Network Performance Feature Reports

Version 1.7
Tivoli® Decision Support for z/OS®

Network Performance Feature Reports

Version 1.7
Note
Before using this information and the product it supports, read the information in "Notices" on page 485.

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This edition applies to version 1, release 7 of Tivoli Decision Support for z/OS (program number 5698-A07) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Preface

The Network Performance Feature Reports provides information about the reports that are included with IBM® Tivoli® Decision Support for z/OS® (hereafter referred to as Tivoli Decision Support for z/OS) and the Network Performance feature. Each report is illustrated and the information in the report is described.

Tivoli Decision Support for z/OS was previously known as Tivoli Decision Support for OS/390®.

The following terms are used interchangeably throughout this book:
- MVS™, OS/390, and z/OS
- Tivoli Decision Support for z/OS and Tivoli Decision Support for OS/390

Who should read this book

The Network Performance Feature Reports is intended for network analysts or programmers who use the Network Performance feature reports.

What this book contains

Use this book as a reference to understand the information provided in a specific report or to find out which report best suits your needs. The book contains the following chapters:

- Chapter 1, “Network Performance feature reports”
  Discusses the types of reports provided by each Network Performance feature component, describes how to generate a report, and provides a guide to the information provided in the report descriptions.

- Chapter 2, “Availability reports”
  Describes the reports produced by the availability component.

- Chapter 3, “Configuration reports”
  Describes the reports produced by the configuration component.

- Chapter 4, “NetView FTP reports”
  Describes the reports produced by the NetView® FTP component.

- Chapter 5, “Problem reports”
  Describes the reports produced by the problem component and the Session Failure component.

- Chapter 6, “Response-time reports”
  Describes the reports produced by the NPM transit time component and the RTM response time component.

- Chapter 7, “NPM/IP reports”
  Describes the reports produced by the NPM for IP component.

- Chapter 8, “Service reports”
  Describes the reports produced by the service component.

- Chapter 9, “Utilization reports (part 1 of 2)”
  Describes the reports produced by the:
  - NCP utilization component
  - Line utilization component
Preface

- NPM internal utilization component
- PU utilization component
- NV/SM internal utilization component
- NTRI utilization component
- NEO utilization component
- X.25 utilization component

- Chapter 10, “Utilization reports (part 2 of 2)”

Describes the reports produced by the:
- LAN utilization component
- ODLC utilization component
- Frame Relay utilization component
- VTAM® utilization component
- SNMP routers utilization component

The book contains the following appendixes:
- Appendix A, “GDDM formats”
- Appendix B, “Query, form, and chart formats”
- Appendix C, “Variable formats”

The book also contains a list of abbreviations, a glossary, and an index.

Publications

This section lists publications in the Tivoli Decision Support for z/OS library and any other related documents. It also describes how to access Tivoli publications online and how to order Tivoli publications.

Tivoli Decision Support for z/OS library

The following documents are available in the Tivoli Decision Support for z/OS library:

- Accounting Feature for z/OS, SH19-4495
  Provides information for users who want to use Tivoli Decision Support for z/OS to collect and report performance data generated by the Accounting Feature for z/OS.
- Administration Guide, SH19-6816
  Provides information about initializing the Tivoli Decision Support for z/OS database and customizing and administering Tivoli Decision Support for z/OS.
- AS/400 System Performance Feature Guide and Reference, SH19-4019
  Provides information for administrators and users about collecting and reporting performance data generated by AS/400® systems.
- CICS Performance Feature Guide and Reference, SH19-6820
  Provides information for administrators and users about collecting and reporting performance data generated by Customer Information and Control System (CICS®).
- Distributed Systems Performance Feature Guide and Reference, SH19-4018
  Provides information for administrators and users about collecting and reporting performance data generated by operating systems and applications running on a workstation.
- Guide to the Reporting Dialog, SH19-6842
Using LookAt to look up message explanations

LookAt is an online facility that lets you look up explanations for most messages you encounter, as well as for some system abends and codes. Using LookAt to find information is faster than a conventional search because in most cases LookAt goes directly to the message explanation.

You can access LookAt from the Internet at:
or from anywhere in z/OS or z/OS.e where you can access a TSO/E command line (for example, TSO/E prompt, ISPF, z/OSUNIX® System Services running OMVS).

The LookAt Web site also features a mobile edition of LookAt for devices such as Pocket PCs, Palm OS, or Linux™-based handhelds. So, if you have a handheld
device with wireless access and an Internet browser, you can now access LookAt message information from almost anywhere.

**Accessing publications online**

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli software information center Web site. Access the Tivoli software information center by first going to the Tivoli software library at the following Web address:


Scroll down and click the **Product manuals** link. In the Tivoli Technical Product Documents Alphabetical Listing window, click the Tivoli Decision Support for z/OS link to access the product library at the Tivoli software information center.

**Note:** If you print PDF documents on other than letter-sized paper, set the option in the **File” Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

**Ordering publications**

You can order many Tivoli publications online at the following Web site:


You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, see the following Web site for a list of telephone numbers:


**Accessibility**

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see the Accessibility Appendix in *Book_Title*.

**Tivoli technical training**

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site:


**Contacting IBM Software Support**

IBM Software Support provides assistance with product defects.
Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, as well as DB2® and WebSphere® products that run on Windows® or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:
  - **Online**: Go to the Passport Advantage Web page [http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home](http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home) and click **How to Enroll**
  - **By phone**: For the phone number to call in your country, go to the IBM Software Support Web site [http://techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region.

- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries®, pSeries®, and iSeries® environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web page [http://www.ibm.com/servers/eserver/techsupport.html](http://www.ibm.com/servers/eserver/techsupport.html).

If you are not sure what type of software maintenance contract you need, call 1-800-IBM-SERV (1-800-426-7378) in the United States or, from other countries, go to the contacts page of the IBM Software Support Handbook on the Web [http://techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region for phone numbers of people who provide support for your location.

Follow the steps in this topic to contact IBM Software Support:

1. “Determine the business impact of your problem”
2. “Describe your problem and gather background information” on page xx
3. “Submit your problem to IBM Software Support” on page xx

### Determine the business impact of your problem

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem you are reporting. Use the following criteria:

<table>
<thead>
<tr>
<th>Severity 1</th>
<th>Critical business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity 2</td>
<td>Significant business impact: The program is usable but is severely limited.</td>
</tr>
<tr>
<td>Severity 3</td>
<td>Some business impact: The program is usable with less significant features (not critical to operations) unavailable.</td>
</tr>
<tr>
<td>Severity 4</td>
<td>Minimal business impact: The problem causes little impact on operations, or a reasonable circumvention to the problem has been implemented.</td>
</tr>
</tbody>
</table>
Contacting IBM Software Support

Describe your problem and gather background information

When explaining a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can the problem be recreated? If so, what steps led to the failure?
- Have any changes been made to the system? (For example, hardware, operating system, networking software, and so on.)
- Are you currently using a workaround for this problem? If so, please be prepared to explain it when you report the problem.

Submit your problem to IBM Software Support

You can submit your problem in one of two ways:

- **By phone**: For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web [http://techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html) and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround for you to implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM product support Web pages daily, so that other users who experience the same problem can benefit from the same resolutions.

For more information about problem resolution, see "Searching knowledge bases" and "Obtaining fixes" on page xxi.

Searching knowledge bases

If you have a problem with your IBM software, you want it resolved quickly. Begin by searching the available knowledge bases to determine whether the resolution to your problem is already documented.

Search the information center on your local system or network

IBM provides extensive documentation that can be installed on your local machine or on an intranet server. You can use the search function of this information center to query conceptual information, instructions for completing tasks, reference information, and support documents.

Search the Internet

If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem. To search multiple Internet resources for your product, expand the product folder in the navigation frame to the left and select **Support on the Web**. From this topic, you can search a variety of resources including:

- IBM technotes
• IBM downloads
• IBM Redbooks™
• IBM DeveloperWorks
• Forums and newsgroups
• Google

Obtaining fixes
A product fix might be available to resolve your problem. You can determine what fixes are available for your IBM software product by checking the product support Web site:

1. Go to the IBM Software Support Web site
2. Under Products A - Z, select your product name. This opens a product-specific support site.
3. Under Self help, follow the link to All Updates, where you will find a list of fixes, fix packs, and other service updates for your product. For tips on refining your search, click Search tips.
4. Click the name of a fix to read the description and optionally download the fix.

To receive weekly e-mail notifications about fixes and other news about IBM products, follow these steps:

1. From the support page for any IBM product, click My support in the upper-right corner of the page.
2. If you have already registered, skip to the next step. If you have not registered, click register in the upper-right corner of the support page to establish your user ID and password.
3. Sign in to My support.
4. On the My support page, click Edit profiles in the left navigation pane, and scroll to Select Mail Preferences. Select a product family and check the appropriate boxes for the type of information you want.
5. Click Submit.
6. For e-mail notification for other products, repeat Steps 4 and 5.

For more information about types of fixes, see the Software Support Handbook (http://techsupport.services.ibm.com/guides/handbook.html).

Updating support information
Information centers typically include one or more support information plug-ins. These plug-ins add IBM technotes and other support documents to the information center. The following steps describe how to update your support information plug-ins:

1. Go to the IBM Software Support Web site
2. Under Products A - Z, select your product name. This opens a product-specific support site.
3. Under Search support for this product, type the keyword phrase: com.ibm.support. Click the Download check box, and click Submit.
4. Check the search results for updates to support information plug-ins. All support information plug-ins follow the naming convention, "com.ibm.support.product.doc." If an update is available, select it from the list and view the download instructions.
5. Save the attached zip file to a temporary location on your hard drive.
6. Unzip the downloaded file, making sure that you retain the subfolders.
7. From the location where you unzipped the file, copy the support information plug-in folder to your Eclipse plug-ins folder. For example, if your IBM software product is installed at c:\IBM\WebSphere, copy the updated plug-in folder (com.ibm.support.product.doc) to c:\IBM\WebSphere\eclipse\plugins.
8. To see the updated support information, start the information center (or shut it down and restart it), and expand the Support information node in the navigation tree.

Conventions used in this book

This guide uses several conventions for special terms and actions, operating system-dependent commands and paths, and margin graphics.

The terms MVS, OS/390, and z/OS are used interchangeably throughout this book.

Typeface conventions

This guide uses the following typeface conventions:

**Bold**
- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as Tip, and Operating system considerations)
- Column headings in a table
- Keywords and parameters in text

*Italic*
- Citations (titles of books, diskettes, and CDs)
- Words defined in text
- Emphasis of words (words as words)
- Letters as letters
- New terms in text (except in a definition list)
- Variables and values you must provide

**Monospace**
- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

Changes in this edition

This edition is an updated version that replaces the previous edition of the same book. The changes are:
- The name of the product has been changed to Tivoli Decision Support for z/OS (except in figures).
Except for editorial changes, changes in this edition are marked with a vertical bar to the left of the change.
Chapter 1. Network Performance feature reports

IBM Tivoli Decision Support for z/OS (hereafter referred to as Tivoli Decision Support for z/OS) is a reporting system that collects performance data logged by computer systems, summarizes the data, and presents it in a variety of forms for use in systems management. Tivoli Decision Support for z/OS consists of a base product and several optional features.

This chapter presents a brief overview of the reports that the Network Performance feature can produce. The chapter describes the reporting process, discusses the concept of report groups, and explains the types of reports produced by the Network Performance feature.

Producing reports

The ultimate goal of all data collection and processing in the Network Performance feature is the production of reports. Reports show essential network performance data in clear and easily understandable formats. Because users have different needs, the Network Performance feature reports present a variety of data in several formats. You can select the data you need and the format in which you want to see the data.

You can create reports using the host reporting dialog, which runs in an OS/390 environment. For information on creating reports with the host reporting dialog, refer to the Guide to the Reporting Dialog.

Grouping reports

To make it easier to find the report you need, the Network Performance feature reports are organized into report groups, which correspond to the feature components. The report groups are:

- Network Availability Reports
- Network Configuration Reports
- Network NetView FTP Reports
- Network Problem Reports
- Network Session Failure Reports
- Network NPM Transit Time Reports
- Network RTM Response Time Reports
- NPM/IP Reports
- Network Service Reports
- Network NCP Utilization Reports
- Network Line Utilization Reports
- Network NPM Internal Utilization Reports
- Network PU Utilization Reports
- Network NV/SM Internal Utilization Reports
- Network NEO Utilization Reports
- Network NTRI Utilization Reports
- Network X.25 Utilization Reports
- Network LAN Utilization Reports
- ODLC Utilization Reports
- Network Frame Relay Utilization Reports
- Network VTAM Utilization Reports
- SNMP Cisco Routers Reports
Network Performance Feature Reports

- SNMP IBM Routers Reports

To produce a report in one of these groups, press F4 (Groups) from the Reports window. The window displays the list of report groups, from which you can select the group you want to use. See Figure 1.

![Figure 1. Selecting a report group](image)

When you select a report group and press Enter, the dialog displays the reports in that group. See Figure 2.

![Figure 2. Reports in the Network Availability report group](image)

Within each report group, reports are divided by report category, which specifies the format in which the data is presented. The report categories are:
- Exception reports
- Worst-case reports
- Overview reports
- Trend reports
- Detail reports
The remainder of this chapter discusses each information category and report category.

**Information categories**

Each of the seven information categories in the Network Performance feature is responsible for collecting, processing, and reporting on a specific type of network data. Each information category is made up of one or more components. Components, which can be individually installed, contain the procedures for actually performing data processing. Because each component is an individual unit, you install only the components you need to produce the reports you need. Refer to the *Network Performance Feature Installation and Administration* for more information on selecting information categories and installing components.

**Availability**

Availability reports show uptime (availability) and the number of down events (stability) during service hours. They use data from the NetView session monitor and optionally from an external availability log. The reports provide information on cross-domain sessions, cross-network sessions, communication controllers, cluster controllers, and applications. Availability reports also provide information about resources logged to an external availability log with the same resource types defined for NetView-monitored resources.

**Configuration**

Configuration reports are based on vital product data (VPD) collected by NetView asset management. Configuration reports are divided into hardware and software categories, which provide device and product information.

**NetView File Transfer Program (FTP)**

The NetView FTP reports provide statistics on NetView FTP transmissions and requests.

**Problem**

Problem reports are based on data collected by the NetView hardware monitor and the NetView session monitor. Problem reports are divided into two main categories:

- **Hardware problems**
  Problems reported by the hardware monitor as basic and generic alerts.

- **Session failures**
  Problems reported by the session monitor. These reports contain information about problems encountered when virtual telecommunications access management (VTAM) establishes and ends sessions.

**Response time**

Response-time reports are based on data recorded by the NetView session monitor and by NetView Performance Monitor (NPM). Response-time reports are divided into these categories:

- **Response time**
  Information collected by the response time monitor (RTM) function of the NetView session monitor

- **Transit time**
  Information collected by NPM
Service level
Service reports are created using data collected from other information categories. Service reports give summarized data suitable for use in monitoring service levels. The reports help to ensure that end users get the expected service as specified in service-level objectives.

Utilization
Utilization reports are based on data measured by NPM regarding usage of specific resource types. Utilization reports are divided into these main categories:

Network control program (NCP) utilization
Provides information about communication control unit (CCU) utilization, channel statistics, and buffer information

Line utilization
Provides information about synchronous data link control (SDLC) lines and binary synchronous communication (BSC) lines

Physical unit (PU) utilization
Provides information about PUs attached to a selected line

NPM internal utilization
Provides information about the number of records written and buffer utilization

NV/SM internal utilization
Provides information about NetView session monitor sessions filtered, records waiting, and storage used

Network token-ring interface (NTRI) utilization
Provides information about physical and logical usage and errors

X.25 utilization
Provides information about data sent and received over X.25 lines

Network extension option (NEO) utilization
Provides information on utilization of NEO send and receive links

LAN utilization
Provides information on utilization of LAN segments and LAN bridges

ODLC utilization
Provides information on utilization of LAN physical link and LAN station PU resources

Frame relay utilization
Provides information about physical and logical usage and errors

VTAM utilization
Provides information on utilization of VTAM applications, devices, channels, buffers, and virtual routes.

SNMP routers utilization
Provides statistics and utilization information for SNMP routers (IBM and Cisco).

Report categories
The different categories of Tivoli Decision Support for z/OS reports available let you specify the way you view the information you need to evaluate your network performance. Not all report categories are available in each information category or subcategory.
Exception reports
Exception reports contain information about situations that can have a negative impact on service levels, both in the short term and in the long term. You get this information by defining threshold values for certain measurements, such as availability of a resource. Exception reports show only those resources that have exceeded the threshold values or limits.

Worst-case reports
Worst-case reports list the resources (usually a maximum of 15) with the worst measured values (for example, the worst performance). A resource’s appearance on this report does not necessarily mean that the measured value of that resource is unacceptable; only that the performance is worse for that resource than for other resources of the same type.

Overview reports
Overview reports list information about all resources that meet the selection criteria. The resources are usually sorted in alphabetical order.

Trend reports
Trend reports present critical measurements of a resource, such as line utilization, over a period of time. The reports show if there have been changes that might indicate an existing or potential problem. Trend reports are usually graphical.

Trend reports for a selected day are useful for problem-solving purposes. Reports with longer time periods, such as a selected week or year, are useful for planning purposes.

Detail reports
Detail reports present detailed information for a selected resource. These reports can be important in helping you find out as much as possible about a critical situation. You usually use these reports when an exception report or trend report indicates a possible problem with a specific resource.

These reports show data for one day. Since most installations keep detailed data for only a few days, the data for the day you select may no longer be in the Network Performance feature database.
Understanding the report descriptions

The report descriptions in this book follow a common format:

NEO Link Data, Hourly/Daily Detail report

These reports show the outbound queue value, load, and errors for a selected NEO link.

This information identifies the reports:

- **Report ID**: NWNEO10 (hourly report), NWNEO11 (daily report)
- **Report group**: Network NEO Utilization Reports
- **Source**: NW_NEO_UTIL_H (hourly report), NW_NEO_UTIL_D (daily report)
- **Attributes**: Network, NW, Performance, Utilization, Detail, NEO, Hourly/Daily
- **Variables**: Date (required) for hourly report, From_date and To_date for daily report, Line name

### Network NEO Link Data, Hourly Detail

**Date:** 2000-08-14

**Line name:** N3L08

<table>
<thead>
<tr>
<th>Hour</th>
<th>Outbound queue avg</th>
<th>Outbound queue max</th>
<th>Thresh exceed (%)</th>
<th>Bytes resent (%)</th>
<th>I-frames resent (%)</th>
<th>Error avg (hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>19.0</td>
<td>34</td>
<td>0.00</td>
<td>16.64</td>
<td>20.22</td>
<td>28400.6</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNEO10

*Figure 3. Example of a Network NEO Link Data, Hourly Detail report*

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Outbound queue avg**: The average outbound queue length, in path information units. This is calculated as: OUTQUEUE_PIUS/RECORDS_COLLECTED.
- **Outbound queue max**: The maximum outbound queue length, in path information units.
- **Thresh exceed (%)**: The percentage of line utilization above the threshold value.
- **Bytes resent (%)**: The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
- **I-frames resent (%)**: The number of I-frames retransmitted, as a percentage of the total number of I-frames that were transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
Network Performance Feature Reports

**Error avg (hour)**

The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.

The following sections describe each part of the standard report description.

**Heading**

Most reports are available for several different time periods. Because these reports are almost identical, they are described together and only one example is included. The heading includes the different time periods for which the report is available (hourly, daily, weekly, or monthly).

**Description**

The report description briefly discusses the information presented in the report. In some cases, the description contains information on how to interpret the report or sources for more information.

**Report ID**

The report ID identifies the report within Tivoli Decision Support for z/OS. All network report IDs start with the letters NW, followed by one or more characters to identify the report group and a numeric code to uniquely identify the report within the group. When the report description includes reports for more than one time period, the description lists the report IDs for all time periods and identifies the time period for which each applies.

**Report group**

The report group identifies the Tivoli Decision Support for z/OS group to which the report belongs. These report groups correspond to the Network Performance feature components.

**Source**

The sources listed are the database tables from which the Network Performance feature extracts data to create the report. If the report uses information from lookup tables, those are listed as well. When the report description includes reports for more than one time period, the description includes the source tables for all time periods and identifies the time period for which each applies.

**Attributes**

The attributes are keys that you can use to search for a particular report. Press F5 from the Reports window to display the Search for Reports window (Figure 4).
You can enter one or more attributes in the Attributes field to display a list of all reports meeting your search criteria.

Typing multiple attributes on the same line (each separated by a space) specifies that you want to search for reports that match all the attributes. For example, type:

```
network performance utilization
```

in the Attributes field to specify that you want to list all reports that have all of those attributes.

Typing multiple attributes on separate lines specifies that you want to search for reports that match any one of the attributes. For example, type:

```
network
performance
utilization
```

in the Attributes field to specify that you want to list all reports that have Network as an attribute, all reports that have Performance as an attribute, and all reports that have Utilization as an attribute.

**Variables**

When you select a report to create, Tivoli Decision Support for z/OS prompts you for the variables listed in this section. When the report description includes reports for more than one time period, the description includes variables for all time periods and identifies the time period for which each applies.

Tivoli Decision Support for z/OS requires a value for some variables. If you do not enter a value for a required variable, an error message appears.

**Example report**

The example illustrates a typical report. When the report description includes reports for more than one time period, the description includes only an example of a report for a single time period.
Column descriptions

The column descriptions explain each column in the report in detail. If the column contains a calculated value, the formula used for the calculation is included.
Chapter 2. Availability reports

This chapter describes availability reports that provide information on the availability and stability of resources and groups of resources.

Availability exception reports

The network availability exception reports list resources that do not meet objectives for availability or stability.
Network Availability, Exception report

This report shows availability exceptions for PUs (clusters), applications, NCPs, and cross-connections. The report also shows stability information. By looking at the availability and stability information, you can determine, for example, whether there have been a few long down events or many short interrupts.

When the Avail in schedule (%) and Stops in schedule columns contain --, it means that the value for this row was unknown in the availability table.

This information identifies the report:

Report ID NWAVAIL01
Report group Network Availability Reports
Source AVAILABILITY_D, NWRESOURCE
Attributes NW, Network, Service, Problem, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Exception
Variables From_date, To_date, Resource_type

The report contains this information:

<table>
<thead>
<tr>
<th>Resource type name</th>
<th>Resource description</th>
<th>Avail dif (%)</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>Schedule days</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPL NETVIEW</td>
<td>NETVIEW</td>
<td>-5.82</td>
<td>93.18</td>
<td>99.00</td>
<td>1.0</td>
<td>0.60</td>
<td>1</td>
</tr>
<tr>
<td>TSO-A</td>
<td>TSO A</td>
<td>-1.82</td>
<td>93.18</td>
<td>95.00</td>
<td>1.0</td>
<td>0.60</td>
<td>1</td>
</tr>
<tr>
<td>CICS01</td>
<td>PROD-A</td>
<td>-1.82</td>
<td>93.18</td>
<td>95.00</td>
<td>0.0</td>
<td>0.60</td>
<td>1</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWAVAIL01

Figure 5. Example of a Network Availability, Exception report

The report contains this information:

Resource type The resource type.

Resource name The resource name.

Resource description The resource description.

Avail dif (%) The difference between the measured availability, Avail in schedule (%), and the availability objective, Avail obj (%), in percent. A negative value means that the service provided does not meet the objective. This is calculated as:

100*UP_IN_SCHEDULE/SCHEDULE_HOURS − AVAIL_OBJ.

Avail in schedule (%) The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:

100*UP_IN_SCHEDULE/SCHEDULE_HOURS.

Avail obj (%) The minimum acceptable availability during the schedule hours, in percent.
**Availability Reports**

**Stops in schedule**

The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj**

The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_RESOURCE table.

**Schedule days**

The number of days the resource was scheduled to be up.
Network Stability, Exception report

This report shows stability exceptions for PUs (clusters), applications, NCPs, and cross-connections. The report also shows availability information. By looking at the availability and stability information, you can determine, for example, whether there have been a few long down events or many short interrupts.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

This information identifies the report:

Report ID NWAVAIL02
Report group Network Availability Reports
Source AVAILABILITY_D, NW_RESOURCE
Attributes NW, Network, Service, Problem, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Stability, Exception
Variables From_date, To_date, Resource_type

The report contains this information:

Resource type The resource type.
Resource name The resource name.
Resource description The resource description.
Stop dif The difference between the objective for the maximum acceptable number of stops during the schedule hours, and the number of stops measured. A negative value means that the service provided does not meet the objective. This is calculated as: DOWN_EVENTS_OBJ – STOPS_IN_SCHEDULE.

Stops in schedule The stops in the schedule. This is the number of down events during the schedule hours for the resource.

Stops obj The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_RESOURCE table.

Avail in schedule (%) The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime.

Figure 6. Example of a Network Stability, Exception report

The report contains this information:

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Resource name</th>
<th>Stop dif</th>
<th>Stops in schedule</th>
<th>Stops Schedule obj</th>
<th>Avail in Schedule (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU N15PU15</td>
<td>AA-3174</td>
<td>-7.00</td>
<td>8.0</td>
<td>1.00</td>
<td>5.98</td>
</tr>
<tr>
<td></td>
<td>BB-3708</td>
<td>-6.00</td>
<td>7.0</td>
<td>1.00</td>
<td>81.68</td>
</tr>
<tr>
<td></td>
<td>CC-3174</td>
<td>-4.00</td>
<td>5.0</td>
<td>1.00</td>
<td>97.06</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWAVAIL02
This is calculated as:
100*UP_IN_SCHEDULE/SCHEDULE_HOURS.

**Avail obj (%)**  The minimum acceptable availability during the schedule hours, in percent.

**Schedule days**  The number of days the resource was scheduled to be up.
Availability Reports

Availability worst-case reports

The network availability worst-case reports list information for resources that have the worst availability or stability, regardless of whether the resources met their service level objectives.
Network Availability, Worst Case report

This report shows up to 15 resources, PUs (clusters), applications, NCPs, or cross-connections, with the worst availability. The value in column Avail dif (%) determines which resources have the worst availability. By comparing the availability in the schedule (Avail in schedule (%)) and the stops in the schedule (Stops in schedule), you can determine if there have been many short periods or a few long periods with unavailability.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWAVAIL03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Availability Reports</td>
</tr>
<tr>
<td>Source</td>
<td>AVAILABILITY_D, NW_RESOURCE</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Worst</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date, Resource_type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Resource name</th>
<th>Resource description</th>
<th>Avail dif (%)</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in Schedule days</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU</td>
<td>FS1PU5</td>
<td>3174 LOCATION E</td>
<td>-5.00</td>
<td>92.00</td>
<td>97.00</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>FS1PU4</td>
<td>3174 LOCATION C</td>
<td>-2.00</td>
<td>95.00</td>
<td>97.00</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>FS1PU1</td>
<td>3174 LOCATION A</td>
<td>3.00</td>
<td>100.00</td>
<td>97.00</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Figure 7. Example of a Network Availability, Worst Case report

The report contains this information:

Resource type  The resource type.

Resource name  The resource name.

Resource description  The resource description.

Avail dif (%)  The difference between the measured availability, Avail in schedule (%), and the availability objective, Avail obj (%), in percent. A negative value means that the service provided does not meet the objective. This is calculated as:

100*UP_IN_SCHEDULE/SCHEDULE_HOURS – AVAIL_OBJ

Avail in schedule (%)  The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:

100*UP_IN_SCHEDULE/SCHEDULE_HOURS

Avail obj (%)  The minimum acceptable availability during the schedule hours, in percent.
Availability Reports

**Stops in schedule**
The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Schedule days**
The number of days the resource was scheduled to be up.
Network Stability, Worst Case report

This report shows up to 15 resources, PUs (clusters), applications, NCPs, or cross-connections, with the worst stability. The value in column Stop dif determines which resources have the worst stability. By comparing the availability in the schedule (Avail in schedule (%)) and the stops in the schedule (Stops in schedule), you can determine if there have been many short periods or a few long periods with unavailability.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

This information identifies the report:

Report ID       NWAVAIL04
Report group    Network Availability Reports
Source          AVAILABILITY_D, NW_RESOURCE
Attributes      NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Stability, Worst
Variables       From_date, To_date, Resource_type

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Resource name</th>
<th>Stop dif</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>Avail in schedule %</th>
<th>Schedule days</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU</td>
<td>FS1PU12</td>
<td></td>
<td>-3.00</td>
<td>5.0</td>
<td>2.00</td>
<td>52.07</td>
</tr>
<tr>
<td></td>
<td>FS1PU6</td>
<td>-1.00</td>
<td>3.0</td>
<td>2.00</td>
<td>86.23</td>
<td>88.13</td>
</tr>
<tr>
<td></td>
<td>FS1PU8</td>
<td>-1.00</td>
<td>3.0</td>
<td>2.00</td>
<td>86.23</td>
<td>88.13</td>
</tr>
</tbody>
</table>

Figure 8. Example of a Network Stability, Worst Case report

The report contains this information:

**Resource type** The resource type.

**Resource name** The resource name.

**Resource description** The resource description.

**Stop dif** The difference between the objective for the maximum acceptable number of stops during the schedule hours, and the number of stops measured. A negative value means that the service provided does not meet the objective. This is calculated as:

\[ \text{DOWN_EVENTS_OBJC} - \text{STOPS_IN_SCHEDULE} \]

**Stops in schedule** The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj** The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJC in NW_RESOURCE table.

**Avail in schedule (%)** The availability for the resource, as a percentage of the number of
Availability Reports

scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:
100*UP_IN_SCHEDULE/SCHEDULE_HOURS.

Schedule days
The number of days the resource was scheduled to be up.
Availability overview reports

The network availability overview reports list the availability of groups of resources during the course of a day or month. Because of the reporting periods involved, these reports provide short-term information.


Network Availability in Groups, Daily/Monthly Overview report

These reports show the measured availability for groups of resources, PUs (clusters), applications, NCPs, or cross-connections. They show both the availability and stability for each group. The values in the Avail dif (%) and Stop dif columns indicate how the services provided by all resources in a group compare to the service objective. A negative value in these columns means that the service provided does not meet the objectives.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

This information identifies the reports:

**Report ID**  NWAVAIL05 (daily), NWAVAIL06 (monthly)

**Report group**  Network Availability Reports

**Source**  AVAILABILITY_D(daily), AVAILABILITY_M(monthly), NW_RESOURCE

**Attributes**  NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Group, Availability, Overview, Daily/Monthly

**Variables**  Date (required for daily), Date_in_month (required for monthly), Resource_type

<table>
<thead>
<tr>
<th>Resource type</th>
<th>Group description</th>
<th>Avail dif (%)</th>
<th>Avail in schedule (%)</th>
<th>Stop dif</th>
<th>Stops in schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU FS1LOAA LOCATION AA GROUP</td>
<td>-0.41</td>
<td>92.59</td>
<td>5.00</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>FS1LOBB LOCATION BB GROUP</td>
<td>7.00</td>
<td>100.00</td>
<td>6.00</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>FS1LOCC LOCATION CC GROUP</td>
<td>2.26</td>
<td>95.26</td>
<td>5.00</td>
<td>13.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 9. Example of a Network Availability in Groups, Daily Overview report

The reports contain this information:

**Resource type**  The resource type.

**Resource group**  The resource group.

**Group description**  The group description.

**Avail dif (%)**  The difference between the measured availability and the availability objective, in percent. A negative value means that the service provided does not meet the objective. This is calculated as: 100*UP_IN_SCHEDULE/SCHEDULE_HOURS – AVAIL_OBJ.

**Avail in schedule (%)**  The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as: 100*UP_IN_SCHEDULE/SCHEDULE_HOURS.

**Stop dif**  The difference between the objective for the maximum acceptable number of stops during the schedule hours, and the number of stops.
stops measured. A negative value means that the service provided does not meet the objective. This is calculated as:
DOWN_EVENTS_OBJ – STOPS_IN_SCHEDULE.

**Stops in schedule**
The stops in the schedule. This is the number of down events during the schedule hours for the resource.
Network Availability by Group, Daily/Monthly Overview report

These reports show the measured availability in a selected group of resources, PUs (clusters), applications, NCPs, or cross-connections. They show both the availability and stability for each resource. The values in the Avail dif (%) and Stop dif columns indicate how the services provided by the resources compare to the service objective. A negative value in these columns means that the service provided does not meet the objectives.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

This information identifies the reports:

**Report ID**: NWAVAIL07 (daily), NWAVAIL08 (monthly)

**Report group**: Network Availability Reports

**Source**: AVAILABILITY_D(daily), AVAILABILITY_M(monthly), NW_RESOURCE

**Attributes**: NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Group, Availability, Overview, Daily/Monthly

**Variables**: Date (required for daily), Date_in_month (required for monthly), Resource_group

---

### Network Availability by Group, Daily Overview

**Date**: 2000-01-27

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Resource name</th>
<th>Description</th>
<th>Avail in schedule (%)</th>
<th>Stop dif</th>
<th>Stops in schedule (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCPAA</td>
<td>RESNCP2</td>
<td>NCP2 3745</td>
<td>-5.00</td>
<td>90.00</td>
<td>7.00</td>
</tr>
<tr>
<td>RESNCP4</td>
<td>NCP4 3745</td>
<td></td>
<td>5.00</td>
<td>100.00</td>
<td>9.00</td>
</tr>
<tr>
<td>RESNCP6</td>
<td>NCP6 3745</td>
<td></td>
<td>5.00</td>
<td>100.00</td>
<td>8.00</td>
</tr>
</tbody>
</table>

**Tivoli Decision Support for z/OS Report**: NWAVAIL07

---

**Figure 10. Example of a Network Availability by Group, Daily Overview report**

The reports contain this information:

**Resource group**

The resource group.

**Resource name**

The resource name.

**Resource description**

The resource description.

**Avail dif (%)**

The difference between the measured availability, Avail in schedule (%), and the availability objective in percent. A negative value means that the service provided does not meet the objective. This is calculated as:

\[ 100 \times \frac{\text{UP IN SCHEDULE}}{\text{SCHEDULE HOURS}} - \text{AVAIL OBJ} \]

**Avail in schedule (%)**

The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:

\[ 100 \times \frac{\text{UP IN SCHEDULE}}{\text{SCHEDULE HOURS}} \]
Stop dif  
The difference between the objective for the maximum acceptable number of stops during the schedule hours, and the number of stops measured. A negative value means that the service provided does not meet the objective. This is calculated as: DOWN_EVENTS_OBJ – STOPS_IN_SCHEDULE.

Stops in schedule  
The stops in the schedule. This is the number of down events during the schedule hours for the resource.
Availability trend reports

The network availability trend reports provide availability and stability trends for daily or weekly periods.
Network Availability Uptime, Daily/Weekly Trend report

These graphic reports show the availability for a selected resource, a PU (cluster), application, NCP, or cross-connection. The availability measurements are given as up hours during the scheduled time period. If there are no recorded schedule hours for a certain time period, it is because the resource has no schedule hours defined for the time period (for example, weekend, Christmas day, and so on).

This information identifies the reports:

- **Report ID**: NWAVAIL09 (daily), NWAVAIL10 (weekly)
- **Report group**: Network Availability Reports
- **Source**: AVAILABILITY_D(daily), AVAILABILITY_W(weekly), NW_RESOURCE
- **Attributes**: NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Uptime, Trend, Daily/Weekly
- **Variables**: Date in week (required for daily), From_date_in_week, To_date_in_week (required for weekly), Resource_name (required)
- **Y-axis**: The y-axis (vertical), hours, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of hours.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (daily or weekly). One of these will appear on the x-axis:
  - Day—the day of the week
  - Week start date—the starting date of the week (weeks start on Monday)
The reports contain this information:

**Up in schedule**

The number of hours the resource was up within the schedule.

**Schedule hours**

The number of hours the resource was scheduled to be up.
Network Availability, Daily/Weekly Trend report

These graphic reports show the percentage of availability and unavailability during the schedule hours for a selected resource, a PU (cluster), application, NCP, or cross-connection. They also show the availability objective.

This information identifies the reports:

- **Report ID**: NWAVAIL11 (daily), NWAVAIL12 (weekly)
- **Report group**: Network Availability Reports
- **Source**: AVAILABILITY_D(daily), AVAILABILITY_W(weekly), NWRESOURCE
- **Attributes**: NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Trend, Daily/Weekly
- **Variables**: Date in week (required for daily), From_date_in_week, To_date_in_week (required for weekly), Resource_name (required)
- **Y-axis**: The y-axis (vertical), indicates the percentage.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (daily or weekly). One of these will appear on the x-axis:
  - Day—the day of the week
  - Week start date—the starting date of the week (weeks start on Monday)

![Network Availability, Daily Trend report](image)

*Figure 12. Example of a Network Availability, Daily Trend report*

The reports contain this information:

- **Avail obj (%)**: The minimum acceptable availability during the schedule hours, in percent.
Availability Reports

**Avail in schedule (%)**

The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:

\[
100 \times \frac{UP\_IN\_SCHEDULE}{SCHEDULE\_HOURS}.
\]

**Unavail in schedule (%)**

The unavailability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours downtime. This is calculated as:

\[
100 \times \frac{SCHEDULE\_HOURS - UP\_IN\_SCHEDULE}{SCHEDULE\_HOURS}.
\]
Network Stability, Daily/Weekly Trend report

These graphic reports show measured stability and the stability objective for a selected resource, a PU (cluster), application, NCP, or cross-connection.

This information identifies the reports:

- **Report ID**: NWAVAIL13 (daily), NWAVAIL14 (weekly)
- **Report group**: Network Availability Reports
- **Source**: AVAILABILITY_D(daily), AVAILABILITY_W(weekly), NW_RESOURCE
- **Attributes**: NW, Network, Service, PU, Application, NCP, Cross, Domain, XDOMAIN, Xnetwork, Availability, Stability, Trend, Daily/Weekly
- **Variables**: Date in week (required for daily), From_date_in_week, To_date_in_week (required for weekly), Resource_name (required)
- **Y-axis**: The y-axis (vertical), stops, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of stops.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (daily or weekly). One of these will appear on the x-axis:
  - Day—the day of the week
  - Week start date—the starting date of the week (weeks start on Monday)

![Network Stability, Weekly Trend report](image)

*Figure 13. Example of a Network Stability, Weekly Trend report*

The reports contain this information:

- **Stops obj**: The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_RESOURCE table.
Availability Reports

Stops in schedule
The stops in the schedule. This is the number of down events during the schedule hours for the resource.
Network Availability by Group, Daily/Monthly Trend report

These graphic reports show for a selected group, the percentage of availability and unavailability during the scheduled hours. They also show the availability objective.

This information identifies the reports:

- **Report ID**: NWAVAIL15 (daily), NWAVAIL16 (monthly)
- **Report group**: Network Availability Reports
- **Source**: AVAILABILITY_D(daily), AVAILABILITY_M(monthly), NW_RESOURCE
- **Attributes**: NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Group, Availability, Trend, Daily/Monthly
- **Variables**: Date_in_month (required for daily), Year (required for monthly), Resource_group (required)
- **Y-axis**: The y-axis (vertical), indicates the percentage.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (daily or monthly). One of these will appear on the x-axis:
  - Day—the day in the month
  - Month—the start date of the month

---

**Figure 14. Example of a Network Availability by Group, Daily Trend report**

The reports contain this information:

- **Avail obj (%)**: The minimum acceptable availability during the schedule hours, in percent.
Availability Reports

**Avail in schedule (%)**

The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:

\[100 \times \frac{\text{UP IN SCHEDULE}}{\text{SCHEDULE HOURS}}.\]

**Unavail in schedule (%)**

The unavailability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours downtime. This is calculated as:

\[100 \times \frac{\text{SCHEDULE HOURS} - \text{UP IN SCHEDULE}}{\text{SCHEDULE HOURS}}.\]
Network Stability by Group, Daily/Monthly Trend report

These graphic reports show for a selected group, the stability measured and the stability objective.

This information identifies the reports:

**Report ID**  
NWAVAIL17 (daily), NWAVAIL18 (monthly)

**Report group**  
Network Availability Reports

**Source**  
AVAILABILITY_D(daily), AVAILABILITY_M(monthly), NW_Resource

**Attributes**  
NW, Network, Service, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Group, Availability, Stability, Trend, Daily/Monthly

**Variables**  
Date_in_month (required for daily), Year (required for monthly), Resource_group (required)

**Y-axis**  
The y-axis (vertical), stops, goes from 0 to a dynamically set value that depends on the information selected. The y-axis indicates the number of stops.

**X-axis**  
The x-axis (horizontal) depends on the time frame selected (daily or monthly). One of these will appear on the x-axis:
  - Day—the day in the month
  - Month—the start date of the month

---

*Figure 15. Example of a Network Stability by Group, Monthly Trend report*

The reports contain this information:
Availability Reports

**Stops obj**
The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_RESOURCE table.

**Stops in schedule**
The stops in the schedule. This is the number of down events during the schedule hours for the resource.
Availability detail report

The network availability detail report provides detailed information on resource availability.

Network Availability, Daily Detail report

This report shows detailed availability information on a selected resource.

This information identifies the report:

- **Report ID**: NWAVAIL19
- **Report group**: Network Availability Reports
- **Source**: AVAILABILITY_T
- **Attributes**: NW, Network, Performance, PU, Application, NCP, Cross, Domain, Xdomain, Xnetwork, Availability, Detail, Daily
- **Variables**: From_date, To_date, Resource_name (required)

<table>
<thead>
<tr>
<th>Start time date and time</th>
<th>Interval type</th>
<th>End time date and time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-28-14.52.37.207040</td>
<td></td>
<td>2000-01-28-22.07.05.854976</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWAVAIL19

Figure 16. Example of a Network Availability, Daily Detail report

The report contains this information:

**Start time date and time**

The start time of the interval.

**Interval type**

The interval type. Possible values are ===, |==, ==|=, |=|=, XXX, |XX, XX|=, |X|=, and blank.

- = Indicates that the resource is up (available).
- X Indicates the resource is down.
- | Indicates an interval start or end.
- A blank Indicates that the status is unknown.

**End time date and time**

The end time of the interval as reported by the session monitor.
Availability Reports
Chapter 3. Configuration reports

This chapter describes hardware and software configuration reports. Configuration reports provide information about the hardware devices and software programs that make up your network. Overview reports are available for hardware and software, and detailed reports are available for hardware.

Configuration hardware overview reports

Configuration hardware overview reports provide general information about the hardware devices in your network.
Network Config Last Collect New Devices, Overview report

This report shows an overview of new devices found in the latest collect run. It also shows the hierarchy for each device.

This information identifies the report:

**Report ID** NWNG01

**Report group** Network Configuration Reports

**Source** NW_CONFIG_HARDWARE

**Attributes** Network, NW, Configuration, Overview, New, Hardware, Device

**Variables** VTAM_NCP

<table>
<thead>
<tr>
<th>VTAM NCP</th>
<th>CA line</th>
<th>PU name</th>
<th>Port number</th>
<th>LU name</th>
<th>Resource type</th>
<th>Machine type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO2CPU 0E10</td>
<td>CA/LINE</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N5ZORUN L25000</td>
<td>CA/LINE</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VTAM NCP</th>
<th>CA line</th>
<th>PU name</th>
<th>Port number</th>
<th>LU name</th>
<th>Resource type</th>
<th>Machine type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO2CPU 0E10</td>
<td>DO2CE10 000</td>
<td>D02SE101 LU</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>001</td>
<td>D02SE102 LU</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>D02SE103 LU</td>
<td>N/A</td>
<td>N/A</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>003</td>
<td>D02SE104 LU</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N5ZORUN L25000</td>
<td>P25008A 000</td>
<td>T25000A1 LU</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>001</td>
<td>T25000A2 LU</td>
<td>3179</td>
<td>G</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>T25000A3 LU</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 17. Example of a Network Config Last Collect New Devices, Overview report**

The report contains this information:

- **VTAM NCP** The new VTAM or NCP name.
- **CA line** The new channel address or the VTAM line name.
- **PU name** The VTAM name of the cluster.
- **Port number** The new port number.
- **LU name** The new LU name (this is the VTAM name of the terminal).
- **Resource type** The new resource type.
- **Machine type** The new hardware machine type.
- **Model** The new model number of the machine.
Network Config Communication Controllers, Overview report

This report shows an overview of all communication controllers (NCPs). It shows the VTAM name, the hardware device type, and the model of the controllers.

This information identifies the report:

- **Report ID**: NWNG02
- **Report group**: Network Configuration Reports
- **Source**: NW_CONFIG_HARDWARE
- **Attributes**: Network, NW, Configuration, Overview, Hardware, NCP, CA
- **Variables**: VTAM_NCP, Machine_type, Model

<table>
<thead>
<tr>
<th>Domain name</th>
<th>VTAM NCP</th>
<th>Machine type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOZ20</td>
<td>N520RUN</td>
<td>3720</td>
<td>011</td>
</tr>
</tbody>
</table>

*Tivoli Decision Support for z/OS* Report: NWNG02

*Figure 18. Example of a Network Config Communication Controllers, Overview report*

The report contains this information:

- **Domain name**: The domain identification.
- **VTAM NCP**: The VTAM or NCP name.
- **Machine type**: The type of hardware device.
- **Model**: The model number of the device.
Network Config PUs, Overview report

This report shows an overview of all cluster controllers for a selected domain and VTAM or NCP. It shows the VTAM name, hardware type, and model of the cluster controllers. It also shows the VTAM and channel (or communication controllers and line) they are attached to.

This information identifies the report:

- **Report ID**: NWNG03
- **Report group**: Network Configuration Reports
- **Source**: NW_CONFIG_HARDWARE
- **Attributes**: Network, NW, Configuration, Overview, Hardware, PU
- **Variables**: Domain_name, VTAM_NCP, CA_line, PU_name, Machine_type, Model

<table>
<thead>
<tr>
<th>Domain name</th>
<th>VTAM_NCP</th>
<th>CA_line</th>
<th>PU_name</th>
<th>Machine_type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>'DO2ZO'</td>
<td>'N520RUN'</td>
<td>'L25000A'</td>
<td>'P25000A'</td>
<td>'3174'</td>
<td>'51R'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>'P25000C'</td>
<td>'3174'</td>
<td>'53R'</td>
</tr>
</tbody>
</table>

Figure 19. Example of a Network Config PUs, Overview report

The report contains this information:

- **Domain name**: The domain identification. This is the name of the NetView system collecting the VPD data.
- **VTAM NCP**: The VTAM or NCP name.
- **CA line**: The channel address or line name.
- **PU name**: The VTAM name of the cluster.
- **Machine type**: The type of hardware device.
- **Model**: The model number of the device.
**Network Config LUs, Overview report**

This report shows an overview of all terminals for a selected domain, VTAM or NCP, and cluster (PU) name. It shows the VTAM names, hardware types, and models. It also shows the VTAM and channel (or communication controllers and line), and the cluster controller to which they are attached.

This information identifies the report:

- **Report ID**: NWNG04
- **Report group**: Network Configuration Reports
- **Source**: NW_CONFIG_HARDWARE
- **Attributes**: Network, NW, Configuration, Overview, Hardware, LU
- **Variables**: Domain_name, VTAM_NCP, CA_line, PU_name, LU_name, Port_number, Machine_type, Model

<table>
<thead>
<tr>
<th>Domain name</th>
<th>VTAM NCP</th>
<th>CA line</th>
<th>PU name</th>
<th>Port number</th>
<th>LU name</th>
<th>Machine type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO2ZO</td>
<td>N520RUN</td>
<td>L25000</td>
<td>P25000A</td>
<td>000</td>
<td>T25000A1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>001</td>
<td>T25000A2</td>
<td>3179</td>
<td>G</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>002</td>
<td>T25000A3</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>003</td>
<td>T25000A4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Figure 20. Example of a Network Config LUs, Overview report

The report contains this information:

- **Domain name**: The domain identification. This is the name of the NetView system collecting the VPD data.
- **VTAM NCP**: The VTAM or NCP name.
- **CA line**: The channel address or line name.
- **PU name**: The PU name (the VTAM name of the cluster).
- **Port number**: The port number.
- **LU name**: The LU name (the VTAM name of the terminal).
- **Machine type**: The type of hardware device.
- **Model**: The model number of the device.
Configurations Reports

Configuration software overview reports

The software configuration overview reports provide general information about the software programs in a network.

Network Config Last Collect New Software, Overview report
This report shows information on all software products found in the last collect run.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNG05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Configuration Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_CONFIG_SOFTWARE</td>
</tr>
<tr>
<td>Attributes</td>
<td>Network, NW, Configuration, Overview, Software, New</td>
</tr>
<tr>
<td>Variables</td>
<td>Domain_name</td>
</tr>
</tbody>
</table>

Network Config Last Collect New Software, Overview
Domain name: DO2Z0

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Component ID</th>
<th>Release date</th>
<th>Customization date</th>
<th>Customization time</th>
</tr>
</thead>
<tbody>
<tr>
<td>N52ORUN</td>
<td>566873801</td>
<td>202</td>
<td>90/032</td>
<td>11:49</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNG05

Figure 21. Example of a Network Config Last Collect New Software, Overview report

The report contains this information:

Resource name
The VTAM resource name.

Component ID
The component ID (product number).

Release
The release level of the product.

Customization date
The date the product was last customized (Julian date YY/DDD).

Customization time
The time the product was last customized.
Network Config NCP Software, Overview report

This report shows, for a selected domain, information on all NCPs—their VTAM names, software component IDs, release levels, and when each NCP was customized and generated.

This information identifies the report:

**Report ID** NWNG06

**Report group** Network Configuration Reports

**Source** NW_CONFIG_SOFTWARE

**Attributes** Network, NW, Configuration, Overview, Software, NCP

**Variables** Domain_name, Resource_name

---

**Network Config NCP Software, Overview**

**Domain name:** 'DO2ZO'

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Component ID</th>
<th>Release</th>
<th>Customization date</th>
<th>Customization time</th>
</tr>
</thead>
<tbody>
<tr>
<td>N520RUN</td>
<td>566873801</td>
<td>202</td>
<td>90/032</td>
<td>11:49</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNG06

*Figure 22. Example of a Network Config NCP Software, Overview report*

The report contains this information:

**Resource name**

The VTAM resource name.

**Component ID**

The component ID (product number).

**Release**

The release level of the product.

**Customization date**

The date the product was last customized (Julian date YY/DDD).

**Customization time**

The time the product was last customized.
Network Config PU Software, Overview report

This report shows, for a selected domain, information on all clusters—their VTAM names, software component IDs, release levels, and when each cluster was customized.

This information identifies the report:

Report ID: NWNG07
Report group: Network Configuration Reports
Source: NW_CONFIG_SOFTWARE
Attributes: Network, NW, Configuration, Overview, Software, PU
Variables: Domain_name, Resource_name

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Component ID</th>
<th>Release date</th>
<th>Customization date</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25000A</td>
<td>566933601</td>
<td>0090/032</td>
<td>11:49</td>
</tr>
<tr>
<td>P25000B</td>
<td>566933601</td>
<td>0090/032</td>
<td>11:49</td>
</tr>
</tbody>
</table>

Figure 23. Example of a Network Config PU Software, Overview report

The report contains this information:

Resource name
The VTAM resource name.

Component ID
The component ID (product number).

Release
The release level of the product.

Customization date
The date the product was last customized (Julian date YY/DDD).

Customization time
The time the product was last customized.
Configuration detail reports

The configuration detail reports provide detailed information about specific types of devices in a network.

Network Config Communication Controllers, Detail report

This report shows information on communication controllers of a selected model and type. It shows the VTAM resource names, hardware types, models, serial numbers, EC levels, and manufacturer IDs.

This information identifies the report:

- **Report ID**: NWNG08
- **Report group**: Network Configuration Reports
- **Source**: NW_CONFIG_HARDWARE
- **Attributes**: Network, NW, Configuration, Detail, Hardware, NCP, CA
- **Variables**: Machine_type, Model, Resource_name, Serial_number, EC_level, Manufacturer

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Machine type</th>
<th>Model</th>
<th>Serial number</th>
<th>EC level</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>N52ORUN</td>
<td>3720</td>
<td>011</td>
<td>0012039</td>
<td>N/A</td>
<td>57</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNG08

*Figure 24. Example of a Network Config Communication Controllers, Detail report*

The report contains this information:

- **Resource name**: The VTAM resource name.
- **Machine type**: The type of hardware device.
- **Model**: The model number of the device.
- **Serial number**: The serial number of the device.
- **EC level**: The engineering change level of the device.
- **Manufacturer**: The identification of the manufacturer of the device.
Network Config PUs, Detail report

This report shows information on cluster controllers of a selected model and type. It shows the VTAM names, hardware types, models, serial numbers, EC levels, and manufacturer IDs.

This information identifies the report:

- **Report ID**: NWNG09
- **Report group**: Network Configuration Reports
- **Source**: NW_CONFIG_HARDWARE
- **Attributes**: Network, NW, Configuration, Detail, Hardware, PU
- **Variables**: Machine_type, Model, Resource_name, Serial_number, EC_level, Manufacturer

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Machine type</th>
<th>Model</th>
<th>Serial number</th>
<th>EC level</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25000C</td>
<td>3174</td>
<td>53R</td>
<td>008562B</td>
<td>N/A</td>
<td>77</td>
</tr>
</tbody>
</table>

*Figure 25. Example of a Network Config PUs, Detail report*

The report contains this information:

- **Resource name**: The VTAM resource name.
- **Machine type**: The type of hardware device.
- **Model**: The model number of the device.
- **Serial number**: The serial number of the device.
- **EC level**: The engineering change level of the device.
- **Manufacturer**: The identification of the manufacturer of the device.
Network Config LUs, Detail report

This report shows information on terminals of a selected model and type. It shows
the VTAM names, hardware types, models, serial numbers, EC levels, and
manufacturer IDs.

Attention: This report may create a lot of output lines.

This information identifies the report:

Report ID NWNG10
Report group Network Configuration Reports
Source NW_CONFIG_HARDWARE
Attributes Network, NW, Configuration, Detail, Hardware, LU
Variables Machine_type, Model, Resource_name, Serial_number, EC_level, Manufacturer

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Machine type</th>
<th>Model</th>
<th>Serial number</th>
<th>EC level</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>T25000A2</td>
<td>3179</td>
<td>G</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNG10

Figure 26. Example of a Network Config LUs, Detail report

The report contains this information:

Resource name The VTAM resource name.
Machine type The type of hardware device.
Model The model number of the device.
Serial number The serial number of the device.
EC level The engineering change level of the device.
Manufacturer The identification of the manufacturer of the device.
Network Config Devices, Detail report

This report shows device information for a selected resource and type. It shows the VTAM resource name and type, hardware type, model, serial number, EC level, and manufacturer ID for the resource.

Attention: This report may create a lot of output lines.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNG11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Configuration Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_CONFIG_HARDWARE</td>
</tr>
<tr>
<td>Attributes</td>
<td>Network, NW, Configuration, Detail, Hardware, Device</td>
</tr>
<tr>
<td>Variables</td>
<td>Resource_name, Resource_type, Machine_type Model, Serial_number, EC_level, Manufacturer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Resource type</th>
<th>Machine type</th>
<th>Model</th>
<th>Serial number</th>
<th>EC level</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>'DO2SE104'</td>
<td>'LU'</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Tivoli</td>
</tr>
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<td></td>
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<td>Decision</td>
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<td>Support</td>
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<td></td>
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<td>for z/OS</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report: NWNG11</td>
</tr>
</tbody>
</table>

Figure 27. Example of a Network Config Devices, Detail report

The report contains this information:

Resource name

The VTAM resource name.

Resource type

The resource type.

Machine type

The type of hardware device.

Model

The model number of the device.

Serial number

The serial number of the device.

EC level

The engineering change level of the device.

Manufacturer

The identification of the manufacturer of the device.
Network Config Last Collect Changed Devices report

This report shows an overview of new devices that were changed and found in the latest collect run. It also shows the hierarchy for each device.

This information identifies the report:

**Report ID**      NWNG12
**Report group**   Network Configuration Reports
**Source**         NW_CONFIG_HARDWARE
**Attributes**     Network, NW, Configuration, Overview, New, Hardware, Device, Changed
**Variables**      VTAM_NCP

<table>
<thead>
<tr>
<th>VTAM NCP</th>
<th>CA line</th>
<th>PU name</th>
<th>Port number</th>
<th>LU name</th>
<th>Resource type</th>
<th>Machine type</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO2CPU0E10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CA/LINE</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>DO2CE10</td>
<td>000</td>
<td>D02SE101</td>
<td></td>
<td>LU</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>001</td>
<td>D02SE102</td>
<td></td>
<td>LU</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>D02SE103</td>
<td></td>
<td>LU</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>003</td>
<td>D02SE104</td>
<td></td>
<td>LU</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>N520RUN L25000</td>
<td>CA/LINE</td>
<td>P25000A</td>
<td>000</td>
<td>T25000A1</td>
<td>LU</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>001</td>
<td>T25000A2</td>
<td></td>
<td>LU</td>
<td>3179</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>T25000A3</td>
<td></td>
<td>LU</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 28. Example of a Network Config Last Collect Changed Devices report*

The report contains this information:

**VTAM NCP**      The VTAM or NCP name.
**CA line**       The channel address or the VTAM line name.
**PU name**       The VTAM name of the cluster.
**Port number**   The port number.
**LU name**       The LU name (this is the VTAM name of the terminal).
**Resource type** The resource type.
**Machine type**  The hardware machine type.
**Model**         The model number of the machine.
Network Config Last Collect Changed Software report

This report shows information on software products that were changed and found in the last collect run.

This information identifies the report:

- **Report ID**: NWNG13
- **Report group**: Network Configuration Reports
- **Source**: NW_CONFIGSOFTWARE
- **Attributes**: Network, NW, Configuration, Overview, Software, New, Changed
- **Variables**: Domain_name

Network Config Last Collect Changed Software report

Domain name: DO2ZO

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Component ID</th>
<th>Release</th>
<th>Customization date</th>
<th>Customization time</th>
</tr>
</thead>
<tbody>
<tr>
<td>N52ORUN</td>
<td>566873801</td>
<td>202</td>
<td>91/032</td>
<td>11:49</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNG13

Figure 29. Example of a Network Config Last Collect Changed Software report

The columns in this report contain this information:

- **Resource name**: The VTAM resource name.
- **Component ID**: The component ID (product number).
- **Release**: The release level of the product.
- **Customization date**: The date the product was last customized (Julian date YY/DDD).
- **Customization time**: The time the product was last customized.
Chapter 4. NetView FTP reports

This chapter describes NetView file transfer program (FTP) reports. FTP reports provide information on the status and success of NetView FTP requests from specified systems. The reports provide overview, trend, and detailed information.
Network FTP Requests, Daily/Monthly Overview report

These reports show information on the number of successful requests added to the request queue and how long the requests had to wait before the server started to process the request.

This information identifies the reports:

**Report ID**    NWFTP01 (daily), NWFTP02 (monthly)

**Report group** Network NetView FTP reports

**Source**        NW_FTP_REQUEST_D(daily), NW_FTP_REQUEST_M(monthly)

**Attributes**    Network, NW, Performance, FTP, Request, Overview, Daily/Monthly

**Variables**     Date (required for daily), Date_in_month (required for monthly)

<table>
<thead>
<tr>
<th>Request class</th>
<th>Requests added</th>
<th>Requests success</th>
<th>Requests success (%)</th>
<th>Average wait seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>2</td>
<td>2</td>
<td>100.00</td>
<td>9.56</td>
</tr>
<tr>
<td>W</td>
<td>2</td>
<td>2</td>
<td>100.00</td>
<td>33.55</td>
</tr>
</tbody>
</table>

*Network FTP Requests, Daily Overview*

*Date: 1999-08-10*

*System: ‘IP01’*

*Figure 30. Example of a Network FTP Requests, Daily Overview report*

The reports contain this information:

**Request class**  The request class (user-defined server classes).

**Requests added**  The number of attempts to add a request to the request queue.

**Requests success**  The number of requests successfully added to the request queue.

**Requests success (%)**  The percentage of file transfer requests successfully added to the request queue. This is calculated as: 100*REQUESTS_SUCCESS/REQUESTS_ADDED.

**Average wait seconds**  The time (in seconds) that the file transfer request had to wait on the request queue before the server started to process the request. This is calculated as: WAIT_SECONDS/REQUESTS_TOT.
Network FTP Bytes Transmitted, Monthly Overview report

This report shows information on the number of bytes transmitted and the transmission time.

This information identifies the report:

Report ID       NWFTP08
Report group     Network NetView FTP Reports
Source           NW_FTP_TRANSMIT_M
Attributes       Network, NW, Performance, FTP, Bytes, Overview, Monthly
Variables        Date_in_month (required)

<table>
<thead>
<tr>
<th>LU name</th>
<th>Bytes transmitted (KB)</th>
<th>Transmission average (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU123456</td>
<td>406</td>
<td>12.11</td>
</tr>
<tr>
<td>LU123455</td>
<td>33</td>
<td>25.20</td>
</tr>
<tr>
<td>LU123454</td>
<td>15</td>
<td>63.00</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWFTP08

Figure 31. Example of a Network FTP Bytes Transmitted, Monthly Overview report

The report contains this information:

LU name The logical unit name of the remote server.

Bytes transmitted (KB) The number of bytes transmitted, in kilobytes.

Transmission average (sec) The transmission time in seconds. This is calculated as: TRANSMISSION_SEC/TRANSMISSIONS.
Network FTP Queue Status, Daily Overview report

This report shows information on the request queue and the number of queue slots unused.

This information identifies the report:

**Report ID**      NWFTP04

**Report group**   Network NetView FTP reports

**Source**         NW_FTP_REQUEST_D

**Attributes**     Network, NW, Performance, FTP, Request, Overview, Daily

**Variables**      Date (required)

<table>
<thead>
<tr>
<th></th>
<th>Requests waiting (%)</th>
<th>Requests restart (%)</th>
<th>Requests active (%)</th>
<th>Requests finished (%)</th>
<th>Qslots unused (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
<td>12</td>
<td>36.84</td>
<td>0.00</td>
<td>0.00</td>
<td>63.16</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>18.18</td>
<td>0.00</td>
<td>45.45</td>
<td>36.36</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWFTP04

*Figure 32. Example of a Network FTP Queue Status, Daily Overview report*

The report contains this information:

**Hour**     The hour of the day.

**Requests waiting (%)**

The percentage of current requests on queue waiting to be processed. This is calculated as:

\[ 100 \times \frac{\text{REQUESTS\_WAIT\_SUM}}{\text{REQ\_QUEUE\_TOT}} \]

**Requests restart (%)**

The percentage of current requests on queue waiting to be processed due to restart. This is calculated as:

\[ 100 \times \frac{\text{REQ\_RESTART\_SUM}}{\text{REQ\_QUEUE\_TOT}} \]

**Requests active (%)**

The percentage of active requests currently processed by the server. This is calculated as:

\[ 100 \times \frac{\text{REQUESTS\_ACT\_SUM}}{\text{REQ\_QUEUE\_TOT}} \]

**Requests finished (%)**

The percentage of current requests on queue already finished. This is calculated as:

\[ 100 \times \frac{\text{REQ\_FINISHED\_SUM}}{\text{REQ\_QUEUE\_TOT}} \]

**Qslots unused (min)**

The minimum number of unused queue slots.
Network FTP Transmissions, Daily/Monthly Overview report

These reports show information on the number of successful transmissions and the transmission time.

This information identifies the reports:

**Report ID**       NWFTP05 (daily), NWFTP06 (monthly)
**Report group**     Network NetView FTP reports
**Source**          NW_FTP_TRANSMIT_D(daily), NW_FTP_TRANSMIT_M(monthly)
**Attributes**      Network, NW, Performance, FTP, Transmission, Overview, Daily/Monthly
**Variables**       Date (required for daily), Date_in_month (required for monthly)

<table>
<thead>
<tr>
<th>Node ID</th>
<th>Transmissions</th>
<th>Transmission successes</th>
<th>Transmission successes (%)</th>
<th>Transmission average (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO12345</td>
<td>2</td>
<td>2</td>
<td>100.00</td>
<td>37.56</td>
</tr>
<tr>
<td>NO12346</td>
<td>1</td>
<td>1</td>
<td>100.00</td>
<td>25.20</td>
</tr>
</tbody>
</table>

Figure 33. Example of a Network FTP Transmissions, Daily Overview report

The reports contain this information:

**Node ID**       The remote node name specified by the request originator.
**Transmissions** The number of file transfer transmissions.
**Transmission successes** The number of successful file transfer transmissions.
**Transmission successes (%)** The percentage of successful file transfer transmissions. This is calculated as: 100*TRANSMISSIONS_SUCC/TRANSMISSIONS.
**Transmission average (sec)** The transmission time in seconds. This is calculated as: TRANSMISSION_SEC/TRANSMISSIONS.
Network FTP Requests, Hourly Trend report

This report shows graphical information on the number of successful requests added to the request queue.

This information identifies the report:

Report ID       NWFTP03
Report group    Network NetView FTP reports
Source          NW_FTP_REQUEST_H
Attributes      Network, NW, Performance, FTP, Request, Trend, Hourly
Variables       Date (required)
Y-axis          The y-axis (vertical), number of requests, shows values from 0 to a dynamically set value that depends on the information presented.
X-axis          The x-axis (horizontal), hour of the day, shows values from 0 to 24 hours.

Figure 34. Example of a Network FTP Requests, Hourly Trend report

The report contains this information:

Requests added
The number of attempts to add a request to the request queue.

Requests success
The number of requests successfully added to the request queue.
Network FTP Obtains, Daily Detail report

This report shows information on the number of successful obtains (actions by the server to take an item from the queue).

This information identifies the report:

- **Report ID**: NWFTP07
- **Report group**: Network NetView FTP reports
- **Source**: NW_FTP_REQUEST_H
- **Attributes**: Network, NW, Performance, FTP, Obtain, Detail, Daily
- **Variables**: Date (required)

```
Network FTP Obtains, Daily Detail
Date: 1999-08-10
System: 'IPO1'

<-------- Class -------->
<----- 0 ------> <----- W ------>
Obtain    Obtain
Hour  successes  successes
 12        1        2
 13        5        1
          --------  --------
             6        3
```

**Figure 35. Example of a Network FTP Obtains, Daily Detail report**

The report contains this information:

- **Hour**: The hour of the day.
- **Class**: The request class (user-defined server classes).
- **Obtain successes**: The number of successful obtains.
Netview FTP Reports
Chapter 5. Problem reports

This chapter describes reports produced by the components in the problem information category. The reports are divided into reports produced by the problem component and reports produced by the session failure component.

Problem reports

This section describes the reports delivered by the problem component.

Problem worst-case reports

The purpose of the worst-case reports is to find the resources that have had the most problems during a given interval. Those resources should be further investigated.

There are separate reports for selected resource categories, basic alerts, and generic alerts.
Network Problem Resource, Worst-Case report

This report shows, for a selected resource category and product name, the failing resources with the highest number of events recorded. It focuses on the affected resources, such as the terminals with events. Up to 15 affected resource names are shown in descending order based on the EVENTS column.

For detailed information about the alert events, see "Network Problem Owner Basic Alert, Hourly/Daily Detail report" on page 72 and "Network Problem Owner Generic Alert, Hourly/Daily Detail report" on page 74 or use the NetView hardware monitor.

This information identifies the report:

Report ID NWPROBLEM01
Report group Network Problem Reports
Source NW_ALERT_BASIC_D, NW_ALERT GENERIC_D
Attributes NW, Network, Problem, Alert, Worst
Variables From_date, To_date, Resource_category, Product

<table>
<thead>
<tr>
<th>Resource category</th>
<th>Owning resource</th>
<th>Resource name</th>
<th>Resource type</th>
<th>Product name</th>
<th>Generic indicator</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL</td>
<td>AB1NSA</td>
<td>AB1CEF6</td>
<td>CTRL</td>
<td>3820</td>
<td>Y</td>
<td>643</td>
</tr>
<tr>
<td>AB1NSB</td>
<td>AB1S1234</td>
<td>AB1S1234</td>
<td>DEV</td>
<td>3274</td>
<td>Y</td>
<td>162</td>
</tr>
<tr>
<td>AB1S4567</td>
<td>AB1S4567</td>
<td>AB1S4567</td>
<td>DEV</td>
<td>3274</td>
<td></td>
<td>57</td>
</tr>
<tr>
<td>AB1234C1</td>
<td>AB1A1234</td>
<td>CTRL</td>
<td>OS/2</td>
<td></td>
<td>Y</td>
<td>17</td>
</tr>
</tbody>
</table>

Figure 36. Example of a Network Problem Resource, Worst-Case report

The report contains this information:

Resource category
The resource category. Defined in NW_PRODUCT_ID lookup table.

Owning resource
The owner of the failing resource.

Resource name
The name of the failing resource.

Resource type
The type of the failing resource.

Product name
The name of the product as defined in the NW PRODUCT ID lookup table.

Generic indicator
The generic alert indicator. Y specifies a generic alert, and a blank specifies a basic alert.

Events
The number of events reported for the resource.
Network Problem Owner, Worst-Case report

This report shows, for a selected resource category and product name, the owner of the failing resources with the highest number of events recorded. It focuses on the owners of the affected resources, such as the clusters to which terminals with events are attached. Up to 15 affected resource names are shown in descending order based on the EVENTS column.

This information identifies the report:

- **Report ID**: NWPROBLEM02
- **Report group**: Network Problem Reports
- **Source**: NW_ALERT_BASIC_D, NW_ALERT_GENERIC_D
- **Attributes**: NW, Network, Problem, Alert, Worst
- **Variables**: From_date, To_date, Resource_category, Product

<table>
<thead>
<tr>
<th>Resource category</th>
<th>Owning resource</th>
<th>Product name</th>
<th>Generic indicator</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL</td>
<td>AB1231</td>
<td>3820</td>
<td></td>
<td>1566</td>
</tr>
<tr>
<td></td>
<td>AB123B</td>
<td>3274</td>
<td>Y</td>
<td>1378</td>
</tr>
<tr>
<td></td>
<td>AB123C</td>
<td>3174</td>
<td></td>
<td>806</td>
</tr>
<tr>
<td></td>
<td>AB123A</td>
<td>3174</td>
<td>Y</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>AB1CDEF1</td>
<td>05/2</td>
<td>Y</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>AB1CDEF2</td>
<td>05/2</td>
<td>Y</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>AB123E</td>
<td>3820</td>
<td></td>
<td>42</td>
</tr>
</tbody>
</table>

**Figure 37. Example of a Network Problem Owner, Worst-Case report**

The report contains this information:

- **Resource category**
  The resource category, defined in the NW_PRODUCT_ID lookup table.

- **Owning resource**
  The owner of the failing resource.

- **Product name**
  The name of the product as defined in the NW_PRODUCT_ID lookup table.

- **Generic indicator**
  The generic alert indicator. Y specifies a generic alert, and a blank specifies a basic alert.

- **Events**
  The number of events reported for the resource.
Network Problem Basic Alert Types, Worst-Case report

This report shows the general-cause codes that occurred most often and the alert types to which the codes belong. Up to 15 general-cause codes are shown in descending order based on the EVENTS column.

This information identifies the report:

Report ID       NWPROBLEM03
Report group    Network Problem Reports
Source          NW_ALERT_BASIC_D, NW_ALERT_TYPE, NW_GENERAL_CAUSE
Attributes      NW, Network, Problem, Alert, Worst
Variables       From_date, To_date

<table>
<thead>
<tr>
<th>type</th>
<th>short code</th>
<th>code</th>
<th>long description</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>PERM</td>
<td>02</td>
<td>SOFTWARE</td>
<td>2849</td>
</tr>
<tr>
<td>04</td>
<td>OPER</td>
<td>11</td>
<td>USER ERROR</td>
<td>1651</td>
</tr>
<tr>
<td>03</td>
<td>PERF</td>
<td>01</td>
<td>HARDWARE OR MICROCODE</td>
<td>1006</td>
</tr>
<tr>
<td>01</td>
<td>PERM</td>
<td>07</td>
<td>HARDWARE OR SOFTWARE</td>
<td>902</td>
</tr>
<tr>
<td>00</td>
<td>PROC</td>
<td>0D</td>
<td>PROTOCOL ABOVE LINK LEVEL</td>
<td>855</td>
</tr>
<tr>
<td>01</td>
<td>PERM</td>
<td>01</td>
<td>HARDWARE OR MICROCODE</td>
<td>555</td>
</tr>
<tr>
<td>03</td>
<td>LINK</td>
<td>CONNECTION COMPONENT</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>TEMP</td>
<td>0D</td>
<td>PROTOCOL ABOVE LINK LEVEL</td>
<td>107</td>
</tr>
<tr>
<td>01</td>
<td>OTHER</td>
<td>0F</td>
<td>HARDWARE OR MICROCODE</td>
<td>66</td>
</tr>
<tr>
<td>10</td>
<td>OTHER</td>
<td>0F</td>
<td>UNCLASSIFIED</td>
<td>54</td>
</tr>
</tbody>
</table>

Figure 38. Example of a Network Problem Basic Alert Types, Worst-Case report

The report contains this information:

Alert type code
The alert-type code for the basic alert.

Alert short desc
A short description of the alert type.

General cause code
The problem general cause code.

General cause long description
A long description of the general cause code.

Events
The number of events reported for the alert type code.
Network Problem Generic Alert Types, Worst-Case report

This report shows the probable-cause codes (first cause codes) that occurred most often and the alert types to which the codes belong. Up to 15 probable-cause codes are shown in descending order based on the EVENTS column.

This information identifies the report:

- **Report ID**: NWPROBLEM04
- **Report group**: Network Problem Reports
- **Source**: NW_ALERT GENERIC D, NW_ALERT_TYPE
- **Attributes**: NW, Network, Problem, Alert, Worst
- **Variables**: From_date, To_date

---

**Figure 39. Example of a Network Problem Generic Alert Types, Worst-Case report**

The report contains this information:

**Alert type code**

The alert-type code for the generic alert.

**Alert short desc**

A short description of the alert type.

**First cause code**

A code point value for the first probable cause of the generic alert.

**First cause description**

A description of the alert cause.

**Events**

The number of events reported for the alert type code.
Problem Reports

Problem trend reports

Trend reports show the number of alerts that have occurred for selected resources or resource types. Peak values in these reports indicate when resources are experiencing more problems than normal. There are separate reports for affected resources, owning resources, and selected alert types.

Network Problem Resource Alerts, Hourly/Daily/Weekly Trend report

These graphic reports show the number of basic and generic alert events for a selected resource.

This information identifies the reports:

Report ID: NWPROBLEM05 (hourly), NWPROBLEM06 (daily), NWPROBLEM07 (weekly)

Report group: Network Problem Reports

Source: NW_ALERT_BASIC_H, NW_ALERT_GENERIC_H (hourly)
NW_ALERT_BASIC_D, NW_ALERT_GENERIC_D (daily)
NW_ALERT_BASIC_W, NW_ALERT_GENERIC_W (weekly)

Attributes: NW, Network, Problem, Alert, Trend, Hourly/Daily/Weekly

Variables: Date (required) for hourly trend reports, Date_in_week (required) for daily trend reports, From_date_in_week and To_date_in_week (required) for weekly trend reports, Resource_name

Y-axis: The y-axis (vertical), number of events, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of events.

X-axis: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Basic events**  Number of basic events (indicated by a vertical bar).

**Generic events**  Number of generic events (indicated by a vertical bar).

*Figure 40. Example of a Network Problem Resource Alerts, Hourly Trend report*
Problem Reports

Network Problem Owner Alerts, Hourly/Daily/Weekly Trend report

These graphic reports show the number of basic and generic alert events for a selected owning resource.

This information identifies the reports:

**Report ID**  
NWPROBLEM08 (hourly), NWPROBLEM09 (daily), NWPROBLEM10 (weekly)

**Report group**  
Network Problem Reports

**Source**  
NW_ALERT_BASIC_H, NW_ALERT_GENERIC_H (hourly report)  
NW_ALERT_BASIC_D, NW_ALERT_GENERIC_D (daily report)  
NW_ALERT_BASIC_W, NW_ALERT_GENERIC_W (weekly report)

**Attributes**  
NW, Network, Problem, Alert, Trend, Hourly/Daily/Weekly

**Variables**  
Date (required) for hourly trend reports, Date_in_week (required) for daily trend reports, From_date_in_week and To_date_in_week (required) for weekly trend reports, Owning_resource

**Y-axis**  
The y-axis (vertical), number of events, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of events.

**X-axis**  
The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)

![Network Problem Owner Alerts, Daily Trend](image)

*Figure 41. Example of a Network Problem Owner Alerts, Daily Trend report*

The reports contain this information:
Problem Reports

Generic events
Number of generic events (indicated by a vertical bar).

Basic events
Number of basic events (indicated by a vertical bar).
Problem Reports

Network Problem Alert Type, Hourly/Daily/Weekly Trend report
These graphic reports show the number of basic and generic alert events for a selected alert type code.

This information identifies the reports:

Report ID  NWPROBLEM11 (hourly), NWPROBLEM12 (daily), NWPROBLEM13 (weekly)
Report group Network Problem Reports
Source  NW_ALERT_BASIC_H, NW_ALERT_GENERIC_H (hourly report)
         NW_ALERT_BASIC_D, NW_ALERT_GENERIC_D (daily report)
         NW_ALERT_BASIC_W, NW_ALERT_GENERIC_W (weekly report)
Attributes  NW, Network, Problem, Alert, Trend, Hourly/Daily/Weekly
Variables  Date (required) for hourly report, Date_in_week (required) for daily report, From_date_in_week and To_date_in_week (required) for weekly reports, Alert_type_code
Y-axis  The y-axis (vertical), number of events, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of events.
X-axis  The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
• Hour—the hour of the day
• Day—the day of the week
• Week start date—the start date of the week (weeks start on Monday)

Figure 42. Example of a Network Problem Alert Type, Weekly Trend report

The reports contain this information:
Generic events

Number of generic events (indicated by a vertical bar).

Basic events

Number of basic events (indicated by a vertical bar).
Problem Reports

Problem detail reports

The problem detail reports provide detailed information about network problems occurring over a short time period.

Network Problem Owner Basic Alert, Hourly/Daily Detail report

These reports show detailed information on basic alert events that occurred for a selected owning resource.

Attention: These reports can create a lot of output lines.

This information identifies the reports:

Report ID NWPROBLEM14 (hourly), NWPROBLEM15 (daily)
Report group Network Problem Reports
Source NW_ALERT_TYPE, NWGENERAL_CAUSE, NW_SPECIFIC_CAUSE NW_ALERT_BASIC_H(hourly report) NW_ALERT_BASIC_D(daily report)
Attributes NW, Network, Problem, Alert, Detail, Hourly/Daily
Variables Date (required) for hourly reports, From_date and To_date for daily reports, Owning_resource

Network Problem Owner Basic Alert, Hourly Detail
Date: 2000-02-02
Owning resource: 'AB123A'

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Resource type</th>
<th>Alert type code</th>
<th>Alert short desc</th>
<th>General cause code</th>
<th>Spec cause code</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB1234A1</td>
<td>CTRL</td>
<td>04</td>
<td>OPER</td>
<td>11</td>
<td>USER</td>
<td>PRINT</td>
</tr>
<tr>
<td>AB1234A6</td>
<td>CTRL</td>
<td>04</td>
<td>OPER</td>
<td>11</td>
<td>USER</td>
<td>PRINT</td>
</tr>
<tr>
<td>AB1234A7</td>
<td>DEV</td>
<td>03</td>
<td>PERF</td>
<td>01</td>
<td>H&amp;M/MI</td>
<td>OTHER</td>
</tr>
<tr>
<td>AB1234A1</td>
<td>CTRL</td>
<td>04</td>
<td>OPER</td>
<td>11</td>
<td>USER</td>
<td>PRINT</td>
</tr>
</tbody>
</table>

Figure 43. Example of a Network Problem Owner Basic Alert, Hourly Detail report

The reports contain this information:

Hour The hour when the record was written to SMF (hourly report).
Date The date when the record was written to SMF (daily report).
Resource name The VTAM resource name of the failing resource.
Resource type The type of the failing resource.
Alert type code The alert-type code.
Alert short desc The short description of the alert type.
General cause code The code for the general cause of the alert.
Problem Reports

- **Gen cause short**
  The short description of the general cause code.

- **Spec cause code**
  The code for the specific cause of the alert.

- **Spec code short**
  The short description of the specific cause code.

- **Events**
  The number of events reported for the resource.
Problem Reports

Network Problem Owner Generic Alert, Hourly/Daily Detail report
These reports show detailed information on generic alert events that occurred for a selected owning resource.

Attention: These reports can create a lot of output lines.

This information identifies the reports:

Report ID NWPROBLEM16 (hourly), NWPROBLEM17 (daily)

Report group Network Problem Reports

Source NW_ALERT_TYPE NW_ALERT_GENERIC_H(hourly report) NW_ALERT_GENERIC_D(daily report)

Attributes NW, Network, Problem, Alert, Detail, Hourly/Daily

Variables Date (required) for hourly reports, From_date and To_date for daily reports, Owning_resource

<table>
<thead>
<tr>
<th>Hour</th>
<th>Resource name</th>
<th>Resource type</th>
<th>Alert short desc</th>
<th>Alert desc</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AB1234A1</td>
<td>CP</td>
<td>PERM</td>
<td>LINK ERROR</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 44. Example of a Network Problem Owner Generic Alert, Hourly Detail report

The reports contain this information:

**Hour** The hour when the record was written to SMF (hourly report).

**Date** The date when the record was written to SMF (daily report).

**Resource name** The VTAM name of the failing resource.

**Resource type** The type of the failing resource.

**Alert short desc** The short description of the alert type.

**Alert desc** The long description of the alert type.

**Events** The number of events reported for the resource.
Network Problem Product IDs Not Defined report
This report lists those product IDs or block IDs received but not defined in lookup table NW_PRODUCT_ID. Update the lookup table to support these product IDs/block IDs.

This information identifies the report:

- **Report ID**: NWPROBLEM18
- **Report group**: Network Problem Reports
- **Source**: NW_ALERT_BASIC_D, NW_ALERT_GENERIC_D, NW_PRODUCT_ID
- **Attributes**: NW, Network, Problem, Product, ID
- **Variables**: None

Network Problem Product IDs Not Defined
NW_PRODUCT_ID lookup table can be updated with the new values.

Product IDs not defined
--------
0551
0554
562121301
566933602
6467038

Tivoli Decision Support for z/OS Report: NWPROBLEM18

Figure 45. Example of a Network Problem Product IDs Not Defined report

The report contains this information:

**Product IDs not defined**
The product identifier not defined in NW_PRODUCT_ID.
Session failure reports

The Network Performance feature session failure reports provide information on resources involved in session failures, the number of failures, and the causes of failures. Installations often do not know the number of session failures users experience.

A session failure can occur either when a session is established or when one ends unexpectedly. These types of session failures can occur:

- The terminal and the application do not agree on the terms for the communication (bind failure).
- The network does not have any available routes or resources to establish communications.
- A route is deactivated.
Session failure worst-case reports

The session failure worst-case reports provide information about resources for which the highest number of session failures have been logged.

Network Session Fail Between LUs, Worst-Case report

This report shows the session partners (primary LUs and secondary LUs) with the highest number of session failures. The report lists up to 15 session partners in descending order of the Failures column.

This information identifies the report:

Report ID: NWSF01
Report group: Network Session Failure Reports
Source: NW_SESSION_FAIL_D
Attributes: NW, Network, Problem, Session, Failure, Worst
Variables: From_date, To_date

Network Session Fail Between LUs, Worst Case
From date: '2000-02-01' To date: '2000-02-01'

<-------- LU -------->
Primary Secondary Failures
-------- -------- --------
TSOM002 SWLXOX01  2838
TSOM009 SWLXOX16  1428
TSOM011 SW1SJA23  768
TSOM018 SW2MP001  556
TSOM024 SW2MP002  126

Tivoli Decision Support for z/OS Report: NWSF01

Figure 46. Example of a Network Session Fail Between LUs, Worst-Case report

The report contains this information:

Primary LU: The VTAM name of the primary resource (application) involved in the failure.

Secondary LU: The VTAM name of the secondary resource (terminal) involved in the failure.

Failures: The number of session failures for the combination of primary and secondary LUs.
**Problem Reports**

**Network Session Primary LU Fail, Worst-Case report**

This report shows the primary LUs (applications) with the highest number of session failures. The report lists up to 15 primary LUs in descending order of the Failures column.

This information identifies the report:

- **Report ID**: NWSF02
- **Report group**: Network Session Failure Reports
- **Source**: NW_SESSION_FAIL_D
- **Attributes**: NW, Network, Problem, Session, Failure, Worst
- **Variables**: From_date, To_date

<table>
<thead>
<tr>
<th>Primary LU</th>
<th>Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB1234A5</td>
<td>3748</td>
</tr>
<tr>
<td>AB1234A1</td>
<td>1287</td>
</tr>
<tr>
<td>AB1234B6</td>
<td>975</td>
</tr>
<tr>
<td>AB1234A2</td>
<td>547</td>
</tr>
<tr>
<td>AB1234A3</td>
<td>83</td>
</tr>
</tbody>
</table>

_Tivoli Decision Support for z/OS Report: NWSF02_

**Figure 47. Example of a Network Session Primary LU Fail, Worst-Case report**

The report contains this information:

- **Primary LU**: The VTAM name of the primary resource (application) involved in the failure.
- **Failures**: The number of session failures logged for the primary LU.
**Network Session Secondary LU Fail, Worst-Case report**

This report shows the secondary LUs (terminals) with the highest number of session failures. The report lists up to 15 secondary LUs in descending order of the Failures column.

This information identifies the report:

- **Report ID**: NWSF03
- **Report group**: Network Session Failure Reports
- **Source**: NW_SESSION_FAIL_D
- **Attributes**: NW, Network, Problem, Session, Failure, Worst
- **Variables**: From_date, To_date

---

**Network Session Secondary LU Fail, Worst Case**  
From date: '2000-02-01'  To date: '2000-02-03'

<table>
<thead>
<tr>
<th>Secondary LU</th>
<th>Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC123C7</td>
<td>2794</td>
</tr>
<tr>
<td>BC123A4</td>
<td>1747</td>
</tr>
<tr>
<td>BC123B2</td>
<td>1522</td>
</tr>
<tr>
<td>BC123A1</td>
<td>972</td>
</tr>
<tr>
<td>BC123A6</td>
<td>536</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWSF03

---

**Figure 48. Example of a Network Session Secondary LU Fail, Worst-Case report**

The report contains this information:

- **Secondary LU**: The VTAM name of the secondary resource (terminal) involved in the failure.
- **Failures**: The number of session failures logged for the secondary LU.
Network Session Failure Reason, Worst-Case report

This report shows the reason codes for the session failures that occurred most often. The report lists up to 15 failure reason codes in descending order of the Failures column.

This information identifies the report:

**Report ID**  NWSF04
**Report group**  Network Session Failure Reports
**Source**  NW_SESSION_FAIL_D, NW_FAILURE_CODE
**Attributes**  NW, Network, Problem, Session, Failure, Worst
**Variables**  From_date, To_date

```
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>DEFAULT VALUE</td>
<td>19622</td>
</tr>
<tr>
<td>01</td>
<td>NORMAL END OF SESSION</td>
<td>12212</td>
</tr>
<tr>
<td>02</td>
<td>BIND FORTHCOMING</td>
<td>5721</td>
</tr>
<tr>
<td>04</td>
<td>BIND ERROR IN REACHING SLU</td>
<td>3078</td>
</tr>
<tr>
<td>0F</td>
<td>CLEANUP</td>
<td>2855</td>
</tr>
<tr>
<td>07</td>
<td>VIRTUAL ROUTE INOPERATIVE</td>
<td>240</td>
</tr>
<tr>
<td>0A</td>
<td>SSCP GONE</td>
<td>124</td>
</tr>
<tr>
<td>11</td>
<td>GATEWAY NODE CLEANUP</td>
<td>32</td>
</tr>
<tr>
<td>0C</td>
<td>LU FAILURE - UNRECOVERABLE</td>
<td>5</td>
</tr>
<tr>
<td>0E</td>
<td>LU FAILURE - RECOVERABLE</td>
<td>2</td>
</tr>
</tbody>
</table>
```

Tivoli Decision Support for z/OS Report: NWSF04

**Figure 49. Example of a Network Session Failure Reason, Worst-Case report**

The report contains this information:

**Reason code**  The reason code for the session failure.

**Reason description**

The full description of the session failure. If the reason code is not known and the lookup table NW_FAILURE_CODE does not contain a specific value for the code, the value in this column is UNDEFINED.

**Failures**  The number of session failures logged with the listed reason code.
Session failure overview reports

The session failure overview reports provide a short- or medium-term overview of the number of specific types of session failures.

Network Session Fail Between LUs, Daily/Weekly Overview report

These reports show, for combinations of primary and secondary LUs, the number of sessions with errors for a selected date and a selected reason code. To limit the size, these reports list only secondary LUs whose session failures exceed the average. The reports list a maximum of 15 entries.

Attention: These reports can generate many columns.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWSF05 (daily), NWSF06 (Weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Session Failure Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_SESSION_FAIL_D(daily report) NW_SESSION_FAIL_W(weekly report)</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Problem, Session, Failure, Overview, Daily / Weekly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required) for daily report, Reason_code (required), Date_in_week (required) for weekly report</td>
</tr>
</tbody>
</table>

Network Session Fail Between LUs, Daily Overview
Date: 2000-02-01
Reason code: '0A,' <----------
Primary LU -------->
Secondary LU
<table>
<thead>
<tr>
<th>AB1234A1</th>
<th>AB1234A6</th>
<th>AB1234B2</th>
<th>&lt; TOTAL --&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failures</td>
<td>Failures</td>
<td>Failures</td>
<td>Failures</td>
</tr>
<tr>
<td>BC1234A5</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BC1234A6</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>BC1234B2</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWSF05

Figure 50. Example of a Network Session Fail Between LUs, Daily Overview report

The reports contain this information:

Primary LU The name of the primary resource (application) involved in the failure.

Secondary LU The name of the secondary resource (terminal) involved in the failure.

Failures The number of session failures logged for each combination of primary and secondary LUs and the total number logged for the secondary LU.
Session failure trend reports

The session failure trend reports provide short- or long-term trends in the number of specific types of session failures.

Network Session Primary LU Fail, Hourly/Daily/Weekly Trend report

These reports show the number of session failures that have occurred for a selected primary LU.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWSF07 (hourly), NWSF08 (daily), NWSF09 (weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Session Failure Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_SESSION_FAIL_H(hourly report) NW SESSION FAIL_D(daily report) NW SESSION FAIL_W(weekly report)</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Problem, Session, Failure, Trend, Hourly/Daily/Weekly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required) for hourly reports, Date_in_week (required) for daily reports, From_date_in_week and To_date_in_week (required) for weekly reports, Primary_LU</td>
</tr>
<tr>
<td>Y-axis</td>
<td>The y-axis (vertical), number of events, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of events.</td>
</tr>
<tr>
<td>X-axis</td>
<td>The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:</td>
</tr>
<tr>
<td></td>
<td>• Hour—the hour of the day</td>
</tr>
<tr>
<td></td>
<td>• Day—the day of the week</td>
</tr>
<tr>
<td></td>
<td>• Week start date—the start date of the week (weeks start on Monday)</td>
</tr>
</tbody>
</table>
The reports contain this information:

**Failures** The number of session failures logged for the primary LU.

*Figure 51. Example of a Network Session Primary LU Fail, Hourly Trend report*
Problem Reports

Network Session Secondary LU Fail, Hourly/Daily/Weekly Trend report

These reports show the number of session failures that have occurred for a selected secondary LU.

This information identifies the reports:

- **Report ID**: NWSF10 (hourly), NWSF11 (daily), NWSF12 (weekly)
- **Report group**: Network Session Failure Reports
- **Source**: NW_SESSION_FAIL_H (hourly report), NW_SESSION_FAIL_D (daily report), NW_SESSION_FAIL_W (weekly report)
- **Attributes**: NW, Network, Problem, Session, Failure, Trend, Hourly/Daily/Weekly
- **Variables**: Date (required) for hourly reports, Date_in_week (required) for daily reports, From_date_in_week and To_date_in_week (required) for weekly reports, Secondary_LU
- **Y-axis**: The y-axis (vertical), number of events, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of events.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Failures**  The number of session failures logged for the secondary LU.
Problem Reports

Network Session Failure Reason, Hourly/Daily/Weekly Trend report

These graphic reports show the number of session failures that have occurred for a selected failure reason code.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWSF13 (hourly), NWSF14 (daily), NWSF15 (weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Session Failure Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_SESSION_FAIL_H(hourly report), NW_SESSION_FAIL_D(daily report), NW_SESSION_FAIL_W(weekly report).</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Problem, Session, Failure, Trend, Hourly/Daily/Weekly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required) for hourly reports, Date_in_week (required) for daily reports, From_date_in_week and To_date_in_week (required) for weekly reports, Reason_code</td>
</tr>
<tr>
<td>Y-axis</td>
<td>The y-axis (vertical), number of events, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of events.</td>
</tr>
<tr>
<td>X-axis</td>
<td>The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:</td>
</tr>
</tbody>
</table>

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Failures**  The number of session failures logged with the specified reason code.

*Figure 53. Example of a Network Session Failure Reason, Weekly Trend report*
Session failure detail reports
The session failure detail reports provide, on an hourly basis, detailed information about specific types of session failures.

Network Session Primary LU Fail, Hourly Detail report
This report shows detailed information on session failures for a selected date and a selected primary LU.

Attention: This report can create a lot of output lines.

This information identifies the report:

Report ID    NWSF16
Report group Network Session Failure Reports
Source       NW_SESSION_FAIL_H, NW_FAILURE_CODE
Attributes   NW, Network, Problem, Session, Failure, Detail, Hourly
Variables    Date (required), Primary LU

<table>
<thead>
<tr>
<th>Hour</th>
<th>Secondary LU</th>
<th>Reason code</th>
<th>Description</th>
<th>Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>BC1234A6</td>
<td>01</td>
<td>NORMAL END OF SESSION</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>BC1234A1</td>
<td>0F</td>
<td>CLEANUP</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BC1234B2</td>
<td>0F</td>
<td>CLEANUP</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BC1234C</td>
<td>01</td>
<td>NORMAL END OF SESSION</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BC1234D</td>
<td>0F</td>
<td>CLEANUP</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>BC1234A1</td>
<td>0F</td>
<td>CLEANUP</td>
<td>4</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWSF16

Figure 54. Example of a Network Session Primary LU Fail, Hourly Detail report

The report contains this information:
Hour  The hour when the record was written to SMF.
Secondary LU The name of the secondary resource (terminal) involved in the session failure.
Reason code The reason code for the session failure.
Description The full description of the session failure. If the reason code is not known and the lookup table NW_FAILURE_CODE does not contain a specific value, the value in this column is UNDEFINED.
Failures The number of session failures logged for the combination of primary and secondary LUs.
Network Session Secondary LU Fail, Hourly Detail report
This report shows detailed information on session failures for a selected date and a selected secondary LU.

Attention: This report can create a lot of output lines.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWSF17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Session Failure Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_SESSION_FAIL_H, NW_FAILURE_CODE</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Problem, Session, Failure, Detail, Hourly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required), Secondary_LU</td>
</tr>
</tbody>
</table>

The report contains this information:

<table>
<thead>
<tr>
<th>Hour</th>
<th>Primary LU</th>
<th>Reason code</th>
<th>Description</th>
<th>Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>AB123A1</td>
<td>02</td>
<td>BIND FORTHCOMING</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>AB123A2</td>
<td>02</td>
<td>BIND FORTHCOMING</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>AB123A6</td>
<td>01</td>
<td>NORMAL END OF SESSION</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>AB123A1</td>
<td>02</td>
<td>BIND FORTHCOMING</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>AB123A3</td>
<td>07</td>
<td>VIRTUAL ROUTE INOPERATIVE</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 55. Example of a Network Session Secondary LU Fail, Hourly Detail report

The hour when the record was written to SMF.

The name of the primary resource (application) involved in the session failure.

The reason code for the session failure.

The full description of the session failure. If the reason code is not known and the lookup table NW_FAILURE_CODE does not contain a value, the value for this column is UNDEFINED.

The number of session failures logged for the combination of primary and secondary LUs.
Network Session Failure Reason, Hourly Detail report

This report shows detailed information on primary and secondary LUs affected by a selected session failure reason code.

Attention: This report can create a lot of output lines.

This information identifies the report:

Report ID       NWSF18
Report group    Network Session Failure Reports
Source          NW_SESSION_FAIL_H, NW_FAILURE_CODE
Attributes      NW, Network, Problem, Session, Failure, Detail, Hourly
Variables       Date (required), Reason_code

<table>
<thead>
<tr>
<th>Date: 2000-02-03</th>
<th>Reason code: '0A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary LU</td>
<td>Secondary LU</td>
</tr>
<tr>
<td>Description</td>
<td>Failures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hour</th>
<th>Primary LU</th>
<th>Secondary LU</th>
<th>Description</th>
<th>Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>AB1234A1</td>
<td>BC1234A1</td>
<td>SSCP GONE</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>AB1234A1</td>
<td>BC1234A1</td>
<td>SSCP GONE</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>AB1234A1</td>
<td>BC1234A1</td>
<td>SSCP GONE</td>
<td>1</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWSF18

Figure 56. Example of a Network Session Failure Reason, Hourly Detail report

The report contains this information:

Hour       The hour when the record was written to SMF.
Primary LU  The name of the primary resource (application) involved in the session failure.
Secondary LU The name of the secondary resource (terminal) involved in the session failure.
Description The full description of the session failure. If the reason code is not known and lookup table NW_FAILURE_CODE does not contain a value, this column contains the value UNDEFINED.
Failures   The number of session failures logged for the combination of primary and secondary LUs and having the specified reason code.
Network APPN Session Fail

This report shows the session partners (primary LUs and secondary LUs) for the APPN (Advanced peer-to-peer Networking) subnetwork with the total number of first or second RSCV (route selection control vector data) errors.

This information identifies the reports:

Report ID: NWSF19
Report group: Network Session Failure Report
Source: NW_SESSION_FAIL_D
Attributes: NW, Network, Problem, Session, Failure
Variables: From_date and To_date

**Network APPN Session Fail**

Date: 2002-10-02

<table>
<thead>
<tr>
<th>End Node 1</th>
<th>End Node 2</th>
<th>RSCV Error Count</th>
<th>TG Not Valid</th>
<th>Transmission Group Number</th>
<th>TG Partner Network Name</th>
<th>TG Partner Node Name</th>
<th>TG Flag Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESOURCA</td>
<td>RESOURCB</td>
<td>1 IN-TG AT START/END 0</td>
<td>NTAMYS</td>
<td>USIBMNT</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESOURCA</td>
<td>RESOURCH</td>
<td>2 IN-TG AT START/END 0</td>
<td>NTAMYS</td>
<td>USIBMNT</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESOURCC</td>
<td>RESOURCD</td>
<td>1 IN_TG AT START 0</td>
<td>NTAMYS</td>
<td>USIBMNT</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESOURCF</td>
<td>RESOURCF</td>
<td>1 NO IN_TG 0</td>
<td>NTAMYS</td>
<td>USIBMNT</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWSF19

**Figure 57. Example of a Network APPN Session Fail**

The reports contain this information:

**End Node 1**
The VTAM name of the primary resource involved in the failure.

**End Node 2**
The VTAM name of the secondary resource involved in the failure.

**RSCV Error Count**
The total number of first or second RSCV (route selection control vector data) errors.

**TG Not valid**
The Transmission group error for APPN.

**Transmission group number**
The number of the Transmission group for APPN subnetwork, including the primary CP.

**TG Partner NETWORK name**
The name of the Transmission group partner for APPN subnetwork, including the primary CP.

**TG Partner NODE name**
The node of the Transmission group partner for APPN subnetwork, including the primary CP.

**TG Flag Descriptor**
The flag descriptor of the Transmission group partner for APPN subnetwork, including the primary CP.
Problem Reports
Chapter 6. Response-time reports

This chapter describes the Tivoli Decision Support for z/OS reports that provide information on different aspects of network response time. The NPM transit-time reports provide data on the time required to pass information through the network. The RTM response-time reports provide response time figures from the RTM.

NPM transit-time reports

NPM transit time reports provide information on the time required to pass a message through the network. These reports are useful for performing an in-depth analysis of network response-time problems. The total transit time is called *operator transit time*, and consists of *host transit time* and *network transit time*.

Host transit time begins when VTAM becomes aware of an input message and ends when VTAM receives a reply from the application. Network transit time begins when VTAM forwards an output message to the network and ends when VTAM receives a definite response. Refer to the *Network Performance Feature Reference* for detailed information on NPM transit time.
NPM transit time worst-case reports

The NPM transit-time worst-case reports provide information about PUs, IP addresses (for Telnet sessions), and applications that have the highest transit times.

Network Oper Transit-Time Obj, Worst-Case report

This report shows the PUs with the greatest difference between the operator transit-time objective and the percentage of transactions meeting the objective. The report also shows network transit-time information, which can help you determine whether the problem is in the host or network.

A negative value in the Operator dif (%) column indicates that the value in the Operator met (%) column is less than the transit-time objective, in percent. The higher the negative value, the worse the service. If the Operator dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

Report ID NWNT01
Report group Network NPM Reports
Source NW_NPM_TRANSIT_D
Attributes Network, NW, Performance, Response, Worst, NPM, Transit, Operator
Variables From_date, To_date

From date: 2000-02-23 To date: 2000-06-13

<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>met (%)</th>
<th>dif (%)</th>
<th>obj met (%)</th>
<th>dif obj (%)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1PENPA</td>
<td>FS1LENPA</td>
<td>0.00</td>
<td>-95.00</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
<tr>
<td>FSICAB11</td>
<td>FSILA000</td>
<td>99.98</td>
<td>4.98</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
<tr>
<td>LOCAL</td>
<td></td>
<td>100.00</td>
<td>5.00</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
<tr>
<td>FSICA631</td>
<td>FSILA016</td>
<td>100.00</td>
<td>5.00</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
<tr>
<td>FSICAJ17</td>
<td>FSILA024</td>
<td>100.00</td>
<td>5.00</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
<tr>
<td>FSICAD41</td>
<td>FSILA036</td>
<td>100.00</td>
<td>5.00</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Figure 58. Example of a Network Oper Transit Time Obj, Worst Case report

The report contains this information:

PU name The secondary PU name. This is the VTAM resource name of the PU.

Line name The secondary link name. This is the VTAM resource name of the line that connects the PU to the NCP.

Operator met (%) The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER_TRAN*100).

Operator dif (%) The difference between the percentage of transactions meeting the operator transit-time objective and the operator transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:
(100 – (OPER_OBJ_NOTMET/OPER_TRAN*100)) –
(OPER_OBJ_PCT_SUM/RECORDS_COLLECTED).

Operator obj (sec)
The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.

Network met (%)
The percentage of transactions that met the network transit-time objective. This is calculated as: 100 –
(NETW_OBJ_NOTMET/NETW_TRAN*100).

Network dif (%)
The difference between the percentage of transactions meeting the network transit-time objective and the network transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:
(100 – (NETW_OBJ_NOTMET/NETW_TRAN*100)) –
(NETW_OBJ_PCT_SUM/RECORDS_COLLECTED).

Network obj (sec)
The network transit-time objective, in seconds. This is calculated as: NETW_OBJ_SEC_SUM/NETW_TRAN.

Transactions The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
Tivoli Decision Support for z/OS Network Average Oper Transit Time, Worst-Case report

This report lists the PUs with the highest average operator transit times.

A negative value in the Operator dif (%) column indicates that the percentage of transactions meeting the operator transit-time objective is less than the operator transit-time objective, in percent. The higher the negative value, the worse the service. If the Operator dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNT02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NPM Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_NPM_TRANSIT_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>Network, NW, Performance, Response, Worst, NPM, Transit, Operator</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

Network Average Oper Transit Time, Worst Case
From date: 2000-02-23  To date: 2000-06-13

<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>avg (sec)</th>
<th>obj (sec)</th>
<th>dif (%)</th>
<th>max (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1PENPA</td>
<td>FS1LENPA</td>
<td>41.9</td>
<td>3.0</td>
<td>-95.00</td>
<td>60.1</td>
<td>8</td>
</tr>
<tr>
<td>FS1CA111</td>
<td>FS1LA000</td>
<td>0.3</td>
<td>3.0</td>
<td>4.98</td>
<td>59.8</td>
<td>20459</td>
</tr>
<tr>
<td>LOCAL</td>
<td></td>
<td>0.3</td>
<td>3.0</td>
<td>5.00</td>
<td>0.4</td>
<td>8</td>
</tr>
<tr>
<td>FS1CA171</td>
<td>FS1LA024</td>
<td>0.3</td>
<td>3.0</td>
<td>5.00</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>FS1CA631</td>
<td>FS1LA016</td>
<td>0.6</td>
<td>3.0</td>
<td>5.00</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>FS1CAD41</td>
<td>FS1LA036</td>
<td>0.8</td>
<td>3.0</td>
<td>5.00</td>
<td>1.2</td>
<td>5</td>
</tr>
</tbody>
</table>

Figure 59. Example of a Network Average Oper Transit Time, Worst Case report

The report contains this information:

**PU name**  The secondary PU name. This is the VTAM resource name of the PU.

**Line name**  The secondary link name, which is the VTAM resource name of the line connecting the PU to the NCP.

**Operator avg (sec)**  The average operator transit time for transactions, in seconds. This is calculated as: \( \text{OPER_SEC} / \text{OPER_TRAN} \).

**Operator obj (sec)**  The operator transit-time objective, in seconds. This is calculated as: \( \text{OPER_OBJ_SEC_SUM} / \text{OPER_TRAN} \).

**Operator dif (%)**  The difference between the percentage of transactions meeting the operator transit-time objective and the operator transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:

\[
(100 - (\text{OPER_OBJ_NOTMET} / \text{OPER_TRAN} \times 100)) - (\text{OPER_OBJ_PCT_SUM} / \text{RECORDS_COLLECTED}).
\]
Operator max (sec)
The maximum operator transit time, in seconds. This is the maximum of OPER_MAX_SEC.

Transactions
The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
**Network Transit Time Objective, Worst-Case report**

This report lists the PUs with the greatest difference between the transit-time objective and the percentage of transactions meeting that objective. The report also contains operator transit-time information to help you determine whether the problem is in the host or network.

A negative value in the Network dif (%) column indicates that the value in the Network met (%) column is less than the network transit-time objective, in percent. The higher the negative value, the worse the service. If the Network dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

**Report ID**    NWNT03  
**Report group** Network NPM Reports  
**Source**      NW_NPM_TRANSIT_D  
**Attributes** Network, NW, Performance, Response, Worst, NPM, Transit  
**Variables**   From_date, To_date

<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>Network met (%)</th>
<th>Network dif (%)</th>
<th>Network obj met (%)</th>
<th>Network obj dif (%)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1CA11</td>
<td>FS1LA000</td>
<td>100.00</td>
<td>5.00</td>
<td>2.0</td>
<td>99.98</td>
<td>20459</td>
</tr>
<tr>
<td>FS1CA631</td>
<td>FS1LA016</td>
<td>100.00</td>
<td>5.00</td>
<td>2.0</td>
<td>100.00</td>
<td>2</td>
</tr>
<tr>
<td>FS1CA171</td>
<td>FS1LA024</td>
<td>100.00</td>
<td>5.00</td>
<td>2.0</td>
<td>100.00</td>
<td>3</td>
</tr>
<tr>
<td>FS1CA41</td>
<td>FS1LA036</td>
<td>100.00</td>
<td>5.00</td>
<td>2.0</td>
<td>100.00</td>
<td>5</td>
</tr>
<tr>
<td>FSIPENPA</td>
<td>FSILENPA</td>
<td>100.00</td>
<td>5.00</td>
<td>2.0</td>
<td>-95.00</td>
<td>8</td>
</tr>
<tr>
<td>LOCAL</td>
<td></td>
<td>100.00</td>
<td>5.00</td>
<td>2.0</td>
<td>100.00</td>
<td>8</td>
</tr>
</tbody>
</table>

Figure 60. Example of a Network Transit Time Objective, Worst-Case report

The report contains this information:

**PU name**    The secondary PU name. This is the VTAM resource name of the PU.

**Line name**  The secondary link name. This is the VTAM resource name of the line that connects the PU to the NCP.

**Network met (%)**    The percentage of transactions that met the network transit-time objective. This is calculated as: 100 – (NETW_OBJ_NOTMET/NETW_TRAN*100).

**Network dif (%)**    The difference between the percentage of transactions meeting the network transit-time objective and the network transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: (100 – (NETW_OBJ_NOTMET/NETW_TRAN*100)) – (NETW_OBJ_PCT_SUM/RECORDS_COLLECTED).
**Network obj (sec)**

The network transit-time objective, in seconds. This is calculated as: \( \frac{\text{NETW_OBJ_SEC_SUM}}{\text{NETW_TRAN}} \).

**Operator met (%)**

The percentage of transactions that met the operator transit-time objective. This is calculated as: \( 100 - \frac{\text{OPER_OBJ_NOTMET}}{\text{OPER_TRAN}} \times 100 \).

**Operator dif (%)**

The difference between the percentage of transactions meeting the operator transit-time objective and the operator transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:

\[
(100 - \frac{\text{OPER_OBJ_NOTMET}}{\text{OPER_TRAN}} \times 100) - \frac{\text{OPER_OBJ_PCT_SUM}}{\text{RECORDS_COLLECTED}}.
\]

**Operator obj (sec)**

The operator transit-time objective, in seconds. This is calculated as: \( \frac{\text{OPER_OBJ_SEC_SUM}}{\text{OPER_TRAN}} \).

**Transactions**

The number of transactions on which the network transit-time measurements are based. This is the sum of \( \text{NETW_TRAN} \).
Network Average Transit Time Objective, Worst-Case report

This report lists the PUs with the highest average network transit times. The PUs are listed in descending order based on the values in Network avg (sec) column.

A negative value in the Network dif (%) column indicates that the percentage of transactions meeting the network transit-time objective is less than the network transit-time objective, in percent. The higher the negative value, the worse the service. If the Network dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

Report ID: NWNT04
Report group: Network NPM Reports
Source: NW_NPM_TRANSIT_D
Attributes: Network, NW, Performance, Response, Worst, NPM, Transit
Variables: From_date, To_date

The report contains this information:

<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>avg (sec)</th>
<th>obj (sec)</th>
<th>dif (%)</th>
<th>max (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1CAD41</td>
<td>FS1LA036</td>
<td>0.8</td>
<td>2.0</td>
<td>5.00</td>
<td>1.2</td>
<td>5</td>
</tr>
<tr>
<td>FS1CA631</td>
<td>FS1LA016</td>
<td>0.6</td>
<td>2.0</td>
<td>5.00</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>FS1CA111</td>
<td>FS1LA000</td>
<td>0.3</td>
<td>2.0</td>
<td>5.00</td>
<td>0.7</td>
<td>20459</td>
</tr>
<tr>
<td>FS1CA171</td>
<td>FS1LA024</td>
<td>0.3</td>
<td>2.0</td>
<td>5.00</td>
<td>0.4</td>
<td>3</td>
</tr>
<tr>
<td>LOCAL</td>
<td></td>
<td>0.3</td>
<td>2.0</td>
<td>5.00</td>
<td>0.4</td>
<td>8</td>
</tr>
<tr>
<td>FS1PENPA</td>
<td>FS1LENPA</td>
<td>0.2</td>
<td>2.0</td>
<td>5.00</td>
<td>0.2</td>
<td>8</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNT04

Figure 61. Example of a Network Average Transit Time Objective, Worst-Case report

The report contains this information:

PU name: The secondary PU name. This is the VTAM resource name of the PU.

Line name: The secondary link name. This is the VTAM resource name of the line that connects the PU to the NCP.

Network avg (sec): The average network transit time for transactions, in seconds. This is calculated as: NETW_SEC/NETW_TRAN.

Network obj (sec): The network transit-time objective, in seconds. This is calculated as: NETW_OBJ_SEC_SUM/NETW_TRAN.

Network dif (%): The difference between the percentage of transactions meeting the network transit-time objective and the network transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:

\[ (100 - \frac{(NETW_OBJ_NOTMET/NETW_TRAN*100)}{NETW_OBJ_PCT_SUM/RECORDS_COLLECTED}) - \]
**Network max (sec)**

The maximum network transit time, in seconds. This is the maximum value of NETW_MAX_SEC.

**Transactions**

The number of transactions on which the network transit-time measurements are based. This is the sum of NETW_TRAN.
### Network Host Transit Time Obj, Worst-Case report

This report lists the applications with the greatest difference between the objective for percentage of transactions meeting the transit-time objective and the actual percentage. The applications are shown in ascending order based on the values in column Host dif (%).

A negative value in the Host dif (%) column indicates that the value of the Host met (%) column is less than the objective value. The higher the negative value, the worse the service.

This information identifies the report:

**Report ID** NWNT05  
**Report group** Network NPM Reports  
**Source** NW_NPM_TRANSIT_D  
**Attributes** Network, NW, Performance, Response, Worst, NPM, Transit, Host  
**Variables** From_date, To_date

The report contains this information:

**Application**  
The application synonym name.  
**Host met (%)**  
The percentage of transactions that met the host transit-time objective. This is calculated as:  
\[ 100 - \left( \frac{\text{HOST_Obj_NOTMET}}{\text{HOST_TRAN_TOTAL}} \right) \times 100 \].  
**Host dif (%)**  
The difference between the percentage of transactions meeting the host transit-time objective and the host transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:  
\[ \left( 100 - \left( \frac{\text{HOST_Obj_NOTMET}}{\text{HOST_TRAN_TOTAL}} \right) \times 100 \right) - \left( \frac{\text{HOST_Obj_PCT_SUM}}{\text{RECORDS_COLLECTED}} \right) \].  
**Host obj (sec)**  
The host transit-time objective, in seconds. This is calculated as:  
\[ \frac{\text{HOST_Obj_SEC_SUM}}{\text{HOST_TRAN_TOTAL}} \].  
**Transactions**  
The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.

---

**Figure 62. Example of a Network Host Transit Time Obj, Worst-Case report**

<table>
<thead>
<tr>
<th>Application</th>
<th>met (%)</th>
<th>dif (%)</th>
<th>obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1ZNM</td>
<td>55.00</td>
<td>-40.00</td>
<td>1.00</td>
<td>20</td>
</tr>
<tr>
<td>FSOLMVS1</td>
<td>99.95</td>
<td>4.95</td>
<td>1.00</td>
<td>9361</td>
</tr>
<tr>
<td>FSOLVMV</td>
<td>100.00</td>
<td>5.00</td>
<td>1.00</td>
<td>1658</td>
</tr>
<tr>
<td>FSOSVM1</td>
<td>100.00</td>
<td>5.00</td>
<td>1.00</td>
<td>1458</td>
</tr>
<tr>
<td>FSOSVM2</td>
<td>100.00</td>
<td>5.00</td>
<td>1.00</td>
<td>1409</td>
</tr>
<tr>
<td>FSOSYSH</td>
<td>100.00</td>
<td>5.00</td>
<td>1.00</td>
<td>2664</td>
</tr>
<tr>
<td>FSOSYSK</td>
<td>100.00</td>
<td>5.00</td>
<td>1.00</td>
<td>3909</td>
</tr>
<tr>
<td>FS1MCPUO</td>
<td>100.00</td>
<td>5.00</td>
<td>1.00</td>
<td>10</td>
</tr>
</tbody>
</table>
Network Average Host Transit Time, Worst-Case report

This report lists the applications with the highest average host transit times. The applications are shown in descending order based on the values in column Host avg (sec).

A negative value in the Host dif (%) column indicates that the percentage of transactions meeting the host transit-time objective is less than the host transit-time objective, in percent. The higher the negative value, the worse the service.

This information identifies the report:

**Report ID**    NWNT06
**Report group** Network NPM Reports
**Source**       NW_NPM_TRANSIT_D
**Attributes**   Network, NW, Performance, Response, Worst, NPM, Transit, Host
**Variables**    From_date, To_date

<table>
<thead>
<tr>
<th>Application</th>
<th>avg (sec)</th>
<th>obj (sec)</th>
<th>dif (%)</th>
<th>max (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1ZNPM</td>
<td>16.8</td>
<td>1.0</td>
<td>-40.00</td>
<td>59.9</td>
<td>20</td>
</tr>
<tr>
<td>FSOLMV1</td>
<td>0.0</td>
<td>1.0</td>
<td>4.95</td>
<td>59.5</td>
<td>9361</td>
</tr>
<tr>
<td>FSOLMV2</td>
<td>0.0</td>
<td>1.0</td>
<td>5.00</td>
<td>0.4</td>
<td>1658</td>
</tr>
<tr>
<td>FSOSYM1</td>
<td>0.0</td>
<td>1.0</td>
<td>5.00</td>
<td>0.3</td>
<td>1458</td>
</tr>
<tr>
<td>FSOSYM2</td>
<td>0.0</td>
<td>1.0</td>
<td>5.00</td>
<td>0.0</td>
<td>1409</td>
</tr>
<tr>
<td>FSOSYSH</td>
<td>0.0</td>
<td>1.0</td>
<td>5.00</td>
<td>0.3</td>
<td>2664</td>
</tr>
<tr>
<td>FSOSYSK</td>
<td>0.0</td>
<td>1.0</td>
<td>5.00</td>
<td>0.3</td>
<td>3909</td>
</tr>
<tr>
<td>FS1MCPUO</td>
<td>0.0</td>
<td>1.0</td>
<td>5.00</td>
<td>0.0</td>
<td>10</td>
</tr>
</tbody>
</table>

**Transactions** The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.

---

**Figure 63. Example of a Network Average Host Transit Time, Worst-Case report**

The report contains this information:

**Application** The application synonym name.

**Host avg (sec)** The average host transit time for transactions (host-only and host-with-network), in seconds. This is calculated as:

HOST_SEC_TOTAL/HOST_TRAN_TOTAL.

**Host obj (sec)** The host transit-time objective, in seconds. This is calculated as:

HOST_OBJ_SEC_SUM/HOST_TRAN_TOTAL.

**Host dif (%)** The difference between the percentage of transactions meeting the host transit-time objective and the host transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:

(100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100)) – (HOST_OBJ_PCT_SUM/RECORDS_COLLECTED).

**Host max (sec)** The maximum host transit time for transactions (host-only and host-with-network), in seconds. This is the maximum value of HOST_MAX_SEC.
Response-Time Reports

**Network Oper Trans Time Obj (Telnet), Worst-Case report**

This report shows the IP addresses with the greatest difference between the operator transit-time objective and the percentage of transactions meeting the objective. The report also shows network transit-time information, which can help you determine whether the problem is in the host or network.

A negative value in the Operator dif (%) column indicates that the value in the Operator met (%) column is less than the transit-time objective, in percent. The higher the negative value, the worse the service. If the Operator dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

**Report ID** NWNT25
**Report group** NWNT
**Source** NW_NPM_TRANS_IP_D
**Attributes** NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT, OPERATOR
**Variables** From_date, To_date

<table>
<thead>
<tr>
<th>IP ADDRESS</th>
<th>Operator met (%)</th>
<th>Operator dif (%)</th>
<th>Operator obj (sec)</th>
<th>Network met (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>146.84.189.76</td>
<td>100.00</td>
<td>5.00</td>
<td>100.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

**Figure 64. Example of a Network Oper Trans Time Obj (Telnet), Worst Case report**

The report contains this information:

**IP_ADDRESS** The IP address of the logical unit connected via a TCP/IP Telnet session.

**Operator met (%)** The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER_TRAN*100).

**Operator dif (%)** The difference between the percentage of transactions meeting the operator transit-time objective and the operator transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER_TRAN*100) – (OPER_OBJ_FCT_SUM/RECORDS_COLLECTED).

**Operator obj (sec)** The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.

**Network met (%)** The percentage of transactions that met the network transit-time
Network dif (%)
The difference between the percentage of transactions meeting the network transit-time objective and the network transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:
\[
100 - \left(\frac{\text{NETW_OBJ_NOTMET}}{\text{NETW_TRAN}} \times 100\right)
\]

Network obj (sec)
The network transit-time objective, in seconds. This is calculated as:
\[
\frac{\text{NETW_OBJ_SEC_SUM}}{\text{NETW_TRAN}}.
\]

Transactions The number of transactions on which the operator transit-time measurements are based. This is the sum of \(\text{OPER_TRAN}\).
**Network Avg Oper Trans Time (Telnet), Worst-Case report**

This report lists the IP addresses with the highest average operator transit times.

A negative value in the Operator dif (%) column indicates that the percentage of transactions meeting the operator transit-time objective is less than the operator transit-time objective, in percent. The higher the negative value, the worse the service. If the Operator dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

- **Report ID**: NWNT26
- **Report group**: NWNT
- **Source**: NW_NPM_TRANS_IP_D
- **Attributes**: NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT, OPERATOR
- **Variables**: From_date, To_date

```
Network Avg Oper Trans Time (Telnet), Worst Case
From date: '2000-03-24' To date: '2000-03-24'

<-------- Operator -------->
IP ADDRESS | avg | obj | dif | max | Transactions
------------|-----|-----|-----|-----|----------------
146.84.189.76 | 0.1 | 3.0 | 5.00 | 0.1 | 188

Tivoli Decision Support for z/OS : NWNT26
```

**Figure 65. Example of a Network Avg Oper Trans Time (Telnet), Worst Case report**

The report contains this information:

- **IP_ADDRESS**: The IP address of the logical unit via a TCP/IP Telnet session.
- **Operator avg (sec)**: The average operator transit time for transactions, in seconds. This is calculated as: OPER_SEC/OPER_TRAN.
- **Operator obj (sec)**: The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.
- **Operator dif (%)**: The difference between the percentage of transactions meeting the operator transit-time objective and the operator transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: 
  \[(100 - (OPER_OBJ_NOTMET/OPER_TRAN*100)) - (OPER_OBJ_PCT_SUM/RECORDS_COLLECTED)\].
- **Operator max (sec)**: The maximum operator transit time, in seconds. This is the maximum of OPER_MAX_SEC.
- **Transactions**: The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
Network Netw Trans Time Obj (Telnet), Worst-Case report

This report lists the IP addresses with the greatest difference between the transit-time objective and the percentage of transactions meeting that objective. The report also contains operator transit-time information to help you determine whether the problem is in the host or network.

A negative value in the Network dif (%) column indicates that the value in the Network met (%) column is less than the network transit-time objective, in percent. The higher the negative value, the worse the service. If the Network dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNT27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>NWNT</td>
</tr>
<tr>
<td>Source</td>
<td>NW_NPM_TRANS_IP_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT, OPERATOR</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP ADDRESS</th>
<th>Netw met (%)</th>
<th>Netw diff (%)</th>
<th>Obj met (%)</th>
<th>Obj diff (%)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>146.84.189.76</td>
<td>100.00</td>
<td>5.00</td>
<td>3.0</td>
<td>100.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Figure 66. Example of a Network Netw Avg Trans Time Obj (Telnet), Worst-Case report

The report contains this information:

**IP_ADDRESS** The IP address of the logical unit connected via a TCP/IP Telnet session.

**Network met (%)**

The percentage of transactions that met the network transit-time objective. This is calculated as: 100 – (NETW_OBJ_NOTMET/NETW_TRAN*100).

**Network diff (%)**

The difference between the percentage of transactions meeting the network transit-time objective and the network transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:

(100 – (NETW_OBJ_NOTMET/NETW_TRAN*100)) – (NETW_OBJ_PCT_SUM/RECORDS_COLLECTED).

**Network obj (sec)**

The network transit-time objective, in seconds. This is calculated as: NETW_OBJ_SEC_SUM/NETW_TRAN.

**Operator met (%)**

The percentage of transactions that met the operator transit-time
Response-Time Reports

objective. This is calculated as: 100 –
(OPER_OBJ_NOTMET/OPER_TRAN*100).

Operator dif (%) The difference between the percentage of transactions meeting the
operator transit-time objective and the operator transit-time
objective, in percent. A negative value indicates that the objective is
not met. This is calculated as:
(100 – (OPER_OBJ_NOTMET/OPER_TRAN*100)) –
(OPER_OBJ_PCT_SUM/RECORDS_COLLECTED).

Operator obj (sec) The operator transit-time objective, in seconds. This is calculated
as: OPER_OBJ_SEC_SUM/OPER_TRAN.

Transactions The number of transactions on which the network transit-time
measurements are based. This is the sum of NETW_TRAN.
Network Netw Avg Trans Time Obj (Telnet), Worst-Case report

This report lists the IP addresses with the highest average network transit times.

A negative value in the Network dif (%) column indicates that the percentage of transactions meeting the network transit-time objective is less than the network transit-time objective, in percent. The higher the negative value, the worse the service. If the Network dif (%) column contains a negative value, check the line utilization.

This information identifies the report:

**Report ID** NWNT28

**Report group** NWNT

**Source** NW_NPM_TRANS_IP_D

**Attributes** NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT

**Variables** From_date, To_date

<table>
<thead>
<tr>
<th>IP ADDRESS</th>
<th>avg (sec)</th>
<th>obj (sec)</th>
<th>dif (%)</th>
<th>max (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>146.84.189.76</td>
<td>0.0</td>
<td>3.0</td>
<td>5.00</td>
<td>0.1</td>
<td>188</td>
</tr>
</tbody>
</table>

Figure 67. Example of a Network Netw Avg Trans Time Obj (Telnet), Worst-Case report

The report contains this information:

**IP_ADDRESS** The IP address of the logical unit connected via a TCP/IP Telnet session.

**Network avg (sec)**

The average network transit time for transactions, in seconds. This is calculated as: NETW_SEC/NETW_TRAN.

**Network obj (sec)**

The network transit-time objective, in seconds. This is calculated as: NETW_OBJ_SEC_SUM/NETW_TRAN.

**Network dif (%)**

The difference between the percentage of transactions meeting the network transit-time objective and the network transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as:

\[(100 - \frac{\text{NETW_OBJ_NOTMET}}{\text{NETW_TRAN} \times 100}) - \frac{\text{NETW_OBJ_PCT_SUM}}{\text{RECORDS_COLLECTED}}\]

**Network max (sec)**

The maximum network transit time, in seconds. This is the maximum value of NETW_MAX_SEC.

**Transactions**

The number of transactions on which the network transit-time measurements are based. This is the sum of NETW_TRAN.
**Network Host Trans Time Obj (Telnet), Worst-Case report**

This report lists the applications with the greatest difference between the objective for percentage of transactions meeting the transit-time objective and the actual percentage. The applications are shown in ascending order based on the values in column Host dif (%).

A negative value in the Host dif (%) column indicates that the value of the Host met (%) column is less than the objective value. The higher the negative value, the worse the service.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNT29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>NWNT</td>
</tr>
<tr>
<td>Source</td>
<td>NW_NPM_TRANS_IP_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT, HOST</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Application</th>
<th>Host met (%)</th>
<th>Host dif (%)</th>
<th>Host obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPMA88</td>
<td>100.00</td>
<td>10.00</td>
<td>2.0</td>
<td>188</td>
</tr>
</tbody>
</table>

*Tivoli Decision Support for z/OS: NWNT29*

**Figure 68. Example of a Network Host Trans Time Obj (Telnet), Worst-Case report**

The report contains this information:

- **Application**: The application synonym name.
- **Host met (%)**: The percentage of transactions that met the host transit-time objective. This is calculated as: 100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).
- **Host dif (%)**: The difference between the percentage of transactions meeting the host transit-time objective and the host transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: ([100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100)] – (HOST_OBJ_PCT_SUM/RECORDS_COLLECTED)).
- **Host obj (sec)**: The host transit-time objective, in seconds. This is calculated as: HOST_OBJ_SEC_SUM/HOST_TRAN_TOTAL.
- **Transactions**: The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.
**Network Avg Host Trans Time (Telnet), Worst-Case report**

This report lists the applications with the highest average host transit times. The applications are shown in descending order based on the values in column Host avg (sec).

A negative value in the Host dif (%) column indicates that the percentage of transactions meeting the host transit-time objective is less than the host transit-time objective, in percent. The higher the negative value, the worse the service.

This information identifies the report:

**Report ID**       NWNT30  
**Report group**    NWNT  
**Source**          NW_NPM_TRANS_IP_D  
**Attributes**      NETWORK, NW, PERFORMANCE, RESPONS, WORST, NPM, TRANSIT, HOST  
**Variables**       From_date, To_date

<table>
<thead>
<tr>
<th>Application</th>
<th>avg (sec)</th>
<th>obj (sec)</th>
<th>dif (%)</th>
<th>max (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPM88</td>
<td>0.0</td>
<td>2.0</td>
<td>10.00</td>
<td>0.1</td>
<td>188</td>
</tr>
</tbody>
</table>

Figure 69. Example of a Network Avg Host Trans Time (Telnet), Worst-Case report

The report contains this information:

**Application** The application synonym name.

**Host avg (sec)** The average host transit time for transactions (host-only and host-with-network), in seconds. This is calculated as: 

\[
\text{HOST_SEC_TOTAL}/\text{HOST_TRAN_TOTAL}.
\]

**Host obj (sec)** The host transit-time objective, in seconds. This is calculated as: 

\[
\text{HOST_OBJ_SEC_SUM}/\text{HOST_TRAN_TOTAL}.
\]

**Host dif (%)** The difference between the percentage of transactions meeting the host transit-time objective and the host transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: 

\[
(100 - (\text{HOST_OBJ_NOTMET}/\text{HOST_TRAN_TOTAL} \times 100)) - (\text{HOST_OBJ_PCT_SUM}/\text{RECORDS_COLLECTED}).
\]

**Host max (sec)** The maximum host transit time for transactions (host-only and host-with-network), in seconds. This is the maximum value of HOST_MAX_SEC.

**Transactions** The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.
Response-Time Reports

Network Host Trans Time Obj (Summary), Worst-Case report
This report lists the applications with the greatest difference between the objective for percentage of transactions meeting the transit-time objective and the actual percentage. The application’s data refers to all the LUs (LU detail records) that have been in session with the application. The applications are shown in ascending order based on the values in column Host dif (%).

A negative value in the Host dif (%) column indicates that the value of the Host met (%) column is less than the objective value. The higher the negative value, the worse the service.

This information identifies the report:

- **Report ID**: NWNT35
- **Report group**: NWNT
- **Source**: NW_NPM_TRANS_SUM_D
- **Attributes**: NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT, HOST, SUMMARY
- **Variables**: From_date, To_date

```
Network Host Trans Time Obj (Summary), Worst Case
From date: '2000-03-24' To date: '2000-03-24'

<--------- HOST --------->
LUS    IN  met  dif  obj
Application SESSION (%) (%) (sec) Transactions
NPMAR8 31  100.00  10.00 0.0  188

Tivoli Decision Support for z/OS: NWNT35
```

*Figure 70. Example of a Network Host Trans Time Obj (Summary), Worst-Case report*

The report contains this information:

- **Application**: The application synonym name.
- **LUS_IN_SESSION**: The number of LUs that have been in session with the application.
- **Host met (%)**: The percentage of transactions that met the host transit-time objective. This is calculated as: 100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).
- **Host dif (%)**: The difference between the percentage of transactions meeting the host transit-time objective and the host transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: (100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100)) – (HOST_OBJ_PCT_SUM/RECORDS_COLLECTED).
- **Host obj (sec)**: The host transit-time objective, in seconds. This is calculated as: HOST_OBJ_SEC_SUM/HOST_TRAN_TOTAL.
- **Transactions**: The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.
Network Avg Host TransTime (Summary), Worst-Case report

This report lists the applications with the highest average host transit times. The application’s data refers to all the LUs (LU detail records) that have been in session with the application. The applications are shown in descending order based on the values in column Host avg (sec).

A negative value in the Host dif (%) column indicates that the percentage of transactions meeting the host transit-time objective is less than the host transit-time objective, in percent. The higher the negative value, the worse the service.

This information identifies the report:

- **Report ID**: NWNT36
- **Report group**: NWNT
- **Source**: NW_NPM_TRANS_SUM_D
- **Attributes**: NETWORK, NW, PERFORMANCE, RESPONSE, WORST, NPM, TRANSIT, HOST, SUMMARY
- **Variables**: From_date, To_date

---

**Figure 71. Example of a Network Avg Host Trans Time (Summary), Worst-Case report**

The report contains this information:

- **Application**: The application synonym name.
- **LUS_IN_SESSION**: The number of LUs that have been in session with the application.
- **Host avg (sec)**: The average host transit time for transactions (host-only and host-with-network), in seconds. This is calculated as: HOST_SEC_TOTAL/HOST_TRAN_TOTAL.
- **Host obj (sec)**: The host transit-time objective, in seconds. This is calculated as: HOST_OBJ_SEC_SUM/HOST_TRAN_TOTAL.
- **Host dif (%)**: The difference between the percentage of transactions meeting the host transit-time objective and the host transit-time objective, in percent. A negative value indicates that the objective is not met. This is calculated as: 
  
  \[
  (100 - (\text{HOST\_OBJ\_NOTMET}/\text{HOST\_TRAN\_TOTAL} \times 100)) - (\text{HOST\_OBJ\_PCT\_SUM}/\text{RECORDS\_COLLECTED}).
  \]

- **Host max (sec)**: The maximum host transit time for transactions (host-only and host-with-network), in seconds. This is the maximum value of HOST_MAX_SEC.
**Transactions**  The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.
NPM transit-time overview reports

These reports show the percentage of operator and network transactions meeting the transit-time objectives.

Network PU Groups Transit Time, Daily/Monthly Overview report

These reports list the percentage of transactions that met the operator and network transit-time objectives. The information shown applies to all PU groups.

The value shown for each PU group is the average of all PUs in that group. Because the terminals attached to the PUs could have had sessions with applications having different objectives, the objective columns Operator obj (sec) and Network obj (sec) can contain unexpected values.

You can determine the effect of the host transit time by comparing the operator (Operator met (%)) and network (Network met (%)) values.

This information identifies the reports:

Report ID  NWNT07 (daily), NWNT08 (monthly)
Report group  Network NPM Reports
Source  NWRESOURCE, NW_NPM_TRANSIT_D (daily report), NW_NPM_TRANSIT_M (monthly report)
Attributes  Network, NW, Performance, Response, NPM, Overview, Daily/Monthly, Transit, PU, Groups
Variables  Date (required for daily report), Date_in_month (required for monthly report)

Network PU Groups Transit Time, Daily, Over.
Date: 2000-02-04

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Resource description</th>
<th>Operator met (%)</th>
<th>Operator obj (sec)</th>
<th>Network met (%)</th>
<th>Network obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERRORGRP</td>
<td>GROUP DEFINITION</td>
<td>100.00</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>8</td>
</tr>
<tr>
<td>FSNSEG</td>
<td>DEFAULT GROUP</td>
<td>99.98</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>20469</td>
</tr>
<tr>
<td>FSNSEG</td>
<td>DEFAULT GROUP</td>
<td>0.00</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>8</td>
</tr>
</tbody>
</table>

Figure 72. Example of a Network PU Groups Transit Time, Daily Overview report

The reports contain this information:

Resource group
The resource group name.

Resource description
The group description.

Operator met (%)
The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER_TRAN*100).

Operator obj (sec)
The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.
Response-Time Reports

Network met (%)  
The percentage of transactions that met the network transit-time objective. This is calculated as: 100 –  
(NETW_OBJ_NOTMET/NETW_TRAN*100).

Network obj (sec)  
The network transit-time objective, in seconds. This is calculated as: NETW_OBJ_SEC_SUM/NETW_TRAN.

Transactions  
The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
**Network PU Transit Time by Group, Daily/Monthly Overview report**

These reports list the percentage of transactions meeting the operator and network transit-time objectives. The information shown in these reports applies to PUs in a specified group.

Because the terminals attached to the PUs could have had sessions with applications having different objectives, the objective columns Operator Obj (sec) and Network Obj (sec) can contain unexpected values.

You can determine the effect of the host transit time by comparing the operator (Operator met (%)) and network (Network met (%)) values.

This information identifies the reports:

**Report ID**    NWNT09 (daily), NWNT10 (monthly)

**Report group**    Network NPM Reports

**Source**    NW RESOURCE, NW_NPM_TRANSIT_D (daily report), NW_NPM_TRANSIT_M (monthly report)

**Attributes**    Network, NW, Performance, Response, NPM, Overview, Daily/Monthly Transit, PU, Group

**Variables**    Date (required for daily report), Date_in_month (required for monthly report), Resource_Group

---

**Network PU Transit Time by Group, Daily, Over.**

Date: 2000-02-04

Resource Group: 'FS1NSAG'

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Operator met (%)</th>
<th>Operator obj (sec)</th>
<th>Network met (%)</th>
<th>Network obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1CAD11 PU</td>
<td>B1 NSA</td>
<td>99.98</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>20459</td>
</tr>
<tr>
<td>FS1CAD14 PU</td>
<td>04 NSA</td>
<td>100.00</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>5</td>
</tr>
<tr>
<td>FS1CAD17 PU</td>
<td>17 NSA</td>
<td>100.00</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>3</td>
</tr>
<tr>
<td>FS1CAD31 PU</td>
<td>63 NSA</td>
<td>100.00</td>
<td>3.0</td>
<td>100.00</td>
<td>2.0</td>
<td>2</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNT09

---

**Figure 73. Example of a Network PU Transit Time by Group, Daily Overview report**

The reports contain this information:

**PU name**    The secondary PU name. This is the VTAM resource name of the PU.

**Resource description**    The resource description.

**Operator met (%)**    The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 − (OPER_OBJ_NOTMET/OPER_TRAN*100).

**Operator obj (sec)**    The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.

**Network met (%)**    The percentage of transactions that met the network transit-time...
Response-Time Reports

objective. This is calculated as: 100 –
(NETW_OBJ_NOTMET/NETW_TRAN*100).

Network obj (sec)
The network transit-time objective, in seconds. This is calculated as: NETW_OBJ_SEC_SUM/NETW_TRAN.

Transactions The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
Network Appl Groups Transit Time, Daily/Monthly Overview report

These reports list the percentage of the transactions meeting the host transit-time objectives. The information in these reports applies to all application groups.

The value listed for each application group is the average sum of applications in that group. Because the applications can have different objectives, the objective column Host Obj (sec) can show unexpected values.

These reports do not list the operator transit time or network transit time because service for applications relate only to the host time. Therefore, the host total transit times (Host_met(%) and Host_Obj(sec)), which cover all transactions with or without network transit time, are included.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNT11 (daily), NWNT12 (monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NPM Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NWRESOURCE, NW_NPM_TRANSIT_D (daily report), NW_NPM_TRANSIT_M (monthly report)</td>
</tr>
<tr>
<td>Attributes</td>
<td>Network, NW, Performance, Response, NPM, Overview, Daily/Monthly, Transit, Application, Groups</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required for daily report), Date_in_month (required for monthly report)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application group</th>
<th>Resource description</th>
<th>Host met (%)</th>
<th>Host service (%)</th>
<th>Host Obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS1AISCF</td>
<td>APPL MAJ NODE</td>
<td>99.98</td>
<td>95.00</td>
<td>1.0</td>
<td>20459</td>
</tr>
<tr>
<td>FS1ANPM</td>
<td>APPL MAJ NODE</td>
<td>55.00</td>
<td>95.00</td>
<td>1.0</td>
<td>20</td>
</tr>
<tr>
<td>FS1AVAMP</td>
<td>APPL MAJ NODE</td>
<td>100.00</td>
<td>95.00</td>
<td>1.0</td>
<td>10</td>
</tr>
</tbody>
</table>

Figure 74. Example of a Network Appl Groups Transit Time, Daily Overview report

The reports contain this information:

**Application group**

The application group name.

**Resource description**

The group description.

**Host met (%)**

The percentage of transactions that met the host transit-time objective. This is calculated as: 100 - (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).

**Host service (%)**

The minimum acceptable percentage of transactions that should meet the host transit-time objective. This is calculated as: HOST_OBJ_PCT_SUM/RECORDS_COLLECTED.

**Host obj (sec)**

The host transit-time objective, in seconds. This is calculated as: HOST_OBJ_SEC_SUM/HOST_TRAN_TOTAL.
**Response-Time Reports**

<table>
<thead>
<tr>
<th>Transactions</th>
<th>The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.</th>
</tr>
</thead>
</table>
Network Appl Transit Time by Group, Daily/Monthly Overview report

These reports list the percentage of the transactions meeting the host transit-time objectives. The information in these reports applies to applications in a specified group.

These reports do not show the operator transit time or the network transit time because service for applications relates only to the host time. So, the host total transit times (Host met (%) and Host Obj (sec)), which cover all transactions with or without network transit time, are included.

This information identifies the reports:

**Report ID**    NWNT13 (daily), NWNT14 (monthly)
**Report group** Network NPM Reports
**Source**       NW_Resource, NW_NPM_TRANSIT_D (daily report), NW_NPM_TRANSIT_M (monthly report)
**Attributes**   Network, NW, Performance, Response, NPM, Overview, Daily/Monthly, Transit, Application, Group
**Variables**    Date (required for daily report), Date_in_month (required for monthly report), Application_Group

<table>
<thead>
<tr>
<th>Application name</th>
<th>Resource description</th>
<th>Host met (%)</th>
<th>Host service (%)</th>
<th>Host obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSOLMVS1</td>
<td>ISCF TO LABMVS</td>
<td>99.95</td>
<td>95.00</td>
<td>1.0</td>
<td>9361</td>
</tr>
<tr>
<td>FSOLMVM</td>
<td>ISCF TO LABMVM</td>
<td>100.00</td>
<td>95.00</td>
<td>1.0</td>
<td>1658</td>
</tr>
<tr>
<td>FSOSYMK</td>
<td>ISCF TO SYSK</td>
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<td>95.00</td>
<td>1.0</td>
<td>3909</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNT13

Figure 75. Example of a Network Appl Transit Time by Group, Daily Overview report

The reports contain this information:

**Application name**

The application synonym name.

**Resource description**

The resource description.

**Host met (%)**

The percentage of transactions that met the host transit-time objective. This is calculated as: 100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).

**Host service (%)**

The host transit-time objective, in percent. This is calculated as: HOST_OBJ_PCT_SUM/RECORDS_COLLECTED.

**Host obj (sec)**

The host transit-time objective, in seconds. This is calculated as: HOST_OBJ_SEC_SUM/HOST_TRAN_TOTAL.
Response-Time Reports

**Transactions**  The number of transactions on which the host transit-time measurements are based. This is the sum of HOST_TRAN_TOTAL.
Network PU Obj Oper Transit Time, Hourly/Daily/Weekly Trend report

These reports list the operator transit times compared to the transit-time objective for a specified PU.

A percentage value for transactions meeting the objective (Obj met (%)) that is less than the objective value (NPM obj (%)) indicates that the service provided did not meet the objective.

This information identifies the reports:

**Report ID**  
NWNT15 (hourly), NWNT16 (daily), NWNT17 (weekly)

**Report group**  
Network NPM Reports

**Source**  
NW_NPM_TRANSIT_H (hourly report)  NW_NPM_TRANSIT_D (daily report)  NW_NPM_TRANSIT_W (weekly report)

**Attributes**  
Network, NW, Performance, Response, NPM, Trend, Hourly/Daily/Weekly, Transit, PU, Operator

**Variables**  
Date (required for hourly report), Date in week (required for daily report), From date in week and To date in week (required for weekly report), PU_name

**Y-axis**  
The y-axis (vertical) is a percentage from 0 to 100%

**X-axis**  
The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
- Hour—the hour of the day
- Day—the name of the day of the week
- Week start date—the start date of the week (weeks start on Monday)
Response-Time Reports

The reports contain this information:

**Obj met (%)**  The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER_TRNS*100).

**NPM obj (%)**  The operator transit-time objective, in percent. This is calculated as: OPER_OBJ_PCT_SUM/RECORDS_COLLECTED.

Figure 76. Example of a Network PU Obj Oper Transit Time, Daily Trend report
Network Appl Obj Host Transit Time, Hourly/Daily/Weekly Trend report

These reports list, for a specified application, the total host transit time compared to the transit-time objective.

A percentage value for transactions meeting the objective (Obj met (%)) that is less than the objective value (NPM obj (%)) indicates that the service provided did not meet the objective.

This information identifies the reports:

- **Report ID**: NWNT18 (hourly), NWNT19 (daily), NWNT20 (weekly)
- **Report group**: Network NPM Reports
- **Source**: NW_NPM_TRANSIT_H (hourly report) NW_NPM_TRANSIT_D (daily report) NW_NPM_TRANSIT_W (weekly report)
- **Attributes**: Network, NW, Performance, Response, NPM, Trend, Hourly/Daily/Weekly, Transit, Application, Host
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Application
- **Y-axis**: The y-axis (vertical) is a percentage from 0 to 100%
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the name of the day of the week
  - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Obj met (%)** The percentage of all transactions (host-only plus host-with-network) that met the host transit-time objective. This is calculated as: 100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).

**NPM obj (%)** The host transit-time objective for transactions. This is calculated as: HOST_OBJ_PCT_SUM/RECORDS_COLLECTED.
NPM transit-time detail reports

The NPM transit-time detail reports list all transit time information for a specified PU, IP address (for Telnet sessions), or application. The information is listed regardless of whether it meets the transit-time objectives.

**Network Oper Transit Time Cntr, Hourly Detail report**

This report lists the operator transit-time distribution for all the terminals attached to a selected PU, and the applications with which they have been in session. The report shows the defined boundary values and the percentage of transactions for each response-time counter.

This information identifies the report:

**Report ID** NWNT21

**Report group** Network NPM Reports

**Source** NW_NPM_TRANSIT_H

**Attributes** Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Operator

**Variables** Date (required), PU_name

<table>
<thead>
<tr>
<th>LU name</th>
<th>Application name</th>
<th>NPM cntr1 (%)</th>
<th>NPM bndy1 (sec)</th>
<th>NPM cntr2 (%)</th>
<th>NPM bndy2 (sec)</th>
<th>NPM cntr3 (%)</th>
<th>NPM bndy3 (sec)</th>
<th>NPM cntr4 (%)</th>
<th>NPM bndy4 (sec)</th>
<th>NPM cntr5 (%)</th>
<th>NPM bndy5 (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>FS1SB101 FOSYSYK</td>
<td>100.0</td>
<td>5.0</td>
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<td>0.0</td>
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<td>30.0</td>
<td>0.0</td>
<td>40.0</td>
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<td>0</td>
<td>FS1SB106 FSOLMVS1</td>
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<td>10.0</td>
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<td>0.0</td>
<td>30.0</td>
<td>0.0</td>
<td>40.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNT21

**Figure 78. Example of a Network Oper Transit Time Cntr, Hourly Detail report**

The report contains this information:

**Hour**
The hour of the day.

**LU name**
The name of the secondary resource. This is the resource name of the terminal, on the selected PU, in session with the application.

**Application name**
The synonym name for the application that was in session with the terminal (LU name).

**NPM cntr1 (%)–NPM cntr5 (%)**
The percentage of transactions in each of the five operator transit-time counters. This is calculated as:
NPM_OPERATOR_CNTRx/OPER_RECORDS.

**NPM bndy1 (sec)–NPM bndy4 (sec)**
The transit-time boundary for each counter, in seconds. This is calculated as: NPM_BNDYx_SEC_SUM/RECORDS_COLLECTED.
**Network Oper Transit Time, Hourly Detail report**

This report lists detailed operator transit-time data for all the terminals attached to a selected PU and for the applications with which they have been in session.

This information identifies the report:

**Report ID**    NWNT22
**Report group** Network NPM Reports
**Source**       NW_NPM_TRANSIT_H
**Attributes**   Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Operator
**Variables**    Date (required), PU_name

---

**Network Oper Transit Time, Hourly Detail**

Date: 2000-02-04

PU name: 'FS1CAB11'

<table>
<thead>
<tr>
<th>Hour name</th>
<th>Line name</th>
<th>Application name</th>
<th>avg (sec)</th>
<th>max (sec)</th>
<th>obj (sec)</th>
<th>met (%)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<td>FS1L000</td>
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<td>136</td>
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<td>FS1L000</td>
<td>FSOSYSK</td>
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<td>100.0</td>
<td>70</td>
</tr>
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<td>FS1L000</td>
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<td>3.0</td>
<td>100.0</td>
<td>64</td>
</tr>
</tbody>
</table>

Figure 79. Example of a Network Oper Transit Time, Hourly Detail report

The report contains this information:

**Hour**
- The hour of the day.

**LU name**
- The name of the secondary resource. This is the resource name of the terminal, on the selected PU, in session with the application.

**Line name**
- The secondary link name. This is the VTAM resource name of the line that connects the PU to the NCP.

**Application name**
- The synonym name for the application that was in session with the terminal (LU name).

**Transit time avg (sec)**
- The average operator transit time for transactions from the terminal (LU name) to the application, in seconds. This is calculated as: OPER_SEC/OPER_TRAN.

**Transit time max (sec)**
- The maximum operator transit time for transactions from the terminal (LU name) to the application during the actual time period, in seconds. This is the maximum value of OPER_MAX_SEC.

**Transit time obj (sec)**
- The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.
Transit time obj met (%)  
The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER_TRAN*100).

Transactions  The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
Network Host Only Transit Time Ctr, Hourly Detail report
This report lists the host-only transit-time distribution for a selected application and for the PUs that contain the terminals in session with that application.

This information identifies the report:
Report ID       NWNT23
Report group    Network NPM Reports
Source          NW_NPM_TRANSIT_H
Attributes       Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Host
Variables       Date (required), Application_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>PU name</th>
<th>Line name</th>
<th>NPM cntr1 (%)</th>
<th>NPM cntr1 (sec)</th>
<th>NPM cntr2 (%)</th>
<th>NPM cntr2 (sec)</th>
<th>NPM cntr3 (%)</th>
<th>NPM cntr3 (sec)</th>
<th>NPM cntr4 (%)</th>
<th>NPM cntr4 (sec)</th>
<th>NPM cntr5 (%)</th>
<th>NPM cntr5 (sec)</th>
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<td>FS1LA000</td>
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<td>10.0</td>
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<td>30.0</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Figure 80. Example of a Network Host Only Transit Time Ctr, Hourly Detail report

The report contains this information:

**Hour**
The hour of the day.

**PU name**
The secondary PU name. This is the VTAM resource name of the PU.

**Line name**
The secondary link name. This is the VTAM resource name of the line that connects the PU to the NCP.

**NPM cntr1–NPM cntr5 (%)**
The percentage of host-only transactions in each of the five transit-time counters. The percentage in counter 1 indicates the percentage of transactions whose transit time is lower than the value of boundary 1. The percentage in counter 2 indicates the percentage of transactions whose transit time is between the value of boundary 1 and boundary 2, and so on. This is calculated as: NPM_HOST_CNTRx/HOSTONLY_RECORDS.

**NPM bndy1–NPM bndy4 (sec)**
The transit-time boundary for counters 1 through 4, in seconds. This is calculated as: NPM_BNDYx_SEC_SUM/RECORDS_COLLECTED.
Network Host Only Transit Time, Hourly Detail report

This report lists the detailed host-only transit-time data for each PU containing terminals in session with a specified application.

This information identifies the report:

Report ID       NWNT24
Report group    Network NPM Reports
Source          NW_NPM_TRANSIT_H
Attributes      Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Host
Variables       Date (required), Application_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>PU name</th>
<th>Line name</th>
<th>average (sec)</th>
<th>max (sec)</th>
<th>obj (sec)</th>
<th>met (%)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
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<td>FS1LA000</td>
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<td>120</td>
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<td>FS1LA000</td>
<td>1.4</td>
<td>2.8</td>
<td>3.0</td>
<td>100.0</td>
<td>34350</td>
</tr>
<tr>
<td>6</td>
<td>FS1CAB11</td>
<td>FS1LA000</td>
<td>1.3</td>
<td>2.8</td>
<td>3.0</td>
<td>100.0</td>
<td>43533</td>
</tr>
</tbody>
</table>

Figure 81. Example of a Network Host Only Transit Time, Hourly Detail report

The report contains this information:

Hour        The hour of the day.
PU name     The secondary PU name. This is the VTAM resource name of the PU.
Line name   The secondary link name. This is the VTAM resource name of the line that connects the PU to the NCP.
Transit time average (sec)  The average transit time for host-only transactions, in seconds. This is calculated as: HOSTONLY_SEC/HOSTONLY_TRAN.
Transit time max (sec)       The maximum transit time for host-only transactions, in seconds. This is the maximum value of HOSTONLY_MAX_SEC.
Transit time obj (sec)       The transit-time objective for host-only transactions, in seconds. This is calculated as: HOSTONLY_OBJ_SEC/HOSTONLY_TRAN.
Transit time met (%)         The percentage of host-only transactions that met the transit-time objective. This is calculated as: 100 – (HOSTONLY_OBJ_NOMET/HOSTONLY_TRAN*100).
Transactions  The number of host-only transactions on which the measurements are based. This is the sum of HOSTONLY_TRAN.
Network Oper Trans Time Cntr (Telnet), Hourly Detail report

This report lists the operator transit-time distribution for all the IP addresses, ports, and the applications with which they have been in session. The report shows the defined boundary values and the percentage of transactions for each response-time counter.

This information identifies the report:

**Report ID** NWNT31  
**Report group** NWNT  
**Source** NW_NPM_TRANS_IP_H  
**Attributes** Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Operator  
**Variables** Date (required)

<table>
<thead>
<tr>
<th>IP_ADDRESS</th>
<th>PORT NUMBER</th>
<th>Application name</th>
<th>NPM cntr1 (%)</th>
<th>NPM bndy1 (sec)</th>
<th>NPM cntr2 (%)</th>
<th>NPM bndy2 (sec)</th>
<th>NPM cntr3 (%)</th>
<th>NPM bndy3 (sec)</th>
<th>NPM cntr4 (%)</th>
<th>NPM bndy4 (sec)</th>
<th>NPM cntr5 (%)</th>
<th>NPM bndy5 (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.16.55.109.76</td>
<td>1176</td>
<td>NPMNOSD</td>
<td>106.0</td>
<td>5.0</td>
<td>9.0</td>
<td>10.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>36.0</td>
<td>0.0</td>
<td>36.0</td>
</tr>
<tr>
<td>1.16.55.109.76</td>
<td>1179</td>
<td>NPMNOSD</td>
<td>106.0</td>
<td>5.0</td>
<td>9.0</td>
<td>10.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>36.0</td>
<td>0.0</td>
<td>36.0</td>
</tr>
<tr>
<td>1.16.55.109.76</td>
<td>1256</td>
<td>NPMNOSD</td>
<td>106.0</td>
<td>5.0</td>
<td>9.0</td>
<td>10.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>36.0</td>
<td>0.0</td>
<td>36.0</td>
</tr>
<tr>
<td>9.16.55.109.76</td>
<td>1176</td>
<td>NPMNOSD</td>
<td>106.0</td>
<td>5.0</td>
<td>9.0</td>
<td>10.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>36.0</td>
<td>0.0</td>
<td>36.0</td>
</tr>
</tbody>
</table>

*Figure 82. Example of a Network Oper Trans Time Cntr (Telnet), Hourly Detail report*

The report contains this information:

**Hour** The hour of the day.  
**IP_ADDRESS** The IP address of the logical unit connected via a TCP/IP Telnet session.  
**PORT_NUMBER** The port number of the application program that uses the IP address to communicate with the host.  
**Application name** The synonym name for the application that was in session with the terminal (IP_ADDRESS).  

**NPM cntr1 (%)--NPM cntr5 (%)**  
The percentage of transactions in each of the five operator transit-time counters. This is calculated as:  
NPM_OPERATOR_CNTRx/OPER_RECORDS.

**NPM bndy1 (sec)--NPM bndy4 (sec)**  
The transit-time boundary for each counter, in seconds. This is calculated as: NPM_BNDYx_SEC_SUM/RECORDS_COLLECTED.

Network Oper Trans Time (Telnet), Hourly Detail report

This report lists detailed operator transit-time data for all the IP addresses, ports, and for the applications with which they have been in session.
This information identifies the report:

**Report ID**         NWNT32  
**Report group**      NWNT  
**Source**            NW_NPM_TRANS_IP_H  
**Attributes**        Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Operator  
**Variables**         Date (required)

---

**Figure 83. Example of a Network Oper Trans Time (Telnet), Hourly Detail report**

The report contains this information:

**Hour**  
The hour of the day.

**IP_ADDRESS**  
The IP address of the logical unit connected via a TCP/IP Telnet session.

**PORT_NUMBER**  
The port number of the application program that uses the IP address to communicate with the host.

**Application name**  
The synonym name for the application that was in session with the terminal (IP_ADDRESS).

**Transit time avg (sec)**  
The average operator transit time for transactions from the terminal (IP_ADDRESS) to the application, in seconds. This is calculated as: OPER_SEC/OPER_TRAN.

**Transit time max (sec)**  
The maximum operator transit time for transactions from the terminal (IP_ADDRESS) to the application during the actual time period, in seconds. This is the maximum value of OPER_MAX_SEC.

**Transit time obj (sec)**  
The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.

**Transit time obj met (%)**  
The percentage of transactions that met the operator transit-time objective. This is calculated as: 100 – (OPER_OBJ_NOTMET/OPER.TRAN*100).
### Response-Time Reports

| Transactions | The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN. |
Network Host Only Trans Time Cntr (Telnet), Hourly Detail report
This report lists the host-only transit-time distribution for a selected application and for the IP addresses and ports in session with that application.

This information identifies the report:

Report ID         NWNT33
Report group      NWNT
Source            NW_NPM_TRANS_IP_H
Attributes        Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Host
Variables         Date (required), Application_name

```
<table>
<thead>
<tr>
<th>IP_ADDRESS</th>
<th>NPM cntr1 (%)</th>
<th>NPM cntr1 (sec)</th>
<th>NPM cntr2 (%)</th>
<th>NPM cntr2 (sec)</th>
<th>NPM cntr3 (%)</th>
<th>NPM cntr3 (sec)</th>
<th>NPM cntr4 (%)</th>
<th>NPM cntr4 (sec)</th>
<th>NPM cntr5 (%)</th>
<th>NPM cntr5 (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 146.64.109.76</td>
<td>0.0</td>
<td>5.0</td>
<td>0.0</td>
<td>13.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>30.0</td>
<td>0.0</td>
<td>30.0</td>
</tr>
<tr>
<td>9 146.64.109.76</td>
<td>0.0</td>
<td>5.0</td>
<td>0.0</td>
<td>13.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>30.0</td>
<td>0.0</td>
<td>30.0</td>
</tr>
<tr>
<td>16 146.64.109.76</td>
<td>0.0</td>
<td>5.0</td>
<td>0.0</td>
<td>13.0</td>
<td>0.0</td>
<td>29.0</td>
<td>0.0</td>
<td>30.0</td>
<td>0.0</td>
<td>30.0</td>
</tr>
</tbody>
</table>
```

Performance Reporter: NWNT33

Figure 84. Example of a Network Host Only Trans Time Cntr (Telnet), Hourly Detail report

The report contains this information:

**Hour**
The hour of the day.

**IP_ADDRESS**
The IP address of the logical unit connected via a TCP/IP Telnet session.

**NPM cntr1–NPM cntr5 (%)**
The percentage of host-only transactions in each of the five transit-time counters. The percentage in counter 1 indicates the percentage of transactions whose transit time is lower than the value of boundary 1. The percentage in counter 2 indicates the percentage of transactions whose transit time is between the value of boundary 1 and boundary 2, and so on. This is calculated as: NPM_HOST_CNTRx/HOSTONLY_RECORDS.

**NPM bndy1–NPM bndy4 (sec)**
The transit-time boundary for counters 1 through 4, in seconds. This is calculated as:
NPM_BNDYx_SEC_SUM/RECORDS_COLLECTED.
Network Host Only Trans Time (Telnet), Hourly Detail report
This report lists the detailed host-only transit-time data for each IP address containing terminals in session with a specified application.

This information identifies the report:
Report ID       NWNT34
Report group    NWNT
Source          NW_NPM_TRANS_IP_H
Attributes      Network, NW, Performance, Response, NPM, Detail, Hourly, Transit, Host
Variables       Date (required), Application_name

```
<table>
<thead>
<tr>
<th>Hour</th>
<th>IP_ADDRESS</th>
<th>Transit time average</th>
<th>Transit time max</th>
<th>Transit time obj</th>
<th>Transit time met</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>146.84.199.76</td>
<td>0.0 0.0 0.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>146.84.199.76</td>
<td>0.0 0.0 0.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
<td>146.84.199.76</td>
<td>0.0 0.0 0.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>6</td>
</tr>
</tbody>
</table>
```

Performance Reporter: NWNT34

Figure 85. Example of a Network Host Only Trans Time (Telnet), Hourly Detail report

The report contains this information:

Hour
The hour of the day.

IP_ADDRESS
The IP address of the logical unit connected via a TCP/IP Telnet session.

Transit time average (sec)
The average transit time for host-only transactions, in seconds. This is calculated as: HOSTONLY_SEC/HOSTONLY_TRAN.

Transit time max (sec)
The maximum transit time for host-only transactions, in seconds. This is the maximum value of HOSTONLY_MAX_SEC.

Transit time obj (sec)
The transit-time objective for host-only transactions, in seconds. This is calculated as: HOSTONLY_OBJ_SEC/HOSTONLY_TRAN.

Transit time met (%)
The percentage of host-only transactions that met the transit-time objective. This is calculated as: 100 – (HOSTONLY_OBJ_NOMET/HOSTONLY_TRAN*100).

Transactions
The number of host-only transactions on which the measurements are based. This is the sum of HOSTONLY_TRAN.
Network Oper Trans Time (Summary), Hourly Detail report

This report lists the detailed operator transit-time data. The application’s data refers to all the LUs (LU detail records) that have been in session with a specified application.

This information identifies the report:

| Report ID | NWNT37          |
| Report group | NWNT            |
| Source | NW_NPM_TRANS_SUM_H |
| Attributes | Network, Performance, Response, NPM, Hourly, Transit, Operator, Summary |
| Variables | Date (required) |

Figure 86. Example of a Network Oper Trans Time (Summary), Hourly Detail report

The report contains this information:

Hour
The hour of the day.

Application name
The synonym name for the application that was in session with the terminal (IP_ADDRESS).

LUS_IN_SESSION
The number of LUs that have been in session with the application, that is, the number of LU detail records that have been summarized to create this summary record.

Transit time avg (sec)
The average operator transit time for transactions from the terminal (IP_ADDRESS) to the application, in seconds. This is calculated as: OPER_SEC/OPER_TRAN.

Transit time max (sec)
The maximum operator transit time for transactions from the terminal (IP_ADDRESS) to the application during the actual time period, in seconds. This is the maximum value of OPER_MAX_SEC.

Transit time obj (sec)
The operator transit-time objective, in seconds. This is calculated as: OPER_OBJ_SEC_SUM/OPER_TRAN.
Response-Time Reports

Transit time obj met (%)
The percentage of transactions that met the operator transit-time objective. This is calculated as: $100 - \frac{\text{OPER_OBJ_NOTMET}}{\text{OPER_TRAN}} \times 100$.

Transactions
The number of transactions on which the operator transit-time measurements are based. This is the sum of OPER_TRAN.
RTM response-time reports

These reports provide information on RTM response time, as collected by the NetView Session Monitor. These reports are useful for analyzing response times as experienced by users.

Response-time exception reports

The response-time exception reports provide information on resources that do not meet response-time objectives.

Network RTM PU, Exception Report

This report provides information on PUs (clusters) that do not meet the response-time objective.

If the Response time dif (%) column contains a negative value, the value in the Response time obj met (%) column is less than the objective value in the Response time obj (%) column. The higher the negative value, the worse the service. If the report indicates unacceptable service, check the line utilization.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWRTM01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network RTM Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_RTM_RESPONSE_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Service, Problem, PU, Cluster, Response, RTM, Exception</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

```
Network RTM PU, Exception  
From date: '2000-02-02' To date: '2000-02-03'

<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>obj met (%)</th>
<th>obj (%)</th>
<th>dif (%)</th>
<th>average obj (sec)</th>
<th>obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1CB3F1</td>
<td>SW1LB144</td>
<td>5.0</td>
<td>90.0</td>
<td>-85.0</td>
<td>3.5</td>
<td>2.0</td>
<td>39</td>
</tr>
<tr>
<td>SW1CB311</td>
<td>SW1LB004</td>
<td>12.0</td>
<td>90.0</td>
<td>-78.0</td>
<td>4.9</td>
<td>2.2</td>
<td>390</td>
</tr>
<tr>
<td>SW1CV0A1</td>
<td>SW1LV012</td>
<td>23.0</td>
<td>90.0</td>
<td>-67.0</td>
<td>3.2</td>
<td>2.0</td>
<td>111</td>
</tr>
</tbody>
</table>
```

Figure 87. Example of a Network RTM PU, Exception report

The report contains this information:

<table>
<thead>
<tr>
<th>PU name</th>
<th>The VTAM name of the PU.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line name</td>
<td>The VTAM resource name of the line connecting the PU to the NCP.</td>
</tr>
<tr>
<td>Response time obj met (%)</td>
<td>The percentage of transactions that met the response-time objective. This is calculated as: 100*TRAN_OBJ_MET/TRANSACTIONS.</td>
</tr>
<tr>
<td>Response time obj (%)</td>
<td>The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.</td>
</tr>
</tbody>
</table>
Response-Time Reports

Response time dif (%)
The difference between the percentage of transactions meeting the response-time objective (Response time obj met (%) column) and the response time objective (Response time obj (%) column), in percent. A negative value indicates that the objective is not met.

Response time average (sec)
The average response time, in seconds. This is calculated as: 
RTM_SEC_SUM/TRANSACTIONS.

Response time obj (sec)
The response-time objective, in seconds. This is calculated as: 
RTM_OBJ_SEC_SUM/TRANSACTIONS.

Transactions The number of transactions measured by the RTM.
Response time worst-case reports

The response time worst-case reports provide information on resources that have the greatest difference between the response-time objective and actual response time.

Network RTM PU Objective, Worst-Case Report

This report provides information on PUs (clusters) with the greatest difference between the objective for percentage of transactions meeting the response-time objective and the percentage of transactions actually meeting the objective.

If the Response time dif (%) column contains a negative value, the value in the Response time obj met (%) column is less than the objective value in the Response time obj (%) column. The higher the negative value, the worse the service. If the report indicates unacceptable service, check the line utilization.

This information identifies the report:

Report ID NWRTM02
Report group Network RTM Reports
Source NW_RTM_RESPONSE_D
Attributes NW, Network, Service, Cluster, PU, Response, RTM, Worst
Variables From_date, To_date

<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>obj met (%)</th>
<th>obj obj dif (%)</th>
<th>obj obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1CB3F1</td>
<td>SW1LB144</td>
<td>5.0</td>
<td>90.0</td>
<td>-85.0</td>
<td>2.0</td>
</tr>
<tr>
<td>SW1CB311</td>
<td>SW1LB004</td>
<td>12.0</td>
<td>90.0</td>
<td>-78.0</td>
<td>2.2</td>
</tr>
<tr>
<td>SW1CV0A1</td>
<td>SW1LV012</td>
<td>23.0</td>
<td>90.0</td>
<td>-67.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWRTM02

Figure 88. Example of a Network RTM PU Objective, Worst-Case report

The report contains this information:

PU name The VTAM name of the PU.

Line name The VTAM resource name of the line connecting the PU to the NCP.

Response time obj met (%) The percentage of transactions that met the response-time objective. This is calculated as: 100*TRAN_OBJ_MET/TRANSACTIONS.

Response time obj (%) The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

Response time dif (%) The difference between the percentage of transactions meeting the response-time objective (Response time obj met (%) column) and
Response-Time Reports

the response-time objective (Response time obj (%) column), in percent. A negative value indicates that the objective is not met.

**Response time obj (sec)**

The response-time objective, in seconds. This is calculated as:

\[ \text{RTM_Obj_Sec_Sum} / \text{Transactions} \]

**Transactions**

The number of transactions measured by the RTM.
Network RTM PU Average, Worst-Case report

This report lists the PUs (clusters) with the greatest difference between the average response time and the response-time objective.

If the Response time dif (sec) column contains a negative value, the value in the Response time average (sec) column is higher than the response-time objective value in the Response time obj (sec) column. The higher the negative value, the worse the service. If the report indicates unacceptable service, check the line utilization.

This information identifies the report:

- **Report ID**: NWRTM03
- **Report group**: Network RTM Reports
- **Source**: NW_RTM_RESPONSE_D
- **Attributes**: NW, Network, Service, Cluster, PU, Response, RTM, Worst
- **Variables**: From_date, To_date

![Table]

```
<table>
<thead>
<tr>
<th>PU name</th>
<th>Line name</th>
<th>average (sec)</th>
<th>obj (sec)</th>
<th>dif (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1CB21</td>
<td>SW1LI084</td>
<td>4.9</td>
<td>2.2</td>
<td>-2.7</td>
<td>390</td>
</tr>
<tr>
<td>SW1CB2F1</td>
<td>SW1LB144</td>
<td>4.1</td>
<td>2.0</td>
<td>-2.1</td>
<td>11</td>
</tr>
<tr>
<td>SW1CM981</td>
<td>SW1TML07</td>
<td>3.5</td>
<td>2.0</td>
<td>-1.5</td>
<td>39</td>
</tr>
</tbody>
</table>
```

*Figure 89. Example of a Network RTM PU Average, Worst-Case report*

The report contains this information:

- **PU name**: The VTAM name of the PU.
- **Line name**: The VTAM resource name of the line connecting the PU to the NCP.
- **Response time average (sec)**: The average response time, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.
- **Response time obj (sec)**: The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.
- **Response time dif (sec)**: The difference between the response-time objective (Response time obj (sec) column) and the average response time (Response time average (sec) column), in seconds. A negative value indicates that the objective is not met.
- **Transactions**: The number of transactions measured by RTM.
Network RTM Application Objective, Worst-Case report
This report provides information on applications with the greatest difference between the objective for percentage of transactions meeting the response-time objective and the percentage of transactions actually meeting the objective.

If the Response time dif (%) column contains a negative value, the value in the Response time obj met (%) column is less than the objective value in the Response time obj (%) column. The higher the negative value, the worse the service. If the report indicates unacceptable service, check the line utilization.

This information identifies the report:
Report ID NWRTM04
Report group Network RTM Reports
Source NW_RTM_RESPONSE_D
Attributes NW, Network, Service, Application, Response, RTM, Worst
Variables From_date, To_date

Network RTM Application Objective, Worst Case
From date: '2000-02-02' To date: '2000-02-03'

<table>
<thead>
<tr>
<th>Application name</th>
<th>obj met (%)</th>
<th>obj dif (%)</th>
<th>obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWEXT011</td>
<td>0.0</td>
<td>-90.0</td>
<td>1.0</td>
<td>1</td>
</tr>
<tr>
<td>SWEXT001</td>
<td>0.0</td>
<td>-90.0</td>
<td>3.0</td>
<td>1</td>
</tr>
<tr>
<td>SWEXT002</td>
<td>37.0</td>
<td>-53.0</td>
<td>1.0</td>
<td>8</td>
</tr>
</tbody>
</table>

Figure 90. Example of a Network RTM Application Objective, Worst-Case report
The report contains this information:
Application name
The synonym for the application.
Response time obj met (%)
The percentage of transactions that met the response-time objective. This is calculated as: 100*TRAN_OBJ_MET/TRANSACTIONS.
Response time obj (%)
The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective, calculated as RTM_OBJ_PCT_SUM/TRANSACTIONS.
Response time dif (%)
The difference between the percentage of transactions meeting the response-time objective (Response time obj met (%) column) and the response-time objective (Response time obj (%) column), in percent. A negative value indicates that the objective is not met.
Response time obj (sec)
The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.
Transactions The number of transactions measured by RTM.
Network RTM Application Average, Worst-Case report

This report lists the applications with the greatest difference between the average response time and the response-time objective.

If the Response time dif (sec) column contains a negative value, the value in the Response time average (sec) column is higher than the response-time objective value in the Response time obj (sec) column. The higher the negative value, the worse the service. If the report indicates unacceptable service, check the line utilization.

This information identifies the report:

Report ID    NWRTM05
Report group Network RTM Reports
Source       NW_RTM_RESPONSE_D
Attributes   NW, Network, Service, Application, Response, RTM, Worst
Variables    From_date, To_date

<table>
<thead>
<tr>
<th>Application name</th>
<th>Average (sec)</th>
<th>Response time obj (sec)</th>
<th>Response time dif (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1XT082</td>
<td>305.3</td>
<td>1.0</td>
<td>-304.3</td>
<td>1</td>
</tr>
<tr>
<td>SW1XT001</td>
<td>105.8</td>
<td>1.0</td>
<td>-104.8</td>
<td>7</td>
</tr>
<tr>
<td>SW1XT023</td>
<td>42.7</td>
<td>1.0</td>
<td>-41.7</td>
<td>29</td>
</tr>
</tbody>
</table>

Figure 91. Example of a Network RTM Application Average, Worst-Case report

The report contains this information:

Application name
The synonym for the application.

Response time average (sec)
The average response time for the transactions, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.

Response time obj (sec)
The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.

Response time dif (sec)
The difference between the response-time objective (Response time obj (sec) column) and the average response time (Response time average (sec) column), in seconds. A negative value indicates that the objective is not met.

Transactions   The number of transactions.
Response-Time Reports

Response time overview reports

The response time overview reports list the response-time information and objectives for application groups and PU groups and for resources in the groups.

Network RTM PU Groups, Daily/Monthly Overview report

These reports show information on the response times for PU (cluster) groups. They show the response times and the objectives for response times, in percent and in seconds. The information shown for each group is the average response time for all PUs in the group.

This information identifies the reports:

Report ID      NWRTM06 (daily), NWRTM07 (monthly)
Report group   Network RTM Reports
Source         NW_RESOURCE NW_RTM_RESPONSE_D (daily), NW_RTM_RESPONSE_M (monthly)
Attributes     NW, Network, Service, Cluster, PU, Group, Response, RTM, Overview, Daily/Monthly
Variables      Date (required for daily report), Date_in_month (required for monthly report)

Network RTM PU Groups, Monthly Overview
Month start date: 2000-02-01

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Resource description</th>
<th>Resource met obj (%)</th>
<th>Resource obj average obj (%)</th>
<th>Resource obj average obj (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWIPUA PUA</td>
<td>3174 LOCATION A</td>
<td>96.0</td>
<td>90.0</td>
<td>1.4</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWRTM07

Figure 92. Example of a Network RTM PU Groups, Monthly Overview report

The reports contain this information:

Resource group
The resource group name.

Resource description
Description of the resource group.

Response time obj met (%)
The percentage of transactions that met the response-time objective. This is calculated as: 100*TRAN_OBJ_MET/TRANSACTIONS.

Response time obj (%)
The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

Response time average (sec)
The average response time, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.

Response time obj (sec)
The response time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.
Transactions  The number of transactions measured by RTM.
Response-Time Reports

Network RTM by PU Group, Daily/Monthly Overview report
These reports show information on the RTM response times for PUs (clusters) in a selected group. They show the response times and the objectives for response times, in percent and in seconds.

This information identifies the reports:

**Report ID**  NWRTM08 (daily), NWRTM09 (monthly)

**Report group**  Network RTM Reports

**Source**  NW_RESOURCE, NW_RTM_RESPONSE_D (daily), NW_RTM_RESPONSE_M (monthly)

**Attributes**  NW, Network, Service, Cluster, PU, Group, Response, RTM, Overview, Daily/Monthly

**Variables**  Date (required for daily report), Date_in_month (required for monthly report), Resource_Group

---

Network RTM by PU Group, Daily Overview
Date: 2000-02-05
Resource group: SW1PUKG

<table>
<thead>
<tr>
<th>PU</th>
<th>Resource description</th>
<th>obj met (%)</th>
<th>obj average (sec)</th>
<th>obj Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1CIB21</td>
<td>LOCATION B21</td>
<td>100.0</td>
<td>0.4</td>
<td>2.0</td>
</tr>
<tr>
<td>SW1CIB24</td>
<td>LOCATION B24</td>
<td>100.0</td>
<td>0.6</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWRTM08

Figure 93. Example of a Network RTM by PU Group, Daily Overview report

The report contains this information:

**PU name**  The name of the secondary resource, and the VTAM resource name of the PU.

**Resource description**  A description of the resource.

**Response time obj met (%)**  The percentage of transactions that met the response-time objective. This is calculated as: 100*TRAN_OBJ_MET/TRANSACTIONS.

**Response time obj (%)**  The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

**Response time average (sec)**  The average response time, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.
Response Time Reports

Response time obj (sec)
The response-time objective, in seconds. This is calculated as:
RTM_OBJ_SEC_SUM/TRANSACTIONS.

Transactions The number of transactions measured by RTM.
Response-Time Reports

Network RTM Application Groups, Daily/Monthly Overview report
These reports show information on the response times for application groups. They show the response times and the objectives for response times, in percent and in seconds. The information shown for each group is the average response time for all applications in the group. These reports are issued in daily and monthly overviews.

This information identifies the reports:
Report ID        NWRTM10 (daily), NWRTM11 (monthly)
Report group     Network RTM Reports
Source           NW_RTM_RESPONSE_D, NW_RESOURCE
Attributes       NW, Network, Service, Application, Group, Response, RTM, Overview, Daily/Monthly
Variables        Date (required for daily report), Date_in_month (required for monthly report)

Network RTM Application Groups, Monthly Overview
Month start date: 2000-02-01

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Resource description</th>
<th>obj met (%)</th>
<th>obj average (sec)</th>
<th>obj (%)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWAPVAMP</td>
<td>APPLICATION VAMP</td>
<td>96.0</td>
<td>1.5</td>
<td>90.0</td>
<td>2.8 4277</td>
</tr>
<tr>
<td>SWAPTSO</td>
<td>APPLICATION TSO</td>
<td>98.0</td>
<td>0.5</td>
<td>90.0</td>
<td>2.0 622</td>
</tr>
</tbody>
</table>

Figure 94. Example of a Network RTM Application Groups, Monthly Overview report

The reports contain this information:
Resource group
The name of the resource group (the application group).

Resource description
The description of the resource group.

Response time obj met (%)
The percentage of transactions that met the response-time objective. This is calculated as: 100*TRAN_OBJ_MET/TRANSACTIONS.

Response time obj (%)
The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

Response time average (sec)
The average response time, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.
Response time obj (sec)
The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.

Transactions  The number of transactions measured by RTM.
Response-Time Reports

Network RTM by Application Group, Daily/Monthly Overview report

These reports show information on the response times for applications in a selected group. They show the response times and the objectives for response times, in percent and in seconds. These reports are issued in daily and monthly overviews.

This information identifies the reports:

**Report ID** NWRTM12 (daily), NWRTM13 (monthly)

**Report group** Network RTM Reports

**Source** NWRESOURCE, NW_RTM_RESPONSE_D (daily report), NW_RTM_RESPONSE_M (monthly report)

**Attributes** NW, Network, Service, Application, Group, Response, RTM, Overview, Daily/Monthly

**Variables** Date (required for daily report), Date_in_month (required for monthly report), Application_Group

---

**Network RTM by Application Group, Monthly Overview**

Month start date: 2000-02-01

Resource group: SW1USE

<table>
<thead>
<tr>
<th>Application name</th>
<th>Resource description</th>
<th>met obj (%)</th>
<th>obj average (sec)</th>
<th>obj obj (sec)</th>
<th>Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1SAA1</td>
<td>AA1 APPLICATION</td>
<td>98.0</td>
<td>0.5</td>
<td>2.0</td>
<td>622</td>
</tr>
<tr>
<td>SW1SBB2</td>
<td>BB2 APPLICATION</td>
<td>92.0</td>
<td>1.4</td>
<td>3.0</td>
<td>66</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWRTM13

**Figure 95. Example of a Network RTM by Application Group, Monthly Overview report**

The reports contain this information:

**Application name**

The application synonym name.

**Resource description**

The description of the resource.

**Response time obj met (%)**

The percentage of transactions that met the response-time objective. This is calculated as: 100\*TRAN_OBJ_MET/TRANSACTIONS.

**Response time obj (%)**

The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

**Response time average (sec)**

The average response time, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.

**Response time obj (sec)**

The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.

**Transactions**

The number of transactions measured by RTM.
Response time trend reports

The response time trend graphic reports show the response time of PUs or applications in relation to the response-time objectives.

Network RTM PU Objective, Hourly/Daily/Weekly Trend report

These graphic reports display the percentage of transactions meeting the response-time objective and indicate the objective for percentage of transactions meeting the response-time objective. The percentage is graphed for each hour, day, or week, depending on whether you choose the hourly, daily, or weekly report.

This information identifies the reports:

- **Report ID**: NWRTM14 (hourly), NWRTM15 (daily), NWRTM16 (weekly)
- **Report group**: Network RTM Reports
- **Source**: NW_RTM_RESPONSE_H (hourly), NW_RTM_RESPONSE_D (daily), NW_RTM_RESPONSE_W (weekly)
- **Attributes**: NW, Network, Service, Cluster, PU, Response, RTM, Trend, Hourly/Daily/Weekly
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), PU_name
- **Y-axis**: The y-axis (vertical) is a percentage from 0% to 100%
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the name of the day of the week
  - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**RTM obj (%)**  The objective for percentage of transactions meeting the response-time objective. This is calculated as: 
RTM_OBJ_PCT_SUM/TRANSACTIONS.

**Obj met (%)**  The percentage of transactions that met the response-time objective. This is calculated as: 100*OBJ_MET_TRAN/TRANSACTIONS.
Network RTM PU Average, Hourly/Daily/Weekly Trend report
These graphic reports display the average response time for a specified PU (cluster) and indicate how the response time compares to the objective. The response time is calculated for each hour, day, or week, depending on whether you choose the hourly, daily, or weekly report.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWRTM17 (Hourly), NWRTM18 (Daily), NWRTM19 (Weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network RTM Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_RTM_RESPONSE_H (hourly), NW_RTM_RESPONSE_D (daily), NW_RTM_RESPONSE_W (weekly)</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Service, Cluster, PU, Response, RTM, Trend, Hourly/Daily/Weekly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), PU_name</td>
</tr>
<tr>
<td>Y-axis</td>
<td>The y-axis (vertical), number of seconds, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of seconds.</td>
</tr>
</tbody>
</table>
| X-axis         | The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:  
  • Hour—the hour of the day  
  • Day—the name of the day of the week  
  • Week start date—the start date of the week (weeks start on Monday) |
Response-Time Reports

The reports contain this information:

**RTM obj (sec)**  The response-time objective, in seconds. This is calculated as:

RTM_OBJ_SEC_SUM/TRANSACTIONS.

**RTM avg (sec)**  The average response time, in seconds. This is calculated as:

RTM_SEC_SUM/TRANSACTIONS.

*Figure 97. Example of a Network RTM PU Average, Hourly Trend report*
Network RTM Application Objective, Hourly/Daily/Weekly Trend report

These graphic reports display the percentage of transactions meeting the response-time objective and indicate the objective for the percentage of transactions meeting the response-time objective. The percentage is calculated for each hour, day, or week, depending on whether you choose the hourly, daily, or weekly report.

This information identifies the reports:

**Report ID**  NWRTM20 (Hourly), NWRTM21 (Daily), NWRTM22 (Weekly)

**Report group**  Network RTM Reports

**Source**  NW_RTM_RESPONSE_H (hourly), NW_RTM_RESPONSE_D (daily), NW_RTM_RESPONSE_W (weekly)

**Attributes**  NW, Network, Service, Application, Response, RTM, Trend, Hourly/Daily/Weekly

**Variables**  Date (required for hourly report), Date_in_week (required for daily report) From_date_in_week and To_date_in_week (required for weekly report), Application_name

**Y-axis**  The y-axis (vertical) is a percentage from 0% to 100%

**X-axis**  The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the name of the day of the week
- Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**RTM obj (%)**  The objective for percentage of transactions meeting the response-time objective. This is calculated as:

\[
\frac{\text{RTM\_OBJ\_PCT\_SUM}}{\text{TRANSACTIONS}}.
\]

**Obj met (%)**  The percentage of transactions that met the response-time objective. This is calculated as:

\[
100 \times \frac{\text{OBJ\_MET\_TRAN}}{\text{TRANSACTIONS}}.
\]

*Figure 98. Example of a Network RTM Application Objective, Hourly Trend report*
Network RTM Application Average, Hourly/Daily/Weekly Trend report

These graphic reports display the average response time for a specified application and indicate how the response time compares to the objective. The response time is calculated for each hour, day, or week, depending on whether you choose the hourly, daily, or weekly report.

This information identifies the reports:

**Report ID**  NWRTM23 (Hourly), NWRTM24 (Daily), NWRTM25 (Weekly)

**Report group**  Network RTM Reports

**Source**  NW_RTM_RESPONSE_H (hourly), NW_RTM_RESPONSE_D (daily), NW_RTM_RESPONSE_W (weekly)

**Attributes**  NW, Network, Service, Application, Response, RTM, Trend, Hourly/Daily/Weekly

**Variables**  Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week, To_date_in_week (required for weekly report), Application_name

**Y-axis**  The y-axis (vertical), seconds, goes from 0 to a dynamically set value that depends on the information presented. The y-axis indicates the number of seconds.

**X-axis**  The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the name of the day of the week
- Week start date—the start date of the week (weeks start on Monday)
Response-Time Reports

The reports contain this information:

**RTM obj (sec)** The response-time objective, in seconds. This is calculated as:

\[
\text{RTM\_OBJ\_SEC\_SUM/TRANSACTIONS.}
\]

**RTM avg (sec)** The average response time, in seconds. This is calculated as:

\[
\text{RTM\_SEC\_SUM/TRANSACTIONS.}
\]

*Figure 99. Example of a Network RTM Application Average, Weekly Trend report*
Response time detail reports

The response time detail reports show detailed response-time information for a specified PU or application.

Network RTM PU, Hourly Detail report

This report shows detailed response-time information for all resources in a specified PU (cluster). The information is listed regardless of whether it meets the response-time objectives.

This information identifies the report:

Report ID          NWRTM26
Report group       Network RTM Reports
Source             NW_RTM_RESPONSE_H
Attributes         NW, Network, Service, Cluster, PU, Response, RTM, Detail, Hourly
Variables         Date (required), PU_name

Network RTM PU, Hourly Detail
Date: 2000-02-01
PU: SWICAOH1

<-------- Response time -------->

<table>
<thead>
<tr>
<th>Hour name</th>
<th>LU name</th>
<th>Application name</th>
<th>obj met (%)</th>
<th>obj avg (sec)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 WISOH13</td>
<td>SW1LA076 SW1ZJVM1</td>
<td>94.0</td>
<td>90.0</td>
<td>2.0</td>
<td>0.8</td>
</tr>
<tr>
<td>4 WISOH10</td>
<td>SW1LA076 SW1ZJVM1</td>
<td>100.0</td>
<td>90.0</td>
<td>5.0</td>
<td>0.3</td>
</tr>
<tr>
<td>WISOH14</td>
<td>SW1LA076 SW1ZJVM1</td>
<td>97.0</td>
<td>90.0</td>
<td>5.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Figure 100. Example of a Network RTM PU, Hourly Detail report

The report contains this information:

Hour
The hour in the day when the response-time measurements were taken.

LU name
The logical unit (LU) name of the device.

Line name
The VTAM resource name of the line connecting the PU to the NCP.

Application name
The synonym for the application that is in session with the terminal listed in the LU name column.

Response time obj met (%)
Percentage of transactions that met the response-time objective. This is calculated as: 100*OBJ_MET_TRAN/TRANSACTIONS.

Response time obj (%) The objective for percentage of transactions meeting the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

Response time obj (sec) The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.
Response-Time Reports

**Response time average (sec)**
- The average response time for the transactions, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.

**Transactions**
- The number of transactions.
Network RTM PU Counters, Hourly Detail report

This report shows the response-time distribution for all terminals attached to a selected PU (cluster). The report lists the defined boundary values and the percentage of transactions for each response-time counter.

This information identifies the report:

- **Report ID**: NWRTM27
- **Report group**: Network RTM Reports
- **Source**: NW_RTM_RESPONSE_H
- **Attributes**: NW, Network, Performance, Cluster, PU, Response, RTM, Detail, Hourly
- **Variables**: Date (required), PU_name

### Network RTM PU Counters, Hourly Detail

Date: 2000-02-23

<table>
<thead>
<tr>
<th>LU name</th>
<th>Application name</th>
<th>RTM cntr1 (%)</th>
<th>RTM cntr2 (sec)</th>
<th>RTM cntr3 (%)</th>
<th>RTM cntr4 (sec)</th>
<th>RTM cntr5 (%)</th>
<th>RTM cntr1 (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 SW1S0H13 SW1ZJVM1</td>
<td>42.5 0.5 39.8</td>
<td>1.0 13.3 2.0 2.7 3.0 1.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 SW1S0H10 SW1ZJVM1</td>
<td>13.6 0.5 50.5 1.0 29.1 2.0 4.9 3.0 1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW1S0H04 SW1ZJVM1</td>
<td>11.8 0.5 49.0 1.0 29.4 2.0 3.9 3.0 5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 SW1S0H05 SW1ZJVM1</td>
<td>19.7 0.5 40.8 1.0 31.6 2.0 7.9 3.0 0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW1S0H06 SW1ZJVM1</td>
<td>37.2 0.5 37.2 1.0 19.5 2.0 1.8 3.0 4.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 101. Example of a Network RTM PU Counters, Hourly Detail report

The report contains this information:

- **Hour**
  - The hour of the day when the response-time measurements were taken.

- **LU name**
  - The logical unit (LU) name of the device.

- **Application name**
  - The synonym for the application that is in session with the terminal listed in the LU name column.

- **RTM cntr1–5 (%)**
  - The percentage of transactions in each of the five response-time counters. This is calculated as:
    \[100 \times \text{RTM\_TRAN\_CNTRx/TRANSACTIONS}.\]

- **RTM bndy1–4 (sec)**
  - The response-time boundary for counters 1 through 4, in seconds.
  - This is calculated as: \(\text{RTM\_BNDYx\_SEC\_SUM/TRANSACTIONS}\).
Network RTM Application, Hourly Detail report

This report shows detailed response-time information for all terminals in session with a specified application. The information is listed regardless of whether it meets the response-time objectives.

This information identifies the report:

**Report ID**  NWRTM28

**Report group**  Network RTM Reports

**Source**  NW_RTM_RESPONSE_H

**Attributes**  NW, Network, Service, Application, Response, RTM, Detail, Hourly

**Variables**  Date (required), Application_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>LU name</th>
<th>PU name</th>
<th>Line name</th>
<th>obj met (%)</th>
<th>obj (s)</th>
<th>obj (sec)</th>
<th>average (sec)</th>
<th>Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>SW1SE901</td>
<td>SWICE901</td>
<td>SW1TYL58</td>
<td>92.9</td>
<td>90</td>
<td>2.0</td>
<td>0.7</td>
<td>238</td>
</tr>
<tr>
<td>7</td>
<td>SW1SE05</td>
<td>SWICE05</td>
<td>SW1TYL57</td>
<td>98.0</td>
<td>90</td>
<td>2.0</td>
<td>1.0</td>
<td>445</td>
</tr>
<tr>
<td>7</td>
<td>SW1SE10</td>
<td>SWICE10</td>
<td>SW1TYL57</td>
<td>100.0</td>
<td>90</td>
<td>2.0</td>
<td>0.4</td>
<td>114</td>
</tr>
<tr>
<td>7</td>
<td>SW1SE07</td>
<td>SWICE07</td>
<td>SW1TYL17</td>
<td>93.1</td>
<td>90</td>
<td>2.0</td>
<td>0.8</td>
<td>376</td>
</tr>
</tbody>
</table>

**Figure 102. Example of a Network RTM Application, Hourly Detail report**

The report contains this information:

**Hour**  The hour in the day when the response-time measurements were taken.

**LU name**  The logical unit (LU) name of the device.

**PU name**  The VTAM name of the PU.

**Line name**  The VTAM resource name of the line connecting the PU to the NCP.

**Response time obj met (%)**  Percentage of transactions that met the response-time objective. This is calculated as: 100*OBJ_MET_TRAN/TRANSACTIONS.

**Response time obj (%)**  The objective for percentage of transactions meeting the response-time objective. This is calculated as: RTM_OBJ_PCT_SUM/TRANSACTIONS.

**Response time obj (sec)**  The response-time objective, in seconds. This is calculated as: RTM_OBJ_SEC_SUM/TRANSACTIONS.
Response-Time Reports

Response time average (sec)
The average response time for the transactions, in seconds. This is calculated as: RTM_SEC_SUM/TRANSACTIONS.

Transactions  The number of transactions.
Network RTM Application Counters, Hourly Detail report

This report shows the response-time distribution for all terminals attached to a selected PU. The report lists the defined boundary values and the percentage of transactions for each response-time counter.

This information identifies the report:

Report ID      NWRTM29
Report group   Network RTM Reports
Source         NW_RTM_RESPONSE_H
Attributes     NW, Network, Performance, Application, Response, RTM, Detail, Hourly

Variables     Date (required), Application_name

Network RTM Application Counters, Hourly Detail
Date: 2000-02-23
Application: SW1ZVM2

<table>
<thead>
<tr>
<th>LU name</th>
<th>PU name</th>
<th>RTM cntr1 (%)</th>
<th>RTM bndy1 (sec)</th>
<th>RTM cntr2 (%)</th>
<th>RTM bndy2 (sec)</th>
<th>RTM cntr3 (%)</th>
<th>RTM bndy3 (sec)</th>
<th>RTM cntr4 (%)</th>
<th>RTM bndy4 (sec)</th>
<th>RTM cntr5 (%)</th>
<th>RTM bndy5 (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>SW1S2201 SW1C2201</td>
<td>21.8</td>
<td>0.5</td>
<td>31.0</td>
<td>1.0</td>
<td>45.2</td>
<td>2.0</td>
<td>2.0</td>
<td>3.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SW1S9912 SW1M9912</td>
<td>64.4</td>
<td>0.5</td>
<td>19.9</td>
<td>1.0</td>
<td>9.0</td>
<td>2.0</td>
<td>3.1</td>
<td>3.0</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SW1S2936 SW1C2936</td>
<td>68.2</td>
<td>0.5</td>
<td>23.1</td>
<td>1.0</td>
<td>5.8</td>
<td>2.0</td>
<td>1.7</td>
<td>3.0</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SW1S2975 SW1C2975</td>
<td>30.8</td>
<td>0.5</td>
<td>34.6</td>
<td>1.0</td>
<td>34.6</td>
<td>2.0</td>
<td>0.0</td>
<td>3.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SW1S2907 SW1C2907</td>
<td>57.4</td>
<td>0.5</td>
<td>22.3</td>
<td>1.0</td>
<td>13.3</td>
<td>2.0</td>
<td>5.9</td>
<td>3.0</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SW1S2975 SW1C2975</td>
<td>52.6</td>
<td>0.5</td>
<td>25.1</td>
<td>1.0</td>
<td>14.6</td>
<td>2.0</td>
<td>5.7</td>
<td>3.0</td>
<td>2.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 103. Example of a Network RTM Application Counters, Hourly Detail report

The report contains this information:

Hour         The hour of the day when the response-time measurements were taken.

LU name      The logical unit (LU) name of the device.

PU name      The VTAM name of the PU.

RTM cntr1–5 (%)  The percentage of transactions in each of the five response-time counters. This is calculated as:
                   100*RTM_TRAN_CNTRx/TRANSACTIONS.

RTM bndy1–4 (sec)  The response-time boundary for each counter, in seconds. This is calculated as: RTM_BNDYx_SEC_SUM/TRANSACTIONS.
Chapter 7. NPM/IP reports

This chapter describes the Tivoli Decision Support for z/OS reports that provide information on the TCP/IP network monitored by NPM for the IP product. The NPM/IP reports detail transit time and volume of data on the TCP/IP network.

Network NPM/IP Reports, Hourly Detail

This report lists the detailed transit-time for a specified IP address on a specified date.

This information identifies the report:

**Report ID**  NWNB01

**Report group**  NWNB

**Source**  NW_NPMIP_PERFORM_H

**Attributes**  Network, NW, Performance, Response, NPMIP, Detail, Hourly, Transit

**Variables**  Date (required), IP_ADDR(required)

---

### Network NPM/IP Reports, Hourly Detail: IP='9.20.4.6' MVSID='NET7'

Date: '2002-07-01'

<table>
<thead>
<tr>
<th>HOUR</th>
<th>TRANSIT TIME</th>
<th>TRANSIT TIME</th>
<th>TRANSIT TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MAX</td>
<td>MIN</td>
<td>AVG</td>
</tr>
<tr>
<td>0</td>
<td>5.500E-02</td>
<td>6.000E-03</td>
<td>9.625E-03</td>
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<tr>
<td>1</td>
<td>2.400E-02</td>
<td>6.000E-03</td>
<td>8.737E-03</td>
</tr>
<tr>
<td>2</td>
<td>2.600E-02</td>
<td>6.000E-03</td>
<td>8.738E-03</td>
</tr>
<tr>
<td>3</td>
<td>4.400E-02</td>
<td>6.000E-03</td>
<td>1.058E-02</td>
</tr>
<tr>
<td>4</td>
<td>1.900E-02</td>
<td>6.000E-03</td>
<td>8.614E-03</td>
</tr>
<tr>
<td>5</td>
<td>2.300E-02</td>
<td>6.000E-03</td>
<td>8.248E-03</td>
</tr>
<tr>
<td>6</td>
<td>1.400E-02</td>
<td>6.000E-03</td>
<td>8.167E-03</td>
</tr>
<tr>
<td>7</td>
<td>1.600E-02</td>
<td>6.000E-03</td>
<td>8.353E-03</td>
</tr>
<tr>
<td>8</td>
<td>1.300E-02</td>
<td>6.000E-03</td>
<td>8.266E-03</td>
</tr>
<tr>
<td>9</td>
<td>1.900E-02</td>
<td>5.000E-03</td>
<td>8.931E-03</td>
</tr>
<tr>
<td>10</td>
<td>3.600E-02</td>
<td>6.000E-03</td>
<td>1.048E-03</td>
</tr>
<tr>
<td>11</td>
<td>2.800E-02</td>
<td>6.000E-03</td>
<td>1.097E-02</td>
</tr>
<tr>
<td>12</td>
<td>7.500E-02</td>
<td>6.000E-03</td>
<td>1.118E-02</td>
</tr>
<tr>
<td>13</td>
<td>2.300E-02</td>
<td>6.000E-03</td>
<td>1.045E-02</td>
</tr>
<tr>
<td>14</td>
<td>1.280E-02</td>
<td>6.000E-03</td>
<td>1.214E-02</td>
</tr>
</tbody>
</table>

---

*Figure 104. Example of a Network NPM/IP Hourly Detail report*

The report contains this information:

**Hour**  The hour of the day.

**Date**  The date when the data is collected.

**IP_Address**  The IP address.

**Transit time max**  The maximum transit time.

**Transit time min**  The minimum transit time.
NPM/IP Reports

Transit time avg
The average transit time.
Network NPM/IP Bytes by Application

This report lists the detailed workload data for an application (or all applications) at a specified date.

This information identifies the report:

**Report ID**    NWNB02  
**Report group** NWNB  
**Source**       NW_NPMIP_WRKLOAD_H  
**Attributes**   Network, NW, Performance, Response, NPMIP, Detail, Hourly, Transit  
**Variables**    Date (required), MVS_SYSTEM_ID (required), Appl_name (optional)

<table>
<thead>
<tr>
<th>HOUR</th>
<th>APPL</th>
<th>TOTAL BYTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OSNMPD</td>
<td>17,259,340</td>
</tr>
<tr>
<td>1</td>
<td>OSNMPD</td>
<td>22,033,200</td>
</tr>
<tr>
<td>2</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>3</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>4</td>
<td>OSNMPD</td>
<td>22,033,200</td>
</tr>
<tr>
<td>5</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>6</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>7</td>
<td>OSNMPD</td>
<td>22,033,200</td>
</tr>
<tr>
<td>8</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>9</td>
<td>OSNMPD</td>
<td>22,033,200</td>
</tr>
<tr>
<td>10</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>11</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>12</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>13</td>
<td>OSNMPD</td>
<td>21,665,980</td>
</tr>
<tr>
<td>14</td>
<td>OSNMPD</td>
<td>12,852,700</td>
</tr>
</tbody>
</table>

Figure 105. Example of a Network NPM/IP Bytes by Application report

The report contains this information:

**Hour**  The hour of the day.  
**Date**   The date when the data is collected.  
**MVS_system_id**  The name of the MVS system identification.  
**Appl_name**   The synonym name for the application.  
**Bytes**     Cumulative Kbytes sent and received by the application.
Network NPM/IP Response Time

This report lists the transit time data distributed for different sizes of packets sent for a specified IP address at a specified date.

This information identifies the report:

**Report ID**  NWNB03

**Report group**  NWNB

**Source**  NW_NPMIP_PERFVOL_H

**Attributes**  Network, NW, Performance, Response, NPMIP, Detail, Hourly, Transit

**Variables**  Date (required), MVS_SYSTEM_ID (required), IP_Address (required)

<table>
<thead>
<tr>
<th>HOUR</th>
<th>PKT SIZE</th>
<th>TRANSIT TIME MAX</th>
<th>TRANSIT TIME MIN</th>
<th>TRANSIT TIME AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>256</td>
<td>1.000E-02</td>
<td>6.000E-03</td>
<td>6.917E-03</td>
</tr>
<tr>
<td>1</td>
<td>256</td>
<td>1.200E-02</td>
<td>6.000E-03</td>
<td>7.233E-03</td>
</tr>
<tr>
<td>2</td>
<td>512</td>
<td>1.700E-02</td>
<td>6.000E-03</td>
<td>7.600E-03</td>
</tr>
<tr>
<td>0</td>
<td>512</td>
<td>1.200E-02</td>
<td>6.000E-03</td>
<td>7.792E-03</td>
</tr>
<tr>
<td>1</td>
<td>512</td>
<td>1.000E-02</td>
<td>6.000E-03</td>
<td>7.533E-03</td>
</tr>
<tr>
<td>2</td>
<td>512</td>
<td>1.400E-02</td>
<td>6.000E-03</td>
<td>7.800E-03</td>
</tr>
<tr>
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<td>1024</td>
<td>2.000E-02</td>
<td>7.000E-03</td>
<td>9.250E-03</td>
</tr>
<tr>
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<td>1024</td>
<td>1.900E-02</td>
<td>7.000E-03</td>
<td>9.172E-03</td>
</tr>
<tr>
<td>2</td>
<td>1024</td>
<td>1.300E-02</td>
<td>7.000E-03</td>
<td>8.500E-03</td>
</tr>
<tr>
<td>0</td>
<td>2048</td>
<td>5.500E-02</td>
<td>9.000E-03</td>
<td>1.454E-02</td>
</tr>
<tr>
<td>1</td>
<td>2048</td>
<td>2.400E-02</td>
<td>9.000E-03</td>
<td>1.110E-02</td>
</tr>
<tr>
<td>2</td>
<td>2048</td>
<td>2.600E-02</td>
<td>9.000E-03</td>
<td>1.123E-02</td>
</tr>
</tbody>
</table>

**Figure 106. Example of a Network NPM/IP Response Time report**

The report contains this information:

**Hour**  The hour of the day.

**Date**  The date when the data is collected.

**Pkt size**  The size in bytes of the test packet sent.

**Transit time max**  The maximum transit time.

**Transit time min**  The minimum transit time.

**Transit time avg**  The average transit time.
Network NPM/IP Top Clients (Bytes)

This report lists the detailed workload data for all top clients (IP Address) at a specified date.

This information identifies the report:

**Report ID**  NWNB04

**Report group**  NWNB

**Source**  NW_NPMIP_WRKLOAD_H

**Attributes**  Network, NW, Performance, Response, NPMIP, Detail, Hourly, Transit

**Variables**  Date (required), MVS_SYSTEM_ID (required)

Network NPM/IP Top Clients (Bytes): MVSID='NET7'
Date: '2002-07-01'

<table>
<thead>
<tr>
<th>HOUR</th>
<th>REMOTE IP ADDR</th>
<th>NUMBER OF BYTES</th>
</tr>
</thead>
<tbody>
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<td>0</td>
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<td>376</td>
</tr>
<tr>
<td>1</td>
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<td>480</td>
</tr>
<tr>
<td>2</td>
<td>127.0.0.1</td>
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<td>3</td>
<td>127.0.0.1</td>
<td>472</td>
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<tr>
<td>4</td>
<td>127.0.0.1</td>
<td>480</td>
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<td>5</td>
<td>127.0.0.1</td>
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<td>13</td>
<td>127.0.0.1</td>
<td>472</td>
</tr>
<tr>
<td>14</td>
<td>127.0.0.1</td>
<td>280</td>
</tr>
<tr>
<td>0</td>
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</tr>
<tr>
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<td>255.255.255.255</td>
<td>22,033,200</td>
</tr>
<tr>
<td>2</td>
<td>255.255.255.255</td>
<td>21,665,980</td>
</tr>
<tr>
<td>3</td>
<td>255.255.255.255</td>
<td>21,665,980</td>
</tr>
<tr>
<td>4</td>
<td>255.255.255.255</td>
<td>22,033,200</td>
</tr>
<tr>
<td>5</td>
<td>255.255.255.255</td>
<td>21,665,980</td>
</tr>
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<td>6</td>
<td>255.255.255.255</td>
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<td>7</td>
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</tr>
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<td>21,665,980</td>
</tr>
<tr>
<td>13</td>
<td>255.255.255.255</td>
<td>21,665,980</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNB04

*Figure 107. Example of a Network NPM/IP top client report*

The report contains this information:

**Hour**  The hour of the day.

**Date**  The date when the data is collected.

**Remote_ip_addr**  The name of the IP address of the remote socket (client).

**Number Bytes**  Cumulative Kbytes sent and received by the application.
Chapter 8. Service reports

The service reports for the Tivoli Decision Support for z/OS Network feature compare provided service against service objectives for PU groups and application groups. These reports are issued in yearly or monthly intervals and are intended to show long-term performance and trends.

Network Service for PU, Monthly report

This report shows service levels on PUs (clusters) in PU groups. It lists all PUs with availability data, RTM response time data, and NPM transit time data (at least one of availability, RTM, and NPM) recorded. The PUs in each group are listed in ascending order.

The service-level information is a combination of data from several sources; availability data, RTM response-time data, and NPM transit-time data. You must have at least one of the types of data stored in order to show a PU in this report. Sometimes a PU has only one or two of the types of data, and the missing types show zeroes as values.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

If both RTM response-time data and NPM transit-time data are shown in the report, do not compare their measured values because different techniques are used for measuring them.

This report does not show if services are not fulfilled, therefore you should compare the difference between these measured and objective values:
- Avail in schedule (%) and Avail obj (%)
- Stops in schedule and Stops obj
- RTM obj met (%) and RTM obj (%)
- OP obj met (%) and OP obj(%)

This information identifies the report:

- **Report ID**: NWV01
- **Report group**: Network Service Reports
- **Source**: AVAILABILITY_M, NW_RTM_RESPONSE_M, NW_NPM_TRANSIT_M, NW RESOURCE
- **Attributes**: NW, Network, Service, PU, Cluster, Monthly, Availability, Stability, Response, Transit, Operator
- **Variables**: Date_in_month (required)
The report contains this information:

Resource name
The resource name.

Resource description
The resource description.

Avail in schedule (%)
The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:
\[100 \times \frac{\text{UP IN SCHEDULE}}{\text{SCHEDULE HOURS}}.\]

Avail obj (%) The minimum acceptable availability during the schedule hours, in percent.

Stops in schedule
The stops in the schedule. This is the number of down events during the schedule hours for the resource.

Stops obj
The maximum acceptable number of down events during the schedule hours for the resource. This is from \text{DOWN EVENTS OBJ} in \text{NW RESOURCE} table and \text{SCHEDULE DAYS} in \text{AVAILABILITY M} table. This is calculated as:
\[\text{DOWN EVENTS OBJ} \times \text{SCHEDULE DAYS}.\]

RTM obj met (%) The percentage of transactions that met the response-time objective. This is calculated as: 
\[100 \times \frac{\text{TRAN Obj Met}}{\text{TRANSACTIONS}}.\]

RTM obj (%) The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective in seconds. This is calculated as:
\[\frac{\text{RTM Obj PCT SUM}}{\text{TRANSACTIONS}}.\]

OP obj met (%) The percentage of transactions that met the operator transit-time objective. This is calculated as:
\[100 - \frac{\text{OPER Obj NOT MET}}{\text{OPER TRAN}} \times 100.\]

OP obj (%) The operator transit-time objective, in percent. This is calculated as:
\[\frac{\text{OPER Obj PCT SUM}}{\text{RECORDS COLLECTED}}.\]
Network Service for Application, Monthly report

This report shows service levels on applications in application groups. It lists all applications with availability data and NPM host transit time data (at least one of availability, and NPM) recorded. The applications are listed in ascending order.

The service-level information is a combination of data from several sources; availability data, and NPM host transit-time data. You must have at least one of the types of data stored in order to show an application in this report. Sometimes an application has only one of the two types of data, and the missing type shows zeroes as values.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

This report does not show if services are not fulfilled, therefore you should compare the difference between these measured and objective values:
- Avail in schedule (%) and Avail obj (%)
- Stops in schedule and Stops obj
- HT obj met (%) and HT obj (%)

This information identifies the report:

Report ID NWV02
Report group Network Service Reports
Source AVAILABILITY_M, NW_RTM_RESPONSE_M, NW_NPM_TRANSIT_M, NWRESOURCE
Attributes NW, Network, Service, Application, Monthly, Availability Stability, Response, Transit, Host
Variables Date_in_month (required)

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Resource description</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>HT obj met (%)</th>
<th>HT obj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICS01</td>
<td>PROD-A</td>
<td>97.30</td>
<td>95.00</td>
<td>1.0</td>
<td>1.00</td>
<td>92.0</td>
<td>90.0</td>
</tr>
<tr>
<td>CICS02</td>
<td>PROD-B</td>
<td>97.00</td>
<td>95.00</td>
<td>1.0</td>
<td>1.00</td>
<td>93.0</td>
<td>90.0</td>
</tr>
<tr>
<td>IMS</td>
<td>3090</td>
<td>-</td>
<td>95.00</td>
<td>-</td>
<td>1.00</td>
<td>93.0</td>
<td>90.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWV02

Figure 109. Example of a Network Service for Application, Monthly report

The report contains this information:

Resource name
The resource name.

Resource description
The resource description.

Avail in schedule (%)
The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime.
Service Reports

This is calculated as:
100*UP_IN_SCHEDULE/SCHEDULE_HOURS.

**Avail obj (%)**  The minimum acceptable availability during the schedule hours, in percent.

**Stops in schedule**  The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj**  The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_RESOURCE table and SCHEDULE_DAYS in AVAILABILITY_M table. This is calculated as:
DOWN_EVENTS_OBJ*SCHEDULE_DAYS.

**HT obj met (%)**  The percentage of transactions that met the host transit-time objective. This is calculated as:
100 − (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).

**HT obj (%)**  The minimum acceptable percentage of transactions that should meet the host transit-time objective. This is calculated as:
HOST_OBJ_PCT_SUM/RECORDS_COLLECTED.
Network Service in PU Groups, Monthly/Yearly report

These reports show information on the measured service level for all PU (cluster) groups. The information is shown in ascending order based on the Resource group column.

The service-level information is a combination of data from several sources; availability data, RTM response-time data, and NPM transit-time data. You must have at least one of the types of data stored in order to show a PU group in these reports. Sometimes a group has only one or two of the types of data, and the missing types show zeroes as values.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

If both RTM response-time data and NPM transit-time data are shown in the report, do not compare their measured values because different techniques are used for measuring them.

The reports do not show if services are not fulfilled, therefore you should compare the difference between these measured and objective values:

- Avail in schedule (%) and Avail obj (%)
- Stops in schedule and Stops obj
- RTM obj met (%) and RTM obj (%)
- OP obj met (%) and OP obj (%)

This information identifies the reports:

**Report ID** NWV03 (monthly), NWV04 (yearly)

**Report group** Network Service Reports

**Source** AVAILABILITY_M, NW_RTM_RESPONSE_M, NW_NPM_TRANSIT_M, NWRESOURCE

**Attributes** NW, Network, Service, PU, Cluster, Monthly/Yearly, Availability, Stability, Response, Transit, Operator

**Variables** Date_in_month (required for monthly report), Year (required for yearly report)

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>RTM obj met (%)</th>
<th>RTM obj (%)</th>
<th>OP obj met (%)</th>
<th>OP obj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1NSAG</td>
<td>98.60</td>
<td>95.00</td>
<td>2.0</td>
<td>3.00</td>
<td>93.8</td>
<td>90.0</td>
<td>95.4</td>
<td>95.0</td>
</tr>
<tr>
<td>SW1NSBG</td>
<td>99.00</td>
<td>95.00</td>
<td>2.0</td>
<td>3.00</td>
<td>94.0</td>
<td>90.0</td>
<td>100.0</td>
<td>95.0</td>
</tr>
<tr>
<td>SW1NSCG</td>
<td>100.00</td>
<td>95.00</td>
<td>1.0</td>
<td>2.00</td>
<td>97.7</td>
<td>90.0</td>
<td>97.0</td>
<td>95.0</td>
</tr>
<tr>
<td>SW1NSDG</td>
<td>97.00</td>
<td>95.00</td>
<td>3.0</td>
<td>3.00</td>
<td>96.0</td>
<td>90.0</td>
<td>98.3</td>
<td>95.0</td>
</tr>
</tbody>
</table>

Figure 110. Example of a Network Service in PU Groups, Monthly report

The reports contain this information:

**Resource group**

The resource group.
Service Reports

**Avail in schedule (%)**
The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime.
This is calculated as: $100 \times \frac{\text{UP IN SCHEDULE}}{\text{SCHEDULE HOURS}}$.

**Avail obj (%)**
The minimum acceptable availability during the schedule hours, in percent.

**Stops in schedule**
The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj**
The maximum acceptable number of down events during the schedule hours for the resource. This is from $\text{DOWN EVENTS OBJ}$ in $\text{NW RESOURCE}$ table and $\text{SCHEDULE_DAYS}$ in $\text{AVAILABILITY_M}$ table. This is calculated as: $\text{DOWN EVENTS OBJ} \times \text{SCHEDULE_DAYS}$.

**RTM obj met (%)**
The percentage of transactions that met the response-time objective. This is calculated as: $100 \times \frac{\text{TRAN_OBJ_MET}}{\text{TRANSACTIONS}}$.

**RTM obj (%)**
The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective in seconds. This is calculated as: $\frac{\text{RTM_OBJ_PCT_SUM}}{\text{TRANSACTIONS}}$.

**OP obj met (%)**
The percentage of transactions that met the operator transit-time objective. This is calculated as:
$100 - \frac{\text{OPER_OBJ_NOTMET}}{\text{OPER_TRAN} \times 100}$.

**OP obj (%)**
The operator transit-time objective, in percent. This is calculated as: $\frac{\text{OPER_OBJ_PCT_SUM}}{\text{RECORDS_COLLECTED}}$. 
Network Service by PU Group, Monthly/Yearly report

These reports show information on the measured service level for a selected PU (cluster) group. The information is shown in ascending order based on the Resource group and Resource name columns.

The service-level information is a combination of data from several sources; availability data, RTM response-time data, and NPM transit-time data. You must have at least one of the types of data stored in order to show a PU in these reports. Sometimes a PU has only one or two of the types of data, and the missing types show zeroes as values.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

If both RTM response-time data and NPM transit-time data are shown in the reports, do not compare their measured values because different techniques are used for measuring them.

These reports do not show if services are not fulfilled, therefore you should compare the difference between these measured and objective values:
- Avail in schedule (%) and Avail obj (%)
- Stops in schedule and Stops obj
- RTM obj met (%) and RTM obj (%)
- OP obj met (%) and OP obj (%)

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWV05 (monthly), NWV06 (yearly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network Service Reports</td>
</tr>
<tr>
<td>Source</td>
<td>AVAILABILITY_M, NW_RTM_RESPONSE_M, NW_NPM_TRANSIT_M, NWRESOURCE</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Service, PU, Cluster, Monthly/Yearly, Availability, Stability, Response, Transit, Operator</td>
</tr>
<tr>
<td>Variables</td>
<td>Date_in_month (required for monthly report), Year (required for yearly report), Resource_group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource Resource group name</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>RTM obj met (%)</th>
<th>RTM obj (%)</th>
<th>OP obj met (%)</th>
<th>OP obj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSINSIG1 SW1AINPA</td>
<td>98.00</td>
<td>95.00</td>
<td>5.0</td>
<td>18.00</td>
<td>99.2</td>
<td>90.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>FSINSIG1 SW1CIB21</td>
<td>99.00</td>
<td>95.00</td>
<td>4.0</td>
<td>24.00</td>
<td>96.5</td>
<td>90.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Figure 111. Example of a Network Service by PU Group, Monthly report

The reports contain this information:

**Resource group**
The resource group.

**Resource name**
The resource name.
Service Reports

**Avail in schedule (%)**
The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime.
This is calculated as:
\[ 100 \times \frac{UP\_IN\_SCHEDULE}{SCHEDULE\_HOURS} \]

**Avail obj (%)**
The minimum acceptable availability during the schedule hours, in percent.

**Stops in schedule**
The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj**
The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN\_EVENTS\_OBJ in NW\_RESOURCE table and SCHEDULE\_DAYS in AVAILABILITY\_M table. This is calculated as:
\[ DOWN\_EVENTS\_OBJ \times SCHEDULE\_DAYS \]

**RTM obj met (%)**
The percentage of transactions that met the response-time objective. This is calculated as:
\[ 100 \times \frac{TRAN\_OBJ\_MET}{TRANSACTIONS} \]

**RTM obj (%)**
The response-time objective, in percent. This is the percentage of transactions expected to meet the response-time objective in seconds. This is calculated as:
\[ \frac{RTM\_OBJ\_PCT\_SUM}{TRANSACTIONS} \]

**OP obj met (%)**
The percentage of transactions that met the operator transit-time objective. This is calculated as:
\[ 100 - \left( \frac{OPER\_OBJ\_NOTMET}{OPER\_TRAN} \times 100 \right) \]

**OP obj (%)**
The operator transit-time objective, in percent. This is calculated as:
\[ \frac{OPER\_OBJ\_PCT\_SUM}{RECORDS\_COLLECTED} \]
Network Service in Application Groups, Monthly/Yearly report

These reports show information on the measured service level for all application groups. The information is shown in ascending order based on the Resource group column.

The service-level information is a combination of data from several sources; availability data, and NPM host transit-time data. You must have at least one of the types of data stored in order to show an application group in these reports. Sometimes a group has only one of the two types of data, and the missing type shows zeroes as values.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

These reports do not show if services are not fulfilled, therefore you should compare the difference between these measured and objective values:

- Avail in schedule (%) and Avail obj (%)
- Stops in schedule and Stops obj
- HT obj met (%) and HT obj (%)

This information identifies the reports:

**Report ID**  NWV07 (monthly), NWV08 (yearly)

**Report group**  Network Service Reports

**Source**  AVAILABILITY_M, NW_NPM_TRANSIT_M, NW_RESOURCE

**Attributes**  NW, Network, Service, Application, Monthly/Yearly, Availability, Stability, Response, Transit, Host

**Variables**  Date_in_month (required for monthly report), Year (required for yearly report)

Network Service in Application Groups, Monthly
Month start date: 2000-02-01

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>HT obj met (%)</th>
<th>HT obj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATCH</td>
<td>98.60</td>
<td>95.00</td>
<td>2.0</td>
<td>3.00</td>
<td>99.9</td>
<td>95.0</td>
</tr>
<tr>
<td>CICS</td>
<td>99.00</td>
<td>95.00</td>
<td>2.0</td>
<td>3.00</td>
<td>94.0</td>
<td>95.0</td>
</tr>
<tr>
<td>SMKAROUT</td>
<td>100.00</td>
<td>95.00</td>
<td>1.0</td>
<td>2.00</td>
<td>96.0</td>
<td>95.0</td>
</tr>
<tr>
<td>SMKATS0</td>
<td>97.00</td>
<td>95.00</td>
<td>3.0</td>
<td>3.00</td>
<td>98.5</td>
<td>95.0</td>
</tr>
</tbody>
</table>

Figure 112. Example of a Network Service in Application Groups, Monthly report

The reports contain this information:

**Resource group**  The resource group.

**Avail in schedule (%)**  The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as: 100*UP_IN_SCHEDULE/SCHEDULE_HOURS.
**Avail obj (%)**  The minimum acceptable availability during the schedule hours, in percent.

**Stops in schedule**  The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj**  The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_RESOURCE table and SCHEDULE_DAYS in AVAILABILITY_M table. This is calculated as: DOWN_EVENTS_OBJ*SCHEDULE_DAYS.

**HT obj met (%)**  The percentage of transactions that met the host transit-time objective. This is calculated as: 100 – (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).

**HT obj (%)**  The minimum acceptable percentage of transactions that should meet the host transit-time objective. This is calculated as: HOST_OBJ_PCT_SUM/RECORDS_COLLECTED.
Network Service by Application Group, Monthly/Yearly report

These reports show information on the measured service level for a selected application group. The information is shown in ascending order based on the Resource group and Resource name columns.

The service-level information is a combination of data from several sources; availability data and NPM host transit-time data. You must have at least one of the types of data stored in order to show an application in these reports. Sometimes an application has only one of the two types of data, and the missing type shows zeroes as values.

When the Avail in schedule (%) and Stops in schedule columns contain –, it means that the value for this row was unknown in the availability table.

The reports do not show if services are not fulfilled, therefore you should compare the difference between these measured and objective values:

- Avail in schedule (%) and Avail obj (%)
- Stops in schedule and Stops obj
- HT obj met (%) and HT obj (%)

This information identifies the reports:

Report ID        NWV09 (monthly), NWV10 (yearly)
Report group     Network Service Reports
Source           AVAILABILITY_M, NW_NPM_TRANSIT_M, NW_RESOURCE
Attributes       NW, Network, Service, Application, Monthly/Yearly, Availability, Stability, Response, Transit, Host
Variables        Date_in_month (required for monthly report), Year (required for yearly report), Application_group

<table>
<thead>
<tr>
<th>Resource group</th>
<th>Avail in schedule (%)</th>
<th>Avail obj (%)</th>
<th>Stops in schedule</th>
<th>Stops obj</th>
<th>HT obj met (%)</th>
<th>HT obj (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATCH</td>
<td>93.30</td>
<td>95.00</td>
<td>0.0</td>
<td>3.00</td>
<td>99.9</td>
<td>95.0</td>
</tr>
<tr>
<td>BATCH</td>
<td>98.00</td>
<td>95.00</td>
<td>0.0</td>
<td>2.00</td>
<td>99.9</td>
<td>95.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWV09

Figure 113. Example of a Network Service by Application Groups, Monthly report

The reports contain this information:

Resource group
- The resource group.

Resource name
- The resource name.

Avail in schedule (%)
- The availability for the resource, as a percentage of the number of scheduled hours. This is the percentage of schedule hours uptime. This is calculated as:
  100*UP_IN_SCHEDULE/SCHEDULE_HOURS.
Service Reports

**Avail obj (%)**  The minimum acceptable availability during the schedule hours, in percent.

**Stops in schedule**  The stops in the schedule. This is the number of down events during the schedule hours for the resource.

**Stops obj**  The maximum acceptable number of down events during the schedule hours for the resource. This is from DOWN_EVENTS_OBJ in NW_Resource table and SCHEDULE_DAYS in AVAILABILITY_M table. This is calculated as: DOWN_EVENTS_OBJ*SCHEDULE_DAYS.

**HT obj met (%)**  The percentage of transactions that met the host transit-time objective. This is calculated as: 100 − (HOST_OBJ_NOTMET/HOST_TRAN_TOTAL*100).

**HT obj (%)**  The minimum acceptable percentage of transactions that should meet the host transit-time objective. This is calculated as: HOST_OBJ_PCT_SUM/RECORDS_COLLECTED.
Chapter 9. Utilization reports (part 1 of 2)

This chapter and the following chapter (part 2) describe Tivoli Decision Support for z/OS utilization reports, which provide information on the utilization of network resources by specific components of your network.

In this chapter, utilization information is provided for:
- NCP
- Line
- PU
- NPM
- NetView Session Monitor
- Network Token-Ring Interface (NTRI)
- X.25
- Network Extension Option (NEO)

In the following chapter, utilization information is provided for:
- LAN segments and bridges
- ODLC
- Frame Relay
- VTAM
- SNMP routers

**NCP utilization reports**

These reports provide utilization information for NCPs in the network.

**NCP utilization worst-case reports**

The NCP utilization worst-case reports provide information about the NCPs with the highest CCU or buffer utilization.
Network NCP CCU Utilization, Worst-Case report

This report shows the NCPs with the highest CCU utilization, which is based on the number of measured intervals above the threshold value (70%) defined by the Network Performance feature. The report also shows buffer usage so you can check for buffer utilization problems.

The CCU util 70 (%) column shows the percentage of intervals where the CCU utilization is beyond the threshold. The NCPs are listed in descending order based on the values in this column.

This information identifies the report:

**Report ID**    NWNCP01

**Report group** Network NCP Utilization Reports

**Source**       NW_NCP_UTIL_D

**Attributes**   NW, Network, Performance, Utilization, Worst, NCP

**Variables**    From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>CCU util 70 (%)</th>
<th>CCU util avg (%)</th>
<th>NCP slowdown (%)</th>
<th>Buffer util avg (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH1NSA</td>
<td>3.50</td>
<td>43.67</td>
<td>0.00</td>
<td>2.57</td>
</tr>
<tr>
<td>GH1NSY</td>
<td>0.00</td>
<td>35.44</td>
<td>0.00</td>
<td>3.17</td>
</tr>
<tr>
<td>GH1NSK</td>
<td>0.00</td>
<td>35.02</td>
<td>0.00</td>
<td>1.69</td>
</tr>
<tr>
<td>GH1NSI</td>
<td>0.00</td>
<td>28.40</td>
<td>0.00</td>
<td>1.03</td>
</tr>
<tr>
<td>GHIVARC</td>
<td>0.00</td>
<td>27.97</td>
<td>0.00</td>
<td>0.91</td>
</tr>
</tbody>
</table>

**Figure 114. Example of a Network NCP CCU Utilization, Worst-Case report**

The report contains this information:

**NCP name**    The name of the NCP.

**CCU util 70 (%)**

The percentage of intervals when the CCU utilization exceeded the defined threshold value of 70%. This is calculated as:

\[
100 \times \text{CCU\_UTIL\_70PCT/RECORDS\_COLLECTED}.\]

**CCU util avg (%)**

The average CCU utilization, in percent. This is calculated as:

\[
100 \times (\text{MEASURED\_HOURS} - \text{FREE\_CYCLE\_HOURS})/\text{MEASURED\_HOURS}.\]

**NCP slowdown (%)**

The percentage of the time the NCP was in slowdown state. This is calculated as:

\[
100 \times \text{NCP\_SLOWDOWN\_HOURS/MEASURED\_HOURS}.\]

**Buffer util avg (%)**

The average buffer utilization, in percent. This is calculated as:

\[
100 \times \text{BFR\_USED\_COUNT/BFR\_TOTAL\_COUNT}.\]
Network NCP Buffer Utilization, Worst-Case report

This report shows the NCPs with the highest buffer utilization, which is based on the number of measured intervals above the threshold value (62.5% of the BPOOL value) defined by the Network Performance feature.

The Buffer exception (%) column shows the number of intervals when buffer utilization is above the defined threshold value. The NCPs are listed in descending order based on the values in this column.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNCP02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NCP Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_NCP_UTIL_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Worst, NCP</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NCP Name</th>
<th>Buffer exception (%)</th>
<th>NCP slowdown (%)</th>
<th>Buffer util avg (%)</th>
<th>CCU util avg (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHINSY</td>
<td>0.00</td>
<td>0.00</td>
<td>3.17</td>
<td>35.44</td>
</tr>
<tr>
<td>GHINSA</td>
<td>0.00</td>
<td>0.00</td>
<td>2.57</td>
<td>43.67</td>
</tr>
<tr>
<td>GHINSK</td>
<td>0.00</td>
<td>0.00</td>
<td>1.69</td>
<td>35.02</td>
</tr>
<tr>
<td>GHINSI</td>
<td>0.00</td>
<td>0.00</td>
<td>1.03</td>
<td>28.40</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNCP02

Figure 115. Example of a Network NCP Buffer Utilization, Worst-Case report

The report contains this information:

NCP name

The name of the NCP.

Buffer exception (%)

The NCP buffer utilization exception, in percent. This is the percentage of intervals when the buffer utilization is above the defined threshold value of 62.5% of the BFR_BPOOL value. This is calculated as: \(100 \times \frac{\text{BFR\_EXCEPTION}}{\text{RECORDS\_COLLECTED}}\).

NCP slowdown (%)

The percentage of the time the NCP was in slowdown state. This is calculated as: \(100 \times \frac{\text{NCP\_SLOWDOWN\_HOURS}}{\text{MEASURED\_HOURS}}\).

Buffer util avg (%)

The average buffer utilization, in percent. This is calculated as: \(100 \times \frac{\text{BFR\_USED\_COUNT}}{\text{BFR\_TOTAL\_COUNT}}\).

CCU util avg (%)

The average CCU utilization, in percent. This is calculated as: \(100 \times \frac{\text{MEASURED\_HOURS} - \text{FREE\_CYCLE\_HOURS}}{\text{MEASURED\_HOURS}}\).
NCP utilization trend reports

The NCP utilization trend reports provide trend information for NCP CCU or buffer utilization and distribution over a specified day, week, or number of weeks.

Network NCP CCU Utilization, Hourly/Daily/Weekly Trend report

These graphic reports show the minimum, maximum, and average CCU utilization for a selected communication controller. The reports also show the threshold value so you can determine whether future CCU utilization will exceed the threshold level.

This information identifies the reports:

- **Report ID**
  - NWNCP03 (hourly), NWNCP04 (daily), NWNCP05 (weekly)

- **Report group**
  - Network NCP Utilization Reports

- **Source**
  - NW_NCP_UTIL_H (hourly report), NW_NCP_UTIL_D (daily report) NW_NCP_UTIL_W (weekly report)

- **Attributes**
  - NW, Network, Performance, Utilization, Trend, NCP, Hourly/Daily/Weekly

- **Variables**
  - Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

- **Y-axis**
  - The y-axis (vertical) shows percentages from 0 to 100%.

- **X-axis**
  - The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
    - Hour—the hour of the day
    - Day—the day of the week
    - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**CCU thresh (%)**
- The CCU utilization threshold, in percent.

**CCU max (%)**
- The maximum CCU utilization, in percent.

**CCU avg (%)**
- The average CCU utilization, in percent. This is calculated as:
  \[ 100 \times \frac{\text{MEASURED_HOURS} - \text{FREE_CYCLE_HOURS}}{\text{MEASURED_HOURS}}. \]

**CCU min (%)**
- The minimum CCU utilization, in percent.

*Figure 116. Example of a Network NCP CCU Utilization, Hourly Trend report*
Utilization Reports (Part 1)

**Network NCP Buffer Utilization, Hourly/Daily/Weekly Trend report**

These graphic reports show the minimum, maximum, and average buffer utilization for a selected communication controller. The reports also show the threshold value and the inverse slowdown point so you can determine whether future buffer utilization will exceed the threshold level and slowdown point.

This information identifies the reports:

**Report ID** NWNCP06 (hourly), NWNCP07 (daily), NWNCP08 (weekly)

**Report group** Network NCP Utilization Reports

**Source** NW_NCP_UTIL_H (hourly report), NW_NCP_UTIL_D (daily report), NW_NCP_UTIL_W (weekly report)

**Attributes** NW, Network, Performance, Utilization, Trend, NCP, Hourly/Daily/Weekly

**Variables** Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

**Y-axis** The y-axis (vertical) shows percentages from 0 to 100%.

**X-axis** The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Bfr max (%)**  The maximum number of buffers used, in percent.

**Bfr slow (%)**  The inverse slowdown buffer size. This is expressed as a percentage of the maximum number of available NCP buffers. This is calculated as: \(100 \times \text{INVERSE_SLOWDOWN}/\text{BFR_MAX_COUNT}\).

**Bfr thresh (%)**  The buffer utilization threshold, in percent. NCP starts to slow down the traffic with the lowest transmission priority when the number of buffers used for the boundary function exceeds this threshold (62.5\% of the BFR_BPOOL).

**Bfr avg (%)**  The average number of buffers used, in percent. This is calculated as: \(100 \times \text{BFR_USED_COUNT}/\text{BFR_TOTAL_COUNT}\).

**Bfr min (%)**  The minimum number of buffers used, in percent.

---

*Figure 117. Example of a Network NCP Buffer Utilization, Hourly Trend report*
NCP utilization detail reports

The NCP utilization detail reports provide detailed information on NCP CCU and buffer utilization and distribution.

Network NCP CCU Utilization, Hourly/Daily Detail report

These reports show detailed information on CCU utilization for a selected NCP.

This information identifies the reports:

- **Report ID**: NWNCP10 (hourly), NWNCP11 (daily)
- **Report group**: Network NCP Utilization Reports
- **Source**: NW_NCP_UTIL_H (hourly report), NW_NCP_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, NCP, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, NCP_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>CCU average (%)</th>
<th>CCU util min (%)</th>
<th>CCU util max (%)</th>
<th>CCU thresh (%)</th>
<th>CCU util 70 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>54.07</td>
<td>49.10</td>
<td>57.57</td>
<td>70.00</td>
<td>0.00</td>
</tr>
<tr>
<td>9</td>
<td>58.39</td>
<td>55.04</td>
<td>60.68</td>
<td>70.00</td>
<td>0.00</td>
</tr>
<tr>
<td>10</td>
<td>63.34</td>
<td>63.15</td>
<td>63.48</td>
<td>70.00</td>
<td>0.00</td>
</tr>
<tr>
<td>11</td>
<td>56.62</td>
<td>47.77</td>
<td>62.33</td>
<td>70.00</td>
<td>0.00</td>
</tr>
<tr>
<td>12</td>
<td>55.55</td>
<td>45.77</td>
<td>67.89</td>
<td>70.00</td>
<td>0.00</td>
</tr>
<tr>
<td>13</td>
<td>61.98</td>
<td>57.63</td>
<td>65.50</td>
<td>70.00</td>
<td>0.00</td>
</tr>
<tr>
<td>14</td>
<td>59.87</td>
<td>54.47</td>
<td>64.63</td>
<td>70.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Figure 118. Example of a Network NCP CCU Utilization, Hourly Detail report

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **CCU average (%)**: The average CCU utilization, in percent. This is calculated as:
  \[100 \times \frac{\text{MEASURED_HOURS} - \text{FREE_CYCLE_HOURS}}{\text{MEASURED_HOURS}}\]
- **CCU util min (%)**: The minimum CCU utilization, in percent. This is the lowest value measured during an interval for the time period.
- **CCU util max (%)**: The maximum CCU utilization, in percent. This is the highest value measured during an interval for the time period.
- **CCU thresh (%)**: The CCU threshold value, in percent.
- **CCU util 70 (%)**: The percentage of intervals when the CCU utilization exceeded the
defined threshold value of 70%. This is calculated as:
100*CCU_UTIL_70PCT/RECORDS_COLLECTED.
Network NCP CCU Distribution, Hourly/Daily Detail report

These reports show the CCU utilization distribution for a selected NCP. Counters representing intervals of 10% show the utilization distribution.

This information identifies the reports:

**Report ID** NWNCP12 (hourly), NWNCP13 (daily)

**Report group** Network NCP Utilization Reports

**Source** NW_NCP_UTIL_H (hourly report), NW_NCP_UTIL_D (daily report)

**Attributes** NW, Network, Performance, Utilization, Detail, NCP, Hourly/Daily

**Variables** Date (required for hourly report), From_date and To_date for daily report, NCP_name

---

<table>
<thead>
<tr>
<th>Hour</th>
<th>CCU util &gt;=20 (%)</th>
<th>CCU util &gt;=30 (%)</th>
<th>CCU util &gt;=40 (%)</th>
<th>CCU util &gt;=50 (%)</th>
<th>CCU util &gt;=60 (%)</th>
<th>CCU util &gt;=70 (%)</th>
<th>CCU util &gt;=80 (%)</th>
<th>CCU util &gt;=90 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>57.6</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>66.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>9</td>
<td>60.7</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>25.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>10</td>
<td>63.5</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>11</td>
<td>62.3</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>75.0</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>66.6</td>
<td>33.3</td>
<td>0.0</td>
</tr>
<tr>
<td>13</td>
<td>65.5</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>75.0</td>
<td>0.0</td>
</tr>
<tr>
<td>14</td>
<td>64.6</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>50.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

---

**Figure 119. Example of a Network NCP CCU Distribution, Hourly Detail report**

The reports contain this information:

**Hour** The hour when the record was written to SMF (hourly report).

**Date** The date when the record was written to SMF (daily report).

**CCU util max (%)** The maximum CCU utilization, in percent. This is the highest value measured during an interval for the time period.

**CCU util >=20 (%)–CCU util >=90 (%)** The CCU utilization percentages. Each column lists the percentage of intervals whose utilization is greater than the listed value. This is calculated as: 100*CCU_UTIL_xxPCT/RECORDS_COLLECTED, where xx ranges from 20 to 90 in increments of 10.
Network NCP Buffer Utilization, Hourly/Daily Detail report

These reports show detailed information on buffer utilization for a selected NCP.

This information identifies the reports:

- **Report ID**: NWNCP14 (hourly), NWNCP15 (daily)
- **Report group**: Network NCP Utilization Reports
- **Source**: NW_NCP_UTIL_H (hourly report), NW_NCP_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, NCP, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, NCP_name

Network NCP Buffer Utilization, Hourly Detail
Date: 2000-01-28
NCP name: 'GH1NSA'

<table>
<thead>
<tr>
<th>Hour (cnt)</th>
<th>Bfr avg (cnt)</th>
<th>Bfr max (cnt)</th>
<th>Bfr thresh (cnt)</th>
<th>Bfr avg (%)</th>
<th>Bfr max (%)</th>
<th>Bfr except (%)</th>
<th>Bfr thresh (%)</th>
<th>Bfr slow (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 306</td>
<td>1037 3454</td>
<td>2.40 8.20</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>9 303</td>
<td>939 3454</td>
<td>2.40 7.40</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>10 596</td>
<td>1183 3454</td>
<td>4.70 9.40</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>11 358</td>
<td>1108 3454</td>
<td>2.80 8.00</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>12 319</td>
<td>1121 3454</td>
<td>2.50 8.00</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>13 337</td>
<td>1043 3454</td>
<td>2.70 8.30</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>14 324</td>
<td>1224 3454</td>
<td>2.60 9.70</td>
<td>0.00 27.30</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Figure 120. Example of a Network NCP Buffer Utilization, Hourly Detail report

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Bfr avg (cnt)**: The average number of buffers used. This is calculated as: BFR_USED_COUNT/RECORDS_COLLECTED.
- **Bfr max (cnt)**: The maximum number of buffers used. This is the highest value measured during an interval.
- **Bfr thresh (cnt)**: The buffer threshold. This is the number of buffers defined as threshold.
- **Bfr avg (%)**: The average buffer utilization, in percent. This is calculated as: 100*BFR_USED_COUNT/BFR_TOTAL_COUNT.
- **Bfr max (%)**: The maximum buffer utilization, in percent.
- **Bfr except (%)**: The NCP buffer utilization exception, in percent. This is the percentage of intervals when the buffer utilization was above the defined threshold value of 62.5% of the BFR_BPOOL. This is calculated as: 100*BFR_EXCEPTION/RECORDS_COLLECTED.
- **Bfr thresh (%)**: The calculated buffer threshold value, as a percentage of the total number of buffers.
- **Bfr slow (%)**: The percentage of the time the NCP was in slow-down state.
is calculated as:
100*NCP_SLOWDOWN_HOURS/MEASURED_HOURS.
Network NCP Buffer Distribution, Hourly/Daily Detail report

These reports show the buffer utilization distribution for a selected NCP. Counters representing intervals of 10% show the utilization distribution.

This information identifies the reports:

**Report ID**  NWNCP16 (hourly), NWNCP17 (daily)

**Report group**  Network NCP Utilization Reports

**Source**  NW_NCP_UTIL_H (hourly report), NW_NCP_UTIL_D (daily report)

**Attributes**  NW, Network, Performance, Utilization, Detail, NCP, Hourly/Daily

**Variables**  Date (required for hourly report), From_date and To_date for daily report, NCP_name

<table>
<thead>
<tr>
<th>Date: 2000-01-28</th>
<th>NCP name: 'GH1NSA'</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bfr thresh (%)</strong></td>
<td><strong>Bfr max (%)</strong></td>
</tr>
<tr>
<td>8</td>
<td>27.3</td>
</tr>
<tr>
<td>9</td>
<td>27.3</td>
</tr>
<tr>
<td>10</td>
<td>27.3</td>
</tr>
<tr>
<td>11</td>
<td>27.3</td>
</tr>
<tr>
<td>12</td>
<td>27.3</td>
</tr>
<tr>
<td>13</td>
<td>27.3</td>
</tr>
<tr>
<td>14</td>
<td>27.3</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNCP16

**Figure 121. Example of a Network NCP Buffer Distribution, Hourly Detail report**

The reports contain this information:

**Hour**  The hour when the record was written to SMF (hourly report).

**Date**  The date when the record was written to SMF (daily report).

**Bfr thresh (%)**  The calculated buffer threshold value, as percentage of the total number of buffers.

**Bfr max (%)**  The maximum buffer utilization, in percent.

**Bfr except (%)**  The NCP buffer utilization exception, in percent. This is the percentage of intervals when the buffer utilization was above the defined threshold value of 62.5% of the BFR_BPOOL. This is calculated as: 100*BFR_EXCEPTION/RECORDS_COLLECTED.

**Bfr util >=20 (%)**–**Bfr util >=80 (%)**  The buffer utilization percentages. Each column lists the percentage of intervals whose utilization is greater than the listed value. This is calculated as: 100*BFR_UTIL_xxPCT/RECORDS_COLLECTED, where xx ranges from 20 to 80 in increments of 10.
Line utilization reports

These reports provide utilization information for network lines.

Line utilization worst-case reports

The line utilization worst-case reports show information about lines with the worst utilization or capacity.

Network Line Utilization, Worst-Case report

This report shows the lines with the highest number of intervals where line utilization is above the maximum acceptable line threshold value. The report shows information about up to 15 lines.

The Threshold exceeds column shows the percentage of intervals where the line utilization is above the defined line threshold (Load threshold (%)). A value greater than zero in the Threshold exceeds (%) column means that there were intervals where the measured utilization was above the acceptable threshold value for the line type. A high value can indicate unacceptable service (response time).

This information identifies the report:

- **Report ID**: NWLINE01
- **Report group**: Network Line Utilization Reports
- **Source**: NW_LINE_UTIL_D
- **Attributes**: NW, Network, Performance, Utilization, Worst, Line
- **Variables**: From_date, To_date

### Network Line Utilization, Worst Case

From date: '2000-01-28' To date: '2000-01-29'

<table>
<thead>
<tr>
<th>Line name</th>
<th>Protocol</th>
<th>Duplex</th>
<th>Line speed (bps)</th>
<th>Threshold exceeds (%)</th>
<th>Load threshold (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNA114</td>
<td>SDLC</td>
<td>HALF</td>
<td>9600</td>
<td>63.7</td>
<td>50.0</td>
</tr>
<tr>
<td>LN1072</td>
<td>SDLC</td>
<td>FULL</td>
<td>64000</td>
<td>29.1</td>
<td>50.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLINE01

**Figure 122. Example of a Network Line Utilization, Worst-Case report**

The report contains this information:

- **Line name**: The name of the line for the secondary LU. This is the name of the VTAM resource.
- **Protocol**: The type of protocol for the line.
- **Duplex**: The duplex mode for the line, either half or full. This feature defines the line as duplex when the NCP reports the speed on both transmit and receive lines.
- **Line speed (bps)**: The line speed, in bits per second. This is the transmission speed.

**Note**: A value of 0 in this column means that NPM is not aware of the line speed. Because NPM obtains this information from the VTAMLST, make sure that the SPEED operand in the
VTAM resource definition contains a correct value. Otherwise, line utilization cannot be correctly calculated.

**Threshold exceeds (%)**

The percentage of intervals when the line utilization exceeded the maximum acceptable load value. This is calculated as:

$$100 \times \text{THRESHOLD_EXCEEDS}/\text{RECORDS_COLLECTED}.$$ 

**Load threshold (%)**

The maximum acceptable load value for the line, in percent.
### Network Line Lost Capacity, Worst-Case report

This report shows up to 15 lines with the highest lost capacity because of errors.

If the value of the Lost line capacity column is too high, it indicates reduced line capacity because of data retransmission.

This information identifies the report:

- **Report ID**: NWLINE02
- **Report group**: Network Line Utilization Reports
- **Source**: NW_LINE_UTIL_D
- **Attributes**: NW, Network, Performance, Utilization, Worst, Line
- **Variables**: From_date, To_date

#### Variables

<table>
<thead>
<tr>
<th>Line name</th>
<th>Protocol</th>
<th>Duplex</th>
<th>Line speed (bps)</th>
<th>Lost line capacity (%)</th>
<th>Errors avg (hour)</th>
<th>Char retransmit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNA114</td>
<td>SDLC</td>
<td>HALF</td>
<td>9600</td>
<td>0.50</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>LNA124</td>
<td>SDLC</td>
<td>FULL</td>
<td>19200</td>
<td>0.30</td>
<td>0.02</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### Figure 123. Example of a Network Line Lost Capacity, Worst-Case report

The report contains this information:

- **Line name**: The name of the line for the secondary LU. This is the name of the VTAM resource.
- **Protocol**: The type of protocol for the line.
- **Duplex**: The duplex mode for the line, either half or full. This feature defines the line as full-duplex when the NCP reports the speed on both transmit and receive lines.
- **Line speed (bps)**: The line speed, in bits per second. This is the transmission speed.
  - **Note**: A speed value of 0 in this column means that NPM is not aware of the line speed. Because NPM obtains this information from the VTAMLST, make sure that the SPEED operand of your VTAMLST contains a correct value. Otherwise, line utilization cannot be correctly calculated.
- **Lost line capacity (%)**: The line capacity lost because of retransmissions, in percent. This is calculated as:
  \[100 \times (\text{CHAR_RETRANSMIT}/1000000)/\text{LINE_CAPACITY} \]
- **Errors avg (hour)**: The average number of errors counted per hour. This is calculated as: \(\text{ERRORS_TOTAL}/\text{MEASURED_HOURS} \)
- **Char retransmit (%)**: The number of characters retransmitted, as a percentage of the
total number of characters transmitted. This is calculated as: 
$100 \times (\text{CHAR\_RETRANSMIT}/1\ 000\ 000)/\text{CHAR\_SENT\_MB}$. 

Utilization Reports (Part 1)

Line utilization trend reports

Line utilization trend graphic reports show utilization trends for full-duplex or half-duplex lines.

Network Line (HDX) Utilization, Hourly/Daily/Weekly Trend report

These graphic reports show the average line utilization for a selected half-duplex line. The reports also show the threshold value so you can determine whether future line utilization will exceed the threshold level and reduce response times.

This information identifies the reports:

- **Report ID**: NWLINE03 (hourly), NWLINE04 (daily), NWLINE05 (weekly)
- **Report group**: Network Line Utilization Reports
- **Source**: NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report), NW_LINE_UTIL_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Trend, Line, Hourly/Daily/Weekly
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name
- **Y-axis**: The y-axis (vertical) shows percentages from 0 to 100%.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Load threshold (%)**

The line load threshold, in percent. This is the maximum acceptable load value for this line.

**HDX line util avg (%)**

The average line utilization for a half-duplex line, in percent. This is calculated as:

\[
100 \times \frac{\text{CHAR_RECEIVED_MB} + \text{CHAR_SENT_MB}}{\text{LINE_CAPACITY}}
\]

**Threshold exceeds (%)**

The percentage of intervals when the line utilization was above the maximum acceptable load value. This is calculated as:

\[
100 \times \frac{\text{THRESHOLD_EXCEEDS}}{\text{RECORDS_COLLECTED}}
\]
Network Line (FDX) Utilization, Hourly/Daily/Weekly Trend report

These graphic reports show the average line utilization for a selected full-duplex line. The reports also show the threshold value so you can determine whether future line utilization will exceed the threshold level and reduce response times.

This information identifies the reports:

**Report ID**
- NWLINE06 (hourly), NWLINE07 (daily), NWLINE08 (weekly)

**Report group**
- Network Line Utilization Reports

**Source**
- NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report), NW_LINE_UTIL_W (weekly report)

**Attributes**
- NW, Network, Performance, Utilization, Trend, Line, Hourly/Daily/Weekly

**Variables**
- Date (required for hourly report), Date in week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**
- The y-axis (vertical) shows percentages from 0 to 100%.

**X-axis**
- The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)

---

*Figure 125. Example of a Network Line (FDX) Utilization, Hourly Trend report*

The reports contain this information:
Load threshold (%)  
The line load threshold, in percent. This is the maximum 
acceptable load value for this line.

Xmit line util avg (%)  
The average line utilization for the transmit line of a duplex line, 
in percent. This is calculated as: 
100*CHAR_SENT_MB/LINE_CAPACITY.

Rcv line util avg (%)  
The average line utilization for the receive line of a duplex line, in 
percent. This is calculated as: 
100*CHAR_RECEIVED_MB/LINE_CAPACITY.

Threshold exceeds (%)  
The percentage of intervals when the line utilization was above the 
maximum acceptable load value. This applies to the receive line, 
the send line, or both. This is calculated as: 
100*THRESHOLD_EXCEEDS/RECORDS_COLLECTED.
Line utilization detail reports

The line utilization detail reports provide comprehensive information about full-duplex and half-duplex line utilization and distribution.

Network Line (HDX) Utilization, Hourly/Daily Detail report

These reports show detailed information on line utilization for a selected half-duplex line.

This information identifies the reports:

**Report ID**  NWLINE10 (hourly), NWLINE11 (daily)

**Report group**  Network Line Utilization Reports

**Source**  NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report)

**Attributes**  NW, Network, Performance, Utilization, Detail, Line, Hourly/Daily

**Variables**  Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Line speed (bps)</th>
<th>HDX util avg (%)</th>
<th>HDX util max (%)</th>
<th>Lost capa-ity (%)</th>
<th>Errors exceed Thresh (%)</th>
<th>Outb queue avg (PIU)</th>
<th>Outb queue max (PIU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>9600</td>
<td>41.0</td>
<td>70.0</td>
<td>0.0</td>
<td>20.0</td>
<td>0.0</td>
</tr>
<tr>
<td>12</td>
<td>9600</td>
<td>17.0</td>
<td>29.0</td>
<td>0.0</td>
<td>20.0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Figure 126. Example of a Network Line (HDX) Utilization, Hourly Detail report

The reports contain this information:

**Hour**  The hour of the day (hourly report).

**Date**  The date when the record was written to SMF (daily report).

**Line speed (bps)**  The line speed, in bits per second. This is the transmission speed.

Note: A speed value of 0 in this column means that NPM is not aware of the line speed. Because NPM obtains line speed information from the VTAMLST, make sure that the SPEED operand of your VTAMLST contains a correct value. Otherwise, line utilization cannot be correctly calculated.

**HDX util avg (%)**  The average line utilization for the line, in percent. This is calculated as: 100*(CHAR_RECEIVED_MB + CHAR_SENT_MB)/LINE_CAPACITY.

**HDX util max (%)**  The maximum line utilization for the line, in percent. This is the highest value measured during an interval for the time period.

**Lost capacity (%)**  The line capacity lost because of retransmissions, in percent. This is
calculated as:
100*(CHAR_RETRANSMIT/1 000 000)/LINE_CAPACITY.

**Errors avg (hour)**
The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.

**Thresh exceed (%)**
The percentage of intervals when the line utilization was above the maximum acceptable load value. This is calculated as:
100*THRESHOLD_EXCEEDS/RECORDS_COLLECTED.

**Outb queue avg (PIU)**
The average outbound queue length for the line, in path information units. This is calculated as:
OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.

**Outb queue max (PIU)**
The maximum outbound queue length for the line, in path information units.
Utilization Reports (Part 1)

Network Line (HDX) Distribution, Hourly/Daily Detail report

These reports show the line utilization distribution for a selected half-duplex line. Counters representing intervals of 10% show the utilization distribution.

This information identifies the reports:

**Report ID**
NWLINE12 (hourly), NWLINE13 (daily)

**Report group**
Network Line Utilization Reports

**Source**
NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report)

**Attributes**
NW, Network, Performance, Utilization, Detail, Line, Hourly/Daily

**Variables**
Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>HDX util max</th>
<th>HDX util &gt;=20</th>
<th>HDX util &gt;=30</th>
<th>HDX util &gt;=40</th>
<th>HDX util &gt;=50</th>
<th>HDX util &gt;=60</th>
<th>HDX util &gt;=70</th>
<th>HDX util &gt;=80</th>
<th>HDX util &gt;=90</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>68.0</td>
<td>75.0</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>65.0</td>
<td>65.0</td>
<td>40.0</td>
<td>40.0</td>
<td>30.0</td>
<td>5.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 127. Example of a Network Line (HDX) Distribution, Hourly Detail report

The reports contain this information:

**Hour**
The hour of the day (hourly report).

**Date**
The date when the record was written to the SMF (daily report).

**HDX util max (%)**
The maximum line utilization for the line, in percent. This is the highest value measured during an interval for the time period.

**HDX util >=20 (%)–HDX util >=90 (%)**
The line utilization percentages. Each column lists the percentage of intervals whose utilization is greater than the listed value. This is calculated as: \(100 \times \text{HDX\_UTIL\_xxPCT/RECORDS\_COLLECTED} \), where \(xx\) ranges from 20 to 90 in increments of 10.
**Network Line (FDX) Utilization, Hourly/Daily Detail report**

These reports show detailed information on line utilization for a selected duplex line.

This information identifies the reports:

**Report ID** NWLINE14 (hourly), NWLINE15 (daily)

**Report group** Network Line Utilization Reports

**Source** NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report)

**Attributes** NW, Network, Performance, Utilization, Detail, Line, Hourly/Daily

**Variables** Date (required for hourly report), From_date and To_date for daily report, Line_name

---

**Network Line (FDX) Utilization, Hourly Detail**

*Date: 2000-01-28*

*Line name: 'LN1072'*

<table>
<thead>
<tr>
<th>Hour</th>
<th>Xmit speed (bps)</th>
<th>Rcv speed (bps)</th>
<th>Xmit util avg (%)</th>
<th>Rcv util avg (%)</th>
<th>Xmit util max (%)</th>
<th>Rcv util max (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>64000</td>
<td>66.0</td>
<td>66.0</td>
<td>59.9</td>
<td>87.2</td>
<td>0.0</td>
</tr>
<tr>
<td>12</td>
<td>64000</td>
<td>66.0</td>
<td>66.0</td>
<td>58.0</td>
<td>66.2</td>
<td>0.0</td>
</tr>
</tbody>
</table>

---

**Figure 128. Example of a Network Line (FDX) Utilization, Hourly Detail report**

The reports contain this information:

**Hour** The hour of the day (hourly report).

**Date** The date when the record was written to SMF (daily report).

**Line speed (bps)**

The line speed, in bits per second. This is the transmission speed.

**Note:** A speed value of 0 in this column means that NPM is not aware of the line speed. Because NPM obtains line speed information from the VTAMLST, make sure that the SPEED operand of your VTAMLST contains a correct value. Otherwise, line utilization cannot be correctly calculated.

**Xmit util avg (%)**

The average line utilization for the transmit line, in percent.

**Rcv util avg (%)**

The average line utilization for the receive line, in percent.

**Xmit util max (%)**

The maximum line utilization for the transmit line, in percent. This is the highest value measured during an interval for the time period.

**Rcv util max (%)**

The maximum line utilization for the receive line, in percent. This is the highest value measured during an interval for the time period.
Utilization Reports (Part 1)

Lost capacity (%)
The line capacity lost because of retransmissions, in percent. This is calculated as:
100*(CHAR_RETRANSMIT/1 000 000)/LINE_CAPACITY.

Errors avg (hour)
The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.

Thresh exceed (%)
The percentage of intervals when the line utilization was above the maximum acceptable load value. This is calculated as:
100*THRESHOLD_EXCEEDS/RECORDS_COLLECTED.

Outb queue avg (PIU)
The average outbound queue length for the line, in path information units. This is calculated as:
OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.
Network Line (FDX) Xmit Distribution, Hourly/Daily Detail report

These reports show the line utilization distribution for the transmit line of a selected duplex line. Counters representing intervals of 10% show the utilization distribution.

This information identifies the reports:

- **Report ID**: NWLINE16 (hourly), NWLINE17 (daily)
- **Report group**: Network Line Utilization Reports
- **Source**: NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, Line, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Line_name

---

<table>
<thead>
<tr>
<th>Hour</th>
<th>Xmit util %</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>59.9</td>
</tr>
<tr>
<td>12</td>
<td>58.0</td>
</tr>
<tr>
<td>13</td>
<td>100.0</td>
</tr>
<tr>
<td>14</td>
<td>75.0</td>
</tr>
<tr>
<td>15</td>
<td>50.0</td>
</tr>
<tr>
<td>16</td>
<td>50.0</td>
</tr>
<tr>
<td>17</td>
<td>0.0</td>
</tr>
<tr>
<td>18</td>
<td>0.0</td>
</tr>
<tr>
<td>19</td>
<td>0.0</td>
</tr>
<tr>
<td>20</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLINE16

---

*Figure 129. Example of a Network Line (FDX) Xmit Distribution, Hourly Detail report*

The reports contain this information:

- **Hour**: The hour of the day (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Xmit util max (%)**: The maximum line utilization for the transmit line, in percent. This is the highest value measured during an interval for the time period.
- **Xmit util >=20–Xmit util >=90 (%)**: The line utilization percentages. Each column lists the percentage of intervals whose utilization is greater than the listed value. This is calculated as: 100*TL_UTIL_xxPCT/RECORDS_COLLECTED, where xx ranges from 20 to 90 in increments of 10.
Network Line (FDX) Rcv Distribution, Hourly/Daily Detail report

These reports show the line utilization distribution for the receive line of a selected duplex line. Counters representing intervals of 10% show the utilization distribution.

This information identifies the reports:

**Report ID** NWLINE18 (hourly), NWLINE19 (daily)

**Report group** Network Line Utilization Reports

**Source** NW_LINE_UTIL_H (hourly report), NW_LINE_UTIL_D (daily report)

**Attributes** NW, Network, Performance, Utilization, Detail, Line, Hourly/Daily

**Variables** Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Date</th>
<th>Rcv util max (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
</tr>
<tr>
<td>1995-01-28</td>
<td>75</td>
</tr>
<tr>
<td>1995-01-29</td>
<td>65</td>
</tr>
</tbody>
</table>

**Figure 130. Example of a Network Line (FDX) Rcv Distribution, Daily Detail report**

The reports contain this information:

**Hour** The hour of the day (hourly report).

**Date** The date when the record was written to SMF (daily report).

**Rcv util max (%)**

The maximum line utilization for the receive line, in percent. This is the highest value measured during an interval for the time period.

**Rcv util >=20 (%)–Rcv util >=90 (%)**

The line utilization percentages. Each column lists the percentage of intervals whose utilization is greater than the listed value. This is calculated as: 100*RL_UTIL_xxPCT/RECORDS_COLLECTED, where xx ranges from 20 to 90 in increments of 10.
PU utilization reports

These reports provide utilization information for PUs in the network.

**PU utilization overview reports**

The PU utilization overview report shows the PU utilization for a specified line.

**Network PU Utilization, Hourly/Daily/Weekly Overview report**

These overview reports show the traffic for all PUs attached to a selected line.

This information identifies the reports:

- **Report ID**
  - NWPU01 (hourly), NWPU02 (daily), NWPU03 (weekly)

- **Report group**
  - Network PU Utilization Reports

- **Source**
  - NW PU_UTIL_H (hourly report), NW PU_UTIL_D (daily report), NW PU_UTIL_W (weekly report)

- **Attributes**
  - NW, Network, Performance, Utilization, Overview, PU, Hourly/Daily/Weekly

- **Variables**
  - Date (required for hourly report), From_date and To_date for daily report, From_date_in_week and To_date_in_week (required for weekly report), Line_name

```plaintext
Network PU Utilization, Hourly Overview
Date: 1999-12-07
Line name: 'GH1LA076'

<table>
<thead>
<tr>
<th>Hour</th>
<th>PU name</th>
<th>Char total (MB)</th>
<th>Char sent (MB)</th>
<th>Char received (MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>GH1XXXH1</td>
<td>0.46</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td>22</td>
<td>GH1XXXK1</td>
<td>0.36</td>
<td>0.20</td>
<td>0.16</td>
</tr>
</tbody>
</table>
```

Tivoli Decision Support for z/OS Report: NWPU01

*Figure 131. Example of a Network PU Utilization, Hourly Overview report*

The reports contain this information:

- **Hour** The hour when the record was written to SMF (hourly report).
- **Date** The date when the record was written to SMF (daily report).
- **Week start date** The start date of the week. Weeks start on Monday (weekly report).
- **PU name** Name of the physical unit.
- **Char total (MB)** The total number of characters sent and received by the PU, in megabytes. This is calculated as: CHAR_RECEIVED_MB + CHAR_SENT_MB.
Utilization Reports (Part 1)

**Char sent (MB)**

The total number of characters sent by the PU, in megabytes.

**Char received (MB)**

The total number of characters received by the PU, in megabytes.
PU utilization detail reports

The PU utilization detail report provides comprehensive utilization information for a specified PU.

Network PU Utilization, Hourly/Daily Detail report

These reports show the traffic and average line utilization for PUs attached to a selected line. These reports are useful when you must determine how to best balance line utilization when splitting an overused multidrop line into two new lines.

This information identifies the reports:

- **Report ID**: NWPU04 (hourly), NWPU05 (daily)
- **Report group**: Network PU Utilization Reports
- **Source**: NW_PU_UTIL_H (hourly report), NW_PU_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, PU, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Line_name

### Network PU Utilization, Hourly Detail

Date: 1999-12-07
Line name: 'GHIL4076'

<table>
<thead>
<tr>
<th>Hour</th>
<th>PU name</th>
<th>Line speed (bps)</th>
<th>Line capacity (MB)</th>
<th>Char total (MB)</th>
<th>Char sent (MB)</th>
<th>Char received (MB)</th>
<th>Util avg (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>GHXX001</td>
<td>56000</td>
<td>40.33</td>
<td>0.346</td>
<td>0.173</td>
<td>0.173</td>
<td>0.9</td>
</tr>
<tr>
<td>21</td>
<td>GHXX001</td>
<td>56000</td>
<td>30.85</td>
<td>0.248</td>
<td>0.133</td>
<td>0.133</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Figure 132. Example of a Network PU Utilization, Hourly Detail report

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **PU name**: Name of PU. This is the PU of the secondary resource.
- **Line speed (bps)**: Speed of the transmission line, in bits per second.
- **Line capacity (MB)**: Line capacity per measurement interval, in megabytes.
- **Char total (MB)**: The total number of characters sent and received by the PU per measurement interval, in megabytes. This is calculated as: CHAR_RECEIVED_MB + CHAR_SENT_MB.
- **Char sent (MB)**: The total number of characters sent by the PU per measurement interval, in megabytes.
- **Char received (MB)**: The total number of characters received by the PU per measurement interval, in megabytes.
**Utilization Reports (Part 1)**

**Util avg (%)**  
The average line utilization for the PU, in percent. This is calculated as:  
\[100 \times \frac{\text{CHAR_RECEIVED_MB} + \text{CHAR_SENT_MB}}{\text{LINE_CAPACITY}}.\]
NPM internal utilization reports

These reports provide utilization information for the NetView Performance Monitor.

NPM internal utilization worst-case reports

The NPM internal utilization worst-case reports provide information on NPMs that have the highest buffer usage or the highest number of lost records.

Network NPM Buffer Usage, Worst-Case report

This report shows the NPMs with the highest maximum buffer utilization in one of the buffer pools.

The Bfr util max % column shows the highest buffer usage in a buffer pool. This report can show up to 15 NPM resources listed in descending order based on the Bfr util max % column.

This information identifies the report:

Report ID NWNPM01
Report group Network NPM Utilization Reports
Source NW_NPM_UTIL_D
Attributes Network, NW, Performance, Utilization, Worst, NPM, Internal, SW, Software, Usage
Variables From_date, To_date

Figure 133. Example of a Network NPM Buffer Usage, Worst-Case report

The report contains this information:

Resource name
The name of the resource. This is the SMF system ID concatenated with the subsystem ID.

Bfr seg util max %
The maximum buffer segment utilization, in percent.

The buffer segments are used by NPM for network data collection. If the buffer segment pool is empty, NPM abends. The size of this buffer pool is specified in the BUFSEGS parameter of the BUFFER initialization statement in NPM.

QCB used max %
The maximum queue control block utilization, in percent.
The queue control blocks are used by the NPM dispatcher in the online portion of NPM. If NPM runs out of QCBs, it abends. The size of this buffer pool is specified in the QCB parameter of the BUFFER initialization statement in NPM.

**TPRB used max %**
The maximum teleprocessing request block utilization, in percent.
The teleprocessing request blocks are used in reading and writing to BSAM data sets, for sending and receiving data from NPALUs, operator terminals, as well as other NPMs. The size of this buffer pool is specified in the TPRB parameter of the BUFFER initialization statement in NPM.

**VSAMRB used max %**
The maximum VSAM request block utilization, in percent.
The VSAM request blocks are used to access VSAM data sets. The size of this buffer pool is specified in the VSRB parameter of the BUFFER initialization statement in NPM.

**Bfr util FS max %**
The maximum file services buffer utilization, in percent.
The file services buffers are used to write session and network records to VSAM databases, SMF, and sequential data sets. If NPM runs out of file services buffers, it allocates more. The size of this buffer pool is specified in the FSTBUFS parameter of the BUFFER initialization statement in NPM.

**CSA bfr max %**
The maximum CSA buffer utilization, in percent.
The CSA buffers are used when collecting RTM SMF data and writing entire PIUs to the VTAM log. If the buffers are exhausted, data may be lost. The size of this buffer pool is specified in the BUFFNO parameter of the BUFFER initialization statement in NPM.

**Bfr util max %**
The maximum buffer utilization in a buffer pool, in percent.
The report shows the NPMs with the highest number of log records lost. The Records lost total column shows the total number of log records lost in all files. This report can show up to 15 NPM resources listed in descending order based on the values in this column.

This information identifies the report:

Report ID: NWNPM02
Report group: Network NPM Utilization Reports
Source: NW_NPM_UTIL_D
Attributes: Network, NW, Performance, Utilization, Worst, NPM, Internal, SW, Software
Variables: From_date, To_date

![Network NPM Log Records Lost, Worst Case report](image)

**Figure 134. Example of a Network NPM Log Records Lost, Worst-Case report**

The report contains this information:

**Resource name**
- The name of the resource. This is the SMF system ID concatenated with the subsystem ID.

**Records lost total**
- The total number of log records lost in all files.

**Records lost sess**
- The total number of session log records lost.

**Records lost rev**
- The total number of review log records lost.

**Records lost NPM**
- The total number of NPM log records lost.

**Records lost VTAM**
- The total number of VTAM log records lost.

**Records lost SMF**
- The total number of SMF log records lost.
NPM internal utilization trend reports

The NPM internal utilization trend reports show NPM buffer pool usage and the number of records written for a specified NPM.

Network NPM Buffer Pool Usage, Hourly/Daily/Weekly Trend report

These graphic reports show the buffer utilization in the different buffer pools for a selected NPM. The reports also show the threshold value so you can determine whether tuning is necessary.

This information identifies the reports:

<table>
<thead>
<tr>
<th><strong>Report ID</strong></th>
<th>NWNPM03 (hourly), NWNPM04 (daily), NWNPM05 (weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report group</strong></td>
<td>Network NPM Utilization Reports</td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td>NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report), NW_NPM_UTIL_W (weekly report)</td>
</tr>
<tr>
<td><strong>Attributes</strong></td>
<td>Network, NW, Performance, Utilization, Trend, NPM, Internal, Hourly/Daily/Weekly, SW, Software, Usage</td>
</tr>
<tr>
<td><strong>Variables</strong></td>
<td>Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Resource_name</td>
</tr>
<tr>
<td><strong>Y-axis</strong></td>
<td>The y-axis (vertical), percentage, shows values from 0 to 100%.</td>
</tr>
<tr>
<td><strong>X-axis</strong></td>
<td>The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:</td>
</tr>
<tr>
<td></td>
<td>• Hour—the hour of the day</td>
</tr>
<tr>
<td></td>
<td>• Day—the day of the week</td>
</tr>
<tr>
<td></td>
<td>• Week start date—the start date of the week (weeks start on Monday)</td>
</tr>
</tbody>
</table>
The reports contain this information:

**Bfr threshold %**

The buffer utilization threshold, in percent.

**CSA bfr max %**

The maximum CSA buffer utilization, in percent.

The CSA buffers are used when collecting RTM SMF data and writing entire PIUs to the VTAM log. If the buffers are empty, data may be lost. The size of this buffer pool is specified in the BUFFNO parameter of the BUFFER initialization statement in NPM.

**Bfr util FS max %**

The maximum file services buffer utilization, in percent.

The file services buffers are used to write session and network records to VSAM databases, SMF, and sequential data sets. If NPM runs out of file services buffers, it allocates more. The size of this buffer pool is specified in the FSTBUFS parameter of the BUFFER initialization statement in NPM.

**VSAMRB used max %**

The maximum VSAM request block utilization, in percent.

The VSAM request blocks are used to access VSAM data sets. The size of this buffer pool is specified in the VSRB parameter of the BUFFER initialization statement in NPM.

**TPRB used max %**

The maximum teleprocessing request block utilization, in percent.

The teleprocessing request blocks are used in reading and writing to BSAM data sets, for sending and receiving data from NPALUs and operator terminals, as well as other NPMs. The size of this buffer pool is specified in the TPRB parameter of the BUFFER initialization statement in NPM.
Utilization Reports (Part 1)

**QCB used max %**
The maximum queue control block utilization, in percent.

The queue control blocks are used by the NPM dispatcher in the online portion of NPM. If NPM runs out of QCBs, it abends. The size of this buffer pool is specified in the QCB parameter of the BUFFER initialization statement in NPM.

**Bfr util max %**
The maximum buffer utilization in a buffer pool, in percent.
Network NPM Log Records Written, Hourly/Daily/Weekly Trend report

These graphic reports show the total number of NPM log records written to the various files. The information shown applies to a selected NPM system.

This information identifies the reports:

**Report ID**  
NWNPM06 (hourly), NWNPM07 (daily), NWNPM08 (weekly)

**Report group**  
Network NPM Utilization Reports

**Source**  
NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report), NW_NPM_UTIL_W (weekly report)

**Attributes**  
Network, NW, Performance, Utilization, Trend, NPM, Internal, Hourly/Daily/Weekly, SW, Software

**Variables**  
Date (required for hourly report), Date in week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Resource_name

**Y-axis**  
The y-axis (vertical), number of log records written in thousands, shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**  
The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Records SMF log (K)**
- The number of SMF log records written, in thousands.

**Records VTAM log (K)**
- The number of VTAM log records written, in thousands.

**Records NPM log (K)**
- The number of NPM log records written, in thousands.

**Records review log (K)**
- The number of review log records written, in thousands.

**Records sess log (K)**
- The number of session log records written, in thousands.
NPM internal utilization detail reports

The NPM internal utilization detail reports provide detailed information about buffer usage and the number of records written for a specified NPM.

Network NPM Buffer Usage, Hourly/Daily Detail report

These reports show detailed information on the utilization of the different buffer pools. The information shown applies to a selected NPM system.

This information identifies the reports:

Report ID       NWNPM09 (hourly), NWNPM10 (daily)
Report group    Network NPM Utilization Reports
Source          NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report)
Attributes      Network, NW, Performance, Utilization, Detail, NPM, Internal, Hourly/Daily, SW, Software, Usage
Variables       Date (required for hourly report), From_date and To_date for daily report, Resource_name

Network NPM Buffer Usage, Hourly Detail
Date: 2000-01-18
Resource name: 'SYSINPM'

<table>
<thead>
<tr>
<th>Bfr seg util</th>
<th>QCB used</th>
<th>TPRB used</th>
<th>VSAMRB used</th>
<th>CSA bfr</th>
<th>Bfr FS</th>
<th>Bfr ext</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
<td>max %</td>
<td>max %</td>
<td>max %</td>
<td>max %</td>
<td>max %</td>
<td>max %</td>
</tr>
<tr>
<td>12</td>
<td>2.8</td>
<td>11.2</td>
<td>1.8</td>
<td>0.0</td>
<td>-</td>
<td>0.7</td>
</tr>
<tr>
<td>13</td>
<td>2.8</td>
<td>11.2</td>
<td>1.8</td>
<td>0.0</td>
<td>-</td>
<td>0.7</td>
</tr>
<tr>
<td>14</td>
<td>2.8</td>
<td>11.2</td>
<td>1.8</td>
<td>0.0</td>
<td>-</td>
<td>0.7</td>
</tr>
<tr>
<td>15</td>
<td>2.8</td>
<td>11.2</td>
<td>1.8</td>
<td>0.0</td>
<td>-</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNPM09

Figure 137. Example of a Network NPM Buffer Usage, Hourly Detail report

The reports contain this information:

Hour          The hour when the record was written to SMF (hourly report).
Date          The date when the record was written to SMF (daily report).
Bfr seg util max %

The maximum buffer segment utilization, in percent.

The buffer segments are used by NPM for network data collection. If the buffer segment pool is empty, NPM abends. The size of this buffer pool is specified in the BUFSEGS parameter of the BUFFER initialization statement in NPM.

QCB used max %

The maximum queue control block utilization, in percent.

The queue control blocks are used by the NPM dispatcher in the online portion of NPM. If NPM runs out of QCBs, it abends. The size of this buffer pool is specified in the QCB parameter of the BUFFER initialization statement in NPM.

TPRB used max %

The maximum teleprocessing request block utilization, in percent.
Utilization Reports (Part 1)

The teleprocessing request blocks are used in reading and writing to BSAM data sets, for sending and receiving data from NPALUs and operator terminals, and other NPMs. The size of this buffer pool is specified in the TPRB parameter of the BUFFER initialization statement in NPM.

**VSAMRB used max %**
The maximum VSAM request block utilization, in percent.

The VSAM request blocks are used to access VSAM data sets. The size of this buffer pool is specified in the VSRB parameter of the BUFFER initialization statement in NPM.

**CSA bfr max %**
The maximum CSA buffer utilization, in percent.

The CSA buffers are used when collecting RTM SMF data and writing entire PIUs to the VTAM log. If the buffers are exhausted, data may be lost. The size of this buffer pool is specified in the BUFFNO parameter of the BUFFER initialization statement in NPM.

**Bfr util FS max %**
The maximum file services buffer utilization, in percent.

The file services buffers are used to write session and network records to VSAM databases, SMF, and sequential data sets. If NPM runs out of file services buffers, it allocates more. The size of this buffer pool is specified in the FSTBUFS parameter of the BUFFER initialization statement in NPM.

**Bfr ext FS**
The total number of file services buffer extensions.
Network NPM Storage Usage, Hourly/Daily Detail report

These reports show detailed information on the amount of private storage and CSA that NPM has allocated. The information shown applies to a selected NPM system.

This information identifies the reports:

**Report ID**  
NWNPM11 (hourly), NWNPM12 (daily)

**Report group**  
Network NPM Utilization Reports

**Source**  
NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report)

**Attributes**  
Network, NW, Performance, Utilization, Detail, NPM, Internal, Hourly/Daily, SW, Software, Usage

**Variables**  
Date (required for hourly report), From_date and To_date for daily report, Resource_name

<table>
<thead>
<tr>
<th>Date</th>
<th>Private max</th>
<th>Private GT16MB max</th>
<th>CSA max</th>
<th>CSA GT16MB max</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-18</td>
<td>4.806</td>
<td>4.622</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2000-01-19</td>
<td>4.806</td>
<td>4.622</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2000-01-20</td>
<td>4.806</td>
<td>4.622</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2000-01-21</td>
<td>4.806</td>
<td>4.622</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Figure 138. Example of a Network NPM Storage Usage, Daily Detail report

The reports contain this information:

**Hour**  
The hour when the record was written to SMF (hourly report).

**Date**  
The date when the record was written to SMF (daily report).

**Private max**  
The maximum amount of private storage allocated by NPM, in megabytes. This is calculated as: PRIVATE_MAX/1 000 000.

**Private GT16MB max**  
The maximum amount of private storage above the 16-megabyte line allocated by NPM, in megabytes. This is calculated as: PRIVATE_GT16MB_MAX/1 000 000.

**CSA max**  
The maximum amount of common storage area allocated by NPM, in megabytes. This is calculated as: CSA_MAX/1 000 000.

**CSA GT16MB max**  
The maximum amount of common storage area above the 16-megabyte line allocated by NPM, in megabytes. This is calculated as: CSA_GT16MB_MAX/1 000 000.
Utilization Reports (Part 1)

Network NPM Log Records Written, Hourly/Daily Detail report
These reports show detailed information on the number of log records written to the various NPM files. The information shown applies to a selected NPM system.

E+07 is equivalent to 10^7.

This information identifies the reports:
- **Report ID**: NWNPM13 (hourly), NWNPM14 (daily)
- **Report group**: Network NPM Utilization Reports
- **Source**: NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report)
- **Attributes**: Network, NW, Performance, Utilization, Detail, NPM, Internal, Hourly/Daily, SW, Software
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Resource_name

<table>
<thead>
<tr>
<th>Date</th>
<th>sess</th>
<th>review</th>
<th>NPM</th>
<th>VTAM</th>
<th>SMF</th>
<th>lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-18</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>4.587E+07</td>
<td>0</td>
</tr>
<tr>
<td>2000-01-19</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>3.345E+08</td>
<td>0</td>
</tr>
<tr>
<td>2000-01-20</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>1.341E+08</td>
<td>0</td>
</tr>
<tr>
<td>2000-01-21</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>3.179E+07</td>
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</tr>
</tbody>
</table>

**Figure 139. Example of a Network NPM Log Records Written, Daily Detail report**

The reports contain this information:
- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Records sess log**: The total number of session log records written.
- **Records review log**: The total number of review log records written.
- **Records NPM log**: The total number of NPM log records written.
- **Records VTAM log**: The total number of VTAM log records written.
- **Records SMF log**: The total number of SMF log records written.
- **Records lost total**: The total number of log records lost in all files.

**Network NPM Record Types Written, Hourly/Daily Detail report**
These reports show detailed information on the number of various types of NPM records written. The information shown applies to a selected NPM system.
E+06 is equivalent to $10^6$.

This information identifies the reports:

**Report ID**  
NWNPM15 (hourly), NWNPM16 (daily)

**Report group**  
Network NPM Utilization Reports

**Source**  
NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report)

**Attributes**  
Network, NW, Performance, Utilization, Detail, NPM, Internal, Hourly/Daily, SW, Software

**Variables**  
Date (required for hourly report), From_date and To_date for daily report, Resource_name

---

Network NPM Record Types Written, Daily Detail  
From date: '2000-01-18'  
To date: '2000-01-21'  
Resource name: 'SYS1NPM'

<table>
<thead>
<tr>
<th>Date</th>
<th>sess</th>
<th>class</th>
<th>network</th>
<th>RTM</th>
<th>accounting</th>
<th>command</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-18</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>4.428E+07</td>
<td>1.590E+06</td>
<td></td>
</tr>
<tr>
<td>2000-01-19</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>3.221E+08</td>
<td>1.246E+07</td>
<td></td>
</tr>
<tr>
<td>2000-01-20</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>1.285E+08</td>
<td>5.633E+06</td>
<td></td>
</tr>
<tr>
<td>2000-01-21</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>3.016E+07</td>
<td>1.639E+06</td>
<td></td>
</tr>
</tbody>
</table>

---

**Tivoli Decision Support for z/OS Report**  
NWNPM16

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**Figure 140. Example of a Network NPM Record Types Written, Daily report**

The reports contain this information:

**Hour**  
The hour when the record was written to SMF (hourly report).

**Date**  
The date when the record was written to SMF (daily report).

**Records sess class**  
The total number of session data records written.

**Records network**  
The total number of network data records written.

**Records RTM**  
The total number of RTM data records written.

**Records accounting**  
The total number of accounting data records written.

**Records command**  
The total number of command records written.
Network NPM Log Records Lost, Hourly/Daily Detail report

These reports show detailed information on the number of NPM records lost for the different files. The information shown applies to a selected NPM system.

Note: It is important that no SMF records be lost because lost records can affect the information that the Network Performance feature presents.

This information identifies the reports:

Report ID: NWNPM17 (hourly), NWNPM18 (daily)
Report group: Network NPM Utilization Reports
Source: NW_NPM_UTIL_H (hourly report), NW_NPM_UTIL_D (daily report)
Attributes: Network, NW, Performance, Utilization, Detail, NPM, Internal, Hourly/Daily, SW, Software
Variables: Date (required for hourly report), From_date and To_date for daily report, Resource_name

<table>
<thead>
<tr>
<th>Date</th>
<th>lost sess</th>
<th>lost rev</th>
<th>lost NPM</th>
<th>lost VTAM</th>
<th>lost SMF</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-18</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-01-19</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-01-20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-01-21</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 141. Example of a Network NPM Log Records Lost, Daily Detail report

The reports contain this information:

Hour: The hour when the record was written to SMF (hourly report).
Date: The date when the record was written to SMF (daily report).
Records lost sess: The total number of session log records lost.
Records lost rev: The total number of review log records lost.
Records lost NPM: The total number of NPM log records lost.
Records lost VTAM: The total number of VTAM log records lost.
Records lost SMF: The total number of SMF log records lost.
NV/SM internal utilization reports

These reports provide utilization information for the NetView Session Monitor.

NV/SM internal utilization worst-case reports

The NV/SM internal utilization worst-case reports provide information about NetView systems having the highest number of session blocks or largest record queues.

Network NV/SM Active Session Blocks, Worst-Case report

This report shows up to 15 NetView systems with the highest amount of storage used for active session blocks (ASB).

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWSM01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NV/SM Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_SM_UTIL_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, SW, Software, Utilization, Worst, NV/SM, Internal</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource name</th>
<th>ASB max (KB)</th>
<th>ASB avg (KB)</th>
<th>ARB max (KB)</th>
<th>ARB avg (KB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS1NETV</td>
<td>5677.1</td>
<td>5484.5</td>
<td>2539.5</td>
<td>2381.4</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWSM01

Figure 142. Example of a Network NV/SM Active Session Blocks, Worst-Case report

The report contains this information:

Resource name
The resource name, which consists of the system ID concatenated with the subsystem ID.

Storage ASB max (KB)
The maximum storage used for ASB (active session block) control blocks, in kilobytes.

Storage ASB avg (KB)
The average storage used for ASB (active session block) control blocks, in kilobytes. This is calculated as: STORAGE_ASB_KB/RECORDS_COLLECTED.

Storage ARB max (KB)
The maximum storage used for ARB (active resource block) control blocks, in kilobytes.

Storage ARB avg (KB)
The average storage used for ARB (active resource block) control blocks, in kilobytes. This is calculated as: STORAGE_ARB_KB/RECORDS_COLLECTED.
Network NV/SM Record Queues, Worst-Case report

This report shows up to 15 NetView systems with the highest number of records waiting to be written to the VSAM file. A high number indicates that the session monitor cannot write the records to VSAM as fast as they are generated.

This information identifies the report:

**Report ID**  NWSM02

**Report group**  Network Line Utilization Reports

**Source**  NW_SM_UTIL_D

**Attributes**  NW, Network, Performance, SW, Software, Utilization, Worst, NV/SM, Internal

**Variables**  From_date, To_date

![Network NV/SM Record Queues, Worst-Case report](image)

**Figure 143. Example of a Network NV/SM Record Queues, Worst-Case report**

The report contains this information:

**Resource name**

The resource name, which consists of the system ID concatenated with the subsystem ID.

**Record queue max**

The maximum number of records queued for writing to the VSAM file.

**Record queue average**

The average number of records queued for writing to the VSAM file. This is calculated as: `RECORD_QUEUE/RECORDS_COLLECTED`.

**Sessions VSAM (%)**

The percentage of sessions recorded to the VSAM file. If the calculated percentage value exceeds 100, the value is set to 100. This is calculated as follows: If `SESSIONS_VSAM` is greater than `SESSION_END_NOTIF`, this is set to 100; otherwise, `100*SESSIONS_VSAM/SESSION_END_NOTIF`.
**NV/SM internal utilization trend reports**

The NetView Session Monitor trend graphic reports show information about session filtering, record queues, VSAM recording, and storage usage for a specified NetView system.

**Network NV/SM Session Filtering, Hourly/Daily/Weekly Trend report**

These reports show the number of sessions that have been filtered and the number of sessions that have not been filtered for a selected NetView system.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWSM03 (hourly), NWSM04 (daily), NWSM05 (weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NV/SM Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_SM_UTIL_H (hourly), NW_SM_UTIL_D (daily), NW_SM_UTIL_W (weekly)</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Resource_name</td>
</tr>
<tr>
<td>Y-axis</td>
<td>The y-axis (vertical), number of sessions in thousands, shows values from 0 to a dynamically set value that depends on the information presented.</td>
</tr>
<tr>
<td>X-axis</td>
<td>The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:</td>
</tr>
<tr>
<td></td>
<td>• Hour—the hour of the day</td>
</tr>
<tr>
<td></td>
<td>• Day—the day of the week</td>
</tr>
<tr>
<td></td>
<td>• Week start date—the start date of the week (weeks start on Monday)</td>
</tr>
</tbody>
</table>
Utilization Reports (Part 1)

The reports contain this information:

**Sessions non filtered (K)**

The number of nonfiltered sessions (indicated by a vertical bar), in thousands.

**Sessions filtered (K)**

The number of filtered sessions (indicated by a vertical bar), in thousands.

*Figure 144. Example of a Network NV/SM Session Filtering, Daily Trend report*
Network NV/SM Record Queues, Hourly/Daily/Weekly Trend report

These graphic reports show the maximum and average lengths of the record queue for writing to the VSAM log. The information shown applies to a selected NetView system.

This information identifies the reports:

- **Report ID**: NWSM06 (hourly), NWSM07 (daily), NWSM08 (weekly)
- **Report group**: Network Line Utilization Reports
- **Source**: NW_SM_UTIL_H (hourly report), NW_SM_UTIL_D (daily report), NW_SM_UTIL_W (weekly report)
- **Variables**: Date (required for hourly report), Date in week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Resource_name
- **Y-axis**: The y-axis (vertical), length of record queue, shows values from 0 to a dynamically set value that depends on the information presented.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Record queue avg**

The average number of records queued for writing to the VSAM file. This is calculated as:

\[
\text{RECORD\_QUEUE/RECORDS\_COLLECTED.}
\]

**Record queue max**

The maximum number of records queued for writing to the VSAM file.

*Figure 145. Example of a Network NV/SM Record Queues, Hourly Trend report*
Network NV/SM VSAM Recording, Hourly/Daily/Weekly Trend report

These graphic reports show the percentage of sessions that have been recorded to the VSAM file. The information shown applies to a selected NetView system.

This information identifies the reports:

- **Report ID**: NWSM09 (hourly), NWSM10 (daily), NWSM11 (weekly)
- **Report group**: Network NV/SM Reports
- **Source**: NW_SM_UTIL_H (hourly report), NW_SM_UTIL_D (daily report), NW_SM_UTIL_W (weekly report)
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Resource_name
- **Y-axis**: The y-axis (vertical), shows percentages from 0% to 100%.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)

![Network NV/SM VSAM Recording, Hourly Trend report](image)

*Figure 146. Example of a Network NV/SM VSAM Recording, Hourly Trend report*

The reports contain this information:
Utilization Reports (Part 1)

Sessions VSAM (%)
The percentage of sessions recorded to the VSAM file. If the calculated percentage value exceeds 100, it is set to 100. This is calculated as follows: If SESSIONS_VSAM is greater than SESSION_END_NOTIF, this is set to 100; otherwise, 100*SESSIONS_VSAM/SESSION_END_NOTIF.
Network NV/SM Storage Usage, Hourly/Daily/Weekly Trend report

These graphic reports show the amount of private storage that the session monitor has used for the data it keeps. The information shown applies to a selected NetView system.

This information identifies the reports:

- **Report ID**: NWSM12 (hourly), NWSM13 (daily), NWSM14 (weekly)
- **Report group**: Network Line Utilization Reports
- **Source**: NW_SM_UTIL_H (hourly report), NW_SM_UTIL_D (daily report), NW_SM_UTIL_W
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Resource_name
- **Y-axis**: The y-axis (vertical), storage in kilobytes, shows values from 0 to a dynamically set value that depends on the information presented.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)

![Network NV/SM Storage Usage, Daily Trend report](image)

*Figure 147. Example of a Network NV/SM Storage Usage, Daily Trend report*
The reports contain this information:

**RTM avg (KB)**
Average storage used for RTM (response time monitor) data, in kilobytes. This is calculated as:
STORAGE_RTM_KB/RECORDS_COLLECTED, indicated by a vertical bar.

**PARM avg (KB)**
Average storage used for PARM (session parameter) data, in kilobytes. This is calculated as:
STORAGE_PARM_KB/RECORDS_COLLECTED, indicated by a vertical bar.

**TRACE avg (KB)**
Average storage used for TRACE (session trace) data, in kilobytes. This value includes PIU trace, boundary function trace, and gateway trace. This is calculated as:
STORAGE_TRACE_KB/RECORDS_COLLECTED, indicated by a vertical bar.

**ASB avg (KB)**
Average storage used for ASB (active session block) control blocks, in kilobytes. This is calculated as:
STORAGE_ASB_KB/RECORDS_COLLECTED, indicated by a vertical bar.

**ARB avg (KB)**
Average storage used for ARB (active resource block) control blocks, in kilobytes. This is calculated as:
STORAGE_ARB_KB/RECORDS_COLLECTED, indicated by a vertical bar.

**ACCT avg (KB)**
Average storage used for ACCT (accounting) data, in kilobytes. This is calculated as:
STORAGE_ACCT_KB/RECORDS_COLLECTED, indicated by a vertical bar.

**Storage_RSCV_KB**
Storage used for route selection control vector data (RSCV), in kilobytes.
The NV/SM internal utilization detail reports provide detailed information about session statistics, VSAM recording, and storage usage.

**Network NV/SM Session Statistics, Hourly/Daily Detail report**

These reports show detailed information on the percentage of sessions with different data types and the percentage of sessions filtered. The information shown applies to a selected NetView system.

This information identifies the reports:

- **Report ID**: NWSM15 (hourly), NWSM16 (daily)
- **Report group**: Network NV/SM Reports
- **Source**: NW_SM_UTIL_H (hourly), NW_SM_UTIL_D (daily), NW_SM_UTIL_W (weekly)
- **Attributes**: NW, Network, Performance, SW, Software, Utilization, Detail, Hourly/Daily, NV/SM, Internal
- **Variables**: Date (required for hourly report), From_date and To_date for daily reports, Resource_name

### Table: Network NV/SM Session Statistics, Hourly Detail

<table>
<thead>
<tr>
<th></th>
<th>filtered (%)</th>
<th>RTM (%)</th>
<th>cross NW (%)</th>
<th>domain (%)</th>
<th>acct (%)</th>
<th>rscv (%)</th>
<th>nonfiltered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0.0</td>
<td>7.0</td>
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<td>10.0</td>
<td>100.0</td>
<td>60.0</td>
<td>21437</td>
</tr>
<tr>
<td>9</td>
<td>0.0</td>
<td>8.0</td>
<td>2.0</td>
<td>12.0</td>
<td>100.0</td>
<td>60.0</td>
<td>22370</td>
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<tr>
<td>10</td>
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<td>9.0</td>
<td>2.0</td>
<td>13.0</td>
<td>100.0</td>
<td>60.0</td>
<td>22745</td>
</tr>
<tr>
<td>11</td>
<td>0.0</td>
<td>9.0</td>
<td>2.0</td>
<td>13.0</td>
<td>100.0</td>
<td>60.0</td>
<td>22649</td>
</tr>
</tbody>
</table>

**Figure 148. Example of a Network NV/SM Session Statistics, Hourly Detail report**

The report contains this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Sessions filtered (%)**: The percentage of sessions filtered. This is calculated as: \(100 \times \text{SESSIONS\_FILTERED} / (\text{SESSIONS\_FILTERED} + \text{SESSIONS\_NONFILTER})\).
- **Sessions RTM (%)**: The percentage of sessions with RTM (response time) data. This is calculated as: \(100 \times \text{SESSIONS\_RTM} / \text{SESSIONS\_NONFILTER}\).
- **Sessions cross NW (%)**: The percentage of sessions with cross network data. This is calculated as: \(100 \times \text{SESSIONS\_CROSS\_NW} / \text{SESSIONS\_NONFILTER}\).
- **Sessions domain (%)**: The percentage of sessions with domain data. This is calculated as: \(100 \times \text{SESSIONS\_DOMAIN} / \text{SESSIONS\_NONFILTER}\).
Utilization Reports (Part 1)

**Sessions acct (%)**

The percentage of sessions with ACCT (accounting) data. This is calculated as: $100 \times \frac{\text{SESSIONS_ACCT}}{\text{SESSIONS_NONFILTER}}$.

**Sessions nonfiltered avg**

The average number of nonfiltered sessions. This is calculated as: $\frac{\text{SESSIONS_NONFILTER}}{\text{RECORDS_COLLECTED}}$.

**Sessions_RSCV**

Number of sessions with route selection control vector data (RSCV).
**Network NV/SM VSAM Recording, Hourly/Daily Detail report**

These reports show detailed information on the percentage of sessions recorded to the VSAM file and the size of the record queue. The information shown applies to a selected NetView system.

This information identifies the reports:

- **Report ID**: NWSM17 (hourly), NWSM18 (daily)
- **Report group**: Network Line Utilization Reports
- **Source**: NW_SM_UTIL_H (hourly report), NW_SM_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, SW, Software, Utilization, Detail, Hourly/Daily, NV/SM, Internal
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Resource_name

<table>
<thead>
<tr>
<th>Date</th>
<th>avg</th>
<th>max</th>
<th>VSAM (%)</th>
<th>Session end notif</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-01</td>
<td>1</td>
<td>126</td>
<td>94.2</td>
<td>15185</td>
</tr>
<tr>
<td>2000-02-02</td>
<td>1</td>
<td>56</td>
<td>99.8</td>
<td>5458</td>
</tr>
</tbody>
</table>

**Figure 149. Example of a Network NV/SM VSAM Recording, Daily Detail report**

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Record queue avg**: The average number of records queued for writing to the VSAM file. This is calculated as:
  \[
  \text{RECORD_QUEUE/RECORDS_COLLECTED}.\]

- **Record queue max**: The maximum number of records queued for writing to the VSAM file.

- **Session VSAM (%)**: The percentage of sessions recorded to the VSAM file. If the calculated percentage value exceeds 100, it is set to 100. This is calculated as follows: If SESSIONS_VSAM is greater than SESSION_END_NOTIF, this is set to 100; otherwise, \(100 \times \text{SESSIONS_VSAM}/\text{SESSION_END_NOTIF}\).

- **Session end notif**: The number of session-end notifications.
Network NV/SM Average Storage, Hourly/Daily Detail report
These reports show detailed information on the average amount of storage the session monitor used for different data types. The information shown applies to a selected NetView system.

This information identifies the reports:

**Report ID**  NWSM19 (hourly), NWSM20 (daily)

**Report group**  Network NV/SM Internal Utilization Reports

**Source**  NW_SM_UTIL_H (hourly report), NW_SM_UTIL_D (daily report)

**Attributes**  NW, Network, Performance, SW, Software, Utilization, Detail, Hourly/Daily, NV/SM, Internal

**Variables**  Date (required for hourly report), From_date and To_date for daily reports, Resource_name

---

<table>
<thead>
<tr>
<th>Resource name: SYS1NETV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

---

**Figure 150. Example of a Network NV/SM Average Storage, Hourly Detail report**

The reports contain this information:

**Hour**  The hour when the record was written to SMF (hourly report).

**Date**  The date when the record was written to SMF (daily report).

**Storage RTM avg (KB)**
Average storage used for RTM (response time monitor) data, in kilobytes. This is calculated as:
STORAGE_RTM_KB/RECORDS_COLLECTED.

**Storage PARM avg (KB)**
Average storage used for PARM (session parameter) data, in kilobytes. This is calculated as:
STORAGE_PARM_KB/RECORDS_COLLECTED.

**Storage TRACE avg (KB)**
Average storage used for TRACE (session trace) data, in kilobytes. This value includes PIU trace, boundary function trace, and gateway trace, and is calculated as:
STORAGE_TRACE_KB/RECORDS_COLLECTED.

**Storage ASB avg (KB)**
Average storage used for ASB (active session block) control blocks, in kilobytes. This is calculated as:
STORAGE_ASB_KB/RECORDS_COLLECTED.
Storage ARB avg (KB)
Average storage used for ARB (active resource block) control blocks, in kilobytes. This is calculated as:
STORAGE_ARB_KB/RECORDS_COLLECTED.

Storage ACCT avg (KB)
Average storage used for ACCT (accounting) data, in kilobytes. This is calculated as:
STORAGE_ACCT_KB/RECORDS_COLLECTED.

Storage_RSCV_KB
Storage used for route selection control vector data (RSCV), in kilobytes.
Utilization Reports (Part 1)

**Network NV/SM Maximum Storage, Hourly/Daily Detail report**

These reports show detailed information on the maximum amount of storage the session monitor used for different data types. The information shown applies to a selected NetView system.

This information identifies the reports:

- **Report ID**: NWSM21 (hourly), NWSM22 (daily)
- **Report group**: Network NV/SM Reports
- **Source**: NW_SM_UTIL_H (hourly report), NW_SM_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, SW, Software, Utilization, Detail, Hourly/Daily, NV/SM, Internal
- **Variables**: Date (required for hourly report), From_date and To_date for daily reports, Resource_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>RTM max (KB)</th>
<th>PARM max (KB)</th>
<th>TRACE max (KB)</th>
<th>ASB max (KB)</th>
<th>ARB max (KB)</th>
<th>ACCT max (KB)</th>
<th>RSCV max (KB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>97.5</td>
<td>284.9</td>
<td>1232.6</td>
<td>5677.1</td>
<td>2539.5</td>
<td>1191.9</td>
<td>100.0</td>
</tr>
<tr>
<td>1</td>
<td>99.1</td>
<td>284.9</td>
<td>1232.6</td>
<td>5677.1</td>
<td>2539.5</td>
<td>1191.9</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>100.4</td>
<td>284.9</td>
<td>1232.6</td>
<td>5677.1</td>
<td>2539.5</td>
<td>1191.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Figure 151. Example of a Network NV/SM Maximum Storage, Hourly Detail report**

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Storage RTM max (KB)**: The maximum storage used for RTM (response time monitor) data, in kilobytes.
- **Storage PARM max (KB)**: The maximum storage used for PARM (session parameter) data, in kilobytes.
- **Storage TRACE max (KB)**: The maximum storage used for TRACE (session trace) data, in kilobytes. This value includes PIU trace, boundary function trace, and gateway trace.
- **Storage ASB max (KB)**: The maximum storage used for ASB (active session block) control blocks, in kilobytes.
- **Storage ARB max (KB)**: The maximum storage used for ARB (active resource block) control blocks, in kilobytes.
- **Storage ACCT max (KB)**: The maximum storage used for ACCT (accounting) data, in kilobytes.
Storage_RSCV_MAX

Maximum storage used for route selection control vector data (RSCV), in kilobytes.

NTRI utilization reports

These reports provide utilization information for the network token-ring interface (NTRI).

NTRI utilization worst-case reports

The NTRI utilization worst-case reports provide information on NTRI physical and logical links with the highest number of errors or the most severe congestion problems.

Network NTRI Physical Errors, Worst-Case report

This report shows the NTRI physical links with the highest number of errors. It also shows the number of retransmitted I-frames and the average number of bytes resent for each of the physical links. The report also shows the congestion count because it influences the number of retransmissions.

If the report indicates an excessive number of errors, use the Network problem component reports or the NetView hardware monitor to further investigate the problem.

If the value in the Bytes resent (%) column is too high, check the number of congestions, because congestions cause retransmissions.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNTRI01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NTRI Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_NTRI_UTIL_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Worst, NTRI</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
<th>Congest avg count</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPS134C</td>
<td>PHYS01</td>
<td>0.0</td>
<td>15.41</td>
<td>15.83</td>
<td>176.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNTRI01

Figure 152. Example of a Network NTRI Physical Errors, Worst-Case report

The report contains this information:

NCP name   The name of the NCP.
Line name  The name of the NTRI physical link.
Error avg (hour) The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.
Utilization Reports (Part 1)

**Bytes resent (%)**

The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted. This is calculated as: 
\[ \text{BYTES_RETRANS/BYTES_SENT} \times 100 \].

**Iframes resent (%)**

The number of I-frames retransmitted, as a percentage of the number of I-frames that were transmitted. This is calculated as: 
\[ \text{IFRAMES_RETRANS/IFRAMES_SENT} \times 100 \].

**Congest avg count**

The average number of congestions. This is calculated as:  
\[ \text{CONGESTIONS/RECORDS_COLLECTED} \].
Network NTRI Physical Link, Worst-Case report
This report shows the NTRI physical links with the highest number of congestions. Use the information in this report as a warning of possible NCP performance problems.

If an NTRI physical link shows values that could indicate a performance problem, check the NCP buffer and CCU utilization using the applicable Network Performance feature component reports.

This information identifies the report:

Report ID       NWNTRI02
Report group    Network NTRI Reports
Source          NW_NTRIP_UTIL_ID
Attributes      NW, Network, Performance, Utilization, Worst, NTRI
Variables       From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Congest avg count</th>
<th>Outbound avg queue size</th>
<th>Frames avg line speed</th>
<th>Rcv line speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPS134C</td>
<td>PHY101</td>
<td>176.0</td>
<td>6.00</td>
<td>0</td>
<td>9600</td>
</tr>
</tbody>
</table>

Figure 153. Example of a Network NTRI Physical Link, Worst-Case report

The report contains this information:

**NCP name**
The name of the NCP.

**Line name**
The name of the NTRI physical link.

**Congest avg count**
The average congestion count. This is calculated as: CONGESTIONS/RECORDS_COLLECTED.

**Outbound queue avg**
The average outbound queue length, in path information units. This is calculated as: OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.

**Frames size avg**
The average size of frames sent and received, in bytes. This is calculated as: BYTES_TOTAL/IFRAMES_TOTAL.

**Rcv line speed**
The receiving line speed, in bits per second.
Network NTRI Logical Errors, Worst-Case report

This report shows the NTRI logical links with the highest number of errors, the percentage of retransmitted bytes and I-frames, and the average number of reply timeouts.

If the Error avg (hour) column contains a value that is too high, use the Network Performance feature problem component reports or the NetView hardware monitor to further investigate the problem.

This information identifies the report:

Report ID          NWNTRI03
Report group       Network NTRI Utilization Reports
Source             NW_NTRIL_UTIL_D
Attributes          NW, Network, Performance, Utilization, Worst, NTRI
Variables          From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
<th>Reply timeouts avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX2SYNO</td>
<td>J000V001</td>
<td>0.0</td>
<td>30.81</td>
<td>25.73</td>
<td>174</td>
</tr>
</tbody>
</table>

Figure 154. Example of a Network NTRI Logical Errors, Worst-Case report

The report contains this information:

NCP name    The name of the NCP.
Line name   The name of the NTRI logical link.
Error avg (hour) The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.
Bytes resent (%) The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
Iframes resent (%) The number of I-frames retransmitted, as a percentage of the total number of I-frames that were transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
Reply timeouts avg The average number of reply timeouts. This is calculated as: REPLY_TIMEOUTS/RECORDS_COLLECTED.
Network NTRI Logical Timeouts, Worst-Case report

This report shows the NTRI logical links with the highest number of reply timeouts. Use the information in this report as a warning of a possible token-ring performance problem.

This information identifies the report:

**Report ID**  
NWNTRI04

**Report group**  
Network NTRI Utilization Reports

**Source**  
NW_NTRIL_UTIL_D

**Attributes**  
NW, Network, Performance, Utilization, Worst, NTRI

**Variables**  
From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Reply timeouts avg</th>
<th>Outbound queue avg</th>
<th>Bytes avg (MB)</th>
<th>Frames size avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX2SYNO</td>
<td>J000V001</td>
<td>174</td>
<td>6.0</td>
<td>0.004</td>
<td>0</td>
</tr>
</tbody>
</table>

_Tivoli Decision Support for z/OS Report: NWNTRI04_

*Figure 155. Example of a Network NTRI Logical Timeouts, Worst-Case report*

The report contains this information:

**NCP name**  
The name of the NCP.

**Line name**  
The name of the NTRI logical link.

**Reply timeouts avg**  
The average number of reply timeouts. This is calculated as:  
REPLY_TIMEOUTS/RECORDS_COLLECTED.

**Outbound queue avg**  
The average outbound queue length, in path information units.  
This is calculated as:  
OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.

**Bytes avg (MB)**  
The average number of bytes sent and received, in megabytes. This is calculated as:  
BYTES_TOTAL/RECORDS_COLLECTED/1 000 000.

**Frames size avg**  
The average size of a frame sent and received, in bytes. This is calculated as:  
BYTES_TOTAL/IFRAMES_TOTAL.
NTRI utilization overview reports

The NTRI utilization overview reports show information about all NTRI physical or logical links on a specified NCP.

Network NTRI Physical Link, Daily/Weekly Overview report

These reports show all the NTRI physical links on a selected NCP in alphabetic order. Use the data in this report to check for performance problems.

Values in the Congest avg count and Outbound queue avg columns that are too high indicate performance problems. To further investigate the problem, check the NCP buffer and CCU utilization by using the applicable Network Performance feature reports.

This information identifies the reports:

Report ID: NWNTRI05 (daily), NWNTRI06 (weekly)

Report group: Network NTRI Utilization Reports

Source: NW_NTRIP_UTIL_D (daily report), NW_NTRIP_UTIL_W (weekly report)

Attributes: NW, Network, Performance, Utilization, Overview, NTRI, Daily/Weekly

Variables: Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

<table>
<thead>
<tr>
<th>Line name</th>
<th>Rcv line speed</th>
<th>Congest avg count</th>
<th>Outbound avg queue size (MB)</th>
<th>Frames total avg (K)</th>
<th>Frames avg (MB)</th>
<th>Bytes avg (MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYL01</td>
<td>9600</td>
<td>176</td>
<td>6.0</td>
<td>16.640</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNTRI05

Figure 156. Example of a Network NTRI Physical Link, Daily Overview report

The reports contain this information:

Line name: The name of the NTRI physical link.

Rcv line speed: The receiving line speed, in bits per second.

Congest avg count: The average congestion count. This is calculated as: CONGESTIONS/RECORDS_COLLECTED.

Outbound queue avg: The average outbound queue length, in path information units. This is calculated as: OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.

Frames total avg (K): The average number of frames sent and received, in thousands. This is calculated as: FRAMES_TOTAL/RECORDS_COLLECTED/1000.
Frames size avg
The average size of a frame sent and received, in bytes. This is calculated as: \(\text{BYTES\_TOTAL}/\text{IFRAMES\_TOTAL}\).

Bytes avg (MB)
The average number of bytes sent and received, in megabytes. This is calculated as:
\(\text{BYTES\_TOTAL}/\text{RECORDS\_COLLECTED}/1\ 000\ 000\).
Utilization Reports (Part 1)

Network NTRI Logical Link, Daily/Weekly Overview report

These reports show all the NTRI logical links on a selected NCP in alphabetic order. Use the data in this report to check for performance problems.

Values in the Reply timeouts avg and Outbound queue avg columns that are too high indicate the presence of a performance problem. If the value in the Outbound queue avg column is too high, check the NCP buffer and CCU utilization by using the applicable Network Performance feature utilization reports. If the value in the Reply timeouts avg column is too high, check the token-ring performance.

This information identifies the reports:

Report ID     NWNTRI07 (daily), NWNRTI08 (weekly)
Report group  Network NTRI Utilization Reports
Source        NW_NTRIL_UTIL_D (daily report), NW_NTRIL_UTIL_W (weekly report)
Attributes    NW, Network, Performance, Utilization, Overview, NTRI, Daily/Weekly
Variables     Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

<table>
<thead>
<tr>
<th>Line name</th>
<th>Reply timeouts avg</th>
<th>Outbound queue avg</th>
<th>Bytes avg (K)</th>
<th>Frame Bytes avg (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>J000V000</td>
<td>174</td>
<td>6.0</td>
<td>16.640</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Figure 157. Example of a Network NTRI Logical Link, Daily Overview report

The reports contain this information:

Line name      The name of the NTRI logical link.
Reply timeouts avg

The average number of reply timeouts. This is calculated as:

REPLY_TIMEOUTS/RECORDS_COLLECTED.

Outbound queue avg

The average outbound queue length, in path information units. This is calculated as:

OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.

Frames total avg (K)

The average number of frames sent and received, in thousands. This is calculated as:

FRAMES_TOTAL/RECORDS_COLLECTED/1000.

Bytes avg (MB)

The average number of bytes sent and received, in megabytes. This is calculated as:

BYTES_TOTAL/RECORDS_COLLECTED/1 000 000.
Frame size avg

The average size of a frame sent and received, in bytes. This is calculated as: $\frac{BYTES_{TOTAL}}{IFRAMES_{TOTAL}}$.

Bytes resent (%)

The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted. This is calculated as: $\frac{BYTES_{RETRANS}}{BYTES_{SENT}} \times 100$. 
Utilization Reports (Part 1)

**NTRI utilization trend reports**

The NTRI utilization trend reports show information about the NTRI physical and logical connections.

**Network NTRI Physical Connections, Hourly/Daily/Weekly Trend report**

These reports show the minimum, average, and maximum number of logical connections for a selected NTRI physical link.

This information identifies the reports:

**Report ID**  
NWNTRI09 (hourly), NWNTRI10 (daily), NWNTRI11 (weekly)

**Report group**  
Network NTRI Utilization Reports

**Source**  
NW_NTRIP_UTIL_H (hourly report), NW_NTRIP_UTIL_D (daily report), NW_NTRIP_UTIL_W (weekly report)

**Attributes**  
NW, Network, Performance, Utilization, NTRI, Hourly/Daily/Weekly, Trend

**Variables**  
Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**  
The y-axis (vertical), number of connections, shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**  
The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Logical conn min**

The minimum number of logical connections.

**Logical conn avg**

The average number of logical connections. This is calculated as:

\[
\text{LOGICAL\_CONN}/\text{RECORDS\_COLLECTED}. 
\]

**Logical conn max**

The maximum number of logical connections.

*Figure 158. Example of a Network NTRI Physical Connections, Daily Trend report*
Network NTRI Physical Bytes Trans, Hourly/Daily/Weekly Trend report

These reports show the minimum, average, and maximum number of bytes transferred for a selected NTRI physical link.

This information identifies the reports:

- **Report ID**: NWNTRI12 (hourly), NWNTRI13 (daily), NWNTRI14 (weekly)
- **Report group**: Network NTRI Utilization Reports
- **Source**: NW_NTRIP_UTIL_H (hourly report), NW_NTRIP_UTIL_D (daily report), NW_NTRIP_UTIL_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, NTRI, Hourly/Daily/Weekly, Trend
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**: The y-axis (vertical), number of kilobytes, shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)

*Figure 159. Example of a Network NTRI Physical Bytes Trans, Daily Trend report*
Utilization Reports (Part 1)

The reports contain this information:

**Bytes transferred min (KB)**
The minimum number of bytes transferred, in thousands. This is calculated as: \(\text{BYTES\_TOTAL\_MIN}/1000\).

**Bytes transferred avg (KB)**
The average number of bytes transferred, in thousands. This is calculated as: \(\text{BYTES\_TOTAL}/\text{RECORDS\_COLLECTED}/1000\).

**Bytes transferred max (KB)**
The maximum number of bytes transferred, in thousands. This is calculated as: \(\text{BYTES\_TOTAL\_MAX}/1000\).
Network NTRI Logical Timeouts, Hourly/Daily/Weekly Trend report

These graphic reports show the minimum, average, and maximum number of reply timeouts for a selected NTRI logical link.

This information identifies the reports:

- **Report ID**: NWNTRI15 (hourly), NWNTRI16 (daily), NWNTRI17 (weekly)
- **Report group**: Network NTRI Utilization Reports
- **Source**: NW_NTRIL_UTIL_H (hourly report), NW_NTRIL_UTIL_D (daily report), NW_NTRIL_UTIL_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, NTRI, Hourly/Daily/Weekly, Trend
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name
- **Y-axis**: The y-axis (vertical), number of reply timeouts, shows values from 0 to a dynamically set value that depends on the information presented.
- **X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)

*Figure 160. Example of a Network NTRI Logical Timeouts, Daily Trend report*
Utilization Reports (Part 1)

The reports contain this information:

**Reply timeouts min**
The minimum number of reply timeouts.

**Reply timeouts avg**
The average number of reply timeouts. This is calculated as: 
REPLY_TIMEOUTS/RECORDS_COLLECTED.

**Reply timeouts max**
The maximum number of reply timeouts.
Network NTRI Logical Bytes Trans, Hourly/Daily/Weekly Trend report

These graphic reports show the minimum, average, and maximum number of bytes transferred for a selected NTRI logical link.

This information identifies the reports:

**Report ID**  NWNTRI18 (hourly), NWNTRI19 (daily), NWNTRI20 (weekly)

**Report group**  Network NTRI Utilization Reports

**Source**  NW_NTRIL_UTIL_H (hourly report), NW_NTRIL_UTIL_D (daily report), NW_NTRIL_UTIL_W (weekly report)

**Attributes**  NW, Network, Performance, Utilization, NTRI, Hourly/Daily/Weekly, Trend

**Variables**  Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**  The y-axis (vertical), number of kilobytes, shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**  The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)

![Network NTRI Logical Bytes Trans, Daily Trend report](image)

*Figure 161. Example of a Network NTRI Logical Bytes Trans, Daily Trend report*
Utilization Reports (Part 1)

The reports contain this information:

**Bytes transferred min (KB)**

The minimum number of bytes transferred, in thousands. This is calculated as: \( \text{BYTES\_TOTAL\_MIN}/1000 \).

**Bytes transferred avg (KB)**

The average number of bytes transferred, in thousands. This is calculated as: \( \text{BYTES\_TOTAL}/\text{RECORDS\_COLLECTED}/1000 \).

**Bytes transferred max (KB)**

The maximum number of bytes transferred, in thousands. This is calculated as: \( \text{BYTES\_TOTAL\_MAX}/1000 \).
NTRI utilization detail reports

The NTRI utilization detail reports provide detailed information about the data transmitted on physical and logical NTRI links.

Network NTRI Physical Data Volume, Hourly/Daily Detail report

These reports show detailed information for a selected NTRI physical link.

This information identifies the reports:

- **Report ID**: NWNTRI21 (hourly), NWNTRI22 (daily)
- **Report group**: Network NTRI Utilization Reports
- **Source**: NW_NTRIP_UTIL_H (hourly report), NW_NTRIP_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, NTRI, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Frames</th>
<th>Bytes</th>
<th>Iframes</th>
<th>Iframes</th>
</tr>
</thead>
<tbody>
<tr>
<td>total</td>
<td>avg (K)</td>
<td>size avg (K)</td>
<td>rcd (K)</td>
</tr>
<tr>
<td>Hour</td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
</tr>
<tr>
<td>19</td>
<td>16.640</td>
<td>0.004</td>
<td>0.112</td>
</tr>
<tr>
<td></td>
<td>38.49</td>
<td>61.51</td>
<td></td>
</tr>
</tbody>
</table>

Figure 162. Example of a Network NTRI Physical Data Volume, Hourly Detail report

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date the record was written to SMF (daily report).
- **Frames total avg (K)**: The average number of frames sent and received, in thousands. This is calculated as: FRAMES_TOTAL/RECORDS_COLLECTED/1000.
- **Bytes avg (MB)**: The average number of bytes sent and received, in megabytes. This is calculated as: BYTES_TOTAL/RECORDS_COLLECTED/1000 000.
- **Frames size avg**: The average size of a frame sent and received, in bytes. This is calculated as: BYTES_TOTAL/IFRAMES_TOTAL.
- **Iframes avg (K)**: The average number of I-frames sent and received, in thousands. This is calculated as: IFRAMES_TOTAL/RECORDS_COLLECTED/1000.
- **Iframes (%)**: The number of I-frames, as a percentage of the total number of
Utilization Reports (Part 1)

frames. This is calculated as:
IFRAMES_TOTAL/FRAMES_TOTAL*100.

Iframes rcvd (%)  
The number of I-frames received, as a percentage of the total number of I-frames. This is calculated as:
IFRAMES_RCV/IFRAMES_TOTAL*100.

Iframes sent (%)  
The number of I-frames sent, as a percentage of the total number of I-frames. This is calculated as:
IFRAMES_SENT/IFRAMES_TOTAL*100.
Network NTRI Physical Data Rate, Hourly/Daily Detail report

These reports show the data rate for a selected NTRI physical link.

This information identifies the reports:

- **Report ID**: NWNTRI23 (hourly), NWNTRI24 (daily)
- **Report group**: Network NTRI Utilization Reports
- **Source**: NW_NTRIP_UTIL_H (hourly report), NW_NTRIP_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, NTRI, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Report ID</th>
<th>Date: 2000-03-11</th>
<th>Line Name: PHYL01</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rcv line speed</td>
<td></td>
</tr>
<tr>
<td>Hour</td>
<td>Frame rate avg</td>
<td></td>
</tr>
<tr>
<td>speed</td>
<td>Frames rcvd avg</td>
<td>Bytes rcvd avg</td>
</tr>
<tr>
<td>avg</td>
<td>Frames sent avg</td>
<td>Bytes sent avg</td>
</tr>
<tr>
<td></td>
<td>Bytes rate avg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bytes avg</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>9600</td>
<td>647</td>
</tr>
<tr>
<td></td>
<td>348</td>
<td>384</td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>512</td>
</tr>
<tr>
<td></td>
<td>268</td>
<td>173</td>
</tr>
<tr>
<td></td>
<td>256</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 163. Example of a Network NTRI Physical Data Rate, Hourly Detail report**

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: Date that the record was written to SMF (daily report).
- **Rcv line speed**: The receiving line speed, in bits per second.
- **Frame rate avg**: Average frame rate, in frames per second. This is calculated as: FRAMES_TOTAL/MEASURED_SEC.
- **Frames rcvd avg (us)**: The average time consumed per frame received, in microseconds. This is calculated as: FRAME_RTIME_TOT_US/RECORDS_COLLECTED.
- **Frames sent avg (us)**: The average time consumed per frame sent, in microseconds. This is calculated as: FRAME_STIME_TOT_US/RECORDS_COLLECTED.
- **Bytes rate avg**: Average byte rate, in bytes per second. This is calculated as: BYTES_TOTAL/MEASURED_SEC.
Utilization Reports (Part 1)

**Bytes rcvd avg (ns)**

The average time consumed per byte received, in nanoseconds. This is calculated as:

\[
\text{BYTE\_RTIMES\_TOT\_NS/RECORDS\_COLLECTED.}
\]

**Bytes sent avg (ns)**

The average time consumed per byte sent, in nanoseconds. This is calculated as: \[
\text{BYTE\_STIMES\_TOT\_NS/RECORDS\_COLLECTED.}
\]
Network NTRI Logical Data Volume, Hourly/Daily Detail report

These reports show the data volume for a selected NTRI logical link.

This information identifies the reports:

**Report ID**  NWNTRI25 (hourly), NWNTRI26 (daily)

**Report group**  Network NTRI Utilization Reports

**Source**  NW_NTRIL_UTIL_H (hourly report), NW_NTRIL_UTIL_D (daily report)

**Attributes**  NW, Network, Performance, Utilization, Detail, NTRI, Hourly/Daily

**Variables**  Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Frames total avg (K)</th>
<th>Bytes avg (MB)</th>
<th>Frames size avg</th>
<th>Iframes avg (K)</th>
<th>Iframes (%)</th>
<th>Iframes rcvd (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>16.640</td>
<td>0.004</td>
<td>0.000</td>
<td>1.112</td>
<td>6.68</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNTRI25

Figure 164. Example of a Network NTRI Logical Data Volume, Hourly Detail report

The reports contain this information:

**Hour**  The hour when the record was written to SMF (hourly report).

**Date**  Date that the record was written to SMF (daily report).

**Frames total avg (K)**

The average number of frames sent and received, in thousands. This is calculated as:

\[
\text{FRAMES\_TOTAL}/\text{RECORDS\_COLLECTED}/1000.
\]

**Bytes avg (MB)**

The average number of bytes sent and received, in megabytes. This is calculated as:

\[
\text{BYTES\_TOTAL}/\text{RECORDS\_COLLECTED}/1000000.
\]

**Frames size avg**

The average size of frames sent and received, in bytes. This is calculated as: \(\text{BYTES\_TOTAL}/\text{IFRAMES\_TOTAL}\).

**Iframes avg (K)**

The average number of I-frames sent and received, in thousands. This is calculated as:

\[
\text{IFRAMES\_TOTAL}/\text{RECORDS\_COLLECTED}/1000.
\]

**Iframes (%)**

The number of I-frames, as a percentage of the total number of frames. This is calculated as:

\[
\text{IFRAMES\_TOTAL}/\text{FRAMES\_TOTAL}*100.
\]

**Iframes rcvd (%)**

The number of I-frames received, as a percentage of the total
number of I-frames. This is calculated as: 
IFRAMES_RCV/IFRAMES_TOTAL*100.

Iframes sent (%) 
The number of I-frames sent, as a percentage of the total number 
of I-frames. This is calculated as: 
IFRAMES_SENT/IFRAMES_TOTAL*100.
Network NTRI Logical Data, Hourly/Daily Detail report

These reports show data on reply timeouts, outbound queue lengths, error rate, and retransmissions for a selected NTRI logical link.

This information identifies the reports:

**Report ID**  NWNTRI27 (hourly), NWNTRI28 (daily)

**Report group**  Network NTRI Utilization Reports

**Source**  NW_NTRIL_UTIL_H (hourly report), NW_NTRIL_UTIL_D (daily report)

**Attributes**  NW, Network, Performance, Utilization, Detail, NTRI, Hourly/Daily

**Variables**  Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Date: 2000-03-11</th>
<th>Line Name: J000V001</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hour</strong></td>
<td><strong>Reply timeouts avg</strong></td>
</tr>
<tr>
<td>19</td>
<td>174</td>
</tr>
</tbody>
</table>

Figure 165. Example of a Network NTRI Logical Data, Hourly Detail report

The reports contain this information:

**Hour**  The hour when the record was written to SMF (hourly report).

**Date**  Date that the record was written to SMF (daily report).

**Reply timeouts avg**  The average number of reply timeouts. This is calculated as: \(\text{REPLY\_TIMEOUTS/RECORDS\_COLLECTED}\).

**Reply timeouts max**  The maximum number of reply timeouts.

**Outbound queue avg**  The average outbound queue length, in path information units. This is calculated as: \(\text{OUTQUEUE\_TOTAL\_PIU/RECORDS\_COLLECTED}\).

**Outbound queue max**  The maximum outbound queue length, in path information units.

**Error rate avg**  The average number of errors counted per hour. This is calculated as: \(\text{ERRORS\_TOTAL/MEASURED\_HOURS}\).

**Iframes resent (%)**  The number of I-frames retransmitted, as a percentage of the total number of I-frames that were transmitted. This is calculated as: \(\text{IFRAMES\_RETRANS/IFRAMES\_SENT*100}\).

**Bytes resent (%)**  The number of bytes retransmitted, as a percentage of the total
Utilization Reports (Part 1)

number of bytes that were transmitted. This is calculated as:
BYTES_RETRANS/BYTES_SENT*100.
X.25 utilization reports

These reports provide utilization information for the X.25 resources.

X.25 utilization worst-case reports

The X.25 utilization worst-case reports provide information on X.25 links having the highest number of a specified type of error.

Network X.25 Link Errors, Worst-Case report

This report shows up to fifteen X.25 physical links (MCH) with the highest number of errors.

If the Error avg (hour) column contains a value that is too high, use the Network Performance feature problem component reports or the NetView hardware monitor to further investigate the problem.

This information identifies the report:

- **Report ID**: NWX2501
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25LN_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, Worst, X25, X.25
- **Variables**: From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPSI34C</td>
<td>XL038</td>
<td>0.0</td>
<td>15.41</td>
<td>15.83</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWX2501

Figure 166. Example of a Network X.25 Link Errors, Worst-Case report

The report contains this information:

- **NCP name**: The name of the NCP.
- **Line name**: The name of the X.25 physical link (MCH).
- **Error avg (hour)**: The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.
- **Bytes resent (%)**: The number of bytes retransmitted, as a percentage of the total number of bytes transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
Utilization Reports (Part 1)

Iframes resent (%)
The number of I-frames retransmitted, as a percentage of the total number of I-frames transmitted. This is calculated as:
IFRAMES_RETRANS/IFRAMES_SENT*100.
Network X.25 Link Utilization, Worst-Case report

This report shows up to fifteen X.25 physical links (MCH) with the largest outbound queue length. The report shows also the maximum outbound queue length and the utilization on both the receive and send lines.

This information identifies the report:

- **Report ID**: NWX2502
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25LN_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, Worst, X25, X.25
- **Variables**: From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Outbound queue avg</th>
<th>Outbound queue max</th>
<th>Thresh exceed (%)</th>
<th>Rcvline util avg (%)</th>
<th>Sendline util avg (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPS34C</td>
<td>XL038</td>
<td>6.0</td>
<td>8</td>
<td>0.00</td>
<td>6.53</td>
<td>6.53</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for Z/OS Report: NWX2502

*Figure 167. Example of a Network X.25 Link Utilization, Worst-Case report*

The report contains this information:

- **NCP name**: The name of the NCP.
- **Line name**: The name of the X.25 physical link (MCH).

**Outbound queue avg**

The average outbound queue length, in path information units. This is calculated as: OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.

**Outbound queue max**

The maximum outbound queue length, in path information units.

**Thresh exceed (%)**

The percentage of line utilization that was above the threshold level. This is calculated as: THRESHOLD_EXCEEDS/RECORDS_COLLECTED*100.

**Rcvline util avg (%)**

The average line utilization on the receive line, in percent. This is calculated as: RL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.

**Sendline util avg (%)**

The average line utilization on the send line, in percent. This is calculated as: SL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.
Network X.25 PU Errors, Worst-Case report

This report shows up to fifteen X.25 physical link PUs with the highest number of errors.

If the Error avg (hour) column contains a value that is too high, use the Network Performance feature problem component reports or the NetView hardware monitor to further investigate the problem.

This information identifies the report:

Report ID       NWX2503
Report group    Network X.25 Utilization Reports
Source          NW_X25PU_UTIL_D
Attributes       Network, NW, Performance, Utilization, Worst, X25, X.25
Variables       From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>PU name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPSI34C</td>
<td>XL038</td>
<td>XP038</td>
<td>0.0</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Figure 168. Example of a Network X.25 PU Errors, Worst-Case report

The report contains this information:

NCP name        The name of the NCP.
Line name       The name of the X.25 link.
PU name         The name of the X.25 physical unit.
Error avg (hour) The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.

Bytes resent (%) The number of bytes retransmitted, as a percentage of total number of bytes transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.

Iframes resent (%) The number of I-frames retransmitted, as a percentage of the total I-frames transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
Network X.25 NPSI VC Errors, Worst-Case report

This report shows up to 15 NCP packet switching interface (NPSI) virtual circuits with the highest number of errors.

If the Error avg (hour) column contains a value that is too high, use the Network Performance feature problem components reports or the NetView hardware monitor to further investigate the problem.

This information identifies the report:

- **Report ID**: NWX2504
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25NL_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, Worst, X25, X.25
- **Variables**: From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>PU name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPSI34C</td>
<td>XL035100</td>
<td>XP035100</td>
<td>0.0</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*Figure 169. Example of a Network X.25 NPSI VC Errors, Worst-Case report*

The report contains this information:

- **NCP name**: The name of the NCP.
- **Line name**: The name of the X.25 physical link name (MCH).
- **PU name**: The name of the NPSI virtual circuit.
- **Error avg (hour)**: The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.
- **Bytes resent (%)**: The number of bytes retransmitted, as a percentage of the total number of bytes transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
- **Iframes resent (%)**: The number of I-frames retransmitted, as a percentage of the total number of I-frames transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
**X.25 utilization overview reports**

The X.25 utilization overview report shows essential utilization information for all X.25 links.

**Network X.25 Link Utilization, Daily/Weekly Overview report**

These reports show all X.25 links in alphabetic order. Use the data in these reports to check for performance problems.

This information identifies the reports:

- **Report ID**: NWX2505 (daily), NWX2506 (weekly)
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25LN_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, X25, X.25, Overview, Daily/Weekly
- **Variables**: Date (required for daily report) From_date_in_week and To_date_in_week (required for weekly report), NCP_name

---

**Network X.25 Link Utilization, Daily Overview**

Date: 1999-08-10
NCP name: NPSI34C

<table>
<thead>
<tr>
<th>Line name</th>
<th>Outbound queue avg (KB)</th>
<th>Bytes avg total (K)</th>
<th>Iframes total avg (K)</th>
<th>RR frames total avg (K)</th>
<th>Rcv line util (%)</th>
<th>Sendline util (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL038</td>
<td>6.0</td>
<td>4.440</td>
<td>1.112</td>
<td>0.356</td>
<td>3.416</td>
<td>6.53</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWX2505

---

*Figure 170. Example of a Network X.25 Link Utilization, Daily Overview report*

The reports contain this information:

**Week start date**

The start date of the week (weeks start on Monday). This column only appears in weekly reports.

**Line name**

The name of the X.25 link.

**Outbound queue avg**

The average outbound queue length, in path information units. This is calculated as:

\[ \text{OUTQUEUE\_TOTAL\_PIU} / \text{RECORDS\_COLLECTED} \]

**Bytes avg (KB)**

The average number of bytes sent and received, in thousands. This is calculated as:

\[ \text{BYTES\_TOTAL} / \text{RECORDS\_COLLECTED} / 1000 \]

**Iframes total avg (K)**

The average number of I-frames sent and received, in thousands. This is calculated as:

\[ \text{IFRAMES\_TOTAL} / \text{RECORDS\_COLLECTED} / 1000 \]

**RNR frames total avg (K)**

The average number of RNR frames sent and received, in thousands. This is calculated as:

\[ \text{RNRFRAMES\_TOTAL} / \text{RECORDS\_COLLECTED} / 1000 \]
RR frames total avg (K)
The average number of RR frames sent and received, in thousands. This is calculated as:
RRFRAMES_TOTAL/RECORDS_COLLECTED/1000.

Rcvline util avg (%)
The average line utilization on the receive line, in percent. This is calculated as: RL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.

Sendline util avg (%)
The average line utilization on the send line, in percent. This is calculated as: SL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.
X.25 utilization trend reports

The X.25 utilization trend reports show utilization trends for X.25 receive or send lines for a selected hour, day, week.

**Network X.25 Link Rcv Utilization, Hourly/Daily/Weekly Trend report**

These reports show the minimum, average, and maximum receive line utilization for a selected X.25 link.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWX2507 (hourly), NWX2508 (daily), NWX2509 (weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network X.25 Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_X25LN_UTIL_H (hourly report), NW_X25LN_UTIL_D (daily report), NW_X25LN_UTIL_W (weekly report)</td>
</tr>
<tr>
<td>Attributes</td>
<td>Network, NW, Performance, Utilization, X25, X.25, Trend, Hourly/Daily/Weekly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name</td>
</tr>
<tr>
<td>Y-axis</td>
<td>The y-axis (vertical), shows percentages from 0% to 100%.</td>
</tr>
<tr>
<td>X-axis</td>
<td>The x-axis (horizontal) depends on the time frame selected (hourly, daily, weekly, or monthly). One of these will appear on the x-axis:</td>
</tr>
<tr>
<td></td>
<td>• Hour—the hour of the day</td>
</tr>
<tr>
<td></td>
<td>• Day—the day of the week</td>
</tr>
<tr>
<td></td>
<td>• Week start date—the start date of the week (weeks start on Monday)</td>
</tr>
</tbody>
</table>
The reports contain this information:

**Link rcvd min**
The minimum line utilization on the receive line, in percent.

**Link rcvd avg**
The average line utilization on the receive line, in percent. This is calculated as: \( RL\_UTIL\_TOTAL\_PCT/RECORDS\_COLLECTED \).

**Link rcvd max**
The maximum line utilization on the receive line, in percent.

These reports show the minimum, average, and maximum send line utilization for a selected X.25 link.

This information identifies the reports:

- **Report ID**: NWX2510 (hourly), NWX2511 (daily), NWX2512 (weekly)
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25LN_UTIL_H (hourly report), NW_X25LN_UTIL_D (daily report), NW_X25LN_UTIL_W (weekly report)
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**: The y-axis (vertical), shows percentages from 0% to 100%.

**X-axis**: The x-axis (horizontal) depends on the time frame selected (hourly, daily, weekly, or monthly). One of these will appear on the x-axis:

- Hour—the hour of the day
- Day—the day of the week
- Week start date—the start date of the week (weeks start on Monday)

![Network X.25 Link Send Utilization, Daily Trend](image)

*Figure 172. Example of a Network X.25 Link Send Utilization, Daily Trend report*

The reports contain this information:
**Utilization Reports (Part 1)**

**Link sent min**  The minimum line utilization on the send line, in percent.

**Link sent avg**  The average line utilization on the send line, in percent. This is calculated as: `SL_UTIL_TOTAL_PCT/RECORDS_COLLECTED`.

**Link sent max**  The maximum line utilization on the send line, in percent.
X.25 utilization detail reports

The X.25 utilization detail reports show detailed information about send and receive data over X.25 links, at X.25 PUs, and on X.25 NPSI virtual circuits (VCs).

Network X.25 Link Receive Line, Hourly/Daily Detail report

These reports show the data rate on the receive line for a selected X.25 physical link (MCH).

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>Report group</th>
<th>Source</th>
<th>Attributes</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>NWX2513(hourly), NWX2514(daily)</td>
<td>Network X.25 Utilization Reports</td>
<td>NW_X25LN_UTIL_H(hourly report), NW_X25LN_UTIL_D(daily report)</td>
<td>Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail</td>
<td>Date (required for hourly report), From_date and To_date for daily report, Line_name</td>
</tr>
</tbody>
</table>

| Network X.25 Link Receive Line, Hourly Detail |
| Date: 2000-03-11 |
| Line Name: XL038 |

<table>
<thead>
<tr>
<th>Hour</th>
<th>Bytes rcvd rate</th>
<th>Bytes rcvd (%)</th>
<th>Iframes rcvd rate</th>
<th>RNR frames rcvd rate</th>
<th>RR frames rcvd rate</th>
<th>Rcvline</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>78</td>
<td>50.00</td>
<td>15</td>
<td>6</td>
<td>78</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWX2513

Figure 173. Example of a Network X.25 Link Receive Line, Hourly Detail report

The reports contain this information:

**Hour** The hour when the record was written to SMF (hourly report).

**Date** Date that the record was written to SMF (daily report).

**Bytes rcvd rate** The number of bytes received per second. This is calculated as: \(\text{BYTES_RCV/MEASURED_SEC}\).

**Bytes rcvd (%)** The number of bytes received, as a percentage of the total number of bytes sent and received. This is calculated as: \(\text{BYTES_RCV/BYTES_TOTAL*100}\).

**Iframes rcvd rate** The number of I-frames received per second. This is calculated as: \(\text{IFRAMES_RCV/MEASURED_SEC}\).

**RNR frames rcvd rate** The number of RNR frames received per second. This is calculated as: \(\text{RNRFRAMES_RCV/MEASURED_SEC}\).

**RR frames rcvd rate** The number of RR frames received per second. This is calculated as: \(\text{RRFRAMES_RCV/MEASURED_SEC}\).
Rcvline util (%)
The average line utilization on the receive line, in percent. This is calculated as: RL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.
Network X.25 Link Send Line, Hourly/Daily Detail report
These reports show the data rate on the send line for a selected X.25 physical link (MCH).

This information identifies the reports:

Report ID       NWX2515 (hourly), NWX2516 (daily)
Report group    Network X.25 Utilization Reports
Source          NW_X25LN_UTIL_H (hourly report), NW_X25LN_UTIL_D (daily report)
Attributes      Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail
Variables       Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>Bytes sent rate</th>
<th>Bytes sent (%)</th>
<th>Iframes sent rate</th>
<th>RNR frames sent rate</th>
<th>RR frames sent rate</th>
<th>Sendline util (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>78</td>
<td>50.00</td>
<td>24</td>
<td>6</td>
<td>42</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWX2515

Figure 174. Example of a Network X.25 Link Send Line, Hourly Detail report

The reports contain this information:

Hour        The hour when the record was written to SMF (hourly report).
Date        Date that the record was written to SMF (daily report).
Bytes sent rate      The number of bytes sent per second. This is calculated as: 
                      BYTES_SENT/MEASURED_SEC.
Bytes sent (%)    The number of bytes sent, as a percentage of the total number of 
                      bytes sent and received. This is calculated as: 
                      BYTES_SENT_TOTAL/BYTES_TOTAL*100.
Iframes sent rate    The number of I-frames sent per second. This is calculated as: 
                      IFRAMES_SENT/MEASURED_SEC.
RNR frames sent rate    The number of RNR frames sent per second. This is calculated as: 
                      RNRFRAMES_SENT/MEASURED_SEC.
RR frames sent rate    The number of RR frames sent per second. This is calculated as: 
                      RRFRAMES_SENT/MEASURED_SEC.
Sendline util (%)    The average line utilization on the send line, in percent. This is 
                      calculated as: SL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.
Network X.25 PU Connections, Hourly/Daily Detail report

These reports show the number of connections, disconnections, and virtual circuits for a selected X.25 physical link PU.

This information identifies the reports:

Report ID       NWX2517 (hourly), NWX2518 (daily)
Report group    Network X.25 Utilization Reports
Source          NW_X25PU_UTIL_H (hourly report), NW_X25PU_UTIL_D (daily report)
Attributes      Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail
Variables       Date (required for hourly report), From_date and To_date for daily report, PU_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>Inbound conn avg</th>
<th>Inbound disconn avg</th>
<th>Outbound conn avg</th>
<th>Outbound disconn avg</th>
<th>VC conn avg</th>
<th>NewVC conn avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>204.0</td>
<td>180.0</td>
<td>188.0</td>
<td>176.0</td>
<td>856.0</td>
<td>850.0</td>
</tr>
</tbody>
</table>

Figure 175. Example of a Network X.25 PU Connections, Hourly Detail report

The reports contain this information:

**Hour**
The hour when the record was written to SMF (hourly report).

**Date**
Date that the record was written to SMF (daily report).

**Inbound conn avg**
The average number of inbound connections. This is calculated as: CONN_IN/RECORDS_COLLECTED.

**Inbound disconn avg**
The average number of inbound disconnections. This is calculated as: DISCONN_IN/RECORDS_COLLECTED.

**Outbound conn avg**
The average number of outbound connections. This is calculated as: CONN_OUT/RECORDS_COLLECTED.

**Outbound disconn avg**
The average number of outbound disconnections. This is calculated as: DISCONN_OUT/RECORDS_COLLECTED.

**VC conn avg**
The average number of virtual circuits connected. This is calculated as: VCIRCUTS_TOTAL/RECORDS_COLLECTED.

**NewVC conn avg**
The average number of new virtual circuits connected. This is calculated as: VCIRCUTS_NEW_TOT/RECORDS_COLLECTED.
Utilization Reports (Part 1)

Network X.25 PU Receive Data, Hourly/Daily Detail report

These reports show the number of frames and packets received for a selected X.25 physical link PU.

This information identifies the reports:

**Report ID**  
NWX2519 (hourly), NWX2520 (daily)

**Report group**  
Network X.25 Utilization Reports

**Source**  
NW_X25PU_UTIL_H (hourly report), NW_X25PU_UTIL_D (daily report)

**Attributes**  
Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail

**Variables**  
Date (required for hourly report), From_date and To_date for daily report, PU_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>Iframes rcvd avg (K)</th>
<th>Pkts rcvd avg (K)</th>
<th>RNR pkts rcvd avg (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>0.000</td>
<td>2.220</td>
<td>78</td>
</tr>
</tbody>
</table>

**Figure 176. Example of a Network X.25 PU Receive Data, Hourly Detail report**

The reports contain this information:

**Hour**  
The hour when the record was written to SMF (hourly report).

**Date**  
The date when the record was written to SMF (daily report).

**Iframes rcvd avg (K)**  
The average number of I-frames received, in thousands. This is calculated as: IFRAMES_RCV/RECORDS_COLLECTED/1000.

**Iframes rcvd (%)**  
The number of I-frames received, as a percentage of the total number of I-frames sent and received. This is calculated as: IFRAMES_RCV/IFRAMES_TOTAL*100.

**Pkts rcvd avg (K)**  
The average number of data packets received, in thousands. This is calculated as: PACKETS_RCV/RECORDS_COLLECTED/1000.

**Pkts rcvd rate**  
The average number of data packets received per second. This is calculated as: PACKETS_RCV/MEASURED_SEC.

**RNR pkts rcvd avg (K)**  
The average number of RNR packets received, in thousands. This is calculated as: RNRPACKETS_RCV/RECORDS_COLLECTED/1000.

**RNR pkts rcvd rate**  
The average number of RNR packets received per second. This is calculated as: RNRPACKETS_RCV/MEASURED_SEC.
Network X.25 PU Send Data, Hourly/Daily Detail report

These reports show the number of frames and packets sent for a selected X.25 physical link PU.

This information identifies the reports:

- **Report ID**: NWX2521 (hourly), NWX2522 (daily)
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25PU_UTIL_H (hourly report), NW_X25PU_UTIL_D (daily report)
- **Attributes**: Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, PU_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>Iframes sent avg (K)</th>
<th>Iframes sent %</th>
<th>Pkts sent avg (K)</th>
<th>Pkts sent rate</th>
<th>RNR pkts sent avg (K)</th>
<th>RNR pkts sent rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>0.000</td>
<td>0.00</td>
<td>1.196</td>
<td>42</td>
<td>0.300</td>
<td>11</td>
</tr>
</tbody>
</table>

Figure 177. Example of a Network X.25 PU Send Data, Hourly Detail report

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: Date the record was written to SMF (daily report).
- **Iframes sent avg (K)**: The average number of I-frames sent, in thousands. This is calculated as: IFRAMES_SENT/RECORDS_COLLECTED/1000.
- **Iframes sent %**: The number of I-frames sent, as a percentage of the total number of I-frames sent and received. This is calculated as: IFRAMES_SENT/IFRAMES_TOTAL*100.
- **Pkts sent avg (K)**: The average number of data packets sent, in thousands. This is calculated as: PACKETS_SENT/RECORDS_COLLECTED/1000.
- **Pkts sent rate**: The average number of data packets sent per second. This is calculated as: PACKETS_SENT/MEASURED_SEC.
- **RNR pkts sent avg (K)**: The average number of RNR packets sent, in thousands. This is calculated as: RNRPACKETS_SNT/RECORDS_COLLECTED/1000.
- **RNR pkts sent rate**: The average number of RNR packets sent per second. This is calculated as: RNRPACKETS_SNT/MEASURED_SEC.
Outbound queue avg
The average outbound queue length, in path information units.
This is calculated as:
OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.
Network X.25 NPSI VC Frame Data, Hourly/Daily Detail report

These reports show the frame data for a selected NPSI virtual circuit (VC).

This information identifies the reports:

**Report ID**  NWX2523 (hourly), NWX2524 (daily)

**Report group**  Network X.25 Utilization Reports

**Source**  NW_X25NI_UTIL_H (hourly report), NW_X25NI_UTIL_D (daily report)

**Attributes**  Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail, NPSI

**Variables**  Date (required for hourly report), From_date and To_date for daily report, Virtual_circuit

<table>
<thead>
<tr>
<th>Hour</th>
<th>Bytes total avg (MB)</th>
<th>Iframes sent avg (K)</th>
<th>Iframes sent avg (K)</th>
<th>Iframes rcvd avg (K)</th>
<th>Outbound avg (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>0.004</td>
<td>50.00</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Figure 178. Example of a Network X.25 NPSI VC Frame Data, Hourly Detail report*

**Bytes total avg (MB)**

The average number of bytes sent and received, in megabytes. This is calculated as:

\[
\text{BYTES TOTAL} / \text{RECORDS COLLECTED} / 1 000 000.
\]

**Bytes sent (%)**

The number of bytes sent, as a percentage of the total number of bytes sent and received. This is calculated as:

\[
\text{BYTES SENT} / \text{BYTES TOTAL} * 100.
\]

**Iframes sent avg (K)**

The average number of I-frames sent, in thousands. This is calculated as:

\[
\text{IFRAMES SENT} / \text{RECORDS COLLECTED} / 1000.
\]

**Iframes sent rate**

The number of I-frames sent per second. This is calculated as:

\[
\text{IFRAMES SENT} / \text{MEASURED_SEC}.
\]

**Iframes rcvd avg (K)**

The average number of I-frames received, in thousands. This is calculated as:

\[
\text{IFRAMES RCV} / \text{RECORDS COLLECTED} / 1000.
\]

**Iframes rcvd rate**

The number of I-frames received per second. This is calculated as:

\[
\text{IFRAMES RCV} / \text{MEASURED_SEC}.
\]
Outbound queue avg

The average outbound queue length, in path information units.
This is calculated as:
OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.
Network X.25 NPSI VC Rcv Pkts, Hourly/Daily Detail report

These reports show the number of packets received for a selected NPSI virtual circuit (VC).

This information identifies the reports:

- **Report ID**: NWX2525 (hourly), NWX2526 (daily)
- **Report group**: Network X.25 Utilization Reports
- **Source**: NW_X25NI_UTIL_H (hourly report), NW_X25NI_UTIL_D (daily report)
- **Attributes**: Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail, NPSI
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Virtual_circuit

<table>
<thead>
<tr>
<th>Date</th>
<th>VC name</th>
<th>Pkts rcvd avg (K)</th>
<th>Pkts rcvd rate</th>
<th>Pkts D-bit rcvd avg (K)</th>
<th>Pkts D-bit rcvd rate</th>
<th>Pkts M-bit rcvd avg (K)</th>
<th>Pkts M-bit rcvd rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-03-11</td>
<td>XP035100</td>
<td>2.220</td>
<td>0.684</td>
<td>0.300</td>
<td>0.300</td>
<td>0.300</td>
<td>0.300</td>
</tr>
</tbody>
</table>

**Figure 179. Example of a Network X.25 NPSI VC Rcv Pkts, Hourly Detail report**

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: Date that the record was written to SMF (daily report).
- **Pkts rcvd avg (K)**: The average number of data packets received, in thousands. This is calculated as: \( \text{PACKETS_RCV/RECORDS_COLLECTED}/1000 \).

- **Pkts rcvd rate**: The average number of data packets received per second. This is calculated as: \( \text{PACKETS_RCV/MEASURED_SEC} \).

- **Pkts D-bit rcvd avg (K)**: The average number of packets with the D-bit on received, in thousands. This is calculated as: \( \text{DPACKETS_RCV/RECORDS_COLLECTED}/1000 \).

- **Pkts D-bit rcvd rate**: The average number of packets with the D-bit on received per second. This is calculated as: \( \text{DPACKETS_RCV/MEASURED_SEC} \).

- **Pkts M-bit rcvd avg (K)**: The average number of packets with the M-bit on received per second. This is calculated as: \( \text{MPACKETS_RCV/RECORDS_COLLECTED}/1000 \).

- **Pkts M-bit rcvd rate**: The average number of packets with the M-bit on received per second. This is calculated as: \( \text{MPACKETS_RCV/MEASURED_SEC} \).
Utilization Reports (Part 1)

Network X.25 NPSI VC Send Pkts, Hourly/Daily Detail report

These reports show the number of packets sent for a selected NPSI virtual circuit (VC).

This information identifies the reports:

**Report ID**   NWX2527 (hourly), NWX2528 (daily)

**Report group**   Network X.25 Utilization Reports

**Source**   NW_X25NI_UTIL_H (hourly report), NW_X25NI_UTIL_D (daily report)

**Attributes**   Network, NW, Performance, Utilization, X25, X.25, Hourly/Daily, Detail, NPSI

**Variables**   Date (required for hourly report), From_date and To_date for daily report, Virtual_circuit

---

<table>
<thead>
<tr>
<th>Hour</th>
<th>Pkts sent avg (K)</th>
<th>Pkts sent rate</th>
<th>Pkts D-bit sent avg (K)</th>
<th>Pkts D-bit sent rate</th>
<th>Pkts M-bit sent avg (K)</th>
<th>Pkts M-bit sent rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>1.196</td>
<td>42</td>
<td>0.428</td>
<td>15</td>
<td>0.236</td>
<td>8</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWX2527

*Figure 180. Example of a Network X.25 NPSI VC Send Pkts, Hourly Detail report*

The reports contain this information:

**Hour**   The hour when the record was written to SMF (hourly report).

**Date**   Date that the record was written to SMF (daily report).

**Pkts sent avg (K)**   The average number of data packets sent, in thousands. This is calculated as: PACKETS_SENT/RECORDS_COLLECTED/1000.

**Pkts sent rate**   The average number of data packets sent per second. This is calculated as: PACKETS_SENT/MEASURED_SEC.

**Pkts D-bit sent avg (K)**   The average number of packets with the D-bit on sent, in thousands. This is calculated as: DPACKETS_SENT/RECORDS_COLLECTED/1000.

**Pkts D-bit sent rate**   The average number of packets with the D-bit on sent per second. This is calculated as: DPACKETS_SENT/MEASURED_SEC.

**Pkts M-bit sent avg (K)**   The average number of packets with the M-bit on sent per second. This is calculated as: MPACKETS_SENT/RECORDS_COLLECTED/1000.

**Pkts M-bit sent rate**   The average number of packets with the M-bit on sent per second. This is calculated as: MPACKETS_SENT/MEASURED_SEC.
NEO utilization reports

These reports provide utilization information for the Network Extension Option (NEO).

NEO utilization worst-case reports

The NEO utilization worst-case reports provide information on the NEO links with the highest number of errors, the largest queue lengths, and the highest number of PU errors.

Network NEO Link Errors, Worst-Case report

This report shows up to 15 NEO links with the highest number of errors.

If the Error avg (hour) column contains a value that is too high, use the Network Performance feature problem component reports or the NetView hardware monitor to further investigate the problem.

This information identifies the report:

- **Report ID**: NWNEO01
- **Report group**: Network NEO Utilization Reports
- **Source**: NW_NEU_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, Worst, NEO
- **Variables**: From_date, To_date

```
Network NEO Link Errors, Worst Case
From date: '2000-01-28' To date: '2000-02-01'

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX2NV3T</td>
<td>N3L08</td>
<td>104.2</td>
<td>16.64</td>
<td>20.22</td>
</tr>
</tbody>
</table>
```

Tivoli Decision Support for z/OS Report: NWNEO01

**Figure 181. Example of a Network NEO Link Errors, Worst-Case report**

The report contains this information:

- **NCP Name**: The name of the NCP.
- **Line name**: The VTAM resource name of the line connecting the PU to the NCP.
- **Error avg (hour)**: The average number of errors counted per hour. This is calculated as: ERROR_TOTAL/MEASURED_HOURS.
- **Bytes resent (%)**: The number of bytes retransmitted, as a percentage of the total number of bytes transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
- **Iframes resent (%)**: The number of I-frames retransmitted, as a percentage of the total number of I-frames transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
Network NEO Link Utilization, Worst-Case report

This report shows up to 15 NEO links with the highest outbound queue length. The report also shows the maximum outbound queue length and the utilization on both the receive and send lines.

This information identifies the report:

- **Report ID**: NWNEO02
- **Report group**: Network NEO Utilization Reports
- **Source**: NW_NEO_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, Worst, NEO
- **Variables**: From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Outbound queue avg</th>
<th>Outbound queue max</th>
<th>Thresh exceed (%)</th>
<th>Rcvline util (%)</th>
<th>Sendline util (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX2NV3T</td>
<td>N3LO8</td>
<td>19.0</td>
<td>34</td>
<td>0.00</td>
<td>8.55</td>
<td>8.55</td>
</tr>
</tbody>
</table>

Figure 182. Example of a Network NEO Link Utilization, Worst-Case report

The report contains this information:

- **NCP Name**: The name of the NCP.
- **Line name**: The VTAM resource name of the line connecting the PU to the NCP.

**Outbound queue avg**

The average outbound queue length, in path information units. This is calculated as:

\[ \text{OUTQUEUE\_TOTAL\_PIU/RECORDS\_COLLECTED}. \]

**Outbound queue max**

The maximum outbound queue length, in path information units.

**Thresh exceed (%)**

The percentage of log records in which the utilization threshold was exceeded. This is calculated as:

\[ \text{THRESHOLD\_EXCEEDS/RECORDS\_COLLECTED*100}. \]

**Rcvline util (%)**

The average line utilization on the receive line, in percent. This is calculated as:

\[ \text{RL\_UTIL\_TOTAL\_PCT/RECORDS\_COLLECTED}. \]

**Sendline util (%)**

The average line utilization on the send line, in percent. This is calculated as:

\[ \text{SL\_UTIL\_TOTAL\_PCT/RECORDS\_COLLECTED}. \]
Network NEO PU Errors, Worst-Case report

This report shows up to 15 NEO PUs with the highest number of errors.

If the Error avg (hour) column contains a value that is too high, use the Network Performance feature problem component reports or the NetView hardware monitor to further investigate the problem.

This information identifies the report:

- **Report ID**: NWNEO03
- **Report group**: Network NEO Utilization Reports
- **Source**: NW_NEO_UTIL_D
- **Attributes**: Network, NW, Performance, Utilization, Worst, NEO
- **Variables**: From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>PU name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX2NV3T</td>
<td>N3L08</td>
<td>N3L08INN</td>
<td>28400.6</td>
<td>16.64</td>
<td>20.22</td>
</tr>
</tbody>
</table>

Figure 183. Example of a Network NEO PU Errors, Worst-Case report

The report contains this information:

- **NCP Name**: The name of the NCP.
- **Line Name**: The VTAM resource name of the line connecting the PU to the NCP.
- **PU name**: The name of the NEO physical unit.
- **Error avg (hour)**: The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.
- **Bytes resent (%)**: The number of bytes retransmitted, as a percentage of total number of bytes transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
- **Iframes resent (%)**: The number of I-frames retransmitted, as a percentage of the total I-frames transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
**NEO utilization overview reports**

The NEO utilization overview report shows utilization information for all NEO links for a specified day or week.

**Network NEO Link Utilization, Daily/Weekly Overview report**

These reports show all NEO links in alphabetic order. Use the data in these reports to check for performance problems.

This information identifies the reports:

- **Report ID**: NWNEO04 (daily report), NWNEO05 (weekly report)
- **Report group**: Network NEO Utilization Reports
- **Source**: NW_NEO_UTIL_D (daily report), NW_NEO_UTIL_W (weekly report)
- **Attributes**: Network, NW, Performance, Utilization, Overview, Daily/Weekly, NEO
- **Variables**: Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

---

**Network NEO Link Utilization, Daily Overview**

**Date**: 2000-03-11

**NCP name**: NX2NV3T

<table>
<thead>
<tr>
<th>Line name</th>
<th>Outbound queue avg</th>
<th>Bytes avg (KB)</th>
<th>Iframes total avg</th>
<th>Iframes Rcvline avg</th>
<th>Sendline util %</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3L08</td>
<td>19.0</td>
<td>4.604</td>
<td>1.276</td>
<td>4</td>
<td>8.56</td>
</tr>
</tbody>
</table>

**Figure 184. Example of a Network NEO Link Utilization, Daily Overview report**

The reports contain this information:

**Week start date**

The start date of the week (weeks start on Monday). This column only appears in weekly reports.

**Line Name**

The VTAM resource name of the line connecting the PU to the NCP.

**Outbound queue avg**

The average outbound queue length, in path information units. This is calculated as:

\[
\text{OUTQUEUE\_TOTAL\_PIU/RECORDS\_COLLECTED.}
\]

**Bytes avg (KB)**

The average number of bytes sent and received, in thousands. This is calculated as:

\[
\text{BYTES\_TOTAL/RECORDS\_COLLECTED/1000.}
\]

**Iframes total avg (K)**

The average number of I-frames sent and received, in thousands. This is calculated as:

\[
\text{IFRAMES\_TOTAL/RECORDS\_COLLECTED/1000.}
\]

**Iframes size avg**

The average size of I-frames sent and received, in bytes per frame. This is calculated as:

\[
\text{BYTES\_TOTAL/IFRAMES\_TOTAL.}
\]
Rcvline util (%)
The average line utilization on the receive line, in percent. This is calculated as: RL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.

Sendline util (%)
The average line utilization on the send line, in percent. This is calculated as: SL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.
NEO utilization detail reports

The NEO utilization detail reports show detailed information about NEO links, send and receive lines, and PUs.

Network NEO Link Receive Line, Hourly/Daily Detail report

These reports show receive line utilization for a selected NEO link.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWNEO06 (hourly report), NWNEO07 (daily report)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network NEO Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_NEO_UTIL_H (hourly report), NW_NEO_UTIL_D (daily report)</td>
</tr>
<tr>
<td>Attributes</td>
<td>Network, NW, Performance, Utilization, Detail, NEO, Hourly/Daily</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required for hourly report), From_date and To_date for daily report, Line_name</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hour</th>
<th>Bytes rcvd avg (MB)</th>
<th>Bytes rcvd (%)</th>
<th>Bytes rcvd rate</th>
<th>Rcvline util (%)</th>
<th>Iframes rcvd avg (K)</th>
<th>Iframes rcvd (%)</th>
<th>Iframes rcvd rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>0.002</td>
<td>50.00</td>
<td>71</td>
<td>8.56</td>
<td>0.510</td>
<td>39.97</td>
<td>16</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNEO06

Figure 185. Example of a Network NEO Link Receive Line, Hourly Detail report

The reports contain this information:

Hour  The hour when the record was written to SMF (hourly report).
Date  Date when the record was written to SMF (daily report).
Bytes rcvd avg (MB)  The average number of bytes received, in megabytes. This is calculated as: `BYTES_RCV/RECORDS_COLLECTED/1 000 000`.
Bytes rcvd (%)  The number of bytes received, as a percentage of the total number of bytes sent and received. This is calculated as: `BYTES_RCV/BYTES_TOTAL*100`.
Bytes rcvd rate  The number of bytes received per second. This is calculated as: `BYTES_RCV/MEASURED_SEC`.
Rcvline util (%)  The average line utilization on the receive line, in percent. This is calculated as: `RL_UTIL_TOTAL_PCT/RECORDS_COLLECTED`.
Iframes rcvd avg (K)  The average number of I-frames received, in thousands. This is calculated as: `IFRAMES_RCV/RECORDS_COLLECTED/1000`.
Iframes (%)  The number of I-frames received, as a percentage of the total.
number of I-frames. This is calculated as:
IFRAMES_RCV/IFRAMES_TOTAL*100.

Iframes rcvd rate
The number of I-frames received per second. This is calculated as:
IFRAMES_RCV/MEASURED_SEC.
Network NEO Link Send Line, Hourly/Daily Detail report
These reports show the send line utilization for a selected NEO link.

This information identifies the reports:

**Report ID** NWNEO08 (hourly report), NWNEO09 (daily report)

**Report group** Network NEO Utilization Reports

**Source** NW_NEO_UTIL_H (hourly report), NW_NEO_UTIL_D (daily report)

**Attributes** Network, NW, Performance, Utilization, Detail, NEO, Hourly/Daily

**Variables** Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Date: 2000-03-11</th>
<th>Line Name: N3L08</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bytes sent avg (MB)</strong></td>
<td><strong>Bytes sent (%)</strong></td>
</tr>
<tr>
<td>19</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWNE008

**Figure 186. Example of a Network NEO Link Send Line, Hourly Detail report**

The reports contain this information:

**Hour** The hour when the record was written to SMF (hourly report).

**Date** Date when the record was written to SMF (daily report).

**Bytes sent avg (MB)** The average number of bytes sent, in megabytes. This is calculated as: BYTES_SENT/RECORDS_COLLECTED/1 000 000.

**Bytes sent (%)** The number of bytes sent, as a percentage of the total number of bytes sent and received. This is calculated as: BYTES_SENT/BYTES_TOTAL*100.

**Bytes sent rate** The number of bytes sent per second. This is calculated as: BYTES_SENT/MEASURED_SEC.

**Sendline util (%)** The average line utilization on the send line, in percent. This is calculated as: SL_UTIL_TOTAL_PCT/RECORDS_COLLECTED.

**Iframes sent avg (K)** The average number of I-frames sent, in thousands. This is calculated as: IFRAMES_SENT/RECORDS_COLLECTED/1000.

**Iframes (%)** The number of I-frames sent, as a percentage of the total number of bytes sent and received. This is calculated as: IFRAMES_SENT/IFRAMES_TOTAL*100.
Iframes sent rate

The number of I-frames sent per second. This is calculated as:
IFRAMES_SENT/MEASURED_SEC.
Network NEO Link Data, Hourly/Daily Detail report

These reports show the outbound queue value, load, and errors for a selected NEO link.

This information identifies the reports:

- **Report ID**: NWNEO10 (hourly report), NWNEO11 (daily report)
- **Report group**: Network NEO Utilization Reports
- **Source**: NW_NEO_UTIL_H (hourly report), NW_NEO_UTIL_D (daily report)
- **Attributes**: Network, NW, Performance, Utilization, Detail, NEO, Hourly/Daily
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Hour</th>
<th>Outbound queue avg</th>
<th>Outbound queue max</th>
<th>Thresh exceed (%)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
<th>Error avg (hour)</th>
<th>Date: 2000-03-11</th>
<th>Line name: N3L08</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>19.0</td>
<td>34</td>
<td>0.00</td>
<td>16.64</td>
<td>20.22</td>
<td>28400.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 187. Example of a Network NEO Link Data, Hourly Detail report**

The reports contain this information:

- **Hour**: The hour when the record was written to SMF (hourly report).
- **Date**: The date when the record was written to SMF (daily report).
- **Outbound queue avg**: The average outbound queue length, in path information units. This is calculated as: OUTQUEUE_TOTAL_PIU/RECORDS_COLLECTED.
- **Outbound queue max**: The maximum outbound queue length, in path information units.
- **Thresh exceed (%)**: The percentage of line utilization above the threshold value.
- **Bytes resent (%)**: The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted. This is calculated as: BYTES_RETRANS/BYTES_SENT*100.
- **Iframes resent (%)**: The number of I-frames retransmitted, as a percentage of the total number of I-frames that were transmitted. This is calculated as: IFRAMES_RETRANS/IFRAMES_SENT*100.
- **Error avg (hour)**: The average number of errors counted per hour. This is calculated as: ERRORS_TOTAL/MEASURED_HOURS.
Network NEO PU Data, Hourly/Daily Detail report

These reports show data for a selected NEO PU.

This information identifies the reports:

**Report ID**  NWNEO12 (hourly report), NWNEO13 (daily report)

**Report group**  Network NEO Utilization Reports

**Source**  NW_NEO_UTIL_H (hourly report), NW_NEO_UTIL_D (daily report)

**Attributes**  Network, NW, Performance, Utilization, Detail, NEO, Hourly/Daily

**Variables**  Date (required for hourly report), From_date and To_date for daily report, PU_name

![Network NEO PU Data, Hourly Detail](image)

**Figure 188. Example of a Network NEO PU Data, Hourly Detail report**

The reports contain this information:

**Hour**  The hour when the record was written to SMF (hourly report).

**Date**  The date when the record was written to SMF (daily report).

**Bytes avg (MB)**  The average number of bytes sent and received, in megabytes. This is calculated as:

\[
\text{BYTES\_TOTAL/RECORDS\_COLLECTED/1 000 000.}
\]

**Bytes rcvd (%)**  The number of bytes received, as a percentage of the total number of bytes sent and received. This is calculated as:

\[
\text{BYTES\_RCV/BYTES\_TOTAL*100.}
\]

**Bytes sent (%)**  The number of bytes sent, as a percentage of the total number of bytes sent and received. This is calculated as:

\[
\text{BYTES\_SENT/BYTES\_TOTAL*100.}
\]

**Bytes resent (%)**  The number of bytes retransmitted, as a percentage of the total number of bytes transmitted. This is calculated as:

\[
\text{BYTES\_RETRANS/BYTES\_SENT*100.}
\]

**Error avg (hour)**  The average number of errors counted per hour. This is calculated as:

\[
\text{ERRORS\_TOTAL/MEASURED\_HOURS.}
\]

**Iframes avg (K)**  The average number of I-frames sent and received, in thousands. This is calculated as:

\[
\text{IFRAMES\_TOTAL/RECORDS\_COLLECTED/1000.}
\]
Utilization Reports (Part 1)

Iframes size avg

The average size of I-frames sent and received. This is calculated as: BYTES_TOTAL/IFRAMES_TOTAL.
Chapter 10. Utilization reports (part 2 of 2)

This chapter and the previous chapter (Part 1) describe Tivoli Decision Support for z/OS utilization reports, which provide information on the utilization of network resources by specific components of your network.

In this chapter, utilization information is provided for:
- LAN segments and bridges
- ODLC
- Frame Relay
- VTAM
- SNMP routers

In the previous chapter, utilization information is provided for:
- NCP
- Line
- PU
- NPM
- NetView Session Monitor
- Network Token-Ring Interface (NTRI)
- X.25
- Network Extension Option (NEO)
LAN utilization reports

These reports provide utilization information related to LAN segments and LAN bridges.

LAN segment utilization reports

This section lists and gives examples of the following reports on LAN segment utilization:
- Worst-case reports
- Overview reports
- Detail reports
Network LAN segment utilization worst-case reports
The worst-case reports give information about the LAN segment with the most errors and highest utilization.

Network LAN Segment Errors, Worst-Case report
This report shows the LAN segments with the highest percentage of errors. An error is any status that is not Normal. Up to 15 LAN segments are shown in descending order based on the Status error (%) column.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWLAN01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network LAN Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_LANS_UTIL_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Worst, LAN</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

Network LAN Segment Errors, Worst Case
From date: '2000-06-14' To date: '2000-06-20'

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment type</th>
<th>Status error (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>T-R 16-MBPS</td>
<td>23.3</td>
</tr>
<tr>
<td>200</td>
<td>T-R 16-MBPS</td>
<td>1.8</td>
</tr>
<tr>
<td>300</td>
<td>T-R 16-MBPS</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLAN01

Figure 189. Example of a Network LAN Segment Errors, Worst-Case report

The report contains this information:

Segment The LAN segment number.

Segment type A short descriptive text that shows the type of this segment.

Status error (%) The number of errors, as a percentage of the total number of status events recorded. All types except the Normal status are considered to be an error.
Utilization Reports (Part 2)

Network LAN Segment Utilization, Worst-Case report
This report shows the LAN segments with the highest average utilization. Up to 15 LAN segments are shown in descending order based on the Util avg (%) column.

In cases where the Util avg (%) column shows a value that is too high, use the detail reports NWLAN12 and NWLAN13 to find more detailed information.

This information identifies the report:

Report ID    NWLAN02
Report group Network LAN Utilization Reports
Source       NW_LANS_UTIL_D
Attributes   NW, Network, Performance, Utilization, Worst, LAN
Variables    From_date, To_date

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment type</th>
<th>Util avg (%)</th>
<th>Confidence level (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>T-R 16-MBPS</td>
<td>26.6</td>
<td>80.0</td>
</tr>
<tr>
<td>300</td>
<td>T-R 16-MBPS</td>
<td>25.9</td>
<td>80.0</td>
</tr>
<tr>
<td>200</td>
<td>T-R 16-MBPS</td>
<td>23.6</td>
<td>80.0</td>
</tr>
</tbody>
</table>

Figure 190. Example of a Network LAN Segment Utilization, Worst-Case report

The report contains this information:

Segment   The LAN segment number.
Segment type A short descriptive text that shows the type of this segment.
Util avg (%) The average segment utilization, in percent.
Confidence level (%) The confidence level of the data, in percent.
Network LAN Segment Exception, Worst-Case report

This report shows the LAN segments with the highest number of intervals in which the high threshold was exceeded. Up to 15 LAN segments are shown in descending order based on the Highex (%) column.

For this report to give useful information, the NPM threshold levels must be set by the LSEGCOLL NPM command.

In cases where the Highex (%) column shows a value that is too high, use the detail reports NWLAN10 and NWLAN11 to find more detailed information.

This information identifies the report:

Report ID NWLAN03
Report group Network LAN Utilization Reports
Source NW_LANS_UTIL_D
Attributes NW, Network, Performance, Utilization, Worst, LAN
Variables From_date, To_date

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment type</th>
<th>Highex (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>T-R 16-Mbps</td>
<td>60.0</td>
</tr>
<tr>
<td>100</td>
<td>T-R 16-Mbps</td>
<td>40.0</td>
</tr>
<tr>
<td>200</td>
<td>T-R 16-Mbps</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Figure 191. Example of a Network LAN Segment Exception, Worst-Case report

The report contains this information:

Segment The LAN segment number.
Segment type A short descriptive text that shows the type of this segment.
Highex (%) The percentage of intervals in which the high threshold was exceeded.
**Network LAN segment utilization overview reports**
The overview reports give information about the primary performance of LAN segments.

**Network LAN Segment Status by Type, Daily/Weekly Overview report**
These reports show the distribution of the different segment statuses in percent. The information is grouped by segment type.

This information identifies the reports:

- **Report ID**: NWLAN04 (daily), NWLAN05 (weekly)
- **Report group**: Network LAN Utilization Reports
- **Source**: NW_LANS_UTIL_D (daily report), NW_LANS_UTIL_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, LAN, Daily/Weekly
- **Variables**: Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report)

### Network LAN Segment Status by Type, Daily Overview

**Date**: 2000-06-14

<table>
<thead>
<tr>
<th>Segment type</th>
<th>Status 1 Beacon (%)</th>
<th>Status 2 Wrapped (%)</th>
<th>Status 3 Software (%)</th>
<th>Status 4 Congest (%)</th>
<th>Status 5 Normal (%)</th>
<th>Status 6 Unknown (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-R 16-MBPS</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*Figure 192. Example of a Network LAN Segment Status by Type, Daily Overview report*

The reports contain this information:

- **Week start date**: The start date of the week (weeks start on Monday). This column appears only in weekly reports.

- **Segment type**: The segment type. These types are defined: Token Ring 16-Mbps, Token Ring 4-Mbps, Ethernet, PCNET, 3174-Peer, and Unknown.

- **Status 1 Beacon (%)**: The number of events where status **Beaconing** occurred, as a percentage of the total number of status events.

- **Status 2 Wrapped (%)**: The number of events where status **Wrapped** occurred, as a percentage of the total number of status events.

- **Status 3 Software (%)**: The number of events where status **Software error** occurred, as a percentage of the total number of status events.

- **Status 4 Congest (%)**: The number of events where status **Congestion error** occurred, as a percentage of the total number of status events.
<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status 5 Normal</td>
<td>The number of events where status Normal occurred, as a percentage of the total number of status events.</td>
</tr>
<tr>
<td>Status 6 Unknown</td>
<td>The number of events where status Unknown occurred, as a percentage of the total number of status events.</td>
</tr>
</tbody>
</table>
**Network LANSegments by Type, Daily/Weekly Overview report**

These reports show information about all segments of a selected type. You can specify these segment types: 1 (Token Ring 16-Mbps), 2 (Token Ring 4-Mbps), 3 (Ethernet), 4 (PCNET), 5 (3174-Peer), and 6 (Unknown).

This information identifies the reports:

- **Report ID**: NWLAN06 (daily), NWLAN07 (weekly)
- **Report group**: Network LAN Utilization Reports
- **Source**: NW_LANS_UTIL_D (daily report), NW_LANS_UTIL_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, LAN, Daily/Weekly
- **Variables**: Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Type

---

### Network LAN Segments by Type, Daily Overview

**Date**: 2000-06-14  
**Segment Type**: 1

<table>
<thead>
<tr>
<th>Segment</th>
<th>Util min (%)</th>
<th>Util avg (%)</th>
<th>Util max (%)</th>
<th>Highex (%)</th>
<th>Conf level (%)</th>
<th>Status error (%)</th>
<th>Status count</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>42.0</td>
<td>58.6</td>
<td>94.0</td>
<td>40.0</td>
<td>80.0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>200</td>
<td>42.0</td>
<td>52.0</td>
<td>66.0</td>
<td>20.0</td>
<td>80.0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>300</td>
<td>42.0</td>
<td>57.0</td>
<td>75.0</td>
<td>60.0</td>
<td>80.0</td>
<td>0.0</td>
<td>5</td>
</tr>
</tbody>
</table>

---

*Figure 193. Example of a Network LAN Segments by Type, Daily Overview report*

The reports contain this information:

**Week start date**  
The start date of the week (weeks start on Monday). This column appears only in weekly reports.

**Segment**  
The LAN segment number.

**Util min (%)**  
The minimum segment utilization, in percent.

**Util avg (%)**  
The average segment utilization, in percent.

**Util max (%)**  
The maximum segment utilization, in percent.

**Highex (%)**  
The percentage of intervals in which the high threshold was exceeded.

**Conf level (%)**  
The confidence level of the data, in percent.

**Status error (%)**  
The number of status errors, as a percentage of the total number of events recorded.

**Status count**  
The total number of status events recorded.
LAN segment utilization detail reports
The detail reports give detailed information about LAN segment errors and segment utilization.

Network LAN Segment Errors, Hourly/Daily Detail report
These reports show the percentage distribution of the different statuses for a selected segment.

This information identifies the reports:
**Report ID** NWLAN10 (hourly), NWLAN11 (daily)
**Report group** Network LAN Utilization Reports
**Source** NW_LANS_UTIL_H (hourly report), NW_LANS_UTIL_D (daily report)
**Attributes** NW, Network, Performance, Utilization, Detail, LAN, Hourly/Daily
**Variables** Segment, Date (required for hourly report), From_date and To_date for daily report

<table>
<thead>
<tr>
<th>Date</th>
<th>Status 1 error (%)</th>
<th>Status 2 Beacon (%)</th>
<th>Status 3 Wrapped (%)</th>
<th>Status 4 Software (%)</th>
<th>Status 5 Congest (%)</th>
<th>Status 6 Normal (%)</th>
<th>Status 6 Unknown (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-06-14</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Figure 194. Example of a Network LAN Segment Errors, Daily Detail report

The reports contain this information:
**Hour** The hour when the record was written to SMF (hourly report).
**Date** The date when the record was written to SMF (daily report).
**Status error (%)** The percentage of errors that occurred.

**Status 1 Beacon (%)** The number of events where status **Beaconing** occurred, as a percentage of the total number of status events.

**Status 2 Wrapped (%)** The number of events where status **Wrapped** occurred, as a percentage of the total number of status events.

**Status 3 Software (%)** The number of events where status **Software error** occurred, as a percentage of the total number of status events.

**Status 4 Congest (%)** The number of events where status **Congestion** occurred, as a percentage of the total number of status events.

**Status 5 Normal (%)** The number of events where status **Normal** occurred, as a percentage of the total number of status events.
Status 6 Unknown (%)
The number of events where status Unknown occurred, as a percentage of the total number of status events.
Network LAN Segment Utilization, Hourly/Daily Detail report

These reports show information about the segment utilization and the confidence level of the data.

This information identifies the reports:

**Report ID**    NWLAN12 (hourly), NWLAN13 (daily)

**Report group** Network LAN Utilization Reports

**Source**        NW_LANS_UTIL_H (hourly report), NW_LANS_UTIL_D (daily report)

**Attributes**    NW, Network, Performance, Utilization, Detail, LAN, Hourly/Daily

**Variables**     Segment, Date (required for hourly report), From_date and To_date

<table>
<thead>
<tr>
<th>Date</th>
<th>Util min (%)</th>
<th>Util avg (%)</th>
<th>Util max (%)</th>
<th>Highex (%)</th>
<th>Conf level (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-06-14</td>
<td>42.00</td>
<td>58.60</td>
<td>94.00</td>
<td>40.00</td>
<td>80.00</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLAN13

Figure 195. Example of a Network LAN Segment Utilization, Daily Detail report

The reports contain this information:

**Hour**        The hour when the record was written to SMF (hourly report).

**Date**        The date when the record was written to SMF (daily report).

**Util min (%)** The minimum segment utilization, in percent.

**Util avg (%)** The average segment utilization, in percent.

**Util max (%)** The maximum segment utilization, in percent.

**Highex (%)**   The percentage of intervals in which the high threshold was exceeded.

**Conf level (%)** The confidence level of the data, in percent.
LAN bridge utilization reports

This section lists and gives examples of the following reports on LAN bridge utilization:

- Worst-case reports
- Overview reports
- Trend reports
- Detail reports

LAN bridge utilization worst-case reports

The worst-case reports give information about the LAN bridges with the highest number of broadcast frames and the highest number of frames not forwarded.
Network LAN Bridge Exception, Worst-Case report

This report shows the LAN bridges with the highest number of intervals in which thresholds (broadcast frames forwarded high, nonbroadcast frames forwarded high, and frames lost high) were exceeded. Up to 15 LAN bridges are shown in descending order based on the Exceeded total column.

For this report to give useful information, the NPM threshold levels must be set by the LBRGCOLL NPM command.

In cases where the Exceeded total column shows a value that is too high, use the Network LAN Bridge Thresh Exceeded Detail reports NWLAN52 and NWLAN53 to find the threshold that created the sum value.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWLAN31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network LAN Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_LANB_UTIL_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Worst, LAN,</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bridge name</th>
<th>Exceeded total</th>
<th>Segment 1 exceeded</th>
<th>Segment 2 exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1003N91</td>
<td>408 003</td>
<td>204 100</td>
<td>204</td>
</tr>
<tr>
<td>B1006N85</td>
<td>320 006</td>
<td>160 200</td>
<td>160</td>
</tr>
<tr>
<td>B1005N91</td>
<td>284 005</td>
<td>142 100</td>
<td>142</td>
</tr>
<tr>
<td>B1004N85</td>
<td>138 004</td>
<td>69 200</td>
<td>69</td>
</tr>
<tr>
<td>BIN91132</td>
<td>56 100</td>
<td>28 132</td>
<td>28</td>
</tr>
<tr>
<td>BRDK1N91</td>
<td>52 001</td>
<td>26 100</td>
<td>26</td>
</tr>
<tr>
<td>BIN91122</td>
<td>36 100</td>
<td>18 122</td>
<td>18</td>
</tr>
</tbody>
</table>

Figure 196. Example of a Network LAN Bridge Exception, Worst-Case report

The report contains this information:

- **Bridge name**: The LAN bridge name.
- **Exceeded total**: The number of thresholds exceeded for segments 1 and 2.
- **Segment 1**: The LAN segment address of the segment attached to port 1.
- **Segment 1 exceeded**: The number of thresholds exceeded for segment 1.
- **Segment 2**: The LAN segment address of the segment attached to port 2.
- **Segment 2 exceeded**: The number of thresholds exceeded for segment 2.
Network LAN Bridge Broadcast, Worst-Case report

This report shows the LAN bridges with the highest percentage of broadcast frames. Up to 15 LAN bridges are shown in descending order based on the Broadcast frames (%) column.

This information identifies the report:

---

**Report ID** NWLAN32  
**Report group** Network LAN Utilization Reports  
**Source** NW_LANB_UTIL_D  
**Attributes** NW, Network, Performance, Utilization, Worst, LAN,  
**Variables** From_date, To_date

---

<table>
<thead>
<tr>
<th>Bridge name</th>
<th>Broadcast frames (%)</th>
<th>Seg1</th>
<th>Frames seg1</th>
<th>Broadcast frames (%)</th>
<th>Seg2</th>
<th>Frames seg2</th>
<th>Broadcast frames (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01ABRDGE</td>
<td>99.9</td>
<td>A1X</td>
<td>637728</td>
<td>99.9</td>
<td>B1Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>02ABRDGE</td>
<td>99.9</td>
<td>A2X</td>
<td>637728</td>
<td>99.9</td>
<td>B2Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>05ABRDGE</td>
<td>99.9</td>
<td>A5X</td>
<td>637728</td>
<td>99.9</td>
<td>B5Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>04ABRDGE</td>
<td>99.9</td>
<td>A4X</td>
<td>637728</td>
<td>99.9</td>
<td>B4Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>06ABRDGE</td>
<td>99.9</td>
<td>A6X</td>
<td>637728</td>
<td>99.9</td>
<td>B6Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>03ABRDGE</td>
<td>99.9</td>
<td>A3X</td>
<td>637728</td>
<td>99.9</td>
<td>B3Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>07ABRDGE</td>
<td>99.9</td>
<td>A7X</td>
<td>637728</td>
<td>99.9</td>
<td>B7Y</td>
<td>637728</td>
<td>99.9</td>
</tr>
<tr>
<td>B1N91124</td>
<td>92.4</td>
<td>10B</td>
<td>654923</td>
<td>95.6</td>
<td>124</td>
<td>31539</td>
<td>26.5</td>
</tr>
</tbody>
</table>

---

**Figure 197. Example of a Network LAN Bridge Broadcast, Worst-Case report**

The report contains this information:

**Bridge name**  
The LAN bridge name.

**Broadcast frames (%)**  
The number of broadcast frames for segments 1 and 2, as a percentage of the total number of frames (broadcast and nonbroadcast) for segments 1 and 2. This is calculated as: 100*(P1BF_SUM + P2BF_SUM)/(P1F_SUM + P2F_SUM).

**Seg1**  
The LAN segment address of the segment attached to port 1.

**Frames seg1**  
The total number of frames (broadcast and nonbroadcast) for segment 1.

**Broadcast frames seg1 (%)**  
The number of broadcast frames for segment 1, as a percentage of the total number of frames (broadcast and nonbroadcast) for segment 1. This is calculated as: 100*P1BF_SUM/P1F_SUM.

**Seg2**  
The LAN segment address of the segment attached to port 2.
<table>
<thead>
<tr>
<th>Frames seg2</th>
<th>The total number of frames (broadcast and nonbroadcast) for segment 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcast frames seg2 (%)</td>
<td>The number of broadcast frames for segment 2, as a percentage of the total number of frames (broadcast and nonbroadcast) for segment 2. This is calculated as: 100*P2BF_SUM/P2F_SUM.</td>
</tr>
</tbody>
</table>
Network LAN Bridge Frames Not Forw, Worst-Case report
This report shows the LAN bridges with the highest number of frames not forwarded. Up to 15 LAN bridges are shown in descending order based on the Not forwarded frames column.

In cases where the Not forwarded frames column shows a value that is too high, use the Network Performance problem reports or the LAN Bridge FNF Detail reports to further investigate the problem. The NWLAN54 and NWLAN55 reports give detailed information on why frames were not forwarded for segment 1; NWLAN56 and NWLAN57 give detailed information on why frames were not forwarded for segment 2.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWLAN33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network LAN Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_LANB_UTIL_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Worst, LAN,</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bridge name</th>
<th>Not forwarded frames</th>
<th>Seg1</th>
<th>Not forwarded frames seg1</th>
<th>Seg2</th>
<th>Not forwarded frames seg2</th>
</tr>
</thead>
<tbody>
<tr>
<td>01ABRDGE</td>
<td>5824</td>
<td>A1X</td>
<td>2912</td>
<td>B1Y</td>
<td>2912</td>
</tr>
<tr>
<td>02ABRDGE</td>
<td>5824</td>
<td>A2X</td>
<td>2912</td>
<td>B2Y</td>
<td>2912</td>
</tr>
<tr>
<td>04ABRDGE</td>
<td>5824</td>
<td>A4X</td>
<td>2912</td>
<td>B4Y</td>
<td>2912</td>
</tr>
<tr>
<td>06ABRDGE</td>
<td>5824</td>
<td>A6X</td>
<td>2912</td>
<td>B6Y</td>
<td>2912</td>
</tr>
<tr>
<td>03ABRDGE</td>
<td>5824</td>
<td>A3X</td>
<td>2912</td>
<td>B3Y</td>
<td>2912</td>
</tr>
<tr>
<td>07ABRDGE</td>
<td>5824</td>
<td>A7X</td>
<td>2912</td>
<td>B7Y</td>
<td>2912</td>
</tr>
<tr>
<td>05ABRDGE</td>
<td>5824</td>
<td>A5X</td>
<td>2912</td>
<td>B5Y</td>
<td>2912</td>
</tr>
<tr>
<td>B1EJB403</td>
<td>975</td>
<td>400</td>
<td>975</td>
<td>403</td>
<td>0</td>
</tr>
</tbody>
</table>

Network LAN Bridge Frames Not Forw, Worst Case
From date: '2000-02-18' To date: '2000-04-05'

Tivoli Decision Support for z/OS Report: NWLAN33

Figure 198. Example of a Network LAN Bridge Frames Not Forw, Worst-Case report
The report contains this information:

**Bridge name**
The LAN bridge name.

**Not forwarded frames**
The number of frames not forwarded for segments 1 and 2.

**Seg1**
The LAN segment address of the segment attached to port 1.

**Not forwarded frames seg1**
The number of frames not forwarded for segment 1.

**Seg2**
The LAN segment address of the segment attached to port 2.

**Not forwarded frames seg2**
The number of frames not forwarded for segment 2.
LAN bridge utilization overview reports
The overview reports give information about the primary performance of LAN bridges.

Network LAN Bridge Data, Daily/Weekly Overview report
These reports show LAN bridge data related to the segments of all LAN bridges. The LAN bridges are shown in alphabetic order.

This information identifies the reports:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWLAN34 (daily), NWLAN35 (weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network LAN Utilization Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_LANB_UTIL_D (daily), NW_LANB_UTIL_W (weekly)</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Overview, LAN, Daily/Weekly</td>
</tr>
<tr>
<td>Variables</td>
<td>Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report).</td>
</tr>
</tbody>
</table>

Network LAN Bridge Data, Daily Overview
Date: 2000-06-14

<table>
<thead>
<tr>
<th>Bridge name</th>
<th>Bridge type</th>
<th>Max frame size</th>
<th>Hop Avg size</th>
<th>Seg1 seg1 size</th>
<th>Seg2 seg2 size</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRIDGE1</td>
<td>TR-TR (Loc)</td>
<td>8144</td>
<td>100</td>
<td>7</td>
<td>161</td>
</tr>
<tr>
<td>BRIDGE2</td>
<td>TR-TR (Loc)</td>
<td>8144</td>
<td>200</td>
<td>7</td>
<td>292</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLAN34

Figure 199. Example of a Network LAN Bridge Data, Daily Overview report

The reports contain this information:

Week start date
The start date of the week (weeks start on Monday). This column appears only in weekly reports.

Bridge name
The LAN bridge name.

Bridge type
The short descriptive text of the actual bridge type.

Max frame size
The largest possible frame size, in bytes.

Seg1
The LAN segment address of the segment attached to port 1.

Hop count seg1
The hop count for the segment attached to port 1.

Avg nonbf size
The average size of a nonbroadcast frame for segment 1, in kilobytes.

Seg2
The LAN segment address of the segment attached to port 2.
Utilization Reports (Part 2)

**Hop count seg2**
The hop count for the segment attached to port 2.

**Avg nonbf size**
The average size of a nonbroadcast frame for segment 2, in kilobytes.
Network LAN Bridge Data Segment 1/2, Daily/Weekly Overview report

These reports show the LAN bridge data related to segments of all LAN bridges. The NWLAN36 and NWLAN37 reports give segment 1 information; NWLAN38 and NWLAN39 give segment 2 information.

This information identifies the reports:

**Report ID** NWLAN36 (daily, segment 1), NWLAN37 (weekly, segment 1), NWLAN38 (daily, segment 2), NWLAN39 (weekly, segment 2)

**Report group** Network LAN Utilization Reports

**Source** NW_LANB_UTIL_D (daily), NW_LANB_UTIL_W (weekly)

**Attributes** NW, Network, Performance, Utilization, Overview, LAN, Daily/Weekly

**Variables** Segment1, Segment2, Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report)

Network LAN Bridge Data Segment 1, Daily Overview

Date: 2000-03-30
Segment 1: '001'

<table>
<thead>
<tr>
<th>Bridge name</th>
<th>Bridge type</th>
<th>Max frame size</th>
<th>Hop count nonbf Seg1</th>
<th>Avg Seg1</th>
<th>Hop count nonbf Seg2</th>
<th>Avg Seg2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRDK1AAR</td>
<td>TR-TR (Ren)</td>
<td>2052</td>
<td>7</td>
<td>600</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>BRDK1BIR</td>
<td>TR-TR (Ren)</td>
<td>2052</td>
<td>7</td>
<td>18 300</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>BRDK1EJB</td>
<td>TR-TR (Ren)</td>
<td>2052</td>
<td>7</td>
<td>400</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>BRDK1N85</td>
<td>TR-TR (Loc)</td>
<td>4472</td>
<td>7</td>
<td>8 200</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>BRDK1N91</td>
<td>TR-TR (Loc)</td>
<td>4472</td>
<td>7</td>
<td>21 100</td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLAN36

*Figure 200. Example of a Network LAN Bridge Data Segment 1, Daily Overview report*

The reports contain this information:

**Week start date**
The start date of the week (weeks start on Monday). This column appears only in weekly reports.

**Bridge name**
The LAN bridge name.

**Bridge type**
The short descriptive text of the actual bridge type.

**Max frame size**
The largest possible frame size, in bytes.

**Seg1**
The LAN segment address of the segment attached to port 1.

**Hop count seg1**
The hop count for the segment attached to port 1.

**Avg nonbf size**
The average size of a nonbroadcast frame for segment 1, in kilobytes.

**Seg2**
The LAN segment address of the segment attached to port 2.
Utilization Reports (Part 2)

**Hop count seg2**
The hop count for the segment attached to port 2.

**Avg nonbf size**
The average size of a nonbroadcast frame for segment 2, in kilobytes.
LAN bridge utilization trend reports
The trend reports give trend information about the utilization of a selected LAN bridge.

Network LAN Bridge FNF for Segment 1/2, Hourly/Daily/Weekly Trend report
These reports graphically show the reasons why frames were not forwarded on segment 1 or 2 for a selected LAN bridge. The NWLAN40, NWLAN41, and NWLAN42 give segment 1 information; NWLAN43, NWLAN44, and NWLAN45 give segment 2 information.

This information identifies the reports:

| Report ID | NWLAN40 (hourly segment 1), NWLAN41 (daily, segment 1), NWLAN42 (weekly, segment 1), NWLAN43 (hourly, segment 2), NWLAN44 (daily, segment 2), NWLAN45 (weekly, segment 2) |
| Report group | Network LAN Utilization Reports |
| Source | NW_LANB_UTIL_H (hourly report), NW_LANB_UTIL_D (daily report), NW_LANB_UTIL_W (weekly report) |
| Chart format | DRLGHBAR (hourly report), DRLGWDBA (daily report), DRLGWBAR (weekly report) |
| Attributes | NW, Network, Performance, Utilization, Trend, LAN, Hourly/Daily/Weekly |
| Variables | Bridge name, Segment1, Segment2, Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report) |
| Y-axis | The y-axis (vertical) shows values from 0 to a dynamically set value that depends on the information presented. |
| X-axis | The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis: • Hour—the hour of the day • Day—the day of the week • Week start date—the start date of the week (weeks start on Monday) |
The reports contain this information:

**Bridge**
The LAN bridge name.

**Segment1**
The LAN segment address of the segment attached to port 1.

**Adapter congestion**
The number of frames not forwarded because of adapter congestions for segment 1.

**Segment inop**
The number of frames not forwarded because of LAN segment inoperative for segment 1.

**Link error**
The number of frames not forwarded because of link error for segment 1.

**Other**
The number of frames not forwarded for reasons other than those described for segment 1.
Network LAN Bridge Data for Segment 1/2, Hourly/Daily/Weekly Trend report

These reports graphically show the number of broadcast and nonbroadcast frames forwarded on segment 1 or 2 for a selected LAN bridge. The NWLAN46, NWLAN47, and NWLAN48 reports give segment 1 information; NWLAN49, NWLAN50, and NWLAN51 give segment 2 information.

This information identifies the reports:

**Report ID**
- NWLAN46 (hourly, segment 1), NWLAN47 (daily, segment 1), NWLAN48 (weekly, segment 1), NWLAN49 (hourly, segment 2), NWLAN50 (daily, segment 2), NWLAN51 (weekly, segment 2)

**Report group**
- Network LAN Utilization Reports

**Source**
- NW_LANB_UTIL_H (hourly report), NW_LANB_UTIL_D (daily report), NW_LANB_UTIL_W (weekly report)

**Chart format**
- DRLGHBAR (hourly report), DRLGWDBA (daily report), DRLGWBAR (weekly report)

**Attributes**
- NW, Network, Performance, Utilization, Trend, LAN, Hourly/Daily/Weekly

**Variables**
- Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Bridge_name, Segment1, Segment2

**Y-axis**
- The y-axis (vertical) shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**
- The x-axis (horizontal) depends on the time frame selected (hourly, daily, or weekly). One of these will appear on the x-axis:
  - Hour—the hour of the day
  - Day—the day of the week
  - Week start date—the start date of the week (weeks start on Monday)
The reports contain this information:

**Bridge**       The LAN bridge name.

**Segment1**    The LAN segment address of the segment attached to port 1.

**Broadcast frames millions**

The number of broadcast frames for segment 1, in millions. This is calculated as: P1BF_SUM/1 000 000.

**Nonbroadcast frames millions**

The number of nonbroadcast frames for segment 1, in millions. This is calculated as: P1NF_SUM/1 000 000.
LAN bridge utilization detail reports

The detail reports give detailed information about broadcast and nonbroadcast frames on segment 1 or 2 for a selected LAN bridge, and the thresholds exceeded on segment 1 or 2 of a selected LAN bridge.

Network LAN Bridge Thresh Exceeded, Hourly/Daily Detail report

These reports show information about thresholds exceeded for segments 1 and 2 for a selected LAN bridge.

This information identifies the reports:

- **Report ID**: NWLAN52 (hourly report), NWLAN53 (daily report)
- **Report group**: Network LAN Utilization Reports
- **Source**: NW_LANB_UTIL_H (hourly report), NW_LANB_UTIL_D (daily report)
- **Attributes**: NW, Network, Performance, Utilization, Detail, LAN, Hourly/Daily
- **Variables**: Bridge_name, Date (required for hourly report), From_date and To_date for daily report

Network LAN Bridge Thresh Exceeded, Daily Detail
From date: '2000-03-30' To date: '2000-04-02'
Bridge: 'B1003N91'

<table>
<thead>
<tr>
<th>Date</th>
<th>Seg1</th>
<th>Broadc high exc</th>
<th>Nonbroad high exc</th>
<th>Frame lost high exc</th>
<th>Seg2</th>
<th>Broadc high exc</th>
<th>Nonbroad high exc</th>
<th>Frame lost high exc</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-03-30</td>
<td>001</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
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<tr>
<td>2000-03-31</td>
<td>001</td>
<td>59</td>
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<td>0</td>
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</tr>
<tr>
<td>2000-04-01</td>
<td>001</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>60</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-04-02</td>
<td>001</td>
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<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLAN53

Figure 203. Example of a Network LAN Bridge Thresh Exceeded, Daily Detail report

The reports contain this information:

- **Hour**: The hour the record was written to SMF (hourly report).
- **Date**: The date the record was written to SMF (daily report).
- **Seg1**: The LAN segment address of the segment attached to port 1.
- **Broadc high exc seg1**: The number of intervals (records) in which the broadcast high threshold was exceeded for segment 1.
- **Nonbroad high exc seg1**: The number of intervals (records) in which the nonbroadcast high threshold was exceeded for segment 1.
- **Frame lost high exc seg1**: The number of intervals (records) in which the frames-lost high threshold was exceeded for segment 1.
- **Seg2**: The LAN segment address of the segment attached to port 2.
Utilization Reports (Part 2)

**Broadc high exc seg2**
- The number of intervals (records) in which the broadcast high threshold was exceeded for segment 2.

**Nonbroad high exc seg2**
- The number of intervals (records) in which the nonbroadcast high threshold was exceeded for segment 2.

**Frame lost high exc seg2**
- The number of intervals (records) in which the frames-lost high threshold was exceeded for segment 2.
Network LAN Bridge FNF for Segment 1/2, Hourly/Daily Detail report

These reports show information about why frames were not forwarded on segment 1 or 2 for a selected LAN bridge. The NWLAN54 and NWLAN55 reports give segment 1 information; NWLAN56 and NWLAN57 give segment 2 information.

This information identifies the reports:

**Report ID**    NWLAN54 (hourly, segment 1), NWLAN55 (daily, segment 1), NWLAN56 (hourly, segment 2), NWLAN57 (daily, segment 2)

**Report group**       Network LAN Utilization Reports

**Source**         NW_LANB_UTIL_H (hourly report), NW_LANB_UTIL_D (daily report)

**Attributes**     NW, Network, Performance, Utilization, Detail, LAN, Hourly/Daily

**Variables**    Bridge_name, Date (required for hourly report), From_date and To_date for daily report

---

### Network LAN Bridge FNF for Segment 1, Daily Detail
From date: '2000-03-30' To date: '2000-04-02'
Bridge: 'BRDK1EJB'

<table>
<thead>
<tr>
<th>Date</th>
<th>Seg1</th>
<th>Frames not forw adapt cong (%)</th>
<th>Frames not forw segm inop (%)</th>
<th>Frames not forw link error (%)</th>
<th>Frames not forw other (%)</th>
<th>Frames not forw total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-03-30</td>
<td>001</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>2</td>
</tr>
<tr>
<td>2000-04-01</td>
<td>001</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>11</td>
</tr>
<tr>
<td>2000-04-02</td>
<td>001</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>22</td>
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</table>

Tivoli Decision Support for z/OS Report: NWLAN55

**Figure 204. Example of a Network LAN Bridge FNF for Segment 1, Daily Detail report**

The reports contain this information:

**Hour**    The hour the record was written to SMF (hourly report).

**Date**    The date the record was written to SMF (daily report).

**Seg1**   The LAN segment address of the segment attached to port 1.

**Frames not forw adapt cong (%)**

The number of frames not forwarded because of adapter congestions for segment 1, as a percentage of the total number of frames not forwarded. This is calculated as: 100*P1AC_SUM/P1FN_SUM.

**Frames not forw segm inop (%)**

The number of frames not forwarded because of LAN segment inoperative for segment 1, as a percentage of the total number of frames not forwarded. This is calculated as: 100*P1IN_SUM/P1FN_SUM.

**Frames not forw link error (%)**

The number of frames not forwarded because of link errors for segment 1, as a percentage of the total number of frames not forwarded. This is calculated as: 100*P1LE_SUM/P1FN_SUM.
Utilization Reports (Part 2)

Frames not forw other (%)
The number of frames not forwarded for reasons other than those described for segment 1, as a percentage of the total number of frames not forwarded. This is calculated as:
100*P1OT_SUM/P1FN_SUM.

Frames not forwarded
The number of frames not forwarded for segment 1.

Frames not forw total (%)
The number of frames not forwarded for segment 1, as a percentage of the total number of frames (broadcast and nonbroadcast) for segment 1. This is calculated as:
100*P1FN_SUM/(P1BF_SUM + P2NF_SUM).
Network LAN Bridge Data for Segmnt 1/2, Hourly/Daily Detail report

These reports show information about broadcast and nonbroadcast frames on segment 1 or 2 for a selected LAN bridge. The NWLAN58 and NWLAN59 reports give segment 1 information; NWLAN60 and NWLAN61 give segment 2 information.

This information identifies the reports:

**Report ID**  
NWLAN58 (hourly, segment 1), NWLAN59 (daily, segment 1), NWLAN60 (hourly, segment 2), NWLAN61 (daily, segment 2)

**Report group**  
Network LAN Utilization Reports

**Source**  
NW_LANB_UTIL_H (hourly report), NW_LANB_UTIL_D (daily report)

**Attributes**  
NW, Network, Performance, Utilization, Detail, LAN, Hourly/Daily

**Variables**  
Bridge_name, Date (required for hourly report), From_date and To_date for daily report

<table>
<thead>
<tr>
<th>Date</th>
<th>Seg1</th>
<th>Broadcast frames (M)</th>
<th>Avg broadcast (frames/s)</th>
<th>Nonbroadcast frames (M)</th>
<th>Avg nonbroadcast (frames/s)</th>
<th>Avg size of nonbr frame (KB)</th>
<th>Nonbroadcast frames (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-03-30</td>
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<td>0.064</td>
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<td>0.028</td>
<td>0.91</td>
<td>15</td>
<td>30.28</td>
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<tr>
<td>2000-03-31</td>
<td>001</td>
<td>0.190</td>
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<td>0.146</td>
<td>2.49</td>
<td>0.085</td>
<td>1.45</td>
<td>13</td>
<td>36.88</td>
</tr>
<tr>
<td>2000-04-02</td>
<td>001</td>
<td>0.171</td>
<td>2.25</td>
<td>0.112</td>
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<td>14</td>
<td>39.49</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWLAN59

**Figure 205. Example of a Network LAN Bridge Data for Segmnt 1, Daily Detail report**

The reports contain this information:

**Hour**  
The hour the record was written to SMF (hourly report).

**Date**  
The date the record was written to SMF (daily report).

**Seg1**  
The LAN segment address of the segment attached to port 1.

**Broadcast frames (M)**  
The number of broadcast frames for segment 1, in millions. This is calculated as: P1BF_SUM/1 000 000.

**Avg broadcast (frames/s)**  
The average broadcast frame rate for segment 1, in frames per second. This is calculated as: P1BF_SUM/MEASURED_SEC.

**Nonbroadcast frames (M)**  
The number of nonbroadcast frames for segment 1, in millions. This is calculated as: P1NF_SUM/1 000 000.

**Avg nonbroadcast (frames/s)**  
The average nonbroadcast frame rate for segment 1, in frames per second. This is calculated as: P1NF_SUM/MEASURED_SEC.
Utilization Reports (Part 2)

**Avg size of nonbr frame (KB)**

The average size of a nonbroadcast frame for segment 1, in kilobytes.

**Nonbroadc frames (%)**

The number of nonbroadcast frames for segment 1, as a percentage of the total number of frames (broadcast and nonbroadcast) for segment 1. This is calculated as: \(100 \times \frac{P1NF\_SUM}{(P1BF\_SUM + P1NF\_SUM)}\).
ODLC utilization reports

These reports provide utilization information for the ODLC LAN and PU utilization component.

NW ODLC Physical Link Traffic Volume

This report shows the ODLC physical link traffic volume for a specific date and line name, specified at report execution.

This information identifies the report:

- **Report ID**: NWODLC01
- **Report group**: NW ODLC Physical Link Reports
- **Source**: NW_ODLCL_UTIL_H
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, ODLC, TRAFFIC, PHYSICAL, LINK
- **Variables**: Date, Line_name, Period_name, NCP_name

*Figure 206. Example of an NW ODLC Phys Link Traffic Volume, Hourly Detail report*

The report contains the following information:

- **Date**: The date when the record was written to SMF.
- **Time**: The time when the record was written to SMF.
- **Period name**: The name of the period.
- **Line name**: The name of the ODLC physical link.
- **NCP name**: The secondary subarea PU to which the ODLC link is attached.
Utilization Reports (Part 2)

Iframes sent max
The maximum number of I-frames sent.

Iframes sent min
The minimum number of I-frames sent.

Iframes rcvd max
The maximum number of I-frames received.

Iframes rcvd min
The minimum number of I-frames received.

Kbytes sent max
The maximum number of K-bytes sent.

Kbytes sent min
The minimum number of K-bytes sent.

Kbytes rcvd max
The maximum number of K-bytes received.

Kbytes rcvd min
The minimum number of K-bytes received.

Hprframes sent max
The maximum number of HPR frames sent.

Hprframes sent min
The minimum number of HPR frames sent.

Hprframes rcvd max
The maximum number of HPR frames received.

Hprframes rcvd min
The minimum number of HPR frames received.

Hprbytes sent max
The maximum number of HPR bytes sent.

Hprbytes sent min
The minimum number of HPR bytes sent.

Hprbytes rcvd max
The maximum number of HPR bytes received.

Hprbytes rcvd min
The minimum number of HPR bytes received.
NW ODLC Physical Link Traffic Errors

This report shows the ODLC physical link traffic errors for a specific date and line name, specified at report execution.

This information identifies the report:

- **Report ID**: NWODLC02
- **Report group**: NW ODLC Physical Link Reports
- **Source**: NW_ODLCL_UTIL_H
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, ODLC, TRAFFIC, PHYSICAL, LINK
- **Variables**: Date, Line_name, Period_name, NCP_name

### NW ODLC Phys Link Traffic Errors, Hourly Detail

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>PERIOD NAME</th>
<th>LINE NAME</th>
<th>NCP NAME</th>
<th>IFRAMES RXMIT</th>
<th>IFrames RXMIT</th>
<th>TOTAL IFrames RXMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-08-31</td>
<td>09.00.00</td>
<td>PRIME</td>
<td>A04L2080</td>
<td>A04NCP</td>
<td>3.853E+03</td>
<td>0.000</td>
<td>4.431E+03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KBYTES RXMIT</th>
<th>KBYTES RXMIT</th>
<th>TOTAL FRAMES</th>
<th>TOTAL PDUS</th>
<th>TOTAL PDUS</th>
<th>SENT</th>
<th>RCVD</th>
</tr>
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<tbody>
<tr>
<td>MAX</td>
<td>MIN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.183</td>
<td>0.000</td>
<td>2.595E+01</td>
<td>9.110E+02</td>
<td>3.550E+02</td>
<td>2.600E+02</td>
<td>6.165E+03</td>
</tr>
</tbody>
</table>

**Figure 207. Example of an NW ODLC Phys Link Traffic Errors, Hourly Detail report**

The report contains the following information:

- **Date**: The date when the record was written to SMF.
- **Time**: The time when the record was written to SMF.
- **Period name**: The name of the period.
- **Line name**: The name of the ODLC physical link.
- **NCP name**: The secondary subarea PU to which the ODLC link is attached.
- **Iframes rxmit max**: The maximum number of I-frames retransmitted.
- **Iframes rxmit min**: The minimum number of I-frames retransmitted.
- **Total Iframes rxmit**: The total number of I-frames retransmitted.
- **Kbytes rxmit max**: The maximum number of K-bytes retransmitted.
- **Kbytes rxmit min**: The minimum number of K-bytes retransmitted.
- **Total Kbytes rxmit**: The total number of K-bytes retransmitted.
Utilization Reports (Part 2)

**Total frames misad**
The total number of misaddressed frames received.

**Total pdus unrecog**
The total number of PDUs unrecognized.

**Total pdus discard**
The total number of PDUs discarded.

**Hprfr tot sent dis**
The total number of sent HPR frames discarded.

**Hprfr tot rcvd dis**
The total number of received HPR frames discarded.
NW ODLC Physical Link Traffic Total

This report shows the ODLC physical link traffic total for a specific date and line name, specified at report execution.

This information identifies the report:

Report ID NWODLC03
Report group NW ODLC Physical Link Reports
Source NW_ODLCL_UTIL_H
Attributes NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, ODLC, TRAFFIC, PHYSICAL, LINK
Variables Date, Line_name, Period_name, NCP_name

NW ODLC Phys Link Traffic Total, Hourly Detail

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>PERIOD NAME</th>
<th>LINE NAME</th>
<th>NCP NAME</th>
<th>TOTAL IFRAMES SENT</th>
<th>TOTAL IFRAMES RCVD</th>
<th>TOTAL KBYTES SENT</th>
<th>TOTAL KBYTES RCVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-08-31 09.00.00</td>
<td>PRIME</td>
<td>A04L2080</td>
<td>A04NCP</td>
<td>7.719E+05</td>
<td>5.879E+05</td>
<td>1.651E+05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL HPRFRAMES SENT</th>
<th>TOTAL HPRBYTES RCVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.970E+05</td>
<td>9.518E+05</td>
</tr>
<tr>
<td>3.479E+05</td>
<td>1.162E+06</td>
</tr>
<tr>
<td>1.651E+05</td>
<td>1.843E+06</td>
</tr>
</tbody>
</table>

Figure 208. Example of an NW ODLC Phys Link Traffic Total, Hourly Detail report

The report contains the following information:

Date The date when the record was written to SMF.
Time The time when the record was written to SMF.
Period name The name of the period.
Line name The name of the ODLC physical link.
NCP name The secondary subarea PU to which the ODLC link is attached.

Total Iframes sent The total number of I-frames sent.
Total Iframes rcvd The total number of I-frames received.
Total kbytes sent The total number of K-bytes sent.
Total kbytes rcvd The total number of K-bytes received.
Hprframes sent tot The total number of HPR frames sent.
Hprframes rcvd tot The total number of HPR frames received.
Utilization Reports (Part 2)

**Hprbytes sent tot**
The total number of HPR bytes sent.

**Hprbytes rcvd tot**
The total number of HPR bytes received.
NW ODLC Station PU Traffic Volume

This report shows the ODLC station PU traffic volume for a specific date and line name, specified at report execution.

This information identifies the report:

- **Report ID**: NWODLC04
- **Report group**: NW ODLC Station PU Reports
- **Source**: NW_ODLCP_UTIL_H
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, ODLC, TRAFFIC, STATION, PU
- **Variables**: Date, Slu_PU_name, Period_name, NCP_name

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<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>PERIOD</th>
<th>SLU</th>
<th>PU</th>
<th>NCP</th>
<th>IFRAMES</th>
<th>IFRAMES</th>
<th>IFRAMES</th>
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<td>11.00</td>
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<td>J0004156</td>
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</table>

<table>
<thead>
<tr>
<th>IFRAMES</th>
<th>KBYTES</th>
<th>KBYTES</th>
<th>KBYTES</th>
<th>KBYTES</th>
<th>HPRFRAMES</th>
<th>HPRFRAMES</th>
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<tbody>
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<td>MIN</td>
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<tr>
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<table>
<thead>
<tr>
<th>HPRFRAMES</th>
<th>HPRFRAMES</th>
<th>HPRBYTES</th>
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<td>2.403E+04</td>
<td>1.184E+04</td>
<td>1.184E+04</td>
</tr>
<tr>
<td>5.334E+04</td>
<td>1.302E+04</td>
<td>7.093E+04</td>
<td>1.226E+03</td>
<td>1.240E+05</td>
<td>4.360E+02</td>
</tr>
</tbody>
</table>

Figure 209. Example of an NW ODLC Stat PU Traffic Volume, Hourly Detail report

The report contains the following information:

- **Date**: The date when the record was written to SMF.
- **Time**: The time when the record was written to SMF.
- **Period name**: The name of the period.
- **Slu PU name**: The name of the PU for the SLU.
- **NCP name**: The secondary subarea PU to which the ODLC link is attached.
- **Iframes sent max**: The maximum number of I-frames sent.
- **Iframes sent min**: The minimum number of I-frames sent.
- **Iframes rcvd max**: The maximum number of I-frames received.
Utilization Reports (Part 2)

- **Iframes rcvd min**
  - The minimum number of I-frames received.

- **Kbytes sent max**
  - The maximum number of K-bytes sent.

- **Kbytes sent min**
  - The minimum number of K-bytes sent.

- **Kbytes rcvd max**
  - The maximum number of K-bytes received.

- **Kbytes rcvd min**
  - The minimum number of K-bytes received.

- **Hprframes sent max**
  - The maximum number of HPR frames sent.

- **Hprframes sent min**
  - The minimum number of HPR frames sent.

- **Hprframes rcvd max**
  - The maximum number of HPR frames received.

- **Hprframes rcvd min**
  - The minimum number of HPR frames received.

- **Hprbytes sent max**
  - The maximum number of HPR bytes sent.

- **Hprbytes sent min**
  - The minimum number of HPR bytes sent.

- **Hprbytes rcvd max**
  - The maximum number of HPR bytes received.

- **Hprbytes rcvd min**
  - The minimum number of HPR bytes received.
NW ODLC Station PU Traffic Errors

This report shows the ODLC station PU traffic errors for a specific date and line name, specified at report execution.

This information identifies the report:

- **Report ID**: NWODLC05
- **Report group**: NW ODLC Station PU Reports
- **Source**: NW_ODLCP_UTIL_H
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, ODLC, TRAFFIC, STATION, PU
- **Variables**: Date, Slu_PU_name, Period_name, NCP_name

NW ODLC Stat PU Traffic Errors, Hourly Detail

<table>
<thead>
<tr>
<th>DATE</th>
<th>PERIOD</th>
<th>SLU PU NAME</th>
<th>NCP NAME</th>
<th>IFRAMES RXMIT</th>
<th>IFRAMES RXMIT</th>
<th>TOTAL IFRAMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-08-31</td>
<td>10.00.00</td>
<td>PRIME</td>
<td>J0004156</td>
<td>A04NCP</td>
<td>2.900E+01</td>
<td>2.900E+01</td>
</tr>
<tr>
<td>1999-08-31</td>
<td>11.00.00</td>
<td>PRIME</td>
<td>J0004156</td>
<td>A04NCP</td>
<td>5.000E+01</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOCAL</th>
<th>RXMIT</th>
<th>RXMIT</th>
<th>RXMIT</th>
<th>MAX</th>
<th>MIN</th>
<th>RXMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL</td>
<td>LOCAL</td>
<td>RJC</td>
<td>RJC</td>
<td>HPRFR</td>
<td>HPRFR</td>
<td></td>
</tr>
<tr>
<td>BUSY</td>
<td>BUSY</td>
<td>SVPDU</td>
<td>SVPDU</td>
<td>TOT</td>
<td>TOT</td>
<td></td>
</tr>
<tr>
<td>OCC</td>
<td>OCC</td>
<td>SENT</td>
<td>SENT</td>
<td>RCVD</td>
<td>RCVD</td>
<td></td>
</tr>
<tr>
<td>MIN</td>
<td>TOT</td>
<td>TOT</td>
<td>TOT</td>
<td>DIS</td>
<td>DIS</td>
<td></td>
</tr>
<tr>
<td>1.300E+01</td>
<td>1.300E+01</td>
<td>1.400E+01</td>
<td>1.100E+01</td>
<td>3.280E+02</td>
<td>7.099E+03</td>
<td></td>
</tr>
<tr>
<td>0.000</td>
<td>4.378E+03</td>
<td>2.224E+03</td>
<td>2.380E+02</td>
<td>7.361E+03</td>
<td>7.133E+05</td>
<td></td>
</tr>
</tbody>
</table>

99/09/11 17:07:58

Figure 210. Example of an NW ODLC Stat PU Traffic Errors, Hourly Detail report

The report contains the following information:

- **Date**: The date when the record was written to SMF.
- **Time**: The time when the record was written to SMF.
- **Period name**: The name of the period.
- **Slu PU name**: The name of the PU for the SLU.
- **NCP name**: The secondary subarea PU to which the ODLC link is attached.
- **Iframes rxmit max**: The maximum number of I-frames retransmitted.
- **Iframes rxmit min**: The minimum number of I-frames retransmitted.
- **Total Iframes rxmit**: The total number of I-frames retransmitted.
Utilization Reports (Part 2)

Kbytes rxmit max
The maximum number of K-bytes retransmitted.

Kbytes rxmit min
The minimum number of K-bytes retransmitted.

Total Kbytes rxmit
The total number of K-bytes retransmitted.

Reply timeouts max
The maximum number of reply timeouts.

Reply timeouts min
The minimum number of reply timeouts.

Reply timeouts tot
The total number reply timeouts.

Local busy occ max
The maximum number of local busy occurrences.

Local busy occ min
The minimum number of local busy occurrences.

Local busy occ tot
The total number of local busy occurrences.

Rjc svpdu sent tot
The total number of rejected supervisor PDUs sent.

Rjc svpdu recv tot
The total number of rejected supervisor PDUs received.

Hprfr tot sent dis
The total number of sent HPR frames discarded.

Hprfr tot rcvd dis
The total number of received HPR frames discarded.
**NW ODLC Station PU Traffic Total**

This report shows the ODLC station PU traffic total for a specific date and line name, specified at report execution.

This information identifies the report:

- **Report ID**: NWODLC06
- **Report group**: NW ODLC Station PU Reports
- **Source**: NW_ODLCP_UTIL_H
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, ODLC, TRAFFIC, STATION, PU
- **Variables**: Date, Slu_PU_name, Period_name, NCP_name

---

**NW ODLC Stat PU Traffic Total, Hourly Detail**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>PERIOD NAME</th>
<th>SLU NAME</th>
<th>NCP NAME</th>
<th>IP FRAMES SENT</th>
<th>IP FRAMES RCVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-08-31</td>
<td>10.00</td>
<td>PRIME</td>
<td>J0004156</td>
<td>A04NCP</td>
<td>2.425E+04</td>
<td>6.705E+03</td>
</tr>
<tr>
<td>1999-08-31</td>
<td>11.00</td>
<td>PRIME</td>
<td>J0004156</td>
<td>A04NCP</td>
<td>8.414E+05</td>
<td>4.861E+05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL KBYTES SENT</th>
<th>TOTAL KBYTES RCVD</th>
<th>TOTAL HPRFRAMES SENT</th>
<th>TOTAL HPRFRAMES RCVD</th>
<th>TOTAL HPRBYTES SENT</th>
<th>TOTAL HPRBYTES RCVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.272E+03</td>
<td>1.979E+03</td>
<td>3.192E+04</td>
<td>3.502E+04</td>
<td>2.403E+04</td>
<td>1.184E+04</td>
</tr>
<tr>
<td>1.615E+05</td>
<td>1.816E+05</td>
<td>8.635E+05</td>
<td>1.005E+06</td>
<td>9.217E+05</td>
<td>1.608E+06</td>
</tr>
</tbody>
</table>

---

**Figure 211. Example of an NW ODLC Stat PU Traffic Total, Hourly Detail report**

The report contains the following information:

- **Date**: The date when the record was written to SMF.
- **Time**: The time when the record was written to SMF.
- **Period name**: The name of the period.
- **Slu PU name**: The name of the PU for the SLU.
- **NCP name**: The secondary subarea PU to which the ODLC link is attached.
- **Total Iframes sent**: The total number of I-frames sent.
- **Total Iframes rcvd**: The total number of I-frames received.
- **Total Kbytes sent**: The total number of K-bytes sent.
- **Total Kbytes rcvd**: The total number of K-bytes received.
- **Hprframes sent tot**: The total number of HPR frames sent.
Utilization Reports (Part 2)

Hprframes rcvd tot
The total number of HPR frames received.

Hprbytes sent tot
The total number of HPR bytes sent.

Hprbytes rcvd tot
The total number of HPR bytes received.
Frame Relay utilization reports

These reports provide utilization information for the frame relay component.

Frame relay utilization worst-case reports

The worst-case reports give information about errors on frame relay physical and logical links.

NW Frame Relay Physical Errors, Worst Case

This report shows the frame relay physical links with the highest number of errors. It also shows the number of retransmitted I-frames and the average number of bytes resent for each of the physical links.

This information identifies the report:

**Report ID**  NWFRRY01

**Report group**  NW Frame Relay Utilization Reports

**Source**  NW_FRRYP_UTIL_D

**Attributes**  NW, NETWORK, PERFORMANCE, UTILIZATION, WORST, FRRY

**Variables**  From_date, To_date

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
<th>Total frames avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A03GUT</td>
<td>A03L1761</td>
<td>0.0</td>
<td>33.50</td>
<td>34.36</td>
<td>2639</td>
</tr>
<tr>
<td></td>
<td>A03L1762</td>
<td>0.0</td>
<td>33.50</td>
<td>34.36</td>
<td>2639</td>
</tr>
<tr>
<td></td>
<td>A03L1763</td>
<td>0.0</td>
<td>33.04</td>
<td>32.99</td>
<td>2481</td>
</tr>
<tr>
<td></td>
<td>A03L1764</td>
<td>0.0</td>
<td>33.04</td>
<td>32.99</td>
<td>2481</td>
</tr>
</tbody>
</table>

Figure 212. Example of an NW Frame Relay Physical Errors, Worst Case report

The report contains the following information:

**NCP name**  The name of the NCP.

**Line name**  The name of the Frame Relay physical link.

**Error avg (hour)**  The average number of errors counted per hour.

**Bytes resent (%)**  The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted.
## Utilization Reports (Part 2)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iframes resent (%)</td>
<td>The number of I-frames retransmitted, as a percentage of the number of I-frames that were transmitted.</td>
</tr>
<tr>
<td>Total frames avg</td>
<td>The average number of frames sent and received.</td>
</tr>
</tbody>
</table>
NW Frame Relay Physical Link, Worst Case

This report shows the frame relay physical links with the highest number of congestions. Use the information in this report as a warning of possible NCP performance problems.

This information identifies the report:

- **Report ID**: NWFRRY02
- **Report group**: NW Frame Relay Utilization Reports
- **Source**: NW_FRRYP_UTIL_D
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, WORST, FRRY
- **Variables**: From_date, To_date

The report contains the following information:

- **NCP name**
- **Line name**
- **Forw cong avg**
- **Back cong avg**
- **Frames disc avg**

### NW Frame Relay Physical Link, Worst Case
From date: '1999-12-18' To date: '1999-12-18'

<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Forw cong avg</th>
<th>Back cong avg</th>
<th>Frames disc avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A03GUT</td>
<td>A03L1761</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>A03L1762</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>A03L1763</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>A03L1764</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Figure 213. Example of an NW Frame Relay Physical Link, Worst Case report

The report contains the following information:

- **NCP name**
  - The name of the NCP.
- **Line name**
  - The name of the Frame Relay physical link.
- **Forw cong avg**
  - The average number of forward congestion count.
- **Back cong avg**
  - The average number of backward congestion count.
- **Frames disc avg**
  - The average number of discarded frames.
Utilization Reports (Part 2)

NW Frame Relay Logical Errors, Worst Case
This report shows the frame relay logical links with the highest number of errors, the percentage of retransmitted bytes and I-frames and the average number of reply timeouts.

This information identifies the report:

**Report ID**  NWFRRY03

**Report group**  NW Frame Relay Utilization Reports

**Source**  NW_FRRYL_UTIL_D

**Attributes**  NW, NETWORK, PERFORMANCE, UTILIZATION, WORST, FRRY

**Variables**  From_date, To_date

---

<table>
<thead>
<tr>
<th>NCP</th>
<th>Line name</th>
<th>Error avg (hour)</th>
<th>Bytes resent (%)</th>
<th>Iframes resent (%)</th>
<th>Reply timeouts avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A03GUT</td>
<td>A03F176</td>
<td>0.0</td>
<td>33.50</td>
<td>34.36</td>
<td>174</td>
</tr>
<tr>
<td>A03F180</td>
<td>A03F180</td>
<td>0.0</td>
<td>33.50</td>
<td>34.36</td>
<td>174</td>
</tr>
</tbody>
</table>

---

Figure 214. Example of an NW Frame Relay Logical Errors, Worst Case report

The report contains this information:

**NCP name.**  The name of the NCP.

**Line name**  The name of the Frame Relay logical link.

**Error avg (hour)**  The average number of errors counted per hour.

**Bytes resent (%)**  The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted.

**Iframes resent (%)**  The number of I-frames retransmitted, as a percentage of the number of I-frames that were transmitted.

**Reply timeouts avg**  The average number of reply timeouts.
**NW Frame Relay Logical Timeouts, Worst Case**

This report shows the frame relay logical links with the highest number of reply timeouts.

The following information identifies the report:

- **Report ID**: NWFRRY04
- **Report group**: NW Frame Relay Utilization Reports
- **Source**: NW_FRRYL_UTIL_D
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, WORST, FRRY
- **Variables**: From_date, To_date

```
<table>
<thead>
<tr>
<th>NCP name</th>
<th>Line name</th>
<th>Reply timeouts avg</th>
<th>Outbound queue avg</th>
<th>Bytes avg (MB)</th>
<th>Frames size avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A03GUT</td>
<td>A03F176</td>
<td>2310</td>
<td>96.0</td>
<td>0.005</td>
<td>4</td>
</tr>
<tr>
<td>A03F180</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

**Figure 215. Example of an NW Frame Relay Logical Timeouts, Worst Case report**

The report contains this information:

- **NCP name**: The name of the NCP.
- **Line name**: The name of the Frame Relay logical link.
- **Reply timeouts avg**: The average number of reply timeouts.
- **Outbound queue avg**: The average outbound queue length, in path information units.
- **Bytes avg (MB)**: The average number of bytes sent and received, in megabytes.
- **Frames size avg**: The average size of a frame sent and received.
Frame relay utilization overview reports

The overview reports give information about the primary performance of frame relay physical and logical links.

NW Frame Relay Physical Link, Daily/Weekly Overview

These reports show all the frame relay physical links on a selected NCP in alphabetic order. Use the data in these reports to check for performance problems.

This information identifies the reports:

**Report ID**  NWFRRY05 (daily), NWFRRY06 (weekly)

**Report group**  NW Frame Relay Utilization Reports

**Source**  NW_FRRYP_UTIL_D (daily report), NW_FRRYP_UTIL_W (weekly report)

**Attributes**  NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, FRRY, DAILY/WEEKLY

**Variables**  Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

---

**Figure 216. Example of an NW Frame Relay Physical Link, Daily Overview report**

---

**Figure 217. Example of an NW Frame Relay Physical Link, Weekly Overview report**
The reports contain this information:

**Line name**  The name of the Frame Relay physical link.

**Outbound queue avg**  The average outbound queue length, in path information units.

**Frames total avg (K)**  The average number of frames sent and received, in thousands.

**Frames size avg**  The average size of a frame sent and received, in bytes.

**Bytes avg (MB)**  The average number of bytes sent and received, in megabytes.
NW Frame Relay Logical Link, Daily/Weekly Overview

These reports show all the frame relay logical links on a selected NCP in alphabetic order. Use the data in these reports to check for performance problems.

The following information identifies the reports:

Report ID   NWFRRY07 (daily), NWFRRY08 (weekly)
Report group NW Frame Relay Utilization Reports
Source      NW_FRRYL_UTIL_D (daily report), NW_FRRYL_UTIL_W (weekly report)
Attributes  NW, NETWORK, PERFORMANCE, UTILIZATION, OVERVIEW, FRRY, DAILY/WEEEKLY
Variables   Date (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), NCP_name

NW Frame Relay Logical Link, Daily Overview
Date: 1999-12-18
NCP name: 'A03GUT'

<table>
<thead>
<tr>
<th>Line name</th>
<th>Reply timeouts</th>
<th>Outbound total</th>
<th>Bytes</th>
<th>Frame Bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
</tr>
<tr>
<td>A03L1761</td>
<td>264</td>
<td>96.0</td>
<td>3.870</td>
<td>0.005</td>
</tr>
<tr>
<td>A03L1762</td>
<td>264</td>
<td>96.0</td>
<td>3.870</td>
<td>0.005</td>
</tr>
<tr>
<td>A03L1763</td>
<td>248</td>
<td>94.0</td>
<td>3.790</td>
<td>0.005</td>
</tr>
<tr>
<td>A03L1764</td>
<td>248</td>
<td>94.0</td>
<td>3.790</td>
<td>0.005</td>
</tr>
</tbody>
</table>

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2000-02-18 15.34.26 PAGE 1

Figure 218. Example of an NW Frame Relay Logical Link, Daily Overview report

NW Frame Relay Logical Link, Weekly Overview
From week starting: 1999-12-16 To week starting: 1999-12-16
NCP name: 'A03GUT'

<table>
<thead>
<tr>
<th>Week start date</th>
<th>Line name</th>
<th>Reply timeouts</th>
<th>Outbound total</th>
<th>Bytes</th>
<th>Frame Bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
</tr>
<tr>
<td>1999-12-16</td>
<td>A03L1761</td>
<td>264</td>
<td>96.0</td>
<td>3.870</td>
<td>0.005</td>
</tr>
<tr>
<td>1999-12-16</td>
<td>A03L1762</td>
<td>264</td>
<td>96.0</td>
<td>3.870</td>
<td>0.005</td>
</tr>
<tr>
<td>1999-12-16</td>
<td>A03L1763</td>
<td>248</td>
<td>94.0</td>
<td>3.790</td>
<td>0.005</td>
</tr>
<tr>
<td>1999-12-16</td>
<td>A03L1764</td>
<td>248</td>
<td>94.0</td>
<td>3.790</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: NWFRRY08
2000-02-18 15.35.37 PAGE 1

Figure 219. Example of an NW Frame Relay Logical Link, Weekly Overview report
The reports contain this information:

**Line name**  The name of the Frame Relay physical link.

**Reply timeouts avg**  The average number of reply timeouts.

**Outbound queue avg**  The average outbound queue length, in path information units.

**Frames total avg (K)**  The average number of frames sent and received, in thousands.

**Bytes avg (MB)**  The average number of bytes sent and received, in megabytes.

**Frames size avg**  The average size of a frame sent and received, in bytes.

**Bytes resent (%)**  The number of bytes retransmitted, as a percentage of the total number of bytes that were transmitted.
Frame relay utilization trend reports

The trend reports give information about the utilization trends of a selected frame relay physical or logical link.

**NW Frame Relay Physical Connections, Hourly/Daily/Weekly Trend**

These reports show the minimum, average, and maximum number of active connections for a selected frame relay physical link.

The following information identifies the reports:

- **Report ID**: NWFRRY09 (hourly), NWFRRY10 (daily), NWFRRY11 (weekly)
- **Report group**: NW Frame Relay Utilization Reports
- **Source**: NW_FRRYP_UTIL_H (hourly report), NW_FRRYP_UTIL_D (daily report), NW_FRRYP_UTIL_W (weekly report)
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, FRRY HOURLY/DAILY/WEEKLY TREND.
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), LINE_name
- **Y-axis**: The y-axis (vertical), number of active connections, shows values from 0 to a dynamically set value that depends on the information presented.
- **X-axis**: The X-axis (horizontal) depends on the time frame selected (hourly, daily or weekly). One of these will appear on x-axis:
  - **Hour**: The hour of the day
  - **Day**: The day of the week
  - **Week start date**: The start date of the week

The reports contain this information:

- **Active conn min**: The minimum number of logical connections.
- **Active conn avg**: The average number of logical connections.
- **Active conn max**: The maximum number of logical connections.
**NW Frame Relay Physical Bytes Trans, Hourly/Daily/Weekly Trend**

These reports show the minimum, average, and maximum number of bytes transferred for a selected frame physical link.

The following information identifies the reports:

- **Report ID**: NWFRRY12 (hourly), NWFRRY13 (daily), NWFRRY14 (weekly)
- **Report group**: NW Frame Relay Utilization Reports
- **Source**: NW_FRRYP_UTIL_H (hourly report), NW_FRRYP_UTIL_D (daily report), NW_FRRYP_UTIL_W (weekly report)
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, FRRY HOURLY/DAILY/WEEKLY, TREND
- **Variables**: Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), LINE_name
- **Y-axis**: The y-axis (vertical), number of kilobytes, shows values from 0 to a dynamically set value that depends on the information presented.
- **X-axis**: The X-axis (horizontal) depends on the time frame selected (hourly, daily or weekly). One of these will appear on x-axis:
  - **Hour**: The hour of the day
  - **Day**: The day of the week
  - **Week start date**: The start date of the week

The reports contain the following information:

- **Bytes transferred min (KB)**
  The minimum number of bytes transferred, in thousands.

- **Bytes transferred avg (KB)**
  The average number of bytes transferred, in thousands.

- **Bytes transferred max (KB)**
  The maximum number of bytes transferred, in thousands.
NW Frame Relay Logical Timeouts, Hourly/Daily/Weekly Trend
These reports show the minimum, average, and maximum number of reply timeouts for a selected frame relay logical link.

This information identifies the reports:

**Report ID**  
NWFRRY15 (hourly), NWFRRY16 (daily), NWFRRY17 (weekly)

**Report group**  
NW Frame Relay Utilization Reports

**Source**  
NW_FRRYL_UTIL_H (hourly report), NW_FRRYL_UTIL_D (daily report), NW_FRRYL_UTIL_W (weekly report)

**Attributes**  
NW, NETWORK, PERFORMANCE, UTILIZATION, FRRY HOURLY/DAILY/WEEKLY, TREND

**Variables**  
Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**  
The y-axis (vertical), number of reply timeouts, shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**  
The X-axis (horizontal) depends on the time frame selected (hourly, daily or weekly). One of these will appear on x-axis:

- **Hour**  
The hour of the day
- **Day**  
The day of the week
- **Week start date**  
The start date of the week

The reports contain this information:

**Reply timeouts min**  
The minimum number of reply timeouts

**Reply timeouts avg**  
The average number of reply timeouts

**Reply timeouts max**  
The maximum number of reply timeouts
**NW Frame Relay Logical Bytes Trans, Hourly/Daily/Weekly Trend**

These reports show the minimum, average, and maximum number of bytes transferred for a selected frame relay logical link.

This information identifies the reports:

**Report ID**  
NWFRRY18 (hourly), NWFRRY19 (daily), NWFRRY20 (weekly)

**Report group**  
NW Frame Relay Utilization Reports

**Source**  
NW_FRRYL_UTIL_H (hourly report), NW_FRRYL_UTIL_D (daily reports), NW_FRRYL_UTIL_W (weekly report)

**Attributes**  
NW, NETWORK, PERFORMANCE, UTILIZATION, FRRY

**Variables**  
Date (required for hourly report), Date_in_week (required for daily report), From_date_in_week and To_date_in_week (required for weekly report), Line_name

**Y-axis**  
The y-axis (vertical), number of kilobytes, shows values from 0 to a dynamically set value that depends on the information presented.

**X-axis**  
The X-axis (horizontal) depends on the time frame selected (hourly, daily or weekly). One of these will appear on x-axis:

- **Hour**  
The hour of the day
- **Day**  
The day of the week
- **Week start date**  
The start date of the week

The reports contain this information:

**Bytes transferred min (KB)**  
The minimum number of bytes transferred in thousands.

**Bytes transferred avg (KB)**  
The average number of bytes transferred in thousands.

**Bytes transferred max (KB)**  
The maximum number of bytes transferred in thousands.
Frame relay utilization detail reports

The detail reports give detailed information about frame relay errors and utilization.

NW Frame Relay Physical Data Volume, Hourly/Daily Detail
These reports show detailed information for a selected frame relay physical link.

This information identifies the reports:

Report ID: NWFRRY21 (hourly), NWFRRY22 (daily)
Report group: NW Frame Relay Utilization Reports
Source: NW_FRRYP_UTIL_H (hourly report), NW_FRRYP_UTIL_D (daily report)
Attributes: NW, NETWORK, PERFORMANCE, UTILIZATION, DETAIL, FRRY, HOURLY/DAILY.
Variables: Date (required for hourly report), From_date and To_date for daily report, Line_name

NW Frame Relay Physical Data Volume, Hourly Detail
Date: 1999-12-18
Line name: 'A03F180'

<table>
<thead>
<tr>
<th>Hour</th>
<th>Frames total avg (K)</th>
<th>Bytes avg (MB)</th>
<th>Frames avg size (K)</th>
<th>Iframes avg (K)</th>
<th>Iframes rcvd (%)</th>
<th>Iframes sent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>3.870</td>
<td>0.005</td>
<td>4</td>
<td>1.292</td>
<td>33.38</td>
<td>40.09</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: NWFRRY21
2000-02-18 15.57.31

Figure 220. Example of an NW Frame Relay Physical Data Volume, Hourly Detail report

NW Frame Relay Physical Data Volume, Daily Detail
From date: '1999-12-18' To date: '1996-12-18'
Line name: 'A03F180'

<table>
<thead>
<tr>
<th>Date</th>
<th>Frames total avg (K)</th>
<th>Bytes avg (MB)</th>
<th>Frames avg size (K)</th>
<th>Iframes avg (K)</th>
<th>Iframes rcvd (%)</th>
<th>Iframes sent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-12-18</td>
<td>3.870</td>
<td>0.005</td>
<td>4</td>
<td>1.292</td>
<td>33.38</td>
<td>40.09</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: NWFRRY22
2000-02-18 15.56.49

Figure 221. Example of an NW Frame Relay Physical Data Volume, Daily Detail report

The reports contain this information:

Hour: The hour of the day (hourly report)
Date: The date when the record was written to SMF (daily report)
Frames total avg (K): The average number of frames sent and received, in thousands.
Bytes avg (MB): The average number of bytes sent and received, in bytes.
Utilization Reports (Part 2)

Frames size avg
The average size of a frame sent and received, in bytes.

Iframes avg (k)
The average number of I-frames sent and received, in thousands.

Iframes (%)
The number of I-frames, as a percentage of the total number of frames.

Iframes rcvd (%)
The number of I-frames received, as a percentage of the total number of I-frames.

Iframes sent (%)
The number of I-frames sent, as a percentage of the total number of I-frames.
NW Frame Relay Physical Data Rate, Hourly/Daily Detail

These reports show the data rate for a selected frame relay physical link.

The following information identifies the reports:

Report ID: NWFRRY23 (hourly), NWFRRY24 (daily)
Report group: NW Frame Relay Utilization Reports
Source: NW_FRRYP_UTIL_H (hourly report), NW_FRRYP_UTIL_D (daily report)
Attributes: NW, NETWORK, PERFORMANCE, UTILIZATION, DETAIL, FRRY, HOURLY/DAILY
Variables: Date (required for hourly report), From_date and To_date for daily report, Line_name

<table>
<thead>
<tr>
<th>Date</th>
<th>From_date</th>
<th>To_date</th>
<th>Line_name</th>
<th>Frame Iframes Errors Bytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-12-18</td>
<td>'1999-12-18'</td>
<td>'1999-12-18'</td>
<td>'A03F180'</td>
<td></td>
</tr>
<tr>
<td></td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
<td>avg</td>
</tr>
<tr>
<td>11</td>
<td>129</td>
<td>43</td>
<td>0</td>
<td>154</td>
</tr>
</tbody>
</table>

Figure 222. Example of an NW Frame Relay Physical Data Rate, Hourly Detail report

Figure 223. Example of an NW Frame Relay Physical Data Rate, Daily Detail report

The reports contain this information:

Hour: The hour of the day (hourly)
Date: Date that the record was written to SMF (daily report)
Frame rate avg: Average frame rate, in frames per second.
Iframes rate avg: Average I-frame rate, in I-frames per second.
Errors rate avg: Average error rate, in errors per second.
Bytes rate avg: Average byte rate, in bytes per second.
NW Frame Relay Logical Data Volume, Hourly/Daily Detail

These reports show the data volume for a selected frame relay logical link.

This information identifies the reports:

**Report ID**  NWFRRY25 (hourly), NWFRRY26 (daily)

**Report group**  NW Frame Relay Utilization Reports

**Source**  NW_FRRYL_UTIL_H (hourly report), NW_FRRYL_UTIL_D (daily report)

**Attributes**  NW, NETWORK, PERFORMANCE, UTILIZATION, DETAIL, FRRY, HOURLY/DAILY

**Variables**  Date (required for hourly report), From_date and To_date for daily report, Line_name

```
NW Frame Relay Logical Data Volume, Hourly Detail
Date: 1999-12-18
Line name: 'A03L1761'

<table>
<thead>
<tr>
<th></th>
<th>Frames total avg (K)</th>
<th>Bytes avg (MB)</th>
<th>Frames size avg</th>
<th>Iframes avg</th>
<th>Iframes rcvd</th>
<th>Iframes sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour</td>
<td>11</td>
<td>3.870</td>
<td>0.005</td>
<td>4</td>
<td>1.292</td>
<td>33.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: NWFRRY25
2000-02-18 15.32.21

Figure 224. Example of an NW Frame Relay Logical Data Volume, Hourly Detail report

NW Frame Relay Logical Data Volume, Daily Detail
From date: '1999-12-18' To date: '1999-12-18'
Line name: 'A03L1761'

<table>
<thead>
<tr>
<th>Date</th>
<th>Frames total avg (K)</th>
<th>Bytes avg (MB)</th>
<th>Frames size avg</th>
<th>Iframes avg</th>
<th>Iframes rcvd</th>
<th>Iframes sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-12-18</td>
<td>3.870</td>
<td>0.005</td>
<td>4</td>
<td>1.292</td>
<td>33.38</td>
<td>40.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: NWFRRY26
2000-02-18 15.30.41

Figure 225. Example of an NW Frame Relay Logical Data Volume, Daily Detail report

The reports contain this information:

**Hour**  The hour of the day (hourly report)

**Date**  Date that the record was written to SMF (daily report)

**Frames total avg (K)**  The average number of frames sent and received, in thousands.

**Bytes avg (MB)**  The average number of bytes sent and received, in megabytes.

**Frames size avg**  The average size of frames sent and received, in bytes.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iframes avg (K)</td>
<td>The average number of I-frames sent and received, in thousands.</td>
</tr>
<tr>
<td>Iframes (%)</td>
<td>The number of I-frames, as a percentage of the total number of I-frames.</td>
</tr>
<tr>
<td>Iframes rcvd (%)</td>
<td>The number of I-frames received, as a percentage of the total number of I-frames.</td>
</tr>
<tr>
<td>Iframes sent (%)</td>
<td>The number of I-frames sent, as a percentage of the total number of I-frames.</td>
</tr>
</tbody>
</table>
**NW Frame Relay Logical Data, Hourly/Daily Detail**

These reports show data on reply timeouts, outbound queue lengths, error rate, and retransmissions for a selected frame relay logical link.

The following information identifies the reports:

- **Report ID**: NWFRRY27 (hourly), NWFRRY28 (hourly)
- **Report group**: NW Frame Relay Utilization Reports
- **Source**: NW_FRRYL_UTIL_H (hourly report), NW_FRRYL_UTIL_D (daily report)
- **Attributes**: NW, NETWORK, PERFORMANCE, UTILIZATION, DETAIL, FRRY, HOURLY/DAILY
- **Variables**: Date (required for hourly report), From_date and To_date for daily report, Line_name

### NW Frame Relay Logical Data, Hourly Detail

<table>
<thead>
<tr>
<th>Hour</th>
<th>Reply timeouts avg</th>
<th>Reply timeouts max</th>
<th>Outbound queue avg</th>
<th>Outbound queue max</th>
<th>Error rate avg</th>
<th>Iframes resent</th>
<th>Bytes resent</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>264</td>
<td>502</td>
<td>96.0</td>
<td>126</td>
<td>0.0</td>
<td>34.36</td>
<td>33.50</td>
</tr>
</tbody>
</table>

**Tivoli Decision Support for z/OS: NWFRRY27**

2000-02-18 15.33.21

**Figure 226. Example of an NW Frame Relay Logical Data, Hourly Detail report**

### NW Frame Relay Logical Data, Daily Detail

<table>
<thead>
<tr>
<th>Date</th>
<th>Reply timeouts avg</th>
<th>Reply timeouts max</th>
<th>Outbound queue avg</th>
<th>Outbound queue max</th>
<th>Error rate avg</th>
<th>Iframes resent</th>
<th>Bytes resent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-12-18</td>
<td>264</td>
<td>502</td>
<td>96.0</td>
<td>126</td>
<td>0.0</td>
<td>34.36</td>
<td>33.50</td>
</tr>
</tbody>
</table>

**Tivoli Decision Support for z/OS: NWFRRY28**

2000-02-18 15.32.55

**Figure 227. Example of an NW Frame Relay Logical Data, Daily Detail report**

The reports contain the following information:

- **Hour**: The hour of the day (hourly report)
- **Date**: Date that the record was written to SMF (daily report)
- **Reply timeouts avg**: The average number of reply timeouts.
- **Reply timeouts max**: The maximum number of reply timeouts.
- **Outbound queue avg**: The average outbound queue length, in path information units.
- **Outbound queue max**: The maximum outbound queue length.
Error rate avg  The average number of errors counted per hour.

Iframes resent (%)  
The number of I-frames retransmitted, as a percentage of the total number of I-frames that were transmitted.

Bytes resent (%)  
The number of byte retransmitted, as a percentage of the total number of bytes that were transmitted.
VTAM utilization reports

This section lists and gives examples of the following reports on VTAM statistics from NPM:

- Worst-case reports
- Overview reports
- Trend reports
- Detail reports
VTAM utilization worst-case reports

Network VTAM Channel Blocked, Worst Case report

This report shows the subchannels and nodes with the highest average incidence of slowdown.

This information identifies the report:

- **Report ID**: NWVTM01
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_DEV_D
- **Attributes**: NW, Network, Performance, Utilization, Worst, VTAM
- **Variables**: From date, To date

The report contains this information:

- **SSCP name**: The name of the VTAM system.
- **Subchannel name**: The subchannel or line name.
- **Node**: The attached node name, or blank if unknown.
- **Slowdown mode (%)**: The percentage incidence of slowdown, calculated as 100*(SUM(SLOWDOWN_MODE_SUM)/SUM(SAMPLES)).
- **Active contacted (%)**: The percentage of times the link was in an active or contacted state, calculated as 100*(SUM(LINK_ACTIVE_SUM)/SUM(SAMPLES)).
Network VTAM Virtual Route Blocked, Worst Case report

This report shows the routes that are most often blocked.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWVTM02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Network VTAM Statistics Reports</td>
</tr>
<tr>
<td>Source</td>
<td>NW_VTAM_VR_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, Network, Performance, Utilization, Worst, VTAM</td>
</tr>
<tr>
<td>Variables</td>
<td>From date, To date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SSCP name</th>
<th>Dest name</th>
<th>Dest subarea</th>
<th>Adjacent subarea</th>
<th>VR blocked events (%)</th>
<th>VR inactive events (%)</th>
<th>VR status events (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A02N</td>
<td>A02N</td>
<td>2</td>
<td>2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>RAB</td>
<td>*UNKNOWN</td>
<td>8</td>
<td>8</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>RAB</td>
<td>RAB</td>
<td>11</td>
<td>11</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>RAB</td>
<td>RAH</td>
<td>17</td>
<td>17</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>RAB</td>
<td>RAI</td>
<td>18</td>
<td>18</td>
<td>0.00</td>
<td>69.34</td>
<td>69.34</td>
</tr>
<tr>
<td>RAB</td>
<td>RAK</td>
<td>20</td>
<td>6</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>RAB</td>
<td>RAK</td>
<td>20</td>
<td>18</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>RAB</td>
<td>RAP</td>
<td>25</td>
<td>9</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>RAB</td>
<td>RAP</td>
<td>25</td>
<td>6</td>
<td>0.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Figure 229. Example of a Network VTAM Virtual Route Blocked, Worst Case report

The report contains this information:

SSCP name    The name of the VTAM system.
Dest name    The name of the destination subarea.
Dest subarea The number of the destination subarea.
Adjacent subarea The number of the subarea next to this VTAM system.

VR blocked events (%) The percentage of samples with a blocked virtual route. This is calculated as:
100*(SUM(VR_BLOCKED_EVENTS)/SUM(SAMPLES)).

VR inactive events (%) The percentage of samples where the virtual route is inactive. This is calculated as:
100*(SUM(VR_INACTIVE_EVENTS)/SUM(SAMPLES)).

VR status events (%) The percentage of samples where the virtual route is inactive. This is calculated as:
100*(SUM(VR_BLOCKED_EVENTS) + SUM(VR_INACTIVE_EVENTS))/SUM(SAMPLES).
VTAM utilization overview reports

Network VTAM CSA Storage Info, Daily/Weekly Overview report

These reports show how much common storage VTAM has allocated.

This information identifies the reports:
- **Report ID**: NWVTM10 (daily), NWVTM11 (weekly)
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_GLOBAL_D (daily report) or NW_VTAM_GLOBAL_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, VTAM
- **Variables**: Date (for daily report), From date in week and To date in week (for weekly report)

---

**Network VTAM CSA Storage Info, Daily Overview**

**Date:** 2000-02-16

<table>
<thead>
<tr>
<th>SSCP name</th>
<th>CSA limit (MB)</th>
<th>CSA24 limit (MB)</th>
<th>CSA max (MB)</th>
<th>CSA24 max (MB)</th>
<th>CSA system max (MB)</th>
<th>CSA24 System max (MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A02N</td>
<td>8.389</td>
<td>16.777</td>
<td>0.939</td>
<td>0.031</td>
<td>5.100</td>
<td>2.970</td>
</tr>
</tbody>
</table>

_Tivoli Decision Support for z/OS Report: NWVTM10

**Figure 230. Example of a Network VTAM CSA Storage Info, Daily Overview report**

The reports contain this information:
- **Date (daily report)**
  - The date when the record was written to SMF.
- **Week start date (weekly report)**
  - The date of the Monday at the start of the week of summarized data.
- **SSCP name**
  - The name of the VTAM system.
- **CSA limit (MB)**
  - The maximum CSA allowed (CSALIMIT), in megabytes.
- **CSA24 limit (MB)**
  - The maximum CSA allowed below the line (CSALIMIT), in megabytes.
- **CSA max (MB)**
  - The maximum CSA allocated, in megabytes.
- **CSA24 max (MB)**
  - The maximum CSA allocated below the line, in megabytes.
- **CSA system max (MB)**
  - The size of the ECSA, in megabytes.
- **CSA24 System max (MB)**
  - The size of the CSA below the line, in megabytes.
CSA total (MB)

The total CSA, above and below the line, in megabytes.
Network VTAM Active Devices, Daily/Weekly Overview report

These reports show how many devices were active in a given day or week.

This information identifies the reports:

**Report ID**  NWVTM12 (daily), NWVTM13 (weekly)

**Report group**  Network VTAM Statistics Reports

**Source**  NW_VTAM_GLOBAL_D (daily report) or NW_VTAM_GLOBAL_W (weekly report)

**Attributes**  NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>Devices NCP average (count)</th>
<th>Devices CTC average (count)</th>
<th>Devices SNA average (count)</th>
<th>Devices local average (count)</th>
<th>Devices other average (count)</th>
<th>Devices total average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>1</td>
<td>3</td>
<td>32</td>
<td>0</td>
<td>36</td>
<td>0</td>
</tr>
</tbody>
</table>

*Network VTAM Active Devices, Weekly Overview*
From week starting: 2000-02-14 To week starting: 2000-02-20

*Figure 231. Example of a Network VTAM Active Devices, Weekly Overview report*

The reports contain this information:

**Date (daily report)**

The date when the record was written to SMF.

**Week start date (weekly report)**

The date of the Monday at the start of the week of summarized data.

**SSCP name**

The name of the VTAM system.

**Devices NCP average (count)**

The average number of active NCP devices.

**Devices CTC average (count)**

The average number of active channel-to-channel adapters.

**Devices SNA average (count)**

The average number of active local SNA devices.

**Devices local average (count)**

The average number of active non-SNA local devices.

**Devices other average (count)**

The average number of other devices that are active.

**Devices total average (count)**

The average number of active devices.
Network VTAM Start I/O Rate, Daily/Weekly Overview report

These reports show the I/O rate for different types of VTAM device.

This information identifies the reports:

**Report ID**  NWVTM14 (daily), NWVTM15 (weekly)
**Report group**  Network VTAM Statistics Reports
**Source**  NW_VTAM_GLOBAL_D (daily report) or NW_VTAM_GLOBAL_W (weekly report)
**Attributes**  NW, Network, Performance, Utilization, Overview, VTAM
**Variables**  Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>DASD SIO</th>
<th>NCP SIO</th>
<th>CTC SIO</th>
<th>Local SIO</th>
<th>SNA SIO</th>
<th>Other SIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 232. Example of a Network VTAM Start I/O Rate, Weekly Overview report

The reports contain this information:

**Date (daily report)**  The date when the record was written to SMF.

**Week start date (weekly report)**  The date of the Monday at the start of the week of summarized data.

**SSCP name**  The name of the VTAM system.

**DASD SIO (1/sec)**

The I/O rate for DASD devices. This is calculated as: SUM(SIO_DASD)/SUM(EXPECTED_INT_SEC).

**NCP SIO (1/sec)**

The I/O rate for NCP channels. This is calculated as: SUM(SIO_NCP)/SUM(EXPECTED_INT_SEC).

**CTC SIO (1/sec)**

The I/O rate for channel-to-channel adapters. This is calculated as: SUM(SIO_CTC)/SUM(EXPECTED_INT_SEC).

**Local SIO (1/sec)**

The I/O rate for local non-SNA devices. This is calculated as: SUM(SIO_LOCAL)/SUM(EXPECTED_INT_SEC).

**SNA SIO (1/sec)**

The I/O rate for local SNA devices. This is calculated as: SUM(SIO_SNA)/SUM(EXPECTED_INT_SEC).

**Other SIO (1/sec)**

The I/O rate for other devices. This is calculated as: SUM(SIO_OTHER)/SUM(EXPECTED_INT_SEC).
Network VTAM CPU and Paging Info, Daily/Weekly Overview report

These reports show the use of the processor and the amount of paging for VTAM.

This information identifies the reports:

Report ID: NWVTM16 (daily), NWVTM17 (weekly)

Report group: Network VTAM Statistics Reports

Source: NW_VTAM_GLOBAL_D (daily report) or NW_VTAM_GLOBAL_W (weekly report)

Attributes: NW, Network, Performance, Utilization, Overview, VTAM

Variables: Date (daily), or From date in week and To date in week (weekly)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>CPU time (sec)</th>
<th>SRB time (sec)</th>
<th>TCB time (sec)</th>
<th>Common page ins (1/sec)</th>
<th>LPA page ins (1/sec)</th>
<th>Private page ins (1/sec)</th>
<th>Total page ins (1/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>5100</td>
<td>1700</td>
<td>3400</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>1637100</td>
<td>449500</td>
<td>1187600</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Figure 233. Example of a Network VTAM CPU and Paging Info, Weekly Overview report*

The reports contain this information:

**Date (daily report)**

The date when the record was written to SMF.

**Week start date (weekly report)**

The date of the Monday at the start of the week of summarized data.

**SSCP name**

The name of the VTAM system.

**CPU time (sec)**

The processor seconds used by this VTAM system.

**SRB time (sec)**

The SRB seconds used by this VTAM system.

**TCB time (sec)**

The TCB seconds used by this VTAM system.

**Common page ins (1/sec)**

The page-in rate for this VTAM system.

**LPA page ins (1/sec)**

The LPA page-in rate for this VTAM system.

**Private page ins (1/sec)**

The private page-in rate for this VTAM system.

**Total page ins (1/sec)**

The total page-in rate for this VTAM system.
Network VTAM Buffer Start Opt 1, Daily/Weekly Overview report

These reports show the VTAM buffer start options, as specified in the ATCSTRnn member in SYS1.VTAMLST. See also "Network VTAM Buffer Start Opt 2, Daily/Weekly Overview report" on page 379. The values shown are maximums, although in practice these values are unlikely to be changed from one week to the next.

This information identifies the reports:

**Report ID**       NWVTM18 (daily), NWVTM19 (weekly)
**Report group**    Network VTAM Statistics Reports
**Source**          NW_VTAM_BFR_D (daily report) or NW_VTAM_BFR_W (weekly report)
**Attributes**      NW, Network, Performance, Utilization, Overview, VTAM
**Variables**       Date (daily report), or From date in week and To date in week (weekly report)

The reports contain this information:

**Date (daily report)**
The date when the record was written to SMF.

**Week start date (weekly report)**
The date of the Monday at the start of the week of summarized data.

**SSCP name**        The name of the VTAM system.
**Buffer pool id**   The buffer pool name.
**Job name**         The job that is the heaviest user of CRPL buffers.
**BASENO buffer (count)**
The base number of buffers.

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP</th>
<th>Buffer pool id</th>
<th>Job</th>
<th>BASENO buffer (count)</th>
<th>CONTPT buffer (count)</th>
<th>SLOWPT buffer (count)</th>
<th>XPANN buffer (count)</th>
<th>XPANN2 buffer (count)</th>
<th>XPANPT buffer (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>AP00</td>
<td>16</td>
<td>115</td>
<td>2</td>
<td>1</td>
<td>56</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>BS00</td>
<td>28</td>
<td>75</td>
<td>0</td>
<td>1</td>
<td>24</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>CRPL NPM21VI</td>
<td>270</td>
<td>170</td>
<td>15</td>
<td>60</td>
<td>75</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>1000</td>
<td>280</td>
<td>162</td>
<td>19</td>
<td>56</td>
<td>56</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>LF00</td>
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<td>68</td>
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<td>1</td>
<td>32</td>
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<td></td>
</tr>
<tr>
<td>2000-02-14</td>
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<td>AP00</td>
<td>56</td>
<td>115</td>
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<td>1</td>
<td>56</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>BS00</td>
<td>42</td>
<td>64</td>
<td>0</td>
<td>1</td>
<td>21</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>CRPL NETCA1IC</td>
<td>400</td>
<td>54</td>
<td>0</td>
<td>1</td>
<td>25</td>
<td>4</td>
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<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>1000</td>
<td>405</td>
<td>88</td>
<td>3</td>
<td>1</td>
<td>15</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>LF00</td>
<td>30</td>
<td>61</td>
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<td>1</td>
<td>30</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>LP00</td>
<td>24</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>SF00</td>
<td>64</td>
<td>65</td>
<td>0</td>
<td>1</td>
<td>32</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>SP00</td>
<td>25</td>
<td>51</td>
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<td>1</td>
<td>25</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>XD00</td>
<td>10</td>
<td>15</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM19

Figure 234. Example of a Network VTAM Buffer Start Opt 1, Weekly Overview report

Utilization Reports (Part 2)
Utilization Reports (Part 2)

CONTP buffer (count)
   The contraction point.

SLOWPT buffer (count)
   The slowdown point.

XPANNO buffer (count)
   The number that VTAM will expand the pool by, if required.

XPANN2 buffer (count)
   The second expansion point.

XPANPT buffer (count)
   The number of unused buffers that triggers a pool expansion.
Network VTAM Buffer Start Opt 2, Daily/Weekly Overview report

These reports show VTAM buffer parameters. See also “Network VTAM Buffer Start Opt 1, Daily/Weekly Overview report” on page 377. The values shown are maximums, although in practice these values are unlikely to be changed from one week to the next.

This information identifies the reports:

**Report ID** NWVTM20 (daily), NWVTM21 (weekly)

**Report group** Network VTAM Statistics Reports

**Source** NW_VTAM_BFR_D (daily report) or NW_VTAM_BFR_W (weekly report)

**Attributes** NW, Network, Performance, Utilization, Overview, VTAM

**Variables** Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start SSCP date</th>
<th>Buffer pool id</th>
<th>Job name</th>
<th>BASENO</th>
<th>BUFSIZE</th>
<th>BUFSIZE adjusted</th>
<th>XSPANLIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14 A02N AP00</td>
<td>1152</td>
<td>56</td>
<td>72</td>
<td>2147484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 A02N BS00</td>
<td>4704</td>
<td>146</td>
<td>168</td>
<td>2147484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 A02N CRPL NPM21VI 43200 144 160 2147484</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 A02N 1000 132160 384 472 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 A02N LF00 4992 112 128 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB AP00 4032 56 72 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB BS00 8064 176 192 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB CRPL NETCA11C 64000 144 160 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB 1000 110160 182 272 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB LF00 4000 144 160 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB SF00 4080 120 136 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB SP00 4000 144 160 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-02-14 RAB XD00 7040 681 704 2147484</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 235. Example of a Network VTAM Buffer Start Opt 2, Weekly Overview report

The reports contain this information:

**Date (daily report)**

The date when the record was written to SMF.

**Week start date (weekly report)**

The date of the Monday at the start of the week of summarized data.

**SSCP name**

The name of the VTAM system.

**Buffer pool id**

The name of the buffer pool.

**Job name**

The job that is the heaviest user of CRPL buffers.

**BASENO (bytes)**

The maximum value of the base number of buffers. From BFR_BASE_ALL_ADJ.
Utilization Reports (Part 2)

**BUFSIZE (bytes)**
The maximum value of the buffer size, in bytes. From BFR_BASE_ALL_ADJ.

**BUFSIZE VTAM adjusted (bytes)**
The maximum value of the adjusted buffer size, in bytes.

**XPANLIM (KB)**
The maximum value of the expansion limit, in kilobytes. This is calculated as: MAX(BFR_POOL_MAX)/1000.
Network VTAM Buffer Information, Daily/Weekly Overview report

These reports show how VTAM has used its buffer pools.

This information identifies the reports:
- **Report ID**: NWVTM22 (daily), NWVTM23 (weekly)
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_BFR_D (daily report) or NW_VTAM_BFR_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, VTAM
- **Variables**: Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>SSCP name</th>
<th>Buffer pool id</th>
<th>Job name</th>
<th>Buffers allocated average (count)</th>
<th>Buffers in use average (count)</th>
<th>Buffers available average (count)</th>
<th>Buffers waiting average (count)</th>
<th>Expansions average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A02N</td>
<td>AP00</td>
<td>16</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A02N</td>
<td>BS00</td>
<td>28</td>
<td>0</td>
<td>28</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A02N</td>
<td>CRPL</td>
<td>270</td>
<td>9</td>
<td>261</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A02N</td>
<td>IO00</td>
<td>280</td>
<td>2</td>
<td>278</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A02N</td>
<td>LF00</td>
<td>39</td>
<td>5</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Figure 236. Example of a Network VTAM Buffer Information, Daily Overview report*

The reports contain this information:

**Date (daily report)**
- The date when the record was written to SMF.

**Week start date (weekly report)**
- The date of the Monday at the start of the week of summarized data.

**SSCP name**
- The name of the VTAM system.

**Buffer pool id**
- The name of the buffer pool.

**Job name**
- The job that was the heaviest user of CRPL buffers.

**Buffers allocated average (count)**
- The average number of allocated buffers.

**Buffers in use average (count)**
- The average number of buffers in use.

**Buffers available average (count)**
- The average number of available buffers.

**Requesters waiting average (count)**
- The average number of requesters waiting for buffers from this pool.

**Expansions average (count)**
- The average number of expansions per sample.
Utilization Reports (Part 2)

Network VTAM Buffer I/O Traffic, Daily/Weekly Overview report

These reports show the distribution of traffic in VTAM I/O buffers.

This information identifies the reports:

**Report ID**  NWVTM24 (daily), NWVTM25 (weekly)

**Report group**  Network VTAM Statistics Reports

**Source**  NW_VTAM_BFR_D (daily report) or NW_VTAM_BFR_W (weekly report)

**Attributes**  NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>Buffer pool id</th>
<th>Read CCW average (count)</th>
<th>Misc traffic average (count)</th>
<th>Unallocated traffic average (count)</th>
<th>TSCBs in I/O buffers average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>1000</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>278</td>
</tr>
</tbody>
</table>

**Tivoli Decision Support for z/OS Report: NWVTM25**

*Figure 237. Example of a Network VTAM Buffer I/O Traffic, Weekly Overview report*

The reports contain this information:

**Date (daily report)**

The date when the record was written to SMF.

**Week start date (weekly report)**

The date of the Monday at the start of the week of summarized data.

**SSCP name**

The name of the VTAM system.

**Buffer pool id**

The name of the buffer pool.

**Read CCW average (count)**

The number of buffers used to receive data.

**Misc traffic average (count)**

The number of buffers used for miscellaneous traffic.

**Unallocated traffic average (count)**

The number of buffers used for unallocated traffic.

**TSCBs in I/O buffers average (count)**

The number of buffers used for TSCB traffic.
Network VTAM CRPL Buffer Info, Daily/Weekly Overview report

These reports show details of the heaviest users of CRPL buffers.

This information identifies the reports:

**Report ID**    NWVTM26 (daily), NWVTM27 (weekly)
**Report group** Network VTAM Statistics Reports
**Source**       NW_VTAM_BFR_D (daily report) or NW_VTAM_BFR_W (weekly report)
**Attributes**   NW, Network, Performance, Utilization, Overview, VTAM
**Variables**    Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start</th>
<th>SSCP name</th>
<th>Buffer pool</th>
<th>Job name</th>
<th>CRPL buffers average (count)</th>
<th>CRPL buffers max (count)</th>
<th>CRPL percent worst (count)</th>
<th>CRPL buffers worst (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>CRPL</td>
<td>NPM21VI</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>270</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>CRPL</td>
<td>NETCA11C</td>
<td>22</td>
<td>27</td>
<td>5</td>
<td>400</td>
</tr>
</tbody>
</table>

Figure 238. Example of a Network VTAM CRPL Buffer Info, Weekly Overview report

The reports contain this information:

**Date (daily report)**
The date when the record was written to SMF.

**Week start date (weekly report)**
The date of the Monday at the start of the week of summarized data.

**SSCP name**    The name of the VTAM system.
**Buffer pool id** The name of the buffer pool.
**Job name**      The job that was the heaviest user of CRPL buffers in the NPM sample.

**CRPL buffers average (count)**
The average number of CRPL buffers used. This is calculated as:
SUM(CRPL_USED_SUM)/SUM(RECORDS_COLLECTED).

**CRPL buffers max (count)**
The maximum number of CRPL buffers used. This is calculated as:
MAX(CRPL_BFR_USED_MAX).
**Utilization Reports (Part 2)**

**CRPL percent (%)**
The average percentage of buffers used by this job, when it is recorded as the heaviest user. This is calculated as: 
SUM(CRPL_PERCENT)/SUM(RECORDS_COLLECTED).

**CRPL worst (count)**
The worst use of CRPL buffers (the maximum value of the aggregate used in an NPM sample). You can use this field to judge the overall worst user of CRPL buffers. This is calculated as: 
MAX(CRPL_USED_MAX).
Network VTAM CTC Device Start Inf, Daily/Weekly Overview report

These reports summarize statistics for channel-to-channel adapters.

This information identifies the reports:

- **Report ID**: NWVTM28 (daily), NWVTM29 (weekly)
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_DEV_D (daily report) or NW_VTAM_DEV_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, VTAM
- **Variables**: Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>Subchannel name</th>
<th>CP starts capacity limit (%)</th>
<th>CP starts high priority (%)</th>
<th>CP starts queue limit (%)</th>
<th>CP starts time delay (%)</th>
<th>Write delay average (msec)</th>
<th>PIUs sent (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14 RAB</td>
<td>RABLC30</td>
<td>0</td>
<td>41</td>
<td>59</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>RABLC32</td>
<td>0</td>
<td>70</td>
<td>30</td>
<td>0</td>
<td>100</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 239. Example of a Network VTAM CTC Device Start Inf, Weekly Overview report

The reports contain this information:

- **Date (daily report)**
  The date when the record was written to SMF.

- **Week start date (weekly report)**
  The date of the Monday at the start of the week of summarized data.

- **SSCP name**: The name of the VTAM system.

- **Subchannel name**: The subchannel.

- **CP starts capacity limit (%)**: The percentage of times a channel program was initiated because of the capacity limit of the receiving system. This is calculated as: $100 \times \text{SUM(CP\_START\_DEST\_LIM)} / \text{SUM(CP\_START\_DEST\_LIM + CP\_START\_TIME\_DEL + CP\_START\_QUEUE\_LIM + CP\_START\_HIGH\_PRIOR)}$.

- **CP starts high priority (%)**: The percentage of times a channel program was initiated because of a high-priority request. This is calculated as: $100 \times \text{SUM(CP\_START\_HIGH\_PRIOR)} / \text{SUM(CP\_START\_DEST\_LIM + CP\_START\_TIME\_DEL + CP\_START\_QUEUE\_LIM + CP\_START\_HIGH\_PRIOR)}$. 

Utilization Reports (Part 2)
Utilization Reports (Part 2)

CP starts queue limit (%)  
The percentage of times a channel program was initiated because the queue reached its maximum length. This is calculated as:  
100*SUM(CP_START_QUEUE_LIM)/SUM(CP_START_DEST_LIM + CP_START_TIME_DEL + CP_START_QUEUE_LIM + CP_START_HIGH_PRIO).

CP starts delay time (%)  
The percentage of times a channel program was initiated because the maximum time delay was reached. This is calculated as:  
100*SUM(CP_START_TIME_DEL)/SUM(CP_START_DEST_LIM + CP_START_TIME_DEL + CP_START_QUEUE_LIM + CP_START_HIGH_PRIO).

Write delay (msec)  
This is the maximum time that a transmission was delayed. This is the maximum of DELAY_WRITE_MAX.

PIUs sent delay average (count)  
The average number of PIUs sent before the timer expires. This is calculated as:  
SUM(PIU_SENT_SUM)/SUM(RECORDS_COLLECTED).
Network VTAM Adapter Information, Daily/Weekly Overview report

These reports show statistics about VTAM adapters.

This information identifies the reports:

**Report ID**  
NWVTM30 (daily), NWVTM31 (weekly)

**Report group**  
Network VTAM Statistics Reports

**Source**  
NW_VTAM_DEV_D (daily report) or NW_VTAM_DEV_W (weekly report)

**Attributes**  
NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  
Date (daily report), or From date in week and To date in week (weekly report)

Network VTAM Adapter Information, Weekly Overview  
From week starting: 2000-02-14 To week starting: 2000-02-20

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>Subchannel name</th>
<th>Buffers req avg read this side (count)</th>
<th>Buffers xmit avg write this side (count)</th>
<th>Buffers used avg read this side (count)</th>
<th>Buffers used avg write this side (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14 RAB</td>
<td>RABLC04</td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>RABLC30</td>
<td>RAK</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>RABLC32</td>
<td>RAI</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM31

*Figure 240. Example of a Network VTAM Adapter Information, Weekly Overview report*

The reports contain this information:

**Date (daily report)**  
The date when the record was written to SMF.

**Week start date (weekly report)**  
The date of the Monday at the start of the week of summarized data.

**SSCP name**  
The name of the VTAM system.

**Subchannel name**  
The subchannel.

**Node**  
The node name.

**Buffers req avg read this side (count)**  
The average number of buffers required for a read on this side of the adapter. This is calculated as:  
SUM(BFR_RECEIVED_SUM)/SUM(RECORDS_COLLECTED).

**Buffers xmit avg write this side (count)**  
The average number of buffers required for a transmit on this side of the adapter. This is calculated as:  
SUM(BFR_XMITTED_SUM)/SUM(RECORDS_COLLECTED).

**Buffers used avg read this side (count)**  
The average number of buffers used for a read on this side of the adapter. This is calculated as:  
SUM(BFR_READ_THIS_SUM)/SUM(RECORDS_COLLECTED).
Utilization Reports (Part 2)

Buffers req avg oth side (count)
The average number of buffers required on the other side of the adapter. This is calculated as:
SUM(BFR_REQ_OTH_SUM)/SUM(RECORDS_COLLECTED).

Buffers used avg read oth side (count)
The average number of buffers used for read on the other side of the adapter. This is calculated as:
SUM(BFR_READ_OTH_SUM)/SUM(RECORDS_COLLECTED).
Network VTAM Coattailing Info, Daily/Weekly Overview report

These reports show how much coattailing (avoidance of start I/O by batching I/O or sending data on the back of incoming traffic) is taking place.

This information identifies the reports:

**Report ID**  NWVTM32 (daily), NWVTM33 (weekly)

**Report group**  Network VTAM Statistics Reports

**Source**  NW_VTAM_DEV_D (daily) or NW_VTAM_DEV_W (weekly)

**Attributes**  NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  Date (daily report), or From date in week and To date in week (weekly report)

---

Network VTAM Coattailing Info, Weekly Overview
From week starting: 2000-02-14 To week starting: 2000-02-20

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>Subchannel name</th>
<th>Node</th>
<th>Active status (%)</th>
<th>Slowdown status (%)</th>
<th>Coattail inbound (count)</th>
<th>Coattail outbound (count)</th>
<th>Data transfer analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14 RAB</td>
<td>OCSE-L</td>
<td>RAQNCPO</td>
<td>100</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM33

*Figure 241. Example of a Network Coattailing Info, Weekly Overview report*

The reports contain this information:

**Date (daily report)**
The date when the record was written to SMF.

**Week start date (weekly report)**
The date of the Monday at the start of the week of summarized data.

**SSCP name**
The name of the VTAM system.

**Subchannel name**
The subchannel.

**Node**
The node name.

**Active status (%)**
The percentage of samples where the link was active. This is calculated as:

\[ 100 \times \frac{\text{SUM}(\text{LINK_ACTIVE_SUM})}{\text{SUM}(\text{SAMPLES})} \]

**Slowdown status (%)**
The percentage of samples where the link was in slowdown. This is calculated as:

\[ 100 \times \frac{\text{SUM}(\text{SLOWDOWN_MODE_SUM})}{\text{SUM}(\text{SAMPLES})} \]

**Coattail inbound (count)**
The amount of inbound coattailing (avoidance of channel reads). If this is 1, there is no coattailing. A value larger than 1 shows a degree of coattailing. This is calculated as:

\[ \frac{\text{SUM}(\text{PIU_INBOUND_SUM})}{\text{SUM}(\text{CHANNEL_READS_SUM})} \]
Utilization Reports (Part 2)

Coattail outbound (count)
The amount of outbound coattailing (avoidance of start I/O). If this is 1, there is no coattailing. A value larger than 1 shows a degree of coattailing. This is calculated as:
\[ \text{SUM(PIU\_OUTBOUND\_SUM)}/\text{SUM(CHANNEL\_WRITES\_SUM)} \].

Data transfer analysis (count)
The amount of outbound coattailing (avoidance of start I/O). If this is 1, there is no coattailing. A value larger than 1 shows a degree of coattailing. This is calculated as:
\[ \frac{\text{SUM(MAXBUFRU\_MAX)}}{\text{SUM(CHANNEL\_READS\_SUM)}}/\text{SUM(CHANNEL\_WRITES\_SUM)}} / \frac{\text{SUM(RECORDS\_COLLECTED)}}{\text{SUM(RECORDS\_COLLECTED)}} \]
Network VTAM Channel Activity, Daily/Weekly Overview report

These reports show the traffic on the channels that VTAM uses.

This information identifies the reports:

- **Report ID**: NWVTM34 (daily), NWVTM35 (weekly)
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_DEV_D (daily report) NW_VTAM_DEV_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, VTAM
- **Variables**: Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>SSCP name</th>
<th>Subchannel name</th>
<th>Node</th>
<th>Active status (%)</th>
<th>Slowdown status (%)</th>
<th>PIU inbound rate (1/sec)</th>
<th>PIU outbound rate (1/sec)</th>
<th>Attention rate (1/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD20S002</td>
<td>L2F14</td>
<td>DEGNO20G</td>
<td>100</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>CD20S002</td>
<td>L2F3A</td>
<td>DEGNO20B</td>
<td>100</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>CD20S002</td>
<td>L2F4A</td>
<td>CD20S009</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 242. Example of a Network VTAM Channel Activity, Daily Overview report

The reports contain this information:

- **Date (daily report)**
  The date when the record was written to SMF.

- **Week start date (weekly report)**
  The date of the Monday at the start of the week of summarized data.

- **SSCP name**
  The name of the VTAM system.

- **Subchannel name**
  The name of the subchannel.

- **Node**
  The node name.

- **Active status (%)**
  The percent of NPM samples where the channel was active. This is calculated as:
  \[ 100 \times \text{SUM(LINK ACTIVE SUM)} / \text{SUM(SAMPLES)} \].

- **Slowdown status (%)**
  The percent of NPM samples where the channel was in slowdown. This is calculated as:
  \[ 100 \times \text{SUM(SLOWDOWN MODE SUM)} / \text{SUM(SAMPLES)} \].

- **PIU inbound rate (1/sec)**
  The rate of receiving inbound PIUs. This is calculated as:
  \[ \text{SUM(PIU INBOUND SUM)} / \text{SUM(EXPECTED INT SEC)} \].

- **PIU outbound rate (1/sec)**
  The rate of receiving inbound PIUs. This is calculated as:
Utilization Reports (Part 2)

\[ \frac{\text{SUM(PIU_OUTBOUND_SUM)}}{\text{SUM(EXPECTED_INT_SEC)}}. \]

**Attention rate (1/sec)**

The rate of attentions on the channel, indicating that there is incoming data. This is calculated as:

\[ \frac{\text{SUM(ATTENTION_RCV_RATE)}}{\text{SUM(RECORDS_COLLECTED)}}. \]
Network VTAM Virtual Route Status, Daily/Weekly Overview report

These reports give information on the status of VTAM routing.

This information identifies the reports:

Report ID        NWVTM36 (daily), NWVTM37 (weekly)
Report group     Network VTAM Statistics Reports
Source           NW_VTAM_VR_D (daily report) or NW_VTAM_VR_W (weekly report)
Attributes       NW, Network, Performance, Utilization, Overview, VTAM
Variables        Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>Dest name</th>
<th>Dest SA</th>
<th>Adj SA</th>
<th>VR no</th>
<th>Status blocked (%)</th>
<th>Status inactive (%)</th>
<th>Sessions (count)</th>
<th>Sessions max (count)</th>
<th>LU-LU sessions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>A02N</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>26</td>
<td>26</td>
<td>11.54</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>57</td>
<td>51</td>
<td>3.49</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAI</td>
<td>18</td>
<td>18</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>2</td>
<td>2</td>
<td>100.00</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAK</td>
<td>18</td>
<td>20</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>1</td>
<td>1</td>
<td>100.00</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAP</td>
<td>20</td>
<td>20</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>3</td>
<td>2</td>
<td>89.91</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAQNCP0</td>
<td>26</td>
<td>26</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>6</td>
<td>5</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Figure 243. Example of a Network VTAM Virtual Route Status, Weekly Overview report

The reports contain this information:

Date (daily report)
The date when the record was written to SMF.

Week start date (weekly report)
The date of the Monday at the start of the week of summarized data.

Dest name
The destination system.

Dest SA
The destination subarea.

Adj SA
The adjacent subarea.

VR no
The virtual route number.

Status blocked (%)
The percentage of samples where the virtual route was blocked. This is calculated as:
100*SUM(VR_BLOCKED_EVENTS)/SUM(SAMPLES).

Status inactive (%)
The percentage of samples where the virtual route was inactive. This is calculated as:
100*SUM(VR_INACTIVE_EVENTS)/SUM(SAMPLES).
**Sessions average (count)**

The average number of sessions. This is calculated as:

$$\frac{\text{SUM}(\text{SESSIONS\_TOT})}{\text{SUM}(\text{SAMPLES})}.$$ 

**Sessions max (count)**

The maximum number of sessions. This is calculated as:

$$\frac{\text{MAX}(\text{SESSIONS\_TOT})}{\text{SUM}(\text{SAMPLES})}.$$ 

**LU-LU sessions (%)**

The average percentage of LU-LU sessions. This is calculated as:

$$100\times\frac{\text{SUM}(\text{SESSIONS\_LU\_LU})}{\text{SUM}(\text{SESSIONS\_TOT})}.$$
Network VTAM Virtual Route PIUs, Daily/Weekly Overview report

These reports give information about virtual route traffic.

This information identifies the reports:

- **Report ID**: NWVTM38 (daily), NWVTM39 (weekly)
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_VR_D (daily report) or NW_VTAM_VR_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, VTAM
- **Variables**: Date (daily report), or From date in week and To date in week (weekly report)

### Example of a Network VTAM Virtual Route PIUs, Weekly Overview report

**Network VTAM Virtual Route PIUs, Weekly Overview**

<table>
<thead>
<tr>
<th>Week start date</th>
<th>Dest name</th>
<th>Dest SA</th>
<th>Adj SA</th>
<th>VR no</th>
<th>PIU sum (count)</th>
<th>PIU inbound (%)</th>
<th>PIU outbound (%)</th>
<th>Wait users</th>
<th>Wait users max</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td><em>UNKNOWN</em></td>
<td>24</td>
<td>20</td>
<td>0</td>
<td>5327</td>
<td>25.81</td>
<td>74.19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAI</td>
<td>18</td>
<td>18</td>
<td>0</td>
<td>1003</td>
<td>88.83</td>
<td>11.17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAK</td>
<td>20</td>
<td>20</td>
<td>1</td>
<td>906</td>
<td>50.11</td>
<td>49.89</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAQNCP0</td>
<td>26</td>
<td>26</td>
<td>0</td>
<td>8767</td>
<td>50.04</td>
<td>49.96</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 244. Example of a Network VTAM Virtual Route PIUs, Weekly Overview report**

The reports contain this information:

- **Date (daily report)**: The date when the record was written to SMF.
- **Week start date (weekly report)**: The date of the Monday at the start of the week of summarized data.
- **Dest name**: The name of the destination.
- **Dest SA**: The name of the subarea.
- **Adj SA**: The adjacent subarea.
- **VR no**: The virtual route number.
- **PIU sum (count)**: The number of PIUs.
- **PIU inbound (%)**: The percentage of PIUs that were inbound. This is calculated as: \( \frac{100 \times \text{SUM(PIU_RECEIVED)}}{\text{SUM(PIU_RECEIVED + PIU_SENT)}} \).
- **PIU outbound (%)**: The percentage of PIUs that were outbound. This is calculated as: \( \frac{100 \times \text{SUM(PIU_SENT)}}{\text{SUM(PIU_RECEIVED + PIU_SENT)}} \).
Utilization Reports (Part 2)

**Wait users average (count)**
The average number of waits. This is calculated as:
\[
\text{SUM(WAITS)}/\text{SUM(SAMPLES)}.
\]

**Wait users max (count)**
The maximum number of waits. This is calculated as:
\[
\text{MAX(WAITS_MAX)}/\text{SUM(SAMPLES)}.
\]
Network VTAM Virtual Route Pacing, Daily/Weekly Overview report

These reports give information on pacing and the window size.

This information identifies the reports:

**Report ID**  NWVTM40 (daily), NWVTM41 (weekly)

**Report group**  Network VTAM Statistics Reports

**Source**  NW_VTAM_VR_D (daily report) or NW_VTAM_VR_W (weekly report)

**Attributes**  NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  Date (daily report), or From date in week and To date in week (weekly report), and SSCP name

<table>
<thead>
<tr>
<th>Date</th>
<th>Min window size</th>
<th>Max window size</th>
<th>Min window size</th>
<th>Max window size</th>
<th>Pacing window size</th>
<th>Pacing window size</th>
<th>Min window size requests</th>
<th>Max window size requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
<td>2 0 0 0 0</td>
</tr>
</tbody>
</table>

**Figure 245. Example of a Network VTAM Virtual Route Pacing, Weekly Overview report**

The reports contain this information:

**Date (daily report)**  The date when the record was written to SMF.

**Week start date (weekly report)**  The date of the Monday at the start of the week of summarized data.

**SSCP name**  The name of the VTAM system.

**Dest SA**  The destination subarea.

**Adj SA**  The adjacent subarea.

**VR no**  The virtual route number.

**TP**  The transmission priority.

**Min window size def**  The minimum default window size. This is the minimum of WINDOW_DEF_MIN.

**Max window size def**  The maximum default window size. This is the maximum of WINDOW_DEF_MAX.

**Min window size cur**  The current minimum window size. This is the minimum of WINDOW_CUR_MIN.
Utilization Reports (Part 2)

Max window size cur
The current maximum window size. This is the maximum of WINDOW_CUR_MAX.

Pacing requests sent
The number of pacing requests sent. This is calculated as:
SUM(PACING_WINDOW_REQ)/SUM(RECORDS_COLLECTED).

Min window size
The minimum window size. This is the minimum of WINDOW_SIZE_MIN.

Max window size
The maximum window size. This is the maximum of WINDOW_SIZE_MAX.

Pacing window size cur
The pacing window size. This is calculated as:
SUM(PACING_WINDOW_SIZE)/SUM(SAMPLES).
Network VTAM Application Status, Daily/Weekly Overview report

These reports give information on the status of applications running VTAM.

This information identifies the reports:

**Report ID**  NWVTM42 (daily), NWVTM43 (weekly)

**Report group**  Network VTAM Statistics Reports

**Source**  NW_VTAM_APPL_D (daily report) or NW_VTAM_APPL_W (weekly report)

**Attributes**  NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>Applicat name</th>
<th>Active state (%)</th>
<th>Desired state (%)</th>
<th>LU-SSCP active (%)</th>
<th>Waits inbound response average (count)</th>
<th>Waits pacing response average (count)</th>
<th>Receive Any active response average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>ECHOESA</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>NETCA11C</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>706</td>
<td>121</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>NET11</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>NPM11G</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>0</td>
<td>906</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>NPM21VI</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>TSO</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>TSO11</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM43

*Figure 246. Example of a Network VTAM Application Status, Weekly Overview report*

The reports contain this information:

**Date (daily report)**

The date when the record was written to SMF.

**Week start date (weekly report)**

The date of the Monday at the start of the week of summarized data.

**Application name**

The VTAM application ID.

**Active state (%)**

The percentage of samples where the application was active. This is calculated as: 100*SUM(CURRENT_ACT)/SUM(SAMPLES).

**Desired state (%)**

The percentage of samples where the desired state of the application was active. This is calculated as: 100*SUM(DESired_ACT)/SUM(SAMPLES).

**LU-SSCP active (%)**

The percentage of samples where the SSCP session of the application was active. This is calculated as: 100*SUM(SSCP_LU_ACT)/SUM(SAMPLES).
Utilization Reports (Part 2)

Waits inbound response average
The average number of times the application was waiting for an inbound response. This is calculated as:
SUM(WAITS_RESPONSE)/SUM(RECORDS_COLLECTED).

Waits pacing response average
The average number of times the application was waiting for a pacing response. This is calculated as:
SUM(WAITS_PACING)/SUM(RECORDS_COLLECTED).

Receive Any active average
The average number of times the application had an active Receive Any request. This is calculated as:
SUM(RECEIVE_ANY)/SUM(RECORDS_COLLECTED).
Network VTAM Application Sessions, Daily/Weekly Overview report

These reports give information about application sessions.

This information identifies the reports:

**Report ID**  
NWVTM44 (daily), NWVTM45 (weekly)

**Report group**  
Network VTAM Statistics Reports

**Source**  
NW_VTAM_APPL_D (daily report) or NW_VTAM_APPL_W (weekly report)

**Attributes**  
NW, Network, Performance, Utilization, Overview, VTAM

**Variables**  
Date (daily report), or From date in week and To date in week (weekly report)

### Network VTAM Application Sessions, Weekly Overview

From week starting: 2000-02-14 To week starting: 2000-02-20

<table>
<thead>
<tr>
<th>Week start date</th>
<th>Application name</th>
<th>APPC sessions average</th>
<th>APPC sessions count</th>
<th>APPL sessions average</th>
<th>APPL sessions count</th>
<th>PLU sessions average</th>
<th>PLU sessions count</th>
<th>Pending sessions average</th>
<th>Pending sessions count</th>
<th>Same Dom sessions average</th>
<th>Same Dom sessions count</th>
<th>Active sessions average</th>
<th>Active sessions count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14</td>
<td>AAUTCNM1</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>BNJHWN1</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
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<td>2</td>
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<tr>
<td>2000-02-14</td>
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<td>2</td>
<td>0</td>
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<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>ISTPCL11</td>
<td>0</td>
<td>1</td>
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<td>0</td>
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<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>NPMA012</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RABAN</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RABANL1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RAB0005</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>RABAP</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2000-02-14</td>
<td>TSO</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM45

*Figure 247. Example of a Network VTAM Application Sessions, Weekly Overview report*

The reports contain this information:

**Date (daily report)**  
The date when the record was written to SMF.

**Week start date (weekly report)**  
The date of the Monday at the start of the week of summarized data.

**SSCP name**  
The name of the VTAM system.

**Application name**  
The name of the application.

**APPC sessions average**  
The average number of APPC sessions. This is calculated as: SUM(SESSIONS_APPC)/SUM(SAMPLES).

**APPL sessions average**  
The average number of APPL sessions. This is calculated as: SUM(SESSIONS_APPL)/SUM(SAMPLES).

**PLU sessions average**  
The average number of PLU sessions. This is calculated as: SUM(SESSIONS_PLU)/SUM(SAMPLES).
Utilization Reports (Part 2)

Pending sessions average
The average number of pending sessions. This is calculated as:
SUM(SESSIONS_PEND)/SUM(SAMPLES).

Same Dom sessions average
The average number of sessions in the same domain. This is calculated as: SUM(SESSIONS_DOM)/SUM(SAMPLES).

Active sessions average
The average number of active sessions. This is calculated as: SUM(SESSIONS_ACT)/SUM(SAMPLES).
Network VTAM Address Space Data, Daily/Weekly Overview report

These reports give VTAM information about address spaces that use VTAM services.

This information identifies the reports:

- **Report ID**: NWVTM46 (daily), NWVTM47 (weekly)
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTM_ADDSPACE_D (daily report) or NW_VTM_ADDSPACE_W (weekly report)
- **Attributes**: NW, Network, Performance, Utilization, Overview, VTAM
- **Variables**: Date (daily report), or From date in week and To date in week (weekly report)

<table>
<thead>
<tr>
<th>Week start date</th>
<th>SSCP name</th>
<th>Job name</th>
<th>VTAM ACB average (count)</th>
<th>PST average (count)</th>
<th>Private storage average (KB)</th>
<th>Pending sessions average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-14 A02N</td>
<td>INSOLIA</td>
<td>1</td>
<td>1</td>
<td>0.288</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>NETCA11C</td>
<td>18</td>
<td>18</td>
<td>0.000</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>NET11</td>
<td>3</td>
<td>2</td>
<td>0.000</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>NPM11G</td>
<td>2</td>
<td>2</td>
<td>0.000</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2000-02-14 RAB</td>
<td>TSO11</td>
<td>1</td>
<td>1</td>
<td>0.348</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Tivoli Decision Support for z/OS Report: NWVTM47**

*Figure 248. Example of a Network VTAM Address Space Data, Weekly Overview report*

The reports contain this information:

**Date (daily report)**

The date when the record was written to SMF.

**Week start date (weekly report)**

The date of the Monday at the start of the week of summarized data.

**SSCP name**

The name of the VTAM system.

**Job name**

The job name.

**VTAM ACB average (count)**

The average number of open VTAM ACBs. This is calculated as:

\[
\text{SUM(ACB\_COUNT)}/\text{SUM(SAMPLES)}.
\]

**PST average (count)**

The average number of PSTs. This is calculated as:

\[
\text{SUM(PST\_COUNT)}/\text{SUM(SAMPLES)}.
\]

**Private storage average (KB)**

The average private storage allocated by VTAM, in KB. This is calculated as:

\[
\text{SUM(STOR\_PRIV\_KB)}/\text{SUM(SAMPLES)}.
\]

**Active sessions average (count)**

The average number of active sessions in the address space. This is calculated as:

\[
\text{SUM(SESSIONS\_ACTIVE)}/\text{SUM(SAMPLES)}.
\]
Pending sessions average (count)
The average number of pending sessions in the address space. This is calculated as: $\frac{\text{SUM(SESSIONS\_PENDING)}}{\text{SUM(SAMPLES)}}$. 
VTAM utilization detail reports

Network VTAM TSCB Traffic, Daily Detail report

This report shows the distribution of TSCB traffic in VTAM buffers, by hour.

This information identifies the report:

- **Report ID**: NWVTM80
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_BFR_H
- **Attributes**: NW, Network, Performance, Utilization, Detail, VTAM
- **Variables**: Date, SSCP name

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.
- **SSCP name**: The name of the VTAM system.
- **Buffer pool id**: The name of the buffer pool.

- **General SSCP average**: The average number of buffers used for general SSCP TSCB traffic. This is calculated as:
  \[ \frac{\text{SUM(TSCB GEN SSCP SUM)}}{\text{SUM(SAMPLES)}} \]

- **VR pacing average**: The average number of buffers used for VR pacing TSCB traffic. This is calculated as:
  \[ \frac{\text{SUM(TSCB VR PACING SUM)}}{\text{SUM(SAMPLES)}} \]

- **PLU to diff SA average**: The average number of buffers used for PIU traffic to different subareas. This is calculated as:
  \[ \frac{\text{SUM(TSCB PLU DIFF SUM)}}{\text{SUM(SAMPLES)}} \]

- **PLU to same SA average**: The average number of buffers used for PIU traffic to the same subarea. This is calculated as:
  \[ \frac{\text{SUM(TSCB PLU SAME SUM)}}{\text{SUM(SAMPLES)}} \]

---

**Figure 249. Example of a Network VTAM TSCB Traffic, Daily Detail report**

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.
- **SSCP name**: The name of the VTAM system.
- **Buffer pool id**: The name of the buffer pool.

The report contains this information:

- **Date**: 2000-02-16
- **SSCP name**: A02N

<table>
<thead>
<tr>
<th>Buffer pool id</th>
<th>Hour</th>
<th>General SSCP average (count)</th>
<th>VR pacing average (count)</th>
<th>PLU to diff SA average (count)</th>
<th>PLU to same SA average (count)</th>
<th>Local SNA average (count)</th>
<th>Local Non-SNA average (count)</th>
<th>IRN average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>1000</td>
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<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM80
Utilization Reports (Part 2)

Local SNA average
The average number of buffers used for traffic to local SNA controllers. This is calculated as:
SUM(TSCB_LOC_SNA_SUM)/SUM(SAMPLES).

Local Non-SNA average
The average number of buffers used for traffic to local non-SNA controllers. This is calculated as:
SUM(TSCB_LOC_NSNA_SUM)/SUM(SAMPLES).

IRN average
The average number of buffers used for traffic to intermediate routing nodes. This is calculated as:
SUM(TSCB_IRN_SUM)/SUM(SAMPLES).
Network VTAM Adapter This Side, Daily Detail report

This report gives detailed information about the buffers used on this side of a VTAM adapter.

This information identifies the report:

**Report ID**  NWVTM81
**Report group**  Network VTAM Statistics Reports
**Source**  NW_VTAM_DEV_H
**Attributes**  NW, Network, Performance, Utilization, Detail, VTAM
**Variables**  Date, Subch name

<table>
<thead>
<tr>
<th>Node</th>
<th>Hour</th>
<th>Buffers received average</th>
<th>Buffers used average</th>
<th>Buffers used maximum</th>
<th>Buffers xmitted average</th>
<th>Buffers required average</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEGNO20G</td>
<td>6</td>
<td>21</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEGNO20G</td>
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<td>31</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEGNO20G</td>
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<td>74</td>
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<td>0</td>
<td>1</td>
<td>0</td>
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<tr>
<td>DEGNO20G</td>
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<td>41</td>
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</tr>
<tr>
<td>DEGNO20G</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>DEGNO20G</td>
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<td>7</td>
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<td>DEGNO20G</td>
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<td>0</td>
</tr>
</tbody>
</table>

_Tivoli Decision Support for z/OS Report: NWVTM81_

**Figure 250. Example of a Network VTAM Adapter This Side, Daily Detail report**

The report contains this information:

**Date**  The date when the record was written to SMF.
**Hour**  The hour when the record was written to SMF.
**Node**  The node name.

**Buffers received average**  The average number of buffers received from this node. This is calculated as:

\[
\text{SUM(BFR RECEIVED SUM)} / \text{SUM(RECORDS COLLECTED)}.
\]

**Buffers used average**  The average number of buffers used at this node. This is calculated as:

\[
\text{SUM(BFR READ THIS SUM)} / \text{SUM(RECORDS COLLECTED)}.
\]

**Buffers used maximum**  The maximum number of buffers used at this node. This is the maximum of BFR_READ_THIS_MAX.

**Buffers xmitted average**  The average number of buffers transmitted to this node. This is calculated as:

\[
\text{SUM(BFR XMITTED SUM)} / \text{SUM(RECORDS COLLECTED)}.
\]

**Buffers required average**  The average number of buffers required. This is calculated as:

\[
\text{SUM(BFR REQ THIS SUM)} / \text{SUM(RECORDS COLLECTED)}.
\]
Network VTAM Adapter Other Side, Daily Detail report

This report gives detailed information about the buffers used on the other side of a VTAM adapter.

This information identifies the report:

- **Report ID**: NWVTM82
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_DEV_H
- **Attributes**: NW, Network, Performance, Utilization, Detail, VTAM
- **Variables**: Date, Subch name

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.
- **Node**: The node name.
- **I/O buf size average (bytes)**: The average I/O buffer size. This is calculated as: \( \frac{\text{SUM(BFR_IO_OTH_SUM)}}{\text{SUM(RECORDS_COLLECTED)}} \).
- **I/O buf size maximum (bytes)**: The maximum I/O buffer size. This is the maximum of BFR_IO_OTH_MAX.
- **Buffers required average**: The average number of buffers required on the other side of the adapter. This is calculated as: \( \frac{\text{SUM(BFR_REQ_OTH_SUM)}}{\text{SUM(RECORDS_COLLECTED)}} \).
- **Buffers req queue average**: The average buffer request queue. This is calculated as: \( \frac{\text{SUM(BFR_REQ_Q_OTH_SUM)}}{\text{SUM(RECORDS_COLLECTED)}} \).

<table>
<thead>
<tr>
<th>Node</th>
<th>Hour</th>
<th>I/O buf size average (bytes)</th>
<th>I/O buf size maximum (bytes)</th>
<th>Buffers required average</th>
<th>Buffers req queue average</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEG020G</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEG020G</td>
<td>7</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>DEG020G</td>
<td>8</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEG020G</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEG020G</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>DEG020G</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEG020G</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEG020G</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DEG020G</td>
<td>14</td>
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</tr>
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<td>DEG020G</td>
<td>16</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 251. Example of a Network VTAM Adapter Other Side, Daily Detail report
Buffers read average
The average number of buffers read. This is calculated as:
\[ \frac{\text{SUM}(\text{BFR\_READ\_OTH\_SUM})}{\text{SUM}(\text{RECORDS\_COLLECTED})}. \]

Buffers read maximum
The maximum number of buffers read. This is the maximum of 
\[ \text{BFR\_READ\_OTH\_MAX}. \]
Network VTAM Virtual Route Status, Daily Detail report

This report gives detailed hourly information about virtual routes.

This information identifies the report:

- **Report ID**: NWVTM83
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_VR_H
- **Attributes**: NW, Network, Performance, Utilization, Detail, VTAM
- **Variables**: Date, Dest subarea, SSCP name

Table:

<table>
<thead>
<tr>
<th>Hour</th>
<th>VR no</th>
<th>TP no</th>
<th>Adj SA</th>
<th>Status blocked (%)</th>
<th>Status inactive (%)</th>
<th>Sessions average</th>
<th>Sessions max</th>
<th>LU-LU sessions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2.00</td>
<td>0.00</td>
<td>26</td>
<td>26</td>
<td>11.54</td>
</tr>
<tr>
<td>12</td>
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<td>0</td>
<td>0</td>
<td>2.00</td>
<td>0.00</td>
<td>26</td>
<td>26</td>
<td>11.54</td>
</tr>
</tbody>
</table>

Figure 252. Example of a Network VTAM Virtual Route Status, Daily Detail report

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.
- **SSCP name**: The name of the VTAM system.
- **VR no**: The virtual route number.
- **TP no**: The transmission priority.
- **Adj SA**: The adjacent subarea.
- **Status blocked (%)**: The percentage of samples when the route was blocked. This is calculated as: 100*SUM(VR_BLOCKED_EVENTS)/SUM(SAMPLES).
- **Status inactive (%)**: The percentage of samples when the route was inactive. This is calculated as: 100*SUM(VR_INACTIVE_EVENTS)/SUM(SAMPLES).
- **Sessions average**: The average number of sessions. This is calculated as: SUM(SESSIONS_TOT)/SUM(SAMPLES).
- **Sessions max**: The maximum number of sessions. This is the maximum of (SESSIONS_TOT/SAMPLES).
- **LU-LU sessions (%)**: The percentage of LU-LU sessions. This is calculated as: 100*SUM(SESSIONS_LU_LU)/SUM(SESSIONS_TOT).
Network VTAM Virtual Route Pacing, Daily Detail report

This report gives detailed hourly information about pacing on virtual routes.

This information identifies the report:

**Report ID** NWVTM84
**Report group** Network VTAM Statistics Reports
**Source** NW_VTAM_VR_H
**Attributes** NW, Network, Performance, Utilization, Detail, VTAM
**Variables** Date, SSCP name, Dest subarea

**Network VTAM Virtual Route Pacing, Daily Detail**

SSCP_NAME= &SSCP_NAME

date: 2000-02-16
From SSCP: A02N to dest subarea: 2

<table>
<thead>
<tr>
<th>Hour</th>
<th>VR no</th>
<th>TP</th>
<th>Adj SA</th>
<th>Min size</th>
<th>Max size</th>
<th>Min def size</th>
<th>Max def size</th>
<th>Min cur size</th>
<th>Max cur size</th>
<th>Pacing window requests</th>
<th>Pacing window size</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>11</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
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<td>2</td>
<td>0</td>
<td>0</td>
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<tr>
<td>12</td>
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<td>2</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 253. Example of a Network VTAM Virtual Route Pacing, Daily Detail report**

The report contains this information:

**Date** The date when the record was written to SMF.
**Hour** The hour when the record was written to SMF.
**SSCP name** The name of the VTAM system.
**VR no** The virtual route number.
**TP** The transmission priority.
**Adj SA** The adjacent subarea.

**Min window size def**
The minimum default window size. This is the minimum of WINDOW_DEF_MIN.

**Max window size def**
The maximum default window size. This is the maximum of WINDOW_DEF_MAX.

**Min window size cur**
The current minimum window size. This is the minimum of WINDOW_CUR_MIN.

**Max window size cur**
The current maximum window size. This is the maximum of WINDOW_CUR_MAX.
Pacing requests sent
The number of pacing requests sent. This is calculated as:
SUM(PACING_WINDOW_REQ)/SUM(RECORDS_COLLECTED).

Min window size
The minimum window size. This is the minimum of
WINDOW_SIZE_MIN.

Max window size
The maximum window size. This is the maximum of
WINDOW_SIZE_MAX.

Pacing window size cur
The pacing window size. This is calculated as:
SUM(PACING_WINDOW_SIZE)/SUM(SAMPLES).
Network VTAM Application Data 1, Daily Detail report

This report gives detailed hourly data about an application.

This information identifies the report:

- **Report ID**: NWVTM85
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_APPL_H
- **Attributes**: NW, Network, Performance, Utilization, Detail, VTAM
- **Variables**: Date, Application name

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.

**Receive any average**

The average number of active Receive Any requests. This is calculated as: \( \text{SUM(RECEIVE\_ANY)} / \text{SUM(SAMPLES)} \).

**Receive any maximum**

The maximum number of active Receive Any requests. This is the maximum of \( \text{RECEIVE\_ANY} / \text{SAMPLES} \).

**Waits response average**

The average number of waits for responses. This is calculated as: \( \text{SUM(WAITS\_RESPONSE)} / \text{SUM(SAMPLES)} \).

**Waits response maximum**

The maximum number of waits for responses. This is the maximum of \( \text{WAITS\_RESPONSE} / \text{SAMPLES} \).

**Waits pacing average**

The average number of waits for pacing responses. This is calculated as: \( \text{SUM(WAITS\_PACING)} / \text{SUM(SAMPLES)} \).

**Waits pacing maximum**

The maximum number of waits for pacing responses. This is the maximum of \( \text{WAITS\_PACING} / \text{SAMPLES} \).

**Active sessions average**

The average number of active sessions. This is calculated as: \( \text{SUM(SESSIONS\_ACT)} / \text{SUM(SAMPLES)} \).
Network VTAM Application Data 2, Daily Detail report

This report gives detailed hourly data about a VTAM application. See also “Network VTAM Application Data 1, Daily Detail report” on page 413.

This information identifies the report:

Report ID: NWVTM86

Report group: Network VTAM Statistics Reports

Source: NW_VTAM_APPL_H

Attributes: NW, Network, Performance, Utilization, Detail, VTAM

Variables: Date, Application name

<table>
<thead>
<tr>
<th>Date</th>
<th>APPC average (count)</th>
<th>APPL average (count)</th>
<th>PLU average (count)</th>
<th>Pending sessions average (count)</th>
<th>Same Dom sessions average (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>21</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>22</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>23</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 255. Example of a Network VTAM Application Data 2, Daily Detail report

The report contains this information:

Date: The date when the record was written to SMF.

Hour: The hour when the record was written to SMF.

Active sessions average: The average number of active sessions for this application. This is calculated as: \(\text{SUM(SESSIONS_ACT)}/\text{SUM(SAMPLES)}\).

APPC sessions average: The average number of APPC sessions for this application. This is calculated as: \(\text{SUM(SESSIONS_APPC)}/\text{SUM(SAMPLES)}\).

APPL sessions average: The average number of APPL sessions for this application. This is calculated as: \(\text{SUM(SESSIONS_APPL)}/\text{SUM(SAMPLES)}\).

PLU sessions average: The average number of PLU sessions for this application. This is calculated as: \(\text{SUM(SESSIONS_PLU)}/\text{SUM(SAMPLES)}\).

Pending sessions average: The average number of pending sessions for this application. This is calculated as: \(\text{SUM(SESSIONS_PEND)}/\text{SUM(SAMPLES)}\).

Same Dom sessions average: The average number of same-domain sessions for this application. This is calculated as: \(\text{SUM(SESSIONS_DOM)}/\text{SUM(SAMPLES)}\).
Network VTAM Address Space Data, Daily Detail report

This report gives information about the address spaces running VTAM applications.

This information identifies the report:

- **Report ID**: NWVTM87
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_ADDSPACE_H
- **Attributes**: NW, Network, Performance, Utilization, Detail, VTAM
- **Variables**: Date, Job name

**Network VTAM Address Space Data, Daily Detail**

**Date**: 2000-02-16  
**Job**: CICSA

<table>
<thead>
<tr>
<th>Step name</th>
<th>VTAM ACB average</th>
<th>VTAM ACB maximum</th>
<th>PST average</th>
<th>PST maximum</th>
<th>Private storage average</th>
<th>Private storage maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(count)</td>
<td>(count)</td>
<td>(count)</td>
<td>(count)</td>
<td>(KB)</td>
<td>(KB)</td>
</tr>
<tr>
<td>12 TSOLOGON</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.288</td>
<td>0.288</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM87

**Figure 256. Example of a Network VTAM Address Space Data, Daily Detail report**

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.
- **SSCP name**: The name of the VTAM system.
- **Step name**: The job step name.
- **VTAM ACB average**: The average number of open VTAM ACBs. This is calculated as: \(\text{SUM(ACB\_COUNT)}/\text{SUM(SAMPLES)}\).
- **VTAM ACB maximum**: The maximum number of open VTAM ACBs. This is the maximum of \(\text{ACB\_COUNT}/\text{SAMPLES}\).
- **PST average**: The average number of PSTs. This is calculated as: \(\text{SUM(PST\_COUNT)}/\text{SUM(SAMPLES)}\).
- **PST maximum (count)**: The maximum number of PSTs. This is the maximum of \(\text{PST\_COUNT}/\text{SAMPLES}\).
- **Private storage average (KB)**: The average private storage allocated by VTAM, in KB. This is calculated as: \(\text{SUM(STOR\_PRIV\_KB)}/\text{SUM(SAMPLES)}\).
- **Private storage maximum (KB)**: The maximum private storage allocated by VTAM, in KB. This is the maximum of \(\text{STOR\_PRIV\_KB}/\text{SAMPLES}\).
Network VTAM Address Space Sessions, Daily Detail report

This report has detailed hourly statistics about VTAM sessions for each address space.

This information identifies the report:

- **Report ID**: NWVTM88
- **Report group**: Network VTAM Statistics Reports
- **Source**: NW_VTAM_ADDSPACE_H
- **Attributes**: NW, Network, Performance, Utilization, Detail, VTAM
- **Variables**: Date, Job name

**Network VTAM Address Space Sessions, Daily Detail**

Date: 2000-02-16
Job: ESFTJY

<table>
<thead>
<tr>
<th>Step</th>
<th>Hour name</th>
<th>Active sessions average</th>
<th>Active sessions maximum</th>
<th>Pending sessions average</th>
<th>Pending sessions maximum</th>
<th>Pending sessions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(count)</td>
<td>(count)</td>
<td>(count)</td>
<td>(count)</td>
<td>(%)</td>
</tr>
<tr>
<td>12</td>
<td>TSOLOGON</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS Report: NWVTM88

**Figure 257. Example of a Network VTAM Address Space Sessions, Daily Detail report**

The report contains this information:

- **Date**: The date when the record was written to SMF.
- **Hour**: The hour when the record was written to SMF.
- **Step name**: The job step name.

- **Active sessions average**: The average number of active sessions. This is calculated as: \(\frac{\text{SUM}(\text{SESSIONS\_ACTIVE})}{\text{SUM}(\text{SAMPLES})}\).

- **Active sessions maximum**: This is the maximum number of active sessions. This is the maximum of \(\text{SESSIONS\_ACTIVE}/\text{SAMPLES}\).

- **Pending sessions average**: The average number of pending sessions. This is calculated as: \(\frac{\text{SUM}(\text{SESSIONS\_PENDING})}{\text{SUM}(\text{SAMPLES})}\).

- **Pending sessions maximum**: This is the maximum number of pending sessions. This is the maximum of \(\text{SESSIONS\_PENDING}/\text{SAMPLES}\).

- **Pending sessions (%)**: This is the percentage of sessions that are pending. This is calculated as: \(100\times\frac{\text{SUM}(\text{SESSIONS\_PENDING})}{\text{SUM}(\text{SESSIONS\_ACTIVE})}\).
SNMP routers utilization detail reports

These reports provide statistics and utilization information for SNMP routers (IBM and Cisco).

Cisco Memory Pool Usage Data, Hourly Detail report

This report shows the Cisco Memory Pool usage for a specific date and IP address, specified at report run.

This information identifies the report:
- Report ID: NWOCIS01
- Report group: SNMP Cisco Routers group
- Source: NW_ROUT_CISPOOL_H
- Attributes: NW, NETWORK, CISCO, MEMORY, POOL, ROUTER, SNMP
- Variables: DATE, IP_ADDRESS, POOL_TYPE

The report contains this information:
- Date: The date when the record was collected.
- Hour: The time when the record was collected.
- IP address: The IP address of the router.
- Pool type: Index to identify the memory pool.
- Max memory pool used/1024: Maximum number of kilobytes in use by the application.
- Min memory pool used/1024: Minimum number of kilobytes in use by the application.
- Avg memory pool used/1024: Average number of kilobytes in use by the application.
- Max memory pool free/1024: Maximum number of kilobytes unused by the application.
- Min memory pool free/1024: Minimum number of kilobytes unused by the application.
- Avg memory pool free/1024: Average number of kilobytes unused by the application.
- Max memory pool largest free/1024: Maximum number of contiguous kilobytes currently used.
Utilization Reports (Part 2)

Min memory pool largest free/1024
Minimum number of contiguous kilobytes currently used.

Avg memory pool largest free/1024
Average number of contiguous kilobytes currently used.
Cisco Memory Pool Usage Data, Daily Detail report

This report shows the Cisco Memory Pool usage for a specific range of dates and IP address, specified at report run.

This information identifies the report:

- **Report ID**: NWOCIS02
- **Report group**: SNMP Cisco Routers group
- **Source**: NW_ROUT_CISPOOL_D
- **Attributes**: NW, NETWORK, CISCO, MEMORY, POOL, ROUTER, SNMP
- **Variables**: FROM_DATE, TO_DATE, IP_ADDRESS, POOL_TYPE

![Table](Figure 259. Example of a Cisco Memory Pool usage data, Daily Detail report)

The report contains this information:

- **Date**: The date when the record was collected.
- **IP address**: The IP address of the router.
- **Pool type**: Index to identify the memory pool.

**Max memory pool used/1024**

- Maximum number of kilobytes in use by the application.

**Min memory pool used/1024**

- Minimum number of kilobytes in use by the application.

**Avg memory pool used/1024**

- Average number of kilobytes in use by the application.

**Max memory pool free/1024**

- Maximum number of kilobytes unused by the application.

**Min memory pool free/1024**

- Minimum number of kilobytes unused by the application.

**Avg memory pool free/1024**

- Average number of kilobytes unused by the application.

**Max memory pool largest free/1024**

- Maximum number of contiguous kilobytes currently used.

**Min memory pool largest free/1024**

- Minimum number of contiguous kilobytes currently used.

**Avg memory pool largest free/1024**

- Average number of contiguous kilobytes currently used.
Cisco Memory Pool Usage Data, Weekly Detail report

This report shows the Cisco Memory Pool usage for a specific week and IP address, specified at report run.

This information identifies the report:

**Report ID**    NWOCIS03
**Report group** SNMP Cisco Routers group
**Source**       NW_ROUT_CISPOOL_W
**Attributes**   NW, NETWORK, CISCO, MEMORY, POOL, ROUTER, SNMP
**Variables**    DATE, IP_ADDRESS, POOL_TYPE

---

**Figure 260. Example of a Cisco Memory Pool usage data, Weekly Detail report**

The report contains this information:

**Date**    The date of the first day of the week when the record was collected.

**IP address**    The IP address of the router.

**Pool type**    Index to identify the memory pool.

**Max memory pool used/1024**    Maximum number of kilobytes in use by the application.

**Min memory pool used/1024**    Minimum number of kilobytes in use by the application.

**Avg memory pool used/1024**    Average number of kilobytes in use by the application.

**Max memory pool free/1024**    Maximum number of kilobytes unused by the application.

**Min memory pool free/1024**    Minimum number of kilobytes unused by the application.

**Avg memory pool free/1024**    Average number of kilobytes unused by the application.

**Max memory pool largest free/1024**    Maximum number of contiguous kilobytes currently used.

**Min memory pool largest free/1024**    Minimum number of contiguous kilobytes currently used.

**Avg memory pool largest free/1024**    Average number of contiguous kilobytes currently used.
Cisco Router CPU Usage Data, Hourly Detail report

This report shows the Cisco Router CPU usage for a specific date and IP address, specified at report run.

This information identifies the report:

Report ID    NWOCIS04
Report group SNMP Cisco Routers group
Source       NW_ROUT_CISCO_H
Attributes   NW, NETWORK, CISCO, CPU, ADDRESS, ROUTER, IP
Variables    DATE, IP_ADDRESS

The report contains this information:

Date    The date when the record was collected.
Hour    The time when the record was collected.
IP address    The IP address of the router.

CPU busy perc max
Maximum of CPU busy percentage during the hour.

CPU busy perc min
Minimum of CPU busy percentage during the hour.

CPU busy perc avg
Average of CPU busy percentage during the hour.

CPU busy avg 1exp
1-minute exponentially decayed average of CPU busy percentage during the hour.

CPU busy avg 5exp
5-minute exponentially decayed average of CPU busy percentage during the hour.

Figure 261. Example of a Cisco Router CPU usage data, Hourly Detail report
Cisco Router CPU Usage Data, Daily Detail report

This report shows the Cisco Router CPU usage for a specific range of dates and IP address, specified at report run.

This information identifies the report:

- **Report ID**: NWOCIS05
- **Report group**: SNMP Cisco Routers group
- **Source**: NW_ROUT_CISCO_D
- **Attributes**: NW, NETWORK, CISCO, CPU, ADDRESS, ROUTER, IP
- **Variables**: FROM_DATE, TO_DATE, IP_ADDRESS

![Cisco Router CPU usage data, daily detail report](image)

*Figure 262. Example of a Cisco Router CPU usage data, Daily Detail report*

The report contains this information:

- **Date**: The date when the record was collected.
- **IP address**: The IP address of the router.
- **CPU busy perc max**: Maximum of CPU busy percentage during the hour.
- **CPU busy perc min**: Minimum of CPU busy percentage during the hour.
- **CPU busy perc avg**: Average of CPU busy percentage during the hour.
- **CPU busy avg 1exp**: Media of 1-minute exponentially decayed average of CPU busy percentage during the hour.
- **CPU busy avg 5exp**: Media of 5-minute exponentially decayed average of CPU busy percentage during the hour.
Cisco Router CPU Usage Data, Weekly Detail report

This report shows the Cisco Router CPU usage for a specific week and IP address, specified at report run.

This information identifies the report:

- **Report ID**: NWOCIS06
- **Report group**: SNMP Cisco Routers group
- **Source**: NW_ROUT_CISCO_W
- **Attributes**: NW, NETWORK, CISCO, CPU, ADDRESS, ROUTER, IP
- **Variables**: DATE, IP_ADDRESS

![Table of Cisco Router CPU usage data, weekly detail]

**Date**
The date of the first day of the week when the record was collected.

**IP address**
The IP address of the router.

**CPU busy perc max**
Maximum of CPU busy percentage during the hour.

**CPU busy perc min**
Minimum of CPU busy percentage during the hour.

**CPU busy perc avg**
Average of CPU busy percentage during the hour.

**CPU busy avg 1exp**
Media of 1-minute exponentially decayed average of CPU busy percentage during the hour.

**CPU busy avg 5exp**
Media of 5-minute exponentially decayed average of CPU busy percentage during the hour.

Figure 263. Example of a Cisco Router CPU usage data, Weekly Detail report
Utilization Reports (Part 2)

Cisco CIP Card Usage Data, Hourly Detail report

This report shows Cisco CIP card statistics from general statistics, obtained by specifying the IP address parameter in the SMFCONFIG statement. The information is displayed hour by hour for a certain date.

This information identifies the report:

Report ID       NWOCIS07
Report group    SNMP Cisco Routers group (NWOCISC)
Source          NW_ROUT_CISCIP_H
Attributes      NW, NETWORK, CISCO CIP, IP ADDRESS, ROUTER
Variables       DATE, IP_ADDRESS, ROUTER_CISCIP_IDX

---

**Cisco CIP Card Usage Data, Hourly Detail**

**DATE: '2000-10-30'**

| DATE     | TIME | IP ADDRESS | ROUTER CIP | CPU | CPU
|----------|------|------------|------------|-----|-----
| 2000-10-30 10:00:00 | 65.100.07.250 | 1 | ECMA bay 1 | 3 | 3
| 2000-10-30 11:00:00 | 65.100.07.250 | 1 | ECMA bay 1 | 3 | 3

---

**Figure 264. Example of part of a Cisco CIP Card Usage Data, Hourly Detail report**

The report contains this information:

**Date**  The date when the record was collected.

**Time**  The time when the record was collected.

**IP address**  The IP address of the router.
Router Cisco CIP index
   Index to identify the Cisco CIP card.

CIP card name
   Name of the Cisco CIP card.

CIP CPU min
   Minimum of CPU load during the hour.

CIP CPU max
   Maximum of CPU load during the hour.

CIP storage
   Total memory of the Cisco CIP card, in kilobytes.

CIP used mem min
   Minimum of memory utilization, in kilobytes.

CIP used mem max
   Maximum of memory utilization, in kilobytes.

CIP used mem avg
   Average of memory utilization, in kilobytes.

CIP free mem min
   Minimum free memory of the Cisco CIP card, in kilobytes.

CIP free mem max
   Maximum free memory of the Cisco CIP card, in kilobytes.

CIP free mem avg
   Average free memory and the collected records for the Cisco CIP card, in kilobytes.

CIP tm reset
   Time since last reset in seconds.

CIP max sw rev
   Major software revision number of the Cisco CIP card.

CIP min sw rev
   Minor software revision number of the Cisco CIP card.

CIP max hw rev
   Major hardware revision number of the Cisco CIP card.

CIP min hw rev
   Minor hardware revision number of the Cisco CIP card.

CIP %CPU load 1min
   CPU percentage load for the Cisco CIP card, over a 1-minute period.

CIP %CPU load 5min
   CPU percentage load for the Cisco CIP card, over a 5-minute period.

CIP %CPU load 60min
   CPU percentage load for the Cisco CIP card, over a 60-minute period.

CIP %DMA load 1min
   DMA percentage load for the Cisco CIP card, over a 1-minute period.

CIP %DMA load 5min
   DMA percentage load for the Cisco CIP card, over a 5-minute period.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CIP %DMA load 60min</strong></td>
<td>DMA percentage load for the Cisco CIP card, over a 60-minute period.</td>
</tr>
<tr>
<td><strong>Host name</strong></td>
<td>Host name for the Cisco CIP card.</td>
</tr>
<tr>
<td><strong>Records collected</strong></td>
<td>Number of collected records.</td>
</tr>
</tbody>
</table>
IBM Router CPU and Memory Usage Data, Hourly Detail report

This report shows the IBM Router CPU and Memory usage for a specific date and IP address, specified at report run.

This information identifies the report:

**Report ID**  NWOIBM01

**Report group**  SNMP IBM Routers group

**Source**  NW_ROUT IBM H

**Attributes**  NW, NETWORK, IBM, CPU, ADDRESS, ROUTER, IP, MEMORY

**Variables**  DATE, IP_ADDRESS

---

**IBM Router CPU and Memory usage, hourly detail**

<table>
<thead>
<tr>
<th>IP DATE</th>
<th>HOUR</th>
<th>ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-28</td>
<td>15.00.00</td>
<td>69.100.112.254</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEM SIZE BYTES MAX</th>
<th>MEM SIZE BYTES MIN</th>
<th>MEM SIZE BYTES AVG</th>
<th>MEM USED SIZE BYTES MAX</th>
<th>MEM USED SIZE BYTES MIN</th>
<th>MEM USED SIZE BYTES AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.655E+06</td>
<td>4.655E+06</td>
<td>4.655E+06</td>
<td>1.245E+06</td>
<td>1.245E+06</td>
<td>1.245E+06</td>
</tr>
</tbody>
</table>

...  

<table>
<thead>
<tr>
<th>MEM HEAP USE PERC MAX</th>
<th>MEM HEAP USE PERC MIN</th>
<th>MEM HEAP USE PERC AVG</th>
<th>MEM GLOBAL BUFFER USE PERC MAX</th>
<th>MEM GLOBAL BUFFER USE PERC MIN</th>
<th>MEM GLOBAL BUFFER USE PERC AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>31</td>
<td>3.100E+01</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

---

### Figure 265. Example of part of an IBM Router CPU and Memory usage, hourly detail report

The report contains this information:

**Date**  The date when the record was collected.

**Hour**  The time when the record was collected.

**IP address**  The IP address of the router.

**Mem size bytes max**  Maximum size of the shared memory chunk in bytes.

**Mem size bytes min**  Minimum size of the shared memory chunk in bytes.

**Mem size bytes avg**  Average size of the shared memory chunk in bytes.

**Mem used bytes max**  Maximum size of the used shared memory chunk in bytes.

**Mem used bytes min**  Minimum size of the used shared memory chunk in bytes.
Utilization Reports (Part 2)

Mem used bytes avg
Average size of the used shared memory chunk in bytes.

Mem used bytes perc max
Maximum percentage of used shared memory.

Mem used bytes perc min
Minimum percentage of used shared memory.

Mem used bytes perc avg
Average percentage of used shared memory.

Mem warn bytes thresh max
Maximum of memory allocation warning threshold.

Mem warn bytes thresh min
Minimum of memory allocation warning threshold.

Mem warn bytes thresh avg
Average of memory allocation warning threshold.

Mem crit bytes thresh max
Maximum of memory allocation critical threshold.

Mem crit bytes thresh min
Minimum of memory allocation critical threshold.

Mem crit bytes thresh avg
Average of memory allocation critical threshold.

CPU load perc max
Maximum of main CPU load percentage.

CPU load perc min
Minimum of main CPU load percentage.

CPU load perc avg
Average of main CPU load percentage.

Mem heap tot bytes max
Maximum total bytes of heap memory that are available.

Mem heap tot bytes min
Minimum total bytes of heap memory that are available.

Mem heap tot bytes avg
Average total bytes of heap memory that are available.

Mem heap res bytes max
Maximum total bytes of heap memory that are reserved.

Mem heap res bytes min
Minimum total bytes of heap memory that are reserved.

Mem heap res bytes avg
Average total bytes of heap memory that are reserved.

Mem heap never alloc bytes max
Maximum bytes of heap memory that were never allocated.

Mem heap never alloc bytes min
Minimum bytes of heap memory that were never allocated.

Mem heap never alloc bytes avg
Average bytes of heap memory that were never allocated.
Mem heap perc bytes alloc max
  Maximum bytes of heap memory that are permanently allocated.

Mem heap perc bytes alloc min
  Minimum bytes of heap memory that are permanently allocated.

Mem heap perc bytes alloc avg
  Average bytes of heap memory that are permanently allocated.

Mem heap temp bytes alloc max
  Maximum bytes of heap memory that are temporarily allocated.

Mem heap temp bytes alloc min
  Minimum bytes of heap memory that are temporarily allocated.

Mem heap temp bytes alloc avg
  Average bytes of heap memory that are temporarily allocated.

Mem heap prev bytes alloc max
  Maximum bytes of heap memory that were previously allocated.

Mem heap prev bytes alloc min
  Minimum bytes of heap memory that were previously allocated.

Mem heap prev bytes alloc avg
  Average bytes of heap memory that were previously allocated.

Mem buffer total max
  Maximum bytes of total buffer memory.

Mem buffer total min
  Minimum bytes of total buffer memory.

Mem buffer total avg
  Average bytes of total buffer memory.

Mem buffer reserved max
  Maximum bytes of total buffer memory that are reserved.

Mem buffer reserved min
  Minimum bytes of total buffer memory that are reserved.

Mem buffer reserved avg
  Average bytes of total buffer memory that are reserved.

Mem buffer never alloc max
  Maximum bytes of total buffer memory that were never allocated.

Mem buffer never alloc min
  Minimum bytes of total buffer memory that were never allocated.

Mem buffer never alloc avg
  Average bytes of total buffer memory that were never allocated.

Mem buffer perc alloc max
  Maximum bytes of total buffer memory that were permanently allocated.

Mem buffer perc alloc min
  Minimum bytes of total buffer memory that were permanently allocated.

Mem buffer perc alloc avg
  Average bytes of total buffer memory that were permanently allocated.
Utilization Reports (Part 2)

Mem global total max
Maximum number of global buffers in the system.

Mem global total min
Minimum number of global buffers in the system.

Mem global total avg
Average number of global buffers in the system.

Mem global free max
Maximum number of free global buffers.

Mem global free min
Minimum number of free global buffers.

Mem global free avg
Average number of free global buffers.

Mem global fair max
Maximum fair number of global buffers.

Mem global fair min
Minimum fair number of global buffers.

Mem global fair avg
Average fair number of global buffers.

Mem global low max
Maximum low number of global buffers.

Mem global low min
Minimum low number of global buffers.

Mem global low avg
Average low number of global buffers.

Mem heap use perc max
Maximum percentage of heap memory usage.

Mem heap use perc min
Minimum percentage of heap memory usage.

Mem heap use perc avg
Average percentage of heap memory usage.

Global buffer use perc max
Maximum percentage of global buffer usage.
Global buffer use perc min
  Minimum percentage of global buffer usage.
Global buffer use perc avg
  Average percentage of global buffer usage.
Utilization Reports (Part 2)

IBM Router CPU and Memory Usage Data, Daily Detail report

This report shows the IBM Router CPU and Memory usage for a specific range of dates and IP address, specified at report run.

This information identifies the report:

- **Report ID**: NWOIBM02
- **Report group**: SNMP IBM Routers group
- **Source**: NW_ROUT_IBM_D
- **Attributes**: NW, NETWORK, IBM, CPU, ADDRESS, ROUTER, IP, MEMORY
- **Variables**: FROM_DATE, TO_DATE, IP_ADDRESS

The report contains this information:

- **Date**: The date when the record was collected.
- **IP address**: The IP address of the router.
- **Mem size bytes max**: Maximum size of the shared memory chunk in bytes.
- **Mem size bytes min**: Minimum size of the shared memory chunk in bytes.
- **Mem size bytes avg**: Average size of the shared memory chunk in bytes.
- **Mem used bytes max**: Maximum size of the used shared memory chunk in bytes.
- **Mem used bytes min**: Minimum size of the used shared memory chunk in bytes.

Figure 266. Example of part of an IBM Router CPU and Memory usage, daily detail report

<table>
<thead>
<tr>
<th>IP DATE</th>
<th>ADDRESS</th>
<th>MEM SIZE</th>
<th>MEM SIZE</th>
<th>MEM SIZE</th>
<th>MEM SIZE</th>
<th>MEM SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-28</td>
<td>69.100.86.3</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

...
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mem used bytes avg</td>
<td>Average size of the used shared memory chunk in bytes.</td>
</tr>
<tr>
<td>Mem used bytes perc max</td>
<td>Maximum percentage of used shared memory.</td>
</tr>
<tr>
<td>Mem used bytes perc min</td>
<td>Minimum percentage of used shared memory.</td>
</tr>
<tr>
<td>Mem used bytes perc avg</td>
<td>Average percentage of used shared memory.</td>
</tr>
<tr>
<td>Mem warn bytes tresh max</td>
<td>Maximum of memory allocation warning threshold.</td>
</tr>
<tr>
<td>Mem warn bytes tresh min</td>
<td>Minimum of memory allocation warning threshold.</td>
</tr>
<tr>
<td>Mem warn bytes tresh avg</td>
<td>Average of memory allocation warning threshold.</td>
</tr>
<tr>
<td>Mem crit bytes tresh max</td>
<td>Maximum of memory allocation critical threshold.</td>
</tr>
<tr>
<td>Mem crit bytes tresh min</td>
<td>Minimum of memory allocation critical threshold.</td>
</tr>
<tr>
<td>Mem crit bytes tresh avg</td>
<td>Average of memory allocation critical threshold.</td>
</tr>
<tr>
<td>CPU load perc max</td>
<td>Maximum of main CPU load percentage.</td>
</tr>
<tr>
<td>CPU load perc min</td>
<td>Minimum of main CPU load percentage.</td>
</tr>
<tr>
<td>CPU load perc avg</td>
<td>Average of main CPU load percentage.</td>
</tr>
<tr>
<td>Mem heap tot bytes max</td>
<td>Maximum total bytes of heap memory that are available.</td>
</tr>
<tr>
<td>Mem heap tot bytes min</td>
<td>Minimum total bytes of heap memory that are available.</td>
</tr>
<tr>
<td>Mem heap tot bytes avg</td>
<td>Average total bytes of heap memory that are available.</td>
</tr>
<tr>
<td>Mem heap res bytes max</td>
<td>Maximum total bytes of heap memory that are reserved.</td>
</tr>
<tr>
<td>Mem heap res bytes min</td>
<td>Minimum total bytes of heap memory that are reserved.</td>
</tr>
<tr>
<td>Mem heap res bytes avg</td>
<td>Average total bytes of heap memory that are reserved.</td>
</tr>
<tr>
<td>Mem heap never alloc bytes max</td>
<td>Maximum bytes of heap memory that were never allocated.</td>
</tr>
<tr>
<td>Mem heap never alloc bytes min</td>
<td>Minimum bytes of heap memory that were never allocated.</td>
</tr>
<tr>
<td>Mem heap never alloc bytes avg</td>
<td>Average bytes of heap memory that were never allocated.</td>
</tr>
</tbody>
</table>
Mem heap perc bytes alloc max
Maximum bytes of heap memory that are permanently allocated.

Mem heap perc bytes alloc min
Minimum bytes of heap memory that are permanently allocated.

Mem heap perc bytes alloc avg
Average bytes of heap memory that are permanently allocated.

Mem heap temp bytes alloc max
Maximum bytes of heap memory that are temporarily allocated.

Mem heap temp bytes alloc min
Minimum bytes of heap memory that are temporarily allocated.

Mem heap temp bytes alloc avg
Average bytes of heap memory that are temporarily allocated.

Mem heap prev bytes alloc max
Maximum bytes of heap memory that were previously allocated.

Mem heap prev bytes alloc min
Minimum bytes of heap memory that were previously allocated.

Mem heap prev bytes alloc avg
Average bytes of heap memory that were previously allocated.

Mem buffer total max
Maximum bytes of total buffer memory.

Mem buffer total min
Minimum bytes of total buffer memory.

Mem buffer total avg
Average bytes of total buffer memory.

Mem buffer reserved max
Maximum bytes of total buffer memory that are reserved.

Mem buffer reserved min
Minimum bytes of total buffer memory that are reserved.

Mem buffer reserved avg
Average bytes of total buffer memory that are reserved.

Mem buffer never alloc max
Maximum bytes of total buffer memory that were never allocated.

Mem buffer never alloc min
Minimum bytes of total buffer memory that were never allocated.

Mem buffer never alloc avg
Average bytes of total buffer memory that were never allocated.

Mem buffer perc alloc max
Maximum bytes of total buffer memory that were permanently allocated.

Mem buffer perc alloc min
Minimum bytes of total buffer memory that were permanently allocated.

Mem buffer perc alloc avg
Average bytes of total buffer memory that were permanently allocated.
Mem global total max
   Maximum number of global buffers in the system.
Mem global total min
   Minimum number of global buffers in the system.
Mem global total avg
   Average number of global buffers in the system.
Mem global free max
   Maximum number of free global buffers.
Mem global free min
   Minimum number of free global buffers.
Mem global free avg
   Average number of free global buffers.
Mem global fair max
   Maximum fair number of global buffers.
Mem global fair min
   Minimum fair number of global buffers.
Mem global fair avg
   Average fair number of global buffers.
Mem global low max
   Maximum low number of global buffers.
Mem global low min
   Minimum low number of global buffers.
Mem global low avg
   Average low number of global buffers.
Mem heap use perc max
   Maximum percentage of heap memory usage.
Mem heap use perc min
   Minimum percentage of heap memory usage.
Mem heap use perc avg
   Average percentage of heap memory usage.
Global buffer use perc max
   Maximum percentage of global buffer usage.
Global buffer use perc min
   Minimum percentage of global buffer usage.
Global buffer use perc avg
   Average percentage of global buffer usage.
Utilization Reports (Part 2)

IBM Router CPU and Memory Usage Data, Weekly Detail report

This report shows the IBM Router CPU and Memory usage for a specific week and IP address, specified at report run.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWOIBM03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>SNMP IBM Routers group</td>
</tr>
<tr>
<td>Source</td>
<td>NW_ROUT_IBM_W</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, NETWORK, IBM, CPU, ADDRESS, ROUTER, IP, MEMORY</td>
</tr>
<tr>
<td>Variables</td>
<td>DATE, IP_ADDRESS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP DATE ADDRESS</th>
<th>MEM SIZE</th>
<th>MEM SIZE</th>
<th>MEM SIZE</th>
<th>MEM USED</th>
<th>MEM USED</th>
<th>MEM USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-28 69.100.100.2</td>
<td>4.654E+06</td>
<td>4.654E+06</td>
<td>4.654E+06</td>
<td>2.425E+06</td>
<td>2.424E+06</td>
<td>2.425E+06</td>
</tr>
</tbody>
</table>

...  

<table>
<thead>
<tr>
<th>MEM HEAP</th>
<th>MEM HEAP</th>
<th>MEM GLOBAL</th>
<th>GLOBAL BUFFER</th>
<th>GLOBAL BUFFER</th>
<th>GLOBAL BUFFER</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE MAX</td>
<td>USE MIN</td>
<td>AVG</td>
<td>MAX</td>
<td>MIN</td>
<td>AVG</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2.000</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS:NWOIBM03

**Figure 267. Example of part of an IBM Router CPU and Memory usage, weekly detail report**

The report contains this information:

**Date**  
The date of the first date of the week when the record was collected.

**IP address**  
The IP address of the router.

**Mem size bytes max**  
Maximum size of the shared memory chunk in bytes.

**Mem size bytes min**  
Minimum size of the shared memory chunk in bytes.

**Mem size bytes avg**  
Average size of the shared memory chunk in bytes.

**Mem used bytes max**  
Maximum size of the used shared memory chunk in bytes.
Mem used bytes min
Minimum size of the used shared memory chunk in bytes.

Mem used bytes avg
Average size of the used shared memory chunk in bytes.

Mem used bytes perc max
Maximum percentage of used shared memory.

Mem used bytes perc min
Minimum percentage of used shared memory.

Mem used bytes perc avg
Average percentage of used shared memory.

Mem warn bytes tresh max
Maximum of memory allocation warning threshold.

Mem warn bytes tresh min
Minimum of memory allocation warning threshold.

Mem warn bytes tresh avg
Average of memory allocation warning threshold.

Mem crit bytes tresh max
Maximum of memory allocation critical threshold.

Mem crit bytes tresh min
Minimum of memory allocation critical threshold.

Mem crit bytes tresh avg
Average of memory allocation critical threshold.

CPU load perc max
Maximum of main CPU load percentage.

CPU load perc min
Minimum of main CPU load percentage.

CPU load perc avg
Average of main CPU load percentage.

Mem heap tot bytes max
Maximum total bytes of heap memory that are available.

Mem heap tot bytes min
Minimum total bytes of heap memory that are available.

Mem heap tot bytes avg
Average total bytes of heap memory that are available.

Mem heap res bytes max
Maximum total bytes of heap memory that are reserved.

Mem heap res bytes min
Minimum total bytes of heap memory that are reserved.

Mem heap res bytes avg
Average total bytes of heap memory that are reserved.

Mem heap never alloc bytes max
Maximum bytes of heap memory that were never allocated.

Mem heap never alloc bytes min
Minimum bytes of heap memory that were never allocated.
Utilization Reports (Part 2)

Mem heap never alloc bytes avg
   Average bytes of heap memory that were never allocated.

Mem heap perc bytes alloc max
   Maximum bytes of heap memory that are permanently allocated.

Mem heap perc bytes alloc min
   Minimum bytes of heap memory that are permanently allocated.

Mem heap perc bytes alloc avg
   Average bytes of heap memory that are permanently allocated.

Mem heap temp bytes alloc max
   Maximum bytes of heap memory that are temporarily allocated.

Mem heap temp bytes alloc min
   Minimum bytes of heap memory that are temporarily allocated.

Mem heap temp bytes alloc avg
   Average bytes of heap memory that are temporarily allocated.

Mem heap prev bytes alloc max
   Maximum bytes of heap memory that were previously allocated.

Mem heap prev bytes alloc min
   Minimum bytes of heap memory that were previously allocated.

Mem heap prev bytes alloc avg
   Average bytes of heap memory that were previously allocated.

Mem buffer total max
   Maximum bytes of total buffer memory.

Mem buffer total min
   Minimum bytes of total buffer memory.

Mem buffer total avg
   Average bytes of total buffer memory.

Mem buffer reserved max
   Maximum bytes of total buffer memory that are reserved.

Mem buffer reserved min
   Minimum bytes of total buffer memory that are reserved.

Mem buffer reserved avg
   Average bytes of total buffer memory that are reserved.

Mem buffer never alloc max
   Maximum bytes of total buffer memory that were never allocated.

Mem buffer never alloc min
   Minimum bytes of total buffer memory that were never allocated.

Mem buffer never alloc avg
   Average bytes of total buffer memory that were never allocated.

Mem buffer perc alloc max
   Maximum bytes of total buffer memory that were permanently allocated.

Mem buffer perc alloc min
   Minimum bytes of total buffer memory that were permanently allocated.
Mem buffer perc alloc avg
Average bytes of total buffer memory that were permanently allocated.

Mem global total max
Maximum number of global buffers in the system.

Mem global total min
Minimum number of global buffers in the system.

Mem global total avg
Average number of global buffers in the system.

Mem global free max
Maximum number of free global buffers.

Mem global free min
Minimum number of free global buffers.

Mem global free avg
Average number of free global buffers.

Mem global fair max
Maximum fair number of global buffers.

Mem global fair min
Minimum fair number of global buffers.

Mem global fair avg
Average fair number of global buffers.

Mem global low max
Maximum low number of global buffers.

Mem global low min
Minimum low number of global buffers.

Mem global low avg
Average low number of global buffers.

Mem heap use perc max
Maximum percentage of heap memory usage.

Mem heap use perc min
Minimum percentage of heap memory usage.

Mem heap use perc avg
Average percentage of heap memory usage.

Global buffer use perc max
Maximum percentage of global buffer usage.

Global buffer use perc min
Minimum percentage of global buffer usage.

Global buffer use perc avg
Average percentage of global buffer usage.
Router Interface Traffic Usage, Hourly Detail report

This report shows the Router Interface Interval Traffic usage by IBM and Cisco routers for a specific date and IP address, specified at report run.

This information identifies the report:

Report ID       NWINTT01
Report group    Routers Interface Traffic group
Source          NW_ROUT_INTTRAF_H
Attributes      NW, NETWORK, ROUTER, IP, INTERFACE, ADDRESS, TRAFFIC
Variables       DATE, IP_ADDRESS

Router Interface Traffic usage hourly detail

<table>
<thead>
<tr>
<th>DATE</th>
<th>HOUR</th>
<th>ADDRESS</th>
<th>INTERFACE INDEX</th>
<th>MTU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-28</td>
<td>15.00</td>
<td>69.100.86.100</td>
<td>5</td>
<td>4.472E+03</td>
</tr>
<tr>
<td>2000-02-28</td>
<td>15.00</td>
<td>69.100.86.100</td>
<td>6</td>
<td>0.000</td>
</tr>
</tbody>
</table>

... INTERFACE TABLE INTERFACE TABLE INTERFACE TABLE INTERFACE TABLE

<table>
<thead>
<tr>
<th>MAX SPEED</th>
<th>MIN SPEED</th>
<th>AVG SPEED</th>
<th>OCTETS/KB</th>
<th>DISCARDS</th>
<th>ERRORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

... INTERFACE TABLE INTERFACE TABLE INTERFACE TABLE INTERFACE TABLE

<table>
<thead>
<tr>
<th>MAX OCTETS/KB</th>
<th>MIN OCTETS/KB</th>
<th>DISCARDED OCTETS/KB</th>
<th>ERRORS</th>
<th>ERRORS</th>
<th>ERRORS NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mss-8210-002.rome.lab.tivoli.com</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mss-8210-002.rome.lab.tivoli.com</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: NWINTT01

Figure 268. Example of part of a Router Interface Traffic usage, hourly detail report
The report contains this information:

**Date**  The date when the record was collected.

**Hour**  The time when the record was collected.

**IP address**  The IP address of the router.

**Router interface index**  Interface table index.

**Interface table MTU**  Maximum size of datagram that can be sent or received, or both, on the interface, in octets.

**Interface table speed max**  Maximum bandwidth in the period, in bits/second.

**Interface table speed min**  Minimum bandwidth in the period, in bits/second.

**Interface table speed avg**  Average bandwidth in the period, in bits/second.

**Interface table inbound octets/KB**  Inbound octets per kilobyte.

**Interface inbound discards**  Inbound packets discarded.

**Interface inbound errors**  Inbound packets in error.

**Interface inbound unknown protocol**  Inbound packets with unknown protocol.

**Interface table outbound octets/KB**  Outbound octets per kilobyte.

**Interface outbound discarded**  Outbound packets discarded.

**Interface outbound errors**  Outbound packets in error.

**Max outbound queue length**  Maximum length of out packet queue in packets.

**Min outbound queue length**  Minimum length of out packet queue in packets.

**Avg outbound queue length**  Average length of out packet queue in packets.

**Interface max inbound perc discarded**  Maximum percentage of inbound packets discarded.

**Interface min inbound perc discarded**  Minimum percentage of inbound packets discarded.

**Interface avg inbound perc discarded**  Average percentage of inbound packets discarded.

**Interface max inbound perc errors**  Maximum percentage of inbound packets in error.
Utilization Reports (Part 2)

Interface min inbound perc errors
Minimum percentage of inbound packets in error.

Interface avg inbound perc errors
Average percentage of inbound packets in error.

Interface max outbound perc discarded
Maximum percentage of outbound packets discarded.

Interface min outbound perc discarded
Minimum percentage of outbound packets discarded.

Interface avg outbound perc discarded
Average percentage of outbound packets discarded.

Interface max outbound perc errors
Maximum percentage of outbound packets in error.

Interface min outbound perc errors
Minimum percentage of outbound packets in error.

Interface avg outbound perc errors
Average percentage of outbound packets in error.

Host name Host name.
Router Interface Traffic Usage, Daily Detail report

This report shows the Router Interface Interval Traffic usage by IBM and Cisco routers for a specific range of dates and IP address, specified at report run.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>NWINTT02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Routers Interface Traffic group</td>
</tr>
<tr>
<td>Source</td>
<td>NW_ROUT_INTTRAF_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>NW, NETWORK, ROUTER, IP, INTERFACE, ADDRESS, TRAFFIC</td>
</tr>
<tr>
<td>Variables</td>
<td>FROM_DATE, TO_DATE, IP_ADDRESS</td>
</tr>
</tbody>
</table>
### Utilization Reports (Part 2)

**Router Interface Traffic usage daily detail**

FROM DATE: '2000-02-28' TO '2000-02-28'

<table>
<thead>
<tr>
<th>DATE</th>
<th>IP ADDRESS</th>
<th>ROUTER INTERFACE INDEX</th>
<th>MTU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-02-28</td>
<td>69.100.112.254</td>
<td>1</td>
<td>1.500E+03</td>
</tr>
<tr>
<td>2000-02-28</td>
<td>69.100.112.254</td>
<td>2</td>
<td>2.044E+03</td>
</tr>
<tr>
<td>2000-02-28</td>
<td>69.100.112.254</td>
<td>6</td>
<td>2.953E03</td>
</tr>
<tr>
<td>2000-02-28</td>
<td>69.100.112.254</td>
<td>7</td>
<td>4.472E+03</td>
</tr>
<tr>
<td>2000-02-28</td>
<td>69.100.112.254</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>2000-02-28</td>
<td>69.100.112.254</td>
<td>9</td>
<td>2.044E+03</td>
</tr>
</tbody>
</table>

... 

<table>
<thead>
<tr>
<th>INTERFACE TABLE</th>
<th>INTERFACE TABLE</th>
<th>INTERFACE TABLE</th>
<th>INTERFACE TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED MAX</td>
<td>SPEED MIN</td>
<td>SPEED AVG</td>
<td>OCTETS/KB DISCARDS</td>
</tr>
<tr>
<td>1.000E+07</td>
<td>1.000E+07</td>
<td>1.000E+07</td>
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</tr>
<tr>
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<td>1.000E+06</td>
<td>5.400E+01</td>
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<td>1.600E+07</td>
<td>1.600E+07</td>
<td>1.400E+01</td>
</tr>
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<td>0.000</td>
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</tr>
<tr>
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<td>1.000E+06</td>
<td>1.000E+06</td>
<td>5.400E+01</td>
</tr>
</tbody>
</table>

... 

<table>
<thead>
<tr>
<th>INTERFACE INBOUND</th>
<th>INTERFACE OUTBOUND</th>
<th>MAX OUTBOUND</th>
<th>MIN OUTBOUND</th>
<th>MAX LENGTH</th>
<th>MIN LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROTOCOL</td>
<td>OCTETS/KB</td>
<td>DISCARDED</td>
<td>ERRORS</td>
<td>LENGTH</td>
<td>LENGTH</td>
</tr>
<tr>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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</tr>
<tr>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<td>0.000</td>
</tr>
<tr>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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... 

<table>
<thead>
<tr>
<th>INTERFACE MAX</th>
<th>INTERFACE MIN</th>
<th>INTERFACE AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTBOUND PERC</td>
<td>OUTBOUND PERC</td>
<td>OUTBOUND PERC</td>
</tr>
<tr>
<td>ERRORS NAME</td>
<td>ERRORS ERRORS</td>
<td>ERRORS ERRORS</td>
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</tr>
</tbody>
</table>

Tivoli Decision Support for z/OS: Network Performance Feature Reports

*Figure 269. Example of part of a Router Interface Traffic usage, daily detail report*
The report contains this information:

**Date**
- The date when the record was collected.

**IP address**
- The IP address of the router.

**Router interface index**
- Interface table index.

**Interface table MTU**
- Maximum size of datagram that can be sent or received, or both, on the interface, in octets.

**Interface table speed max**
- Maximum bandwidth in the period, in bits/second.

**Interface table speed min**
- Minimum bandwidth in the period, in bits/second.

**Interface table speed avg**
- Average bandwidth in the period, in bits/second.

**Interface table inbound octets/KB**
- Inbound octets per kilobyte.

**Interface inbound discards**
- Inbound packets discarded.

**Interface inbound errors**
- Inbound packets in error.

**Interface inbound unknown protocol**
- Inbound packets with unknown protocol.

**Interface table outbound octets/KB**
- Outbound octets per kilobyte.

**Interface outbound discarded**
- Outbound packets discarded.

**Interface outbound errors**
- Outbound packets in error.

**Max outbound queue length**
- Maximum length of out packet queue in packets.

**Min outbound queue length**
- Minimum length of out packet queue in packets.

**Avg outbound queue length**
- Average length of out packet queue in packets.

**Interface max inbound perc discarded**
- Maximum percentage of inbound packets discarded.

**Interface min inbound perc discarded**
- Minimum percentage of inbound packets discarded.

**Interface avg inbound perc discarded**
- Average percentage of inbound packets discarded.

**Interface max inbound perc errors**
- Maximum percentage of inbound packets in error.

**Interface min inbound perc errors**
- Minimum percentage of inbound packets in error.
Utilization Reports (Part 2)

Interface avg inbound perc errors
Average percentage of inbound packets in error.

Interface max outbound perc discarded
Maximum percentage of outbound packets discarded.

Interface min outbound perc discarded
Minimum percentage of outbound packets discarded.

Interface avg inbound perc discarded
Average percentage of outbound packets discarded.

Interface max outbound perc errors
Maximum percentage of outbound packets in error.

Interface min outbound perc errors
Minimum percentage of outbound packets in error.

Interface avg outbound perc errors
Average percentage of outbound packets in error.

Host name
Host name.
Router Interface Traffic Usage, Weekly Detail report

This report shows the Router Interface Interval Traffic usage by IBM and Cisco routers for a specific week and IP address, specified at report run.

This information identifies the report:

- **Report ID**: NWINTT03
- **Report group**: Routers Interface Traffic group
- **Source**: NW_ROUT_INTTRAF_W
- **Attributes**: NW, NETWORK, ROUTER, IP, INTERFACE, ADDRESS, TRAFFIC
- **Variables**: DATE, IP_ADDRESS
### Router Interface Traffic usage weekly detail

<table>
<thead>
<tr>
<th>IP ADDRESS</th>
<th>ROUTER INTERFACE INDEX</th>
<th>INTERFACE TABLE MTU</th>
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<tbody>
<tr>
<td>69.100.112.254</td>
<td>1</td>
<td>500E+03</td>
</tr>
<tr>
<td>69.100.112.254</td>
<td>2</td>
<td>2.044E+03</td>
</tr>
<tr>
<td>69.100.112.254</td>
<td>6</td>
<td>2.052E+03</td>
</tr>
<tr>
<td>69.100.112.254</td>
<td>7</td>
<td>4.472E+03</td>
</tr>
<tr>
<td>69.100.112.254</td>
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<tr>
<td>69.100.112.254</td>
<td>9</td>
<td>2.044E+03</td>
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### Interface Traffic Table

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<thead>
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<th>Interface</th>
<th>MTU</th>
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<td>1.000E+07</td>
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<tr>
<td>Speed MIN</td>
<td>1.000E+06</td>
<td>1.000E+07</td>
</tr>
<tr>
<td>Speed AVG</td>
<td>1.600E+06</td>
<td>1.600E+07</td>
</tr>
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</table>

### Interface Protocol

<table>
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<th>MTU</th>
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<td>0.000</td>
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<td>0.000</td>
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### Interface Errors

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<th>MTU</th>
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</table>

### Interface Host

<table>
<thead>
<tr>
<th>Host Name</th>
<th>MTU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2210-24m-tk0.rome.lab.tivoli.com</td>
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<tr>
<td>2210-24m-tk0.rome.lab.tivoli.com</td>
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<td>2210-24m-tk0.rome.lab.tivoli.com</td>
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</tr>
<tr>
<td>2210-24m-tk0.rome.lab.tivoli.com</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Figure 270. Example of part of a Router Interface Traffic usage, weekly detail report
The report contains this information:

**Date**
The date of the first day of the week when the record was collected.

**IP address**
The IP address of the router.

**Router interface index**
Interface table index.

**Interface table MTU**
Maximum size of datagram that can be sent or received, or both, on the interface, in octets.

**Interface table speed max**
Maximum bandwidth in the period, in bits/second.

**Interface table speed min**
Minimum bandwidth in the period, in bits/second.

**Interface table speed avg**
Average bandwidth in the period, in bits/second.

**Interface table inbound octets/KB**
Inbound octets per kilobyte.

**Interface inbound discards**
Inbound packets discarded.

**Interface inbound errors**
Inbound packets in error.

**Interface inbound unknown protocol**
Inbound packets with unknown protocol.

**Interface table outbound octets/KB**
Outbound octets per kilobyte.

**Interface outbound discarded**
Outbound packets discarded.

**Interface outbound errors**
Outbound packets in error.

**Max outbound queue length**
Maximum length of out packet queue in packets.

**Min outbound queue length**
Minimum length of out packet queue in packets.

**Avg outbound queue length**
Average length of out packet queue in packets.

**Interface max inbound perc discarded**
Maximum percentage of inbound packets discarded.

**Interface min inbound perc discarded**
Minimum percentage of inbound packets discarded.

**Interface avg inbound perc discarded**
Average percentage of inbound packets discarded.

**Interface max inbound perc errors**
Maximum percentage of inbound packets in error.

**Interface min inbound perc errors**
Minimum percentage of inbound packets in error.
### Utilization Reports (Part 2)

<table>
<thead>
<tr>
<th>Description</th>
<th>Explanation</th>
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<td>Interface avg inbound perc errors</td>
<td>Average percentage of inbound packets in error.</td>
</tr>
<tr>
<td>Interface max outbound perc discarded</td>
<td>Maximum percentage of outbound packets discarded.</td>
</tr>
<tr>
<td>Interface min outbound perc discarded</td>
<td>Minimum percentage of outbound packets discarded.</td>
</tr>
<tr>
<td>Interface avg inbound perc discarded</td>
<td>Average percentage of outbound packets discarded.</td>
</tr>
<tr>
<td>Interface max outbound perc errors</td>
<td>Maximum percentage of outbound packets in error.</td>
</tr>
<tr>
<td>Interface min outbound perc errors</td>
<td>Minimum percentage of outbound packets in error.</td>
</tr>
<tr>
<td>Interface avg outbound perc errors</td>
<td>Average percentage of outbound packets in error.</td>
</tr>
<tr>
<td>Host name</td>
<td>Host name.</td>
</tr>
</tbody>
</table>
Appendix A. GDDM formats

This appendix describes the GDDM® Interactive Chart Utility (ICU) formats that the Network Performance feature uses when displaying graphic reports.

The following sections describe and illustrate each format. The mixed chart formats are a combination of bar chart and line graph. The sequence determines if the data will be presented as a bar chart or a line graph.
This format is defined as a mixed chart. Data object number 1 is shown as a line graph, and all other data objects are shown as a bar graphs. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to seven days, listed by day name.

An example of this format is:

![Chart Example](image)

*Figure 271. Example of the format for a daily mixed chart*
DRLGWOBA, weekly mixed chart

This format is defined as a mixed chart. Data object number 1 is shown as a line graph, and all other data objects are shown as a bar graphs. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows weeks, listed by week start date. Weeks start on Monday.

An example of this format is:

![Chart Example](Image)

*Figure 272. Example of the format for a weekly mixed chart*
DRLGMDOB, monthly mixed chart

This format is defined as a mixed chart. Data object number 1 is shown as a line graph, and all other data objects are shown as bar graphs. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to 31 days, listed by day number.

An example of this format is:

![Network Availability by Group, Daily Trend](image)

*Figure 273. Example of the format for a monthly mixed chart*
DRLGMOBA, yearly mixed chart

This format is defined as a mixed chart. Data object number 1 is shown as a line graph, and all other data objects are shown as a bar graphs. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to 12 months, listed by the start date of the month.

An example of this format is:

![Graph Example](image)

*Figure 274. Example of the format for a yearly mixed chart*
DRLGHBAR, hourly cumulative bar chart

This format is defined as an cumulative bar chart. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to 24 hours, listed by hour number.

An example of this format is:

![Cumulative bar chart example](image)

*Figure 275. Example of the format for an hourly cumulative bar chart*
DRLGWDBA, daily cumulative bar chart

This format is defined as an cumulative bar chart. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to seven days, listed by day name.

An example of this format is:

![Daily cumulative bar chart example](image)

*Figure 276. Example of the format for a daily cumulative bar chart*
DRLGWBAR, weekly cumulative bar chart

This format is defined as an cumulative bar chart. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows weeks, listed by the week start date. Weeks start on Monday.

An example of this format is:

![Chart example](chart_example.png)

*Figure 277. Example of the format for a weekly cumulative bar chart*
DRLGHPLI, hourly line graph presenting 0-100%

This format is defined as an line graph. The y-axis ranges from 0% to 100%. The x-axis shows up to 24 hours, listed by the hour number.

An example of this format is:

![Graph Example](image)

*Figure 278. Example of the format for an hourly line graph presenting 0-100%*
GDDM Formats

DRLGWDPDL, daily line graph presenting 0-100%

This format is defined as an line graph. The y-axis ranges from 0% to 100%. The x-axis shows up to seven days, listed by the day name.

An example of this format is:

![Network RTM PU Objective, Daily Trend](image)

Week start date: 2000-01-31
PU name: 'SW1CA511'

Figure 279. Example of the format for a daily line graph presenting 0-100%
DRLGWPLI, weekly line graph presenting 0-100%

This format is defined as an line graph. The y-axis ranges from 0% to 100%. The x-axis shows weeks, listed by the week start date. Weeks start on Monday.

An example of this format is:

![Graph Example]

Figure 280. Example of the format for a weekly line graph presenting 0-100%
DRLGHLIN, hourly line graph presenting a count value

This format is defined as an line graph. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to 24 hours, listed by the hour number.

An example of this format is:

![Graph Example](image)

*Figure 281. Example of the format for an hourly line graph presenting a count value*
DRLGWDLI, daily line graph presenting a count value

This format is defined as an line graph. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows up to seven days, listed by the day name.

An example of this format is:

![DRLGWDLI daily line graph example](image)

*Figure 282. Example of the format for a daily line graph presenting a count value*
DRLGWLIN, weekly line graph presenting a count value

This format is defined as an line graph. The y-axis is dynamic and represents values listed in the legend boxes to the right of the graph. The x-axis shows weeks, listed by the week start date. Weeks start on Monday.

An example of this format is:

![Weekly Line Graph Example](image)

*Figure 283. Example of the format for a weekly line graph presenting a count value*
Appendix B. Query, form, and chart formats

This appendix lists the query and form used by each Network Performance feature report. For graphic reports, the appendix also lists the GDDM chart format used by the report. For more information on the GDDM formats, see Appendix A, “GDDM formats.”

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th>Query</th>
<th>Form</th>
<th>Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>NWSM01</td>
<td>Network NV/SM Active Session Blocks, Worst Case</td>
<td>DRLQNM01</td>
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<tr>
<td>NWSM02</td>
<td>Network NV/SM Record Queues, Worst Case</td>
<td>DRLQNM02</td>
<td>DRLFNM02</td>
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</tr>
<tr>
<td>NWSM03</td>
<td>Network NV/SM Session Filtering, Hourly Trend</td>
<td>DRLQNM03</td>
<td>DRLFNM03</td>
<td>DRLGHBAR</td>
</tr>
<tr>
<td>NWSM04</td>
<td>Network NV/SM Session Filtering, Daily Trend</td>
<td>DRLQNM04</td>
<td>DRLFNM04</td>
<td>DRLGWDBA</td>
</tr>
<tr>
<td>NWSM05</td>
<td>Network NV/SM Session Filtering, Weekly Trend</td>
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<td>DRLFNM05</td>
<td>DRLGWBAR</td>
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<td>DRLGWLIN</td>
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<td>Network NV/SM VSAM Recording, Hourly Trend</td>
<td>DRLQNM09</td>
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<td>DRLGHLPI</td>
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<td>NWSM10</td>
<td>Network NV/SM VSAM Recording, Daily Trend</td>
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## Query, Forms and Chart Formats

<table>
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</tr>
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<td>DRLQNL03</td>
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<td>DRLGHIPL</td>
</tr>
<tr>
<td>NWLINE04</td>
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Appendix B. Query, form, and chart formats 475
## Query, Forms and Chart Formats

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Query, Forms and Chart Formats
Appendix C. Variable formats

This appendix lists all of the variables used in Network Performance feature reports, briefly describes each variable, and provides any restrictions on the variable length.

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<td>APPLICATION_NAME</td>
<td>Application name, 8 characters</td>
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<td>BRIDGE_NAME</td>
<td>LAN bridge name, 8 characters</td>
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<td>CA_LINE</td>
<td>Channel address or line name, 8 characters</td>
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<td>Date</td>
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<tr>
<td>DATE_IN_MONTH</td>
<td>Date</td>
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<tr>
<td>DATE_IN_WEEK</td>
<td>Date</td>
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<td>Domain name, 8 characters</td>
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<td>Engineering change level, 10 characters</td>
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<td>FROM_DATE_IN_WEEK</td>
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<td>LINE_NAME</td>
<td>Line name, 8 characters</td>
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<td>LU_NAME</td>
<td>LU name, 8 characters</td>
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<td>Machine type, 5 characters</td>
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<td>Manufacturer ID, 3 characters</td>
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<td>MODEL</td>
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<td>Name of the owner of the failing resource, 8 characters</td>
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<td>PRIMARY_LU</td>
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<td>PRODUCT</td>
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<tr>
<td>PU_NAME</td>
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<td>REASON_CODE</td>
<td>Reason code for the session failure, 2 characters</td>
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<td>SEGMENT</td>
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<td>LAN segment address of segment attached to port 1, 4 characters</td>
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<td>SEGMENT2</td>
<td>LAN segment address of segment attached to port 2, 4 characters</td>
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## Variable Formats

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<td>VTAM or NCP name, VTAM or NCP name</td>
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<td>YEAR</td>
<td>Year, numeric (for example, 1993)</td>
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Tivoli Decision Support for z/OS: Network Performance Feature Reports
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List of abbreviations

The following is a list of the abbreviations used in this book.

ACCT  accounting
APPC  Advanced program-to-program communication
APPN  Advanced peer to peer networking
ARB   active resource block
ASB   active session block
CA    channel address
CCU   central control unit
CPI-C Common program interface for communications
CSA   common storage area
EC    engineering change
FNF   frames not forwarded
FS    file services
FTP   File Transfer Program
GDDM  Graphical Data Display Manager
HT    host transit time
KB    kilobytes
LAN   local area network
LU    logical unit
MB    megabytes
MVS   Multiple Virtual Storage
NCP   Network Control Program
NEO   network extension option
NPM   NetView Performance Monitor
NPM/IP NetView Performance Monitor for IP
NPSI  NCP packet switching interface
NTRI  NCP/Token-Ring interconnection
NV/SM NetView session monitor
NW    NetWare
ODLC  outboard data link control
OP    operator
OTMA  Open transaction manager access
PIU   path information unit
PU    physical unit
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<td>QCB</td>
<td>queue control block</td>
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<tr>
<td>RTM</td>
<td>response time monitor</td>
</tr>
<tr>
<td>RNR</td>
<td>receive not ready</td>
</tr>
<tr>
<td>RR</td>
<td>receive ready</td>
</tr>
<tr>
<td>SDLC</td>
<td>synchronous data link control</td>
</tr>
<tr>
<td>SNMP</td>
<td>simple network management protocol</td>
</tr>
<tr>
<td>SQ</td>
<td>Shared queue IMS</td>
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<tr>
<td>TCP/IP</td>
<td>transmission control protocol/internet protocol</td>
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<td>TPRB</td>
<td>teleprocessing request block</td>
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<td>Tivoli Workload Scheduler</td>
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<td>VC</td>
<td>virtual circuit</td>
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<td>vital product data</td>
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<td>VSAM</td>
<td>Virtual Storage Access Method</td>
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<td>VSAMRB</td>
<td>virtual storage access method request block</td>
</tr>
<tr>
<td>VTAM</td>
<td>virtual telecommunications access method</td>
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**Glossary**

**C**

**collect.** A process used by Tivoli Decision Support for z/OS to read data from input log data sets, interpret records in the data set, and store the data in DB2 tables in the Tivoli Decision Support for z/OS database.

**component.** An optionally installable part of a Tivoli Decision Support for z/OS feature.

**cross-connection.** A link between two network domains.

**D**

**detail report.** A report that presents detailed information for a selected resource.

**E**

**exception report.** A report that contains information about situations that can have a negative impact on service levels.

**I**

**information category.** One of the divisions of information the Network Performance feature processes. Each information category consists of one or more components.

**L**

**log data set.** Any sequential data set that is used as input to Tivoli Decision Support for z/OS.

**lookup table.** A Tivoli Decision Support for z/OS DB2 table that contains grouping, conversion, or substitution information.

**O**

**overview report.** A report that lists information about all resources meeting the selection criteria.

**R**

**report group.** A collection of Tivoli Decision Support for z/OS reports that can be referred to by a single name.

**reporting dialog.** A set of host or workstation windows used to request reports.

**T**

**Tivoli Decision Support for z/OS database.** A set of DB2 tables that contain the environment information and performance data used by Tivoli Decision Support for z/OS to generate reports.

**threshold.** The maximum or minimum acceptable level of utilization. Utilization measurements are compared with threshold levels.

**trend report.** A report that presents critical measurements of a resource over a period of time.

**W**

**worst-case report.** A report that lists resources with the worst measured values (for example, the worst performance).
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