User’s Guide

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About this guide

The IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 User’s Guide describes how to install and use the IBM Tivoli Monitoring for Databases: DB2 software to manage DB2 resources with Tivoli Enterprise software.

Who should read this guide

This guide is for system administrators and database administrators. It explains the concepts you should know to use the IBM Tivoli Monitoring for Databases: DB2 software. It contains information about database management using this product and how IBM Tivoli Monitoring for Databases: DB2 software is integrated into the Tivoli environment.

Readers should be familiar with the following:

- Windows NT® or UNIX® operating systems
- Tivoli® environment
- DB2® database administration

What this guide contains

This guide contains the following chapters:

- **Chapter 1, “Overview” on page 1**
  Provides an overview of the capabilities of the IBM Tivoli Monitoring for Databases: DB2 software.

- **Chapter 2, “Getting started quick-reference guide” on page 11**
  Provides a quick-reference table of the installation and setup procedures you must perform before you can use IBM Tivoli Monitoring for Databases: DB2.

- **Chapter 3, “Setting up IBM Tivoli Monitoring for Databases: DB2” on page 15**
  Provides information on how to set up IBM Tivoli Monitoring for Databases: DB2.

- **Chapter 4, “Setting up IBM Tivoli Monitoring” on page 45**
  Provides information on how to set up IBM Tivoli Monitoring.

- **Chapter 5, “Working with IBM Tivoli Monitoring for Databases: DB2” on page 57**
  Provides information on how to use IBM Tivoli Monitoring for Databases: DB2.

- **Chapter 6, “Working with tasks and jobs” on page 69**
  Provides information on how to manage tasks and jobs.

- **Chapter 7, “Viewing resource model results with the IBM Tivoli Monitoring Web Health Console” on page 89**
  Provides an overview of the IBM Tivoli Monitoring Web Health Console.

- **Chapter 8, “Customizing resource models” on page 91**
  Provides information on how to use IBM Tivoli Monitoring to customize resource models.

- **Chapter 9, “Enabling IBM Tivoli Monitoring for Databases: DB2 for Tivoli Enterprise Data Warehouse” on page 115**
Provides information on how to enable IBM Tivoli Monitoring for Databases: DB2 with Tivoli Enterprise Data Warehouse.

This guide contains the following appendixes:

- **Appendix A, “Authorization roles quick reference” on page 125**
  Provides a summary of the authorization roles needed for different procedures.

- **Appendix B, “Setting Up the Tivoli Enterprise Console” on page 129**
  Provides information on how to set up Tivoli Enterprise Console® for use with the IBM Tivoli Monitoring for Databases: DB2 software.

- **Appendix C, “Integrating with Tivoli Business Systems Manager” on page 137**
  Provides information on how to use Tivoli Business Systems Manager to manage DB2 resources and events.

- **Appendix D, “Problem determination” on page 143**
  Provides a list of solutions to problems that you might encounter when using or installing the IBM Tivoli Monitoring for Databases: DB2 software.

- **Appendix E, “Messages” on page 147**
  Provides a list of IBM Tivoli Monitoring for Databases: DB2 messages and an explanation of the message.

- **Appendix F, “Accessibility” on page 173**
  Provides accessibility features in IBM Tivoli Monitoring for Databases: DB2.

- **Appendix G, “Notices” on page 175**
  Provides notices, copyright, and trademark information available to the user.

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**Publications**

This section lists publications in the IBM Tivoli Monitoring for Databases: DB2 library and any other related documents. It also describes how to access Tivoli publications online, how to order Tivoli publications, and how to make comments on Tivoli publications.

**IBM Tivoli Monitoring for Databases: DB2 library**

The following documents are available in the IBM Tivoli Monitoring for Databases: DB2 library:

- **IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 User’s Guide, SC23-4726**
  Provides information about how to install and use the IBM Tivoli Monitoring for Databases: DB2 software to manage DB2 database resources with Tivoli Enterprise software.

- **IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide, SC23-4727**
  Provides task and resource model information about procedures described in the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 User’s Guide.

- **IBM Tivoli Monitoring for Databases: Installation and Setup Guide, GC23-4730**
  Provides information on how to install the IBM Tivoli Monitoring for Databases: DB2 software.

- **IBM Tivoli Monitoring for Databases, Version 5.1.0 Release Notes, GI11-0933**
  Describes product features and provides information about the latest changes to the installation requirements and procedures. The release notes also describe known limitations related to installation and explain how to work around each limitation.

- **IBM Tivoli Monitoring for Databases: DB2 Limitations and Workarounds Supplement, SC23-4786**
Provides the latest information about known product limitations and workarounds. To ensure that the information is the latest available, this document is provided only on the Web, where it is updated on a regular basis. You can access the Limitations and Workarounds document through the IBM Tivoli Monitoring for Databases: DB2 link on the Tivoli Information Center Web site:


Prerequisite publications

To use the information in this book effectively, you must have some prerequisite knowledge, which you can get from the following books:

- **Tivoli Management Framework User’s Guide**
  Provides information about profiles and profile management.

- **Tivoli Management Framework Planning and Installation Guide**
  Provides information about server and hardware requirements.

- **Tivoli Management Framework Reference Guide**
  Provides information about command line commands, such as the `winstall` command.

- **IBM Tivoli Monitoring User’s Guide**
  Provides information about distributed monitoring.

- **Tivoli Enterprise Console User’s Guide**
  Provides information about using the Tivoli Enterprise Console®.

- **Tivoli Software Installation Service User’s Guide, Version 4.0**
  Provides information about using Tivoli Software Installation Service to install the IBM Tivoli Monitoring for Databases: DB2 software.

Related publications

The following documents also provide useful information:

- **DB2 System Monitor Guide and Reference**
  Provides information about how to collect different kinds of information about databases and the database manager. This book explains how to use the information to understand database activity, improve performance, and determine the causes of problems.

- **DB2 Administration Guide: Planning**
  Provides an overview of DB2 database concepts, information about design issues (such as logical and physical database design), and a discussion of high availability.

- **DB2 Administration Guide: Implementation**
  Provides information about DB2 implementation issues such as implementing your design, accessing databases, auditing, backup, and recovery.

The *Tivoli Glossary* includes definitions for many of the technical terms related to Tivoli software. The *Tivoli Glossary* is available, in English only, at the following Web site:

http://www.tivoli.com/support/documents/glossary/termshm03.htm
Accessing softcopy publications

The publications for this product are available in PDF and HTML formats through the following media:

- **IBM Tivoli Monitoring for Database, Version 5.1.0: Documentation CD, LK3T-8517-00**
  The Documentation CD contains all of the English language publications for this product, except for the Web-only limitations and workarounds supplements. To access the publications, use a Web browser to open the **start.html** file, which is located in the root directory of the CD.

- **IBM Tivoli Monitoring for Database, Version 5.1.0: NLS Documentation CD, LK3T-8611-00**
  The NLS (national language support) Documentation CD contains both English and non-English language publications for this product, except for the Web-only limitations and workarounds supplements. To access the publications, use a Web browser to open the **start.html** file, which is located in the root directory of the CD.

- **Tivoli Information Center**
  IBM posts all publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Information Center Web site. The Tivoli Information Center is located at the following Web address:

  Click the IBM Tivoli Monitoring for Databases: DB2 link to access the product library.

Using the guide online

This document is available on the **IBM Tivoli Monitoring for Databases, Version 5.1.0: Documentation CD, LK3T-8516-00** in PDF and HTML formats. Refer to the **readme.txt** file on the CD for instructions on downloading the Acrobat Reader, Version 3.0 or later, to view, save, and print the manual.

Use your HTML browser to open the **start.html** file on the CD to access the .html documentation files. Every navigation page also includes a link at the bottom to download the Acrobat reader for viewing, saving, and printing the files.

Viewing online help

Online help is available in several forms:

- **Desktop** — Access online help by clicking the **Help** buttons in dialog boxes.
- **Commands** — You can display command syntax and parameter information for command line interface (CLI) commands by typing the name of the command at a command prompt and pressing the **Enter** key.
- **Management Console** — Access help by pressing the **F1** key in the Management Console.

Ordering publications

You can order hardcopy publications online from the IBM Publications Center 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, for a list of telephone numbers, see the following Web site: [http://www.tivoli.com/inside/store/lit_order.html](http://www.tivoli.com/inside/store/lit_order.html)

**Providing feedback about publications**

If you have comments or suggestions about Tivoli products and documentation, complete the customer feedback survey at the following Web site:


**Accessibility**

Accessibility features help a user who has 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 *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 User’s Guide*.

**Contacting Customer Support**

If you have a problem with any Tivoli product, you can contact IBM Customer Support for Tivoli products. See the *Tivoli Customer Support Handbook* at the following Web site:


The handbook provides information about how to contact Customer Support, depending on the severity of your problem, and the following information:

- Registration and eligibility
- Telephone numbers and e-mail addresses, depending on the country in which you are located
- What information you should gather before contacting Customer Support

**Conventions used in this guide**

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

**Typeface conventions**

The following typeface conventions are used in this book:

**Bold**

Lowercase and mixed-case commands, command options, file and path names, and flags that appear within text appear like this, in **bold** type.

Graphical user interface elements and names of keys also appear like this, in **bold** type.
Italic Variables, values you must provide, new terms, and words and phrases that are emphasized appear like this, in italic type.

Monospace Commands, command options, and flags that appear on a separate line, code examples, output, and message text appear like this, in monospace type.

Names of text strings you must type, when they appear within text, names of Java™ methods and classes, and HTML and XML tags also appear like this, in monospace type.

**Tivoli command syntax**

The commands in this book use the following special characters to define Tivoli command syntax:

`<>` Indicates that the text enclosed in the angle brackets is a variable that you supply.

`[]` Identifies optional elements. Elements that do not have brackets around them are required.

`...` Indicates you can specify multiple values for the previous element. Separate multiple values by a space, unless the command information specifies differently.

If the ellipsis for an element follows a closing bracket ( `] ` ), use the syntax within the brackets to specify multiple values. For example, to specify two administrators for the option `[-a admin]...`, use `–a admin1 –a admin2`.

If the ellipsis for an element is within brackets, use the syntax of the last element to specify multiple values. For example, to specify two hosts for the option `[-h host...]`, use `–h host1 host2`.

`|` Indicates mutually exclusive information, meaning you can use the element on either the left or right of the vertical bar, but not both.

`{ }` Delimits a set of mutually exclusive elements when a command requires one of them, but not multiple elements. Brackets (`[ ]`) are around elements that are optional.

`\` A backslash indicates that a command continues on the next line.

In addition to the special characters, Tivoli command syntax uses the typeface conventions described in the Preface of this guide.

The following examples illustrate the typeface conventions used in Tivoli command syntax:

- **wcrtr** `[-a admin]... [-s region] [-m resource]... name`
  The `name` argument is the only required element for the wcrtr command. The brackets around the options indicate that they are optional. The ellipsis after the `–a admin` option means that you can specify multiple administrators multiple times. The ellipsis after the `–m resource` option means that you can specify multiple resources multiple times.

- **wchkdb** `[-o outfile] [-u] [-x] [-f infile] [-i] object...`
  The `-f`, `-i`, and `object` elements are mutually exclusive. The braces that surround the `-f`, `-i`, and `object` elements indicate that you are including required elements. If you specify the `object` argument, you can specify more than one object.
When you reference an object in a command issued from the command line, the reference is not an absolute object reference like those used in programming. Instead, the reference is a user-friendly name. This user-friendly name derives from a name given to the object by the user of the application, such as when creating a policy region.

**Operating system-dependent variables and paths**

This book uses the UNIX convention for specifying environment variables and for directory notation.

When using the Windows command line, replace `$variable` with `%variable%` for environment variables and replace each forward slash (`/`) with a backslash (`\`) in directory paths.

**Note:** If you are using the bash shell on a Windows system, you can use the UNIX conventions.
Chapter 1. Overview

The IBM Tivoli Monitoring for Databases: DB2 software complements existing tools for DB2 and adds features so you can manage a large number of DB2 databases in a distributed environment. This software concentrates on those tasks that you can define and deploy by generic methods. It reduces the complexity of managing large distributed database environments and allows administrators to concentrate on the specific issues associated with each of the individual databases.

The IBM Tivoli Monitoring for Databases: DB2 software supports the Enterprise-Extended Edition (EEE), Extended Edition (EE), DB2 Connect Extended Edition (EE), and Workgroup Edition products of the IBM DB2 Universal Database (UDB). It provides the ability to manage and monitor DB2 databases by providing extensions to Tivoli Management Framework, IBM Tivoli Monitoring, Tivoli Enterprise Console, and the Tivoli Business Systems Manager. It also includes the task libraries and resource models, which enable you to manage distributed DB2 computing resources effectively.

IBM Tivoli Monitoring for Databases: DB2 software enables you to perform the following:

- Automate repetitive database administrator (DBA) operations across all database servers and databases to define simple tasks and perform them on multiple databases and servers in a single action.
  - Ensure optimal performance through monitoring.
  - Ensure query plans are based on the correct statistics.
  - Ensure space availability on log and data devices.
  - Run standard maintenance commands and check for corruption.
  - Check database and configuration settings.
  - Start and stop the IBM Replication Capture and Apply programs.
  - Provide general statistics about database objects.
  - Keep up-to-date recovery information.
  - Back up databases and log files.
- Use the resource models for global DB2 database availability and performance monitoring facilities.
- Alert administrators to DB2 performance problems or serious errors and failures.
- Integrate with IBM Tivoli Monitoring.
- Integrate with the Tivoli Enterprise Console to provide event correlation. You can define rules for automated responses, such as running a corrective task.
- Integrate with Tivoli Business Systems Manager.

Understanding IBM Tivoli Monitoring

This section describes the main concepts required for understanding how to set up and use resource models. IBM Tivoli Monitoring uses resource models to product monitor and manage resources at distributed systems. A managed resource is a database object that represents a hardware, software, or data entity that you manage according to policies set up in a Tivoli environment. Managed resources can include physical and logical disks, CPUs, memory, printers, processes, and
services. A distributed system is the service that monitors resources, compares data from monitored resources against configured thresholds, and runs automated responses in a Tivoli environment.

**Note:** The resource models and indications used as examples within the following descriptions are automatically installed with IBM Tivoli Monitoring.

**Actions**
You can associate one or more recovery actions with a specific event. These actions are automatically triggered when the event occurs and, typically, are used for restoring satisfactory system service level. Each time an event occurs, the system provides a notification of the event, triggers a recovery action to restore satisfactory conditions and, if the action is successful, provides a notification that the action was performed. Actions are associated with the execution of a CIM method or the execution of a program. Associate actions with indications when modifying an existing resource model using this software, or when creating a new resource model with the IBM Tivoli Monitoring Workbench.

**Attributes**
Attributes can be string or numeric values. A resource model receives attributes when it is created. In IBM Tivoli Monitoring for Databases: DB2, you do not add, delete, or modify attributes that are in the default resource models. When creating a new resource model with the IBM Tivoli Monitoring Workbench, you can qualify an event by specifying relevant attributes according to the information you want the resource model to monitor. For example, an event might indicate insufficient disk space. When you specify attributes, such as disk name, or available disk space, the resource model can generate a more precise indication of the problem. For each resource model, some of the attributes are designated as keys.

**Cycles**
When a resource model runs at an endpoint, it gathers data at regular intervals, called cycles; the duration of a cycle is the cycle time, which is displayed in seconds. A resource model with a cycle time of 60 seconds gathers data every 60 seconds. Each of the supplied resource models has a default cycle time that you can modify when you define the resource model. At each cycle, the resource model collects data, analyzes it, generates the events, and triggers specified actions. The data collected are a snapshot of the status of the resources specified in the resource model.

**Gathering Historical Data component**
The Gathering Historical Data component uses data collected by specific IBM Tivoli Monitoring resource models to populate a database on the Tivoli server where it is installed. The collected data is aggregated every 24 hours and added to the IBM Tivoli Monitoring database, from which it can be used in analyses that help plan network growth using key system metrics.

For more information about Tivoli Enterprise Data Warehouse, see the following publications:
- *Tivoli Distributed Monitoring Warehouse Enablement Pack: Implementation Guide*
- *Enabling an Application for Tivoli Enterprise Data Warehouse*

**Heartbeat function**
In addition to the monitoring processes described above, IBM Tivoli Monitoring operates a heartbeat function, which monitors the basic system status at endpoints attached to the gateway at which it is enabled. Events
can be sent to the Tivoli Business Systems Manager (provided that the Tivoli Business Systems Manager Adapter component is installed at the gateway), the Tivoli Enterprise Console®, and the IBM Tivoli Monitoring Notice Group.

Indications and events
An indication is generated when the state of a given resource meets defined criteria. By itself, an indication does not trigger any specific action. When indications are aggregated, the resource model generates an event. When you define an event, you must specify under what conditions a certain number of indications are aggregated into an event. You also specify whether these indications must be consecutive, or whether the sequence may be interrupted by one or more monitoring cycles that do not register any indication. The cycles during which no indication is generated are called holes. An event can notify that there is a problem in the resource state, trigger an action and, if enabled, send a notification to the Tivoli Enterprise Console server or to the Tivoli Business Systems Manager.

Indications
Each resource model generates an indication in a given cycle based on the settings defined for it. A single occurrence of an indication does not always represent a problem, however the persistence of indications might. The resource model measures the persistence of the indications and aggregates them according to your specifications, or how you define settings for occurrences and holes. If the persistence of an indication meets the specified number of occurrences, the resource model generates an event. Indications can be generated in any one of the following circumstances:

• When a single threshold is exceeded. For example, in the Windows® Process resource model, the Process High CPU indication is generated when the High CPU Usage threshold is exceeded (for any process that has a non-zero process ID).

• When a combination of two or more thresholds are exceeded. For example, in the Windows Logical Disk resource model a High Read Bytes per Second indication is generated when both the following thresholds are exceeded:
  – The amount of bytes transferred per second (being written or read) exceeds the High Bytes per Second threshold
  – The percentage of time that the selected disk drive spends making read or write requests exceeds the High Percent Usage threshold.

• When a combination of other factors change. For example, in the Windows Process resource model the Process Handle Leak indication is generated when a process is losing memory. There is no threshold for this indication. The resource model compares the number of handles of the five processes with the most handles in consecutive cycles. If the number of handles has increased, the indication is generated.

Occurrences and holes
Occurrences and holes record whether or not an indication occurs during the cycle for a specific resource model. An occurrence is a cycle during which required conditions are met to generate an indication for a given resource model. A hole is a cycle during which an indication does not occur for a given resource model. A
hole means none of the conditions that generate an indication were met, but it does not necessarily mean that no thresholds were exceeded.

For example, in the Windows Logical Disk resource model a **High Read Bytes per Second** indication is not created when the percentage disk time is higher than the **High Percent Usage** threshold, provided that the **Low Disk Space** threshold is exceeded.

**Events**

An *event* is used to verify the persistence of a given indication by eliminating unrepresentative peaks and troughs for the indication. The number of occurrences, with allowance for holes, of an indication defines an event. For example, a process that generates the Process High CPU indication in one cycle is behaving perfectly normally, and is of no threat to other processes if the high usage does not repeat. However, an indication that persists over several cycles is a problem.

When you define an event, you can specify how many consecutive *holes* in the sequence of consecutive occurrences are permitted. Specifying how many consecutive holes are permitted during the accumulation of the consecutive occurrences enables you to continue the counting of consecutive occurrences if a given number of cycles fall below the threshold.

While defining an event, you can also indicate if you want the system to notify the Tivoli Enterprise Console server, or the Tivoli Business Systems Manager, that an event was generated. The Tivoli Monitoring operator can change these selections later, when the resource model is included in a Tivoli Monitoring profile. You can also define the degree of severity of the event.

**Clearing events**

A *clearing event* is a resource model function that, if enabled, allows IBM Tivoli Monitoring to close an event when the circumstances that caused the event are no longer present. Clearing events can be processed by the Tivoli Enterprise Console server and by Tivoli Business Systems Manager. Clearing events have a severity of *harmless*, regardless of the severity of the original event, but have the same event ID as the original event.

For example, a service stops and the Tivoli Enterprise Console server receives an event notifying it of this problem. Until the service restarts, the problem is still present on the endpoint, but IBM Tivoli Monitoring does not send any further event notifications to the Tivoli Enterprise Console server. If the Clearing Event function is enabled, as soon as the service restarts, a clearing event is sent to the Tivoli Enterprise Console server, thereby closing the original event. The Clearing Event itself does not normally appear on the server, because its only function is to clear the original error event.

**Note:** Correlated events cannot be cleared.

**Monitoring of events and indications**

Events can be sent to the Tivoli Enterprise Console server, the Web Health Console, and Tivoli Business Systems Manager.
Tivoli Enterprise Console Server

Events can be viewed by a Tivoli Enterprise Console server provided that you have compiled and loaded the relevant *Basic Recorder of Objects in C* (BAROC) files on the server. The event contains a set of properties that can help to identify the problem. For example, the information in the ProcessHandleLeak event includes values for the following:

- Current Process ID
- Number of handles allocated to the process
- Name of the process

Clearing events can also be processed by the Tivoli Enterprise Console server. If the default procedure is used to enable the monitoring of events, the Tivoli Enterprise Console server uses the clearing event to close the associated error event. However, if you choose not to install the clearing events rule incorporated in the above-mentioned default procedure, the clearing event is displayed as a separate entity with the same id as the original error event.

Web Health Console

The Web Health Console, which is an optional part of IBM Tivoli Monitoring, obtains events and indications from endpoints. The Web Health Console displays the health of each potential problem as a numeric value between 100 (perfect health) and zero (with zero meaning that the conditions for the corresponding event have been met).

<table>
<thead>
<tr>
<th>Cycle</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Health (%)</td>
<td>100</td>
<td>75</td>
<td>75</td>
<td>50</td>
<td>25</td>
<td>25</td>
<td>100</td>
<td>75</td>
<td>50</td>
<td>50</td>
<td>25</td>
<td>0</td>
</tr>
</tbody>
</table>

In this example, the health percentage changes in steps of 25% because 4 occurrences were required to trigger an event; if the indication had required 5 occurrences, the health percentage would have changed by steps of 20%.

Tivoli Business Systems Manager

Events can also be sent to the Tivoli Business Systems Manager, provided that the Tivoli Business Systems Manager Adapter component has been installed on the gateways of the endpoints that are to be monitored. A full description of Tivoli Business Systems Manager can be found in the Tivoli Business Systems Manager documentation.

Clearing events can also be processed by the Tivoli Business Systems Manager, which uses the clearing event to close the associated error event.
Logging
For any endpoint, you can log the data collected by a resource model and write it in a local database. Then you can view it through the History View of the Web Health Console. You can choose to store raw or aggregated data.

Parameters
While thresholds can be only numeric values, parameters can be lists of numbers or strings. Using parameters enables you to customize your resource model. You can define different parameters, as required. For each parameter you can specify a value, which can be a list of numbers or strings. This list can represent the instances you want to monitor, or a limit you do not want your resource to exceed, depending on how you use this setting in your script. The lists will then be displayed in the IBM Tivoli Monitoring dialogs, and depending on the type of list you select in the Workbench, the lists will appear in different forms on IBM Tivoli Monitoring. Within the Workbench you can define default values and then let the operator customize the settings in IBM Tivoli Monitoring. You can choose one among the following kinds of lists when you specify the parameters:
- Boolean List
- Choice List
- String List
- Numeric List

Some resource models have one or more parameters. For example, the Windows Parametric TCP/IP Ports resource model uses parameters that contain lists of ports and port states that you want to monitor.

Profiles
IBM Tivoli Monitoring is a profile-based application that runs in a Tivoli environment. Different profiles can be defined containing different selections of resource models. All aspects of existing profiles can be modified, including the addition, deletion and customization of resource models. You can distribute multiple profiles to each endpoint.

Recovery actions
For any event, recovery actions can be run automatically, such as built-in actions (for Windows) or tasks. The actions can take positive steps to remedy the situation, or can ensure that information about the event is distributed to the appropriate authorities or entities.

Built-in actions

Note: The indications in IBM Tivoli Monitoring for Databases: DB2 resource models do not have built-in actions. Certain events can have one or more built-in actions predefined for them. An action can be either the execution of a CIM class method or the execution of a program. Both type of actions can be implemented only through the IBM Tivoli Monitoring Workbench. For example, an event that detects the failure of a service could have the restart of that service as its built-in action. Thus, without any human intervention, IBM Tivoli Monitoring detects the failure of a service and automatically restarts it. Built-in actions are defined by default as part of an event, but can be removed. They have the same event ID as the event that they are designed to correct.
Tasks

For each event you can select one or more tasks to be performed when the event is triggered. The tasks that are triggered by an IBM Tivoli Monitoring event can access the event name and event thresholds of the triggering event by accessing the environment variables.

Resource models

IBM Tivoli Monitoring products provide predefined resource models that access specific performance data from the system at runtime. (For example, the Process resource model gathers data about processes running on the system.) The resource models process the data they collect using an algorithm that determines whether or not the system is performing to expectations. You can either use a resource model’s default values to collect performance data or customize the resource models to match specific requirements in your environment. Distributing resource models using default values enables you to begin monitoring immediately to obtain useful data concerning your enterprise. When you become more familiar with the monitoring process and feedback, you may choose to customize the resource model information.

Scheduling

IBM Tivoli Monitoring contains a scheduling feature that enables you to determine a period within which monitoring takes place and specific scheduling rules. The monitoring period is determined by defining a from and a to date.

The scheduling rules enable you to define time periods on specific weekdays during which monitoring takes place. Any number of rules can be defined, allowing you to set up a complex pattern of resource monitoring for a profile, covering the time periods important to you.

The scheduled times are always interpreted as local times, enabling you to set up a single rule that monitors the same local time period in different time zones. For example, if your region covers several time zones, but you want to monitor morning activities in each time zone, a single rule defining the monitoring period of between 08:00 and 13:00 is interpreted locally in each of the time zones, so that you monitor the same relative period.

You should note also that all times of events or activities reported from endpoints or gateways are also logged in the local time of the system from where they originated.

Thresholds

Each resource model defines one or more thresholds. Each threshold has a default numeric value that you can change when you define the profile. The monitoring algorithm written in the Java script determines how the resource model uses a threshold. The following are examples of how a resource model can use thresholds:

- A threshold value might represent a limit that, if not met, indicates an unsatisfactory resource state. For example, if you want the system to notify you when disk space drops under 70%, set the threshold value to 70 to generate an indication each time your disk space is less than 70%.

- Some threshold values control the scope of what the resource model monitors. For example, the Windows Process resource model uses the Maximum Processes threshold to limit the number processes monitored.
for the highest usage of CPU. Thus, if you set the **Maximum Processes**
threshold to 5, the resource model only reports on the five highest
CPU-using processes.

You can add a description for each threshold in the **Threshold** dialog
explaining what each value measures and how it is used within the
monitoring algorithm.

---

**IBM Tivoli Monitoring for Databases: DB2 administrators**

The Tivoli Management Framework administrator or root administrator can
perform tasks and manage policy regions in one or more management regions.

In IBM Tivoli Monitoring for Databases: DB2 the initial administrator who can
perform DB2 database management tasks is the Tivoli Management Framework
administrator or root administrator. After you install IBM Tivoli Monitoring for
Databases: DB2, you can define and give authorization roles to a non-root
administrator (it is recommended that you select your DB2 product administrator).
Based on these roles, the IBM Tivoli Monitoring for Databases: DB2 administrator
can perform assigned database and system management tasks.

---

**Authorization roles**

Tivoli authorization roles determine the range of actions an administrator can
perform in the Tivoli Management Framework policy region. You assign roles to
administrators so they can perform system or database management procedures. A
role can be over the entire Tivoli management region or over a specific set of
resources, such as those contained in a policy region. **Super, senior, admin, policy**
and **user** are examples of standard Tivoli Management Framework authorization
roles. See the *Tivoli Management Framework User’s Guide* for information on Tivoli
Management Framework provided roles.

The IBM Tivoli Monitoring for Databases: DB2 software includes the following
authorization roles:

**db2_user**

This role provides the ability to view managed resources and query a
database.

**db2_dba**

This role provides the ability to perform all IBM Tivoli Monitoring for
Databases: DB2 operations and functions on a DB2 instance and database.

---

**DB2 managed resources and endpoints**

A **managed resource** is a system or network resource that you manage with Tivoli
Management Framework. A managed resource is a specific resource that has a
default policy defined in the policy region. An **endpoint** is a managed resource that
is the target for distribution of a profile or the resource on which a task or job
runs.

The following list provides important features of a Tivoli endpoint:

- Software installation for an endpoint requires less than one MB of disk space.
- An endpoint does not have an object database, which further reduces its disk
  space requirement.
- An endpoint uses method cache.
An endpoint is the final destination for a profile distribution. Endpoint gateways reside on managed nodes, and they control all communication and operations of endpoints with the managed nodes. A gateway can support thousands of endpoints.

IBM Tivoli Monitoring for Databases: DB2 provides six types of managed resources:

- DB2InstanceManager
- DB2DatabaseManager
- DB2Gateway
- DB2PartitionManager
- DB2PartitionGroupManager
- DB2Discovery

You can subscribe database and instance endpoints to profiles within profile managers in the same way you subscribe any other managed resource.

**User interface options**

The IBM Tivoli Monitoring for Databases: DB2 software offers a choice of the following user interfaces:

- Tivoli desktop graphical user interface. The desktop includes the Navigator, a search tool that enables you to quickly access Tivoli objects in the management region without regard to object hierarchy.
- Tivoli command line interface (CLI) for entering Tivoli commands and scripts. Tivoli commands are run in a shell on an endpoint, a managed node, a gateway, or a Tivoli management region server. A shell is a command interpreter that enables the operating system to process commands. You can run commands from a shell’s command line or include them in shell scripts on either UNIX or Windows operating systems. Before running Tivoli commands, you must set the Tivoli environment variables for the shell. This procedure is described in Chapter 1, “Overview” of the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide*.

This document provides procedures for commands from either the desktop or the command line interface.
Chapter 2. Getting started quick-reference guide

This chapter provides a quick-reference table of the installation and setup procedures you must perform before you can use IBM Tivoli Monitoring for Databases: DB2.

Table 2. Quick reference to installation and setup procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Make sure you have the required amount of disk space and memory for the IBM Tivoli Monitoring for Databases: DB2 software.</td>
<td>IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Release Notes</td>
</tr>
<tr>
<td>2. Install the software.</td>
<td>IBM Tivoli Monitoring for Databases: Component Installation Guide</td>
</tr>
<tr>
<td>3. Assign a DB2 administrator to the Administrator role for the IBM Tivoli Monitoring for Databases: DB2 software.</td>
<td>The Tivoli Management Framework User’s Guide provides information on how to assign authorization roles to Tivoli administrators.</td>
</tr>
<tr>
<td>4. Assign the db2_dba and policy roles to the IBM Tivoli Monitoring for Databases: DB2 administrator.</td>
<td>The Tivoli Management Framework User’s Guide provides information on how to assign authorization roles to Tivoli administrators.</td>
</tr>
<tr>
<td>5. Create an IBM Tivoli Monitoring for Databases: DB2 policy region.</td>
<td>“Creating an IBM Tivoli Monitoring for Databases: DB2 policy region” on page 20</td>
</tr>
<tr>
<td>6. Set the following managed resource types for the IBM Tivoli Monitoring for Databases: DB2 policy region: • DB2InstanceManager • DB2DatabaseManager • DB2Gateway • DB2PartitionManager • DB2PartitionGroupManager • DB2Discovery</td>
<td>“Adding or removing managed resource types” on page 23</td>
</tr>
<tr>
<td>7. Set the Tmw2kProfile managed resource type for the IBM Tivoli Monitoring for Databases: DB2 policy region to create DB2 distributed monitoring profiles.</td>
<td>“Adding or removing managed resource types” on page 23</td>
</tr>
<tr>
<td>8. Create a db2ecc user ID and assign it to the DB2 SYSADM group on the machine where DB2 is located.</td>
<td>“Creating a db2ecc user ID and assigning an administrator group” on page 25</td>
</tr>
<tr>
<td>Procedure</td>
<td>Refer to</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>10. Set up monitoring profiles and tasks for the resources and applications that you want to monitor. This procedure contains the following sub-procedures: • Create a profile manager and a profile for the monitors. • Subscribe resources to profile managers • Add default and custom resource models to profiles</td>
<td>“Creating profile managers and profiles” on page 46, “Subscribing resources to profile managers” on page 48, “Adding default resource models to profiles” on page 49, “Distributing profiles from the desktop” on page 50, Chapter 8, “Customizing resource models” on page 91</td>
</tr>
<tr>
<td>11. For each resource model in your profile, do the following: • Determine how the resource model generates an event by specifying thresholds for each indication for that resource model. • Specify if you want a recovery action when a specific event occurs. • Specify if you want corrective or reporting tasks for an event. • Specify if you want to receive information on a specific event through a notice. • Specify if you want to customize the resource model parameters to optimize the monitoring process. • Specify when the monitoring occurs. • Specify if you want the monitoring to occur at specific time periods on selected days. • Specify if you want the collected log data written to a local database.</td>
<td>“Customizing indications” on page 93, “Editing a built-in action” on page 97, “Specifying tasks for an indication” on page 99, “Sending a notice to administrators when an event occurs” on page 101, “Customizing parameters” on page 102, “Creating scheduling rules” on page 104, “Customizing the scheduling monitoring period” on page 106, “Customizing data logging information” on page 108</td>
</tr>
<tr>
<td>12. Subscribe endpoints to the profile manager.</td>
<td>“Subscribing resources to profile managers” on page 48</td>
</tr>
<tr>
<td>Procedure</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td></td>
</tr>
<tr>
<td><strong>13.</strong> Save and distribute profiles.</td>
<td></td>
</tr>
<tr>
<td><strong>14.</strong> Set up customized tasks.</td>
<td></td>
</tr>
<tr>
<td><strong>15.</strong> Run a job from the task library.</td>
<td></td>
</tr>
<tr>
<td><strong>16.</strong> Set up a job task in a schedule.</td>
<td></td>
</tr>
<tr>
<td><strong>17.</strong> <em>Optional:</em> Connect IBM Tivoli Monitoring for Databases: DB2 to the Tivoli Enterprise Console product.</td>
<td></td>
</tr>
<tr>
<td><strong>18.</strong> <em>Optional:</em> Install the Tivoli Business Systems Manager product to control DB2 resources.</td>
<td></td>
</tr>
<tr>
<td><strong>19.</strong> <em>Optional:</em> Install the Tivoli Enterprise Data Warehouse product to control DB2 resources.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refer to</th>
</tr>
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<tbody>
<tr>
<td>“Distributing profiles from the desktop” on page 50</td>
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<tr>
<td>“Distributing profiles using MDist2” on page 52</td>
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<tr>
<td>“Customizing a task” on page 74</td>
</tr>
<tr>
<td>“Running a job” on page 81</td>
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<tr>
<td>“Scheduling a job” on page 82</td>
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<td>Appendix B, “Setting Up the Tivoli Enterprise Console” on page 129</td>
</tr>
<tr>
<td>Chapter 9, “Enabling IBM Tivoli Monitoring for Databases: DB2 for Tivoli Enterprise Data Warehouse” on page 115</td>
</tr>
</tbody>
</table>
Chapter 3. Setting up IBM Tivoli Monitoring for Databases: DB2

This chapter describes the general setup procedures for IBM Tivoli Monitoring for Databases: DB2.

Table 3 provides an overview of the topics covered in this chapter.

Table 3. DB2 setup guidelines

<table>
<thead>
<tr>
<th>Goal</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Create an IBM Tivoli Monitoring for Databases: DB2 policy region to maintain and manage your DB2 resources.</td>
<td>“Creating an IBM Tivoli Monitoring for Databases: DB2 policy region” on page 20</td>
</tr>
<tr>
<td>3. Move the DB2Manager-DefaultPolicyRegion objects to the IBM Tivoli Monitoring for Databases: DB2 policy region for easy access.</td>
<td>“Moving the Monitoring for DB2 objects” on page 21</td>
</tr>
<tr>
<td>4. Set the DB2 managed resource types for the IBM Tivoli Monitoring for Databases: DB2 policy region. This enables you to create DB2 resource objects that you want to manage.</td>
<td>“Adding or removing managed resource types” on page 23</td>
</tr>
<tr>
<td>5. Create a db2ecc operating system user ID and assign it to an administrator group. The user login name is the root administrator of the Tivoli management region where you plan to use Tivoli Manager for DB2.</td>
<td>“Creating a db2ecc user ID and assigning an administrator group” on page 25</td>
</tr>
<tr>
<td>6. Create DB2 resource objects that you want to manage.</td>
<td>“Creating DB2 instance objects” on page 26</td>
</tr>
<tr>
<td></td>
<td>“Creating DB2 database objects” on page 28</td>
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<tr>
<td></td>
<td>“Creating DB2 gateway objects” on page 31</td>
</tr>
<tr>
<td></td>
<td>“Creating partition objects” on page 33</td>
</tr>
<tr>
<td></td>
<td>“Creating partition group objects” on page 35</td>
</tr>
<tr>
<td></td>
<td>“Creating DB2 Discovery objects” on page 37</td>
</tr>
<tr>
<td>7. Automatically create multiple DB2 instance objects in a policy region.</td>
<td>“Discovering DB2 instances” on page 39</td>
</tr>
</tbody>
</table>
Table 3. DB2 setup guidelines (continued)

<table>
<thead>
<tr>
<th>Goal</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Automatically create multiple database objects in a policy region.</td>
<td>“Discovering DB2 databases” on page 41</td>
</tr>
<tr>
<td>9. Change the members of the partition group.</td>
<td>“Adding or removing partition group members” on page 42</td>
</tr>
<tr>
<td>10. Assign administrators to receive messages from a notice group.</td>
<td>“Subscribing to notice groups” on page 43</td>
</tr>
</tbody>
</table>

Starting the Tivoli environment

**Objective**
To access the Tivoli environment so that you can use the operations and functions of IBM Tivoli Monitoring for Databases: DB2.

**Background information**
You can access the Tivoli desktop or the Tivoli command line interface in order to use the operations and functions of IBM Tivoli Monitoring for Databases: DB2.

The Tivoli desktop is a user interface that provides point-and-click access to IBM Tivoli Monitoring for Databases: DB2 features and functions. The Tivoli desktop provides a central control point for you to organize, manage, and delegate system management operations.

IBM Tivoli Monitoring for Databases: DB2 also provides a command line interface (CLI) that enables you to enter commands from the keyboard. You can use these commands in shell scripts and with system utilities such as the UNIX cron utility. For more information about using commands, refer to the *Tivoli Management Framework Reference Manual*.

**Required authorization role**
admin

**Before you begin**
None.

**When you finish**
None.

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use one of the following two methods to access the command line interface, depending on whether you use a Windows NT or UNIX operating system:

- **Windows NT**
  1. Log on to a Windows NT managed node or Tivoli management region server.
  2. Click **Start** and select **Command Prompt** in the Windows taskbar to open the command prompt window.
3. Enter the following command to run the environment initialization and setup script:

```
%SystemRoot%\system32\drivers\etc\Tivoli\setup_env.cmd
```

This command enables you to perform all of the IBM Tivoli Monitoring for Databases operations.

**UNIX**

1. Log on to a UNIX managed node or Tivoli management region server.
2. Run the environment initialization and setup script.
   - If you are using the Bourne, Korn, or bash shell, run the following command:
     ```
     . /etc/Tivoli/setup_env.sh
     ```
   - If you are using the C shell, run the following command:
     ```
     source /etc/Tivoli/setup_env.csh
     ```

**Windows NT desktop:**

1. Do one of the following to access the login screen of the Tivoli desktop:
   - Click *Start* in the Windows taskbar and select *Programs*.
   - Select *Tivoli* and select *Tivoli* a second time.
     — OR —
   - Enter the *tivoli* command at a DOS prompt. See the *Tivoli Management Framework Reference Manual* for more information on this command.
2. Type the following values in the fields of the login screen:
   - *Host Machine* specifies the Tivoli managed node, including the Tivoli server where the Tivoli desktop should connect.
   - *Log In As* specifies the login name to the managed node.
   - *Password* specifies the password for the specified login name.
3. Click *OK* to display the Tivoli desktop.

### Setting authorization roles

**Objective**

To authorize persons to have the roles they need for managing resources in IBM Tivoli Monitoring for Databases: DB2.

**Background information**

When you authorize roles for the persons who use the product, they can perform operations and access the resources that their jobs require. For example, an administrator needs the following roles, depending on his or her responsibilities:

- **db2_user** provides the ability to view managed resources and query a database.
- **db2_dba** provides the ability to perform all IBM Tivoli Monitoring for Databases: DB2 operations and functions on a DB2 instance and database.

**Required authorization role**

*senior*

**Before you begin**

None.
**When you finish**
You can add managed resources (objects) to a policy region. See “Adding or removing managed resource types” on page 23 for more information on working with various types of managed resources.

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the `wsetadmin` command to set or change resource authorization roles. See the *Tivoli Management Framework Reference Manual* for more information.

**Desktop:** Follow these steps to perform this procedure from the Tivoli desktop:
1. Double-click the *Administrators* icon to display the *Administrators* dialog box.

   ![Administrators dialog box](image)

   *Figure 1. Administrators dialog box*

2. Right-click the existing administrator whose role you want to modify to display the pop-up menu.
3. Select *Edit Resource Roles* to display the *Set Resource Roles* dialog box.
4. Select a resource for which you want to set the administrator’s role from the Resources list.

Additional information: The roles listed in the Available Roles and Current Roles lists depend on the particular applications installed.

5. Add or remove one or more roles for one or more selected resources as follows:
   - Add Roles
     a. Do one of the following to add roles for resources:
        - Select one or more roles from those shown in the Available Roles scrolling list, and click the left-arrow button.
        The selected roles move from the Available Roles scrolling list to the Current Roles scrolling list.
          —OR—
        - Double-click an entry in the Available Roles scrolling list to move it automatically to the Current Roles scrolling list.
        
        Note: Moving a role from one list to another only moves the selected roles temporarily to the Current Roles or Available Roles scrolling lists.

     b. Click Change after moving each role or multiple roles.
        Additional information: The Set Resource Roles dialog box remains displayed until you click Close or Change & Close.

     c. Click Change & Close to add all of the selected roles for the administrator and return to the Administrators dialog box.
• Remove Roles
  a. Do one of the following to remove roles for resources:
     – Select one or more roles from those shown in the Current Roles
       scrolling list, and click the right-arrow button.
       The selected roles move from the Current Roles scrolling list to the
       Available Roles scrolling list.
     —OR—
     – Double-click an entry in the Current Roles scrolling list to move it
       automatically to the Available Roles scrolling list.

     Note: Moving a role from one list to another only moves the selected
     roles temporarily to the Current Roles or Available Roles
     scrolling lists.

  b. Click Change after moving each role or multiple roles.
     Additional information: The Set Resource Roles dialog box remains
     displayed until you click Close or Change & Close.
  c. Click Change & Close to remove all of the selected roles for the
     administrator and return to the Administrators dialog box.

6. Shut down and restart the Administrator’s desktop to activate these changes.

---

Creating an IBM Tivoli Monitoring for Databases: DB2 policy region

Objective
To create an IBM Tivoli Monitoring for Databases: DB2 policy region where similar
managed resources are stored to share one or more common policies.

Background information
A policy region is a collection of DB2 resources, such as databases or servers, that
share one or more common policies. By grouping similar resources into policy
hierarchies that reflect your organization, you can customize IBM Tivoli Monitoring
for Databases: DB2 to maintain and manage your DB2 resources. For example, you
can create a policy region, North_America, that distinguishes the location,
department, or group of resources.

Required authorization role
senior and policy

Before you begin
Install the IBM Tivoli Monitoring for Databases: DB2 product. Refer to IBM Tivoli

When you finish
Move the DB2Manager-DefaultPolicyRegion objects that were created during
installation to the IBM Tivoli Monitoring for Databases: DB2 policy region. Refer to
“Moving the Monitoring for DB2 objects” on page 21 for information.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the wcrtp command to create a policy region. The syntax for
the command will vary depending on the version of the Tivoli Management
Framework you are using. For more information, refer to the Tivoli Management
For example, to create a policy region named TMfDB2 on administrator Chris’s desktop, enter the following command:

\texttt{wcrtpr -a chris TMfDB2}

**Desktop:**
1. Click \textit{Create} and select \textit{Region} to display the \textit{Create Policy Region} dialog box.
2. In the \textbf{Name} text box, type a name for the new policy region.
   
   \textit{Additional Information:} The policy region name can include letters, underscores, dashes, periods, and spaces; however, they must be unique within the local Tivoli management region.
3. Click \textit{Create & Close} to create the new policy region and return to the desktop.

---

**Moving the Monitoring for DB2 objects**

**Objective**
To move the Monitoring for DB2 objects to the IBM Tivoli Monitoring for Databases: DB2 region.

By moving these objects and tools to an IBM Tivoli Monitoring for Databases: DB2 policy region, you make them readily available for use and reuse from the policy region. If you do not move the objects and tools, you must access them through the Tivoli Navigator.

**Background information**
The default policy region contains instance objects and tools that were optionally created during the IBM Tivoli Monitoring for Databases: DB2 installation procedure. The tools include task libraries, default distributed monitoring profiles, and the DB2Discovery object for automatically creating multiple instance objects.

All DB2 objects are accessible as endpoints in a policy region regardless of whether those objects reside in the same policy region or not. The objects belong to the Tivoli management region and not to a specific policy region.

**Note:** If you move the task libraries from the Monitoring for DB2 objects, all available Tivoli endpoints become associated with the task libraries. Only a few of the task libraries are valid for IBM Tivoli Monitoring for Databases: DB2.

**Required authorization role**
Senior and policy

**Before you begin**
Create an IBM Tivoli Monitoring for Databases: DB2 region where you can move the Monitoring for DB2 objects and tools. Refer to “Creating an IBM Tivoli Monitoring for Databases: DB2 policy region” on page 20 for information.

**When you finish**
None

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the \texttt{wmv} command to move DB2 instance objects and tools between policy regions. The syntax for the command will vary depending on the version of the Tivoli Management Framework you are using. For information, refer to the \textit{Tivoli Management Framework User’s Guide}.
For example, to move the **DB2ManagerDatabaseTasks** task library tool to a policy region called **TMfDB2**, enter the following command:

```
wmv /Library/TaskLibrary/DB2ManagerDatabaseTasks/Regions/TMfDB2
```

**Desktop:**

1. Click **Desktop** and select **Navigator** from the desktop to display the **Navigator** dialog box.
2. Select the **PolicyRegion** check box to display the available policy regions in the **Resources** scrolling list.

![Navigator dialog box](image)

**Figure 3.** Navigator dialog box

3. Select **Monitoring for DB2** and click **Go To** to display the **Policy Region** dialog box.
4. Select the icon for the DB2 instance object or tool.
5. Drag and drop the icon on the IBM Tivoli Monitoring for Databases: DB2 policy region icon to complete the move.

*Additional information:* When using a remote access application, it may be necessary to hold down the shift key when performing this step.

*Note:* *For Solaris Operating Environments only:* You cannot use the desktop to drag the DB2 instance object or tool icons to move them out of the **Monitoring for DB2**. You must use the command line.
Adding or removing managed resource types

Objective
To set the managed resource types for the IBM Tivoli Monitoring for Databases: DB2 policy region and to define the DB2 resource objects that can be created.

Background information
The managed resource types must be defined before any resource objects can be created on the Tivoli desktop. For example, to add a DB2 instance object, add the DB2InstanceManager resource type.

The following types of managed resources are available in the IBM Tivoli Monitoring for Databases: DB2 product:
- DB2InstanceManager manages instances of DB2 servers.
- DB2DatabaseManager manages DB2 database objects.
- DB2Gateway manages DB2 gateway objects.
- DB2PartitionManager manages instances of DB2 partitioned servers.
- DB2PartitionGroupManager manages partitioned group objects as defined in the IBM Tivoli Monitoring for Databases: DB2 product.
- DB2Discovery manages DB2 Discovery objects.

Required authorization
senior and policy

Before you begin
- Create an IBM Tivoli Monitoring for Databases: DB2 policy region. Refer to "Creating an IBM Tivoli Monitoring for Databases: DB2 policy region" on page 20 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the following commands to set the managed resource types in the policy region.

<table>
<thead>
<tr>
<th>Command</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>wgetpr &lt;region&gt;</td>
<td>To list the installed managed resources in a policy region</td>
</tr>
<tr>
<td>where: region</td>
<td>Specifies the target policy region.</td>
</tr>
</tbody>
</table>
Table 4. Adding or removing managed resource types from a policy region (continued)

<table>
<thead>
<tr>
<th>Command</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>`wsetpr [-d &lt;default_pol&gt;] [-v &lt;validation_pol&gt;] [-E</td>
<td>-e] &lt;managed_resource&gt; &lt;policy_region&gt;<code>&lt;br&gt;where:&lt;br&gt; -d </code>default_pol<code>&lt;br&gt; Specifies the label of the default policy.&lt;br&gt; -v </code>validation_pol`&lt;br&gt; Specifies the label of the validation policy to be used for the managed resource.&lt;br&gt; -E Displays policy validation.&lt;br&gt; -e Enables policy validation.&lt;br&gt; managed_resource&lt;br&gt; Specifies to managed resource to add.&lt;br&gt; policy_region&lt;br&gt; Specifies the policy region to which the managed resource will be added.</td>
</tr>
<tr>
<td><code>wsetpr -r &lt;managed_resource&gt; &lt;policy_region&gt;</code>&lt;br&gt;where: <code>-r &lt;managed_resource&gt; policy_region</code> specifies the managed resource to remove from the policy region.</td>
<td>To remove a managed resource from a policy region</td>
</tr>
</tbody>
</table>

The following example adds the managed resource `DB2DatabaseManager` to the `TMfDB2` policy region.

```
wsetpr DB2DatabaseManager TMfDB2
```

**Desktop:**
1. Double-click the policy region to display the Policy Region dialog box.
2. Click Properties and select Managed Resources to display the Set Managed Resources dialog box.

![Set Managed Resources dialog box](image)

---

*Additional Information:* The Current Resources list displays the policy region’s current managed resources and the Available Resources list displays the managed resources that can be added.
3. Select the resources to be added from the **Available Resources** list.
4. Click the left-arrow button to move the selection to the **Current Resources** list.
   Additional Information: Double-clicking a selection also moves the resource from one list to another.
5. Optional: Select one or more managed resources in the **Current Resources** list and click the right-arrow button to remove the managed resource.
6. Click **Set & Close** to save the changes and close the **Set Managed Resources** dialog box.

### Creating a db2ecc user ID and assigning an administrator group

**Objective**
To define the db2ecc operating system user ID and assign it to the DB2 SYSADM group so that the DB2 instance can be managed by IBM Tivoli Monitoring for Databases: DB2.

**Background information**
You must define a db2ecc operating system user ID on each DB2 endpoint and make the primary group set to the SYSADM group defined to DB2.

**Required authorization role**
No role required.

**Before you begin**
For Solaris Operating Environments and AIX only: If you have more than one DB2 instance on an endpoint, verify that the SYSADM group parameter setting is the same for each instance. See step 2 for information on verifying and changing the SYSADM group parameter.

**When you finish**
Create a DB2 instance object. Refer to Table 5 on page 26 for more information.

**Procedure**
You must complete this procedure on AIX, Solaris Operating Environments, and Windows operating systems.

**For AIX and Solaris Operating Environment Installations:**
1. Define a db2ecc operating system user ID on each endpoint in the Tivoli management region where DB2 managed resources will be managed and monitored.
2. The current setting of the **SYSADM** DB2InstanceManager configuration file can be checked from the command line by entering the command:
   ```
db2 get dbm config
   ```
   Additional Information: The db2ecc user ID needs to be in the primary operating system group, which is defined for the DB2InstanceManager as the **SYSADM** group for each instance to be managed. After you select an operating system group to function as the DB2 system administrator group, you must define it as the value of the **SYSADM** parameter in the DB2InstanceManager configuration file.

   The value of the **SYSADM** parameter can be changed by entering the command:
   ```
db2 update dbm config using sysadm_group <global_group_name>
   ```
3. If you share executable files between nodes in your Tivoli management region using NFS remote mount, ensure that the integer values used to represent the db2ecc OS user ID and its primary group are identical among all gateways that share executable files in your Tivoli management region.

For Windows installations:
1. Define a local or domain db2ecc user identification (in the operating system software) on each endpoint in the Tivoli management region where DB2 managed resources will be managed and monitored.
2. Define the db2ecc user as a member of the local or domain Administrators and Tivoli_Admin_Privileges groups.
3. Grant the Log on as service policy to the db2ecc user from the User Rights Policy dialog box.
4. For DB2 Extended-Enterprise Edition only. Set Tivoli Remote Access Account (TRAA) services to db2ecc, or any valid ID, by using the Tivoli wlcftap command. When you enter wlcftap -r db2ecc you will be prompted for a password. To activate the user, enter wlcftap -a.

Creating DB2 instance objects

**Objective**
To create an instance of a DB2 database server on the Tivoli desktop so that administrators can monitor server activity and simplify redundant tasks.

**Background information**
An instance object is an occurrence or session of a partitioned or nonpartitioned database server. For a partitioned database server, all partitions belonging to the instance must reside in the same Tivoli management region. Only one instance object is needed to represent a partitioned database server even if the instance resides on multiple managed nodes.

**Note:** If you delete and then recreate a DB2 instance, you must delete and recreate the corresponding DB2InstanceManager from the IBM Tivoli Monitoring for Databases: DB2 product. If you delete a DB2InstanceManager object, you must also unsubscribe the object from all profile managers to which it is subscribed. In addition, when you delete a DB2InstanceManager object, you also delete any child objects associated with the object.

After the instance is created, the DB2InstanceManager icon is displayed on the desktop as shown in Table 5. The server’s state must be checked before the status can be changed to Normal. Refer to “Updating the state of a server” on page 61 for information.

**Table 5. DB2InstanceManager icon**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Managed resource object</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>DB2InstanceManager</td>
</tr>
<tr>
<td>![Icon]</td>
<td>DB2InstanceManager object for parallel instances</td>
</tr>
</tbody>
</table>
Required authorization role

db2_dba

Before you begin
- Set up the DB2InstanceManager managed resource type for the policy region. Refer to “Adding or removing managed resource types” on page 23 for information.
- Create and assign a db2ecc User ID. Refer to “Creating a db2ecc user ID and assigning an administrator group” on page 25.

When you finish
Create a DB2DatabaseManager object manually or by using the Discover Database function. Refer to either “Discovering DB2 databases” on page 41 or “Creating DB2 database objects” on page 28 for information.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the wcdb2inst command to create an instance object.

```
wcdb2inst -l <instance_label> -e <endpoint> -i <instance> -p <policy_region>[-u <password>] [-m <proxy node>]
```

where:
- `instance_label`
  Specifies a unique label for the DB2 server.
- `endpoint`
  Specifies the endpoint label of the computer containing the DB2 server.
- `instance`
  Specifies the name of the DB2 server on the specified managed node for which the endpoint is created.
- `policy_region`
  Specifies the name of the policy region to which the DB2 instance will belong.
- `password`
  For Windows only. Specifies the db2ecc password used to log in to the operating system. Passwords are case-sensitive.
- `proxy node`
  This optional argument defines where the DB2 instance object is stored. If a proxy node is not specified, the instance is stored on the gateway where the endpoint is connected as specified in the -e argument.

Note: In order to store the instance on a node, you must have IBM Tivoli Monitoring Component Services, Version 5.1.0 and IBM Tivoli Monitoring for Databases: DB2, Version 5.1.0, installed on the node.

For example, to create a DB2 instance for the db2inst1 server labeled db2inst1@catalina on the endpoint catalina in the policy region TMfDB2, use the following command:
```
wcdb2inst -l "db2inst1@catalina" -e catalina -i db2inst1 -p TMfDB2
```

Desktop:
1. Double-click the policy region to display the Policy Region dialog box.
2. Click Create and select **DB2InstanceManager** to display the Create DB2InstanceManager dialog box.

![Create DB2InstanceManager dialog box](image)

3. Select the host name of the computer on which the DB2 server exists from the **Endpoint** scrolling list.
4. Type the name of the DB2 server on the host in the **Instance Name** text box.
5. Type a unique label for the desktop icon representation of the instance name in the **Label** text box.
6. For Windows only. Type the **db2ecc** password used to log in to the operating system where the endpoint and DB2 server are located.
7. Click **Create & Close** to create the instance object and close the dialog box.

**Additional Information:** Right-click the new instance object and select **Check Status** to change the object to a normal state.

## Creating DB2 database objects

**Objective**
To create a DB2DatabaseManager object so that administrators can manage and run tasks on the DB2 database from the Tivoli desktop.

**Background information**
To access and manage a DB2 database from the Tivoli desktop, you must create a DB2DatabaseManager object. DB2DatabaseManager objects reference DB2 Extended Edition (EE) databases.

The database object must be installed on the host that is an endpoint in the Tivoli management region. When you create the database object, it becomes a database endpoint in the policy region. Subscribe the endpoint to profiles in profile managers in the same way as any other managed resource.

**Note:** To delete a DB2 database object, you must unsubscribe it from all profile managers.

Multiple DB2DatabaseManager objects can be created using Discover Databases. Refer to "Discovering DB2 databases" on page 41 for information.
After the database object is created, the DB2DatabaseManager icon is displayed on the desktop.

Note: Child objects are created on the same node as the parent objects.

Table 6. DB2DatabaseManager icon

<table>
<thead>
<tr>
<th>Icon</th>
<th>Managed resource object</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="DB2DatabaseManager icon" /></td>
<td>DB2DatabaseManager</td>
</tr>
</tbody>
</table>

Required authorization role
db2_dba

Before you begin
- Set up the DB2DatabaseManager managed resource type for the policy region. Refer to “Adding or removing managed resource types” on page 23 for information.
- Create a DB2InstanceManager object. Refer to “Creating DB2 instance objects” on page 26 for information.

When you finish
Set up the monitoring profiles to monitor DB2 databases. Refer to Chapter 8, “Customizing resource models” on page 91 for information.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the `wcdb2dbs` command to create a database object.

```
wcdb2dbs -l <database_label> -i <instance_label> -d <database> -p <policy_region>
```

where:
- `-l database_label`  Specifies a unique label for the DB2 database object icon representation.
- `-i instance_label`  Specifies the label of the server containing the DB2 partition.
- `-d database`  Specifies the name of the existing database on the specified server for which a database endpoint will be created.
- `-p policy_region`  Specifies the name of the policy region to which the DB2 database object will belong.

For example, to create a DB2 database object for a sample database labeled `sample@db2inst1`, on the server `db2inst1@catalina` in the policy region `westcoast`, enter the following command:

```
wcdb2dbs -l "sample@db2inst1" -i "db2inst1@catalina" -d sample -p westcoast
```

Desktop:
1. Double-click the policy region to display the Policy Region dialog box.
2. Click Create and select DB2DatabaseManager to display the Create DB2DatabaseManager dialog box.

3. Select the DB2 instance where the DB2 database exists from the DB2 Instance scrolling list.

4. Type the name of the DB2 database to manage in the Database Name text box, or click Discover to create multiple databases.

   Additional Information: If you choose to Discover databases, select the databases from the Discover databases dialog box, and click OK. Refer to “Discovering DB2 databases” on page 41 for more information.

5. Type a unique label for the icon representation of the DB2 database in the Label text box.

6. Click Create & Close to create the DB2 database object and close the dialog box.
Creating DB2 gateway objects

Objective
To create a DB2Gateway object so that administrators can manage and run tasks on the DB2 gateway from the Tivoli desktop.

Background information
A DB2 gateway object represents a DCS database connection to a host DB2 system through DB2 Connect Enterprise Edition (EE).

To access and manage a DB2 gateway from the Tivoli desktop, you must create a DB2Gateway object.

You must install the gateway object on the host that is an endpoint in the Tivoli management region. When you create the gateway object, it becomes a gateway endpoint in the policy region. Subscribe the endpoint to profiles in profile managers in the same way as any other managed resource.

Note: To delete a DB2 gateway object, you must unsubscribe it from all profile managers.

You can create multiple DB2Gateway objects by using Discover Databases. Refer to “Discovering DB2 databases” on page 41 for information.

After you create the gateway object, the DB2Gateway icon is displayed on the desktop.

Note: Child objects are created on the same node as the parent objects.

<table>
<thead>
<tr>
<th>Table 7. DB2Gateway icon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icon</td>
</tr>
<tr>
<td>![DB2Gateway icon]</td>
</tr>
</tbody>
</table>

Required authorization role
db2_dba

Before you begin
- Set up the DB2Gateway managed resource type for the policy region. Refer to “Adding or removing managed resource types” on page 23 for information.
- Create a DB2InstanceManager object. Refer to “Creating DB2 instance objects” on page 26 for information.

When you finish
Set up the monitoring profiles to monitor DB2 gateways. Refer to Chapter 8, “Customizing resource models” on page 91 for information.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the wcdb2gateway command to create a gateway object.

wcdb2gateway -l <gateway_label > -i <instance_label> -d <DCSdatabase> -p <policy_region>
where:

- **-l gateway_label**
  Specifies a unique label for the DB2 gateway object icon representation.

- **-i instance_label**
  Specifies the label of the server containing the DB2 partition.

- **-d DCSdatabase**
  Specifies the name of the existing database on the specified server for which a gateway endpoint is created.

- **-p policy_region**
  Specifies the name of the policy region to which the DB2 gateway object will belong.

For example, to create a DB2 gateway object for the database **sample**, on the server **db2inst1@catalina** in the policy region **westcoast**, enter the following command:

```
wcdb2gateway -l "sample@db2inst1" -i "db2inst1@catalina" -d sample -p westcoast
```

**Desktop:**

1. Double-click the policy region to display the **Policy Region** dialog box.
2. Click **Create** and select **DB2Gateway** to display the **Create DB2 Gateway** dialog box.

![Create DB2 Gateway dialog box](image)

**Figure 8. Create DB2 Gateway dialog box**

3. Select the DB2 instance where the DB2 gateway exists from the **DB2 Instance** scrolling list.
4. Type the name of the DB2 database to manage in the **DCS Database Name** text box, or click **Discover** to create multiple databases.

**Additional Information:** If you choose to Discover databases, select the databases from the **Discover DCS Databases** dialog box, and click **OK**. Refer to “Discovering DB2 databases” on page 41 for more information.
5. Type a unique label for the icon representation of the DB2 gateway in the **Label** text box.
6. Click **Create & Close** to create the DB2 gateway object and close the dialog box.

## Creating partition objects

**Objective**
To create a DB2PartitionManager object so that administrators can manage and run tasks on partitioned DB2 databases from the Tivoli desktop.

**Background information**
A **DB2PartitionManager object** represents the logical division of a DB2 Extended-Enterprise Edition (EEE) database on a given node. Each node can have multiple partitions if multiple databases are defined on the database instance.

**Note:** To delete a DB2 partition object, you must unsubscribe it from all profile managers.

**Table 8. DB2PartitionManager icon**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Managed resource object</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="DB2PartitionManager icon" /></td>
<td>DB2PartitionManager</td>
</tr>
</tbody>
</table>

**Required authorization role**
db2_dba

**Before you begin**
- Set up the DB2InstanceManager managed resource type for the policy region. Refer to “Adding or removing managed resource types” on page 23 for information.
- Create a DB2InstanceManager object. Refer to “Creating DB2 instance objects” on page 26 for information.
- Ensure that all partitions belonging to a partitioned database server reside in the same Tivoli management region.

**When you finish**
Set up monitoring profiles. Refer to Chapter 8, “Customizing resource models” on page 91 for information.
Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the wcdb2pt command to create a DB2PartitionManager object.

```bash
wcdb2pt -l <partition_label> -i <instance_label> -d <database> -n <node_number> -p <policy_region> [-u <password>]
```

where:

- **-l partition_label**
  Specifies a unique label for the DB2 partition object’s icon representation.

- **-i instance_label**
  Specifies the label of the server containing the DB2 partition.

- **-d database**
  Specifies the name of the existing partitioned database in the specified server where the object is created.

- **-n node_number**
  Specifies the node number of the existing partitioned database in the specified instance where the object is created.

- **-p policy_region**
  Specifies the name of the policy region to which the DB2 partition object will belong.

- **-u password**
  For Windows only. Specifies the db2ecc password used to log in to the operating system where the endpoint and DB2 server is located.

For example, to create a DB2 partition object for the partitioned database sample, with a node number of 0, in the instance labeled db2pel@catalina in the policy region westcoast, enter the following command:

```bash
wcdb2pt -l "sample_0@db2pel" -i "db2pel@catalina" -d sample -n 0 -p westcoast
```

Desktop:
1. Double-click the policy region to display the Policy Region dialog box.
2. Click Create and select DB2PartitionManager to display the Create DB2PartitionManager dialog box.
3. Select the DB2 instance that contains the database from the DB2 Instance list.
4. Select the node number that contains the database from the Node number list.
5. Type the name of the DB2 database in the Database Name text box.
   Additional Information: You can optionally click Discover to automatically create multiple database objects. Refer to “Discovering DB2 databases” on page 41 for information.
6. For Windows only: Type the db2eccl password used to log in to the operating system where the endpoint and DB2 server are located.
7. Type a unique label for the icon representation of the object in the Label text box.
8. Click Create & Close to create the DB2 partition object and close the dialog box.

Creating partition group objects

Objective
To create a DB2PartitionGroupManager object so that administrators can manage and run tasks on DB2 partitioned groups from the Tivoli desktop.

Background information
A DB2PartitionGroupManager object is an IBM Tivoli Monitoring for Databases: DB2 object that represents a collection of DB2 partitions. It does not represent a DB2 object and has no relationship to a DB2 node group. The partition group object enables you to run monitors and tasks from multiple partitions, regardless of where those partitions reside.

Note: To delete a DB2 partition group object, you must unsubscribe it from all profile managers.

After the partition group object is created, the DB2PartitionGroupManager icon is displayed on the desktop.
**Table 9. DB2PartitionGroupManager icon**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Managed resource object</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>DB2PartitionGroupManager</td>
</tr>
</tbody>
</table>

**Required authorization role**

db2_dba

**Before you begin**

- Create a parallel DB2InstanceManager object in your management region. Refer to “Creating DB2 instance objects” on page 26 for information.
- Create DB2 partition objects before creating a DB2 partition group object so that the DB2 partition group object will not be empty. Refer to “Creating partition objects” on page 33 for information.

**When you finish**

Set up monitoring profiles to begin monitoring DB2 database group partitions. Refer to Chapter 8, “Customizing resource models” on page 91 for information.

**Procedure**

You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the wcdb2pg command to create a DB2 partition group object.

```
wcdb2pg -l <partition_label> -i <instance_label> -d <database> -n <node_number> -p <policy_region>
```

where:

- `-l partition_label` Specifies a unique label for the DB2 partition group object icon representation.
- `-i instance_label` Specifies the label of the server containing the DB2 group partition.
- `-d database` Specifies the name of the existing partitioned database in the specified server where the object is created.
- `-n node_number` Specifies the node numbers of the existing partitioned database in the specified instance where the object is created.
- `-p policy_region` Specifies the name of the policy region to which the DB2 partition group object will belong.

For example, to create a DB2 partition group object for a partition group labeled `sample_grp@db2pel`, with the node numbers 0, 1, and 2, in the instance labeled `db2pel@catalina`, in the partitioned database `sample` in the policy region `westcoast`, enter the following command:

```
wcdb2pg -l "sample_grp@db2pel" -i "db2pel@catalina" -d sample -n "0 1 2" -p westcoast
```
Desktop:
1. Double-click the policy region icon to display the Policy Region dialog box.
2. Click Create and select DB2PartitionGroup to display the Create DB2PartitionGroupManager dialog box.

![Create DB2PartitionGroupManager dialog box](image)

3. Select the name of the partitioned database server from the DB2 Instance list.
4. Select the partitions for the group from the Partition member list.
5. Type a unique name for the icon representation of the partition group object in the Label text box.
6. Click Create & Close to create the DB2 partition group object and close the dialog box.

Creating DB2 Discovery objects

Objective
To create a DB2Discovery object so that multiple DB2InstanceManager objects can be created automatically. This enables administrators to create instances for all DB2 servers simultaneously.

Background information
Discovery searches specified endpoints for DB2 instances that are not already being managed. When an instance is encountered, Discovery automatically creates a DB2InstanceManager object. Discovery runs from within the policy region where the instance objects are added.

A default DB2Discovery object is automatically stored in the DB2Manager-DefaultPolicyRegion upon installation of the IBM Tivoli Monitoring for Databases: DB2 product. Therefore, the DB2Discovery object must be created in the specific policy region where servers are to be discovered.

Note: To delete a DB2Discovery object, you must unsubscribe it from all profile managers.

After the Discovery object is created, the DB2Discovery icon is displayed on the desktop.
<table>
<thead>
<tr>
<th>Icon</th>
<th>Managed resource object</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="DB2Discovery Icon" /></td>
<td>DB2Discovery</td>
</tr>
</tbody>
</table>

### Required authorization role

**db2_dba**

### Before you begin

Set up the DB2Discovery managed resource type for the policy region. Refer to "Adding or removing managed resource types" on page 23 for information.

### When you finish

Discover DB2 instances. Refer to "Discovering DB2 instances" on page 39 for information.

### Procedure

You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the `wcdb2dsc` command to create a DB2Discovery object.

```
wcdb2dsc -l <Label> -p <policy_region> [-u <db2ecc Password> -m <proxy node>]
```

where:

- **-l Label**
  Specifies a unique label for the DB2Discovery object icon representation.

- **-p policy_region**
  Specifies the name of the policy region where the DB2Discovery object will belong.

- **-u db2ecc Password**
  For Windows only. Specifies the `db2ecc` password used to log in to the operating system where the endpoint and DB2 server are located.

- **-m proxy node**
  This optional argument defines the managed node where you want to store the instance objects created by DB2Discovery. If you do not specify this option, DB2Discovery stores the instance objects on the gateway. In order to store the instance on a node, you must have IBM Tivoli Monitoring Component Services, Version 5.1.0 and IBM Tivoli Monitoring for Databases: DB2, Version 5.1.0, installed on the node.

**Note:** Because **proxy nodes** require the use of the `oserv`, they must remain on managed nodes at the same level as the Tivoli management region server. Do not migrate existing proxy nodes to endpoint clients.

**Desktop:**

1. Double-click the policy region to display the Policy Region dialog box.
2. Click Create and select DB2Discovery to display the Create a new DB2Discovery Object dialog box.
3. Type a unique label for the icon representation of the DB2Discovery object in the new DB2Discovery name text box.

4. For Windows only. Type the default db2ecc password defined for the operating system in the Default db2ecc password text box.

5. Click Execute and Close to create the DB2Discovery object and close the dialog box.

Discovering DB2 instances

Objective
To automatically create multiple DB2 instance objects on the Tivoli desktop.

Background information
Discovery searches for DB2 instances that reside on endpoints. If a DB2 instance is found that is not already being managed, a DB2InstanceManager object is automatically created on the Tivoli desktop.

Required authorization role
db2_user (to edit Discovery) or db2_dba (to run Discovery)

Before you begin
Create a DB2Discovery object in the policy region. Refer to “Creating DB2 Discovery objects” on page 37 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.

Desktop:
1. Double-click the policy region to display the Policy Region dialog box.
2. Right-click the discovery object icon.
3. Select Edit Discovery Endpoints to display the Edit Discovery Endpoints dialog box.
4. Select the gateway on which you want to discover DB2 instances from the Available Discovery Gateways scrolling list. If only one gateway is displayed in the list, that gateway is the default gateway.

5. Select the endpoints on which you want to discover DB2 instances from the Available Discovery Endpoints scrolling list.

6. Click the left-arrow button to move the endpoints to the Current Discovery Endpoints scrolling list.

7. Select the object storage point based on the following descriptions:

   - **Create on gateway** to store the instance objects on the gateway.
   - **Create on specific managed node** to store the instance objects on the managed node selected from the Storage Node scrolling list.

   **Note:** In order to store the instance on a node, you must have Tivoli Application Services and IBM Tivoli Monitoring for Databases: DB2, Version 5.1.0, installed on the node.

8. **For Windows only:** Type the **db2ecc** password used to log in to the operating system.
9. Click Change & Close to save your changes and return to the policy region.
10. Right-click the discovery object icon.
11. Select Run Discovery to begin the discovery process. While the discovery function is running, the DB2 Instance Discovery dialog box displays the progress of the discovery.

12. Right-click the newly created instance object, and select Check Status to change the object to a normal state.

Discovering DB2 databases

Objective
To automatically select the databases IBM Tivoli Monitoring for Databases: DB2 manages. Discover Databases enables you to create multiple DB2DatabaseManager objects in a policy region on the Tivoli desktop from a single operation.

Background information
Discover Databases searches for DB2 databases in your local Tivoli management region. If Discover Databases finds a DB2 database that is not already being managed, a DB2DatabaseManager object is automatically created on the Tivoli desktop.

Note: Discover Databases searches either managed or unmanaged databases on local instances only.

Required authorization role
db2_dba

Before you begin
- Discover Databases does not work with parallel (DB2 Extended-Enterprise Edition) instances.
- Set the DB2DatabaseManager and DB2InstanceManager managed resource types for the policy region. Refer to “Adding or removing managed resource types” on page 23 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.

Desktop:
1. Double-click the policy region to display the **Policy Region** dialog box.
2. Right-click the instance object icon.
3. Select **Discover Databases** to display the **Discover Databases** dialog box.
4. Select a database from the **Available Databases** scrolling list.
5. Click the left-arrow button to move the database to the **Databases Managed by Tivoli Manager for DB2** scrolling list.

![Discover Databases dialog box](image)

6. Click **Add & Close** to add the DB2 database object to the policy region and close the **Discover Databases** dialog box.

---

**Adding or removing partition group members**

**Objective**
To add or remove the members of database partitions and enable users to limit or extend the number of partitions to monitor as a group.

**Background information**
Changing the members that belong to a partition group enables you to quickly start or end the monitoring or the running of tasks on a database partition.

**Note:** In order for the monitoring changes to take effect, you must redistribute the monitors assigned to the partition group.

**Required authorization role**
db2_dba

**Before you begin**
Set a partition group. Refer to “Creating partition group objects” on page 35 for information.

**When you finish**
None
**Procedure**

You can perform this procedure from the Tivoli desktop only.

**Desktop:**

1. Double-click the policy region to display the **Policy Region** dialog box.
2. Select the DB2 partition group object icon.
3. Right-click and select **Change** to display the **Change DB2PartitionGroup Members** dialog box.
4. Select the partitions to add to the partition group from the **Available Partitions** scrolling list.
5. Click the left-arrow button.
6. **Optional:** Select the partitions to remove from **Existing Members** scrolling list, and click the right-arrow button.
7. Click **OK** to accept changes.

---

### Subscribing to notice groups

**Objective**

To assign which administrators will receive messages by adding them to notice groups.

**Background information**

When the Tivoli Management Framework product is installed, root administrator is automatically subscribed to several notice groups specific to the Tivoli management environment. The administrators must also be subscribed to the following DB2-specific notice groups.

- The **DB2Manager Tmw2k** notice group contains messages that are generated when a threshold is reached by an IBM Tivoli Monitoring for Databases: DB2 Distributed Monitoring probe.
- The **DB2Manager ECC Log** notice groups contain messages that are generated when IBM Tivoli Monitoring for Databases: DB2 objects are created or modified.

For additional information about notice group subscriptions, see the *Tivoli Management Framework User’s Guide*.

**Required authorization role**

senior

**Before you begin**

None

**When you finish**

None

**Procedure**

You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the `wsetadmin` command with the `-n` option to subscribe administrators to notice groups from the command line. Use the `-N` option to unsubscribe administrators.

The following example subscribes administrator Steve Callahan to the **DB2Manager Tmw2k** notice group:

```
wsetadmin -n "DB2Manager Tmw2k" "Steve Callahan"
```
Desktop:
1. Double-click the Administrators icon from the Tivoli desktop.
2. Right-click the administrator icon.
3. Select Edit Notice Group Subscriptions to display the Set Notice Groups dialog box.

![Set Notice Groups dialog box](image)

Additional Information: The Current Notice Groups list displays the notice groups to which the administrator is currently subscribed. The Available Notice Groups list displays the notice groups to which the administrator can subscribe.

4. Select one or more notice groups from the Available Notice Groups list, and click the left-arrow button to move the selection to the Current Notice Groups list.

Additional Information: Double-clicking the selection will also move the notice group from one list to the other.

5. Optional: Select one or more of the notice groups in the Current Notice Groups list, and click the right-arrow button to remove the notice group.

6. Click Change & Close to save the changes and close the Set Notice Groups dialog box.
Chapter 4. Setting up IBM Tivoli Monitoring

This chapter provides a suggested order and the required procedures for setting up IBM Tivoli Monitoring.

Suggested guidelines for setting up your resource models

Table 11 provides guidelines for the order in which you set up monitoring information and the required procedures for setting up IBM Tivoli Monitoring. When you become more familiar with IBM Tivoli Monitoring, you will discover additional ways of working with resource models that meet the needs of your environment.

**Note:** For additional or advanced information on IBM Tivoli Monitoring in the Tivoli environment, see the IBM Tivoli Monitoring User’s Guide.

<table>
<thead>
<tr>
<th>Goal</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Set up profile managers and profiles to organize your resource models. This makes the distribution of resource models more efficient. You might need to set up multiple profile managers and profiles within the profile managers to meet the needs of your environment.</td>
<td>“Creating profile managers and profiles” on page 46</td>
</tr>
<tr>
<td>2. Subscribe endpoints to the profile manager. This determines which resources receive a profile when the profile is distributed. Profiles contain resource models to run against the endpoints (see Step 3).</td>
<td>“Subscribing resources to profile managers” on page 48</td>
</tr>
<tr>
<td>3. Populate each profile manager/profile with resource models for the resource that you want to monitor. Include resource models with the default values or customize the default values to meet the needs of your environment.</td>
<td>“Adding default resource models to profiles” on page 49</td>
</tr>
<tr>
<td>5. For each profile in your profile manager, do the following: • Specify the subscribers that you want to distribute the monitoring profile to and distribute the profile. • Specify the subscribers that you want to distribute the monitoring profile to while using MDist2. • Determine if you must rerun any failed distributions.</td>
<td>“Distributing profiles using MDist2” on page 52, “Rerunning failed profile distributions” on page 54</td>
</tr>
</tbody>
</table>
Table 11. Monitoring resources and applications guidelines (continued)

<table>
<thead>
<tr>
<th>Goal</th>
<th>See</th>
</tr>
</thead>
</table>
| 6. To maintain your profiles and resource models, do the following:  
• Determine if you want to clear the recovery actions of an event.  
• Determine if you want to reinstate the recovery actions of an event.  
• Specify if you want to manage profiles and resource models after they are distributed to endpoints.  
• Specify if you want to manage IBM Tivoli Monitoring on gateways.  
• Determine which resource models were distributed to an endpoint.  
• Determine the specific resource models that are running on each endpoint.  
• Use the IBM Tivoli Monitoring Web Health Console, Tivoli Enterprise Console, Tivoli Enterprise Data Warehouse, or Tivoli Business Systems Manager to view the information being monitored by your resource models. | “Adding or removing built-in actions” on page 95  
“Managing profiles and resource models at endpoints” on page 110  
“Managing IBM Tivoli Monitoring gateways” on page 111  
“Determining which resource models have been distributed to endpoints” on page 112  
“Determining which resource models are running on endpoints” on page 112 |

Creating profile managers and profiles

**Objective**
To create profile managers and profiles so you can organize and distribute your resource models more efficiently.

**Background information**
A *monitoring profile* is a group of defined resource models that you can distribute (download or push) to a subscribed (marked to receive) managed resource in a profile manager.

In addition to activating default resource models, profile managers and profiles can group resources to enable simultaneous monitoring of multiple resources. You can hierarchically organized the profile managers. The profile manager is the top level of the organization and contains specific profiles that contain specific resource models. Instances and databases are then subscribed to the profile managers, which enable the monitoring information to be channeled to those resources.

You can create an unlimited number of profile managers, but it is recommended that they reflect some logical or functional grouping of database resources or the business’s organizational structure. For example, profile managers could be labeled Sales and Marketing, Administration and Finance, and Operations to reflect a business organization.

You can create a *dataless* profile manager that distributes profiles without regard to the existence of a database on its subscribers. A dataless profile manager distributes to the system files on endpoints and other managed resources that have a profile database. However, it bypasses the profile database on these systems.
Therefore, profiles are available only with database profile managers. A profile manager (database or dataless) cannot subscribe to a dataless profile manager. Likewise, dataless profile managers cannot distribute to other profile managers because they require profiles to be written to a profile database.

**Required authorization role**

admin

**Before you begin**

Set up the Tmw2kProfile managed resource types. Refer to the IBM Tivoli Monitoring User’s Guide for information.

**When you finish**

Add resource models to the profile. See “Adding default resource models to profiles” on page 49 or “Adding custom resource models to profiles” on page 92.

**Procedure**

You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:**

1. Use the wcrtprfmgr command to create a profile manager. For example, to create a profile manager called ProfMgr2 in the TestRegion policy region, enter the following command:

   wcrtprfmgr @PolicyRegion:TestRegion ProfMgr2

2. Optional: Use the wsetpm command to make the policy manager operate in dataless mode. For example, to make the profile manager ProfMgr2 dataless, enter the following command:

   wsetpm -d @ProfileManager:ProfMgr2

   where:

   -d Specifies that the profile manager operates in a dataless mode.

3. Use the wcrtprf command to create a profile. For example, to create a profile called MarketingProf2 in the ProfMgr2 profile manager, enter the following command:

   wcrtprf @ProfileManager:ProfMgr2 MarketingProfile MarketingProf2

   For additional information about these commands, see the Tivoli Management Framework Reference Manual.

**Desktop:**

1. Open the Policy Region dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.

2. Click Create and select Profile Manager to open the Create Profile Manager dialog box.

3. Type a unique name in the Name/Icon Label text box.

4. Optional: Select the Dataless Endpoint Mode check box to create the profile manager in dataless mode.

5. Click Create & Close to close the Create Profile Manager dialog box.

   Additional Information: In the following example, the policy region contains two profile manager icons, Manufacturing and Operations. The Manufacturing
profile manager is defined as dataless (the feathers under the Manufacturing profile manager indicates that it is a dataless profile manager).

6. Double-click the profile manager icon to open the Profile Manager dialog box.
7. Click Create and select Profile to open the Create Profile dialog box.
8. Type a unique name for the profile in the Name/Icon text box.
9. Select the Tmw2kProfile resource from the Type list.
10. Click Create & Close. An icon for the new profile is displayed in the Profiles area of the Profile Manager dialog box.

---

Subscribing resources to profile managers

**Objective**
To add managed resources to a monitoring profile so administrators can define which resource to monitor.

**Background information**
Subscribing resources to a profile manager determines which resources receive a profile when the profile is distributed. IBM Tivoli Monitoring uses the list of subscribers to determine which systems are monitored. To add a subscriber to a distributed monitoring profile, you must add the subscriber to the profile manager.

**Note:** Resources can also be subscribed to profiles from the IBM Tivoli Monitoring Profile dialog. See “Distributing profiles from the desktop” on page 50.

**Required authorization role**
admin

**Before you begin**
Create a monitoring profile with monitoring sources. See “Creating profile managers and profiles” on page 46 for information.

**When you finish**
Distribute the monitoring profile to the subscribed resource. See “Distributing profiles from the desktop” on page 50 for information.

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.
Command line: Use the `wsub` command to add subscribers to the profile manager. For example, to add a database called `Sample@bburns` as a subscriber to the profile manager `DatabaseMonitors`, enter the following command:

```
wsub @ProfileManager:DatabaseMonitors @PolicyRegionName:Sample@bburns
```

For additional information about these commands, see the *Tivoli Management Framework Reference Manual*.

Desktop:
1. Open the Policy Region dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
2. Double-click a profile manager icon to open the Profile Manager dialog box.
3. Click Profile Manager and select Subscribers to open the Subscribers dialog box.
4. Select the subscribers to receive the profile distribution from the Available to become Subscribers scrolling list.
5. Click the left-arrow button to move the selected subscribers to the Current Subscribers scrolling list.
6. Click Set Subscriptions & Close to add the subscribers. Subscribers are displayed in the Subscribers field of the Profile Manager dialog box.

### Adding default resource models to profiles

**Objective**
To add a resource model to a profile using its default values so you can run the resource model immediately.

**Background information**
A resource model captures and returns information about a resource or application. You set up resource models and distribute them to endpoints. Each resource model can monitor multiple resources. Choose the resource models to add to a profile based on the resources you want to monitor. Adding one or more of these resource models to a profile allows you to begin monitoring resources immediately.

We recommend that you put all of the resource models that you are going to distribute to the same endpoint in a single profile because the distribution occurs on a per-profile basis.

You can also use resource models that you have customized by customizing an existing resource model, or adding a new one and customizing it. See [Chapter 8, “Customizing resource models” on page 91](#) for information about customizing resource models.

**Required authorization role**
admin

**Before you begin**
- Create a profile manager and profile. See [“Creating profile managers and profiles” on page 46](#) for information.
- Add subscribers to a profile manager. See [“Subscribing resources to profile managers” on page 48](#) for information.
When you finish
Distribute the profile. See “Distributing profiles from the desktop”.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the `wdmeditprf` command to add a customized resource model to a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.
   c. Double-click the profile manager icon to open the profile manager.
   d. Double-click the profile icon to which you want to add a customized resource model.
2. Click Add With Defaults to open the Add Resource Models to Profile dialog box.
3. Select the resource model category from the Category drop-down list.
4. Select the resource model you want from the Resource Model drop-down list.
5. Click Add & Close. The resource model is added to the IBM Tivoli Monitoring Profile.

Distributing profiles from the desktop

Objective
To set distribution options for a profile so you can distribute profiles to specified subscribers.

Background information
You can distribute profiles to the following groups:

Next level of subscribers
Distributes the profile only to the subscribers named in the Distribute to These Subscribers: scrolling list of the Distribute Profile dialog box. This option does not distribute to subscribers at lower levels of the hierarchy. Perform the distribution process from profile managers at more than one level to reach all the profile endpoints if a profile manager with subscribers resides at the next lower level.

All levels of subscribers
Distributes the profile to all subscribers in the hierarchy. Consider the following example. You have a profile in which a dataless profile manager is subscribed to a profile manager, and the dataless profile manager has a subscribed endpoint. If you distribute to the next level of subscribers, the profile manager distributes the profile only to the dataless profile manager. If you distribute to all levels of subscribers, the profile manager distributes the profile to the dataless profile manager and to the endpoint.
Select this option if you want to distribute a profile in which your resource is the only subscriber.

**Required authorization role**

admin

**Before you begin**

- Create a profile manager and profile. See "Creating profile managers and profiles" on page 46 for information.
- Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 48 for information.
- Add a resource model to a profile. See "Adding default resource models to profiles" on page 49 and "Adding custom resource models to profiles" on page 92 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

**When you finish**

None.

**Procedure**

You can perform this procedure from the Tivoli desktop only.

**Desktop:**

1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   - a. Open the Tivoli desktop.
   - b. Double-click the policy region icon to open the policy region.
   - c. Double-click the profile manager icon you want to open the Profile Manager dialog box.
   - d. Double-click the profile you want to distribute to open the IBM Tivoli Monitoring Profile dialog box.

2. Click Profile and select Distribute. The Distribute Profile dialog box opens.

3. Select one of the Distribute To options based on the following descriptions:

   **Next level of subscribers**
   - Distributes the profile only to the subscribers named in the Distribute to These Subscribers: scrolling list of the Distribute Profile dialog box. This selection does not distribute to subscribers at lower levels of the hierarchy. Perform the distribution process from profile managers at more than one level to reach all the profile endpoints if a profile manager with subscribers resides at the next lower level.

   **All levels of subscribers**
   - Distributes the profile to all subscribers in the hierarchy. Consider the following example. You have a profile in which a dataless profile manager is subscribed to a profile manager, and the dataless profile manager has a subscribed endpoint. If you distribute to the next level of subscribers, the profile manager distributes the profile only to the dataless profile manager. If you distribute to all levels of subscribers, the profile manager distributes the profile to the dataless profile manager and to the endpoint.
   
   Select this option if you want to distribute a profile in which your resource is the only subscriber.

4. Select Make each subscriber's profile an EXACT COPY of this profile from the Distribution Will options.
**Additional Information:** This option overwrites the subscriber’s profile with an exact copy of the profile that you are distributing.

**Note:** Always select the **Make each subscriber’s profile an EXACT COPY of this profile** option when you distribute a profile to a Tivoli Enterprise Console endpoint. Do not select the **Preserve modifications in subscriber’s copies of the profile** option.

5. Select the subscribers to receive the profile using the following steps:
   a. Select the list of subscribers that you want to distribute the profile to from the **Do Not Distribute to These Subscribers** scrolling list.
   b. Click the left arrow to move the subscribers to the **Distribute to These Subscribers** scrolling list.

   **Note:** Make sure that each subscriber in the **Distribute to These Subscribers** scrolling list is either a profile manager or a supported Tivoli management agent endpoint. IBM Tivoli Monitoring does not support other types of endpoints.

6. Click one of the following:

   **Distribute & Close**
   Distributes the profile immediately, closes the **Distribute Profile** dialog box, saves the settings you made, and returns to the **IBM Tivoli Monitoring Profile** dialog box.

   **Distribute**
   Distributes the profile immediately, saves the settings you made, and leaves the **Distribute Profile** dialog box open.

   **Schedule**
   Schedules the distribution of the profile with the Tivoli Scheduler. For details about using the Tivoli Scheduler, refer to the *Tivoli Management Framework User’s Guide*.

---

**Distributing profiles using MDist2**

**Objective**
To circulate copies of the monitoring profile to subscribers while using MDist2 so that administrators and users can activate the monitoring process.

**Background information**
IBM Tivoli Monitoring uses Multiplexed Distribution (MDist2) to perform asynchronous profile data transfers through a hierarchy of repeaters. MDist2 returns a sequence of responses containing the distribution status from each endpoint to the application initiating the distribution. These responses are sent back to IBM Tivoli Monitoring in a log file, on the MDist2 command line, or through the MDist2 GUI.

IBM Tivoli Monitoring uses the following MDist2 functions:

**Asynchronous delivery**
IBM Tivoli Monitoring submits a distribution request and immediately receives a distribution identifier and confirmation that the distribution is in progress. MDist2 uses the callback function to send the final distribution status for each endpoint when it completes each endpoint distribution instead of waiting until all endpoints are distributed.
Assured delivery
Assures that distributed profiles are delivered to the endpoints when there are network interruptions, computer shutdowns, or disconnected endpoints. Assured delivery tries to reestablish the connections until it is either successful or the distribution time expires. The distribution begins at the point where it was interrupted.

Check-point and restart
Assures that an interrupted data stream resumes from the last successful checkpoint. You do not have to resend all the IBM Tivoli Monitoring Profile data when the distribution resumes, but only the data that was not sent when the interruption occurred.

Data depoting
Stores segments of the profile at a depot close to the endpoint so the endpoints can retrieve the data from the depot instead of from the source host. This reduces network traffic and speeds up the distribution.

Required authorization role
admin

Before you begin

- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When you finish
None

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command line: Use the wdmdistrib command to distribute the profile to the subscribers of the profile manager. For example, to distribute the default profile DBManager-DBMSMonProfile to an instance endpoint labeled inst1@bburns, enter the following command:

```
wdmdistrib @Tmw2kProfile:DBManager-DBMSMonProfile \n@InstanceManager:inst1@bburns
```

This command updates subscriber databases and configuration files. If no subscriber is specified, wdistrib updates all subscribers. The syntax varies depending on the version of Tivoli management region that you installed. Refer to the Tivoli Management Framework Reference Manual for more information about the wdistrib command.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.
c. Double-click the profile manager icon you want to open the Profile Manager dialog box.
d. Double-click the profile you want to distribute to open the IBM Tivoli Monitoring Profile dialog box.

2. Click Profile and select Distribute to display the Distribute Profile dialog box.

3. Select one of the Distribute To options based on the following descriptions:
   - **Next Level of Subscribers** Distributes the profile only to the subscribers named in the Distribute to These Subscribers: scrolling list of the Distribute Profile dialog box. This selection does not distribute to subscribers at lower levels of the hierarchy. Perform the distribution process from profile managers at more than one level to reach all the profile endpoints if a profile manager with subscribers resides at the next lower level.
   - **All Levels of Subscribers** Distributes the profile to all subscribers in the hierarchy. Consider the following example. You have a profile in which a dataless profile manager is subscribed to a profile manager, and the dataless profile manager has a subscribed endpoint. If you distribute to the next level of subscribers, the profile manager distributes the profile only to the dataless profile manager. If you distribute to all levels of subscribers, the profile manager distributes the profile to the dataless profile manager and to the endpoint.
     Select this option if you want to distribute a profile in which your resource is the only subscriber.

4. Select one of the Distribute Will options based on the following descriptions:
   - **Preserve modifications in subscribers’ copy of the profile** retains changes to existing monitors in each copy of the profile. If you edit the configuration of a monitor in the subscriber’s copy, those changes are written to every copy of that profile.
   - **Make subscribers’ profile an EXACT COPY of this profile** overwrites the subscriber’s profile with an exact copy of the profile being distributed.

5. Verify that the Distribute To These Subscribers list includes only those subscribers to receive the profile. Use the left and right arrows to move selected subscribers between lists.

6. Click Distribute & Close to begin the distribution and close the Distribute Profile dialog box.

7. **Optional**: Schedule when the distribution will occur by completing the following steps:
   a. Click Schedule to display the Add Scheduled Job dialog box.
   b. Set the job options as needed or See “Customizing the scheduling monitoring period” on page 106 for more information.
   c. Click Schedule Job & Close to set the schedule.

8. Click Distribute & Close to begin the distribution and close the Distribute Profile dialog box.

9. Click Profile and select Close to close the IBM Tivoli Monitoring Profile dialog box.

---

**Rerunning failed profile distributions**

**Objective**
To verify that the distribution to an endpoint failed so that you can rerun the distribution for the failed endpoint.
Background information
When a distribution fails, IBM Tivoli Monitoring creates a profile manager that contains the endpoint subscribers that failed.

When you successfully redistribute profiles, the software deletes the profile manager that it created for the failed distribution. A wholly or partially unsuccessful redistribution retains the profile manager containing only the subscribers that were unsuccessful in the redistribution. Continue the process of correcting the errors and retrying the distribution until the profile is successfully distributed to all endpoints.

Required authorization role
admin

Before you begin
None

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.
2. Click View and select Refresh from the Policy Region dialog box to see the new profile managers.
3. Review the new profile manager names to determine and correct the cause of the failure. The following profile manager names are derived from a failed distribution:
   - The failed distribution creates the following profile manager name due to a Bad.Interpreter error:
     OriginalProfileName_PushFailed_Bad.Interpreter
     where:
     OriginalProfileName
     The name of the profile that you were distributing when the error occurred.
     The AMW089E error message is displayed at this point, indicating that the resource model type is not compatible with the endpoint operating system. For example, you might have distributed a Windows resource model to a UNIX endpoint.
   - The failed distribution creates the following profile manager name due to any other error:
     OriginalProfileName_Distribution_Failed
     where:
     OriginalProfileName
     The name of the profile that you were distributing when the error occurred.
4. Subscribe the profile managers that contain the failed endpoints to the profile manager that contained the original profile.

   **Note:** This can be done only if the profile manager used for the original distribution was not a dataless endpoint.

5. Distribute the original profile to the failed endpoints by selecting these profile managers as the target for the distribution. You can also edit the profile managers to delete an endpoint from a group of failed endpoints before retrying the distribution.
Chapter 5. Working with IBM Tivoli Monitoring for Databases: DB2

This chapter describes how to operate and use IBM Tivoli Monitoring for Databases: DB2.

Table 12 provides an overview of the topics covered in this chapter.

Table 12. Working with IBM Tivoli Monitoring for Databases: DB2 guidelines

<table>
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<tr>
<th>Goal</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
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<td>1. Open a database server endpoint to view the distributed monitoring profiles and database endpoints.</td>
<td>“Opening a DB2 Instance endpoint” on page 57</td>
</tr>
<tr>
<td>2. View the current values of the managed resource properties (database servers, databases, partitions, and partition members) or change the label attribute.</td>
<td>“Viewing DB2 object properties” on page 58</td>
</tr>
<tr>
<td>3. Check the state of a server to determine if it is still up and running or if it has shut down.</td>
<td>“Updating the state of a server” on page 61</td>
</tr>
<tr>
<td>4. Start up or shut down a DB2 database server, partition, or partition group using the IBM Tivoli Monitoring for Databases: DB2 software.</td>
<td>“Starting and stopping a database instance, partition server, or partition group node” on page 62</td>
</tr>
<tr>
<td>5. View multiple database endpoints and distributed profiles for a DB2 database server.</td>
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</tr>
<tr>
<td>6. Test the connection between DB2 servers and clients.</td>
<td>“Showing client connection information” on page 64</td>
</tr>
<tr>
<td>7. Open the DB2 command line processor from the Tivoli desktop to issue DB2 commands on Tivoli managed resources.</td>
<td>“Running DB2 commands from the command line processor” on page 66</td>
</tr>
<tr>
<td>8. Launch the DB2 Java control center from the Tivoli desktop so that you can access and modify any DB2 objects that are associated with Tivoli objects.</td>
<td>“Launching the DB2 Java Control Center” on page 67</td>
</tr>
</tbody>
</table>

Opening a DB2 Instance endpoint

Objective
To display the distributed monitoring profiles and database endpoints for an instance of the DB2 server so that you can view multiple databases and profiles within a single dialog box.

Background information
When you open the DB2 Instance endpoint (from this point forward referred to as an instance), its managed databases and resource models are represented by the instance dialog box.
In addition to the icon representing the managed databases and resource models, this dialog box displays the following information:

- DB2InstanceManager object label displayed in the instance dialog box title bar in the `servername_hostname` format
- Databases on the server in `databasename@servername@hostname` format
- Profiles that have been distributed to the databases in `profilename@servername@hostname` format

**Required authorization role**
db2_user

**Before you begin**
Create a DB2InstanceManager object. Refer to "Creating DB2 instance objects" on page 26 for information.

**When you finish**
None

**Procedure**
You can perform this procedure from the Tivoli desktop only.
1. Double-click the policy region that contains the DB2InstanceManager endpoint.
2. Right-click the **DB2InstanceManager** endpoint icon.
3. Select **Open** to display the instance collection dialog box.

---

### Viewing DB2 object properties

**Objective**
To display the values of the managed resource properties so that you can view a snapshot of the instance and update the label attribute, if needed.

**Background information**
Viewing DB2 object properties (instances, databases, partitions, and partition group members), enables you to quickly review system resources. Table 13 on page 59 and Table 14 on page 59 list the specific information you can view for each object type.

The DB2 instance properties dialog box contains information about the location and configuration of the DB2 instance.
### Table 13. DB2 Instance properties

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Name of the endpoint where the instance is defined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance Name</td>
<td>Name of the DB2 instance.</td>
</tr>
</tbody>
</table>
| Node type              | DB2 instance type. This parameter can have one of these values:  
|                        | • 1 - Database server with local and remote clients.  
|                        | • 2 - Partitioned database server with local and remote clients. |
| Default DB Path        | Default file path used to create a database.        |
| Database Manager Configuration Release Level | Informational parameter that identifies the release level of the configuration information. |
| CPU Speed (millisec/instruction) | Estimate of the machine speed of the managed node. The DB2 SQL optimizer uses this value to determine access paths. DB2 automatically sets this configurable parameter during installation. |
| Default Client Communication | Communication protocols that client applications on this instance can use for remote connections. This parameter relates only to Default Client Communication (DCE). |
| IPX Socket             | Well-known socket number that represents the instance connection end point for a DB2 server. This parameter relates only to instances that are configured to accept IPX/SPX connections. |
| Service Name           | Name of the TCP/IP port that the server uses to wait for communications from remote client nodes. This parameter relates only to servers that are configured to accept TCP/IP connections. |

The DB2 database properties dialog box contains information about the location and state of the database.

### Table 14. DB2 Database properties

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Name of the endpoint where the database is defined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance Name</td>
<td>Name of the DB2 instance.</td>
</tr>
<tr>
<td>Database Name</td>
<td>Name of the DB2 database.</td>
</tr>
<tr>
<td>Database is Consistent</td>
<td>No in this field indicates that the database has transactions that are not committed or rolled back, which indicates an inconsistent database.</td>
</tr>
<tr>
<td>Backup Pending</td>
<td>Yes in this field indicates that you must perform a full backup of the database before you can access it.</td>
</tr>
</tbody>
</table>
Table 14. DB2 Database properties (continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollforward Pending</td>
<td>If you set this parameter to DATABASE, you must perform a roll-forward recovery procedure before you can access the database. If you set this parameter to TABLESPACE, you must roll forward one or more tablespaces before you can access the database.</td>
</tr>
<tr>
<td>Database Territory</td>
<td>This shows the territory used by DB2 to create the database and to determine the country parameter values.</td>
</tr>
<tr>
<td>Database Code Set</td>
<td>This shows the code set used by DB2 to create the database and to determine codepage parameter values.</td>
</tr>
<tr>
<td>Service Name</td>
<td>Name of the TCP/IP port that the server uses to wait for communications from remote client nodes. This parameter relates only to servers that are configured to accept TCP/IP connections.</td>
</tr>
</tbody>
</table>

The DB2PartitionManager object overrides the DB2DatabaseManager object properties to display these properties for each DB2 partition or each member of a partition group.

- Endpoint
- Instance name
- Database name
- Node number
- Database is consistent
- Backup pending
- Rollforward pending
- Database territory
- Database code set

**Required authorization role**

`db2_user`

**Before you begin**

Create either a DB2InstanceManager, DB2DatabaseManager, DB2PartitionManager, or DB2PartitionGroupManager object. Refer to Chapter 3, “Setting up IBM Tivoli Monitoring for Databases: DB2” on page 15 for information.

**When you finish**

None

**Procedure**

You can perform this procedure from the Tivoli desktop only.

1. Double-click the policy region to display the Policy Region dialog box.
2. Right-click the object icon.
3. Select Properties to display the DB2 Instance Properties dialog box.
4. Optional: To update the label name for a DB2InstanceManager, type a new name in the Label text box, and click Set & Close.

### Updating the state of a server

**Objective**
To update the current status of a DB2InstanceManager or DB2PartitionManager object so that you can determine whether the server is available for use.

**Background information**
When you issue a check status command from the IBM Tivoli Monitoring for Databases: DB2 software, an instance status resource model runs on the endpoint. The resource model returns the results and updates the object’s icon to reflect the status. A red circle with a minus symbol indicates the icon for a down state.

The down-state symbols for a DB2InstanceManager and DB2PartitionManager object are as shown in the table:

<table>
<thead>
<tr>
<th>Table 15. Down-state icons</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="DB2InstanceManager in down state" /></td>
</tr>
</tbody>
</table>

**Additional Information:** When you first create an instance object, use this procedure to check the status and change it to a normal state.

**Required authorization role**
db2_user
Before you begin
Create either a DB2InstanceManager object or DB2PartitionManager object. Refer to “Creating DB2 instance objects” on page 26 or “Creating partition objects” on page 33 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.
1. Double-click the policy region icon to display the Policy Region dialog box.
2. Right-click the object icon.
3. Select Check Status to check the status of the object.

Starting and stopping a database instance, partition server, or partition group node

Objective
To start up or shut down a DB2 instance, partition, or partition group object from a single entry point on the Tivoli desktop.

Background information
The Startup option can start remote DB2 instances, partition nodes, or partition group nodes. The Shutdown option can stop remote DB2 instances, partitions, or partition groups. The startup and shutdown functions run the DB2 commands db2start and db2stop at the endpoint where the database instances or partitions reside.

The startup and shutdown commands start and stop the instance on the node or nodes that the partition object represents for DB2 partition and partition group objects.

Required authorization role
db2_dba

Before you begin
Create either a DB2InstanceManager, DB2PartitionManager, or DB2PartitionGroupManager object. Refer to “Creating DB2 instance objects” on page 26, “Creating DB2 database objects” on page 28, “Creating partition group objects” on page 33, and “Adding or removing partition group members” on page 42 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.
1. Double-click the policy region to display the Policy Region dialog box.
2. Right-click the DB2InstanceManager, DB2PartitionManager, or DB2PartitionGroupManager object icon.
3. Complete either of the following commands based on the following descriptions:
   • Select Startup to display the Startup DB2 Instance dialog box.
Select **Shutdown** to display the **Shutdown** dialog box.

**Note:** The instance object does not shut down if the instance object has applications connected or active databases.

4. Click **Yes** to confirm or **No** to cancel the operation when prompted to start up or shut down the object.

---

**Opening a database endpoint**

**Objective**
To view multiple database endpoints on a DB2 instance from a single entry point so that you can view the distributed profiles of a database endpoint.

**Background information**
When you open the database endpoint (from this point forward called *database*), the profiles that are distributed to it are represented by the profile manager icon in the database dialog box.

---

**Figure 20. Startup DB2 Instance dialog box**

- Select **Shutdown** to display the **Shutdown** dialog box.

**Note:** The instance object does not shut down if the instance object has applications connected or active databases.

4. Click **Yes** to confirm or **No** to cancel the operation when prompted to start up or shut down the object.

---

**Opening a database endpoint**

**Objective**
To view multiple database endpoints on a DB2 instance from a single entry point so that you can view the distributed profiles of a database endpoint.

**Background information**
When you open the database endpoint (from this point forward called *database*), the profiles that are distributed to it are represented by the profile manager icon in the database dialog box.

---

**Figure 21. Database endpoint dialog box**

In addition to the icon representing the profile manager, this dialog box displays the following information:

- The dialog box title bar displays the DB2DatabaseManager object label in the *databasename_servername_hostname* format.
- The profiles that have been distributed to the database are displayed in *profilename@databasename@servername@hostname* format.

**Required authorization role**
*db2_user*
Before you begin
Create a DB2DatabaseManager object. Refer to “Creating DB2 database objects” on page 28 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.
1. Double-click the policy region to display the Policy Region dialog box.
2. Right-click the DB2DatabaseManager icon.
3. Select Open to display the database information.

Showing client connection information

Objective
To test the connection between DB2 servers and clients so that you can see if an endpoint can access a DB2 instance.

Background information
Client connectivity tests whether an endpoint can connect to an instance. When you run client connectivity, the endpoint searches the DB2 instance client code and determines whether the instance is remote or local. For remote instances, the endpoint creates a catalog entry as a TCP/IP node and attempts to attach to the instance using the catalog entry. If the endpoint connects to the instance, the desktop displays the catalog entry that the endpoint creates. If the connection fails, a failure notice is sent to the desktop and the catalog entry is removed. For local instances, the endpoint connects using the name of the instance that it finds.

These results are output to the Endpoint - Instance Client Connectivity Test dialog box as shown.

Figure 22. Endpoint - Instance Client Connectivity Test dialog box

This example shows a successful endpoint connectivity test. The instance found was local, therefore, the node was not cataloged.

Required authorization role
db2_user

Before you begin
Create a DB2InstanceManager object. Refer to “Creating DB2 instance objects” on page 26 for more information.
When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.
1. Double-click the policy region icon to display the Policy Region dialog box.
2. Right-click the DB2InstanceManager icon.
3. Select Client connectivity to display the Client connectivity test endpoints dialog box.

4. Select the gateway that contains the endpoints to test from the Gateways scrolling list.
5. Select the endpoints that will test the instance from the Available Endpoints scrolling list.
6. Click the left-arrow button to move the endpoints into the Selected Endpoints scrolling list.
7. Type the username and password of the Tivoli management region on which you are testing across regions. If you are not testing across regions, leave these fields blank.

   Additional Information: By default, the username and password are the db2ecc identification and password.
8. Click Begin & Close to close the dialog box and start the connectivity test.
9. The Endpoint – Instance Client Connectivity Test dialog box displays the resulting output.
10. Click Cancel to close the dialog.
Running DB2 commands from the command line processor

Objective
To open the DB2 command line processor from the Tivoli desktop so that administrators can issue DB2 commands on selected managed resources.

Background information
You can launch the DB2 Command Line Processor dialog box from a DB2 instance, database, or partition object on the Tivoli desktop. The DB2 Command Line Processor enables you to issue database manager commands or structured query language (SQL) statements interactively.

The command line processor connects to DB2 using the db2ecc password with SYSADM authority. You must use the db2_dba authority to launch the command line processor.

Note: The command line processor automatically closes and exits the DB2 prompt after 10 minutes, but the DB2 Command Line Processor dialog remains open at the desktop. Close and reopen the DB2 Command Line Processor dialog to re-establish the connection.

For a complete list of the commands that you can issue, refer to the DB2 Command Reference for the version of DB2 you are using.

Required authorization role
db2_dba

Before you begin
- Create either a DB2DatabaseManager, DB2InstanceManager, or DB2PartitionManager object. Refer to "Creating DB2 instance objects" on page 26, "Creating DB2 database objects" on page 28, or "Creating partition objects" on page 33 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.
1. Double-click the policy region to display the Policy Region dialog box.
2. Right-click the managed resource object.
3. Select Start DB2 CLP to display the DB2 Command Line Processor dialog box.
4. Type the DB2 command to issue in the Command text box. You can use only one command at a time.
5. Click Run to issue the command.
6. Scroll through the Output area to review the results.
7. Type QUIT in the Command text box to terminate the connection to DB2.
8. Click Close to close the DB2 Command Line Processor dialog box.

Launching the DB2 Java Control Center

Objective
To launch the DB2 Java control center from the Tivoli desktop so that you can access and modify DB2 objects, such as tables, views, indexes, and triggers, that are associated with a Tivoli object.

Background information
The IBM Tivoli Monitoring for Databases: DB2 software supports launching the Java control center on all supported platforms.

Note: You must have an endpoint that is also a managed node when you launch the Java Control Center from an endpoint object. In addition, you must log in to the managed node from the Tivoli desktop.

Tivoli objects launch the Java control center. For example, if a resource model indicates that a system management tablespace is almost full, the DB2 Java control center launches against that database and removes unnecessary tables.

When you launch the Java control center, the DB2 object tree positions on the object from which it was launched. This is called launching in context. Only DB2, Version 7.1, supports launching in context. If you are using Windows or UNIX, you must launch from an endpoint.

Required authorization role
db2_user

Before you begin
- Install the DB2 Java control center on the Tivoli endpoint from which it is launched. Refer to the DB2 Universal Database Administration Getting Started guide for information.
Create a DB2DatabaseManager, DB2InstanceManager, DB2PartitionManager, or DB2PartitionGroupManager object. Refer to “Creating DB2 instance objects” on page 26, “Creating DB2 database objects” on page 28, “Creating partition objects” on page 33, or “Creating partition group objects” on page 35 for information.

When you finish
None

Procedure
You can perform this procedure from the Tivoli desktop only.

1. Double-click the policy region to display the Policy Region dialog box.
2. Right-click the database instance or database endpoint object.
3. Select Launch DB2CC.

   Additional Information: When you launch the DB2 Java control center, the object tree positions itself on the object from which it was launched. However, if you launch the control center from an object that is not on the local node and is not cataloged with DB2, the object tree positions itself on System. From this position, you must navigate the object tree to the appropriate object to perform any tasks that the DB2 Java control center provides.
Chapter 6. Working with tasks and jobs

A task is an action that must be routinely performed on selected managed nodes throughout the network. A task defines the executables to be run, the authorization role required to execute the task, and the user or group name under which the task executes. The IBM Tivoli Monitoring for Databases: DB2 software provides standard tasks in a task library. Standard tasks run on any machine without consideration of platform type.

A customized task is a standard task with defined arguments saved in the task library with a unique name. For example, you can customize a task to save task output results to a file after each execution. Because you can customize task arguments, the Tivoli environment does not display argument dialogs when you run the task from the desktop. However, if you run a customized task from the command line, you still must specify the task arguments. Running a customized task requires additional information before it runs, such as the target of the execution.

A job is a task with defined and saved arguments that can be executed many times on specific managed resources. You can create jobs from both standard and customized tasks in the IBM Tivoli Monitoring for Databases: DB2 software task library. Like tasks, you store jobs in task libraries so you can reuse them. After you create a job, you can run it immediately using the procedure described in “Running a job” on page 81. You also can schedule jobs to run at certain times in the Scheduler, as described in “Scheduling a job” on page 82.

Table 16 shows the options to manage tasks and jobs.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Running a task to perform a specific operation.</td>
<td>“Running a task” on page 69</td>
</tr>
<tr>
<td>2. Defining a standard task with specific arguments to customize the task.</td>
<td>“Customizing a task” on page 74</td>
</tr>
<tr>
<td>3. Creating a job from a task so that it can be scheduled to run.</td>
<td>“Creating a job” on page 78</td>
</tr>
<tr>
<td>4. Running a job with predefined arguments.</td>
<td>“Running a job” on page 81</td>
</tr>
<tr>
<td>5. Scheduling jobs to run at specified times.</td>
<td>“Scheduling a job” on page 82</td>
</tr>
</tbody>
</table>

The installation process installs the task library in the IBM Tivoli Monitoring for Databases: DB2 software policy region. We recommend that you do not remove the task library from this policy region. The task library contains default policies that affect how the task library works.

The policy region containing the task library defines task and job policies. Default policies set profile manager options and endpoint for tasks. Validation policies control the creation and execution of tasks.

Running a task

Objective
Perform a routine action on a selected managed node.
**Background information**

A *task* is an action that must be routinely performed on selected managed nodes throughout the network. A task defines the executables to be run, the authorization role required to execute the task, and the user or group name under which the task is run. The product provides standard tasks in a task library. *Standard tasks* run on any machine without consideration of platform type.

See the introduction of this chapter for more information on tasks.

**Required authorization roles**

db2_dba or db2_user

For the authorization role of a specific task, refer to the description of that task in the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide*.

**Before you begin**

None.

**When you finish**

None.

**Procedure**

You can perform this procedure from the Tivoli command line or from the desktop.

**Command Line:** Use the `wruntask` command to run a task. Because not all users use the same task library, the documentation for the `wruntask` command does not provide information for specific tasks. See the “CLI (command line interface) Syntax” and “CLI Example” sections in the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide*. The “CLI Example” section provides an example of how to enter the `wruntask` command and the task arguments at the command line.

For more information about the `wruntask` command, see the *Tivoli Management Framework Reference Manual*.

The following example runs the *ECC_Start_Monitoring_Agent* task on the DB2 server endpoint with a classname of `DB2InstanceManager` and object label of `DB2@jlove`:

```
wruntask -t ECC_Start_Monitoring_Agent -l DB2ManagerAdminTasks \
-h @DB2InstanceManager: DB2@jlove
```

Refer to the CLI Synopsis and Examples sections in the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for specific instructions on how to enter the task arguments.

**Desktop:**

1. Open the task library dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the IBM Tivoli Monitoring for Databases: DB2 task icon to display the IBM Tivoli Monitoring for Databases: DB2 Task Library dialog box.
2. Double-click the task icon that you want to run to display the **Execute Task** dialog box.

   *Additional Information:* The **Execute Task** dialog box is a generic dialog box of execution parameters for all tasks.

![Figure 25. Task Library dialog box](image)
3. Click one of the following check boxes in the **Execution Mode** group box:
   - **Parallel** runs the task simultaneously on all targets. Parallel is typically the fastest method of execution.
   —OR—
   - **Serial** runs the task sequentially on all targets in alphabetical order.
   —OR—
   - **Staged** runs the task on all targets in alphabetical order according to a schedule you specify. Staged execution is useful if you run the task on a large number of endpoints. Specify the **Staging Count** (number of targets to run against for each stage) and the **Staging Interval** (number of seconds between each set).

4. Type a timeout value (in seconds) for the task in the **Timeout** text box.
   **Additional Information:** The **Timeout** value does not stop the task. This value specifies the number of seconds the desktop waits for the task to complete before it issues an error. The task continues to execute on the endpoint without display of output results. Setting an early timeout enables your desktop to become available again if the task takes a long time to execute. The default is 60 seconds. If the task takes longer to complete than the specified **Timeout** and
is running in **Serial** or **Staged** mode, the IBM Tivoli Monitoring for Databases: DB2 software moves on to other endpoints after this time expires.

5. Click one or more of the following check boxes in the **Output Format** group box to choose the output returned upon task completion:

   **Header**
   - Includes a descriptive header for each record, such as the task name and target.

   **Return Code**
   - Includes the programming codes produced when the task executes.

   **Standard Error**
   - Includes all error messages encountered when the task executes.

   **Standard Output**
   - Includes all information that results from the task execution.

6. Select one of the following in the **Output Destination** group box to choose an output destination:
   - Click **Display on Desktop** to display the task output on the desktop.
     - **Additional Information:** If you choose **Display to Desktop**, you have an option to save the information to a file as an option inside the output display dialog box.
     - —OR—
   - Click **Save to File** to save the output to a file.

To save the task output to a file, do the following:

a. Click the **Save to File** check box in the **Output Destination** group box to display the **Destination for Task Output** dialog box.

   ![Destination for Task Output dialog box](image)

   **Figure 27. Destination for Task Output dialog box**

b. Type the name of the endpoint on which to save the output in the **On Host** text box.
   - **Additional Information:** The endpoint must be a Tivoli client.

c. Type the absolute path name for the output file in the **Output File** text box.
   - **Additional Information:** Example: `/tmp/mytask.out`

d. Click **Set & Close** to set your choices and return to the **Execute Task** dialog box.

7. Choose the endpoints on which you want to run the task by doing one of the following:
   - Run the task on specific endpoints by doing the following:
     a. Select the endpoints from the **Available Task Endpoints** list.

     **Note:** If you removed the task libraries from the **DB2Manager-DefaultPolicyRegion**, the **Available Task Endpoints** scrolling list
will contain all Tivoli endpoints, only some of which are available for IBM Tivoli Monitoring for Databases: DB2.

b. Click the left arrow button to move the selected endpoints to the **Selected Task Endpoints** list.

---

- Run the task on all subscribers of the specified profile managers by doing the following:
  a. Select profile managers from the **Available Profile Managers** list.
  b. Click the left arrow button to move the selected profile managers to the **Selected Profile Managers** list.

8. Click **Execute** to display the task argument dialog box.

*Additional Information:* For information about how to fill in the task argument dialog, refer to the task description in the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* or click **Task Description** to display the online help.

9. Click **Set & Execute** to run the task.

---

**Customizing a task**

**Objective**
To customize one of the standard tasks in the task library so you can save defined arguments for future executions.

**Background information**
A *customized task* is a standard task with defined arguments saved in the task library with a unique name. For example, you can customize a task to save task output results to a file after each execution. Because you can customize task arguments, the Tivoli environment does not display argument dialogs when you run the task from the desktop. However, if you run a customized task from the command line, you still must specify the task arguments. Running a customized task requires additional information before it runs, such as the target of the execution.

**Required authorization roles**
admin
**Before you begin**
None.

**When you finish**
You can run the task by following the procedure in "Running a task" on page 69.
When you run a customized task, the Tivoli desktop does not display the task argument dialog.

**Procedure**
You can perform this procedure from the Tivoli desktop only.

1. Open the task library dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the IBM Tivoli Monitoring for Databases: DB2Task icon to display the Task Library dialog box.

2. Double-click a task icon to display the Execute Task dialog box for that task.
   Additional Information: The Execute Task dialog box is a generic dialog box of execution parameters for all tasks. Complete this dialog box to run the task as described in "Running a task" on page 69.
3. Click **Execute** to display the task argument dialog box.

**Additional Information**: Each standard task has a unique task argument dialog box. Below is one example of a task argument dialog box.
4. Enter the appropriate values for this customized task.

   Additional Information: For information about each field in these dialog boxes, see the task description in the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide or click Task Description to display the online help.

5. Click Save to display the Save Argument dialog box.

   ![Saving arguments dialog box](image)

   Figure 32. Saving arguments dialog box

6. Type the following information to define the customized task:

   a. Type a name for the task in the Name text box.

      Additional Information: This name appears in the Library Contents field so you can view the customized tasks that are based on the parent task.

   b. Type an identifier for this task.

      Additional Information: An identifier is the name of the task icon in the Task Library dialog box. A customized task identifier has two parts. The first part should be the standard task name (such as CurrentRunningSQL). The second part should be descriptive information that makes sense to you. For example, you could type SYS. The resulting task name would be CurrentRunningSQL_SYS.

      The software generates a unique default name (such as CurrentRunningSQL_1aa) if no identifier is entered.

      To enable filtering for an identifier without the standard task name, edit the tl_def_man_nodes policy method in the task library policy object. See the Tivoli Management Framework Reference Manual for more information.

   c. Type a description of this task in the Description text box.

      Additional Information: This description appears when you click Task Description in the task argument dialog box for this customized task.

   d. Optional: Select the Show by Identifier check box to change the Library Contents list to use the task identifier instead of the task name.

   e. Optional: Click Parent Description to display information about the parent task from which you are creating a customized task.

      Additional Information: The task information appears under the heading Description.

   f. Click Save & Close to return to the task argument dialog box.
7. Click **Cancel** in the task argument dialog box.

8. Click **Close** in the **Execute Task** dialog to return to the **Task Library** dialog box.

9. Click **View** to display the **View** drop-down menu.

10. Click **Refresh** from the **View** drop-down menu to display the new customized task.

---

### Creating a job

**Objective**
To create a job by defining execution parameters so you can specify a target enabling you to schedule it to run at certain times in the Scheduler.

**Background information**
A job is a task with defined and saved arguments that can be executed many times on specific managed resources. You can create jobs from both standard and customized tasks in the IBM Tivoli Monitoring for Databases: DB2 software task library. Like tasks, you store jobs in task libraries so you can reuse them.

**Required authorization roles**
admin

**Before you begin**
None.

**When you finish**
After you create a job, you can run it immediately using the procedure described in "Running a job" on page 81. You also can schedule jobs to run at certain times in the Scheduler, as described in "Scheduling a job" on page 82.

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command Line:** Use the `wcrtjob` command to create jobs from the command line. The syntax is as follows:

```
wcrtjob -j job_name -l library_name -t task_name -M mode [-s interval -n number] -m timeout -o output_format [-D|-d mannode_name -f file_name] [-h mannode_name] [-p prof_manager_name]
```

where:

- `-j job_name`
  The name of the job being created. Job names can include any alphanumeric character, an underscore (_), a dash (--), a period (.), and a space.

- `-l library_name`
  Specifies the task library containing the task to be included in the job.

- `-t task_name`
  Specifies the name of the task to include in the job.

- `-M mode`
  Specifies the mode in which the job runs. Valid options are as follows:

  - **parallel**
    Runs the job on all specified endpoints and any subscribers simultaneously.
serial  Runs the job on one endpoint at a time.

staged  Runs the job on a set number of endpoints at specified intervals.

Desktop:
1. Access the task library dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the task library icon to display the task library dialog box.
2. Click Create to display the Create drop-down menu.
3. Click Job from the Create drop-down menu to display the Create Job dialog box.

4. Type a descriptive job name in the Job Name text box.
**Additional Information:** The job name identifies the icon on the desktop. The name can include any alphanumeric character, an underscore (_), dash (–), period (.), or blank space.

5. Select the task on which the job is based from the **Task Name** list.

6. In the **Execution Mode** group box, select one of the following check boxes:
   - **Parallel**
     Runs the task simultaneously on all targets. Parallel is typically the fastest method of execution.
   - OR—
   - **Serial**
     Runs the task sequentially on all targets in alphabetical order.
   - OR—
   - **Staged**
     Runs the task on all targets in alphabetical order according to a schedule you specify. Staged execution is useful if you are running the task on a large number of endpoints. Complete Step 8 to specify the **Staging Count** (number of targets to run against per stage) and the **Staging Interval** (number of seconds between each set).

7. In the **Execution Parameters** group box, type the timeout value (in seconds) for the task in the **Timeout** text box.

   **Additional Information:** This value specifies the number of seconds the IBM Tivoli Monitoring for Databases: DB2 software waits for the task or job to complete before it issues an error. The default is 60 seconds. If the task takes longer to complete than the specified **Timeout** and is running in **Serial** or **Staged** mode, the IBM Tivoli Monitoring for Databases: DB2 software moves on to other endpoints after this time expires. The task continues to execute on the endpoint, even though the IBM Tivoli Monitoring for Databases: DB2 software stopped waiting for it to end.

8. **Optional:** If you selected **Staged** in Step 6, specify the number of endpoints to include in each staged set in the **Staging Count** text box and the number of seconds between each set’s startup time in the **Staging Interval** text box.

9. Click one or more of the following check boxes to choose the output type in the **Output Format** group box:
   - **Header**
     Includes a descriptive header for each record.
   - **Return Code**
     Includes the programming codes produced when the job executes.
   - **Standard Error**
     Includes all error messages encountered when the job executes.
   - **Standard Output**
     Includes all information that results from the job execution.

10. Do one of the following in the **Output Destination** group box to choose an output destination:
    - Click **Display on Desktop** to display the job output on the desktop. Go to Step 12.

   **Additional Information:** If you choose **Display to Desktop**, you have an option to save the information to a file as an option inside the output display dialog box.
   - OR—
• Click Save to File to save the output to a file and display the Destination for Task Output dialog box. Go to Step 11.

![Destination for Task Output dialog box](image)

**Figure 34. Destination for Task Output dialog box**

11. Do the following in the Destination for Task Output dialog box to save the job output to a file:
   a. Type a Tivoli client endpoint name on which to save the output in the On Host text box.
   b. Type the absolute path name for the output file in the Output File text box.
      Additional Information: Example: `/tmp/myjob.out`
   c. Click Set & Close to set your choices and return to the Create Job dialog box.

12. Do one of the following to choose the endpoints on which to run the job:
   • Run the job on specific endpoints by doing the following:
     a. Select the endpoints from the Available Task Endpoints list.
     b. Click the left arrow button to move the selected endpoints to the Selected Task Endpoints list.
     –OR–
   • Run the job on all subscribers of the specified profile managers by doing the following:
     a. Select profile managers from the Available Profile Managers list.
     b. Click the left arrow button to move the selected profile managers to the Selected Profile Managers list.

13. Click Create & Close to create the job and return to the Task Library dialog box.

   Additional Information: The new job icon appears in the Task Library dialog box.

---

**Running a job**

**Objective**
To execute a job on specific endpoints immediately so you can perform a management operation.

**Background information**
Before you can run a job, you must create it, as described in “Creating a job” on page 78.

If you created a job from a standard task, the Tivoli desktop displays the task argument dialog so that you can fill in any required information.
Jobs created from customized tasks run without further input because all required information is specified. (See “Customizing a task” on page 74 for information about how to create a customized task.)

**Required authorization roles**

- db2_dba or db2_user

For the authorization role of a specific task, refer to the description of that task in *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide*.

**Before you begin**

None.

**When you finish**

After you create a job, you can set it up to run on a regular schedule as described in “Scheduling a job” on page 82.

**Procedure**

You can perform this procedure from the Tivoli command line or from the desktop.

**Command Line:** Use the wrunjob command to run jobs from the command line. For more information about this command, see the *Tivoli Management Framework Reference Manual*.

The following example uses the wrunjob command to run the *Start Database* job, which is stored in the *DB2ManagerDatabaseTasks* task library:

```
wrunjob Start Database -l DB2ManagerDatabaseTasks
```

**Desktop:**

1. Open the task library dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the task icon to display the task library dialog box.
2. Do one of the following:
   - Double-click the job icon created from a customized task to begin executing the job.
     - OR -
   - Double-click the job icon created from a standard task. Go to Step 3
3. Type the values in the task dialog box.

**Additional Information:** For information about specific fields, see the task description in the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* or click *Task Description* to display the online help. The IBM Tivoli Monitoring for Databases: DB2 software runs the job and displays the output on the desktop or sends it to a file in accordance with the job specification.

---

### Scheduling a job

**Objective**

To schedule jobs to occur regularly so you can routinely perform management operations.
Background information
The IBM Tivoli Monitoring for Databases: DB2 software uses Scheduler to schedule jobs. Scheduler is a service that enables you to run jobs unattended. You can schedule a job to run one time or multiple times. Scheduler notifies you by the manner you select when a job is complete. To schedule a job, the job must exist in the task library. You create a job by following the procedure described in “Creating a job” on page 78.

Required authorization roles
admin

Before you begin
None.

When you finish
None.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command Line: Use the wschedjob command to schedule a job in the Task Library from the command line. You can only schedule jobs that already exist in the task library from the command line. For more information, see the Tivoli Management Framework Reference Manual.

Desktop:
1. Open the IBM Tivoli Monitoring for Databases: DB2 task library dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the IBM Tivoli Monitoring for Databases: DB2 policy region icon to display the policy region.
   c. Double-click the IBM Tivoli Monitoring for Databases: DB2 task library icon to display the task library dialog box.
2. Drag the job icon that you want to schedule onto the Scheduler icon located on the Tivoli desktop.
3. Optional: Do the following if a task argument dialog box displays:
   a. Type the appropriate information for each field in the dialog.
      Additional Information: Refer to the task description in the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide or click Task Description to display the online help for this task.
   b. Click Set & Execute to set the task arguments and open the Add Scheduled Job dialog box.
4. Type a label for the job icon in the Job Label text box of the Add Scheduled Job dialog box.

Additional Information: The label identifies the icon on the desktop. The job label can include alphanumeric character, underscores (_), dashes (–), periods (.), and blanks. If you do not specify a label, the job name is used.

5. Do one of the following:
   - Select the Disable the Job check box to stop a scheduled job from running.
     — OR —
   - Deselect the Disable the Job check box to continue running a scheduled job.

Additional Information: For more information on job disabling, see the Tivoli Management Framework User’s Guide.

6. Optional: Type a job description to uniquely identify the job in the Description field.
7. Set the date and time to begin scheduling in the Schedule Job For group box:
   a. Type a date in the Month, Day, and Year text boxes.
   b. Enter the time using the Hour and Minute drop-down lists and the AM and PM radio buttons.

8. Optional: Repeat the job by doing the following in the Repeat the Job group box:
   a. Do one of the following:
      • Select the Repeat the job indefinitely check box to repeat the job indefinitely.
      • Repeat the job a finite number of times by doing the following:
        1) Select the Repeat the job check box.
        2) Type the number of times you want the job to run.
   b. Set the interval between start times for the job in the The job should start every field.

9. Click any of the following check boxes in the When Job Completes group box to send job completion notification:
   • Send a notice to a specific group by doing the following:
     a. Click the Post Tivoli Notice check box.
     b. Click Available Groups to display the Available Groups dialog box.
     c. Select a group from the list of notice groups.
     d. Click Set to set your group and return to the Add Scheduled Job dialog box.

   Additional Information: You can read notices from the Tivoli desktop by clicking on the Notices icon.
   • Send a notice to your desktop by doing the following:
     a. Click the Post Status Dialog on Desktop check box.
     b. Type the message you want displayed in the text box next to the check box.
   • Send an e-mail to a specified user by doing the following:
     a. Click the Send e-mail to check box.
     b. Type the complete e-mail address in the text box next to the check box.
   • Log the job completion status to a file by doing the following:
     a. Click the Log to File check box.
     b. Enter the file destination by doing one of the following:
        – Type the file destination in the Host and File text boxes.
        – OR – Browse for the file destination by doing the following:
          1) Click File Browser to display the File Browser dialog.
          2) Double-click on a host name to display the directories and files for that host.
          3) Select a directory and file from the Directories and Files lists.
          4) Click Set File & Close to return to the Add Scheduled Job dialog box.

10. Optional: Set retry, cancel, or restriction options by doing the following:
a. Click Set Retry/Cancel/Restriction Options to display the Set Retry/Cancel Restrictions Options dialog box.

![Set Retry/Cancel Restrictions Options dialog box]

**Figure 36. Set Retry/Cancel Restrictions Options dialog box**

b. Choose one of the following cancel job options:
   - Deselect the Cancel job check box to have the Scheduler continue trying the job indefinitely.
     —OR—
   - Set the Scheduler to cancel a job in a specified time frame by doing the following:
     1) Select the Cancel job check box.
     2) Type the time frame for the Scheduler to wait before canceling a job that has not started.

c. Click one of the following retry options:
   - Click Retry the job until success to retry the job until it runs successfully.
     —OR—
   - Specify the number of times a job attempts to run by doing the following:
     1) Click the Retry the job check box.
     2) Type the number of attempts to start the job in the text box.
     3) Type the amount of time the Scheduler waits before retrying in the The job should retry every field.

d. Click any of the following check boxes in the Restrictions group box to specify the job run times:

**During the day**
Set the beginning and ending hour of day for the job to run.
At night
  Set the beginning and ending hour of night for the job to run.

During the week
  Set the beginning and ending day of the week for the job to run.

On weekends
  Set the beginning and ending day of the weekend for the job to run.

e. Click Set to set the options and return to the Add Scheduled Job dialog box.

11. Click Schedule Job & Close to schedule the job and return to the Tivoli desktop.
Chapter 7. Viewing resource model results with the IBM Tivoli Monitoring Web Health Console

This chapter provides an overview of the IBM Tivoli Monitoring Web Health Console. For complete information on installing and working with the IBM Tivoli Monitoring Web Health Console see the latest version of the IBM Tivoli Monitoring User’s Guide. The IBM Tivoli Monitoring Web Health Console runs on Netscape 6.x and Internet Explorer 6.x. You can use the IBM Tivoli Monitoring Web Health Console for the following purposes:

- Checking, displaying, and analyzing the status and health of endpoints that have distributed resource monitors
- Displaying an endpoint’s real-time and historical data logged to the IBM Tivoli Monitoring database
- Viewing online and historical data on endpoints as a follow-up to specific problems
- Starting and stopping the IBM Tivoli Monitoring engine and individual resource models on selected endpoint
- Removing a profile from the selected endpoint

Overview

You can use the IBM Tivoli Monitoring Web Health Console to check, display, and analyze the status and health of any endpoint with profiles and resource models. Status reflects the state of the endpoint displayed on the IBM Tivoli Monitoring Web Health Console, such as running or stopped. Health is a numeric value determined by resource model settings. You can also use the Web Health Console to work with real-time or historical data from an endpoint that is logged to the IBM Tivoli Monitoring database.

You can use the diagnostic and monitoring capabilities of the IBM Tivoli Monitoring Web Health Console to perform targeted analysis of problems associated with individual endpoints when an event is sent to the Tivoli Enterprise Console. Use the online and historical data to follow up specific problems with single endpoints.

Understanding Resource Health

The IBM Tivoli Monitoring Web Health Console obtains events and indications from endpoints. The IBM Tivoli Monitoring Web Health Console displays the health of each potential problem as a numeric value between 100 (perfect health) and zero (with zero meaning that the conditions for the corresponding event are met). See Table 17.

Table 17. Health Determination Example

<table>
<thead>
<tr>
<th>Cycle</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU%</td>
<td>55</td>
<td>73</td>
<td>54</td>
<td>63</td>
<td>68</td>
</tr>
<tr>
<td>Occurrences or Holes</td>
<td>H</td>
<td>O</td>
<td>H</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Occurrence Count</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Health %</td>
<td>100</td>
<td>75</td>
<td>75</td>
<td>50</td>
<td>25</td>
</tr>
</tbody>
</table>
Table 17 on page 89 displays the health percentage changes in steps of 25% because 4 occurrences were required to trigger an event; if the indication required 5 occurrences, the health percentage would have changed by steps of 20%. Resource health is determined at the indication level and passed up to the endpoint. The lowest health of any indication in a resource model is shown as the health of that resource model and the lowest health of any resource model installed on an endpoint is shown as the health of that endpoint. For example, if one indication on one resource model that is installed on an endpoint has a health of zero, the health of the endpoint is shown as zero. The required occurrences, cycle times, thresholds, and parameters for indications are defined when the resource model is created in the IBM Tivoli Monitoring Workbench.

Connecting the IBM Tivoli Monitoring Web Health Console

You can connect the IBM Tivoli Monitoring Web Health Console to any Tivoli management region server or managed node and configure it to monitor any or all of the endpoints that are found in that region. The IBM Tivoli Monitoring Web Health Console does not have to be within the region itself, although it could be. To connect to the IBM Tivoli Monitoring Web Health Console you need access to the server on which the IBM Tivoli Monitoring Web Health Console server is installed and the IBM Tivoli Managed Region on which you want to monitor health. All user management and security is handled through the IBM Tivoli management environment. This includes creating users and passwords as well as assigning authority.
Chapter 8. Customizing resource models

This chapter provides an overview of IBM Tivoli Monitoring procedures you need to follow to customize resource models.

Overview of IBM Tivoli Monitoring

IBM® Tivoli® Monitoring 5.1.1 allows you to deploy preconfigured best practices resource models as well as standard and customized resource models to automate the monitoring of essential resources. In this context, a resource is anything that affects the operation of a computer system and includes physical and logical disks, CPUs, memory, printers, as well as the processes running, and the services, such as LanMan, the Windows event log, the UNIX® syslogd (logging system daemon) and TCP/IP. This allows you to detect bottlenecks and other potential problems and define automatic recovery from critical situations. This capability frees system administrators from manually scanning extensive performance data. The monitoring software integrates with other Tivoli Availability solutions, including Tivoli Business Systems Manager® and Tivoli Enterprise Console®.

A resource model captures and returns information, such as database status or server availability, about a resource or software application in the Tivoli management environment. To use a resource model, you must define and distribute it to an endpoint.

Tivoli provides tools for organizing system resources on the Tivoli desktop. A profile manager is the top level of organization. Servers are subscribed to profile managers. These subscriptions provide the channel through which resource models are distributed to servers. A profile manager also can contain profiles, which are containers for application-specific information about a particular type of resource. Each profile contains one or more resource models. You can subscribe resources to a pre-defined profile manager. You can distribute individual profiles within the profile manager to subscribers of the profile manager. You can group profile managers in a way that meets your needs. Profile managers can reflect functional grouping of resources, functional grouping of resource models, or any grouping at all. Likewise, a profile can contain any combination of resource models.

You must segregate profiles according to resources: Web servers need Web server resource models, and database servers need database server resource models. You can define each resource model to include information such as how often to check the server resource status and what to do when certain conditions are met. Some resource models provide predefined settings and response actions, which you can adjust. Other resource models require you to define all the settings. See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for a description of individual settings.

Before running a resource model, you must subscribe the server resource to the profile manager that contains the profile in which the resource model is stored. You can distribute the profile to the resource. By default, resource models are set up to become active when you distribute them to subscribers. You can activate and deactivate resource models after they are distributed.
Adding custom resource models to profiles

**Objective**
To specify the platform, cycle time, and threshold values that customize a resource model to meet the needs of your environment and add the resource model to a profile.

**Background information**
A resource model captures and returns information about a resource or application. You set up resource models and distributed them to endpoints. A number of predefined resource models are installed with the product. To customize basic settings of a resource model, specify the platform type, cycle time, and threshold values appropriate for your environment. Choose the resource models to add to a profile based on the resources you want to monitor. Adding one or more of these resource models to a profile enables you to begin monitoring resources immediately.

**Required authorization role**
admin

**Before you begin**
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

**When you finish**
Distribute the profile. See “Distributing profiles from the desktop” on page 50

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the `wdmeditprf` command to add a customized resource model to a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

**Desktop:**
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to open the policy region.
   c. Double-click the profile manager icon to open the Profile Manager dialog box.
   d. Double-click the profile icon to which you want to add a customized resource model.
2. Click Add to open the Add Resource Models to Profile dialog box.
3. Select the resource model category from the Category drop-down list.
4. Select the desired resource model from the Resource Model drop-down list.
5. Set the frequency with which the resource model monitors the data in the Cycle Time text box. Enter a time in seconds.
6. Use the following steps to change any of the threshold values:
a. Select the **Threshold Name** that you want to change.

*Additional Information:* The description box displays a description of the threshold that you selected. A dialog box above the description displays the currently assigned threshold value. For the default threshold values see the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide.

b. Change the currently assigned threshold value to a value appropriate to your requirements.

c. Click **Apply** to set and display the new value in the **Threshold Value** dialog box.

7. **Optional:** Click **Indications** or **Parameters** to make required modifications to indications and parameters, click **Schedule** to add schedule information, and click **Logging** to add logging information.

*Additional information:* If you do not perform this step, the indications and parameters use the default values shipped with the resource models. See "Customizing indications" on page 102 and "Customizing the scheduling monitoring period" on page 106 for information.

8. Click **Add & Close** to save your changes. The **IBM Tivoli Monitoring Profile** dialog box now shows the customized resource model.

---

**Customizing indications**

**Objective**
To customize indication rules so that resources are monitored and events generated in the manner most appropriate to your environment.

**Background Information**
Each resource model triggers an *indication* if certain conditions defined by the resource model’s thresholds are not satisfied during the monitoring cycle. Each resource model has predefined thresholds that meet the business needs of most customers; however, you may have specific requirements for which these thresholds are not appropriate; therefore, you can adjust these values as needed.

An *event* is used to verify the persistence of a given indication by eliminating unrepresentative peaks and troughs for the indication. The number of occurrences, with allowance for holes, of an indication defines an event. For example, a process that generates the Process High CPU indication in one cycle is behaving perfectly normally, and is of no threat to other processes if the high usage does not repeat. However, an indication that persists over several cycles is a problem.

An *occurrence* is a cycle during which required conditions are met to generate an indication for a given resource model.

An *hole* refers to a cycle during which an indication does *not* occur for a given resource model. In other words, none of the conditions specified for the generation of the indication are met. This does not mean that none of the thresholds are exceeded.

**Required Authorization Role**
admin

**Before You Begin**
- Create a profile manager and profile. See "Creating profile managers and profiles" on page 46 for information.
• Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 48 for information.

• Add a resource model to a profile. See "Adding default resource models to profiles" on page 49 and "Adding custom resource models to profiles" on page 92 for information.

• See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When You Finish
Distribute the profile to which the resource model belongs. See "Distributing profiles from the desktop" on page 50.

Optional: Continue customizing the resource model:
• Specify if you want a recovery action when a specific event occurs. See "Editing a built-in action" on page 97

• Specify if you want corrective or reporting tasks for an event. See "Specifying tasks for an indication" on page 99

• Specify if you want to receive information on a specific event through a notice. See "Sending a notice to administrators when an event occurs" on page 101

• Specify if you want to customize your parameters to optimize the monitoring process. See "Customizing parameters" on page 102

• Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See "Creating scheduling rules" on page 104

• Determine when the monitoring of resource models takes place. See "Customizing the scheduling monitoring period" on page 106

• Specify if you want the log data collected by a resource model written to a local database. See "Customizing data logging information" on page 108

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command Line: Use the wdmeditprf command to customize a resource model for a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.

2. Select the resource model that you want to customize from the IBM Tivoli Monitoring Profile dialog box.

3. Click Edit to open the Edit Resource Model dialog.

4. Click Indications. The Indications and Actions dialog box opens and displays the indications appropriate to the selected resource model.

5. Select the indication for which you want to customize the values of the event associated with that indication.
6. Apply the changes to the values that are appropriate to your requirements. See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for the default resource model settings. The following describes the values that you can customize:

**Number of Occurrences**
Specifies the number of consecutive times the problem occurs before the software generates an indication. You can change this value to specify the number of times a problem occurs before an indication generates.

**Number of Holes**
Determines how many cycles that do not produce an indication can occur between cycles that do produce an indication. This determines if the occurrences of an indication are consecutive. Each cycle without an indication is termed a hole. For example, an event that has a value of two holes means that when up to two cycles without an indication occur between any two cycles with an indication, the cycles with an indication are considered consecutive.

Use the value for the **Number of Holes** in conjunction with the **Number of Occurrences** parameter and the **Cycle Time** to define a time window for the generation of an event. If, for example, you define **Cycle Time** as 10 seconds, **Number of Occurrences** as 5, and **Number of Holes** as 2, the time that must elapse before an event occurs is between 50 and 130 seconds. The minimum elapsed time is the number of occurrences multiplied by the cycle time. The maximum time window assumes that the maximum number of holes occur between each pair of occurrences, and is determined by the following equation:

\[ TW = CT \times (Oc + (H \times (Oc - 1))) \]

where:
- **TW** Specifies the time window calculated
- **CT** Specifies the cycle time
- **Oc** Specifies the number of occurrences
- **H** Specifies the number of holes

**Send TEC Events**
Select this check box to send an event to the Tivoli Enterprise Console. You must have Tivoli Enterprise Console installed and configured.

**Send to TBSM**
Select this check box to send an event to Tivoli Business Systems Manager’s Common Listener. You must have Tivoli Business Systems Manager installed and configured.

7. Click **Apply Changes & Close** to save your changes to the indication.

---

**Adding or removing built-in actions**

**Objective**
To add a built-in action so administrators and users can reinstate an event’s recovery actions or to remove a built-in action so administrators and users can clear an event’s recovery actions.
Background Information
A built-in action is a recovery action for an event. The actions take positive steps to remedy the situation, or ensure distribution of information about the event to the appropriate authorities or entities.

The Tivoli software has predefined actions for certain events. An action is either the execution of a common information model (CIM) class method, or the execution of a program. For example, an event that detects the failure of a service has the restart of that service as its built-in action. IBM Tivoli Monitoring detects the failure of a service and automatically restarts it. Built-in actions are defined by default as part of an event when the resource model is created in the IBM Tivoli Monitoring Workbench. See the IBM Tivoli Monitoring documentation for more information.

Required Authorization Role
admin

Before You Begin
• You must have previously removed a built-in action to activate Build-In for adding a built-in action. Use this procedure to reinstate the previously removed built-in action.
• Create a profile manager and profile. See "Creating profile managers and profiles" on page 46 for information.
• Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 48 for information.
• Add a resource model to a profile. See "Adding default resource models to profiles" on page 49 and "Adding custom resource models to profiles" on page 92 for information.
• See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When You Finish
Distribute the profile to which the resource model belongs. See "Distributing profiles from the desktop" on page 50.

Optional: Continue customizing the resource model:
• Specify if you want a recovery action when a specific event occurs. See "Editing a built-in action" on page 97.
• Specify if you want corrective or reporting tasks for an event. See "Specifying tasks for an indication" on page 99.
• Specify if you want to receive information on a specific event through a notice. See "Sending a notice to administrators when an event occurs" on page 101.
• Specify if you want to customize your parameters to optimize the monitoring process. See "Customizing parameters" on page 102.
• Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See "Creating scheduling rules" on page 104.
• Determine when the monitoring of resource models takes place. See "Customizing the scheduling monitoring period" on page 106.
• Specify if you want the log data collected by a resource model written to a local database. See "Customizing data logging information" on page 108.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.
Command Line: Use the `wdmeditprf` command to customize a resource model for a profile.

For more information about this command, see the *IBM Tivoli Monitoring, Version 5.1.0: User’s Guide*.

Desktop:
1. Open the **IBM Tivoli Monitoring Profile** dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select a resource model from the **IBM Tivoli Monitoring Profile** dialog box.
3. Click **Edit** to open the **Edit Resource Model** dialog box.
4. Click **Indications**. The **Indications and Actions** dialog box opens and displays the indications appropriate to the selected resource model.
5. Select the indication that has the associated events you want to add or remove.
6. Select the action from the **Action List** panel of the **Indications and Actions** dialog box.
7. Click **Remove** to remove the action from the list.
   — or —
   Click **Built-in** to open the **Add Action** dialog box.
   a. Select the action you want to run when an event occurs.
   b. Enter the number of times you want the action to perform when an indication generates an event in the **Retry** field.
   
   *Additional information:* If you set the **Retry** field to zero, the product continually tries to perform the action until the action is successful.
   c. Click one of the following to add an action:
      
      **Add** Adds the selected action with the values specified and keeps the **Add Action** dialog box open.
      
      **Add & Close** Adds the selected action and closes the **Add Action** dialog box.
8. Click one of the following to apply changes:

   **Apply Changes**
   Saves the changes made to the built-in actions and leaves the **Indications and Actions** dialog box open.

   **Apply Changes and Close**
   Closes the **Indications and Actions** dialog box and saves the changes made to the built-in actions.

---

**Editing a built-in action**

**Objective**
Specifies the number of times the software attempts to execute the built-in action when an event is generated.
Background Information
A built-in action is a recovery action for an event. The actions take positive steps to remedy the situation, or ensures distribution of information about the event to the appropriate authorities or entities.

The Tivoli software has predefined actions for certain events. An action is either the execution of a common information model class method, or the execution of a program. For example, an event that detects the failure of a service has the restart of that service as its built-in action. IBM Tivoli Monitoring detects the failure of a service and automatically restarts it. Built-in actions are defined by default as part of an event when the resource model is created in the IBM Tivoli Monitoring Workbench. See the IBM Tivoli Monitoring documentation for more information. You can removing built-in actions from a resource model using the Tivoli desktop. See "Adding or removing built-in actions" on page 95.

Required Authorization Role
admin

Before You Begin
- Create a profile manager and profile. See "Creating profile managers and profiles" on page 46 for information.
- Add subscribers to a profile manager. See "Subscribing resources to profile managers" on page 48 for information.
- Add a resource model to a profile. See "Adding default resource models to profiles" on page 49 and "Adding custom resource models to profiles" on page 92 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When You Finish
Distribute the profile to which the resource model belongs. See "Distributing profiles from the desktop" on page 50.

Optional: Continue customizing the resource model:
- Specify if you want to customize your thresholds and events to optimize the monitoring process. See "Customizing indications" on page 93.
- Specify if you want corrective or reporting tasks for an event. See "Specifying tasks for an indication" on page 99.
- Specify if you want to receive information on a specific event through a notice. See "Sending a notice to administrators when an event occurs" on page 101.
- Specify if you want to customize your parameters to optimize the monitoring process. See "Customizing parameters" on page 102.
- Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See "Creating scheduling rules" on page 104.
- Determine when the monitoring of resource models takes place. See "Customizing the scheduling monitoring period" on page 106.
- Specify if you want the log data collected by a resource model written to a local database. See "Customizing data logging information" on page 108.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command Line: Use the wdmeditprf command to customize a resource model for a profile.
For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select a resource model from the IBM Tivoli Monitoring Profile dialog box.
3. Click Edit to open the Edit Resource Model dialog box.
4. Click Indications. The Indications and Actions dialog box opens and displays the indications appropriate to the selected resource model.
5. Select the indication that has the associated events you want to customize.
6. Select the action to edit from the Action List panel of the Indications and Actions dialog box.
7. Click Edit to open the Edit Current Action dialog box.
8. Enter the number of times you want the action to perform when an indication generates an event in the Retry field.
   Additional information: If you set the Retry field to zero, the product continually tries to perform the action until the action is successful.
9. Click Apply next to the Retry field to apply the changes.
10. Click one of the following to close the Edit Current Action dialog box:
    - Close Closes the Edit Current Action dialog box and saves the original retry value.
    - Modify & Close Closes the Edit Current Action dialog box and saves the modified retry value.

Specifying tasks for an indication

Objective
To specify a task so administrators and users can determine corrective or reporting tasks for an indication.

Background Information
You can select one or more tasks to perform when an indication generates an event. You can select one or more tasks for each event. These tasks can access the IBM Tivoli Monitoring event name and thresholds by accessing the environment variables.

Required Authorization Role
admin

Before You Begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
• Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.

• See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When You Finish
Distribute the profile to which the resource model belongs. See “Distributing profiles from the desktop” on page 50.

Optional: Continue customizing the resource model:
• Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Customizing indications” on page 93.
• Specify if you want a recovery action when a specific event occurs. See “Editing a built-in action” on page 97.
• Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 101.
• Specify if you want to customize your parameters to optimize the monitoring process. See “Customizing parameters” on page 102.
• Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 104.
• Determine when the monitoring of resource models takes place. See “Customizing the scheduling monitoring period” on page 106.
• Specify if you want the log data collected by a resource model written to a local database. See “Customizing data logging information” on page 108.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command Line: Use the wdmeditprf command to customize a resource model for a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select the resource model that you want to customize.
3. Click Edit to open the Edit Resource Model dialog box.
4. Click Indications. The Indications and Actions dialog box opens and displays the indications appropriate to the selected resource model.
5. Select the indication that you want to generate a task from the Indications and Actions dialog box.
6. Click Tasks in the Action List dialog box. The Tasks dialog box opens.
7. Double-click the appropriate task library from the scroll list of the Libraries panel. The tasks contained in the library are displayed in the Tasks panel.
8. Double-click the appropriate task in the Tasks panel.
9. Specify the appropriate parameters in the **Configure Task** dialog box.  
   *Additional Information*: Run the `wlsnotif -g` command to see the available Notice Groups.

10. Click **Change & Close** to add the task to the **Action List** panel in the **Indications and Actions** dialog box.

### Sending a notice to administrators when an event occurs

**Objective**
To send a notice in response to an event so administrators can take the appropriate actions or responses.

**Background Information**
You can select the IBM Tivoli Monitoring Utility task to send notices in response to an event.

**Required Authorization Role**
admin

**Before You Begin**
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- See the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for detailed information about each resource model.

**When You Finish**
Distribute the profile to which the resource model belongs. See “Distributing profiles from the desktop” on page 50.

**Optional**: Continue customizing the resource model:
- Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Customizing indications” on page 93
- Specify if you want a recovery action when a specific event occurs. See “Editing a built-in action” on page 97
- Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 99
- Specify if you want to customize your parameters to optimize the monitoring process. See “Customizing parameters” on page 102
- Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 104
- Determine when the monitoring of resource models takes place. See “Customizing the scheduling monitoring period” on page 106
- Specify if you want the log data collected by a resource model written to a local database. See “Customizing data logging information” on page 108

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.
Command Line: Use the `wdmeditprf` command to customize a resource model for a profile.

For more information about this command, see the *IBM Tivoli Monitoring, Version 5.1.0: User’s Guide*.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select the resource model that you want to customize.
3. Click Edit to open the Edit Resource Model dialog box.
4. Click Indications. The Indications and Actions dialog box opens and displays the indications appropriate to the selected resource model.
5. Select the indication that you want to generate a task from the Indications and Actions dialog box.
6. Click Tasks in the Action List dialog box. The Tasks dialog box opens.
7. Double-click the IBM Tivoli Monitoring Utility Tasks library in the scroll list of the Libraries panel. The tasks contained in the IBM Tivoli Monitoring Utility Tasks library are displayed in the Tasks panel.
9. Specify the appropriate parameters in the Configure Task dialog box.
   Additional Information: Run the `wlsnotif -g` command to see the available Notice Groups.
10. Click Change & Close to add the task to the Action List panel in the Indications and Actions dialog box.

Customizing parameters

Objective
To customize the parameters of a resource model so administrators and users can optimize the monitoring process.

Background Information
Some resource models have one or more parameters. Each parameter can take the form of a list of strings, a list of numeric values, a Boolean list of predetermined values from which you can make any combination of selections, or a choice list of mutually exclusive alternatives.

Note: Certain parameters for IBM Tivoli Monitoring for Databases: DB2 resource models feature selective logging. Selective logging enables you to choose properties that you want to log. Selective logging properties are listed in the Parameters dialog box. See “Customizing data logging information” on page 108 for details on how to enable selective logging.

Required Authorization Role
admin
Before You Begin

- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When You Finish

Distribute the profile to which the resource model belongs. See “Distributing profiles from the desktop” on page 50.

Optional: Continue customizing the resource model:

- Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Customizing indications” on page 93.
- Specify if you want a recovery action when a specific event occurs. See “Editing a built-in action” on page 97.
- Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 99.
- Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 101.
- Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 104.
- Determine when the monitoring of resource models takes place. See “Customizing the scheduling monitoring period” on page 106.
- Specify if you want the log data collected by a resource model written to a local database. See “Customizing data logging information” on page 108.

Procedure

You can perform this procedure from the Tivoli command line or from the desktop.

Command Line: Use the wdmeditprf command to customize a resource model for a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

Desktop:

1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select the resource model that you want to customize.
3. Click Edit to open the Edit Resource Model dialog box.
4. Click Parameters.
5. Select the type of parameter from the Name drop-down list in the Parameters dialog box.
6. Add or delete the parameter values as desired by selecting or clearing the check boxes.

7. Click Apply Changes and Close to save your changes.

Creating scheduling rules

Objective
To create schedule rules so administrators and users can determine the time periods on selected days when monitoring takes place.

Background Information
IBM Tivoli Monitoring contains a scheduling feature that enables you to determine a period when monitoring takes place and specific scheduling rules. You can divide the overall collection period into active and inactive intervals by applying one or more schedule rules.

The scheduling rules enable you to define time periods on specific weekdays during which monitoring takes place. You can define any number of rules which allows you set up a complex pattern of resource monitoring for a profile and covers the periods that you want to monitor. If the profile contains more than one schedule rule, all the time intervals are respected, and rules are combined by adding together the time periods they define. For example, if you specify a rule that requests monitoring between 8:00 and 14:00 every day and another that requests all-day monitoring on Fridays, the sum of the two rules gives all-day monitoring only on Fridays, and monitoring between 8:00 and 14:00 on all other days. If the second rule instead requested monitoring from 12:00 to 18:00 on Fridays, the sum of the rules would give monitoring between 8:00 and 18:00 on Fridays and between 08:00 and 14:00 on all other days.

The scheduled times are always interpreted as local times, enabling you to set up a single rule that monitors the same local time period in different time zones. All times of events or activities reported from endpoints or gateways are also logged in the local time of the system from where they originated.

The Scheduling dialog box has the following group boxes:

Schedule
Sets the data collection period. By default, all resource models are set to always collect data.

Schedule Rules
Manages time intervals during which the resource model is active.

Rule Editor
Creates and edits schedule rules.

Required Authorization Role
admin

Before You Begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
• See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

**When You Finish**

Distribute the profile to which the resource model belongs. See “Distributing profiles from the desktop” on page 50.

**Optional:** Continue customizing the resource model:

• Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Customizing indications” on page 93.

• Specify if you want a recovery action when a specific event occurs. See “Editing a built-in action” on page 97.

• Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 99.

• Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 101.

• Specify if you want to customize your parameters to optimize the monitoring process. See “Customizing parameters” on page 102.

• Determine when the monitoring of resource models takes place. See “Customizing the scheduling monitoring period” on page 106.

• Specify if you want the log data collected by a resource model written to a local database. See “Customizing data logging information” on page 108.

**Procedure**

You can perform this procedure from the Tivoli command line or from the desktop.

**Command Line:** Use the **wdmeditprf** command to customize a resource model for a profile.

For more information about this command, see the *IBM Tivoli Monitoring, Version 5.1.0: User's Guide*.

**Desktop:**

1. Open the **IBM Tivoli Monitoring Profile** dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.

2. Select the resource model that you want to customize.

3. Click **Edit** to open the **Edit Resource Model** dialog box.

4. Click **Schedule** to open the **Scheduling** dialog box.

5. Clear the **Always** check box in the **Schedule** panel.

6. Click **New Rule** in the **Schedule Rules** panel.

7. Type a name for the rule in the **Rule Name** text box of the **Rule Editor** panel.

8. Select one or more items in the weekday list to specify the day or days on which you want the collections active during the collection period.

   *Additional information:* Use the **Shift** or **Cutler** key as necessary to select more than one day from the list.

9. Set the **Start Time** and **Stop Time** for the collection activity or select the **All Day** check box.
Additional information: Times are always interpreted as local time where the endpoint engine runs. Setting a time interval of 08:00 to 13:00 ensures that monitoring takes place between those times in all time zones to which you distribute the profile.

10. Click Set Rule. Your new rule appears in the Schedule Rules list.

Additional information: To display the details of any rule, select the rule in the Schedule Rules list. Its settings are displayed in the Rule Editor group box.

11. Click Modify & Close to save your rule and close the Scheduling dialog box.

Customizing the scheduling monitoring period

Objective
To customize the scheduling monitoring period of a resource model so administrators and users can determine when monitoring takes place.

Background Information
IBM Tivoli Monitoring contains a scheduling feature that enables you to determine a period when monitoring takes place and specific scheduling rules.

The scheduling rules enable you to define time periods on specific weekdays during which monitoring takes place. You can define any number of rules which enables you set up a complex pattern of resource monitoring for a profile and covers the periods that you want to monitor. If a profile contains more than one schedule rule, all the time intervals are respected, and rules are combined by adding together the time periods they define. For example, if you specify a rule that requests monitoring between 8:00 and 14:00 every day and another that requests all-day monitoring on Fridays, the sum of the two rules gives all-day monitoring only on Fridays, and monitoring between 8:00 and 14:00 on all other days. If the second rule instead requested monitoring from 12:00 to 18:00 on Fridays, the sum of the rules would give monitoring between 8:00 and 18:00 on Fridays and between 08:00 and 14:00 on all other days.

The scheduled times are always interpreted as local times, enabling you to set up a single rule that monitors the same local time period in different time zones. All times of events or activities reported from endpoints or gateways are also logged in the local time of the system from where they originated.

The Scheduling dialog box has the following group boxes:

Schedule
Sets the data collection period. By default, all resource models are set to always collect data.

Schedule Rules
Manages time intervals during which the resource model is active.

Rule Editor
Creates and edits schedule rules.

Required Authorization Role
admin

Before You Begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
• Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.

• Create the schedule rules. See “Creating scheduling rules” on page 104 for more details.

• See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

**When You Finish**
Distribute the profile to which the resource model belongs. See “Distributing profiles from the desktop” on page 50.

*Optional:* Continue customizing the resource model:

• Specify if you want to customize your thresholds and events to optimize the monitoring process. See “Customizing indications” on page 93.

• Specify if you want a recovery action when a specific event occurs. See “Editing a built-in action” on page 97.

• Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 99.

• Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 101.

• Specify if you want to customize your parameters to optimize the monitoring process. See “Customizing parameters” on page 102.

• Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 104.

• Specify if you want the log data collected by a resource model written to a local database. See “Customizing data logging information” on page 108.

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command Line:** Use the *wdmeditprf* command to customize a resource model for a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

**Desktop:**
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.

2. Select the resource model that you want to customize.

3. Click **Edit** to open the **Edit Resource Model** dialog box.

4. Click the **Schedule** to open the **Scheduling** dialog box.

5. Clear the **Always** check box in the **Schedule** panel.

6. Set a **Start Date** and **Stop Date** to define the monitoring period.

7. *Optional:* Add one or more schedule rules that determine time periods on the selected dates that monitoring takes place.
8. Click **Modify & Close** to save your changes.

## Customizing data logging information

### Objective
To customize data logging information so administrators and users can log data collected by a resource model and write it in a local database.

### Background Information

**Note:** Certain IBM Tivoli Monitoring for Databases: DB2 resource models feature selective logging. Selective logging enables you to choose properties that you want to log. Selective logging properties are listed in the **Parameters** dialog box. See optional Step [110](#) in the procedure for details on selective logging.

You can view the log data through the IBM Tivoli Monitoring Web Health Console after you write it in a local database. You can store one of the following types of data in the database:

- **Raw data**
  Data written exactly as the resource model collects it. All the monitored values are collected and copied in the database.

- **Aggregated data**
  Data collected and aggregated at fixed intervals that you define (**Aggregation Period**). Only the aggregated values are written in the database. The aggregated data is calculated on the basis of one or more of the following options:
  - Maximum
  - Minimum
  - Average

### Required Authorization Role
**admin**

### Before You Begin
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- See the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for detailed information about each resource model.

### When You Finish
Distribute the profile to which the resource model belongs. See “Distributing profiles from the desktop” on page 50.

**Optional:** Continue customizing the resource model:
- Specify if you want to **customize your thresholds and events** to optimize the monitoring process. See “Customizing indications” on page 93.
• Specify if you want a recovery action when a specific event occurs. See “Editing a built-in action” on page 97.

• Specify if you want corrective or reporting tasks for an event. See “Specifying tasks for an indication” on page 99.

• Specify if you want to receive information on a specific event through a notice. See “Sending a notice to administrators when an event occurs” on page 101.

• Specify if you want to customize your parameters to optimize the monitoring process. See “Customizing parameters” on page 102.

• Specify if you want the monitoring of resource models to take place on specific time periods of selected days. See “Creating scheduling rules” on page 104.

• Determine when the monitoring of resource models takes place. See “Customizing the scheduling monitoring period” on page 106.

Procedure
You can perform this procedure from the Tivoli command line or from the desktop.

Command Line: Use the wmeditprf command to customize a resource model for a profile.

For more information about this command, see the IBM Tivoli Monitoring, Version 5.1.0: User’s Guide.

Desktop:
1. Open the IBM Tivoli Monitoring Profile dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manager icon to display the profile manager.
   d. Double-click the profile icon in which you want to customize a resource model.
2. Select the resource model that you want to customize.
3. Click Edit to open the Edit Resource Model dialog box.
4. Click Logging to open the Logging dialog box.
5. Select the Enable Data Logging check box in the Data Logging Settings panel. This enables logging of all raw data collected by the resource model to a database.

Note: Resource models do not log data by default. You must select the Enable Data Logging check box to log data. If you do not select this check box, resource model data will be lost.

6. Perform the following steps to specify the aggregation rule applied to the data before it is written to the database:
   a. Set Hours and Minutes of the Aggregation Period to the required values.
   b. Select one or more of the following functions to perform on the numerical data collected during the aggregation period before it is written to the database:
      Maximum
      Calculates and logs the peak value in each aggregation period.

      Minimum
      Calculates and logs the lowest value in each aggregation period.
Average
Calculates and logs the average of all values in each aggregation period. Average is the default setting.

7. If you want to log the raw data instead of aggregate data, do the following:
   a. Clear the Aggregate Data check box.
   b. Select Raw Data.
   c. Optional: If Tivoli Enterprise Data Warehouse is installed, you can check the TEDW Data option to store the raw data for use in Tivoli Enterprise Data Warehouse.

8. Set Hours and Minutes of the Historical Period to the required values.

9. Click Apply Changes and Close to save your changes and close the Logging dialog box.

10. Optional: If you want to enable selective logging, do the following:
    a. Click Parameters to open the Parameters dialog box.
    b. Select the parameter that you want to log from the Name drop-down list.

    Note: See the IBM Tivoli Monitoring for Databases: DB2 Reference Guide for parameters available for selective logging.

    c. Select the check box in the Value field for each metric that you want to log.
    d. Click Apply Changes and Close to save your changes.

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### Managing profiles and resource models at endpoints

**Objective**
To manage profiles and resource models after they are distributed to endpoints so administrators and users can maintain monitoring processes on those endpoints.

**Background Information**
None.

**Required Authorization Role**
admin

**Before You Begin**
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- Distribute the profile. See “Distributing profiles from the desktop” on page 50 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

**When You Finish**
None
**Procedure**
You can perform this procedure from the Tivoli command line only.

**Command Line:**

**Note:** You must run the following commands on or from a managed node.

Use the `wdmcmd` command to stop or restart IBM Tivoli Monitoring on one or more endpoints from a gateway or server.

Use the `wdmdistrib` command to distribute a profile to one or more subscribers.

Use the `wdmeng` command to stop or start profiles or resource models at endpoints or to delete profiles at endpoints.

Use the `wdmlseng` command to return a list and the status of all resource models that have been distributed on a specified endpoint.

Use the `wdmtrceng` command to set the trace parameters of the IBM Tivoli Monitoring engine at the endpoint.

See the IBM Tivoli Monitoring documentation for more information about the `wdm` commands.

---

**Managing IBM Tivoli Monitoring gateways**

**Objective**
To manage IBM Tivoli Monitoring on gateways so administrators and users can run monitoring processes on those gateways.

**Background Information**
None.

**Required Authorization Role**
admin

**Before You Begin**
- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- Distribute the profile. See “Distributing profiles from the desktop” on page 50 for information.
- See the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for detailed information about each resource model.

**When You Finish**
None

**Procedure**
You can perform this procedure from the Tivoli command line only.
**Command Line:** Use the `wdmmn` command to stop or start selected IBM Tivoli Monitoring processes on one or all gateways.

## Determining which resource models have been distributed to endpoints

**Objective**

To determine which resource models have been distributed to an endpoint.

**Background Information**

Open an endpoint window from the desktop to see if a resource model has been distributed to it.

**Required Authorization Role**

admin

**Before You Begin**

- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- Distribute the profile. See “Distributing profiles from the desktop” on page 50 for information.
- See the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for detailed information about each resource model.

**When You Finish**

None

**Procedure**

You can perform this procedure from the Tivoli desktop only.

**Desktop:**

1. Open the Profile Manager dialog box by doing the following:
   a. Open the Tivoli desktop.
   b. Double-click the policy region icon to display the policy region.
   c. Double-click the profile manger icon to display the Profile Manager dialog box.
2. Double-click the endpoint icon from the Subscribers area to open the endpoint dialog box.
3. Double-click the monitoring profile icon to display the IBM Tivoli Monitoring Profile dialog box, which lists the resource models distributed to the endpoint.

## Determining which resource models are running on endpoints

**Objective**

To determine which resource models are running on an endpoint.

**Background Information**

Use the Tivoli command line to determine which resource models are running on an endpoint.
Required Authorization Role
admin

Before You Begin

- Create a profile manager and profile. See “Creating profile managers and profiles” on page 46 for information.
- Add subscribers to a profile manager. See “Subscribing resources to profile managers” on page 48 for information.
- Add a resource model to a profile. See “Adding default resource models to profiles” on page 49 and “Adding custom resource models to profiles” on page 92 for information.
- Distribute the profile. See “Distributing profiles from the desktop” on page 50 for information.
- See the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide for detailed information about each resource model.

When You Finish
None

Procedure
You can perform this procedure from the Tivoli command line only.

Command Line: Use the wdmIseng command to determine which resource models are running on an endpoint. For example, to view the list of resource models on an endpoint, enter the following command:

```
wdmlseng -e <endpoint>
```

Refer to the IBM Tivoli Monitoring User’s Guide for more information.
Chapter 9. Enabling IBM Tivoli Monitoring for Databases: DB2 for Tivoli Enterprise Data Warehouse

This chapter provides information on enabling IBM Tivoli Monitoring for Databases: DB2 for Tivoli Enterprise Data Warehouse.

Overview

Tivoli Enterprise Data Warehouse enables you to access application reports from various Tivoli and customer applications. The infrastructure provides a set of extract, transform and load (ETL) utilities that you use to extract and move data from Tivoli application data stores to a central data warehouse database.

Tivoli Enterprise Data Warehouse provides the following capabilities:

• An open architecture for storing, aggregating, and correlating historical data. In addition to the data collected by IBM Tivoli software, Tivoli Enterprise Data Warehouse has the flexibility and extensibility to enable you to integrate your own application data.

• Database optimizations for the efficient storage of large amounts of historical data and for fast access to data for analysis and report generation.

• The infrastructure and tools necessary for maintaining and viewing the collected data. These include the Tivoli Enterprise Data Warehouse application, IBM DB2 Universal Database™ Enterprise Edition, the Data Warehouse Center, DB2 Warehouse Manager, and a user interface for creating and viewing reports.

• The ability to use your choice of data analysis tools to examine your historical data. In addition to the report interface, you can analyze your data using other products such as online analytical processing (OLAP), planning, trending, analysis, accounting, and data mining tools.

• The ability to control access to your historical data. You can keep data about multiple customers and data centers in one central data warehouse, but restrict access so that customers can see and work with data and reports based only on their data and not any other customer’s data. You can also restrict an individual user’s ability to access data.

• A zero-footprint client. Users can access Tivoli Enterprise Data Warehouse reports from any system by using a Web browser. No special software is required on the user’s system.

• Internationalization support. Not only is the report interface localized, application programmers can localize the data stored in the central data warehouse.

Tivoli Enterprise Data Warehouse consists of the following components:

• Control server
• Central data warehouse
• Data marts
• Report interface

Control server

The control server contains the control database for Tivoli Enterprise Data Warehouse from which you manage your data warehouse.
The control server has these subcomponents:

- A server that controls communication between the control server, the central data warehouse server, the data mart server, and the report server.
- The control database, which contains metadata for Tivoli Enterprise Data Warehouse.

The control server uses the following parts of the IBM DB2 product, which you must install manually before installing the control server. These parts are all automatically installed when you install IBM DB2 Universal Database Enterprise Edition on a Microsoft Windows system.

- DB2 Server
- The Data Warehouse Center, a component that automates data warehouse processing. You can use the Data Warehouse Center to define the ETL processes that move and transform data into the central data warehouse and the star schemas used by the data marts. Then, you can use the Data Warehouse Center to schedule, maintain, and monitor these processes.
- The warehouse agent, part of DB2 Warehouse Manager.

**Central data warehouse**

The central data warehouse is a DB2 database that contains the historical data for your enterprise. The system that hosts the central data warehouse is called the central data warehouse server. The central data warehouse component uses IBM DB2 Universal Database Enterprise Edition, which you must install manually before installing the control server.

**Data marts**

A separate DB2 database contains the data marts for your enterprise. Each data mart contains a subset of the historical data from the central data warehouse to satisfy the analysis and reporting needs of a specific department, team, customer, or application. The system that hosts this DB2 database is called the data mart server. Although you can have many data marts, you can have only one data mart server.

The data mart component requires IBM DB2 Universal Database Enterprise Edition, which you must install manually before installing the control server.

The warehouse pack for IBM Tivoli Monitoring for Databases: DB2 creates data marts whose structure is suitable for the report interface. They do this by providing an extract, transform, and load (ETL) process, called a data mart ETL, that creates the data mart and loads it with data from the central data warehouse.

You can modify an existing data mart, or create new data marts that contain slightly different data, to address a reporting need specific to your situation. To modify or create a data mart, you must be familiar with database ETL processes and with the internal representation of a data mart as star schemas in the Tivoli Enterprise Data Warehouse databases. For information about this, see the Enabling an Application for Tivoli Enterprise Data Warehouse Guide.

**Report interface**

The Tivoli Enterprise Data Warehouse report interface (RPI) provides tools and a graphical user interface that other Tivoli software products use to create and display reports. You can use Tivoli Enterprise Data Warehouse to customize reports provided with other Tivoli software and to create new reports. You also use the
report interface to control access to data marts and to the reports associated with a
data mart. The system on which you install the report interface is called the report
server.

Use the Work with Reports task group in the report interface to manage users,
groups, and data marts for Tivoli Enterprise Data Warehouse or to run, create, and
view Tivoli Enterprise Data Warehouse reports.

Tivoli Enterprise Data Warehouse reports

Tivoli Enterprise Data Warehouse reports display a static view of the data in a data
mart. Reports are provided by the warehouse pack for IBM Tivoli Monitoring for
Databases: DB2, along with the data marts required to collect the data used in the
report.

For more information about working with reports, see the Tivoli Enterprise Data
Warehouse online help.

Tivoli software products using the Tivoli Enterprise Data Warehouse can provide
prepackaged reports that enable you to access specific information about your
business environment. All of these reports are listed in the Manage Reports and
Report Output task of the Work with Reports task group in the IBM Console. This
includes reports from all Tivoli software products that use the Tivoli Enterprise
Data Warehouse report interface. Tivoli software products can also provide a
different reporting interface.

A Tivoli Enterprise Data Warehouse report uses data from a single data mart.

If you have the appropriate role, you can also create additional reports or modify
existing reports. Before you can create a new report or modify an existing report,
you must understand the structure of the underlying warehouse data and of the
operational data that is the source of that data. For information about the structure
of data in the data mart and in the central data warehouse, see the Enabling an
Application for Tivoli Enterprise Data Warehouse Guide.

Table 18. Goals and where to find procedures for enabling IBM Tivoli Monitoring for
Databases: DB2 for Tivoli Enterprise Data Warehouse

<table>
<thead>
<tr>
<th>Goal</th>
<th>Where to find procedures</th>
</tr>
</thead>
<tbody>
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<td>Work with users and user groups</td>
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<tr>
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<td>“Creating an IBM Console user” on page 118</td>
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<tr>
<td></td>
<td>“Assigning roles to a user” on page 119</td>
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<td>“Creating a user group” on page 120</td>
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<tr>
<td></td>
<td>“Assigning users to a user group” on page 120</td>
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<tr>
<td></td>
<td>“Assigning user groups to a data mart” on page 121</td>
</tr>
</tbody>
</table>
Table 18. Goals and where to find procedures for enabling IBM Tivoli Monitoring for Databases: DB2 for Tivoli Enterprise Data Warehouse (continued)

<table>
<thead>
<tr>
<th>Goal</th>
<th>Where to find procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Tivoli Enterprise Data Warehouse reports</td>
<td>“Running reports” on page 121</td>
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<td></td>
<td>“Creating reports” on page 123</td>
</tr>
<tr>
<td></td>
<td>“IBM Tivoli Monitoring for Databases: DB2 data marts and reports” on page 124</td>
</tr>
</tbody>
</table>

Accessing the IBM Console

**Objective**
To display the IBM Console so you can use Tivoli Enterprise Data Warehouse.

**Background information**
You perform all Tivoli Enterprise Data Warehouse functions through the IBM Console. Access the IBM Console using a web browser to connect to Tivoli Enterprise Data Warehouse server.

**Required authorization role**
superadmin

**Before you begin**
None

**When you finish**
None

**Procedure**
To access the IBM Console, complete the following steps:
1. Start the web browser.
2. Connect to the following URL:
   http://<hostname of TEDW server>/IBMConsole
3. Enter the default user, ‘superadmin’, and the default password, ‘password’. It is recommended that you change the default password after you log in. To change the password, click **Administer Users and Role** and select **Manage Users**.

Creating an IBM Console user

**Objective**
To create an IBM Console user.

**Background information**
Tivoli Enterprise Data Warehouse is displayed using the IBM Console, which is also used by other Tivoli software products. A user is given access to tasks in the IBM Console based on the roles that are assigned to that user. One user can have roles for diverse tasks including administering IBM Console users, managing Tivoli Enterprise Data Warehouse user groups and data marts, running and viewing the
output of Tivoli Enterprise Data Warehouse reports, and performing tasks associated with other Tivoli software products.

**Required authorization role**
superadmin

**Before you begin**
None.

**When you finish**
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing users, such as updating or displaying the properties of a user and deleting a user.

**Procedure**
To create an IBM Console user, complete the following steps from the IBM Console:

1. Select **Administer Users** and then **Create a User**.
2. Open the Task Assistant and follow the instructions provided in the online help to create a user.

---

### Assigning roles to a user

**Objective**
To assign roles to a user.

**Background information**
The following Tivoli Enterprise Data Warehouse roles control access to tasks and activities in the Work with Reports task group:

- **Warehouse Security Administrator**
  With this role, a user can create and manage groups and data marts. A user with this role controls access to data marts by assigning users to groups and by giving groups access to specific data marts. In effect, this role controls access to the Tivoli Enterprise Data Warehouse data using user groups and data marts.

- **Report roles control a user’s ability to create and modify reports for the data marts his user groups can access. Assign only one of the following roles to each user:**
  - **Advanced Report Author**
    With this role, a user can create, modify, run, and delete public and their own personal reports, and save the output of reports, both public and personal.
  - **Report Author**
    With this role, a user can run and save the output of public reports and create and modify their own personal reports. They can run public and personal reports, and create, modify, and delete personal reports.
  - **Report Reader**
    With this role, a user can run public reports and view the saved output of public reports.

**Required authorization role**
superuser

**Before you begin**
None.
Creating a user group

Objective
To create a user group.

Background information
None.

Required authorization role
Administration Authorizations

Before you begin
None.

When you finish
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing user groups, such as updating or displaying the properties of a user group, adding users to a user group, and deleting a user group.

Procedure
To create a user group, complete the following steps from the IBM console:
1. Select Work with Reports and then Manage User Groups.
2. In the Manage User Groups window, click the context menu of Root and select Create.
3. Follow the instructions in the Task Assistant about creating user groups.

Assigning users to a user group

Objective
To assign users to user groups.

Background information
You control access to data in Tivoli Enterprise Data Warehouse data marts by specifying which user groups (collections of users) can run the reports that access the data in each data mart. Each user in a user group is given access to all reports that access the data in the data marts to which that user group has access.

By default, Tivoli Enterprise Data Warehouse provides the TWHAdmin user group, which contains a single user: superadmin. You can customize the TWHAdmin user group for the needs of your enterprise.

A user can be assigned to more than one user group.
Required authorization role
Administration Authorizations

Before you begin
None.

When you finish
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for managing user groups, such as updating or displaying the properties of a user group, adding or removing users from a user group, and deleting a user group.

Procedure
To assign one or more users to a user group, perform the following steps from the IBM Console:
1. Select Work with Reports and then Manage User Groups.
2. In the Manage User Groups window, click the context menu icon of a group and select Properties.
3. Follow the instructions in the Task Assistant about assigning users to user groups.

Assigning user groups to a data mart

Objective
To assign user groups to a data mart.

Background information
Grant access to only those user groups whose users need the data mart to perform tasks.

Required authorization role
Administration Authorizations

Before you begin
None.

When you finish
The Tivoli Enterprise Data Warehouse online help can guide you through additional tasks for managing user groups, such as updating or displaying the properties of a user group, removing users from a user group, and removing data mart access from a user group.

Procedure
To assign user groups to a data mart, complete the following steps from the IBM Console:
1. Select Work with Reports and then Manage Data Marts.
2. In the Manage Data Marts window, in the Data Mart view, click the context menu icon for the data mart that you want to change and click Properties.
3. Select the User Groups tab.

Running reports

Objective
To run a report using the report interface.
Background information
None.

Required authorization role
AdvRepAuthRole, RepAuthRole, or RepReaderRole

Before you begin
None.

When you finish
The Tivoli Enterprise Data Warehouse online help can also guide you through additional tasks for reports, such as displaying the properties of a report and deleting a report.

Procedure
To run a report using the report interface, complete the following steps from the IBM Console:
1. Select Work with Reports and then Manage Reports and Report Output.
2. In the Manage Reports and Report Output window, in the Reports view, click the context menu icon of a report and select Run.

Scheduling reports to run automatically

Objective
To automatically run reports.

Background information
Using the Tivoli Enterprise Data Warehouse report interface, you can schedule a report to run automatically when the associated data mart is updated. This ensures that when you examine the output of the report, it displays the most recent data in the warehouse.

Required authorization role
AdvRepAuthRole

Before you begin
None.

When you finish
The Tivoli Enterprise Data Warehouse online help can also guide you through additional tasks for reports, such as modifying or displaying the properties of a report and deleting a report.

Procedure
To schedule a report to run automatically when the associated data mart is updated, complete the following steps from the IBM Console:
1. Select Work with Reports and then Manage Reports and Report Output.
2. In the Manage Reports and Report Output window, in the Reports view, click the context menu icon of a report and select Reports.
3. Click the context menu icon of a report and select Properties.

Modifying default settings for reports

Objective
To modify default settings for report creation.
**Background information**
When you create or modify a report, you select predetermined values for the time frame of the report. The predetermined values of Peak Hours and Weekdays specified under Filtering in the Time page of report properties can be modified. Do this by modifying the information in the control database on the control server.

The default value for Peak Hours is 9:00 am through 5:00 PM, or 0900 to 1700. This value can be modified to reflect different peak hours if necessary.

The default value for Weekdays is Monday through Friday. This value can also be modified.

The RPI.TimeFilters table contains the following filters and default filter values:

<table>
<thead>
<tr>
<th>TIME_FILTER_NAME</th>
<th>TIME_FILTER_VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak hours</td>
<td>hour(meas_hour) in (9,10,11,12,13,14,15,16,17)</td>
</tr>
<tr>
<td>Weekdays</td>
<td>dayofweek(meas_date) between 2 and 6</td>
</tr>
</tbody>
</table>

**Required authorization role**
AdvRepAuthRole

**Before you begin**
None.

**When you finish**
For additional information on the properties of the RPI.TimeFilters table, see the *Enabling an Application for Tivoli Enterprise Data Warehouse Guide*.

**Procedure**
To change the values displayed in the report interface, perform the following steps:

1. Connect to the control database (TWH_MD).
2. Use an SQL statement similar to the following to modify the values for Peak Hours or Weekdays in the RPI.TimeFilters table. The following example sets the Weekdays filter to represent Sunday through Thursday:

   ```sql
   Update RPI.TimeFilters set TIME_FILTER_VALUES =dayofweek(meas_date) between 1 and 5
   where TIME_FILTER_NAME =Weekdays
   ```

   After doing this, when a user selects a Weekdays filter for a report in the report interface, the data returned is for Sunday through Thursday.

   **Note:** There is no error-checking for the values inserted into the tables for Peak Hours and Weekdays. Therefore, ensure that the information you insert into the tables is correct. You can save a report that contains incorrect values for these parameters without receiving an error message. The message is not generated until the report is run.

---

**Creating reports**

**Objective**
To create a report.

**Background information**
You can receive a message that the name you specified is already in use, even if you do not have access to the report with that name.
**Required authorization role**
AdvRepAuthRole or RepAuthRole

**Before you begin**
Ensure that you use descriptive and meaningful names for the reports you create. Report names are unique across all users of Tivoli Enterprise Data Warehouse.

**When you finish**
The Tivoli Enterprise Data Warehouse online help also guides you through additional tasks for reports, such as modifying or displaying the properties of a report and deleting a report.

**Procedure**
To create a report, perform the following steps from the IBM Console:
1. Select **Work with Reports**.
2. Select **Create a Report**.

---

**IBM Tivoli Monitoring for Databases: DB2 data marts and reports**

This section describes the data marts, star schemas, and reports used for IBM Tivoli Monitoring for Databases: DB2.

IBM Tivoli Monitoring for Databases: DB2 provides the **TWH_MART** data mart. This data mart uses the following star schemas:
- CTD Hourly Instance Star Schema
- CTD Hourly Database Star Schema

The **TWH_MART** data mart provides the following prepackaged health check reports:

**CTD Hourly Minimum Buffer Pool Hit Ratio**
Shows the minimum buffer pool ratio at the database level.

**CTD Percent Catalog Cache Hits**
Shows the percentage of catalog cache hit ratio.

**CTD Hourly Deadlocks Delta**
Shows the total number of deadlocks for each hour at database level.

**CTD Hourly Maximum Percentage Used of Primary Log**
Shows the maximum primary log space used during each hourly period.

**CTD Hourly Percentage of Connections Used**
Shows the minimum percentage of available connections that were used at the DB2 instance level during each hourly period.
### Appendix A. Authorization roles quick reference

Each IBM Tivoli Monitoring for Databases: DB2 procedure has a required authorization role. The following table summarizes these activities and roles and tells you where to find additional information in this document:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Context</th>
<th>Required role</th>
<th>For additional information see</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install software</td>
<td>Tivoli management region (TMR)</td>
<td>senior and db2_dba</td>
<td>IBM Tivoli Monitoring for Databases: Component Installation Guide</td>
</tr>
<tr>
<td>Creating policy regions</td>
<td>Policy region</td>
<td>senior and policy</td>
<td>“Creating an IBM Tivoli Monitoring for Databases: DB2 policy region” on page 20</td>
</tr>
<tr>
<td>Moving objects into a subregion</td>
<td>Policy region</td>
<td>senior and policy</td>
<td>“Moving the Monitoring for DB2 objects” on page 21</td>
</tr>
<tr>
<td>Adding managed resource types</td>
<td>Policy region</td>
<td>senior and policy</td>
<td>“Adding or removing managed resource types” on page 23</td>
</tr>
<tr>
<td>Removing managed resource types</td>
<td>Policy region</td>
<td>senior and policy</td>
<td>“Adding or removing managed resource types” on page 23</td>
</tr>
<tr>
<td>Creating DB2 instance objects</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Creating DB2 instance objects” on page 26</td>
</tr>
<tr>
<td>Creating DB2 database objects</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Creating DB2 database objects” on page 28</td>
</tr>
<tr>
<td>Creating DB2 gateway objects</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Creating DB2 gateway objects” on page 31</td>
</tr>
<tr>
<td>Creating partition objects</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Creating partition objects” on page 33</td>
</tr>
<tr>
<td>Creating partition group objects</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Creating partition group objects” on page 35</td>
</tr>
<tr>
<td>Creating discovery objects</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Creating DB2 Discovery objects” on page 37</td>
</tr>
<tr>
<td>Discovering DB2 servers</td>
<td>Policy region</td>
<td>db2_user or db2_dba</td>
<td>“Discovering DB2 instances” on page 39</td>
</tr>
<tr>
<td>Discovering DB2 databases and gateways</td>
<td>Policy region</td>
<td>db2_dba</td>
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</tr>
<tr>
<td>Adding or removing partition group members</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Adding or removing partition group members” on page 42</td>
</tr>
<tr>
<td>Subscribing to notice groups</td>
<td>Administrators collection</td>
<td>senior</td>
<td>“Subscribing to notice groups” on page 43</td>
</tr>
<tr>
<td>Opening a database server endpoint</td>
<td>Policy region</td>
<td>db2_user</td>
<td>“Opening a DB2 Instance endpoint” on page 57</td>
</tr>
<tr>
<td>Viewing DB2 object properties</td>
<td>Policy region</td>
<td>db2_user</td>
<td>“Viewing DB2 object properties” on page 58</td>
</tr>
<tr>
<td>Updating a server’s state</td>
<td>Policy region</td>
<td>db2_user</td>
<td>“Updating the state of a server” on page 61</td>
</tr>
<tr>
<td>Activity</td>
<td>Context</td>
<td>Required role</td>
<td>For additional information see</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>---------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Starting a database server, partition, or partition group</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Starting and stopping a database instance, partition server, or partition group node” on page 62</td>
</tr>
<tr>
<td>Stopping a database server, partition, or partition group</td>
<td>Policy region</td>
<td>db2_dba</td>
<td>“Starting and stopping a database instance, partition server, or partition group node” on page 62</td>
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Appendix B. Setting Up the Tivoli Enterprise Console

This appendix provides information about setting up the Tivoli Enterprise Console (TEC) for use with the IBM Tivoli Monitoring for Databases: DB2 software. If you do not have the Tivoli Enterprise Console or do not want to have IBM Tivoli Monitoring for Databases: DB2 send events to it, you do not need to use this information.

This appendix includes the following topics:

- Overview of the Tivoli Enterprise Console
- Procedures for setting up the Tivoli Enterprise Console to receive monitoring and task events
- Procedures for viewing events in the Tivoli Enterprise Console
- Procedures for setting up automated task execution in response to events

Note: If you plan to track IBM Tivoli Monitoring for Databases: DB2 objects using Tivoli Business Systems Manager, you must first configure Tivoli Enterprise Console to forward events to Tivoli Business Systems Manager. For details on configuring Tivoli Enterprise Console to forward events to Tivoli Business Systems Manager, see "Configuring the Tivoli Enterprise Console event server" on page 139.

Table 20. Setting up the Tivoli Enterprise Console guidelines

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Overview of the Tivoli Enterprise Console

In distributed computing environments, it is essential to address events and conditions that can lead to problems. The Tivoli Enterprise Console provides the tools for the following functions:

- Receiving events from various sources
- Processing events using rules
- Grouping events and delegating the groups selectively to administrators
- Responding to events automatically
- Viewing events at a console

For more information about the Tivoli Enterprise Console, refer to the Tivoli Enterprise Console User’s Guide. For a listing of event classes and events, see the Tivoli Enterprise Console classes appendix in the IBM Tivoli Monitoring for Databases: DB2 Reference Guide.
Events

In the Tivoli Enterprise Console environment, an event is an object that has been created using data obtained from a source that is monitored by an event adapter. Each event is identified by a class name. Class names may vary and are defined by their respective event adapters.

Sources of events

The Tivoli Enterprise Console accepts events from many sources. Typically, Tivoli software is set up so that events are sent in response to changes in an application or system resource. For example, distributed monitors can be configured to send events as well as report in other ways. Tivoli tasks can send events.

Event processing

The Tivoli Enterprise Console uses rules to process events. A rule is made up of a set of logic statements. The rule makes decisions on what to do with the event based on information provided in the event, such as the event class, event name, severity, location, and description.

A rule’s logic provides one or more responses to the event. A rule can drop insignificant events, escalate important events, create new events, or respond to defined relationships of multiple events (event correlation). It can also close an old event when a new event indicates that the original condition is resolved.

Event grouping

The Tivoli Enterprise Console can filter events into event groups. These event groups are typically organized by function but can also be configured by other criteria, such as location or organizational jurisdiction.

Event groups are especially useful for subdividing all the Tivoli Enterprise Console events into manageable chunks. Administrators can be assigned to one or more event groups.

Note: This option is not available for Tivoli Enterprise Console, Version 3.7. For information on creating event groups for that version, refer to the Tivoli Enterprise Console, Version 3.7, User’s Guide.

Viewing events

The Tivoli Enterprise Console includes a console where administrators can watch for incoming events and respond to them. The event console is a useful tool for managing by exception. The Tivoli Enterprise Console can filter out normal events, respond automatically to anticipated problems, and forward only those events that require human intervention.

Responses to events

The Tivoli Enterprise Console normally can provide automatic responses to many common events, either by executing response programs or executing Tivoli tasks. For example, you can set a response program to respond to the event that is received when a database becomes unavailable. The specific response can be to inform an administrator or to attempt automatic restarts of the database, or a combination of both.

Configuring Event Console using a task

Objective

To configure the Tivoli Enterprise Console in a single step by using the ECC_Configure_TEC_Classes task.
**Background information**

The **ECC_Configure_TEC_Classes** task does all of the following:

- Creates a rule base in the directory where you install Tivoli Enterprise Console.
- Provides Tivoli Enterprise Console configuration for the specified options. It adds class and rule set definitions to a valid rule base for the options, if they are not already defined in the specified rule base.
- Copies a specified rule base into the newly created rule base.
- Creates event groups. (This option is not available for Tivoli Enterprise Console, Version 3.7.)
- Loads the rule base.
- Restarts the event server.

Refer to the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for additional information about this task.

You can also configure the Tivoli Enterprise Console by using the Tivoli Enterprise Console commands at the command line; however, Tivoli recommends that you use the **ECC_Configure_TEC_Classes** task. See "Configuring Event Console using Tivoli Enterprise Console commands" on page 133 for information on configuring the Tivoli Enterprise Console using the Tivoli Enterprise Console commands.

**Required authorization role**

senior and super (must have both roles)

**Before you begin**

Ensure that you have the Tivoli Enterprise Console server installed in the same Tivoli management region where you have IBM Tivoli Monitoring and IBM Tivoli Monitoring for Databases: DB2 installed. If you have the Tivoli Enterprise Console server installed on a different Tivoli management region, you have the option of making a two-way connection between the Tivoli management regions. See the *Tivoli Management Framework User’s Guide* for details on properly connecting two Tivoli management regions.

Ensure that you have taken the following steps to properly connect the two Tivoli management regions:

- Run the **wconnect** command as a two-way connection.
- Ensure that you update the following Tivoli managed resources:
  - Register each of the Tivoli management regions in the other Tivoli management region’s **ManagedNode** property.

  **Note:** Use the **wlookup** command to ensure that you have a valid registration. If your registration is not accurate, use the **wupdate** command to properly register the Tivoli management region on a managed node.

  - Register the Tivoli management region where Tivoli Enterprise Console resides on the **EventServer** managed resource in the Tivoli management region where IBM Tivoli Monitoring for Databases: DB2 resides.

  **Note:** Use the **wlookup** and **wregister** commands to ensure that you have a valid registration. If your registration is not accurate, use the **wupdate** command to properly register the Tivoli management region in the event server.
Register the following IBM Tivoli Monitoring for Databases: DB2 managed resources in the Tivoli management region where Tivoli Enterprise Console resides:
- DB2InstanceManager
- DB2DatabaseManager
- DB2Gateway
- DB2PartitionManager
- DB2PartitionGroupManager
- DB2Discovery

**Note:** Use the `wlookup` and `wregister` commands to ensure that you have a valid registration. If your registration is not accurate, use the `wupdate` command to properly register the IBM Tivoli Monitoring for Databases: DB2 managed resources.

See the *Tivoli Management Framework Reference Manual* for details on the `wconnect`, `wlookup`, `wregister`, and `wupdate` commands.

If you choose to make a two-way connection between the Tivoli management region where Tivoli Enterprise Console resides and the Tivoli management region where IBM Tivoli Monitoring and IBM Tivoli Monitoring for Databases: DB2 reside, run the `ECC_Send_Files_To_TEC_TMR` task after connecting the two Tivoli management regions in order to place the required DB2 files on the remote Tivoli management region. See the *IBM Tivoli Monitoring for Databases: DB2 Reference Guide* for details on running the `ECC_Send_Files_To_TEC_TMR` task.

**When you finish**
None

**Procedure**
You can perform this procedure from the Tivoli command line or from the desktop.

**Command line:** Use the `wruntask` command to run the task.

See the *IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 Reference Guide* for information about running the `ECC_Configure_TEC_Classes` task from the command line.

**Desktop:**
1. Double-click the *DB2ManagerAdminTasks* task library icon.
2. Double-click the `ECC_Configure_TEC_Classes` icon to display the `Execute Task` dialog box.
3. Change the value in the `Timeout` text box from 60 to 600.
4. Select the `Display on Desktop` option to see the output when the task is executed.
5. Select a managed resource in the `Available Task Endpoints` from the `Execution Targets` list.
6. Click the left arrow button to move the managed resource into the `Selected Task Endpoints` list.
   
   Additional Information: The `Available Task Endpoints` list displays only those managed resources that have Tivoli Enterprise Console servers.
7. Click `Execute & Dismiss` to display the `ECC_Configure_TEC_Classes` task argument dialog box.
8. Specify the configuration of the Tivoli Enterprise Console based on the following descriptions:

- **Rule Base Name**: Type the name of the rule base to configure. It can be a new rule base to create or an existing rule base. If you specify an existing rule base, the task checks to make sure that both its class and rule set files are defined correctly.

  **Note:** Type only the name. Do not enter a full path. If a full path is entered, only the name portion is used.

  You must run the `wdelrb` command on the Tivoli Enterprise Console server when you change an existing rule base. This command removes the current copy of the rule base that you are replacing. See the *Tivoli Enterprise Console Reference Manual* for details on the `wdelrb` command.

- **Copy Base Name**: Type the name of the rule base to copy. If you do not enter a name, a rule base with the specified name is created, but no rule base is copied into it.

  **Note:** If you intend to specify a rule base other than Default, be sure that the rule base is valid.

- **Event Group Name**: Type the name of the event group you are creating.

  **Note:** This option is not available for Tivoli Enterprise Console, Version 3.7.

- **Restart Event Server**: Select this box if you want the task to restart the event server. The new rule base (or modified rule base) does not take effect until the event server is restarted.

  **Note:** If you do not have the task restart the event server, you must load the rule base and restart the event server manually.

9. Click **Set & Execute** to run the task.

**Additional Information:** If the **Restart Event Server** option is specified, this task starts the server if it is not running, or stops and restarts it if it is currently running. If you set the **Display on Desktop** option (in Step 3), the system displays the results of this task in a dialog box.

## Configuring Event Console using Tivoli Enterprise Console commands

**Objective**
To configure the event console for use with IBM Tivoli Monitoring for Databases: DB2 using the Tivoli Enterprise Console commands.

**Background information**
This section includes information on creating and loading a rule base that contains the IBM Tivoli Monitoring for Databases: DB2 event class definitions and rule sets. The rule base directory is `$BINDIR/TME/TEC/rulebase_name`. You will need this to configure the event console.

**Required authorization role**
Senior and super (must have both roles)

**Before you begin**
- Ensure that you have the appropriate roles to create event server objects.
- Install the Tivoli Enterprise Console server on the same host as the Tivoli management region server.
There must be only one Tivoli management region server.

Create and configure a rule base named **DB2Base**.

Create and configure an event group called **DB2BaseEvent**.

### When you finish

None

### Procedure

You can perform this procedure from the Tivoli command line only.

1. Use the `wlookup` command as follows to verify that the Tivoli Enterprise Console server has been installed and registered.
   ```
   wlookup -ar EventServer
   ```

   The `wlookup` command returns a line similar to the following, however, the object identification number (OID) will be different.
   ```
   EventServer 1671340084.1.695#Tec::Server#
   ```

   If you have an interconnected Tivoli management region with an event server installed in each Tivoli management region, each Tivoli Enterprise Console server is reported.

2. Create a new rule base using the `wcrtrb` command.
   ```
   wcrtrb -S @EventServer:EventServerName -d $BINDIR/TME/TEC/DB2Base
   ```

3. Copy the contents of the **Default** rule base into the new rule base using the `wcprb` command.

   **Note:** If your current rule base is not **Default**, copy your current rule base instead.
   ```
   wcprb -S @EventServer:EventServerName Default DB2Base
   ```

4. Import the rule base event class `.baroc` files by entering the following command:

   **Note:** You must load each `.baroc` file separately and in the same order as listed in the Tivoli Enterprise Console classes appendix in the *IBM Tivoli Monitoring for Databases: DB2 Reference Guide*.
   ```
   wimprbclass -S @EventServer:EventServerName <eventclass.baroc>
   ```

5. Import the rule base rule set file by entering the following command:
   ```
   wimprbrules -S @EventServer:EventServerName <rulebase.rls>
   ```

6. Compile the rule base by entering the following command:
   ```
   wcomprules -S @EventServer:EventServerName
   ```

7. Load the rule base by entering the following command:
   ```
   wloadrb -S @EventServer:EventServerName DB2Base
   ```

8. Select a method to restart the event server based on the following descriptions:
   
   - **If the event server is running**, enter the following commands:
     ```
     wstopesvr -S @EventServer:EventServer
     wstartesvr -S @EventServer:EventServer
     ```
   
   - **If the event server is not running**, enter the following command:
     ```
     wstartesvr -S @EventServer:EventServer
     ```
Viewing events in the Tivoli Enterprise Console

Objective
To view events in the Tivoli Enterprise Console so you can watch for incoming events and respond to them immediately.

Background information
The Tivoli Enterprise Console can filter out normal events, respond automatically to anticipated problems, and forward only those events that require human intervention.

Required authorization role
user

Before you begin
• This procedure is not supported in Tivoli Enterprise Console, Version 3.7. You must use the Tivoli Enterprise Console, Version 3.7 Java user interface to search for the DB2 monitor events.
• The example used in this procedure relies on the following assumptions:
  – The Tivoli Enterprise Console has been configured and it has been configured to receive DB2 Distributed Monitor events. (The Tivoli Enterprise Console is represented on the Tivoli Desktop by an EventServer icon.)
  – An event group named DB2EventBase was created when the Tivoli Enterprise Console was configured.
  – The DB2 instance status monitor has been configured to send an event with a severity level of FATAL to the Tivoli Enterprise Console when it detects that the DB2 instance is unavailable.
  – The DB2 instance status monitor has detected this condition and has sent an event.

When you finish
Respond to the event yourself or configure the Tivoli Enterprise Console to automatically respond to events. Refer to the Tivoli Enterprise Console User’s Guide for information.

Procedure
You can perform this procedure from the Tivoli desktop only.
1. Double-click the EventServer icon to open the Tivoli Enterprise Console. The console displays an icon for each event group that you are authorized to view.
2. Double-click the DB2EventBase icon. The list of events for that event group is displayed in the DB2EventBase window.
3. Double-click the event icon to display the Event Group Message Viewer dialog box.
   Additional Information: You can also click View Message to display the Event Group Message Viewer dialog box.
Appendix C. Integrating with Tivoli Business Systems Manager

This chapter provides information on using Tivoli Business Systems Manager to manage DB2 resources and events.

Integrating DB2 into Tivoli Business Systems Manager includes the following steps:

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<tr>
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</tr>
</tbody>
</table>

This chapter also provides a list of the IBM Tivoli Monitoring for Databases: DB2 tasks that you can run from Tivoli Business Systems Manager and information about uninstalling the IBM Tivoli Monitoring for Databases: DB2 integration from Tivoli Business Systems Manager.

Understanding Tivoli Business Systems Manager

Tivoli Business Systems Manager is a business systems management tool that enables you to graphically monitor and control interconnected business components and operating system resources. A business resource and its resources are referred to as a Line of Business (LOB).

Tivoli Business Systems Manager consists of the following components:

**Tivoli Business Systems Manager management server**
The Tivoli Business Systems Manager management server processes all the availability data that is collected from various sources. Availability data is inserted in the Tivoli Business Systems Manager database, where intelligent agents provide alerts on monitored objects and then broadcast those alerts to Tivoli Business Systems Manager workstations. The management server processes all user requests that originate from the workstation and includes a database server that is built around a Microsoft SQL Server database.

**Tivoli Business Systems Manager workstation**
The Tivoli Business Systems Manager workstation displays objects in customized views, called Line of Business Views. Objects are presented in a hierarchical TreeView so that users can see the relationship between objects. Alerts are overlaid on the objects when the availability of the object is threatened.
**Tivoli Event Enablement**

Tivoli Event Enablement is installed on the Tivoli Enterprise Console event server and enables the event server to forward events to Tivoli Business Systems Manager. Tivoli Event Enablement defines event classes and rules for handling events related to Tivoli Business Systems Manager.

**Task server**

The Tivoli Business Systems Manager task server is installed on the Tivoli Enterprise Console event server with Tivoli Event Enablement. It receives task requests from the Tivoli Business Systems Manager workstation, runs the tasks on the Tivoli server on which it is installed, and returns the output to Tivoli Business Systems Manager.

---

**Prerequisites**

Before you integrate IBM Tivoli Monitoring for Databases: DB2 into Tivoli Business Systems Manager, perform the following prerequisite steps:

- Install the Tivoli Business Systems Manager configuration, as described in the *Tivoli Business Systems Manager Installation and Configuration Guide*. You must install Tivoli Business Systems Manager Version 1.5 with patch 29.
- Install and configure the Tivoli Event Enablement (with patch 32) on all Tivoli Enterprise Console event servers that receive events that you want to forward to Tivoli Business Systems Manager. See the *Tivoli Business Systems Manager Installation and Configuration Guide* for more information.
- Configure Tivoli Business Systems Manager to communicate with each Tivoli Event Enablement installed in the previous step. See the *Tivoli Business Systems Manager Installation and Configuration Guide* for more information.

---

**Integrating IBM Tivoli Monitoring for Databases: DB2 with Tivoli Business Systems Manager**

**Objective**

To integrate IBM Tivoli Monitoring for Databases: DB2 with Tivoli Business Systems Manager so you can receive DB2 events on the Tivoli Business Systems Manager.

**Background information**

To enable Tivoli Business Systems Manager to manage DB2 events, you must install an IBM Tivoli Monitoring for Databases: DB2 integration program on the Tivoli Business Systems Manager server. This integration program does the following steps:

- Defines the DB2 objects in Tivoli Business Systems Manager
- Adds IBM Tivoli Monitoring for Databases: DB2 tasks to the object types in Tivoli Business Systems Manager
- Defines a line of business for DB2 resources

**Required authorization role**

You must have administrator authority on the Tivoli Business Systems Manager server.

**Before you begin**

Make sure that your Tivoli Business Systems Manager environment is configured correctly and that you have Tivoli Event Enablement installed on each Tivoli
Enterprise Console event server that you want to forward events. For more information, see the *Tivoli Business Systems Manager Installation and Configuration Guide*.

**When you finish**

Configure the Tivoli Enterprise Console event server to forward events to Tivoli Business Systems Manager. See "Configuring the Tivoli Enterprise Console event server" for more information.

**Procedure**

Use the following steps to install the IBM Tivoli Monitoring for Databases: DB2 integration:

1. On the Tivoli Business Systems Manager server, insert the IBM Tivoli Monitoring for Databases, Version 5.1.0: DB2 CD and, from a command prompt, navigate to the \TBSM directory.
2. Type `install` to start the installation wizard.
3. Click Next on the welcome screen.
4. Specify an installation location for the Tivoli Business Systems Manager integration. The default location is C:\tivoli\itmwas. Click Browse to select a different installation location.
   - Click Next to continue.
   - The installation location and total installed size are displayed.
5. Click Next to continue.
6. Provide the following Microsoft SQL Server information and click Next to start the installation.
   - **SQL Server**
     - The name of the SQL server with which this Tivoli Business Systems Manager server is associated
   - **SQL Userid**
     - The SQL user ID.
   - **SQL Password**
     - The password for the user ID defined above.
   - A progress bar is displayed to show the progress of the installation. When installation is complete, a message appears.
7. Click Finish to exit the installation wizard.

---

**Configuring the Tivoli Enterprise Console event server**

**Objective**

To configure the Tivoli Enterprise Console event server to forward events to Tivoli Business Systems Manager.

**Background information**

Before Tivoli Enterprise Console event servers can forward events to Tivoli Business Systems Manager, you must configure them to use a rule base to forward the events.

**Required authorization role**

Senior
Before you begin
Install the Tivoli Event Enablement on each Tivoli Enterprise Console event server that you want to forward events to Tivoli Business Systems Manager. For more information, see the Tivoli Business Systems Manager Installation and Configuration Guide for more information.

When you finish
Define your DB2 objects to Tivoli Business Systems Manager with the ECC_TBSM_Discovery task, as described in “Discovering resources for Tivoli Business Systems Manager”.

Procedure
Use the Configure Event Server task to configure (or reconfigure) each event server. If you installed the Tivoli Event Enablement on the event server, this task recognizes that and compiles the rule base that forwards events to Tivoli Business Systems Manager. For information on running this task, see “Configuring Event Console using a task” on page 130.

Discovering resources for Tivoli Business Systems Manager

Objective
To define the specific IBM Tivoli Monitoring for Databases: DB2 objects to Tivoli Business Systems Manager.

Background information
The IBM Tivoli Monitoring for Databases: DB2 integration that you installed in “Integrating IBM Tivoli Monitoring for Databases: DB2 with Tivoli Business Systems Manager” on page 138 defined the types of objects that you want Tivoli Business Systems Manager to manage. After you define the object types, you must define the specific objects. You can do this with the ECC_TBSM_Discovery task. This task searches a managed node for objects and sends a DISCOVER event to Tivoli Business Systems Manager for each object. The ECC_TBSM_Discovery task also maintains a list of the objects that have been discovered and alerts Tivoli Business Systems Manager when they have been deleted by sending Tivoli Business Systems Manager a GONE event for each object that no longer exists on the managed node.

Required authorization role
You must have administrator authority on the Tivoli Business Systems Manager server.

Before you begin
Configure your Tivoli Enterprise Console event server, as described in “Configuring the Tivoli Enterprise Console event server” on page 139.

When you finish
Use Tivoli Business Systems Manager to view and manage your DB2 objects. For information on using Tivoli Business Systems Manager, see the Tivoli Business Systems Manager User’s Guide. For information on the IBM Tivoli Monitoring for Databases: DB2 tasks that you can run from Tivoli Business Systems Manager, see “Working with Tivoli Business Systems Manager” on page 141.

Procedure
You can perform this procedure from the command line or the Tivoli desktop.
Command line: Use the `wruntask` command to run the `ECC_TBSM_Discovery` task from the command line. For information on the CLI syntax for this task, see the *IBM Tivoli Monitoring for Databases: DB2 Reference Guide*.

Desktop: Use the following steps to run this procedure as a task:
1. In the DB2ManagerAdminTasks task library, double-click the `ECC_TBSM_Discovery` task.
2. Select the managed node on which you want to search for objects and click Execute.

If the task completes successfully, you receive a list of the DISCOVER and GONE events that were sent to Tivoli Business Systems Manager.

---

**Working with Tivoli Business Systems Manager**

Tivoli Business Systems Manager also monitors the status of resource models. Events generated by the Tivoli Enterprise Console adapter or resource models are forwarded from Tivoli Enterprise Console to Tivoli Business Systems Manager.

For more information about these tasks and resource models, see the *IBM Tivoli Monitoring for Databases: DB2 Reference Guide*.

---

**Uninstalling IBM Tivoli Monitoring for Databases: DB2 integration from Tivoli Business Systems Manager**

**Objective**
To remove the IBM Tivoli Monitoring for Databases: DB2 integration from Tivoli Business Systems Manager.

**Background information**
Uninstalling the IBM Tivoli Monitoring for Databases: DB2 integration removes the DB2 object definitions and objects from Tivoli Business Systems Manager.

**Required authorization role**
You must have administrator authority on the Tivoli Business Systems Manager server

**Before you begin**
None

**When you finish**
None

**Procedure**
Use the following steps to perform this procedure:
1. On the Tivoli Business Systems Manager server, from a command prompt, navigate to the directory where you installed the IBM Tivoli Monitoring for Databases: DB2 integration. The default directory is `C:\tivoli\itmwas`.
2. Type `uninstall` to start the uninstallation wizard.
3. Click Next on the welcome screen.
4. The installation location for the Tivoli Business Systems Manager integration is displayed. Click Next to continue.
5. Provide the following Microsoft SQL Server information and click Next to start the uninstallation:
SQL Server
The name of the SQL server with which this Tivoli Business Systems Manager server is associated

SQL Userid
The SQL user ID.

SQL Password
The password for the user ID defined above.

6. Click Finish to exit the installation wizard.
Appendix D. Problem determination

This appendix provides information about resolving problems that might occur when you run IBM Tivoli Monitoring for Databases: DB2.

Note: For installation and uninstallation issues, see the IBM Tivoli Monitoring for Databases Installation and Setup Guide.

What is Discovery?
Discovery provides a convenient way of registering multiple DB2 Instances on one or more endpoints in a single operation. For more information about Discovery and using it to register DB2 Instances, see "Creating DB2 Discovery objects" on page 37.

What is Tivoli Business Systems Manager Discovery?
Tivoli Business Systems Manager Discovery provides a process for finding all DB2 managed node objects and informing Tivoli Business Systems Manager of their existence. The ECC_TBSM_Discovery task from the DB2ManagerAdminTask library performs Tivoli Business Systems Manager Discovery operations. The ECC_TBSM_Discovery task configures a Tivoli Enterprise Console server for event enablement with a Tivoli Business Systems Manager server.

What are the port requirements for communication?
There are no special firewall considerations for IBM Tivoli Monitoring for Databases: DB2. IBM Tivoli Monitoring for Databases: DB2 depends on the ability of Tivoli Management Framework to communicate with the LCF endpoint and receive upcalls. The ports required to be opened on the LCF endpoint are local ports (0.0.0) and have no firewall implications.

Why are the resource models that I disable now monitoring the database?
IBM Tivoli Monitoring enables all resource models when you reboot a machine.

What does ‘Unable to start 40’ mean?
This message appears in the output from the wdmlseng –e <endpoint_name> CLI. It indicates that a resource model was not started on the endpoint because the resource model was distributed to an unsupported resource type. You can find the following message in the trace_dmxengine.log on Unix endpoints and in the Tmw2k.log on NT/2000 endpoints:

```
ERROR: <Resource Model Internal Name> <Resource Model Internal Name> resource model not valid for resource <ResourceType>.
```

What (Data) Providers are used by the DB2 resource models?
The IBM Tivoli Monitoring for Databases: DB2 makes exclusive use of the Shell ILT provider.

Where is the trace log for IBM Tivoli Monitoring and how do I set the trace logging level?
You can find the IBM Tivoli Monitoring trace log in the $LCF_DATDIR/LCFNEW/AMW/logs/trace_dmxengine.log for Unix endpoints and in the $LCF_DATDIR/LCFNEW/Tmw2k/Tmw2k.log for NT/2000 endpoints.
You must have previously set the trace log level to 3 in order for these logs to be useful. To set the trace level to 3, enter the following command from a Managed Node command prompt:

```
# wdmtrceng -e <endpoint name> ** 3 -1
```

After running this command, you must stop the IBM Tivoli Monitoring engine and restart it. Enter the following CLI command from a managed node (not the endpoint) to stop the IBM Tivoli Monitoring engine:

```
# wdmcmd -stop -e <endpoint name>
```

Enter the following CLI command from a managed node (not the endpoint) to start the IBM Tivoli Monitoring engine:

```
# wdmcmd -restart -e <endpoint name>
```

**Where is trace log for Shell ILT and how do I enable Shell ILT trace logging?**

You can find the Shell ILT trace log in `$LCF_DATDIR/LCFNEW/AMG/logs/` by file names `trc_itmcs1.log`, `trc_itmcs2.log` and `trc_itmcs3.log`. The `trc_itmcs2.log` and `trc_itmcs3.log` files are written only when their predecessor has reached maximum size. From that point the trace logging rolls over from the `trc_itmcs3.log` file to the `trc_itmcs1.log` file and the cycle repeats.

In order to enable trace logging from Shell ILT, you must edit the following line in the `$LCF_DATDIR/LCFNEW/AMG/logs/logging.properties` file:

change the line

`AMS.ShellTrace.isLogging=false`

to

`AMS.ShellTrace.isLogging=true`

After making this edit to `logging.properties` file, you must stop the IBM Tivoli Monitoring engine and restart it. Enter the following CLI command from a managed node (not the endpoint) to stop the IBM Tivoli Monitoring engine:

```
# wdmcmd -stop -e <endpoint name>
```

Enter the following CLI command from a managed node (not the endpoint) to start the IBM Tivoli Monitoring engine:

```
# wdmcmd -restart -e <endpoint name>
```

**Why does the creation of a DB2InstanceManager object time out?**

You have a UNIX endpoint and the DB2 Instance home directory does not have 755 permissions. Set the DB2 Instance home directory to 755 and create the DB2InstanceManager object.

**Why does a resource model return a value of -999?**

The resource model did not return a valid value. Review the resource model parameters.

**Why does a resource model return a value of -999 and I receive an error message?**

If you specify an endpoint that is not valid, you might receive the following error message:
Invalid Endpoint Type. Please verify that you have distributed this monitor to the correct endpoint.
Endpoint Class distributed = <Endpoint Class>
Endpoint ID distributed = <Endpoint ID>

To resolve this problem, perform the following steps on the managed node and gateway:

1. Run the **ECC_Stop_Monitoring_Agent** task to stop the monitoring agent on the endpoint.
2. Run the **ECC_Start_Monitoring_Agent** task to restart the monitoring agent on the endpoint.

If the problem persists, restart the object dispatcher on the Tivoli management region server.

**Why does a numeric resource model return a value of 32767 or -32767?**

The resource model did not receive valid data from DB2.

If the resource model normally returns a positive number to represent valid data, it returns a value of 32767 for invalid data. If the resource model normally returns 0 or a negative number to represent valid data, it returns a value of -32767 for invalid data. Review the resource model parameters for better data.

**Why do the returned values not match the group members of the DB2 partition group when I run a resource model against a DB2 partition group endpoint?**

If you defined a DB2 partition group object that you are running resource models against, and you change the members of the DB2 partition group object, the IBM Tivoli Monitoring for Databases: DB2 monitoring agent might not pick up the changed definition right away.

To resolve this problem, perform the following steps on the node where the DB2 instance resides:

1. Run the **ECC_Stop_Monitoring_Agent** task to stop the monitoring agent on the endpoint.
2. Run the **ECC_Start_Monitoring_Agent** task to restart the monitoring agent on the endpoint.

**Why are my resource models not logging data?**

Resource models do not log data by default. You must select the **Enable Data Logging** check box in the **Logging** dialog box to log data. If you do not select this check box, resource model data will be lost.
## Appendix E. Messages

<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTD0001E</td>
<td>Instance Monitoring Request Server is not responding. Monitor not started.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>A monitoring request resulted in the abnormal termination of the Monitoring Request Server. The monitor was not started.</td>
</tr>
<tr>
<td>CTD0002E</td>
<td>Instance Monitoring Request Server is not responding. The Monitor cannot continued.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>A monitoring request resulted in the abnormal termination of the Monitoring Request Server. The monitor cannot continue.</td>
</tr>
<tr>
<td>CTD0003E</td>
<td>Endpoint is incorrect.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>The specified endpoint is not running the IBM Tivoli Monitoring for Databases endpoint functionality.</td>
</tr>
<tr>
<td>CTD0004E</td>
<td>The partition group contains partitions from more than one partitioned database.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>The monitor cannot be run against the partition group because the database to be monitored cannot be determined.</td>
</tr>
<tr>
<td>CTD0005E</td>
<td>Distributed Endpoint Class is</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0006E</td>
<td>Distributed Endpoint Object ID is</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0007I</td>
<td>DB2 Instance Name is</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0008I</td>
<td>Database Name is</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0009I</td>
<td>DB2 Version is</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0010E</td>
<td>Endpoint Type is incorrect.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>The endpoint type is not correct for the requested operation.</td>
</tr>
<tr>
<td>CTD0012I</td>
<td>Verify that the monitor has been distributed to the correct endpoint.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0013I</td>
<td>IsMPP is TRUE.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>The DB2 instance is an Extended Enterprise Edition.</td>
</tr>
<tr>
<td>CTD0014I</td>
<td>IsMPP is FALSE.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>The DB2 instance is not an Extended Enterprise Edition.</td>
</tr>
<tr>
<td>CTD0015E</td>
<td>Request type is incorrect.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>The request type is not correct for the intended endpoint.</td>
</tr>
<tr>
<td>CTD0016E</td>
<td>Exception Occurred.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>An error has occurred and resulted in an exception.</td>
</tr>
<tr>
<td>CTD0017I</td>
<td>Shutdown task was started.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0018I</td>
<td>Task was started.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0019W</td>
<td>No Monitor data for this element was found.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>An internal program error has occurred. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0020W</td>
<td>This monitor returned no data.</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td>An internal program error has occurred. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0021I</td>
<td>This monitor does not have an observed time period. Wait for the next execution.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>This monitor needs at least two performance snapshots to provide the differences.</td>
</tr>
<tr>
<td>CTD0022E</td>
<td>Cannot find columns with statistics.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An internal program error has occurred. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0023E</td>
<td>Cannot find valid TableOwner parameter.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A required parameter was not supplied. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0024E</td>
<td>A valid TableName parameter was not found.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A required parameter was not supplied. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0025E</td>
<td>The Snapshot index was not found.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The Snapshot index does not exist. A program error has occurred. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0026E</td>
<td>A valid TablespaceName parameter was not found.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A required parameter was not supplied. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0027W</td>
<td>Storage cannot be allocated before the sqlma record is defined.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Unable to allocate sufficient memory to get a performance snapshot from DB2.</td>
</tr>
<tr>
<td>CTD0028W</td>
<td>First struct is not requested snapshot type.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A program error has occurred. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0029I</td>
<td>The connection is already open.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Program error. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0030E</td>
<td>SQL Error Code.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An SQL error occurred. Refer to the DB2 Error Message reference for an explanation.</td>
</tr>
<tr>
<td>CTD0031W</td>
<td>The allocation of the environment handle has failed.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Contact your support representative.</td>
</tr>
<tr>
<td>CTD0032E</td>
<td>An error occurred while allocating an SQL connection to DB2.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An SQL connection to DB2 could not be established due to a failure to allocate an SQL connection handle. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0033E</td>
<td>An error occurred while opening an SQL connection to DB2.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An SQL connection to DB2 could not be established.</td>
</tr>
<tr>
<td>CTD0034E</td>
<td>Allocating statement failed.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The allocation statement failed.</td>
</tr>
<tr>
<td>CTD0035I</td>
<td>Starting Statement.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0036I</td>
<td>Number of result columns.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0037E</td>
<td>A new error occurred while allocating the result set.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A new error occurred during the allocation for the result set.</td>
</tr>
<tr>
<td>CTD0038I</td>
<td>Get number of Columns on NULL statement.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0039E</td>
<td>ResultSet Column Name is incorrect.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The specified column name was not found in the result set.</td>
</tr>
<tr>
<td>CTD0040E</td>
<td>ResultSet Column Index is not correct.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The specified column index was not found in the result set.</td>
</tr>
</tbody>
</table>
CTD0041I Fetching row.
Explanation: No additional information is available for this message.

CTD0042E Global Type is not supported in factory.
Explanation: This is an internal program error. Contact your support representative.

CTD0043I The Monitor Definition was not found in the SQL Definition Manager.
Explanation: No additional information is available for this message.

CTD0044E The Monitor Definition was not found.
Explanation: This is an internal program error. Contact your support representative.

CTD0045E The MonName parameter is not correct.
Explanation: The monitor name parameter MonName is not a valid value and was not found. This is an internal program error. Contact your support representative.

CTD0046E Table space ID was not retrieved.
Explanation: Could not retrieve the tablespace identifier. This may be due to an table space name being supplied that does not exist.

CTD0047E The Monitor Definition was not found in the Configuration Definition Manager.
Explanation: Could not find a definition for the monitor in the Configuration Definition Manager. This is an internal program error. Contact your support representative.

CTD0048E The Monitor Definition was not found in the SS Definition Manager.
Explanation: A definition for the monitor was not found in the SS Definition Manager. This is an internal program error. Contact your support representative.

CTD0049E The number of nodes on target endpoint cannot be determined.
Explanation: No additional information is available for this message.

CTD0050E The number of columns is not equal to one.
Explanation: This is an internal program error. Contact your support representative.

CTD0051E No result rows were returned.
Explanation: This is an internal program error. Contact your support representative.

CTD0052E There is more than one result row.
Explanation: This is an internal program error. Contact your support representative.

CTD0053E SQLGS(GetUsage): Cannot access syscat.tables.
Explanation: An attempt to access the syscat.tables resulted in an error.

CTD0054E Cannot find value for required parameter:
Explanation: No value was specified for the required parameter. This is an internal program error. Contact your support representative.

CTD0054W Verify the monitor has been distributed to a database endpoint.
Explanation: The monitor used must be distributed to a DB2DatabaseManager or a DB2PartitionManager object.

CTD0055E The passed Parameter values do not match the Parameter Name List
Explanation: The number of passed parameter values must be equal to what was specified in the Parameter Name List.

CTD0056E The Monitor parameters list is incorrect. One or more required Proxy environment variables is missing.
Explanation: One or more of the parameters used to start the monitor is missing or incorrect.

CTD0057I The maxcagents configuration parameter default value (-1) has been replaced by maxagents.
Explanation: No additional information is available for this message.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTD0058I</td>
<td>The maxcagents configuration parameter default value (-1) has been replaced by max_coordagents.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0059I</td>
<td>The maxcagents configuration parameter default value (-1) has been replaced by maxagents minus num_initagents.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0060I</td>
<td>The configuration parameter default value (-1) has been replaced by .75 multiplied by fcm_num_rqbp.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0061E</td>
<td>The current endpoint is NULL.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A target endpoint must be specified.</td>
</tr>
<tr>
<td>CTD0061I</td>
<td>Checking the status of the DB2 Monitoring agent.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0062E</td>
<td>A DB2InstanceManager endpoint must be selected for this monitor.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The monitor was not distributed to a DB2InstanceManager endpoint.</td>
</tr>
<tr>
<td>CTD0062I</td>
<td>Checking the status of the DB2 SNMP agent.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0063E</td>
<td>The password for the User Profile Manager could not be retrieved.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A valid password for db2ecc could not be retrieved. Update the db2ecc password using the wdb2chgpw utility.</td>
</tr>
<tr>
<td>CTD0063I</td>
<td>Checking the status of the DB2 Instance.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0064E</td>
<td>Unable to get DB2 instance name.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The DB2 instance name could not be obtained. This is required.</td>
</tr>
<tr>
<td>CTD0064I</td>
<td>The numeric operating system command was completed.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0065E</td>
<td>Unable to start driver.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The driver process did not start. Increase the diagnostic level of the lcfd log and redistribute.</td>
</tr>
<tr>
<td>CTD0065I</td>
<td>The character string operating system command has completed.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0066E</td>
<td>The syntax is checkService &lt;service name&gt;.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>This is an internal program error. Contact your support representative.</td>
</tr>
<tr>
<td>CTD0067E</td>
<td>Access to Service Control Manager was denied.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Access to the Service Control Manager was denied because of a permission violation.</td>
</tr>
<tr>
<td>CTD0067I</td>
<td>Checking the status of Data replication Apply.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0068I</td>
<td>The ServicesActive database does not exist.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0069I</td>
<td>Checking the link to Host Name.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0070E</td>
<td>Service status could not be determined.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An unknown error occurred while requesting the status of a service.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
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<td>----------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CTD0071E</td>
<td>Unable to log on to UPM. Check the password.</td>
</tr>
<tr>
<td>CTD0071I</td>
<td>Enter the password for the local or domain user ID db2ecc.</td>
</tr>
<tr>
<td>CTD0072E</td>
<td>The monitoring agent subsystem could not be installed.</td>
</tr>
<tr>
<td>CTD0072W</td>
<td>Cannot determine type of request. It should be MonName or TaskName.</td>
</tr>
<tr>
<td>CTD0073E</td>
<td>Unrecoverable Communications Error.</td>
</tr>
<tr>
<td>CTD0074E</td>
<td>The Monitor is not defined.</td>
</tr>
<tr>
<td>CTD0075E</td>
<td>The Attribute is not correct.</td>
</tr>
<tr>
<td>CTD0076E</td>
<td>An unknown error occurred while installing the monitoring agent.</td>
</tr>
<tr>
<td>CTD0077I</td>
<td>Trying %1$s.</td>
</tr>
<tr>
<td>CTD0078E</td>
<td>The Discovery process received an error while getting results from the endpoint.</td>
</tr>
<tr>
<td>CTD0079I</td>
<td>No DB2 Instances were found on the endpoint.</td>
</tr>
<tr>
<td>CTD0080E</td>
<td>No db2ecc user ID was found on the endpoint.</td>
</tr>
<tr>
<td>CTD0081E</td>
<td>User ID db2ecc is not a local or domain administrator.</td>
</tr>
<tr>
<td>CTD0082E</td>
<td>Access to the system or registry information was denied.</td>
</tr>
<tr>
<td>CTD0083E</td>
<td>An error of unknown origin was received.</td>
</tr>
<tr>
<td>CTD0084I</td>
<td>DB2 Instance %1$s was found.</td>
</tr>
<tr>
<td>CTD0085I</td>
<td>DB2 Instance discovery task completed.</td>
</tr>
<tr>
<td>CTD0086I</td>
<td>Discovery Stopped.</td>
</tr>
<tr>
<td>CTD0088I</td>
<td>The Managed Node where newly created DB2InstanceManager objects will be stored.</td>
</tr>
<tr>
<td>Message Code</td>
<td>Message 설명</td>
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<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>CTD0089I</td>
<td>Instance %1$s is already managed. Object %2$s is in policy region %3$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0090I</td>
<td>Creating Instance object %1$s for endpoint %2$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0091I</td>
<td>No match with existing Instance objects was found.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Discovery has determined that an Instance object with identical properties does not exist on the endpoint.</td>
</tr>
<tr>
<td>CTD0092I</td>
<td>DB2InstanceManager object label is %1$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0093E</td>
<td>An error occurred while installing the monitoring agent.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The Monitoring Agent process could not be installed on the endpoint.</td>
</tr>
<tr>
<td>CTD0094I</td>
<td>The DB2 Instance is not a DB2 server</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The DB2 Instance is not a server Instance.</td>
</tr>
<tr>
<td>CTD0095I</td>
<td>DB2Discovery object %1$s was created.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0096W</td>
<td>The DB2 Instance is already active.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The DB2 Instance is already running. It is not necessary to restart it.</td>
</tr>
<tr>
<td>CTD0097E</td>
<td>The DB2 function returned error code %7$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Refer to the DB2 Administration Message Reference documentation for error details.</td>
</tr>
<tr>
<td>CTD0098E</td>
<td>The DB2 command returned error code %7$s: %8$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Refer to the DB2 Administration Message Reference documentation for error details.</td>
</tr>
<tr>
<td>CTD0099W</td>
<td>The DB2 Instance is not active.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The DB2 Instance is down.</td>
</tr>
<tr>
<td>CTD0100E</td>
<td>The operating system system call %7$s returned error number %8$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Refer to the operating system’s error reference manual for error details.</td>
</tr>
<tr>
<td>CTD0101W</td>
<td>Are you sure that you want to delete the Instance %1$s from the Tivoli database? Deleting this Instance will also delete all databases in this Instance from the Tivoli database.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>DB2DatabaseManager, DB2PartitionManager, and DB2Gateway are child classes of the parent Instance class. Deleting the parent will cause the deletion of all child objects.</td>
</tr>
<tr>
<td>CTD0102E</td>
<td>The DB2 Command Line Processor was not started. Error code is %7$s: %8$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>Refer to your operating system error codes and messages information for a complete explanation of the error.</td>
</tr>
<tr>
<td>CTD0103E</td>
<td>An error occurred while attaching a DB2 Instance on endpoint %1$s: %2$s.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An attempt to attach to a DB2 Instance resulted in an error. Refer to the DB2 Administration: Message Reference documentation for error details.</td>
</tr>
<tr>
<td>CTD0104E</td>
<td>An error occurred while resolving an IP Address from hostname.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>The network NameService could not locate the hostname. There may be network problems or the name is not correct.</td>
</tr>
<tr>
<td>CTD0105E</td>
<td>No DB2 Instances were found on the endpoint.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>A search was conducted but no local DB2 Instances were found on the endpoint.</td>
</tr>
<tr>
<td>CTD0106E</td>
<td>A memory allocation error occurred.</td>
</tr>
<tr>
<td>Explanation:</td>
<td>An attempt to allocate memory to perform an operation failed. There may be insufficient memory on the machine for all applications to run, or a memory leak has exhausted allocated memory.</td>
</tr>
</tbody>
</table>
CTD0107E  An unknown error has occurred.
Explanation: An error was returned while attempting to attach to a remote or local DB2 Instance. The source of the error is not determined. Contact your support representative for assistance.

CTD0108I  Node %1$s has been found in node catalog.
Explanation: No additional information is available for this message.

CTD0109I  Node was not cataloged. Node %1$s has been added.
Explanation: No additional information is available for this message.

CTD0110I  Remote DB2 Instance attach was successful.
Explanation: No additional information is available for this message.

CTD0111I  Local DB2 Instance attach was successful.
Explanation: No additional information is available for this message.

CTD0112I  Remote attach failed: %1$s
Explanation: An attempt to attach to DB2 resulted in an error. Refer to the DB2 Administration Message Reference information for error details.

CTD0113I  Local attach failed: %1$s.
Explanation: An attempt to attach to DB2 resulted in an error. Refer to the DB2 Administration Message Reference information for error details.

CTD0114E  No db2ecc user ID was found on the endpoint.
Explanation: The operating system user ID db2ecc must be defined on the endpoint and have System Administrator permissions. Check the users guide for more information.

CTD0115E  The db2ecc user ID is not a local or domain administrator.
Explanation: The operating system user ID db2ecc must be defined on the endpoint and have System Administrator permissions.

CTD0115I  Stopped.
Explanation: No additional information is available for this message.

CTD0116E  Access was denied while looking for a db2ecc user ID.
Explanation: The operating system on the endpoint denied access to user information. Check the permissions and try again.

CTD0116I  The node was not cataloged. Instance name %1$s was used.
Explanation: No additional information is available for this message.

CTD0117I  Instance name %1$s was found.
Explanation: No additional information is available for this message.

CTD0118E  A DB2Database for a parallel instance cannot be created. Create a DB2Partition or DB2PartitionGroup instead.
Explanation: A DB2Database does not exist for a parallel instance. Define either a DB2Partition or DB2PartitionGroup.

CTD0119E  A DB2PartitionManager for a serial instance cannot be created. Create a DB2DatabaseManager instead.
Explanation: A DB2PartitionManager is not defined for a serial instance. Create a DB2DatabaseManager instead.

CTD0120E  The node number is incorrect for the specified DB2 instance.
Explanation: The node number does not exist or is not valid for the specified DB2 instance.

CTD0122E  The specified node number is not numeric.
Explanation: The node number must be a positive integer value.
CTD0123E  More than one node number is specified.
Explanation:  The node number may be specified only one time.

CTD0124E  The instance name is not correct.
Explanation:  The instance name does not exist or contains characters which are not valid alphanumeric values.

CTD0125E  The passwords do not match.
Explanation:  The first password value entered does not match the second password value entered.

CTD0126I  The password was successfully changed.
Explanation:  No additional information is available for this message.

CTD0127I  The DB2InstanceManager object %1$s was created.
Explanation:  No additional information is available for this message.

CTD0128I  DB2Discovery object %1$s was created.
Explanation:  No additional information is available for this message.

CTD0129I  DB2PartitionGroupManager object %1$s was created.
Explanation:  No additional information is available for this message.

CTD0130E  Endpoint for host at specified node was not found.
Explanation:  The specified node does not exist as an endpoint for the TMR server.

CTD0131E  Managed Node was not found.
Explanation:  The specified Tivoli gateway or TMR server was not found.

CTD0132W  The message catalog was not found.
Explanation:  Contact your system administrator for assistance. If the message catalog cannot be found in the NLSPATH, contact your local support representative.

CTD0133E  A DB2ECC error has occurred.
Explanation:  A general DB2ECC error has occurred.

CTD0134E  The field named %7$s is required.
Explanation:  Enter the required field.

CTD0135E  The database driver cannot be started in %7$s.
Explanation:  The database driver was not started.

CTD0136E  The specified DB2 Instance is not valid.
Explanation:  The specified DB2 Instance either does not exist or the name is incorrect.

CTD0137E  The DB2 command returned error code %7$d : %8$s.
Explanation:  The DB2 command was not completed.

CTD0138E  The DB2 Command Line Processor could not be started.
Explanation:  An error occurred starting the DB2 Command Line Processor (CLP) for the targeted endpoint.

CTD0139E  There is no serial DB2 Instance being managed. At least one is required for this action.
Explanation:  A serial DB2 Instance must be managed to perform the operation.

CTD0140E  There is no parallel DB2 Instance being managed. At least one is required for this action.
Explanation:  A parallel DB2 Instance must be managed to perform the operation.

CTD0141E  The action is not allowed for a DB2 Partition Instance.
Explanation:  The action is not allowed for a DB2 Partition Instance.

CTD0142E  The DB2 Instance name is not valid.
Explanation:  A DB2 Instance with the specified name was not found or is incorrect.
CTD0143E  An error occurred while opening a pipe for the database driver in %7$s.
Explanation: A named pipe could not be opened on the endpoint to communicate with DB2.

CTD0144E  An error occurred while setting the environment in %7$s.
Explanation: The environment was not set.

CTD0145E  An unknown error was received from driver %7$d in %8$s.
Explanation: An error was returned from the operating system during normal DB2 driver operation.

CTD0146I  Startup was attempted on %7$d nodes. %8$d nodes were successfully started. %9$d nodes were already started. %10$d nodes were not started. %11$s
Explanation: No additional information is available for this message.

CTD0147I  Shutdown was attempted on %7$d nodes. %8$d nodes were successfully stopped. %9$d nodes were already stopped. %10$d nodes were not stopped. %11$s
Explanation: No additional information is available for this message.

CTD0148E  The DB2 Control Center was not launched on %7$s. A desktop environment is required to launch the DB2 Control Center.
Explanation: A desktop environment is required to launch the DB2 Control Center.

CTD0149E  The launch of the DB2 Control Center on endpoint %7$s failed.
Explanation: The request to start the DB2 Control Center on the endpoint failed.

CTD0150E  Endpoint %7$s was not found.
Explanation: The specified endpoint does not exist or was not correct.

CTD0151E  The DB2 Control Center on %7$s cannot be launched because %7$s is not a valid endpoint.
Explanation: The specified endpoint for the DB2 Control Center does not exist or was not correct.

CTD0152E  The object cannot be removed because the object is still subscribing to profiles.
Explanation: The previous operation is still in progress. Wait until the subscription is complete before removing the object.

CTD0153W  The specified action is not available for this version of DB2.
Explanation: The action was not completed.

CTD0154E  An attempt to connect to DB2 has failed. The Command Line Processor (CLP) session may have timed out.
Explanation: The DB2 Command Line Processor session has timed out while attempting to connect to DB2.

CTD0155E  The specified DB2 Partition Group has no members.
Explanation: The command requires that the specified DB2 Partition Group have members.

CTD0156E  The Database name does not exist or is not local.
Explanation: The DB2 Database name was not found.

CTD0157I  Running in Tivoli bypass mode.
Explanation: No additional information is available for this message.

CTD0158E  Endpoint name is not correct.
Explanation: The selected endpoint name is not correct for this task.

CTD0159I  Valid end points are
Explanation: No additional information is available for this message.

CTD0160E  Task number is incorrect.
Explanation: The task specified by the task number does not exist.

CTD0161E  The class name must be set to force all applications.
Explanation: A Class Name must be set to force all applications.
CTD0162E • CTD0181I

CTD0162E The Class Name is not correct.
Explanation: The specified Class Name does not exist.

CTD0163I Forcing off all applications.
Explanation: No additional information is available for this message.

CTD0164I All applications were successfully forced.
Explanation: No additional information is available for this message.

CTD0165E The class name must be one of the following to get DB2 configuration:
Explanation: Specify a correct class name.

CTD0166I The Get Database Configuration task has started.
Explanation: No additional information is available for this message.

CTD0167E The specified data type is not correct.
Explanation: No additional information is available for this message.

CTD0168E The specified configuration parameter is not allowed.
Explanation: The specified configuration parameter is not correct.

CTD0169I The current value for
Explanation: No additional information is available for this message.

CTD0170E Get_partitions produced a return code of
Explanation: Getting the list of partitions failed.

CTD0171I The Get Database Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0172E The class name to get dbm configuration must be
Explanation: Specify the correct class name to execute this command.

CTD0173I Get Database Manager Configuration task was started.
Explanation: No additional information is available for this message.

CTD0174E Too many arguments were passed to the Get dbm Configuration task.
Explanation: Correct the number of arguments and try again.

CTD0175I The Get Database Manager Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0176E An error occurred while processing the SQL command. SQLCODE:
Explanation: Refer to the DB2 Reference Guide: Messages and Errors for a detailed explanation.

CTD0177W Warning. The program is continuing with errors.
Explanation: The program will continue even though warning errors occurred.

CTD0178E This task is not supported on DB2 Version 2.
Explanation: No additional information is available for this message.

CTD0179E The class name for the Alter Buffer Pool task must be
Explanation: Specify the correct class name to perform an Alter Buffer Pool request.

CTD0180I The Get Database Manager Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0181I Setting client attach node.
Explanation: No additional information is available for this message.
<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message Description</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTD0182I</td>
<td>Attaching to the instance.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0183E</td>
<td>Selected action is not correct.</td>
<td>Choose a valid action.</td>
</tr>
<tr>
<td>CTD0184E</td>
<td>Error on get_partitions. Return code is</td>
<td>Could not retrieve the DB2 Partition names.</td>
</tr>
<tr>
<td>CTD0185I</td>
<td>Alter Buffer Pool task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0186E</td>
<td>The class name to test the Command Line Interface (CLI) is not correct.</td>
<td>The class name to test the Command Line Interface (CLI) must be DB2InstanceManager, DB2DatabaseManager, DB2PartitionManager or DB2PartitionGroupManager.</td>
</tr>
<tr>
<td>CTD0187I</td>
<td>Test Command Line Interface (CLI) task was started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0188I</td>
<td>Test Command Line Interface (CLI) task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0189E</td>
<td>The class name must be</td>
<td>Select a valid class name.</td>
</tr>
<tr>
<td>CTD0190E</td>
<td>The class name must be</td>
<td>Select a valid class name.</td>
</tr>
<tr>
<td>CTD0191E</td>
<td>The class name must be</td>
<td>Select a valid class name.</td>
</tr>
<tr>
<td>CTD0192E</td>
<td>The class name must be</td>
<td>Select a valid class name.</td>
</tr>
<tr>
<td>CTD0193I</td>
<td>Activate Database task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0194I</td>
<td>Activate Database task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0195I</td>
<td>Backup Database task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0196I</td>
<td>Backup Database task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0197W</td>
<td>Commands ignored. ECTEST9 flag is set.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0198I</td>
<td>Create Explain Tables Task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0199I</td>
<td>Create Explain Tables Task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0200E</td>
<td>Create Process failed. Return code is</td>
<td>The process was not created.</td>
</tr>
<tr>
<td>CTD0201E</td>
<td>DB2CLP ENV variable fetch failed. Return code is</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0202I</td>
<td>Deactivate Database task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0203I</td>
<td>Deactivate Database task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Message</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CTD0204I</td>
<td>Drop sample Database task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0205I</td>
<td>Drop sample Database task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0206E</td>
<td>An error occurred while allocating memory.</td>
<td>Memory could not be allocated. Check and stop non-critical applications. Stop orphaned processes.</td>
</tr>
<tr>
<td>CTD0207E</td>
<td>Error getting Process Completion. Return code is</td>
<td>The process could not be completed.</td>
</tr>
<tr>
<td>CTD0208E</td>
<td>Error occurred during get_partitions task. Return code is</td>
<td>Could not retrieve the partition names.</td>
</tr>
<tr>
<td>CTD0209E</td>
<td>Error on get_unique task. Return code is</td>
<td>Could not retrieve the unique Database or Instance name.</td>
</tr>
<tr>
<td>CTD0210E</td>
<td>Error occurred while reading the EXPLAIN.DDL file.</td>
<td>Could not read the EXPLAIN.DDL file. Check the file permissions.</td>
</tr>
<tr>
<td>CTD0211E</td>
<td>Error occurred while waiting for child process to complete. Return code is</td>
<td>A timeout occurred while waiting for a child process to complete.</td>
</tr>
<tr>
<td>CTD0212E</td>
<td>Error occurred while writing to the /tmp directory.</td>
<td>Permission to write temporary files to the /tmp directory was not granted.</td>
</tr>
<tr>
<td>CTD0213I</td>
<td>Force Applications task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0214I</td>
<td>Force Applications task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0215I</td>
<td>Get Admin Configuration task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0216I</td>
<td>Get Admin Configuration task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0217I</td>
<td>Get Database Configuration task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0218I</td>
<td>Get Database Configuration task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0219I</td>
<td>Get Database Manager Configuration task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0220I</td>
<td>Get Database Manager Configuration task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0222E</td>
<td>Invocation of Command Line Process (CLP) ENV command failed. Return code is</td>
<td>The Command Line Process could not be spawned. The environment to execute the process was not established.</td>
</tr>
<tr>
<td>CTD0223I</td>
<td>Invoke Stored Procedure task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>Message Code</td>
<td>Description</td>
<td>Explanation</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>CTD0224I</td>
<td>Invoke Stored Procedure task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0225I</td>
<td>List DCS Applications task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0226I</td>
<td>List DCS Applications task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0227I</td>
<td>List Applications task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0228I</td>
<td>List Applications task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0230I</td>
<td>List Backup/recovery History File task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0231I</td>
<td>List Backup/recovery History File task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0232I</td>
<td>Reorganize Table task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0233I</td>
<td>Reorganize Table task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0234I</td>
<td>Reenter and rerun this task</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0235I</td>
<td>Prune Recovery History File task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0236I</td>
<td>Prune Recovery History File task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0237I</td>
<td>Quiesce Tablespaces for Table task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0238I</td>
<td>Quiesce Tablespaces for Table task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0239I</td>
<td>REORGCHK task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0240I</td>
<td>REORGCHK task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0241I</td>
<td>Rebind Package task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0242I</td>
<td>Rebind Package task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0243I</td>
<td>Reorganize Table task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0244I</td>
<td>Reorganize Table task has started</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0245I</td>
<td>Reset Admin Configuration task has ended</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0246I</td>
<td>Reset Admin Configuration task has started</td>
<td>No additional information is available for this message.</td>
</tr>
</tbody>
</table>
CTD0247I  Reset Database Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0248I  Reset Database Configuration task has started.
Explanation: No additional information is available for this message.

CTD0249I  Reset Database Manager Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0250I  Reset Database Manager Configuration task has started.
Explanation: No additional information is available for this message.

CTD0251I  Restart Database task has started.
Explanation: No additional information is available for this message.

CTD0252I  Restart Database task has started.
Explanation: No additional information is available for this message.

CTD0253I  Run statistics task has ended.
Explanation: No additional information is available for this message.

CTD0254I  Run statistics task has started.
Explanation: No additional information is available for this message.

CTD0255I  The node number is
Explanation: No additional information is available for this message.

CTD0256I  Update admin Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0257I  Update admin Configuration task has started.
Explanation: No additional information is available for this message.

CTD0258I  Update database Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0259I  Update database Configuration task has started.
Explanation: No additional information is available for this message.

CTD0260I  Update Database Manager Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0261I  Update Database Manager Configuration task has started.
Explanation: No additional information is available for this message.

CTD0262I  Updating statistics for a specific index is not supported on DB2 Version 2.
Explanation: No additional information is available for this message.

CTD0263I  Start Data Replication Capture.
Explanation: No additional information is available for this message.

CTD0264I  Stop Data Replication Capture.
Explanation: No additional information is available for this message.

CTD0265I  Start Data Replication Apply.
Explanation: No additional information is available for this message.

CTD0266I  Stop Data Replication Apply.
Explanation: No additional information is available for this message.
CTD0267I  Start Data Replication Capture task has started.
Explanation:  No additional information is available for this message.

CTD0268I  Start Data Replication Capture task has ended.
Explanation:  No additional information is available for this message.

CTD0269I  Stop Data Replication Capture task has started.
Explanation:  No additional information is available for this message.

CTD0270I  Stop Data Replication Capture task has ended.
Explanation:  No additional information is available for this message.

CTD0271I  Get Log Sequence task has started.
Explanation:  No additional information is available for this message.

CTD0272I  Get Log Sequence task has ended.
Explanation:  No additional information is available for this message.

CTD0273I  Suspend Data Replication Capture task has started.
Explanation:  No additional information is available for this message.

CTD0274I  Suspend Data Replication Capture task has ended.
Explanation:  No additional information is available for this message.

CTD0275I  Resume Data Replication Capture task has started.
Explanation:  No additional information is available for this message.

CTD0276I  Reinitialize Data Replication Capture task has ended.
Explanation:  No additional information is available for this message.

CTD0277I  Prune Data Replication Capture task has started.
Explanation:  No additional information is available for this message.

CTD0278I  Prune Data Replication Capture task has ended.
Explanation:  No additional information is available for this message.

CTD0279I  Start Data Replication Apply task has started.
Explanation:  No additional information is available for this message.

CTD0280I  Start Data Replication Apply task has ended.
Explanation:  No additional information is available for this message.

CTD0281I  Stop Data Replication Apply task has started.
Explanation:  No additional information is available for this message.

CTD0282I  Stop Data Replication Apply task has ended.
Explanation:  No additional information is available for this message.

CTD0283E  Unable to change to the capture directory.
Explanation:  Permissions do not allow changing directory to the capture directory.

CTD0284I  SetCurrentDirectory return code is
Explanation:  No additional information is available for this message.

CTD0285E  Unable to change to the apply directory.
Explanation:  Permissions do not allow changing directory to the apply directory.

CTD0286E  Logon failed. LogonUser return code is
Explanation:  Either the user ID or password does not match those assigned on the endpoint.
CTD0287E • CTD0307I

CTD0287E Create process failed. CreateProcessAsUser return code is 0x0.
Explanation: Could not spawn the child process.

CTD0288E This task is not supported on DB2 Version 2.
Explanation: No additional information is available for this message.

CTD0289E Error occurred while stopping the Data Replication Apply task.
Explanation: The Data Replication Apply task could not be stopped.

CTD0290E The error code was 0x0.
Explanation: An error occurred and the error code is in the message. Refer to the reference guide for the product.

CTD0291E No Apply tasks found for user
Explanation: No Apply Tasks were found for the named user.

CTD0292I Create the Admin Server task has started.
Explanation: No additional information is available for this message.

CTD0293I Create the Admin Server task has ended.
Explanation: No additional information is available for this message.

CTD0294I Create the sample Database task has started.
Explanation: No additional information is available for this message.

CTD0295I Create the sample Database task has ended.
Explanation: No additional information is available for this message.

CTD0296I Drop the Admin Server task has started.
Explanation: No additional information is available for this message.

CTD0297I Drop the Admin Server task has ended.
Explanation: No additional information is available for this message.

CTD0298I Get the Admin Server instance task has started.
Explanation: No additional information is available for this message.

CTD0299I Get the Admin Server instance task has ended.
Explanation: No additional information is available for this message.

CTD0300I List the Profile Registry task has started.
Explanation: No additional information is available for this message.

CTD0301I List the Profile Registry task has ended.
Explanation: No additional information is available for this message.

CTD0302I Rebind all packages task has started.
Explanation: No additional information is available for this message.

CTD0303I Rebind all packages task has ended.
Explanation: No additional information is available for this message.

CTD0304I Set the Admin Server ID task has started.
Explanation: No additional information is available for this message.

CTD0305I Set the Admin Server ID task has ended.
Explanation: No additional information is available for this message.

CTD0306I Set the Profile Registry task has started.
Explanation: No additional information is available for this message.

CTD0307I Set the Profile Registry task has ended.
Explanation: No additional information is available for this message.
<table>
<thead>
<tr>
<th>Code</th>
<th>Message</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTD0308I</td>
<td>Set up Monitoring Agent task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0309I</td>
<td>Set up Monitoring Agent task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0310I</td>
<td>Start the Admin Server task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0311I</td>
<td>Start the Admin Server task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0312I</td>
<td>Start DB2 task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0313I</td>
<td>Start DB2 task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0314I</td>
<td>Stop the Admin Server task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0315I</td>
<td>Stop the Admin Server task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0316I</td>
<td>Stop DB2 task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0317I</td>
<td>Stop DB2 task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0318I</td>
<td>Start DB2 SNMP Agent task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0319I</td>
<td>Start DB2 SNMP Agent task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0320I</td>
<td>Stop DB2 SNMP Agent task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0321I</td>
<td>Stop DB2 SNMP Agent task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0322E</td>
<td>Parameters are not supported on DB2 Version 2.</td>
<td>Remove the parameters.</td>
</tr>
<tr>
<td>CTD0323I</td>
<td>Adding the DB2 ECC inittab entry.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0324I</td>
<td>Installing the DB2 ECC monitoring service.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0325W</td>
<td>A DB2 ECC inittab entry already exists.</td>
<td>There is already an entry in the /etc/inittab file for the DB2 ECC task. Either delete the entry or continue.</td>
</tr>
<tr>
<td>CTD0326E</td>
<td>Error occurred while adding the inittab entry. Return code is</td>
<td>The inittab entry was not added. Check permissions for /etc and /etc/inittab.</td>
</tr>
<tr>
<td>CTD0327E</td>
<td>The user ID or password is missing. Retry.</td>
<td>Correct user ID and password are required.</td>
</tr>
<tr>
<td>CTD0328E</td>
<td>An error occurred while installing the Monitoring Agent. Return code is</td>
<td>The Monitoring Agent was not installed. Refer to the reference guide for return code information.</td>
</tr>
<tr>
<td>Code</td>
<td>Message</td>
<td>Explanation</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CTD0329I</td>
<td>Removing the DB2 ECC inittab entry.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>CTD0330E</td>
<td>An error occurred while removing the inittab entry. Return code is</td>
<td>The DB2 ECC entry was not removed from the /etc/inittab file.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0331I</td>
<td>Removing the DB2 ECC monitoring service.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0332E</td>
<td>An error occurred while removing the Monitoring Agent. Return code is</td>
<td>The Monitoring Agent task was not removed.</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>CTD0333W</td>
<td>They have been ignored.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0334I</td>
<td>Starting the Monitoring Agent.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0335I</td>
<td>The Monitoring Agent has been started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0336E</td>
<td>An error occurred while starting the Monitoring Agent.</td>
<td>The Monitoring Agent was not started.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0337W</td>
<td>The Monitoring Agent was already started.</td>
<td>The Monitoring Agent is already active and another was not started.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0338W</td>
<td>The agent must be stopped before it can be restarted.</td>
<td>Continue or stop the agent and restart it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0339E</td>
<td>Unable to open the Service Manager. Access is denied.</td>
<td>An error occurred opening the Service Manager. Correct the permissions and try again.</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>CTD0340E</td>
<td>The service manager cannot be opened. The return code is</td>
<td>The service manager was not opened.</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>CTD0341E</td>
<td>The Monitoring Service cannot be opened. Return code is</td>
<td>The Monitoring Service was not started.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0342E</td>
<td>The agent cannot be started because it already running.</td>
<td>The Monitoring Service was not started.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0343E</td>
<td>The agent cannot be started. Return code is</td>
<td>The monitoring service was not started.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0344E</td>
<td>An error occurred while stopping the ipc task.</td>
<td>The tmdb2ipc process may or may not have been stopped.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0344I</td>
<td>The Monitoring Agent has been stopped.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0345E</td>
<td>No Monitoring Agent were found.</td>
<td>A Monitoring Agent is not currently running.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0346I</td>
<td>Stopping the Monitoring Agent.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0347E</td>
<td>The monitoring service cannot be stopped because it is not active.</td>
<td>An error occurred while attempting to terminate the monitoring service.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0348E</td>
<td>The monitoring service cannot be stopped. The return code is</td>
<td>An error occurred while attempting to terminate the monitoring service.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTD0349E</td>
<td>Unable to query status of monitoring service. The return code is</td>
<td>Could not get a response from the monitoring service to a status request.</td>
</tr>
<tr>
<td>Code</td>
<td>Message</td>
<td>Explanation</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CTD0350I</td>
<td>Starting the DB2 Security Service.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0351E</td>
<td>The DB2 Security Service could not be opened. The return code is</td>
<td>The DB2 Security Service was not opened.</td>
</tr>
<tr>
<td>CTD0352E</td>
<td>The DB2 Security Service was not started because it is already running.</td>
<td>The DB2 Security Service was not started.</td>
</tr>
<tr>
<td>CTD0353E</td>
<td>Unable to start the DB2 Security Service. The return code is</td>
<td>The DB2 Security Service was not started.</td>
</tr>
<tr>
<td>CTD0354I</td>
<td>The DB2 Security Service has been started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0355I</td>
<td>Stopping the DB2 Security Service.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0356E</td>
<td>The DB2 Security Service was not stopped because it is not active.</td>
<td>The request to stop the DB2 Security Service failed because it was not running.</td>
</tr>
<tr>
<td>CTD0357E</td>
<td>Unable to stop the DB2 Security Service. The return code is</td>
<td>The DB2 Security Service was not stopped.</td>
</tr>
<tr>
<td>CTD0358E</td>
<td>Unable to query status of DB2 Security Service. The return code is</td>
<td>The DB2 Security Service is not responding to a status request. Status was not obtained.</td>
</tr>
<tr>
<td>CTD0359I</td>
<td>The DB2 Security Service has been stopped.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0360E</td>
<td>Error occurred while stopping the DB2 SNMP agent.</td>
<td>The DB2 SNMP Agent is not responding to a service termination request.</td>
</tr>
<tr>
<td>CTD0361E</td>
<td>No DB2 SNMP agent was found.</td>
<td>The DB2 SNMP Agent was not running.</td>
</tr>
<tr>
<td>CTD0362E</td>
<td>Check type is not correct.</td>
<td>Incorrect parameter passed to task.</td>
</tr>
<tr>
<td>CTD0363E</td>
<td>Error occurred while getting group name attribute.</td>
<td>The group name attribute was not retrieved.</td>
</tr>
<tr>
<td>CTD0364E</td>
<td>Error occurred while getting group ID attribute.</td>
<td>The group identifier was not retrieved.</td>
</tr>
<tr>
<td>CTD0365E</td>
<td>Unable to set the group ID.</td>
<td>The Group Identifier was not set.</td>
</tr>
<tr>
<td>CTD0366E</td>
<td>Error occurred while getting user ID attribute.</td>
<td>The user identifier was not retrieved.</td>
</tr>
<tr>
<td>CTD0367E</td>
<td>Unable to set the user ID.</td>
<td>The user ID was not set.</td>
</tr>
<tr>
<td>CTD0368E</td>
<td>Cannot retrieve group name for</td>
<td>Could not retrieve the specified group name.</td>
</tr>
<tr>
<td>CTD0369E</td>
<td>The task is not supported on this platform.</td>
<td>Task was not run on the endpoint.</td>
</tr>
<tr>
<td>CTD0370I</td>
<td>Reset Audit Configuration task has started.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0371I</td>
<td>Reset Audit Configuration task has ended.</td>
<td>No additional information is available for this message.</td>
</tr>
</tbody>
</table>
CTD0372I Get Audit Configuration task has started.
Explanation: No additional information is available for this message.

CTD0373I Get Audit Configuration task has ended.
Explanation: No additional information is available for this message.

CTD0374I Flush Audit Log task has started.
Explanation: No additional information is available for this message.

CTD0375I Flush Audit Log task has ended.
Explanation: No additional information is available for this message.

CTD0376I Start DB2 Audit Facility task has started.
Explanation: No additional information is available for this message.

CTD0377I Start DB2 Audit Facility task has ended.
Explanation: No additional information is available for this message.

CTD0378I Stop DB2 Audit Facility task has started.
Explanation: No additional information is available for this message.

CTD0379I Stop DB2 Audit Facility task has ended.
Explanation: No additional information is available for this message.

CTD0380I Configure Audit Facility task has started.
Explanation: No additional information is available for this message.

CTD0381I Configure Audit Facility task has ended.
Explanation: No additional information is available for this message.

CTD0382I Extract DB2 Auditing task has started.
Explanation: No additional information is available for this message.

CTD0383I Extract DB2 Auditing task has ended.
Explanation: No additional information is available for this message.

CTD0384I Purge Audit Log task has started.
Explanation: No additional information is available for this message.

CTD0385I Purge Audit Log task has ended.
Explanation: No additional information is available for this message.

CTD0386I Create Import Audit Log task has started.
Explanation: No additional information is available for this message.

CTD0387I Create Import Audit Log task has ended.
Explanation: No additional information is available for this message.

CTD0388I Prune Audit Log task has started.
Explanation: No additional information is available for this message.

CTD0389I Prune Audit Log task has ended.
Explanation: No additional information is available for this message.

CTD0390I Set Query Patroller System Cost Threshold.
Explanation: No additional information is available for this message.

CTD0391I Query Patroller request has started.
Explanation: No additional information is available for this message.

CTD0392I Query Patroller request has completed.
Explanation: No additional information is available for this message.

CTD0393I Set Query Patroller System Query Threshold.
Explanation: No additional information is available for this message.
CTD0394I  Set Query Patroller System Accounting Status.
Explanation: No additional information is available for this message.

CTD0395I  Set Query Patroller System Days To Keep Jobs.
Explanation: No additional information is available for this message.

CTD0396I  Get Query Patroller System Parameters.
Explanation: No additional information is available for this message.

CTD0397I  Get Query Patroller User Group IDs.
Explanation: No additional information is available for this message.

CTD0398I  Get Query Patroller User Group Configuration.
Explanation: No additional information is available for this message.

CTD0399I  Set Query Patroller User Group Cost Analysis Flag.
Explanation: No additional information is available for this message.

CTD0400I  Set Query Patroller User Group Authority Level.
Explanation: No additional information is available for this message.

CTD0401I  Set Query Patroller User Group Max Queries.
Explanation: No additional information is available for this message.

CTD0402I  Set Query Patroller User Group Low Priority.
Explanation: No additional information is available for this message.

CTD0403I  Set Query Patroller User Group Normal Priority.
Explanation: No additional information is available for this message.

CTD0404I  Set Query Patroller User Group High Priority.
Explanation: No additional information is available for this message.

CTD0405I  Set Query Patroller User Group Threshold.
Explanation: No additional information is available for this message.

CTD0406I  Set Query Patroller User Group Management Threshold.
Explanation: No additional information is available for this message.

CTD0407I  Set Query Patroller User Group Max Elapsed Time.
Explanation: No additional information is available for this message.

CTD0408I  Set Query Patroller User Group Max Result Rows.
Explanation: No additional information is available for this message.

CTD0409I  Set Query Patroller User Group Account ID.
Explanation: No additional information is available for this message.

CTD0410I  Set Query Patroller User Group Email Address.
Explanation: No additional information is available for this message.

CTD0411I  Query Patroller Release All Held Jobs.
Explanation: No additional information is available for this message.

CTD0412I  Query Patroller Drop All Complete Result Sets.
Explanation: No additional information is available for this message.

CTD0413I  Start the DB2 SNMP agent.
Explanation: No additional information is available for this message.
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<td>Stop DB2.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0415I</td>
<td>Stop the Admin Server.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0416I</td>
<td>Start DB2.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0417I</td>
<td>Create the Admin Server.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0418I</td>
<td>Create the sample database.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0419I</td>
<td>Drop the Admin Server.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0420I</td>
<td>Get the Admin Server instance name.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0421I</td>
<td>List the Profile Registry.</td>
<td>No additional information is available for this message.</td>
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<tr>
<td>CTD0422I</td>
<td>Rebind all packages.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0423I</td>
<td>Set the Admin Server ID.</td>
<td>No additional information is available for this message.</td>
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<tr>
<td>CTD0424I</td>
<td>Set the Profile Registry.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0425I</td>
<td>Start the Admin Server.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0426I</td>
<td>Activate a database.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0427I</td>
<td>Create a backup copy of a database.</td>
<td>No additional information is available for this message.</td>
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<tr>
<td>CTD0428I</td>
<td>Create the explain tables.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0429I</td>
<td>Deactivate a database.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0430I</td>
<td>Drop the sample database.</td>
<td>No additional information is available for this message.</td>
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<td>CTD0431I</td>
<td>Force applications.</td>
<td>No additional information is available for this message.</td>
</tr>
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<td>CTD0432I</td>
<td>Get admin configuration.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0433I</td>
<td>Get database configuration.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0434I</td>
<td>Get Database Manager configuration.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>CTD0435I</td>
<td>Invoke a stored procedure.</td>
<td>No additional information is available for this message.</td>
</tr>
<tr>
<td>Message</td>
<td>Explanation</td>
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<tr>
<td>CTD0436I List DCS applications.</td>
<td>No additional information is available for this message.</td>
<td></td>
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<td>CTD0437I List applications.</td>
<td>No additional information is available for this message.</td>
<td></td>
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<tr>
<td>CTD0438I List the history file.</td>
<td>No additional information is available for this message.</td>
<td></td>
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<tr>
<td>CTD0439I List the node directory.</td>
<td>No additional information is available for this message.</td>
<td></td>
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<tr>
<td>CTD0440I Prune the recovery history file.</td>
<td>No additional information is available for this message.</td>
<td></td>
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<tr>
<td>CTD0441I Quiesce tablespaces.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0442I Rebind a package.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0443I Reorganize a table.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0444I Reset admin configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0445I Reset database configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0446I Reset Database Manager configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0447I Restart a database.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0448I Run reorgchk.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0449I Run statistics.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0450I Update admin configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0451I Update database configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0452I Update Database Manager configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0453I Get Database Manager configuration.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0454I Get the log sequence number.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0455I Suspend Data Replication Capture.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0456I Resume Data Replication Capture.</td>
<td>No additional information is available for this message.</td>
<td></td>
</tr>
<tr>
<td>CTD0457I Reinitialize Data Replication Capture.</td>
<td>No additional information is available for this message.</td>
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</tbody>
</table>
**CTD0458I**  Prune Data Replication Capture.

**Explanation:** No additional information is available for this message.

**CTD0460I**  The ECC Broadcast Message task was started.

**Explanation:** No additional information is available for this message.

**CTD0462I**  The ECC Broadcast Message task was completed.

**Explanation:** No additional information is available for this message.

**CTD0463W**  This task must be run from a DB2InstanceManager or DB2PartitionManager.

**Explanation:** No additional information is available for this message.

**CTD0464I**  ECC Reset Counters task was started.

**Explanation:** No additional information is available for this message.

**CTD0465I**  ECC Reset Counters task was completed.

**Explanation:** No additional information is available for this message.

**CTD0466I**  ECC Send Notice started.

**Explanation:** No additional information is available for this message.

**CTD0467I**  ECC Send Notice task was completed.

**Explanation:** No additional information is available for this message.

**CTD0468I**  ECC Set Up Monitoring task was started.

**Explanation:** No additional information is available for this message.

**CTD0469I**  ECC Set Up Monitoring task was completed.

**Explanation:** No additional information is available for this message.

**CTD0470I**  ECC Start Monitoring Agent task was started.

**Explanation:** No additional information is available for this message.

**CTD0471I**  ECC Start Monitoring Agent task was completed.

**Explanation:** No additional information is available for this message.

**CTD0472E**  Endpoints must be either DB2InstanceManager, DB2DatabaseManager, or DB2PartitionManager.

**Explanation:** No additional information is available for this message.

**CTD0473I**  ECC Stop DB2SNMP Agent task was started.

**Explanation:** No additional information is available for this message.

**CTD0474I**  ECC Stop DB2SNMP Agent task was completed.

**Explanation:** No additional information is available for this message.

**CTD0475I**  ECC Stop Monitoring Agent task was started.

**Explanation:** No additional information is available for this message.

**CTD0476I**  ECC Stop Monitoring Agent task was completed.

**Explanation:** No additional information is available for this message.

**CTD0477E**  The specified Event Server was not found.

**Explanation:** No additional information is available for this message.

**CTD0478I**  ECC Configure TEC Classes task was started.

**Explanation:** No additional information is available for this message.
CTD0479I  ECC Configure TEC Classes was completed.
Explanation: No additional information is available for this message.

CTD0480I  ECC Client Connectivity task was started.
Explanation: No additional information is available for this message.

CTD0481I  ECC Client Connectivity task was completed.
Explanation: No additional information is available for this message.

CTD0482E  The number of arguments is incorrect.
Explanation: No additional information is available for this message.

CTD0483E  The task name is not correct.
Explanation: No additional information is available for this message.

CTD0484E  Endpoints must be either DB2InstanceManager, DB2DatabaseManager, or DB2PartitionManager.
Explanation: No additional information is available for this message.

CTD0485E  Endpoints must be either DB2InstanceManager, DB2DatabaseManager, or DB2PartitionManager.
Explanation: No additional information is available for this message.

CTD0486E  Cannot create the rule base at the Event Server in the rule base directory.
Explanation: No additional information is available for this message.

CTD0487E  Cannot copy the existing rule base to another existing rule base.
Explanation: No additional information is available for this message.

CTD0488E  Cannot copy the TEC rule TBSM helper script into the TEC scripts directory.
Explanation: No additional information is available for this message.

CTD0489I  The current contents of the Audit Facility log are as follows:
Explanation: No additional information is available for this message.

CTD0490I  Discovery task succeeded.
Explanation: No additional information is available for this message.

CTD0491E  Discovery task failed.
Explanation: No additional information is available for this message.

CTD0601I  The DB2Gateway object %1$s was created.
Explanation: No additional information is available for this message.

CTD1017I  Verify that the correct monitor argument values were specified. There might not be any active application running in the requested database. Or, one or more of the expression elements is null. Therefore, the best possible default value is used.
Explanation: No additional information is available for this message.

CTD1066I  Checking the status of DataJoiner Instance.
Explanation: No additional information is available for this message.

CTD1022E  Cannot find valid database parameter.
Explanation: A required parameter was not supplied. Contact your support representative.

CTD1066I  Checking the status of DataJoiner Instance.
Explanation: No additional information is available for this message.
CTD1068I • CTD4004E

CTD1068I  Checking the SNA Link to Station Name.
Explanation: No additional information is available for this message.

CTD1070E  Cannot obtain data from %1$d nodes.
Explanation: An error occurred while retrieving the requested information from one or more nodes.

CTD1073E  User ID db2ecc was not found on the endpoint.
Explanation: A db2ecc operating system user ID must be defined and assigned to the DB2 SYSADM group so that the DB2 instance can be managed.

CTD1074E  The db2ecc user ID is not a local or domain administrator.
Explanation: A db2ecc operating system user ID must be defined and assigned to the DB2 SYSADM group so that the DB2 instance can be managed.

CTD1075E  Access was denied while looking for a db2ecc user ID.
Explanation: An attempt to find the user ID db2ecc resulted in an access violation. Check permissions on the endpoint.

CTD1101E  A call to the DB2 server returned an unexpected error.
Explanation: An Application Program Interface (API) call to DB2 returned an error code which is not a known error code.

CTD1118E  Unable to install monitoring agent subsystem.
Explanation: The monitoring agent provides access to the DB2 snapshot monitoring system. Contact your support representative for more information.

CTD4004E  Essential environment parameter is missing.
Explanation: A task command or monitor was attempted without the proper context being set. Set the environment variable and run the command again.
Appendix F. Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in IBM Tivoli Monitoring for Databases: DB2 enable users to:

- Use assistive technologies such as screen-reader software and a digital speech synthesizer to hear what is displayed on the screen
- Operate specific or equivalent features using only the keyboard
- Magnify what is displayed on the screen

In addition, the product documentation has been modified to include features to aid accessibility:

- All documentation available in both HTML and convertible PDF formats to give the maximum opportunity for users to apply screen-reader software.
- All images provided with alternative text so that users of the documentation with vision impairments can understand the contents of the images.

Using assistive technologies

Assistive technology products such as screen-readers, function with both the text-based and graphical user interfaces found in IBM Tivoli Monitoring for Databases: DB2. Consult the assistive technology product documentation for specific information about using it to access command line or graphical interfaces.

Additional accessibility features might be included as part of the user interface of a particular IBM Tivoli Monitoring for Databases: DB2 component. Check with the individual component’s documentation for any additional information about accessibility.

Magnifying what is displayed on the screen

In all components of IBM Tivoli Monitoring for Databases: DB2 other than the Web Health Console, users can magnify the screens used by the product’s user interfaces using facilities provided by the operating systems on which the product is run. For example, in a Windows environment you can change the screen settings to a lower resolution to enlarge the font sizes of the text on the screen. Information about these facilities is provided in the relevant operating system documentation.

Documentation in accessible formats

All user documentation is provided in HTML format, which can be read directly by assistive tools such as screen readers, or in convertible PDF format. Convertible PDF files are those that can be converted from PDF to HTML by the Adobe PDF to HTML converter. For information about converting PDF documents to HTML, refer to the Adobe book Optimizing Adobe PDF Files for Accessibility.

Using alternative text

All documentation images are provided with an alternative text that can be read by assistive tools such as screen readers.
Using Alternative Text
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