Program Directory for
IBM Tivoli Storage Manager

for OS/390 and z/OS

Version 5 Release 2
Program Number 5698-A13

FMID HDN5520

for Use with
OS/390
z/OS

Document Date: August 2003
Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page v.
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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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- OS/390®
- RACF
- SoftwareXcel
- System/390
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- VTAM
- z/OS®
1.0 Introduction

This Program Directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of IBM Tivoli Storage Manager. This publication refers to IBM Tivoli Storage Manager as IBM Tivoli Storage Manager.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for IBM Tivoli Storage Manager.
- 3.0, “Program Support” on page 7 describes the IBM support available for IBM Tivoli Storage Manager.
- 4.0, “Program and Service Level Information” on page 9 lists the APARs (program level) and PTFs (service level) incorporated into IBM Tivoli Storage Manager.
- 5.0, “Installation Requirements and Considerations” on page 10 identifies the resources and all for installing and using IBM Tivoli Storage Manager.
- 6.0, “Installation Instructions” on page 16 provides detailed installation instructions for IBM Tivoli Storage Manager. It also describes the procedures for activating the functions of IBM Tivoli Storage Manager, or refers to appropriate publications.

Before installing IBM Tivoli Storage Manager, read the CBPDO Memo To Users and the CBPDO Memo To Users Extension that were supplied with this program softcopy as well as this Program Directory and then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 7 tells you how to find any updates to the information and procedures in this Program Directory.

IBM Tivoli Storage Manager is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The Program Directory is provided softcopy on the CBPDO tape which is identical to the hard copy provided with your order. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for IBM Tivoli Storage Manager are included on the CBPDO tape.

Do not use this Program Directory if you are installing IBM Tivoli Storage Manager with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the Program Directory as required.

1.1 IBM Tivoli Storage Manager Description

IBM Tivoli Storage Manager is a client/server program that provides storage management solutions to customers in a multivendor computer environment. IBM Tivoli Storage Manager provides an automated, centrally scheduled, policy-managed backup, archive, and space-management facility for file servers and workstations.
1.2 IBM Tivoli Storage Manager FMIDs

IBM Tivoli Storage Manager consists of the following FMIDs:

- HDN5520
- JDN5521
2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for IBM Tivoli Storage Manager is 5698-A13 and its feature numbers are 5804, 5844, 5854, 5814, 5864, 5824, 5884, 5834, 5874, and 5894.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature code, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by IBM Tivoli Storage Manager. Ask your IBM representative for this information if you have not already received a copy.

2.1 Basic Machine-Readable Material

The distribution medium for this program is magnetic tape or downloadable files. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, “Installation Instructions” on page 16 for more information about how to install the program.

Information about the physical tape for the Basic Machine-Readable Materials for IBM Tivoli Storage Manager can be found in the CBPDO Memo To Users Extension.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Feature Number</th>
<th>Physical Volume</th>
<th>External Label</th>
<th>VOLSER</th>
</tr>
</thead>
<tbody>
<tr>
<td>3480 cart</td>
<td>5804</td>
<td>1</td>
<td>IBM Tivoli Storage Manager</td>
<td>DN5520</td>
</tr>
<tr>
<td></td>
<td>5844</td>
<td></td>
<td>(German)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5854</td>
<td></td>
<td>(Spanish)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5814</td>
<td></td>
<td>(French)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5864</td>
<td></td>
<td>(Italian)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5824</td>
<td></td>
<td>(Japanese)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5884</td>
<td></td>
<td>(Korean)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5834</td>
<td></td>
<td>(Brazilian Portuguese)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5874</td>
<td></td>
<td>(Simplified Chinese)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5894</td>
<td></td>
<td>(Traditional Chinese)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2 on page 4 describes the program file content for IBM Tivoli Storage Manager. You can refer to the CBPDO Memo To Users Extension to see where the files reside on the tape.

Notes:
1. The data set attributes in this table should be used in the JCL of jobs reading the data sets, but since the data sets are in IEBCOPY unloaded format, their actual attributes may be different.

2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

A description of the contents of each file follows:

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM.HDN5520.F1</td>
<td>Server JCLIN</td>
</tr>
<tr>
<td>IBM.HDN5520.F2</td>
<td>Server samples</td>
</tr>
<tr>
<td>IBM.HDN5520.F3</td>
<td>Server executables</td>
</tr>
<tr>
<td>IBM.HDN5520.F4</td>
<td>Server auxiliary parts</td>
</tr>
<tr>
<td>IBM.HDN5520.F5</td>
<td>Web Server Images</td>
</tr>
<tr>
<td>IBM.JDN5521.F1</td>
<td>TSO Admin Client JCLIN</td>
</tr>
<tr>
<td>IBM.JDN5521.F2</td>
<td>TSO Admin Client samples</td>
</tr>
<tr>
<td>IBM.JDN5521.F3</td>
<td>TSO Admin Client executables</td>
</tr>
<tr>
<td>IBM.JDN5521.F4</td>
<td>TSO Admin Client auxiliary parts</td>
</tr>
</tbody>
</table>

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IBM Tivoli Storage Manager.
2.3 Program Publications

The following sections identify the basic and optional publications for IBM Tivoli Storage Manager.

2.3.1 Basic Program Publications

Figure 3 identifies the basic unlicensed program publications for IBM Tivoli Storage Manager. One copy of each of these publications is included when you order the basic materials for IBM Tivoli Storage Manager. For additional copies, contact your IBM representative.

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Form Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Tivoli Storage Manager Version 5 Release 2 Product Publications</td>
<td>SK3T-8176</td>
</tr>
<tr>
<td>IBM Tivoli Storage Manager for OS/390 and z/OS Quick Start Version 5 Release 2</td>
<td>GC32-0777</td>
</tr>
</tbody>
</table>

2.3.2 Optional Program Publications

No optional publications are provided for IBM Tivoli Storage Manager.

The IBM Tivoli Storage Manager Program Directory, along with other Tivoli Program Directories can be found by following links to the product from the support web site listed below:

2.4 Program Source Materials

No program source materials or viewable program listings are provided for IBM Tivoli Storage Manager.

2.5 Publications Useful During Installation

The publications listed in Figure 4 may be useful during the installation of IBM Tivoli Storage Manager. To order copies, contact your IBM representative or visit the IBM Publications Center on the world wide web at:

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Form Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM SMP/E for z/OS and OS/390 User's Guide</td>
<td>SA22-7773</td>
</tr>
<tr>
<td>Publication Title</td>
<td>Form Number</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>IBM SMP/E for z/OS and OS/390 Commands</td>
<td>SA22-7771</td>
</tr>
<tr>
<td>IBM SMP/E for z/OS and OS/390 Reference</td>
<td>SA22-7772</td>
</tr>
<tr>
<td>IBM SMP/E for z/OS and OS/390 Messages, Codes, and Diagnosis</td>
<td>GA22-7770</td>
</tr>
<tr>
<td>IBM Tivoli Storage Manager for OS/390 and z/OS Administrator's Guide Version 5 Release 2</td>
<td>GC32-0775</td>
</tr>
<tr>
<td>IBM Tivoli Storage Manager for OS/390 and z/OS Administrator's Reference Version 5 Release 2</td>
<td>GC32-0776</td>
</tr>
<tr>
<td>IBM Tivoli Storage Manager for OS/390 and z/OS Quick Start Version 5 Release 2</td>
<td>GC32-0777</td>
</tr>
<tr>
<td>IBM Tivoli Storage Manager Messages Version 5 Release 2</td>
<td>GC32-0767</td>
</tr>
</tbody>
</table>
3.0 Program Support

This section describes the IBM support available for IBM Tivoli Storage Manager.

3.1 Program Services

Contact your IBM and/or Tivoli representative for specific information about available program services. You can find information in the "IBM Software Support Guide" 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 contact support

3.2 Preventive Service Planning

Before installing IBM Tivoli Storage Manager, you should review the current Preventive Service Planning (PSP) information. If you obtained IBM Tivoli Storage Manager as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO.

If the CBPDO for IBM Tivoli Storage Manager is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

For access to RETAIN, visit http://www.ibmlink.ibm.com/ on the Internet.

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for IBM Tivoli Storage Manager are:

<table>
<thead>
<tr>
<th>UPGRADE</th>
<th>SUBSET</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITSM520</td>
<td>HDN5520</td>
<td>Server</td>
</tr>
<tr>
<td>JDN5521</td>
<td></td>
<td>TSO Admin Client</td>
</tr>
</tbody>
</table>
3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 6 on page 8 identifies the component IDs (COMPID) for IBM Tivoli Storage Manager.

<table>
<thead>
<tr>
<th>FMID</th>
<th>COMPID</th>
<th>Component Name</th>
<th>RETAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDN5520</td>
<td>5698ISMVS</td>
<td>Server</td>
<td>DN5520</td>
</tr>
<tr>
<td>JDN5521</td>
<td>5698ISMVS</td>
<td>TSO Admin Client</td>
<td>DN5521</td>
</tr>
</tbody>
</table>
4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of IBM Tivoli Storage Manager. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

4.1 Program Level Information

No APARs have been incorporated into IBM Tivoli Storage Manager.

4.2 Service Level Information

No PTFs against this release of IBM Tivoli Storage Manager have been incorporated into the product tape.
5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IBM Tivoli Storage Manager. The following terminology is used:

- **Driving system**: the system used to install the program.
- **Target system**: the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.
- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install IBM Tivoli Storage Manager.

5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

5.1.2 Programming Requirements

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name and Minimum VRM/Service Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5647-A01</td>
<td>OS/390 SMP/E Version 2 Release 8 or higher</td>
</tr>
<tr>
<td>5694-A01</td>
<td>z/OS Version 1 Release 1 or higher</td>
</tr>
<tr>
<td>5655-G44</td>
<td>IBM SMP/E for z/OS and OS/390 Version 3 Release 1 or higher</td>
</tr>
</tbody>
</table>
5.2 Target System Requirements

This section describes the environment of the target system required to install and use IBM Tivoli Storage Manager.

IBM Tivoli Storage Manager installs in the z/OS (Z038) SREL.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming Requirements

5.2.2.1 Mandatory Requisites

A mandatory requisite is defined as a product that is required without exception; this product either will not install or will not function unless this requisite is met. This includes products that are specified as REQs or PREs.

![Figure 8. Mandatory Requisites](image)

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name and Minimum VRM/Service Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any one of the following:</td>
<td></td>
</tr>
<tr>
<td>5647-A01</td>
<td>OS/390 Version 2 Release 8 or higher</td>
</tr>
<tr>
<td>5694-A01</td>
<td>z/OS Version 1 Release 1 or higher</td>
</tr>
</tbody>
</table>

5.2.2.2 Functional Requisites

A functional requisite is defined as a product that is not required for the successful installation of this product or for the basic function of the product, but is needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

![Figure 9 (Page 1 of 2). Functional Requisites](image)

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name and Minimum VRM/Service Level</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5647-A01</td>
<td>Language Environment in OS/390 Version 2 Release 8 or higher</td>
<td>Run Time Library¹</td>
</tr>
<tr>
<td>5694-A01</td>
<td>Language Environment in Version 1 Release 1 of z/OS or higher</td>
<td>Run Time Library¹</td>
</tr>
</tbody>
</table>

Any one of the following:
The Language Environment link library must be available to link the TSO Administrator client module in JDN5521.

The IBM TCP/IP link library must be available to link the TSO Administrator client module in JDN5521.

5.2.2.3 Toleration/Coexistence Requisites

A toleration/coexistence requisite is defined as a product which must be present on a sharing system. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD at different time intervals.

IBM Tivoli Storage Manager has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

A negative requisite identifies products which must not be installed on the same system as this product.

IBM Tivoli Storage Manager has no negative requisites.

5.2.3 DASD Storage Requirements

IBM Tivoli Storage Manager libraries can reside on all supported DASD types.

Figure 10 lists the total space required for each type of library.

<table>
<thead>
<tr>
<th>Library Type</th>
<th>Total Space Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>40megabytes</td>
</tr>
<tr>
<td>Distribution</td>
<td>40megabytes</td>
</tr>
</tbody>
</table>

Notes:
1. IBM recommends use of system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.

2. Abbreviations used for the data set type are:
   - **U**  Unique data set, allocated by this product and used only by this product. To determine the correct storage needed for this data set, this table provides all required information; no other tables (or Program Directories) need to be referenced for the data set size.
   - **S**  Shared data set, allocated by this product and used by this product and others. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other Program Directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
   - **E**  Existing shared data set, used by this product and others. This data set is NOT allocated by this product. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information on the names and sizes of the required data sets, please refer to 6.1.7, “Allocate SMP/E Target and Distribution Libraries and Paths” on page 20.

3. Abbreviations used for the HFS Path type are:
   - **N**  New path, created by this product.
   - **X**  Path created by this product, but may already exist from a previous release.
   - **P**  Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:
   - The default name of the data set may be changed
   - The default block size of the data set may be changed
   - The data set may be merged with another data set that has equivalent characteristics
   - The data set may be either a PDS or a PDSE

5. All target libraries listed have the following attributes:
   - The data set may be SMS managed
   - It is not required for the data set to be SMS managed
   - It is not required for the data set to reside on the IPL volume
   - The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.

6. All target libraries listed which contain load modules have the following attributes:
   - The data set may be in the LPA
• It is not required for the data set to be in the LPA
• The data set may be in the LNKLST
• It is not required for the data set to be APF authorized

The following figures describe the target and distribution libraries and HFS paths required to install IBM Tivoli Storage Manager. The storage requirements of IBM Tivoli Storage Manager must be added to the storage required by other programs having data in the same library or path.

**Note:** The data in these tables should be used when determining which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

**Figure 11. Storage Requirements for IBM Tivoli Storage Manager Target Libraries**

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Member Type</th>
<th>Member Type</th>
<th>Target Type</th>
<th>Volume</th>
<th>No. of 3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINKLIB</td>
<td>LMOD</td>
<td>ANY</td>
<td>E</td>
<td>PDS</td>
<td>0</td>
<td>440</td>
</tr>
<tr>
<td>SAMPLIB</td>
<td>Sample</td>
<td>ANY</td>
<td>E</td>
<td>PDS</td>
<td>0</td>
<td>288</td>
</tr>
<tr>
<td>SANRHLP</td>
<td>Help</td>
<td>ANY</td>
<td>U</td>
<td>PDS</td>
<td>80</td>
<td>288</td>
</tr>
<tr>
<td>SANRIMG</td>
<td>Panel</td>
<td>ANY</td>
<td>U</td>
<td>PDS</td>
<td>80</td>
<td>92</td>
</tr>
<tr>
<td>SANRMSG</td>
<td>Message</td>
<td>ANY</td>
<td>U</td>
<td>PDS</td>
<td>80</td>
<td>14</td>
</tr>
<tr>
<td>SANSMSG</td>
<td>Message</td>
<td>ANY</td>
<td>U</td>
<td>PDS</td>
<td>80</td>
<td>6</td>
</tr>
</tbody>
</table>

**Figure 12. Storage Requirements for IBM Tivoli Storage Manager Distribution Libraries**

<table>
<thead>
<tr>
<th>Library DDNAME</th>
<th>Member Type</th>
<th>Member Type</th>
<th>Member Type</th>
<th>Target Type</th>
<th>Volume</th>
<th>No. of 3390 Trks</th>
<th>No. of DIR Blks</th>
</tr>
</thead>
<tbody>
<tr>
<td>AANRLOAD</td>
<td>U</td>
<td>PDS</td>
<td>U</td>
<td>0</td>
<td>403</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>AANSLOAD</td>
<td>U</td>
<td>PDS</td>
<td>U</td>
<td>0</td>
<td>20</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>AANRHLP</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>92</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>AANRIMG</td>
<td>U</td>
<td>PDS</td>
<td>VB</td>
<td>8196</td>
<td>65</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>AANRMSG</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>14</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>AANSMSG</td>
<td>U</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ASAMPLIB</td>
<td>E</td>
<td>PDS</td>
<td>FB</td>
<td>80</td>
<td>288</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>
5.3 FMIDs Deleted

Installing IBM Tivoli Storage Manager may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install IBM Tivoli Storage Manager into separate SMP/E target and distribution zones.

**Note:** These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

5.4 Special Considerations

IBM Tivoli Storage Manager has no special considerations for the target system.
6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of IBM Tivoli Storage Manager.

Please note the following:

- If you want to install IBM Tivoli Storage Manager into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets. Additionally, to assist you in doing this, IBM has provided samples to help you create an SMP/E environment at the following url:
  http://www-1.ibm.com/support/docview.wss?rs=660&context=SSZJDU&uid=swg21066230
- Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.
- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing IBM Tivoli Storage Manager

6.1.1 SMP/E Considerations for Installing IBM Tivoli Storage Manager

This release of IBM Tivoli Storage Manager is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

6.1.2 SMP/E Environment

All SMP/E installation jobs provided assume that all necessary DD statements for the execution of SMP/E are defined using DDDEFs.

Sample jobs are provided to assist you in installing IBM Tivoli Storage Manager. After the RECEIVE step has been completed, the sample jobs can be found in SMPTLIB hlq.HDN5520.F2 (hlq is the high level qualifier defined in the DSPREFIX in the CSI). Make a copy of these jobs in your own library and modify them to use during the installation of IBM Tivoli Storage Manager. The sample jobs are:

ANRRECEV Sample RECEIVE job.
ANRALLOC Sample job to allocate target and distribution libraries.
ANRDDDEF Sample job to define required SMP/E DDDEFs.
ANRAPPCK Sample APPLY CHECK job.
ANRAPPLY Sample APPLY job.
ANRACCCK Sample ACCEPT CHECK job.
ANRACCEP Sample ACCEPT job.
ANRRPTCL Sample REPORT CALLLIBS job for creating a link-edit job. This job should only be used when the TSO Admin Client module must be re-linked at a later time.

In the sample SMP/E jobs provided, the name of the SMP/E CSI is #GLOBALCSI. The global zone name in the SMP/E CSI is GLOBAL. The distribution zone name is #DZONE. The target zone name is #TZONE. The sample jobs should be updated to reflect the CSI and zone names used at your installation.

### 6.1.3 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 13. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

![Figure 13. SMP/E Options Subentry Values](image)

<table>
<thead>
<tr>
<th>SUB-ENTRY</th>
<th>Value</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSSPACE</td>
<td>(15,15,47)</td>
<td>TLIB default allocation parameters</td>
</tr>
<tr>
<td>PEMAX</td>
<td>SMP/E Default</td>
<td>IBM recommends using the SMP/E default for PEMAX.</td>
</tr>
</tbody>
</table>

### 6.1.4 SMP/E CALLLIBS Processing

IBM Tivoli Storage Manager uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When IBM Tivoli Storage Manager is installed, ensure that DDDEFs exist for the following libraries:

The IBM Tivoli Storage Manager TSO Admin Client module is installed using the SMP/E CALLLIBS function. During APPLY processing the client module will be link-edited from a RECEIVE staging library into the SMPLTS dataset; no link libraries are needed. Then, the client module will be link-edited from the SMPLTS dataset into the target library; link libraries needed by this step are defined with the ANRDDDEF job.

For the install to work properly, ensure the following:

- Verify that the SMP/E SMPLTS data set has been allocated. Refer to *SMP/E Reference* for information on allocating the SMPLTS data set. The dataset must be large enough to hold the client module as distributed.
- Define the appropriate DDDEFs for installing the client module. Modify the sample job ANRDDDEF by following the instructions that are included in the sample job and in the text that follows.

ANRDDDEF includes DDDEF statements for installing IBM Tivoli Storage Manager. The following information applies to DDDEF statements required to install the client module with SMP/E CALLLIBS.
The DDDEF statements identify the dataset names of libraries needed for link-editing the client module into the target library. These dataset names will be used by SMP/E CALLLIBS to modify a prototype of a link-edit job. The prototype includes the following SYSLIB DD statements that will be modified:

```
//SYSLIB DD DSN=TCP/IP.SEZACMTX,DISP=SHR
// DD DSN=CEE.SCEELKED,DISP=SHR
```

The low-level qualifier of each of the dataset names found in the prototype identifies the DDDEF that will be searched for by CALLLIBS. Once the DDDEF is found, the dataset name associated with it will replace the dataset name found in the prototype.

Modify ANRDDDEF to reflect your CALLLIB requirements:

**SEZACMTX** Identifies the dataset name of the IBM TCP/IP SEZACMTX library.

**SCEELKED** Identifies the dataset name of the Language Environment SCEELKED library.

- Include in the DDDEFs statements the UNIT and VOLUME keywords and parameters if needed.
- Change lower case names to installation-defined UPPERCASE values.

**Note:** The DDDEFs above are used only to resolve external references during the link-edit of the client module using CALLLIBS. These data sets are not updated during the installation of IBM Tivoli Storage Manager.

### 6.1.5 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install IBM Tivoli Storage Manager:

<table>
<thead>
<tr>
<th>Job Name</th>
<th>Job Type</th>
<th>Description</th>
<th>RELFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANRRECEV</td>
<td>RECEIVE</td>
<td>Sample RECEIVE job</td>
<td>IBM.HDN5520.F2</td>
</tr>
<tr>
<td>ANRALLOC</td>
<td>ALLOCATE</td>
<td>Sample job to allocate target and distribution libraries</td>
<td>IBM.HDN5520.F2</td>
</tr>
<tr>
<td>ANRDDDEF</td>
<td>DDDEF</td>
<td>Sample job to define SMP/E DDDEFs</td>
<td>IBM.HDN5520.F2</td>
</tr>
<tr>
<td>ANRAPPCK</td>
<td>APPLY CHECK</td>
<td>Sample APPLY CHECK job</td>
<td>IBM.HDN5520.F2</td>
</tr>
<tr>
<td>ANRAPPLY</td>
<td>APPLY</td>
<td>Sample APPLY job</td>
<td>IBM.HDN5520.F2</td>
</tr>
<tr>
<td>ANRACCECK</td>
<td>ACCEPT CHECK</td>
<td>Sample ACCEPT CHECK job</td>
<td>IBM.HDN5520.F2</td>
</tr>
<tr>
<td>ANRACCEP</td>
<td>ACCEPT</td>
<td>Sample ACCEPT job</td>
<td>IBM.HDN5520.F2</td>
</tr>
</tbody>
</table>

You may copy the jobs from the tape or product files by submitting the job below. Use either the //TAPEIN or the //FILEIN DD statement, depending on your distribution medium, and comment out or delete the other statement. Add a job card and change the lowercase parameters to uppercase values to meet your site’s requirements before submitting.
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HDN5520.F2,UNIT=tunit,
  VOL=SER=DN5520,LABEL=(3,SL),
  DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HDN5520.F2,UNIT=SYSALLDA,DISP=SHR,
  VOL=SER=filevol
//OUT DD DSNNAME=jcl-library-name,
  DISP=(NEW,CATLG,DELETE),
  VOL=SER=dasdvol,UNIT=SYSALLDA,
  SPACE=(TRK,(320,20,9))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
  COPY INDD=xxxxIN,OUTDD=OUT
/*

In the sample above, update the statements as noted below:

If using TAPEIN:
  tunit is the unit value matching the product tape
  3 is the tape file number where the data set name is on the product tape.
  Refer to the documentation provided by CBPDO to see where IBM.HDN5520.F2 is on the CBPDO tape.

If using FILEIN
  filevol is the volume serial of the DASD device where the downloaded files reside.

OUT
  jcl-library-name is the name of the output data set where the sample jobs will be stored
  dasdvol is the volume serial of the DASD device where the output data set will reside

SYSIN
  xxxxIN is either TAPEIN or FILEIN depending on your input DD statement.

You can also access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the relfiles to a work data set for editing and submission. See Figure 14 on page 18 to find the appropriate relfile data set.

6.1.6 Perform SMP/E RECEIVE

Perform an SMP/E RECEIVE for IBM Tivoli Storage Manager.

Having obtained IBM Tivoli Storage Manager as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the IBM Tivoli Storage Manager FMIDs as well as any service, HOLDDATA, or preventive service planning (PSP) information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

You can also choose to edit and submit sample job ANRRECEV to perform the SMP/E RECEIVE for IBM Tivoli Storage Manager. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages:
Return code 0 is expected from this job.

Return code 4 or greater may result when other error conditions are detected. Review the SMP/E output to determine the cause of the error.

6.1.7 Allocate SMP/E Target and Distribution Libraries and Paths

Edit and submit sample job ANRALLOC to allocate the SMP/E target and distribution libraries for IBM Tivoli Storage Manager. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:**

Return code 0 is expected from this job.

6.1.8 Create DDDEF Entries

Edit and submit sample job ANRDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for IBM Tivoli Storage Manager. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:**

Return code 0 will result when all DDDEFs were added successfully to the target zone.

Return code 8 will result when one or more DDDEFs being added already exist in the target zone. Review the existing DDDEFs to determine if they meet your requirements.

6.1.9 Perform SMP/E APPLY

Edit and submit sample job ANRAPPCK to perform an SMP/E APPLY CHECK for IBM Tivoli Storage Manager. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do not bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Once you have taken any actions indicated by the APPLY CHECK, edit and submit sample job ANRAPPLY to perform an SMP/E APPLY.

**Note:** The GROUPEXTEND operand indicates that SMP/E apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Note:** APPLY link-edits the client module ANSADM into the SMPLTS dataset and then link-edits ANSADM into the target library. This is the result of the CALLLIBS function. All other modules are link-edited directly to a target library.

**Expected Return Codes and Messages from APPLY CHECK:**
Return code 0 is expected from this job.

Return code 4 or greater may result when other error conditions are detected. Review the SMP/E output to determine the cause of the error.

**Expected Return Codes and Messages from APPLY:**

Return code 0 is expected from the link-edit of the server module ANRSERV (alias DSMSERV) into the target library.

Return code 4 is expected from the interim link-edit of the client module (ANSADM) and ANSTCPIN. This will result from “unresolved external references” or symbols (message IEW2454W) and can be ignored.

The following IEW2650I message can also be ignored: “MODULE ENTRY NOT PROVIDED. ENTRY DEFAULTS TO SECTION DSADM$”

Either of the following SMP/E messages may result and can be ignored:

```
GIM23903W LINK-EDIT PROCESSING FOR SYSMOD JDN5521 WAS SUCCESSFUL FOR MODULE ANSTCPIN IN LMOD ANSTCPIN IN THE SANSLOAD LIBRARY. THE RETURN CODE WAS 04.
GIM23913W LINK-EDIT PROCESSING FOR SYSMOD JDN5521 WAS SUCCESSFUL FOR MODULE ANSTCPIN IN LMOD ANSTCPIN IN THE SANSLOAD LIBRARY. THE RETURN CODE WAS 04.
```

Return code 0 is expected from the final link-edit of the client module ANSADM (alias DSMADMC) into LINKLIB.

Return code 4 or greater may result when other error conditions are detected. Review the SMP/E output to determine the cause of the error.

### 6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job ANRACCCK to perform an SMP/E ACCEPT CHECK for IBM Tivoli Storage Manager. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do not bypass the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.
Once you have taken any actions indicated by the ACCEPT CHECK, edit and submit sample job ANRACCEP to perform an SMP/E ACCEPT.

Note: The GROUPEXTEND operand indicates that SMP/E accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Expected Return Codes and Messages from ACCEPT CHECK:**

Return code 0 is expected from this job.

Return code 4 or greater may result when other error conditions are detected. Review the SMP/E output to determine the cause of the error.

**Expected Return Codes and Messages from ACCEPT:**

Return code 0 is expected from this job.

Return code 4 or greater may result when other error conditions are detected. Review the SMP/E output to determine the cause of the error.

### 6.1.11 Perform SMP/E REPORT CALLLIBS

This optional step will create a link-edit job for the client module. The resulting job can then be used to link-edit the client module if one of the SYSLIB libraries has been updated. The SYSLIB libraries are defined as follows:

```
//SYSLIB DD DSN=TCPIP.SEZACMTX,DISP=SHR TCP/IP SEZACMTX
// DD DSN=CEE.SCEELKED,DISP=SHR LE SCEELKED
```

Edit and submit the sample job ANRRPTCL to perform SMP/E REPORT CALLLIBS for IBM Tivoli Storage Manager. Consult the instructions in the sample job for more information.

The output from the ANRRPTCL job will be similar to the following:

```
//TSMTZN JOB ,MSGLEVEL=(1,1),MSGCLASS=H,CLASS=A,REGION=4M
//*
//*SMPLTS
//******************************************************************************
//*
//* THE FOLLOWING JOB WAS GENERATED FROM THE REPORT CALLLIBS
//* COMMAND FOR TARGET ZONE TSMTZN ON 01.321 AT 10.30.30.
//*
//******************************************************************************
//LINK0001 EXEC PGM=IEWL, EXECLNK
// PARM=('SIZE=(968K,200K),LET,LIST,XREF,NCAL,CALL')
//******************************************************************************
//*
//* LMODS LINKED IN THIS STEP:
//*
```
In columns 73-80 of the DD statements, you will find an identifier that is similar to SMP/E DDDEF definitions. These identifiers will be used within parenthesis in the text that follows to refer to the appropriate DD statement.

The job can be run as created without modification. However, you can modify the job as necessary before running it.

The job must be modified when a new TCP/IP SEZACMTX library (SEZACMTX) is to be used. Also, the job must be modified when a new Language Environment SCEELKED library (SCEELKED) will be used.

**SEZACMTX** The dataset name must be set to the following:

```
tcphlq.SEZACMTX to include the TCP/IP functions.
```

*tcphlq* is the high-level qualifier for the datasets allocated for IBM TCP/IP.

**SCEELKED** The dataset name must be the following:

```
ceehlq.SCEELKED (Language Environment link library).
```

*ceehlq* is the high-level qualifier for the datasets allocated for Language Environment.

The dataset name for the SYSLMOD DD statement (LINKLIB) can be changed to meet your needs (for example, to place the client module ANSADM (alias DSMADMC) in a different library).
The dataset name for the SMPLTS DD statement (SMPLTS) should be changed only when instructed to do so.

The remaining DD statements can be modified to meet your needs.

Return code 4 will result from the link-edit job and can be ignored.

Return code greater than 4 indicates an error and must be resolved before continuing.

### 6.2 Activating IBM Tivoli Storage Manager

The publication *IBM Tivoli Storage Manager for OS/390 and z/OS Quick Start Version 5.2 Version 5 Release 2, GC32-0777* contains the step-by-step procedures to activate the functions of IBM Tivoli Storage Manager.
Contacting Customer Support

For support for this or any Tivoli product, you can contact Tivoli Customer Support in one of the following ways:

Submit a problem management record (PMR) electronically at IBMSERV/IBMLINK.


You can also review the IBM Software Support Guide, which is available on the Web site listed above. An End of Support Matrix is provided as well which will tell you when products you are using are nearing the end of support date for a particular version or release.

When you contact Tivoli Customer Support, be prepared to provide identification information for your company so that support personnel can readily assist you. Company identification information may also be needed to access various online services available on the Web site.

The support Web site offers extensive information, including a guide to support services (the IBM Software Support Guide); frequently asked questions (FAQs); and documentation for all Tivoli products, including Release Notes, Redbooks, and Whitepapers. The documentation for some product releases is available in both PDF and HTML formats. Translated documents are also available for some product releases.