IBM Tivoli Storage Manager for Databases
Version 6.3.0

Data Protection for Oracle

Messages

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This edition applies to Version 6.3.0 of IBM Tivoli Storage Manager for Databases, Data Protection for Oracle (product number 5608-E04) and to all subsequent releases and modification until otherwise indicated in new editions or technical newsletters.

Contents

About this publication

IBM® Tivoli® Storage Manager for Databases, Data Protection for Oracle is an enterprise-wide storage management application for the network. Data Protection for Oracle works with Oracle RMAN to back up and restore Oracle databases and control files.

This publication contains explanations and suggested actions for messages issued by IBM Tivoli Storage Manager for Databases, Data Protection for Oracle.

Who should read this guide

The target audience for this publication is system administrators who use Tivoli Storage Manager for Databases, Data Protection for Oracle.

Publications

Publications for the IBM Tivoli Storage Manager family of products are available online. The IBM Tivoli Storage Manager product family includes IBM Tivoli Storage FlashCopy® Manager, IBM Tivoli Storage Manager for Space Management, IBM Tivoli Storage Manager for Databases, and several other storage management products from IBM Tivoli.

To search all publications, go to the Tivoli Storage Manager information center at http://publib.boulder.ibm.com/infocenter/tsminfo/v6r3.

You can download PDF versions of publications from the Tivoli Storage Manager information center or from the IBM Publications Center at http://www.ibm.com/shop/publications/order/.

Go to Tivoli Documentation Central to find information centers that contain official product documentation for current and previous versions of Tivoli products, including the Tivoli Storage Manager product family. You can find Tivoli Documentation Central at https://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Home.

You can also order some related publications from the IBM Publications Center website. The website provides information about ordering publications from countries other than the United States. In the United States, you can order publications by calling 1-800-879-2755.

Tivoli Storage Manager publications

The following tables list the publications that make up the Tivoli Storage Manager library.

Table 1. Tivoli Storage Manager server publications

Publication title	Order number
IBM Tivoli Storage Manager for AIX Installation Guide	GC23-9781
IBM Tivoli Storage Manager for AIX Administrator's Guide	SC23-9769
IBM Tivoli Storage Manager for AIX Administrator's Reference	SC23-9775

Table 1. Tivoli Storage Manager server publications (continued)

Publication title	Order number
IBM Tivoli Storage Manager for HP-UX Installation Guide	GC23-9782
IBM Tivoli Storage Manager for HP-UX Administrator's Guide	SC23-9770
IBM Tivoli Storage Manager for HP-UX Administrator's Reference	SC23-9776
IBM Tivoli Storage Manager for Linux Installation Guide	GC23-9783
IBM Tivoli Storage Manager for Linux Administrator's Guide	SC23-9771
IBM Tivoli Storage Manager for Linux Administrator's Reference	SC23-9777
IBM Tivoli Storage Manager for Oracle Solaris Installation Guide	GC23-9784
IBM Tivoli Storage Manager for Oracle Solaris Administrator's Guide	SC23-9772
IBM Tivoli Storage Manager for Oracle Solaris Administrator's Reference	SC23-9778
IBM Tivoli Storage Manager for Windows Installation Guide	GC23-9785
IBM Tivoli Storage Manager for Windows Administrator's Guide	SC23-9773
IBM Tivoli Storage Manager for Windows Administrator's Reference	SC23-9779
IBM Tivoli Storage Manager for z/OS Media Installation and User's Guide	SC27-4018
IBM Tivoli Storage Manager Upgrade and Migration Guide for V5 Servers	GC27-4017
IBM Tivoli Storage Manager Integration Guide for Tivoli Storage Manager FastBack®	SC27-2828

Table 2. Tivoli Storage Manager storage agent publications

Publication title	Order number
IBM Tivoli Storage Manager for SAN for AIX Storage Agent User's Guide	SC23-9797
IBM Tivoli Storage Manager for SAN for HP-UX Storage Agent User's Guide	SC23-9798
IBM Tivoli Storage Manager for SAN for Linux Storage Agent User's Guide	SC23-9799
IBM Tivoli Storage Manager for SAN for Oracle Solaris Storage Agent User's Guide	SC23-9800
IBM Tivoli Storage Manager for SAN for Windows Storage Agent User's Guide	SC23-9553

Table 3. Tivoli Storage Manager client publications

Publication title	Order number
IBM Tivoli Storage Manager for UNIX and Linux: Backup-Archive Clients Installation and User's Guide	SC23-9791
IBM Tivoli Storage Manager for Windows: Backup-Archive Clients Installation and User's Guide	SC23-9792
IBM Tivoli Storage Manager Using the Application Programming Interface	SC23-9793
IBM Tivoli Storage Manager for Space Management for UNIX and Linux: User's Guide	SC23-9794
IBM Tivoli Storage Manager HSM for Windows Administration Guide	SC23-9795

Table 4. Tivoli Storage Manager data protection publications

Publication title	Order number
IBM Tivoli Storage Manager for Databases: Data Protection for Microsoft SQL Server Installation and User's Guide	GC27-4010
IBM Tivoli Storage Manager for Databases: Data Protection for Oracle for UNIX and Linux Installation and User's Guide	SC27-4019
IBM Tivoli Storage Manager for Databases: Data Protection for Oracle for Windows Installation and User's Guide	SC27-4020
IBM Tivoli Storage Manager for Mail: Data Protection for Microsoft Exchange Server Installation and User's Guide	GC27-4009
IBM Tivoli Storage Manager for Mail: Data Protection for Lotus Domino® UNIX and Linux Installation and User's Guide	SC27-4021
IBM Tivoli Storage Manager for Mail: Data Protection for Lotus Domino for Windows Installation and User's Guide	SC27-4022
IBM Tivoli Storage Manager for Enterprise Resource Planning: Data Protection for SAP Installation and User's Guide for DB2	SC33-6341
IBM Tivoli Storage Manager for Enterprise Resource Planning: Data Protection for SAP Installation and User's Guide for Oracle	SC33-6340
IBM Tivoli Storage Manager for Virtual Environments Installation and User's Guide	SC27-2898
IBM Tivoli Storage Manager for Microsoft SharePoint Guide	N/A

Table 5. IBM Tivoli Storage Manager troubleshooting and tuning publications

Publication title	Order number
IBM Tivoli Storage Manager Problem Determination Guide	GC23-9789
IBM Tivoli Storage Manager Performance Tuning Guide	GC23-9788
IBM Tivoli Storage Manager Client Messages and Application Programming Interface Return Codes	SC27-2878
IBM Tivoli Storage Manager Server Messages and Error Codes	SC27-2877
IBM Tivoli Storage Manager for Mail: Data Protection for Microsoft Exchange Server Messages	GC27-4011
IBM Tivoli Storage Manager for Databases: Data Protection for Microsoft SQL Server Messages	GC27-4012
IBM Tivoli Storage Manager for Databases: Data Protection for Oracle Messages	SC27-4014
IBM Tivoli Storage Manager for Mail: Data Protection for Lotus Domino Messages	SC27-4015
IBM Tivoli Storage Manager for Enterprise Resource Planning: Data Protection for SAP Messages	SC27-4016

Note: You can find information about IBM System Storage® Archive Manager at http://publib.boulder.ibm.com/infocenter/tsminfo/v6r3/ c_complydataretention_ovr.html.

Support information

You can find support information for IBM products from various sources.

Start at the IBM Support Portal: http://www.ibm.com/support/entry/portal/. You can select the products that you are interested in and search for a wide variety of relevant information.

Getting technical training

Information about Tivoli technical training courses is available online.

Go to the following websites to sign up for training, ask questions, and interact with others who use IBM storage products.

Tivoli software training and certification
Choose from instructor led, online classroom training, self-paced Web classes, Tivoli certification preparation, and other training options at http://www.ibm.com/software/tivoli/education/

Tivoli Support Technical Exchange
Technical experts share their knowledge and answer your questions in webcasts at http://www.ibm.com/software/sysmgmt/products/support/supp_tech_exch.html.

Storage Management community
Interact with others who use IBM storage management products at http://www.ibm.com/developerworks/servicemanagement/sm/index.html

Global Tivoli User Community
Share information and learn from other Tivoli users throughout the world at http://www.tivoli-ug.org/.

IBM Education Assistant
View short "how to" recordings designed to help you use IBM software products more effectively at http://publib.boulder.ibm.com/infocenter/ieduasst/tivv1r0/index.jsp

Searching knowledge bases

If you have a problem with your Tivoli Storage Manager family product, there are several knowledge bases that you can search.

Begin by searching the Tivoli Storage Manager Information Center at http://publib.boulder.ibm.com/infocenter/tsminfo/v6r3. From this website, you can search the current Tivoli Storage Manager documentation.

Searching the Internet
If you cannot find an answer to your question in the IBM Tivoli Storage Manager information center, search the Internet for the information that might help you resolve your problem.

To search multiple Internet resources, go to the IBM support website at http://www.ibm.com/support/entry/portal/.

You can search for information without signing in. Sign in using your IBM ID and password if you want to customize the site based on your product usage and

information needs. If you do not already have an IBM ID and password, click **Sign in** at the top of the page and follow the instructions to register.

From the support website, you can search various resources including:
- IBM technotes
- IBM downloads
- IBM Redbooks® publications
- IBM Authorized Program Analysis Reports (APARs)

Select the product and click **Downloads** to search the APAR list.

If you still cannot find a solution to the problem, you can search forums and newsgroups on the Internet for the latest information that might help you find problem resolution.

An independent user discussion list, ADSM-L, is hosted by Marist College. You can subscribe by sending an email to listserv@vm.marist.edu. The body of the message must contain the following text: SUBSCRIBE ADSM-L *your_first_name your_family_name*.

To share your experiences and learn from others in the Tivoli Storage Manager and Tivoli Storage FlashCopy Manager user communities, go to the following wikis:

Tivoli Storage Manager wiki
> http://www.ibm.com/developerworks/wikis/display/ tivolistoragemanager

Tivoli Storage FlashCopy Manager wiki
> https://www.ibm.com/developerworks/mydeveloperworks/wikis/home/ wiki/Tivoli Storage FlashCopy Manager

Using IBM Support Assistant

IBM Support Assistant is a complimentary software product that can help you with problem determination. It is available for some Tivoli Storage Manager and Tivoli Storage FlashCopy Manager products.

To learn about which products are supported, go to the IBM Support Assistant download web page at http://www.ibm.com/software/support/isa/ download.html.

IBM Support Assistant helps you gather support information when you must open a problem management record (PMR), which you can then use to track the problem. The product-specific plug-in modules provide you with the following resources:
- Support links
- Education links
- Ability to submit problem management reports

You can find more information at the IBM Support Assistant website:

http://www.ibm.com/software/support/isa/

You can also install the stand-alone IBM Support Assistant application on any workstation. You can then enhance the application by installing product-specific plug-in modules for the IBM products that you use. Find add-ons for specific products at http://www.ibm.com/support/docview.wss?uid=swg27012689.

Finding product fixes

A product fix to resolve your problem might be available from the IBM software support website.

You can determine what fixes are available by checking the IBM software support website at http://www.ibm.com/support/entry/portal/.

- If you previously customized the site based on your product usage:
  1. Click the link for your product, or a component for which you want to find a fix.
  2. Click **Downloads**, and then click **Fixes by version**.
- If you have not customized the site based on your product usage, click **Downloads** and search for your product.

Receiving notification of product fixes

You can receive notifications about fixes, flashes, upgrades, and other news about IBM products.

To sign up to receive notifications about IBM products, follow these steps:

1. From the support page at http://www.ibm.com/support/entry/portal/, click **Sign in to create, manage, or view your subscriptions** in the **Notifications** pane.
2. Sign in using your IBM ID and password. If you do not have an ID and password, click **register now** and complete the registration process.
3. Click **Manage all my subscriptions** in the **Notifications** pane.
4. Click the **Subscribe** tab and then click **Tivoli**.
5. Select the products for which you want to receive notifications and click **Continue**.
6. Specify your notification preferences and click **Submit**.

Contacting IBM Software Support

You can contact IBM Software Support if you have an active IBM subscription and support contract and if you are authorized to submit problems to IBM.

To obtain help from IBM Software Support, complete the following steps:

1. Ensure that you have completed the following prerequisites:
   a. Set up a subscription and support contract.
   b. Determine the business impact of your problem.
   c. Describe your problem and gather background information.
2. Follow the instructions in "Submitting the problem to IBM Software Support" on page xii.

Setting up a subscription and support contract

Set up a subscription and support contract. The type of contract that you need depends on the type of product you have.

For IBM distributed software products (including, but not limited to, IBM Tivoli, Lotus®, and Rational® products, as well as IBM DB2® and IBM WebSphere® products that run on Microsoft Windows or on operating systems such as AIX or Linux), enroll in IBM Passport Advantage® in one of the following ways:

- **Online:** Go to the Passport Advantage website at http://www.ibm.com/software/lotus/passportadvantage/, click **How to enroll**, and follow the instructions.
- **By telephone:** You can call 1-800-IBMSERV (1-800-426-7378) in the United States. For the telephone number to call in your country, go to the IBM Software Support Handbook web page at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html and click **Contacts**.

Determining the business impact

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you must understand and assess the business impact of the problem you are reporting.

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

Describing the problem and gathering background information

When explaining a problem to IBM, it is helpful to be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently.

To save time, know the answers to these questions:

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

Submitting the problem to IBM Software Support

You can submit the problem to IBM Software Support online or by telephone.

Online

> Go to the IBM Software Support website at http://www.ibm.com/
> support/entry/portal/Open_service_request/Software/
> Software_support_(general). Sign in to access IBM Service Requests and
> enter your information into the problem submission tool.

By telephone

> For the telephone number to call in your country, go to the IBM Software
> Support Handbook at http://www14.software.ibm.com/webapp/set2/sas/
> f/handbook/home.html and click **Contacts**.

Chapter 1. Introduction to Data Protection for Oracle messages

This publication contains explanations and suggested actions for messages issued by Tivoli Storage Manager for Databases, Data Protection for Oracle.

This introduction contains information to help you to understand the messages issued by this component.
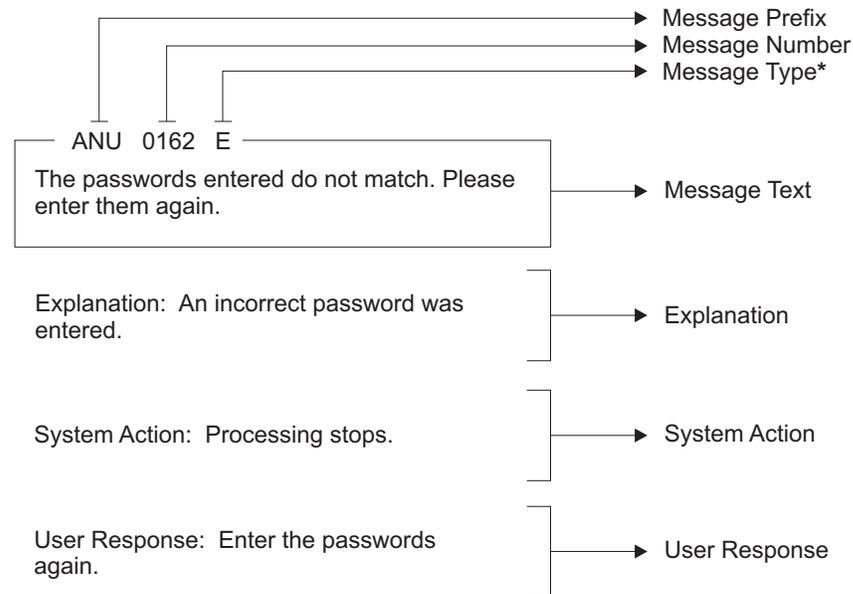
Data Protection for Oracle messages format

Messages consist of the following elements:

- A three-letter prefix.
- A numeric message identifier.
- A one-letter severity code, also called the message type.
- Message text that is displayed on screen and written to message logs.
- Explanation, System Action, and User Response texts. These texts elaborate on the message text, and are accessible only in documentation.

The image below presents a typical message.

The callouts on the right of the image identify each element of the message.

```
                                                    ─────►  Message Prefix
                                                    ─────►  Message Number
                                                    ─────►  Message Type*

     ANU  0162  E
    The passwords entered do not match. Please      ─────►  Message Text
    enter them again.


    Explanation:  An incorrect password was
    entered.                                        ─────►  Explanation


    System Action:  Processing stops.               ─────►  System Action


    User Response:  Enter the passwords
    again.                                          ─────►  User Response


      I  =  Information
    * E  =  Error
      S  =  Severe Error
      W  =  Warning
```

The severity codes give an indication of the severity of the issue that generated the message. The severity codes and their meanings are as follows:

E	Error	Processing cannot continue.
W	Warning	Processing can continue, but problems might occur later.

| I | Information | Processing continues. User response is not necessary. |

Message variables in the message text appear in italics.

Chapter 2. ANU: Data Protection for Oracle messages version 6.3

This section contains ANU messages for IBM Tivoli Storage Manager for Databases, Data Protection for Oracle version 6.3.

ALL prefix ANU messages are issued by IBM Tivoli Storage Manager for Databases, Data Protection for Oracle.

Version 6.3.0 messages that are new or changed since the previous release are listed in one section. All version 6.3.0 messages are documented in another section.

Data Protection for Oracle version 6.3.0 messages changes from the previous version

This section lists the version 6.3.0 ANU messages that are new or changed since the previous version. Only the message ID is listed.

ANU0292E
ANU0588E
ANU0589E
ANU0590E
ANU0591I
ANU0592E
ANU0593E
ANU0594E
ANU0595T
ANU2526I
ANU2527I
ANU2604W
ANU2610W
ANU2617E
ANU2620E
ANU2621E
ANU2622E
ANU2623I
ANU2627W

Data Protection for Oracle version 6.3.0 messages

This section documents the Data Protection for Oracle 6.3.0 messages. The messages are listed in ascending numeric order. The complete message is documented, including message ID, message text, explanation, system action, and user response.

ANU0003S   **An internal processing error has occurred.**

Explanation: An internal processing error has occurred.

System action: Processing ends.

User response: Retry the operation. If this error persists, contact your service representative.

ANU0004E   An unknown error has been detected.

Explanation: An internal processing error has occurred that prevents the generation of a message for a return code.

System action: Processing continues.

User response: Retry the operation. If this error persists, contact your service representative.

ANU0005E   Out of memory. Stop other processes and try the operation again.

Explanation: The machine has run out of memory.

System action: Processing continues.

User response: Close unnecessary processes and try the operation again.

ANU0053E   License file (*licensefile*) could not be opened.

Explanation: An attempt to read from the license file failed.

System action: Processing ends.

User response: Install the product again. This ensures that the correct license file is installed.

ANU0054E   Read failure on license file (*licensefile*).

Explanation: An attempt was made to read from the license file. This attempt failed.

System action: Processing ends.

User response: Reinstall the product. This will ensure that the correct license file is installed.

ANU0055E   Write failure on license file (*licensefile*).

Explanation: An attempt to write to the license file failed.

System action: Processing ends.

User response: Make sure enough space exists on the workstation to write to the license file. If enough space exists, run the command again.

ANU0056E   Data in the license file (*licensefile*) is not in a valid format.

Explanation: An attempt to read information from the license file failed.

System action: Processing ends.

User response: Install the product again.

ANU0057E   The checksum in the license file (*licensefile*) does not match the license string text.

Explanation: An attempt was made to read information from the license file. The checksum was not valid so it appears that the license file is not at the correct level.

System action: Processing ends.

User response: Reinstall the product.

ANU0058E   The 'Try and Buy' license has expired.

Explanation: This 'Try and Buy' license that was detected has expired.

System action: Processing ends.

User response: This product is no longer valid for use. A valid license must be obtained before running the product.

ANU0100E   Incomplete command:

Explanation: This message displays the incomplete command that was entered.

System action: Processing ends.

User response: Re-enter the complete command.

ANU0101E   Invalid argument:

Explanation: This message displays the command that was entered, up to and including the invalid command or option argument that was detected.

System action: Processing ends.

User response: Re-enter the command specifying a valid argument for the command or option.

ANU0102E   Invalid command:

Explanation: This message displays the invalid command that was entered.

System action: Processing ends.

User response: Re-enter a valid command.

ANU0103E   Invalid option for the specified command:

Explanation: This message displays the command that was entered, up to and including the option that was detected as invalid for the command.

System action: Processing ends.

User response: Re-enter the command specifying valid command options.

ANU0104E   Invalid option:

Explanation: This message displays the command that was entered, up to and including the invalid option that was detected.

System action: Processing ends.

User response: Re-enter the command specifying valid command options.

ANU0105E   Missing argument:

Explanation: This message displays the command that was entered, up to and including the command or option whose required argument is missing.

System action: Processing ends.

User response: Re-enter the command specifying a valid argument for the command or option.

ANU0132W   Tracing could not be started. Processing will continue.

Explanation: A problem prevented tracing from beginning.

System action: Processing will continue with the command entered.

User response: Refer to the other messages that display with this message to determine the problem.

ANU0133W   Could not locate installation directory. Attempting to continue...

Explanation: An attempt was made to read the registry to determine where the Tivoli Data Protection application client was installed. This attempt failed.

System action: Processing will continue with the command entered.

User response: There should be other messages along with this one. Refer to the other messages to determine the problem. If the problem can not be determined, it may be necessary to reinstall the application client code. This will ensure that the registry entries are set up correctly.

ANU0134W   Could not locate log directory. Processing will continue...

Explanation: An attempt was made to read the registry to determine where the Tivoli Data Protection application client log is located. This attempt failed.

System action: Processing will continue with the command entered.

User response: There should be other messages along with this one. Refer to the other messages to determine the problem. If the problem can not be determined, it may be necessary to reinstall the application client

code. This will ensure that the registry entries are set up correctly.

ANU0150I   Operation canceled by user.

Explanation: The user has requested that the Data Protection for Oracle application client end by entering ctrl-C.

System action: Processing ends.

User response: None

ANU0151E   Errors occurred while processing the request.

Explanation: Attempting to process the request entered, an error occurred.

System action: Processing ends.

User response: Attempt to determine the source of the errors from viewing the log file. Correct the problems and try running the command again.

ANU0152I   Performance stats: *seconds* **seconds spent in** *apicall* **API calls**

Explanation: The indicated number of seconds were spent making API calls for the indicated system.

System action: Processing continues.

User response: None

ANU0153I   Performance stats: *seconds* **seconds spent in** *function*

Explanation: The indicated number of seconds were spent the named function.

System action: Processing continues.

User response: None

ANU0154E   The Data Protection for Oracle application client cannot work with the version of the Tivoli Storage Manager API you have installed. Please install version *version.release.level* **or greater.**

Explanation: The version of the Tivoli Storage Manager API currently installed on the system is older than the version used to build the Data Protection for Oracle application client.

System action: Processing ends.

User response: Install a version of the Tivoli Storage Manager API at or later than the indicated level. A copy is distributed with the Data Protection for Oracle application client.

ANU0155E **The Data Protection for Oracle application client cannot work with the release of Tivoli Storage Manager API you have installed. Please install release** *version*.*release*.*l evel* **or greater.**

Explanation: The release of the Tivoli Storage Manager API currently installed on the system is older than the release used to build the Data Protection for Oracle application client.

System action: Processing ends.

User response: Install a release of the Tivoli Storage Manager API at or later than the indicated level. A copy is distributed with the Data Protection for Oracle application client.

ANU0156E **Could not load the Tivoli Storage Manager API.**

Explanation: The Tivoli Storage Manager API could not be loaded.

System action: Processing ends.

User response: Ensure the Tivoli Storage Manager API is correctly installed. Run the Data Protection for Oracle application client with the /TRACEFLAGS=API /TRACEFILE=filename options and view the tracefile to determine why it could not be loaded. Another possible cause is that the TSMAPI.DLL does not exist in the system directory. Re-install the Tivoli Storage Manager API, if this is the case.

ANU0160E **An authentication error occurred with your stored Tivoli Storage Manager password.**

Explanation: You were unable to log on to the Tivoli Storage Manager server due an authentication error.

System action: Processing stops.

User response: The stored Tivoli Storage Manager password may have become corrupted. Contact your Tivoli Storage Manager server administrator.

ANU0161E **Authentication error. The password entered is not valid. You are not logged on to the Tivoli Storage Manager server.**

Explanation: An incorrect password was entered.

System action: Processing stops.

User response: Enter the correct Tivoli Storage Manager password and try again.

ANU0162E **The passwords entered do not match. Please enter them again.**

Explanation: An incorrect password was entered.

System action: Processing stops.

User response: Enter the passwords again.

ANU0163E **The directory path needs to be fully-qualified.**

Explanation: The /intopath option was specified without a fully-qualified path.

System action: Processing stops.

User response: Enter the command again and specify a fully-qualified path in the /intopath option.

ANU0167E **The fully-qualified file name is too long.**

Explanation: An attempt was made to use a fully-qualified file name that was too long. This attempt failed.

System action: Processing ends.

User response: None

ANU0200E **File (***filename***) could not be opened for reading.**

Explanation: An attempt was made to open a file for reading. This attempt failed.

System action: Processing ends.

User response: None

ANU0201E **File (***filename***) could not be opened for writing.**

Explanation: An attempt was made to open a file for writing. This attempt failed.

System action: Processing ends.

User response: None

ANU0202E **Read failure on file (***filename***).**

Explanation: An attempt was made to read from a file. This attempt failed.

System action: Processing ends.

User response: None

ANU0203E **Write failure on file (***filename***).**

Explanation: An attempt was made to write to a file. This attempt failed.

System action: Processing ends.

User response: None

ANU0204E   File (*filename*) could not be closed.

Explanation: An attempt was made to close a file. This attempt failed.

System action: Processing ends.

User response: None

ANU0205E   File (*filename*) statistics could not be obtained.

Explanation: An attempt was made to obtain file statistics. This attempt failed.

System action: Processing ends.

User response: None

ANU0206E   Directory (*directory*) could not be created.

Explanation: An attempt was made to create a directory. This attempt failed.

System action: Processing ends.

User response: None

ANU0207E   Directory path (*directorypath*) is too long.

Explanation: An attempt was made to use a directory path that was too long. This attempt failed.

System action: Processing ends.

User response: None

ANU0208E   There is not enough disk space for the operation attempted.

Explanation: An attempted operation required more disk space than was available. The attempt failed.

System action: Processing ends.

User response: None

ANU0209E   The rename of file (*filename1*) to (*filename2*) failed.

Explanation: An attempt was made to rename a file. This attempt failed.

System action: Processing ends.

User response: None

ANU0210E   The Tivoli Storage Manager high level qualifier is too long.

Explanation: An attempt was made to use a Tivoli Storage Manager high level qualifier that was too long. This attempt failed.

System action: Processing ends.

User response: None

ANU0211E   The Tivoli Storage Manager low level qualifier is too long.

Explanation: An attempt was made to use a Tivoli Storage Manager low level qualifier that was too long. This attempt failed.

System action: Processing ends.

User response: None

ANU0212E   The Tivoli Storage Manager filespace name is too long.

Explanation: An attempt was made to use a Tivoli Storage Manager filespace name that was too long. This attempt failed.

System action: Processing ends.

User response: None

ANU0213E   The maximum number of objects allowed per Tivoli Storage Manager transaction is too small.

Explanation: In order to maintain backup data integrity, multiple backup objects are sent to the Tivoli Storage Manager server in a single transaction. The Tivoli Storage Manager server has indicated that the maximum number of objects allowed per transaction is less than the minimum required by the Data Protection for Oracle application client.

System action: Processing ends.

User response: Increase the maximum number of objects allowed per transaction on the Tivoli Storage Manager server and retry the operation.

ANU0214E   The backup object's management class backup copy group does not exist.

Explanation: The Tivoli Storage Manager server has indicated that the backup object's management class backup copy group does not exist.

System action: Processing ends.

User response: Contact your Tivoli Storage Manager server administrator.

ANU0215E   All backup objects do not have the same management class backup copy destination.

Explanation: In order to maintain backup data integrity, multiple backup objects are sent to the Tivoli Storage Manager server within a single transaction. All backup objects within a single transaction are required

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to have the same management class backup copy destinations.

System action: Processing ends.

User response: Contact your Tivoli Storage Manager server administrator.

ANU0216E   Unable to obtain space information for volume (*volumename***).**

Explanation: An attempt was made to obtain space information for a volume. This attempt failed.

System action: Processing ends.

User response: None

ANU0217E   The Tivoli Storage Manager filespace name is invalid.

Explanation: The filespace name or directory delimeter is invalid.

System action: Processing ends.

User response: Check that the filespace name length, characters, and directory delimeters are valid.

ANU0218E   The Tivoli Storage Manager high level qualifier is invalid.

Explanation: The high level qualifier name or directory delimeter is invalid.

System action: Processing ends.

User response: Check that the high level qualifier name length, characters, and directory delimeters are valid.

ANU0219E   The Tivoli Storage Manager low level qualifier is invalid.

Explanation: The low level qualifier name or directory delimeter is invalid.

System action: Processing ends.

User response: Check that the low level qualifier name length, characters, and directory delimeters are valid.

ANU0256E   The password in your Tivoli Storage Manager options file has expired. Please change your password on the Tivoli Storage Manager server using the 'change password' command and then either change or remove the password value in your options file.

Explanation: Your Tivoli Storage Manager password has expired. You need to change your password.

System action: Processing ends.

User response: Obtain a new password for your Tivoli Storage Manager server; node using the change password command or by asking your Tivoli Storage Manager Administrator to change your password.

ANU0257E   Your password has expired.

Explanation: Your Tivoli Storage Manager password has expired. A new password needs to be obtained.

System action: Processing ends.

User response: Obtain a new password for your Tivoli Storage Manager node using the change password command or by asking your Tivoli Storage Manager Administrator to change your password.

ANU0258E   You did not enter a valid password. Processing ends.

Explanation: The password that was entered was not a valid password.

System action: Processing ends.

User response: Re-enter the command specifying a valid password.

ANU0259E   The password you entered for verification does not match the password you entered for your new password. Your password will not be changed.

Explanation: The password you entered for verification of your new password does not match the new password that was entered.

System action: Processing ends.

User response: Try again to change your password being sure to enter the same password for the new password and for the verification password.

ANU0260I   Password successfully changed.

Explanation: The change password command completed successfully

System action: Processing ends.

User response: None

ANU0261I   There are no backups for the server named ***servername*.

Explanation: There are no backups on the Tivoli Storage Manager server for the specified server name.

System action: Processing ends.

User response: None

ANU0262E   Errors occurred while processing the VSS operation. Examine the Windows Event Logs and DSMERROR.LOG for additional details.

Explanation: While attempting to process a VSS operation, an unexpected error occurred.

System action: Processing ends.

User response: Attempt to determine the source of the error by examining the Data Protection for Oracle log file, the TSM Client error log file (DSMERROR.LOG), the Windows Application Event Log, the Windows System Event Log, and the VSS provider log file, if applicable. Additional instructions for Windows VSS operations are located in the TSM Problem Determination Guide. Correct the problem and retry the operation. If this error persists, contact your service representative.

ANU0263E   Failed to start Web browser with a return code of *returncode***.**

Explanation: An attempt was made to start the web browser to view the TSM HTML b ook. This attempt failed.

System action: Processing ends.

User response: Start your web browser manually and point it to bookfrm.htm in the agent htm directory.

ANU0264I   Could not find the default browser defined. An attempt will be made to use Microsoft Internet Explorer.

Explanation: An attempt was made to read the registry to determine the default browser. However, a default browser is not defined. A determination will be made where Microsoft Internet Explorer is installed.

System action: Processing continues.

User response: It is possible that a default browser is not defined for the system. This is okay. An attempt will be made to use Microsoft Internet Explorer.

ANU0265E   Could not find Internet Explorer.

Explanation: An attempt was made to read the registry to determine where Microsoft's Internet Explorer was installed. This attempt failed.

System action: Processing ends.

User response: Make sure that the registry is set up correctly for Internet Explorer.

ANU0266E   Could not find the Tivoli Storage Manager HTML books.

Explanation: An attempt was made to read the registry to determine where the Tivoli Storage Manager books were installed. This attempt failed.

System action: Processing ends.

User response: It may be necessary to reinstall the application client code. This will ensure that the registry entries are set up correctly.

ANU0267E   The verify password entered does not match the new password entered.

Explanation: The verify password does not match the new password.

System action: Processing ends.

User response: Retry the command with a matching verify password.

ANU0292E   An unknown error has been detected. rc = *rc*

Explanation: An error occured without an error message. The return code, *rc*, is displayed.

System action: Processing ends.

User response: Retry the operation. If this error persists, contact your service representative.

ANU0300E   Invalid restore type.

Explanation: The type of restore requested is invalid.

System action: Processing ends.

User response: Re-enter the command specifying a valid restore type.

ANU0301E   Invalid backup type.

Explanation: The type of backup requested is invalid.

System action: Processing ends.

User response: Re-enter the command specifying a valid backup type.

ANU0351E   Invalid trace keyword - '*keyword*'

Explanation: A TRACEFLAG option in the user configuration file or on the command line is incorrect.

System action: Client program did not initialize or tracing was not enabled in the applet.

User response: Correct the value.

ANU0357E   Unable to open trace output file
             file-name.

Explanation: A TRACEFILE option in the user
configuration file or on the command line used a
directory path and *file-name* combination to which you
do not have write access.

System action: Client program did not initialize.

User response: Change the TRACEFILE value so that
it is a location to which you have write access.

ANU0366E   Unable to close trace output file
             file-name.

Explanation: An error occurred during the closing of a
trace output *file-name* (for example, not enough disk
space).

System action: Processing continues.

User response: Check the options.doc file for a
description of possible causes of the error, or see your
system administrator.

ANU0367E   Unable to write to trace file *tracefile*.
             Tracing disabled.

Explanation: An error occurred when writing to the
specified *tracefile.*

System action: Tracing is disabled. Processing
continues.

User response: Ensure the device that the *tracefile*
access is available and has sufficient space for the
tracefile. Retry the command.

ANU0368E   Invalid trace file name (name too long).

Explanation: A TRACEFILE option in the preferences
files used a file name that is too long.

System action: Client program did not initialize.

User response: Change the file name used as the
TRACEFILE so that it is equal to or less than 255
characters in length.

ANU0383E   Specifying the trace file '*link***' as a**
             symbolic link is not allowed.

Explanation: Trace file '*linkname*' cannot be a symbolic
link.

System action: The symbolic link '*linkname*' is deleted,
the trace file is recreated, and processing stops.

User response: Specify the trace file location with the
'tracefile' option.

ANU0384E   Symbolic link '*linkname***' to '***target***' was**
             successfully deleted.

Explanation: Log '*linkname*' cannot be a symbolic link.

System action: The symbolic link '*linkname*' is deleted,
the log is recreated, and processing stops.

User response: Check the location of the new file. To
specify the location of log files, refer to the user's
manual for the 'errorlogname' option, the
'schedlogname' option, and the 'DSM_LOG'
environmental variable.

ANU0385E   Unable to delete symbolic link '*link***'.**

Explanation: Log '*linkname*' cannot be a symbolic link.

System action: Processing stops.

User response: Delete the symbolic link '*linkname*'.

ANU0476E   *program-name*: cannot open file *file-spec*:
             error.

Explanation: DP cannot open the file.

System action: DP cannot complete the requested
operation.

User response: Retry the operation. If the problem
continues, check with your system administrator.

ANU0487E   Specifying the error log '*link***' as a**
             symbolic link is not allowed.

Explanation: Error log '*linkname*' cannot be a symbolic
link.

System action: The symbolic link '*linkname*' is deleted,
the error log is recreated, and processing stops.

User response: Check the location of the new error
log. To specify the location of the error logs, refer to the
user's manual for the 'errorlogname' option and
'DSM_LOG' environmental variable.

ANU0488E   Initialization functions cannot open the
             error log: *log-name*. **errno =** *errno-value*,

Explanation: The file *log-name* could not be opened
during initialization. The system set the error code
errno-value. If the reason given is "access denied," the
current user does not have permission to write to the
log in the directory specified. It is also possible that no
space is available at the given log location.

System action: Processing terminates.

User response: Set the DSM_LOG (or DSMI_LOG)
environment variable to a directory into which the
current user can write. You may also use the
ERRORLOGNAME option to specify a file to which the
current has write permission.

ANU0495E **Failure writing to a Tivoli Storage Manager log or log-related file:** *file-name*, **errno =** *errno-value*, *reason*

Explanation: A failure was encountered when writing to one of the log files or a related file named *file-name*. The system set the error code *errno-value*. *reason* is the system explanation of that error code. Among other things, it is possible that no space is available at the given log location.

System action: Processing terminates.

User response: Set the DSM_LOG (or DSMI_LOG) environment variable to a directory with adequate space to write the log data.

ANU0496I **DP is converting the** *log-file* **from continuous (pruning) mode to wrapping mode. This process may take several minutes.**

Explanation: The *log-file* was previously in continouos mode where the only size control was through the use of ERRORLOGRETENTION or SCHEDLOGRETENTION option. This is the first occasion where ERRORLOGMAX or SCHEDLOGMAX is specified for this log, so its format must be changed and old data saved.

System action: Transition processing continues.

User response: None.

ANU0497I **DP is converting the** *log-file* **from wrapping mode to continuous (pruning) mode. This process may take several minutes.**

Explanation: The *log-file* was previously in wrapping mode where the size control was through the use of the ERRORLOGMAX or SCHEDLOGMAX option. This is the first occasion where ERRORLOGMAX or SCHEDLOGMAX is not specified for this log, so its format must be changed and old data saved.

System action: Transition processing continues.

User response: None.

ANU0498I *count* **log records processed.**

Explanation: This is just a progress report to let you know the process is still ongoing.

System action: Transition processing continues.

User response: None.

ANU0501E **Invalid Proxy Configuration Detected: Target Node '***targetnode***' is not listed as a valid node to proxy to for Node Name '***nodename***'.**

Explanation: The proxy node configuration on the TSM Server is not correct to support this VSS operation.

System action: The VSS operation stops.

User response: Contact the TSM Server administrator to have the correct TSM Server GRANT PROXY commands issued to enable proxy authority for the nodes. If the error persists, contact your service representative.

ANU0515E **Invalid DSMAGENT Node configuration found for node '***dsmagentnode***'.**

Explanation: The DSMAGENT Node specified is not configured properly.

System action: The VSS operation stops.

User response: Verify that the DSMAGENT Node specified is correct and that the Client Acceptor Daemon (CAD) is running for the DSMAGENT Node. If the error persists, contact your service representative.

ANU0516I **The Windows console event handler received a '***event***' console event.**

Explanation: A console event was received by one of the Data Protection for Oracle processes or programs. The following events can be recevied:

• Ctrl-C - This indicates either the user entered the ctrl-c sequence or that one of the Windows services was stopped.

System action: None.

User response: None.

ANU0517I **An unexpected error was encountered. DP function name :** *function-name* **DP function :** *function-desc* **DP return code :** *TSM-rc* **DP file :** *file-name* **(***line-number***)**

Explanation: None.

System action: Processing stops.

User response: Contact the DP administrator with the information provided in this message.

ANU0518E **Backups selected for restore must have the same backup location (TSM or LOCAL).**

Explanation: A VSS restore operation was submitted that specified multiple backup objects. The backup objects chosen had different backup locations. This is

not allowed. All backup objects submitted in the same VSS restore operation must have the same backup location, either TSM or LOCAL, but not both.

System action: The VSS restore operation stops.

User response: Retry the VSS restore operation specifying one backup object at a time.

ANU0519E   The VSS operation failed with rc = *returncode***.**

Explanation: There was a failure when TSM performed the VSS operation.

System action: The VSS operation stops.

User response: Verify that the TSM Client Acceptor Daemon (CAD) is installed, configured, and running properly on the machine. Retry the operation. If the error persists, contact your service representative.

ANU0520E   Failed to connect to Local DSMAGENT Node '*localdsmagentnode***' at address:port '***address***:***portnumber***'. Verify that the TSM Client Acceptor Daemon (CAD) is installed, configured, and running properly.**

Explanation: An attempt was made to connect to the TSM Client Acceptor Daemon (CAD) running on the local machine. A communication error occurred when this connection was attempted.

System action: The operation stops.

User response: In order to perform VSS operations, you must have a TSM Client Acceptor Daemon (CAD) and a TSM Remote Client Agent Service (DSMAGENT) installed and configured properly. In addition, the TSM Client Acceptor Daemon (CAD) must be running. Verify that the TSM Client Acceptor Daemon (CAD) is installed, configured, and running properly on the local machine. If the error persists, contact your service representative.

ANU0521E   Pruning functions cannot open one of the Tivoli Storage Manager prune files: *log-name***. errno =** *errno-value***,**

Explanation: The file "*log-name*" could not be opened during pruning. The system set the error code *errno-value*. If the reason given is "access denied," the current user does not have permission to write to the file in the directory specified. It is also possible that no space is available at the given file location or another Tivoli Storager Manager process started by different user id is performing pruning at the same time.

System action: Pruning stops, processing continues.

User response: Set the DSM_LOG (or DSMI_LOG) environment variable to a directory into which the current user can write.

ANU0522E   DIAG:

Explanation: The message text is provided for diagnostic purposes and is meant to provide information to IBM support in problem determination.

System action: None.

User response: None.

ANU0524S   Error '*errtxt***' (errno=***errno***) occurred trying to write to audit log '***file-name***'. The audit log function is disabled.**

Explanation: There was an error encountered writing to the audit log (for example, there is not enough space on the disk).

System action: Audit logging is disabled for the rest of the operation. The return code for the operation is set to 12 to indicate that the contents of the audit log are incomplete.

User response: If this is an out of space condition either free up space on the volume or try to write the audit log to a volume with more space.

ANU0555E   Invalid number of snapshots:

Explanation:

System action: Policy was not created.

User response: Specify a number in the range: range: 1...9999 or NOLimit

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ANU0556E   Invalid number of days:

Explanation:

System action: The Policy was not created.

User response: Specify a number in the range: range: 0...9999 or NOLimit

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ANU0571E   The specified policy was not found: '*policy*'

Explanation:

System action:

User response: Please make sure that the specified policy exists.

ANU0572E   The specified policy already exists: '*policy*'

Explanation:

System action: Policy was not created.

User response: Enter a different name for the policy.

ANU0573E   The specified policy could not be updated: '*policy*'

Explanation: This is due to a problem in virtual server database.

System action:

User response: Make sure that FCM is configured correctly.

ANU0574E   The specified policy could not be deleted: '*policy*'

Explanation: This is due to a problem in virtual server database.

System action:

User response: Make sure that FCM is configured correctly.

ANU0575E   The specified policy could not be created: '*policy*'

Explanation: This is due to a problem in virtual server database.

System action:

User response: Make sure that FCM is configured correctly.

ANU0576I   There were no items found.

Explanation: The query completed successfully, but no results were found.

System action: None.

User response: Change the specified search criteria.

ANU0583E   Invalid name of policy specified. Valid input characters include alphanumeric charaters and underscore.

Explanation:

System action: Policy was not created.

User response: Please specify a valid name.

ANU0585E   Unable to connect to the TSM Client Acceptor Daemon (CAD).

Explanation: Possible causes of this message include: The TSM Client Acceptor Daemon (CAD) is not running. The VSSALTSTAGINGDIR option setting in the TDP option file is not set to the same value as the VSSALTSTAGINGDIR option setting in the Data Protection for Oracle Remote Client Agent Service (DSMAGENT) option file. They must be set to the same value for successful TDP operations.

System action: The VSS operation stops.

User response: Ensure that the TSM Client Acceptor Daemon (CAD) is running. Ensure that the VSSALTSTAGINGDIR option setting in the TDP option file is set to the same value as the VSSALTSTAGINGDIR option setting in the Data Protection for Oracle Remote Client Agent Service (DSMAGENT) option file. After correcting the VSSALTSTAGINGDIR option inconsistency, retry the TDP operation.

ANU0588E   The value for the BACKUPDESTination option is not allowed. Data Protection for Oracle is only licensed to run data protection operations to a Tivoli Storage Manager server. It is not licensed to backup or to restore locally managed snapshots.

Explanation: The value for the configuration option is not allowed. The only allowed value is TSM. Data Protection for Oracle is only licensed to run data protection operations to a Tivoli Storage Manager server. It is not licensed to backup or to restore locally managed snapshots.

System action: Processing ends.

User response: Set the backup destination to TSM. In order to create and restore local VSS backups it is required to use and install a fully-featured valid license or to purchase an upgrade, and install Tivoli Storage FlashCopy Manager. If you use Data Protection for Oracle it is also required to purchase and install IBM Tivoli Storage FlashCopy Manager.

ANU0589E   You are not allowed to set REMOTEDSMAGentnode option. Data Protection for Oracle is not licensed to perform offloaded VSS backups.

Explanation: The REMOTEDSMAGentnode option is used to perform offloaded VSS backups.

System action: The operation stops.

User response: In order to perform offloaded VSS backups install a valid fully-featured license. If you use Data Protection for Oracle it is also required to purchase and install IBM Tivoli Storage FlashCopy Manager. Contact your service representative to find out purchase details.

ANU0590E   A Data Protection communication error with the Tivoli Storage Manager server has occurred.

Explanation: Communications with the Tivoli Data Protection server has been lost.

System action: The operation stops.

User response: Correct the TCP/IP communications error with the Tivoli Storage Manager server and retry the operation.

ANU0591I Data Protection communications with the Tivoli Storage Manager server has been successfully recovered.

Explanation: Communications with the Tivoli Data Protection server has been successfully recovered.

System action: None.

User response: Continue with normal operations.

ANU0592E The Data Protection TCP/IP session with the Tivoli Storage Manager server was canceled.

Explanation: The Data Protection TCP/IP session with the Tivoli Storage Manager server was cancelled.

System action: The operation stops.

User response: Correct the reason the Tivoli Storage Manager server administrator cancelled the session and retry the operation.

ANU0593E Data Protection for Oracle is not licensed to perform offloaded VSS backups.

Explanation: Currently installed license does not allow to perform offloaded VSS backups. In order to use this feature it is necessary to install a valid fully-featured license.

System action: The operation stops.

User response: In order to perform offloaded VSS backups install a valid fully-featured license. If you use Data Protection for Oracle it is also required to purchase and install IBM Tivoli Storage FlashCopy Manager. Contact your service representative to find out purchase details.

ANU0594E You cannot perform offloaded VSS backups in TSM Server independent environment.

Explanation: OFFLOAD option is not available in TSM Server independent environment.

System action: The operation stops.

User response: In order to perform offloaded VSS backups you have to configure Tivoli Storage FlashCopy Manager to manage snapshot backups using a Tivoli Storage Manager server. To do this you can use Tivoli Storage Manager configuration wizard.

ANU0595T The options file '*optfile*' does not exist. It is required for proper operation.

Explanation: The specified TSM API options file could not be found. It is required in order to complete the command.

System action: Processing ends.

User response: Make sure to complete Tivoli Storage Manager configuration and try the operation again.

ANU2500E Oracle passed an invalid mode

Explanation: Invalid mode passed by Oracle.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2501E Oracle passed a null file name

Explanation: Null file name passed by Oracle.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2502E Wrong data block size

Explanation: Wrong data block size.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2503E Backup object '*filespacehlll*' already exists on TSM Server.

Explanation: The object has previously been backed up to the TSM Server.

System action: Data Protection for Oracle returns to the calling procedure.

User response: If backing up an object, make sure Oracle is generating a unique backup object name.

ANU2504E Dissimilar Oracle handle

Explanation: The handle passed from Oracle is not the same handle that TSM passed back.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2505I End of file reached

Explanation: End of file reached.

System action: The system returns to the calling procedure.

User response: None.

ANU2506E   Wrong Read State

Explanation: The operation must be in READ state.

System action: The system returns to the calling procedure.

User response: Contact TSM support.

ANU2507E   Runtime API version is outdated

Explanation: Runtime API is lower than compile time API.

System action: The system returns to the calling procedure.

User response: Check compile time API level, obtain same or higher level of API library.

ANU2508E   Wrong write state

Explanation: The operation must be in WRITE state.

System action: The system returns to the calling procedure.

User response: Contact TSM support.

ANU2509E   Invalid flag passed

Explanation: Oracle passed an invalid flag.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2510E   The Caller must be a root user

Explanation: Only a UNIX root user can execute password

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2511E   Reduce the number of copies to that specified in RMAN

Explanation: The duplex copy feature has reached maximum allowed copies.

System action: The system returns to the calling procedure.

User response: Reduce the number of backup copies to that allowed by RMAN.

ANU2512E   Could not open license file: *license file*

Explanation: The license file could not be opened.

System action: The system returns to the calling procedure.

User response: Check that the license file exists with the correct permissions.

ANU2513E   Could not read license file: *license file*

Explanation: The license file could not be read.

System action: The system returns to the calling procedure.

User response: Check that the license file permissions are correct.

ANU2514E   Could not write license file: *license file*

Explanation: The license file could not be written.

System action: The system returns to the calling procedure.

User response: Check that the license file permissions are correct.

ANU2515E   Invalid data format in license file: *license file*

Explanation: The license file data format is invalid.

System action: The system returns to the calling procedure.

User response: Reinstall the license that came with Data Protection for Oracle.

ANU2516E   Bad checksum of license file: *license file*

Explanation: The license file has a bad checksum.

System action: The system returns to the calling procedure.

User response: Reinstall the license that came with Data Protection for Oracle.

ANU2517E   Try and Buy Evaluation period is over for license file: *license file*

Explanation: The Try and Buy Evaluation period is over.

System action: The system returns to the calling procedure.

User response: Purchase the product or discontinue use.

ANU2518E   License file: *license file* **not valid for this application**

Explanation: The license file is not intended for this application.

System action: The system returns to the calling procedure.

User response: Reinstall the license that came with Data Protection for Oracle.

ANU2519E   Could not read password

Explanation: There is an invalid password or the password file cannot be not found.

System action: The system returns to the calling procedure.

User response: Check that password file exists and is valid.

ANU2521E   Error opening *file name*. **Check permissions.**

Explanation: A directory could not be created.

System action: The system returns to the calling procedure.

User response: Check that permissions allow the creation of directories.

ANU2522E   No memory available

Explanation: There is not enough system memory to complete the action.

System action: The system returns to the calling procedure.

User response: Make more system resources available by closing other applications, then try the action again.

ANU2523E   The Management Class does not match

Explanation: The management class for the query object could not be found.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2525E   Input date does not match expected date format or range.

Explanation: The input date does not match the expected date format or range.

System action: The system returns to the calling procedure.

User response: Check that the format and length of the date entry matches TDP_DATE_FORMAT type and the range of the date values are valid.Valid days are: 1-31Valid months are: 1-12Valid years are:1990-2089

ANU2526I   Backup details for backup piece */fs/hl/ll* **(database** *db*). **Total bytes processed:** *number*. **Deduplicated:** *Yes | No*. **Bytes after deduplication:** *number*. **Deduplication reduction:** *rate*. **Compressed:** *Yes | No*. **Bytes after compression:** *number*. **Compressed by:** *rate*. **Encryption:** *type*. **LAN-Free:** *Yes | No*. **Total bytes sent:** *number*. **Total data reduction:** *rate*. **Total processing time:** *time*. **Throughput rate:** *rate* **Kb/Sec.**

Explanation: These are the backup details for the specified backup piece.

System action: The system returns to the calling procedure.

User response: Check the TSM Server activity log.

ANU2527I   Restore details for backup piece */fs/hl/ll*. **Total bytes received:** *number*. **Total processing time:** *time*. **Throughput rate:** *rate* **Kb/Sec.**

Explanation: These are the restore details for that backup piece.

System action: The system returns to the calling procedure.

User response: Check the TSM Server activity log.

ANU2529E   To Date cannot occur before From Date

Explanation: The specified To Date occurs before From Date.

System action: The system returns this error.

User response: Enter a valid To Date that occurs after the From Date.

ANU2530E   Screen size is too small to accurately display the PICK window.

Explanation: You cannot use the PICK option on a workstation that has a screen smaller than 20 characters across and 10 lines down.

System action: The operation was not completed.

User response: Retry the operation using a workstation that has a screen with the minimum size.

ANU2531E   Could not create a temporary file name for Data Protection for Oracle utility

Explanation: A temporary file name could not be created by the Operating System call to tempnam().

System action: The system returns to the calling procedure.

User response: Check with the Operating System

Vendor for specific reasons why the function call to tempnam() could fail. Take the necessary corrective action and try operation again.

ANU2532E   Unknown Error - View the Data Protection for Oracle error log

Explanation: There was an unknown error. View the tdpoerror.log.

System action: None

User response: None

ANU2533E   SQLPLUS error

Explanation: The utility could not find SQLPLUS or there was a scripting error.

System action: The system returns to the calling procedure.

User response: Check that SQLPLUS is installed and located in your search path. Verify the password.

ANU2534E   Option file error.

Explanation: The option or option file name is invalid.

System action: The system returns to the calling procedure.

User response: Check the tdpoerror.log file for an explanation of the error.

ANU2535I   File *\fs\hl\ll* **=** *number* **bytes sent**

Explanation: This is the total bytes sent to the server for that file name

System action: The system returns to the calling procedure.

User response: Check the TSM Server activity log.

ANU2536I   File *\fs\hl\ll* **=** *number* **bytes recieved**

Explanation: This is the total bytes received from the server for that backup file name.

System action: The system returns to the calling procedure.

User response: Check the TSM Server activity log.

ANU2537E   Error found while parsing options in Data Protection for Oracle options file.

Explanation: There was an error found while parsing the Data Protection for Oracle options file.

System action: The system returns to the calling procedure.

User response: Check that the options and the options file are valid.

ANU2538E   Error found while initializing tracing for Data Protection for Oracle.

Explanation: Error found while initializing the Data Protection for Oracle trace facility.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2539E   *Function Name*: Error - *string* pointer is NULL.

Explanation: A NULL pointer was passed to Data Protection for Oracle.

System action: The system returns to the calling procedure.

User response: Contact your system administrator.

ANU2571E   Could not load the library: *library* **Data Protection for Oracle**

Explanation: Library cannot be loaded.

System action: The system returns to the calling procedure.

User response: Check that the library exists.

ANU2575E   An error was detected while attempting to open the file '*filename***' for writing.**

Explanation: The Data Protection for Oracle utility failed to open the file named in the error message.

System action: The system returns to the calling procedure.

User response: Check to ensure that the directory exists or that the directory has write permission, and that the disk is not full. Take the necessary corrective action and try operation again.

ANU2576E   An error was detected while attempting to open the file '*filename***' for reading.**

Explanation: The Data Protection for Oracle utility failed to open the temporary file named in the error message.

System action: The system returns to the calling procedure.

User response: Check to ensure that the file named in the error exists in the path specified and that the file named has read permissions. Take the necessary corrective action and try operation again.

ANU2600E **There is no Registry entry for the TSM API.**

Explanation: The Windows Registry entry was not found.

System action: The system returns to the calling procedure.

User response: Check that the TSM API is installed correctly.

ANU2601E **There is no Registry entry for the Data Protection for Oracle install path.**

Explanation: The Registry Entry for the Data Protection for Oracle install path was not found.

System action: The system returns to the calling procedure.

User response: Check that Data Protection for Oracle was installed correctly.

ANU2602E **The object** *Filespace NameHigh Level NameLow Level Name* **was not found on the TSM Server**

Explanation: The object name was not found on the TSM Server.

System action: The system returns to the calling procedure.

User response: Check that the object name is correct and that it exists on the TSM Server.

ANU2603E **The option** *Option Name* **in file** *Filename* **is invalid.**

Explanation: An incorrect option was passed into the Data Protection for Oracle options file.

System action: The system returns to the calling procedure.

User response: Verify that your options are correct in the Data Protection for Oracle options file.

ANU2604W **The object** *Filespace NameHigh Level Name Low Level Name* **was not found on the TSM Server**

Explanation: The object name was not found on the TSM Server.

System action: The system returns to the calling procedure.

User response: Check that the object name is correct and that it exists on the TSM Server.

ANU2610W **Data Protection for Oracle options tdpo_node and tdpo_owner are not allowed when passwordaccess is set to generate in the TSM client options file.**

Explanation: This combination of Data Protection for Oracle and Tivoli Storage Manager client options is not valid.

System action: The tdpo_node and tdpo_owner option values are ignored and processing continues.

User response: Remove tdpo_node and tdpo_owner options from Data Protection for Oracle options file.

ANU2614E **Invalid sequence of function calls to Data Protection for Oracle**

Explanation: Data Protection for Oracle received a function call from Oracle that is out of sequence.

System action: Data Protection for Oracle returns to the calling procedure.

User response: Contact Oracle or Data Protection for Oracle support.

ANU2615E **Options file '***filename***' not found.**

Explanation: The option file name specified could not be located.

System action: The system returns to the calling procedure.

User response: Ensure that an option file exists in the default path or that the user specified option file is valid.

ANU2616E **Empty parameter specified for option '***option***' in options file '***filename***'.**

Explanation: The option specified must have a parameter supplied.

System action: The system returns to the calling procedure.

User response: Ensure that a valid parameter for the given option is entered and valid.

ANU2617E **Could not get Data Protection for Oracle library version.**

Explanation: The Data Protection for Oracle utility could not get Data Protection for Oracle library version. The library file used by Data Protection for Oracle utility is not a valid Data Protection for Oracle library.

System action: The Data Protection for Oracle utility exits.

User response: Check that Data Protection for Oracle was installed and set up correctly.

ANU2620E   Attempting to create or modify Data Protection for Oracle prompted password as non-root user.

Explanation: The Tivoli Storage Manager client options file has passwordaccess set to prompt. As a root user this is not allowed. Root access is needed to modify the Data Protection for Oracle password file.

System action: The system returns to the calling procedure.

User response: To create or modify the Data Protection for Oracle password file, switch to the root user and re-run the Data Protection for Oracle password configuration utility.

ANU2621E   Attempting to create or modify Data Protection for Oracle generated password as root user.

Explanation: The Tivoli Storage Manager client options file has passwordaccess set to generate. As a root user this is not allowed.

System action: The system returns to the calling procedure.

User response: Run the command again as a non-root user. Or if you want Data Protection for Oracle to manage passwords, modify the Tivoli Storage Manager client options file and set passwordaccess prompt. Then run the password configuration utility as root user.

ANU2622E   One or more option parameters contain invalid values.

Explanation: An invalid parameter value was specified at the command-line.

System action: The system returns to the calling procedure.

User response: Check the User's Guide for correct usage of option parameters and the possible values for this command. Retry the command with valid option values.

ANU2623I   No user input detected.

Explanation: Valid user input is required to fullfill the parameter request.

System action: The operation gives the user 3 attempts before returning to the calling procedure.

User response: Check the User's Guide for correct usage of the command and the possible values for this command. Retry the command with valid values.

ANU2627W   Passwordaccess value must be set to generate in the Tivoli Storage Manager client options file.

Explanation: The passwordaccess option value is incorrect. DP for Oracle can use passwordaccess generate only.

System action: The option value is ignored and processing continues.

User response: Set passwordaccess option value to generate in the Tivoli Storage Manager client options file.

Appendix. Accessibility features for the Tivoli Storage Manager product family

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

Accessibility features

The following list includes the major accessibility features in the Tivoli Storage Manager family of products:

- Keyboard-only operation
- Interfaces that are commonly used by screen readers
- Keys that are discernible by touch but do not activate just by touching them
- Industry-standard devices for ports and connectors
- The attachment of alternative input and output devices

The Tivoli Storage Manager Information Center, and its related publications, are accessibility-enabled. The accessibility features of the information center are described at http://publib.boulder.ibm.com/infocenter/tsminfo/v6r3/topic/com.ibm.help.ic.doc/iehs36_accessibility.html.

Keyboard navigation

On Windows, the Tivoli Storage Manager product family follows Microsoft conventions for all keyboard navigation and access. Drag and Drop support is managed using the Microsoft Windows Accessibility option known as MouseKeys. For more information about MouseKeys and other Windows accessibility options, please refer to the Windows online help (keyword: MouseKeys).

On other operating systems, these products follow the operating-system conventions for keyboard navigation and access.

Vendor software

The Tivoli Storage Manager product family includes certain vendor software that is not covered under the IBM license agreement. IBM makes no representation about the accessibility features of these products. Contact the vendor for the accessibility information about its products.

IBM and accessibility

See the IBM Human Ability and Accessibility Center for more information about the commitment that IBM has to accessibility.

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Glossary

This glossary includes terms and definitions for IBM Tivoli Storage Manager and IBM Tivoli Storage FlashCopy Manager products.

To view glossaries for other IBM products, go to http://www.ibm.com/software/ globalization/terminology/.

The following cross-references are used in this glossary:
- *See* refers the reader from a term to a preferred synonym, or from an acronym or abbreviation to the defined full form.
- *See also* refers the reader to a related or contrasting term.

A

absolute mode

In storage management, a backup copy-group mode that specifies that a file is considered for incremental backup even if the file has not changed since the last backup. See also *modified mode*.

access control list (ACL)

In computer security, a list associated with an object that identifies all the subjects that can access the object and their access rights. For example, an access control list is associated with a file that identifies the users who can access that file and their access rights.

access mode

An attribute of a storage pool or a storage volume that specifies whether the server can write to or read from the storage pool or storage volume. The access mode can be read/write, read-only, or unavailable. Volumes in primary storage pools can also have an access mode of destroyed. Volumes in copy storage pools can also have an access mode of offsite.

acknowledgment

The transmission of acknowledgment characters as a positive response to a data transmission.

ACL   See *access control list*.

activate

To validate the contents of a policy set and then make it the active policy set.

active-data pool

A named set of storage pool volumes that contain only active versions of client backup data.

active file system

A file system to which space management has been added. With space management, tasks for an active file system include automatic migration, reconciliation, selective migration, and recall. Contrast with *inactive file system*.

active policy set

The activated policy set that contains the policy rules in use by all client nodes that are assigned to the policy domain. See also *policy domain* and *policy set*.

active version

The most recent backup copy of a file stored. The active version of a file cannot be deleted until a backup process detects that the user has either replaced the file with a newer version or has deleted the file from the file server or workstation. Contrast with *inactive version*.

activity log

A log that records normal activity messages that are generated by the server. These messages include information about server and client operations, such as the start time of sessions or device I/O errors.

adaptive subfile backup

A type of backup that sends only changed portions of a file to the server, instead of sending the entire file. Adaptive subfile backup reduces network traffic and increases the speed of the backup.

administrative client

A program that runs on a file server, workstation, or mainframe that administrators use to control and monitor the Tivoli Storage Manager server. Contrast with *backup-archive client*.

administrative command schedule

A database record that describes the planned processing of an administrative command during a specific time period. See also *client schedule*.

administrative privilege class

See *privilege class*.

administrative session

A period of time during which an administrator user ID communicates with a server to perform administrative tasks. Contrast with *client node session*.

administrator

A user who is registered to the server as an administrator, and who is authorized to perform tasks and issue commands through the assignment of an administrative privilege class.

Advanced Program-to-Program Communication (APPC)

An implementation of the SNA LU 6.2 protocol that allows interconnected systems to communicate and share the processing of programs.

agent node

A client node that has been granted proxy authority to perform operations on behalf of another client node, which is the target node.

aggregate

An object, stored in one or more storage pools, consisting of a group of logical files that are packaged together. See also *logical file* and *physical file*.

aggregate data transfer rate

A performance statistic that indicates the average number of bytes that were transferred per second while processing a given operation.

APPC See *Advanced Program-to-Program Communication*.

application client

A program that is installed on a system to protect an application. The Tivoli Storage Manager server provides backup services to an application client.

archive
>   To copy programs, data, or files to other storage media, usually for long-term storage or security. Contrast with *retrieve*.

archive copy
>   A file or group of files that was archived to server storage.

archive copy group
>   A policy object containing attributes that control the generation, destination, and expiration of archived files.

archive-retention grace period
>   The number of days that the storage manager retains an archived file when the server is unable to rebind the file to an appropriate management class. See also *bind*.

association
>   (1) The defined relationship between a client node and a client schedule. An association identifies the name of a schedule, the name of the policy domain to which the schedule belongs, and the name of a client node that performs scheduled operations.
>
>   (2) On a configuration manager, the defined relationship between a profile and an object such as a policy domain. Profile associations define the configuration information that is distributed to a managed server when it subscribes to the profile.

audit   To check for logical inconsistencies between information that the server has and the actual condition of the system. The storage manager can audit information about items such as volumes, libraries, and licenses. For example, when a storage manager audits a volume, the server checks for inconsistencies between information about backed-up or archived files that are stored in the database and the actual data that are associated with each backup version or archive copy in server storage.

authentication
>   The process of checking a user's password before permitting user access to the Tivoli Storage Manager server. Authentication can be turned on or off by an administrator with system privilege.

authentication rule
>   A specification that another user can use to either restore or retrieve files from storage.

authority
>   The right to access objects, resources, or functions. See also *privilege class*.

authorization rule
>   A specification that permits another user to either restore or retrieve a user's files from storage.

authorized user
>   A user who has administrative authority for the Tivoli Storage Manager client on a workstation. This user changes passwords, performs open registrations, and deletes file spaces.

AutoFS
>   See *automounted file system*.

automatic detection
>   A feature that detects, reports, and updates the serial number of a drive or library in the database when the path from the local server is defined.

automatic migration

The process that is used to automatically move files from a local file system to storage, based on options and settings that are chosen by a root user on a workstation. See also *threshold migration* and *demand migration*.

automatic reconciliation

The process that is used to reconcile file systems at regular intervals. The intervals are set by a user with root user authority. See also *reconciliation*.

automounted file system (AutoFS)

A file system that is managed by an automounter daemon. The automounter daemon monitors a specified directory path, and automatically mounts the file system to access data.

B

backup-archive client

A program that runs on a workstation or file server and provides a means for users to back up, archive, restore, and retrieve files. Contrast with *administrative client*.

backup copy group

A policy object containing attributes that control the generation, destination, and expiration of backup versions of files. A backup copy group belongs to a management class.

backup-retention grace period

The number of days the storage manager retains a backup version after the server is unable to rebind the file to an appropriate management class.

backup set

A portable, consolidated group of active versions of backup files that are generated for a backup-archive client.

backup set collection

A group of backup sets that are created at the same time and which have the same backup set name, volume names, description, and device classes. The server identifies each backup set in the collection by its node name, backup set name, and file type.

backup version

A file or directory that a client node backed up to server storage. More than one backup version can exist in server storage, but only one backup version is the active version. See also *active version* and *inactive version*.

bind   To associate all versions of a file with a management class name. See *rebind*.

bindery

A database that consists of three system files for a NetWare server. The files contain user IDs and user restrictions.

C

cache   To place a duplicate copy of a file on random access media when the server migrates a file to another storage pool in the hierarchy.

cache file

A snapshot of a logical volume created by Logical Volume Snapshot Agent. Blocks are saved immediately before they are modified during the image backup and their logical extents are saved in the cache files.

CAD   See *client acceptor*.

central scheduler

A function that permits an administrator to schedule client operations and administrative commands. The operations can be scheduled to occur periodically or on a specific date. See *client schedule* and *administrative command schedule*.

client A software program or computer that requests services from a server.

client acceptor

An HTTP service that serves the applet for the web client to web browsers. On Windows systems, the client acceptor is installed and run as a service. On AIX®, UNIX, and Linux systems, the client acceptor is run as a daemon, and is also called the *client acceptor daemon* (CAD).

client acceptor daemon (CAD)

See *client acceptor*.

client domain

The set of drives, file systems, or volumes that the user selects to back up or archive data, using the backup-archive client.

client node

A file server or workstation on which the backup-archive client program has been installed, and which has been registered to the server.

client node session

A session in which a client node communicates with a server to perform backup, restore, archive, retrieve, migrate, or recall requests. Contrast with *administrative session*.

client options file

An editable file that identifies the server and communication method, and provides the configuration for backup, archive, hierarchical storage management, and scheduling.

client option set

A group of options that are defined on the server and used on client nodes in conjunction with client options files.

client-polling scheduling mode

A method of operation in which the client queries the server for work. Contrast with *server-prompted scheduling mode*.

client schedule

A database record that describes the planned processing of a client operation during a specific time period. The client operation can be a backup, archive, restore, or retrieve operation, a client operating system command, or a macro. See also *administrative command schedule*.

client/server

Pertaining to the model of interaction in distributed data processing in which a program on one computer sends a request to a program on another computer and awaits a response. The requesting program is called a client; the answering program is called a server.

client system-options file

A file, used on AIX, UNIX, or Linux system clients, containing a set of processing options that identify the servers to be contacted for services. This file also specifies communication methods and options for backup, archive, hierarchical storage management, and scheduling. This file is also called the dsm.sys file. See also *client user-options file*.

client user-options file
A file that contains the set of processing options that the clients on the system use. The set can include options that determine the server that the client contacts, and options that affect backup operations, archive operations, hierarchical storage management operations, and scheduled operations. This file is also called the dsm.opt file. For AIX, UNIX, or Linux systems, see also *client system-options file*.

closed registration
A registration process in which only an administrator can register workstations as client nodes with the server. Contrast with *open registration*.

collocation
The process of keeping all data belonging to a single-client file space, a single client node, or a group of client nodes on a minimal number of sequential-access volumes within a storage pool. Collocation can reduce the number of volumes that must be accessed when a large amount of data must be restored.

collocation group
A user-defined group of client nodes whose data is stored on a minimal number of volumes through the process of collocation.

commit point
A point in time when data is considered consistent.

Common Programming Interface for Communications (CPI-C)
A call-level interface that provides a consistent application programming interface (API) for applications that use program-to-program communications. CPI-C uses LU 6.2 architecture to create a set of interprogram services that can establish and end a conversation, send and receive data, exchange control information, and notify a partner program of errors.

communication method
The method by which a client and server exchange information. See also *Transmission Control Protocol/Internet Protocol*.

communication protocol
A set of defined interfaces that permit computers to communicate with each other.

compression
A function that removes repetitive characters, spaces, or strings of characters from the data being processed and replaces the repetitive characters with control characters. Compression reduces the amount of storage space that is required for the data.

configuration manager
A server that distributes configuration information, such as policies and schedules, to managed servers according to their profiles. Configuration information can include policy and schedules. See also *managed server* and *profile*.

conversation
A connection between two programs over a session that allows them to communicate with each other while processing a transaction.

copy backup

A full backup in which the transaction log files are not deleted so that backup procedures that use incremental or differential backups are not disrupted

copy group

A policy object containing attributes that control how backup versions or archive copies are generated, where backup versions or archive copies are initially located, and when backup versions or archive copies expire. A copy group belongs to a management class. See also *archive copy group*, *backup copy group*, *backup version*, and *management class*.

copy storage pool

A named set of volumes that contain copies of files that reside in primary storage pools. Copy storage pools are used only to back up the data that is stored in primary storage pools. A copy storage pool cannot be a destination for a backup copy group, an archive copy group, or a management class (for space-managed files). See also *primary storage pool* and *destination*.

CPI-C   See *Common Programming Interface for Communications*.

D

daemon

A program that runs unattended to perform continuous or periodic functions, such as network control.

damaged file

A physical file in which Tivoli Storage Manager has detected read errors.

data access control mode

A mode that controls whether a command can access a migrated file, see a migrated file as zero-length, or receive an input/output error if it attempts to access a migrated file. See also *execution mode*.

database backup series

One full backup of the database, plus up to 32 incremental backups made since that full backup. Each full backup that is run starts a new database backup series. A number identifies each backup series.

database snapshot

A complete backup of the entire database to media that can be taken off-site. When a database snapshot is created, the current database backup series is not interrupted. A database snapshot cannot have incremental database backups associated with it. See also *database backup series*. Contrast with *full backup*.

data deduplication

A method of reducing storage needs by eliminating redundant data. Only one instance of the data is retained on storage media. Other instances of the same data are replaced with a pointer to the retained instance.

data manager server

A server that collects metadata information for client inventory and manages transactions for the storage agent over the local area network. The data manager server informs the storage agent with applicable library attributes and the target volume identifier.

data mover

A device that moves data on behalf of the server. A network-attached storage (NAS) file server is a data mover.

data storage-management application-programming interface (DSMAPI)
A set of functions and semantics that can monitor events on files, and manage and maintain the data in a file. In an HSM environment, a DSMAPI uses events to notify data management applications about operations on files, stores arbitrary attribute information with a file, supports managed regions in a file, and uses DSMAPI access rights to control access to a file object.

default management class
A management class that is assigned to a policy set. This class is used to govern backed up or archived files when a file is not explicitly associated with a specific management class through the include-exclude list.

deduplication
See *data deduplication.*

demand migration
The process that is used to respond to an out-of-space condition on a file system for which hierarchical storage management (HSM) is active. Files are migrated to server storage until space usage drops to the low threshold that was set for the file system. If the high threshold and low threshold are the same, one file is migrated.

desktop client
The group of backup-archive clients that includes clients on Microsoft Windows, Apple, and Novell NetWare operating systems.

destination
A copy group or management class attribute that specifies the primary storage pool to which a client file will be backed up, archived, or migrated.

device class
A named set of characteristics that are applied to a group of storage devices. Each device class has a unique name and represents a device type of disk, file, optical disk, or tape.

device configuration file
(1) For a server, a file that contains information about defined device classes, and, on some servers, defined libraries and drives. The information is a copy of the device configuration information in the database.

(2) For a storage agent, a file that contains the name and password of the storage agent, and information about the server that is managing the SAN-attached libraries and drives that the storage agent uses.

device driver
A program that provides an interface between a specific device and the application program that uses the device.

disaster recovery manager (DRM)
A function that assists in preparing and using a disaster recovery plan file for the server.

disaster recovery plan
A file that is created by the disaster recovery manager (DRM) that contains information about how to recover computer systems if a disaster occurs and scripts that can be run to perform some recovery tasks. The file includes information about the software and hardware that is used by the server, and the location of recovery media.

domain

A grouping of client nodes with one or more policy sets, which manage data or storage resources for the client nodes. See *policy domain* or *client domain*.

DRM See *disaster recovery manager*.

DSMAPI

See *data storage-management application-programming interface*.

dynamic serialization

A type of copy serialization in which a file or folder is backed up or archived on the first attempt regardless of whether it changes during a backup or archive.

E

EA See *extended attribute*.

EB See *exabyte*.

EFS See *Encrypted File System*.

Encrypted File System (EFS)

A file system that uses file system-level encryption.

enterprise configuration

A method of setting up servers so that the administrator can distribute the configuration of one of the servers to the other servers, using server-to-server communication. See also *configuration manager*, *managed server*, *profile*, and *subscription*.

enterprise logging

The process of sending events from a Tivoli Storage Manager server to a designated event server. The event server routes the events to designated receivers, such as to a user exit. See also *event*.

error log

A data set or file that is used to record error information about a product or system.

estimated capacity

The available space, in megabytes, of a storage pool.

event (1) An administrative command or a client operation that is scheduled to be run using Tivoli Storage Manager scheduling.

(2) A message that an Tivoli Storage Manager server or client issues. Messages can be logged using Tivoli Storage Manager event logging.

event record

A database record that describes actual status and results for events.

event server

A server to which other servers can send events for logging. The event server routes the events to any receivers that are enabled for the sending server's events.

exabyte (EB)

For processor storage, real and virtual storage, and channel volume, 1 152 921 504 606 846 976 bytes. For disk storage capacity and communications volume, 1 000 000 000 000 000 000 bytes.

exclude

The process of identifying files in an include-exclude list. This process

prevents the files from being backed up or migrated whenever a user or schedule enters an incremental or selective backup operation. A file can be excluded from backup and space management, backup only, or space management only.

exclude-include list
See *include-exclude list*.

execution mode
A mode that controls the space-management related behavior of commands that run under the **dsmmode** command.

expiration
The process by which files, data sets, or objects are identified for deletion because their expiration date or retention period has passed.

expiring file
A migrated or premigrated file that has been marked for expiration and removal from storage. If a stub file or an original copy of a premigrated file is deleted from a local file system, or if the original copy of a premigrated file is updated, the corresponding migrated or premigrated file is marked for expiration the next time reconciliation is run.

extend
To increase the portion of available space that can be used to store database or recovery log information.

extended attribute (EA)
Names or value pairs that are associated with files or directories. There are three classes of extended attributes: user attributes, system attributes, and trusted attributes.

extent The part of a file that is created during the data-deduplication process. Extents are compared with other file extents to identify duplicates.

external library
A type of library that is provided by Tivoli Storage Manager that permits LAN-free data movement for StorageTek libraries that are managed by Automated Cartridge System Library Software (ACSLS). To activate this function, the Tivoli Storage Manager library type must be EXTERNAL.

F

file access time
On AIX, UNIX, or Linux systems, the time when the file was last accessed.

file age
For migration prioritization purposes, the number of days since a file was last accessed.

file device type
A device type that specifies the use of sequential access files on disk storage as volumes.

file server
A dedicated computer and its peripheral storage devices that are connected to a local area network that stores programs and files that are shared by users on the network.

file space
A logical space in server storage that contains a group of files that have been backed up or archived by a client node, from a single logical partition, file system, or virtual mount point. Client nodes can restore,

retrieve, or delete their file spaces from server storage. In server storage, files belonging to a single file space are not necessarily stored together.

file space ID (FSID)
A unique numeric identifier that the server assigns to a file space when it is stored in server storage.

file state
The space management mode of a file that resides in a file system to which space management has been added. A file can be in one of three states: resident, premigrated, or migrated. See also *resident file*, *premigrated file*, and *migrated file*.

file system migrator (FSM)
A kernel extension that intercepts all file system operations and provides any space management support that is required. If no space management support is required, the operation is passed to the operating system, which performs its normal functions. The file system migrator is mounted over a file system when space management is added to the file system.

file system state
The storage management mode of a file system that resides on a workstation on which the hierarchical storage management (HSM) client is installed. A file system can be in one of these states: native, active, inactive, or global inactive.

frequency
A copy group attribute that specifies the minimum interval, in days, between incremental backups.

FSID   See *file space ID*.

FSM   See *file system migrator*.

full backup
The process of backing up the entire server database. A full backup begins a new database backup series. See also *database backup series* and *incremental backup*. Contrast with *database snapshot*.

fuzzy backup
A backup version of a file that might not accurately reflect what is currently in the file because the file was backed up at the same time as it was being modified.

fuzzy copy
A backup version or archive copy of a file that might not accurately reflect the original contents of the file because it was backed up or archived the file while the file was being modified. See also *backup version* and *archive copy*.

G

General Parallel File System
A high-performance shared-disk file system that can provide data access from nodes in a cluster environment.

gigabyte (GB)
In decimal notation, 1 073 741 824 when referring to memory capacity; in all other cases, it is defined as 1 000 000 000.

global inactive state
The state of all file systems to which space management has been added when space management is globally deactivated for a client node. When

space management is globally deactivated, hierarchical storage management (HSM) cannot perform migration, recall, or reconciliation. However, a root user can update space management settings and add space management to additional file systems. Users can access resident and premigrated files.

Globally Unique Identifier (GUID)
An algorithmically determined number that uniquely identifies an entity within a system.

GPFS™
See *General Parallel File System*.

GPFS node set
A mounted, defined group of GPFS file systems.

group backup
The backup of a group containing a list of files from one or more file space origins.

GUID See *Globally Unique Identifier*.

H

hierarchical storage management (HSM)
A function that automatically distributes and manages data on disk, tape, or both by regarding devices of these types and potentially others as levels in a storage hierarchy that range from fast, expensive devices to slower, cheaper, and possibly removable devices. The objectives are to minimize access time to data and maximize available media capacity.

hierarchical storage management (HSM) client
A client program that works with the Tivoli Storage Manager server to provide hierarchical storage management (HSM) for a system. See also *hierarchical storage management* and *space manager client*.

HSM See *hierarchical storage management*.

HSM client
See *hierarchical storage management client*.

I

ILM See *information lifecycle management*.

image A file system or raw logical volume that is backed up as a single object.

image backup
A backup of a full file system or raw logical volume as a single object.

inactive file system
A file system for which space management has been deactivated. Contrast with *active file system*.

inactive version
A backup version of a file that is either not the most recent backup version, or that is a backup version of a file that no longer exists on the client system. Inactive backup versions are eligible for expiration processing according to the management class assigned to the file. Contrast with *active version*.

include-exclude file

A file containing statements to determine the files to back up and the associated management classes to use for backup or archive. See also *include-exclude list*.

include-exclude list

A list of options that include or exclude selected files for backup. An exclude option identifies files that should not be backed up. An include option identifies files that are exempt from the exclusion rules or assigns a management class to a file or a group of files for backup or archive services.

incremental backup

(1) A copy of all database data that has changed since the most recent successful full backup operation. An incremental backup is also known as a *cumulative backup image* because each incremental backup includes the contents of the previous incremental backup.

(2) The process of backing up information in the database that is new or changed since the last full backup. Contrast with *full backup*. See also *database backup series*.

(3) For Data Protection for Microsoft Exchange Server, a backup in which the transaction logs are backed up and then cleared.

individual mailbox restore

See *mailbox restore*.

information lifecycle management (ILM)

GPFS policy-based file management for storage pools and file sets.

inode The internal structure that describes the individual files on AIX, UNIX, or Linux systems. An inode contains the node, type, owner, and location of a file.

inode number

A number specifying a particular inode file in the file system.

IP address

A unique address for a device or logical unit on a network that uses the IP standard.

J

job file

A generated file that contains configuration information for a migration job. The file is XML format and can be created and edited in the hierarchical storage management (HSM) client for Windows client graphical user interface.

journal-based backup

A method for backing up Windows clients and AIX clients that exploits the change notification mechanism in a file to improve incremental backup performance by reducing the need to fully scan the file system.

journal daemon

On AIX, UNIX, or Linux systems, a program that tracks change activity for files residing in file systems.

journal service

In Microsoft Windows, a program that tracks change activity for files residing in file systems.

K

kilobyte (KB)
For processor storage, real and virtual storage, and channel volume, 210 or 1 024 bytes. For disk storage capacity and communications volume, 1 000 bytes.

L

LAN   See *local area network*.

LAN-free data movement
The movement of client data between a client system and a storage device on a storage area network (SAN), bypassing the local area network. This process is also referred to as *LAN-free data transfer*.

LAN-free data transfer
See *LAN-free data movement*.

leader data
Bytes of data, from the beginning of a migrated file, that are stored in the file's corresponding stub file on the local file system. The amount of leader data that is stored in a stub file depends on the stub size that is specified.

library
(1) A repository for demountable recorded media, such as magnetic disks and magnetic tapes.

(2) A collection of one or more drives, and possibly robotic devices (depending on the library type), which can be used to access storage volumes.

library client
A server that uses server-to-server communication to access a library that is managed by another storage management server. See also *library manager*.

library manager
A server that controls device operations when multiple storage management servers share a storage device. See also *library client*.

local   (1) Pertaining to a device, file, or system that is accessed directly from a user system, without the use of a communication line.

(2) For HSM products, pertaining to the destination of migrated files that are being moved.

local area network (LAN)
A network that connects several devices in a limited area (such as a single building or campus) and that can be connected to a larger network.

local shadow volumes
Data that is stored on shadow volumes localized to a disk storage subsystem.

LOFS   See *loopback virtual file system*.

logical file
A file that is stored in one or more server storage pools, either by itself or as part of an aggregate. See also *aggregate* and *physical file*.

logical occupancy
The space that is used by logical files in a storage pool. This space does

not include the unused space created when logical files are deleted from aggregate files, so it might be less than the physical occupancy.

logical unit (LU)
An access point through which a user or application program accesses the Systems Network Architecture (SNA) network to communicate with another user or application program.

logical unit number (LUN)
In the Small Computer System Interface (SCSI) standard, a unique identifier that is used to differentiate devices, each of which is a logical unit (LU).

logical volume
A portion of a physical volume that contains a file system.

logical volume backup
A backup of a file system or logical volume as a single object.

Logical Volume Snapshot Agent (LVSA)
Software that can act as the snapshot provider for creating a snapshot of a logical volume during an online image backup.

loopback virtual file system (LOFS)
A file system that is created by mounting a directory over another local directory, also known as mount-over-mount. A LOFS can also be generated using an automounter.

LU See *logical unit*.

LUN See *logical unit number*.

LVSA See *Logical Volume Snapshot Agent*.

M

macro file
A file that contains one or more storage manager administrative commands, which can be run only from an administrative client using the MACRO command. Contrast with *Tivoli Storage Manager command script*.

mailbox restore
A function that restores Microsoft Exchange Server data (from IBM Data Protection for Microsoft Exchange backups) at the mailbox level or mailbox-item level.

managed object
In Tivoli Storage Manager, a definition in the database of a managed server that was distributed to the managed server by a configuration manager. When a managed server subscribes to a profile, all objects that are associated with that profile become managed objects in the database of the managed server. In general, a managed object cannot be modified locally on the managed server. Objects can include policy, schedules, client option sets, server scripts, administrator registrations, server definitions, and server group definitions.

managed server
A Tivoli Storage Manager server that receives configuration information from a configuration manager using a subscription to one or more profiles. Configuration information can include definitions of objects such as policy and schedules. See also *configuration manager*, *subscription*, and *profile*.

management class

A policy object that users can bind to each file to specify how the server manages the file. The management class can contain a backup copy group, an archive copy group, and space management attributes. See also *copy group*, *space manager client*, *bind*, and *rebind*.

maximum transmission unit

The largest possible unit of data that can be sent on a given physical medium in a single frame. For example, the maximum transmission unit for Ethernet is 1500 bytes.

MB   See *megabyte*.

media server

In a z/OS® environment, a program that provides access to z/OS disk and tape storage for Tivoli Storage Manager servers that run on operating systems other than z/OS.

megabyte (MB)

(1) 1 048 576 bytes (2 to the 20th power) when used in this publication.

(2) For processor storage, real and virtual storage, and channel volume, 2 to the power of 20 or 1 048 576 bits. For disk storage capacity and communications volume, 1 000 000 bits.

metadata

Data that describes the characteristics of data; descriptive data.

migrate

To move data from one storage location to another. In Tivoli Storage Manager products, migrating can mean moving data from a client node to server storage, or moving data from one storage pool to the next storage pool defined in the server storage hierarchy. In both cases the movement is controlled by policy, such as thresholds that are set. See also *migration threshold*.

migrated file

A file that has been copied from a local file system to Tivoli Storage Manager storage. For HSM clients on UNIX or Linux systems, the file is replaced with a stub file on the local file system. On Windows systems, creation of the stub file is optional. See also *stub file* and *resident file*. For HSM clients on UNIX or Linux systems, contrast with *premigrated file*.

migrate-on-close recall mode

A mode that causes a migrated file to be recalled back to its originating file system temporarily. Contrast with *normal recall mode* and *read-without-recall recall mode*.

migration job

A specification of files to migrate, and actions to perform on the original files after migration. See also *job file*.

migration threshold

High and low capacities for storage pools or file systems, expressed as percentages, at which migration is set to start and stop.

mirroring

The process of writing the same data to multiple locations at the same time. Mirroring data protects against data loss within the recovery log.

mode A copy group attribute that specifies whether to back up a file that has not been modified since the last time the file was backed up. See *modified mode* and *absolute mode*.

modified mode
In storage management, a backup copy-group mode that specifies that a file is considered for incremental backup only if it has changed since the last backup. A file is considered a changed file if the date, size, owner, or permissions of the file have changed. See also *absolute mode*.

mount limit
The maximum number of volumes that can be simultaneously accessed from the same device class. The mount limit determines the maximum number of mount points. See also *mount point*.

mount point
On the Tivoli Storage Manager server, a logical drive through which volumes in a sequential access device class are accessed. For removable-media device types, such as tape, a mount point is a logical drive that is associated with a physical drive. For the file device type, a mount point is a logical drive that is associated with an I/O stream. The number of mount points for a device class is defined by the value of the mount limit attribute for that device class. See also *mount limit*.

mount retention period
The maximum number of minutes that the server retains a mounted sequential-access media volume that is not being used before it dismounts the sequential-access media volume.

mount wait period
The maximum number of minutes that the server waits for a sequential-access volume mount request to be satisfied before canceling the request.

MTU See *maximum transmission unit*.

N

Nagle algorithm
An algorithm that reduces congestion of TCP/IP networks by combining smaller packets and sending them together.

named pipe
A type of interprocess communication that permits message data streams to pass between peer processes, such as between a client and a server.

NAS See *network-attached storage*.

NAS node
A client node that is a network-attached storage (NAS) file server. Data for the NAS node is transferred by a NAS file server that is controlled by the network data management protocol (NDMP). A NAS node is also called a NAS file server node.

native file system
A file system that is locally added to the file server and is not added for space management. The hierarchical storage manager (HSM) client does not provide space management services to the file system.

native format
A format of data that is written to a storage pool directly by the Tivoli Storage Manager server. Contrast with *non-native data format*.

NDMP
See *Network Data Management Protocol*.

NetBIOS
See *Network Basic Input/Output System*.

network-attached storage (NAS) file server
A dedicated storage device with an operating system that is optimized for file-serving functions. A NAS file server can have the characteristics of both a node and a data mover.

Network Basic Input/Output System (NetBIOS)
A standard interface to networks and personal computers that is used on local area networks to provide message, print-server, and file-server functions. Application programs that use NetBIOS do not have to handle the details of LAN data link control (DLC) protocols.

Network Data Management Protocol (NDMP)
A protocol that allows a network storage-management application to control the backup and recovery of an NDMP-compliant file server, without installing vendor-acquired software on that file server.

network data-transfer rate
A rate that is calculated by dividing the total number of bytes that are transferred by the data transfer time. For example, this rate can be the time that is spent transferring data over a network.

node   A file server or workstation on which the backup-archive client program has been installed, and which has been registered to the server.

node name
A unique name that is used to identify a workstation, file server, or PC to the server.

node privilege class
A privilege class that gives an administrator the authority to remotely access backup-archive clients for a specific client node or for all clients in a policy domain. See also *privilege class*.

non-native data format
A format of data that is written to a storage pool that differs from the format that the server uses for operations.

normal recall mode
A mode that causes a migrated file to be copied back to its originating file system when it is accessed.

O

offline volume backup
A backup in which the volume is locked so that no other system applications can access it during the backup operation.

online volume backup
A backup in which the volume is available to other system applications during the backup operation.

open registration
A registration process in which users can register their workstations as client nodes with the server. Contrast with *closed registration*.

operator privilege class
A privilege class that gives an administrator the authority to disable or halt

the server, enable the server, cancel server processes, and manage removable media. See also *privilege class*.

options file
A file that contains processing options. On Windows and NetWare systems, the file is called dsm.opt. On AIX, UNIX, Linux, and Mac OS X systems, the file is called dsm.sys.

originating file system
The file system from which a file was migrated. When a file is recalled using normal or migrate-on-close recall mode, it is always returned to its originating file system.

orphaned stub file
A file for which no migrated file can be found on the Tivoli Storage Manager server that the client node is contacting for space management services. For example, a stub file can be orphaned when the client system-options file is modified to contact a server that is different than the one to which the file was migrated.

out-of-space protection mode
A mode that controls whether the program intercepts out-of-space conditions. See also *execution mode*.

P

pacing
In SNA, a technique by which the receiving system controls the rate of transmission of the sending system to prevent overrun.

packet In data communication, a sequence of binary digits, including data and control signals, that is transmitted and switched as a composite whole.

page A defined unit of space on a storage medium or within a database volume.

partial-file recall mode
A recall mode that causes the hierarchical storage management (HSM) function to read just a portion of a migrated file from storage, as requested by the application accessing the file.

password generation
A process that creates and stores a new password in an encrypted password file when the old password expires. Automatic generation of a password prevents password prompting. Password generation can be set in the options file (`passwordaccess` option). See also *options file*.

path An object that defines a one-to-one relationship between a source and a destination. Using the path, the source accesses the destination. Data can flow from the source to the destination, and back. An example of a source is a data mover (such as a network-attached storage [NAS] file server), and an example of a destination is a tape drive.

pattern-matching character
See *wildcard character*.

physical file
A file that is stored in one or more storage pools, consisting of either a single logical file, or a group of logical files that are packaged together as an aggregate. See also *aggregate* and *logical file*.

physical occupancy
The amount of space that is used by physical files in a storage pool. This

space includes the unused space that is created when logical files are deleted from aggregates. See also *physical file*, *logical file*, and *logical occupancy*.

plug-in
A self-contained software component that modifies (adds, or changes) the function in a particular system. When a plug-in is added to a system, the foundation of the original system remains intact.

policy domain
A grouping of policy users with one or more policy sets, which manage data or storage resources for the users. The users are client nodes that are associated with the policy domain.

policy privilege class
A privilege class that gives an administrator the authority to manage policy objects, register client nodes, and schedule client operations for client nodes. Authority can be restricted to certain policy domains. See also *privilege class*.

policy set
A group of rules in a policy domain. The rules specify how data or storage resources are automatically managed for client nodes in the policy domain. Rules can be contained in management classes. See also *active policy set* and *management class*.

premigrated file
A file that has been copied to Tivoli Storage Manager storage, but has not been replaced with a stub file on the local file system. An identical copy of the file resides both on the local file system and in Tivoli Storage Manager storage. Premigrated files occur on UNIX and Linux file systems to which space management has been added. Contrast with *migrated file* and *resident file*.

premigrated files database
A database that contains information about each file that has been premigrated to Tivoli Storage Manager storage. The database is stored in a hidden directory named `.SpaceMan` in each file system to which space management has been added.

premigration
The process of copying files that are eligible for migration to Tivoli Storage Manager storage, but leaving the original file intact on the local file system.

premigration percentage
A space management setting that controls whether the next eligible candidates in a file system are premigrated following threshold or demand migration.

primary storage pool
A named set of volumes that the server uses to store backup versions of files, archive copies of files, and files migrated from client nodes. See also *destination* and *copy storage pool*.

privilege class
A level of authority that is granted to an administrator. The privilege class determines which administrative tasks the administrator can perform. See also *node privilege class*, *operator privilege class*, *policy privilege class*, *storage privilege class*, and *system privilege class*.

profile

A named group of configuration information that can be distributed from a configuration manager when a managed server subscribes. Configuration information can include registered administrator IDs, policies, client schedules, client option sets, administrative schedules, storage manager command scripts, server definitions, and server group definitions. See also *configuration manager* and *managed server*.

Q

quota (1) For HSM on AIX, UNIX, or Linux systems, the limit (in megabytes) on the amount of data that can be migrated and premigrated from a file system to server storage.

(2) For HSM on Windows systems, a user-defined limit to the space that is occupied by recalled files.

R

randomization

The process of distributing schedule start times for different clients within a specified percentage of the schedule's startup window.

raw logical volume

A portion of a physical volume that is comprised of unallocated blocks and has no journaled file system (JFS) definition. A logical volume is read/write accessible only through low-level I/O functions.

read-without-recall recall mode

A mode that causes hierarchical storage management (HSM) to read a migrated file from storage without storing it back on the local file system. The last piece of information read from the file is stored in a buffer in memory on the local file system. Contrast with *normal recall mode* and *migrate-on-close recall mode*.

rebind

To associate all backed-up versions of a file with a new management class name. For example, a file that has an active backup version is rebound when a later version of the file is backed up with a different management class association. See also *bind*.

recall In Tivoli Storage Manager, to copy a migrated file from server storage back to its originating file system using the space management client. See also *transparent recall*, *selective recall*, and *recall mode*.

recall mode

A mode that is assigned to a migrated file with the **dsmattr** command that determines how the file is processed when it is recalled. It determines whether the file is stored on the local file system, is migrated back to Tivoli Storage Manager storage when it is closed, or is read from Tivoli Storage Manager storage without storing it on the local file system.

receiver

A server repository that contains a log of server and client messages as events. For example, a receiver can be a file exit, a user exit, or the Tivoli Storage Manager server console and activity log. See also *event*.

reclamation

The process of consolidating the remaining data from many sequential-access volumes onto fewer, new sequential-access volumes.

reclamation threshold

The percentage of space that a sequential-access media volume must have before the server can reclaim the volume. Space becomes reclaimable when files are expired or are deleted.

reconciliation

The process of synchronizing a file system with the Tivoli Storage Manager server, and then removing old and obsolete objects from the Tivoli Storage Manager server.

recovery log

A log of updates that are about to be written to the database. The log can be used to recover from system and media failures. The recovery log consists of the active log (including the log mirror) and archive logs.

register

To define a client node or administrator ID that can access the server.

registry

A repository that contains access and configuration information for users, systems, and software.

remote

(1) Pertaining to a system, program, or device that is accessed through a communication line.

(2) For HSM products, pertaining to the origin of migrated files that are being moved.

resident file

On a Windows system, a complete file on a local file system that might also be a migrated file because a migrated copy can exist in Tivoli Storage Manager storage. On a UNIX or Linux system, a complete file on a local file system that has not been migrated or premigrated, or that has been recalled from Tivoli Storage Manager storage and modified. Contrast with *stub file* and *premigrated file*. See *migrated file*.

restore

To copy information from its backup location to the active storage location for use. For example, to copy information from server storage to a client workstation.

retention

The amount of time, in days, that inactive backed-up or archived files are kept in the storage pool before they are deleted. Copy group attributes and default retention grace periods for the domain define retention.

retrieve

To copy archived information from the storage pool to the workstation for use. The retrieve operation does not affect the archive version in the storage pool.

roll back

To remove changes that were made to database files since the last commit point.

root user

A system user who operates without restrictions. A root user has the special rights and privileges needed to perform administrative tasks.

S

SAN   See *storage area network*.

schedule
A database record that describes client operations or administrative commands to be processed. See *administrative command schedule* and *client schedule*.

scheduling mode
The type of scheduling operation for the server and client node that supports two scheduling modes: client-polling and server-prompted.

scratch volume
A labeled volume that is either blank or contains no valid data, that is not defined, and that is available for use.

script A series of commands, combined in a file, that carry out a particular function when the file is run. Scripts are interpreted as they are run. Contrast with *Tivoli Storage Manager command script*.

Secure Sockets Layer (SSL)
A security protocol that provides communication privacy. With SSL, client/server applications can communicate in a way that is designed to prevent eavesdropping, tampering, and message forgery.

selective backup
The process of backing up certain files or directories from a client domain. The files that are backed up are those that are not excluded in the include-exclude list. The files must meet the requirement for serialization in the backup copy group of the management class that is assigned to each file. Contrast with *incremental backup*.

selective migration
The process of copying user-selected files from a local file system to Tivoli Storage Manager storage and replacing the files with stub files on the local file system. Contrast with *threshold migration* and *demand migration*.

selective recall
The process of copying user-selected files from Tivoli Storage Manager storage to a local file system. Contrast with *transparent recall*.

serialization
The process of handling files that are modified during backup or archive processing. See *dynamic serialization*, *static serialization*, *shared static serialization*, and *shared dynamic serialization*.

server A software program or a computer that provides services to other software programs or other computers.

server options file
A file that contains settings that control various server operations. These settings affect such things as communications, devices, and performance.

server-prompted scheduling mode
A client/server communication technique where the server contacts the client node when tasks must be done. Contrast with *client-polling scheduling mode*.

server storage
The primary, copy, and active-data storage pools that are used by the server to store user files such as backup versions, archive copies, and files migrated from space manager client nodes (space-managed files). See also *active-data pool*, *primary storage pool*, *copy storage pool*, *storage pool volume*, and *volume*.

session

A logical or virtual connection between two stations, software programs, or devices on a network that allows the two elements to communicate and exchange data.

session resource usage

The amount of wait time, processor time, and space that is used or retrieved during a client session.

shared dynamic serialization

A value for serialization that specifies that a file must not be backed up or archived if it is being modified during the operation. Tivoli Storage Manager retries the backup or archive operation a number of times; if the file is being modified during each attempt, Tivoli Storage Manager will back up or archive the file on its last try. See also *serialization*. Contrast with *dynamic serialization*, *shared static serialization*, and *static serialization*.

shared library

A library device that is used by multiple storage manager servers.

shared static serialization

A copy-group serialization value that specifies that a file must not be modified during a backup or archive operation. Tivoli Storage Manager attempts to retry the operation a number of times. If the file is in use during each attempt, the file is not backed up or archived. See also *serialization*. Contrast with *dynamic serialization*, *shared dynamic serialization*, and *static serialization*.

snapshot

An image backup type that consists of a point-in-time view of a volume.

space-managed file

A file that is migrated from a client node by the space manager client. The space manager client recalls the file to the client node on demand.

space management

The process of keeping sufficient free storage space available on a local file system for new data by migrating files to server storage. Synonymous with *hierarchical storage management*.

space manager client

A program that runs on a UNIX or Linux system to manage free space on the local file system by migrating files to server storage. The program can recall the files either automatically or selectively. Also called *hierarchical storage management (HSM) client*.

space monitor daemon

A daemon that checks space usage on all file systems for which space management is active, and automatically starts threshold migration when space usage on a file system equals or exceeds its high threshold.

sparse file

A file that is created with a length greater than the data it contains, leaving empty spaces for the future addition of data.

special file

On AIX, UNIX, or Linux systems, a file that defines devices for the system, or temporary files that are created by processes. There are three basic types of special files: first-in, first-out (FIFO); block; and character.

SSL   See *Secure Sockets Layer*.

stabilized file space
A file space that exists on the server but not on the client.

stanza A group of lines in a file that together have a common function or define a part of the system. Each stanza is identified by a name that occurs in the first line of the stanza. Depending on the type of file, a stanza is ended by the next occurrence of a stanza name in the file, or by an explicit end-of-stanza marker. A stanza can also be ended by the end of the file.

startup window
A time period during which a schedule must be initiated.

static serialization
A copy-group serialization value that specifies that a file must not be modified during a backup or archive operation. If the file is in use during the first attempt, the storage manager cannot back up or archive the file. See also *serialization*. Contrast with *dynamic serialization*, *shared dynamic serialization*, and *shared static serialization*.

storage agent
A program that enables the backup and restoration of client data directly to and from storage attached to a storage area network (SAN).

storage area network (SAN)
A dedicated storage network that is tailored to a specific environment, combining servers, systems, storage products, networking products, software, and services.

storage hierarchy
(1) A logical order of primary storage pools, as defined by an administrator. The order is typically based on the speed and capacity of the devices that the storage pools use. The storage hierarchy is defined by identifying the next storage pool in a storage pool definition. See also *storage pool*.

(2) An arrangement of storage devices with different speeds and capacities. The levels of the storage hierarchy include: main storage, such as memory and direct-access storage device (DASD) cache; primary storage (DASD containing user-accessible data); migration level 1 (DASD containing data in a space-saving format); and migration level 2 (tape cartridges containing data in a space-saving format).

storage pool
A named set of storage volumes that are the destination that is used to store client data. A storage pool contains backup versions, archive copies, and files that are migrated from space manager client nodes. A primary storage pool is backed up to a copy storage pool. See also *primary storage pool*, *copy storage pool*, and *active-data pool*.

storage pool volume
A volume that has been assigned to a storage pool. See also *volume*, *active-data pool*, *copy storage pool*, and *primary storage pool*.

storage privilege class
A privilege class that gives an administrator the authority to control how storage resources for the server are allocated and used, such as monitoring the database, the recovery log, and server storage. See also *privilege class*.

stub A shortcut on the Windows file system that is generated by the hierarchical storage management (HSM) client for a migrated file that allows

transparent user access. A stub is the sparse file representation of a migrated file, with a reparse point attached.

stub file
> A file that replaces the original file on a local file system when the file is migrated to storage. A stub file contains the information that is necessary to recall a migrated file from Tivoli Storage Manager storage. It also contains additional information that can be used to eliminate the need to recall a migrated file.

stub file size
> The size of a file that replaces the original file on a local file system when the file is migrated to Tivoli Storage Manager storage. The size that is specified for stub files determines how much leader data can be stored in the stub file. The default for stub file size is the block size defined for a file system minus 1 byte.

subscription
> In a Tivoli environment, the process of identifying the subscribers that the profiles are distributed to. For Tivoli Storage Manager, a subscription is the process by which a managed server receives configuration information associated with a particular profile on a configuration manager. See also *managed server*, *configuration manager*, and *profile*.

system privilege class
> A privilege class that gives an administrator the authority to issue all server commands. See also *privilege class*.

Systems Network Architecture (SNA)
> The description of the logical structure, formats, protocols, and operational sequences for transmitting information through and controlling the configuration and operation of networks.

T

tape library
> A set of equipment and facilities that support an installation's tape environment. The tape library can include tape storage racks, mechanisms for automatic tape mounting, a set of tape drives, and a set of related tape volumes mounted on those drives.

tape volume prefix
> The high-level-qualifier of the file name or the data set name in the standard tape label.

target node
> A client node for which other client nodes (called agent nodes) have been granted proxy authority. The proxy authority allows the agent nodes to perform operations such as backup and restore on behalf of the target node, which owns the data.

TCA See *trusted communications agent*.

TCP/IP
> See *Transmission Control Protocol/Internet Protocol*.

threshold migration
> The process of moving files from a local file system to Tivoli Storage Manager storage based on the high and low thresholds that are defined for the file system. Contrast with *demand migration*, *selective migration*, and *migration job*.

throughput

In storage management, the total bytes in the workload, excluding overhead, that are backed up or restored, divided by elapsed time.

timeout

A time interval that is allotted for an event to occur or complete before operation is interrupted.

timestamp control mode

A mode that determines whether commands preserve the access time for a file or set it to the current time.

Tivoli Storage Manager command script

A sequence of Tivoli Storage Manager administrative commands that are stored in the database of the Tivoli Storage Manager server. The script can run from any interface to the server. The script can include substitution for command parameters and conditional logic.

tombstone object

A small subset of attributes of a deleted object. The tombstone object is retained for a specified period, and at the end of the specified period, the tombstone object is permanently deleted.

Transmission Control Protocol/Internet Protocol (TCP/IP)

An industry-standard, nonproprietary set of communication protocols that provides reliable end-to-end connections between applications over interconnected networks of different types.

transparent recall

The process that is used to automatically recall a file to a workstation or file server when the file is accessed. See also *recall mode*. Contrast with *selective recall*.

trusted communications agent (TCA)

A program that handles the sign-on password protocol when clients use password generation.

U

UCS-2 A 2-byte (16-bit) encoding scheme based on ISO/IEC specification 10646-1. UCS-2 defines three levels of implementation: Level 1-No combining of encoded elements allowed; Level 2-Combining of encoded elements is allowed only for Thai, Indic, Hebrew, and Arabic; Level 3-Any combination of encoded elements are allowed.

UNC See *Universal Naming Convention name*.

Unicode

A character encoding standard that supports the interchange, processing, and display of text that is written in the common languages around the world, plus some classical and historical texts. The Unicode standard has a 16-bit character set defined by ISO 10646.

Unicode-enabled file space

Unicode file space names provide support for multilingual workstations without regard for the current locale.

Unicode transformation format 8

Unicode Transformation Format (UTF), 8-bit encoding form, which is designed for ease of use with existing ASCII-based systems. The CCSID value for data in UTF-8 format is 1208.

Universal Naming Convention (UNC) name
A name that is used to access a drive or directory containing files shared across a network. The UNC name includes the system name and a SharePoint name that represents the shared drive or directory.

Universally Unique Identifier (UUID)
The 128-bit numeric identifier that is used to ensure that two components do not have the same identifier.

UTF-8 See *Unicode transformation format 8*.

UUID See *Universally Unique Identifier*.

V

validate
To check a policy set for conditions that can cause problems if that policy set becomes the active policy set. For example, the validation process checks whether the policy set contains a default management class.

version
A backup copy of a file stored in server storage. The most recent backup copy of a file is the active version. Earlier copies of the same file are inactive versions. The number of versions retained by the server is determined by the copy group attributes in the management class.

virtual file space
A representation of a directory on a network-attached storage (NAS) file system as a path to that directory.

virtual volume
An archive file on a target server that represents a sequential media volume to a source server.

volume
A discrete unit of storage on disk, tape or other data recording medium that supports some form of identifier and parameter list, such as a volume label or input/output control. See also *scratch volume*, and *storage pool volume*.

volume history file
A file that contains information about volumes that have been used by the server for database backups and for export of administrator, node, policy, or server data. The file also has information about sequential-access storage pool volumes that have been added, reused, or deleted. The information is a copy of volume information that is recorded in the server database.

Volume Shadow Copy Service
A set of Microsoft application-programming interfaces (APIs) that you can use to create shadow copy backups of volumes, exact copies of files, including all open files, and so on.

VSS See *Volume Shadow Copy Service*.

VSS Backup
A backup operation that uses Microsoft Volume Shadow Copy Service (VSS) technology. The backup operation produces an online snapshot (point-in-time consistent copy) of Microsoft Exchange data. This copy can be stored on local shadow volumes or on Tivoli Storage Manager server storage.

VSS Fast Restore
A function that uses a Microsoft Volume Shadow Copy Service (VSS)

software provider to restore VSS Backups (IBM Data Protection for Microsoft Exchange database files and log files) that reside on local shadow volumes.

VSS Instant Restore
A volume-level hardware-assisted Microsoft Volume Shadow Copy Service (VSS) function where target volumes that contain the snapshot are copied back to the original source volumes.

VSS offloaded backup
A backup operation that uses a Microsoft Volume Shadow Copy Service (VSS) hardware provider (installed on an alternate system) to move IBM Data Protection for Microsoft Exchange data to the Tivoli Storage Manager server. This type of backup operation shifts the backup load from the production system to another system.

VSS Restore
A function that uses a Microsoft Volume Shadow Copy Service (VSS) software provider to restore VSS Backups (IBM Data Protection for Microsoft Exchange database files and log files) that reside on Tivoli Storage Manager server storage to their original location.

W

wildcard character
A special character such as an asterisk (*) or a question mark (?) that can be used to represent one or more characters. Any character or set of characters can replace the wildcard character.

workstation
A terminal or personal computer at which a user can run applications and that is usually connected to a mainframe or a network.

worldwide name
A 64-bit, unsigned name identifier that is unique.

workload partition (WPAR)
A partition within a single operating system instance.

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