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Hitachi HiCommand™ Device Manager Agent Installation Guide

HiCommand™ Device Manager Version 2.3

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Document Revision Level

Revision	Date	Description
MK-92HC019-0	November 2002	Initial Release ***Note***: This document supersedes and replaces *HiCommand™ Device Manager HiScan™ Installation Guide* (MK-91HC005-4).
MK-92HC019-1	May 2003	Revision 1, supersedes and replaces MK-92HC019-0

Source Documents for this Revision

- MK-92HC0191e
- HDS review of this document

Changes to This Revision

- Updated microcode version (Front Matter)
- Updated information on installing agent in a Solaris environment (section 2.7 Updated information on installing agent in a Solaris environment (section 2.7))
- Updated information on installing agent in an AIX environment (section 2.8)
- Updated information on installing agent in an HP-UX environment (section 2.8)
- Added note about third party agents (throughout document and in Preface)

Software Revision Level

This document is written to support version 2.3 of the HiCommand™ Device Manager - Agent software.

Referenced Documents

- *HiCommand Device Manager Server Installation and Configuration Guide,* MK-91HC002
- *Hitachi Lightning 9900™ V Series User and Reference Guide,* MK-92RD100
- *Hitachi Lightning 9900™ User and Reference Guide,* MK-90RD008
- *Hitachi Thunder 9500™ V Series User and Reference Guide,* MK-92RD100
- *Hitachi Thunder 9200™ User and Reference Guide,* MK-90DF504
- Sun™ StorEdge™ T3 and T3+ Array Installation, Operation, Service Manual, 816-0773-1

Preface

The HiCommand Device Manager Agent Installation Guide describes and provides instructions for installing the HiCommand Device Manager Agent software for HiCommand Device Manager. This document assumes that the:

- user has a background in data processing and understands peripheral storage device subsystems and their basic functions,
- user has read and understands the user guide for the Hitachi storage subsystem, including *Hitachi Lightning 9900™ V Series User and Reference Guide*, MK-92RD100, *Hitachi Lightning 9900™ User and Reference Guide*, MK-90RD008, *Hitachi Thunder 9500™ V Series User and Reference Guide*, MK-92DF601, *Hitachi Thunder 9200™ User and Reference Guide*, MK-90DF504, and the *Sun™ StorEdge™ T3 and T3+ Array Installation, Operation, and Service Manual*,
- user is familiar with the host operating system (for example, Windows NT®).

Note: The term "9900V" refers to the entire Hitachi Lightning 9900™ V Series subsystem family, unless otherwise noted.

Note: The term "9900" refers to the entire Hitachi Lightning 9900™ subsystem family, unless otherwise noted. Please refer to the Hitachi Lightning 9900™ User and Reference Guide (MK-90RD008) for further information on the 9900 disk array subsystems.

Note: The term "9500" refers to the entire Hitachi Thunder 9500™ subsystem family, unless otherwise noted. Please refer to the *Hitachi Thunder 9500™ V Series User and Reference Guide* (MK-92RD100) for further information on the 9500V disk array subsystem

Note: The term "9200" refers to the entire Hitachi Thunder 9200™ subsystem family, unless otherwise noted. Please refer to the *Hitachi Thunder 9200™ User and Reference Guide* (MK-90DF504) for further information on the 9200 disk array subsystem.

Note: Please refer to the Sun™ StorEdge™ T3 and T3+ Array Installation, Operation, and Service Manual (816-0773-10) for further information on the T3 array subsystem.

Third-party agents are available for other servers. For the latest information about these agents, please contact your Hitachi Data System representative or refer to documentation about a specific agent.

The use of HiCommand Device Manager and all other Hitachi Data Systems products is governed by the terms of your license agreement(s) with Hitachi Data Systems.

The use of the Sun™ StorEdge™ T3 Array and all other Sun™ products is governed by the terms of your license agreement(s) with Sun Microsystems.

COMMENTS

Please send us your comments on this document: doc.comments@hds.com.

Make sure to include the document title, number, and revision.
Please refer to specific page(s) and paragraph(s) whenever possible.

(All comments become the property of Hitachi Data Systems Corporation.)

Thank you!

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Chapter 1 Overview of HiCommand Device Manager Agent

The Hitachi Data Systems licensed HiCommand Device Manager Agent software runs on the host servers. It finds the attached Hitachi storage devices (logical units, LUs) on Hitachi storage subsystems, and forwards this information to remote hosts, such as the HiCommand Device Manager Server.

HiCommand Device Manager Agent incorporates two programs: Daemon for Solaris, AIX, or other UNIX platforms (on a Windows® platform, it is called Service) and WebServer.

When the HiCommand Device Manager Agent receives a request from a remote host such as HiCommand Device Manager Server, the daemon process generates the WebServer process. The WebServer process gathers server-side information and forwards this information to the remote host via TCP/IP. This information includes utilization of LU capacity, host bus adapter (HBA) worldwide names (WWNs), mount points, file system types and names, and the operating system's SCSI address. The HiCommand Device Manager Server presents its view of Hitachi storage resources to the HiCommand Device Manager client.

Display this information by executing the **hldutil** command or send this information by executing the **HiScan** command. The **hldutil** command and **HiScan** command are part of the command line interface in the HiCommand Device Manager Agent.

In a standard installation of HiCommand Device Manager Agent, the operating system task scheduler is configured to execute the HiScan command on a periodic basis. The recommended duration for a HiScan execution configuration is from 30 minutes to as long as 24 hours, depending upon your operational environment. The Agent (HiScan) parameters include the IP address of the HiCommand Device Manager Server.

Note: Third-party agents are available for other servers. For the latest information about these agents, please contact your Hitachi Data System representative or refer to documentation about a specific agent.

1.1 Minimum Levels of Firmware and Microcode

The minimum levels of firmware and microcode required for HiCommand operations are:

- Sun™ StorEdge™ T3 firmware revisions: 1.1.7, 2.0.0
- Hitachi Freedom Storage™ Thunder 9200™ microcode level: 0559
- Hitachi Freedom Storage™ Lightning 9900™ microcode level: 01-13-19 (if not using CVS/LUSE functions)
- Hitachi Freedom Storage™ Lightning 9900™ microcode level: 01-15-39-00/05 (if using CVS/LUSE functions)
- Hitachi Freedom Storage™ Lightning 9900™ V microcode level: 21-01-50/00

The use of HiCommand Device Manager, HiCommand Device Manager Agent, and all other Hitachi Data Systems products is governed by the terms of your license agreement(s) with Hitachi Data Systems.

Chapter 2 Installation Requirements and Procedures

2.1 Supported Operating Systems

Operating systems supported by HiCommand Device Manager – Agent are listed in Table 2.1.

Table 2.1 Supported Operating Systems

No	Operating System	Revision and Version
1	Windows NT®	4.0 (SP6a required)
2	Windows® 2000	SP2 or SP3 required
3	Solaris™	2.6 (the Solaris™ 2.6 recommended Patch Cluster is required)
4		7 (the Solaris™ 2.7 recommended Patch Cluster is required)
5		8 (the Solaris™ 8 recommended Patch Cluster is required)
6		9 (the Solaris™ 9 recommended Patch Cluster is required)
7	AIX®	4.3.3
8		5.1
9		5.2
10	HP-UX®	11.0
11		11.i

Note: Third-party agents are available for other servers. For the latest information about these agents, please contact your Hitachi Data System representative or refer to documentation about a specific agent.

2.2 Requirements for Connecting to Hitachi Data Systems Storage Subsystems

The Hitachi storage subsystem models that are supported by HiCommand Device Manager Agent are listed in Table 2.2.

Table 2.2 Supported Hitachi Storage Subsystems

Storage Subsystem	DKC Microcode/firmware Revision and Version
Lightning 9900V	21-01-50/00 or later
Lightning 9900	01-13-19 or later ***(Note 1)***
	01-15-39-00/05 or later ***(Note 1)***
Thunder 9500V	0651 or later
Thunder 9200	0559 or later 355E ***(Note 2)***

Note 1: For LUSE or CVS, 01-15-39 or higher is required.

Note 2: Required for a 128 LUNS per port configuration.

If the host installed HiCommand Device Manager – Agent is connected to a Hitachi storage subsytem, all HBA models supported by that subsystem are available. Please refer to the appropriate Hitachi Data Systems documentation.

IMPORTANT: For 9200 LUN attachments, HiCommand Device Manager – Agent requires that the Hitachi Freedom Storage™ Thunder 9200™ array be configured with the Report Inquiry Page 83H option and Standard INQUIRY data expand Mode. Refer to the *Hitachi Freedom Storage™ Thunder 9200™ (DF500) Hitachi Disk Array Subsystem Installation Manual Rev. 2* (FE-98DF369), Appendix 2, System Parameter Setting, for details.

2.3 Requirements for Connecting to the Sun™ StorEdge™ T3

If connecting to a Sun™ StorEdge™ T3, the required HBA, driver software, and HBA API software is listed in Table 2.3.

Table 2.3 Requirements Connecting to Sun™ StorEdge™ T3

OS	HBA Model	Notes
Solaris	***JNI FCI-1063***	(See ***Notes 1 and 4***)
	JNI FC64-1063	
	JNI FCE-6410	
	JNI FCE-6460	(See ***Notes 1, 2, and 4***)
	QLogic QLA2200	(See ***Notes 3 and 4***)
HP-UX V11.0	HP A3404A	
	HP A3740A	
	HP A5158A	
Windows 2000 SP2 or later NT EE4.0 SP 6a	***Emulex LP8000***	(See ***Note 4***)
AIX 4.3.3	IBM6227	

Note 1: If the vendor of HBA JNI, the API Library "JNI SNIA Fibre Channel HBA LIBRARY v1.0.0.0.0.b.011205-15 or later" is required, that is bundled to driver software.

Note 2: This HBA model is not available for Solaris 9 OS.

Note 3: If the vendor of HBA is QLogic, the required API Library (QLogic SDM Library v1.25 or later) is bundled to driver software.

Note 4: The required API Library is supplied by the HBA vendor.

Note: For additional information about HBAs and related driver software, see http://www.sun.com/storage/t3/nonsun_support.html.

Note: The required firmware version of Sun™ StorEdge™ T3 is 1.1.7 or 2.0.0

2.4 Finding the WWN when not Connected to a Subsystem

If a storage subsytem is connected to the host but not to a subsystem, and you want to find the WWN of an HBA, the required HBA and its HBA API driver software is listed in Table 2.4.

Table 2.4 Requirement for Identifying the WWN when not connected to a Storage Subsystem

OS	HBA	Notes
Solaris	JNI FCI-1063	***(Notes 1 and 4)***
	JNI FC64-1063	
	JNI FCE-6410	
	JNI FCE-6460	***(Notes 1,2, and 4)***
	QLogic QLA2200	***(Note 3 and 4)***
HP-UX	HP A3404A	
	HP A3591B	
	HP A3636A	
	HP A3740A	
	HP A5158A	
	HP A6684A	
	HP A6685A	
	HP A6795A	
Windows 2000 SP2 or later NT EE4.0 SP 6a	**Emulex LP8000**	***(Note 4)***
AIX	IBM6227	
	IBM6228	

Note 1: If the vendor of HBA is JNI, the required API Library (SNIA Fibre Channel HBA LIBRARY" (v1.0.0.0.0.b.011205-15 or later) is bundled to driver software. For the latest JNI HBA information, please see the JNI website.

Note 2: This HBA model is not available for Solaris 9 OS.

Note 3: If the vendor of HBA is QLogic, the required API Library (QLogic SDM Library v1.25 or later) is bundled to driver software.

Note 4: The required API Library is supplied by the HBA vendor.

2.5 Requirements for using FC-HUB (FC-SWITCH)

If you connect the host with storage subsystems via FC-HUB/FC-SWITCH, you have to confirm whether FC-HUB/FC-SWITCH and its firmware are available for the storage subsystem.

Please refer the appropriate documentation for your storage subystem.

2.6 Installing HiCommand Agent on a Windows® 2000 or Windows NT® System

Before installing HiCommand Device Manager Agent on a Windows NT® system:

- Remove any previous HiScan installation.
  - Select **Start → Settings → Control Panel → Add/Remove Programs**.
  - Select a Hitachi HiCommand Agent (HiScan) listing. (Before removing, you may inspect its execution parameters by opening its properties folder and examining the task tab. (See section 3.1 for an interpretation of the Agent scheduling entry.)
  - Select **Change/Remove**.

To install HiCommand Agent:

1. Logon to Windows using a User ID in the Administrators Group. Insert the HiCommand Device Manager Agent CD-ROM. Select **Run → Browse → `install.exe`** (from the root directory of the CD-ROM). The **HiCommand Device Manager Agent Introduction** panel displays (see Figure 2.1).

   Note: Before starting the installation, cancel any programs that may be running.

2. Select **Next** to continue. The Agent **License Agreement** panel displays (see Figure 2.2).

3. Select **Next** to continue. The **Choose Install Folder** panel displays (see Figure 2.3). Select the folder in which you want HiCommand Agent to be installed.

4. Select **Next**. The HiCommand Device Manager Agent installation parameters panel displays (see Figure 2.4). Enter the HiCommand Server information.

   Note: The parameters are used for specifying the properties of the HiCommand Device Manager Agent. See section 3.1 for further information on these options.

5. Select **Next**. The **Choose HiCommand Device Manager Agent Execution Frequency** panel displays (see Figure 2.5). Enter the HiScan execution parameters.

6. Select **Next**. The Pre-Installation Summary panel displays (see Figure 2.6).

7. Select **Install** to continue.

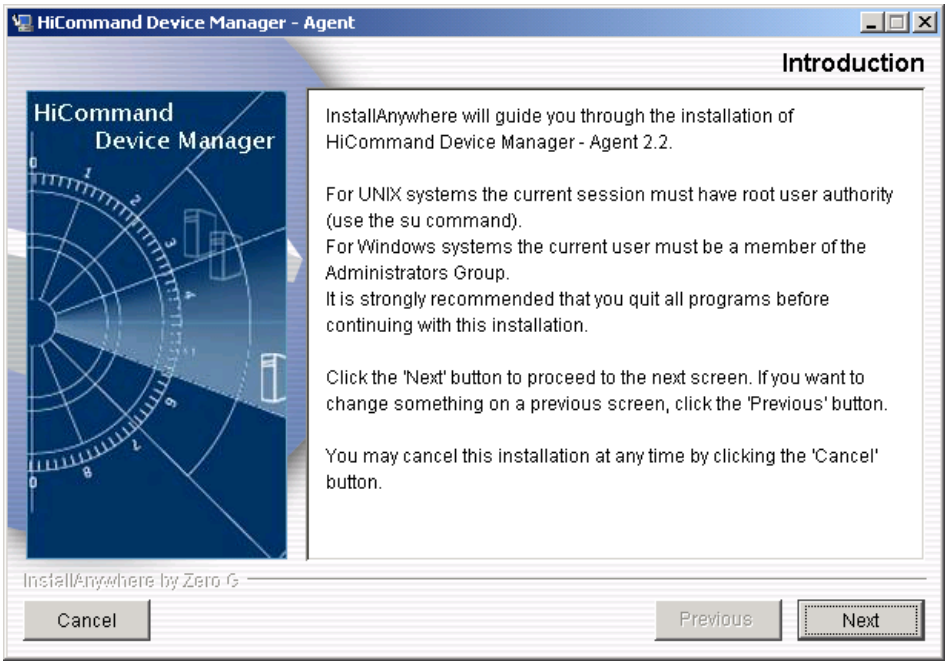

Figure 2.1 HiCommand Device Manager Agent Introduction

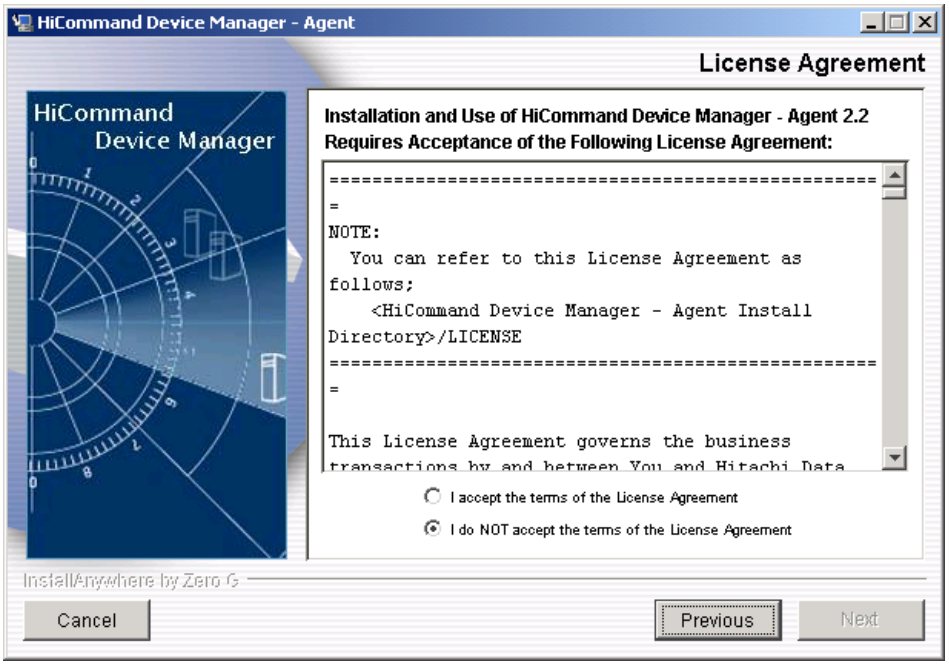

Figure 2.2 HiCommand Device Manager Agent License Agreement

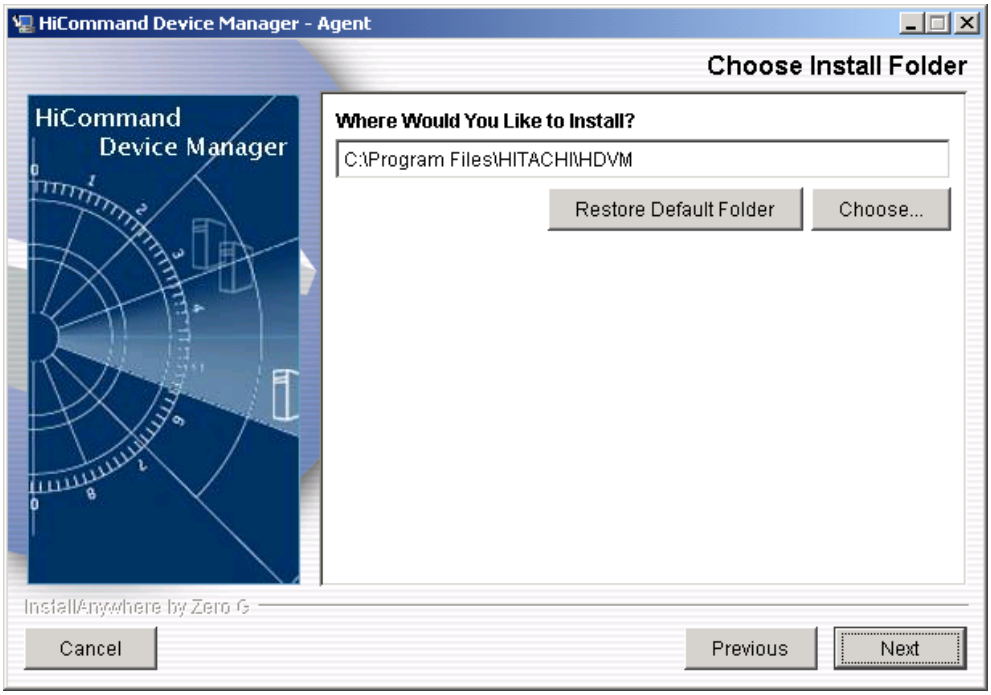

Figure 2.3 HiCommand Device Manager Agent Choose Install Folder

Figure 2.4 HiCommand Device Manager Agent HiCommand Server Information

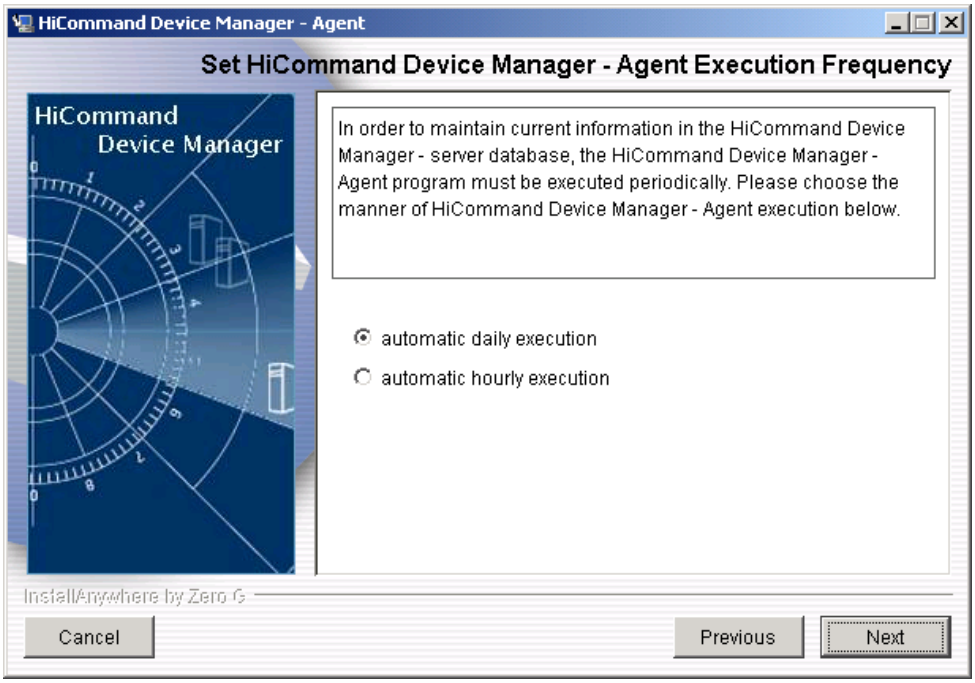

Figure 2.5 HiCommand Device Manager Agent Set Execution Frequency

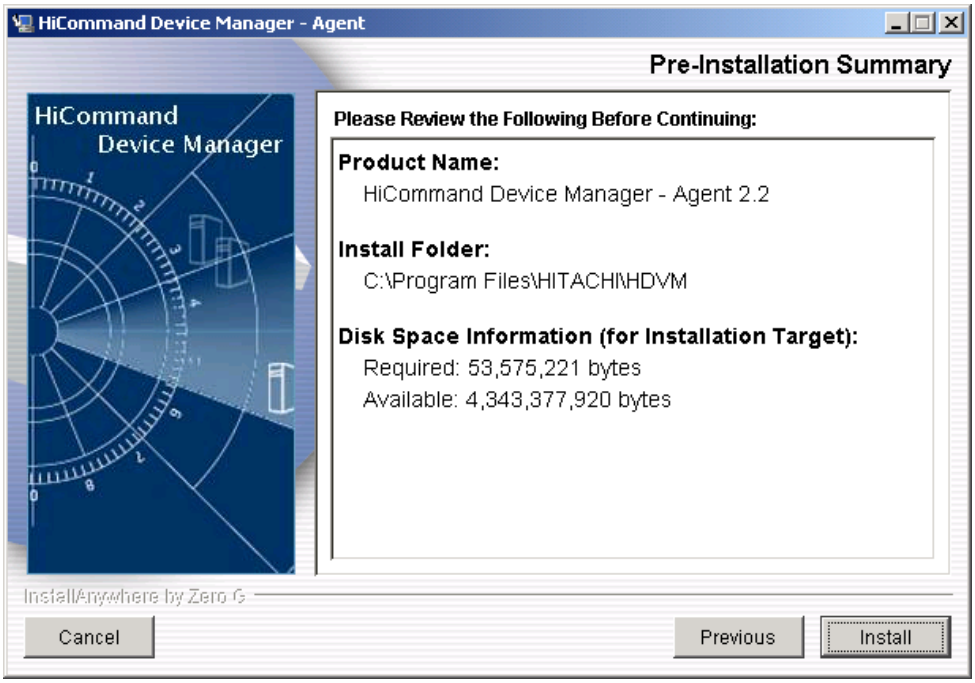

Figure 2.6 HiCommand Device Manager Agent Pre-Installation Summary

2.7 Installing HiCommand Device Manager Agent on a Solaris™ System

Before installing HiCommand Device Manager Agent on a Solaris™ System:

- Remove any HiScan package installed on your system. (HiScan is installed in the directory `/opt/HDVM`.) At the prompt, use the following commands to check for the presence of a HiScan *or* an HDVMAgent package installation:

  % **su**

  # **pkginfo –l HDSHiScan** *or*

  # **pkginfo –l HDVMAgent**

  Note: HDSHiScan is the name used for versions prior to 2.0. HDVMAgent is the name used for version 2.0 and higher.

  Note: If the HDS HiScan package is already installed, you may wish to review the HiScan execution parameters before uninstalling. Enter the following commands: (See section 3.1 for an interpretation of the HiScan scheduling entry.)

  % **su**

  # **crontab –l**

- To remove the existing HiScan or HDVMAgent package, enter the following commands:

  % **su**

  # **pkgrm HDSHiScan** *or*

  # pkgrm HDVMAgent

  The screen will verify that the selected program has been deinstalled.

  Please see Figure 2.7 for a complete screen example of installing the HiCommand Device Manager Agent in a Solaris environment.

To install HiCommand Device Manager Agent:

1. Insert the HiCommand Device Manager Agent CD-ROM and mount it. The File Manager will automatically mount the CD-ROM on the Solaris system:

   sh-2.05# cd /cdrom/cdrom0/Solaris

   sh-2.05# ls

   The screen will list CD-ROM contents.

2. Type **sh-2.05# pkgadd -d ./HDVMAgent**
   You will see a listing of pre-installed filesets and will be asked to make a selection. You may also select **all** (default).

3. At this point, software licensing agreement information will appear. You will be asked if you accept the licensing agreement.

4. Following acceptance of the licensing agreement, information about the server IP address and socket number will appear. You will be asked for a server IP address, a userID (ususally "hauser"), and a server user password (usually "haset").

5. A message will appear asking you to state the frequency of execution. Select **1** for automataic daily execution, or **2** for automatic hourly execution.

6. The screen will confirm recording of installation parameters.
7. You will be asked if you want to continue installing HDVAgent. Type **y** or **n**.
8. If you typed **y**, the screen will state that the preinstallation script is executing and will also list all files being executed. If you typed **n**, you will exit the system and the installation process ends.
9. The screen will confirm when installation of HDVAgent is complete.
10. Run the **hdvmagt_account** command to confirm server property information listed in Step 4. You may edit this information if necessary. After making any changes, type (**y**)es or (**n**)o to save the information. ***Note:*** Any changes made here must also be made on the Device Manager server, such as pointing to a different server.
11. Run the **hdvmagt_schedule** command to confirm the chosen execution schedule entered in Step 5. You may edit this information if necessary.
12. To execute the Agent without waiting for CRON to run using a script, type **cat hitest.**

    This will take several minutes to complete. When the process completes, do a refresh of the Device Manager server to view the information sent from HiScan.

```
# cd /cdrom                          ← See Step 1 for mounting the HCDMAgent CD-ROM.
# ls
build_0230_08       cdrom0

sh-2.05# cd cdrom0

sh-2.05# ls

AIX                          ← CD-ROM content lists here.  //See Craig's comments.//

HPUX
ReadMe.wri
Solaris
Windows


sh-2.05# cd Solaris
sh-2.05# ls
HDVM_02-30_sol.tar.gz  HostAgent
install.sh
sh-2.05# cd HostAgent
sh-2.05# ls
HDVMAgent
sh-2.05# pwd
/cdrom/cdrom0/Solaris/HostAgent


sh-2.05# pkgadd -d ./HDVMAgent       ← See Step 2 for executing the install of HDVMAgent.


The following packages are available:
  1  HDVMAgent     HiCommand Device Manager - Agent (Build 0230-08)
                   (sparc) 2.3

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]: ← See Step 3 for selecting packages.

Processing package instance <HDVMAgent> from
</cdrom/build_0230_08/Solaris/HostAgent/HDVMAgent>

HiCommand Device Manager - Agent (Build 0230-08)
(sparc) 2.3
Copyright (C) 2001, 2003, Hitachi, Ltd.


================================================================================
License Agreement                  ← HDS licensing information is shown here.
-----------------

Installation and use of HiCommand Device Manager - Agent 2.3 requires
acceptance of the following License Agreement:

================================================
NOTE:
  You can refer to this License Agreement as follows;
    <HiCommand Device Manager - Agent Install Directory>/LICENSE
================================================

This License Agreement governs the business transactions by and between You and Hitachi
Data Systems Corporation ("HDS") whereby You are licensing HiCommand Device Manager
("Product") and related programs distributed together with the Product ("Related
Programs"), etc.…

DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N): y
```

```
================================================================================
HiCommand Device Manager - Agent communicates with a HiCommand Device Manager - Server.


Enter HiCommand Device Manager - Server IP address (ex: 255.255.255.255)
  : 255.255.255.0    ← See Step 3.
================================================================================

The HiCommand Device Manager - Server uses a configurable socket number.


Enter HiCommand Device Manager - Server socket number (default: 2001)
  : 2001

================================================================================
HiCommand Device Manager - Agent must use a userid to update the HiCommand Device Manager -
Server database.

Enter HiCommand Device Manager - Server userid (normally: hauser)
  : hauser
================================================================================

HiCommand Device Manager - Agent must supply a password for the HiCommand Device Manager -
Server user.


Enter HiCommand Device Manager - Server user password (normally: haset)
  : haset

================================================================================

Choose the frequency for automatic execution.


  ->1- automatic daily execution
    2- automatic hourly execution

Choose the frequency (default daily:1): 2    ← See Step 4.

================================================================================

Recording installation parameters...
## Executing checkinstall script.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <HDVMAgent> [y,n,?] y ← See Step 6.

Installing HiCommand Device Manager - Agent (Build 0230-06) as <HDVMAgent>

## Executing preinstall script.  ← Lists all files that are executing. (Partial list
                                    shown).
## Installing part 1 of 1.
/etc/hdmaconf
/etc/init.d/hdmarc
/opt/HDVM/LICENSE
/opt/HDVM/agent/JRE/CHANGES
/opt/HDVM/agent/JRE/COPYRIGHT
```

```
etc.

Installation of <HDVMAgent> was successful.
#  pkginfo –l HDVMAgent              ← Confirms HDVMAgent installation.

bash-2.05# ./hdvmagt_account                ← See Step 9.
IPAddress      : 255.255.254.0
port           : 2001
userID         : hauser

Would you like to change the HDVM server information? (y)es or (n)o. (default:n) y

Enter the IP address of the HDVM server. (default:255.255.254.0)

Enter the port for the HDVM server. (default:2001)

Enter the HDVM server user ID. (default:hauser)

Enter the HDVM server password.         ← Note: you must input the name "haset" or change
                                      it, or you'll see a message "password is invalid.

The specified password is invalid.
Enter the HDVM server password.
haset
Would you like to save to server.properties? (y)es or (n)o. (default:n) ← Saves edits.
y
Saving server.properties...
server.properties was saved successfully.
bash-2.05#

-----------------------------------------------
Solaris - running the hdvmagt_schedule command.
-----------------------------------------------

./hdvmagt_schedule           ← See Step 10.

Do you change the execution period of HiScan command? (Y)es or (N)o. (default:N): y

Enter execution period: (H)ourly or (D)aily  (default:D): h

Configuration of the HiScan automatic execution shedule is completed.

-------------------------------------------------
cat hitest           ← Executes the agent without waiting for CRON to run. See Step 11.
-------------------------------------------------
#!/bin/sh

while true
do
echo "About to run HiScan Manually"
echo "to run HiScan - Press return "
read val

echo "Running against sasol10 - 11.11.10.10"
/opt/HDVM/bin/HiScan -s 11.11.10.10:2001 -u hauser -p haset -t
/TEST/HISCAN/HiScanTest_2.3._bld8_S10.msg

echo "done - going around again"
done

# end of file
```

Figure 2.7 Example of Installing HCDM Agent in a Solaris Environment

2.8 Installing HiCommand Device Manager Agent on an AIX® System

Before installing HiCommand Device Manager Agent on an AIX® System:

- Remove any HiScan package installed on your system. (HiScan is installed in the directory `/opt/HDVM`.) At the prompt, use the following commands to check for the presence of a HiScan *or* an HDVMAgent package installation:

  % **su**

  # **pkginfo –l HDSHiScan** *or*

  # **pkginfo –l HDVMAgent**

  Note: HDSHiScan is the name used for versions prior to 2.0. HDVMAgent is the name used for version 2.0 and higher.

  Note: If the HDS HiScan package is already installed, you may wish to review the HiScan execution parameters before uninstalling. Enter the following commands (see section 3.1 for an interpretation of the HiScan scheduling entry):

  % **su**

  # **crontab –l**

- To remove the existing HiScan or HDVMAgent package, enter the following commands:

  % su

  # **installp -u HDSHiScan**

  # **installp –u HDVMAgent.rte**

- Check for the presence of the Java® JRE (version 1.3.1) package using the following commands:

  % **ls /usr/java131**

  % **lslpp –l | grep Java ./java –version**

  Note: If the JRE (version 1.3.1) package is not installed on your system, please install it from CD-ROM that is bundled with the AIX® systems. If the correct version of JRE is not bundled, please download it from the AIX® web page and install it. Refer to your AIX® documentation for further information on JRE.

  The screen will verify that the selected program has been deinstalled.

  Please see Figure 2.8 for a complete screen example of installing the HiCommand Device Manager Agent in an AIX environment.

To install HiCommand Device Manager Agent:

1. Insert the HiCommand Device Manager Agent CD-ROM and mount it Execute the following commands:

   ```
   #mount      –v cdrfs –r /dev/cd0 /cdrom
               cd cdrom/AIX (to verify CD-ROM contents)
                ls

   $ installp –d cdrom/AIX/HostAgent HDVMAgent
   ```

   – Execute the following command to setup HiCommand Device Manager – Agent. See section 3.3 for further information.
   $ **hdvmagt_account**

   – Execute the following command to setup HiScan auto-execution period. See section 3.4 for further information.
   $ **hdvmagt_schedule**

   A listing of pre-installed filesets will appear on your screen.

2. At this point, software licensing agreement information will appear. You will be asked if you accept the licensing agreement.
3. Following acceptance, You may view the configuration files, but not edit them.
4. Verify that the Agent was successfully installed by typing the **lslpp –l HDVMAgent.rte** command.
5. To configure the AIX system, type **cd config** to go into the config.directory.
6. ***Note***: You must use **hdvmagt_account** and **hdvmagt_schedule** to edit the configuration files.
7. To confirm and run the setup commands, enter the **./hdvmagt_account** command.

   You will be asked if you would like to change the HDVM server information. Type (**y**)es or (**n**)o. The default is **n**. You may edit the IP address, the HDVM server port, and the user ID and password. You will be asked if you want to save your changes. Type (**y**)es or (**n**)o. The default is **n**.

   The screen will confirm recording of setup parameters.

7. Type **./hdvmagt_schedule** to change the execution period of the HiScan command. Type **y** or **n**. A message will appear asking you to state the frequency of execution. Select **D** for automataic daily execution, or **H** for automatic hourly execution.

   The screen will confirm recording of execution parameters.

8. To execute the Agent using a script and without having to wait for CRON to run, type **cat hitest.**

   This will take several minutes to complete. When the process completes, do a refresh of the Device Manager server to view the information sent from HiScan.

```
Note: hdvmagent will start the agent
      stop_hdvmagt will stop it

# installp -u HDVMAgent.rte
+-----------------------------------------------------------------------------+
                 Pre-deinstall Verification...
+-----------------------------------------------------------------------------+
Verifying selections...done
Verifying requisites...done
Results...

SUCCESSES
---------
  Filesets listed in this section passed pre-deinstall verification
  and will be removed.

  Selected Filesets
  -----------------
  HDVMAgent.rte 2.3.0.0                      # HiCommand Device Manager - A...

  << End of Success Section >>

FILESET STATISTICS
------------------
    1  Selected to be deinstalled, of which:
        1  Passed pre-deinstall verification
  ----
    1  Total to be deinstalled

+-----------------------------------------------------------------------------+
                       Deinstalling Software...
+-----------------------------------------------------------------------------+

installp:  DEINSTALLING software for:
     HDVMAgent.rte 2.3.0.0

Finished processing all filesets.  (Total time:  6 secs).

+-----------------------------------------------------------------------------+
                            Summaries:
+-----------------------------------------------------------------------------+

Installation Summary
--------------------
Name                        Level           Part        Event       Result
-------------------------------------------------------------------------------
HDVMAgent.rte               2.3.0.0         USR         DEINSTALL   SUCCESS
#
#
# mount -v cdrfs -r /dev/cd0 /cdrom  ← See Step 1 for mounting the HDVMAgent CD-ROM.
# cd /cdrom/AIX/HostAgent

# ls                                        ← CD-ROM contents list here.
ADOBE_READER  BIN           HPUX          Solaris       VIEWER
AIX           DATA          Hisource      Startup.dat   Windows
AUTORUN.INF   HICMD         ReadMe.wri    Startup.exe   help
# cd AIX
# ls
HostAgent
# cd *
# ls
.toc           HDVMAgent.bff
```

```
# installp -d /cdrom/AIX/HostAgent HDVMAgent
installp:  No action was indicated.
     The -a (apply) flag is being assumed.
+-----------------------------------------------------------------------------+
                Pre-installation Verification...
+-----------------------------------------------------------------------------+
Verifying selections...done
Verifying requisites...done
Results...

SUCCESSES
---------
  Filesets listed in this section passed pre-installation verification
  and will be installed.

  Selected Filesets
  -----------------
  HDVMAgent.rte 2.3.0.0                       # HiCommand Device Manager - A...

  << End of Success Section >>

FILESET STATISTICS
------------------
    1  Selected to be installed, of which:
        1  Passed pre-installation verification
  ----
    1  Total to be installed

+-----------------------------------------------------------------------------+
                     Installing Software...
+-----------------------------------------------------------------------------+

installp:  APPLYING software for:
     HDVMAgent.rte 2.3.0.0


. . . . . << Copyright notice for HDVMAgent >> . . . . . .
Copyright (C) 2001, 2003, Hitachi, Ltd.
. . . . . << End of copyright notice for HDVMAgent >>. . . .

================================================
NOTE:← HDS licensing information is shown here.
  You can refer to this License Agreement as follows;
    <HiCommand Device Manager - Agent Install Directory>/LICENSE
================================================

This License Agreement governs the business transactions by and between You and Hitachi
Data Systems Corporation ("HDS") whereby You are licensing HiCommand Device Manager
("Product") and related programs distributed together with the Product ("Related
Programs"), etc….

If not agree then uninstall this package.

Please enter next command.

installp -u HDVMAgent

================================================

Finished processing all filesets.  (Total time:  15 secs).
```

```
+-----------------------------------------------------------------------------+
                            Summaries:
+-----------------------------------------------------------------------------+

Installation Summary
--------------------
Name                        Level           Part        Event       Result
-------------------------------------------------------------------------------
HDVMAgent.rte               2.3.0.0         USR         APPLY       SUCCESS


# lslpp -l HDVMAgent.rte     ← See Step 4.
  Fileset                      Level  State      Description
  ----------------------------------------------------------------------------
Path: /usr/lib/objrepos
  HDVMAgent.rte              2.3.0.0  COMMITTED  HiCommand Device Manager -
                                                 Agent (Build 0230-08)
============================
###### config section ########
============================

# cd /usr/HDVM
# ls
LICENSE  agent    bin      doc      util
# cd agent
# ls
bin      classes  config   docroot  jar      logs

###### LOCATION OF CONFIG FILES ########
###### Do not edit these by hand ######
###### You must use hdvmagt_account & hdvmagt_schedule ########

# cd config                 ← See Step 5.
# ls
logger.properties   plugin              servlet.properties
mime.properties     server.properties
# cd ..
# pwd
/usr/HDVM/agent
# cd ..
# pwd
/usr/HDVM
# cd bin
# ls
HiScan            hdvmagt_account   logs
                  hdvmagt_schedule  msgs
hdvmagt           hiscan_run        stop_hdvmagt

# ./hdvmagt_account          ← See Step 6.
IPAddress      : 255.255.255.255
port           : 2001
userID         :

Would you like to change the HDVM server information? (y)es or (n)o. (default:n)
y

Enter the IP address of the HDVM server. (default:255.255.255.255)
10.10.11.11
Enter the port for the HDVM server. (default:2001)
2001
Enter the HDVM server user ID.
hauser
Enter the HDVM server password.
haset
```

```
Would you like to save to server.properties? (y)es or (n)o. (default:n) y

Saving server.properties...
server.properties was saved successfully.

# ls
HiScan            hdvmagt_account   logs
                  hdvmagt_schedule  msgs
hdvmagt           hiscan_run        stop_hdvmagt

# ./hdvmagt_schedule ← See Step 5

Do you change the execution period of HiScan command? (Y)es or (N)o. (default:N): y

Enter execution period: (H)ourly or (D)aily  (default:D): h

Configuration of the HiScan automatic execution shedule is completed.

--------------------------------------------------
#
cat hitest   ← Executes the agent without waiting for CRON to run. See Step 8.

--------------------------------------------------
#!/bin/sh

while true
do
echo "About to run HiScan Manually"
echo "to run HiScan - Press return "
read val

echo "Running against sasol10 - 11.11.10.10"  ← (Modify for your Device Manager Server.)
/usr/HDVM/bin/HiScan -s 11.11.10.10:2001 -u hauser -p haset -t
/TEST/HISCAN/HiScanTest_2.3._bld8_S10.msg

echo "done - going around again"
done

# end of file
```

Figure 2.8 Example of Installing HCDM Agent in an AIX Environmen

2.9 Installing HiCommand Device Manager Agent on an HP-UX® System

Before installing the HiCommand Device Manager Agent on an HP-UX® system:

- R Remove any HiScan package installed on your system. (HiScan is installed in the directory `/opt/HDVM`.) At the prompt, use the following commands to check for the presence of a HiScan *or* an HDVMAgent package installation:

  % **su**

  # **swlist HDSHiScan** *or*

  # **swlist HDVMAgent**

  Note: HDS HiScan is the name used for versions prior to 2.0. HDVMAgent is the name used for version 2.0 and higher.

  Note: If the HDS HiScan package is already installed, you may wish to review the HiScan execution parameters before uninstalling. Enter the following commands (see section 3.1 for an interpretation of the HiScan scheduling entry):

  % **su**

  # **crontab –l**

- To remove the existing HiScan package, enter the following commands:

  % **su**

  # **swremove HDSHiScan**, *or*

  # **swremove HDVMAgent**

  Please see Figure 2.9 for a complete screen example of installing the HiCommand Device Manager Agent.

To install the HiCommand Device Manager Agent:

1. Insert the HiCommand Device Manager Agent CD-ROM and mount it. Change to the `/opt/HDVM` directory. Enter the following command:

   # **swinstall -x ask=true –s sahpux01:/opt/HDVM/HDVMAgent HDVMAgent**

   In the case of an overwrite installation:

   # **swinstall -x ask=true –x reinstall=true –s sahpux01:/cdrom/HPUX/HDVMAgent HDVMAgent**

2. At this point, software licensing agreement information will appear. You will be asked if you accept the licensing agreement.

3. Following acceptance, information about the server IP address and socket number will appear. You will be asked for a server userID (ususally "hauser"), and a server user password (usually "haset").

4. A message will appear asking you to state the frequency of execution. Select **1** for automataic daily execution, or **2** for automatic hourly execution.

   The screen will confirm recording of installation parameters.

5. Run the **hdvmagt_account** command to confirm server property information listed in Step 3. You may edit this information if necessary. After making any changes, type (**y**)es or (**n**)o to save the information. ***Note:*** Any changes made here must also be made on the Device Manager server.
6. Run the **hdvmagt_schedule** command to confirm the chosen execution schedule entered in Step 4. You may edit this information if necessary.
7. To execute the Agent using a script and without having to wait for CRON to run, type **cat hitest.**

   This will take several minutes to complete. When the process completes, do a refresh of the Device Manager server to view the information sent from HiScan.

```
# swlist HDSHiScan

# Initializing...
# Contacting target "sahpux01"...
ERROR:   Software "HDSHiScan" was not found on host "sahpux01:/".
(Above is an example of a package not being present)
#

# swlist HDVMAgent
# Initializing...
# Contacting target "sahpux01"...

ERROR:   Software "HDVMAgent" was not found on host "sahpux01:/".
#

# crontab -l
#
# /usr/sbin/mount /dev/dsk/c0t1d0 /cdrom  ← Mount Device Manager Agent CD-ROM. See Step 1.

# mount              ← Shows what is mounted.
/ on /dev/vg00/lvol3 log on Tue Apr 29 21:19:52 2003
/stand on /dev/vg00/lvol1 defaults on Tue Apr 29 21:19:53 2003
/var on /dev/vg00/lvol9 delaylog,nodatainlog on Tue Apr 29 21:20:42 2003
/usr on /dev/vg00/lvol8 delaylog,nodatainlog on Tue Apr 29 21:20:42 2003
/tmp on /dev/vg00/lvol4 delaylog,nodatainlog on Tue Apr 29 21:20:42 2003
/opt on /dev/vg00/lvol7 delaylog,nodatainlog on Tue Apr 29 21:20:42 2003
/home on /dev/vg00/lvol6 delaylog,nodatainlog on Tue Apr 29 21:20:43 2003
/TEST on /dev/vg00/lvol5 delaylog,nodatainlog on Tue Apr 29 21:20:43 2003
/cdrom on /dev/dsk/c0t1d0 ro on Wed Apr 30 20:02:32 2003
#
# cd /cdrom
# ls                 ← CD-ROM contents list here.
AIX                             BUILD_0230_08_sim_solaris.zip   SDK
BUILD_0230_08 Transfer Doc.txt  BUILD_0230_08_sim_windows.zip   Solaris
BUILD_0230_08_SDK.zip           HPUX                            Windows
BUILD_0230_08_demo.zip          ReadMe.wri
# cd HPUX
# ls -l
total 4
dr-xr-xr-x   1 4294967295 4294967295    2048 Apr 28 23:10 HostAgent

# cd *
# ls
HDVMAgent
# ls -l
total 121960
-r-xr-xr-x   1 4294967295 4294967295 62443520 Apr 28 23:11 HDVMAgent
# pwd
/cdrom/HPUX/HostAgent
#

# swinstall -x ask=true -s sahpux01:/opt/HDVM/HDVMAgent HDVMAgent

=======  04/30/03 20:27:54 MDT  BEGIN swinstall SESSION
         (non-interactive)

       * Session started for user "root@sahpux01".

       * Beginning Selection
       * Target connection succeeded for "sahpux01:/".
       * Software RTE has a "request" script. It will be executed and
         corresponding "response" file  will be generated.

================================================================================
```

```
License Agreement     ← HDS licensing information is shown.
-----------------

Installation and use of HiCommand Device Manager - Agent 2.3 requires
acceptance of the following License Agreement:

================================================
NOTE:
  You can refer to this License Agreement as follows;
    <HiCommand Device Manager - Agent Install Directory>/LICENSE
================================================

This License Agreement governs the business transactions by and between You and Hitachi
Data Systems Corporation ("HDS") whereby You are licensing HiCommand Device Manager
("Product") and related programs distributed together with the Product ("Related
Programs"), etc…

DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N): y

================================================================================

HiCommand Device Manager - Agent communicates with a HiCommand Device Manager - Server.

Enter HiCommand Device Manager - Server IP address (ex: 255.255.255.255)
  : 10.10.11.12              ← See Step 3.

================================================================================
The HiCommand Device Manager - Server uses a configurable socket number.


Enter HiCommand Device Manager - Server socket number (default: 2001)
  : 2001
================================================================================
HiCommand Device Manager - Agent must use a userid to update the HiCommand Device Manager -
Server database.


Enter HiCommand Device Manager - Server userid (normally: hauser)
  : hauser
================================================================================
HiCommand Device Manager - Agent must supply a password for the HiCommand Device Manager -
Server user.


Enter HiCommand Device Manager - Server user password (normally: haset)
  : haset
================================================================================

Choose the frequency for automatic execution.       ← See Step 4.

  ->1- automatic daily execution
    2- automatic hourly execution

Choose the frequency (default daily:1): 2

================================================================================

Recording installation parameters...
       * Ask task succeeded.

       * Source:                sahpux01:/opt/HDVM/HDVMAgent
       * Targets:               sahpux01:/
       * Software selections:
            HDVMAgent.RTE,r=2.3,a=HP-UX_B.11.00_32/64,v=Hitachi,fr=2.3,fa=HP-
UX_B.11.00_32/64
```

```
       * Selection succeeded.


       * Beginning Analysis
       * Session selections have been saved in the file
         "/.sw/sessions/swinstall.last".
       * The analysis phase succeeded for "sahpux01:/".
       * Analysis succeeded.

       * Beginning Execution
       * The execution phase succeeded for "sahpux01:/".
       * Execution succeeded.

         NOTE:    More information may be found in the agent logfile (location
         is sahpux01:/var/adm/sw/swagent.log).

=======  04/30/03 20:31:24 MDT  END swinstall SESSION (non-interactive)

##########################################
# #### verify the package was installed
##########################################

# swlist HDVMAgent
# Initializing...
# Contacting target "sahpux01"...
#
# Target:  sahpux01:/
#
# HDVMAgent          2.3            HiCommand Device Manager - Agent (Build 0230-08)
  HDVMAgent.RTE              2.3            HiCommand Device Manager - Agent (Build 0230-
08)
#
# # ### cd to the HDVMAgent directory and run the account and schedule command for examples
#
#
# cd /opt
# ls
DynamicLinkManager  dcelocal            hitachi             image               pd
upgrade
HDVM                fc                  hparray             lost+found          pred
video
audio               fcms                ifor                nettladm            resmon
webadmin
dce                 graphics            ignite              networkdocs         snia
# cd HDVM
# ls
HDVMAgent  LICENSE    agent      bin        doc        util
# cd bin
# ls
HiScan            hdvmagt_account   logs              stop_hdvmagt
hdvmagt           hdvmagt_schedule  msgs

# ./hdvmagt_account                          ← See Step 5.
IPAddress      : 10.10.11.12
port           : 2001
userID         : hauser

Would you like to change the HDVM server information? (y)es or (n)o. (default:n)
y

Enter the IP address of the HDVM server. (default:10.60.71.13)

Enter the port for the HDVM server. (default:2001)
```

```
Enter the HDVM server user ID. (default:hauser)

Enter the HDVM server password.
haset
Would you like to save to server.properties? (y)es or (n)o. (default:n)
y
Saving server.properties...
server.properties was saved successfully.
#


Enter the IP address of the HDVM server. (default:10.10.11.12)
# ./hdvmagt_schedule          ← See Step 6.

Do you change the execution period of HiScan command? (Y)es or (N)o. (default:N): y

Enter execution period: (H)ourly or (D)aily  (default:D): H

Configuration of the HiScan automatic execution shedule is completed.

--------------------------------------------------
# ### RUN A SCRIPT TO EXECUTE AT WILL
#

cat hitest    ← Executes the agent without waiting for CRON to run. See Step 7.
--------------------------------------------------
#!/bin/sh

while true
do
echo "About to run HiScan Manually"
echo "to run HiScan - Press return "
read val

echo "Running against sasol10 - 10.10.11.12"
/opt/HDVM/bin/HiScan -s 10.10.11.12:2001 -u hauser -p haset -t ← (Modify for your Device
                                                                  ManagerServer.)
/TEST/HISCAN/HiScanTest_2.3._bld8_S10.msg
echo "done - going around again"
done

# end of file
--------------------------------------------------

# crontab -l
47 * * * * cd /opt/HDVM/bin/ ; (./HiScan -s 10.10.11.12:2001 -t
/opt/HDVM/bin/logs/HiScan.msg >> /opt/HDVM/bin/logs/HiScan.log) 2>
/opt/HDVM/bin/logs/HiScan.err #HDVMAgent
#


END OF EXAMPLE
```

Figure 2.9 Example of Installing HCDM Agent in an HP-UX Environment

Chapter 3 HiScan Operations

3.1 HiScan Command Syntax

Table 3.1 lists and describes the Agent (HiScan) command syntax.

Table 3.1 HiScan Command Syntax

Synopsis	**HiScan** { **-s server** [**-u userid -p password**] [{ **-c sec** | **-t output-file** }] | **-t output-file** }
Description	The **HiScan** command reports information about attached Hitachi and Sun™ storage devices. HiScan scans system information and constructs associations between file systems, volumes, partitions and disk drives. From these results it creates a HTTP/XML message. Depending upon parameters, HiScan can transmit this message to a HiCommand Device Manager Server so that host, file system, disk adapter, and utilization information can be associated with Hitachi and Sun™ storage resources.
Options	**-s** server: Sends the resulting HTTP/XML messages to the HiCommand Device Manager Server indicated by the network appended to this address as follows: *address:port*. If no port number is provided, the default port number is 2001. For example; 192.168.1.102:2001. (The HiCommand Device Manager Server port number is configured during the HiCommand Device Manager Server installation.) This is an optional parameter. If **-s** is omitted, the **-t** option must be supplied. **-u** userid: The user identifier is used by the HiCommand Device Manager Server to validate HiScan database update requests. If the **-s** parameter is supplied and **-u** parameter is omitted, HiScan uses the userid and password that are stored in server.server.authorization of the server.properties file (see Chapter 4 and Table 4.4). **-p** password: The password is used by the HiCommand Device Manager Server to validate the userid supplied in the **-u** parameter. The **–p** parameter is required if the **-u** parameter is supplied. ***Note***: If the **–s** parameter is supplied and **-p** parameter is omitted, HiScan uses the userid and password that are stored in server.server.authorization of the server.properties file (see 0 and Table 4.4). **-c** sec: Pauses for xx seconds between successive scan/report cycles. Continue to iterate until a termination signal is encountered. Values of less than ten seconds are recognized as invalid. If **-t** is supplied, **-c** should not be used. **-t** output-file: Sends the output messages to the indicated output file. ***Note***: This option is intended for diagnostic purposes only. The **-t** option may be supplied in addition to the **-s** option. If both are supplied, the output request message and input response message (from HiCommand Device Manager Server) are both included in the output file. If **–t** is supplied, **-c** must not be used.
Exit Status	The following exit values are returned: **0** successful completion **>0** an error occurred

3.2 hldutil Command Syntax

Table 3.2 lists and describes the hldutil command syntax.

Table 3.2 hldutil Command Syntax (continues on the following pages)

Synopsis	**hldutil** { **[-d** [device-file]|**[-g** [disk-group]|**-l** ldev#.ser#][-p] [**-q**] [-nolog] [**-s** sort-key...] [**-k**|**-hf** [log-file]|**-h** [log-number]] | **–h** [log-number] **–hb** [log-file]| **-hrm** [log-number|all]| **-history number** }
Description	Hitachi Logical Device Utility (hldutil) provides device information display and execution results log file management functions. If you do not specify an option, the command outputs information about all currently recognized logical devices.
Options	**-d** [device-file]: If you want to view information about a specific logical device, specify the device special file name (UNIX) or disk number (Windows) of the logical device. If you omit this option, the command displays information about all currently recognized logical devices. You cannot specify the **-d** option and the **-g** or **-l** option at the same time. **-g** [disk-group]: If you want to view information about a specific disk group, specify the name of the disk group. If you omit the disk group name, the command outputs information about all currently defined disk groups. You cannot specify the **-g** option and the **-d** or **-l** option at the same time. **-l** ldev# ser#: If you want to view information about a specific logical device, specify the logical device number (ldev#) and serial number (ser#) of the logical device. The logical device number and serial number must be specified in the indicated order. If you omit the logical device number or serial number, the command does not output information about the logical device. You cannot specify the **-l** option and the **-d** or **-g** option at the same time. If you specify the **-l** option, the display items output by the command with this option specified is limited to Ldev# (logical device number). **Ser#**: (disk array device serial number): Device (device special file name on UNIX or disk number on Windows)Dg name (disk group name)fs (file system) **-p**: Specify this option when adding Hitachi Freedom Storage Lightning 9900 Series P-VOL and S-VOL information configured using the TrueCopy or ShadowImage function to the logical device information. If no P-VOL or S-VOL information is assigned to a logical device, the command with this option specified does not output P-VOL or S-VOL information. **-q**: Specify this option to output command execution results only to the execution-result log file. If you specify this option, the command does not send its execution results to the standard output (quiet mode). Typically, you specify this option when you want to run a background job to supply the latest logical device information to the execution-result log file. However, error messages are output to the standard error output. **-nolog**: Specify this option to output command execution results only to the standard output. If you specify this option, the execution-result log file is not updated. **-d** [device-file]: If you want to view information about a specific logical device, specify the device special file name (UNIX) or disk number (Windows) of the logical device. If you omit this option, the command displays information about all currently recognized logical devices. You cannot specify the **-d** option and the **-g** or **-l** option at the same time. **-g** [disk-group]: If you want to view information about a specific disk group, specify the name of the disk group. If you omit the disk group name, the command outputs information about all currently defined disk groups. You cannot specify the **-g** option and the **-d** or **-l** option at the same time.

Table 3.2 hldutil Command Syntax (continued)

Options (continued)	**-p**: Specify this option when adding Hitachi Freedom Storage Lightning 9900 Series P-VOL and S-VOL information configured using the TrueCopy or ShadowImage function to the logical device information. If no P-VOL or S-VOL information is assigned to a logical device, the command with this option specified does not output P-VOL or S-VOL information. **-q**: Specify this option to output command execution results only to the execution-result log file. If you specify this option, the command does not send its execution results to the standard output (quiet mode). Typically, you specify this option when you want to run a background job to supply the latest logical device information to the execution-result log file. However, error messages are output to the standard error output. **-nolog**: Specify this option to output command execution results only to the standard output. If you specify this option, the execution-result log file is not updated. **-s** sort-key: Specify this option when sorting logical device information in ascending order of ASCII codes. This option includes one or more sort keys. When specifying multiple sort keys, place a one-byte space between adjacent sort keys. If you specify multiple sort keys, the command sorts information using the sort keys in the order in which they are specified. If you specify the file system name as the sort key, the command sorts logical device information using the file system name that is included in each logical device and assigned the lowest ASCII code. If you do not specify a sort key or if you specify the same sort key more than once, you receive an error message. If you do not specify the **-s** option, the command outputs logical device information in the order in which it has processed the information. See Table 3.3 for the sort key descriptions. **-k**: Specify this option when outputting the latest execution-result log file to the standard output. This processing involves no hardware access. Since the command skips processing for obtaining logical device information, its execution does not affect device input or output. However, if the execution-result log file contains no record, the command acquires logical device information and output the results to the standard output and the execution-result log file. You cannot specify the **-k** option and the **-h** or **-hf** option at the same time. **-hf** [log-file]: The command outputs the contents of the specified execution-result log file to the standard output. The command does not access any disk array device. If you omit the file name, the command waits for the entry of a file name. If the specified file name does not identify an execution-result log file, the command outputs an error message and ends. You cannot specify the **-hf** option and the **-k**, **-h**, **-hb**, or **-hrm** option at the same time. **-h** [log-number]: If you use the device information display function: The command outputs the contents of the execution-result log file identified by the specified log number to the standard output. The command does not access any disk array device. If you use the execution-result log file management function, the command copies an execution-result log file. Assign the copy source execution-result log file name to a log number and specify the **–hb** option to designate the copy destination. If you omit the log number, the command displays a list of the available execution-result log files and waits for the specification of an execution-result log file. If the specified log number does not identify an execution-result log file, the command outputs an error message and terminates. You cannot specify the **-h** option and the **-k**, **-hf**, or **-hrm** option at the same time. **-hb** [log-file]: Specify this option when copying an execution-result log file that is the result of using the device information display function. The command copies the execution-result log file specified by the **-h** option to the file specified by the **-hb** option. Use the full path name (including directories) or relative path name for the file. If you omit the log file, the command waits for the specification of a file name. If the specified file already exists, the command displays a prompt asking you whether you want to overwrite the file and waits for your reply. You must specify this option together with the **-h** option. You cannot specify the **-hb** option together with any option other than **–h** or **–hrm** [log-number|all]. Specify this option when deleting an execution-result log file that was created when the device information display function was used. Specify the log number that identifies the execution-result log file to be deleted. If you specify all instead of a log number, the command deletes all execution-result log files from the default log storage directory. If you omit the log number, the command displays a list of execution-result log files and waits for the specification of a log number. If the specified log number does not identify any execution-result log file, the command displays an error message and terminates. You cannot specify the **-hrm** option together with any other option.

Table 3.2 hldutil Command Syntax (continued)

Options (continued)	**-history** numberSpecify: The number of generations of execution-result log files to be retained. The execution-result log files are created when the device information display function is used. You can specify a number between 1 and 64. The default value that is effective when Hitachi Logical Device Utility is installed is 3. The specified number becomes effective the next time the device information display function is used to create an execution-result log file. You cannot specify the **-history** option together with any other option.
Exit Status	None.

Table 3.3 Sort Key Descriptions

Sort Key	Descriptions
dg	Disk group name
fs	File system name
ldev	Logical device number
lun	Logical unit number
port	Port number
prod	Product name
rg	RAID Group number
rid	Character string representing a disk array device model
ser	Disk array device serial number
tid	Target ID
vend	Vendor name
wwnn	Node WWN name
wwnp	Port WWN name

3.3 hdvmagt_schedule Command Syntax

Table 3.6 lists and describes the hdvmagt_schedule command syntax.

Table 3.4 hdvmagt_schedule Command Syntax

Synopsis	hdvmagt_schedule
Description	The hdvmagt_schedule command provides interactive interface to setup auto-execution period of HiScan command. The hdvmagt_schedule command asks execution period of HiScan daily or hourly, and configure /etc/crontab table (or task scheduler). You must possess root/Administrator authority to execute hdvmagt_schedule command. The questions hdvmagt_schedule command asks are below. Do you change the execution period of HiScan command? (Y)es or (N)o. (default:N): Enter 'Y' or 'N'. If you answer 'N', hdvmagt_schedule terminates without configureing anything. Enter execution period: (H)ourly or (D)aily (default:D): Enter 'H' or 'D'. If you answer 'H', hdvmagt_schedule configures crontab (or task scheduler) to execute HiScan every hour. If you answer 'D', HiScan will execute every day at 2:47 AM.
Options	None
Exit Status	None

3.4 hdvmagt_schedule Command Syntax

Table 3.4 lists and describes the hdvmagt_schedule command syntax.

Table 3.5 hdvmagt_schedule Command Syntax

Synopsis	hdvmagt_schedule
Description	The hdvmagt_schedule command provides interactive interface to setup auto-execution period of HiScan command. The hdvmagt_schedule command asks execution period of HiScan daily or hourly, and configure /etc/crontab table (or task scheduler). You must possess root/Administrator authority to execute hdvmagt_schedule command. The questions hdvmagt_schedule command asks are below. Do you change the execution period of HiScan command? (Y)es or (N)o. (default:N): Enter 'Y' or 'N'. If you answer 'N', hdvmagt_schedule terminates without configuring anything. Enter execution period: (H)ourly or (D)aily (default:D): Enter 'H' or 'D'. If you answer 'H', hdvmagt_schedule configures crontab (or task scheduler) to execute HiScan every hour. If you answer 'D', HiScan will execute every day at 2:47 AM.
Options	None
Exit Status	None

3.5 hdvmagt_account Command Syntax

Table 3.6 lists and describes the hdvmagt_account command syntax.

Table 3.6 hdvmagt_account Command Syntax

Synopsis	Hdvmagt_account
Description	The hdvmagt_account command provides an interactive interface to setup the Hicommand Device Manager Agent and the HiScan command. The `hdvmagt_account` command requests information about the HiCommand Device Manager server, and writes it to the property file, `server.properties`. You must possess root/Administrator authority to execute the `hdvmagt_account` command. Enter the following information when requested: **IPAddress**: Enter the IPAddress of Hicommand Device Manager Server in the dotted-decimal IPAddress form. This is stored to the property file, `server.server.IPAddress` (see Table 4.4). **Port**: Enter the Port number of the HiCommand Device Manager Server to which HiCommand Device Manager Agent is going to connect. This must be a number from 0 to 65535. ***Note***: The value of this property equals the value of the Port number of the HiCommand Device Manager Server. This is stored to the property file, server.server.Port (see Table 4.4). **Userid and Password**: Enter the userid and password authorized by the HiCommand Device Manager Server to give validity to any database update requests of the HiCommand Device Manager Agent and the HiScan command. The hdvmagt_account command encodes the userid and password and stores it to the property file, server.server.authorization (seeTable 4.4). ***Note***: The server.server.authorization file is encoded data, so you cannot edit it.
Options	None
Exit Status	None

3.6 HTTP/XML Communication Between Agent and Device Manager Server

The HiScan **-t <filespec>** option allows for capture of the HiScan HTTP/XML request. Furthermore, if the **-s <hostaddr>** option is provided and that host responds, HiScan also records the response in this file. This allows for inspection of the outgoing message and the incoming response.

- The outgoing HTTP message begins with the POST request in the first line. Note that the Hitachi and Sun™ LUNs discovered by HiScan can be seen along with all their significant attributes.
- The incoming response begins with the HTTP/1.0 message on the 29th line. In the example as shown in Figure 3.1, this line is "HTTP/1.0 200 OK", indicating successful communication with a HiCommand Device Manager Server. The response message carries a status and result code (the 45th line in this example).

```
26    </Request>↓
27  </HiCommandServerPeerMessage>↓
28  ↓
29  HTTP/1.0 200 OK↓
30  Expires: Tue, 24 Sep 2002 05:51:59 GMT↓
31  Date: Tue, 24 Sep 2002 05:51:59 GMT↓
32  Allow: GET, HEAD, POST, TRACE, OPTIONS↓
33  Content-Type: text/xml↓
34  Last-Modified: Tue, 24 Sep 2002 05:51:59 GMT↓
35  Server: HiCommandDeviceManagerServer/2.2↓
36  Content-Length: 303↓
37  Connection: close↓
38  Pragma: no-cache↓
39  Servlet-Engine: HiCommand (Servlet API 2.0; Java 1.3.1_03)↓
40  ↓
41  <?xml version="1.0" encoding="UTF-8"?>↓
42  <HiCommandServerMessage>↓
43    <APIInfo version="2.2" />↓
44    <Response>↓
45      <EchoCommand name="SetHostVolume" status="COMPLETED" result="0" resultSource=
46  "HiScan.SetHostVolume" messageID="223257423" />↓
47      <ResultList />↓
48    </Response>↓
49  </HiCommandServerMessage>↓
50  ↓
51  [EOF]
```

Figure 3.1 Checking HiCommand Device Manager Server Responses

Chapter 4 Troubleshooting HiCommand Device Manager Agent Operations

4.1 Troubleshooting Solaris™, AIX®, and HP-UX® Systems

To determine the status of the HiCommand Device Manager Agent package on this host:

`pkginfo -l HDVMAgent` (Solaris™ Systems)

`lslpp –l HDVMAgent.rte` (AIX® Systems)

`swlist HDVMAgent` (HP-UX® Systems)

For example, in the Solaris™ Systems, this command produces output similar to the output as shown in Figure 4.1. ***Note*** VERSION:, BASEDIR:, and STATUS for future reference.

To obtain a listing of the root crontab, enter the following commands:

```
su
crontab -l
```

This produces output showing the Agent (HiScan) entry in the root crontab (see Figure 4.2). In this case, the last two lines of output from the crontab command show the entry governing scheduled execution of the HiScan command. Use the **`man crontab`** command to see an explanation of the format of this entry.

The HiScan HTTP/XML communication (from the most recent invocation) is recorded in HiScan.msg (see Table 4.1 for the file location).

Table 4.1 Location of HiScan.msg

Solaris™	/opt/HDVM/bin/logs/HiScan.msg
HP-UX®	/opt/HDVM/bin/logs/HiScan.msg
AIX®	/usr/HDVM/bin/logs/HiScan.msg

The standard output messages from HiScan invocations are accumulated in the file `HiScan.log` (see Table 4.2 for the location). It is normal for this file to be empty.

Table 4.2 Location of HiScan.err

Solaris™	/opt/HDVM/bin/logs/HiScan.log, HiScan.err
HP-UX®	/opt/HDVM/bin/logs/HiScan.log, HiScan.err
AIX®	/usr/HDVM/bin/logs/HiScan.log, HiScan.err

Error messages from the most recent HiScan invocation are recorded in the HiScan.err file. The *1107W* warning messages in this file are normal for certain system devices. HiScan error messages are described in section 4.4. Use the **more** command to inspect these files for problem symptoms.

- Issue the **HiScan** command from the prompt using the options shown in the root `crontab`. Super-user authority is required. Vary the options and system/network configuration until HiScan functions properly.
- Use the **-t** option to produce a record of which Hitachi or Sun™ storage resources were detected and (if **-s** is also used) a record of the HiCommand Device Manager Server's response to the HiScan request. See section 3.1 for proper use of these options.
- For connectivity problems, use standard network debugging procedures such as ping, and actual IP addresses. Verify that the port number specified in the HiCommand Device Manager Server's configuration file matches configuration of HiCommand Device Manager Agent. See Table 4.3 for the location of the HiCommand Device Manager Agent configuration file. See section 3.2 for a description of the hdvmagt_account command.

Table 4.3 Location of server.properties

Solaris™	/opt/HDVM/agent/config/server.properties
HP-UX®	/opt/HDVM/agent/config/server.properties
AIX®	/usr/HDVM/agent/config/server.properties

- The configuration file, `server.properties`, contains various properties of HiCommand Device Manager Agent. If any network problems occur, check the properties in server.properties. See section 4.3 for property descriptions.
- The configuration file, `logger.properties`, contains logging properties of the HiCommand Device Manager Agent. See section 4.3 for property descriptions.
- For problems concerning HiScan's detection of Hitachi or Sun™ storage resources, make sure that the particular configuration (HBA, device driver, storage array model) is supported by the HiCommand Device Manager Agent and is operative on the Host.

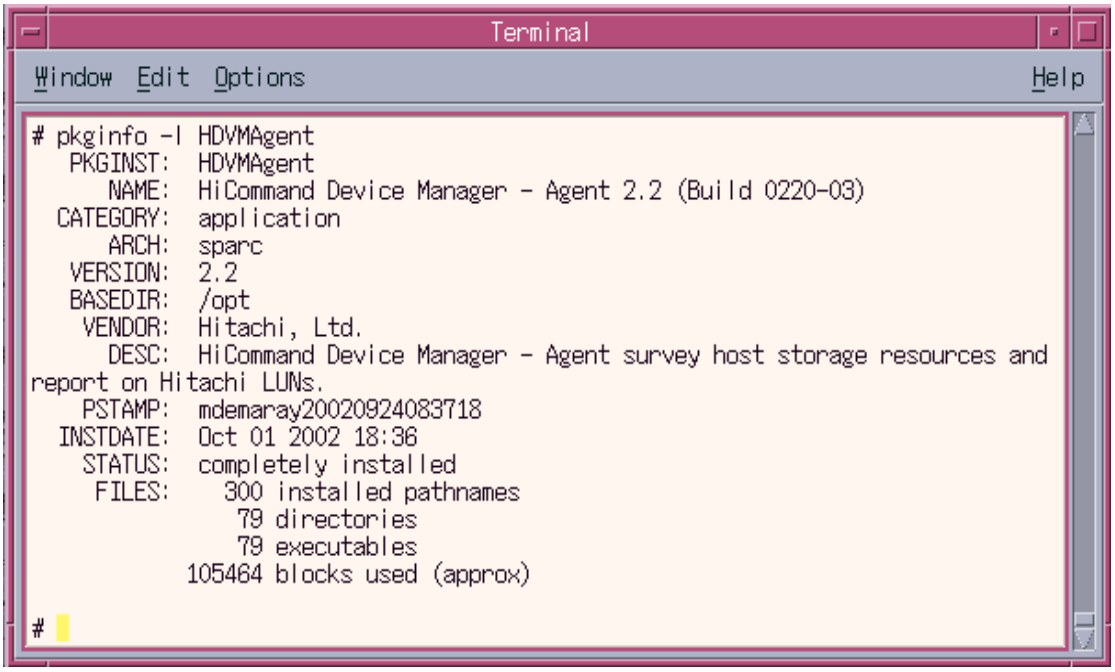

Figure 4.1 HiScan Package Status

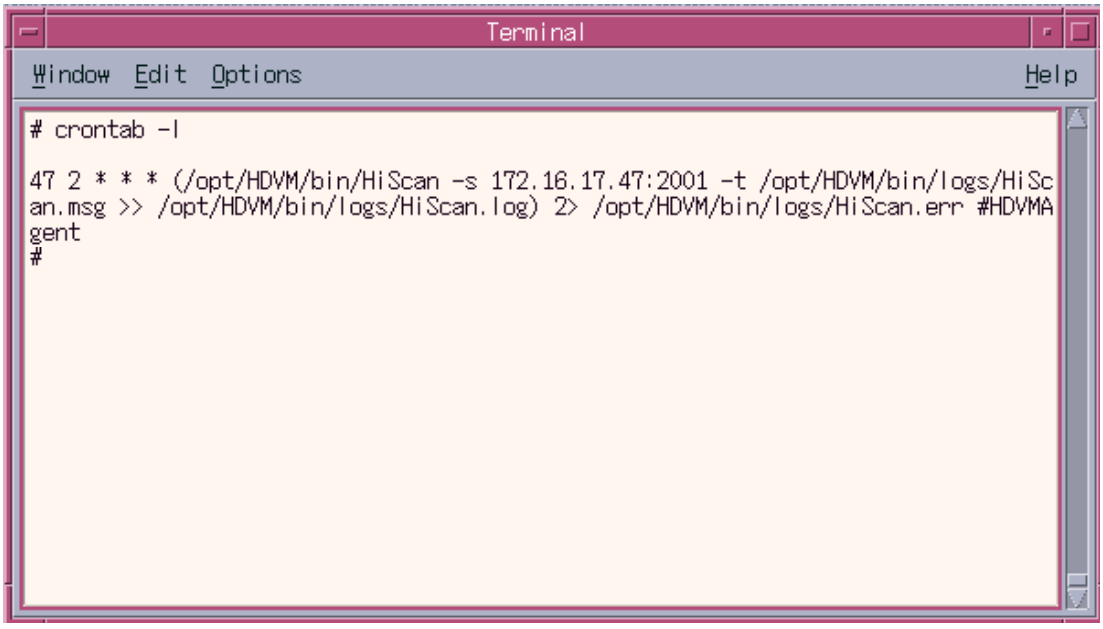

Figure 4.2 Crontab Output

4.2 Troubleshooting Windows NT® and Windows® 2000 Systems

HiCommand Device Manager Agent issues typically fall into one of three general problem categories:

- Task Scheduler: The **at** command that launches the Schedule service does not seem to be auto-starting the Host Agent process.
- HiCommand Device Manager Agent Process: The HiCommand Device Manager Agent process starts but terminates with a non-zero return code.
- HiCommand Device Manager Server: The HiCommand Device Manager Agent process starts and completes with a zero return code, but HiCommand Device Manager Server (or Client) is not reporting the Host information.

4.2.1 Task Scheduler

To run the Task Scheduler:

1. Log on as Administrator. To display all scheduled jobs, from a Command Prompt window, enter the following command (see Figure 4.3):

   at

2. Inspect the Day and Time columns, and verify that each HiCommand Device Manager Agent job entry schedule is correct. If not, delete each incorrect entry and re-enter it.
3. Inspect the Command Line column, and verify that each HiCommand Device Manager Agent job entry schedule is correct. From the command prompt, the Command Line contents can be tested. When successful, no additional messages are displayed.
4. The `HiScan.msg` file should also have a timestamp that reflects the running of the Host Agent process (refer to Figure 4.1).

   Note: This is a good way to determine if HiCommand Device Manager Agent scheduled jobs are running. The timestamp of the HiScan.msg file should reflect the last automated scheduled running of the HiCommand Device Manager Agent process.
5. When not successful, diagnostic messages are displayed from either the operating system or the HiCommand Device Manager Agent process.

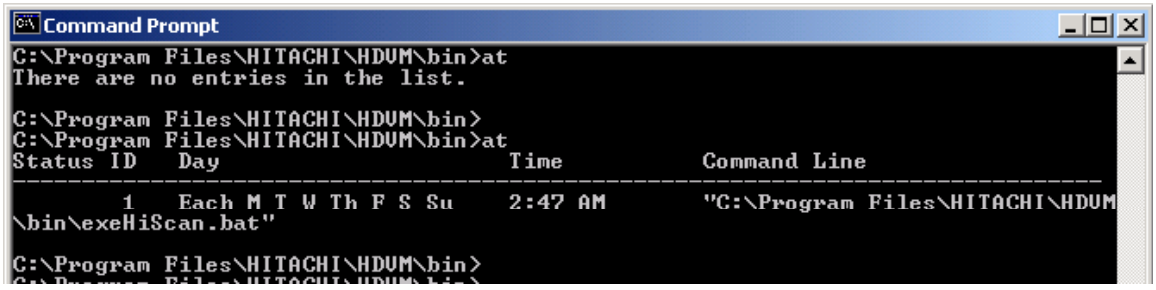

Figure 4.3 Command Prompt Window

4.2.2 HiCommand Device Manager Agent

For connectivity problems, use standard network debugging procedures, such as ping, to verify access to the HiCommand Device Manager Server. Verify that the port number specified in the HiCommand Device Manager configuration file matches that supplied for the HiCommand Device Manager Agent in the server.properties file (refer to Figure 4.1) or HiScan '-s' parameter (see section 3.1).

4.2.3 HiCommand Device Manager Server

Evaluate the contents of HiCommand Device Manager Agent diagnostic file as specified by the `HiScanMsg` variable in the `exeHiScan.bat` file (<install folder>\HDVM\bin). When a response message is being returned by the HiCommand Device Manager Server, the HiCommand Device Manager Agent process is successfully sending information (see section 3.1).

For other error conditions, see section 4.4.

4.3 Property Files

You can configure HiCommand Device Manager Agent by editing the property file `server.properties`. Configure the logging function of HiCommand Device Manager Agent by editing `logger.properties`. These two files contain various kinds of properties.

4.3.1 server.properties File

This file contains network configuration properties. To configure the daemon/service and WebServer processes of HiCommand Device Manager Agent, see Table 4.4.

Table 4.4 server.properties File (continues on the following pages)

Property	Description
server.server.serverIPAddress	Specify the IPAddress of HiCommand Device Manager Server in dotted-decimal IPAddress form. You may specify this property using the text editor, or by executing the `hdvmagt_account` command (see section 3.5). Default: None (usually specified at installation)
server.server.serverPort	Specify the Port number of the HiCommand Device Manager Server to which HiCommand Device Manager Agent is going to connect. ***Note*** The value of this property equals the value of the Port number of HiCommand Device Manager Server. You may specify this property utilizing the text editor, or executing the `hdvmagt_account` command (see section 3.5). Default: 2001
server.server.authorization	This property is a stored user-id and password authorized by HiCommand Device Manager Server. This property is encoded data, so you cannot edit it using a text editor. To edit this property, use the `hevmagt_account` command (see section 3.5). Default: None (usually specified at installation)
server.http.browseDirs	If this property is true, the Web server function of HiCommand Device Manager Agent displays a list of files contained in the document directory. Usually you do not need to edit this property. Default: false
server.util.process.TimeOut	Specify the period that is regarded as HiCommand Device Manager Agent's normal execution time of external programs. If an external program takes longer than the time period specified in this property, HiCommand Device Manager Agent regards the program as something abnormal and terminates it. If you specify too short a time period, HiCommand Device Manager Agent may stop execution of external programs that are running regularly. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 600000[msec] (= 10 minutes)

Table 4.4 server.properties File (continued)

Property	Description
server.agent.cashTimeOut	Specify the maximum execution period of thread that is executing something requested from the remote host, for example, HiCommand Device Manager WebClient. If the thread execution takes longer than the time period specified in this property, HiCommand Device Manager Agent regards the thread as something abnormal and terminates it. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 1200000[msec]
server.agent.shutDownTime	Specify the period to shutdown HiCommand Device Manager Agent's WebServer since it received or sent the last http message. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 600000[msec]
server.http.agent.timeOut	Specify the interval of sending the message "now processing" to a remote host. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 600[sec]
server.http.host	Specify the host that executes HiCommand Device Manager Agent's WebServer. It is usually "localhost", so you may not edit this property. Default: localhost
server.http.socket.bindAddress	Specify the IPAddress of any network interface card (NIC) that is installed to the host HiCommand Device Manager Agent. If this property is not specified, HiCommand Device Manager Agent listens on all NICs. If you want to allow only specific NICs to listen, specify the IPAddress of these NICs. Default: none. (HiCommand Device Manager Agent listens to all NICs)
server.http.socket.agentAddress	If several NICs are installed to the host and if you have to specify the IPAddress of NIC, specify the IP address that you want to send to the HiCommand Device Manager Server. If this property is not specified, HiCommand Device Manager Agent sends the IPAddress that is detected at first. Default: none.
server.http.port	Specify the port number that HiCommand Device Manager Agent's WebServer uses. Normal range is 1024 to 49151. Note that too small a number conflicts with other applications. Default: 23011
server.http.localPort	Specify the port number for communication between HiCommand Device Manager Agent's daemon process and the WebServer process. Normal range is 1024 to 49151. Note that too small a number conflicts with other applications. Default: 23012

Table 4.4 server.properties File (continued)

Property	Description
server.agent.port	Specify the port number for HiCommand Device Manager Agent's daemon process (or service). Normal range is 1024 to 49151. Note that too small a number conflicts with other applications. Default: 23013
server.http.default	If HiCommand Device Manager Agent's WebServer receives an http request without a file name (directory name only), it searches the default filename specified in this property file. Usually you do not need to change this property. Default: index.html
server.http.request.timeout	If HiCommand Device Manager Agent's WebServer opens http stream and cannot read data from it, HiCommand Device Manager Agent's WebServer waits the period specified in this property. If it times out, HiCommand Device Manager Agent's WebServer regards it as an I/O error. If 0 is specified, HiCommand Device Manager Agent's WebServer does not wait. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 5000[msec]
server.http.connection.priority	Specify the priority of threads. Valid value is 1 to 10 (10 is the highest priority), 5 through 8 is recommended. If 10 is specified, HiCommand Device Manager Agent's WebServer executes the threads one by one, not in parallel. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 7
server.http.connection.bufSize	Specify the size of the buffer that is used by HiCommand Device Manager Agent's WebServer to execute the file I/O. To avoid problems, do not specify less than 1024. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 8192
server.http.socket.backlog	Specify the maximum length of queue that remote hosts connect to HiCommand Device Manager Agent. Do not edit this property without current knowledge of HiCommand Device Manager Agent's performance. Default: 50
server.http.socket.maxThreads	Specify the maximum number of requests that can be executed by HiCommand Device Manager Agent at the same time. Please note that it does not pertain to the maximum number of remote hosts that can send requests. Do not edit this property without current knowledge of HiCommand Device Manager – Agent's performance. Default: 50
server.http.socket.linger	Specify whether to give the linger attribute to the socket that HiCommand Device Manager Agent's WebServer uses. Usually you do not need to change this property. Default: true

Table 4.4 server.properties File (continued)

Property	Description
server.http.socket.no Delay	Specify whether to apply Nagle Algorithm for TCP/IP packet handling of HiCommand Device Manager Agent. If you do not apply Nagle Algorithm, packets timing problems may not occur, but the performance of HiCommand Device Manager Agent deteriorates. Do not edit this property file without current knowledge of HiCommand Device Manager Agent's performance. Default: true (apply Nagle Algorithm)
server.http.headers.max Number	Specify the maximum number of http headers that is sent from the remote hosts. If HiCommand Device Manager Agent receives an http packet that has more headers than specified, HiCommand Device Manager Agent does not generate an error message. Usually you do not need to change this property. Default: 50
server.http.headers.max Length	Specify the maximum size of each http header (in bytes). This property protects HiCommand Device Manager Agent from buffer overflow attacks. If HiCommand Device Manager Agent detects a header longer than specified, HiCommand Device Manager Agent ignores it with no error messages. Usually you do not need to change this property. Default: 1024
server.http.entity.max Length	Specify the maximum size of the http request entity (in bytes). This property protects HiCommand Device Manager Agent from buffer overflow attacks. If the HiCommand Device Manager Agent detects a request longer than specified, HiCommand Device Manager Agent sends an error response to the host and records it to the log files. Usually you do not need to change this property. Default: 1024
server.http.log.reverse DNS	Specify whether HiCommand Device Manager Agent uses `reverseDNS`. If you specify this property "true", HiCommand Device Manager Agent tries to find the hostname in `IPAddress`, and record it to the `access.log` file (see section 4.4.2). If `reverseDNS` cannot find a hostname in `IPAddress` or you specified this property "false", HiCommand Device Manager Agent records the IPAddress to `access.log` file. Note that `reverseDNS` demands heavy network resources resulting in a network slowdown. The default is recommended. Default: false
server.http.cache.size	Specify the upper-limit size of HiCommand Device Manager Agent's internal cache. If 0 is specified, HiCommand Device Manager Agent does not use a file cache, resulting in reduced performance. Usually you do not need to change this property. Default: 10000000

Table 4.4 server.properties File (continued)

Property	Description
server.http.cache.max FileSize	Specify the maximum size of HiCommand Device Manager Agent's internal file cache (in bytes). If a file larger than specified is requested, HiCommand Device Manager Agent does not use the cache but reads from the disk. If 0 is specified, HiCommand Device Manager Agent does not use a file cache, resulting in reduced performance. Usually you do not need to change this property. Default: 10000000
server.http.fileTypes. noLog	Specify file types not to be added to a log. Use a comma separator (,) to list more than one type (white space in the list is ignored). HiCommand Device Manager Agent does not record the file types specified here to `access.log` (see section 4.4.2). If you want to record all files to `access.log`, specify nothing here. Default: null (record any type of files)
server.http.security. clientIP	Specify that the remote host or subnet can send a request to HiCommand Device Manager Agent. For example, specify `server.http.security.clinentIP=191.0.0.2, 192.*.*.*.` HiCommand Device Manager Server(=191.0.0.2) and HiCommand Device Manager WebClient(=192.*.*.*) are given permission to connect HiCommand Device Manager Agent. Specify `sever.http.security.clientIP=*.*.*.*`. HiCommand Device Manager Agent receives requests from any remote host. Default: *.*.*.* (any host can access HiCommand Device Manager Agent)
server.agent.rm.location	You can specify the install directory of *RAID Manager*. To display ShadowImage/TrueCopy information on the WebClient of HiCommand Device Manager, it is necessary to specify correct directory that is installed *RAID Manager*. For example, server.agent.rm.location="/HORCM" (UNIX) server.agent.rm.location="c:\HORCM" (Windows)
server.agent.rmxp.locati on	You can specify the install directory of *Raid Manager XP*. To display ShadowImage/TrueCopy information on the WebClient of HiCommand Device Manager, it is necessary to specify correct directory that is installed *Raid Manager XP*. For example, server.agent.rmxp.location="/HORCM" (UNIX) server.agent.rmxp.location="c:\HORCM" (Windows)

4.3.2 logger.properties File

Table 4.5 contains the logging function properties of HiCommand Device Manager Agent.

Table 4.5 logger.properties File

Property	Description
logger.loglevel	You can specify the level of log that the HiCommand Device Manager Agent outputs to the files `error.log` and `trace.log` (see section 4.4.2). Log levels: DEBUG, INFO, WARN, ERROR and FATAL. If you specify DEBUG or INFO, the performance of the WebServer function deteriorates. Do not specify these options unless it is absolutely necessary. Default: WARN
logger.MaxBackupIndex	You can specify the maximum number of log file backups. If more log files are generated than specified, HiCommand Device Manager Agent writes over the oldest one. Default: 10
logger.MaxFileSize	You can specify the maximum size of each log file. If a log file becomes larger than you specified here, HiCommand Device Manager Agent creates a new file and writes logs to it. Default: 1 [MB]

4.4 Error Messages

4.4.1 HiScan Command Error messages

HiScan command displays an error message when an error condition occurs. This message is also written in the file "HDVM/bin/logs/HiScan.log". The error message includes the error level, which indicates the severity of the error, error code, and error message. The error code range indicates the type of error.

HiScan messages are written to the secondary output, and have the following format:

```
<revision level> / <timestamp> / <message text>
```

- <revision level> indicates the internal revision number of the program, and should always be included in any error report to Hitachi.
- <time-stamp> includes the local time-zone, but is otherwise always in a fixed numerical format (for example, its format does not depend on your geographical locale).
- <message text> starts with an error number (see Table 4.6). Messages 1000, 1001, 1007, 1008 and 1009 are only available in English. The number includes an indication of severity, as follows:
  - **I** = Informational
  - **W** = Warning
  - **E** = Error
  - **S** = Severe error

If a message is issued, and is not in the following list, please consult the appropriate README file.

Table 4.6 lists and describes the HiScan error messages and provides instructions for resolving each condition. If you are unable to resolve an error condition, please call the Hitachi Data Systems Support Center for assistance.

Table 4.6 HiScan Error Messages (continues on the following pages)

Code	Message	Description	Recommended Action
1000E	Bad usage: <explanation> <summary of correct usage>	Command parameters are incorrect. <Explanation> gives further information, for example, “Too few parameters”. **-s** option requires **-u** and **–p**. <summary of correct usage> summarizes the correct combinations. This message appears only in English.	Enter the correct command.
1001W	Error messages ‘<pathname>‘ unavailable: <systemcall>: <error>	HiScan attempts to open the message repository appropriate to your geographical locale. If not found, HiScan defaults to English, and you are notified by message 1009. Message repository <pathname> cannot be opened. It is possible for <pathname> to be null. If this occurs, HiScan cannot even obtain storage for the pathname, and further execution is unlikely to be successful. <systemcall> indicates the failing system call, for example, stat, malloc, fopen. See the appropriate <error> description. Processing continues. Error messages are indicated in message 1007, but are identified only by number. This message appears only in English.	Check for correct installation of HiScan. If correctly installed, notify your Hitachi representative.
1002E	Couldn’t establish termination handler: <reason>	The sigaction system call returned error <reason>	Consult your system administrator. Sigaction is not required if HiScan is invoked via crontab.
1004E	DoScan: <DoScan_Message>	The DoScan subroutine returned fatal error <DoScan_Message> (see below)	Respond as indicated in <DoScan_Message>
1005E	DoScan: No disk drives on this host	The DoScan subroutine found no SCSI drives installed	Consult your system administrator. Ensure all Hitachi or Sun™ disks are online.
1006E	DoEmit: <DoEmit_Message>	The DoEmit subroutine returned fatal error <DoEmit_Message> (see below)	Respond as indicated in <DoEmit_Message>
1007W	Error messages unavailable: message <number> requested	No message repository is available. Message <number> has been requested. This message appears only in English, and should be read in conjunction with message 1001.	Check for correct installation of Agent. If correctly installed, notify your Hitachi representative.
1008W	Internal error: message <number> requested	Message <number> has been requested, but is not in the message repository selected at HiScan start-up. This message appears only in English.	Check for correct installation of Agent. If correctly installed, notify your Hitachi representative.
1009W	No error messages for locale ‘<locale>‘: using English	The message repository for locale <locale> either does not exist or cannot be opened. This message appears only in English, and is preceded by message 1001.	Check for correct installation of Agent, and that Agent supports your locale. If correctly installed, notify your Hitachi representative.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
1101E	Couldn't open /dev/rdsk: <reason>	Self explanatory. See the `opendir` function description. Fatal. (Solaris™ only)	Consult your system administrator. This may be caused by running without root authority.
1102W	Could only allocate storage for <number> CTDRec items: <reason>	The CTDRec internal table records all combinations of `/dev/rdsk/cntndn` found. It is doubled in size each time it overflows. Doubling has failed, for the <reason> given by the realloc function. Processing continues, but only <number> devices are reported. (Solaris™ only)	Consult your system administrator. Ensure tjat sufficient storage is available for HiScan.
1103E	Couldn't allocate any storage for CTDRec items: <reason>	The CTDRec internal table records all combinations of `/dev/rdsk/cntndn` found. Even the initial allocation has failed, for the <reason> given by the malloc function. Fatal. (Solaris™ only)	Consult your system administrator. Ensure that sufficient storage is available for HiScan.
1104E	Couldn't allocate <number> bytes for DiskDesc table: <reason>	The DiskDesc internal table records data for all combinations of `/dev/rdsk/cntndn` found for which data can be obtained; it has at most the same number of entries as the CTDRec table. The allocation has failed, for the <reason> given by the malloc function. Fatal. (Solaris™ only)	Consult your system administrator. Ensure that sufficient storage is available for HiScan.
1105W	Couldn't open /etc/mnttab: <reason>	Self explanatory. See the `fopen` function description for information on <reason>. Processing continues, but does not yield much useful data. (Solaris™ only)	Consult your system administrator. This may be caused by running without root authority.
1106W	Couldn't statvfs <filename>: <reason>	Self explanatory. <Filename> is one of `/dev/rdsk/cntndnsn`.. See the statvfs system call description for information on <reason>. Processing continues, but does not yield much useful data. (Solaris™ only)	Consult your system administrator. This may be caused by running without root authority.
1107W	Couldn't open SCSI file <filename>: <reason>	Self explanatory. <Filename> is one of `/dev/rdsk/cntndnsn`.. See the open system call description for information on <reason>. Processing continues, but does not yield much useful data. (Solaris™ only)	Consult your system administrator. This may be caused by running without root authority.
1108W	Couldn't read SCSI file <filename>: <reason>	Self explanatory. <Filename> is one of `/dev/rdsk/cntndnsn`.. See the ioctl system call description for information on <reason>. Processing continues, but does not yield much useful data. (Solaris™ only)	Consult your system administrator..
1109W	Couldn't close <filename>	Self explanatory. <Filename> is one of `/dev/rdsk/cntndnsn`. See the close system call description. Processing continues, but later processing may fail. (Solaris™ only)	Consult your system administrator.
1110W	Couldn't close /etc/mnttab: <reason>	Self explanatory. See the `fclose` function description for information on <reason>. Processing continues, but later processing may fail. (Solaris™ only)	Consult your system administrator.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
1111W	Couldn't close /dev/rdsk: <reason>	Self explanatory. See the `closedir` function description for information on <reason>. Processing continues, but later processing may fail. (Solaris™ only)	Consult your system administrator.
1112W	Couldn't parse raw disk id /dev/rdsk/<cntndn>	A file name <cntndn> appears not to have the correct format. Processing continues, and this entry is ignored. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.
1113W:	Couldn't statvfs <mountpoint>: <reason>	Self explanatory. <Mountpoint> is a mount point specified in `/etc/mnttab` (for example, `/data`). See the `statvfs` system call description for information on <reason>. Processing continues, but does not yield much useful data. (Solaris™ only)	Consult your system administrator.
1114W	Couldn't resolve raw disk id <filename>	<filename> is one of `/dev/rdsk/cntndnsn`. The symbolic link to the appropriate file in directory `/devices` is broken. See the resolvepath system call description. Processing continues, and this entry is ignored. (Solaris™ only)	Consult your system administrator.
1115W	Couldn't load HBAAPI library, error <hbastatus>	Self explanatory. See the `HBA_LoadLibrary` function description for information on <hbastatus>. All HBA processing is bypassed; no WWN information is available. (Solaris™ only)	Consult your system administrator. Probably, the HBA API Library is not installed.
1116W	Couldn't get adapter <number> name, error <hbastatus>	Adapters are numbered from zero. The name of adapter number could not be read. See the `HBA_GetAdapterName` function description for information on <hbastatus>. This adapter is bypassed; its WWN information is not available. (Solaris™ only)	Consult your system administrator. Ensure that all Hitachi or Sun™ disks are online.
1117W	Couldn't open adapter <name>, error <hbastatus>	See the `HBA_OpenAdapter` function description for information on <hbastatus>. This adapter is bypassed; its WWN information is not available. (Solaris™ only)	Consult your system administrator. Ensure that all Hitachi or Sun™ disks are online.
1118W	Couldn't get adapter <name> attribs, error <hbastatus>	Self explanatory. See the `HBA_GetAdapterAttributes` function description for information on <hbastatus>. This adapter is bypassed; its WWN information is not available. (Solaris™ only)	Consult your system administrator. Ensure that all Hitachi or Sun™ disks are online.
1119W	Couldn't get adapter <name> port <number>attribs, error <hbastatus>	Self explanatory. See the `HBA_GetAdapterPortAttributes` function description for information on <hbastatus>. Adapter WWN information is available, but this port is bypassed; its WWN information is not available. (Solaris™ only)	Consult your system administrator. Ensure that all Hitachi or Sun™ disks are online.
1120W	Couldn't free HBAAPI library, error <hbastatus>	Self explanatory. See the `HBA_FreeLibrary` function description for information on <hbastatus>. HBA processing has probably been successful, but later processing may fail. (Solaris™ only)	Consult your system administrator.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
1122W	Couldn't read SCSI page 0 for disk id <file_name>	<filename> is one of /dev/rdsk/cntndnsn. Vital data page 0 was unavailable for device. Messages 1131-32 provide detailed error information. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.
1123W	SCSI page 83h not supported for disk id <file_name>	filename> is one of /dev/rdsk/cntndnsn. Vital data page 83 (hex) is not supported for this device; probably, it is not a Hitachi device. Messages 1131-32 provide detailed error information. (Solaris™ only)	Consult your system administrator, and report error to Hitachi if applicable.
1124W	Couldn't read SCSI page 83h for disk id <file_name>	<filename> is one of /dev/rdsk/cntndnsn. Vital data page 83 (hex) was unavailable for device. It is probably not a Hitachi device. Messages 1131-32 provide detailed error information. (Solaris™ only)	Consult your system administrator, and report error to Hitachi if applicable.
1125W	SCSI page 83h has unknown format for disk id <file_name>, model <modelid>	<filename> is one of /dev/rdsk/cntndnsn. Vital data page 83 (hex) for device does not have the expected format; possibly, it is not a Hitachi or Sun™ device. <modelid> is a 4-character string identifying the manufacturer's model number. (Solaris™ only)	Consult your system administrator, and report error to Hitachi if applicable.
1126W	SCSI page 83h has bad port info for disk id <file_name>, model <modelid>	<filename> is one of /dev/rdsk/cntndnsn. The port data in vital data page 83 (hex) for a Hitachi or Sun™ device does not have expected format. <modelid> is a 4-character string identifying the manufacturer's model number. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.
1127W	Raw disk id <file_name> is not SCSI	<filename> is one of /dev/rdsk/cntndnsn. The name of the raw SCSI file to which it is symbolically linked does not contain the string "/sd@", and is therefore not a SCSI device. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.
1128W	SCSI page 83h for disk id <file_name> indicates unknown model <modelid>	<filename> is one of /dev/rdsk/cntndnsn. The port data in vital data page 83 (hex) for a Hitachi or Sun™ device indicates a model not supported by HiScan. <modelid> is a 4-character string identifying the manufacturer's model number. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.
1129W	Couldn't find HBA Library, error <dlerror>	The HBAAPI library cannot be located. Message <dlerror> gives further detail. See the dlopen and dlerror functions. All HBA processing is bypassed; no WWN information is available. (Solaris™ only)	Consult your system administrator. The HBA API Library may not be installed.
1130W	dlsym error <dlerror>	A routine in the HBAAPI library cannot be located. Message <dlerror> gives further detail, including the name of the missing routine. See the dlsym and dlerror functions. All HBA processing is bypassed; no WWN information is available. (Solaris™ only)	Consult your system administrator. The HBA API Library may not be installed.
1131W	SCSI ioctl failed for <file_name>: <reason>	<filename> is one of /dev/rdsk/cntndnsn. See the ioctl system call description for information on <reason>.This message should be read in conjunction with message 1132. Processing continues, and this entry is ignored. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
1132W	SCSI status <hex1> Sense key <hex2> ASC(Q) <hex3hex4>	See the `scsi/generic/scsi.h` include file for information on <hex1>, and see the draft SCSI-2 standard for information on <hex2> through <hex4>.This message should be read in conjunction with message 1131. Processing continues, and this entry is ignored. (Solaris™ only)	Consult your system administrator, and report error to Hitachi.
1133W	Couldn't allocate <number> bytes for FCP Target Mapping: <reason>	The HBA API `GetFcpTargetMapping` function allows HiScan to relate subsystem port WWN data to a specific LUN. Storage allocation has failed, for the <reason> given by the malloc function. Processing continues, but subsystem port WWN data is not available. (Solaris™ only)	Consult your system administrator. Ensure that sufficient storage is available for HiScan.
2001W	Cannot get hostname	Process failed to acquire the host name. Process returns a value of "NoHostName". (Windows only)	Windows requires a valid computer name. Check Network properties for WinNT and System properties for Win2000 for a valid name.
2002E	Memory allocation failure for <structure name> struct	The malloc function failed to acquire the requested storage. Process requires several dynamic work areas for disk information. Fatal. (Windows only)	Record this error and report the problem to your Hitachi Data Systems representative.
2003E	No physical disks attached to host	Process failed to find any attached physical disk for the host. Fatal. (Windows only)	Using Disk Administrator, verify that the host has valid physical disks. Record this error and report the problem to your Hitachi Data Systems representative.
2005E	Access <error code> failure trying to determine number of drives.	Process requires Administrator group access to make inquiry only calls to determine disk configuration. On a WinNT platform, Disk Administrator may be active and have a lock on volume information. Fatal. (Windows only)	The userid used to run HiScan does not have Administrator group access. Either add the access or use another userid that does have the Administrator group access. If a WinNT Disk Administrator locking problem, commit changes to disk configuration.
2006E	No logical volumes found for host.	Process failed to find any logical drives or mount points for the host. On a WinNT platform, Disk Administrator may be active and have a lock on volume information. Fatal. (Windows only)	Reboot host and try again. The host should have at least one boot partition/volume. If a WinNT Disk Administrator locking problem, commit changes to disk configuration.
2009W	Failed to load HBAAPI.dll libraries	Process could not find the HBAAPI.dll libraries. All HBA processing is bypassed; no host disk information is reported. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems or and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
2010W	Could not load pointer to function <HBA function name>.	Process could not load pointer to function specified. All HBA processing is bypassed; no host disk information is reported. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2011W	HBA Status: <HBA Status Code> Failed to load HBA libraries	Process failed to load HBA dll libraries. All HBA processing is bypassed; no host disk information is reported. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems or and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2012W	HBA failed to find any SCSI adapters	Process failed to find any valid HBA SCSI adapters HBA processing has been bypassed. Required host disk information is not available. Process reports default disk entry only. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2013W	HBA Status: <HBA status code> Failure to get adapter name handle.	Process failed to acquire valid HBA SCSI adapter name handle. HBA processing has been bypassed. Required host disk information is not available. Process reports default disk entry only. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2014W	HBA Status: <HBA status code>. Failure to get Fcp target mapping	Process failed to acquire HBA FCP target mapping information. HBA processing has been bypassed. Required host disk information is not available. Process reports default disk entry only. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 Systems and Windows NT® Systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2020W	Conversion error to <format> format for string = <string>	<format> has the value “multi-byte” or UNICODE. An error has occurred while changing string <string> to format <format> (Windows only). Message 2021 follows.	If the host agent is correctly reporting information this message can be ignored. Otherwise, record this error and report the problem to your Hitachi Data Systems representative.
2021W	String hex dump = <string>	See message 2020.	See message 2020.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
2040W	<Function name> failure code <error code> for physical drive <id>	The specified physical disk function call failed. There are several valid conditions that cause this to occur. (Windows only)	If the host agent is correctly reporting information, this message can be ignored. Otherwise, record this error and report the problem to your Hitachi Data Systems representative.
2041W	<Function name> failure code <error code> for volume <id>	The specified logical volume function call failed. There are several valid conditions that cause this to occur. (Windows only)	If the host agent is correctly reporting information, this message can be ignored. Otherwise, record this error and report the problem to your Hitachi Data Systems representative.
2042W	<Function name> failure code <error code> for mount point <id>	The specified mount point function call failed. There are several valid conditions that cause this to occur. (Windows only)	If the host agent is correctly reporting information, this message can be ignored. Otherwise, record this error and report the problem to your Hitachi Data Systems representative.
2070W	IOCTL_SCSI_GET_INQUIRY_DATA failure code <error code>	Process failed to acquire the OS disk information required for further processing. (Windows only)	Record this error and report the problem to your Hitachi Data Systems representative.
2071W	IOCTL_SCSI_PASS_THROUGH page <vpdno> failure code <error code> for physical disk <number>	Process failed to acquire the OS disk information required for further processing. <vpdno> is the number of a Vital Product Data page. (Windows only)	Record this error and report the problem to your Hitachi Data Systems representative.
2072W	IOCTL_SCSI_PASS_THROUGH page <vpdno> sense code failure for physical disk <number>	Process failed to acquire the OS disk information required for further processing. <vpdno> is the number of a Vital Product Data page. (Windows only)	Record this error and report the problem to your Hitachi Data Systems representative.
2080W	Cannot open drive <volume letter> which was previously found, code = <error code>	Process failed to open a previously found logical volume or mount point. NOTE: For Windows® 2000 the references is for a GUID. and cannot report host disk information for missing volume/mount point. (Windows only)	Verify that mount points (Win2000) and volumes are allocated to available physical disks. The host may require a reboot. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
2081W	Cannot open volume <volume letter> which was previously found	Process failed to open a previously found logical volume or mount point. ***Note***: For Windows® 2000 the reference is for a GUID and cannot report host disk information for missing volume/mount point. (Windows only)	Verify that mount points (Win2000) and volumes are allocated to available physical disks. The host may require a reboot. If problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2150W	HBA Status: <HBA status code>. Failure to get adapter attributes	Process failed to acquire HBA port attribute information adapter. HBA processing has been bypassed. Required host disk information is not available. Process reports default disk entry only. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2151W	HBA Status: <HBA status code>. Failure to get adapter port attributes	Process failed to acquire HBA port attribute information adapter. HBA processing has been bypassed. Required host disk information is not available. Process reports default disk entry only. (Windows only)	Verify and correct host HBA configuration. See section 2.6 for Windows® 2000 systems and Windows NT® systems. If the problem continues, record this error and report the problem to your Hitachi Data Systems representative.
2400I	HBA Library name <name>, file <pathname> is loaded	Self-explanatory. (Solaris™ only)	None.
2401W	HBA Library name <name>, file <pathname> is not loaded	Self-explanatory. (Solaris™ only)	Check file /etc/hba.conf for correctness. As long as one HBA API library is correctly loaded, this error can probably be ignored. Otherwise, report to the supplier of the missing HBA API library.
2402I	HBA Library name <name>, file <pathname> is loaded	Self-explanatory. (Solaris™ only)	No action required.
2403W	HBA Library name <name>, file <pathname> is not loaded	Self-explanatory. (Solaris™ only)	Check file `/etc/hba.conf` for correctness. As long as one HBA API library is correctly loaded, this error can often be ignored. Otherwise, report to the supplier of the missing HBA API library.
2500I	HBA INFO: Adapter <number> is named <name>	Informational.	No action required.
2501I	HBA INFO: Adapter <number> has <number> mapped LUNs	Informational.	No action required.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
2502I	HBA INFO: Adapter <number> manufacturer is <name>	Informational.	No action required.
2503I	HBA INFO: Adapter <number> serial number is <number>	Informational.	No action required.
2504I	HBA INFO: Adapter <number> model is <detail>	Informational.	No action required.
2505I	HBA INFO: Adapter <number> model description is <detail>	Informational.	No action required.
2506I	HBA INFO: Adapter <number> driver version is <detail>	Informational.	No action required.
2507I	HBA INFO: Adapter <number> firmware version is <detail>	Informational.	No action required.
2508I	HBA INFO: Adapter <number> number of ports is <number>	Informational.	No action required.
3000E	WSAStartup failed with error nnnn.	Windows Socket Services were unable to start. Fatal.	Check that the Windows® operating system is completely installed, and that the TCP/IP protocol stack is fully installed.
3001E	Insufficient storage available to report <number of> disk devices.	The malloc function failed to acquire the requested storage. Process requires dynamic work area to format return disk information. Fatal.	Record this error and report the problem to your Hitachi Data Systems representative.
3002E	Insufficient storage available to report <number of> disk devices.	The malloc function failed to acquire the requested storage. Process requires dynamic work area to format return disk information. Fatal.	Record this error and report the problem to your Hitachi Data Systems representative.
3003E	Error Opening output file <file name>: Error <error number>	Process failed to open output specified by startup parameters. Fatal.	Ensure that the path used in the **-t** parameter exists, the filename is valid for this operating system, and that there is sufficient space on the disk.
3004E	Cannot resolve address <IP address>: Error <error number>.	Process failed to resolve HiCommand Device Manager Server IP address specified by startup parameters. Fatal.	
3005E	Error Opening socket: Error <error number>.	Process failed to open TCP/IP socket for communication with HiCommand Device Manager server. Fatal.	Check that the Windows OS is completely installed, and that the TCP/IP protocol stack is fully installed.
3006E	Socket Connect() failed: <error number>.	Process failed to acquire socket connection to HiCommand Device Manager Server. Fatal.	Ensure that the **-s** parameter is correct (server address:port) and that the indicated HiCommand Device Manager server is active.

Table 4.6 HiScan Error Messages (continued)

Code	Message	Description	Recommended Action
3007E	Socket send() failed: error <error number>.	Process failed to send HTTP/XML data to HiCommand Device Manager Server. Fatal.	Check that the network connection is operative and reliable.
3008E	Socket recv() failed: error <error number>	Process failed to receive acknowledgment from HiCommand Device Manager Server. Fatal.	Check to see that the **-s** parameter indicates a HiCommand Device Manager server and not some other network server type. Check that the network connection is operative and reliable.
3009E	-s <servaddr> connected but did not respond.	The server indicated in the **-s** parameter accepted the connection, but did not respond to the request. Fatal.	Check to see that the **-s** parameter indicates a HiCommand Device Manager server and not some other network server type. Check that the network connection is operative and reliable.
3010E	Expecting response header: HTTP/1.0. Received: <string>	The server indicated in the **-s** parameter communicated with HiScan, but provided an unrecognized response (as indicated in the <string>). Fatal.	Check to see that the **-s** parameter indicates a HiCommand Device Manager server and not some other network server type. Check that the network connection is operative and reliable.
3011E	Received a HTTP failure response: <code> <text>	The server indicated in the **-s** parameter returned a HTTP header that indicates an unusual condition. Fatal.	The <text> portion of this message may indicate the nature of the problem. Such a condition might arise from an invalid combination of **-u** <userid> and **-p** <password> parameters.

4.4.2 Other error messages

If any problem occurs in the execution of the daemon/service or WebServer processes of HiCommand Device Manager Agent, it records information about that problem to the proper log files. See Table 4.7 for these log filenames, locations and descriptions.

Table 4.7 Other Error Log Files

Log file name and location	Description
HDVM/agent/logs/service.log	This file is a log of the WebServer function. The generation process of XML Response message and its contents is recorded to this file.
HDVM/agent/logs/access.log	All accesses to the WebServer function of HiCommand Device Manager Agent are recorded to this file.
HDVM/agent/logs/trace.log	Usually this file is empty. If you specify "DEBUG" or "INFO" to logger.loglevel in the property file "logger.properties" (see section 4.3.2), the internal information of the WebServer function is logged to this file. This option slows down the performance of the WebServer function. Do not specify these options unless it is absolutely necessary.
HDVM/agent/logs/error.log	This file is an error log of HiCommand Device Manager Agent's WebServer function.
HDVM/bin/logs/hdvmagterr.log	This file is an error log of HiCommand Device Manager Agent's daemon/service process.
HDVM/util/logs/hldn_err.log	This file is an error log of HiCommand Device Manager Agent's process that finds the attached Hitachi storage devices (logical units, LUs) on Hitachi storage subsystems.

Chapter 5 Hitachi Data Systems Support Center

5.1 Calling the Hitachi Data Systems Support Center

If you need to call the Hitachi Data Systems Support Center, make sure to provide as much of the following information about the problem as possible.

- Circumstances surrounding the error or failure
- All configuration and log files of HiCommand Device Manager Agent and the HiScan command (see section 4.3)
- The exact content of any error messages displayed on the HiCommand Device Manager Server, HiCommand Device Manager client, HiCommand Device Manager Agent, and/or host system

The worldwide Hitachi Data Systems Support Centers are:

- Hitachi Data Systems North America/Latin America
  San Diego, California, USA
  1-800-348-4357
- Hitachi Data Systems Europe
  Contact Hitachi Data Systems Local Support
- Hitachi Data Systems Asia Pacific
  North Ryde, Australia
  011-61-2-9325-3300

Acronyms and Abbreviations

API	application program interface
CVS	custom volume size
HBA	host bus adapter
HDVM	HiCommand Device Manager
HTML	hypertext markup language
HTTP	hypertext transfer protocol
LU	logical unit
LUN	logical unit number, logical unit
LUSE	LUN expansion
NIC	network interface card
OS	operating system
SCSI	small computer systems interface
SNIA	Storage Networking Industry Association
TCP/IP	transmission control protocol/internet protocol
WWN	worldwide name
XML	extensible markup language

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