CHAPTER 12

Maintaining Cisco E-DI

Several tools are provided for Cisco E-DI server maintenance and troubleshooting:

- Repair Login—Used to troubleshoot the Cisco E-DI server and to perform server maintenance operations. For example, restart services, display memory, disk usage.
- Maintenance Submode—The Cisco E-DI maintenance shell can be used to perform routine maintenance tasks such as rebooting of the Cisco E-DI server.
- Viewing Server Information—Administrators can view Cisco E-DI related information such as device-packages, clock, netstat, interfaces, and thread pools.

Cisco E-DI provides an aggregate log of all database transactions with their respective time stamps.

Cisco E-DI provides CLI commands to display:

- Linux process information
- Cisco E-DI thread pool sizes and pending tasks in the queue
- System memory usage
- System CPU usage

Cisco E-DI also generates internal statistics which can be output to a file.

Repair Login

Repair login allows the administrator to troubleshoot the system when the Cisco E-DI process itself is not responding.

Repair login can be accessed only through the console port. It can be used to perform server maintenance operations. The following options can be chosen using the repair login:

- Network Information—Displays the details of all the interfaces on the server, and the summary information about the entries in the routing table. The Cisco E-DI system leverages the underlying Linux operating system networking capabilities. The interface information displayed is the output of the **ifconfig** command and the routing information is the output of the **route** command on the Linux system.
- Disk Information—Displays summary information on the disk utilization.
- Memory usage—Displays memory (RAM) and swap information.
- Boot message—Displays the message generated during the server boot process.
- Services— Displays information about currently running services. This information includes the pid and status of the following processes:
  - EDIServer
  - mysqld
  - sshd
  - vsftpd
  - snmpd
  - httpd

  The following is the sample output.

```
********************** System Services Status ***********
Service EDIServer {pid 568} is running.
mysqld (pid 576) is running...
sshd (pid 500) is running...
vsftpd is stopped
snmpd (pid 479) is running...
httpd (pid 643 642 641 640 639 638 637 636 614) is running...
*********************************************************
```

- Recreate database—Drops the existing data, recreates the database, and reloads the server.
- Restart services—Restarts all the critical services run in Cisco E-DI.
- Reboot server—Reboots Cisco E-DI and uses the current saved startup configuration.
- Erase startup config—Erases the current startup configuration and reloads the server. This option does not reset the hardware to factory defaults, all the Cisco E-DI patches, Linux patches and IDU updates will be kept intact.
- Reinstall software—Reinstalls the Cisco E-DI software from the Installation CD-ROM.
- Patches—Shows currently installed Linux patches.

Repair Mode

Repair mode is accessible through the console mode only, and can be used to perform server recovery and maintenance operations. This mode can be accessed at the login time by using a login name **repair** and the password set up during installation. The repair menu options are displayed, see Table 12-1for more information.

Table 12-1 Repair Menu Options

Menu Option	Description
[B] Display system boot messages	Displays all the boot messages that were logged during bootup time.
[C] Re-create Cisco E-DI database	Re-creates Cisco E-DI database. All previous contents will be lost.
[D] Display disk information	Displays Cisco E-DI physical disk information. Information such as the disk size and usage is reported.
[E] Erase startup config and reload server	Erases the current startup configuration and reloads Cisco E-DI.
[I] Re-install software from Installation CD-ROM	Re-install the Cisco E-DI server from the Installation CD-ROM.
[L] Display server log	Displays the Cisco E-DI server log messages.

Table 12-1 Repair Menu Options (continued)

Menu Option	Description
[M] Display memory usage	Displays Cisco E-DI memory (RAM) and swap information.
[N] Display network interface information	Displays Cisco E-DI network connection and routing table information. Detailed interface configuration, statistics, static IP address information and routing table are provided.
[P] Restart critical system services	Restarts all the critical services run in Cisco E-DI.
[Q] Quit repair menu	Quit repair mode and bring up the login prompt.
[R] Reboot appliance	Reboots Cisco E-DI and use the current saved startup configuration.
[S] Display services current running status	Displays Cisco E-DI system services and their PIDs.

Maintenance Submode

The maintenance submode can be used by the administrator for normal day to day maintenance operations.

The tasks performed in this mode include mounting and ejecting a CD-ROM, upgrading the server, installing patches, or rebooting the Cisco E-DI server. Refer to the *Cisco Enhanced Device Interface Quick Start Guide, 2.0* for details.

Viewing Server Information

Troubleshooting the server typically begins by looking at the server statistics and debug information. To enable administrators to view this information, Cisco E-DI provides options for the **show server** command. See Table 12-2.

Table 12-2 Commands to View Server Information

Action	Command
To display the server arp table.	[SRV:/server]# **show server arp**
To display the server hardware clock.	[SRV:/server]# **show server clock**
To display installed Cisco E-DI device packages.	[SRV:/server]# **show server device-packages**
To display the disk partitions and usage.	[SRV:/server]# **show server disk**
To print a list of event queues.	[SRV:/server]# **show server event-queues**
To display the server interfaces.	[SRV:/server]# **show server interfaces**
To display the server log information.	[SRV:/server]# **show server log** [*bookmark name* | *log.1* | *log.2* | *log backup*]
To display the known device types.	[SRV:/server]# **show server known-devices**
To print a list of all server software modules.	[SRV:/server]# **show server modules**
To display the server TCP or UDP network connections.	[SRV:/server]# **show server netstat** [*tcp* | *udp*]
To display the server NTP table.	[SRV:/server]# **show server ntp**
To display information on server processes such as the process id, cpu utilization. The output will be what can be seen using the **top** command in a Linux system.	[SRV:/server]# **show server processes**
To display the server IP routing table.	[SRV:/server]# **show server routes**
To display the server running configuration for a module.	[SRV:/server]# **show server running-config** *module*
To display the server startup configuration.	[SRV:/server]# **show server startup-config**

Table 12-2 Commands to View Server Information (continued)

Action	Command
To display the server statistics that include the aggregate count and the last occurrence for the following operations and events: • Database backup, database restore. • Discovery jobs. • Inventory jobs run. • SNMP—Traps sent, trap send failures. • Syslog—Message send failures, messages sent, receiver decode errors, messages received but dropped, messages received. • Server—Configuration change count, configuration load count, configuration save count. • TFTP—Authentication failed requests, get requests, put requests. • SNMP Traps—Traps received but dropped, known traps received, traps received, unknown traps received. • Triggers—Failed action implementations, successful action implementations, successful pattern matches. • XML API—Events sent, keep-alive requests received, XML requests received, XML responses sent out.	`[SRV:/server]#` **`show server stats`**
To print a list of thread pools.	`[SRV:/server]#` **`show server thread-pools`**
To print a list of all threads.	`[SRV:/server]#` **`show server threads`**
To show the server version.	`[SRV:/server]#` **`show server version`** *`brief`*

In addition, administrators can use the **show line** command to view information on the sessions currently in use, including the userId, IP Address, connection mode and the uptime.

Debug Logs

Debug logging can be enabled or altered or disabled on specific modules or on all the modules using the **debug** CLI command. When debug logging is enabled with a specific level, the messages that are generated by various modules at that level and above are logged into a log file.

Debug mode has the following levels of severity:

- fatal (5)
- error (4)
- warn (3)
- info (2)
- debug (1)

The debug log messages can be viewed using **show server log** command. The log output can be redirected to the terminal using the **terminal monitor** command. When the log file reaches the maximum size of 30MB, it is saved into a backup file.

These messages can be displayed on the terminal or logged to a file which can be accessed using the commands detailed in Table 12-3.

Table 12-3 Commands to Debug Cisco E-DI

Action	Command
To set the debugging level for all the Cisco E-DI modules.	`[SVR:/server]# debug all level {debug | error | fatal | info | warn}`
To set the debugging level for a specific Cisco E-DI module to a predefined state.	`[SVR:/server]# debug module {module-name} level {debug | error | fatal | info | warn}`
To set a bookmark in the log file to facilitate retrieval of log messages between desired Cisco E-DI states.	`[SVR:/server]# debug bookmark {begin | end} bookmark-name`
To show the contents of the log file for the specified bookmark.	`[SVR:/server]# show server log bookmark bookmark-name`

Table 12-3 Commands to Debug Cisco E-DI (continued)

Action	Command
To print the logging messages to the terminal,	`[SVR:/server]# terminal monitor`
To clear the debug log. See Table A-1 for details of the options available with this command.	`[SVR:/server]# clear debug-log`

Synchronizing Information

Cisco E-DI has the most current information about all of the devices in the network in its database. In case of any discrepancies found in the information when troubleshooting, you can synchronize the information between the server and the network. Synchronization can be done in the foreground or the background.

Note The command for configuration synchronization is context sensitive.

Table 12-4 details the commands to synchronize information in Cisco E-DI.

Table 12-4 Commands to Synchronize Information

Action	Command
To synchronize the config-archives with the database for all offline and online devices, and server	`[NET:/network]# sync archives-with-db [all]`
To synchronize the file system with device. Synchronization can be done in the foreground or the background.	`[NET:/network]# sync filesystem {bg | fg}`
To synchronize the startup and running config files with device. Synchronization can be done in the foreground or the background.	`[NET:/network]# sync configuration {bg | fg}`
To synchronize the asset inventory information. Synchronization can be done in the foreground or the background.	`[NET:/network]# sync asset {bg | fg}`