Configuring Devices

Cisco E-DI supports configuration of devices, through the CLI and XML programmatic interface (PI), covering a range of platform/OS combinations. Cisco E-DI uses a knowledge base which emulates each device to provide you with a virtual experience of configuring the actual device.

The knowledge base for the various platforms is learnt through the **FastTrack** command learning engine. Through FastTrack, Cisco E-DI is capable of providing comprehensive CLI/XML coverage for a given NE/OS release combination within a short period of time. As more features are added into releases of Cisco IOS, Cisco E-DI incrementally builds upon the existing knowledge base through incremental device updates (IDU) which are available for download.The IDU feature allows Cisco E-DI to be updated with new device packages on the running system.

Cisco E-DI users can configure a group of devices using **network virtualization**. Cisco E-DI groups the knowledge base data applicable to all the devices in the group, and provides the common set of configuration commands to the user. In this way, the user can configure the network as if they are configuring a single device. See Network Virtualization, page 1-7.

All network related configurations are performed in the server configuration setup command mode. This mode contains commands for entering into configuration mode for selected devices or combinations of devices to save, commit, schedule or discard configuration changes.

To configure a device or devices:

1. Select the device using the **network <device>** or **network <group>** commands, or by changing into the device directory using the **cd** command.
2. Enter the config-setup mode, enter **config s**.

   Note The behavior of this command changes when session based device authentication is enabled. See Using Session Based Device Authentication, page 2-6 for a full explanantion of the command behavior.

3. Enter **config t** to start editing the configuration.
4. When you have finished editing the configuration, exit the config mode.
5. You enter the config-setup mode where you can commit, discard or schedue the configuration change you have just made.

This chapter includes the following information:

Configuring a Device

Cisco E-DI provides several ways to change the configuration of a device:

- Interactive configuration
- Changing the configuration through **copy** command

Note The behavior of this command changes when session based device authentication is enabled. See Using Session Based Device Authentication, page 2-6 for a full explanantion of the command behavior.

Table 6-1 details the commands available to enter the network configuration mode and configure the devices.

Table 6-1 Commands to Configure Devices

Action	Command
To enter network configuration setup mode. **Note** The behavior of this command changes when session based device authentication is enabled. See Using Session Based Device Authentication, page 2-6 for a full explanantion of the command behavior.	`[NET:/network]# configure setup`
To enter network configuration mode.	`[NET:/network](config-setup)# conf t`
To enter the device configuration mode.	`[NET:/network](config-setup)# configure [device | terminal] ip-address`
To exit from the current configuration view and move to the parent view.	`[NET:/network](configure)# exit`
To exit out of the configuration mode. You can also use Ctrl-Z.	`[NET:/network](configure)# end`
To configure an interface when only one device is selected.	`[NET:/network](configure)# interface FastEthernet0/1`
To configure an interface when multiple devices are selected.	`[NET:/network](configure)# interface ip-address/name`
To configure an interface using an interface macro to select multiple interfaces. Enter **interface ?** to see list of all macros available. Devices can be grouped as interface macros, for example all-fast ethernet, or all-vlans. This allows the configuration to be applied to all the interfaces of the device, and also on all the devices in the selected group.	`[NET:/network](configure)# interface all-dot11`
To show the list of devices selected for configuration, or to preview the configurations that will be made on the selected device.	`[NET:/network](config-setup)# show [devices | preview]`

Table 6-1 Commands to Configure Devices (continued)

Action	Command
To: • Discard the configuration. • Save the configuration as text and script to a file. The script will be saved in the /server/scripts/config-jobs directory. • Schedule the configuration commit to a later date. The script will be saved in the /server/scripts/config-jobs directory. • Commit the configurations to the devices immediately. Maintains a transaction log in /server/logs/config-commit.log and in user log file if user specifies.	`[NET:/network](config-setup)# discard | save | schedule-job | commit [logfile FILENAME]`
To run the script.	`[NET:/network]# run file Script_path`

In network configuration mode, Cisco E-DI provides a common set of commands that apply to all selected devices and their software versions.

After exiting from network configuration mode, you must select an option from the Configuration menu as follows:

Validating Commands

Once the devices are selected for configuration, a summary table shows which devices have been selected and which versions of the knowledge base are being used to perform CLI operations. In the network-config mode, enter CTRL-G to display the devices selected, knowledge base applied and the applicability of the command to the selected device. For example:

```
[NET:/network](configure)# ip name-server [CTRL-G]
Device            IDU Name     IDU Version   Version       Command Status
172.168.3.22      Cat3550      1.2           12.3(6a)      INCOMPLETE
172.168.3.21      Cisco7200    1.1           12.3(6a)      INCOMPLETE
```

Managing Configuration Files

Cisco E-DI archives start-up and running-config files for all devices and the server whenever there is a configuration change. The archived files may later be used for restoring the configuration of the network or server to the desired state. All the network and server configuration archives are stored in the /server/config-archive directory.

Table 6-2 details the commands to manage the configuration files.

Table 6-2 Commands to Manage Configuration Files

Action	Command
To list all archives of running configuration. A running configuration can be saved to the startup configuration. The archived configuration files can also be viewed in the device directory, enter **cd /network/device/<ip address>/[running-config | startup-config]**	[SVR:/server]# **show running-config** [archive | device | diff-with | list-archives]
To list all archives of startup configuration	[SVR:/server]# **show startup-config** [archive | device | diff-with | list-archives]
To load the latest archived configuration into the running configuration, or load the filename that points to the startup configuration. The filename is the name of the startup configuration file to be loaded.	[SVR:/server]# **load-config** [*filename*]
To clear the configuration archive files from the server. See Table A-1 for details of the options available with this command.	[SVR:/server]# **clear config-archive** [all | device |running-config| startup-config]
To clear the configuration archive files from the network. This command is applied to all the devices in the current context; **all** clears the startup and running configurations, **running** clears the running configurations, **startup** clears the startup configurations	[NET:/network]# **clear config-archive** {all | startup | running}
To clear the configuration archive files for a particular device.	[NET:/network]# **clear config-archive** device ip-address {all | startup | running}
To clear the configuration archive older than a specific period.	[NET:/network]# **clear config-archive** {**all** | **running** | **startup** | **device** {**ip-address**} ...} **older-than** {**days** | **time**}
To restore a server or a device or a group of devices to a state represented by a specified time or a configuration file or a labeled archive file. `file` is the name of the configuration archive file that will be used for restoration. `time` restores the configuration file that has a timestamp that is less than or equal to the given time. **Note** The device will be restarted after a configuration restore.	[SVR:/server|NET:/network]# **restore** {**file file_name** | **time YYYY MM DD HH:MM:SS** | **label label_name**}
To create a label for server configuration. Startup configuration archive files can be labeled using the time stamp or filename. Labels created in one context, for example server, are not displayed in the other context, that is network mode. The label command accepts the name of the label and applies the label based on whether the command is implemented in the server or network context.	[SVR:/server]# **label** {***label_name***} [descr | file | time]

Table 6-2 Commands to Manage Configuration Files (continued)

Action	Command
To create a label for device configuration. `descr` provides an option to specify a description while labeling the configuration `file` applies the label to the given file name. `time` creates and applies a label based on the timestamp of the configuration archive file.	`[SVR:/server]# network [ip-address | group {group-name} ]` `[NET:/network]# label {label_name} [descr | file | time]`
To display the label and its details including the associated file, and description.	`[SVR:/server|NET:/network]# show labels [detail label_name]`
To delete a label.	`[SVR:/server]# clear label server_conf | network_conf {time YYYY MM DD HH:MM:SS descr "Server configuration as of <date> | file_name descr "name"}`