



Cisco Prime IP Express User Interfaces

Cisco Prime IP Express provides a regional and a local web UI and a regional and local CLI to manage the CDNS, DNS, DHCP, and CCM servers:

- **Web UI for the regional cluster to access local cluster servers**—See [Regional Cluster Web UI](#), on page 11.
- **Web UI for the local cluster**—See [Local Cluster Web UI](#), on page 7.
- **CLI for the local clusters**—Open the `CLIContent.html` file in the installation `/docs` directory (see [Command Line Interface](#), on page 11).
- **CCM servers that provide the infrastructure to support these interfaces**— See [Central Configuration Management Server](#).

This chapter describes the Cisco Prime IP Express user interfaces and the services that the CCM servers provide. Read this chapter before starting to configure the Cisco Prime IP Express servers so that you become familiar with each user interface capability.

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Management Components

Cisco Prime IP Express contains two management components:

- Regional component, consisting of:
 - Web UI
 - CLI
 - CCM Server

- Bring your own device (BYOD)
- Local component, consisting of:
 - Web UI
 - CLI
 - CCM server
 - Authoritative Domain Name System (DNS) server
 - Caching / Recursive Domain Name System (CDNS) server
 - Dynamic Host Configuration Protocol (DHCP) server
 - Simple Network Management Protocol (SNMP) server
 - Management of local address space, zones, scopes, DHCPv6 prefixes and links, and users

**Note**

We do not recommend configuring both DNS and Caching DNS services in one server.

License management is done from the regional cluster when Cisco Prime IP Express is installed. You must install the regional server first and load all licenses in the regional server. When you install the local cluster, it registers with regional to obtain its license.

The regional CCM server provides central management of local clusters, with an aggregated view of DHCP address space and DNS zones. It provides management of the distributed address space, zones, scopes, DHCPv6 prefixes and links, and users.

The local CCM server provides management of the local address space, zones, scopes, DHCPv6 prefixes and links, and users.

The remainder of this chapter describes the SNMP protocols. The CCM server, web UIs, and CLI are described in [Cisco Prime IP Express User Interfaces, on page 1](#). The DNS, CDNS and DHCP servers are described in their respective sections.

Introduction to the Web-Based User Interfaces

The web UI provides granular access to configuration data through user roles and constraints. The UI provides quick access to common functions. The web UI granularity is described in the following sections.

Related Topics

[Supported Web Browsers, on page 3](#)

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Supported Web Browsers

The web UI has been tested on Microsoft Internet Explorer 9 and Mozilla Firefox 21 and later. Internet Explorer 8 is not supported.

Access Security

At Cisco Prime IP Express installation, you can choose to configure HTTPS to support secure client access to the web UIs. You must specify the HTTPS port number and provide the keystore at that time. With HTTPS security in effect, the web UI Login page indicates that the “Page is [SSL¹ Secure](#).”

**Note**

Do not use a dollar sign (\$) symbol as part of a keystore password.

Logging In to the Web UIs

You can log into the Cisco Prime IP Express local or regional cluster web UIs either by HTTPS secure or HTTP nonsecure login. After installing Cisco Prime IP Express, open one of the supported web browsers and specify the login location URL in the browser address or netsite field. Login is convenient and provides some memory features to increase login speed.

You can log in using a nonsecure login in two ways:

- On Windows, from the Start menu, choose **Start > All Programs > IP Express 8.3 > IP Express 8.3 {local | regional} Web UI**. This opens the local or regional cluster web UI from your default web browser.

**Note**

Open the regional Web UI first and add the licenses for the required services.

- Open the web browser and go to the web site. For example, if default ports were used during the installation, the URLs would be **http://hostname:8080** for the local cluster web UI, and **http://hostname:8090** for the regional cluster web UI.

This opens the New Product Installation page if no valid license is added at the time of installation. You have to browse and add the valid license. If the license key is acceptable, the Cisco Prime IP Express login page is displayed.

¹ This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

**Note**

You can add the licenses only in the regional server. The local has to be registered to the regional at the time of installation to run the desired licensed services.

In the local server, confirm the regional server IP address and port number and also the services you want to run at the time of your first login. Click **Register** to confirm registration. If the regional server is configured with the required licenses, you will be displayed the login page.

Enter the superuser username and password created at the time of installation to log into the Web UI. The password is case-sensitive (See [Managing Passwords](#)). If you already added the valid license and superuser and configured a password at the time of installation, then you can log into the web UI using that username and password.

**Note**

There is no default username or password for login.

**Note**

To prepare for an HTTPS-secured login, see *Cisco Prime IP Express Installation Guide*.

Depending on how your browser is set up, you might be able to abbreviate the account name or choose it from a drop-down list while setting the username.

To log in, click **Login**.

Multiple Users

The Cisco Prime IP Express user interfaces support multiple, concurrent users. If two users try to access the same object record or data, a **Modified object** error will occur for the second user. If you receive this error while editing user data, do the following:

- **In the web UI**—Cancel the edits and refresh the list. Changes made by the first user will be reflected in the list. Redo the edits, if necessary.
- **In the CLI**—Use the **session cache refresh** command to clear the current edits, before viewing the changes and making further edits. Make changes, if you feel that it is necessary even after the other user's changes.

Changing Passwords

Whenever you edit a password on a web UI page, it is displayed as a string of eight dots. The actual password value is never sent to the web browser. So, if you change the password, the field is automatically cleared. You must enter the new password value completely, exactly as you want it to be.

**Note**

The password should not be more than 255 characters long.



For details on changing administrator passwords at the local and regional cluster, see [Managing Passwords](#).

Navigating the Web UIs

The web UI provides a hierarchy of pages based on the functionality you desire and the thread you are following as part of your administration tasks. The page hierarchy prevents you from getting lost easily.

**Caution**

Do not use the Back button of the browser. Always use the navigation bar menu, or the **Cancel** button on the page to return to a previous page. Using the browser Back button can cause erratic behavior or can cause failures.

A single sign-on feature is available to connect between the regional and local cluster web UIs. The regional cluster web UI pages include the Connect button () in the List/Add Remote clusters page, which you can click to connect to the local cluster associated with the icon. If you have single sign-on privileges to the local cluster, the connection takes you to the related local server management page (or a related page for related server configurations). If you do not have these privileges, the connection takes you to the login page for the local cluster. To return to the regional cluster, local cluster pages have the Return button () on the main toolbar.

**Note**

Navigation bar items can vary based on if you have the role privileges for IPv4 or IPv6. For example, the **Design** menu bar can be **DHCPv4** and **DHCPv6** if you have the ipv6-management subrole of the addrblock-admin role assigned.

Waiting for Page Resolution Before Proceeding

Operations performed in the web UI, such as resynchronizing or replicating data from server clusters, are synchronous in that they do not return control to the browser until the operation is completed. These operations display confirmation messages in blue text. Also, both the Netscape and IE browsers display a wait cursor while the operation is in progress.

**Tip**


Wait for each operation in the web UI to finish before you begin a new operation. If the browser becomes impaired, close the browser, reopen it, then log in again. Some operations like zone distributions can take significant amount of time, so you may have to wait till the operation completes.

Committing Changes in the Web UIs

You do not actually commit the page entries you make until you click **Save** on the page. You can delete items using the delete icon. To prevent unwanted deletions, a Confirm Delete dialog box appears in many cases so that you have a chance to confirm or cancel the deletion.

Role and Attribute Visibility Settings

Click the *username* drop-down list on the top of the main page to modify user preferences, session settings, user permissions, or debug settings.

- To view the user groups and roles for the administrator, select the **User Preferences** option. Superuser is a special kind of administrator. (For details how to set up these administrator roles, see [Create the Administrators](#).)
- Select **Session Settings** to open the Session Settings dialog, select the mode from the **Session Web UI Mode** drop-down list, and click **Modify Session Settings**. You can also click the drop-down arrow of the Mode icon () to view the list of modes. Select the required mode from the list:
 - **Basic**—Basic user mode (the preset choice).
 - **Advanced**—Advanced user mode that exposes the normal attributes.
 - **Expert**—Expert user mode that exposes a set of attributes that are relevant for fine-tuning or troubleshooting the configuration. In most cases, you would accept the default values for these expert attributes and not change them without guidance from the Cisco Technical Assistance Center (TAC). Each Expert mode attribute is marked with a Warning icon on the configuration pages. Each page is clearly marked as being in Expert mode.

Displaying and Modifying Attributes

Many of the web UI pages, such as those for servers, zones, and scopes, include attribute settings that correspond to those you can set using the CLI. (The CLI name equivalents appear under the attribute name.) The attributes are categorized into groups by their function, with the more prominent attributes listed first and the ones less often configured nearer the bottom of the page.

Grouping and Sorting Attributes

On many Advanced mode web UI pages, you can toggle between showing attributes in groups and in alphabetical order. These pages generally open by default in group view so that you can see the attributes in their respective categories. However, in the case of large numbers of attributes, you might want to see the attributes alphabetized. Click **Show A-Z View** to change the page to show the attributes alphabetically. Click **Show Group View** to change the page to show the attributes in groups. You can also expand or collapse the attribute groups in group view by clicking **Expand All** or **Collapse All**. In Expert mode, the Expert mode attributes are alphabetized separately further down the page under the Visibility=3 heading and are all marked with the Warning icon.

Modifying Attributes

You can modify attribute values and unset those for optional attributes. In many cases, these attributes have preset values, which are listed under the Default column on the page. The explicit value overrides the default one, but the default one is always the fallback. If there is no default value, unsetting the explicit value removes all values for that attribute.

Displaying Attribute Help

For contextual help for an attribute, click the name of the attribute to open a separate popup window.

Left Navigation Pane and Quick View Icon

The Web UI also provides a navigation pane on the left of the main pages. This navigation pane provides access to objects that are added as part of the various categories. You can click the object to edit its properties in the main page.

Each object displayed under a category in the pane also has a Quick View icon associated with it, which is activated when you move the mouse pointer over the object. The Quick View icon expands to open a dialog box that displays the main details about the object, and provides links (if any) to perform the main actions associated with the object.

Help Pages

The web UI provides a separate window that displays help text for each page. The Help pages provide:

- A context-sensitive help topic depending on which application page you have open.
- A clickable and hierarchical Contents and Index, and a Favorites setting, as tabs on a left-hand pane that you can show or hide.
- A Search facility that returns a list of topics containing the search string, ordered by frequency of appearance of the search string.
- Forward and backward navigation through the history of Help pages opened.
- A Print function.
- A Glossary.

Logging Out

Log out of the web UI by clicking **Log Out** link. You can find the **Log Out** link between the *username* drop-down list and the **About** link at the top right corner of the application page above the toolbar.

Local Cluster Web UI

The local cluster web UI provides concurrent access to Cisco Prime IP Express user and protocol server administration and configuration. It provides granular administration across servers with permissions you can set on a per element or feature basis. The local cluster web UI is available in three user modes:

- **Basic Mode**— Provides a more simplified configuration for the more frequently configured objects, such as DHCP scopes and DNS zones (see [Local Basic Main Menu Page](#), on page 8).
- **Advanced Mode**— Provides the more advanced configuration method familiar to past users of the Cisco PrimeIP Express web UI, with some enhancements (see [Local Advanced Main Menu Page](#), on page 9).

- **Expert Mode** (marked with the icon)-For details on Expert mode, see [Role and Attribute Visibility Settings](#), on page 6.

Change to Basic, Advanced, or Expert mode by clicking the drop-down arrow of the Mode icon () on the toolbar at the top right of the page (see [Setting Local User Preferences](#), on page 10).

**Note**


If you change the IP address of your local cluster machine, see the Note in [Configuring Clusters in the Local Web UI](#), on page 10.

Related Topics

[Introduction to the Web-Based User Interfaces](#), on page 2

[Regional Cluster Web UI](#), on page 11

Local Basic Main Menu Page

The Basic tab activated on the toolbar at the top right corner of the page implies that you are in Basic user mode. Otherwise, click the drop-down arrow of the Mode icon () to view the list of modes and select **Basic**.

You can see the submenu items under the navigation bar item by placing the cursor on the main menu. To choose a submenu under a navigation bar item, place the cursor over the navigation bar item. For example, place the cursor on **Operate** to choose the **Manage Servers**.


Also, you can select any submenu under the required navigation bar and then navigate to the required submenu page from the left pane. For example, place the cursor on **Operate**, choose **Schedule Tasks**. You can see List/Add Scheduled Tasks page along with a left pane that has links to Manage Servers, Manage Clusters, Schedule Tasks, and View Change Log. Click the **Manage Servers** link to view the Manage Servers page.

The Local Basic main menu page provides functions with which you can:

- **Open the dashboard to monitor system health**—Open **Operate** menu and click **Dashboard**. See the "Server Status Dashboard" chapter.
- **Set up a basic configuration by using the Setup interview pages**—Click the **Setup** icon at the top, and select the different tabs in the Setup page. See *Cisco Prime IP Express Quick Start Guide* for more details.
- **Administer users, encryption keys**—Place the cursor on **Administration** menu (for user access options) or **Design** menu (for Security > Keys option). See [Managing Administrators](#).
- **Manage the Cisco PrimeIP Express protocol servers**—Place the cursor on **Operate** menu and select **Manage Servers** or **Schedule Tasks** option. See [Maintaining Servers and Databases](#).
- **Manage clusters**—Place the cursor on **Operate** menu and choose **Manage Clusters** option. See [Configuring Server Clusters](#).
- **Configure DHCP**—Place the cursor on **Design** menu and select the options under **DHCP Settings**, **DHCPv4** or **DHCPv6**. See the "Configuring Scopes and Networks" section in *Cisco PrimeIP Express 8.3 DHCP User Guide*.


- **Configure DNS**—Place the cursor on **Design** menu and select the options under **Cache DNS** and **Auth DNS**. Place the cursor on **Deploy** menu and select the options under **DNS** and **DNS Updates**. See the "Managing Zones" section in *Cisco PrimeIP Express 8.3 Authoritative and Caching DNS User Guide*.
- **Manage hosts in zones**—From the **Design** menu, choose **Hosts** under the **Auth DNS** submenu. See the "Managing Hosts" section in *Cisco PrimeIP Express 8.3 Authoritative and Caching DNS User Guide*.
- **Go to Advanced mode**—Click **Advanced** in the top right corner of the page. See [Local Advanced Main Menu Page](#), on page 9.

Local Advanced Main Menu Page

To switch to Advanced user mode from the Basic user Main Menu page, click the drop-down arrow of the Mode icon () at the top right of the window to view the list of modes and select **Advanced**. Doing so opens another Main Menu page, except that it shows the Advanced user mode functions. To switch back to Basic mode at any time, click next to the Mode icon at the top right of the window and select **Basic**.

The local Advanced mode Main Menu page includes advanced Cisco Prime IP Express functions that are in addition to the ones in Basic mode:

- **Open the dashboard to monitor system health**—Open **Operate** menu and click **Dashboard**. See the "Server Status Dashboard" chapter.
- **Administer users, groups, roles, regions, access control lists (ACLs), and view change logs**—Place the cursor on **Administration** menu (for user access options), **Design** menu (for ACLs) or **Operate** menu (for change logs). See [Managing Administrators](#).
- **Manage the Cisco PrimeIP Express protocol servers**—Place the cursor on **Operate** menu and select **Manage Servers** or **Schedule Tasks** option. See [Maintaining Servers and Databases](#).
- **Manage clusters**—Place the cursor on **Operate** menu and choose **Manage Clusters** option. See [Configuring Server Clusters](#).
- **Configure DHCPv4**—Place the cursor on **Design** and select any option under **DHCPv4**. See the "Configuring Scopes and Networks" section in *Cisco PrimeIP Express 8.3 DHCP User Guide*.
- **Configure DHCPv6**—Place the cursor on **Design** and select any option under **DHCPv6**. See the "Managing DHCPv6 addresses" section in *Cisco PrimeIP Express 8.3 DHCP User Guide*.
- **Configure DNS**—Place the cursor on **Design** menu and select the options under **Cache DNS** and **Auth DNS**. Place the cursor on **Deploy** menu and select the options under **DNS** and **DNS Updates**. See the "Managing Zones" section in *Cisco PrimeIP Express 8.3 Authoritative and Caching DNS User Guide*.
- **Manage hosts in zones**—From the **Design** menu, choose **Hosts** under the **Auth DNS** submenu. See the "Managing Hosts" section in *Cisco PrimeIP Express 8.3 Authoritative and Caching DNS User Guide*.
- **Manage IPv4 address space**—Place the cursor on **Design** and select any option under **DHCPv4**. See the "Managing Address Space" section in *Cisco PrimeIP Express 8.3 DHCP User Guide*.
- **Configure IPv6 address space**—Place the cursor on **Design** and select any option under **DHCPv6**. See the "Managing DHCPv6 Addresses" section in *Cisco PrimeIP Express 8.3 DHCP User Guide*.

- **Go to Basic mode**—Click the drop-down arrow of the mode icon () at the top right corner of the page and choose **Basic**. See [Local Basic Main Menu Page](#), on page 8.

The Advanced user mode page provides additional functions:

- **View the user role and group data for the logged-in user**—See [Role and Attribute Visibility Settings](#), on page 6.
- **Set your preferred session settings**—See [Role and Attribute Visibility Settings](#), on page 6.
- **Set server debugging**—You can set debug flags for the protocol servers. Set these values only under diagnostic conditions when communicating with the Cisco Technical Assistance Center (TAC).
- **Change your login administrator password**—See [Managing Passwords](#).

Setting Local User Preferences

You can maintain a short list of web UI settings through subsequent user sessions. The only difference between the Basic and Advanced or Expert mode user preference pages is that Advanced and Expert modes have additional columns listing the data types and defaults

You can edit the user preferences by going to **User Preferences** under the **admin** menu(at the top of the main page). The user preference attributes to set are:

- **Username**—Username string, with a preset value of admin. You cannot modify this field.
- **Web UI list page size**—Adjust the page size by the number of displayed lines in a list; the preset value is 10 lines.
- **Web UI mode**—User mode at startup: Basic, Advanced, or Expert (see [Role and Attribute Visibility Settings](#), on page 6). If unset, the mode defaults to the one set in the CCM server configuration (see [Managing Servers](#)).

You can unset the page size and web UI mode values by checking the check box in the *Unset?* column, next to the attribute. After making the user preference settings, click **Modify User Preferences**.

Configuring Clusters in the Local Web UI

You can define other local Cisco Prime IP Express clusters in the local web UI. The local cluster on the current machine is called the **localhost** cluster. To set up other clusters, choose **Manage Clusters** from **Operate** menu to open the List/Add Clusters page. Note that the **localhost** cluster has the IP address and SCP port of the local machine.

Click the **Add Cluster** icon in the left pane to open the Add Cluster page. At a minimum, you must enter the name and ipaddr of the remote local cluster. You should also enter the admin name and password, along with possibly the SCP port (if not 1234), of the remote cluster. Click **Add Cluster**. To edit a cluster, click the cluster name in the Clusters pane on the left to open the Edit Cluster page. If you want to use secure access mode, select use-ssl as disabled, optional, or required (optional is the preset value; you need the security library installed if you choose required). Make the changes, then click **Save**.

**Note**

If you change the IP address of your local cluster machine, you must modify the **localhost** cluster to change the address in the `ipaddr` field. Avoid setting the value to the loopback address (127.0.0.1); if you do, you must also set the actual IP addresses of main and backup servers for DHCP failover and High-Availability (HA) DNS configurations.

Regional Cluster Web UI

The regional cluster web UI provides concurrent access to regional and central administration tasks. It provides granular administration across servers with permissions you can set on a per element or feature basis. After you log into the application, the Home page appears. Regional cluster administration is described in [Managing the Central Configuration](#).

Related Topics

[Introduction to the Web-Based User Interfaces](#), on page 2

[Local Cluster Web UI](#), on page 7

Command Line Interface

Using the Cisco Prime IP Express CLI (the **nrcmd** program), you can control your local cluster server operations. You can set all configurable options, as well as start and stop the servers.

**Note**

The CLI provides concurrent access, by at most 14 simultaneous users and processes per cluster.

**Tip**

See the **CLIContents.html** file in the **/docs** subdirectory of your installation directory for details.

The **nrcmd** program for the CLI is located on:

- **Windows**—In the *install-path* \bin directory.
- **Linux**—In the *install-path* /usrbin directory.

On a local cluster, once you are in the appropriate directory, use the following command at the prompt:

```
nrcmd [-C cluster[:port]] [-N user] [-P password] [-h] [-r] [-v] [-b < script | command]
```

- **-C**—Cluster name, preset value **localhost**. Specify the port number with the cluster name while invoking **nrcmd** to connect to another cluster. See the preceding example.
The port number is optional if the cluster uses the default SCP port—1234 for local and 1244 for regional. Ensure that you include the port number if the port used is not the default one.
- **-N**—Username. You have to enter the username that you created when first logged into the Web UI.
- **-P**—User password. You have to enter the password that you created for the username.
- The local cluster (**-L**) is implied; use **-R** to open the regional cluster CLI.

- -b < script Process script file of nrcmd commands.
- -h Print this help text.
- -r Login as a read-only user.
- -R Connect to regional.
- -v Report the program version and exit.



Note Cluster defaults to localhost if not specified.



Tip For additional command options, see the **CLIGuide.html** file in /docs.



Note If you change the IP address of your local cluster machine, you must modify the **localhost** cluster to change the address in the *ipaddress* attribute. Do not set the value to 127.0.0.1.

You can also send the output to a file using:

```
nrcmd> session log filename
```

For example:

To send the leases on the DHCP server to a file (leases.txt), use the following commands:

```
nrcmd> session log leases.txt
nrcmd> lease list
```



Note To close a previously opened file, use session log (no filename). This stops writing the output to any file.

To disconnect from the cluster, use **exit**:

```
nrcmd> exit
```



Tip The CLI operates on a coordinated basis with multiple user logins. If you receive a cluster lock message, determine who has the lock and discuss the issue with that person. (See [Multiple Users](#), on page 4.)

Global Search in PrimeIP Express

The Local and Regional Web UI in PrimeIP Express also provides a global search functionality for the IP addresses or DNS names available in the local clusters. The search interface element is available at the top right corner of the main page.

**Note**

To view the search interface element and run the search for IP addresses and DNS names, Cisco PrimeIP Express must be licensed with DHCP or DNS, and the DHCP or DNS services must be enabled for the local cluster (in the List/Add Remote Clusters page in Regional Web UI).

The following table shows the typical search results under different scenarios.

Table 1: Typical Search Results

You search for...	With active licenses and services for...	Search Results
An IPv4 address	Only DHCP	The closest matching scope, scope lease or scope reservation
An IPv4 address or a DNS FQDN	Only DNS	The related Zone or Resource Record
An IPv6 address	Only DHCP	The closest matching prefix, prefix lease or prefix reservation
An IPv6 address or a DNS FQDN	Only DNS	The related Zone or Resource Record
An IPv4 address, an IPv6 address or a DNS FQDN	Both DHCP and DNS	All of the above, based on the type of address

