



CHAPTER 2

Cisco Network Registrar User Interfaces

Cisco Network Registrar provides a regional and a local web-based user interface (web UI) and a regional and local command line interface (CLI) to manage the DNS, DHCP, TFTP, and Central Configuration Management (CCM) servers:

- **Web UI for the regional cluster to access local cluster servers**—See the [“Regional Cluster Web UI” section on page 2-11](#)).
- **Web UI for the local cluster**—See the [“Local Cluster Web UI” section on page 2-7](#)).
- **CLI for the local clusters**—Open the `CLIContent.html` file in the installation `/docs` directory (see the [“Command Line Interface” section on page 2-12](#)).
- **CCM servers that provide the infrastructure to support these interfaces**—See the [“Central Configuration Management Server” section on page 2-13](#)).

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

Introduction to the Web-Based User Interfaces

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

See Also

[Supported Web Browsers, page 2-2](#)
[Access Security, page 2-2](#)
[Logging In to the Web UIs, page 2-2](#)
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Supported Web Browsers

The minimum web browsers supported in Cisco Network Registrar are Internet Explorer 5.5 and Netscape 6.2. It will also support Internet Explorer 7.1 and 8.0, and Firefox 3.0 and 3.5.

Access Security

At Cisco Network Registrar 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 (see [Figure 2-1 on page 2-3](#)) 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 in to the Cisco Network Registrar local or regional cluster web UIs either by HTTPS secure or HTTP nonsecure login. After installing Cisco Network Registrar, 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 > Programs > Cisco Network Registrar 7.2 > Cisco Network Registrar 7.2 {local | regional} Web UI**. This opens the local or regional cluster web UI from your default web browser.
- 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 Add Superuser Administrator page is displayed. Enter the Name and Password and click **Add**. The password is case sensitive (See the “[Managing Passwords](#)” section on page 5-7). If you already added the valid license and superuser and configured a password at the time of installation, then you can login to the web UI using that username and password.



Note

There is no default username or password for login.

With a conventional login, the page indicates “Page is not secure” (see [Figure 2-1 on page 2-3](#)); with an SSL-secured login, the page indicates “Page is SSL Secure.”

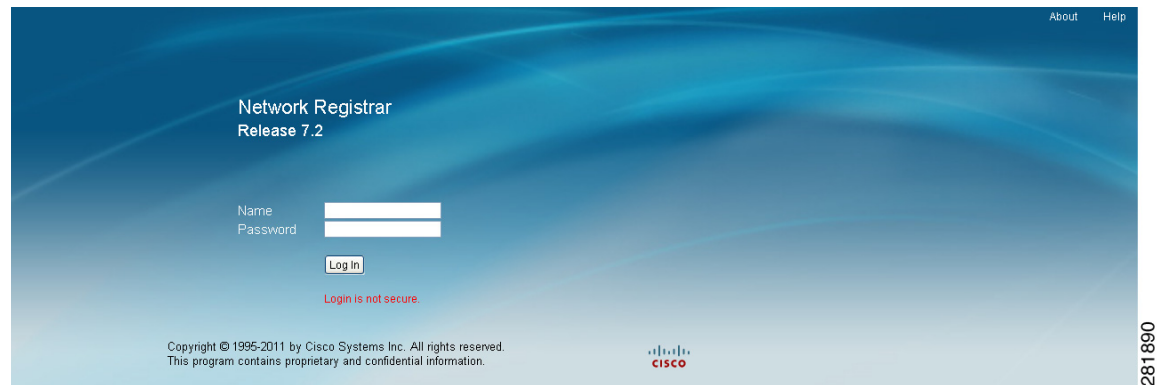


Note

To prepare for an HTTPS-secured login, see the *Installation Guide for Cisco Network Registrar*.

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

Figure 2-1 Web UI Login Page



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**.

Adding License

Cisco will e-mail you one or more license files after you register the Cisco Network Registrar Product Authorization Key (PAK) on the web according to the Software License Claim Certificate shipped with the product. Cisco administers licenses through a FLEXlm system. Once you have the file or files:

1. Locate the license file or files in a directory (or on the desktop) that is easy to find.
2. On the Add Product License page, browse for each file by clicking the **Browse** button.
3. In the Choose file window, find the location of the initial license file, then click **Open**.
4. If the license key is acceptable, the Add Superuser Administrator page appears immediately.
5. To add further licenses, click **Administration**, then **Licenses** to open the List/Add Product License page. Click **Browse** to open the Choose file window, locate the additional license file, then click **Open**. If the key in the file is acceptable, the key, type, count, and expiration date appear, along with whether it is an evaluation key. If the key is not acceptable, the page shows the license text along with an error message. For the list of license types, see the “[Licensing](#)” section on page 5-20.

Under the table of licenses is a License Utilization area that, when expanded, shows the license types along with the total nodes that you can use and those actually used.

To reenter a previously active session, click **Reuse current session** (assuming that you did not remove cookies in the web browser).



Tip

If you log back in to a previously active session without clicking **Reuse current session**, you could have two active sessions open, which can cause failures. For example, if your active session was the first one after an installation, when you enter the license key, you are prompted for it again indefinitely. To avoid this, click **Reuse current session**, or close and reopen the browser to initiate a new session.

Multiple Users

The Cisco Network Registrar 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 the [“Managing Passwords” section on page 5-7](#).



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 failures.

A single sign-on feature is available to connect between the regional and local cluster web UIs. Many of the regional cluster web UI pages include the Go Local icon () , 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 Go Regional icon () at the top right corner of the page.



Note

Navigation bar items can vary based on if you have the role privileges for IPv4 or IPv6. For example, the **Address Space** menu bar can be **Address Space v4** and **Address Space v6** if you have the `ipv6-management` subrole of the `addrblock-admin` role assigned. In this *User Guide*, the convention is to use only the generic label of the menu bar in instructions. Similarly, **DHCP** can mean the **DHCP**, **DHCPv4**, or **DHCPv6** tabs.

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.

Committing Changes in the Web UIs

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

Role and Attribute Visibility Settings

In Advanced user mode (see the “[Local Advanced Main Menu Page](#)” section on page 2-9), the Main Menu page shows the administrative roles assigned to the logged-in administrator. It also presents a choice of which visibility you want the configuration attributes to be in the web UI:

- To view the user groups and roles for the administrator, click the plus sign (+) next to the User Role and Group Data heading. Superuser is a special kind of administrator. (For details how to set up these administrator roles, see the “[Create the Administrators](#)” section on page 5-32.)
- To set the attribute visibility settings for this user session only, click the plus sign (+) next to the Session Settings heading (see [Figure 2-5 on page 2-9](#)). Pull down the choices next to the **Session Web UI Mode**, choose a mode, then click **Modify Session Settings**:
 - **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.

When you leave Expert mode (click **Basic** or **Advanced**), the **Expert** button disappears. To reenter Expert mode, you must set the web UI mode to Expert again.

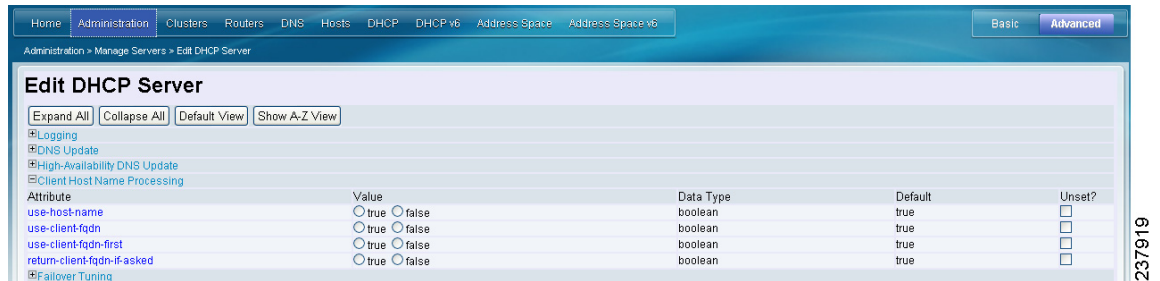
Displaying and Modifying Attributes

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

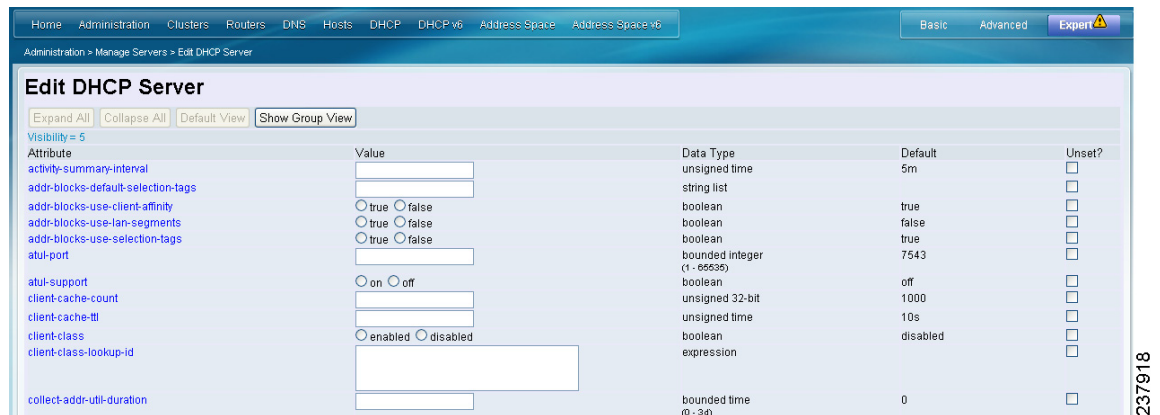
On many Advanced mode web UI pages, you can toggle between showing attributes in groups and in alphabetical order. These pages generally open by default in group view so that you can see the attributes in their respective categories. However, in the case of large numbers of attributes, you might want 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. [Figure 2-2](#) and [Figure 2-3](#) show the difference between group and A-Z views for a sample web UI page.

Figure 2-2 Attributes in Group View (Local Advanced)



You can also expand or collapse the attribute groups in group view by clicking **Expand All** or **Collapse All**. [Figure 2-3](#) shows the alphabetized view with the example of being in Expert mode.

Figure 2-3 Attributes in Alphabetical View (Local Advanced)



Tip

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.

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 **Logout** in the top right corner of any application page.

Local Cluster Web UI

The local cluster web UI provides concurrent access to Cisco Network Registrar 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 the [“Local Basic Main Menu Page”](#) section on page 2-8).
- **Advanced mode**—Provides the more advanced configuration method familiar to past users of the Cisco Network Registrar web UI, with some enhancements (see the [“Local Advanced Main Menu Page”](#) section on page 2-9).
- **Expert mode** (marked with the  icon)—For details on Expert mode, see the [“Role and Attribute Visibility Settings”](#) section on page 2-5.

Change to Basic or Advanced mode by clicking **Basic** or **Advanced** at the top right of the page. You can also add Expert mode by setting User Preferences (see the [“Setting Local User Preferences”](#) section on page 2-10).



Note

If you change the IP address of your local cluster machine, see the Note in the [“Configuring Clusters in the Local Web UI”](#) section on page 2-11.

See Also

[Introduction to the Web-Based User Interfaces, page 2-1](#)
[Regional Cluster Web UI, page 2-11](#)

Local Basic Main Menu Page

The Basic tab activated at the top right corner of the page implies that you are in Basic user mode (see [Figure 2-4](#)). Otherwise, click **Basic** to activate Basic user mode.

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 **Administration** to choose the **Manage Servers**.

Also, you can select any submenu under the required navigation bar and then navigate to the required submenu page. For example, place the cursor on **Administration**, choose **Schedule Tasks**. You can see List/Add Scheduled task page with Manage Servers, Schedule Tasks, Administrators, Tenants, Licenses, and Change Log tabs on top of it. Click the **Manage Servers** tab to view the Manage Servers page.

Figure 2-4 Local Basic Main Menu Page



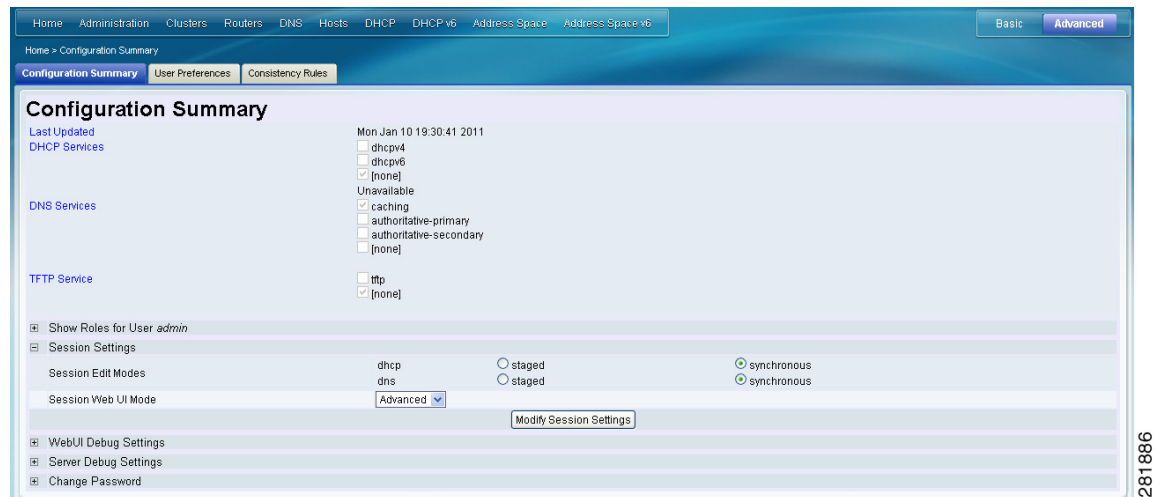
This page provides functions with which you can:

- **Open the dashboard to monitor system health**—Click **Dashboard** in the top right part of the page. See [Chapter 3, “Server Status Dashboard.”](#)
- **Set up a basic configuration by using the Setup interview pages**—Place the cursor on **Setup** menu and select any option from the drop-down list. See the *Quick Start Guide for Cisco Network Registrar* for more details.
- **Administer licenses, users, groups, roles, encryption keys, and access control lists (ACLs)**—Place the cursor on **Administration** menu and select any option from the drop-down list. See [Chapter 5, “Configuring Administrators.”](#)
- **Manage the Cisco Network Registrar protocol servers**—Place the cursor on **Administration** menu and select **Manage Servers** or **Schedule Tasks** option from the drop-down list. See [Chapter 7, “Maintaining Servers and Databases.”](#)
- **Manage clusters**—Place the cursor on **Clusters** menu and select any option from the drop-down list. See the [“Configuring Server Clusters”](#) section on [page 6-2](#).
- **Configure DHCP**—Place the cursor on **DHCP** menu and select any option from the drop-down list. See [Chapter 20, “Configuring Scopes and Networks.”](#)
- **Configure DNS**—Place the cursor on **DNS** menu and select any option from the drop-down list. See [Chapter 15, “Managing Zones.”](#)
- **Manage hosts in zones**—Place the cursor on **Hosts** menu and select any option from the drop-down list. See [Chapter 10, “Managing Hosts.”](#)
- **Go to Advanced mode**—Click **Advanced** in the top right corner of the page. See the [“Local Advanced Main Menu Page”](#) section.

Local Advanced Main Menu Page

To switch to Advanced user mode from the Basic user Main Menu page (see [Figure 2-4 on page 2-8](#)), click **Advanced** in the top right corner of the page. Doing so opens another Main Menu page, except that it shows the Advanced user mode functions (see [Figure 2-5](#) for a view that shows the Session Settings). To switch back to Basic mode at any time, click **Basic** in the top right corner of the page.

Figure 2-5 Local Advanced Main Menu Page



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

- **Open the dashboard to monitor system health**—Click **Dashboard** in the top right part of the page. See [Chapter 3, “Server Status Dashboard.”](#)
- **Administer licenses, users, groups, roles, encryption keys, owners, regions, and ACLs, plus view change logs**—Place the cursor on **Administration** menu and select any option from the drop-down list. See [Chapter 5, “Configuring Administrators.”](#)
- **Manage the Cisco Network Registrar protocol servers**—Place the cursor on **Administration** menu and select Manage Servers or Schedule Tasks option from the drop-down list. See [Chapter 7, “Maintaining Servers and Databases.”](#)
- **Manage clusters**—Place the cursor on **Clusters** menu and select any option from the drop-down list. See the “[Configuring Server Clusters](#)” section on page 6-2.
- **Configure Routers**—Place the cursor on **Routers** menu and select any option from the drop-down list. See [Chapter 11, “Managing Router Interface Configurations.”](#)
- **Configure DHCPv4**—Place the cursor on **DHCPv4** menu and select any option from the drop-down list. See [Chapter 20, “Configuring Scopes and Networks.”](#)
- **Configure DHCPv6**—Place the cursor on **DHCPv6** menu and select any option from the drop-down list. See [Chapter 26, “Managing DHCPv6 Addresses.”](#)
- **Configure DNS**—Place the cursor on **DNS** menu and select any option from the drop-down list. See [Chapter 15, “Managing Zones.”](#)
- **Manage hosts in zones**—Place the cursor on **Hosts** menu and select any option from the drop-down list. See [Chapter 10, “Managing Hosts.”](#)

- **Manage IPv4 address space**—Place the cursor on **Address Space v4** menu and select any option from the drop-down list. (Clicking the Address Space link on the page opens the Address Space v4 view.) See [Chapter 9, “Managing Address Space.”](#)
- **Configure IPv6 address space**—Place the cursor on **Address Space v6** menu and select any option from the drop-down list. See [Chapter 26, “Managing DHCPv6 Addresses.”](#)
- **Go to Basic mode**—Click **Basic** in the top right corner of the page. See the [“Local Basic Main Menu Page” section on page 2-8.](#)

The Advanced user mode page provides additional functions:

- **View the user role and group data for the logged-in user**—See the [“Role and Attribute Visibility Settings” section on page 2-5.](#)
- **Set your preferred session settings**—See the [“Role and Attribute Visibility Settings” section on page 2-5.](#)
- **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 the [“Changing Passwords” section on page 2-4.](#)

Setting Local User Preferences

You can maintain a short list of web UI settings through subsequent user sessions. In either Basic or Advanced user mode, choose **User Preferences** from **Home** drop-down list to open the Edit User Preferences for Current User page. 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.

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 the [“Role and Attribute Visibility Settings” section on page 2-5.](#) If unset, the mode defaults to the one set in the CCM server configuration (see the [“Managing Servers” section on page 7-1.](#))

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

Configuring Clusters in the Local Web UI

You can define other local Cisco Network Registrar clusters in the local web UI. The local cluster on the current machine is called the **localhost** cluster. To set up other clusters, click **Clusters** and select the **Cluster List** option from the drop-down list to open the List/Add Clusters page. Note that the **localhost** cluster has the IP address and SCP port of the local machine.

Click **Add Cluster** 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. 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). Click **Add Cluster**. To edit a cluster, click the cluster name on the List/Add Clusters page to open the Edit Cluster page, make the changes, then click **Modify Cluster**.

**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 in to the application, the Home page appears. Regional cluster administration is described in [Chapter 6, “Managing the Central Configuration.”](#)

See Also

[Introduction to the Web-Based User Interfaces, page 2-1](#)
[Local Cluster Web UI, page 2-7](#)

Command Line Interface

Using the Cisco Network Registrar 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.
- **Solaris and 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 clustername -N username -P password [-L | -R]
```

- **-C**—Cluster name, preset value **localhost**.
- **-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.


Tip

Change the initial password right away (see the “[External Authentication Servers](#)” section on [page 5-14](#)). 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 pipe output to a file. For example:

```
nrcmd> dns getStats all > dnsstats.txt
```

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 also the “[Multiple Users](#)” section on [page 2-4](#).)

Central Configuration Management Server

The CCM servers at the local and regional clusters provide the infrastructure for Cisco Network Registrar operation and user interfaces. The CCM Server reads, writes, and modifies the Cisco Network Registrar database (CCM DB). The main purpose of the CCM Server is to store and propagate data from the user to the protocol servers, and from the servers back to the user.

The change set is the fundamental unit of change to a data store. It sends incremental changes to a replicating server and provides an audit log for changes to the data store. Change sets consist of lists of change entries that are groups of one or more changes to a single network object. The web UI provides a view of the change sets for each data store.

