



CHAPTER 10

Configuring and Accessing the Web User Interface

The Cisco ASR 1000 Series Routers introduce a web user interface that expands on the functionality of web user interfaces available in other Cisco routers.

This chapter is about this web user interface and covers the following topics:

- [Web User Interface Overview, page 10-1](#)
- [Configuring the Router for Web User Interface Access, page 10-5](#)
- [Authentication and the Web User Interface, page 10-7](#)
- [Domain Name System and the Web User Interface, page 10-7](#)
- [Clocks and the Web User Interface, page 10-7](#)
- [Accessing the Web User Interface, page 10-8](#)
- [Using Auto-Refresh, page 10-9](#)
- [Web User Interface Tips and Tricks, page 10-10](#)

Web User Interface Overview

This section covers the following topics:

- [Web User Interface General Overview, page 10-1](#)
- [Legacy Web User Interface Overview, page 10-2](#)
- [Graphics-Based Web User Interface Overview, page 10-3](#)
- [Persistent Web User Interface Transport Maps Overview, page 10-4](#)

Web User Interface General Overview

The web user interface is available on Cisco ASR 1000 Series Routers starting in Cisco IOS XE Release 2.1.1. The web user interface is not available in Cisco IOS XE Release 2.1.0.

The Cisco ASR 1000 Series Routers can be accessed using a web user interface. This web user interface allows users to monitor router performance using an easy-to-read graphical interface. Most aspects of a Cisco ASR 1000 Series Router can be monitored using the web user interface.

The web user interface has the following features:

- An interface that presents information in an easy-to-read graphical format.

- An interface that allows users to monitor most software processes, including processes related to the IOS and non-IOS sub-packages within the Cisco IOS XE consolidated package.
- An interface that allows users to monitor most hardware components, including all RPs, ESPs, SIPs, and SPAs installed in the router.
- Access to the legacy web user interface in addition to the enhanced web user interface.
- The ability to gather the output of **show** commands from the web user interface.

Legacy Web User Interface Overview

Previous Cisco routers have a legacy web user interface that can be used to monitor the router. This legacy web user interface presents information in a straightforward manner without using any graphics. On the Cisco ASR 1000 Series Routers, this interface is part of the larger web user interface and can be accessed by clicking the “IOS Web UI” option in the left-hand menu.

On the Cisco ASR 1000 Series Routers, the legacy web user interface can only be used to configure and monitor the IOS sub-package. In some scenarios, most notably when an **ip http** command has been successfully entered to enable the HTTP or HTTPS server while a properly configured web user interface transport map has not yet been applied on the Cisco ASR 1000 Series Router, the legacy web user interface will be accessible while the graphics-based web user interface will be inaccessible.

See [Figure 10-1](#) for an example of the legacy web user interface home page.

Figure 10-1 Legacy Web User Interface Home Page

The screenshot shows the legacy web user interface for a Cisco Router. The top right corner displays the time as 11:58 am and the user as user15. The navigation menu on the left includes sections for System (Version, Running Configuration, Content, Status), Chassis (Environment, Fans, File System, IO-Ports), Memory (Free, Summary), Mounts, Process Resource (Memory, CPU, CPU History, Process List, Sensors, UDS), Alarms (Audible, Visual), CEF (All, VRF Summary), Diagnostics (Chassis Manager, Slots), Interfaces (Forwarding Manager, IP, OS-Interfaces, Summary), Modules (FPD, Subslot OIR), Peers (Chassis Manager, Forwarding Manager, Interface Manager, Shell Manager), and WebCLI.

The main content area is titled "IOS WebUI" and features a refresh interval of 15 seconds with a "Start.." button. Below this, the "Cisco Systems" section is titled "Accessing Cisco ASR1006 'Router'" and lists several diagnostic and support options:

- Show diagnostic log - display the diagnostic log.
- Monitor the router - HTML access to the command line interface at level 0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
- Show tech-support - display information commonly needed by tech support.
- Extended Ping - Send extended ping commands.

The "Help resources" section provides the following information:

1. CCO at www.cisco.com - Cisco Connection Online, including the Technical Assistance Center (TAC).
2. tac@cisco.com - e-mail the TAC.
3. **1-800-553-2447 or +1-408-526-7209** - phone the TAC.
4. cs-html@cisco.com - e-mail the HTML interface development group.

At the bottom of the page, there is a copyright notice: "(c) 2004-2007 Cisco Systems, Inc. All rights reserved." and the time "10:52:00 AM Thu Apr 03 2008 GMT".

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Graphics-Based Web User Interface Overview

The web user interface on the Cisco ASR 1000 Series Routers expands the legacy web user interface available on other platforms by presenting information in easy-to-read graphics-based tables, graphs, or charts, depending on the information presented. The web user interface on the Cisco ASR 1000 Series Routers is also able to present monitoring information stored in both the IOS and non-IOS sub-packages, allowing for a complete view of the router using the web user interface.

See [Figure 10-2](#) for an example of the graphics-based web user interface home page.

Figure 10-2 Graphics-Based Web User Interface Home Page



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Persistent Web User Interface Transport Maps Overview

To enable the graphics-based web user interface, a persistent web user interface transport map must be configured. The persistent web user interface transport map, when successfully configured and applied to the router, defines how the router handles incoming web user interface requests. In the persistent web user interface transport map, users define whether the graphics-based web user interface can be accessed through HTTP, HTTPS, or both protocols. Only one persistent web user interface transport map can be applied to a Cisco ASR 1000 Series Router at a time.

The persistent web user interface transport map configuration must be performed in addition to the legacy web user interface configuration, which is configured using the **ip http** command set. The **ip http** command settings define which ports are used by HTTP or HTTPS for both the legacy and graphics-based web user interface.

For information on configuring the entire graphics-based web user interface, including the configuration of persistent web user interface transport maps, see the [“Configuring the Router for Web User Interface Access” section on page 10-5](#).

Configuring the Router for Web User Interface Access

The ability to access either web user interface on the Cisco ASR 1000 Series Routers is disabled by default.

The legacy web user interface must be configured before the graphics-based web user interface can be enabled.

To enable the entire web user interface, perform the following tasks:



Note

The web user interface will not work if the Management Ethernet interface has not been configured or is not working; specifically, the default route must be specified in the Management Ethernet VRF before the web user interface can be configured.

See the [“Using the Management Ethernet Interface”](#) chapter for information on configuring the Management Ethernet interface on your router. See the [“Setting a Default Route in the Management Ethernet VRF” section on page 8-4](#) chapter for information on configuring a default route in the Management Ethernet interface on your router.

Step 1 (Optional) Ensure the clock setting on your router is accurate by entering the **show clock** command.

```
Router# show clock
*13:56:59.257 DST Mon May 5 2008
```

If the router time is not properly set, see the [clock set](#) and [clock timezone](#) command references for information on properly setting the router clock.



Note

The [“Clocks and the Web User Interface” section on page 10-7](#) provides additional information on how clock settings on both the router and the web-browser can impact the web user interface.

Step 2 Connect to your router and enter the **configure terminal** command to enter global configuration mode.

Step 3 Enable the legacy web user interface by entering one of the following global configuration commands:

- **ip http server**—Enables HTTP on port 80, which is the default HTTP port.
- **ip http port *port-number***—Enables HTTP on the non-default user-specified port.
- **ip http secure-server**—Enables HTTPS on port 443, the default HTTPS port.
- **ip http secure-port *port-number***—Enables HTTPS on the non-default user-specified port.

The legacy web user interface becomes available at this point of the procedure. Users attempting to access the web user interface after this step is completed will see the legacy web user interface only.

To enable the graphics-based web user interface, proceed to [Step 4](#) and complete the remaining steps in this procedure.

- Step 4** Create and name a persistent web user interface transport map by entering the **transport-map type persistent webui** *transport-map-name* command.
- Step 5** Enable HTTP, HTTPS, or both by entering the following commands in transport map configuration mode:
- **server**—Enables HTTP.
 - **secure-server**—Enables HTTPS.
- Port numbers cannot be set within the transport map. The port numbers defined in [Step 3](#) are also used with these settings in the persistent web user interface transport map.
- Step 6** (Optional) Enter the **show transport-map name** *transport-map-name* privileged EXEC command to verify that your transport map is properly configured.
- Step 7** Enable the transport map by entering the **transport type persistent webui input** *transport-map-name* global configuration command.
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Examples

In the following example, the web user interface using the default HTTP port is enabled:

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# ip http server
Router(config)# transport-map type persistent webui http-webui
Router(config-tmap)# server
Router(config-tmap)# exit
Router(config)# exit

Router# show transport-map name http-webui
Transport Map:
  Name: http-webui
  Type: Persistent Webui Transport

Webui:
  Server:          enabled
  Secure Server:  disabled

Router# configure terminal
Router(config)# transport type persistent webui input http-webui
*Apr 22 02:43:55.798: %UICFGEXP-6-SERVER_NOTIFIED_START: R0/0: psd: Server wui has been notified to start
```

In the following example, the web user interface using the default HTTPS port is enabled:

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# ip http secure-server
Router(config)# transport-map type persistent webui https-webui
Router(config-tmap)# secure-server
Router(config-tmap)# exit
Router(config)# transport type persistent webui input https-webui
*Apr 22 02:38:43.597: %UICFGEXP-6-SERVER_NOTIFIED_START: R0/0: psd: Server wui has been notified to start
```

In the following example, the web user interface using the default HTTP and HTTPS ports is enabled:

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# ip http server
Router(config)# ip http secure-server
```

```
Router(config)# transport-map type persistent webui http-https-webui
Router(config-tmap)# server
Router(config-tmap)# secure-server
Router(config-tmap)# exit
Router(config)# transport type persistent webui input http-https-webui
*Apr 22 02:47:22.981: %UICFGEXP-6-SERVER_NOTIFIED_START: R0/0: psd: Server wui has been
notified to start
```

Authentication and the Web User Interface

Users attempting to access the web user interface for a router are subject to the same authentication requirements configured for that router. The web browser prompts all users for a name and password combination, and the web browser then looks to the router configuration to see if a user should or should not be granted access to the web user interface.

Only users with a privilege level of 15 can access the web user interface. Otherwise, authentication of web user interface traffic is governed by the authentication configuration for all other traffic.

To configure authentication on your router, see [Configuring Authentication](#).

Domain Name System and the Web User Interface

The Domain Name System (DNS) is a distributed database in which you can map hostnames to IP addresses through the DNS protocol from a DNS server.

If the router is configured to participate in the Domain Name System, users can access the web user interface by entering `http://<dns-hostname>` as the web browser address.

For information on configuring DNS, see [Configuring DNS](#).

Clocks and the Web User Interface

Requests to view the web user interface can be rejected by certain web browsers if the time as seen by the web browser differs from the time as seen by the router by an hour or more.

For this reason, we recommend checking the router time using the `show clock` command before configuring the router and, if the router time is not properly set, properly set the time using the `clock set` and `clock timezone` commands.

Similarly, the web browser's clock source, which is usually the personal computer, must also have an accurate time to properly access the web user interface.

The following message appears when the web browser and the router clocks are more than an hour apart:

```
Your access is being denied for one of the following reasons:
. Your previous session has timed-out, or
. You have been logged out from elsewhere, or
. You have not yet logged in, or
. The resource requires a higher privilege level login.
```

If you see this message and fixing the other possible causes of the issue still does not make the web user interface accessible, check both the router clock and the PC clock to ensure both clocks reflect the accurate day and time and then retry your connection to the web user interface.

Also note that if one clock changes at daylight savings time while another clock does not, clock-related issues can occur.

Accessing the Web User Interface

To access the web user interface, perform the following tasks:

-
- Step 1** Open your web browser. The web user interface supports the following web browsers:
- Microsoft Internet Explorer 6 or later
 - Mozilla Firefox 2.0 or later
- Step 2** Enter the address of the router in the address field of the web browser. The format for the address of the router in the address field is **http://<routername or management-ethernet-ip-address>:[http-port]** or **https://<routername or management-ethernet-ip-address>:[https-port]**, and the addresses that are acceptable depend upon your web browser user interface configurations and whether your router is participating in DNS. Below are some examples of acceptable address field web browser entries:
- HTTP Using Default Port Example**
http://172.16.5.1
- HTTPS Using Default Port Example**
https://172.16.5.1
- HTTP Using Non-Default Port Example**
http://172.16.5.1:94
- HTTPS Using Non-Default Port Example**
https://172.16.5.1:530/
- HTTP Using Default Port Participating in DNS Example**
http://router1
- HTTPS Using Default Port Participating in DNS Example**
https://router1
- HTTP Using Non-Default Port Participating in DNS Example**
http://router1:94
- HTTPS Using Non-Default Port Participating in DNS Example**
https://router1:530/
- Step 3** If prompted, enter your username and password. The username and password combination required to enter the web user interface is the same combination required to access the router.
- Step 4** The graphics-based web user interface similar to [Figure 10-2](#) in the “[Graphics-Based Web User Interface Overview](#)” section on page 10-3 should appear in your web browser.
-

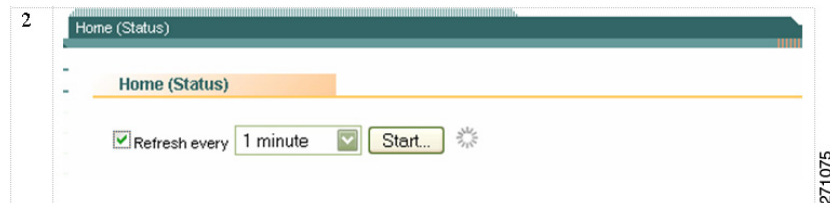
Using Auto-Refresh

The web user interface does not refresh content automatically by default.

To set an auto-refresh interval, follow these steps:

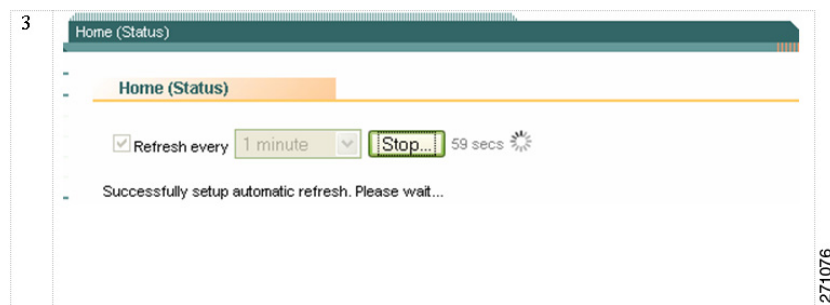
- Step 1** Check the **Refresh every** check box on the graphical web user interface home page. A check mark appears in the check box (See [Figure 10-3](#)).

Figure 10-3 Checking Auto-Refresh Check Box



- Step 2** Set the frequency of the auto-refresh interval using the drop-down menu.
- Step 3** Click the **Start** button to the right of the drop-down menu. After hitting this button, the **Start** button becomes the **Stop** button and a countdown timer placed to the right of the **Stop** button begins to increment (See [Figure 10-4](#)).

Figure 10-4 Auto-Refresh Counter Example



The web user interface screen refreshes every time this counter reaches 0 seconds.

If you would like to stop the auto-refresh update, click the **Stop** button to return to the default setting of no auto-refresh update.

Web User Interface Tips and Tricks

This section provides some useful information about using the web user interface once the interface has been accessed:

- If you know a Cisco IOS command-line interface command to gather information that you are unable to gather using the web user interface, you can click **IOS Web UI** followed by **Monitor the Router** to enter commands.
- If you know a diagnostic mode command to gather information that you are unable to gather using the web user interface, you can click **WebCLI** to enter **show** commands.
- The WebCLI command line has a context-sensitive help feature that shows the options available in a certain keyword sequence using a drop-down menu. See [Figure 10-5](#) for an example of this drop-down menu context-sensitive help feature.

Figure 10-5 Web CLI Drop-Down Menu

The screenshot displays the Cisco Web User Interface (WebUI) for a Router. The top navigation bar includes the Cisco logo, the word "Router", and the time "10:44 am". On the right side of the navigation bar, there are links for "About | Help" and "Log out user15". Below the navigation bar, the breadcrumb "Home > WebCLI" is visible. The left sidebar contains a tree view of navigation options, with "WebCLI" selected. The main content area is titled "WebCLI" and contains the following text:

To conserve resources, the webCLI requires the following steps:

- . In the *command* field, start entering "**show**" to see all start-phrases for supported **show** commands
- . After entering the entire start-phrase or selecting one, enter a **<space>** to see all possible matching commands
- . Enter the remainder of the command or select one. Hit **<enter>** to execute the command

Below this text is a "Command" input field containing the text "show platform software process list". A drop-down menu is open below the input field, listing various "show" commands related to platform software process lists, such as "show platform software process list 0", "show platform software process list 0 summary", "show platform software process list 1", "show platform software process list 1 summary", "show platform software process list 2", "show platform software process list 2 summary", "show platform software process list F0", "show platform software process list F0 summary", "show platform software process list F1", "show platform software process list F1 summary", "show platform software process list FP active", "show platform software process list FP active summary", "show platform software process list FP standby", "show platform software process list FP standby summary", "show platform software process list R0", "show platform software process list R0 summary", "show platform software process list R1", "show platform software process list R1 summary", "show platform software process list RP active", "show platform software process list RP active summary", "show platform software process list RP standby", and "show platform software process list RP standby summary". The first option, "show platform software process list 0", is highlighted in blue. To the right of the drop-down menu, there is a small gear icon and the text "rights reserved. GMT".