



## CHAPTER 2

# Using the Web Interface

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Ease of use is the overriding design principle of the web interface in the Cisco Secure Access Control Server Release 4.2, henceforth referred to as ACS. ACS presents intricate concepts of network security from the perspective of an administrator. You can use the Interface Configuration section of ACS to configure the ACS web interface. You can tailor the interface to simplify screens by hiding the features that you do not use and adding fields for your specific configuration.



### Note

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We recommend that you return to this section to review and confirm your initial settings. While it is logical to begin your ACS configuration efforts with configuring the interface, sometimes a section of the web interface that you initially believed should be hidden from view may later require configuration from within this section.

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### Tip

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If a section of the ACS web interface appears to be missing or broken, return to the Interface Configuration section and confirm that the particular section has been activated.

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This chapter contains:

- [Administrative Sessions, page 2-1](#)
- [Configuring User Access, page 2-4](#)
- [Customizing User Data, page 2-5](#)
- [Displaying Advanced Options, page 2-6](#)
- [Displaying TACACS+ Configuration Options, page 2-6](#)
- [Displaying RADIUS Configuration Options, page 2-7](#)
- [Interface Configuration Reference, page 2-10](#)

## Administrative Sessions

We recommend that administrative sessions take place without the use of an HTTP proxy server, without a firewall between the browser and ACS, and without a NAT gateway between the browser and ACS. Because these limitations are not always practical, this section discusses how various network environmental issues affect administrative sessions.

This section contains:

- [Administrative Sessions and HTTP Proxy, page 2-2](#)

- [Administrative Sessions Through Firewalls, page 2-2](#)
- [Administrative Sessions Through a NAT Gateway, page 2-2](#)
- [Accessing the Web Interface, page 2-3](#)
- [Logging Off the Web Interface, page 2-4](#)

## Administrative Sessions and HTTP Proxy

ACS does not support HTTP proxy for administrative sessions. If the browser used for an administrative session is configured to use a proxy server, ACS sees the administrative session originating from the IP address of the proxy server rather than from the actual address of the computer. Administrative session tracking assumes each browser resides on a computer with a unique IP.

Also, IP filtering of proxied administrative sessions has to be based on the IP address of the proxy server rather than the IP address of the computer. This conflicts with administrative session communication that does use the actual IP address of the computer. For more information about IP filtering of administrative sessions, see [Configuring Access Policy, page 11-8](#) and [Access Policy Setup Page, page 11-18](#).

For these reasons, we do not recommend performing administrative sessions using a web browser that is configured to use a proxy server. Administrative sessions using a proxy-enabled web browser is not tested. If your web browser is configured to use a proxy server, disable HTTP proxying when attempting ACS administrative sessions.

## Administrative Sessions Through Firewalls

In the case of firewalls that do not perform network address translation (NAT), administrative sessions conducted across the firewall can require additional configuration of ACS and the firewall. This is because ACS assigns a random HTTP port at the beginning of an administrative session.

To allow administrative sessions from browsers outside a firewall that protects ACS, the firewall must permit HTTP traffic across the range of ports that ACS is configured to use. You can control the HTTP port range using the HTTP port allocation feature. For more information about the HTTP port allocation feature, see [HTTP Port Allocation for Administrative Sessions, page 1-19](#).

While administering ACS through a firewall that is not performing NAT is possible, we do not recommend that you administer ACS through a firewall. For more information, see [HTTP Port Allocation for Administrative Sessions, page 1-19](#).

## Administrative Sessions Through a NAT Gateway

We do not recommend conducting administrative sessions across a network device performing NAT. If the administrator runs a browser on a computer behind a NAT gateway, ACS receives the HTTP requests from the public IP address of the NAT device, which conflicts with the computer private IP address, included in the content of the HTTP requests. ACS does not permit this.

If ACS is behind a NAT gateway and the URL used to access the web interface specifies ACS by its hostname, administrative sessions operate correctly, provided that DNS is functioning correctly on your network or that computers used to access the web interface have a hosts file entry for ACS.

If the URL used to access the web interface specifies ACS by its IP address, you could configure the gateway to forward all connections to port 2002 to ACS, using the same port. Additionally, all the ports allowed using the HTTP port allocation feature would have to be similarly mapped. We have not tested such a configuration and do not recommend implementing it.

## Accessing the Web Interface

Remote administrative sessions always require that you log in using a valid administrator name and password, as configured in the Administration Control section. If the Allow automatic local login check box is cleared on the Sessions Policy Setup page in the Administration Control section, ACS requires a valid administrator name and password for administrative sessions accessed from a browser on the computer running ACS.

### Before You Begin

Determine whether a supported web browser is installed on the computer you want to use to access the web interface. If not, install a supported web browser or use a computer that already has a supported web browser installed. For a list of supported browsers, see the *Release Notes for Cisco Secure ACS Release 4.2*. The latest revision to the Release Notes is posted on [http://www.cisco.com/en/US/docs/net\\_mgmt/cisco\\_secure\\_access\\_control\\_server\\_for\\_windows/4.2/release/notes/ACS42\\_RN.html](http://www.cisco.com/en/US/docs/net_mgmt/cisco_secure_access_control_server_for_windows/4.2/release/notes/ACS42_RN.html).

Because the web interface uses Java in a few places, the computer running the browser used to access the web interface must have a Java Virtual Machine available for the use of the browser.

To access the web interface:

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- Step 1** Open a web browser. For a list of supported web browsers, see the Release Notes for the version of ACS you are accessing. The most recent revision to the Release Notes is posted on [http://www.cisco.com/en/US/docs/net\\_mgmt/cisco\\_secure\\_access\\_control\\_server\\_for\\_windows/4.2/release/notes/ACS42\\_RN.html](http://www.cisco.com/en/US/docs/net_mgmt/cisco_secure_access_control_server_for_windows/4.2/release/notes/ACS42_RN.html).
- Step 2** In the Address or Location bar in the web browser, type the applicable URL. You can access the ACS web interface by using one of the following uniform resource locators (URLs):
- `http://IP address:2002`
  - `http://hostname:2002`



**Note** *IP address* is the dotted decimal IP address and *hostname* is the hostname of the server that is running ACS. If you use the hostname, DNS must be functioning properly on your network or the hostname must be listed in the local hosts file of the computer that is running the browser.

If ACS is configured to use SSL to protect administrative sessions, you must specify the HTTPS protocol in the URLs:

- `https://IP address:2002`
- `https://hostname:2002`



**Note** If SSL is enabled and you do not specify HTTPS, ACS redirects the initial request to HTTPS for you. Using SSL to access the login page protects administrator credentials. For more information about enabling SSL to protect administrative sessions, see [Configuring Access Policy, page 11-8](#) and [Access Policy Setup Page, page 11-18](#).

From the computer that is running ACS, you can also use the following URLs:

- <http://127.0.0.1:2002>
- <http://localhost:2002>

If SSL is enabled, you can specify the HTTPS protocol in the URLs:

- <https://127.0.0.1:2002>
- <https://localhost:2002>

**Step 3** If the ACS login page appears:

- a. In the Username box, type a valid ACS administrator name.
- b. In the Password box, type the password for the administrator name you specified.
- c. Click **Login**.

The initial page appears, listing build and copyright information.

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## Logging Off the Web Interface

When you are finished using the web interface, we recommend that you log off. While ACS can timeout unused administrative sessions, logging off prevents unauthorized access by someone using the browser after you or by unauthorized persons using the HTTP port left open to support the administrative session.

To log off the ACS web interface, click the Logoff button (**X**) in the upper-right corner of the screen.

**Note**

The Logoff button (**X**) appears in the upper-right corner of the browser window, except on the initial page, where it appears in the upper-left corner of the configuration area.

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## Configuring User Access

Configuration of user access is a critical configuration activity.

This section introduces configuration for user access and contains:

[User-to-Group Relationship, page 2-4](#)

[Network Access Profiles \(NAPs\), page 2-5](#)

[Per-User or Per-Group Features, page 2-5](#)

## User-to-Group Relationship

You can configure a user to belong to one group at a time. Then, as long as there are no conflicting attributes, the user inherits the group settings.

**Note**

If a user profile has an attribute configured differently from the same attribute in the group profile, the user setting always overrides the group setting.

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If a user has a unique configuration requirement, you can make that user a part of a group and set unique requirements on the User Setup page; or you can assign that user to his or her own group. For complete information, see [Chapter 5, “User Group Management”](#) and [Chapter 6, “User Management.”](#)

## Network Access Profiles (NAPs)

You no longer need to rely on user and group settings alone. With NAPs you can set up authorization rules that allow you to set user groups, RACs, and DACLs as part of a profile. For complete information, see [Chapter 14, “Network Access Profiles.”](#) For more details on authorization rules, see [Authorization Policy Configuration for NAPs, page 14-34.](#)

## Per-User or Per-Group Features

You can configure most features at both the group and user levels, with the following exceptions:

- **User level only**—Static IP address, password, and expiration.
- **Group level only**—Password aging and time-of-day/day-of-week restrictions.

## Customizing User Data

The Configure User Defined Fields page enables you to add (or edit) up to five fields for recording information on each user. The fields you define in this section subsequently appear in the Supplementary User Information section at the top of the User Setup page. For example, you could add the user’s company name, telephone number, department, billing code, and so on. You can also include these fields in the accounting logs. For more information about the accounting logs, see [About ACS Logs and Reports, page 10-1.](#) For information on the data fields that compose the user data options, see [User-Defined Attributes, page E-25.](#)

To configure or edit user data fields:

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- Step 1** Click **Interface Configuration**, and then click **User Data Configuration**.
- Step 2** The [Configure User Defined Fields, page 2-10](#) page appears. Use this page to enable and define or edit the fields that will appear in the Supplementary User Information section at the top of the User Setup page.
- Step 3** Click **Submit** or **Cancel**.



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**Tip** You can edit the title of a field by changing the text in the **Field Title** box and then clicking **Submit**.

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## Displaying Advanced Options

You use the Advanced Options page to determine which advanced options ACS displays. You can simplify the pages that appear in other areas of the ACS web interface by hiding advanced options that you do not use.

To set advanced options for the ACS web interface:

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**Step 1** Click **Interface Configuration**, and then click **Advanced Options** to open the Advanced Options page.

**Step 2** Click each option that you want enabled in the ACS web interface. See [Advanced Options \(for Interface Configuration\)](#).



### Caution

Disabling an advanced option in the Interface Configuration section does not affect anything except the display of that option in the web interface. Settings made while an advanced option was visible remain in effect when that advanced option is no longer visible. Furthermore, the interface displays any advanced option that has nondefault settings, even if you have configured that advanced option to be hidden. If you later disable the option or delete its settings, ACS hides the advanced option. The only exception is the Network Device Groups option. Regardless of whether Network Device Groups are in use, they are hidden when you clear the appropriate check box on the Advanced Options page.

**Step 3** Click **Submit**.

ACS alters the contents of various sections of the web interface according to your selections.

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## Displaying TACACS+ Configuration Options

The TACACS+ (Cisco) page details the configuration of the ACS web interface for TACACS+ settings. You use the interface settings to display or hide TACACS+ administrative and accounting options. You can simplify the web interface by hiding the features that you do not use.



### Note

The TACACS+ or RADIUS security protocols appear as links on the Interface Configuration page when you have configured one or more AAA client(s) that support a particular protocol. For example, RADIUS (Cisco VPN 3000/ASA/PIX 7.x+) appears when you have configured a AAA client in the Network Configuration sections that includes RADIUS (Cisco VPN 3000/ASA/PIX 7.x+) in the client's Authenticate Using list.



### Note

The ACS web interface displays any protocol option that is enabled or has nondefault values, even if you have configured that protocol option to be hidden. If you later disable the option or delete its value and the protocol option is configured to be hidden, ACS hides the protocol option. This behavior prevents ACS from hiding active settings.

You use this procedure to display or hide TACACS+ administrative and accounting options. It is unlikely that you will use every service and protocol available for TACACS+. Displaying each would make setting up a user or group cumbersome. To simplify setup, you can use the TACACS+ (Cisco IOS) Edit page to customize the services and protocols that appear.

To configure the user interface for TACACS+ options:

- Step 1** Click **Interface Configuration**, and then click **TACACS+ (Cisco IOS)** to display the TACACS+ (Cisco) page.
- Step 2** Use the [TACACS+ Services](#) area to define each TACACS+ service that you want to be visible on the applicable setup page.
- Step 3** Use the Advanced Configuration Options area to enable display of the advanced option. See [Advanced Configuration Options \(for TACACS+\)](#).
- Step 4** Click **Submit**.

The selections made in this procedure determine what TACACS+ options ACS displays in other sections of the web interface.

## Displaying RADIUS Configuration Options

It is unlikely that you want to install every attribute available for every protocol. Displaying each would make setting up a user or group cumbersome. To simplify setup, use the options in this section to customize the attributes that are visible. For a list of supported RADIUS AV pairs and accounting AV pairs, see [Appendix B, “RADIUS Attributes.”](#)

Depending on which AAA client or clients you have configured, the Interface Configuration page displays different choices of RADIUS protocol configuration settings. The Interface Configuration page displays RADIUS Internet Engineering Task Force (IETF) settings whenever any RADIUS AAA client is configured. The Interface Configuration page also displays additional settings for each vendor-specific RADIUS type. The settings that appear for various types of AAA client depend on what settings that type of device can employ. These combinations are detailed in [Table 2-1](#).

**Table 2-1** RADIUS Listings in Interface

Configure this Type of AAA Client	The Interface Configuration Page Lists the Types of Settings Shown											
	RADIUS IETF	RADIUS Cisco Airespace	RADIUS Cisco Aironet	RADIUS BBSM	RADIUS Cisco IOS/PIX 6.0	RADIUS Microsoft	RADIUS Ascend	RADIUS Cisco VPN 3000/ASA/PIX 7.x+	RADIUS Cisco VPN 5000	RADIUS Juniper	RADIUS Nortel	RADIUS 3COMUSR
<b>RADIUS IETF/RADIUS iPass</b>	Yes	No	No	No	No	No	No	No	No	No	No	No
<b>RADIUS Cisco Airespace)</b>	Yes	Yes	No	No	No	No	No	No	No	No	No	No

Table 2-1 RADIUS Listings in Interface (continued)

Configure this Type of AAA Client	The Interface Configuration Page Lists the Types of Settings Shown											
	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No
RADIUS Cisco Aironet	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No
RADIUS BBSM	Yes	No	No	Yes	No	No	No	No	No	No	No	No
RADIUS Cisco IOS/PIX 6.0	Yes	No	No	No	Yes	Yes	Yes	No	No	No	No	No
RADIUS Ascend	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
RADIUS (Cisco VPN3000/ASA/PIX 7.x+	Yes	No	No	No	Yes	Yes	No	Yes	No	No	No	No
RADIUS Cisco VPN 5000	Yes	No	No	No	No	No	No	No	Yes	No	No	No
RADIUS Juniper	Yes	No	No	No	No	No	No	No	No	Yes	No	No
RADIUS Nortel	Yes	No	No	No	No	No	No	No	No	No	Yes	No
RADIUS 3COMUSR												Yes

**Tip**

You must configure your network devices before you can select, on the Interface Configuration page, a type of setting for further configuration.

From the Interface Configuration page, when you select a type of RADIUS setting to configure, the web interface displays the corresponding list of available RADIUS attributes and associated check boxes. If you have selected the Per-user TACACS+/RADIUS Attributes check box in Interface Configuration: Advanced Options, a User check box appears alongside the Group check box for each attribute. Otherwise, only the Group check box for each attribute appears. By checking check boxes in a list of attributes, you determine whether the corresponding (IETF) RADIUS attribute or vendor-specific attribute (VSA) is configurable from the User Setup and Group Setup sections.

While ACS ships with these prepackaged VSAs, you can also define and configure custom attributes for any VSA set that is not already contained in ACS. If you have configured a custom VSA and a corresponding AAA client, from the Interface Configuration section you can select the custom VSA and then set the options for how particular attributes appear as configurable options on the User Setup or Group Setup page. For information about creating user-defined RADIUS VSAs, see [Creating, Reading, Updating and Deleting Actions for AAA clients](#), page 8-22.

## Specifying Display of RADIUS (IETF) Options

This procedure enables you to hide or display any of the standard IETF RADIUS attributes for configuration from other portions of the ACS web interface.



**Note** If the Per-user TACACS+/RADIUS Attributes check box in Interface Configuration: Advanced Options is selected, a User check box appears alongside the Group check box for each attribute.

To set protocol configuration options for IETF RADIUS attributes:

- Step 1** Click **Interface Configuration**, and then click **RADIUS (IETF)** to display the RADIUS (IETF) page.
- Step 2** For each IETF RADIUS attribute that you want to appear as a configurable option on the User Setup or Group Setup page, check the corresponding check box. See [RADIUS Protocols](#).



**Note** Your RADIUS network devices must support each checked RADIUS attribute.

- Step 3** To specify how many values to display for tagged attributes on the User Setup and Group Setup pages, select the **Tags to Display Per Attribute** option, and then select a value from the corresponding list. Examples of tagged attributes are [064] Tunnel-Type and [069] Tunnel-Password.

- Step 4** Click **Submit**.

Each IETF RADIUS attribute that you checked appears as a configurable option on the User Setup or Group Setup page, as applicable.

## Specifying Display of RADIUS (<vendor>) Options

You use this procedure to hide or display various RADIUS VSAs for configuration from the User Setup and Group Setup portions of the ACS web interface.

To set protocol configuration options for a set of RADIUS VSAs:

- Step 1** Click **Interface Configuration**.
- Step 2** Click one of the RADIUS VSA set types, for example, RADIUS (Ascend).
- Step 3** The page listing the selected set of available RADIUS VSAs appears. See [RADIUS Protocols](#).



**Note** If the Per-user TACACS+/RADIUS Attributes check box in Interface Configuration: Advanced Options is checked, a User check box appears beside the Group check box for each attribute.

- Step 4** For each RADIUS VSA that you want to appear as a configurable option on the User Setup or Group Setup page, check the corresponding check box.



**Note** Your RADIUS network devices must support each checked RADIUS attribute.

- Step 5** Click **Submit** at the bottom of the page.

According to your selections, the RADIUS VSAs appear on the User Setup or Group Setup pages, or both, as a configurable option.

## Interface Configuration Reference

Click the Interface Configuration button in the navigation bar to open the top page of the Interface Configuration section of the Web interface.

Table 2-2 describes the options on the Interface Configuration page.

**Table 2-2** *Interface Configuration Page*

Option	Description
Select	
User Data Configuration	Opens the Configure User Defined Fields page, which you can use to configure additional fields that will appear on the User Setup page.
<protocol>	Opens a page that contains the associated TACACS+ or RADIUS service and attribute options. <b>Note</b> The TACACS+ or RADIUS security protocols appear as links on the Interface Configuration page when you have configured one or more AAA client(s) that support a particular protocol. For example, RADIUS (Cisco VPN 3000/ASA/PIX 7.x+) appears when you have configured a AAA client in the Network Configuration sections that includes RADIUS (Cisco VPN 3000/ASA/PIX 7.x+) in the client's Authenticate Using list.
Advanced Options	Opens the Advanced Options page, which you can use to choose additional options that will appear in the user interface.

The Interface Configuration Reference includes:

- [Configure User Defined Fields](#)
- [TACACS+ Services](#)
- [Advanced Configuration Options \(for TACACS+\)](#)
- [RADIUS Protocols](#)
- [Advanced Options \(for Interface Configuration\)](#)

## Configure User Defined Fields

Table 2-3 describes the options on the Configure User Defined Fields page.

**Table 2-3** *Configure User Defined Fields*

Option	Description
Display	When checked, enables display of the field on the User Setup page and certain System Configuration: Logging pages.
Field ID	Lists the ID number for each field.

**Table 2-3** Configure User Defined Fields (continued)

Option	Description
Field Name	Type a new field name or edit an existing field name. The range is 1 to 126 characters, any alpha-numeric characters are allowed. <b>Note</b> Be sure to check the Display field.
Submit	Submits the changes and then returns to the Interface Configuration page.
Cancel	Clears new changes and then returns to the Interface Configuration page.

## TACACS+ Services

Table 2-4 describes the TACACS+ Services area.

**Table 2-4** TACACS+ Services

Option	Description
TACACS+ Services	Contains a list of the most commonly used TACACS+ services and protocols. Check each TACACS+ service that you want to appear as a configurable option on the Group Setup page or the User Setup page. <b>Note</b> The default interface setting defines a single column of check boxes, at the group level only, for selecting TACACS+ Services Settings and New Service Settings. To view two columns of check boxes that you check to configure settings at the Group level or the User level, you must have checked the Per-user TACACS+/RADIUS Attributes option on the Advanced Options page of the Interface Configuration section. <b>Note</b> Customized settings at the user level take precedence over settings at the group level.
New Services	Use this area to add services and protocols that are particular to your network configuration. Be sure to check the appropriate check box. <b>Note</b> If you have configured ACS to interact with device-management applications for other Cisco products, such as Management Center for Firewalls, ACS might display new TACACS+ services as dictated by these device-management applications. To ensure the proper functioning of ACS, of device-management applications with which ACS interacts, and of the Cisco network devices managed by those applications, do not change or delete automatically generated TACACS+ service types. <b>Note</b> The ACS web interface displays any protocol option that is enabled or has nondefault values, even if you have configured that protocol option to be hidden. If you later disable the option or delete its value and the protocol option is configured to be hidden, ACS hides the protocol option. This behavior prevents ACS from hiding active settings.

## Advanced Configuration Options (for TACACS+)

Table 2-5 describes the TACACS+ advanced configuration options.

Table 2-5 Displayable TACACS+ Advanced Options

Option	Description
<b>Advanced TACACS+ Features</b>	This option displays or hides the Advanced TACACS+ Options section on the User Setup page. These options include Privilege Level Authentication and Outbound Password Configuration for SENDPASS and SENDAUTH clients, such as routers.
<b>Display a Time-of-Day access grid for every TACACS+ service where you can override the default Time-of-Day settings</b>	<p>If this option is checked, a grid appears on the User Setup page that you use to override the TACACS+ scheduling attributes on the Group Setup page.</p> <p>You can control the use of each TACACS+ service by the time of day and day of week. For example, you can restrict Exec (Telnet) access to business hours but permit PPP-IP access at any time.</p> <p>The default setting is to control time-of-day access for all services as part of authentication. However, you can override the default and display a time-of-day access grid for every service. This setting keeps user and group setup easy to manage, while making this feature available for the most sophisticated environments. This feature applies only to TACACS+ because TACACS+ can separate the authentication and authorization processes. RADIUS time-of-day access applies to all services. If TACACS+ and RADIUS are used simultaneously, the default time-of-day access applies to both. The default provides a common method by which to control access regardless of the access-control protocol.</p>
<b>Display a window for each service selected in which you can enter customized TACACS+ attributes</b>	<p>If you check this option, an area appears on the User Setup and Group Setup pages in which you enter custom TACACS+ attributes.</p> <p>ACS can also display a custom command field for each service. You use this text field to make specialized configurations to be downloaded for a particular service for users in a particular group.</p> <p>You can use this feature to send many TACACS+ commands to the access device for the service, provided that the device supports the command, and that the command syntax is correct. This feature is disabled by default, but you can enable it the same way you enable attributes and time-of-day access.</p>
<b>Display enable Default (Undefined) Service Configuration</b>	<p>If this check box is checked, the 'TACACS+ Unknown Services' check box appears in the User Setup and Group Setup pages that allow you to permit unknown TACACS+ services, such as the Cisco Discovery Protocol (CDP).</p> <p><b>Note</b> Only advanced system administrators should use this option.</p>

## RADIUS Protocols

Table 2-6 describes the RADIUS (IETF and non-IETF) protocols that you can display.

**Table 2-6** Displayable RADIUS Settings

<b>RADIUS Settings</b>	<b>Description</b>
RADIUS (IETF)	
RADIUS (IETF) Settings	<p>This page lists attributes available for (IETF) RADIUS.</p> <p>These standard (IETF) RADIUS attributes are available for any network device configuration when using RADIUS. If you want to use IETF attribute number 26 (for VSAs), select Interface Configuration and then RADIUS for the vendors whose network devices you use. Attributes for (IETF) RADIUS and the VSA for each RADIUS network device vendor supported by ACS appear in User Setup or Group Setup.</p> <p>The RADIUS (IETF) attributes are shared with RADIUS VSAs. You must configure the first RADIUS attributes from RADIUS (IETF) for the RADIUS vendor.</p> <p>The Tags to Display Per Attribute option (located under Advanced Configuration Options) enables you to specify how many values to display for tagged attributes on the User Setup and Group Setup pages. Examples of tagged attributes include [064]Tunnel-Type and [069]Tunnel-Password.</p> <p>For detailed steps, see <a href="#">Specifying Display of RADIUS (IETF) Options, page 2-9</a>.</p>
RADIUS (Non-IETF, in alphabetical order)	
RADIUS (Ascend) Settings	<p>From this section you enable the RADIUS VSAs for RADIUS (Ascend). This page appears if you have configured a RADIUS (Ascend) or a RADIUS (Cisco IOS/PIX 6.0) device. For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a>.</p>
RADIUS (BBSM) Settings	<p>From this section you enable the RADIUS VSAs for RADIUS Building Broadband Service Manager (BBSM). For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a>.</p>
RADIUS (Cisco Airespace) Settings	<p>From this section you enable the RADIUS VSAs for RADIUS (Cisco Airespace). This page appears if you have configured a RADIUS (Cisco Airespace) device. For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a>.</p>
RADIUS (Cisco Aironet) Settings	<p>This section is now obsolete. You can now use the session-timeout in a dedicated WLAN RADIUS Authorization Component (RAC).</p> <p>We recommend that you do not use the RADIUS Cisco Aironet settings to enable a specific attribute for RADIUS (Cisco Aironet) unless it is an existing configuration.</p> <p>When ACS responds to an authentication request from a Cisco Aironet Access Point and the Cisco-Aironet-Session-Timeout attribute is configured in the RAC, ACS sends to the wireless device this value in the IETF Session-Timeout attribute. This setting enables you to provide different session-timeout values for wireless and wired end-user clients. For steps on adding a WLAN RAC session-timeout, see <a href="#">Adding RADIUS Authorization Components, page 4-10</a>.</p>
RADIUS (Cisco IOS/PIX 6.0) Settings	<p>You use this section to enable the specific attributes for RADIUS (Cisco IOS/PIX 6.0). Selecting the first attribute listed under RADIUS (Cisco IOS/PIX 6.0), 026/009/001, displays an entry field under User Setup and/or Group Setup in which any TACACS+ commands can be entered to fully leverage TACACS+ in a RADIUS environment. For detailed steps, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a>.</p>

**Table 2-6** Displayable RADIUS Settings (continued)

RADIUS Settings	Description
RADIUS (Cisco VPN 3000/ASA/PIX 7.x+) Settings	From this section you enable the RADIUS VSAs for RADIUS (Cisco VPN 3000/ASA/PIX 7.x+). For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a> .
RADIUS (Cisco VPN 5000) Settings	From this section you enable the RADIUS VSAs for RADIUS (Cisco VPN 5000). For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a> .
RADIUS (Juniper) Settings	From this section you enable the RADIUS VSAs for RADIUS (Juniper). For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a> .
RADIUS (Microsoft) Settings	From this section you enable the RADIUS VSAs for RADIUS (Microsoft). This page appears if you configure a RADIUS (Ascend), or a RADIUS (VPN 3000/ASA/PIX 7.x+), or a RADIUS (Cisco IOS/PIX 6.0) device. For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a> .
RADIUS (Nortel) Settings	From this section you enable the RADIUS VSAs for RADIUS (Nortel). For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a> .
RADIUS (3COMUSR) Settings	From this section you enable the RADIUS VSAs for RADIUS (3COMUSR). For detailed procedures, see <a href="#">Specifying Display of RADIUS (&lt;vendor&gt;) Options, page 2-9</a> .

## Advanced Options (for Interface Configuration)

[Table 2-7](#) describes each advanced Interface Configuration option.

**Table 2-7** Advanced Options (for Interface Configuration)

Option	Description
<b>Per-User TACACS+/RADIUS Attributes</b>	When selected, this option enables TACACS+/RADIUS attributes to be set at a per-user level, in addition to being set at the group level. After this option is enabled, you must edit the TACACS+ (Cisco IOS) or any RADIUS page in the Interface Configuration section to specify which attributes you want to appear in user accounts. After you do this, user accounts display the selected attributes and enable them to be configured. Attributes configured at the user level override those defined at the group level.
<b>User-Level Shared Network Access Restrictions</b>	When selected, this option enables the Shared Profile Component network-access restrictions (NARs) options on the User Setup page. You use these options to apply previously configured, named, IP-based and CLID/DNIS-based NARs at the user level. For information on defining a NAR, or NAR set, within Shared Profile Components, see <a href="#">Adding a Shared NAR, page 4-21</a> .
<b>User-Level Network Access Restrictions</b>	When selected, this option enables the two sets of options for defining user-level, IP-based and CLI/DNIS-based NARs, on the User Setup page.
<b>User-Level Downloadable ACLs</b>	When selected, this option enables the Downloadable ACLs (access-control lists) section on the User Setup page.
<b>Default Time-of-Day/Day-of-Week Specification</b>	When selected, this option enables the default time-of-day/day-of-week access settings grid on the Group Setup page.

Table 2-7 Advanced Options (for Interface Configuration) (continued)

Option	Description
<b>Group-Level Shared Network Access Restrictions</b>	When selected, this option enables the Shared Profile Component NAR options on the Group Setup page. You use these options to apply previously configured, named, IP-based and CLID/DNIS-based NARs at the group level. For information on defining a NAR, or NAR set, within Shared Profile Components, see <a href="#">Adding a Shared NAR, page 4-21</a> .
<b>Group-Level Network Access Restrictions</b>	When selected, this option enables the two sets of options for defining group-level, IP-based and CLI/DNIS-based NARs on the Group Setup page.
<b>Group-Level Downloadable ACLs</b>	When selected, this option enables the Downloadable ACLs section on the Group Setup page.
<b>Group-Level Password Aging</b>	When selected, this option enables the Password Aging section on the Group Setup page. The Password Aging option enables you to force users to change their passwords.
<b>Network Access Filtering</b>	When selected, this option enables the Network Access Filtering (NAF) section on the Shared Profiles Components pages. The NAF option lets you set up groups of AAA client configurations (which may represent multiple network devices), network device groups (NDGs), or IP addresses of specific AAA client devices. You can use NAFs with downloadable IP ACLs and network-access restrictions to control access easily by device, which is important when creating your NAPs.
<b>Max Sessions</b>	When selected, this option enables the Max Sessions section on the User Setup and Group Setup pages. The Max Sessions option sets the maximum number of simultaneous connections for a group or a user.
<b>Usage Quotas</b>	When selected, this option enables the Usage Quotas sections on the User Setup and Group Setup pages. The Usage Quotas option sets one or more quotas for usage by a group or a user.
<b>Distributed System Settings</b>	When selected, this option displays the AAA server and proxy tables on the Network Interface page. If the tables have information other than the defaults in them, they always appear.  <b>Note</b> You no longer need to select the Distributed System Settings flag to display remote logging configuration options and (ACS for Windows only) ODBC logging options.
<b>ACS Internal Database Replication</b>	When selected, this option enables the ACS database replication information on the System Configuration page.
<b>RDBMS Synchronization</b>	When selected, this option enables the Relational Database Management System (RDBMS) Synchronization option on the System Configuration page. If RDBMS Synchronization is configured, this option always appears.
<b>IP Pools</b>	When selected, this option enables the IP Pools Address Recovery and IP Pools Server options on the System Configuration page.
<b>Network Device Groups</b>	When selected, this option enables NDGs. When NDGs are enabled, the Network Configuration section and parts of the User Setup and Group Setup pages change to enable you to manage groups of network devices (AAA clients or AAA servers). This option is useful if you have many devices to administer.
<b>Voice-over-IP (VoIP) Group Settings</b>	When selected, this option enables the VoIP option on the Group Setup page.

**Table 2-7** *Advanced Options (for Interface Configuration) (continued)*

<b>Option</b>	<b>Description</b>
<b>Voice-over-IP (VoIP) Accounting Configuration</b>	When selected, this option enables the VoIP Accounting Configuration option on the System Configuration page. You use this option to determine the logging format of RADIUS VoIP accounting packets.
<b>Microsoft Network Access Protection Settings</b>	When selected, this option enables the Microsoft Network Access Protection feature in the <b>External Posture Validation Setup</b> page. Use this option to enable Network Access Protection settings and configuration throughout ACS.
Submit	Submits the changes and then returns to the Interface Configuration page.
Cancel	Clears new changes and then returns to the Interface Configuration page.