



Getting Started

This chapter describes how to prepare WCS for operation. It contains these sections:

- [Prerequisites, page 2-2](#)
- [System Requirements, page 2-2](#)
- [Installing WCS for Windows, page 2-3](#)
- [Installing WCS for Linux, page 2-8](#)
- [Starting WCS, page 2-10](#)
- [Logging into the WCS User Interface, page 2-11](#)
- [Changing the Default Password, page 2-13](#)

Prerequisites

Before installing the Cisco WCS, ensure that you have completed the following:

- Met the necessary hardware and software requirements as listed in [System Requirements](#) for Cisco WCS.
- Updated your system with the necessary critical updates and service packs.



Note Refer to the latest release notes for information on the service packs and patches required for correct operation of Cisco WCS.

- Made a backup of the existing Cisco WCS database. For more information on doing a Windows backup, refer to [“Backing Up the WCS Database” section on page 10-4](#).
- Uninstalled the older version of the Cisco WCS. For more information on doing an uninstall, refer to [Chapter 10, “Maintaining WCS”](#).

System Requirements

Cisco WCS can be run on a workstation/server class system and access points can be distributed unevenly across controllers. The following server hardware and software is required to support Cisco WCS for Windows or Linux.

- High End Server
 - Supports up to 3000 Cisco Aironet lightweight access points and 250 Cisco wireless LAN controllers.
 - 3.15 GHz Intel Xeon Quad processor with 8 GB RAM.
 - 200 GB free space on your hard drive

The following operating system is supported:

- Windows 2003/SP1 or later with all critical and security Windows updates installed.
- Red Hat Enterprise Linux Enterprise Server 4.0 or Advanced Server 4.0. Only 32-bit OS installations are supported. 64-bit installations are not supported.

- Standard Server
 - Supports up to 2000 Cisco Aironet lightweight access points and 150 Cisco wireless LAN controllers.
 - 3.2 GHz Intel Dual Core processor with 4 GB RAM.
 - 80 GB of free space on your hard drive.

The following operating systems are supported:

- Windows 2003/SP1 or later with all critical and security Windows updates installed.
- Red Hat Enterprise Linux Enterprise Server 4.0 or Advanced Server 4.0. Only 32-bit OS installations are supported. 64-bit installations are not supported.

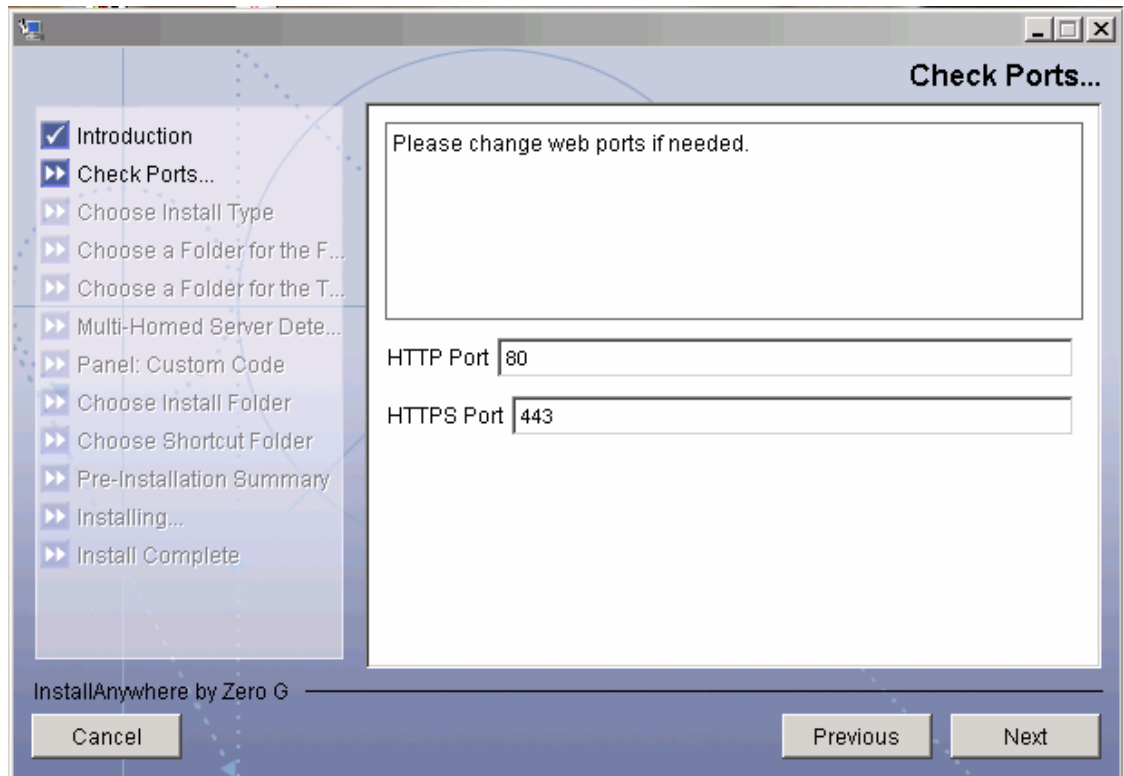
- Low End Server
 - Supports up to 500 Cisco Aironet lightweight access points and 50 Cisco wireless LAN controllers.
 - 2.4 GHz Intel processor with 1 GB RAM.
 - 30 GB of free space on your hard drive.
- The following operating systems are supported:
- Windows 2003/SP1 or later with all critical and security Windows updates installed.
 - Red Hat Enterprise Linux Enterprise Server 4.0 or Advanced Server 4.0. Only 32-bit OS installations are supported. 64-bit OS installations are not supported.
- WCS on WLSE
 - Supports up to 1500 Cisco Aironet lightweight access points and 100 Cisco wireless LAN controllers.
 - 3 GHz Intel Pentium4 processor with 3 GB RAM
 - 38 GB of free space on your hard drive.
 - Requirements for Cisco WCS User Interface—The Cisco WCS user interface requires Internet Explorer 6.0/SP1 or later, with the Flash plug-in. The Cisco WCS user interface has been tested and verified using Internet Explorer 6.0 on a Windows workstation.

Installing WCS for Windows

This section describes how to install Cisco WCS. Before installing Cisco WCS, refer to the [Prerequisites](#) and [System Requirements](#) sections. These sections give an overview of the system requirements and other measures that you should take prior to the installation. You must administrator rights on Windows and root on Linux. If installing WCS for Linux, see “[Installing WCS for Linux](#)” section on page 2-8.

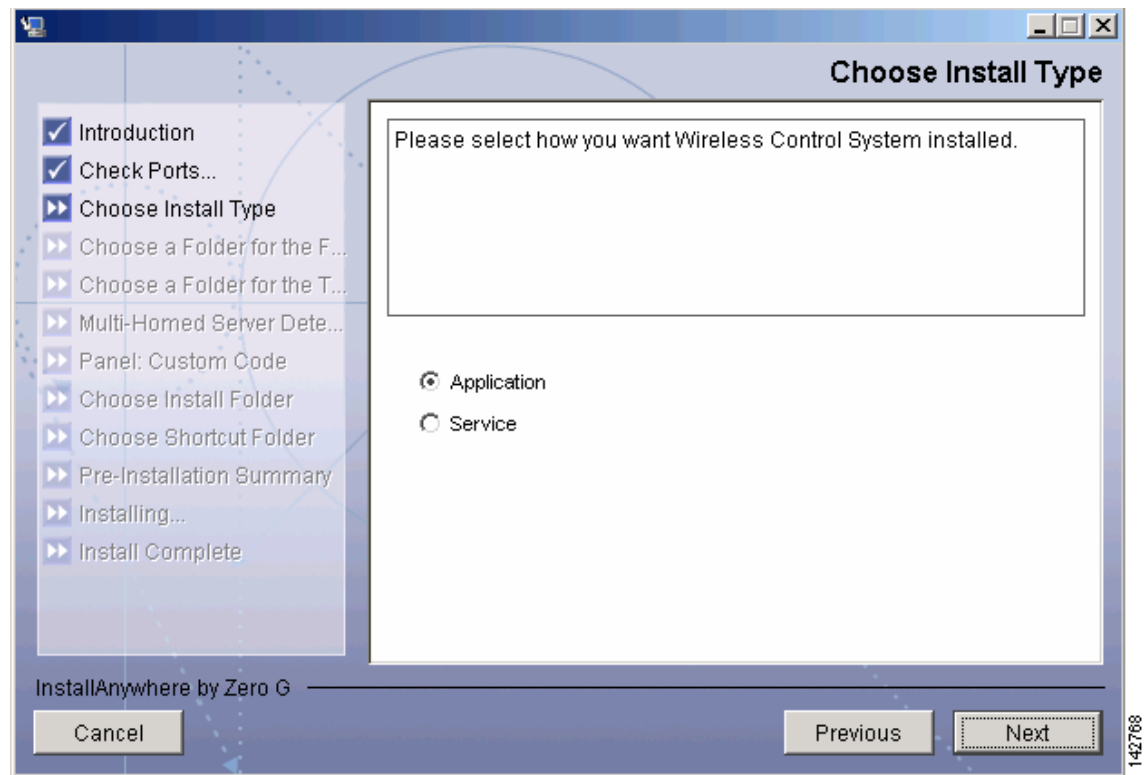
To install Cisco WCS, follow these steps:

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- Step 1** Insert the Windows Cisco WCS CD into the CD-ROM drive and double click the WCS-STANDARD-K9-4.0.X.Y.exe file where 4.0.X.Y is the software build. If you received the installer from Cisco.com, double click the WCS-STANDARD-WB-K9-4-0-X-Y.exe file that you downloaded to your local drive.
 - Step 2** The Install Anywhere window appears and prepares the system for installation. After a few seconds, the Introduction window appears. Click **Next** to bring up the Check Ports window (see [Figure 2-1](#)).

Figure 2-1 Check Ports Window

In the Check Ports window, change the default HTTP and HTTPS ports if necessary and click Next to bring up the Choose Install Type window (see [Figure 2-2](#)). The default ports for HTTP and HTTPS are 80 and 443, respectively.

Figure 2-2 Choose Install Type



Step 3 In the Choose Install Type window, choose either **Application** or **Service** and click **Next**. The FTP File Server window appears.

- If you want to manually launch the Cisco WCS after installation and have it run on the desktop, select **Application**.
- If you want to launch Cisco WCS as a service at reboot and run in the background (especially useful when the Cisco WCS is to always be online), select **Service**.



Note Cisco recommends that you always install WCS as a service because it is designed to be running all the time.

Step 4 From the FTP Server File window, choose a folder in which to store the FTP server files and click **Next** to bring up the TFTP File Server window.



Note Store the FTP server files in a folder outside the main installation folder. This ensures that the FTP server files are not deleted if Cisco WCS is uninstalled.

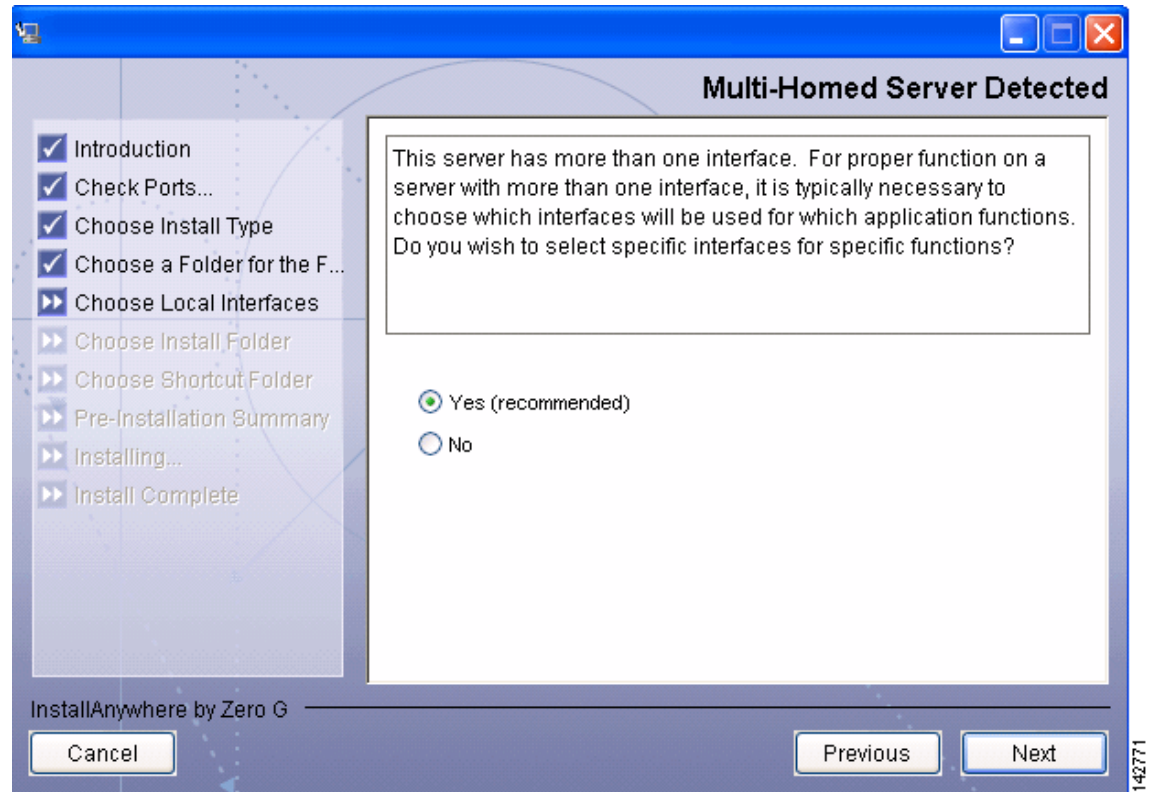
Step 5 From the TFTP Server File window, choose a folder in which to store the TFTP server files and click **Next**.



Note Store the TFTP server files in a folder outside the main installation folder. This ensures that the TFTP server files are not deleted if Cisco WCS is uninstalled.

If you are installing Cisco WCS on a multi-homed server (a server having multiple interfaces), the installer automatically detects the presence of multiple interfaces and brings up the Multi-Homed Server Detected window (see [Figure 2-3](#)).

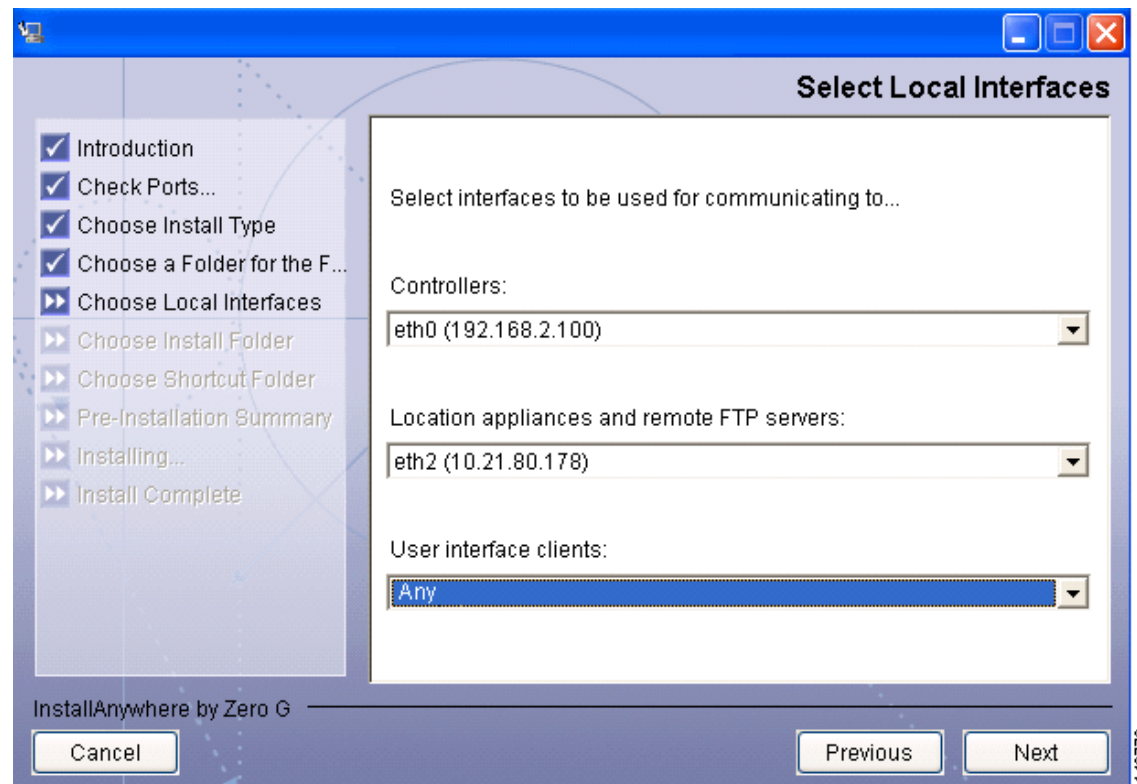
Figure 2-3 Multi-Homed Server Detected



Note The Multi-Homed Server Detected window does not appear if you install Cisco WCS on a server which has only one interface.

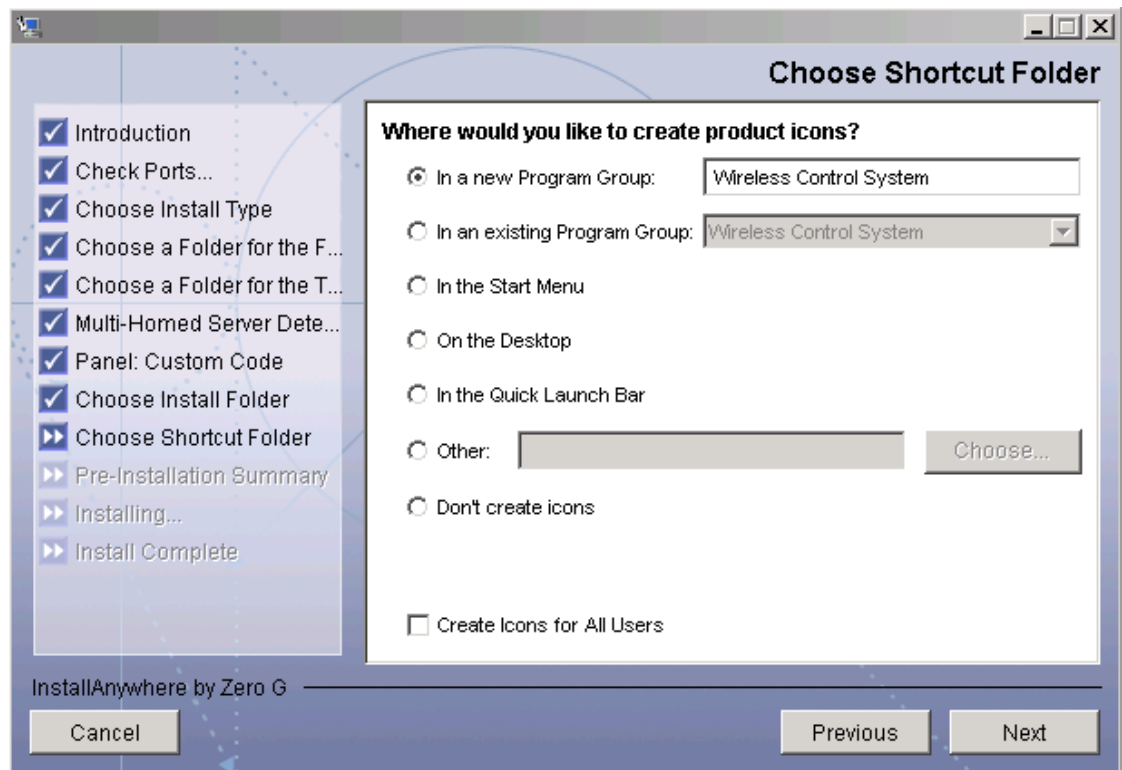
Step 6 Click **Yes** and then **Next** to configure specific interfaces on the server for communicating with controllers, location appliances, remote FTP servers, and clients. The Select Local Interfaces window appears (see [Figure 2-4](#)). Click **No** if you do not want to configure specific interfaces.

Figure 2-4 Select Local Interfaces



- Step 7** From the Select Local Interfaces window, select the interfaces that are used by the server for communicating with controllers, location appliances and remote FTP servers, and clients. Click **Next** to bring up the Choose Install Folder window.
- Step 8** Choose a folder in which to install the Cisco WCS and click **Next** to bring up the Choose Shortcut Folder window (see [Figure 2-5](#)).

Figure 2-5 Choose Shortcut Folder



- Step 9** In the Choose Shortcut Folder window, choose a location in which to create product icons and click **Next**.
- Step 10** Follow the prompts that appear on the screen to complete the installation. After the installation is complete, the Install Complete window appears.
- Step 11** Click **Done** to complete the installation.



Note The system must be rebooted to complete the Cisco WCS installation.

Installing WCS for Linux

This section describes how to install Cisco WCS.



Note Before reinstalling or updating Cisco WCS, you may want to back up the Cisco WCS database. After you have a backup, uninstall the old release.

- Step 1** If not already done, log in as root, and open an X terminal session.
- Step 2** Using the command line, perform one of the following:
- a. If you are installing from a CD, switch to the /media/cdrom directory.

- b. If you are installing from Cisco.com, switch to the directory that the install file was downloaded to. For example, if the install file was placed in /root/Desktop, enter **cd /root/Desktop**.
- Step 3** Enter **./WCS-STANDARD-K9-4.0.X.Y.bin** (for CD users) or **./WCS-STANDARD-LB-K9-4-0-X-Y.bin** (for Cisco.com users) to start the install script.
- Step 4** The install script prepares the install environment, and several windows of the license agreement display. You will then be asked if you accept the terms of the license agreement.
- Step 5** Finally a Check HTTP Port prompts appears. Change the default HTTP port if necessary (the default is 80).
- Step 6** Change the default HTTPS port if necessary (the default is 443).
- Step 7** At the Get User Input prompt, choose either **1** for **Application** or **2** for **Service**. If you want to manually launch the Cisco WCS after installation and have it run on the desktop, select Application. If you want to launch Cisco WCS as a service at reboot and run in the background (especially useful when the Cisco WCS is to always be online), select **Service**.



Note Cisco recommends that you always install WCS as a service because it is designed to be running all the time.

- Step 8** Choose a folder to store the FTP server files. It is recommended that the folder is outside of the WCS installation path so that it is not removed during an uninstall. If the folder does not already exist, you must do **mkdir** and create it.
- Step 9** Choose a folder to store the TFTP server files. It is recommended that the folder is outside of the WCS installation path so that it is not removed during an uninstall. If the folder does not already exist, you must do **mkdir** and create it.
- Step 10** If you are installing Cisco WCS on a multi-homed server (a server having multiple interfaces), the installer automatically detects the presence of multiple interfaces and prompts with the multi-homed server detected prompt. You need to choose which interface is used for which application functions. If you wish to configure specific interfaces on the server for communicating with controllers, location appliances, remote FTP servers, and clients, type 1 for Yes (recommended). Type 2 for No if you do not want to.



Note If you do not select any specific interface, Cisco WCS randomly selects an interface on its own and uses this interface to communicate with the devices. This might lead to an issue where the interface is not able to communicate with the device. Hence, Cisco recommends that you always select a specific interface for each device.

- Step 11** At the Select Local Interfaces prompt, choose which interfaces are used by the server for communicating with controllers, location appliances, remote FTP servers, and clients. Enter the number for the interface you want to select.
- Step 12** At the Choose Install Folder prompt, choose a folder in which to install the Cisco WCS. Enter an absolute path or press Enter to accept the default.
- Step 13** At the Choose Link Location prompt, choose in which folder to put the links for the installed software. This directory houses the StartWCS, StopWCS, Backup, Restore, and UninstallWCS components. The options are to type 1 for the default (opt/WCS4.0), 2 for your home folder, 3 to enter a location, or 4 to not create links.
- Step 14** A pre-installation summary and installing message is displayed to show that the software installation has begun.

**Note**

You must manually start WCS after installation.

Starting WCS

This section provides instructions for starting WCS on either a Windows or Linux server.

**Note**

You can check the status of WCS at any time. To do so, follow the instructions in the [“Checking the Status of WCS” section on page 10-2](#).

Starting WCS on Windows

Follow these steps to start WCS when it is installed as a Windows application or Windows service.

**Note**

When WCS is installed as a Windows service, WCS runs automatically upon system bootup.

Step 1 Log into the system as administrator.

Step 2 Perform one of the following:

- From the Windows Start menu, click **Programs > Wireless Control System > StartWCS**.
- From the command prompt, navigate to the WCS installation directory (C:\Program Files\WCS32\bin) and enter **WCSAdmin start**.

The WCSAdmin window appears and displays messages indicating that WCS is starting.



Note If WCS is installed as a service, messages also appear to indicate that the Nms_Server service is starting.

Step 3 Close the WCSAdmin window when the Close button becomes active.

Step 4 WCS is now ready to host WCS user interfaces (clients). Go to the [“Logging into the WCS User Interface” section on page 2-11](#) to use a web browser to connect to the WCS user interface.

Starting WCS on Linux

Follow these steps to start WCS when it is installed as a Linux application or Linux service.

**Note**

When WCS is installed as a Linux service, WCS runs automatically upon system bootup.

Step 1 Log into the system as root.

Step 2 Using the Linux command line interface (CLI), perform one of the following:

- Navigate to the /opt/WCS32 directory (or the directory chosen during installation) and enter **./StartWCS**.

- Navigate to the `opt/WCS32/bin` directory and enter **WCSAdmin start**.

The CLI displays messages indicating that WCS is starting.

- Step 3** WCS is now ready to host WCS user interfaces (clients). Go to the [“Logging into the WCS User Interface”](#) section below to use a web browser to connect to the WCS user interface.
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Logging into the WCS User Interface

Follow these steps to log into the WCS user interface through a web browser.

- Step 1** Launch Internet Explorer 6.0 or later on a different computer than the one on which you installed and started WCS.



Note Some WCS features may not function properly if you use a web browser other than Internet Explorer 6.0 on a Windows workstation.

- Step 2** In the browser’s address line, enter **https://wcs-ip-address**, where *wcs-ip-address* is the IP address of the computer on which you installed and started WCS.

- Step 3** When the WCS user interface displays the Login window, enter your username and password. The default username is **root**, and the default password is **public**.



Note Cisco recommends that you change the default password. All entries are case sensitive. For steps on changing the default password, see [“Changing the Default Password”](#) section on page 2-13.

- Step 4** Click **Submit** to log into WCS. The WCS user interface is now active and available for use. The Network Summary page appears. This page provides a summary of the Cisco Unified Wireless Network Solution, including coverage areas, the most recently detected rogue access points, access point operational data, reported coverage holes, and client distribution over time. [Figure 2-6](#) shows a typical Network Summary page.



Note When you use WCS for the first time, the Network Summary page shows that the Controllers, Coverage Areas, Most Recent Rogue APs, Top 5 APs, and Most Recent Coverage Holes databases are empty. It also shows that no client devices are connected to the system. After you configure the WCS database with one or more controllers, the Network Summary page provides updated information.

Figure 2-6 Network Summary Page

Cisco Wireless Control System Username: root Logout

Monitor ▾ Configure ▾ Location ▾ Administration ▾ Help ▾

Controllers

Search for controller by

Select a Network

Search

Rogues	0	0	77
Coverage	0	0	0
Security	13	0	21
Controllers	18	0	0
Access Points	17	0	8
Location	0	0	0

Network Summary

Controllers

Total	Unreachable
11	6

Coverage Areas

Name	Total APs	a Radios	b/g Radios	OOS Radios	Clients
Richfield Campus	3	3	3	2	0
--REQ01	3	3	3	2	0
---Richfield Lower Level	0	0	0	0	0
---Michele	3	3	3	2	0
--test	0	0	0	0	0
Richfield TME Lab	4	4	4	2	0
---WNBU TME Lab	4	4	4	2	0
Campus #2	3	3	3	0	2
---New Floor	3	3	3	0	2
---New Floor #2	0	0	0	0	0

Total APs not yet assigned to Maps : 2

Most Recent Rogue APs

MAC Address	SSID	Type	State	Date/Time
00:0e:83:19:28:de	wmtest	AP	Alert	11/18/05 1:44 PM
00:0b:85:28:a4:bf	Strange Magic	AP	Alert	11/18/05 1:42 PM
00:0b:85:23:e8:70	Always	AP	Alert	11/18/05 1:40 PM
00:07:85:b4:02:b1	guestnet	AP	Alert	11/18/05 1:39 PM
00:0b:85:28:a8:3f	Strange Magic	AP	Alert	11/18/05 1:13 PM

Top 5 APs

AP Name	Map Location	a Clients	b/g Clients	Total
ap:23:ea:c0	Unassigned	0	1	1
AP1030-ma7-000b.8523.ead0	Campus #2 > New Floor	0	1	1
AP1240-ma7-0013.5f0c.3fa4	Campus #2 > New Floor	1	0	1
ap:04:73:f0	Campus #2 > New Floor	0	0	0
ap:14:39:70	Richfield Campus > REQ01 > Michele	0	0	0

Most Recent Coverage Holes

Access Point	Interface	Perc
No Coverage Holes found		

Clients

Associated Clients vs. Time

Client Count

Time

**Note**

To exit the WCS user interface, close the browser window or click **Logout** in the upper right corner of the page. Exiting a WCS user interface session does not shut down WCS on the server.

**Note**

When a system administrator stops the WCS server during your WCS session, your session ends, and the web browser displays this message: “The page cannot be displayed.” Your session does not reassociate to WCS when the server restarts. You must restart the WCS session.

Changing the Default Password

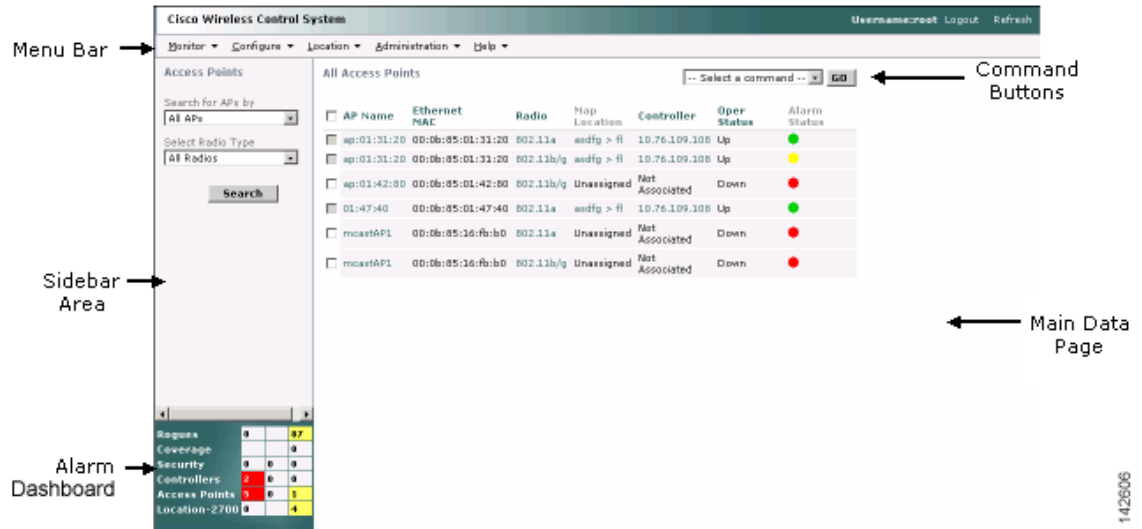
After installing WCS, the default root password is *public*. Cisco advises changing the default password after the initial installation. Follow these steps to change the WCS default password.

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- Step 1** Log in as **root**.
 - Step 2** Select **Administration > Accounts**.
 - Step 3** From the User Name column, click **root**.
 - Step 4** Enter a new password in the New Password text box and retype the new password in the Confirm New Password text box.
 - Step 5** Click **Submit**.
-

Using the Cisco WCS User Interface

A typical Cisco WCS user interface page consists of the areas illustrated in [Figure 2-7](#).

Figure 2-7 WCS User Interface



The following sections describe the Cisco WCS user interface page areas and how to use them:

- [Menu Bar](#), page 2-14
- [Sidebar Area](#), page 2-15
- [Alarm Dashboard](#), page 2-16
- [Command Buttons](#), page 2-16
- [Main Data Page](#), page 2-16
- [Administrative Tools](#), page 2-17

Menu Bar

There are five menus on each screen: **Monitor**, **Configure**, **Location**, **Administration**, and **Help**. When you move the mouse over any of the menus, a drop-down menu appears.



Note

The Location menu is displayed only in Cisco WCS Location version.

Monitor Menu

The Monitor menu provides you with a top level description of the devices on your network. You can monitor your network, maps, various devices, security, alarms, events, or reports.

Configure Menu

The Configure menu allows you to configure templates, controllers, and access points on your network.

Administration Menu

The Administration menu allows you to schedule tasks like making a backup, checking a device status, auditing your network, synchronizing the location server, and so on. You can also choose Logging to enable various logging modules and specify restart requirements. By choosing Accounts, you can view a list of all users and their associated audit trail.

Location Menu

The Location menu allows you to configure location appliances. A location appliance is a Cisco server that collects and stores up to 30 days of historical location data for up to 1500 laptop clients, palmtop clients, VoIP telephone clients, active RFID (Radio Frequency Identifier) asset tags, rogue access points, and rogue access point clients.

**Note**

The Location menu is displayed only in Cisco WCS location version.

For more information on location appliances, refer to the *Cisco 2700 Series Location Appliance Installation and Configuration Guide*.

**Note**

Read/Write permissions are used by the location function of the location appliance. *Write* permissions allow a client application or location appliance operator to modify location data only (such as asset information), while *Read* permissions only allow a client to read location data.

**Note**

Full permissions are required for administration. All functions under the Locate menu in Cisco WCS are administrative functions. An administrator must always have full permissions.

Help Menu

The Help menu allows you to access online help and check the version of Cisco WCS.

To check the version of WCS, click **About the Software**. The product name, version number, copyright statement, and Apache Software Foundation statement is displayed.

Sidebar Area

The sidebar area allows you to choose a new configuration panel under the currently selected menu area. You may choose to display or configure any of the available data. The selector area options vary based on which menu you have chosen.

Some screens contain a group of menus in this area. Click the menu item to reveal a submenu and then click the item to chose it.

Alarm Dashboard

When Cisco WCS receives alarm messages from a controller, the Cisco WCS user interface displays an alarm indicator in the lower left corner. The alarm dashboard only appears when the Macromedia flash is installed. Alarms indicate the current fault or state of an element which needs attention. These are usually generated by one or more events. The alarm can be cleared, but the event remains. An example of an alarm is *AP down*, which means that the current status of the access point is down.

Alarms are color coded as follows:

- Clear = No alarm
- Red = Critical alarm
- Orange = Major alarm
- Yellow = Minor alarm

You can click any of the various types of alarms (such as rogues, coverage, security, controllers, and access points) to display details.

Command Buttons

The Cisco WCS user interface uses a number of command buttons throughout its screens. The most common of these are as follows:

- Apply to Controllers: Applies the selected information to the controllers
- Delete: Deletes the selected information
- Cancel: Cancels new information entered on the current screen and return to the previous screen
- Save: Saves the current settings
- Audit: Discovers the present status of this access point
- Place AP: Fixes the position of the selected access point on the graphic map display and updates the display of its coordinates

Main Data Page

The main data page is determined by the required parameter information. Active areas on the data pages include the following:

- Text fields into which data may be entered using the keyboard
- Pull-downs from which one of several options may be chosen
- Check boxes in lists allow you to choose one or more items from the displayed list
- Radio buttons allow you to turn a parameter on or off
- Hyperlinks take you to other pages in the Cisco WCS user interface

Input fields are black text on a white background. When data is entered or selected, it is not sent to the controller, but it is saved in the field until the **Go** button is selected.

Administrative Tools

This area provides shortcuts to administration functions (such as logged in as, logout, refresh, and help) that are used on a regular basis when configuring a controller through the web user interface.

