



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 2-7](#)
- [Starting WCS, page 2-12](#)
- [Logging into the WCS User Interface, page 2-13](#)
- [Using the Cisco WCS User Interface, page 2-15](#)

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 9-4.
- Uninstalled the older version of the Cisco WCS. For more information on doing an uninstall, refer to Uninstalling Cisco WCS in Chapter 9.

System Requirements

Table 2-1 describes the system requirements of Cisco WCS for Windows or Linux.

Table 2-1 System Requirements

Requirement Type	Minimum Requirement
System Hardware	<ul style="list-style-type: none"> • IBM PC-compatible computer with 2.4-GHz Intel Pentium processor if you have up to 500 access points in your network • IBM PC-compatible computer with 2.4-GHz dual processors if you have more than 500 access points in your network
Memory	<ul style="list-style-type: none"> • 1 GB if you have up to 500 access points in your network • 2 GB if you have more than 500 access points in your network
Available drive space	20 GB of free space on your hard drive
Operating System Software	Microsoft Windows 2000 Service Pack 4 or later Microsoft Windows 2003 Service Pack 1 or later -----OR----- Red Hat Enterprise Linux ES 3
Additional Software	Internet Explorer 6.0 or later -----OR----- XWindows

Step 1

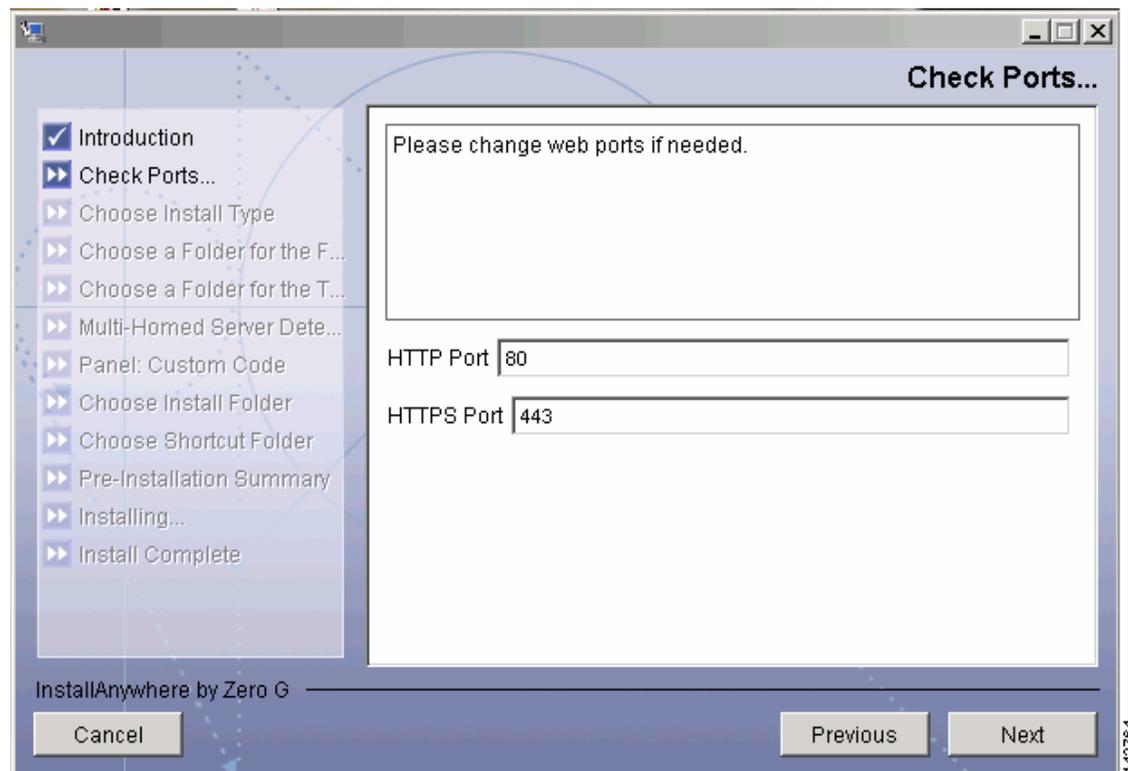
Installing WCS for Windows

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 have administrator rights on Windows and root on Linux. If installing WCS for Linux, see [Installing WCS for Linux, page 2-7](#).

To install Cisco WCS, follow these steps:

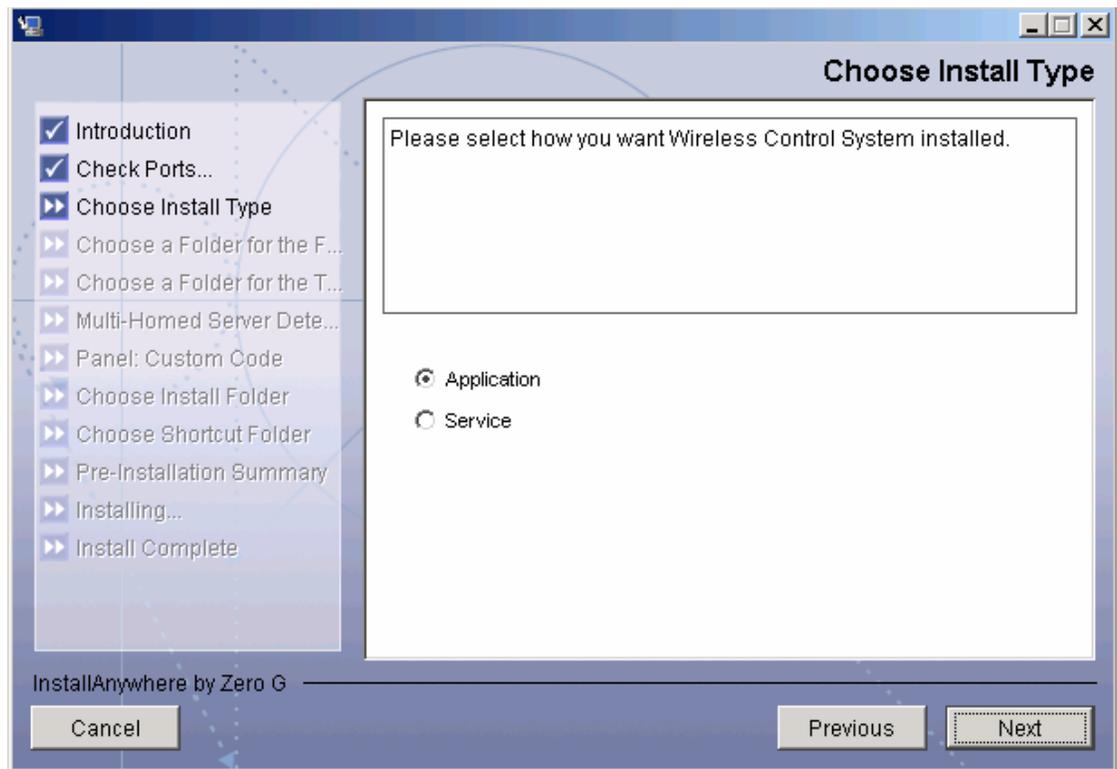
- Step 1** Insert the Windows Cisco WCS CD into the CD-ROM drive and double click the AIR-WCS-WL-1.0-3.2.X.Y.exe file where 3.2.X.Y is the software build. If you received the installer from Cisco.com, double click the AIR-WCS-WB-1.0-K9-3-2-X-Y.exe file that you downloaded to your local drive.
- Step 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.

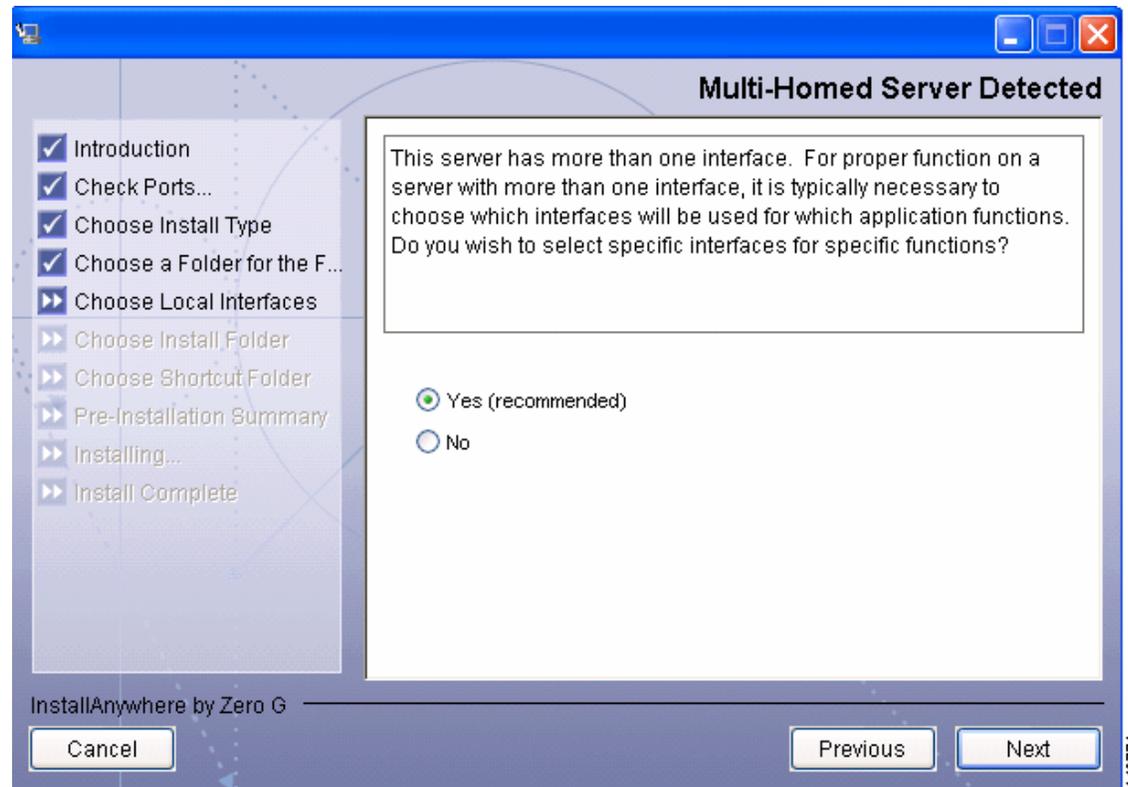
Step 5 From the TFTP Server File window, choose a folder in which to store the TFTP server files and click **Next**.



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](#)).

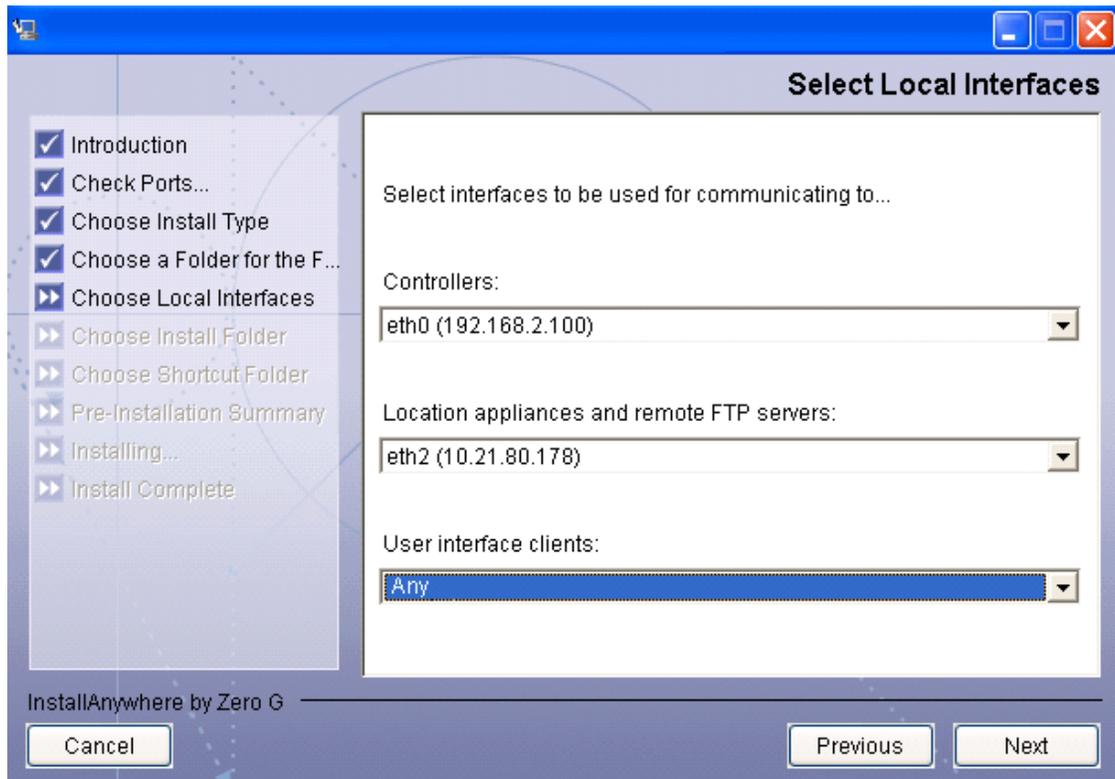
Figure 2-3 Multi-Homed Server Detected



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



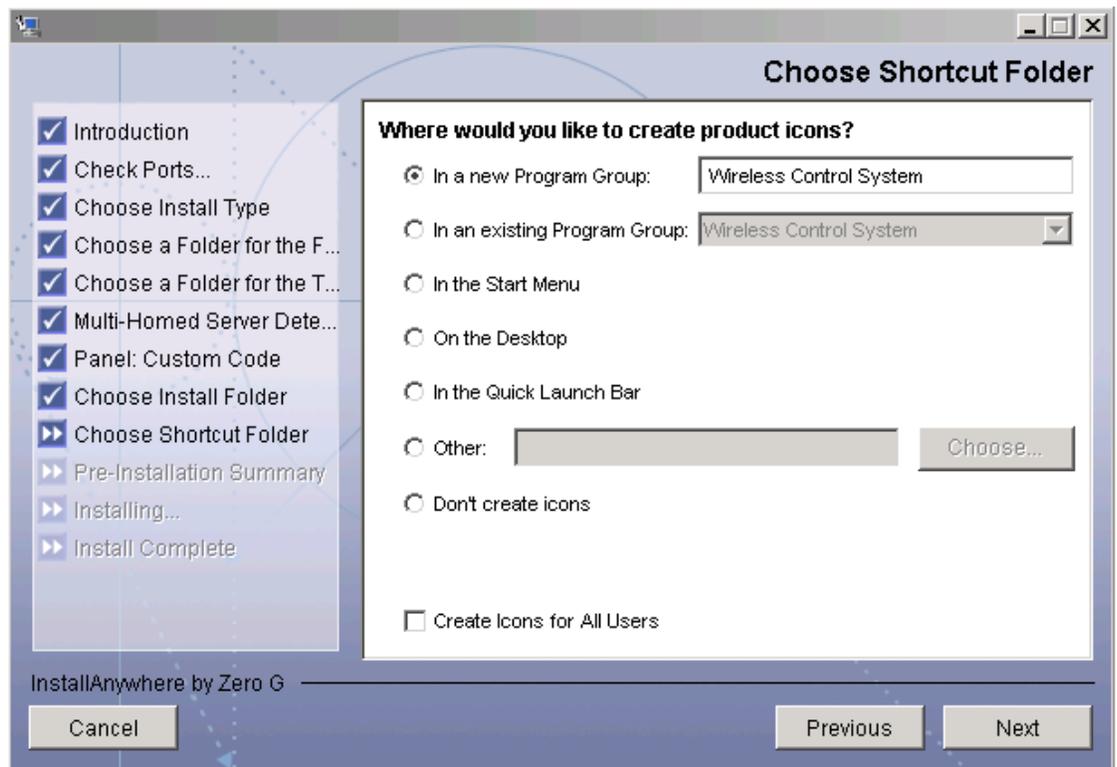
- Step 7** From the Select Local Interfaces window, select the interfaces that are used by the server for communicating with controllers, location appliances and remote FTP servers, and clients. Click **Next** to bring up the Choose Install Folder window.



Note If you do not select any specific interface and instead select **Any** as the option, 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 specific interface for each device.

- 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.

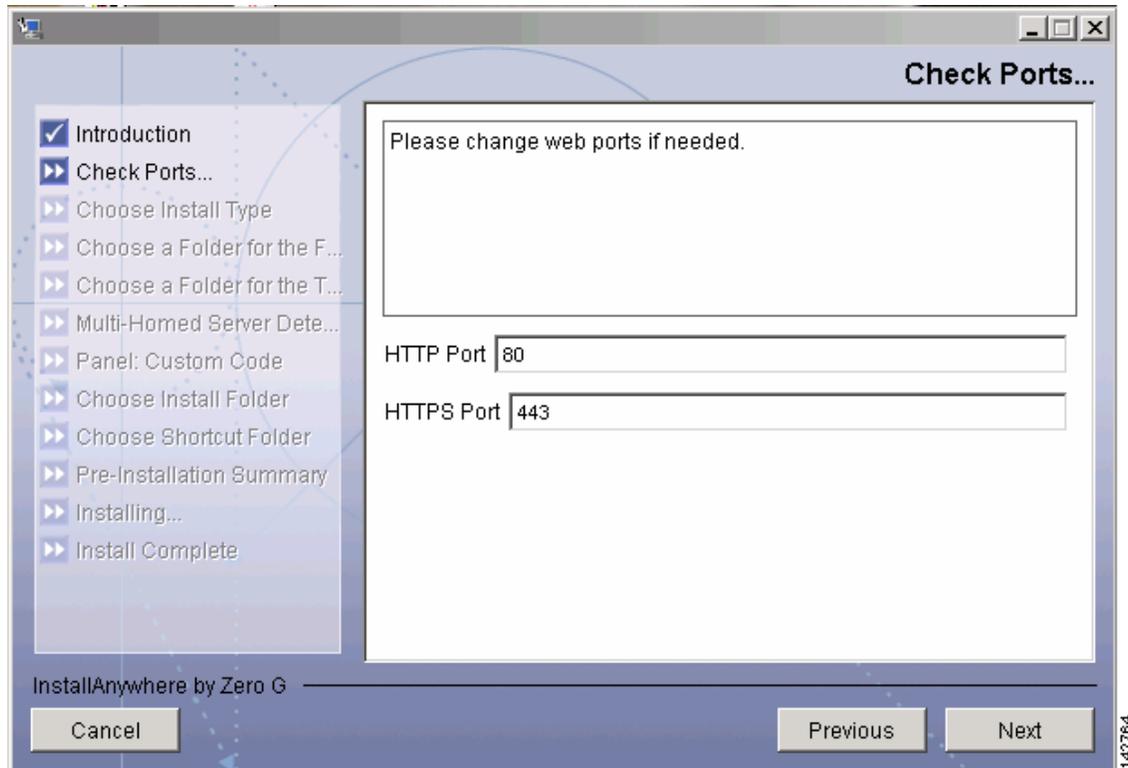


Note Before reinstalling or updating Cisco WCS, you may want to back up the Cisco WCS database. After you have a backup, uninstall the old release.

- 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 `./AIR-WCS-LL-1.0-k9-3.2.X.Y.bin` (for CD users) or `./AIR-WCS-LB-1.0-K9-3-2-X-Y.bin` (for Cisco.com users) to start the install script.
- Step 4** The install script prepares the install environment and displays the Introduction window. Click **Next** to bring up the Check Ports window (see [Figure 2-6](#)).

Figure 2-6 Check Ports



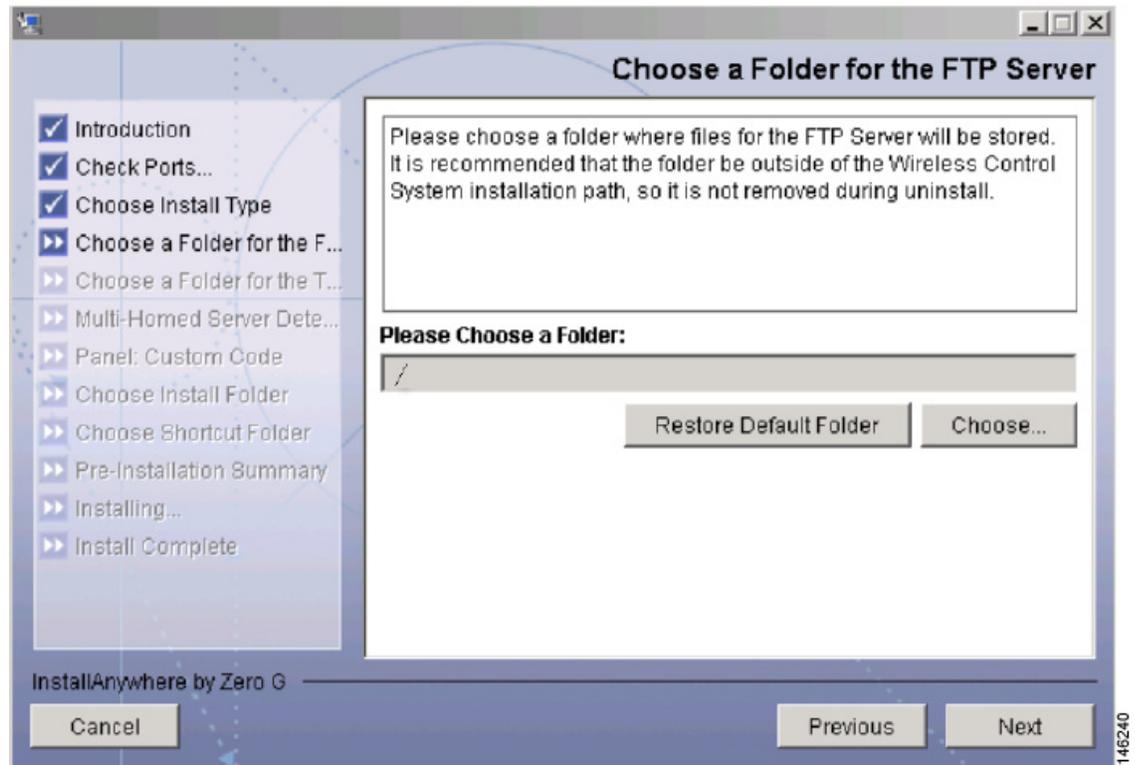
- Step 5** In the Check Ports window, change the default HTTP and HTTPS ports if necessary and click **Next** to bring up the Choose Install Type window.
- Step 6** In the Choose Install Type window, choose either **Application** or **Service** and click **Next**.
- If you want to manually launch the 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.

The Choose a Folder for FTP Server window appears (see [Figure 2-7](#)).

Figure 2-7 FTP Server Folder



- Step 7** Choose a folder to store the FTP service files and click **Next**. The Choose a Folder for the TFTP Server window appears.



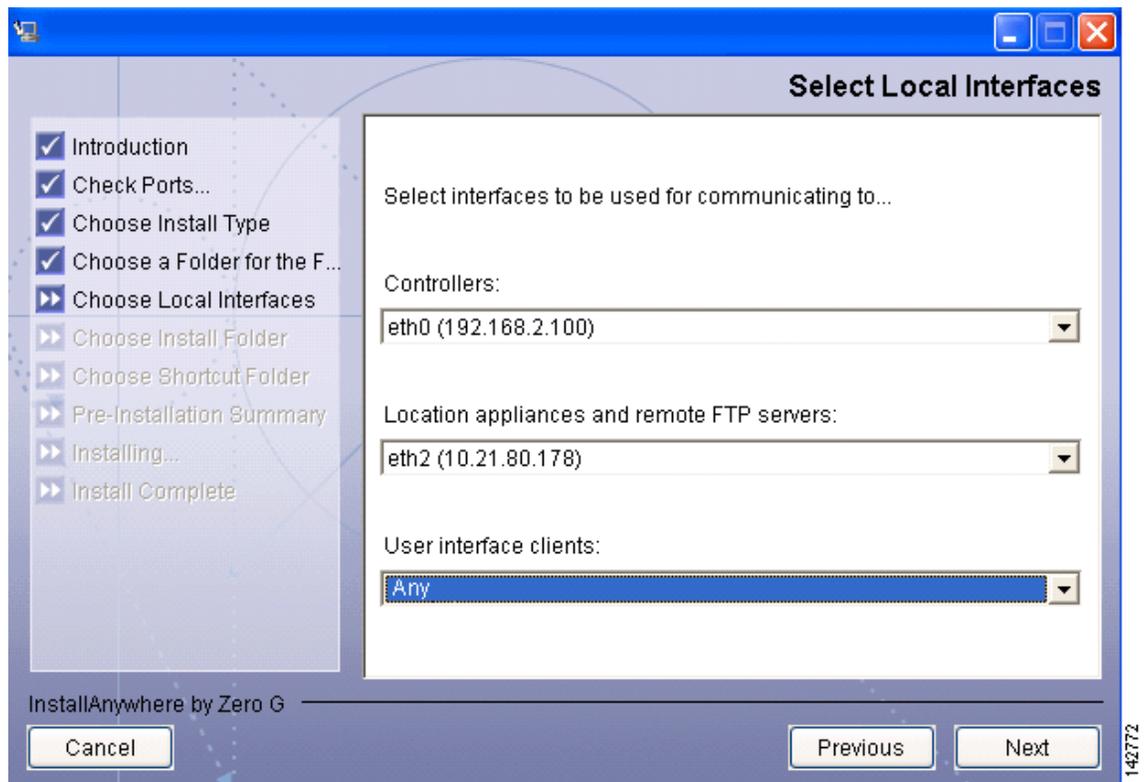
Note Store the FTP server files in a folder outside the main installation folder. This ensures that the FTP server files are not deleted when Cisco WCS is uninstalled.

- Step 8** From the TFTP Server File window, choose a folder to store the TFTP server files and click **Next**. 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.



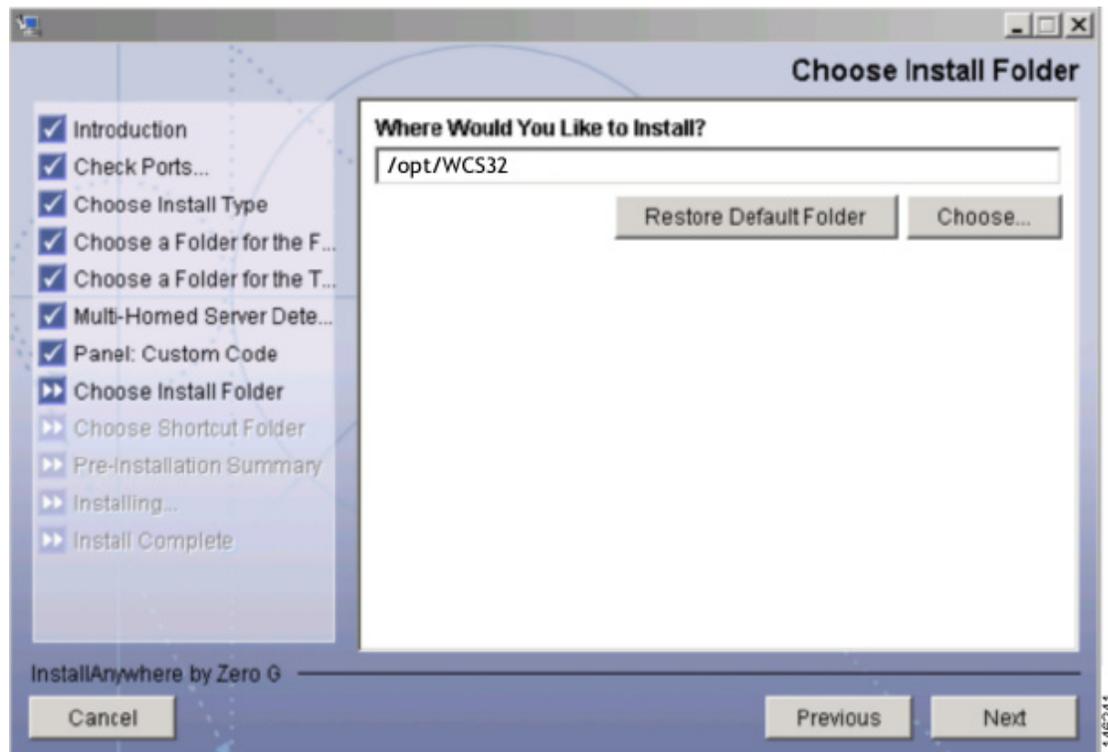
Note The Multi-Homes Server Detected window does not appear if you install Cisco WCS on a server which has only one interface.

- Step 9** Click **Yes** and then click **Next** to bring up the Select Local Interfaces window (see [Figure 2-8](#)) where you can configure specific interfaces on the server for communicating with controllers, location appliances, remote FTP servers, and clients. Click **No** if you want to configure specific interfaces.

Figure 2-8 Select Local Interfaces

- Step 10** 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 (see [Figure 2-9](#)).

Figure 2-9 Choose Install Folder

**Note**

If you do not select any specific interface and instead select **Any** as the option, 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** From the Choose Install Folder window, choose a folder in which to install the Cisco WCS and click **Next**. The Choose Link Folder window appears.
- Step 12** In the Choose Link Folder window, choose the folder in which to create links and click **Next**.
- Step 13** Click **Next** to continue installing Cisco WCS software. After the installation is complete, the Install Complete window appears.
- Step 14** Click **Done** to complete the 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 9-2](#).

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 2-13](#) 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 All entries are case sensitive.

- 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 Wireless LAN Solution, including coverage areas, the most recently detected rogue access points, access point operational data, reported coverage holes, and client distribution over time. [Figure 2-10](#) 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 2-10 Network Summary Page

Cisco Wireless Control System Username: root Logout

Monitor ▾ Configure ▾ Location ▾ Administration ▾ Help ▾

Controllers

Search for controller by
Networks ▾

Select a Network
All Networks ▾

Search

Access Points	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
---WNBULab	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	Percent
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.

Using the Cisco WCS User Interface

A typical Cisco WCS user interface page consists of the areas illustrated in [Figure 2-11](#).

Figure 2-11 WCS User Interface

The screenshot shows the Cisco Wireless Control System (WCS) user interface. The interface is divided into several sections:

- Menu Bar:** Located at the top, it contains five main menu items: Monitor, Configure, Location, Administration, and Help.
- Command Buttons:** Located at the top right, it includes a search bar with the text "-- Select a command --" and a "GO" button.
- Access Points:** The main data page displays a table of all access points. The table has the following columns: AP Name, Ethernet MAC, Radio, Map Location, Controller, Oper Status, and Alarm Status. The data rows show various APs with their respective MAC addresses, radio types, locations, and operational statuses.
- Alarm Dashboard:** Located at the bottom left, it displays a grid of system metrics including Rogue Coverage, Security, Controllers, Access Points, and Location-2700.
- Sidebar Area:** Located on the left, it contains search filters for APs and radios, along with a "Search" button.

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

- [Menu Bar](#), page 2-15
- [Sidebar Area](#), page 2-17
- [Alarm Monitor](#), page 2-17
- [Command Buttons](#), page 2-17
- [Main Data Page](#), page 2-17
- [Administrative Tools](#), page 2-18

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, 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 *2700 Location Appliance Quick Start 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 choose it.

Alarm Monitor

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 monitor window 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.