CISCO SYSTEMS

Quick Start Guide: Cisco Wireless Control System for Microsoft Windows

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Preface

This guide assists you in the installation of Cisco Wireless Control System (Cisco WCS) on a Microsoft Windows workstation to create a Cisco WCS Server. To install the Cisco WCS on a Linux workstation, refer to the *Quick Start Guide: Cisco Wireless Control System for Linux*.

Organization

This guide is organized into the following sections:

- "Prerequisites" lists the things that you should have completed before installing Cisco WCS.
- "System Requirements" describes the basic hardware and software requirements.
- "Backing Up the Cisco WCS Database" describes how to make a backup of your database.
- "Restoring the Cisco WCS Database" explains how to restore your database.
- "Uninstalling Cisco WCS" describes how to uninstall Cisco WCS.
- "Installing Cisco WCS" describes how to install Cisco WCS.
- "Starting and Stopping the Cisco WCS" describes how to start and stop Cisco WCS when it is installed as an application or service.
- "Starting and Stopping a Cisco WCS User Interface" describes how to start and stop a Cisco WCS user interface.

Conventions

Interactive examples use these conventions:

- Terminal sessions and system displays are in screen font.
- Information you enter is in boldface screen font.
- Nonprinting characters, such as passwords or tabs, are in angle brackets (< >).

Notes, cautions, and timesavers use these conventions and symbols:

Tip Means the following will help you solve a problem. The tips information might not be troubleshooting or even an action, but could be useful information.

Note Means reader take note. Notes contain helpful suggestions or references to materials not contained in this manual.

Caution Means reader be careful. In this situation, you might do something that could result equipment damage or loss of data.

Warning **This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.**

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation DVD

Cisco documentation and additional literature are available in a Documentation DVD package, which may have shipped with your product. The Documentation DVD is updated regularly and may be more current than printed documentation. The Documentation DVD package is available as a single unit.

Registered Cisco.com users (Cisco direct customers) can order a Cisco Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/

Cisco Marketplace:

http://www.cisco.com/go/marketplace/

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com
- Nonemergencies—psirt@cisco.com

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&exact=on

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

> **Note** Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

- Severity 1 (S1)—Your network is "down," or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

- Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

- Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

- Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

Installation and Configuration

The Cisco WCS is part of the innovative Cisco Wireless LAN Solution.

- It maintains the Cisco wireless LAN solution configuration, which includes controllers, access points, and location appliances.

- It enables Cisco WCS system administrators to assign logins, passwords, and privileges for all Cisco WCS operators, and to set times for periodic system tasks.

- It enables Cisco WCS operators to use a web browser on any connected workstation to access Cisco WCS configuration, monitoring, and administrative functions. The Cisco WCS operators can also add, change, and delete Cisco wireless LAN solution components and configurations in the Cisco WCS database, depending on privilege level.

The Cisco WCS can be run either as a normal Windows application, or it can be installed as a service that operates in the background and resumes operating after a reboot.

The Cisco WCS needs the following communication ports to be available on the Cisco WCS Server system:

Table 1   Cisco WCS Server Ports Information

Port Name	Port Number
Rmi	1299
Http	80 (can be changed during installation)
Https	443 (can be changed during installation)
WebContainer	8009
Database	1315
HttpConnector	8456
HttpConnectorRedirect	8457
TomcatShutdown	8005
TFTP	69
FTP	21
WCS Data	2000
Traps	169

Prerequisites

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

- Ensured that you meet 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 from Windows Update site.

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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, refer to "Backing Up the Cisco WCS Database."

- Uninstalled the older version of the Cisco WCS. Refer to "Uninstalling Cisco WCS."

System Requirements

The following table describes the system requirements for Cisco WCS.

Table 2   System Requirements for Cisco WCS

Requirement Type	Minimum Requirement
System Hardware	- 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	- 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
Operating System Software	- Microsoft Windows 2000 Service Pack 4 or later. - Microsoft Windows 2003 Service Pack 1 or later.
Additional Software	- Internet Explorer 6.0 or later.

Backing Up the Cisco WCS Database

Before uninstalling Cisco WCS, it is very important that you back up the existing Cisco WCS database. Backing it up saves the configuration data in a directory that can be restored later when you install Cisco WCS.

To back up the Cisco WCS database, follow these steps:

Step 1   On the Cisco WCS server, create a backup directory with no spaces in the name, such as *C:\WCS32_Backup*.

Step 2   Select **Start > Programs > Wireless Control System > Backup**. The backup script opens the DBAdmin window and Enter Information window.

Step 3   In the Enter Information window, enter the full path of the backup directory you created above and click **OK**.

The backup database script creates subdirectories in the C:\WCS32_Backup\ directory and backs up the Cisco WCS database and the floor plan, building, and area maps to the C:\WCS32_Backup\conf and C:\WCS32_Backup\mapimages directories.

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> **Note**   Make sure the directory name does not contain any spaces because the backup script generates error messages in such cases.

Step 4   When the DBAdmin window displays the `Backup Succeeded. Backup database done.` message, click **Close**.

Restoring the Cisco WCS Database

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> **Note**   You must shut down the WCS server before restoring the database.

To restore the Cisco WCS database, follow these steps:

Step 1   In Windows, select **Start > Programs > Wireless Control System > Restore**. The DBAdmin and Enter Information windows open.

Step 2   In the Enter Information window, enter the full path of the backup directory you had created and click **OK**.

The restore database script restores the Cisco WCS database and the floor plan, building, and area maps to the new Cisco WCS installation.

Step 3   When the DBAdmin window displays the `Restore Succeeded.` message, click **Close**.

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> **Note** If you receive an error message during the restoration process, scroll down the window to find the error. Normally, the only reason a restoration process halts is because an incorrect directory has been specified; if this is the case, repeat this procedure by specifying the correct directory to complete the restoration process.

Uninstalling Cisco WCS

To uninstall Cisco WCS, follow these steps:

Step 1 Close all existing Cisco WCS user interface sessions.

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> **Caution** When you stop Cisco WCS, all active Cisco WCS User Interface sessions stop functioning.

Step 2 Select **Start > Programs > Wireless Control System > StopWCS** to stop Cisco WCS.

Step 3 Select **Start > Programs > Wireless Control System > Uninstall WCS** to begin the uninstallation process.

When the Uninstall Wireless Control System window displays the program uninstalled message, click **Done**. If any part of the C:\Program Files\WCS32 folder remains on the hard drive, manually delete the folder and all its contents.

Installing Cisco WCS

This section describes how to install Cisco WCS. Before installing Cisco WCS refer to "Prerequisites" and "System Requirements" sections. These sections give you an overview of the system requirements and other measures that you should take prior to the installation.

To install Cisco WCS, follow these steps:

Step 1 Insert the Windows Cisco WCS CD into the CD-ROM drive.

Step 2 On the CD, locate and double-click the **AIR-WCS-WL-1.0-3.2.X.Y.exe** file where 3.2.X.Y is the software build. 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 (Figure 1).

Figure 1   ***Checking HTTP and HTTPS Ports***
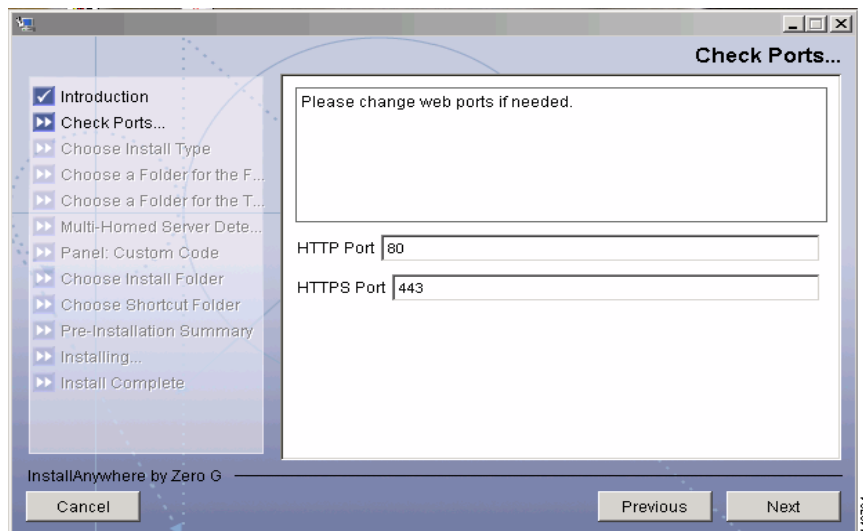
Step 3 In the Check Ports window, change the default HTTP and HTTPS ports if necessary and click **Next** to to bring up the Choose Install Type window (Figure 2). The default ports for HTTP and HTTPS are 80 and 443, respectively.

*Figure 2   Choosing the Type of Installation*
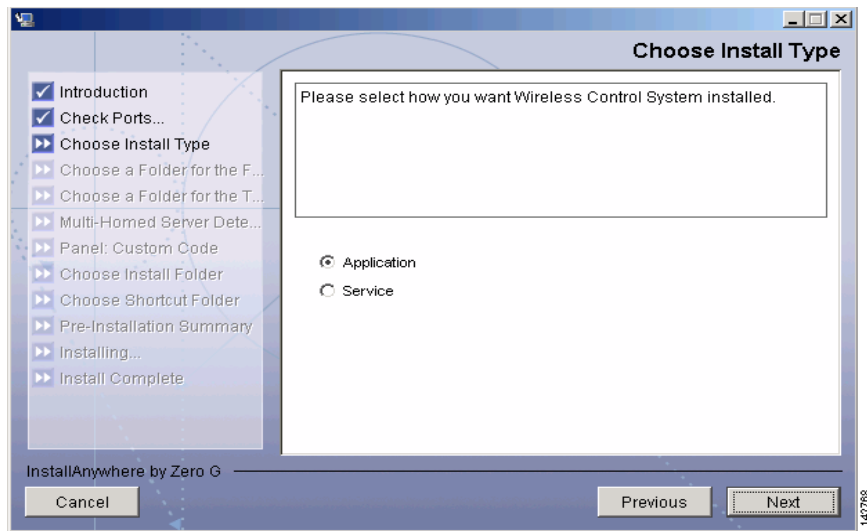
Step 4   In the Choose Install Type window, choose either **Application** or **Service** and click **Next**. The FTP File Server window (Figure 3) appears.

- 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.

Figure 3   Choosing FTP Server File Folder
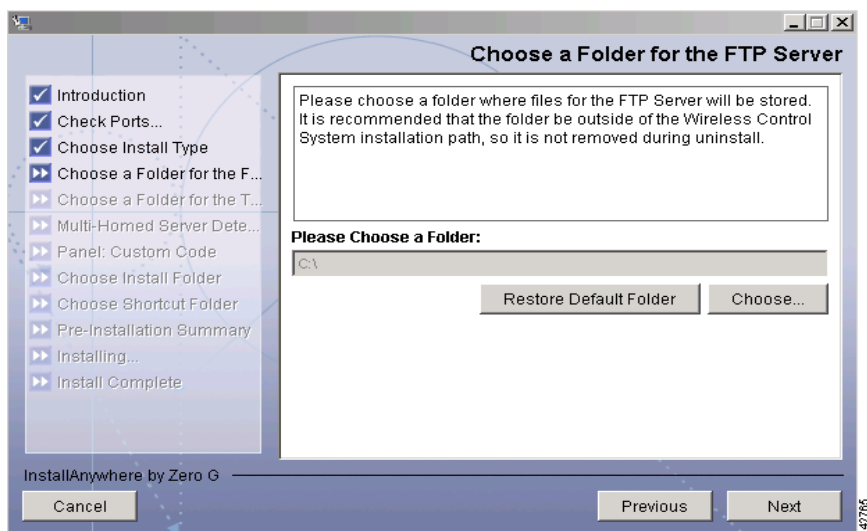
Step 5 From the FTP Server File window, choose a folder in which to store the FTP server files and click **Next** to bring up the TFTP File Server window (Figure 4).

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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.

Figure 4   *Choosing TFTP Server File Folder*
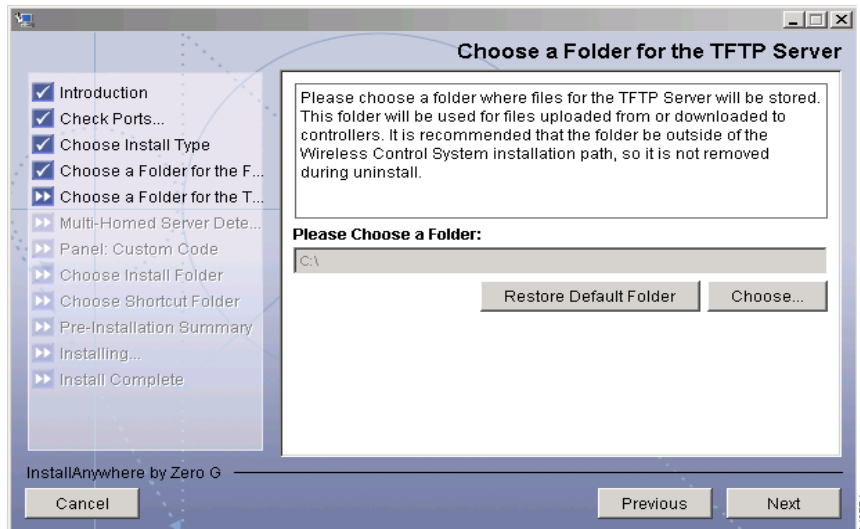
Step 6 From the TFTP Server File window, choose a folder in which to store the TFTP server files and click **Next**.

✎

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 (Figure 5).

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

Figure 5   Detecting a Multi-Homed Server
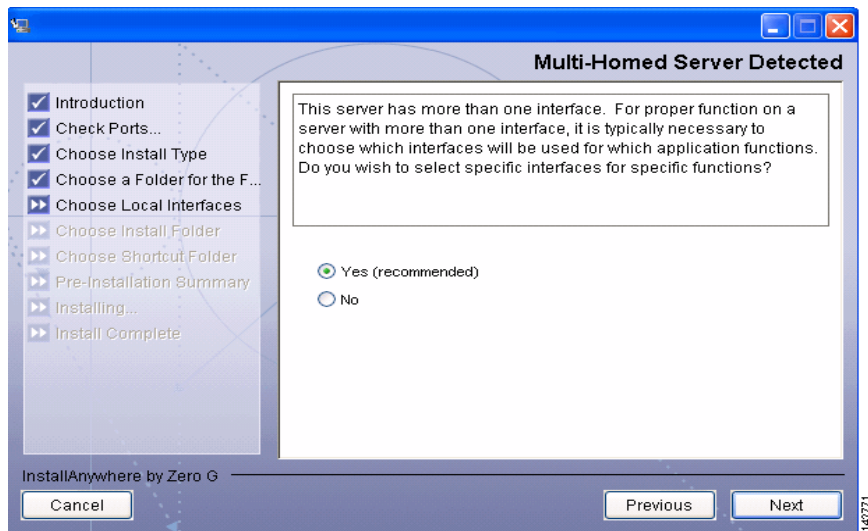
Step 7   Click **Yes** and then click **Next** to configure specific interfaces on the server for communicating with controllers, location appliances, remote FTP servers, and clients. The Select Local Interfaces window (Figure 6) appears. Click **No** if you do not want to configure specific interfaces.

Figure 6   Selecting Local Interfaces
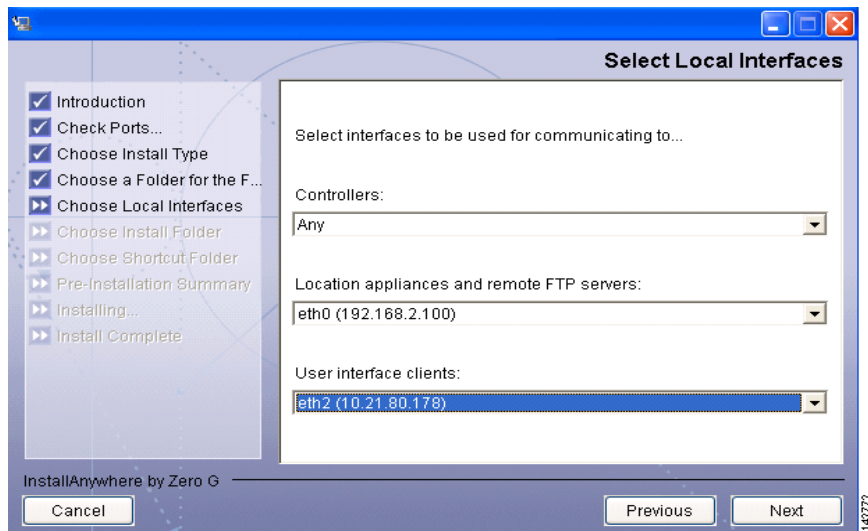
Step 8   From the Select Local Interfaces window, select the interfaces that are used by the server for communicating with controllers, location appliances and remote FTP servers, and clients. Click Next to bring up the Choose Install Folder window (Figure 7).

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.

Figure 7   *Choosing the Installation Folder*
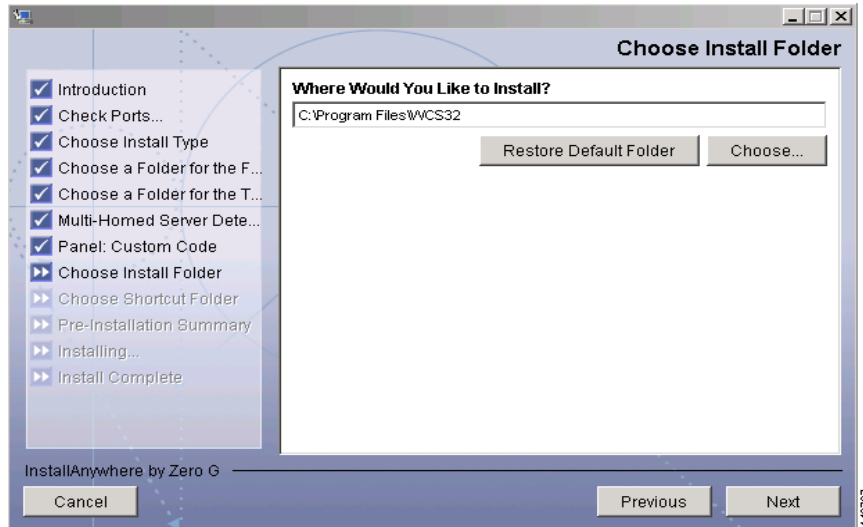
Step 9   Choose a folder in which to install the Cisco WCS and click **Next** to bring up the Choose Shortcut Folder window (Figure 8).

Figure 8   *Choosing a Folder to Store Product Icons*
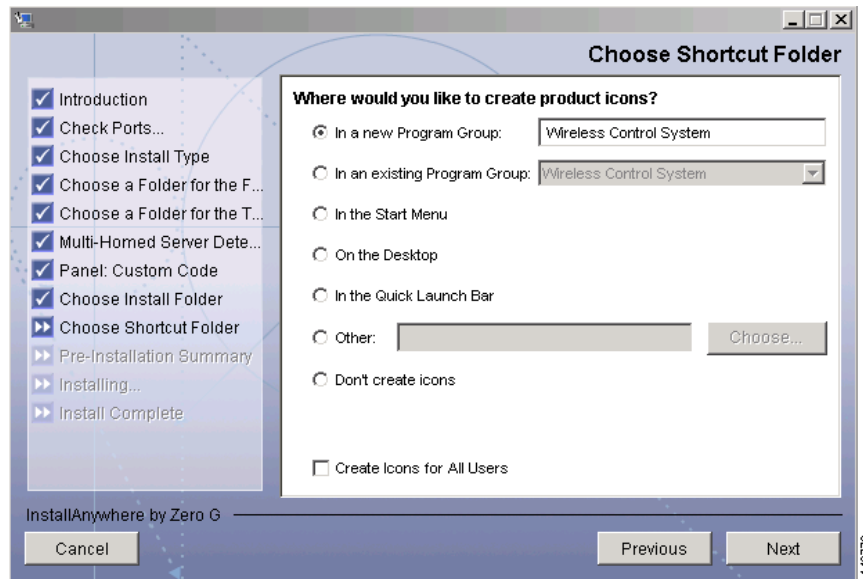
Step 10   In the Choose Shortcut Folder window, choose a location in which to create product icons and click **Next**.

Step 11   Follow the prompts that appear on the screen to complete the installation. After the installation is complete, the Install Complete window appears (Figure 9).

Figure 9 *Installation Complete*
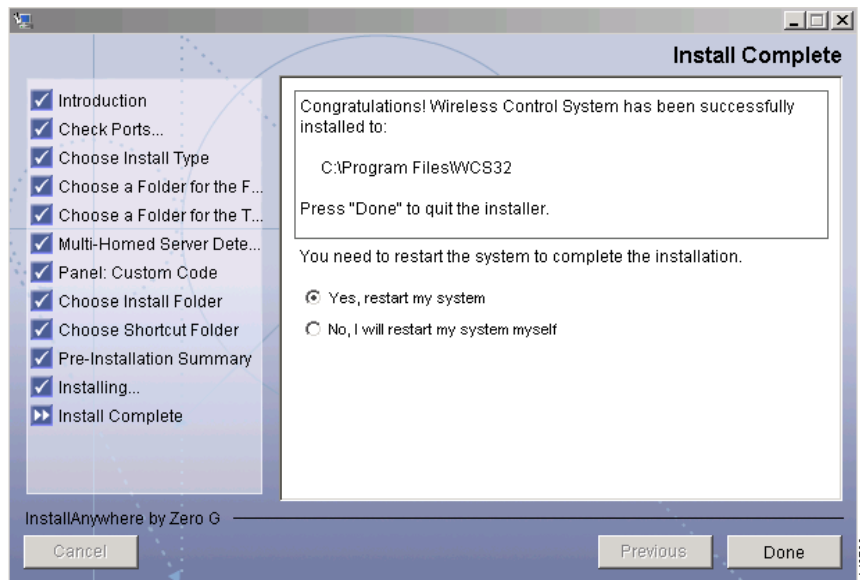
Step 12 Click **Done** to complete the installation.

> ![note icon]
>
> **Note** The system must be rebooted to complete the Cisco WCS installation.

Starting and Stopping the Cisco WCS

Before you can use a Cisco WCS User Interface, you must start the Cisco WCS as described in "Starting Cisco WCS". After you have closed down all Cisco WCS user interfaces (optional), you must shut down the Cisco WCS as described in "Stopping Cisco WCS" or "Starting and Stopping a Cisco WCS User Interface."

Starting Cisco WCS

To start Cisco WCS, follow these steps:

Step 1 Choose **Start** > **Programs** > **Wireless Control System** > **StartWCS**.

The start Cisco WCS script opens the WCSAdmin window, which displays the following messages unless the Cisco WCS service is already running:

```
Starting WCS
The Nms_Server service is starting.....
The Nms_Server service was started successfully.
WCS server started successfully.
```

Step 2   You can either minimize or close the WCSAdmin window. The Cisco WCS keeps running in the background.

Verifying the Status of Cisco WCS

To verify the status of Cisco WCS at any time, choose **Start > Programs > Wireless Control System > WCSStatus**. The WCSAdmin window opens and displays the status of Cisco WCS.

Stopping Cisco WCS

To stop th e Cisco WCS, follow these steps:

Step 1   Select **Start** > **Programs** > **Wireless Control System** > **StopWCS**.

Step 2   The WCSAdmin window opens and displays the following message:

```
Stopping WCS
WCS server successfully shutdown.
Waiting for shutdown to complete.
Database Server is stopped.
Apache server is stopped.
```

Step 3   Click **Close** to shutdown Cisco WCS completely.

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Caution   If there are any Cisco WCS user interfaces logged in when you stop Cisco WCS, the Cisco WCS user interface sessions will stop functioning.

Starting and Stopping a Cisco WCS User Interface

This section describes how to access a Cisco WCS user interface through a web browser.

Starting a Cisco WCS User Interface

To log into Cisco WCS, follow these steps.

Step 1   Start the Cisco WCS Server.

Step 2   Launch Internet Explorer 6.0 or later.

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Note   When you open a Cisco WCS user interface, do not use the web browser on the same machine on which Cisco WCS is installed.

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> **Note** Some of the documented features may not function properly if you choose to use any web browser other than Internet Explorer 6.0 on a Windows workstation.

Step 3 In the web browser address field, access the Cisco WCS user interface by entering:

```
https://<localhost|Cisco WCS IP Address>
```

For example, in the address field, enter **https://176.89.43.44**

where

- *https://* is a secure (http + Secure Sockets Layer) login, to which the Cisco WCS usually returns a Security Alert message before continuing.
- *localhost* is used when the Cisco WCS user interface is on the Cisco WCS Server.
- *Cisco WCS IP Address* is the IP Address of the Cisco WCS on any other workstation.

Step 4 The Cisco WCS user interface displays the Cisco WCS login window.

Figure 10 **Login Window**
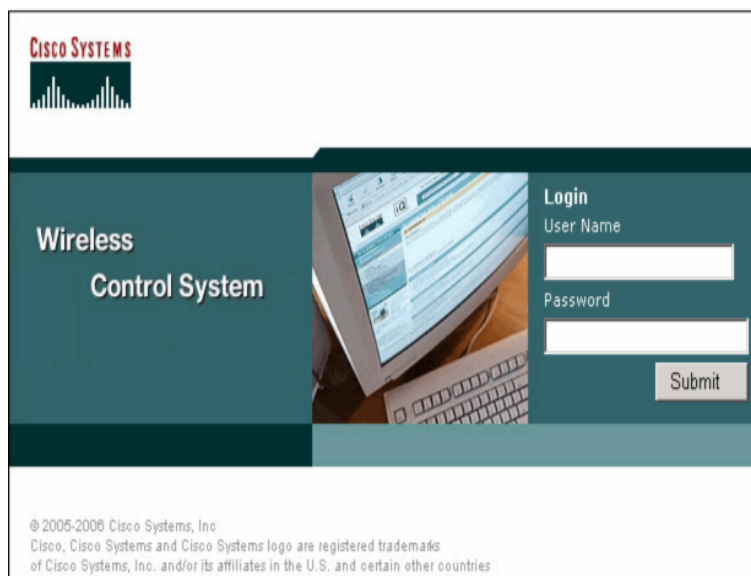
In the login page, enter your username and password and then click **Submit** to log into Cisco WCS. The default user name is *root* (case sensitive) and the default password is *public* (case sensitive).The Cisco WCS user interface is now active and available for your use.

Stopping a Cisco WCS User Interface

A Cisco WCS user interface can be stopped either by logging out of the interface or by stopping the Cisco WCS.

Manually Stopping the Cisco WCS User Interface

To manually stop a Cisco WCS user interface, follow these steps:

Step 1   When you are finished working in the Cisco WCS user interface, exit by clicking **Logout** in the upper right corner of the Cisco WCS user interface. The Cisco WCS Login window appears.

You can return to the previous cached screen in the web browser. However, if you attempt to access any of the parameters in that screen, you are returned to the Cisco WCS Login window.

Step 2   Close the web browser window. The Cisco WCS user interface window shuts down, leaving Cisco WCS running.

Shutting Down Cisco WCS to Stop the Cisco WCS User Interface

Occasionally, the system administrator may stop Cisco WCS while a Cisco WCS user interface is running. Should this happen, the web browser displays a `The page cannot be displayed` message.

Note   When the Cisco WCS user interface has been stopped by a Cisco WCS server shutdown, it does not reassociate with Cisco WCS when the Cisco WCS server restarts. You must restart the Cisco WCS user interface as described in "Starting a Cisco WCS User Interface."

Where to go From Here

Proceed with the *Cisco Wireless Control System Configuration Guide* to start configuring your network.