



## CHAPTER 2

# Installation and Initial Configuration

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This chapter describes how to initially install and configure your Cisco 2700 or 2710 Series Location Appliance.

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### Note

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For configuration details beyond initial installation, refer to the following documentation:

- *Cisco Location Appliance Configuration Guide*
- *Cisco Wireless Control System Configuration Guide*

This documentation can be found at the following links:

[http://www.cisco.com/en/US/products/ps6386/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html)

[http://www.cisco.com/en/US/products/ps6305/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6305/products_installation_and_configuration_guides_list.html)

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# Collecting Required Tools and Information

This section lists the tools and information you need to install and configure the location appliance.

## Location Appliance Hardware

You need this location appliance hardware:

- A location appliance
- Network cables
- One rack unit (RU) in a EIA-standard rack

## CLI Console Requirements

You need this equipment to connect to the location appliance console:

- VT-100 terminal emulator on CLI console laptop, desktop, or palmtop
- Null modem serial cable to connect CLI console and location appliance DB-9 console port

## System Compatibility

Please refer to the location appliance release notes for Cisco WCS, controller and location appliance compatibility updates at:

[http://www.cisco.com/en/US/products/ps6386/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps6386/prod_release_notes_list.html).

**Note**

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Cisco WCS uses an integral FTP server. Third-party FTP servers cannot run on the same workstation as WCS because they use the same communication port.

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## System Configuration Parameters

Obtain these parameters from your network administrator:

- A host name for the location appliance
- A broadcast address for the location appliance
- An IP address for the Ethernet-0 (eth0) port (location appliance back panel)
- A net mask for the eth0 IP address
- An IP address for the eth0 default gateway
- An IP address for the Ethernet-1 (eth1) port (location appliance back panel) (installation optional)
- A net mask for the eth1 IP address (only required if eth1 is installed)
- An IP address for the eth1 default gateway (only required if eth1 is installed)

**Note**

Either the Ethernet-0 or Ethernet-1 port can be used to transmit location updates to Cisco WCS. However, the Ethernet-0 port is generally configured to communicate with Cisco WCS and the Ethernet-1 port is generally used for out-of-band management. Both ports are configured as part of the installation script described in the “[Configuring the Location Appliance](#)” section on page 2-6.

## Choosing a Physical Location

The location appliance can be installed almost anywhere, but security and reliability concerns can be addressed by installing the location appliance in a secure equipment room or wiring closet.

For maximum reliability, mount the location appliance using the following guidelines:

- Install the location appliance in a EIA-standard rack. Verify that one rack unit (RU) is required for each location appliance.
- Ensure that there is sufficient room at the back of the location appliance for all cables and connectors.
- Ensure you can reach the location appliance and all cables.
- Ensure that water or excessive moisture cannot get into the location appliance.
- Ensure that airflow through the location appliance is not obstructed. Leave at least 4 inches clear on the front, right, and back sides of the location appliance chassis.
- Verify that the ambient temperature remains between 0 and 40° C (32 and 104° F).
- Ensure the location appliance is within 328 ft. (100 m) equivalent distance to any equipment connected to the 10/100/1000BASE-T ports.
- Ensure that the power cord can reach a 110 or 220 VAC grounded electrical outlet.

## Installing the Chassis

**Warning**

**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.**

The location appliance is shipped with integral rack-mounting ears ([Figure 2-1](#)). Mount the location appliance as follows:

- When you are mounting the location appliance in an EIA-standard rack (one rack unit required), attach the integral mounting ears to the equipment rack using the factory-supplied screws.

Figure 2-1 Cisco 2700 and 2710 Front Panel

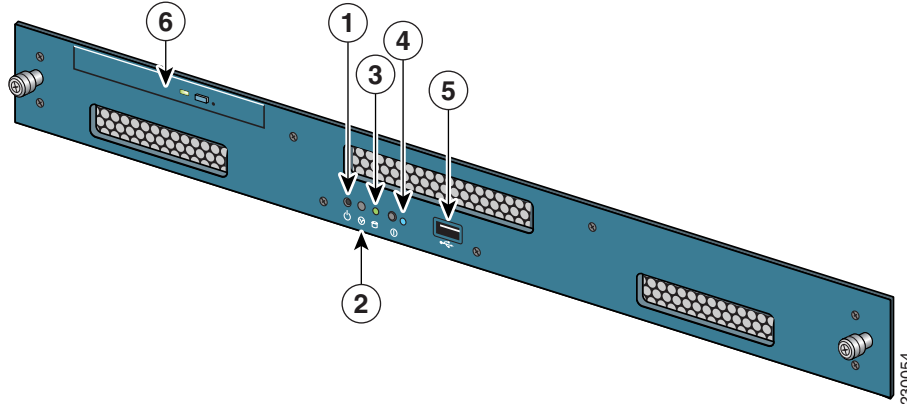


Table 2-1 Front Panel Components

Item No.	Description
1	Power switch. Press to turn system on or off. To power off, press and hold power switch for 4 seconds.
2	Reserved.
3	Hard drive indicator.
4	System LED. See <a href="#">Table 2-2</a> for details.
5	USB port (Reserved). Do not use as console port.
6	DVD tray (Reserved).

Table 2-2 System LED

Color	System Status
Blinking Amber	Indicates an event has occurred such as open system lid, incorrect fan speed, temperature or power supply tolerance exceeded.
Blinking Blue	Blinks on front and rear panel when the (I) button on the front panel is pressed and there are no outstanding events. Back panel blue light is designed to identify the unit within a rack mount.

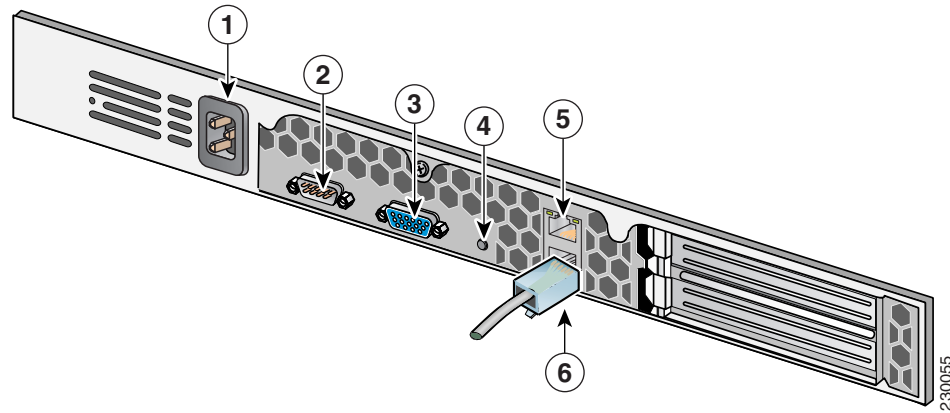
## Connecting and Using the CLI Console

For initial system configuration, use the command-line interface (CLI) console. The CLI console connects to the location appliance back-panel DB9 console port. [Figure 2-2](#) shows the console port on the back panel of the location appliance. Back panel components are described in [Table 2-3](#). Console port pinouts are shown in [Table 2-4](#).

Use these terminal emulator settings for the CLI console session:

- 9600 baud
- 8 data bits
- no flow control
- 1 stop bit
- no parity

**Figure 2-2 Cisco 2700 and 2710 Back Panel**



**Table 2-3 Back Panel Components**

Item No.	Description
1	AC power receptacle.
2	Console/serial DB-9 port.
3	Video output (Reserved).
4	Reserved.
5	Ethernet 0 connector.
6	Ethernet 1 connector.

**Table 2-4 Pin Assignments for DB9 Pinout**

Pin	Assignments	Description
1	DCD	Data Carrier Detect
2	RD	Receive Data
3	TD	Transmit Data

Table 2-4 Pin Assignments for DB9 Pinout (continued)

Pin	Assignments	Description
4	DTR	Data Terminal Ready
5	SG	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	Ring	Ring Indicator

## Powering On the Location Appliance

When you apply AC power to a location appliance, the bootup script initializes the operating system and its stored configurations. You are also prompted to enter a user ID and password and enter key configuration details.

Follow these steps to power up the location appliance:

- 
- Step 1** Plug an AC power cord into the back of the location appliance (Figure 2-2, Item 1), and connect the other end to a grounded 100 to 240 VAC 50/60 Hz electrical outlet. The end of the power cord that plugs into the location appliance conforms with the IEC 320 standard.
  - Step 2** Use the front-panel ON/OFF switch to turn the location appliance on (Figure 2-1, Item 1).
  - Step 3** At the login prompt, enter the location appliance operating user ID and password. The default user ID is *root* and the default password is *password*. The user ID and password are case sensitive.  
You are now logged into the location appliance operating system.  
Continue to the “[Configuring the Location Appliance](#)” section on page 2-6.
- 

## Configuring the Location Appliance


**Note**

It is highly recommended that all relevant items be configured during initial setup to ensure optimum operation of the location appliance in your network. The hostname and either the Ethernet-0 (eth0) or the Ethernet-1 (eth1) port **MUST** always be configured during the automatic installation.


**Note**

You can rerun the automatic installation script at any time to add or change parameters. There is no need to reenter values that you do not want changed during one of these updates.


**Note**

If you do not want to configure an item, enter **skip** and you are prompted for the next configuration step. Any setting skipped is retained and not modified.

The automatic installation script that displays to the screen is shown below along with descriptive text.

Example text: Indicates the installation script that displays to the console.

Body text: Provides additional information to the user about steps within the script.

All configuration beyond the initial installation can be done with WCS.

## Automatic Installation Script



### Note

The following installation script is for location appliances installed with release 5.1 (or later). For location appliances operating with releases 2.x, 3.x and 4.x refer to the *Cisco 2700 Series Location Appliance Installation and Configuration Guide, Release 4.0* at the following link: [http://www.cisco.com/en/US/products/ps6386/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6386/prod_installation_guides_list.html)

Follow these steps to configure the location appliance using the automatic script.

Enter the login *root*.

```
localhost.localdomain login:
```

Enter the password *password*.

```
Password:
```

```
Setup parameters via Setup Wizard (yes/no) [yes]:
```

Enter **yes** if you want to use the setup wizard or **No** if you want to manually set the parameters. Only experienced Linux system administrators should opt to configure the system using the setup script. The option in square brackets is the default. You can press **Enter** to choose that default.

When you enter **Yes** the following displays on the console.

```
Welcome to the location appliance setup.  
Please enter the requested information. At any prompt,  
enter ^ to go back to the previous prompt. You may exit at  
any time by typing <Ctrl+C>.
```

```
You will be prompted to choose whether you wish to configure a  
parameter, skip it, or reset it to its initial default value.  
Skipping a parameter will leave it unchanged from its current  
value.
```

```
Changes made will only be applied to the system once all the  
information is entered and verified.
```

```
Current hostname=[localhost]  
Configure hostname? (Y)es/(S)kip/(U)se default [Yes]:Y
```

The host name should be a unique name that can identify the device on the network. The hostname should start with a letter, end with a letter or number, and contain only letters, numbers, and dashes.

```
Enter a host name [localhost]: locapp-nyc
```

Enter a domain name for the network domain to which this device belongs. The domain name should start with a letter, and it should end with a valid domain name suffix such as *.com*. It must contain only letters, numbers, dashes, and dots.

```
Current domain=[localdomain]
Configure domain name? (Y)es/(S)kip/(U)se default [Yes]: Y
```

```
Enter a domain name [localdomain]: cisco.com
```

```
Current IP address=[171.71.132.233]
Current eth0 netmask=[255.255.254.0]
Current gateway address=[171.71.132.1]
Enter eth0 IP address [171.71.132.233]:
Configure eth0 interface parameters? (Y)es/(S)kip/(U)se default [Skip]: Y
```

Enter **Yes** if you want to provide information for Ethernet-0 (eth0) interface.




---

**Note** A network administrator can provide you with the IP address, network mask, and default gateway address for the prompts that follow.

---

Enter an IP address for the first ethernet interface of this machine.

```
Enter eth0 IP address [171.71.132.233]:
Enter the network mask for IP address 171.71.132.233.
Enter network mask [255.255.254.0]:
```

Enter a default gateway address for this machine.  
Note that the default gateway must be reachable from the first ethernet interface

```
Enter default gateway address [171.71.132.1]:
```

The second ethernet interface is currently disabled for this machine.  
Configure eth1 interface parameters? (Y)es/(S)kip/(U)se default [Skip]:

Enter **Yes** if you want to provide information for a second ethernet (eth1) interface.




---

**Note** Entry of a second ethernet interface (eth1) can be skipped by entering **skip**.

---

Enter an IP address for the second ethernet interface (eth1) on this machine.

```
Enter eth1 IP address [none]:
```

Enter the network mask for the IP address you specified.

```
Enter network mask [255.0.0.0]:
```




---

**Note** If you entered an IP address and mask for the second interface (eth1) of this machine, you are given the opportunity to define up to two static routing entries for that interface. Static routes are typically used in lab environments to mimic out-of-band networks and are not recommended for implementation within your network unless you have extensive experience in their use.

---




---

**Note** If you do not want to configure any static routes, enter **none** at the network address prompt seen below. You will not be prompted for the network mask and gateway address.

---





**Note** If you want to configure only one route, you can enter **none** when you are prompted for the second network address. You will not be prompted for the network mask and gateway address for the second route.

Enter the network address to define a static route for eth1.

Enter network [none]:

Enter the network mask for the network address you entered above.

Enter network mask [255.0.0.0]:

Enter a gateway address for the network address and network mask you provided.

Enter gateway address:

Enter DNS information.

```
Domain Name Service (DNS) Setup
DNS is currently enabled.
No DNS servers currently defined
Configure DNS related parameters? (Y)es/(S)kip/(U)se default [Skip]: Y
```

```
Enable DNS (yes/no) [yes]: Yes
Enter primary DNS server IP address: 171.68.226.120
Enter backup DNS server IP address (or none) [none]:
```

Enter time zone information.



**Note** Communications between the location appliance, Cisco WCS and the controller are in universal time code (UTC). Local time zones are configured on the location appliance to assist network operations center personnel in locating events within logs. Configuring NTP on each system provides devices with the UTC time.

```
Current timezone=[America/Los_Angeles]
Configure timezone? (Y)es/(S)kip/(U)se default [Skip]:
```

Enter NTP server information.



**Note** The location appliance and its associated controllers must be mapped to the same NTP server and the same Cisco WCS server. An NTP server is required to automatically synchronize time between the controller, Cisco WCS and the location appliance.

```
Network Time Protocol (NTP) Setup.
If you choose to enable NTP, the system time will be configured from NTP servers that you
select. Otherwise, you will be prompted to enter the current date and time.
```

```
NTP is currently disabled.
Configure NTP related parameters? (Y)es/(S)kip/(U)se default [Skip]: Y
```

Enter whether or not you would like to set up the Network Time Protocol (NTP) for this machine.

```
If you choose to enable NTP, the system time will be configured from NTP servers that you
select. Otherwise, you will be prompted to enter the current date and time.
```

```
Enable NTP (yes/no) [no]: yes
```

```
Enter NTP server name or address: 1.ntp.esl.cisco.com
Enter another NTP server IP address (or none) [none]:
```

A login banner appears when a user logs in through the console or SSH. This example shows the default banner. You can change the text that appears in this banner in the steps below. The banner is usually used to warn users that they are entering a private system.

```
Current Login Banner = [Warning!]
Configure login banner (Y)es/(S)kip/(U)se default [Skip]:
```

Enter text to be displayed as login banner. Enter a single period on a line to terminate.

```
Login banner [Warning!]:
```

```
Cisco Wireless Location Appliance.
```

```
Remote root login is currently disabled.
```

Enter **Y** in the step below to configure and enable remote root login (access) from the console.




---

**Note** If you enable *remote root access*, serial and SSH connections are supported. Local monitor and keyboard access is denied.

---




---

**Note** If you disable *remote root access*, then both the local monitor and keyboard work along with the serial connection. SSH access is disabled.

---

```
Configure remote root access? (Y)es/(S)kip/(U)se default [Skip]: N
```

Enter whether or not you would like to allow remote root login via secure shell for this machine.

```
Enable remote root login (yes/no) [no]: N
```

```
SSH root access is currently enabled.
```

```
Configure ssh access for root (Y)es/(S)kip/(U)se default [Skip]: N
```

Enter whether or not you would like to enable ssh root login. If you disable this option, only console root login will be possible.

Enter **yes** (below) to allow remote login through SSH v2 (ssh root login) in addition to console login. Choose **no** to allow *root* login only from the console.

```
Enable ssh root access (yes/no): yes
```




---

**Note** If you forget the *ssh root* login password, you can enter into *single user mode* and change the password. To prevent unauthorized access, a password for the *single user mode* can be defined.

---

```
Single user mode password check is currently enabled.
```

```
Configure single user mode password check (Y)es/(S)kip/(U)se default [Skip]: Y
```

The single user mode is usually used for recovery operations. For example, when the root password is forgotten, you can log into single user mode and reset the root password.

```
*****
!!WARNING!!
-----
If single user mode password check is enabled and
the root password is forgotten, the appliance
will be unusable as it cannot be logged into
successfully. Do not enable this option unless it
is required. (Press ^ to go back to previous step.)
*****
```

**Caution**

If you forget the *single user mode* password, you cannot login and you will need to contact TAC to arrange for an RMA.

Enable password check for single user mode login (yes/no) [yes]: **yes**

Enter the desired value for each of the password parameters or hit **Enter** to accept the default parameter value.



**Note** These parameter settings apply to ALL passwords that you enable and set during the installation script.

```
Login and password strength related parameter setup
Maximum number of days a password may be used : 60
Minimum number of days allowed between password changes : 1
Minimum acceptable password length : 9
Login delay after failed login : 5
Checking for strong passwords is currently enabled.
```

Configure login/password related parameters? (Y)es/(S)kip/(U)se default [Skip]: **Y**

Enter login and password related parameters.

```
Maximum number of days a password may be used(1-99999, 99999 means no expiry) [60]:
Minimum number of days a password may be used(0-99999, 0 means no minimum) [1]:
Minimum acceptable password length(8-10) [9]:
Login delay in seconds after failed login(0-15) [5]
Enable strong password checking? [yes/no] [yes]:
```

Enter **Y** to enable and define a *root* (superuser) password. Press Enter to skip this step.

Configure root password? (Y)es/(S)kip/(U)se default [Skip]: **Y**

Enter a password for the superuser.

Enter a password for the superuser and confirm it by typing it again. Your typing is not visible.

```
Enter root password:
Confirm root password:
```

You can also configure a *strong* (GRand Unified Bootloader (GRUB)) password. A strong password must have a minimum of 9 characters and must include: two lowercase letters, two digits and two special characters (such as \$ and #). An error message displays if you enter an inadequate password.

**Caution**

If you forget the GRUB password, you cannot login and you will need to contact TAC to arrange for an RMA.




---

**Note** If a *strong* password is not enabled, a password can be of any length.

---




---

**Note** Passwords defined *before* a strong password is set are not affected by the *strong* password setting. Only those passwords that are set *after* the strong password is set are affected. For example, *strong* passwords will be required for passwords set later in this script such as the Cisco WCS communication password (as noted in example below) and as passwords expire.

---

```
GRUB password is not currently configured.
Configure GRUB password (Y)es/(D)isable/(S)kip/(U)se default [Skip]: Y
GRUB is the Linux bootloader. Setting a password for
the GRUB loader means that each time the appliance is
powered up, you will be prompted for the GRUB password
you configure here.
```

```
*****
!!WARNING!!
-----
```

```
If the GRUB password is forgotten, the appliance
will be unusable as it cannot be booted up
successfully. Do not configure this option unless it
is required. (Press ^ to go back to previous step.)
*****
```

```
Enter a password for the grub menu.
```

```
Enter GRUB Password:
Verify GRUB Password:
```

```
Password must be 9 characters long. Try again.
```

```
Enter GRUB Password:
Verify GRUB Password:
UP = 2, LO = 6, DIGIT = 3, PUNCT = 0
Password must contain 2 uppercase, 2 lowercase letters,
2 digits and 2 special characters. Try again.
```

```
Enter GRUB Password:
Verify GRUB Password:
```

Enter **Y** to enable and define a *Cisco WCS communication* password.




---

**Note** This password does not define an individual user password for access to the Cisco WCS GUI. This password is used for SOAP/XML authentication between systems (such as location appliances) and Cisco WCS.

---

```
Configure WCS communication password? (Y)es/(S)kip/(U)se default [Skip]: Y
```

```
Enter a password for the admin user.
The admin user is used by the WCS and other northbound systems
to authenticate their SOAP/XML session with the server.
Once this password is updated, it must correspondingly be updated
on the WCS page for Location Server General Parameters so that the WCS can
communicate with the Location Server.
```

Enter a password for Cisco WCS communication and confirm it by typing it again. Your typing is not visible.

Enter WCS communication password:  
 Confirm WCS communication password:



**Note** It is recommended that you set a BIOS password to prevent unauthorized BIOS access.

All of the information that was entered into the install script appears on the screen.

Please verify the following setup information.

```
-----
Host name= locapp-nyc
Domain=cisco.com
Eth0 IP address=171.71.132.233, Eth0 network mask=255.255.254.0
Default gateway=171.71.132.1
Enable DNS=yes, DNS servers=171.68.226.120
Enable NTP=yes, NTP servers=1.ntp.esl.cisco.com
Login banner =
Cisco Wireless Location Appliance.
Enable Remote Root Login=no
Enable SSH root access=yes
Enable Single User Mode Password Check=no
Password/Login parameters :
Password min length=9
Password min days =1
Password max days =60
Failed login delay =5
Strong password checking=yes
Root password is changed.
GRUB password is changed.
WCS password is changed.
-----
You may enter "yes" to proceed with configuration, "no" to make
more changes, or "^" to go back to the previous step.
Is the above information correct (yes, no, or ^): yes
-----
Setup will now attempt to apply the configuration.
Applying hostname related parameters...
Generating /etc/hosts
Running hostname locapp-nyc.cisco.com
Generating /etc/sysconfig/network
Updating /proc/sys/kernel/hostname
Applying eth0 related parameters...
Generating /etc/sysconfig/network-scripts/ifcfg-eth0
Applying DNS related parameters...
Generating /etc/resolv.conf
Restarting network services with new settings.
Shutting down interface eth0:
Shutting down loopback interface:
Setting network parameters:
Bringing up loopback interface:
Bringing up interface eth0:
Applying NTP related parameters...
Generating /etc/ntp.conf and /etc/ntp/step-tickers
Setting system clock from NTP.
11 Apr 15:56:59 ntpdate[15176]: step time server 171.68.10.80 offset -37.556823 sec
Synchronizing hardware clock
Generating /etc/sysconfig/clock
Applying remote root login related parameters...
Disabling single user mode login password check...
```

```

Setting password/login parameters...
Setting root password.
Changing password for user root.
passwd: all authentication tokens updated successfully.
Setting grub password...
Setting wcs password.
***Configuration successful***
We recommend you reboot the system to ensure changes are operational.
Reboot now? (yes/no) [yes]: yes
Some of your changes will only take effect after the next reboot.
Exiting setup script...
[root@sanity-lbs setup]#
Script done on Fri 11 Apr 2008 03:58:12 PM PDT

```

After the script configuration appears on the screen, you are asked to verify all the setup information you provided. You can enter **Yes** to proceed with the configuration, **No** to make more changes, or **^** to go back to the previous step.

Is the above information correct (yes, no, or ^):

If you enter **yes**, the configuration information is applied. Cisco recommends that you reboot the system when prompted to ensure that the changes are applied.

**Note**

The message “\*\*\*Configuration successful\*\*\*” appears on the screen when the configuration is complete.

The next time you log in using *root*, only the Linux shell prompt appears and not the setup script. You can rerun the setup script at any time to change settings by logging in as *root* and running **/opt/locserver/setup/setup.sh**.

The setup script generates a log file that can be found at **/opt/locserver/setup/setup.log**.

## Configuring an NTP Server

You can configure NTP servers to set up the time and date of the location appliance.

**Note**

You are automatically prompted to enable NTP and enter NTP server IP addresses as part of the automatic installation script. For more details on the automatic installation script, refer to the [“Configuring the Location Appliance” section on page 2-6](#).

**Note**

If you need to add or change an NTP server installation after a location appliance install, rerun the automatic installation script. You can configure the NTP server without adjusting the other values by just tabbing through the script. To rerun the automatic script, log in as *root* and run **/opt/locserver/setup/setup.sh**.

**Note**

For more information on the NTP configuration, consult the Linux configuration guide.

## Launching the Location Appliance

To configure a location appliance to automatically launch after bootup enter:

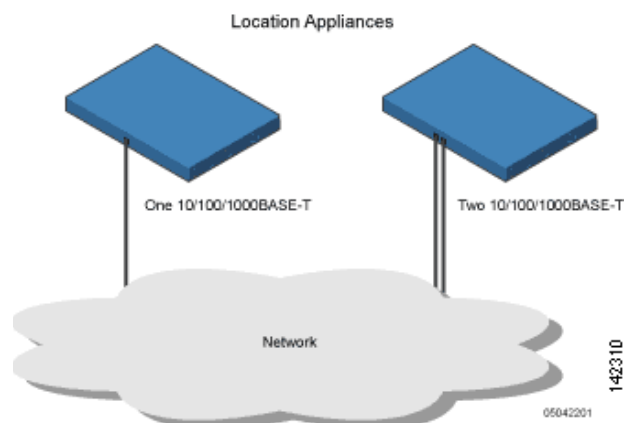
```
[root@locapp-server1]# chkconfig locserverd on
```

To start the application manually, enter `/etc/init.d/locserverd start`.

## Connecting to the Network

Figure 2-3 shows two possible connections from the network to the location appliance. Use Ethernet Category-5 or higher Ethernet cables to connect the location appliance to your network equipment.

**Figure 2-3** Network Connections to the Location Appliance



## Verifying the Location Appliance Software State

You can verify the location appliance software state at any time. In the location appliance CLI interface, enter `/opt/locserver/bin/getserverinfo`. If the location appliance is running, the command output looks like this example:

```

-----
Server Config
-----
Product name: Cisco Wireless Location Appliance
Version: 5.1.30.0
Hw Version: none
Hw Product Identifier: none
Hw Serial Number: none
Use HTTPS: true
HTTPS Port: 443
Use HTTP: false
HTTP Port: 80
Legacy HTTPS: false
Legacy Port: 8001
Session timeout in mins: 30
DB backup in days: 0

-----
Server Monitor
-----
Start time: Fri May 23 15:24:36 EDT 2008
Server current time: Fri May 30 19:08:15 EDT 2008
Server timezone: America/New_York
Server timezone offset: -18000000
-----
Service Engine (1):
-----
NAME: Location Service
VERSION: 5.1.30.0
-----
Location Service Monitor
-----
Log Modules: 262143

Log Level: INFO
Days to keep events: 2
Keep absent data in mins: 1440
Restarts: 1
Used Memory (bytes): 129851856
Allocated Memory (bytes): 3087007744
Max Memory (bytes): 3087007744
DB virtual memory (kbytes): 0
DB virtual memory limit (bytes): 256000000
DB disk memory (bytes): 4128768
DB free size (kbytes): 2856
Active Elements: 0
Active Clients: 0
Active Tags: 0
Active Rogues: 0
Active Elements Limit: 18000
Active Sessions: 0
Clients Not Tracked due to the limiting: 0
Tags Not Tracked due to the limiting: 0
Rogues Not Tracked due to the limiting: 0
Total Elements Not Tracked due to the limiting: 0

```



If the location appliance is not running, the command output looks like this example:

```
com.aes.common.util.AesException: Failed to connect to server: http://localhost:8001
  at com.aes.client.AesClient.connect(AesClient.java:218)
  at com.aes.location.test.AesAbstractTest.init(AesAbstractTest.java:181)
  at
com.aes.location.test.admin.AesTestGetServerInfo.main(AesTestGetServerInfo.java:75)
  at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
  at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
  at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)
  at java.lang.reflect.Method.invoke(Unknown Source)
  at com.zerog.lax.LAX.launch(DashoA8113)
  at com.zerog.lax.LAX.main(DashoA8113)
#
```

## Manually Stopping Location Appliance Software

The location appliance software automatically runs after initial configuration and after each reboot.

Follow these steps to manually stop and restart the software:

- 
- Step 1** To stop the software, enter **etc/init.d/locserverd stop**.
  - Step 2** To check status enter **etc/init.d/locserverd status**.
  - Step 3** To start the software, enter: **etc/init.d/locserverd start**.
- 

## Updating Location Appliance Software

You can update the location appliance using the Cisco WCS or manually download the software using a console port connected to the location appliance.

**Note**

For the latest Cisco WCS and location appliance compatibility and installation notes for a given release, refer to the appropriate release note at the following link:

[http://www.cisco.com/en/US/products/ps6386/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps6386/prod_release_notes_list.html)

Before downloading and updating software on the location appliance, note the following:


- The location appliance (server) image is compressed. The software image automatically decompresses during its download from Cisco WCS.
- Approximately 5 minutes is required for the newly loaded location appliance software version to appear on the Cisco WCS **Mobility > Mobility Service Engines** window.

**Note**

Cisco WCS queries for location appliance connectivity and database updates every 5 minutes by default.

## Downloading Software Using the WCS Server

Follow these steps to download software to a location appliance using WCS:

- 
- Step 1** Verify that you can ping the location appliance from the Cisco WCS Server or an external FTP server, whichever you are going to use for the application code download.
- Step 2** In Cisco WCS, click **Mobility > Mobility Service Engines**.
- Step 3** Click the name of the server that is to receive the software download.
- Step 4** Click **Maintenance** (left).
- Step 5** Click **Download Software**.
- Step 6** To download software, do one of the following:
- To download software listed in the WCS directory, select **Select from uploaded images to transfer into the Location Server**. Then, choose a binary image from the drop-down menu.  
Cisco WCS downloads the binary images listed in the drop-down menu into the FTP server directory you have specified during the Cisco WCS installation.
  - To use downloaded software available locally or over the network, select the **Browse a new software image to transfer into the Location Server** and click **Browse**. Locate the file and click **Open**.
- Step 7** Enter the time in seconds (between 1 and 1800) after which software download times out.
-  **Note** This time out setting represents the total time allowed before a software download to a location appliance expires. It is not a FTP packet timeout setting.
- 
- Step 8** Click **Download** to send the software to the `/opt/installers` directory on the location server.
- Step 9** After the image has been transferred to the location server, log in to the location server CLI and run the installer image from the `/opt/installers` directory by entering the `./bin locserver image` command.
- Step 10** To run the software, enter `/etc/init.d/locserverd start`.
- Step 11** To stop the software, enter `/etc/init.d/locserverd stop` and to check status enter `/etc/init.d/locserverd status`.
-

## Manually Downloading Software

If you do not want to automatically update the location appliance software using Cisco WCS, follow these steps to upgrade the software manually using a local (console) or remote (SSH) connection.

- Step 1** Transfer the new location appliance code onto the hard drive.
- Log in as root, and use the binary setting to send the software image from an external FTP server root directory.
- An example software image file name is *CISCO-AIR-LOC2700-L-K9-x-x-x-x-64bit.bin.gz* and changes with each release.



**Note** The location appliance image is compressed at this point.



**Note** The default login name for the FTP server is *ftp-user*.

Your entries should look like this example:

```
# cd /opt/installers
# ftp <FTP Server IP address>
Name: <login>
Password: <password>
binary
get AIR-LOC2700-L-K9-5-1-30-0-64bit.bin.gz
<CTRL-Z>
#
```

- Verify that the application code (*CISCO-AIR-LOC2700-L-K9-x-x-x-x-64bit.bin.gz*) is in the location appliance */opt/installers* directory.
- To decompress (unzip) the image file enter:
 

```
gunzip CISCO-LOC2700-L-K9-x-x-x-x-64bit.bin.gz
```

The decompression yields a *bin* file.
- Make sure that the *CISCO-LOC2700-L-K9-x-x-x-x.bin* file has execute permissions for the root user. If not, enter:
 

```
chmod 755 CISCO-LOC2700-L-K9-x-x-x-x.bin
```

- Step 2** To manually stop the location appliance, login as *root* and enter:

```
/etc/init.d/locserverd stop
```

- Step 3** To install the new location appliance image, enter:

```
/opt/installers/CISCO-AIR-LOC2700-L-K9-x-x-x-x.bin
```

- Step 4** To start the new location appliance image, enter:

```
/etc/init.d/locserverd start
```

**Caution**


---

Do not complete the next step, which uninstalls the script files, unless the system instructs you to do so. Removing the application files unnecessarily erases your historical data.

---

**Step 5** To uninstall the location appliance's script files, enter:

```
/opt/locserver/uninstall
```

---

## Operational Notes

### Recovering a Lost Root Password

If you lose or forget the root password for the location appliance, follow these steps:

---

**Step 1** When the GRUB screen comes up, press **Esc** to enter the boot menu.

**Caution**


---

If you forget the GRUB password, you cannot login and you will need to contact TAC to arrange for an RMA.

---

**Step 2** Press **e** to edit.

**Step 3** Navigate to the line beginning with "kernel," and press **e**.

At the end of the line enter a space and the number one (**1**). Press **Enter** to save this change.

**Step 4** Press **b** to begin boot sequence.

At the end of the boot sequence, a shell prompt appears.




---

**Note** The shell prompt does not appear if you have set up a single user mode password.

---

**Step 5** You can change the root password by entering the **passwd** command.

**Step 6** Enter and confirm the new password.

**Step 7** Restart the machine.

---