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# enable password

To set a local password to control access to various privilege levels, use the **enable password** command in global configuration mode. To remove the password requirement, use the **no** form of this command.

**enable password** [**level** *level*] {*password* | [*encryption-type* ] *encrypted-password*}

**no enable password** [**level** *level*]

## Syntax Description

<b>level</b> <i>level</i>	(Optional) Level for which the password applies. You can specify up to 16 privilege levels, using numbers 0 through 15. Level 1 is normal EXEC-mode user privileges. If this argument is not specified in the command or the <b>no</b> form of the command, the privilege level defaults to 15 (traditional enable privileges).
<i>password</i>	Password users type to enter enable mode.
<i>encryption-type</i>	(Optional) Cisco-proprietary algorithm used to encrypt the password. Currently the only encryption type available is 5. If you specify <i>encryption-type</i> , the next argument you supply must be an encrypted password (a password already encrypted by a Cisco router).
<i>encrypted-password</i>	Encrypted password you enter, copied from another router configuration.

## Command Default

No password is defined. The default is level 15.

## Command Modes

Global configuration

## Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS release 12.(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

### Usage Guidelines

#### Caution

If neither the `enable password` command nor the `enable secret` command is configured, and if there is a line password configured for the console, the console line password will serve as the enable password for all VTY (Telnet and Secure Shell [SSH]) sessions.

Use this command with the **level** option to define a password for a specific privilege level. After you specify the level and the password, give the password to the users who need to access this level. Use the **privilege level** configuration command to specify commands accessible at various levels.

You will not ordinarily enter an encryption type. Typically you enter an encryption type only if you copy and paste into this command a password that has already been encrypted by a Cisco router.



#### Caution

If you specify an encryption type and then enter a clear text password, you will not be able to reenter enable mode. You cannot recover a lost password that has been encrypted by any method.

If the **service password-encryption** command is set, the encrypted form of the password you create with the **enable password** command is displayed when a **more nvram:startup-config** command is entered.

You can enable or disable password encryption with the **service password-encryption** command.

An enable password is defined as follows:

- Must contain from 1 to 25 uppercase and lowercase alphanumeric characters.
- Can have leading spaces, but they are ignored. However, intermediate and trailing spaces are recognized.
- Can contain the question mark (?) character if you precede the question mark with the key combination Ctrl-v when you create the password; for example, to create the password `abc?123`, do the following:
  - Enter **abc**.
  - Type **Ctrl-v**.
  - Enter **?123**.

When the system prompts you to enter the enable password, you need not precede the question mark with the Ctrl-v; you can simply enter `abc?123` at the password prompt.

### Examples

The following example enables the password “pswd2” for privilege level 2:

```
enable password level 2 pswd2
```

The following example sets the encrypted password “\$1\$i5Rkls3LoyxzS8t9”, which has been copied from a router configuration file, for privilege level 2 using encryption type 7:

```
enable password level 2 5 $1$i5Rkls3LoyxzS8t9
```

**Related Commands**

Command	Description
<b>disable</b>	Exits privileged EXEC mode and returns to user EXEC mode.
<b>enable</b>	Enters privileged EXEC mode.
<b>enable secret</b>	Specifies an additional layer of security over the <b>enable password</b> command.
<b>privilege</b>	Configures a new privilege level for users and associate commands with that privilege level.
<b>service password-encryption</b>	Encrypts passwords.
<b>show privilege</b>	Displays your current level of privilege.

# enable secret

To specify an additional layer of security over the **enable password** command, use the **enable secret** command in global configuration mode. To turn off the **enable secret** function, use the **no** form of this command.

**enable secret** [**level** *level*] {[**0**] *unencrypted-password* | *encryption-type encrypted-password*}

**no enable secret** [**level** *level*] [*encryption-type encrypted-password*]

## Syntax Description

<b>level</b> <i>level</i>	(Optional) Specifies the level for which the password applies. You can specify up to 15 privilege levels, using numerals 1 through 15. Level 1 is normal EXEC-mode user privileges. If the <i>level</i> argument is not specified in the command or in the <b>no</b> form of the command, the privilege level defaults to 15 (traditional enable privileges).
<b>0</b>	(Optional) Specifies an unencrypted clear-text password. The password is converted to a Secure Hash Algorithm (SHA) 256 secret and gets stored in the router.
<i>unencrypted-password</i>	Password for users to enter enable mode. This password should be different from the password created with the <b>enable password</b> command.
<i>encryption-type</i>	Cisco-proprietary algorithm used to encrypt the password. The encryption types available for this command are 4 and 5. <ul style="list-style-type: none"> <li>• <b>4</b> — Specifies an SHA-256 encrypted secret string. The SHA256 secret string is copied from the router configuration.</li> <li>• <b>5</b> — Specifies a message digest algorithm 5 (MD5) encrypted secret.</li> </ul>
<i>encrypted-password</i>	Encrypted password that is copied from another router configuration.

## Command Default

No password is defined. The default level is 15.

## Command Modes

Global configuration (config)

**Command History**

Release	Modification
11.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)S	This command was integrated into Cisco IOS Release 15.0(1)S. Support for the encryption type <b>4</b> was added.
Cisco IOS XE Release 3.1S	This command was integrated into Cisco IOS XE Release 3.1S. Support for the encryption type <b>4</b> was added.
15.1(4)M	This command was modified. Support for the encryption type <b>4</b> was added.
Cisco IOS Release 3.3.0SG	This command was modified. Support for the encryption type <b>5</b> was removed.
15.1(1)SY	This command was integrated into Cisco IOS Release 15.1(1)SY.
Cisco IOS XE Release 3.2SE	This command was modified. The warning message for removal of support for the encryption type <b>5</b> was modified.

**Usage Guidelines****Caution**

If neither the **enable password** command or the **enable secret** command is configured, and if a line password is configured for the console, the console line password will serve as the enable password for all vty (Telnet and Secure Shell [SSH]) sessions.

Use the **enable secret** command to provide an additional layer of security over the enable password. The **enable secret** command provides better security by storing the enable secret password using a nonreversible cryptographic function. The added layer of security encryption provides is useful in environments where the password crosses the network or is stored on a TFTP server.

Typically you enter an encryption type only when you paste an encrypted password that you copied from a router configuration file into this command.

**Caution**

If you specify an encryption type and then enter a clear-text password, you will not be able to reenter enable mode. You cannot recover a lost password that has been encrypted by any method.

If you use the same password for the **enable password** and **enable secret** commands, you receive an error message warning that this practice is not recommended, but the password will be accepted. By using the same password, however, you undermine the additional security the **enable secret** command provides.

**Note**

After you set a password using the **enable secret** command, a password set using the **enable password** command works only if the **enable secret** is disabled or an older version of Cisco IOS software is being used, such as when running an older rxboot image. Additionally, you cannot recover a lost password that has been encrypted by any method.

If the **service password-encryption** command is set, the encrypted form of the password you create is displayed when the **more nvram:startup-config** command is entered.

You can enable or disable password encryption with the **service password-encryption** command.

An enable password is defined as follows:

- Must contain 1 to 25 alphanumeric characters, both uppercase and lowercase.
- Can have leading spaces, but they are ignored. However, intermediate and trailing spaces are recognized.
- Can contain the question mark (?) character if you precede the question mark with the key combination Ctrl-v when you create the password; for example, to create the password *abc?123*, do the following:
  - Enter **abc**.
  - Type **Ctrl-v**.
  - Enter **?123**.

When the system prompts you to enter the enable password, you need not precede the question mark with the Ctrl-v; you can enter **abc?123** at the password prompt.

**Note**

During a downgrade from 3.3.0SG to 3.2.0SG, if a SHA256-encrypted enable password is configured, then the SHA256-encrypted password will be lost without any warning, and the secret password will have to be reconfigured.

**Examples**

The following example shows how to specify the password with the **enable secret** command:

```
Device> enable
Device# configure terminal
Device(config)# enable secret password
```

After specifying a password with the **enable secret** command, users must enter this password to gain access. Any passwords set through **enable password** command will no longer work.

Password: **password**

The following example shows how to enable the encrypted password “\$1\$FaD0\$Xyti5Rkls3LoyxzS8”, which has been copied from a router configuration file, for privilege level 2 using the encryption type 4:

```
Device> enable
Device# configure terminal
Device(config)# enable password level 2 4 $1$FaD0$Xyti5Rkls3LoyxzS8
```

The following example is a sample warning message that is displayed when a user enters the **enable secret 5** *encrypted-password* command:

```
Device(config)# enable secret 5 $1$FaD0$Xyti5Rkls3LoyxzS8
```

```
Warning: The CLI will be deprecated soon  
'enable secret 5 <password>'  
Please move to 'enable secret <password>' CLI
```

#### Related Commands

Command	Description
<b>enable</b>	Enters privileged EXEC mode.
<b>enable password</b>	Sets a local password to control access to various privilege levels.
<b>service password-encryption</b>	Encrypt passwords.



# enrollment http-proxy

To access the certification authority (CA) by HTTP through the proxy server, use the **enrollment http-proxy** command in ca-trustpoint configuration mode.

**enrollment http-proxy** *host-name port-num*

## Syntax Description

<i>host-name</i>	Defines the proxy server used to get the CA.
<i>port-num</i>	Specifies the port number used to access the CA.

## Command Default

If this command is not enabled, the CA will not be accessed via HTTP.

## Command Modes

Ca-trustpoint configuration

## Command History

Release	Modification
12.2(8)T	This command was introduced.
12.2(18)SXD	This command was integrated into Cisco IOS Release 12.2(18)SXD.

## Usage Guidelines

The **enrollment http-proxy** command must be used in conjunction with the **enrollment** command, which specifies the enrollment parameters for the CA.

## Examples

The following example shows how to access the CA named “ka” by HTTP through the bomborra proxy server:

```
crypto ca trustpoint ka
enrollment url http://kahului
enrollment http-proxy bomborra 8080
crl optional
```

## Related Commands

Command	Description
<b>crypto ca trustpoint</b>	Declares the CA that your router should use.
<b>enrollment</b>	Specifies the enrollment parameters of your CA.

## enrollment url (ca-profile-enroll)

To specify the URL of the certification authority (CA) server to which to send enrollment requests, use the **enrollment url** command in ca-profile-enroll configuration mode. To delete the enrollment URL from your enrollment profile, use the **no** form of this command.

**enrollment url** *url*

**no enrollment url** *url*

### Syntax Description

<i>url</i>	<p>URL of the CA server to which your router should send certificate requests.</p> <p>If you are using Simple Certificate Enrollment Protocol (SCEP) for enrollment, the <i>url</i> argument must be in the form <code>http://CA_name</code>, where <i>CA_name</i> is the host Domain Name System (DNS) name or IP address of the CA.</p> <p>If you are using TFTP for enrollment, the <i>url</i> argument must be in the form <code>tftp://certserver/file_specification</code>. (If the URL does not include a file specification, the fully qualified domain name [FQDN] of the router will be used.)</p>
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### Command Default

Your router does not recognize the CA URL until you specify it using this command.

### Command Modes

Ca-profile-enroll configuration

### Command History

Release	Modification
12.2(13)ZH	This command was introduced.
12.3(4)T	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

This command allows the user to specify a different URL or a different method for authenticating a certificate and enrolling a certificate; for example, manual authentication and TFTP enrollment.

### Examples

The following example shows how to enable certificate enrollment via HTTP for the profile name “E”:

```
crypto pki trustpoint Entrust
  enrollment profile E
  serial
```

```
crypto pki profile enrollment E
authentication url http://entrust:81
authentication command GET /certs/cacert.der
enrollment url http://entrust:81/cda-cgi/clientcgi.exe
enrollment command POST reference_number=$P2&authcode=$P1
&retrievedAs=rawDER&action=getServerCert&pkcs10Request=$REQ
parameter 1 value aaaa-bbbb-cccc
parameter 2 value 5001
```

**Related Commands**

Command	Description
<b>crypto pki profile enrollment</b>	Defines an enrollment profile.

enrollment url (ca-profile-enroll)