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# Password Recovery Procedure for the Cisco Catalyst 8540 Multiservice Switch Router

Document ID: 24000

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- Introduction**
- Before You Begin**
  - Conventions
  - Prerequisites
  - Related Products
- Step-by-Step Procedure**
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## Introduction

This document describes the procedure for recovering **enable password** or **enable secret** passwords. These passwords are used to protect access to privileged EXEC and configuration modes. The **enable password** password can be recovered, but the **enable secret** password is encrypted and can only be replaced with a new password using the procedure below.

## Before You Begin

### Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

### Prerequisites

There are no specific prerequisites for this document.

### Related Products

This password recovery procedure can also be used for the following products:

- Cisco 806
- Cisco 827
- Cisco uBR900
- Cisco 1003
- Cisco 1004
- Cisco 1005
- Cisco 1400
- Cisco 1600
- Cisco 1700
- Cisco 2600
- Cisco 3600
- Cisco 4500
- Cisco 4700

- Cisco AS5x00
- Cisco 6x00
- Cisco 7000 (RSP7000)
- Cisco 7100
- Cisco 7200
- Cisco 7500
- Cisco uBR7100
- Cisco uBR7200
- Cisco uBR10000
- Cisco 12000
- Cisco LS1010
- Catalyst 2948G–L3
- Catalyst 4840G
- Catalyst 4908G–L3
- Catalyst 5500 (RSM)
- Catalyst 8510–CSR
- Catalyst 8510–MSR
- Catalyst 8540–CSR
- Catalyst 8540–MSR
- Cisco MC3810
- Cisco NI–2
- Cisco VG200 Analog Gateway
- Route Processor Module

## Step–by–Step Procedure

Follow this procedure to recover the **enable password** or **enable secret** passwords.

1. Attach a terminal or PC with terminal emulation to the console port of the router. Use the following terminal settings:

```

9600 baud rate
No parity
8 data bits
1 stop bit
No flow control

```

For additional information on cabling and connecting a terminal to the console port or the AUX port, refer to the following documents:

- ◆ Cabling Guide for Console and AUX Ports
  - ◆ Connecting a Terminal to Catalyst 2948G–L3, 4908G–L3, and 4840G Series Switches
  - ◆ Catalyst 8510CSR and 8540CSR Switches Console Port Pinouts
2. If you still have access to the router, type **show version** and record the setting of the configuration register; it is usually 0x2102 or 0x102. [Click here](#) to see the output of a **show version** command.
  3. If you don't have access to the router (because of a lost login or tacacs password), you can safely consider that your configuration register is set to 0x2102.
  4. Using the power switch, turn off the router and then turn it back on.

**Important:** To simulate step 4 on a Cisco 6400, pull out and then replace the Node Route Processor (NRP) or Node Switch Processor (NSP) card.

To simulate step 4 on a Cisco 6x00 using NI–2, pull out and then replace the NI–2 card.

5. Press **Break** on the terminal keyboard within 60 seconds of the power-up to put the router into ROMMON.

If the break sequence doesn't work, see Standard Break Key Sequence Combinations During Password Recovery for other key combinations.

6. Type **confreg 0x2142** at the rommon 1> prompt to boot from Flash without loading the startup configuration from the nonvolatile RAM (NVRAM).
7. Type **reset** at the rommon 2> prompt.

The router reboots but ignores its saved configuration.

8. Type **no** after each setup question or press **Ctrl-C** to skip the initial setup procedure.
9. Type **enable** at the Router> prompt.

This puts you in enable mode where you can see the Router# prompt.

10. **Important:** Type **configure memory** or **copy startup-config running-config** to copy the NVRAM into memory. Do not type **configure terminal** or **copy running-config startup-config** or **write memory**. This erases the router configuration stored in the NVRAM.
11. Type **write terminal** or **show running-config**.

The **show running-config** and **write terminal** commands show the configuration of the router. In this configuration, you see under all the interfaces the **shutdown** command, which means all interfaces are currently shutdown. Also, you can see the passwords (enable password, enable secret, vty, console passwords, and so on) either in encrypted or unencrypted format. The unencrypted passwords can be re-used; the encrypted ones have to be replaced with new passwords.

12. Type **configure terminal** and make the changes.

The prompt is now `hostname(config)#`.

13. Type **enable secret <password>** to change the **enable secret** password, for example.
14. Issue the **no shutdown** command on every interface that is used. If you issue a **show ip interface brief** command, once you exit the configuration mode (Ctrl-z), every interface that you want to use should be "up up".
15. Type **config-register 0x2102**, or the value you recorded in step 2. This makes the router load the startup configuration from the NVRAM during the next reload.
16. Press **Ctrl-z** or **End** to leave the configuration mode.

The prompt is now `hostname#`.

17. Type **write memory** or **copy running-config startup-config** to commit the changes.

## Sample Output

The sample output shown here is the result of the password recovery procedure on a Cisco 4700 Series Router. Even if you are not using a 4700 router, this example should be almost exactly what you experience on your device.

```
Router>enable

Password:

Password:

Password:

% Bad secrets
```

```
Router>show version
Cisco Internetwork Operating System Software
IOS (tm) 4500 Software (C4500-IS-M), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 17:29 by pwade
Image text-base: 0x60008948, data-base: 0x60C74000

ROM: System Bootstrap, Version 5.2(7b) [mkamson 7b], RELEASE SOFTWARE (fc1)

      BOOTLDR: 4500 Software (C4500-BOOT-M), Version 11.3(10),
      RELEASE SOFTWARE (fc1)

Router uptime is 0 minutes

      System returned to ROMby reload at 17:34:58 UTC Tue Aug 1 1995

      System image file is "flash:c4500-is-mz.122-10b.bin"

cisco 4700 (R4K) processor (revision B) with 32768K/16384K bytes of memory.

      Processor board ID 02169303

      R4600 CPU at 133Mhz, Implementation 32, Rev 2.0, 512KB L2 Cache

      G.703/E1 software, Version 1.0.

      Bridging software.

      X.25 software, Version 3.0.0.

      6 Ethernet/IEEE 802.3 interface(s)

      8 Serial network interface(s)

      128K bytes of non-volatile configuration memory.

      8192K bytes of processor board System flash (Read/Write)

      4096K bytes of processor board Boot flash (Read/Write)

Configuration register is 0x2102
```

```
Router>
```

```
!--- The router was just powercycled and during bootup a
!---break sequence was sent to the router.
```

```
!
```

```
monitor: command "cisco2-C4500" aborted due to user interrupt
```

```
>
```

```
>confreg 0x2142
```

```
You must reset or power cycle for new config to take effect
```

```
>reset
```

```
System Bootstrap, Version 5.2(7b) [mkamson 7b], RELEASE SOFTWARE (fc1)
```

Copyright (c) 1995 by cisco Systems, Inc.

C4500 processor with 32768 Kbytes of main memory

Self decompressing the image : #####

#####

##### [OK]

program load complete, entrypt: 0x80008000, size: 0x6a6b30

Self decompressing the image : #####

##### [OK]

Restricted Rights Legend

.....

<snip>

.....

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog?[yes/no]:n

Press RETURN to get started!

00:00:05: %LINK-3-UPDOWN: Interface Serial0, changed state to down

00:00:05: %LINK-3-UPDOWN: Interface Serial1, changed state to down

.....

<snip>

.....

00:01:29: %LINK-5-CHANGED: Interface Ethernet5, changed state to administratively down

00:01:29: %LINK-5-CHANGED: Interface Serial0, changed state to administratively down

Router>

Router>**enable**

Router#**copy startup-config running-config**

Destination filename [running-config]?

1012 bytes copied in 0.276 secs (3667 bytes/sec)

Router#**show running-config**

Building configuration...

Current configuration : 1084 bytes

!

version 12.2

service timestamps debug uptime

service timestamps log uptime

no service password-encryption

```

!
hostname Router
!
enable secret 5 $1$uQ7K$rfZtMRsWsFagqsW4/9K0b1

!--- Since the password is encrypted, we need to replace
!--- the password with the new one.

!
ip subnet-zero
!
!
!
!
interface Ethernet0
ip address 10.10.10.1 255.0.0.0
media-type 10BaseT
!
interface Ethernet1
no ip address
shutdown
media-type 10BaseT
!
Ouput Omitted
!
interface Serial0
ip address 172.16.1.1 255.255.0.0
!
Ouput Omitted
!
ip classless
no ip http server
ip pim bidir-enable
!
!
line con 0
line aux 0
line vty 0 4
login
!
end

```

Router#**configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#**enable secret < password > [Choose a strong password with at least one**

Router(config)#**^Z**

00:05:23: %SYS-5-CONFIG\_I: Configured from console by console

Router#**show ip interface brief**

Interface IP-Address OK? Method Status Protocol

Ethernet0 10.10.10.1 YES TFTP administratively down down

Ethernet1 unassigned YES TFTP administratively down down

Ethernet2 unassigned YES TFTP administratively down down

Ethernet3 unassigned YES TFTP administratively down down

```
Ethernet4 unassigned YES TFTP administratively down down
Ethernet5 unassigned YES TFTP administratively down down
Serial0 unassigned YES TFTP administratively down down
```

.....

<snip>

.....

```
Serial7 unassigned YES TFTP administratively down down
```

```
Router#
```

```
Router#configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Router(config)#interface ethernet 0
```

```
Router(config-if)#no shutdown
```

```
Router(config-if)#
```

```
00:08:06: %LINK-3-UPDOWN: Interface Ethernet0, changed state to up
```

```
Router(config-if)#^Z
```

```
Router#
```

```
00:09:21: %SYS-5-CONFIG_I: Configured from console by console
```

```
Router#
```

```
Router#
```

```
Router#copy running-config startup-config
```

```
Destination filename [startup-config]?
```

```
Building configuration...
```

```
[OK]
```

```
Router#show version
```

```
Cisco Internetwork Operating System Software
IOS (tm) 4500 Software (C4500-IS-M), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 17:29 by pwade
Image text-base: 0x60008948, data-base: 0x60C74000
```

```
ROM: System Bootstrap, Version 5.2(7b) [mkamson 7b], RELEASE SOFTWARE (fc1)
```

```
BOOTLDR: 4500 Software (C4500-BOOT-M), Version 11.3(10), RELEASE SOFTWARE(fc1)
Router uptime is 10 minutes
```

.....

<snip>

```
.....

8192K bytes of processor board System flash (Read/Write)

4096K bytes of processor board Boot flash (Read/Write)

Configuration register is 0x2142

Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#config-register 0x2102
Router(config)#^Z
Router#show version
Cisco Internetwork Operating System Software
IOS (tm) 4500 Software (C4500-IS-M), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 17:29 by pwade
Image text-base: 0x60008948, data-base: 0x60C74000

ROM: System Bootstrap, Version 5.2(7b) [mkamson 7b], RELEASE SOFTWARE (fc1)
BOOTLDR: 4500 Software (C4500-BOOT-M), Version 11.3(10), RELEASE SOFTWARE (fc1)

Router uptime is 11 minutes

.....
<snip>
.....

00:11:02: %SYS-5-CONFIG_I: Configured from console 4096K bytes of processor board
Boot flash (Read/Write)

Configuration register is 0x2142 (will be 0x2102 at next reload)
```

---

## Related Information

- [Password Recovery Procedures Index](#)
- [Standard Break Key Sequence Combinations During Password Recovery](#)
- [Cabling Guide for Console and AUX Ports](#)
- [Technical Support – Cisco Systems](#)

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