

Password Recovery Procedure for the Cisco 801, 802, 803, 804, 805, 811, and 813 Series Routers

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Introduction

This document describes how to recover the **enable password** and the **enable secret** passwords. These passwords protect access to privileged EXEC and configuration modes. The **enable password** password can be recovered, but the **enable secret** password is encrypted and must be replaced with a new password. Use the procedure described in this document in order to replace the **enable secret** password.

Refer to Password Recovery Procedure for the Cisco 806, 826, 827, 828, 831, 836 and 837 Series Routers in order to recover a password on Cisco 806, 826, 827, 828, 831, 836 and 837 Series Routers.

Note: You may encounter boot problems with some Cisco 800 Series Routers. Cisco 801, 802, 803, 804, 805, 811, and 813 routers boot into TinyROM at power-up or after they save any configuration from the console port with Cisco IOS® Software Release 12.1(3) and later. Refer to Field Notice: Cisco 801–805 and Cisco 811 and 813 Boots into TinyROM for details about the affected unit serial number and the procedure required in order to solve the boot problem.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these hardware versions:

- Cisco 801 Series Router
- Cisco 802 Series Router
- Cisco 803 Series Router
- Cisco 804 Series Router
- Cisco 805 Series Router
- Cisco 811 Series Router
- Cisco 813 Series Router

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Related Products

Refer to Password Recovery Procedures for information on how to recover passwords for related products.

Conventions

Refer to Cisco Technical Tips Conventions for information on document conventions.

Step-by-Step Procedure

Follow these steps in order to recover your password:

1. Attach a terminal or PC with terminal emulation to the console port of the router.

Use these terminal settings:

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

The required console cable specifications are described in Cabling Guide for Console and AUX Ports.

2. Use the power switch in order to turn off the router, and then turn the router back on.
3. Press **Break** on the terminal keyboard within 60 seconds of power up in order to put the router into ROMMON.

If the break sequence does not work, refer to Standard Break Key Sequence Combinations During Password Recovery for other key combinations.

4. Type **set** at the **boot#** prompt, and record the current value of the configuration register.

```
boot#set
set baud                =9600
set data-bits           =8
set parity              =none
set stop-bits           =1
set console-flags      =0
set mac-address         =0050.7307.C329
set unit-ip             =10.200.40.65
set serv-ip             =255.255.255.255
set netmask             =255.255.252.0
set gate-ip             =10.200.40.1
set pkt-timeout         =8
set tftp-timeout        =16
set boot-action         =flash
set file-name           ="c800-nsy6-mw.122-10b.bin"
set watchdog           =off
set prompt              ="boot"
set ios-conf           =0x2102
!--- The ios-conf variable sets the value for the
!--- configuration register. Record this value.
```

5. Type **set ios-conf = 142** at the **boot#** prompt.

Note: The best setting is 142 if the Flash is intact. If the Flash is not installed or is erased, use 141.

With this setting, you can view or erase the configuration, but you cannot change the password.

6. Type **boot** at the `boot#` prompt in order to initialize the router.

The router reboots, but ignores the saved configuration.

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

Once the `Router#` prompt appears, you are in enable mode.

9. Type **configure memory** or **copy startup-config running-config** in order to copy the nonvolatile RAM (NVRAM) into memory.

Important: Do *not* type **copy running-config startup-config** or **write**. These commands erase your startup configuration.

10. Type **show running-config**.

The **show running-config** command shows the configuration of the router. In this configuration, the **shutdown** command appears under all interfaces, which indicates all interfaces are currently shut down. In addition, the passwords (enable password, enable secret, vty, console passwords) are in either an encrypted or unencrypted format. You can reuse unencrypted passwords. You must change encrypted passwords to a new password.

11. Type **configure terminal**.

The `hostname(config)#` prompt appears.

12. Type **enable secret <password>** in order to change the **enable secret** password. For example:

```
hostname(config)#enable secret cisco
```

13. Issue the **no shutdown** command on every interface that you use.

If you issue a **show ip interface brief** command, every interface that you want to use displays *up up*.

14. Type **config-register <configuration_register_setting>**. Where *configuration_register_setting* is either the value you recorded in step 2 or `0x2102`. For example:

```
hostname(config)#config-register 0x2102
```

15. Press **Ctrl-z** or **end** in order to leave the configuration mode.

The `hostname#` prompt appears.

16. Type **write mem** or **copy running startup** in order to commit the changes.
17. Type **reload**.

Once the router reloads, the configuration register value changes from **0x142** to **0x2102**.

Sample Output Example

This section provides an example of the password recovery procedure. This example was created with a Cisco 803 Series Router. Even if you do not use a Cisco 803 Series Router, this output provides an example of what you should experience on your product.

```
Router>show version
Cisco Internetwork Operating System Software
IOS (tm) C800 Software (C800-NSY6-MW), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 19:53 by pwade
Image text-base: 0x000F2000, data-base: 0x0086C000
```

ROM: TinyROM version 1.0(3)
leased uptime is 1 minute
System returned to ROM by power-on
System image file is "flash:c800-nsy6-mw.122-10b.bin"

Cisco C803 (MPC850) processor (revision 1) with 52940K bytes of virtual memory.
Processor board ID JAD03325506 (2953252)
CPU part number 0x2100
X.25 software, Version 3.0.0.
Bridging software.
Basic Rate ISDN software, Version 1.1.
2 POTS Ports
1 Ethernet/IEEE 802.3 interface(s)
1 ISDN Basic Rate interface(s)
12M bytes of physical memory (DRAM)
8K bytes of non-volatile configuration memory
12M bytes of flash on board (8M from flash card)

Configuration register is 0x2102

*!--- The router was just powercycled.
!--- At bootup a break sequence is sent to the router.*

TinyROM version 1.0(3)
Fri Apr 30 18:22:12 1999
Copyright (c) 1998-1999 by cisco Systems, Inc.
All rights reserved.

POST OK. 12MB DRAM, 8MB Flash.

```
boot# set
set baud          =9600
set data-bits     =8
set parity        =none
set stop-bits     =1
set console-flags =0
set mac-address   =0050.7307.C329
set unit-ip       =10.200.40.65
set serv-ip       =255.255.255.255
set netmask       =255.255.252.0
set gate-ip       =10.200.40.1
set pkt-timeout   =8
set tftp-timeout  =16
set boot-action   =flash
set file-name     ="c800-nsy6-mw.122-10b.bin"
set watchdog     =off
set prompt        ="boot"
set ios-conf     =0x2102
```

```
boot# set ios-conf = 142
!---You can use 0x142 or 0x2142.
```

```
boot# boot
```

```
Booting "c800-nsy6-mw.122-10b.bin"...
Restricted Rights Legend
```

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cisco Systems, Inc.
170 West Tasman Drive
San Jose, California 95134-1706

Cisco Internetwork Operating System Software
IOS (tm) C800 Software (C800-Y6-MW), Version
12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 19:53 by pwade
Image text-base: 0x000F2000, data-base: 0x0086C000

Cisco C803 (MPC850) processor (revision 1) with 52940K bytes of virtual memory.
Processor board ID JAD03325506 (2953252)
CPU part number 0x2100
X.25 software, Version 3.0.0.
Bridging software.
Basic Rate ISDN software, Version 1.1.
2 POTS Ports
1 Ethernet/IEEE 802.3 interface(s)
1 ISDN Basic Rate interface(s)
12M bytes of physical memory (DRAM)
8K bytes of non-volatile configuration memory
12M bytes of flash on board (8M from flash card)

--- System Configuration Dialog ---

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

Press RETURN to get started! (press Enter)

00:26:02: %SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) C800 Software (C800-NSY6-MW), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 19:53 by pwade
00:26:02: %SNMP-5-COLDSTART: SNMP agent on host Router is undergoing a cold start
00:26:02: %LINK-5-CHANGED: Interface BRI0, changed state to administratively down
00:26:03: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0, changed state to down
00:26:03: %LINK-5-CHANGED: Interface Ethernet0, changed state to administratively down
00:26:04: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0, changed state
to down

Router>**enable**

Router#**copy startup-config running-config**
Destination filename [running-config]? (press Enter)

% Login disabled on line 1, until 'password' is set
% Login disabled on line 2, until 'password' is set
% Login disabled on line 3, until 'password' is set
% Login disabled on line 4, until 'password' is set
% Login disabled on line 5, until 'password' is set
797 bytes copied in 2.304 secs (346 bytes/sec)

00:27:47: %LINK-3-UPDOWN: Interface BRI0:1, changed state to down
00:27:47: %LINK-3-UPDOWN: Interface BRI0:2, changed state to down
00:27:48: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:1, changed state to down
00:27:48: %LINEPROTO-5-UPDOWN: Line protocol on Interface BRI0:2, changed state to down

Note: After you copy the configuration file from NVRAM to RAM, you can perform one of these procedures:

- Password recovery Perform this procedure if the **enable** password (which is in plain text format) is configured.

- Password replacement Perform this procedure if the **enable–secret** password (which is in encrypted format) is configured based on how the password is last configured.

Note: In order to check the format in which the password is configured in the router, use the **show running–config** command, and look for **enable password** or **enable secret password** in the configuration. For more information, see Example of Enable Password Recovery and Example of Password Replacement.

Example of Enable Password Recovery

This example output from the **show running–config** command shows that **enable password** is configured.

```
Router#show running-config
Building configuration...
Current configuration : 820 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
boot system flash c800-nsy6-mw.122-10b.bin
enable password cisco
```

*!--- Here the password is **plain text**. You can either maintain
!--- the same password or replace it with a new password.*

!--- Output omitted.

Example of Password Replacement

This example output from the **show running–config** command shows that **enable secret password** is configured. As a result, password replacement can be performed as shown in this example:

```
Router#show running-config
Building configuration...
Current configuration : 835 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
boot system flash c800-nsy6-mw.122-10b.bin
enable secret 5 $1$080N$NjrO/6P5jpi0PZYzAj/vX0
```

*!--- Password replacement is performed because
!--- the password is encrypted.*

!--- Output omitted.

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#enable secret letmein
Router(config)#
```

```
00:03:39: %SYS-5-CONFIG_I: Configured from console by console
```

Once the password recovery or replacement is done, the remaining steps are the same, as shown in this example:

```
Router#show ip interface brief
Interface  IP-Address      OK?    Method  Status          Protocol
BRI0       unassigned      YES    TFTP    administratively down  down
BRI0:1     unassigned      YES    unset   administratively down  down
BRI0:2     unassigned      YES    unset   administratively down  down
Ethernet0  10.200.40.65    YES    TFTP    administratively down  down
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)#
00:30:02: %LINK-3-UPDOWN: Interface Ethernet0, changed state to up
00:30:03: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0, changed state to up
Router(config)#config-reg 0x2102
Router(config)#^Z
Router#
00:04:36: %SYS-5-CONFIG_I: Configured from console by console
Router#write memory
```

After you issue the **config-reg 0x2102** command, the new configuration register value is not immediately applied. The new value is applied only after the router is reloaded. This output from the **show version** command shows the current value (0x142) and the value that is applied after the next reload (0x2102).

```
Router#show version
Cisco Internetwork Operating System Software
IOS (tm) C800 Software (C800-NSY6-MW), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 19:53 by pwade
Image text-base: 0x000F2000, data-base: 0x0086C000

ROM: TinyROM version 1.0(3)
leased uptime is 7 minutes
System returned to ROM by power-on
System image file is "flash:c800-nsy6-mw.122-10b.bin"

Cisco C803 (MPC850) processor (revision 1) with 52940K bytes of virtual memory.
Processor board ID JAD03325506 (2953252)
CPU part number 0x2100
X.25 software, Version 3.0.0.
Bridging software.
Basic Rate ISDN software, Version 1.1.
2 POTS Ports
1 Ethernet/IEEE 802.3 interface(s)
1 ISDN Basic Rate interface(s)
12M bytes of physical memory (DRAM)
8K bytes of non-volatile configuration memory
12M bytes of flash on board (8M from flash card)

Configuration register is 0x142

!--- This value becomes 0x2102 at next reload.
```

```
Router#show version
Cisco Internetwork Operating System Software
IOS (tm) C800 Software (C800-NSY6-MW), Version 12.2(10b), RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Thu 11-Jul-02 19:53 by pwade
Image text-base: 0x000F2000, data-base: 0x0086C000
```

ROM: TinyROM version 1.0(3)
leased uptime is 0 minutes
System returned to ROM by power-on
System image file is "flash:c800-nsy6-mw.122-10b.bin"

Cisco C803 (MPC850) processor (revision 1) with 52940K bytes of virtual memory.
Processor board ID JAD03325506 (2953252)
CPU part number 0x2100
X.25 software, Version 3.0.0.
Bridging software.
Basic Rate ISDN software, Version 1.1.
2 POTS Ports
1 Ethernet/IEEE 802.3 interface(s)
1 ISDN Basic Rate interface(s)
12M bytes of physical memory (DRAM)
8K bytes of non-volatile configuration memory
12M bytes of flash on board (8M from flash card)

Configuration register is 0x2102

Related Information

- **Password Recovery Procedures**
 - **Cabling Guide for Console and AUX Ports**
 - **Field Notice: Cisco 801–805 and Cisco 811 and 813 Boots into TinyROM**
 - **Password Recovery Procedure for the Cisco 806, 827, and 837 Series Routers**
 - **Standard Break Key Sequence Combinations During Password Recovery**
 - **Technical Support – Cisco Systems**
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