

How To Replace the NCB Module on the ONS 15252

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Introduction

The Network Control Board (NCB) resides in the ONS 15252 Multi-Channel Unit (MCU), and hosts the CPU together with all of its peripherals. The NCB includes permanent Nonvolatile Random Access Memory (NVRAM), where the system software, `snm.out`, and the database configuration files reside. If you replace an NCB module, the replacement NCB has the system software, but has no knowledge of your configuration. Therefore, you must transfer the configuration files from the original NCB to the replacement NCB.

This document walks you through the steps to replace an NCB module, and describes how to transfer the configuration files.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- The IP address of the NCB you want to replace You need this information to log in and take a backup of all the files in the NCB. You can replace the NCB only after you back up all the files in the original NCB.
- Flow of traffic though the Client Layer Interface Ports (CLIPs) When the replacement of the NCB is in progress, traffic continues to flow though the CLIPs. The CLIP modules self-synchronize with their respective mates, and do not need the assistance of an NCB to carry traffic.
- PC configuration Ensure that your PC is properly configured to communicate with the 15200 system. Contact your system administrator for more information on your network configuration if necessary.
- The `snm.out` and `qdfs.cfg` files A new NCB includes at least two files, namely, `snm.out` and `qdfs.cfg`. These two files are specific to each software version. If an NCB has an `snm.out` file from version 1.04, the `qdfs.cfg` file must also be from the same version.

Note: This document assumes that the replacement NCB has the same `snm.out` and `qdfs.cfg` file versions as the original NCB.

Components Used

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

- Software: snm.out version 1.04
- Hardware: -01, -02

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.

Conventions

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

Replacement Procedure

This section describes the procedure to replace the NCB.

Determine the Original NCB Software and Hardware Version

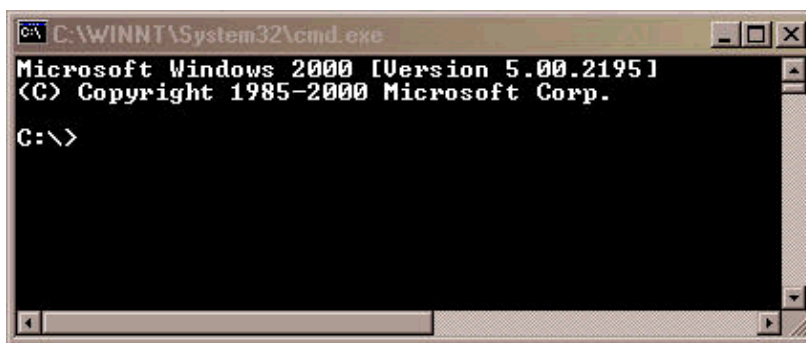
Complete these steps:

1. Select **Start > Run** on your PC or laptop.

The Run dialog box appears.

2. Type **cmd**, and click **OK**.

The command prompt appears:



```
C:\WINNT\System32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
<C> Copyright 1985-2000 Microsoft Corp.
C:\>
```

3. At the C:\> prompt, type **telnet IP address** , where **IP address** is the IP address of the NCB.
4. Press ENTER.

A login prompt from the NCB appears:

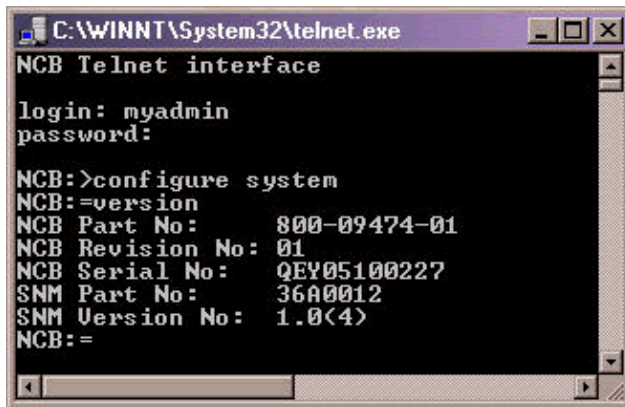


```
C:\WINNT\System32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
<C> Copyright 1985-2000 Microsoft Corp.
C:\>telnet 10.89.239.102
```

5. At the NCB login prompt, type a user name with administrator privileges, and press ENTER.
6. At the password prompt, type the password for the administrator user, and press ENTER.

Note: Each user on the 15200 can only be logged in once. If a user is already logged in, you cannot log in with the same user name.

- At the NCB : > prompt, type **configure system**, and press ENTER. The NCB := prompt appears.
- Type **version** and press ENTER. Record the NCB revision number and the SNM version number that appears on the screen. Here is an example:



```
C:\WINNT\System32\telnet.exe
NCB Telnet interface

login: myadmin
password:

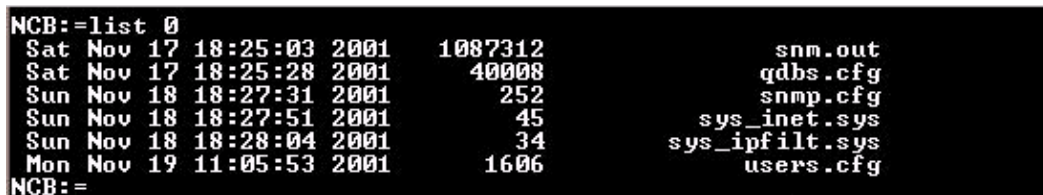
NCB:>configure system
NCB:=version
NCB Part No:      800-09474-01
NCB Revision No:  01
NCB Serial No:   QEY05100227
SNM Part No:     36A0012
SNM Version No:  1.0(4)
NCB:=
```

- Type **list 0**, and press ENTER.

A list of files that currently reside in the NCB appears.

Record the names of the files, and note down how many files are in the list.

Note: On the basis of your specific configuration, you can have more or less files than the ones that appear in this example:



```
NCB:=list 0
Sat Nov 17 18:25:03 2001    1087312    snm.out
Sat Nov 17 18:25:28 2001     400008    qdbs.cfg
Sun Nov 18 18:27:31 2001         252      snmp.cfg
Sun Nov 18 18:27:51 2001         45      sys_inet.sys
Sun Nov 18 18:28:04 2001         34      sys_ipfilt.sys
Mon Nov 19 11:05:53 2001     1606      users.cfg
NCB:=
```

- Determine whether you need to defragment the NCB. To do so, check whether any of the files in the list have the word [deleted] next to them. If you see the word [deleted] next to any of the files, you must defragment the NCB.
- In order to defragment the NCB, complete these steps:

Note: If no files have the word [deleted] next to them, you can skip these steps, and go to step 12.

- At the NCB := prompt, type **defrag 0** and press ENTER.

The Defragmentation in progress message appears. This command takes about two minutes to execute. You must wait for this command to complete. When the command is complete, the NCB := prompt appears again.

```

C:\WINNT\System32\cmd.exe - telnet 10.89.239.102
NCB:>conf sys
NCB:=list 0
Sat Nov 17 18:25:03 2001 1087312 snm.out
Sat Nov 17 18:25:28 2001 40008 qdbs.cfg
Sun Nov 18 18:27:31 2001 252 snmp.cfg
Sun Nov 18 18:27:51 2001 45 sys_inet.sys
Sun Nov 18 18:28:04 2001 34 sys_ipfilt.sys
Sun Nov 18 18:28:10 2001 1606 users.cfg [deleted]
Mon Nov 19 11:05:53 2001 1606 users.cfg
NCB:=defrag 0
Defragmentation in progress...

NCB:=list 0
Sat Nov 17 18:25:03 2001 1087312 snm.out
Sat Nov 17 18:25:28 2001 40008 qdbs.cfg
Sun Nov 18 18:27:31 2001 252 snmp.cfg
Sun Nov 18 18:27:51 2001 45 sys_inet.sys
Sun Nov 18 18:28:04 2001 34 sys_ipfilt.sys
Mon Nov 19 11:05:53 2001 1606 users.cfg
NCB:=

```

- b. Type **list 0**, and press ENTER. Ensure that no filename contains the word [deleted].
12. At the NCB := prompt, type **ipconf** and press ENTER.

Information on the current NCB IP address, subnet mask, and the gateway appears:

```

C:\WINNT\System32\cmd.exe - telnet 10.89.239.102
NCB:=ipconf
IP address: 10.89.239.102
Subnet mask: 255.255.255.128
Default gateway: 10.89.239.1
NCB:=

```

- Record this information for later use.
13. At the NCB := prompt, type **exit** and press ENTER.
14. At the NCB :> prompt, type **exit** and press ENTER.

The connection to the host is terminated:

```

C:\WINNT\System32\cmd.exe
NCB:=exit
NCB:>exit

Connection to host lost.

C:\>

```

Back Up All The NCB files To Your PC

Complete these steps:

1. Open the command prompt (see Steps 1 and 2 of the Determine the Original NCB Software and Hardware Version section).
2. At the C:\> prompt, type **mkdir foldername**, and press ENTER. Here, *foldername* refers to the name of the directory you want to create. Here is an example:

```

C:\>mkdir 252backup
C:\>

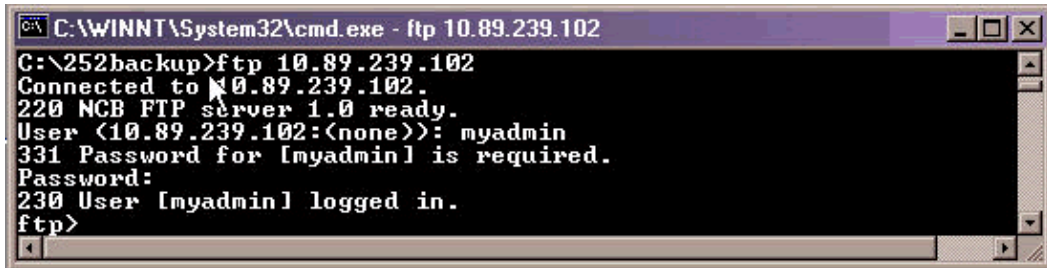
```

In this example, the *foldername* is **252backup**.

- At the C:\> prompt, type **cd foldername** , and press ENTER. Here, *foldername* is the destination folder. In this example, the folder name is 252backup:

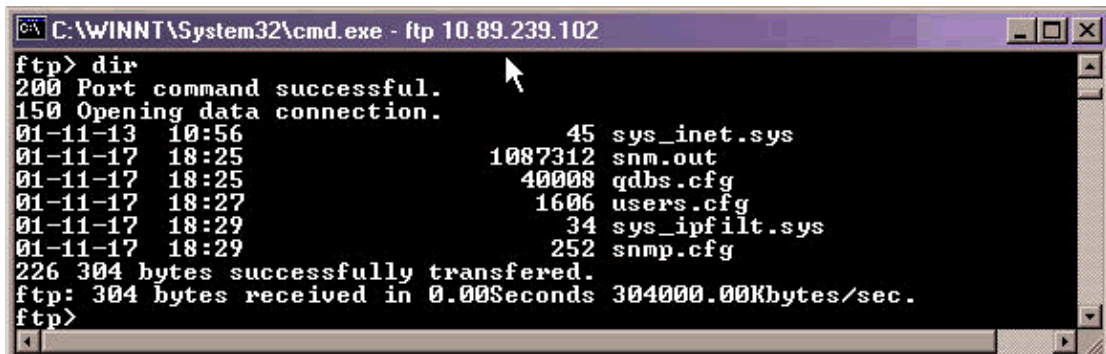
```
C:\>cd 252backup
C:\252backup>
```

- At the c:\foldername> prompt, type **ftp IP address** , and press ENTER. Here, *IP address* refers to the IP address of the 15200 system NCB.
- At the user prompt, type a valid 15200 user name with administrator privileges, and then type the password. If the user name and password are correct, you log in, as shown here:



```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
C:\252backup>ftp 10.89.239.102
Connected to 10.89.239.102.
220 NCB FTP server 1.0 ready.
User (10.89.239.102:(none>): myadmin
331 Password for [myadmin] is required.
Password:
230 User [myadmin] logged in.
ftp>
```

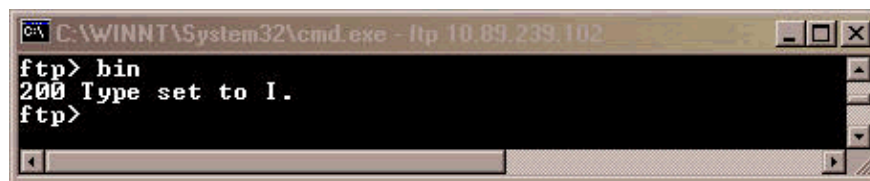
- At the ftp> prompt, type **dir**, and press ENTER. A list of all the files in the NCB appears:



```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
ftp> dir
200 Port command successful.
150 Opening data connection.
01-11-13 10:56          45 sys_inet.sys
01-11-17 18:25     1087312 snm.out
01-11-17 18:25     40008 qdbs.cfg
01-11-17 18:27       1606 users.cfg
01-11-17 18:29        34 sys_ipfilt.sys
01-11-17 18:29       252 snmp.cfg
226 304 bytes successfully transferred.
ftp: 304 bytes received in 0.00Seconds 304000.00Kbytes/sec.
ftp>
```

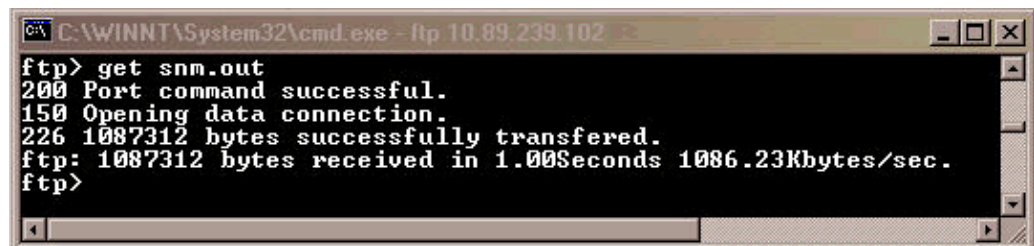
- Now, copy all the files in the NCB to the backup directory in your PC. Start with the **snm.out** file. Complete these steps:

- At the ftp> prompt, type **bin**, and press ENTER:



```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
ftp> bin
200 Type set to I.
ftp>
```

- Type **get snm.out**, and press ENTER:



```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
ftp> get snm.out
200 Port command successful.
150 Opening data connection.
226 1087312 bytes successfully transferred.
ftp: 1087312 bytes received in 1.00Seconds 1086.23Kbytes/sec.
ftp>
```

- Back up the remainder of the files that reside in the NCB to your PC. Complete these steps:

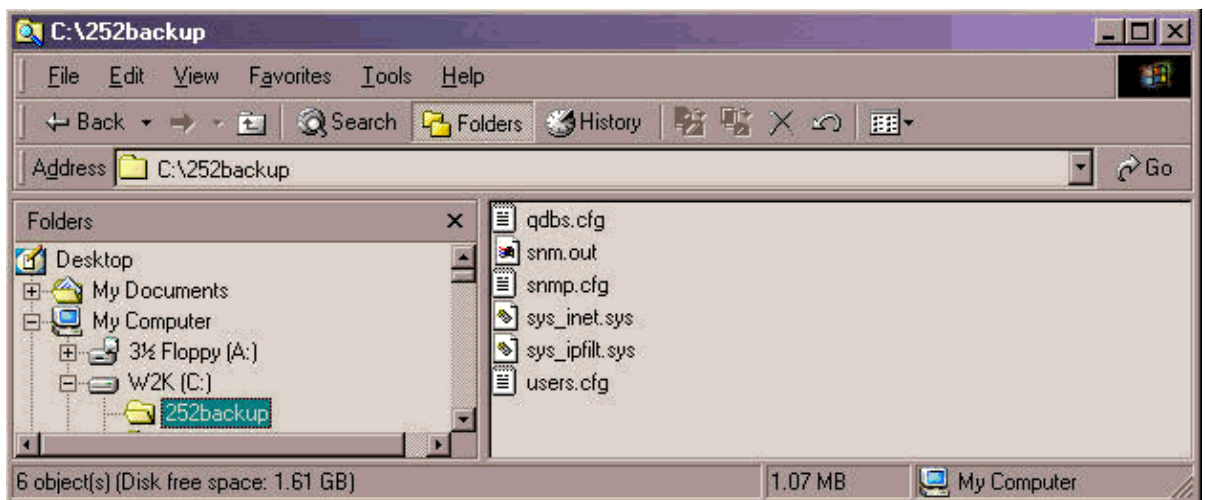
- At the ftp> prompt, type **ascii**, and press ENTER:

```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
ftp> ascii
200 Type set to A.
ftp>
```

- b. Type `get filename`, and press ENTER. Replace *filename* with the name of the file each time you issue this command, as shown here:

```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
ftp> get qdbs.cfg
200 Port command successful.
150 Opening data connection.
226 40008 bytes successfully transferred.
ftp: 40008 bytes received in 0.02Seconds 2000.40Kbytes/sec.
ftp> get snmp.cfg
200 Port command successful.
150 Opening data connection.
226 252 bytes successfully transferred.
ftp: 252 bytes received in 0.00Seconds 252000.00Kbytes/sec.
ftp> get sys_inet.sys
200 Port command successful.
150 Opening data connection.
226 45 bytes successfully transferred.
ftp: 45 bytes received in 0.00Seconds 45000.00Kbytes/sec.
ftp> get sys_ipfilt.sys
200 Port command successful.
150 Opening data connection.
226 34 bytes successfully transferred.
ftp: 34 bytes received in 0.00Seconds 34000.00Kbytes/sec.
ftp> get users.cfg
200 Port command successful.
150 Opening data connection.
226 1606 bytes successfully transferred.
ftp: 1606 bytes received in 0.00Seconds 1606000.00Kbytes/sec.
ftp>
```

9. On your PC or laptop, open Windows Explorer to verify whether all the files listed in the NCB are now in the backup directory. This example confirms that all six files that were in the original NCB are in the backup directory also:



10. When you have verified that all the files are copied, you can close the FTP window. For this, type `bye`, and press ENTER.

The `c:\foldername>` prompt appears again:

```
ftp> bye
221 Closing control connection.
C:\252backup>
```

The backup of the files is now complete.



Caution: Do NOT back up the **qdfs.cfg** file instead of the **snm.out** file. These two files need to synchronize with each other.

Replace the NCB

After the backup of all the NCB files is complete, remove and replace the NCB from the 15252 Multipoint Control Unit (MCU). Complete these steps:

1. Disconnect the Ethernet cable from the NCB module.
2. Loosen the thumbscrews.

Note: The NCB module screws are equipped with retainers.

3. Carefully remove the NCB module from the 15252 MCU.
4. Align the replacement NCB module with the NCB module slot.
5. Carefully insert the module into the slot.

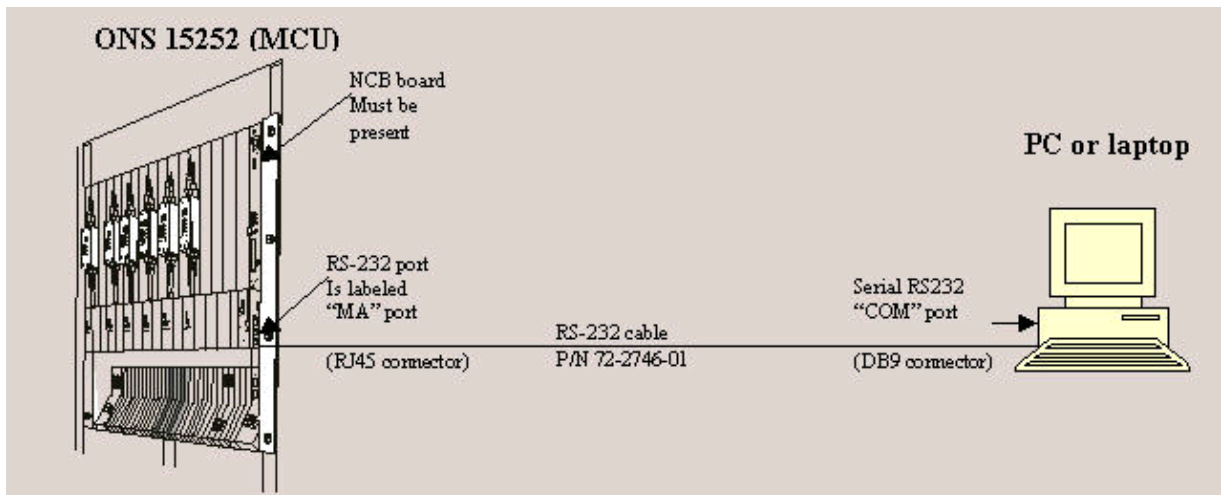
Note: Ensure that the backplane connector and the NCB module connector are correctly mated and that no optical fibers are pinched.

6. Tighten the thumbscrews.
7. Connect the Ethernet cable to the NCB module.

Initialize the NCB

This section provides the procedure to create an administrator user and assign an IP address, mask, and gateway to the new NCB. Complete these steps:

1. Use the CIM RS-232 cable (P/N 72-2746-01) provided with the system to connect your PC or laptop serial COM port to the 15252 Management Access (MA) port on the CIM board, as shown here:



2. On the PC or laptop, open a terminal emulation program (for example, HyperTerminal), and configure the COM port based on these values:

- ◆ Speed: 19200 bit/s
- ◆ Data bits: 8
- ◆ Parity: None
- ◆ Stop bits: 1

- ◆ Flow control: None
- ◆ Emulation: VT100
- ◆ Settings > Ascii setup > Ascii sending: Send line ends with line feeds

Here is an example of the steps to complete when you use HyperTerminal to configure the RS-232 parameters:

- a. Click **Start > Programs > Accessories > Communications > HyperTerminal**.

The Hyperterminal window appears.

- b. Type a session name in the Connection Description dialog box, and click **OK**.

The Connect To Dialog box appears.

- c. Select **COM1** from the Connect Using list, and click **OK**.

The COM1 Properties dialog box appears.

- d. Click **File > Properties**.

The Properties dialog box appears.

- e. Click the **Settings** tab, and then click the **ASCII Setup** button.

The ASCII Setup dialog box appears.

- f. Check the **Send line ends with line feeds** check box.
 - g. Click **OK** until all dialog boxes close. Leave the HyperTerminal window open.
3. After you connect the CIM RS-232 cable, and set the HyperTerminal parameters, press ENTER. The system responds with a login prompt. Press ENTER again. No password is necessary, so press ENTER again. The `NCB : >` prompt appears.

Note: If you do not receive a response from the 15252, use a different COM port.

4. Now, create a user with administrator privileges. Complete these steps:

- a. At the `NCB : >` prompt, type **create user** *9user1*: , and press ENTER.

The system responds with the message, "Created 9user1 : .". The `user1:#` prompt appears on the screen.

- b. At the `user1 : #` prompt, type **password** *password1* , and press ENTER to create a password for the new user.
- c. Type **privileges administrator**, and press ENTER.
- d. Type **exit**, and press ENTER.
- e. Type **commit user** *9user1*: .

5. Set the initial IP address of the NCB module. Complete these steps:

- a. At the `NCB : >` prompt, type **configure system**, and press ENTER.
- b. At the `NCB : =` prompt, type **ipconf** *<IP Address>* *<Subnet>* *<Gateway>* , and press ENTER. Here, **IP Address** represents the IP address, **Subnet** is the subnet mask, and **Gateway** stands for the default gateway for the replacement NCB.

Note: The values you type for these parameters must be the same values that you obtained from the original NCB (see Step 12 of the Determine the Original NCB Software and Hardware Version section).

- c. At the `NCB : =` prompt, type **reboot**, and press ENTER.

```

NCB RS-232 interface

login:
password:

NCB:>create user myadmin
Created 'myadmin'
myadmin:#password myadmin
myadmin:#privileges administrator
myadmin:#exit
NCB:>commit user myadmin
NCB:>show user

-----+-----+-----
name                | privileges      | state
-----+-----+-----
myadmin              | administrator   | offline
-----+-----+-----

NCB:>configure system
NCB:=ipconf 10.89.239.102 255.255.255.128 10.89.239.1
IP address set, please reboot
NCB:=reboot
System shutdown started...

```

Connected 2:50:14 VT100 19200 8-N-1 SCROLL CAPS NUM Capture Print echo

6. Disconnect the CIM RS-232 adapter cable. The subnetwork manager on the NCB module now has an IP address, which you can access directly at the Ethernet port on the NCB module.

Restore the Configuration Files to the New NCB

This procedure lists the steps to copy all the files, except **snm.out** and **qdfs.cfg**, from the PC backup directory to the new NCB. Do not copy these two files to the new NCB because the new NCB already contains these two files. These two files are installed at the factory.

Complete these steps:

1. Ensure that your PC or laptop is connected to the Ethernet port on the NCB module.
2. Open the command prompt (see Steps 1 and 2 of the Determine the Original NCB Software and Hardware Version section).
3. At the `C:\>` prompt, type `cd foldername`, where *foldername* is the name of the folder where the backed up files reside.

```

C:\>cd 252\backup
C:\252\backup>

```

4. Press ENTER.
5. Start an FTP session to the NCB. To do so, at the `C:\foldername>` prompt, type `ftp IP address`, where *IP address* represents the IP address of the new NCB. Press ENTER.

```
C:\WINNT\System32\cmd.exe - ftp 10.89.239.102
G:\252backup>ftp 10.89.239.102
Connected to 10.89.239.102.
220 NCB FTP server 1.0 ready.
User (10.89.239.102:(none>): myadmin
331 Password for [myadmin] is required.
Password:
230 User [myadmin] logged in.
ftp>
```

6. Type the user name of the administrator that you created in Step 4 of the Initialize the NCB section.
7. Press ENTER.
8. At the password prompt, type the password, and press ENTER. A message that you are successfully logged in appears, and an ftp> prompt appears.
9. Determine which files are already on the NCB. For this, type **dir** and press ENTER.

A list of all the files that currently reside in the replacement NCB appears. In addition, the two files **snm.out** and **qdbns.cfg**, which are installed at the factory must also be present. On the basis of the NCB version, you can see two additional files, **sys_inet.sys** and **network.cfg**. Ensure that **snm.out** and **qdbns.cfg** are present.

```
ftp> dir
200 Port command successful.
150 Opening data connection.
01-11-17 18:25          1087312 snm.out
01-11-17 18:25           400008 qdbns.cfg
226 97 bytes successfully transferred.
ftp: 97 bytes received in 0.00Seconds 97000.00Kbytes/sec.
ftp>
```

10. At the ftp> prompt, type **ascii**, and press ENTER.
11. One by one, transfer all the files (except **snm.out** and **qdbns.cfg**) from the backup directory to the new NCB.

At the ftp> prompt, type **put filename** , and press ENTER. Here, **filename** represents the name of the file that you want to move from the PC backup directory to the new NCB.

A message is displayed to indicate that each file is successfully transferred, as shown here:

```
ftp> put snmp.cfg
200 Port command successful.
150 Opening data connection.
226 252 bytes successfully transferred.
ftp: 252 bytes sent in 0.00Seconds 252000.00Kbytes/sec.
ftp> put sys_inet.sys
200 Port command successful.
150 Opening data connection.
226 45 bytes successfully transferred.
ftp: 45 bytes sent in 0.00Seconds 45000.00Kbytes/sec.
ftp> put sys_ipfilt.sys
200 Port command successful.
150 Opening data connection.
226 34 bytes successfully transferred.
ftp: 34 bytes sent in 0.00Seconds 34000.00Kbytes/sec.
ftp> put users.cfg
200 Port command successful.
150 Opening data connection.
226 1606 bytes successfully transferred.
ftp: 1606 bytes sent in 0.00Seconds 1606000.00Kbytes/sec.
ftp>
```

Note: Notice that **snm.out** and **qdbns.cfg** are the only two files that are not transferred to the new NCB.

12. Verify whether the new NCB shows the same files that the original NCB had. For this, type **dir** and press ENTER.

```

ftp> dir
200 Port command successful.
150 Opening data connection.
01-11-17  18:25                1087312  snm.out
01-11-17  18:25                400008  qdbs.cfg
01-11-18  18:27                  252    snmp.cfg
01-11-18  18:27                   45    sys_inet.sys
01-11-18  18:28                   34    sys_ipfilt.sys
01-11-18  18:28                  1606    users.cfg
226 304 bytes successfully transferred.
ftp: 304 bytes received in 0.00Seconds 304000.00Kbytes/sec.
ftp>

```

Note: One extra file named **network.cfg** can be present in the new NCB. This file can be present when the original NCB does not have this file and the new NCB contains this file. You need not perform any action in this case. Proceed to the next step.

13. Type **bye**, and press ENTER to close the FTP window.

```

ftp> bye
221 Closing control connection.
C:\252backup>

```

14. Reboot the NCB for the downloaded configuration files to take effect. Complete these steps:

- a. Establish a Telnet session to the NCB with the administrator user name and password that you created.
- b. At the NCB : > prompt, type **configure system**, and press ENTER.
- c. At the NCB := prompt, type **ldboot 0 snm.out 10**, and press ENTER.

Note: The number after **ldboot** is a zero and there is a space before and after the zero.

- d. Type **reboot**, and press ENTER.

Note: When you reboot the NCB, the original NCB configuration files that you transfer to the new NCB take effect, and the admin user that you created on the new NCB and used in Step 12a is removed. The only users authorized to login are the ones that were in the original NCB. These user names are listed in the file **users.cfg**.

15. Telnet to the new NCB with an administrator user name that existed previously in the original NCB.
16. Check the new NCB software version. For this, type **configure system** at the NCB : > prompt, and press ENTER.
17. At the NCB := prompt, type **version** and press ENTER. Ensure that the software version is the same as in the original NCB.

The NCB replacement procedure is now complete.

Related Information

- [Cisco ONS 15200 Module Handbook, Release 1.0.1](#)
 - [NCB Removal and Replacement](#)
 - [NCB Functional Description](#)
 - [Technical Support & Documentation – Cisco Systems](#)
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