

MITEL NETWORKS

3300 Integrated Communications Platform

Technician's Handbook Release 3.1

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Product Information

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Contacting Technical Support

Please contact your local Mitel dealer if you require technical assistance. Before you call, check this Help system for tips and solutions. If you are unable to find a solution, please have the following information ready when you call:

- The product serial number
- The nature of the problem
- What you were doing with the application when the problem occurred
- Troubleshooting results.

Sending Us Feedback

If you have suggestions on how to improve this documentation, please contact:

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About The Document Set

The Mitel Networks 3300 ICP documentation set includes the following components:

- General Information Guide (Web Site, CD-ROM, or system)
- Technician's Handbook (Web Site and paper with the system)
- Manual Maker (Web Site)
- Embedded User Information (Web Site and system)
- Hardware User Guide (Web Site, CD-ROM, or system)

- Configuration Tool Online Help (Web Site, CD-ROM)
- System Administration Tool Online Help (Web Site, CD-ROM, or system)
- IMAT Online Help (CD-ROM).

Installation

Installation Planner

The following required and default settings are necessary for an installation:

System Administration Tool		
username	(Default = system)	
password	(Default = password)	

Controller Configuration (RTC)			
	Default Settings	Settings to Change	
boot device	ata=0,0		
processor number	0		
host name			
file name	/sysro/RTC8260		
inet on ethernet (e)	192.168.1.2		IP address: subnet mask
inet on backplane (b)			
host inet (h)			IP address: ftp server
gateway inet (g)			Default Gateway
user (u)	ftp		FTP user (installer's PC)
ftp password (pw)	@		FTP password (installer's PC)
flags (f)	0x0		
target name (tn)			
startup scripts (s)			
other (o)	motfcc		

DHCP Configuration (for scope supporting IP Voice devices)				
	Start Address	End Address	Subnet Mask	
IP Address Scope				
Lease Duration	Days:	Hours:	Minutes:	
Options (for all devices)	Identifier	Data Type	Value	
(Router) Default Gateway	003	IP Address		
Options (for WEB device	s)			
DNS Server	006	IP Address		
DNS Domain Name	015	ASCII String		
Options (for 3300 E2T)				
TFTP Server (hostname or IP)	066	ASCII String	(typically the IP address of the controller RTC)	
TFTP BootFile	067	ASCII String	/sysro/E2T8260	
Options (for IP Phones)				
Mitel IP Phone DHCP server	130	ASCII String	MITEL IP PHONE	
IP Phone TFTP Server	128	IP Address	(typically the IP address of the controller RTC)	
MN3300 (RTC) IP Address	129	IP Address		
VLAN ID	132	Hex Long (32 bit word)	e.g. 0x2	
VLAN Priority	133	Hex Long (32 bit word)	0x6	

IP Phone MAC Information			
IP Set Registration Code	(See System		
IP Set Replacement Code	Option Assignment)		

Set Programming Guide				
User Name	Location	Set Type	Number	MAC Address (optional)

Capacity

The 250-user 3300 ICP will support one of the following maximum configurations:

- 250 IP telephones and 96 ONS telephones with no peripheral unit support.
- 250 IP telephones and a 192 port peripheral unit with a DTMF card installed.
- a combination of IP, ONS, and DNI telephones (for example, 100 IP telephones, 96 ONS telephones, and 100 DNI telephones on a peripheral unit).

The 750-user 3300 ICP will support the quantities listed in the following hardware and feature capacity tables.

3300 ICP Hardware Capacity			
Parameter Name	Number		
Attendant Consoles	24		
DNI Channels	2368		
Modems	10		
Programmable Key Modules	75		
System Ports			
- DTMF Receivers	128		
- Multiline Sets	756		
- Single Line Sets (ONS/OPS Lines)	700		
- Trunks	628		
Tone Detector Circuits	32		

3300 ICP Feature Capacity		
Parameter Name	Number	
ACDII - Agent Groups	32	
Agents per Group	500	
ACDII - Agent IDs	1181	
ACDII - Agent Paths	256	
Attendant Console Groups	48	
Attendant Console Calls Waiting	72	
Broadcast Groups	1875	
- Members per Broadcast Group	32	
Busy Lamp Groups (Monitored Devices)	439	
- Members per Busy Lamp Group	16	
Call Reroute Always	176	
Call Reroute 1st Alternates	336	
Call Reroute 2nd Alternates	32	
Class of Restriction (COR)	96	
Class of Service (COS)	96	
Telephone Directory	19995	
Default Account Codes	225	
Departments (in Tel Dir)	2000	
Digit Modification Tables	256	
Digit Blocks	4055	
Digital Links	16	
Group Page Groups	16	
Hunt Groups	176	
- Members per Hunt Group	64	
Independent Account Codes	1000	
Locations (in Tel Dir)	250	

3300 ICP Feature Capacity				
Parameter Name	Number			
Modem Groups	15			
Modems per Modem Group	10			
MSDN/DPNSS Cluster Elements	30			
MSDN/DPNSS Remote Directory Numbers	18500			
Networked ACD - Remote Agent Subgroups	32			
Page Groups (Zones)	16			
Personal Speed Call Users	500			
(blocks of 10 speed calls per user)				
Pickup Groups	200			
- Members per Pickup Group	75			
Routes	200			
Route Lists	128			
Speed Call Digit String (avg. 12 digits)	1500			
SUPERSET™ Callback Messages per System	500			
System Account Codes	24			
System Digit Strings	6814			
System Speed Call	600			
Telephone Directory Entries	19995			
Trunk Groups	112			
Trunks per Trunk Group	175			
Trunk Service Numbers	150			

Overview of the Installation

- Note: Before you begin, review the LAN and WAN guidelines and plan the network. Complete the Installation Planner. You will need to know the IP addresses reserved by the customer for the 3300 ICP Controller (one for the RTC and one for the E2T) and for the IP Phones.
- Time: Initial power-up and reset will each take 15 to 20 minutes.

To install the Mitel Networks 3300 ICP:

- 1. Install the System ID Module.
- 2. Establish a serial connection and an Ethernet connection from your PC to the 3300 Controller but do not connect the Controller to the LAN.
- 3. Power up the 3300 Controller. The controller will come up, in 15 to 20 minutes, with factory-installed software.
- Launch browser to login to the System Administration Tool (http://192.168.1.2 -- username is system, password is password).
- Optional. Install the Mitel Networks 3300 Configuration Tool on your PC. Use the Configuration Tool to reset the default database, import the .csv file, and make programming changes. Refer to the 3300 Configuration Tool online help for detailed instructions.
- 6. Enable the options in the License and Option Selection form and reboot.
- 7. Program the system by using the System Administration Tool or restore a database.
- Configure the DHCP Server with IP addresses provided by the customer. Refer to the Note and default settings table following this procedure.
- 9. If you are using an external DHCP Server, disable the internal DHCP Server.
- 10. Perform a Backup.

- 11. Reboot the system.
- 12. Set the 3300 Controller (RTC) IP address through a communication program.
- 13. Connect the 3300 Controller to the LAN.
- Note: You may use the internal or an external DHCP Server. The controller is shipped with the DHCP server Enabled. Use DHCP reservations against the MAC address for the E2T.

Internal DHCP Server default settings - shipped enabled				
TFTP Server	066	192.168.1.2		
TFTP BootFile	067	/sysro/E2T8260		
IP Phone TFTP Server	128	192.168.1.2		
MN330 (RTC) IP Address	129	192.168.1.2		
Mitel IP Phone DHCP Server	130	MITEL IP PHONE		
Range	Start End	192.168.1.20 192.168.1.24		

TCP/IP Output Streaming

This procedure enables the log applications and ACD Real Time Events streaming to be directed to remote applications. The remote IP application must act as a TCP/IP client.

To set up TCP/IP Output Steaming from a remote IP application:

- 1. Open up a Telnet Session
- 2. Input the IP address of the RTC
- 3. Under PORT select the current socket for the information required.

Logs Output	Socket Number
Software Logs	1750
Maintenance Logs	1751
SMDR	1752
Hotel Logs	1753
LPR1 (printer port)	1754
ACD Real Time Event	15373

Note: If the TCP/IP connection drops the client application has to reconnect. There is a maximum 3 connections to each system application.

Controller

Install the System ID Module

The system ID module is shipped with the software. You must install the system ID module in the 3300 ICP controller. The module contains a unique identifier that the system reads on start-up.

To install the System ID Module:

- 1. Remove the cover.
- 2. Press firmly to seat the module on the board. Placement is between MMC 1, the Dual FIM, and MMC 8, the DSP location. The module will cover the 'MMC 8' text printed on the board.
- 3. Replace the cover.

Install the 3300 Controller

To install the 3300 Controller:

- 1. Install the System ID Module.
- Set up a serial connection between the 3300 Configuration Tool PC and the Maintenance (RS-232) port on the 3300 Controller. Baud rate 9600, Data bits 8, Parity None Stop bits 1, Flow control None.
- 3. Set up an Ethernet connection between the 3300 Controller and the 3300 Configuration Tool PC (a standard LAN cable from an RJ-45 connector on the 3300 Controller L2 switch to the PC NIC).
- 4. To check the connections between the 3300 Controller and the PC:
 - PING the 3300 Controller IP address
 - FTP to the 3300 Controller IP address
 - Go to the 3300 Controller URL address (http://192.168.1.2).

- After you enable options and program the system, establish a fiber connection from the 3300 Controller fiber port to the fiber port on the digital trunking NSU. Note: The NSU is connected to the Public Switched Telephone Network (PSTN) termination point from the L0/L1 port.
- Connect the CIM ports on the 3300 Controller and 3300 ASU by using a Category 5 cable with RJ-45 connectors (crossover).
- 7. After you complete programming connect the 3300 Controller to the LAN (cross-over Ethernet LAN cable).
- Note: You can connect IP telephones to the 3300 Controller through L2 switch external ports, for testing only, after installation of the database and configuration. IP Phones require a configured DHCP server.



3300 ICP Controller Installation

Set the 3300 Controller IP Address

To set the 3300 Controller IP address:

- 1. Establish a serial connection from the 3300 Configuration Tool PC (or any PC equipped with a communications program) to the Maintenance Port on the 3300 Controller.
- 2. Launch the communication program.
- 3. Set the RS-232 communication parameters:
 - Baud rate 9600
 - Data bits 8
 - Parity None
 - Stop bits 1
 - Flow control None
- 4. Connect AC power to the 3300 Controller.
- 5. Press the **Reset** button on the 3300 Controller with a small pointed object.
- 6. Wait for the "Press any key to stop auto-boot" message and then press a key.
- 7. At VxWorks Boot type c and then press Enter.

Press Enter after you enter required text.

For all other fields, (displayed in grey text, for information only) accept the default value or leave blank.

boot device: ata=0,0 (Boot device is Disk) unit number: 0 (default, leave at 0, not used)

processor number: 0 (default, leave at 0, not used)

host name: (optional)

file name: /sysro/Rtc8260 (boot location and file name)

inet on ethernet (e): **134.199.63.11:ffffff00** (example RTC IP and subnet mask)

Note: Type the IP address and subnet mask (in hexadecimal format for the end user's site (i.e. ffffff represents 255.255.255.00).

```
inet on backplane (b):
```

host inet (h):

gateway inet (g): **134.199.63.251** (example Router (Gateway)address)

Note: Enter the IP address of the end user's gateway for the 3300 Controller.

user (u):

ftp (must be ftp for Release 3.1) ftp password (ftp) (blank = @):

flags (f): 0x0 (a fixed IP address (0x40 is used on E2T for DHCP)

target name (tn):

startup script (s):

other (o): motfcc (other device, E2T using Network to boot from)

- 8. Press the Reset button on the 3300 Controller.
- 9. Remove the Serial connection. The system will return to service in about 10 to 15 minutes.
- Note: It may be helpful to leave the serial connection in place to capture any potential errors.

NSUs

Install the 3300 Universal NSU

To install the 3300 Universal NSU:

- Set DIP switch #6 for Network or Line termination mode. The default is network termination mode. Refer to Universal NSU DIP Switch Settings.
- 2. Establish a fiber connection from the fiber port on the NSU to the fiber port on the 3300 Controller.
- 3. Connect the NSU L0 and/or L1 port to the remote system (the PSTN or another system) by using Category 5 cable.
- Note: The Ethernet port is used for FTP upgrades.
- Note: The cable for the CIM ports must be an Ethernet crossover cable.

Install for PRI/Q.SIG

To install and configure the 3300 Universal NSU as a $\ensuremath{\mathsf{PRI}}\xspace$ variant:

Install a Direct Connection Device Driver on a computer.

- 1. Create a Dial-up Network connection on your computer.
- 2. Connect the computer to the 3300 Universal NSU.
- 3. Use the IMAT Tool to complete required PRI configuration.
- 4. Connect the 3300 Universal NSU to the ISDN network.

Connecting a Laptop Computer to the NSU

To connect a computer to the NSU:

- 1. Install IMAT. From the 3300 Software CD-ROM, run Tools/IMAT/Disk1/setup.exe.
- 2. Use a straight through serial cable for a direct connection.
- 3. Use a null modem adapter if connecting to the card through a modem.

- 4. If you have not already done so on the laptop computer, install a Direct Connect modem type. You may also wish to install a modem for remote connection.
- 5. On the laptop, create a new Dial-up Networking entry.

Create a Modem Connection

- 6. Install the modem following the manufacturer's installation instructions.
- 7. In the Modem Properties/Advanced Settings window Turn off error control Turn on flow control and select Hardware.

Install Direct Connect Device Driver

By default, Windows does not support a direct cable connection. You must add a device driver. Windows takes the information from a Mitel file and creates the driver called NT Direct Connection.

Refer to detailed installation and configuration instructions for:

- Direct Connection Device Driver for Windows 95 and Windows 98
- Direct Connection Device Driver for Windows 2000
 Professional

Driver for Windows 95 and Windows 98

To install and configure the Direct Connection Device Driver for Windows 95 or Windows 98:

- 1. On the **Start** menu, point to Settings, and then click **Control Panel**.
- 2. Double-click the Modems icon.
- 3. In the Modem Properties window, click Add.
- 4. In the Install New Modem screen, click Other.
- 5. Select Don't detect my modem, I will select from a list. Click Next.
- 6. Click Have Disk.

- 7. Type c:\Program Files\Mitel\Imat in the **Copy manufacturer's files from** field and click **OK**.
- 8. On the Install from Disk window, click OK.
- 9. Click Next to select the NT Direct Connection.
- 10. Select COM 1 or COM 2, and then click Next.
- 11. Click Finish.
- 12. In the **Modem Properties** window, select **NT Direct Connection**, then click **Properties**.
- 13. Set the following parameters:
 - Maximum speed: 3840
 - Check: only connect at this speed
 - Data bits: 8
 - Parity: none
 - Stop bits: 1
 - Mode: auto answer
 - In the Advanced Settings window, do the following for a direct connect cable:
 - Turn off: error control
 - Turn off: flow control
- 14. Click **OK** and close the **Control Panel** window.

Driver for Windows 2000

To install and configure Direct Connection Device Driver for Windows 2000 Professional:

- 1. On the **Start** menu, point to **Settings**, then click **Control Panel**.
- 2. Double-click the Phone and Modem Options icon.
- 3. Select the **Modem** tab.
- 4. Click Add.
- 5. Click Other on the Install New Modem screen.

- 6. Select **Don't detect my modem**, I will select it from a list and click **Next**.
- 7. In the Models field, select Communications cable between two computers, then click Next.
- 8. Select COM 1 or COM 2, then click Next.
- 9. Click Finish.
- 10. The COM Port will be displayed in the Phone and Modem Options window, Modems tab. Select the COM Port and click **Properties**.
- 11. From the Maximum Port Speed drop-down menu, select **38400**.
- In the Communications cable between two computers, select the Advanced tab, and then click Change Default Preferences.
- 13. From the Port speed drop-down list select **38400**, and then from the Flow control drop-down list select **None**.
- 14. Select the **Advanced** tab. From the drop-down menus, set the fields as follows:
 - Data bits: 8
 - Parity: none
 - Stop bits: 1
- 15. Click **OK** and close the Control Panel window.

Create a Dial-up Network Connection

Typically, you will want to follow this procedure twice to create two Dial-up Networking connections, one for on-site direct access, and one for remote modem access.

Refer to detailed instructions for:

- Dial-up Networking Connection for Windows 95 or Windows 98
- Dial-up Network connection for Windows 2000 Professional

Dial-up Connection for Windows 95 or Windows 98

To create a dial-up networking connection for Windows 95 or Windows 98:

- 1. On the **Start** menu, point to **Programs**, point to **Accessories**, and then click **Dial-Up Connections**.
- 2. Double-click Make New Connection.
- Enter an appropriate name for the connection (for example, Direct for direct connections, Remote or a customer's name for remote connections) and click Next. Note: If you are creating a direct connection, make sure NT Direct Connection is listed in the drop-down list in the Make a New Connection window.
- 4. Enter an **Area Code** and **Telephone Number** and select a Country Code from the drop-down list. Click **Next**. Note: Even though it is not needed for a direct connection, Windows requires that you enter this information.
- 5. Click Finish.
- 6. Right-click your new connection icon and click **Properties**.
- 7. Click Configure, then make sure the fields are set as follows:
 - Data bits: 8
 - Parity: none

For a direct connection:

- Maximum speed: 38400
- Check: only connect at this speed
- Select wait for dial tone before dialing
- Select cancel the call time at 60 sec
- Click Advanced and turn off error control and flow control
- For a remote connection:
- Stop bits: 1
- Click Advanced and turn on error control and select Compress data
- Turn on flow control and select Hardware.

- 8. Click OK.
- 9. Select the **Server Types** tab and make sure that **PPP: Windows, WindowsNT3.5, Internet** or **PPP:Internet** appears in the Type of Dial-Up Server field.
- 10. In the Advanced Options field, select **Log onto Network** and **Enable software compression**.
- 11. Make sure that only **TCP/IP** is selected in the Allowed network protocols field.
- Select the Scripting tab and enter c:\program files\mitel\Imat\pridun.scp for a 3300 Universal NSU c:\program files\mitel\Imat\r2dun.scp for a 3300 R2 NSU.
- 13. Click **OK**.

Dial-up Connection for Windows 2000

To create a dial-up networking connection for Windows 2000 Professional:

- 1. On the Start menu, point to Programs, point to Accessories, click Communications, and then click Dial-Up Connections.
- 2. Double click Make New Connection, and then click Next.
- 3. Select **Dial-up to the Internet**, and then click **Next**.
- 4. Select I want to set up my Internet connection manually, or I want to connect through a local area network (LAN). Click Next.
- 5. Select I connect through a phone line and a modem, and then click Next.
- 6. Use the COM Port that has been configured as a NULL Modem connection: 38400, 8, none, 1.
- 7. In the Choose Modem box, from the drop-down list select **Communications cable between 2 computers**. Click **Next**.
- 8. Clear the **Use area code and dialing rules** box, and then click **Advanced**.

- For the Connection type, select PPP (Point to Point 9. Protocol). For the Logon procedure, select Use logon script, and then click Browse. Select pridun.scp. Click OK, and then click Next.
- 10. In the Internet account logon information box, leave the username and password fields blank and then click Next.
- 11. Dialog boxes appear to warn you that you will not be able to connect to your Internet service provider without your user name and your password. Disregard these warnings and click Yes on these boxes to continue.
- 12. Enter the Connection name, then click **Next**.
- 13. In the box to set up an Internet mail account, select No, then click Next.
- 14. De-select the option to connect to the Internet immediately, then click Finish.
- 15. In the Network and Dial-up Connections window, right-click on the new DUN connection, point to **Properties**, then click Configure.
- 16. From the Maximum speed (bps) drop-down list, select 38400 for the baud rate.
- 17. Click **OK** until you exit the windows.

5500 Universal NSU PIN Allocations			
T1/E1 Connector Allocation			
Signal Name	RJ-45 Connector Pin		
RXRING	1		
RXTIP	2		
No used	3		
TXRING	4		
TXTIP	5		
Not used	6		
Not used	7		
Not used	8		

2200 Universal NEU Din Allegations

RS-232 Maintenance Connector Allocation				
Signal Name	DB9 Connector Pin			
DTR (data terminal ready)	1			
RXD (receive data)	2			
TXD (transmit data)	3			
DTR (data terminal ready)	4			
GND	5			
DSR (dataset ready)	6			
RTS (ready to send)	7			
CTS (clear to send)	8			
Not used	9			

3300 Universal NSU DIP Switch Settings

Hybrid Port DIP Switch Settings				
DIP Switch	Use	Default Setting	Notes	
1	Tx Ground	Up	Ground when down; floating when up.	
2	Rx Ground	Up	Ground when down; floating when up.	
3	Impedance selector #1	Up	120 ohm (enabled when down)	
4	Impedance selector #2	Down	100 ohm (enabled when down)	
5	Impedance selector #3	Up	75 ohm (enabled when down)	
6	LT/NT selector	Up	Up for NT; down for LT.	

T1 Mode/Connector DIP Switch Settings						
Impedance	1 Tx Gnd	2 Rx Gnd	3 I #1	4 I #2	5 I #3	6 LT/NT
100	Down	Down	Up	Down	Up	Down
75	Down	Down	Up	Up	Down	Down

E1/MF-R2 Mode/Connector DIP Switch Settings							
BNC Adapter Required	Impe- dance	1 Tx Gnd	2 Rx Gnd	3 120 ohm	4 100 ohm	5 75 ohm	6 LT/NT
No	120	Up	Up	Down	Up	Up	Up
No	120	Up	Up	Down	Up	Up	Down
Yes	75	Note	Note	Up	Up	Down	Up
Yes	75	Note	Note	Up	Up	Down	Down
Note: Site dependent - normally Tx is grounded and Rx is not							

grounded, but it depends on which remote connection is grounded.

Impedance DIP Switch Settings			
Impedance Selector #1 (switch #3)	Impedance Selector #2 (switch #4)	Impedance Selector #2 (switch #5)	Description
Down	Up	Up	E1 120 ohm network (RJ- 45 connector)
Up	Down	Up	T1 100 ohm network.
Up	Up	Down	E1 75 ohm network (coaxial cable with BNC to RJ-45 adapter).
Any other combination			Undefined

Install the 3300 R2 NSU

To install and configure the 3300 R2 NSU:

- Set the DIP switches for the protocol and site installation. The default configuration of the DIP switches will support T1 protocols in network termination mode.
- 2. Establish a fiber connection from the fiber port on the NSU to the fiber port on the 3300 Controller.
- 3. Connect the NSU L0 and/or L1 port to the remote system (the PSTN or another system).
- 4. Install a Direct Connection Device Driver on a PC. Refer to Install the 3300 Universal NSU for details.
- 5. Create a Dial-up Network connection on the PC. Refer to Install the 3300 Universal NSU for details.
- 6. Connect the computer to the 3300 R2 NSU.
- 7. Use the IMAT Tool to complete the required configuration.
- 8. Connect the 3300 R2 NSU to the PSTN network.
- 9. Connect the 3300 R2 NSU to the 3300 Controller.

Connections

Connect the computer to the 3300 R2 NSU

To connect the computer to the 3300 R2 NSU:

- 1. Connect the serial cable from the computer's COM port to the 3300 R2 NSU 9-pin serial port.
- 2. On the File menu, click Connect to Remote Site.
- In the Dial-Up Entry box, select the <name> you entered for the connection when creating the dial-up connection. (See Dial-Up Networking Connection.) Note: The 3300 R2 NSU does not require a password.
- 4. Ensure that PRI CARD is selected under Remote ISDN System.
- 5. Click **Connect**.

- 6. In the Connected to remote site window, click **OK**.
- Note: A networked computer running Win95/98 has difficulties communicating using Dial-up Networking. It is strongly suggested that a non-networked computer be used.

Connect the 3300 R2 NSU to the 3300 Controller

A fiber connection originates from a fiber interface module (FIM) port on the front of the 3300 Controller and is terminated on the FIM port of the digital trunking 3300 R2 NSU.

The 3300 R2 NSU is connected to the Public Switched Telephone Network (PSTN) termination point from the L0 port with Category 5 cable.

T1/E1 Connector Allocation			
Signal Name	RJ-45 Connector Pin		
RXRING	1		
RXTIP	2		
Not used	3		
TXRING	4		
TXTIP	5		
Not used	6		
Not used	7		
Not used	8		

3300 R2 NSU Pin Allocations
RS-232 Maintenance Connector Allocation				
Signal Name DB9 Connector P				
DTR (data terminal ready)	1			
RXD (receive data)	2			
TXD (transmit data)	3			
DTR (data terminal ready)	4			
GND	5			
DSR (dataset ready)	6			
RTS (ready to send)	7			
CTS (clear to send)	8			
Not used	9			

3300 R2 NSU DIP Switch Settings

MF-R2 Port DIP Switch Settings					
DIP Switch	Use	Default Setting	Notes		
1	Tx Ground	Up	Tx shield ground when down		
2	Rx Ground	Up	Rx shield ground when down		
3	Impedance selector #1	Up	120 ohm		
4	Impedance selector #2	Up	100 ohm		
5	Impedance selector #3	Up	75 ohm		
6	LT/NT selector	Up	Up for NT, down for LT		

E1/MF-R2 Mode/Connector DIP Switch Setting								
BNC Adapter Required	Impe- dance	LT/NT Mode	1 Tx Gnd	2 Rx Gnd	3 120 ohm	4 100 ohm	5 75 ohm	6 LT/NT
No	120	NT	Up	Up	Down	Up	Up	Up
No	120	LT	Up	Up	Down	Up	Up	Down
Yes	75	NT	Note	Note	Up	Up	Down	Up
Yes	75	LT	Note	Note	Up	Up	Down	Down
Note: Site dependent - normally Tx is grounded and Rx is not grounded, but it depends on which remote connection is grounded.								

Install the 3300 BRI NSU

To install the 3300 BRI NSU:

- Configure the 3300 Controller E1 DPNSS on the 3300 Universal NSU that will be used to connect to the 3300 BRI NSU.
- 2. Program the BRI-specific requirements for the E1 DPNSS interface.
- 3. Set up the maintenance PC.
- 4. Complete the 3300 BRI NSU programming.
- Note: The 3300 BRI NSU is set for 75 ohms impedance when connected to a digital trunking NSU running E1 DPNSS. The 3300 Universal NSU is also set for 75 ohms impedance. A Category 5 connection from the 3300 BRI NSU E1 port to a 3300 Universal NSU that is running E1 DPNSS. E1 connections as TX and RX pairs in RJ-45. Option to ground one side of TX and or RX (using DIP switch) to use with coax adapter. The 2200 BRI NSU is connected to an appropriate device.

The 3300 BRI NSU is connected to an appropriate device (such as a PSTN or ISDN device) from a 25-pair Amphenol connector.

Setting Up the Maintenance PC

To install, configure, and maintain the 3300 BRI NSU, you must connect it to a maintenance computer. The computer must be running DOS and have a communications program (such as ProComm Plus ©) installed.

To connect a maintenance PC to the 3300 BRI NSU:

- 1. Using the RJ45 to 9-pin D-type MMI cable, connect the RS-232 port on the 3300 BRI NSU to COM port 1 or 2 on the PC.
- 2. Set up the communications program on COM port 1 or 2 with the following parameters:
- 9600 baud
- 8 data bits
- no parity
- 1 stop bit
- ASCII character set
- XON/XOFF flow control.

3300 BRI NSU Pin Allocations

E1 Connector Allocation			
Signal Name	RJ-45 Connector Pin		
RXRING	1		
RXTIP	2		
Not used	3		
TXRING	4		
TXTIP	5		
Not used	6		
Not used	7		
Not used	8		

RS-232 Maintenance Connector Allocation			
Signal Name	RJ-45 Connector Pin		
DCD (data carrier detector)	1		
RXD (receive data)	2		
TXD (transmit data)	3		
DTR (data terminal ready)	4		
GND	5		
Not used	6		
RTS (ready to send)	7		
CTS (clear to send)	8		
Not used	9		

BRI Connector Allocation			
T1	1		
T2	2		
Т3	3		
Τ4	4		
Т5	5		
Т6	6		
Τ7	7		
Т8	8		
Т9	9		
T10	10		
T11	11		
T12	12		
T13	13		
T14	14		

BRI Connector Allocation			
T15	15		
R1	26		
R2	27		
R3	28		
R4	29		
R5	30		
R6	31		
R7	32		
R8	33		
R9	34		
R10	35		
R11	36		
R12	37		
R13	38		
R14	39		
R15	40		

ASUs

Install the 3300 Universal ASU

Before you begin, ensure that there is a free CIM port on the 3300 Controller.

To install the 3300 Universal ASU:

- 1. Mount the 3300 Universal ASU in the 19-inch rack (if applicable).
- 2. Connect the supplied Cross-over Category 5 cable with RJ-45 connector to the CIM port on the 3300 Universal ASU and a free CIM port on the 3300 Controller. Note that up to four ASUs can be connected to the 3300 Controller.

- 3. Power up the 3300 Universal ASU. CIM LEDs will be on once the CIM link synchronizes. The 3300 Controller will detect the 3300 Universal ASU, and the application software will download and start immediately.
- 4. Complete telephony cabling.
- 5. Complete programming.

CIM Connector Pin Allocations					
Pin	Signal	Pin	Signal		
1	RX+	5	Not Used		
2	RX-	6	TX-		
3	TX+	7	Not Used		
4	Not Used	8	Not Used		
Note: The 3300 over a Category through a CIM in type used for Eth pairs are arrange connected to a 7 located up to 30 Controller. The in modular jack cor on the front of th	4Not Used8Not UsedNote: The 3300 Universal ASU connects to the 3300 Controller over a Category 5 Universal Twisted Pair (UTP) cross-over cable through a CIM interface. The Category 5 cable is of the same type used for Ethernet connections and within the cable twisted pairs are arranged as: 1,2: 3,6; 4,5; 7,8. Each tied pair is connected to a 75 ohm resistor. The 3300 Universal ASU can be located up to 30 meters (98.4 feet) away from the 3300 Controller. The interface employs a single standard 8-pin modular jack consisting of 2 balanced signal pairs and is located				

3300 Universal ASU Pin Allocations

Music on Hold Connector Pin Allocations						
Pin Signal Pin Signal						
1	Tip 1	5	Ring 3			
2	Ring 1	6	Ring 2			
3 Tip 2 7 Tip 4						
4	Tip 3	8	Ring 4			
Noto: The four M	IOH tipe & ripge o	oouny on 9 nin for	nolo			

Note: The four MOH tips & rings occupy an 8 pin female modular jack located on the rear panel. Only one port is supported through software on the system.

Paging Connector Pin Assignments						
Pin Signal Pin Signal						
1	Tip 1	5	Ring 2			
2	Ring 1	6	Ring 1-1			
3	Tip 1-1	7	Tip 1-2			
4	Tip 2	8	Ring 1-2			

Note: The paging port employs a single standard 8-pin modular RJ-45 jack located on the rear panel. Each paging port has a tip/ring pair for audio and a second tip/ring pair designated tip1/ring1 contact closures for zone control.

25	pair	Connector	Pin	Allocations
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Note: Connection of the Tip and Ring (A and B) leads of the ONS lines and LS trunk circuits are through a 25 pair female D-type connector.

Pin	Signal	Pin	Signal
1	ONS Tip 1	26	ONS Ring 1

25 pair Connector Pin Allocations

Note: Connection of the Tip and Ring (A and B) leads of the ONS lines and LS trunk circuits are through a 25 pair female D-type connector.

Pin	Signal	Pin	Signal
2	ONS Tip 2	27	ONS Ring 2
3	ONS Tip 3	28	ONS Ring 3
4	ONS Tip 4	29	ONS Ring 4
5	ONS Tip 5	30	ONS Ring 5
6	ONS Tip 6	31	ONS Ring 6
7	ONS Tip 7	32	ONS Ring 7
8	ONS Tip 8	33	ONS Ring 8
9	ONS Tip 9	34	ONS Ring 9
10	ONS Tip 10	35	ONS Ring 10
11	ONS Tip 11	36	ONS Ring 11
12	ONS Tip 12	37	ONS Ring 12
13	ONS Tip 13	38	ONS Ring 13
14	ONS Tip 14	39	ONS Ring 14
15	ONS Tip 15	40	ONS Ring 15
16	ONS Tip 16	41	ONS Ring 16
17	LS Tip 1	42	LS Ring 1
18	LS Tip 1-1	43	LS Ring 1-1
19	LS Tip 2	44	LS Ring 2
20	LS Tip 1-2	45	LS Ring 1-2
21	LS Tip 3	46	LS Ring 3
22	LS Tip 1-3	47	LS Ring 1-3
23	LS Tip 4	48	LS Ring 4
24	LS Tip 1-4	49	LS Ring 1-4
25	N/C	50	N/C

Install the 3300 ASU

Before you begin, ensure there is a free CIM port on the 3300 Controller.

To install the 3300 ASU:

- 1. Mount the 3300 ASU in the 19-inch rack (if applicable).
- Connect the supplied Cross-over Category 5 cable with RJ-45 connector to the CIM port on the 3300 ASU and a free CIM port on the 3300 Controller. Up to four ASUs can be connected to a 3300 Controller.
- Power up the 3300 ASU. CIM LEDs will be on once the CIM link synchronizes. The 3300 Controller will detect the 3300 ASU, and the application software will download and start immediately.
- 4. Complete telephony cabling.
- 5. Complete programming.

CIM Connector Pin Allocations					
Pin	Signal	Pin	Signal		
1	RX+	5	Not Used		
2	RX-	6	TX-		
3	TX+	7	Not Used		
4	Not Used	8	Not Used		

3300 ASU Pin Allocations

Note: The 3300 ASU connects to the 3300 Controller over a Category 5 Universal Twisted Pair (UTP) cross-over cable through a CIM interface. The Category 5 cable is of the same type used for Ethernet connections and within the cable twisted pairs are arranged as: 1,2: 3,6; 4,5; 7,8. Each tied pair is connected to a 75 ohm resistor. The 3300 ASU can be located up to 30 meters (98.4 feet) away from the 3300 Controller. The interface employs a single standard 8-pin modular jack consisting of 2 balanced signal pairs and is located on the front of the unit.

25 Pair Connector Pin Allocations

Note: Connection to the 3300 ASU is through a 25 pair D-type connector.

Pin	Signal	Pin	Signal
1	Tip 1	26	Ring 1
2	Tip 2	27	Ring 2
3	Тір З	28	Ring 3
4	Tip 4	29	Ring 4
5	Tip 5	30	Ring 5
6	Tip 6	31	Ring 6
7	Tip 7	32	Ring 7
8	Tip 8	33	Ring 8
9	Tip 9	34	Ring 9
10	Tip 10	35	Ring 10
11	Tip 11	36	Ring 11
12	Tip 12	37	Ring 12
13	Tip 13	38	Ring 13
14	Tip 14	39	Ring 14
15	Tip 15	40	Ring 15
16	Tip 16	41	Ring 16
17	Tip 17	42	Ring 17
18	Tip 18	43	Ring 18
19	Tip 19	44	Ring 19
20	Tip 20	45	Ring 20
21	Tip 21	46	Ring 21
22	Tip 22	47	Ring 22
23	Tip 23	48	Ring 23
24	Tip 24	49	Ring 24
25	N/C	50	N/C

Software

Install the 3300 Configuration Tool

The 3300 Configuration Tool PC must have Windows NT 4.0 or Windows 2000 Professional operating system. In addition, the Java Plug-in 1.1.3 by Sun[™] Microsystems is required (Netscape Communicator 4.05 and the Java Plug-in are shipped with the 3300 Configuration Tool software).

To install the 3300 Configuration Tool:

- 1. Insert the 3300 Configuration Tool CD-ROM into the CD-ROM drive.
- 2. Open Explorer and double-click the **Setup.exe** file in the root directory of the CD-ROM drive.
- 3. Enter your user name and company name. Click Next.
- 4. Click **Next** to select the default destination folder, or click **Browse** to install in a different folder.
- 5. Click Typical install.
- 6. Click **Next** to copy files to the target directory. The 3300 Configuration Tool installation program automatically starts the Oracle installation program. Follow the prompts to install Oracle.

Install and Configure the Java Plug-In

Install the Java Plug-in on the 3300 Configuration Tool PC to improve performance of the 3300 Configuration Tool application. You can access the Java Plug-in from a browser at the following URL: http://servername/opsclient/ where servername is the netbios name of the 3300 Configuration Tool platform.

After you have installed the plug-in you must set the parameters as follows:

- 1. From the **Start** menu, point to **Programs**, and click Java **Plug-in ControlPanel**.
- 2. Click Basic.

- 3. Enter the following parameter: Network Access: Unrestricted or Applet host (do not select None)
- 4. Use the default settings for the parameters in the Advanced and Proxies property sheets.
- 5. Click Apply.

The 3300 Configuration Tool PC, operating on Windows NT 4.0 or Windows 2000 Professional, is connected to the 3300 Controller through a serial connection and a network connection. The PC must be equipped with an Ethernet card, an Ethernet cable, a communications program, a serial port (use Hyperterminal default settings), and a serial cable.

Install IMAT

Mitel Networks ISDN Maintenance and Administration Tool (IMAT) is a Windows-based application you use to program and maintain the Universal NSU and the R2 NSU on the 3300 ICP.

To install the IMAT software:

- 1. Shut down all applications on the IMAT PC.
- 2. Insert the CD-ROM into the CD drive.
- 3. On the Start menu, click Run.
- 4. Type your CD drive letter followed by :\imat\disk1\setup.exe.
- 5. Click OK.
- 6. Follow the prompts.

Upgrading

Hardware

Upgrade the 3300 Hardware Controller Capacity

Before you begin:

- Ensure that the upgrade kit is complete (a Dual FIM, 2 DSP Modules, a 128 Echo Canceller, and 16 Philips Screws).
- Check each module to ensure that no damage has occurred in transit.
- You will need a Philips screwdriver.
- Have a 3300 ICP system back-up.

CAUTION: To prevent ESD damage while handling modules on any unit, always attach the wrist strap from the cabinet being serviced, and immediately place any item removed from a cabinet into an anti-static bag.

To upgrade from 250 to 700 user 3300 ICP Controller capacity:

- 1. Remove the cover.
- 2. Install the additional Dual FIM Module (slot MMC2).
- 3. Install the additional DSP Modules (slots MMC7 and MMC8).
- 4. Replace the 64 Echo Canceller Module with the 128 (slot MMC5).
- 5. Replace the cover.

	DSP	DSP	DSP	Echo
≥	(optional)	(optional)		Canceller
ddr	MMC 8	MMC 7	MMC 6	MMC 5
เร	SYSID			
owe	MMC 1	MMC 2	MMC 3	MMC 4
ፈ		(optional)	spare	Spare
	Dual FIM	Dual FIM		

Upgrade 3200 ICP to 3300 ICP Hardware

• If existing capacity is greater than that of the 3300 ICP, the conversion may fail. See the capacity table for the 3300 ICP.

The 3200 ICP database is converted and restored to a 3300 ICP database, and any peripheral cabinets connected to the FIM ports on the 3300 Controller.

In addition to the DNIC telephones supported by the peripheral cabinet, the 3300 ICP supports the following legacy IP telephones:

- SUPERSET 4015IP
- SUPERSET 4025IP.

Upgrade SX-2000® LIGHT to 3300 ICP Hardware

To upgrade SX-2000 LIGHT hardware for 3300 control:

- 384 port Peripheral main control replacement
- DSU main control replacement
- Peripheral cards DNIC Line, ONS CLASS, ONS Line, LS/GS Trk, E&M Tie Trk, OPS Line, DID/Loop Tie
- DSU cards T1 (DS1) Formatter, CEPT Interface, ISDN PRI, E1/T1 Dig Trk Formatter, 6E1 R2, 6CCT BRI, 15CCT BRI
- If existing capacity is greater than that of the 3300 ICP, the conversion will fail. See the capacity table for the 3300 ICP.

The SX-2000 LIGHT Digital Services Unit (DSU) cabinet provides digital trunk capability, and the SX-2000 LIGHT peripheral cabinet provides connectivity for analog trunks, analog telephones, and Mitel DNIC devices. Both cabinet types can be connected to the 3300 Controller by using multi-mode fiber connections.

The DSU cabinet supports BRI, PRI, T1/D4, MSDN/DPNSS, and DASS II trunks.

The peripheral cabinet supports the following analog trunks: Analog CO trunks, E&M trunks, and Direct Inward Dial and Tie Trunks. It also supports the following DNIC telephones and devices:

- SUPERSET 401
- SUPERSET 401+
- SUPERSET 410
- SUPERSET 420
- SUPERSET 430
- SUPERSET 4001
- SUPERSET 4015
- SUPERSET 4025
- SUPERSET 4125
- SUPERSET 4150
- SUPERSET 700
- SUPERCONSOLE 1000®
- SUPERCONSOLE 2000.

For additional information, refer to SX-2000 technical documentation.

Upgrade SX-2000 MICRO LIGHT to 3300 ICP Hardware

To upgrade SX-2000 MICRO LIGHT hardware for 3300 Control:

- Replace the Main Controller in the MICRO LIGHT with a Triple FIM Card.
- If existing capacity is greater than that of the 3300 ICP, the conversion may fail. See the capacity table for the 3300 ICP.

By installing a triple FIM card in the SX-2000 MICRO LIGHT main cabinet, you can physically connect it to the 3300 ICP by using multi-mode fiber. As a result, you can use the existing peripheral and digital trunk cards within the main cabinet. External cabinets can also be connected using FIMs.

Software

Upgrade 3300 Release 3.0 to 3300 Release 3.1

Before you begin:

- Ensure you have a new option password
- Ensure you have a 3300 ICP system back-up
- Upgrade OPS Manager if you are using it to manage your system, to minimum Version 6.5.3.x.
- Inform all system users that the system is being upgraded.

Ensure that your PC is equipped with the following software and hardware:

- The CD-ROM containing the Mitel Networks 3300 ICP software release deliverables
- An Ethernet cable (RJ45) to connect from your PC to the 3300 ICP controller
- A serial cable (9600,8n1) to connect from your PC to the 3300 ICP maintenance port.
- Time: When you enter the upgrade command, the upgrade process will take about 45 minutes. Total upgrade time is about 2 1/2 hours.
- Fip: You will need the 3300 ICP IP address, username, and password.

To perform a software upgrade:

- 1. Launch the communication program.
- 2. Establish a serial connection from the 3300 Configuration Tool PC (or any PC equipped with a communications program) to the Maintenance Port on the 3300 Controller.
- 3. Set the communication program parameters to the following:
 - Baud rate 9600
 - Data bits 8
 - Parity None

- Stop bits 1
- Flow control None.
- 4. Log in to the RTC and type **bootChange**.

Press Enter after you enter required text. For all other fields, (displayed in grey text, for information only) accept the default value or leave blank.

boot device: ata=0,0 (Boot device is Disk) unit number: 0 (default, leave at 0, not used) processor number: 0 (default, leave at 0, not used)

host name: (optional)

file name: /sysro/Rtc8260 (boot location and file name) inet on ethernet (e): **134.199.63.11:fffff00** (example RTC IP

and subnet mask)

Note: Type the IP address and subnet mask (in hexadecimal format for the end user's site (i.e. ffffff represents 255.255.255.00).

inet on backplane (b):

```
host inet (h):
```

gateway inet (g): **134.199.63.251** (example Router (Gateway) address)

Note: Enter the IP address of the end user's gateway for the 3300 Controller.

user (u):

ftp (must be ftp for Release 3.1)

```
ftp password (ftp) (blank = @): (must be @ for Release 3.1)
flags (f): 0x0 (a fixed IP address (0x40 is used on E2T for
DHCP))
target name (tn):
startup script (s):
other (o): motfcc (other device, E2T using Network to boot
```

```
from)
```

- Insert the software CD-ROM into the CD drive of the installer's PC.
- 6. Run the "Setup.exe" program from the CD.
- 7. Select NA or UK Upgrade.
- Choose a location for the Setup program to install files (default is C:\MN3300).
- 9. Type in the IP address of the Controller RTC.

- 10. Enter the username and password to Log into the FTP Server (by default the username is ftp and the password is @). The installSetup program will:
 - Provide a progress indicator and log file
 - Check the disk space in the specified location
 - Check the country variant of existing software
 - Put files in the created directory under the chosen location. Default location will result in: "c:3300 ICP\".
 - Run an FTP Client Session to load new software files to the Install directory.
- 11. Review the Readme file.
- 12. Go to the cmd prompt (->) of the RTC shell.
- 13. Type the command "upgrade". This process will take about 45 minutes. The program will:
 - Check disk space in the Hard Disk Drive of the 3300 ICP
 - Display the current software version and the new version to be upgraded to
 - Stop all active user sessions
 - Disallow any new user sessions
 - Stop system services
 - Move original software and data to a different location in Hard Disk drive as a temporary back up.
- 14. The system will reset and then extract the software file hierarchy from the tar file.
- 15. Log into the System Administration Tool.
- 16. Select System Configuration, expand System Capacity, click License and Option Selection and enable the System Options.
- 17. Reboot the system.
- 18. Restore the database data. The system will display a 'successful' message.
- 19. Reboot the system.
- 20. Close the (COM) serial session.

- Tip: A DBMS Save is automatically performed after the Data Restore but it is a good practice to check if the DBMS flag is on and set DBMS Check ON.
- Note: The upgrade procedure will not change the DHCP Server settings or the Voice Mail messages. DHCP Lease times are renewed after an upgrade.

Upgrade 3200 to 3300 Software

- Only one 3200 ICP can be migrated to a 3300 ICP at a time.
- Migration and Configuration cannot be performed in a single task or session using the 3300 Configuration Tool.
- After migration, configuration must be completed using System Administration Tool.
- Data restoration automatically triggers data migration.
- If existing capacity is greater than that of the 3300 ICP, the conversion may fail. See the capacity table for the 3300 ICP.
- Note: Although the 3200 ICP FD_DSU programming is restored to the 3300 ICP, you must deprogram the DSU and reprogram using the System Administration Tool after you install new hardware.

To transfer database from a 3200 ICP to a 3300 ICP:

- Prepare the 3200 ICP for migration: deprogramm unsupported devices and cards (AC15, SCDC, Advanced Tone Detector, ISDN Gateway, FIM Carrier Card, COV Line Card, 3DN, 4DN, SUPERSET 3, SUPERSET 4, SUPERSET 7DN, and datasets).
- 2. Program 3200 ICP connectivity using the Configuration Tool. Create a Network Element that is the same as the 3200 ICP.
- Backup 3200 ICP database (datasave) to the 3300 Configuration Tool or copy a datasave from OPS Manager to the Configuration Tool. The Configuration Tool will convert the 3200 database to a 3300 database.
- 4. Change the Variant to 3300 ICP and change the IP Address if required.

- 5. Perform a Restore of the 3200 ICP converted database onto the 3300 ICP. An automatic validation operation occurs to determine if the restore can proceed. Correct any data restore failures.
- 6. Reboot the 3300 ICP.
- 7. Change the 3300 ICP system name through the System Administration Tool.
- 8. Deprogram the 3200 ICP FD_DSU using the System Administration Tool.
- 9. Install new hardware (Network Services Unit or DSU Cabinet).
- 10. Reprogram the digital links.

Upgrade SX-2000 LIGHT to 3300 ICP Software

- Only one 3300 ICP can be configured at a time; and only one SX-2000 PBX can be migrated to a 3300 ICP at a time.
- Migration and Configuration cannot be performed in a single task or session using the 3300 Configuration Tool.
- After migration, configuration must be completed using System Administration Tool.
- Data restoration automatically triggers data migration.
- If existing capacity is greater than that of the 3300 ICP, the conversion will fail. See the capacity table for the 3300 ICP.

To transfer database from SX-2000 LIGHT to 3300 ICP:

- Prepare the SX-2000 LIGHT for migration: reduce Peripheral and DSU nodes to a maximum of 4; deprogram unsupported devices and cards (AC13, AC15, SCDC, DID3, Advanced Tone Detector, ISDN Gateway, FIM Carrier Card, COV Line Card, 3DN, 4DN, SUPERSET 3, SUPERSET 4, SUPERSET 700, SUPERSET 7DN, SUPERCONSOLE 2000, and datasets).
- Program SX-2000 connectivity using the Configuration Tool. Create a Network Element that is the same as the SX-2000 PBX.

- 3. Backup SX-2000 database (datasave) to the 3300 Configuration Tool or copy a datasave from OPS Manager to the Configuration Tool. The Configuration Tool will convert the SX-2000 database to a 3300 database.
- 4. Change the Variant to 3300 ICP and change the IP Address if required.
- 5. Enable Options.
- 6. Perform a Restore of the SX-2000 converted database onto the 3300 ICP. An automatic validation operation occurs to determine if the restore can proceed. Correct any data restore failures.
- 7. Reboot the 3300 ICP.
- 8. Change the 3300 ICP system name through the System Administration Tool.

Upgrade SX-2000 MICRO LIGHT to 3300 ICP Software

- Only one 3300 ICP can be configured at a time; and only one SX-2000 can be migrated to a 3300 ICP at a time.
- Migration and Configuration cannot be performed in a single task or session using the 3300 Configuration Tool.
- After migration, configuration must be completed using the System Administration Tool.
- Data restoration automatically triggers data migration.
- The MICRO LIGHT is seen by the 3300 ICP as 2 pair of NSUs and a Peripheral node.
- If existing capacity is greater than that of the 3300 ICP, the conversion will fail. See the capacity table for the 3300 ICP.

To transfer database from SX-2000 MICRO LIGHT to 3300 ICP:

 Prepare the SX-2000 MICROLIGHT for migration: reduce Peripheral and DSU nodes to a maximum of 4; deprogram unsupported devices and cards (AC13, AC15, SCDC, DID3, Advanced Tone Detector, ISDN Gateway, FIM Carrier Card, COV Line Card, 3DN, 4DN, SUPERSET 3, SUPERSET 4, SUPERSET 700, SUPERSET 7DN, SUPERCONSOLE 2000, and datasets).

- 2. Program SX-2000 connectivity using NE Editor.
- 3. Backup SX-2000 database (datasave) from the 3300 Configuration Tool. The Configuration Tool will convert the SX-2000 database to a 3300 database.
- 4. Program 3300ICP connectivity using NE editor with the Variant as 3300 ICP.
- 5. Enable Options.
- 6. Perform a Restore of the SX-2000 converted database onto the 3300 ICP. An automatic validation operation occurs to determine if the restore can proceed.
- 7. Reboot the 3300 ICP.
- 8. Change the 3300 ICP system name through the System Administration Tool.

Programming

Overview of Programming

To program the system:

- 1. Use the 3300 Configuration Tool. Refer to the 3300 Configuration Tool online help for programming information.
- 2. Use the System Administration Tool. Refer to the System Administration Tool online help for programming information.
- 3. Use IMAT.
- 4. Register the IP telephones.
- Note: The following options are required in the DHCP server programming:
- 3 (Router) Default Gateway IP Address
- 6 DNS Server IP Address
- 66 TFTP Server ASCII String format (typically the 3300 ICP Controller)
- 67 TFTP BootFile (ASCII String = /sysro/e2t8260)
- 128 TFTP Server IP address format (typically the 3300 ICP Controller)
- 129 RTC IP address format (typically the 3300 ICP Controller)
- 130 IP phone DHCP Server (ASCII String = MITEL IP PHONE)
- 132 VLAN ID for the voice LAN (Hex 32 bit word, optional)
- 133 Priority, values of 1-7 (Mitel recommends 6; optional).

Use IMAT

The IMAT software is used to program hardware and call characteristics for the NSUs that run PRI or R2 protocols. IMAT is also used to install software upgrades.

Maintenance activities include access to the following R2 maintenance information:

- A list of all software files and versions on the 3300 R2 NSU
- Log messages which contain a history of activities and the status of faults
- R2 database.

Use IMAT to backup the database from the 3300 R2 NSU, or to upgrade the R2 software on the 3300 R2 NSU. For more information, refer to the IMAT online Help.

To log on to an IMAT computer:

- 1. Launch IMAT from the desktop. IMAT may display a username configuration error message. Ignore this message, and click **OK**.
- 2. From the File menu, select Connect to Remote Site.

To exit the IMAT application:

- 3. Save any open databases.
- 4. On the File menu, click **Exit**.

Register IP Telephones from the Station

This procedure registers the IP devices with the 3300 ICP database. The procedure will program the 3300 ICP database with the MAC address of the IP device.

Before you begin

- Ensure a Set Registration Access Code is assigned in the System Options Assignment form.
- Ensure the directory number and device type is programmed in the Single Line IP Set Configuration form or Multiline IP Set Configuration form.

To register IP telephones:

- 1. Connect the IP telephone to an RJ-45 Ethernet port on the LAN.
- 2. Press * during power-up (to clear any PIN number in memory).

Type the PIN number at the prompt on the IP device. Prompts:

- The 5001 IP Phone displays a solid message light.
- The 5005, 5010, 5020 IP telephones and the 5140 IP Appliance show "Enter the PIN number" on the display.
- Complete one of the following:
- Press Hold for the 5001 and 5005 IP Phones
- Press Superkey for the 5010 and 5020 IP Phones
- Press OK for the 5140 IP Appliance The set will complete initialization.
- Note: Use the System Administration Tool to program all other station features (for example, Class of Service, Interconnect Restriction, Set Key Assignments, and Class of Restriction).

When using the 3300 ICP in a cluster, the actual registering sequence of the IP device is unchanged provided the following guidelines have been observed:

- The Cluster Element ID programmed in the Cluster Element Assignment form must match the ICP/PBX Number programmed in the ICP/PBX Assignment form.
- In a clustered environment, each member of the cluster must be able to see the directory numbers programmed on the other controllers. This information is programmed by using OPS manager.
- The Set Registration Access Codes and Set Replacement Access Codes must be the same for each controller in the cluster.
- Each IP Phone must be able to retrieve the IP address of one of the controllers in the cluster (See program DHCP server instructions).
- Note: Mitel Networks OPS Manager is required to use 3300 ICP systems in a clustered environment.

Maintenance

Healthy System Checklist

Ensure that the system is running properly by checking that there are:

- No alarms present
- DBMS Status initialized flag is on
- DBMS check is scheduled
- Programmed Reboot is scheduled
- No error logs
- Database is backed up

Checking the System

To check the system:

- 1. Click Maintenance and Diagnostics.
- 2. Click Maintenance Commands.
- 3. Click All.
- 4. Enter the following commands:

SH ST AL Checks for system alarms. There should be no alarms.

DBMS STAT - Checks the status of the initialized flag. If the flag is off enter DBMS Save command.

PROGRAMMED REBOOT DISPLAY - Displays the scheduled system reset.

ME S - Checks the status of all communication links. All communication links should be open

PCM TO - Checks for Circuit Switch Faults. There should be no faults.

- 5. Click Logs.
- 6. Click Maintenance Logs.
- 7. Click **Error** Checks for error logs or click ALL to see all maintenance logs.

- 8. Check that you have recent back-ups of the database and hard drive.
- Note: It is recommended back-ups be made at least once a week and where possible, copies of the last 3 back-ups should be available.

System Security Checklist

Complete the following to ensure the system is secure:

- No SECURITY alarms are present
- Passwords and usernames have been changed from defaults
- Passwords and usernames are recorded and secure
- Account codes programmed
- SMDR records checked for irregularities
- Trunk Class of Restrictions programmed correctly
- Voice mail system is secure
- Auto attendant is secure
- DISA is secure
- End user call forwarding feature is secure.

Backing Up System Information

The system back-up includes call control data: 3300 ICP databases, internal DHCP server configuration, and voice mail (with or without messages).

To back-up the system:

- 1. Click Maintenance and Diagnostics.
- 2. Click Back-up.
- 3. Copy the **identitydb.obj** file to your PC (if required). Follow the instructions displayed on the screen.
- 4. Enter the path on your local drive to store the backup (e.g. C:\3300_ICP\backup).
- 5. Enter a name for your backup file.

- 6. Click **Yes** to include the voice mail messages in your backup. Note: Including voice mail messages can increase the backup time significantly.
- 7. Click **Start Backup**. The system will display progress and then a back-up complete message.
- 8. Click OK.
- 9. Verify the presence of the backup on the local drive.

Database Restore

To restore a previously saved database:

- 1. Click Maintenance & Diagnostics.
- 2. Click **Restore**.
- 3. Type in the location of the database that is being restored or use the Browse facility.
- 4. Click **Start Restore**. A window warns that you must reboot after a restore and that a restore replaces the current database.
- 5. Click **OK**. The system will show an "in progress" message and then a complete message.
- 6. Reboot the system.

CAUTION: After using the Restore Procedure you must Reboot your system. When the system Reboots Service will be LOST

List of Maintenance Commands

BACKGROUND

BACKGROUND ON

BACKGROUND OFF

BACKGROUND STATUS

BACKGROUND STATUS CEPT

BACKGROUND STATUS DS1

BACKGROUND STATUS R2

BACKGROUND STATUS UNIVERSAL E1

BACKGROUND STATUS UNIVERSAL T1

BLF REFRESH

BLF REFRESH CEID <CEID INDEX>

BLF REFRESH CEID ALL

BUSY

BUSY <unit><shelf><slot>

BUSY <unit> <shelf> <slot> <circuit>

BUSY <unit> <shelf> <slot> <circuit> <channel>

BUSY EXTENSION < extension number>

BUSY TRUNK GROUP <group number>

CBM

CBM DISABLE LOG

CBM ENABLE LOG

CCS

CCS RESET DASS2

CCS RESET DPNSS ROUTE_OPT_STATISTICS

CCS SHOW DPNSS FEATURE

CCS SHOW DASS2 FEATURE_STATUS

CCS SHOW DPNSS ROUTE SUMMARY

CCS SHOW DPNSS ROUTE DETAILED

CCS SHOW DASS2 ROUTE_OPT_STATISTICS

CCS TRACE ENABLE

CCS TRACE DISABLE

CCS TRACE SHOW OUTPUT

CCS TRACE SHOW CONTEXT

CCS TRACE SET CONTEXT <location ID>

CCS TRACE SET CONTEXT VIRTUAL <location ID>

CCS TRACE SET CONTEXT XNET

CCS TRACE CLEAR CONTEXT

CCS TRACE ENABLE CONTINUOUS

CONGESTION

CONGESTION

DBMS

DBMS CHECK ON

DBMS CHECK OFF

DBMS CHECK BRIEF

Technician's Handbook

DBMS CHECK FULL

DBMS CHECK KILL

DBMS CHECK TIME <hour>

DBMS CLIENT

DBMS FLAG OFF

DBMS SAVE

DBMS STATUS

DIGITAL TRUNK STATISTICS

DTSTAT CLEAR <unit> <shelf> <slot>

DTSTAT CLEAR <unit> <shelf> <slot> <circuit>

DTSTAT READ <unit> <shelf> <slot>

DTSTAT READ <unit> <shelf> <slot> <circuit>

DISABLE SEIZE TEST

DISABLE SEIZE TEST

ENABLE SEIZE TEST

ENABLE SEIZE TEST

FIRMWARE

FIRMWARE PLID <unit> <shelf>

FIRMWARE PLID <unit> <shelf> <slot>

FIRMWARE PLID <unit> <shelf> <Slot> <circuit>

FIRMWARE PLID <unit> <shelf> <Slot> <circuit> <channel>

LANGUAGE SELECT

LANGUAGE SELECT <language> DISPLAY SETS DEFAULT AUX 1 FROM <catalog>

LANGUAGE SELECT <language> DISPLAY SETS DEFAULT AUX 2 FROM <catalog>

LANGUAGE SELECT <language> SETS AUX 1 FROM <catalog>

LANGUAGE SELECT <language> SETS AUX 2 FROM <catalog>

LANGUAGE SELECT <language> SETS DEFAULT FROM <catalog>

LOAD

LOAD <unit/module>

LOAD IPDevice <1,2...700>

LOAD IPDevice <1> TO <700>

LOAD <unit> <shelf> <slot> <circuit>

LOAD <unit> <shelf> <slot> <circuit> <channel>

LOCATE

LOCATE AGENT <agent identifier>

LOCATE ALL FREE DN

LOCATE ALL FREE PLID

LOCATE ALL FREE PLID <card type> <unit>

LOCATE ALL FREE PLID <card type> <unit> <shelf>

LOCATE ALL FREE PLID <card type> <unit> <shelf> <slot>

LOCATE ALL FREE PLID <card type> <plidmin> TO <plidmax>

LOCATE ALL FREE DN <dn number> TO <dn number>

LOCATE EXTENSION < Extension number>

LOCATE FEATURE PLID <unit> <shelf> <slot>

LOCATE FEATURE PLID <unit> <shelf> <slot> <circuit>

LOCATE FEATURE PLID <unit> <shelf> <slot> <circuit> <channel>

LOCATE FEATURE EXTENSION <number>

LOCATE FEATURE HUNT_GROUP <number>

LOCATE FIRST FREE DN

LOCATE FIRST FREE DN <number> TO <number>

LOCATE FIRST FREE PLID <card type>

LOCATE FIRST FREE PLID <card type> <unit>

LOCATE FIRST FREE PLID <card type> <unit> <shelf>

LOCATE FIRST FREE PLID <card type> <unit> <shelf> <slot>

LOCATE GROUP GROUP_REPORTING_NUM <number>

LOCATE NUMBER <number>

LOCATE PATH PATH_REPORTING_NUM <number>

LOCATE PLID <Unit> <Shelf> <Slot>

LOCATE PLID <Unit> <Shelf> <Slot> <Circuit>

LOCATE REMOTE <number>

LOCATE TRUNK <trunk number>

MESSAGE

MESSAGE MATE

MESSAGE REMOTE

MESSAGE SUBSYSTEM

NETSYNC

NETSYNC SETSOURCE <number>

NETSYNC SETSOURCE AUTO

NETSYNC SETSOURCE FREERUN

NETSYNC STATE <number>

NETSYNC SUMMARY <number>

PCM

PCM STATUS TX <number>

PCM STATUS RX <number>

PCM TEST TX <number>

PCM TEST RX <number>

PCM TEST BOTH <number>

PCM TOTALS

PENDING

PENDING CHANGES DELETE

PENDING CHANGES DISPLAY ALL

PENDING CHANGES DISPLAY COUNT

PENDING CHANGES DISPLAY NEW <number>

PENDING CHANGES GENERATE <string> BLANK

PENDING CHANGES GENERATE BLANK BLANK

PENDING CHANGES GENERATE BLANK <string>

PROGRAMMED REBOOT

PROGRAMMED REBOOT ON

PROGRAMMED REBOOT OFF

PROGRAMMED REBOOT DISPLAY

PROGRAMMED REBOOT MEMORY DAILY <HH : MM : SS>

PROGRAMMED REBOOT SCHEDULE <Day> <HH : MM : SS>

PROGRAMMED REBOOT SCHEDULE DAILY <HH : MM : SS>

PMS

PMS STATE

PMS TRACE DISABLE

PMS TRACE ENABLE

PROM

PROM <unit> <shelf> <slot>

READDATETIME

READDATETIME

REMOVE

REMOVE COURTESY DOWN <unit> <shelf> <slot> <circuit>

REMOVE COURTESY DOWN EXTENSION <number>

RESOURCE

RESOURCE <unit> <shelf> <slot> <circuit> <channel>

RESOURCE XNET <number>

RTS

RTS <unit> <shelf> <slot>
RTS <unit> <shelf> <slot> <circuit>

RTS EXTENSION <number>

RTS MATE

RTS TRUNK GROUP <number>

SET THRESHOLDS

SET THRESHOLDS LINES <category> <number> <number>

SET THRESHOLDS LINES <category> <number> NIL NIL

SET THRESHOLDS LINES <category> <number> NIL <number>

SET THRESHOLDS LINES NIL <category> <number> <number> <number>

SHOW

SHOW FAULTS <category>

SHOW FAULTS ALARM

SHOW SEIZE TEST

SHOW STATUS <category>

SHOW STATUS ALARMS

STATE

STATE <unit>

STATE <unit> <shelf>

STATE <unit> <shelf> <slot>

STATE <unit> <shelf> <slot> <circuit>

STATE EXTENSION <number>

STATE TRUNK GROUP NUMBER

STATE XNET PBX <number>

STATE XNET LINK <number>

TEST

TEST <unit>

TEST <unit> <shelf>

TEST <unit> <shelf> <slot>

TEST <unit> <shelf> <slot> <circuit>

TEST EXTENSION <number>

TEST TRUNK GROUP <number>

TRAFFIC

TRAFFIC DELETE <month> <day> <number>

TRAFFIC FILES

TRAFFIC PRINT

TRAFFIC STATUS

TRAFFIC STOP

WRITEDATETIME

<year><month><day> <day of the week> <hours> <mins> <seconds>

Troubleshooting

Field Replaceable Units

Remove the Cover

Note: Ensure that you have read the Important Safety Instructions in the Hardware User Guide before carrying out these procedures.

WARNING: Before any kind of servicing that requires the case to be removed, the power to the system must be removed by disconnecting the system plug from the power supply. All PSTN/Network connections must also be removed before opening the case.

WARNING: Servicing of this unit shall be performed by suitably-qualified, trained technicians who are fully aware of the safety requirements contained in the Hardware User Guide.

To remove the 3300 ICP Controller cover:

- 1. Turn off the power to the unit.
- 2. Disconnect all cables.
- 3. Remove the 3300 Controller from the rack and place it on a suitable work area (clean desk).
- 4. Remove the front face-plate (this will clip off).
- 5. Turn the 3300 Controller over gently, keeping the front panel facing forwards.
- 6. Remove the two Philips screws from the underside of the 3300 Controller.
- 7. Turn the 3300 Controller the right side up and rotate until the back of the unit is facing forwards.
- 8. Remove the two screws from the back panel.

- 9. Slide the cover forwards until it catches, then tilt the cover upwards to remove completely.
- 10. Turn the 3300 Controller until the front panel is towards you.

Replace the Cover

To replace the 3300 ICP cover:

- 1. Turn the 3300 Controller until the back panel is facing forwards.
- 2. Lift the lock for the AC power cord and place the shell at an angle to hook onto the back of the unit.
- 3. Straighten and slide the cover forwards as far as it will go.
- 4. Secure the shell by inserting and snugly securing the two screws on the back panel.
- 5. Rotate the 3300 Controller until the front panel is facing forwards.
- 6. Turn the 3300 Controller gently upside down.
- 7. Secure the screws on the bottom front of the unit.
- 8. Turn the 3300 Controller right side up.
- 9. Clip on the front face-plate taking care not to damage the protruding FIM connectors.
- 10. Reinstall the 3300 Controller into the rack (if applicable).
- 11. Reconnect all cables.
- 12. Power on the unit.

Dual FIM Module

To install an additional Dual FIM Module:

- 1. Remove the cover.
- 2. Remove the two Philips screws from the faceplate in slot MMC 2 (next to the existing Dual FIM Module).
- 3. Remove the faceplate.

- 4. Remove the Dual FIM Module from the packaging, line up the connectors and firmly seat onto the board.
- 5. Secure the module onto the board using the four screws provided.
- 6. Replace the cover.

DSP Module

To install DSP Modules:

- 1. Remove the cover.
- 2. Line up the connectors of the first DSP module on slot MMC 7 and firmly seat onto the board.
- 3. Secure the module onto the board using the four screws provided.
- 4. Line up connectors of the second DSP module on Slot MMC 8 and firmly seat onto the board.
- 5. Secure the module onto the board using the four screws provided.
- 6. Replace the cover.

Echo Canceller Module

To install an Echo Canceller Module:

- 1. Remove the cover.
- 2. Remove the screws from the module in MMC 5.
- 3. Remove the module from the board and place to one side.
- 4. Take the 128 echo canceller and line up the connectors with those in MMC 5.
- 5. Seat the board firmly.
- 6. Secure the module using the four screws.
- 7. Replace the cover.

Hard Drive

To replace the hard drive:

- 1. Turn off the power to the unit.
- 2. Disconnect all cables.
- 3. Place the 3300 Controller on the work area with the bottom of the unit facing up.
- 4. Replace the hard drive.
- 5. Return power to the unit but do not connect to the network.
- 6. Reset the IP Address of the RTC, through the RS232 port, to the default 192.168.1.2.
- 7. Set the IP Address of the source PC to match the RTC IP scheme.
- 8. Connect the PC NIC to the 3300 ICP.
- 9. Configure the FTP server for the install process.
- 10. From the software CD-ROM, select INSTALL.
- 11. Reboot the system.
- 12. Login to the System Administration Tool.
- 13. Restore a backup.
- 14. Reset the RTC IP Address to the customer setting.
- 15. Connect to the network.
- 16. Reset the system.



Troubleshoot the 3300 Controller

Fiber Interface Module LEDs

FIM LED	Meaning for Local, Upper and Remote, Lower FIM
On	In frame synchronization.
Off	Power off or held in reset.
Flashing	Out of synchronization, or Tx or Rx cables might be reversed.
Note: If a remote MFC Status LED is OFF, go to the FIM and check its local FIM Status LED. If it is ON, the fiber cable may be faulty.	

Alarm LEDs

Critical	0			P(PCB)
Major	Ō	0	Alarms OFF	
Minor	0			
(RED)			(Green)	

Alarm	State	LED	Meaning
Critical	On	Red	Indicates that customer service has been lost and immediate maintenance is required. A critical alarm invokes system fail transfer if enabled. This LED will be on during POR (power on reset) or when the INIT switch is activated (resets all boards).
	Off		No alarm.
Major	On	Red	Indicates that service has degraded beyond predetermined thresholds. This LED is also on when there is a critical Alarm. This LED will be on during POR or INIT switch active.
	Off		No alarm.
Minor	On	Red	Indicates the presence of a minor malfunction in the system. A minor alarm is raised whenever the system is not fully operational. This LED is also on when there is a critical Alarm. This LED will be on during POR or INIT switch active.
	Off		No alarm.

Alarm	State	LED	Meaning
Alarms OFF	On	Green	Alarm is on but silenced. Silence state is toggled by the Remove Alarms ON/OFF switch.
	On	Green	During POR or INIT switch active.
	Off		Alarm is audible.
	Off		During power-up state.
Integrate	d Voice N	<i>l</i> ail	
Major	On	Red	The voice mail is not functioning or disk space is at 95%.
	Off		No alarm.
Minor	On	Red	Voice mail disk space is at 90%.
	Off		No alarm.

Copper Interface Module (CIM)



CIM LED Patterns		
LED Pattern	Description; Local - Upper and Remote - Lower	
Off	No Power	
Flashing	Link established but not configured	
On	Communication Link established and configured	

LAN Ethernet Ports



10/100 Base TX MDI-X Ethernet

	LED State	Color	Meaning
Normal mode	Top - On	Yellow	Link activity
	Top - On	Red	Collision
	Bottom - On	Green	Link integrity
	Bottom - Off		No link integrity
LED mode	Top - On	Yellow	Full Duplex
switch pressed	Top - On	Red	ERR
	Bottom - On	Green	100 Mbps
	Bottom - Off		10 Mbps

Troubleshoot the 3300 Universal NSU

Link Status			
LED	State	Meaning	
LAN	flashing	LAN activity	
MS (message system)	solid green	message link open to the system	
	off	message link not open to the system; may be downloading when L0 and L1 are "walking"	
ST (status)	flashing	operational; flashing in 1/2 second intervals	
	off	not operational	
	solid	card is booting or not operating; should be blinking in 1/2 sec intervals	
L0 and L1 (on front and	right side - solid red	no Layer 1	
rear panel)	right side - off	no error	
	left side - solid green	D-channel established (PRI) Layer 1 established (T1, E1, DPNSS)	
	left side - flashing green	Layer 1 established (PRI)	
	left side - off	no link	
	right side - yellow with left side - flashing green	alarm indication from far end	

Link Status			
LED	State	Meaning	
L0 and L1 (on front and rear panel) (cont'd)	right side - yellow with left side - off	blue alarm from card - normal during link startup (PRI NA or response to yellow)	
	yellow and green alternating between L0 and L1	downloading (15 - 25 minutes)	
	yellow alternating between L0 and L1	decompressing and copying files (2 - 4 minutes)	

CIM LED Patterns		
LED Pattern	Description	
Off	No Power	
Flashing	Powered On, BSP Running	
On	Communication Link synchronized with 3300 Controller	

Message Link Controlled (Card status)		
LED State	Meaning	
Green - On	no error	
Yellow - On	out of service	
Red - On	error - does not necessarily indicate total failure	
Green and Yellow - On	out of service - this combination may	

Message Link Controlled (Card status)		
LED State	Meaning	
	occur at power-up	
Green and Red - On	a fault has been detected	
Yellow and Red - On	out of service - this combination appears at power-up	
Green, Yellow and Red - On	at power-up before fully operational	
No LEDs illuminated	fully operational	

Fiber Interface Module LEDs		
FIM Upper LED	Meaning for Local, upper and Remote, lower FIM	
On	In frame synchronization	
Off	Power off or held in reset	
Flashing	Out of synchronization or Tx and Rx cables reversed	
Note: When a remote MFC Status LED is off, go to the FIM and check its local FIM Status LED. If it is on then the fiber optic cable may be faulty.		

Troubleshoot the 3300 R2 NSU

To access the 3300 R2 NSU maintenance window:

- 1. Connect the modem or the straight-through cable to the 3300 R2 NSU.
- 2. For terminal emulation (dumb terminal), do the following:
- Run a communications package (for example, ProComm Plus©)
- Ensure that the settings are 8 bits, no parity, 1 stop bit, 38400 baud rate.

Link Status		
LED	State	Meaning
LAN	flashing	LAN activity
MS (message	solid green	message link open to the system
system)	off	message link not open to the system
ST (status)	flashing	operational
	off	not operational
	solid	card in booting
L0 and L1	right side - solid red	error (no physical layer is present or network/line side (NT/LT) jumper is not set correctly)
ļ	right side - off	no error
	left side - solid green	AB signaling established
	left side - flashing green	Layer 1 established
	left side - off	no link
	right side - yellow with left side - flashing green	alarm indication from far end
	right side - yellow with left side - off	blue alarm from card - normal during link startup
	Yellow and green alternating between L0 and L1	downloading (15 - 25 minutes)
	Yellow alternating between L0 and L1	decompressing copying files (2 - 4 minutes)

CIM LED Patterns		
LED Pattern Description		
Off	No Power	
Flashing	Powered On, BSP Running	
On	Communication Link synchronized with 3300 Controller	

Troubleshoot the 3300 BRI NSU

One status LED and fifteen circuit LEDs are mounted on the faceplate. The status LED shows the status of the CEPT link, and each of the circuit LEDs shows the status of one BRI circuit. The BRI circuit LEDs are also used during card initialization to indicate the progress of the self-test and to indicate that the download is in progress.

CEPT LED	State	Meaning
Status	Off	CEPT link not established
	Flashing at 1 Hz	Layer 1 established
	Flashing at 4 Hz	Layer 2 established
	On	Call in progress on the DPNSS link

3300 BRI NSU CEPT Port DIP Switch Manufacture Settings			
DIP Switch	Use	Setting	Notes
1	Tx Ground	Up	Off - ungrounded
			Not required for RJ-45 connector
2	Rx Ground	Up	Off - ungrounded
			Not required for RJ-45 connector
Note: Site dependant - normally Tx is grounded but that depends if the remote Rx connection is grounded.			

Troubleshoot the 3300 Universal ASU

LEDs are located on the front panel and indicate the status of the CIM circuit, ONS circuits, LS circuits, and power.

Note: The Music on Hold and Paging Ports do not have an LED to show status

CIM LED Patterns

LED Pattern	Description	
Off	No Power	
Flashing	Powered On, BSP Running	
On	Communication Link synchronized with 3300 Controller	

ONS Circuit LED Patterns

The front panel has 16 LEDs representing the ONS line circuits.

LED Pattern	Circuit State	Status
Off	Idle	NA
Steady On	Off Hook	NA
Slow Flash	Idle	Circuit is manual busy
Fast Flash	Idle	Circuit Fault
Flashing in a pattern		Loading software

LS Trunk Circuit LED Patterns

There are four LEDs on the front panel of the unit representing the LS trunk circuits

LED Pattern	Circuit State	Status
Off	Idle	NA
Steady On	Off Hook	NA
Slow Flash	Idle	Circuit is manual busy
Fast Flash	Idle	Circuit Fault

Troubleshoot the 3300 ASU

LEDs are located on the front panel and indicate CIM circuit, ONS Circuits, and power status.

CIM LED Patterns

LED Pattern Status	Description	
Off	No Power	
Flashing	Powered On, BSP Running	
On	Communication Link synchronized with 3300 Controller	

ONS Circuit LED Patterns

The front panel has 24 LEDs representing the ONS line circuits.

LED Pattern Status	Circuit State	Circuit Status
Off	Idle	NA
Steady On	Off Hook	NA
Slow Flash	Idle	Circuit is 'manual busy'
Fast Flash	Idle	Circuit Fault

Software Install Procedure

WARNING: You must back up the system and voice mail data.

WARNING: The software installation procedure will format the 3300 Controller hard drive and install new software.

Before you begin

Installer's PC requirements:

- Windows NT 4.0 or Windows 2000 operating system
- FTP server running (with IIS installed)
- Ethernet card and a connection to the Mitel Networks 3300 ICP Controller over the network with Ethernet cable
- A communications program
- A serial port that is connected to the Controllers maintenance port with a serial cable.
- Time: The entire rebuild procedure, including backup and restore, will take approximately 3 hours.

Rebuild Procedure

- Before beginning, perform a PING to verify that the IP Address is valid and that the 3300 ICP has connection to your PC and is running.
- 2. Back up the 3300 ICP database (including voice mail) to your PC.
- 3. Insert the Mitel Networks 3300 ICP software CD-ROM into the CD drive of the installer's PC.
- 4. Run the "Setup.exe" program from the CD.
- 5. Select NA or UK Installation.
- 6. Choose a location for the installSetup program to install files (normally that is C:\intpub\ftproot). The installSetup program will provide a progress indicator and a log file.

- 7. Click Finish when prompted. You will be presented with a text file providing instructions.
- 8. Reboot the 3300 Controller and stop the auto-boot. Press a key at the "Press any key to stop auto-boot" prompt.
- 9. At [VXWorks Boot] type c and then press Enter.
- Change the following parameters: Boot device : motfcc File name : Boot_Install Host inet : <the IP address of the ftp server PC host (your PC)> User (u) : <user name for FTP server in PC host> Ftp password (pw) (blank = use rsh) : <password for FTP server in PC host> Flags (f) : 0x0 (for RTC only).
- 11. Reboot the Mitel Networks 3300 ICP (software installation will take about 45 minutes).
- 12. Login to the System Administration Tool (http://192.168.1.2 -- username is system, password is password).
- 13. Set the options in the License and Option Selection form and Reboot.
- 14. If you have a database backup Restore the customer data to the system. OR Program the system using the System Administration Tool.
- 15. If you are using an external DHCP Server, disable the internal DHCP Server.
- 16. Perform a Backup (optional).

Management Tool Fails to Launch

The Mitel Networks 3300 ICP management tools include the System Administration, the Group Administration, and the Desktop Tools.

Because all of the management tools depend on being allowed to set cookies to maintain sessionID state, login will fail if cookies are not enabled.

Cookies are enabled by default in Microsoft Internet Explorer. Internet Explorer 5.0 will display the error message, 'No session available, try again!'. Internet Explorer 5.5 and 6.0 will indicate that 'Cookies are not enabled'.

If the management tool fails to launch:

- 1. Launch Internet Explorer.
- 2. Select Internet Options from the Tools menu.
- 3. Select the Security tab and enable cookies.

IP Phone Initialization Sequence

This process occurs automatically when the IP phone is connected to the network. The user is not required to input any information unless the process is unsuccessful.

Initialization Display Sequence

- 1. IP telephone MAC and the current boot load version
- 2. The IP address and the message DOWNLOADING
- 3. The MAIN file downloaded by TFTP, the BOOT in the set and the message "DOWNLOAD COMPLETE".
- 4. MAIN and BOOT, and the message "Waiting for COMM".

Telephone Problem

Users may report the following problems:

- No Dial Tone analog telephone DNI telephone IP telephone
- Calls received in error
- Calls are being cut off
- Dial Tone at the set but unable to make calls
- No calls are being received
- If the IP Telephone fails to boot
- To PING from the IP telephone
- To PING from the ICP

No Dial Tone

Analog Telephone

Log into the System Administration Tool.

Establish the Location of the analog set using the Locate Extension maintenance command.

• If Locate Extension command does not work verify the programming in the Single Line Set Assignment.

Using the location identifier run the State <identifier> command. You will get any of the following responses:

- Idle
- Manbusy
- Busy
- Locked Out.

If the response is Idle

Connect a known good analog telephone set to the wiring frame that is closest to the Analog Services Unit.

• If the phone works then the problem is with the wiring from the frame to the set or it is the set.

Check the Set at the desk.

Disconnect the suspected set and connect a known good set into the terminal jack.

- If the test set works then the faulty set should be replaced.
- If the set does not work then the problem is in the wiring from the frame already tested or the jack.

Check that the wiring in the jack is correct.

• If the wiring is incorrect then make the adjustment required and try the known good set again. If the set still does not work then the problem is in the wiring.

Check the wiring from the known good point at periodic intervals.

If the Response is Manbusy

Find out why the circuit was busied out.

Run the RTS <location id> command.

This process should return the circuit to normal.

If the Response is Busy

Is the phone on a real call?

- Yes the phone is functioning normally
- No if the phone is not on a real call then take the following steps:

Disconnect the wiring going towards the phone at the internal frame closest to the Analog Services Unit.

Connect a known good telephone to the internal frame wiring that connects to the Analog Service unit and verify if there is dial tone.

• If there is dial tone then there is a fault in the wiring.

• If there is no dial tone then it could be the D-type connector (Amphenol) cable or a fault with the ASU. Verify the integrity of the Amphenol by changing it out.

CAUTION: If you change the Amphenol connector this will affect all users who are connected to that ASU.

If the Response is Locked Out

Disconnect the wiring going towards the phone at the internal frame closest to the Analog Services Unit.

Connect a known good telephone to the internal frame wiring that connects to the Analog Service unit and verify if there is dial tone.

- If there is dial tone then there is a fault in the wiring.
- If there is no dial tone then it could be the D-type connector (Amphenol) cable or a fault with the ASU. Verify the integrity of the Amphenol by changing it out.

CAUTION: If you change the Amphenol connector this will affect all users who are connected to that ASU.

IP Telephone

Log into the System Administration Tool.

Establish the Location of the IP set using the Locate Extension maintenance command.

 If Locate Extension command does not work verify the programming in the following forms: IP Device Assignment, IP Set Assignment, MAC address Assignment, and Multiline IP Set Key Assignment.

Run the Status <device ID> command.

If the response is Idle

• Try resetting the phone.

If the response is Manbusy

• Find out why it is Manbusy.

Technician's Handbook

• Return to Service.

If the response is Busy

- Is it on real call?
- If not on a call try resetting the handset.

If the response is Out of Service

Go to the telephone set.

Check the phone has power (does it have a display).

- If the phone does not have power then connect to an appropriate power source
- If the phone does have power the verify the link integrity LEDs.
- If the LEDs are not showing check the wiring.
- If the phone has power and the LEDs are on then refer to the IP phone diagnostics.

A green LED on the bottom of the phone indicates a proper connection

A flashing yellow LED indicates activity (data flow) on the network

Calls Received in Error

A user may report that they are continually receiving incorrect calls.

Ask the user the following questions:

Are the calls always for the same person?

- If the response is yes then try these options:
 - Check the telephone directory entries to ensure that the name and extension numbers are correct.
 - Check the users number against that of the person people are looking for. If the numbers are similar then it is possible that people are dialing incorrectly. Changing the users extension number maybe an option.

- Verify that the person being called has not call forwarded or rerouted calls to the user (who raised the complaint) in error.
- If the response is no then try these options:
 - Ask the user to log the calls received in Error.
 - Check the SMDR logs to establish a pattern.

Calls are Being Cut-off

Look for a pattern.

- Are the calls always being made to the same number?
- Is it a cellular phone? If it is it is likely to be a cellular issue.
- Is this affecting many users or just one? Build a pattern.
- Many Users Check SMDR records to see if it is a particular trunk or link that is causing the problem.
- One User Ensure that it is not a hardware or wiring issue.

Dial Tone at the Set but Unable to Make Calls

A user may complain of being unable to make calls from their set.

- 1. Establish if the extension being used is the one assigned to the user.
- 2. Establish the type of calls the user is trying to make.
- 3. Check the programming on the system for that extension. Look at the Class of Service and Class of Restriction Assignment in particular.
- 4. If there is an error, correct the programming.
- Note: Before you change Class of Restriction to enable chargeable calls make sure that you have the authorization of the customer.

Is this an intermittent problem?

If yes then check to see if the number dialed is using a route list or plan. If it is then check the Class of Restriction of the routes in the route list or plan. Use the SMDR records to assist you.

No Calls are Being Received

Check the programming to make sure the calls are not forwarded or rerouted elsewhere automatically by the system.

Check the Class of Service Options Assignment to make sure the programming allows incoming calls.

If the IP Telephone Fails to Boot

- 1. Verify the Network Connection.
- 2. Verify power (is there a display?).
- 3. Check the wiring.
- 4. Check LED on the IP telephone for network activity.
- A green LED on the bottom of the phone indicates a proper connection
- A flashing red LED indicates activity (data flow) on the network.
- Use the PING (Packet Internet Groper) on the IP telephone to determine whether the server's (3300 ICP, DHCP, and/or TFTP) IP address is accessible.
- 6. Ensure that the DHCP server has been programmed with the correct information.
- 7. If the IP telephone displays "TFTP LOAD FAILURE" verify that the TFTP Firmware, DSP, and Main software loads are available and not corrupted.
- 8. Ensure that the phone is registered with the system.

To PING from the 3300 ICP

- 1. Select Maintenance and Diagnostics in the System Administration Tool.
- 2. Select All IP Telephones or Programmed Telephones.
- 3. Select a telephone with an In Service state.

- 4. Click PING.
- 5. In the To IP Device field, select Number or IP.
- 6. Type the Directory Number or IP Address.
- 7. Click PING. The Ping Result field will display the number of successful and failed PINGs.

To PING from the IP Telephone:

To PING from the IP telephone:

- 1. View and record the IP phone device address, subnet mask, and default gateway.
- 2. Press Superkey while connecting power to the IP phone until the set displays MANUAL IP SETUP MODE.
- 3. Enter the IP address for the phone and press the Down arrow key.
- 4. Enter the subnet mask for the phone and press the Down arrow key.
- 5. Enter the default gateway for the phone and press Down arrow key.
- 6. At the message "Perform PING Test", press #.
- Enter the destination IP address. The phone display will indicate PINGING. The phone will also display the number of successful and failed PINGs.
- 8. Disconnect and Reconnect the Power to reboot the IP phone.

NOTES