

MITEL NETWORKS

3050 | Integrated Communications Platform

TECHNICIAN'S HANDBOOK

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Mitel Networks 3050 Integrated Communications Platform
Technician's Handbook

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Chapter 1

System Description

Introduction

Purpose of this guide

The guide provides

- An overview of system capabilities
- An introduction to the system components
- A simplified installation process, suitable for many stand-alone installations
- A procedure to verify correct operation of phones and basic features
- Troubleshooting procedures
- Maintenance instructions

Who this guide is written for

Anyone who needs to install or maintain a Mitel Networks 3050 Integrated Communications Platform (ICP) and its associated components.

Where you can find more information

Mitel Networks 3050 ICP online documentation is available from the administration console or from Mitel Networks online documentation library:.

1. Point your browser to **<http://www.mitel.com>**.
2. Click **Support**
3. Click **Documentation Library**
4. Select **User Guides** from the drop-down list.

System components

3050 Controller

The Mitel Networks™ 3050 Integrated Communications Platform (ICP) provides a complete voice and data solution for the small office or branch office.

The 3050 Controller has all required call control and Internet gateway software needed to implement a small business phone system that takes advantage of the latest advances in Internet Protocol (IP) telephony.



Figure 1: 3050 ICP controller

PSTN Gateway

This optional add-on module provides traditional analog Public Switched Telephone Network (PSTN) service. Most Session Initiation Protocol (SIP) service providers offer a PSTN gateway as well. This module, however, functions independently of IP-link availability and the SIP service provider. Each PSTN gateway supports the connection of up to 4 Loop-Start trunks

Layer 2 Ethernet switch

The 3050 Controller is shipped with two Ethernet ports: one for connection to a WAN network, and one for connection to SIP phones and IP appliances. You will need to obtain an Ethernet switch with sufficient ports to accommodate your IP phones and workstations.

Mitel Networks 5055 SIP phones

Mitel Networks SIP-enabled phones can function both with and independent of the 3050 ICP. The 3050 ICP adds functions such as simplified station-to-station dialing, voice mail, autoattendant, and incoming call groups.



LL0099

Figure 2: 5055 SIP phones

System configuration

A simple integrated communications system consists of

- One Mitel Networks 3050 ICP
- Up to eight SIP phones

- An Ethernet switch (an 8-port switch can accommodate six SIP phones)

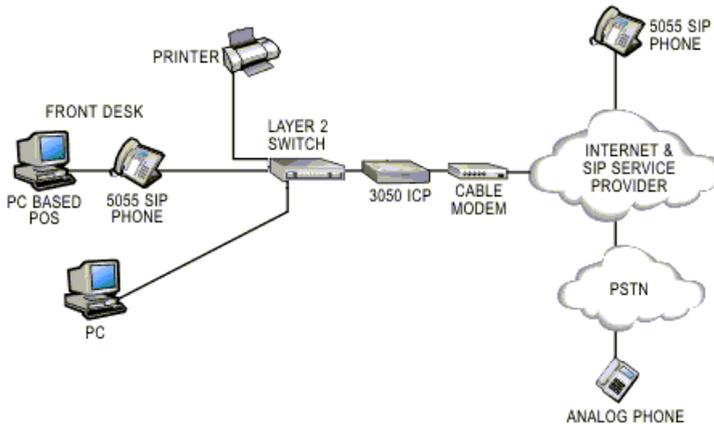


Figure 3: Basic 3050 ICP configuration

To this configuration, you may choose to add a variety of IP appliances such as Point of Sale Systems (POS), network printers, and computer workstations. Optional accessories such as Public Switched Telephone Network (PSTN) gateways enable those on the PSTN to dial SIP phones connected to the 3050 ICP.

Software components

The 3050 ICP is pre-loaded with two major software systems:

- The Mitel Networks Small, Medium Enterprise Server (SME) is a Linux-based server that manages the Internet gateway and file server functions.
- The 3050 ICP telephony control system performs call control and provides features such as voice mail and an auto attendant.

These components must be customized to meet the needs of each installation site, using the tools described later in this guide.

Security

Be aware that communications over this system are not encrypted so the privacy of your transmissions may be compromised. For this reason you should think twice before communicating anything of a sensitive and/or personal nature that may be 'overheard'. If you are a health professional you should also avoid communicating any individually identifiable health information pursuant to the Health Insurance Portability and Accountability Act (US Public Law 104-191).

Service availability

The 3050 ICP connects SIP phones on its local LAN to:

- other SIP phones on the internet
- regular phones on the PSTN through a local or ISO-provided SIP to PSTN gateway
- other 3050 ICPs.

Problems affecting this IP connection or the availability of the SIP service from your provider will interfere with IP trunk availability. Data services such as Web access or electronic transactions are also dependent on the availability of IP service from your provider. In addition, local power outages can temporarily interfere with SIP phone operation.

To reduce or eliminate loss of phone and data service in these cases:

- Purchase an Uninterruptable Power Supply (UPS) to maintain 3050 ICP, Layer 2 switch, and SIP phone operation during short-duration local power outages with no loss of service.
- Purchase a PSTN gateway to connect alternate trunks to provide backup phone service during SIP-service-provider or IP-service outages.

- Install an analog phone across a designated analog trunk to provide basic phone access and emergency phone service in the event of an extended power outage.

Emergency phone support

The 3050 ICP accommodates two levels of emergency phone service support:

- Installations that depend on the Internet for all call traffic support emergency phone service through the user-programmable emergency number feature in the 5055 SIP phone. This feature recognizes a user's dialed emergency number (for example, 911), then translates it into an SIP request that is sent to a designated emergency server IP address. This emergency phone support functions as long as
 - The SIP phones are correctly programmed,
 - The 3050 ICP is functioning correctly, and
 - The Internet link is functioning correctly.
- Installations that include analog trunk support can provide an extra level of emergency phone support through the installation of an analog phone on one of the analog trunks. This phone should be designated as an "emergency phone". Since it bypasses the digital call path, this emergency phone will function regardless of the state of the 3050 ICP, the SIP phones, and the Internet link. Areas that support Enhanced 911 service can use this method to automatically pinpoint the phone's location.

It is important that you be aware of the requirements for access to emergency services in your area, and if required, make available other means of contacting emergency services.

What telephone features are supported?

Table 1: Functions and features

Features	Description
Advisory Messages	Lets you set up advisory messages which will be displayed on other SIP phones to alert callers to your current status.
Automatic Answer	Lets you automatically answer calls that ring your extension.
Auto Attendant	Plays a greeting to callers, then gives them the option of selecting an extension number by pressing a single key.
Call Hold with Audible and Visual Indication	Lets you temporarily suspend a telephone call. While the call is on hold, you can use the other telephone features. The call can be retrieved at either the originating telephone or another telephone.
Call Hold Ring Back	Reminds the user that a caller is on hold. When a call has been on hold for a certain period of time, this feature automatically rings the set that put it on hold.
Call Waiting	Provides a visual and audible indication that another call is waiting to be answered.
Caller ID	Displays the caller's telephone number on the LCD.
Call Transfer Unattended or Attended	Allows a user to move a call from the current extension to another extension. The transfer can be announced or unannounced.
Call Forward All	Allows a user to forward all calls to another extension or extension group without it first ringing at the called extension.
Call Forward on No Answer or Busy	Forwards unanswered calls to another extension or an extension group.

(Page 1 of 4)

Table 1: Functions and features

Features	Description
Call Waiting Indicator	Provides visual indication that another call is waiting to be answered.
Conferencing	Provides a three-way telephone conversation. The conference prime cannot put a call on hold or use another line during the conference, but conference members have full access to these features.
Conference Unit Support	Mitel Networks supports two conference units for use with the 5055 SIP Phones: the Mitel Networks 5305 Conference Unit and the Mitel Networks 5310 Conference Unit.
Dial from Call Log	Allows an extension user to use the SIP phone call log to return a call.
Dial by URL, Dial by PSTN number	You can use either of these methods to dial an external destination.
Dialing aliases	The system can be programmed to redirect dialed numbers to a particular extension.
Do Not Disturb	Disables an extension's ringer. Those calling an extension with Do Not Disturb enabled hear a busy tone.
Full-Duplex Speakerphone option	The addition of a conference unit supports full duplex handsfree operation.
Half-Duplex Speakerphone (hands free)	Allows an extension user to use the telephone set speaker and microphone to answer and make calls.
Headset Operation	Allows an extension user to use a headset to answer and make calls.
Hunt Groups	Lets you designate a group of phones that (if idle) ring one after the other when an incoming call arrives, until someone picks up the call.
(Page 2 of 4)	

Table 1: Functions and features

Features	Description
Last Number Redial	Enables an extension user to redial the last external number dialed from the extension.
List of Calls	Lists 15 of the most recent calls (last 5 answered incoming calls, last 5 unanswered incoming calls and last 5 outgoing calls)
Message Waiting Lamp	SIP phones with message waiting lamps indicate the presences of new messages by flashing the lamp.
On-hook Dialing	Allows a user to dial a number and initiate a call without lifting the handset. If the handset remains in the cradle, speakerphone operation will begin as soon as the callers are connected.
Personal Phone Book	Each extension user is allowed to keep a list of 5 numbers or URLs in their personal phone book.
Redial List	Allows you to save outgoing-dialed numbers in a list that can then be used to redial them.
Remote Call Forward	Allows you to forward incoming calls to an external destination, for example, a cellular phone or your home number.
Ring Groups	Lets you designate a group of phones that will ring simultaneously when an incoming call arrives. The call is answered by the first person in the group to pick up the call.
Ringer On/Off	Allows you to turn off your extension's ringer so that incoming calls are indicated with call indicators only.
Set-to-Set Dialing	Allows a user to dial another SIP phone, using a short three- or four-digit extension number.

(Page 3 of 4)

Table 1: Functions and features

Features	Description
Set Information	Pressing the Menu key then the Line 1 key displays the phone IP and MAC address. Pressing the Menu key then the Line 2 key displays the phone software version.
Speed Call Keys	Lets you store and dial frequently used numbers, using the personal keys on your telephone.
Toll Restriction	The 3050 ICP can be programmed to allow or deny access to PSTN trunks to individual, or groups of phones.
Voice Mail	Each extension or device can have a voice mail account associated with it to give callers the option of leaving a message, should the person they call be unavailable.
Who am I	Displays your extension number and name on your set's LCD.
(Page 4 of 4)	

System capacity

Hardware

- 8 SIP phones (typically)
- Each phone supports 4 simultaneous calls (4 lines)
- 1 locally connected printer
- Up to 50 IP devices (locally or remotely connected PCs, network printers, IP-enabled POS systems)
- Bandwidth usage:
 - G.711 (using a typical 20ms Frame) uses 96.8 bit/s one-way, or 193.6 kbit/s for a two-way conversation.
 - G.729 (using a typical 20ms Frame) uses 40.8 kbit/s for one-way and 81.6 kbit/s for two-way conversation.
- Call Handling: 1 call per second (3600 Busy Hour Call Attempts)
- 8 voice mail ports (voice mail handles up to 8 simultaneous calls)

Features

- Up to 20 voice mail accounts
- 11 programmable destinations for the Autoattendant

UPS recommendations

An Uninterruptable Power Supply (UPS) can add resiliency to your communications network by maintaining full service during short power outages and by allowing you to perform the orderly shutdown of workstations during long power outages. Because there are a number of factors affecting the selection of a suitable UPS, we recommend the following procedure.

Use Table 2 on page 14 to identify and calculate the expected power usage:

1. Under "Qty," record the number of each item that is to be UPS-protected.
2. Under "Individual Load," record the manufacturer's figure for expected load in Volt-Amperes.
3. Calculate the Total load for each item by multiplying "Qty." by "Individual Load." Enter this into "Total Load" *(See the entry for the 3050 ICP for an example calculation.)
4. When you have all of your unit Total Loads calculated, add them together to determine the overall system load.

Table 2: Total power usage

Unit Description	Qty.	Individual Load (VA)	Total Load (VA)
3050 ICP	1	125 -175	125-175
Layer 2 switch			
5055 SIP phone	1		
PSTN Gateway			
Modem			
Workstation Type 1			
Workstation Type 2			
Total			

- Calculate a 25% growth factor (* 1.25)

Example:

498VA

x 1.25

= 622.50 VA

- Select a UPS size according to your VA requirements

Example:

650VA UPS or higher

- Determine how long you will need backup of your communications system before you are able to shut it off or before power is restored.

- 10, 20, 30-plus minutes (the longer the back-up time, the larger the batteries and the costs)

8. Choose the size of back-up batteries you will need at full-load (All of your equipment running at full power).

Example:

10 minutes Full-load/29 minutes Half-load

15 minutes Full-load/35 minutes Half-load

9. Select a UPS that meets both your VA and battery backup requirements.

Default installation

The 3050 ICP is shipped with a default database that contains pre-configured profiles for stand-alone, single 3050 ICP installations.

Table 3: Network set up default configuration

Description	Default
3050 ICP WAN server address	Assigned by DHCP by default
3050 ICP LAN Interface DHCP IP Address Range:	192.168.215.65 - 192.168.215.249
3050 ICP LAN Port Address	192.168.215.1
PSTN Gateway IP address	192.168.215.7
SME Root and administrator password	icp3050
Default manager password	icp3050manager
Default mktech password	mkpa55wØrd

Default Dialing Plan and Toll Restriction

The 3050 ICP has a default 4-digit dialing plan that lets you dial station-to-station using short extension numbers.

Table 4: System default dialing plan

Extension	Voicemail user name	Voicemail password	Voicemail PIN
1111	user1111	user1111	1234
1112	user1112	user1112	1234
1113	user1113	user1113	1234
1114	user1114	user1114	1234
1115	user1115	user1115	1234
1116	user1116	user1116	1234
1117	user1117	user1117	1234
1118	user1118	user1118	1234
1119	user1119	user1119	1234

If you have purchased a PSTN Gateway, and you have connected it directly to the PSTN

- Dialing any number that is 7 digits or longer routes that call immediately to a free PSTN trunk without the need to first dial “9” as is common in many business phone systems.
- Dialing 411, 611, or 911 immediately dials the corresponding service without the need to first dial “9” as is common in many business phone systems.
- Dialing through the PSTN Gateway is restricted to locally connected SIP phones only by the default toll restriction rules.



These default dialing rules can be altered to accommodate different dialing plans or to change the restrictions on PSTN access. The programming of dial plan and toll restriction rules is explained in the *3050 ICP Advanced Network Installation and Administration Guide*.

If the PSTN gateway lines are attached to a PBX that requires you to dial “9” to reach an outside line, your users will have to precede PSTN calls with a “9”. This requirement can be eliminated by modifying the default dial plan rules to add the prefix “9” automatically (refer to the *3050 ICP Advanced Networking and Administration Guide*).

Going further

The *3050 ICP General Information Guide* contains additional technical information as well as more information on 3050 ICP applications. This manual is available online at: URL <http://www.mitel.com>.

Chapter 2

Physical Installation

Physical installation overview

The instructions in this section are for installation at sites that

- Have no pre-existing LAN

or

- Involve replacing a pre-existing LAN gateway, router, or firewall device that functioned as a DHCP server.

If your site has other pre-existing LAN servers, you should refer to the on-line *3050 ICP Advanced Network Installation and Administration Manual* for instructions on how to integrate the 3050 ICP with an existing network.



Connecting a 3050 ICP to an existing network without first verifying network compatibility can cause loss of service on the network and the 3050 ICP.



Only qualified network administrators should install the 3050 ICP system into an existing LAN.

A physical installation requires you to complete the following key steps:

- Select the site
- Plug in the cables
- Power up the system
- Check the indicators.

Selecting the site

Place the 3050 ICP on a convenient level surface with easy access to AC power, LAN, and telephone wiring (if required).

Select a site that meets the following requirements:

- Space
 - 2.5" high x 10 3/4" deep x 11 1/2" wide (63.5mm H x 273mm D x 295mm W)
- Environment
 - ambient temperature between 32°F and 104°F (0°C to 40°C)

- Power

You will require the following AC receptacles:

- One for each 3050 ICP
 - One for each Ethernet switch
 - One per PSTN Gateway (if purchased)
 - One (optional) for the UPS
- Telephone wiring
 - Only required if PSTN trunks were ordered
 - WAN wiring (typically, CAT5)
 - LAN wiring

You need standard twisted pair, straight-through CAT5 cables to connect the

- Ethernet switch to the 3050 ICP LAN port
- Ethernet switch to each SIP phone
- 3050 ICP to the external PSTN gateway (if purchased)
- 3050 ICP to a network printer (if purchased)

Plug in the cables

The 3050 ICP performs a network discovery process the first time it's powered up. The order of unit power-up is critical for the success of this process, so don't power-up anything (including the phones) until instructed to do so.

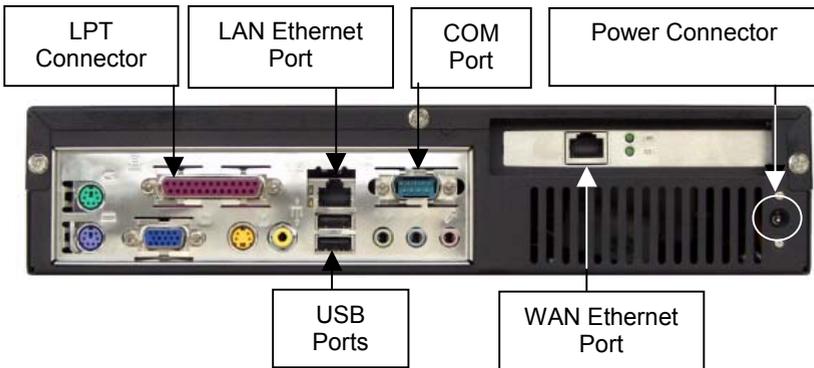
Connect the cables in the following order:

1. Plug the 3050 ICP power adaptor into a wall receptacle, and then plug the power cable into the unit.



Ensure that you plug the correct plug into the correct unit. Layer 2 switches, SIP phones, and the 3050 ICP all use the same-type power plug, but some require different voltages.

2. Connect an Ethernet cable between a free Layer 2 switch port and the 3050 ICP **LAN** port.



3050 ICP rear panel connectors

3. Connect an Ethernet cable between the 3050 ICP **WAN** port and the Ethernet port on your WAN device (for example, a DSL or cable modem).



Be careful to plug the Ethernet cables into the correct ports on the back of the 3050 ICP. By default, the WAN port is configured as a DHCP client, the LAN port as a DHCP server. If you accidentally swap these

connections you can disable your LAN, WAN, DSL, or cable modem.

4. Plug the SIP phones into empty ports on the Layer 2 switch.



If you are installing Mitel SIP phones that are equipped with two Ethernet interfaces (such as the 5055), ensure that you plug the cables into the port marked with the



symbol. If you accidentally plug them into the PC port, the phones may not register correctly with the 3050 ICP. The  port is for connection to PCs.



Do not plug in the SIP phone power adaptors at this time (the 3050 ICP should be powered up and fully booted before you power-up the phones). This will enable the automatic configuration process to work properly.

5. If you have a PSTN gateway, plug in the power and Ethernet cable (the Ethernet cable connects the PSTN gateway to any unused Layer 2 switch port) on the LAN side.
6. If you are installing the gateway anywhere outside of North America, it's best to leave the trunk cables unplugged until you have carried out the location selection procedure ("Location selection" on page 46), since the default settings may be incorrect for your location. Otherwise, plug the trunks in now.

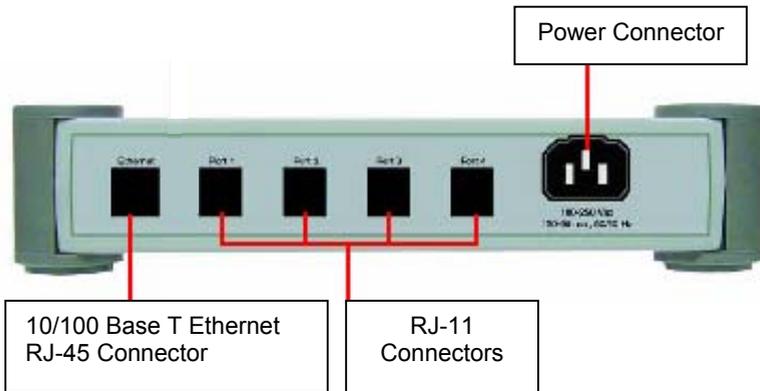


Figure 4: PSTN Gateway rear panel connectors

Replacing existing DHCP client devices

If you are replacing a pre-existing router that was configured as a DHCP client with a 3050 ICP, you must take the time to release the old DHCP IP address lease before you power up the 3050 ICP.

Failure to do so may prevent the 3050 ICP DHCP client from working correctly. Refer to your router or ISP documentation for instructions on how to release the DHCP IP address lease.

Power up the system

The 3050 ICP controller has a power switch and two indicators: one indicates power, and the other indicates hard-disk activity.

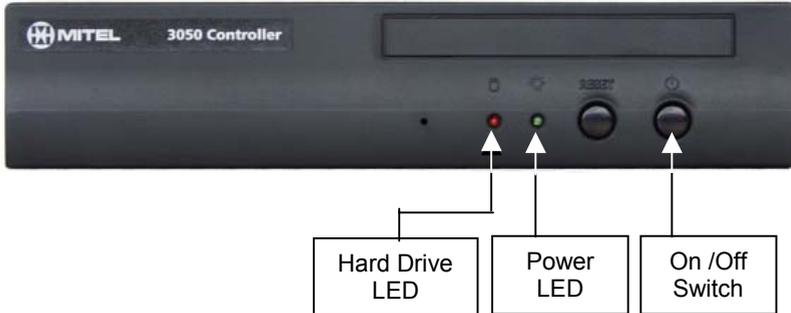


Figure 5: 3050 ICP Controller power switch

To ensure proper operation of the 3050 ICP's network discovery process, power up the system in the following order:

3 to
5 min.



1. DSL/cable modem (refer to manufacturer's instructions)
2. Ethernet Layer 2 switch (refer to manufacturer's instructions)
3. 3050 ICP (press the On/Off switch). Wait until the 3050 ICP has finished booting (the hard-drive activity indicator becomes less active).
4. External PSTN Gateway (refer to manufacturer's instructions)
5. Workstations or POS systems (refer to manufacturer's instructions)

SIP Phones

If you are content to use the default 3050 ICP dialing plan (“Default Dialing Plan and Toll Restriction” on page 16), go ahead and power up the SIP phones now. By doing so, you will activate the SIP phone autoconfiguration process. This process assigns default extension numbers and voice mail user accounts to the phones (the first phone to finish booting, will receive extension number “1111” the second will get “1112” etc.).

If you plan to use other extension numbers, then its advisable for you to leave the phones powered off until you have configured the autoconfigure base extension number (“Autoconfigure page” on page 47).

Checking the indicators

After the system components are powered, the Ethernet physical-layer indicators will illuminate. Verify the following:

1. On the 3050 ICP, the LAN and WAN port physical-layer indicators illuminate solid green, and the data indicators flash to indicate data Tx/Rx.
2. On the Ethernet Switch, the LAN port physical-layer indicators illuminate solid green, and the data Indicators flash to indicate data Tx/Rx.
3. If you have a PSTN gateway, check the **Power**, **Server** (both should be on) and **LAN** LED (should flash to indicate data Tx/Rx). The In Use LED will flash whenever one of the lines is in use.

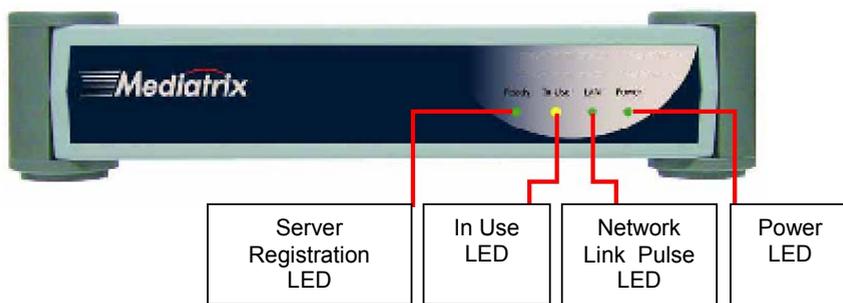


Figure 6: PSTN Gateway Indicators

4. On each connected SIP phone, the LAN port physical layer indicators illuminate solid green, and the data indicators flash to indicate data Tx/Rx.

If workstations are connected to the SIP phone, the corresponding SIP-phone LAN-port physical-layer indicators illuminate solid green, and the data indicators flash to indicate data Tx/Rx.

Should any of these LED indicators fail to illuminate, check the Ethernet cables connecting the device to the LAN.

If you cannot isolate the problem, refer to the troubleshooting instructions in Chapter 5.

Verify the phones

After you have established the Ethernet physical-layer connectivity by checking the port LED indicators, you can verify phone operation by making a call to one of the locally connected phones. To do this on Mitel Networks SIP phones

1. Lift the handset.
2. Key in the extension number of another station (for example: 1111, 1112, 1113).
3. Press the **Dial** soft key.



You may or may not be able to make a SIP-phone call using the WAN link at this point. This is dependent on the type of broadband account and modem you have purchased. There is further information about configuring the 3050 WAN port connection in the next chapter of this manual.

Going further

- Refer to the online *3050 ICP General Information Guide* for detailed technical specifications.
- Refer to Chapter 3 for instructions on configuring network services.

Chapter 3

Network Setup

Overview

The instructions in this section are for installation into sites that

- Involve replacing a pre-existing LAN gateway, router or firewall device which functioned as a DHCP server
- Do not require connection to LANs that have other, pre-existing LAN servers
- Do not require connection to corporate WANs or networks of 3050 ICPs

Refer to the on-line *3050 ICP Advanced Network Installation and Administration Manual* for information on how to install the 3050 ICP into more complex networks.



Only qualified network administrators should install the 3050 ICP system into an existing LAN.

Network set up consists of the following steps:

- Checking the status of network discovery and SIP phone registration
- Testing, and if required, configuring the broadband connection between the 3050 ICP WAN port and your ISP
- Confirming the language selection, and if required, changing it
- Confirming the location selection, and if required, changing it
- Optionally, recording a personalized autoattendant greeting
- Checking, and if required, setting the time and date
- Activating ServiceLink

- ☑ Configuring a network printer
- ☑ Changing default passwords to secure the system
- ☑ Filling in the SIP-phone-user quick-reference table for each of your users with the information that they need to access voice mail.

Network capabilities

The 3050 ICP server provides

- Network Address Translation (NAT/NAPT) capabilities (firewall with IP masquerading)
- Domain Name Service (DNS) that resolves local names and forwards other requests
- A Dynamic Host Configuration Protocol (DHCP) server that automatically assigns IP addresses to LAN devices
- A DHCP client for the WAN port that negotiates a valid IP address for those high-speed Internet devices that require one (cable modems)
- Optional management features available through Mitel Networks ServiceLink subscription

Prerequisite information

If you have a WAN access device with a standard, dynamically-assigned IP address, you need no prerequisite information for this installation.

If you have purchased a static IP address from your service provider, you need to acquire the following information from your ISP before proceeding with this installation:

- Static IP address
- Subnet mask (netmask)

- ISP gateway IP address
- Optionally, a DNS server address

If you have a DSL modem, you need to acquire the following information from your ISP before proceeding with this installation:

- PPPoE account user name
- PPPoE account password

This information will be required in the procedures described in “Manual WAN port parameter configuration” on page 44.

Mitel Networks SIP Phones

The Mitel Networks 5055 SIP phone can work independent of the 3050 ICP, or it can work with it. There are significant differences in how the phone functions in these environments.

Independent SIP phones

5055 SIP phones that are attached directly to the Internet

- Are configured through a combination of soft keys and via the phone’s own web page
- Has its one user name and password for accessing the web page and managing user profiles
- Perform all call setup and management, using the SIP protocol
- Can make and receive calls to 3050 ICP servers (and their associated phones) but do not take advantage of 3050 ICP features such as quick station-to-station dialing and voice mail.

Refer to the Mitel Networks 5055 SIP phone user guide for instructions for using and programming independent 5055 SIP phones.

3050 ICP Managed SIP Phones

5055 SIP phones that are managed to a 3050 ICP

- Can be attached to the local (LAN side) of the 3050 ICP for regular in-office operation, or can be attached to the WAN side of the 3050 ICP as a teleworker phone.
- Are programmed using the 3050 ICP Web pages rather than the built-in 5055 SIP phone Web pages .
- Depend on the 3050 ICP to set up and manage calls.
- Have their own set of user names, passwords, and Personal Identification Numbers (PIN) to control access to phone feature configuration and voice mail.

Configuration and maintenance tools

Configuration and maintenance tools allow you to configure operating parameters and perform system maintenance. The Web-based tools require Netscape Navigator (version 6.0 or later) or Internet Explorer (version 5.5 or later).

The SME server console configuration process uses the Secure Shell (SSH) protocol. You need an SSH client such as the popular freeware application, “PuTTY,” to access it. PuTTY can be obtained from

<http://putty.very.rulez.org/>

Workstation requirements

You can use one of the workstations already on your LAN or a laptop with a modified CAT5 cable to connect directly to the 3050 ICP. Whatever you use, it must be configured for TCP/IP. It can be set up as a DHCP client (it will obtain its IP address from the 3050 ICP LAN port), or it can be configured with a static IP address in the range of 192.168.215.20 to 192.168.215.64.

To verify that your workstation is connected, use a tool such as the Windows MS-DOS command prompt to ping the 3050 ICP LAN port at IP 192.168.215.1. A successful ping looks like this:

```
C:\WINDOWS>ping 192.168.215.1

Pinging 192.168.215.1 with 32 bytes of data:

Reply from 192.168.215.1: bytes=32 time=2ms TTL=64
Reply from 192.168.215.1: bytes=32 time=1ms TTL=64
Reply from 192.168.215.1: bytes=32 time=1ms TTL=64
Reply from 192.168.215.1: bytes=32 time<10ms TTL=64

Ping statistics for 192.168.215.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms
```

Figure 7: Successful Ping

SME server manager

The server manager lets you perform system configuration, and perform backup and restore of the 3050 ICP database to a desktop PC.

To access this tool

1. Point your browser to **https://192.168.215.1/server-manager**
A login screen is displayed.
2. Enter the user name (**admin**) and password (**icp3050**).

SME console configuration process

By default, SSH access is disabled on 3050 ICPs shipped from Mitel. As part of your first session with the 3050 ICP, you need to enable this protocol. On subsequent sessions, SSH access will remain enabled so you need not re-enable it.

Enable SSH access (one-time procedure)

1. Launch the SME server manager as indicated in "SME server manager" on page 40.
2. Select Remote access from the **Security** section.
3. Select either **Public** or **Private** access from the **Secure shell access** pull-down list. Public access lets you access the 3050 ICP remotely via SSH, but it can create a possible security risk.
4. Set **Allow administrative command-line access over secure shell** to **Yes**.
5. Click the **Save** button. You can close the browser window now. You should not need to repeat the procedure again in the future, as the system will retain these settings.

Launch the SME console configuration process

Ensure that you have enabled SSH access on your 3050 ICP first, before you perform this step (refer to “Enable SSH access (one-time procedure)” on page 40).

1. Launch PuTTY on your PC.
2. Enter the following IP address in the **Host Name** field:
192.168.215.1
3. Click the **SSH** radio button **ON**, and then click **OPEN**.
You see a character-based window and a prompt for user name.
4. Enter **admin** as the user name.
You are prompted to enter a password.
5. Enter **icp3050** as the password.

The Server Console screen is displayed:



```

Server console
Welcome to the console of your Mitel Networks SME Server!
Use the Arrow and Tab keys to make your selection, then press Enter.

1. Check status of this server
2. Configure this server
3. Review configuration
4. Test Internet access
5. Reboot or shut down this server
6. Access server manager
7. View support and licensing information
8. Exit from the server console

<Exit>                <Next>
  
```

Figure 8: Console Configuration Server Console

6. To begin a configuration session, select option **2. Configure this server**. The server console is a menu-driven process that lets you adjust a number of 3050 ICP networking and operating parameters.

Launching the 3050 ICP configuration tool

The configuration tool lets you control user access to voice mail, check the status of SIP phone registration, and perform maintenance tasks.

To launch the configuration tool

1. Point your browser to **http://192.168.215.1:8180**
A login screen is displayed.

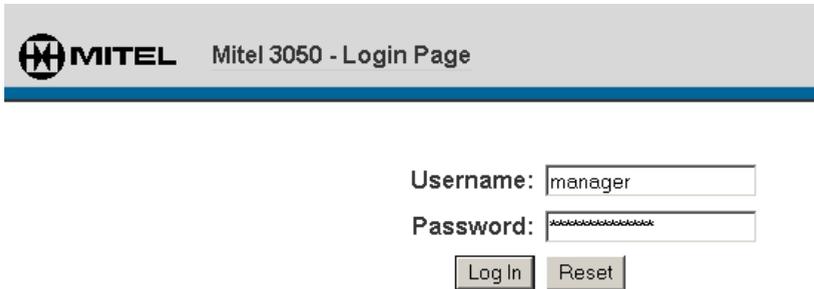


Figure 9: Log-in page

2. Type the user name (**manager**) and password (**icp3050manager**), and click **Log In**. An initial login manager console is displayed that offers the option to change the default manager password.

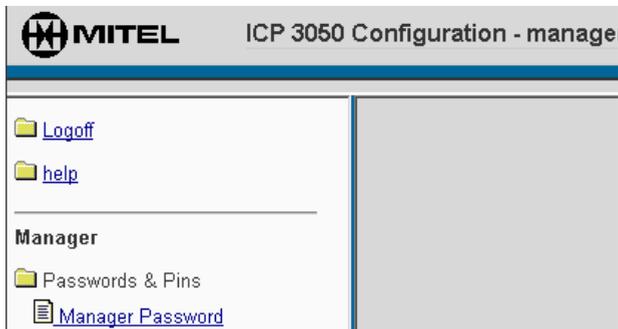


Figure 10: Initial login manager console

- To change the manager password, type **icp3050manager** in the **Enter Old Password** field. Type a new password in the **Change Login Password** and **Verify Login Password** fields, and click **Update**. The full version of the manager console is displayed:

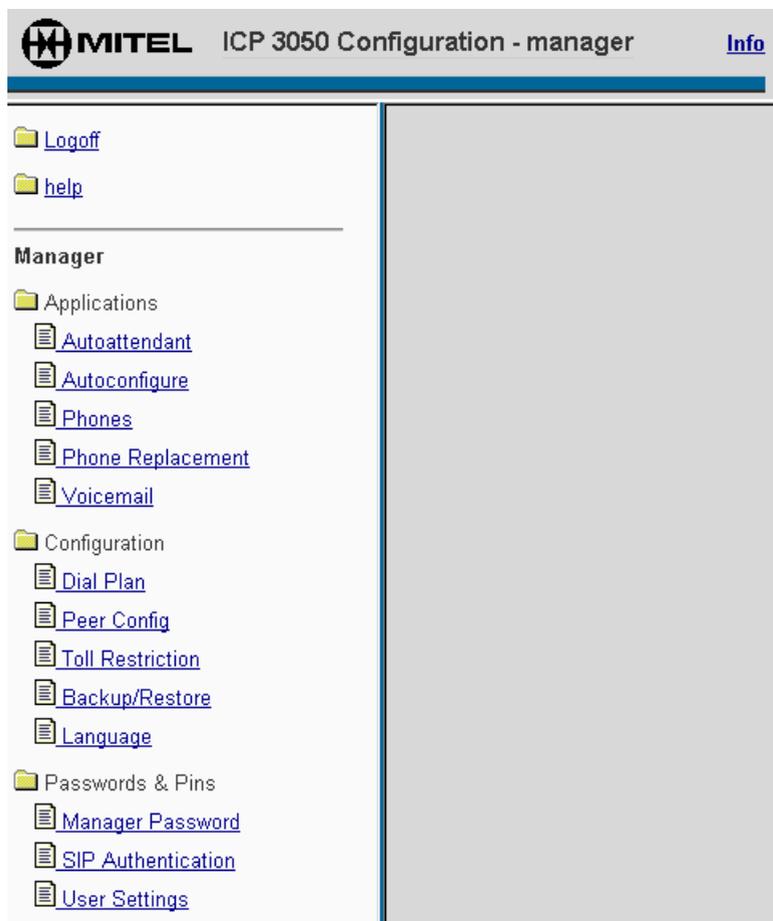


Figure 11: Manager console

Network discovery

The following network parameters must be configured to reflect the particular configuration of your broadband links and your network environment:

- WAN IP address
- WAN protocol (DHCP or PPPoE)
- Workstation and SIP phone IP addresses

If you are using a cable modem and a dynamic WAN IP address, the 3050 ICP is capable of discovering how to configure these parameters, on its own.

If you are using a DSL modem or require a static WAN IP address, the automatic network discovery will be able to configure your SIP phones and workstations but not your broadband link.

To test the WAN connection, launch an Internet browser on a workstation connected through the 3050 ICP, and enter the URL of an Internet destination.

Manual WAN port parameter configuration

If you have a DSL modem or you have purchased a static IP address from your ISP, you will have to enter some information into your 3050 ICP using the SME server console configuration process.

1. Launch the SME server configuration console as indicated in "SME console configuration process" on page 40.

The console configuration has a default configuration that will work with cable modems that use DHCP but not DSL modems or modems with static IPs.

2. Select option **2. Configure this server.**

- Press the **Enter** key repeatedly to navigate past the initial configuration screens until you see the following **External Interface Configuration** screen:

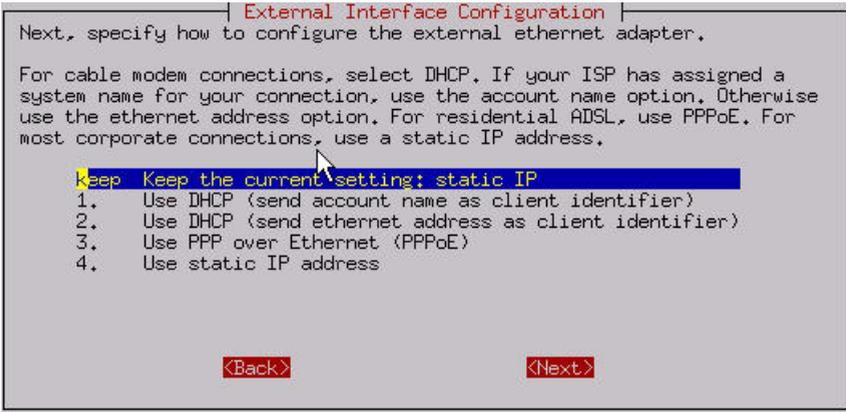


Figure 12: External Interface Configuration

- If you are using a DSL modem, select option **3. Use PPP over Ethernet (PPPoE)**, then enter the user name and password that your ISP provided you with.

If you have a static IP address, select option 4. Use static IP address, and enter your Static IP address, subnet mask (netmask), and the gateway IP address.

- Press **ENTER** to navigate through the rest of the Console Configuration screens. (Pressing ENTER retains the current, factory-default values.)



If, by accident you change a value and need to return it to the factory default value, refer to Table 6 on page 109 to learn the factory default value.

- When prompted, activate the changes that you have made, and reboot the 3050 ICP.
- When the 3050 ICP has rebooted, test the WAN connection by launching an Internet browser on a workstation connected to the 3050 ICP and entering the URL of an Internet destination.

Location selection

The 3050 ICP configuration tool and on-line documentation supports user-selection of location-specific operating parameters such as language and signal gain. By default, the system is set to North American PSTN parameters and the English language.

To change this setting

1. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Click **Select Language**.
3. Choose the appropriate language from the list.



Any attempt to alter or reset the PSTN Gateway configuration using the gateway manufacturer's tools may render the gateway unusable.

The gateway behavior with respect to the dialing and routing of calls can be safely altered using the 3050 ICP configuration tools. Refer to the *Advanced Network Installation and Administration Guide* for instructions on how to set up dial plans for these purposes.



If you left the trunk cable connections unplugged (as instructed in Chapter 2), it is safe to connect them now (plug the phone lines into the RJ-11 connectors on the back of the PSTN gateway).



If you reset or replace the PSTN gateway at any time, you will need to repeat the location selection to ensure that it is configured correctly for you location.

Programming the SIP phones

The 3050 ICP lets you define a SIP-phone default configuration template. The template's applied to each new SIP phone that you plug into the 3050 ICP LAN. This template assigns the extension number to the set and predetermines some behaviors such as how it will deal with unanswered calls.

You can use the individual user profile pages to set up features that are unique to each SIP phone (for example, the display name or teleworker networking parameters).

Autoconfigure page

To review and configure the Autoconfigure page

1. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Select **Autoconfigure** from the navigation menu.
3. Review the default values for the fields, and modify them as required.

User profile page

To review and configure the User profile page

1. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Select **Phones** from the navigation menu.
3. Locate the SIP phone that you want to configure. In the **User profile** column, click the corresponding **View** link.
4. Review the default values for the fields, and modify them as required.

SIP Phone Parameters

These parameters are accessed through the **Autoconfigure** or **User profile** pages.

Extension

This field appears in both the autoconfiguration and individual phone configuration pages, but it serves a slightly different purpose in each:

- The 3050 ICP assigns extension numbers sequentially to Mitel SIP phones as they are plugged into the LAN. It starts with the base extension number, then increments this by one for each additional extension (for example, the default range of extensions 1111, 1112, 1113... is created from the base extension number "1110"). If the default range does not work with your preferred dialing plan, modify the **Extension** number in the autoconfigure page.

Refer to the online *3050 ICP Advanced Network Installation and Administration Guide* for more information on how to design custom dialing plans for networked 3050 ICPs.



Modifying the autoconfigure **Extension** number from the factory default value is considered an advanced procedure, as it necessitates additional work to reconfigure the autoattendant and to create new voicemail user accounts.



You must avoid assigning any extension number or autoconfigure base extension number that conflicts with the system-reserved extensions **7000, 8000, 8001, 411, 611, and 911** as this will interfere with the operation of 3050 ICP.

- Modifying the value of **Extension** in the user profile page overrides the autoconfigured value which lets you change a phone's extension number.

Programmable Keys

This optional feature lets you pre-program the 7 user-programmable keys as speed-dial keys for phone numbers or URLs.

Do Not Disturb

Redirects all the user's calls directly to their voice mail, so they are not disturbed by a ringing phone.

Always Forward

Redirects all of the user's incoming calls to a designated number or URL, regardless of the state of the telephone.

No Answer Forward

Redirects the user's unanswered incoming calls to a designated number or URL.

Busy Forward

Redirects the user's incoming calls to a designated number or URL, when all four lines are busy.

Advisory Message

You can set up an advisory message to alert callers to your current availability status (for example, when you're going on vacation). This message can be turned on and off by pressing the **Advisory Message** key on the phone. The **Reasons** drop-down list has pre-programmed messages you can use, or you can enter a message of your own (maximum 20 characters) in the **Other** field.

Display Name

The display name corresponds to the extension user. It appears on the SIP phone display when it is idle, and it will identify the user when they make a call (caller ID name).

Phone Number

A public phone number can be programmed as an alternative contact number. The Default is blank.

E-mail

An e-mail address can be programmed, for alternative contact information. The Default is blank.

Number of voice mail rings

You can control how many times the phone rings before the call is forwarded to voice mail. Setting this value to 0, disables voicemail.

PPPOE login

Teleworkers with DSL links can use the PPPOE login to program their PPPOE user name into the SIP phone.

PPPOE password

Teleworkers with DSL links can program their PPPOE password into the SIP phone.

Teleworker

The Teleworker parameter presets a number of networking parameters to enable a phone to be used as a teleworker device (not directly connected to the 3050 ICP).

Connecting teleworker phones

If you plan to deploy Mitel Networks SIP phones in the field for use as stand-alone teleworker phones, you must perform either of the following two procedures on each teleworker phone:

Local configuration method

This method uses direct connection to the 3050 ICP to autoconfigure the phone for you. This is useful if you will be testing the phones out in the office first, before deploying them to the field.

1. Connect the SIP phone to the 3050 ICP LAN.

It will be recognized by the 3050 ICP and autoconfigured with the next available extension number.

2. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.

3. Select the **Phones** option.

A table of configured and registered phones is displayed.

4. Locate the table-row of the teleworker phone and click its **View** link to display its **Phone Configuration** page.

5. Locate the **Teleworker** field (near the bottom), and change the setting to **Yes**.

This reconfigures the phone’s SIP proxy setting to work properly once it’s deployed to the field.

6. Click the **Save and Reboot** button.

The phone reboots. You can now disconnect the phone and deploy it to the field.

After its connected to the Internet, an autoconfigured teleworker phone will automatically register with the 3050 ICP so that it can function as if it were directly attached to the 3050 ICP LAN.

Remote configuration method

This method can be used in the field with a new phone (one that has never been attached to the 3050 ICP before):

1. Launch the 3050 ICP configuration tool as indicated in "Launching the 3050 ICP configuration tool" on page 42.
2. Click **SIP Authentication**.
3. Click the **Add** button to add a new entry to the authentication table.
4. In the **User** field, enter a SIP authentication user name.
5. In the **Password** field, enter a SIP authentication user name.
6. Click the **Add** button to save your new entry.
The table will display the new user name as you entered it, but it will display the new password in an encrypted form. The encryption ensures that this password remains secure. Within a few minutes, the SIP phone should register with the 3050 ICP so that it can make and receive calls.
7. Using the Mitel SIP phone Web configuration tool:
 - set the **SIP Registry Server** to point to the 3050 ICP WAN IP address
 - verify that the **Authentication Method** is set to **Digest** authentication

- set the **SIP authentication User Name** and **Password** to the same values that you entered into the 3050 ICP (Steps 4 and 5).
8. Click **Save and Reboot** on the phone web-page. The phone will be recognized by the 3050 ICP and autoconfigured with the next available extension number.



For detailed instructions on how to use the Mitel networks 5055 SIP phone configuration tools, refer to the **Mitel Networks 5055 User Guide**.

Connecting other manufacturers' SIP phones

The 3050 ICP can work with any combination of SIP-compliant phones; however, there are some differences in how other manufacturers SIP phones interact with the 3050 ICP:

- While the network discovery process will register and autoconfigure Mitel Networks SIP phones, other manufacturer's phones require some manual configuration before they will register with the 3050 ICP.
 - Third party phones may not support all of the features of Mitel SIP phones.
1. Refer to the SIP phone manufacturer's documentation to learn how do the following:
 - SIP phones being used in teleworker mode, must have the "SIP Proxy" enabled and configured to point to the 3050 ICP WAN address, and must not have the "Outbound SIP Proxy" setting enabled or set to a value.
 - SIP phones being connected to the 3050 ICP LAN, must have the "Outbound SIP Proxy" enabled and configured to point to the 3050 ICP LAN address (default: 192.168.215.1), and must not have the "SIP Proxy" setting enabled or set to a value.
 - set the SIP registry server (SIP registrar) to point to the 3050 ICP LAN or WAN address (dependent on whether the phone is to be used in teleworker, or locally-connected mode).
 - set the phone to MD5 digest authentication.
 - set a SIP authentication user name and password.

- set the phone to use an extension number compatible with the 3050 ICP dial plan.
- 2. Launch the 3050 ICP configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
- 3. Click **SIP Authentication**.
- 4. Click the **Add** button to add a new entry to the authentication table.
- 5. In the **User** field, enter the same SIP authentication user name that you entered into the phone in step 1.
- 6. In the **Password** field, enter the same SIP authentication user name that you entered into the phone in step 1.
- 7. Click the **Add** button to save your new entry.

The table will display the new user name as you entered it, but it will display the new password in an encrypted form. The encryption ensures that this password remains secure. Within a few minutes, the SIP phone should register with the 3050 ICP so that it can make and receive calls.



Tip: Some of the options that are preprogrammed into Mitel networks SIP phones such as forward to voice mail, display name, and time display may also be supported by non-Mitel SIP phones (with a bit of work), refer to the manufacturer’s documentation.

Tip: The destination for call forward to voice mail is the voice mail user name. To determine the voice mail account name, see “Creating voice mail user accounts” on page 56.

Setting up voice mail accounts

By default, the 3050 ICP autoconfigures a set of generic user names (for example, user1111 for extension 1111, user1112 for extension 1112, user1113 for extension 1113...).

These user names

- Enable voice mail to function without further programming
- Give users access to shared resources such as system printers and file exchange
- Enable SIP phones to register with the 3050 ICP.

Creating voice mail user accounts

If you decide to create personalized user accounts that reflect the names of the users, or you need to use the 3050 ICP as your email server, you will have to create personalized voicemail accounts on the 3050 ICP:

1. Ensure that the SIP phones have been plugged in, powered up and autoconfigured. You will know that they have autoconfigured because they will display their extensions numbers.
2. Launch the 3050 ICP configuration tool as indicated in "Launching the 3050 ICP configuration tool" on page 42.
3. Click the **voice mail** option from the menu.

Voicemail Configuration	
User:	<input type="text"/>
Login Password:	<input type="password"/>
Verify Login Password:	<input type="password"/>
Remote Access PIN:	<input type="text"/>
Verify Remote Access PIN:	<input type="text"/>
Extension:	<input type="text"/>
<input type="button" value="Add"/>	
NOTE: Adding or Deleting a user may take a couple of minutes. Please be patient.	
User:	<input type="text"/> <input type="button" value="v"/>
<input type="button" value="Delete"/>	
Default Voice Mailbox	
Email Address:	<input type="text" value="Bob@icp3050.com"/>
SMTP Server:	<input type="text" value="Sales@icp3050.com"/>
<input type="button" value="Update"/>	

Figure 13: Voice mail account enable screen

4. Enter the appropriate information in the **Voicemail Configuration** fields.
 - The **User** field is for the user's name (for example "bob"). The 3050 ICP takes this name and appends the system domain name to it. For example, user "bob" on a system with domain-name "3050icp.com" produces email address "bob@3050icp.com".
 - Passwords are case-sensitive. They can contain up to 30 alpha-numeric characters. We recommend that you use a passwords that are at least 6 characters long, with at least one character being a digit.
 - Remote access PINs are 4-digit numbers.

- The **Extension** field associates a free, valid extension with a user for purposes of recording voice prompts.
5. We recommend leaving the Default voice Mailbox settings at their system-default values.
 6. Click the **Add** button.

Delete voice mail user accounts

Deleting a voicemail user account disables voicemail for that user, and deletes any existing voicemail messages that he or she might have.

1. Launch the 3050 ICP configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Click the **voice mail** option from the menu.
3. Select the user account from the **User** drop-down list, and click **Delete**.



Tip: By default, the 3050 ICP stores voice mail in its own e-mail server. This is the recommended and Mitel-supported configuration for the 3050 ICP.

Tip: Many ISPs provide users access to servers for storage of regular e-mail. This external e-mail server can be used to store 3050 ICP voice mail if it does not require outgoing authentication for sending mail. The current release of the 3050 ICP is designed to work optimally with its own e-mail server. As a result, Mitel does not support the use of an external e-mail server. When using an external e-mail server, some voice-mail features may not work as described in this documentation.

Setting up the autoattendant

The 3050 ICP is equipped with an autoattendant that plays a pre-recorded greeting to callers that directs them to dial an extension. By default, all incoming calls are presented to the autoattendant first. If you prefer to have incoming calls directed to a live attendant first, with the autoattendant as a backup, see “Live attendant position” on page 116 for details.

Greeting

The autoattendant delivers the following generic greeting:

Welcome to the autoattendant. Press Star to dial an extension.

You can use this greeting, or you can record your own.

Programming the autoattendant

The autoattendant can be programmed to prompt the caller to make a selection of one of up to 11 possible destinations, one for each telephone keypad key. A destination can be an individual user such as “Brian” or a group such as “Customer Service.” Once a destination is selected, the caller is forwarded to that destination where either the call is answered, or the caller is given the option of leaving a message.

The autoattendant associates telephone keypad keys with users who are programmed into the telephone system (see “Creating voice mail user accounts” on page 56 for details).

To associate a user with a keypad key

1. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.

2. Click the **autoattendant** entry.
3. Enter the extension number and user name next to each key.

Autoattendant

	<u>Extension</u>	<u>Description</u>
Option 1	<input type="text" value="1111"/>	<input type="text" value="user1111"/>
Option 2	<input type="text" value="1112"/>	<input type="text" value="user1112"/>
Option 3	<input type="text" value="1113"/>	<input type="text" value="user1113"/>
Option 4	<input type="text" value="1114"/>	<input type="text" value="user1114"/>
Option 5	<input type="text" value="1115"/>	<input type="text" value="user1115"/>
Option 6	<input type="text" value="1116"/>	<input type="text" value="user1116"/>
Option 7	<input type="text" value="1117"/>	<input type="text" value="user1117"/>
Option 8	<input type="text" value="1118"/>	<input type="text" value="user1118"/>
Option 9	<input type="text" value="1119"/>	<input type="text" value="user1119"/>
Option 0	<input type="text" value="1111"/>	<input type="text" value="user1111"/>
Option #	<input type="text" value="7000"/>	<input type="text" value="Voice Mail"/>

Auto Attendant Prompt Recording

Extension to use

Figure 14: Autoattendant Configuration Screen

Option # connects a caller with the 3050 ICP general voice-mail inbox (7000 is the voice-mail extension number).

Record your greeting

1. If you have not already done so, launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Click the **autoattendant** entry.
3. Enter the extension number of the SIP phone that you will use to record and review the greeting in the **Extension to use** field.
4. Click the **Record** button, and wait for the selected phone to ring. Pick up the handset, or press the microphone key to use the phone to record your greeting.
5. When you are finished dictating the message, hang up the phone.
6. To listen to your greeting, click the **Preview** button, and wait for your phone to ring. Pick up the handset, or press the speaker key to use the phone to play your message. To hear your original greeting, click the **Play Current** button.
7. If, after hearing the greeting you decide to re-record it, repeat steps 2 and 3. If you are happy with your greeting, click the **Update** button to save it as your new greeting.

Autoattendant applications

A simple autoattendant application such as the one provided with the 3050 ICP can be programmed to offer callers more options for reaching extension users.

Groups

You can program the autoattendant to give callers the option of dialing a group of extensions (for example, those in the “order desk” group). For programming details, see the *3050 ICP Advanced Network Installation and Administration Guide*.

Setting the date and time

The 3050 ICP is pre-configured to obtain its date and time automatically from a Network Time Protocol (NTP) server as part of its network discovery process. This process cannot take time zones and daylight savings into account, so you may have to adjust the date and time manually, using the SME Server Manager application.

1. Log in to the SME Server with the ServiceLink Server Manager application as indicated in “SME server manager” on page 40.
2. Click the **Date and Time Configuration** option in the menu.
3. Follow the on-screen instructions to set the time.

Activating ServiceLink

The *3050 ICP Start Here Guide* explains how to register your trial ServiceLink subscription with the Mitel Networks Applications Management Center (AMC). Once the subscription is registered, you must activate it on the 3050 ICP, using the following procedure:

1. Log in to the SME Server with the ServiceLink Server Manager application, as indicated in “SME server manager” on page 40.
2. Under *ServiceLink* in the Server Manager's menu, click **Status**, and enter the **Service Account ID** that was provided to you when you registered the subscription with the AMC.
3. Click **Activate**.

The server connects to the AMC and synchronizes with it. You will see a screen telling you that registration was successful. The initial synchronization can take several minutes to complete.

At any time in the future, you or your customer can view the status of ServiceLink services by clicking **Status** in the Server Manager's navigation menu.

Using the default telephone configuration

The default 3050 ICP configuration allows you to make station-to-station calls, using a 4-digit dial plan. If you have a PSTN gateway, it will also immediately route certain pre-programmed numbers to the PSTN line. You do not need to dial “9” to get an outside line as is common in many business phone systems.

Calls originating from the PSTN are connected to a generic automated attendant greeting that invites them to select one of the 11 possible SIP-phone extensions or extension groups.

In order to personalize the greeting with your own message, see “Setting up the autoattendant” on page 59.

Dialing a station

When a SIP phone has been autoconfigured, it displays its extension number on the LCD.

If you have multiple networked 3050 ICPs, each can be assigned a separate range of 2-, 3-, or 4-digit extension numbers. In this case, a similar station-to-station dialing method can be used to reach any 3050 ICP-connected phone.

To dial a station

1. Lift the handset, and listen for dial tone.
2. Key in the station extension number.
3. Press the **Dial** softkey.

Dialing Numbers on the PSTN

1. Lift the handset, and listen for dial tone.

This selects the first free line. To select another line, press the associated line key.

2. Key in 7 or more digits.
3. Press the **Dial** softkey.



Your 3050 ICP is pre-configured to pass the special three-digit services (411, 611, and 911) directly to the first available trunk without requiring the numbers to be preceded by “9”.

Making a SIP call using a SIP URL

1. Lift the handset, and listen for dial tone.
2. Press the URL soft key.
3. Using the keypad, enter the address of the party you want to reach.
 - SIP URLs consist of the prefix “sip:” followed by a user name or global phone number and a domain name or IP address, for example: **sip:bob@10.1.2.3** or **sip:jane@sip.mitel.com** are valid SIP URLs.

Mitel SIP phones do not require you to enter the prefix “sip:” when dialing by URL.

- To enter a period (.) press star (*) twice, quickly.
 - To enter a colon (:), press star (*) four times, quickly.
 - To enter an @ symbol, press pound (#) twice, quickly.
- If the URL has more than 20 characters, the display will only show the last 20 characters.
 - If you make an error, press the back (<---) soft key to delete it, and enter the correct character.



4. Press the **Dial** softkey.

The 3050 ICP voice mail user's guide explains how to use the voice mail system.

Setting up a network printer

You can connect a printer directly to the printer port on the 3050 ICP, or you can connect to a network printer with an Ethernet interface via the Layer 2 switch.

The 3050 ICP does not perform any filtering on print requests. These requests are passed directly from the client computers to the printer in "raw" or "pass-through" mode. This means that the client computer must provide the driver appropriate for the printer.

To add a network printer

1. Log in to the SME Server with the ServiceLink Server Manager application, as indicated in "SME server manager" on page 40.
2. Under **Configuration**, select **Printers**.
3. Follow the on-screen instructions. If you choose "Network printer," enter the host name or IP address and the network printer name where requested.



Users cannot use the 3050 ICP print server until a user account is created for them and they have logged in with the correct user name and password. See "Creating voice mail user accounts" on page 56.

Making your 3050 ICP secure

Your 3050 ICP is shipped with factory default SIP-phone passwords and user names for the system manager and technicians. These passwords control access to confidential information such as voice mail and critical system configuration tools. As a security measure, the first time that users log in with any of the 3050 mktech, manager, or user accounts, they are required to select a new password.

The 3050 ICP supports three levels of password-protected users:

mktech users have access to all system configuration data, user accounts, and special troubleshooting tools such as the watchdog and the system process logs.

- Default user name: **mktech**
- Default password: **mkpa55wØrd**

Manager users have access to all system configuration data and user accounts.

- Default user name: **manager**
- Default password: **icp3050manager**

Users have access to voice-mail configuration pages and system resources such as network printers.

- Default user name: **user<XXXX>**
- Default password: **user<XXXX>**

Where <XXXX> is the user's extension number (for example "user1111").

Changing passwords

You are required to change the default passwords for these accounts the first time you login to them. If you need to change them again after this, you can use the appropriate option in the **Change Password and PINS** section of the console.

User passwords can be changed by individual users, by using the user configuration tool. You may find it useful to pre-configure your user's browsers with bookmarks for the user configuration Web page; this will save them the need to manually enter this URL. Add a bookmark that points to **http://192.168.215.1:8180**.



The user password-change procedure is explained in the *3050 ICP Voice Mail User's Guide*. This guide should be copied and given to each SIP phone user.

If users forget or lose their password, you can reset it to a known value, using the voice-mail configuration page (see "Setting up voice mail accounts" on page 56).



The 3050 ICP can be administered from a remote workstation, using the SSH protocol. By default, remote SSH and command-line access are disabled to increase system security. If you need to administer your 3050 ICP remotely, refer to "Enable SSH access (one-time procedure)" on page 40.

Connecting IP devices to your network

Introduction

Before you can connect IP devices such as desktop computers or POS systems to your Layer 2 switch or to 5055 SIP phone Ethernet ports, you must configure them to work with the switch and 3050 ICP networking setup.

Check your desktop computer network configuration

TCP/IP is the protocol used to connect desktop computers to the 3050 ICP. You must complete the following steps for each desktop computer or POS system:

1. Ensure that TCP/IP protocol is enabled on your computer and that any non-TCP/IP protocols are disabled.
2. Enable DHCP service.
3. If you are using a Microsoft operating system, you must ensure that your workgroup is the same as the workgroup name of your server. (The default workgroup name is your domain name.)

Select the appropriate instructions from the following list:

Windows® 95/98

1. From the **Start** menu, click **Settings**, and then click **Control Panel**.
2. In the Control Panel window, double click the **Network** icon.
3. Click **Configuration**.
4. Click the TCP/IP component, and then click **Properties**.

5. Select "Obtain an IP address automatically".
6. Click **OK**.
7. Restart your PC.

You are now set up to connect to the 3050 ICP system.

Windows NT

1. Log in to the PC with administrator privileges.
2. In the Control Panel window, double click the **Network** icon.
3. Click the **Protocols** tab.
4. The Network Protocols window should only contain **TCP/IP Protocol**. If other protocols are present, remove them with the **Remove** button. If **TCP/IP Protocol** is missing, use the **Add** button to add it.
5. Click **TCP/IP Protocols**, and then click **Properties**.
6. From the Adapter drop-down list, highlight the device that is being used to connect to the 3050 ICP system, then click **Obtain an IP address from a DHCP server**.
7. Click **OK**.
8. Click **Yes**, and then restart your PC.

You are now set up to connect to the 3050 ICP system.

Windows 2000

1. Log in to the PC with administrator privileges.
2. Open the Control Panel window, and double-click the **Network** icon.
3. Double-click the **Local Area Connection**.

4. In the Local Area Connection Status Page, click **Properties**.
5. Click **Obtain an IP address automatically**.
6. From the Adapter drop-down list, highlight the device that is being used to connect to the 3050 ICP system, then click **Obtain an IP address from a DHCP server**.
7. Click **OK**.
You are now setup to connect to the 3050 ICP system.
8. Reboot Windows 2000.

Windows ME

1. From the **Start** menu, select the **Settings** tab and then **Control Panel**.
2. In the Control Panel window, double-click the **Network** icon.
3. Select the **Configuration** tab in the Network window. This window displays a list of installed network components. It should only contain the **TCP/IP Protocol**. If other protocols are present, remove them with the **Remove** button. If **TCP/IP Protocol** is missing, use the **Add** button to add it.
4. Highlight the TCP/IP component, and click **Properties**.
5. Select the radio button marked **Obtain an IP address automatically**.
6. Click **OK**, and then restart your PC. You are now set up to connect to the 3050 ICP system.

Windows XP

1. Log in to the PC with administrator privileges.

2. From the **Start** menu, select the **Settings** tab, and then **Control Panel**.
3. In the Control Panel window, double-click the **Network and Internet Connection** icon.
4. Double-click the **Local Area Connection** (LAN or High Speed Internet).
5. Click **General** in the Local Area Connection Status page, and choose **Properties**.
6. Click the **General** tab in the Local Area Connection Properties window. This displays a list of installed components.
7. Highlight Internet Protocol (TCP/IP) and choose **Properties**.
8. Select **Obtain an IP address automatically**.
9. Click **OK**, and then restart your PC.
You are now setup to connect to the 3050 ICP system.

Assigning static LAN IP addressees

If you have a PC, Macintosh, or POS that does not support DHCP, then you will have to manually assign an IP address to it that does not conflict with the ones that the 3050 ICP reserves for DHCP. To do this, assign your static IP addresses in the range of 192.168.215.20 to 192.168.215. 64. Refer to your workstation documentation for instructions on how to assign a static IP address to it.

Setting up your e-mail clients (optional)

The 3050 ICP has a POP3 and IMAP e-mail server that is used to store voice mail. Users can always access their voice messaging from their phones; however, with a bit of work, you can configure their e-mail client software to

receive voice-mail messages as audio attachments to e-mails. This feature lets them use their e-mail to review and manage both regular e-mail and voice mail from a single application.

E-mail clients such as Microsoft Outlook Express allow you to configure several e-mail servers as sources for e-mail.

The following is an example procedure for setting up Microsoft Outlook Express to receive voice mail from the 3050 ICP e-mail server:

1. Open Outlook Express, select the **Tools** menu, then select **Accounts**.

The Accounts window is displayed.

2. Click the **Add** button.
You are prompted to select the type of account to add,
3. Select **Mail**.
4. You are prompted to enter information such as **Display Name** and **e-mail Address**. This information is not applicable to voice mail, so you can enter anything here.
5. You can leave the incoming e-mail server type as **POP3**.
6. For the **Incoming mail (POP3, IMAP or HTTP) server**, enter the 3050 ICP LAN port IP address (the system default is 192.168.215.1).
7. For the **Outgoing mail (SMTP) server**, enter the 3050 ICP LAN port IP address (the system default is 192.168.215.1).



Tip: In cases where multiple 3050 ICPs with IPSEC VPN have been configured, the default LAN IP may have been changed.

8. Fill in the rest of the fields appropriately to complete the add an account wizard.
9. Your new account is displayed in the "Internet Accounts" window. Highlight it and click **Properties**.
10. Select the **Advanced** tab, and ensure that the **leave a copy of messages on server** check box is selected. It's a good idea to click on the other options for removing e-mails from the server (after several days or when deleted); these options will prevent your server from filling up with too much old voice mail.

If you use an e-mail client other than Microsoft Outlook Express, refer to the documentation that comes with it. Make sure that you configure it to leave messages on the server, as described in the above example (step 10).

Setting up workstation Internet browsers

Most browsers are configured using a dialog box called "preferences," "network preferences," or "Internet options." Some browsers need to be configured to access the Internet either directly or using a proxy server. For the 3050 ICP, your browser should be configured as though it is directly accessing the Internet (no proxy server). For example, if you are using Internet Explorer

1. Click the **Tools** menu, and select **Internet Options**.
2. Click the **Connections** tab.
3. Click the **LAN Settings** button.
4. Clear the **Use a proxy server** check box if it is selected.

Fill in the user quick reference table

In the process of installing and configuring your 3050 ICP, you will customize some of the system default values to reflect information unique to your installation (such as your domain name) or to enable some of the optional features offered by the 3050 ICP.

Before your users can take advantage of these features, they will need to know some essential pieces of information. This information is captured for you on a worksheet which can be found in the *3050 ICP Voice Mail User's Guide*.

We recommend that you

- Make enough copies of this guide for each user
- Customize each copy with information unique to each user (such as the user's account user name and default password)
- Distribute the guides to your users when you train them on the new system.

Training your users

Mitel Networks SIP phones have a number of user-configurable options that can take advantage of 3050 ICP features such as voice mail. Instructions for enabling these options and for using voice mail are in the *3050 ICP Voice Mail User's Guide*. The 5055 SIP phone user guide explains how to use many other useful features such as ringer-pitch adjust and speed-dial keys,

These guides are in downloadable form at <http://www.mitel.com>.

Going further

To install the following features or advanced configuration options, refer to the online documentation:

- Mitel ServiceLink—If you have activated your Mitel ServiceLink subscription, you may want to visit the Mitel ServiceLink configuration page at <https://mitel-amc.com> to configure your Server monitoring and Alerts.
- Installation of a 3050 ICP into an existing LAN or WAN
- 3050 ICP networking
- Virtual Private Network (VPN) configuration

Chapter 4

Maintenance

Overview

The procedures in this section will enable you to test the basic functions of a new or existing 3050 ICP installation and to operate the system in a manner that will maximize system reliability and availability. Some of these procedures (such as system backup) should be carried out on a regular basis to speed system recovery if the 3050 ICP requires replacement. Other procedures such as recovery from power outage address specific (unpredictable) circumstances.

This section details the following procedures:

- ☑ Determining if the system is healthy
- ☑ Adding, moving or removing SIP phones
- ☑ Orderly system power-down and power-up
- ☑ Recovering from a power failure
- ☑ Backing up your system configuration to a desktop computer

Is the system healthy?

To determine if your 3050 ICP system is functioning correctly, verify the following equipment:

- SIP phones
- Workstations, POS systems and the Internet gateway
- Printers

Verify the SIP phones

This procedure will verify the LAN connection between your phones, the 3050 ICP, and your SIP service provider on the Internet.

1. To verify a SIP phone, use it to make a station-to-station call to another SIP phone on the 3050 ICP local LAN.
2. If you can call another SIP phone on the 3050 ICP network, then try a call to an external number to verify a call path to the SIP provider.
3. If you have a PSTN gateway, try making a PSTN call to the 3050 ICP. Depending on how you have your incoming call hunt group programmed, the call will be directed to a live attendant or the autoattendant. Successful direction to either destination verifies operation of the PSTN gateway and associated trunks.
4. From SIP phone, dial **7000**. You should hear the general system voice mail greeting. This verifies basic voice mail system operation. If your users's phones are configured to forward calls to voice mail, then you can test individual voice mail accounts by dialing them and leaving test messages.
5. From a SIP phone, pick up the handset, dial **8001**, and press the **Dial** soft key. You should hear the

autoattendant prompt. Successful playing of the prompt verifies basic autoattendant operation.

If your system passed all tests, then you have a fully functioning telephone system.

Verify the workstations or POS systems and the Internet gateway

This procedure will verify the LAN connection between your workstations or POS systems, the Layer 2 switch, the 3050 ICP and your ISP. It will also verify the correct operation of your e-mail application and user account and authorization setup.

1. Use a workstation that is either plugged into the 3050 ICP via the Layer 2 switch, or via the IP port on a 5055 phone to “ping” the 3050 ICP:
 - Ping 192.168.215.1 (the default 3050 ICP IP address)

You should get all packets returned. If you cannot successfully ping the 3050 ICP, refer to the troubleshooting instructions in Chapter 5.

2. On your workstation, launch a browser (Internet Explorer 5.5 or later or Netscape Navigator 6.0 or later), and enter the URL of an Internet site (preferably, one that you have not visited before). If you cannot reach any sites, refer to the troubleshooting instructions in Chapter 5.
3. Start your e-mail application, and log in. A successful login verifies that your e-mail client is correctly configured and that your account name and password are recognized by the system.

If your workstations or POS systems passed all tests, then you have a fully functioning LAN and Internet Gateway.

Verify the network printer (if present)

This procedure will verify correct operation of printers connected either directly to the 3050 ICP parallel printer port or USB port, or printers connected using the Layer 2 switch.

Use a workstation connected to the 3050 ICP to print a test page on the printer. If the page does not print, refer to the troubleshooting section in Chapter 5

If your printer passed all tests, then you have a fully functioning network printer.

Verify voice mail

For voice mail to function properly, you must have created and enabled voice-mail accounts (see "Creating voice mail user accounts" on page 56 for details).

To verify a voice mail account

1. Pick up a SIP-phone handset, and dial **7000**.
2. When the general voice-mail prompt begins to play, press star (*).
3. When the system prompts you to enter a voice mail ID, enter the ID and PIN.

The system plays a message indicating the number of saved messages. This verifies that the voice mail system works and that the voice mail account is enabled and functioning.

Verify autoattendant

The autoattendant is pre-configured to direct calls coming from the PSTN to extensions 1111 to 1119, with generic user names such as “user1111,” “user1112,” and so on.

To test the autoattendant:

1. If you have a PSTN gateway, dial the public phone number of the 3050 ICP. If you do not have a PSTN gateway, dial **8000** from any SIP set.
2. When the autoattendant greeting plays, select an extension by pressing one of the numeric keys. The corresponding SIP phone should ring.

This verifies the autoattendant programming and basic functionality.

Adding, replacing or removing SIP phones

The 3050 ICP uses an automatic phone registration and configuration process to detect phones as they are powered up.

Registration is the process by which the ICP 3050 detects a SIP phone and adds it to its SIP registry.

Auto-configuration is the process by which the 3050 ICP pre configures a Mitel Networks SIP phone with 2-, 3-, or 4-digit extension numbers. Auto-configuration will not work with non-Mitel Networks Phones (you can still use 2-, 3-, or 4-digit dialing plans with these, but first, you have to manually set up their extension numbers and SIP parameters).

Adding a SIP phone

If you are adding a Mitel Networks plug it in and it will autoconfigure to a free extension number. For detailed information on autoconfiguration and manual configuration procedures, refer to “Programming the SIP phones” on page 47.

Replacing a SIP phone

The 3050 ICP has a feature that simplifies Mitel Networks SIP phone replacement. This feature copies the old phone's configuration into a new phone, saving you the need to manually re-program it:

1. Plug the new phone into the 3050 ICP LAN. It will autoconfigure to the next available extension number. If you have not already done so, remove the old phone now.
2. Log in to the SME Configuration tool (see “Launching the 3050 ICP configuration tool” on page 42).

3. Select **Phone Replacement** from the navigation menu.
4. Select the extension number of the phone you are replacing in the **Phone extension to use** drop-down list.
5. Select the extension number of the new phone in the **Phone extension to replace** drop-down list.
6. Click the **Submit** button.
The old phone's configuration, including its voice mail setup and extension number, is copied to the new phone.

Local moves

If you need to move a SIP phone from one LAN drop to another on the local LAN, all you have to do is unplug the phone and plug it into the new location. The user's extension number and voice-mail configuration travels with the phone, regardless of where you plug it in.

Remote Moves

If you need to take a phone home for a period of time, you must switch the phone configuration to teleworker mode (see "Connecting teleworker phones" on page 51 for detailed instructions).

Since there is currently no way to move a user's configuration from one 3050 ICP to another, if you move a user from one 3050 ICP to another, that user will be assigned a new extension number and voice-mail account.

Removing a SIP phone

To remove a SIP phone, simply unplug it. Callers who attempt to reach a missing phone will be given the option of leaving the user a message (providing that voice mail

is enabled for this user).

If you need to permanently remove a SIP phone

1. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Click the **Phones** option from the navigation menu.
3. Locate the row with the phone that you want to remove.
4. Click the corresponding **Remove** link.

Changing a SIP phone Extension Number

If you need to change a SIP phone's extension number

1. Launch the configuration tool as indicated in “Launching the 3050 ICP configuration tool” on page 42.
2. Click the **Phones** option from the navigation menu.
3. Locate the row with the phone that you want to change, and click the corresponding **View** link.
4. Edit the contents of the **Extension** field, and optionally, the **Display Name** field.
5. Click the **Save and Reboot** button.

Powering down or powering up the system

Phone service

SIP phones depend on the 3050 ICP to set up and take down calls. If the 3050 ICP is powered down, existing broadband calls will be lost, and you will not be able to make new broadband calls.

Some of the optional add-ons for the 3050 ICP provide levels of phone service not available with a strictly broadband trunk-based system:

- If you have purchased and installed an external PSTN gateway that remains powered up while the 3050 ICP is powered down, then existing calls on the analog trunks will be maintained, but new calls may not be made or received.
- If you have installed an analog phone across an analog trunk line as a power-fail phone, then you can make and receive calls on it when either the PSTN gateway or the 3050 ICP, or both, are powered down.

Power down the 3050 ICP

The 3050 ICP is a server and should, therefore, be shut down in an orderly fashion to avoid the loss of data. Use the **Reboot** or **Shut down** command in the SME Server with ServiceLink Server Manager application for this purpose.



Do not remove power to the 3050 ICP by unplugging the power cord; this is unsafe and can lead to permanent loss of system-log information.

Power up the system

Once the system has been installed and powered up for the first time, there is no preferred order in which to power up the system components for subsequent power cycles.

3 to
5 min.



Press the power button on the front of the 3050 ICP to power it up. The length of the boot time is dependent on whether the system was powered down in a controlled manner or not. (Should a power outage cause an abrupt power-down, the system takes extra time during the next boot process to check the integrity of the file system).

Recovering from a power failure

If an un-expected power failure occurs, the 3050 ICP is designed to recover automatically once power is restored. Phone service should be re-established within 5 minutes of power restoration.

Note that logs of calls that were in progress at the time of the power failure are lost; however, all configuration information will be automatically recovered from storage.

Backing up and restoring your configuration

It is good practice to back up your 3050 ICP configuration files whenever you make a change to the configuration. Having a backup of the configuration simplifies the process of restoring the system to full operation if you ever need to replace your 3050 ICP. You can also use the backup and restore process to return a 3050 ICP configuration to a desired previous state in case of data corruption.

Backup and restore saves system configuration information consisting of

- User accounts
- System configuration (Dial plan programming, voice mail setup, and so on)
- Autoattendant recorded greeting and programming
- Voice-mail greetings

This procedure requires that you perform two steps:

1. Save the database to the 3050 ICP hard drive, using the 3050 ICP administration console.

2. Back up this database to a workstation on your LAN, using the **SME Server Manager Backup to Desktop** option.

Backup to desktop

3 to
5 min.



This is a two-step process that requires the use of both the 3050 ICP configuration tool and the SME server manager.

Backup does not interfere with the operation of the 3050 ICP in any way.

1. Select a PC that is connected to the 3050 ICP LAN, has a Web browser on it and at least 1 Mb of free hard-disk space.
2. From the PC, log in to the 3050 ICP administration console, and click **Backup/Restore**.
3. Click the **Backup** button.
4. When the “Database Backup Successful” message appears, log in to the SME Server Manager, and click on **Backup or Restore**.
5. Click **Backup to desktop**.
A browser window is displayed with the option “Backup to Desktop” selected.
6. Click the **Perform** button.
A browser file-download window is displayed
7. Select the option that lets you **Save a file to disk**.
8. Your browser will now prompt you to enter a file name and path for the backup file. Server Manager will append the file extension “tgz” to whatever file name you choose. This completes the backup to desktop procedure.

Verify desktop backup file

The Server Manager Backup or Restore page also lets you verify the contents of the backup file, using the **Verify Desktop Backup File** command. This is an optional procedure.

Restore from desktop

3 to
5 min.



This is a two-step procedure that is essentially, the reverse of the backup to desktop process. It will cause the system to perform a reboot so phone service will be unavailable during the reboot period.

1. Using the PC that was used to back up the 3050 ICP, log in to the SME Server Manager, and click on **Backup or Restore**.

2. Click **Backup to desktop**.

A browser window is displayed. Select the drop-down menu option Restore from Desktop, and click Perform.

3. You must enter the backup filename and path in the **Backup file to restore from** field (you can use the **Browse** button to locate it on the PC's hard drive).

A page titled "Restore in Progress" lists the files as they are restored to your 3050 ICP hard drive. When restoration is finished, a Restore Complete message is displayed at the bottom of the list.

4. Log in to the 3050 ICP administration console, and click **Backup/Restore**.

5. Click **Restore**.

A "Database Restore Successful" message appears. This completes the restoration procedure.

Chapter 5

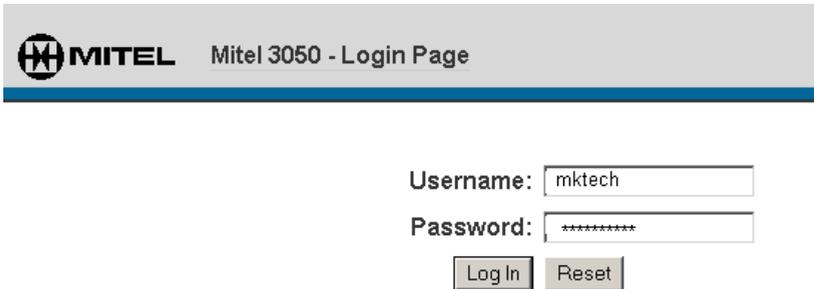
Troubleshooting

Accessing the Mktech tool

There is an alternative login method that's useful for performing some troubleshooting and system-upgrade procedures. This involves logging in as an "mktech" user.

1. To do this, point your browser to:
http://192.168.215.1:8180

The login screen is displayed.



MITEL Mitel 3050 - Login Page

Username:

Password:

Figure 15: Log-in page

2. Enter the user name, **mktech**, and password, **mkpa55w0rd**. An initial login mktech console is displayed that has only one option: to change the default manager password.

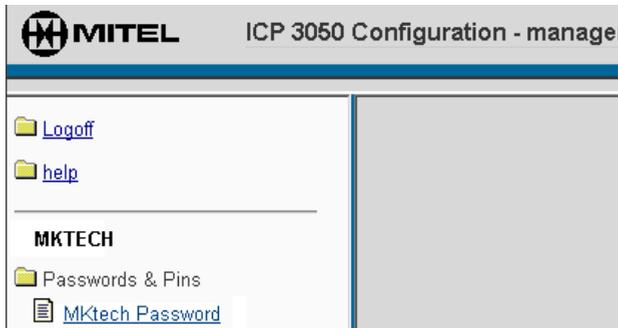


Figure 16: Mktech initial login page

3. Enter **mkpa55w0rd** in the **Enter Old Password** field.
4. Enter a new password in the **Change Login Password** and **Verify Login Password** fields, and then click **Update**. The full-version of the mktech console is displayed:

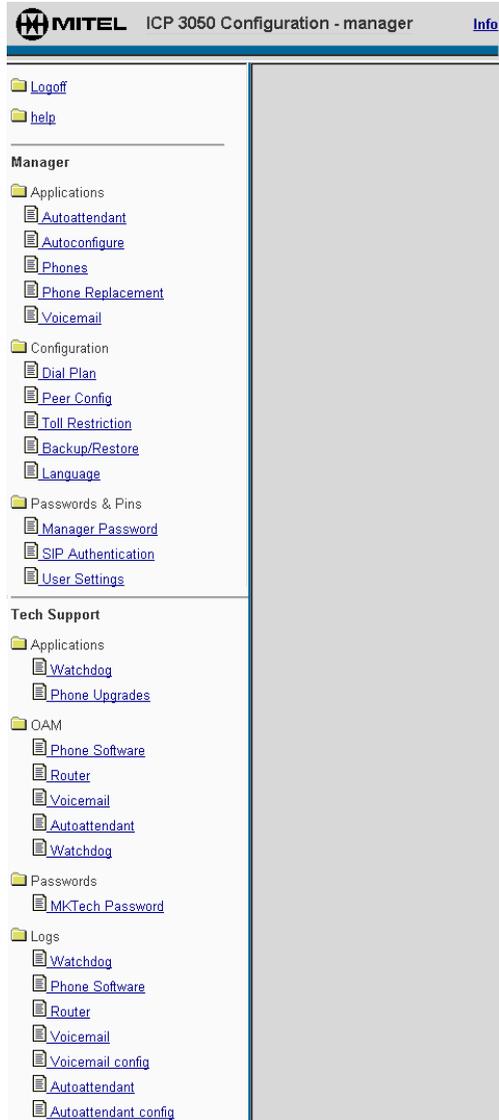


Figure 17: Mktch console

Using the watchdog view page

The 3050 ICP has a master process that monitors and controls the rest of the telephony software called the “watchdog.” You can view process status by displaying the watchdog view page. You can also use buttons on this page to shut down or restart individual processes. Since shutting down processes causes service interruption, this should only be done when

- The system is idle, or
- You are instructed to do so by Mitel Support.

Refer to the online help for more information on the processes controlled by the watchdog.

Upgrading phone firmware

This feature enables you to upgrade the firmware on Mitel SIP phones. You can upgrade a single phone, or all of them at once by clicking the appropriate link.



Check with Mitel technical support before performing a firmware upgrade to verify that your SIP phones and 3050 ICP both support this option.

Viewing OAM and log pages

OAM and log pages can be used to gather troubleshooting information about individual software processes on the 3050 ICP. Mitel technical support may direct you to view the contents of specific logs as part of the troubleshooting process.

Troubleshooting

If you have completed the system checkup described in Chapter 4 and are experiencing a problem, refer to Table 5 to isolate the problem and learn the recommended action.

Table 5: Troubleshooting

Symptom	Probable Cause	Corrective Action
None of the 5055 IP phones are working	Layer 2 switch is not working	<ol style="list-style-type: none"> 1. Verify that the Layer 2 switch has power, is configured, and is connected to both the 3050 ICP and the phones. 2. Check the Layer 2 switch port LEDs; they should be Green for each connected phone.
Some 5055 phones are working and some are not	There may be a problem with the wiring to the Layer 2 switch.	<ol style="list-style-type: none"> 1. Check the Layer 2 switch port LEDs for each phone; they should be Green. 2. Try plugging a PC into the ethernet port on the phone and “pinging” the 3050 ICP. If data packets can be exchanged, then the phone-to-switch and switch-to-3050 ICP physical layer connections are OK.
(Page 1 of 6)		

Table 5: Troubleshooting

Symptom	Probable Cause	Corrective Action
Some 5055 phones are working and some are not (con't)	If the Layer 2 switch wiring is OK, and the port LED is Green, then the phone may not be configured for DHCP (no IP address is being assigned to it, so it cannot connect to the 3050 ICP).	<ol style="list-style-type: none"> 1. Check the SIP phone to see if it has been assigned a valid IP address: Press the blue Menu key, then the Line 1 key. The top line of the display shows the SIP Phone IP address. If the IP address begins with "192" then DHCP has not assigned a valid address to the phone. 2. Verify that DHCP is enabled on the phone. 3. Compare the configuration of a working 5055 SIP phone to one of the ones that is not working to see if there are any other possible configuration problems.
Some 5055 phones are working and some are not (con't)	Faulty phone.	<ol style="list-style-type: none"> 1. Check the phone power supply. 2. Put the phone through a power cycle. 3. Replace the phone with a known working phone of the same model to determine if the phone is faulty.
One or more Mitel SIP Phones do not auto-configure correctly	There are two LAN sockets on Mitel SIP phones; if the wrong socket is used, the 3050 ICP will fail to auto-configure the phone.	Check the cable connections to ensure that the phone line connection is the one that is plugged into the Layer 2 switch.

Table 5: Troubleshooting

Symptom	Probable Cause	Corrective Action
<p>Unable to make any external calls or frequently unable to access an external line through the SIP provider, but the phone can make station-to-station calls</p>	<p>Service provider has not connected the lines.</p>	<ol style="list-style-type: none"> 1. Unplug the 3050 ICP from your digital modem, then plug a 5055 phone or a PC directly into the modem. 2. Try to establish a SIP call. If you still can't establish a call, then your SIP phone configuration or SIP provider may be at fault.
	<p>3050 ICP is not connected to the Internet.</p>	<ol style="list-style-type: none"> 1. Restart the 3050 ICP. 2. Try accessing an Internet page through a workstation attached to the 3050 ICP. This will test the IP link between your ISP and the local network.
<p>The message waiting indicator on a Mitel SIP phone flashes to indicate messages, but when the user checks their voice-mail in-box, it states that there are no messages.</p>	<p>The user's voice-mail server setting is wrong.</p>	<p>Check the user's voice-mail settings to verify that the settings in Configure retrieval are correct.</p>
<p>(Page 3 of 6)</p>		

Table 5: Troubleshooting

Symptom	Probable Cause	Corrective Action
Printer connected to the 3050 ICP parallel printer port or USB port does not work	Parallel printer port or USB cable may be faulty.	Try a different cable.
	The client workstation printer driver may not be installed correctly.	<ol style="list-style-type: none"> 1. Refer to the printer documentation to determine what kind of driver is required to work with your workstation. 2. There are some newer printers that rely heavily on Windows to perform their print functions. These printers cannot be used with the 3050 ICP. <p>Note: The 3050 ICP does not have any printer drivers on it; it passes the print requests directly from the client computers to the printer in "raw" or "pass-through" mode.</p>
Printer connected to the Layer 2 switch does not work	The 3050 ICP is not configured to accept the printer IP address.	Many network printers use static IP addresses. You have to enter the static address into the 3050 ICP network configuration.
(Page 4 of 6)		

Table 5: Troubleshooting

Symptom	Probable Cause	Corrective Action
<p>Cannot receive or make calls on PSTN, T1/E1 or ISDN trunk lines</p>	<p>Trunk gateway is not working.</p>	<ol style="list-style-type: none"> 1. Verify that your gateway is installed, configured and has power. 2. If you have purchased an external gateway, check the gateway/Layer 2 switch connection. The switch port LED for the gateway should be Green. 3. If you are currently using only one trunk, try plugging it into the other trunk port on the gateway. 4. Check the trunk routing configuration. 5. Try power-cycling the gateway.
	<p>Telephone installer has not connected the trunk lines.</p>	<p>Unplug the gateway from the trunk line, then plug a compatible phone directly into the trunk to verify dial tone.</p>
<p>(Page 5 of 6)</p>		

Table 5: Troubleshooting

Symptom	Probable Cause	Corrective Action
<p>A network printer, PC or POS system connected to the 3050 ICP through the Layer 2 switch does not work, but the phones do.</p>	<p>The PC, POS system, or printer Ethernet interface or cable may be faulty or improperly configured.</p>	<ol style="list-style-type: none"> 1. Check the Layer 2 switch ports. A green LED indicates a good physical network connection. 2. If you are trying to connect a PC, try "pinging" the 3050 ICP to establish if there is a network connection. 3. Many network printers do not support DHCP for IP assignment (they use static IP assignment). Check your printer documentation to determine how it assigns IP addresses, and make the required configuration changes to your 3050 ICP (refer to the 3050 ICP online installation and administration instructions).
<p>(Page 6 of 6)</p>		

Going further

If the procedures outlined in Troubleshooting have not helped you to solve your problem, you can obtain advanced troubleshooting information by referring to the *3050 ICP Advanced Network Installation and Administration Guide*, which is available at URL: <http://www.mitel.com>.

If you have determined that a Mitel product is faulty, contact Mitel to obtain return-to-manufacturer authorization.

Appendix A System Default Configuration

SME Console Configuration

Some network configuration procedures require that you launch the SME Server Console Configuration process. This process is pre-configured to work with the 3050 ICP in a simple, stand-alone network server application. If, while in the process of reconfiguring one or more parameters in this tool, you need to reset any of these factory-default values, refer to table below.

Table 6: SME console configuration default values

SME Console Configuration Screen	Default Setting/Value
Primary Domain Name	example.com
Select System Name	icp3050
Select Local Ethernet Driver	via-rhine
Local networking parameters	192.168.215.1
Select local subnet mask	255.255.255.0
Select operation mode	Server and gateway
Select external access mode	Server and gateway - dedicated
Select external ethernet driver	rt18139 or tulip
External interface configuration	Use DHCP (send ethernet address as client identifier)
Select dynamic DNS service	off
Select DHCP server configuration	on
Select beginning of DHCP host number range	192.168.215.65
Select end of DHCP host number range	192.168.215.250
Select Master DNS server address	<Blank>
Select proxy server	No
Select Status reporting	No
Select console mode	auto
Contact e-mail address	<blank>

Table 7: Network set up default configuration

Description	Default
3050 ICP WAN server address	Assigned by DHCP by default
3050 ICP LAN Interface DHCP IP Address Range:	192.168.215.65 - 192.168.215.249
3050 ICP LAN Port Address	192.168.215.1
PSTN Gateway IP address	192.168.215.7
SME Root and administrator password	icp3050
Default Manager password	icp3050manager
Default mktech password	mkpa55wØrd

Table 8: System default dialing plan

Extension	Voice mail user name	Voice mail password	Voice mail PIN
1111	user1111	user1111	1234
1112	user1112	user1112	1234
1113	user1113	user1113	1234
1114	user1114	user1114	1234
1115	user1115	user1115	1234
1116	user1116	user1116	1234
1117	user1117	user1117	1234
1118	user1118	user1118	1234
1119	user1119	user1119	1234

Appendix B

SIP Dialing Reference

SIP Dialing Reference

Table 9: Valid SIP URL syntax

SIP URL	Explanation
SIP:someone@10.1.2.3	SIP URL with IP address.
SIP: someone@example.com;transport=TCP	SIP URL with transport specified as TCP. The default transport is UDP if none is specified.
SIP: someone@example.com	Basic SIP URL.
SIP:+12225550789@gateway.com;user=phone	SIP URL with global phone number and specified gateway.
SIP: +1 206 555-0246@1.2.3.4;user=phone	SIP URL with global phone number format and specified gateway

Table 10: Mitel SIP Phone character entry

Dial	Press								
	Once	Twice	3 Times	4 Times	5 Times	6 Times	7 Times	8 Times	9 Times
1	1	space	?	!					
2	2	a	b	c					
3	3	d	e	f					
4	4	g	h	i					
5	5	j	k	l					
6	6	m	n	o					
7	7	p	q	r	s				
8	8	t	u	v					
9	9	w	x	y	z				
0	0	+	&	%	\$	¥	“		
*	*	.	+	:	/	;	,	-	_
#	#	@	()	[]	<	>	

Appendix C

Special Features

Live attendant position

By default, the 3050 ICP directs all incoming PSTN calls to a hunt group (8000) that contains the extension number of the of the autoattendant (8001).

If you prefer to have incoming calls directed to a live attendant first, with the autoattendant as a backup, you can add one or more extension numbers to the hunt group, in front of the autoattendant. Hunt groups are ordered lists of possible call destinations that are tried in sequence, from left to right.

For example, if your receptionist happens to have extension 11, you could modify the default incoming call hunt-group dial plan rule to make extension 11 the first member of the group to be presented with the call.

Table 11: Receptionist position

Host	Digits	Priority	Forking	Digits to skip	Prefix to add	Suffix to add	Description
11 8001	8000	0	12				Incoming call hunt group

If you are familiar with the 3050 ICP Configuration tool, and dial-plan programming, you can go ahead now, and modify the default hunt group rule to include a live attendant. If you need more information on the tool or dial-plan syntax, refer to the tool's online help or the *3050 Advanced Networking and Administration Guide*.

Glossary

802.11	802.11 is a family of specifications for wireless local area networks (WLANs) developed by a working group of the Institute of Electrical and Electronics Engineers (IEEE). There are currently four specifications in the family: 802.11, 802.11a, 802.11b, and 802.11g. All four use the Ethernet protocol and CSMA/CA (carrier sense multiple access with collision avoidance) for path sharing.
ADSL	Asymmetric Digital Subscriber Line. Transmits digital information at a high bandwidth over existing lines to homes and businesses, providing continuous connection. ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part to receive information, while simultaneously accommodating analog information on the same line.
ANI	Automatic Number Identification. A service that provides the receiver of a telephone call with the number of the calling phone.
Autoattendant	A simplified automated attendant application that enables the 3050 ICP to automatically direct incoming calls to specific extensions or to prerecorded messages.
CAT5	A twisted pair Ethernet wiring standard used to connect 5055 SIP phones to Ethernet switches.
CLID	Calling Line Identity Display. Displays the number of an incoming external caller. If the external number is included in the System or Personal Directory, the number is replaced by the associated name in the directory.
DHCP	Dynamic Host Configuration Protocol. A network IP address negotiation protocol that establishes a relationship between the DHCP server and the DHCP client. As DHCP clients connect to the LAN, they query the DHCP server for a dynamically assigned IP address. The DHCP server assigns a dynamic address from its range of valid addresses.
DNS	Domain Name Service. The software and protocols that translate domain names to IP addresses. The 3050 ICP provides DNS lookup services for your local network. Your ISP links you to DNS servers that perform the same function in resolving names on the Internet.

DSL	Digital Subscriber Line. Provides high-bandwidth information over conventional copper wiring. The four most commonly-used types of DSL are ADSL, HDSL, SDSL, and VDSL.
Emergency Phone	A phone designated for making outgoing emergency phone calls such as the those on the 911 emergency network. Emergency phones often have special attributes such as high availability and the ability to provide automatic number identification to the emergency network.
Ethernet	The most widely-installed Local Area Network (LAN).
FTP	File Transfer Protocol. A protocol that enables a user to log into the Local Area Network, list directories, and copy files between systems. It can also be used to back up and restore system databases and to upgrade the system software.
Gateway	A port that connects multiple networks or subnetworks. Incoming and outgoing signals to and from different networks are converted from one form to another in terms of speed, protocols, and interchange codes.
IP Phone	A telephone that uses Internet Protocol to send or deliver voice.
IPSEC	IP SECurity. An encryption and authentication protocol that establishes secure client-to-server and server-to-server connections over the Internet.
LAN	Local Area Network. A network that connects PCs and other devices within a single location.
LDAP	Lightweight Directory Access Protocol. The 3050 ICP creates an LDAP local directory based on user account information. An LDAP server runs as a service on the 3050 ICP. LDAP-enabled e-mail applications such as Microsoft Outlook and Netscape Navigator can use this server to resolve local addresses.
LS/CLASS	Loop Start/Customer Local Access Signaling Services. This enables call information, that is, the caller's number and name, to be transmitted down an analog line that supports CLASS, for display on extensions with LCDs.

MAC address	Media Access Control address. On a LAN or other network, the MAC address is your PC's or IP telephone's unique identifier; every device on the network must have a MAC address. When connected to the Internet, a corresponding table relates the IP address to a MAC address on the LAN.
MP3	MPEG-1 Audio Layer-3. A digital audio-compression format that can be used to store recorded music or messages on the 3050 ICP.
NAPT	Network Port Address Translation. An extension to NAT that uses TCP/UDP ports in addition to network addresses (IP addresses) to map many private network addresses to a single outside address.
NAT	Network Address Translation. A service that translates the addresses of hosts on the local LAN to one or more external, globally unique addresses.
ONS	On-Premise Station. Extensions that are installed in the same building as a system, or extensions that can satisfactorily operate with a system when installed in an adjacent building without special circuit arrangements.
PBX	Private Branch Exchange. A system of connected telephone lines that serves a particular organization and uses telephone services rather than supplies them.
PPP	Point-to-Point Protocol. A data communications standard that allows two ends of a point-to-point serial interface to negotiate the parameters that will be used on the connection.
PPPoE	PPPoE is the Point-to-Point Protocol over Ethernet. It is an implementation of the PPP protocol used for dial up connections, configured to run over an Ethernet connection. Many ISPs that provide DSL connections use PPPoE.
POS	Point of Sales System is a IP-enabled device such as a credit-card scanner which can be connected to the 3050 ICP LAN.
PSTN	Public Switched Telephone Network.

ServiceLink	A Mitel Networks subscription service that enhances the security, reliability, and manageability of your network by providing Virus scanning, network alarm monitoring and reporting, Guaranteed E-mail, DNS Services, and a growing number of applications such as IPSEC VPN.
SIP	Session Initiation Protocol (SIP) is a multimedia signalling protocol used for establishing sessions in an IP network such as phone calls or multi-media conferences. SIP enables a host of new services such as voice-enriched e-commerce, Web page click-to-dial, Instant Messaging with buddy lists, and IP Centrex services.
SME Server	Small, Medium Enterprise Server.
SSH	Secure Sockets Shell. A secure, command-line based, remote access protocol for administration of servers such as the 3050 ICP.
Subnet Address	An extension of the IP addressing scheme that allows a site to use a single IP address for multiple physical addresses. External to the site, routing continues as usual by dividing the destination address into an Internet portion and a local portion. Gateways and hosts inside the site interpret the local portion of the address by dividing it into a physical network portion and a host portion.
Subnet Mask	A bit mask used to identify which bits in an IP address correspond to the network address and subnet portions of the address. This mask is referred to as the subnet mask because the network portion of the address can be determined by the class inherent to an IP address. The subnet mask has 1s in positions corresponding to the network and subnet numbers and 0s in the host number positions.
TFTP	Trivial File Transfer Protocol. A simplified version of FTP; however, TFTP does not provide password protection when downloading software and transferring files. This type of protocol relies on UDP, which cannot guarantee delivery.
UDP	User Datagram Protocol. A connectionless protocol that delivers data packets without guaranteed delivery or acknowledgement.

URL	Uniform Resource Locator. An Internet address, such as www.mitel.com , with a protocol prefix, such as http:// , to indicate the type of Internet service being addressed.
Voice Mail	A simple, individually managed message recording application that enables callers to leave voice messages for 3050 ICP SIP phone users.
VoIP	Voice over IP. Used in IP telephony for controlling the delivery of voice information, using the Internet protocol.
VPN	In the Context of the 3050 ICP, the Virtual Private Network creates a secure, encrypted remote IP connection between a VPN client and your LAN, using the Internet as the transport medium.
WAN	Wide Area Network. A network that connects PCs serving users who are not located within a single location.
xDSL	A generic reference to related DSL technologies.

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