



Avaya Interchange

Release 5.4

Concepts, Features, and Planning Guide

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Notice

Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

Your Responsibility for Your System's Security

Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party, for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk of toll fraud associated with your telecommunications system and, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

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Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Canadian Department of Communications (DOC)

Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le reglement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Trademarks

See the section titled "About This Book."

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to the "Limited Use Software License Agreement" card provided with your package.

European Union Declaration of Conformity

Avaya Inc. Business Communications Systems declares that the equipment specified in this document conforms to the referenced European Union (EU) Directives and Harmonized Standards listed below:

EMC Directive 89/336/EEC

Low-Voltage Directive 73/23/EEC



The "CE" mark affixed to the equipment means that it conforms to the above directives.

Contents

Contents	iii
About This Document	ix
■ Purpose	ix
■ Intended Audiences	ix
■ Release History	ix
■ How to Use This Book	ix
■ Conventions Used in This Book	x
Terminology	x
Terminal Keys	xii
Screen Displays	xiii
Other Typography	xiii
Safety and Security Alert Labels	xiv
■ Related Resources	xiv
Documentation	xiv
Training	xv
■ Trademarks and Service Marks	xv
■ How to Comment on This Book	xvii
■ Product Support	xvii
1 Avaya Interchange Description	1
■ What's in This Chapter?	1
■ What Is Avaya Interchange?	1
■ Interchange Features	2
■ AMIS Analog Gateway	5
■ Octel Analog Networking Gateway	6
■ Aria Digital Gateway	7
■ Serenade Digital Gateway	8
■ VPIM Digital Gateway	9
■ Interchange System Capacities	10
■ Interchange System Capabilities Comparison	12
Subscriber Capabilities	12
Lists Capabilities	15
■ Interchange Networking Features	20
Future Delivery Considerations	30

■ Interchange Message Component Types	32
■ Administrator Interface	33
Adding Remote Machines	33
Defining Directory Views	33
Defining Dial Plan Mapping	34
Message Confirmation Comparison	34
■ Remote Machine Considerations	37
Aria Octel Analog Networking	37
Octel 100 Analog	37
DEFINITY ONE and IP600	38
Unified Messenger	38
Aria Digital and Serenade Digital	39
VPIM Digital	40
■ Remote Subscribers	42
Registering AMIS Analog and Octel Analog Networking Subscribers on the Interchange	42
Registering Aria Digital and Serenade Digital Subscribers on the Interchange	43
Registering VPIM Subscribers on the Interchange	44
Subscriber Updates	45
When Subscriber Updates Occur	45
■ Unsupported Features	50
■ Interchange Maintenance	50
2 Avaya Interchange Networking	51
■ What's in This Chapter?	51
■ What Is Networking?	51
Digital Networking (AUDIX, Aria, Serenade, and VPIM)	52
Types of Digital Networking Connections	53
AMIS Analog Networking	53
Octel Analog Networking	54
TCP/IP Networking's Impact on LAN Traffic	55
Voice Message Impact	55
Fax Message Impact	55
E-mail Message Impact	55

	TCP/IP Networking LAN Traffic Example	55
■	Networking Terminology	56
	Machine Types	56
	Subscriber Types	56
3	Avaya Interchange Requirements	57
■	What's in This Chapter?	57
■	Cluster Configuration	57
■	Interchange System Requirements	59
	Cornerstone	60
	Installed Systems	60
	Switch Connections	60
A	Subscriber Interface Information	63
■	What's in This Appendix?	63
■	Subscriber Interface Differences	63
	AUDIX Differences	65
	AMIS Differences	65
	Aria and Serenade Differences	66
B	Important Factors to Consider When Implementing an Avaya Interchange System	67
■	What's in This Appendix?	67
■	General User Interface Considerations	68
	Remote Machine Voiced Name	68
	Future Delivery	69
	Subscriber ASCII Name Field	70
	Accessed / Return Receipt / Positive Confirmation/Message Disposition Notification	70
	Negative Confirmation	70
	Failed Message Notification	70
	Extended Absence Greeting (EAG) Warning Notification	71
	Interchange Announcements	71
	Delivered Indicator	72
	Call Sender Feature	72
■	General Network Configuration Considerations	73
	Analog Fallback	73

Uniform Network Address Length	73
Multiple Length Mailbox IDs	74
Hybrid Networks	74
Upgrading from Octel Analog Networking to Digital	74
Impact When Moving from Point-to-Point Network to Interchange Network	75
Lists	75
Personal Address Book	75
Message Headers	75
Maximum Port Number Capacities Are Not Additive	76
Subscriber Bulk Add by Range Utility	77
■ Enterprise Lists Considerations	78
General Enterprise List Considerations	78
Enterprise List Usage for Octel Analog Networking, Aria Digital, Serenade Digital, and VPIM Users	80
Enterprise Lists and Point-to-Point Networking	80
■ Serenade-Specific Considerations	81
Serenade Digital Call Processing Features	82
Serenade Gateway Support	82
Serenade Multiple Voice Components	82
Reply, Forwarded, and Auto-Copy Message Indication	82
■ Aria-Specific Considerations	83
Alias Mailbox Support	83
Upgrading from Aspen to Aria Digital	83
Mixed Private/Priority Messages from Aria	84
Aria Digital Version Numbers	84
8 Second Spoken Names Using Aria Octel Analog	84
Subscribers with No Recorded Spoken Name	84
■ Unified Messenger-Specific Considerations	85
Unified Messenger Directory Updates	85
Private Messages	85
■ VPIM Considerations	86
Variable Length Mailbox IDs	86

<u>Network Address Length Greater than 10 Digits</u>	<u>86</u>
<u>Network Turnaround</u>	<u>87</u>
<u>Disabling Updates In/Out</u>	<u>87</u>
<u>Converting from AMIS to VPIM</u>	<u>87</u>
<u>Sender Voice Name and ASCII Name</u>	<u>87</u>
<u>Multiple Component Handling</u>	<u>87</u>
■ <u>Migration Considerations</u>	<u>88</u>
<u>Index</u>	<u>89</u>

About This Document

Purpose

This book, [Avaya Interchange Release 5.4 Concepts, Features, and Planning Guide](#), describes hardware and software requirements for and provides a description of the Avaya Interchange. It includes information about the architecture, user interface, protocol gateways, system capacities, and implementation considerations. It contains information that is specific only to the Avaya Interchange system.

Intended Audiences

This book is intended primarily for customers, marketing personnel, and service providers for the Interchange system.

Release History

This is the third release of this book.

How to Use This Book

This book is organized into the following sections:

- [Chapter 1, Avaya Interchange Description](#), provides a description of the Avaya Interchange. It includes information about architecture, user interface, the AMIS Analog Gateway, Octel Analog Networking Gateway, Aria Digital Gateway, Serenade Digital Gateway, Intuity Digital Gateway, VPIM Digital Gateway, and system capacities.

- [Chapter 2, Avaya Interchange Networking](#), provides an introduction to the basics of Avaya Interchange networking. It includes definitions of digital networking, Audio Messaging Interchange Specification (AMIS) analog networking, Octel Analog Networking, Voice Profile for Internet Mail (VPIM), types of networking connections, and networking terminology.
- [Chapter 3, Avaya Interchange Requirements](#), describes the hardware and software requirements for a Avaya Interchange system.
- [Appendix A, Subscriber Interface Information](#), compares the differences among the different messaging systems from the subscriber's perspective.
- [Appendix B, Important Factors to Consider When Implementing an Avaya Interchange System](#), provides information about considerations relative to implementing an Interchange network. It also documents differences to consider for those customers moving from a point-to-point network to an Interchange network.

Conventions Used in This Book

This section describes the conventions used in this book.

Terminology

The following terms are used in this book:

- The word “type” means to press the key or sequence of keys specified. For example, an instruction to type the letter “y” is shown as
Type **y** to continue.
- The word “enter” means to type a value and then press **ENTER**. For example, an instruction to type the letter “y” and press **ENTER** is shown as
Enter **y** to continue.
- The word “select” means to move the cursor to the desired menu item and then press **ENTER**. For example, an instruction to move the cursor to the start test option on the Network Loop-Around Test screen and then press **ENTER** is shown as
Select Start Test.
- The terms “subscriber” and “user” are interchangeable terms that describe a person administered on the Interchange system. The term “subscriber” is the preferred term in the text and is the command word you must type at the command line, for example, **change subscriber “Jane Doe.”**
- The Avaya Interchange system displays *screens*, *windows*, and *menus*. Screens make up the Interchange user interface through which you can enter data or commands or access windows or menus ([Figure 1](#)). Windows

show and request system information (Figure 2). Menus present options from which you can choose to view another menu, screen, or window (Figure 3).

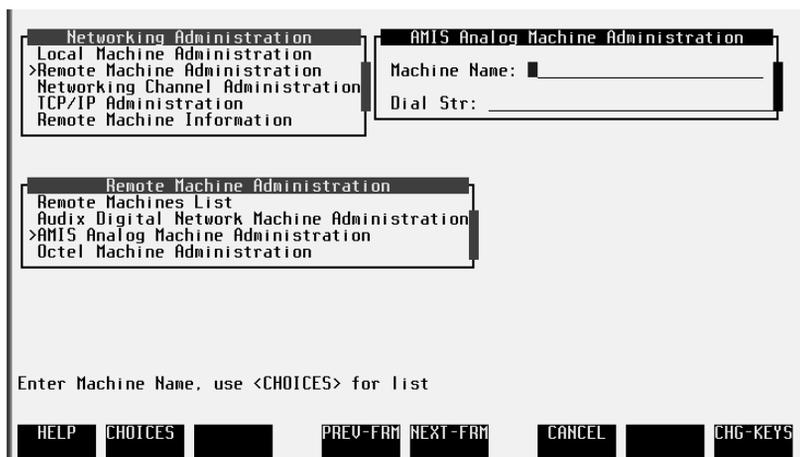


Figure 1. Example of an Avaya Interchange Screen

Feature Options (Read Only)		
Feature Option	Current	Maximum
Aria Digital Ports	8	8
Call Detail Recording (CDR)	ON	N/A
Enterprise Lists Administration	ON	N/A
High speed digital ports	2	12
Low speed digital ports	2	12
Max Number of Octel Nodes	6	50
Maximum Number of AMIS Nodes	6	50
Maximum Number of Digital Nodes	20	50
SCSI Disk Mirroring	OFF	N/A
SNMP	ON	N/A
Serenade Digital Ports	8	8
TCP/IP Administration	ON	N/A
TCPIP digital ports	12	12
Text-to-Speech Sessions	0	30
UPIM Ports	5	10
hours_of_speech	200	1114
voice_ports	6	6

Figure 2. Example of an Avaya Interchange Window

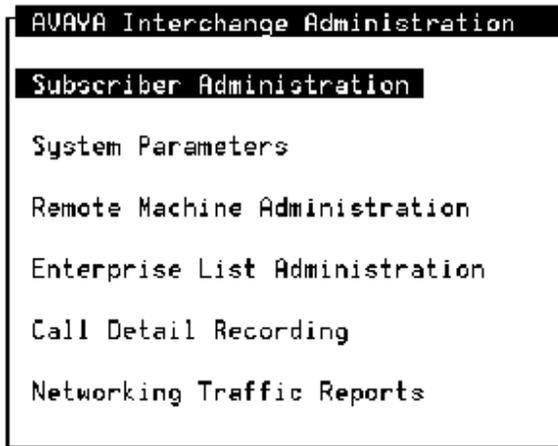


Figure 3. Example of an Avaya Interchange Menu

Terminal Keys

The following list identifies actions you perform on the computer keyboard:

- Keys that you press on the computer *keyboard* are shown as rounded boxes. For example, an instruction to press the Enter key is shown as

Press **ENTER**.

- Two or three keys that you press at the same time on the computer *keyboard* (that is, you hold down the first key while pressing the second and third keys) are shown as a series of separate rounded boxes. For example, an instruction to press and hold **ALT** while typing the letter "d" is shown as

Press **ALT** **D**.

- A combination keystroke is a series of keystrokes that combines two key functions plus a third key. You press and hold down the first key, press the second key, and then release those keys and press a third key. A combination keystroke is represented as an equation. For example, an instruction to press and hold while typing the letter "d" and then typing the number "1" is shown as

Press **ALT-D** **1**.

- Function keys on the computer keyboard or system screens, also known as *soft keys*, are shown as round boxes followed by the function or value of that key enclosed in parentheses. For example, an instruction to press function key 2 is shown as

Press **F2** (Choices).

- Keys that you press on the *telephone keypad* are shown as square boxes. For example, an instruction to press the first key on the telephone keypad is shown as

Press 1 to record a message.

Screen Displays

The following list identifies formats used in Interchange screens:

- Values, system messages, field names, and prompts that appear on the screen are shown in typewriter-style `constant-width` type, as shown in the following examples:

Example 1:

```
Enter the number of ports to be dedicated to outbound traffic in the
Maximum Simultaneous Ports field.
```

Example 2:

```
Alarm Form Update was successful.
Press <Enter> to continue.
```

- The sequence of menu options that you must select to display a specific screen or submenu is shown as follows:

Start at the Administration menu and select

```
> Interchange Administration
> Subscriber Administration
```

In this example, you access the Administration menu and select Interchange Administration menu. From the Interchange Administration menu, you then select the Subscriber Administration screen.

- Screens shown in this book are examples only.

Other Typography

The following list identifies how bold and italic type are used:

- Commands and text you type or enter appear in **bold type**, as in the following example:

Type **high** or **low** in the `Speed:` field.

- Command variables are shown in ***bold italic*** type when they are part of what you must type and *regular italic* type when they are not, for example:

Enter **ch ma *machine_name***, where *machine_name* is the name of the call delivery machine you just created.

Safety and Security Alert Labels

This book uses the following symbols to call your attention to potential problems that could cause personal injury, damage to equipment, loss of data, service interruptions, or breaches of toll fraud security:

CAUTION:

Indicates the presence of a hazard that, if not avoided, can or will cause minor personal injury or property damage, including loss of data.

WARNING:

Indicates the presence of a hazard that, if not avoided, can cause death or severe personal injury.

DANGER:

Indicates the presence of a hazard that, if not avoided, will cause death or severe personal injury.

Related Resources

This section describes additional documentation and training available for you to learn more about installation and operation of the Avaya Interchange product.

Documentation

It is recommended that you obtain and use the following books in conjunction with this book:

- [Avaya Interchange Release 5.4 MAP/5P System Installation](#)
- [Avaya Interchange Release 5.4 MAP/5P System Maintenance](#)
- [Avaya Interchange Release 5.4 MAP/100P System Installation](#)
- [Avaya Interchange Release 5.4 MAP 100/P System Maintenance](#)
- [Avaya Interchange Release 5.4 Administration](#)
- [Avaya Interchange Release 5.4 Software Upgrades](#)
- [Avaya Interchange Release 5.4 Alarm and Log Messages](#)
- [Avaya Interchange Release 5.4 Installation and System Recovery](#)

It is recommended that you obtain and use the following book for information on security and toll fraud issues:

- *Avaya Products Security Handbook*, 555-025-600

See the inside front cover for information on how to order Avaya documentation.

Training

For more information on Interchange training, call the Avaya University at one of the following numbers:

- Organizations within Avaya: (904) 636-3261
- Avaya customers and all others: (800) 255-8988

Trademarks and Service Marks

The following trademarked products are mentioned in books in the Interchange document set:

- 5ESS is a registered trademark of Lucent Technologies.
- AT is a trademark of Hayes Microcomputer Products, Inc.
- AUDIX is a registered trademark of Avaya Inc.
- cc:Mail is a registered trademark of cc:Mail, a subsidiary of Lotus Development Corporation.
- COMSPHERE is a registered trademark of Paradyne Corp.
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- MERLIN LEGEND is a registered tradesman of Avaya Inc.
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- Netware Loadable Module is a trademark of Novell, Inc.
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- SL-1 is a trademark of Northern Telecom Limited.
- softFAX is a registered trademark of VOXEM, Inc.
- SUPERSET is a trademark of Mitel Corporation.
- SX-100 is a trademark of Mitel Corporation.
- SX-200 is a trademark of Mitel Corporation.
- SX-2000 is a trademark of Mitel Corporation.
- Telephony OneStop is a trademark of Lotus Development Corporation.
- TMI is a trademark of Texas Micro Systems, Inc.
- UNIX is a registered trademark of UNIX System Laboratories, Inc.
- VB-PC is a trademark of Voice Technologies Group, Inc.
- VoiceBridge is a registered trademark of Voice Technologies Group, Inc.
- VOXEM is a registered tradesman of VOXEM, Inc.
- VT100 is a trademark of Digital Equipment Corporation.
- Windows is a trademark of Microsoft Corporation.

How to Comment on This Book

We are interested in your suggestions for improving this book. Please complete and return the reader comment card located behind this page. If the reader comment card has been removed, send your comments via the internet to infodev@avaya.com or mail your comments to:

Avaya Inc.
Product Documentation
Room D1-B53
1300 W. 120th Avenue
Denver, Colorado 80234-2703 US

You may also fax your comments to the attention of the Avaya Interchange writing team at (303) 538-9625.

Product Support

If you have questions about how to use Avaya Interchange, contact one of the following resources:

- your Avaya Account Representative
- the Avaya Remote Support Center at + 800-242-2121

Avaya Interchange Description

1

What's in This Chapter?

This chapter provides a description of the Avaya Interchange. It includes information about architecture, user interface, the AMIS Analog Gateway, Octel Analog Networking Gateway, Aria Digital Gateway, Serenade Digital Gateway, VPIM Digital Gateway, and system capacities.

What Is Avaya Interchange?

The Avaya Interchange allows networking customers to simplify their network topology and administration by supporting store-and-forward message protocols. With Interchange, you can exchange messages between different voice messaging systems.

The Interchange network topology includes:

- A Multi-Application Platform 5P (MAP/5P) or Multi-Application Platform 100P (MAP/100P) with Interchange software installed



NOTE:

Interchange Release 5.4 supports Cornerstone Release 2.5.



NOTE:

For specific platform information, see [Avaya Interchange Release 5.4 MAP/5P System Installation](#) or [Avaya Interchange Release 5.4 MAP/100P System Installation](#).

- Remote (endpoint) machines that support AUDIX® Digital (DEFINITY® AUDIX, DEFINITY ONE™, INTUITY AUDIX, INTUITY AUDIX LX, and other Interchanges), AMIS Analog, Octel Analog, Aria Digital, Serenade Digital, or VPIM v2 Digital networking
 - From 2 to 50 remote (endpoint) machines per MAP/5P
 - From 2 to 500 per Interchange MAP/100P

Interchange Features

Features of the Interchange include:

- Compatibility with existing systems that support AUDIX Digital networking, including DEFINITY AUDIX R3.2.6, DEFINITY ONE Release 2.0, IP600 Release 9.2.1, INTUITY AUDIX Release 3.0 and higher, and INTUITY AUDIX LX Release 1.0
- Compatibility with existing systems that support Octel Analog Networking, including Octel 100 Release 3.2.9d, Aria version 1.0 and higher, Serenade version 2.0 and higher, and Unified Messenger Release 3.0 and 4.0
- Compatibility with existing systems that support Serenade TCP/IP digital networking including Serenade (Octel 200/300) Release 2.0 and higher (with level 5 protocol).
- Compatibility with existing systems that support Aria TCP/IP digital networking including Aria (Octel 250/350) Release 2.05 and higher.
- Compatibility with existing systems that support the VPIM v2 protocol in an open and digital TCP/IP format.
- Transport and protocol conversion that automatically transcodes message formats between all supported networking protocols.
- AMIS Analog Gateway support that allows Avaya systems to exchange messages with non-Avaya messaging systems using the AMIS analog protocol (See [AMIS Analog Gateway](#)).
- Octel Analog Networking Gateway support that allows INTUITY systems to exchange voice and fax messages with Octel Analog messaging systems using the Octel Analog Networking protocol (See [Octel Analog Networking Gateway](#)). Also used to exchange voice-only messages with Unified Messenger Release 3.0 and 4.0.

NOTE:

When sending a fax message to a recipient on an Octel Analog Networking node or an Aria digital node, the sender must include a voice message. If the fax is sent without a voice message, the Interchange adds a default voice component to the message.

- Aria Digital Gateway support that allows INTUITY systems to exchange voice and fax messages with Aria digital messaging systems using the Aria digital protocol (See [Aria Digital Gateway](#)).

- Serenade Digital Gateway support that allows INTUITY systems to exchange voice and fax messages with Serenade digital messaging systems using the Serenade digital protocol (See [Serenade Digital Gateway](#)).
- VPIM Digital Gateway support that allows Avaya systems to exchange messages with non-Avaya messaging systems using the VPIM v2 digital protocol (See [VPIM Digital Gateway](#)).
- Interchange-to-Interchange configurations that support an Interchange-to-Interchange configuration to increase network capacities.
- Directory views. Allows for a subset of names and subscriber remote screens to be downloaded from the Interchange to a specific location.
- Administration support is provided by Professional Services who provide initial translation support for the Interchange.
- Voice and fax messaging support.



NOTE:

INTUITY AUDIX Release 3.3 (IP55) and higher, INTUITY AUDIX LX Release 1.0, DEFINITY ONE Release 2.0. IP600 Release 9.2.1, Aria Digital Version 2.05 and higher, Serenade Digital Version 2.0 and higher (with level 5 protocol), Octel Analog Networking, and VPIM Version 2 all support fax messaging.

Unified Messenger Release 3.0 and 4.0 support voice but not fax messaging over an Interchange network.

- E-mail and binary file attachments support.



NOTE:

INTUITY AUDIX Release 4.3 and higher and INTUITY AUDIX LX Release 1.0 support e-mail and binary attachments. DEFINITY ONE Release 2.0 supports e-mail attachments.

Aria, Serenade, Unified Messenger, and VPIM Version 2 systems do not support e-mail and binary file attachments.

- Routing Information Protocol (RIP) is used, but is not required if an IP address is specified.
- Supports hybrid networks which allow a combination of Interchange and point-to-point networks.
- Automated Nightly Backup consists of a nightly backup completed by the Interchange. Messages are queued during the backup downtime. Those messages may be delayed slightly. See [Nightly Backup](#) in [Chapter 13, Avaya Interchange Backup](#), in [Avaya Interchange Release 5.4 Administration](#) for more information.



NOTE:

If you receive notice that this backup has not been completed successfully, contact the Technical Services Center (TSC) at 800-242-2121.

- Interchange Enterprise Lists that allow for the creation and administration of enterprise-wide mailing lists for subscribers that reside on an Interchange network. For information on administering Enterprise Lists, see [Chapter 4, Avaya Interchange Enterprise List Administration](#), in [Avaya Interchange Release 5.4 Administration](#).
- Call Detail Recording Administration (CDRA) that helps manage message networks that use the Interchange by creating a message history file. This history file includes: the status of the message, the source and destination of the message, and the time it entered and left the Interchange. This history file can be transferred from the Interchange on to another system for reporting purposes using the FTP process. For information on administering CDR, see [Chapter 5, Call Detail Recording Administration](#), in [Avaya Interchange Release 5.4 Administration](#).
- Simple Network Management Protocol (SNMP) Support that allows the consolidation of network management of all Interchange network machines using a TCP/IP LAN or WAN. For information on administering SNMP, see [Chapter 8, Avaya Interchange Simple Network Management Protocol](#), in [Avaya Interchange Release 5.4 Administration](#).
- File Transfer Protocol (FTP) Support that allows the transfer of Interchange report files and lists using a file transfer protocol (FTP) to and from other systems. For information on administering FTP, see [Chapter 10, Avaya Interchange File Transfer Protocol Support](#), in [Avaya Interchange Release 5.4 Administration](#).

AMIS Analog Gateway

The AMIS Analog Gateway allows Avaya and non-Avaya systems to exchange messages with other non-Avaya messaging systems using the AMIS analog protocol. Endpoints, or remote machines, only need to be configured once to communicate with the Interchange. The Interchange handles the communication to the other types of remote machines. This module simplifies the network topology and the administration required.

The AMIS Analog Gateway supports:

- Digital networks:
 - INTUITY AUDIX systems using RS-232, DCP Modes 1 and 3, and TCP/IP Networking
 - Aria Digital Release 2.05 and higher
 - Serenade Digital Release 2.0 or higher (with level 5 protocol)
 - VPIM Version 2
- AMIS analog networks:
 - Any vendor's messaging system using AMIS analog Version 1.0
- Octel Analog Networking networks:
 - Any vendor's messaging system using Octel 100 Release 3.2.9d, Aria Release 2.05. and higher, or Serenade Release 2.0 and higher

Administration of the AMIS Analog Gateway can be performed either through a screen-based interface or a telephone-based interface. See [Chapter 6, AMIS Analog Gateway Telephone Administration](#), in [Avaya Interchange Release 5.4 Administration](#) for more information on administration through the telephone interface.

The following features are supported by the AMIS Analog Gateway for AMIS analog subscribers:

- Reply to sender of AMIS analog messages
- Playback of name during message addressing and directory searches for subscribers registered as AMIS analog subscribers (for those sending from AUDIX, Aria, Serenade, or VPIM to AMIS)



NOTE:

Playback of names for VPIM v2 senders is supported if the VPIM end node sends voiced names.

- Optional voice name in messages sent from INTUITY AUDIX, Octel Analog Networking, Aria digital, Serenade digital, and VPIM subscribers to AMIS mailboxes



NOTE:

Optional voice names in messages sent from VPIM v2 end nodes is supported if the VPIM end node sends voiced names.

- Optional priority and private message markings in messages sent from INTUITY AUDIX, Octel Analog Networking, Aria digital, Serenade digital, and VPIM subscribers to AMIS mailboxes
- Undeliverable messages automatically returned to sender on INTUITY AUDIX, Octel Analog Networking, Aria digital, Serenade digital machines and remote machines

Octel Analog Networking Gateway

The Octel Analog Networking Gateway allows Octel Analog systems to exchange voice and fax messages with other messaging systems within the Interchange network. Such endpoints, or remote machines, use the Octel Analog Networking protocol to communicate with the Interchange. The Interchange handles the communication to the other remote machines.

The Octel Analog Networking Gateway supports these analog systems:

- Aria Version 2.05 and higher
- Serenade Version 2.0 and higher
- Octel 100 Release 3.2.9d
- Unified Messenger Release 3.0 and 4.0



NOTE:

For information on the administration of an Octel Analog Networking remote machine, see the respective networking documents for that machine.

The following features are supported for the Octel Analog Networking subscribers:

- Reply to sender of analog messages
- Playback of name during message addressing and directory searches for subscribers registered as analog subscribers (for those sending from AUDIX, Aria, or Serenade, not AMIS)
- Automatic directory updates



NOTE:

Subscribers are updated on the Interchange from the Unified Messenger directory only if a default record for the subscriber exists

in the Interchange directory. For more information about creating default records, contact the Professional Services Organization (PSO).

- Voice name in messages sent from INTUITY AUDIX, Aria digital, and Serenade digital subscribers to Octel Analog Networking mailboxes
- Priority and private message markings in messages sent from INTUITY AUDIX, Aria digital and Serenade digital subscribers to Octel Analog Networking mailboxes to be marked as urgent and private
- Undeliverable messages to be automatically returned to sender on INTUITY AUDIX machines and other remote machines

Aria Digital Gateway

The Aria Digital Gateway allows Aria digital systems to exchange voice and fax messages with other messaging systems within the Interchange network. Such endpoints, or remote machines, use Aria digital networking to communicate with the Interchange. The Interchange handles the communication to the other remote machines.

The Aria Digital Gateway supports these systems:

- Aria Version 2.05 and higher



NOTE:

For information on the administration of an Aria Digital remote machine, see the respective networking documents for that machine.

The following networking features are supported for Aria digital subscribers:

- Same TCP/IP physical card as AUDIX
- Similar operation to that of Octel Analog Networking, except over IP
- Connection-oriented protocol
- No network turnaround
- Voice and fax supported
- One message for multiple recipients; each recipient receives header information (private, priority, confirmation request)
- Subscriber updates including automatic update on add/change/delete
- Bulk administration, screen adds/changes/deletes not required for subscribers; Aria uses NameSend and has automatic updates (such as AUDIX)
- Self-registration not supported for Aria/Serenade digital; NameSend used instead

Serenade Digital Gateway

The Serenade Digital Gateway allows Serenade digital systems to exchange voice and fax messages with other messaging systems within the Interchange network. Such endpoints, or remote machines, use Serenade digital networking to communicate with the Interchange. The Interchange handles the communication to the other remote machines.

The Serenade Digital Gateway supports these systems:

- Serenade version 2.0 and higher (with level 5 protocol)

NOTE:

The presence of level 5 protocol is important. If you have later model Serenade digital systems that are still using level 2 protocol in your network, then Interchange will not support these endpoints.

For information on the administration of a Serenade remote machine, see the respective networking documents for that machine.

The following networking features are supported for Serenade Digital subscribers:

- Same TCP/IP physical card as AUDIX and Aria Digital
- Connection-oriented protocol
- No network turnaround
- Voice and fax supported
- One message for multiple recipients with header information (private, priority, sender's name)
- Subscriber updates that include:
 - Automatic update on add and change (not on delete)
 - Automatic update on message delivery (updates sender on receiving system if sender's spoken name is recorded)
- Bulk administration, self-registration, screen adds and changes not required for subscribers—Administrators must delete subscriber information when necessary
- Serenade Digital Sender Dial Plan:
 - In some Dial Plans, the Interchange needs to build back the complete address of the sender (including prefix) before transmitting to a Serenade digital machine.
 - For example, if the Serenade digital machine attaches a prefix of "1" before the 10-digit network address to a recipient, then the Interchange must be configured to attach the same prefix of "1" before that sender's 10-digit network address when the recipient replies to the Serenade digital machine.

VPIM Digital Gateway

The Voice Profile for Internet Mail (VPIM) protocol is an internationally accepted standard profile of SMTP/MIME that allows the interexchange of voice and fax messages between voice messaging systems. The VPIM protocol also allows interexchange with non-voice messaging MIME compatible e-mail systems, establishment of a directory service to support lookup of the routable address, and establishment of a defined mapping specification with other voice messaging applications.

The VPIM Digital Gateway allows Avaya and non-Avaya systems to exchange voice, fax, and text messages with other non-Avaya messaging systems using the VPIM Version 2 digital protocol. Endpoints, or remote machines, need to be configured only once to communicate with the Interchange. The Interchange handles the communication to the other types of remote machines. This module simplifies the network topology and the administration required.

The VPIM Digital Gateway supports voice mail products that comply with the VPIM Version 2 protocol.

Administration of the VPIM Digital Gateway is performed through a screen-based interface.

The following networking features are supported by the VPIM Digital Gateway for VPIM Version 2 digital subscribers:

- Same TCP/IP physical card as INTUITY AUDIX TCP/IP, Aria Digital, and Serenade Digital
- Messages sent to and received from both VPIM Version 2 and non-VPIM subscribers.
- Connection-oriented protocol
- No network turnaround
- Voice, fax, and text supported
- Bulk administration
- Self-registration
- Directory Updates:
 - A VPIM Version 2 sender's subscriber directory entry is sent to the Interchange and updated every time the VPIM Version 2 subscriber sends a message through the Interchange, if the VPIM end node sends names. If there is any change to this record, the Interchange queues the change to those remote machines that require the change (based upon directory views) and can accept the change (AUDIX, Octel Analog Networking, Aria Digital, Serenade Digital).
 - On the outbound side, the Interchange sends the current subscriber record values to a receiving VPIM Version 2 machine for any subscriber sending a message to a VPIM Version 2 recipient.

- VPIM Version 2 does not provide for sending adds, changes, or deletes, either inbound or outbound, when a given subscriber record has been updated by an Administrator.
- The Demand Remote Push capability used to push the Interchange subscriber directories on to remote machines (Octel Analog Networking, Aria Digital, and Serenade Digital) is not supported for VPIM Version 2 remote machines.
- Future delivery not supported for the following combinations:
 - Aria/Octel 100/UM to AUDIX, AMIS, Serenade Digital, and VPIM Version 2

Interchange System Capacities

[Table 1-1](#) shows the system capacities for an Interchange MAP/5P and MAP/100P.

Table 1-1. Interchange System Capacities

System Attribute	System Capacity	
	MAP/5P	MAP/100P
Maximum number of subscribers (without voice name)	40,000	500,000
Maximum number of subscribers (with voice name)	40,000	120,000
 NOTE: MAP/5P systems do not work in a network that contains more than 40,000 subscribers. If the total number of subscribers in the network now or in the foreseeable future could approach 40,000 subscribers, recommend only MAP/100P systems.		
Maximum number of remote machines	50	500
Disk mirroring	No	Yes

Table 1-1. Interchange System Capacities

System Attribute	System Capacity	
	MAP/5P	MAP/100P
Number of AUDIX digital ports (TCP/IP, RS232, or DCP)	8	12
<p>⇒ NOTE: DCP and RS232 channels must exist in pairs. If you assign channel 1 as DCP, you also must assign channel 2 as DCP. If you assign channel 1 as RS232, you must assign channel 2 as RS232 for future use.</p> <p>Channel 2 could be unequipped depending on whether the switch has secondary data module capability.</p> <p>AUDIX TCP/IP channels always exist in groups of four. If you administer one TCP/IP channel, the remaining three channels in the group become TCP/IP unequipped or TCP/IP equipped if purchased.</p>	Maximum of 4 DCP/RS232 Maximum of 8 TCP/IP	
Maximum number of ports:		
<ul style="list-style-type: none"> ■ AMIS Analog 	12	30
<ul style="list-style-type: none"> ■ Octel Analog Networking 	12	30
<ul style="list-style-type: none"> ■ Aria Digital 	8	16
<ul style="list-style-type: none"> ■ Serenade Digital 	8	16
<ul style="list-style-type: none"> ■ VPIM Version 2 Digital 	10	20
Average message delivery time	15 minutes	15 minutes
Maximum number of simultaneous in/out digital networking sessions per AUDIX digital remote machine	2	2
Maximum number of simultaneous in/out analog networking sessions per AMIS analog remote machine	9	9
Maximum number of simultaneous in/out analog networking sessions per Octel Analog Networking remote machine	12	30

Table 1-1. Interchange System Capacities

System Attribute	System Capacity	
	MAP/5P	MAP/100P
Maximum number of simultaneous in/out digital networking sessions per Aria digital remote machine	2	2
Maximum number of simultaneous in/out digital networking sessions per Serenade digital remote machine	2	2
Maximum number of simultaneous in/out digital networking sessions per VPIM v2 digital remote machine	2	2
Maximum number of subscribers per Interchange Enterprise List	40,000	500,000

(3 of 3)

Interchange System Capabilities Comparison

The following section compares some of the capabilities associated with the Interchange system and the remote machines within the network.

Subscriber Capabilities

The following lists the subscriber capabilities of an Interchange system:

- The Interchange system allows a uniform dial plan (the number of digits used when addressing a message). It consists of from a 3-digit to a 10-digit network address. It allows from a 0-digit to a 21-digit prefix for an INTUITY AUDIX system. The sum of the network address and prefix cannot exceed 24 digits. A 10-digit network address dial plan is recommended.
- A subscriber must be administered on an Interchange system so that Interchange can accept messages for delivery.
- Digitally networked mailboxes sending messages to subscribers on any supported end node type can have the message addressed using the number or name of the subscriber, if the subscriber name has been administered or registered.

⇒ NOTE:

Data must have been previously downloaded to the remote digital sending machine from the Interchange.

- Digitally networked mailboxes receiving messages from subscribers on any end node type are treated as though they were coming from another digitally networked mailbox. Callers hear “Message from *voice or extension*” as they usually would when receiving a message from local subscribers.

 NOTE:

For VPIM Version 2 end nodes, this capability depends on the features of the VPIM end node.

- AMIS analog subscriber messages can optionally contain the “private/priority” designation and voiced name of the sender as part of the actual message being sent.
- Messages delivered to VPIM Version 2 digital subscribers include the sender’s name in the appropriate “sender’s voice name field” in the ADPCM form if the name is stored on the Interchange.
- VPIM Version 2 digital subscriber messages can optionally contain the “private/priority” designation and voiced name of the sender as part of the actual message being sent.

 NOTE:

When Aria senders send a mixed private and/or priority message to multiple Serenade or VPIM v2 digital recipients on the same remote machine, the message is marked “priority” and/or “private” for all recipients even if one recipient is marked as such. The sender is not notified that this has happened.

- AMIS Analog and Octel Analog Networking subscribers can be administered through any of the following ways:
 - Administration screens
 - Touchtones (AMIS only)
 - Bulk files
 - Sending a message through the Interchange system
 - Demand remote update (Octel Analog Networking only)
 - Sending a message to a predefined “subscriber registration” mailbox on the Interchange
 - Professional Services Organization (PSO)

- Aria digital and Serenade digital subscribers can be administered through any of the following ways (refer to [Appendix H, Directory Population](#), in [Avaya Interchange Release 5.4 Administration](#) for further information about how and when subscribers are added to the Interchange):

- NameSend from Aria or Serenade digital



NOTE:

For existing subscribers who were migrated from an Aspen system to Aria 2.05 or higher, NameSend does not work until each subscriber rerecords a spoken name on the Aria.

- For Aria, Demand Remote Update from the Interchange is supported as follows:
 - Can be done by “all” or an extension range
 - Takes an average of 2 seconds per subscriber
 - Is less efficient than Aria NameSend
- Aria/Serenade digital automatically informs the Interchange when a new subscriber is added; this is similar to AUDIX directory updates
- Duplicate names from the same Serenade system have “Node #D#” appended to the name to make it unique
- Interchange Release 5.4 supports only one mailbox length per endpoint
- VPIIM Version 2 subscribers can be administered in any of the following ways:
 - Administration screens
 - Bulk files
 - Sending a message through the Interchange system
 - Self-registration
- For subscribers residing on AUDIX digital remote machines, a “delivered” status means the message was delivered to the Interchange successfully. This message can be returned to the sending subscriber if the Interchange cannot deliver the message to the receiving subscriber successfully for some reason.
- A “scheduled message” status for AUDIX indicates that delivery has not been successfully completed, nor has it failed yet.
- Senders receive notification of failed messages in two ways, including:
 - An error message indicating each mailbox that failed to receive the sent message. This can be an optional “priority” message.
 - A copy of the failed original message from the “failed message delivery manager.”



NOTE:

For more information about administration options for failed messages, see [Administering Remote Machine Parameters](#) in [Chapter 2, Avaya Interchange Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

- For AUDIX, failed message IDs can be viewed using INTUITY Message Manager.
- Notification of failure to deliver a message component because the recipient is not enabled to receive a component type (voice, fax, text, or binary) is the same as on the INTUITY AUDIX Release 4 system. The component that could not be delivered is stripped, and the following is prefixed to the original message: "One or more components could not be delivered, please contact the sender" <pause><voice message>.
- "Accessed" status indicates that the subscriber has received and accessed a message for both the Interchange and INTUITY AUDIX systems.
- For AUDIX, the machine name of the receiving machine in INTUITY Message Manager is that of the Interchange delivering the message.
- The remote subscriber ASCII name contains a suffix of from two to eight characters at the end of the name field indicating the Interchange node ID for the remote machine on which that subscriber resides.
- With Enterprise Lists, if requested, delivery status is sent to the sender of the list message as a voice, fax, or text message rather than being indicated in the outgoing mailbox of the sender.

Lists Capabilities

[Table 1-2](#) compares the capabilities of an INTUITY AUDIX system, an INTUITY AUDIX system with the Enhanced List Application (ELA), an Interchange system with Enterprise Lists, and Octel Analog Networking and digital systems with System Distribution Lists capabilities.

For more information about Enterprise Lists, including considerations affecting their use, see [Chapter 4, Avaya Interchange Enterprise List Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

Table 1-2. Interchange Lists Capabilities Comparison

Functionality	INTUITY AUDIX (personal lists)	INTUITY AUDIX with ELA (system lists)	Interchange with Enterprise Lists	Aria, Octel 100 Serenade, and Unified Messenger
Configuration	Can be used only by subscribers on the same system as the list owner	Co-resident with INTUITY AUDIX application Can be used as a single system or within a network	Available as an application	Can be used only by subscribers on the same system as the list owner
Delivery Status Location	Outgoing mailbox	Administrative log	Optional reporting to message originator	N/A
Embedded Lists	Not supported	Supported	Supported	Supported only within a single layer
List Content	Individual subscribers, fax numbers, AMIS analog subscribers, including ELA and/or Interchange	Individual subscribers, call-delivery or fax numbers, AMIS analog subscribers Circular list references blocked within ELA lists	Individual subscribers, address ranges, partial text strings, community IDs, and remote machines Circular list references blocked within lists	Individual subscribers, call-delivery or fax numbers, AMIS analog subscribers, Octel Analog Networking end-node subscribers, AUDIX, and Aria or Serenade digital subscribers

Table 1-2. Interchange Lists Capabilities Comparison

Functionality	INTUITY AUDIX (personal lists)	INTUITY AUDIX with ELA (system lists)	Interchange with Enterprise Lists	Aria, Octel 100 Serenade, and Unified Messenger
List Management	Sequential creation and editing of lists available by telephone Text listing and editing available by Message Manager	Management by administration screen	Management by administration screen Can use FTP files as input	Sequential creation and editing of personal lists available by telephone by subscriber Management by administration screen of system lists
Number of Lists	100 lists per user 250 members per list	100 lists per system 1,500 members per list	Unlimited number of lists per system 500,000 subscribers per list for MAP/100P or MAP/5P	100 lists per user 300 members per list
Maximum Number of Recipients per Single Message Transmission (inbound to the Interchange)	250	250	250	Octel Analog: 99 times number of attempts count under Node Profile (max. is 9900) UM: Octel Analog unlimited Aria digital: unlimited Serenade digital: 10

Table 1-2. Interchange Lists Capabilities Comparison

Functionality	INTUITY AUDIX (personal lists)	INTUITY AUDIX with ELA (system lists)	Interchange with Enterprise Lists	Aria, Octel 100 Serenade, and Unified Messenger
Maximum Number of Recipients per Single Message Transmission (outbound from the Interchange)	250	250	250	Octel Analog: 250, but tunable to fewer (Octel 200/300 Analog—still stores in groups of 10) UM: 250 Aria digital: 250, but tunable to fewer Serenade digital: 10
Ownership/ Maintenance	Subscriber	System administrator	System administrator	Subscriber or System Administrator
Number of Recipients	250 per list	Entire network	Entire enterprise network	300 per list
Reply	Allows the ability to reply to the sender	Allows the ability to reply to the sender of the message if the recipient is on INTUITY AUDIX release 4.1 and higher	Allows the ability to reply, not reply, or reply all to the sender	Allows the ability to reply to the sender

Table 1-2. Interchange Lists Capabilities Comparison

Functionality	INTUITY AUDIX (personal lists)	INTUITY AUDIX with ELA (system lists)	Interchange with Enterprise Lists	Aria, Octel 100 Serenade, and Unified Messenger
Reporting	Owner can play back list by telephone or display list using INTUITY Message Manager	System administrator can print a list of lists or the contents of selected lists	Various detailed and summary reports available to system administrator and subscribers in voice, text, or fax format	System administrator can print a list of lists or the contents of selected lists
Sender identification	Sender identification information is contained in the header  NOTE: AUDIX to Octel Analog message does not support sender's name.	Sender identification information is contained in the header if the message recipient is on INTUITY AUDIX release 4.1 and higher	Sender identification information contained in the header	Sender identification information contained in the header
Used For	Small groups for list owner and subscribers on the same system	Large groups or hierarchal organizations	Large groups or hierarchal organizations	Large groups or hierarchal organizations

Interchange Networking Features

[Table 1-3](#) outlines the support of Interchange features relative to the INTUITY AUDIX, AMIS Analog, Octel Analog Networking, Aria Digital, Serenade Digital, and VPIM Version 2 messaging systems.



NOTE:

Information in the INTUITY AUDIX column applies to DEFINITY ONE and IP600 9.2.1 systems.

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Analog Encryption	Not supported	Not supported	Supported for Octel Analog	Not supported	N/A
Annotation	Supported release 4.0 and higher	Not supported	Not supported	Not supported	Supported as determined by the endpoint
Automatic Message Forwarding	Not supported	Supported as determined by the endpoint	Supported	Supported as determined by endpoint	Supported as determined by the endpoint
Automatic Update of Remote Subscriber Records on Endpoints	Supported	Not supported	For Octel Analog, add and change supported; delete not supported UM: not supported For Aria digital, add/change/delete/message delivery supported	Add/change/message delivery supported; delete not supported	Not supported (the VPIM Version 2 protocol does not support this function)

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Automatic Update of Subscriber Records on the Interchange	Supported	Not supported	For Octel Analog, add and change supported; delete not supported UM: if "default" record exists on the Interchange ¹ For Aria digital, add/change/delete/message delivery supported	Add and change supported; delete not supported (in general, oriented toward sender validation)	Not supported (the VPIM Version 2 protocol does not support this function)
Binary	Supported for release 4.0 and higher	Not supported	Not supported	Not supported	Not supported
Bulk Subscriber Additions/ Changes/ Deletions by File Ranges	Not supported; not required for digital	Supported	Supported; not required for digital	Not required	Supported
Call Detail Recording (CDR)	Supported	Supported	Supported	Supported	Supported

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Component Delivery	Sends the components that the Interchange can deliver with an earcon to the recipient indicating that one or more components were undeliverable	Sends the components that the Interchange can deliver with an earcon to the recipient indicating that one or more components were undeliverable	Sends the components that the Interchange can deliver with an earcon to the recipient indicating that one or more components were undeliverable	Sends the components that the Interchange can deliver with an earcon to the recipient indicating that one or more components were undeliverable	Sends the components that the Interchange can deliver with an earcon to the recipient indicating that one or more components were undeliverable
Data/Message Encryption	Not supported	Not supported	Supported for Aria Digital	Not supported	Not supported
Demand Remote Updates	Supported	N/A	Supported by range; preferred method is with "NameSend" from Aria node	Performed by executing push from end node—called "NameSend"	Not supported
Dial by ASCII Name	Supported	Supported as determined by the endpoint	Supported	Supported	Supported as determined by the endpoint
Dial Plan Mapping	Supported	Supported	Supported	Supported	Supported
Directory Views (dynamic, with voiced name option)	Supported	N/A	Supported	Supported	Dynamic only

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Directory Views (static, with voiced name option)	Supported (with remote machine pull from INTUITY AUDIX at initialization)	N/A	Supported with the Interchange; remote machine push at initialization for Aria Digital	Supported with the Interchange; remote machine push at initialization	Not supported
Enterprise Lists	Supported	Supported (no fax or text support)	Supported except for text reports	Supported except for text reports	Supported
Failed Message Delivery from the Interchange	Supported with two incoming messages: <ul style="list-style-type: none"> ■ Failed message notification ■ Original copy of message 	Supported with two incoming messages: <ul style="list-style-type: none"> ■ Failed message notification ■ Original copy of message 	Supported with two incoming messages: <ul style="list-style-type: none"> ■ Failed message notification ■ Original copy of message 	Supported with two incoming messages: <ul style="list-style-type: none"> ■ Failed message notification ■ Original copy of message 	Supported with two incoming messages: <ul style="list-style-type: none"> ■ Failed message notification ■ Original copy of message
Failed Message Delivery to the Interchange	Supported	Supported	Supported	Supported	Supported
Fax	Supported for release 3.0 and higher	Not supported	Supported for release 2.03 and higher for Aria Digital Not supported for Unified Messenger	Supported for release 2.0 and higher	Supported as determined by the endpoint

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Forwarding a Message	Supported	Supported as determined by the endpoint	Supported	Supported; Serenade to Serenade or Aria "forwarded" messages have this indicated in message header	Supported as determined by the endpoint
Forward and Reply Indication to Recipient	Supported when replier or forwarder is a Serenade Octel Analog subscriber	Supported when replier or forwarder is a Serenade Octel Analog subscriber	Supported when replier or forwarder is a Serenade Octel Analog subscriber	Supported for Serenade digital to Serenade digital	Supported when replier or forwarder is a Serenade Octel Analog subscriber
Future Delivery	Supported	Supported as determined by the endpoint	Supported for everything except for Aria	Supported	Not supported for the following: Aria, UM, and Octel 100 to AUDIX, AMIS, Serenade Digital, and VPIM Version 2 (as determined by the endpoint)
Inbound Analog Fallback	Not supported	N/A	Not supported	Not supported	Not supported

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Maximum Number of Recipients per Single Message Transmission (inbound)	250	1	Octel 250/350 Analog: 100 X bad connection count in System Parameter Networking screen UM: unlimited Aria Digital: unlimited Octel 200/300 Analog: 10	10	1000
Maximum Number of Recipients per Single Message Transmission (outbound)	250 250 using Enterprise Lists also	1	Octel 250/350 Analog: 250 but tunable to fewer UM: 250 Octel 200/300 Analog: 250 but tunable to fewer (still stores in groups of 10) Aria Digital: 250 (not tunable)	10	250

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Message Delivery Confirmation	Supported	Not supported	Supported	Supported	Supported as delivery to the Interchange
Multi-Language Message Responses from Interchange Network	Voice support only Standard American English only	Voice support only Standard American English only	Voice support only Standard American English only	Voice support only Standard American English only	Voice support only Standard American English only
Multiple Simultaneous Remote Machine Inbound Connections from the same Remote Machine	Not supported	Supported as determined by endpoint	Supported for Octel Analog; not supported for Aria Digital	Not supported	Not supported
Multiple Simultaneous Remote Machine Outbound Connections to the same Remote Machine	Not supported	Supported for up to 9 sessions	Supported for Octel Analog Not supported for Aria Digital	Not supported	Not supported
Name Confirmation (spoken)	Supported	Supported as determined by the endpoint	Supported	Supported	Supported as determined by the endpoint
Network Turnaround	Supported	N/A	Not supported	Not supported	Not supported

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Outbound Analog Fallback	Not supported	N/A	Not supported	Not supported	Not supported
Overlapping Prefixes/ Multiple Prefixes per Location	Supported	Supported as determined by the endpoint	Supported	Supported	Supported as determined by the endpoint
Priority Message Indication	Supported	Supported, except for priority message originating from an AMIS sender	Supported	Supported	Supported
Private or Urgent Message Indication	Supported	Supported, except for private message originating from an AMIS sender	Supported (User hears "priority" as earcon vs. urgent)	Supported (User hears "priority" as earcon vs. urgent)	Supported
Receiving a Voice Message	Supported	Supported	Supported	Supported	Supported
Receiving Voiced Name of Sender	Sender's name in message header	Sender's name in message header	Sender's name in message header	Sender's name in message header	Sender's name in message header
Recipient Name Confirmation when Addressing a Message	Supported	Supported as determined by the endpoint	Supported	Supported	Supported as determined by the endpoint

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Remote Machine Reports	Supported	Supported	Supported	Supported	Supported
Reply to a Network Message	Supported	Supported as determined by the endpoint	Supported	Supported; "replied to" messages have this indicated in message header	Supported as determined by the endpoint
Accessed Return-Receipt/Confirmation	See Table 1-5 or Table 1-6	N/A	See Table 1-5 or Table 1-6	See Table 1-5 or Table 1-6	See Table 1-5 or Table 1-6
Self-Registration Agent	Not required	Supported	Not supported for digital	Not supported for digital	Supported
Sending a Message to an Aria Recipient with Extended Absence Greeting (EAG) block activated	Sender receives a failed message	Sender receives a failed message	Sender receives a failed message	Sender receives a failed message	Sender receives a failed message
Sending a Message to an Aria Recipient with Extended Absence Greeting (EAG) warning activated	Sender receives an EAG warning message	Sender receives an EAG warning message	Sender receives an EAG warning message	Sender receives an EAG warning message	Sender receives an EAG warning message

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Sending a Voice Message	Supported	Supported	Supported	Supported	Supported
SNMP (from Interchange's perspective only)	Supported	Supported	Supported	Supported	Supported
Subscriber Community ID	Supported	Supported (default is 1)	Supported (default is 1)	Supported (default is 1)	Supported (default is 1)
Subscriber NetName Type	Supported; default is u	Supported; default is u	Supported	Supported, default is u	Supported (default is u)
Subscriber Reports	Supported	Supported	Supported	Supported	Supported
Text Message	Supported for release 4.0 and higher	Not supported	Not supported	Not supported	Supported
Time of Day Routing	Supported	Not supported	Not supported for outbound	Not supported for outbound	Not supported for outbound
Traffic Reports					
Network Load	Supported	Supported	Supported	Supported	Supported

Table 1-3. Interchange Networking Features Comparison

Interchange Features	INTUITY AUDIX	AMIS Analog	All Octel Analog Networking Machines and Aria Digital	Serenade Digital	VPIM Version 2 Digital
Network Status	Supported	Supported	Supported	Supported	Supported
Port Utilization	Supported with selection by protocol resource type	Supported with selection by protocol resource type	Supported with selection by protocol resource type (now called Port Utilization Traffic Report)	Supported with selection by protocol resource type (now called Port Utilization Traffic Report)	Supported
Weekend/Holiday/Message Type Routing from the Interchange	Not supported	Not supported	Not supported	Not supported	Not supported

(11 of 11)

1. Subscribers are updated on the Interchange from the Unified Messenger directory only if a default record for the subscriber exists in the Interchange directory.

Future Delivery Considerations

Endpoints in an Interchange network handle future delivery messages in one of two ways:

- The sending machine stores the future-dated message and then sends the message to its receiving machine at the stipulated time. The receiving machine then immediately distributes the message to the recipient.
- The sending machine does not store the future-dated message, but instead sends it immediately to the receiving machine. The receiving machine then stores the message and distributes it to the recipient at the stipulated time.

In either case, the Interchange does not control the sending and receiving of future delivery messages. The Interchange rejects future delivery messages that would be delivered before the expected date. Most of the sending end nodes hold a future delivery message until it is time to send it. In these cases, the Interchange ignores the future delivery flag and sends the message.

In cases where the sending machine does not hold the message, the Interchange verifies that the receiving machine will hold the message. If the receiving machine will not hold the message, the Interchange rejects the message.

UM, Octel 100, and Octel 250/350 analog and digital end nodes send future messages immediately. These end nodes expect the receiving system to display the message at the appropriate time. Therefore, if the message comes from Aria, it is rejected if it is destined for any machine other than Aria or Serenade Octel Analog Networking.

All messages received from VPIM Version 2 systems are assumed to be delivered as soon as normal delivery schedules permit. VPIM machines can receive future delivery messages if they are sent by a machine that holds future delivery messages and then sends them at the time specified.

Interchange Message Component Types

The endpoints networked by the Interchange support different combinations of message component types. These component types can include voice messages, fax messages, text messages, e-mail messages, binary file attachments, and message or subject line annotations. Component types for each type of endpoint is listed in [Table 1-4](#).

Table 1-4. Interchange Message Component Types

Endpoint	Protocol	Voice	Fax	Text	Bin-ary	Annotation/ Subject
Other Vendor	AMIS	Y	N	N	N	N
INTUITY AUDIX Release 3	AUDIX Digital (TCP/IP, DCP, RS232)	Y	Y	N	N	Y
INTUITY AUDIX Release 4 or 5	AUDIX Digital (TCP/IP, DCP, RS232)	Y	Y	Y	Y	Y
DEFINITY AUDIX 3.2.6	AUDIX Digital (DCP, RS232)	Y	N	N	N	Y
DEFINITY ONE R2	AUDIX Digital ((TCP/IP)	Y	Y	Y	Y	Y
IP600 9.2.1	AUDIX Digital TCP/IP	Y	Y	Y	Y	Y
INTUITY AUDIX LX Release 1.0	AUDIX Digital TCP/IP	Y ¹	Y	Y	Y	Y
Aria Release 1.0 or Higher	Octel Analog Networking	Y	Y	N	N	N
Aria Release 2.05 or Higher	Aria Digital TCP/IP	Y	Y	N	N	N
Serenade Release S2.0 or Higher	Octel Analog Networking	Y	Y	N	N	N
Serenade Release S2.0 or Higher	Serenade Digital TCP/IP	Y	Y	N	N	N

Table 1-4. Interchange Message Component Types

Endpoint	Protocol	Voice	Fax	Text	Binary	Annotation/ Subject
Unified Messenger 3.0 and Higher	Octel Analog Networking	Y	N	N	N	N
Octel 100 Release 3.2.9d	Octel Analog Networking	Y	N	N	N	N
VPIM ²	VPIM TCP/IP	Y	Y	Y	N	Y

(2 of 2)

1. AUDIX LX Release 1.0 supports voice messages of up to 180 minutes.
2. VPIM support for fax, text, and annotation/subject is determined by the VPIM endpoint.

Administrator Interface

This section provides an overview of the administrator interface for the Interchange.

Adding Remote Machines

Remote machine administration through the Interchange administration screens allows you to add digital, AMIS analog, or Octel Analog Networking remote machines to the Interchange. For information on adding a remote machine, see [Administering Remote Machines](#) in [Chapter 2, Avaya Interchange Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

Defining Directory Views

A directory view allows you to define, for a particular remote machine, the remote machines that can provide updates to that machine. You can specify a range of mailbox IDs on a remote machine from which to accept update information. Only those mailboxes defined in the directory view are treated as remote subscribers on the local message server. You can also define whether to include a voice name for the subscriber.

A directory view can contain full, static, dynamic, or a combination of static and dynamic types of updates for a specific machine or all remote machines. For more information on directory views, see [Chapter 3, Subscriber Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

Defining Dial Plan Mapping

Dial plan number mapping allows messages to be delivered to locations with different addressing schemes. For example, a message that is addressed using a 10-digit numbering scheme can be delivered to a location that has 5-digit local addressing automatically using dial plan mapping. An endpoint does not have to modify current addressing practices. For more information on administering dial plan mapping, see [Administering VPIM Machine Profile](#) in [Chapter 2, Avaya Interchange Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

Message Confirmation Comparison

The following tables compare Accessed/Return Receipt/Positive Confirmation and Negative Confirmation Support for messages sent through the Interchange.

The first table ([Table 1-5](#)) lists whether senders are notified when their message has been played. The second table ([Table 1-6](#)) lists whether senders are notified when the message has not been played after a certain length of time.



NOTE:

Information in the AUDIX rows and columns applies to INTUITY AUDIX LX Release 1.0, DEFINITY ONE and IP600 9.2.1 systems.

Table 1-5. Accessed/Return Receipt/Positive Confirmation Support/Message Disposition Notification

Sender:	Receiver:								
	AUDIX	Aria Octel	Serenade Octel	AMIS Analog	Octel 100	Unified Messenger	Aria Digital	Serenade Digital	VPIM v2 Digital
AUDIX ¹	Y	N	N	N	N	N	N	N	N
Aria Octel	N	Y	Y	N	Y	Y	Y	N	N
Serenade Octel	N	Y	Y	N	Y	Y	Y	N	N
AMIS Analog	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
Octel 100	N	Y	Y	N	Y	Y	Y	N	N
Unified Messenger	N	Y	Y	N	Y	Y	Y	N	N
Serenade Digital	N	N	N	N	N	N	N	Y	N
Aria Digital	N	Y	Y	N	Y	Y	Y	N	N
VPIM v2 Digital	N	N	N	N	N	N	N	N	Y ²

1. Intuity AUDIX messages are changed to “Accessed” status when they are moved to a different category.
2. Support of Message Disposition Notification (MDN) between VPIM endpoints is determined by the endpoints.

Table 1-6. Negative Confirmation Support

Sender:	Receiver:								
	AUDIX	Aria Octel	Serenade Octel	AMIS Analog	Octel 100	Unified Messenger	Aria Digital	Serenade Digital	VPIM v2 Digital
AUDIX	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
Aria Octel	N	Y	Y	N	See note ¹	N	Y	N	N
Serenade Octel	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
AMIS Analog	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
Octel 100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
Unified Messenger	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
Aria Digital	N	Y	Y	N	note ¹	N	Y	N	N
Serenade Digital	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
VPIM v2 Digital	N	N	N	N	N	N	N	N	N

1. When the Octel 100 receives a negative confirmation from an Aria system, it is displayed as a positive confirmation.

Remote Machine Considerations

The following are considerations based on the type of remote machine networked through the Interchange:

Aria Octel Analog Networking

The following are considerations related to Aria Octel Analog Networking remote machines:

- **Aria lists.** When sending a message using a distribution list from an Aria Octel Analog remote machine to another Aria Octel Analog remote machine, the maximum number of subscribers to which the message can be sent is based on the Aria networking parameter that defines the number of attempts the Aria machine will make to deliver a message before giving up on the connection.

For example, if a message is sent to 3,000 subscribers and the Aria networking parameter is set to 3, the message is sent in chunks of 100 times the bad connection count. For more information, see your Aria Networking Management documentation.

- **Future Delivery.** Future delivery messages are supported only through the Interchange when sent to Octel 100, Unified Messenger, and Aria/Serenade Octel Analog Networking remote machines. When sending future delivery messages from an Aria Octel Analog machine to any other type of end node, the message is failed by the Interchange and returned to the sender with a "future delivery" error type. The Interchange uses the time stamp it receives to determine if a message is for future delivery.

Octel 100 Analog

The following are considerations related to Octel 100 Analog remote machines:

- **Demand Remote Push.** This remote machine does not support an update by demand remote push from the Interchange.
- **Positive Message Confirmation.** This remote machine does not send a positive message confirmation to 10-digit dial plans.
- **Negative Message Confirmation.** If a message is received by an Octel 100 subscriber that was flagged as a negative confirmation, it will be turned into a positive confirmation by the Octel 100 and the sender will receive a positive confirmation message.
- **Future Delivery.** Based on the way that the Octel 100 machine sends a future delivery message (the Octel 100 machine sends the message immediately and expects the remote machine to hold the message until time to be delivered), future delivery messages are supported only through the Interchange when sent to Octel 100 analog and Aria/Serenade Octel Analog Networking remote machines.

DEFINITY ONE and IP600

The following are considerations related to DEFINITY ONE and IP600 remote machines:

- Future Delivery. DEFINITY ONE and IP600 work in the same manner as does the INTUITY AUDIX; therefore, DEFINITY ONE and IP600 systems do not support receipt of future delivery messages sent from Aria systems.
- Demand Remote Push. DEFINITY ONE and IP600 does not use this command; it is not required for systems using INTUITY AUDIX as one of its components. The command for these types of systems is "Demand Remote Update."

Unified Messenger

The following are notes and considerations related to Unified Messenger as an endpoint:

- Networking is provided through Octel Analog, not SMTP/MIME.
- Unified Messenger uses Microsoft Exchange Directory, which is different from all other directories in the Interchange endpoint list.
- Subscribers must already exist in the Interchange directory to be pulled from Unified Messenger.
- The Unified Messenger directory will not accept a push from the Interchange.
- ASCII names are not matched in Unified Messenger. Since Unified Messenger directory entries are permanent, changed mailboxes on other Interchange endpoints can then send updates to the wrong subscriber.
- Unified Messenger directory entries are permanent, not usage based. Entries must be made manually or by Professional Services using bulk adds.
- Only voice components are sent to a Unified Messenger user's mailbox. Faxes are dropped and receivers hear an "earcon" asking them to contact the sender.
- To use spoken name confirmation for messages from Unified Messenger through the Interchange gateway, a custom recipient with an Octel Analog Networking address type is required for each Interchange user in the Exchange directory.

Aria Digital and Serenade Digital

The following are considerations related to Aria Digital and Serenade Digital remote machines:

- Announcements cannot be customized.
- For fax-only messages to Aria remote machines, the following voice component is added by the Interchange: “Your fax message is attached.”
- The Aria Message Locator feature applies to Interchange delivery.
- Large messages to AUDIX from Aria and Serenade are failed with a “message length” failure message.



NOTE:

AUDIX LX Release 1.0 supports voice messages of up to 180 minutes.

- When Aria senders send a mixed private and/or priority message to multiple Serenade or VPIM Version 2 digital recipients on the same remote machine, the message is marked “priority” and/or “private” for all recipients, even if one recipient is marked as such. The sender is not notified that this has happened.
- Reply/Forward Indicator is supported:
 - From Serenade Octel Analog Networking to all machine types
 - From Serenade Digital to Serenade Digital
- Serenade Digital Call Processing Features (for example, Immediate Call) are *not* supported.
- Note the use of “notices” versus “messages” for Aria and Serenade systems. Historically, notices were used on Aria to convey message delivery failure. However, when messaging using the Interchange:
 - Message delivery failures are conveyed using messages
 - Message delivery confirmations are still conveyed as notices
- Enterprise List usage for Octel Analog Networking, Aria Digital, and Serenade Digital senders includes these considerations:
 - List Status Report does not indicate “accessed” for non-AUDIX recipients.
 - Positive and Negative Confirmation and Return Receipt are not supported for Octel Analog Networking, Aria Digital, or Serenade Digital senders.

VPIM Digital

The following are considerations related to VPIM Version 2 remote machines:

- When the sending VPIM Version 2 message is larger than the receiving non-VPIM machine can handle, the message is failed with a “Large Message” failure code.



NOTE:

AUDIX LX Release 1.0 supports voice messages of up to 180 minutes.

- When recipients of messages from VPIM Version 2 systems are notified that one or more components of a multimedia message cannot be delivered, the sender is not notified. The recipient is notified to contact the sender for missing components.
- VPIM Version 2 does not provide for sending adds, changes, or deletes either inbound or outbound when a given subscriber record has been updated by an Administrator.
- The maximum number of recipients per message on an inbound VPIM Version 2 message is 1,000. The maximum number of recipients per message on an outbound VPIM message is 250.
- VPIM Version 2 remote machines administered on the Interchange support only dynamic directory views. This means that the Interchange sends subscriber directory updates to a VPIM Version 2 remote machine as subscribers send messages to that VPIM Version 2 machine.
- VPIM Version 2 does not support the following combinations of future delivery:
 - Aria/Octel 100/UM to AUDIX, AMIS, Serenade Digital, and VPIM Version 2.
- Sender notification of message receipt is handled in one of the following ways:
 - An originator sending a message from a VPIM Version 2 remote machine to a non-VPIM remote machine does not get an indication that the recipient has accessed the message.
 - An originator sending a message from a non-VPIM remote machine to a VPIM Version 2 remote machine does not get an indication that the recipient has accessed the message. Requests for this information are ignored.
 - An originator sending a message from a VPIM Version 2 remote machine supporting the accessed feature to a VPIM Version 2 remote machine also supporting the accessed feature gets an indication that the recipient has accessed the message. This response is in text format.

- Message Disposition Notification (MDN) is handled in one of the following ways:
 - For messages sent from VPIM remote machines to non-VPIM remote machines, Interchange ignores MDN requests.
 - For messages sent from VPIM to VPIM remote machines, Interchange returns whatever the receiving VPIM machine returns, for example, MDN, "Ignore," and so on.
- VPIM v2 systems do not support negative confirmation.
- Demand Remote Update and Demand Remote Push do not apply to VPIM systems.
- Disabling of Updates In or Out does not apply to VPIM v2 systems.
- VPIM Version 2 does not support network turnaround.
- VPIM Version 2 does not support variable length mailbox IDs.
- VPIM Version 2 subscribers can use Enterprise Lists defined on the Interchange when given permission by the Administrator. They can also be referenced on lists.
- VPIM Version 2 subscriber records can be imported using the FTP subscriber import utility.
- When sending a VPIM message with multiple components of the same type to a non-VPIM recipient, the components of that type are concatenated before being delivered to the recipient as follows:
 - Multiple voice components are concatenated.
 - Multiple text components are concatenated.
 - For multiple faxes sent to non-AUDIX systems, the first fax is transmitted. The additional faxes are converted to a single binary attachment. Endpoints capable of receiving binary attachments will receive the additional faxes. Endpoints, such as Aria and Serenade, that are not capable of receiving binary attachments will not receive the additional faxes.



NOTE:

AUDIX systems are the only non-VPIM systems capable of receiving multiple faxes. The capability of a VPIM system to receive multiple faxes is determined by the endpoint.

- The Interchange follows a default transmission schedule for message delivery to VPIM remote machines. This schedule defaults to all hours (00:00-23:59). An immediate trigger for VPIM message delivery occurs when a message for a given remote VPIM machine is placed on the queue. All messages on the queue for that remote VPIM machine are sent during the same communication session for that remote machine. This schedule is not tunable.

- The Interchange provides the ability to administer up to three Domain Name Servers (DNSs) to be used (in priority order) when the VPIM Module needs to locate the IP address necessary to communicate with the appropriate VPIM message server. When configuring a VPIM remote machine domain, the use of a DNS is optional. In cases where DNS is not used, the IP address for the VPIM domain being configured must be specified.

Remote Subscribers

Subscribers are administered and updated differently, depending on the endpoint. This section lists those differences.

Registering AMIS Analog and Octel Analog Networking Subscribers on the Interchange

AMIS Analog and Octel Analog Networking subscribers can be administered on the Interchange through one of the following ways:

- Interchange Administration screen interface — see [Adding a Subscriber Mailbox](#) or [Deleting a Subscriber Mailbox](#) in [Chapter 3, Subscriber Administration](#), in [Avaya Interchange Release 5.4 Administration](#).
- AMIS Analog Gateway telephone administration interface — see [Chapter 6, AMIS Analog Gateway Telephone Administration](#), in [Avaya Interchange Release 5.4 Administration](#).
- Self-registration mailbox — as set up in the Self-Registration Agent ID field on the General Parameters screen ([Figure 2-5](#)) in [Chapter 2, Avaya Interchange Administration](#), in [Avaya Interchange Release 5.4 Administration](#).
- Bulk file add or delete — see [Bulk Subscriber Administration](#) in [Chapter 3, Subscriber Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

[Table 1-7](#) shows the information available about a subscriber when added to the Interchange through one of the administration methods described above. A “√” in a box indicates that information is provided when a subscriber is added through that administration method.

Table 1-7. AMIS Analog/Octel Analog Subscriber Information

Field	Administration Method					
	Screen Interface	Telephone Interface (AMIS only)	Self-Registration	Sending a Message	Bulk from File	Bulk from Range
Network Address	÷	÷	÷	÷	÷	÷
Mailbox ID	÷	÷	÷	÷	÷	÷
ASCII Name	÷			√ (Octel Analog)	÷	
Remote Machine	÷	÷	÷	÷	÷	÷
Type	AMIS or Octel Analog	AMIS	AMIS or Octel Analog	AMIS or Octel Analog	AMIS or Octel Analog	
Community ID	√	Default	Default	Default	√	÷
Voice Name		√	√	√ (Octel Analog)		
Last Updated	√	Current time	Current time	Current time	Current time	Current time

Registering Aria Digital and Serenade Digital Subscribers on the Interchange

Aria digital and Serenade digital subscribers can be administered on the Interchange using the Interchange Administration screen.

See [Adding a Subscriber Mailbox](#) or [Deleting a Subscriber Mailbox](#) in [Chapter 3, Subscriber Administration](#), in [Avaya Interchange Release 5.4 Administration](#).

Registering VPIM Subscribers on the Interchange

VPIM Version 2 subscribers can be administered on the Interchange in the following ways:

- Bulk Subscriber Administration. Using the Bulk Subscriber Add utility, the Interchange allows an Administrator to add VPIM Version 2 subscribers by user ID range (using a default record) or by importing an FTP file containing the VPIM Version 2 subscribers to be added.
- Sending a message through the Interchange. A VPIM Version 2 subscriber who does not exist on the Interchange, but who sends a message using the Interchange, is automatically added to the subscriber directory.
- Universal Self-registration Agent. Using the Self-registration utility on the Interchange, a VPIM Version 2 subscriber can self-register by sending a message consisting of a voice component of the subscriber's voiced name to the Administrator-defined Self-registration ID Network Address.
- Subscriber Parameters Administration screen interface. A VPIM Version 2 subscriber can be added to the Interchange subscriber directory using this screen. See [Administering VPIM Remote Subscribers](#) in [Chapter 12, VPIM Administration](#), in [Avaya Interchange Release 5.4 Administration](#) for more information.

Subscriber Updates

The subscriber database must be built when the Interchange network is started or when an endpoint is added. [Table 1-8](#) lists the supported methods.



NOTE:

Information in the INTUITY AUDIX row applies to INTUITY AUDIX LX Release 1.0, DEFINITY ONE, and IP600 systems.

Table 1-8. Demand Remote Pull/Push/NameSend

Machine Type	Demand Remote Pull on Interchange	Demand Remote Push from Interchange	NameSend from Endpoint
AMIS	No	No	No
AUDIX Digital	Yes (all mailbox IDs)	No (performed by executing demand remote update from the AUDIX digital endpoint)	No
Octel Analog	Yes (by range)	Yes Not supported for Octel 100 or Unified Messenger	No
Aria Digital	Yes (by range); preferred method is "NameSend" from Aria Digital	Yes	Yes
Serenade Digital	No (Performed by executing push from Serenade called "NameSend")	Yes	Yes
VPIM Version 2 Digital	No	No	No

When Subscriber Updates Occur

After the database is built, subscribers are updated at the endpoint or on the Interchange at different times, depending on the endpoint. This section ([Table 1-9](#)) lists those times.

⇒ NOTE:
 Information in the INTUITY AUDIX row applies to INTUITY AUDIX LX Release 1.0, DEFINITY ONE, and IP600 systems.

Table 1-9. Subscriber Update Timing

Protocol	Endpoint updates Interchange	Interchange updates Endpoint
AMIS	<ul style="list-style-type: none"> ■ N/A for adds and changes. ■ When the Interchange attempts to deliver to a non-existent subscriber on an AMIS endpoint, it fails the messages and deletes that subscriber from the Interchange directory. 	N/A
AUDIX Digital	When the subscriber is added, changed or deleted through administration, the Interchange is automatically notified.	When the Interchange detects an add, change or delete of a subscriber, it pushes out the update to the AUDIX digital endpoint.
VPIM Version 2 Digital	<p>An update ONLY occurs from a VPIM Version 2 machine to the Interchange when the sender sends a message to the other system. It is the sender's information that is updated on the Interchange.</p> <p>⇒ NOTE: This functionality is determined by the endpoint.</p>	<p>An update ONLY occurs to a VPIM Version 2 machine when the sender sends a message to the other system. It is the sender's information that is updated on the receiving system.</p> <p>The update also includes the voiced name, if the subscriber has recorded it and if it is sent with the VPIM message. The update also includes the alphabetic name for addressing alphabetically.</p> <p>⇒ NOTE: This functionality is determined by the endpoint.</p>

Table 1-9. Subscriber Update Timing

Protocol	Endpoint updates Interchange	Interchange updates Endpoint
Otel Analog Networking	<ul style="list-style-type: none"> ■ When the Interchange delivers a message to the endpoint, it does an ASCII match of the recipient (if ASCII name check is set to “yes”). ■ If the recipient mismatches, it fails the message and immediately requests a pull from the endpoint (when Updates In is set to “yes” on Interchange and Remote Updates In is set to “yes” on endpoint). ■ If the ASCII name is a default on the Interchange, a comparison is not performed by the Interchange, the message is delivered, and the pull is immediately requested (when Updates In is set to “yes” on Interchange and Remote Updates In is set to “yes” on endpoint). ■ If the subscriber does not exist on the endpoint but does exist on the Interchange, then the message is failed. The Interchange defaults the ASCII name and nulls the spoken name of the subscriber. ■ For any name pull to work, the endpoint must be set to Protocol Level 2 or 3. 	<ul style="list-style-type: none"> ■ When the endpoint delivers a message to the Interchange, it does an ASCII match on the recipient. ■ If the recipient mismatches, it fails the message and deletes the entry; the next time that subscriber is messaged, it requests a pull from the Interchange. ■ If the ASCII name is a default on the Interchange, the Interchange always accepts the message, (that is, it does not perform a name comparison); the Interchange then schedules a name pull. ■ If a subscriber does not exist on the Interchange and that subscriber sends a message through the Interchange, the Interchange adds the subscriber as a default and then schedules a name pull. ■ When the Interchange detects an add or change (not a delete) of a subscriber, it pushes out the update.

Table 1-9. Subscriber Update Timing

Protocol	Endpoint updates Interchange	Interchange updates Endpoint
Aria Digital	<ul style="list-style-type: none"> ■ When the Interchange delivers a message to the endpoint, it requests that the endpoint perform an ASCII match on the recipient. ■ If the recipient mismatches, the endpoint fails the message, and the Interchange requests a pull from the endpoint. ■ If the ASCII name is a default on the Interchange a comparison is not requested, the message is delivered, and the pull is requested. ■ If the subscriber does not exist on the endpoint but does on the Interchange, then the message is failed by the endpoint. The Interchange defaults the ASCII name and nulls the spoken name of the subscriber. ■ Aria Digital can automatically push an add, change, or delete of a subscriber when the update occurs. 	<ul style="list-style-type: none"> ■ When the endpoint delivers a message to the Interchange, the Interchange does an ASCII match on the recipient. ■ If the recipient mismatches, the Interchange fails the message and the endpoint deletes the entry; the next time that subscriber is sent a message, it requests a pull from the Interchange. ■ When the Interchange detects an add, change, or delete of a subscriber, it pushes out the update.

Table 1-9. Subscriber Update Timing

Protocol	Endpoint updates Interchange	Interchange updates Endpoint
Serenade Digital	<ul style="list-style-type: none"> ■ When the Serenade Digital system delivers a message to the Interchange, it automatically pushes the sender's ASCII and spoken name (if the spoken name exists). ■ The Serenade Digital system can automatically push an add or change, not a delete, of a subscriber when the update occurs. ■ When the Interchange delivers a message to the endpoint, it does an ASCII match of the recipient (if the ASCII name check flag is set to yes). ■ If the recipient mismatches, the Interchange fails the message, then defaults the ASCII name and nulls the spoken name. ■ If the ASCII name is a default on the Interchange, a comparison is not performed and the message is delivered. ■ If the subscriber does not exist on the endpoint but does on the Interchange, the message is failed. The Interchange then defaults the ASCII name and nulls the spoken name of the subscriber. 	<ul style="list-style-type: none"> ■ When the Interchange delivers a message to the Serenade Digital system, it automatically pushes the sender's ASCII and spoken name (done only when a spoken name exists). ■ When the Interchange detects an add or change (not a delete) of a subscriber, it pushes out the update. ■ When the endpoint delivers a message to the Interchange, it does an ASCII match on the recipient if addressed alphabetically. ■ If the recipient mismatches, the Serenade fails the message and deletes the entry.
Unified Messenger	<p>Interchange requests a Unified Messenger recipient and updates its directory entry only if the entry on the Interchange is a "default" record.</p>	<p>Unified Messenger updates the Microsoft Exchange directory when it sends a message if:</p> <ul style="list-style-type: none"> ■ A custom directory entry is defined for the recipient. ■ This is the first time the directory entry is updated.

Unsupported Features

The Interchange does not support the following features or functions:

- Variable length mailbox IDs on the same VPIM voicemail server
- Network address length greater than 10 digits
- Disabling of Updates In or Out for VPIM remote machines (this concept does not apply to VPIM)
- Network turnaround for VPIM remote machines (this concept does not apply to VPIM)
- Ability to “change” a remote machine administered as an AMIS type to a VPIM type (AMIS machine must be deleted from the Interchange and then added as a VPIM machine)
- Migration from a MAP/5P Interchange system to a MAP/100P Interchange system

Interchange Maintenance

The philosophy behind the maintenance of an Interchange is that the system provides a single point of reference for troubleshooting a problem, regardless of the system configuration. The Interchange application does not change this maintenance strategy. All applications use the same alarm log to report errors occurring within an application or in its interaction with other applications. The alarm log receives entries from all areas of the system (including the Interchange-specific modules), prioritizes the alarms according to severity, and makes them accessible. The alarms, their descriptions, and repair actions can be found in [Chapter 4, Avaya Interchange Alarm Codes and Administrator Log Entries](#), in [Avaya Interchange Release 5.4 Alarm and Log Messages](#).

Avaya Interchange Networking

2

What's in This Chapter?

This chapter provides an introduction to the basics of Avaya Interchange networking. It includes definitions of digital networking, Audio Messaging Interchange Specification (AMIS) analog networking, Octel Analog Networking, Voice Profile for Internet Mail (VPIM) networking, types of networking connections, and networking terminology.

What Is Networking?

Networking is the transfer of messages between users located on remote machines through the Interchange. The types of networking used in conjunction with the Interchange are:

- Digital networking that provides users with the ability to exchange the following:
 - Voice messages with users on INTUITY AUDIX Release 2 systems
 - Voice and fax messages with users on INTUITY AUDIX Release 3 and higher, to INTUITY AUDIX LX Release 1.0, Aria digital, and Serenade digital systems
 - Voice, fax, e-mail, and messages containing binary attachments with users on INTUITY AUDIX Release 4 and higher systems (DEFINITY ONE and IP600 incorporate AUDIX Release 4.4) and INTUITY AUDIX LX Release 1.0 systems
 - Voice messages with INTUITY AUDIX Release 2 and higher systems and DEFINITY AUDIX R3.2 and higher systems

- AMIS Analog Networking that provides users with the ability to exchange voice messages with INTUITY AUDIX users, Octel Analog Networking users, Aria digital users, Serenade digital users, and users of systems having AMIS analog protocol and VPIM Version 2 digital support.
- Octel Analog Networking that provides Octel Analog users with the ability to exchange voice and fax messages with INTUITY AUDIX users, Aria digital users, Serenade digital users, and users of other systems having AMIS analog protocol and VPIM Version 2 digital support. Also provides Unified Messenger users with the ability to exchange voice messages on the same set of systems.
- AUDIX, Aria Digital, and Serenade Digital Networking that provides users with the ability to exchange voice messages with INTUITY AUDIX users, Octel Analog users, Aria digital users, Serenade digital users, and users of having AMIS analog protocol and VPIM Version 2 digital support
- VPIM Digital Networking that provides users with the ability to exchange voice, fax, and text with users of Avaya and non-Avaya voice mail products. (See [VPIM Digital Gateway](#) for a list of vendors of these types of products.)

Digital Networking (AUDIX, Aria, Serenade, and VPIM)

Digital networking (including INTUITY AUDIX, DEFINITY ONE, IP600, Aria digital, Serenade digital, and VPIM Version 2) is the transfer of a digital file from a subscriber on one system to a subscriber on another system. Voice and fax messages are files that are digitally recorded and stored. Digital networking allows these messages to be transferred from one remote machine to another remote machine using the Interchange.

A digital message is sent in the following manner:

1. A subscriber on a remote machine records a voice message or creates a fax or e-mail message and then addresses it to a subscriber on a different remote machine.

NOTE:

Fax is supported on Aria and Serenade digital, INTUITY AUDIX Release 3 and higher, DEFINITY ONE Release 2.0, and on systems using the VPIM Version 2 protocol. E-mail is supported on INTUITY AUDIX Release 4 and higher, DEFINITY ONE Release 2.0, and on systems using the VPIM Version 2 protocol.

2. Digital networking uses a dial string to place the call to the Interchange (or an IP address when the digital protocol is TCP/IP).
3. The Interchange answers the call and identifies the remote machine and subscriber to whom the message is being sent.

4. The Interchange sends the message, including a message header (remote machine name, sender's name, time message was sent, and length of message), to the remote subscriber.
5. For AUDIX, the subscriber sending the message receives notification that the message was received.



NOTE:

For more information on digital networking, see *INTUITY Messaging Solutions Release 4.4 Digital Networking, 585-310-567* and the Aria and Serenade System Manager Manuals on networking.

Types of Digital Networking Connections

Digital networking provides different types of network connections using the following protocols:

- Avaya Digital Communication Protocol (DCP). Used only when both switches are DCP switches. Data rates can be 56 or 64 Kbps. Switches include:
 - System 75, R1V3 Issue 2.2 and higher
 - System 85, R2V4
 - DEFINITY Communications System Generic 1, 2, or 3
- Electronic Industries Association (EIA) RS-232 Protocol. Data rates can be 9.6 Kbps for standard connections over the public network or 19.2 Kbps for special services, such as Software Defined Data Network (SDDN).
- Transmission Control Protocol/Internet Protocol (TCP/IP). Used to connect INTUITY AUDIX Release 3 (IP42 or higher) or INTUITY AUDIX Release 4 systems over a Local Area Network (LAN) with much greater throughput than DSP or RS-232.



NOTE:

TCP/IP is the protocol used for Aria digital, Serenade digital, and VPIM Version 2 digital systems, and between Interchange systems.

AMIS Analog Networking

AMIS analog networking plays messages as voice files over analog lines to communicate with other AMIS analog systems (Avaya and non-Avaya Technologies AMIS systems).

An AMIS analog message is sent in the following manner:

1. A subscriber on a remote machine records a voice message and addresses the message to an AMIS subscriber on another remote machine.
2. The AMIS analog protocol sends the message to the Interchange.

3. The Interchange answers the call and identifies the remote machine and subscriber to whom the message is being sent.
4. The Interchange sends the message to the remote subscriber using AMIS analog protocol.
5. The remote AMIS analog machine answers the call, exchanges protocols with the Interchange, and allows the Interchange to play, *not* transfer, the message.
6. The remote AMIS analog machine records the message, as it is played, into the mailbox of the subscriber receiving the message.
7. The receiver can now listen to the message.



NOTE:

For more information on AMIS analog networking, see *AMIS ANALOG Networking, 585-300-512*.

Octel Analog Networking

Octel Analog Networking Gateway networking sends messages as voice or fax files over analog lines to communicate with other analog systems (INTUITY AUDIX, DEFINITY AUDIX, Aria, Serenade, and non-Avaya Technologies analog systems).

Octel Analog Networking can also be used to network with Unified Messenger systems for voice messages only.

A message is sent in the following manner:

1. A subscriber on a remote machine records a voice message and addresses the message to a subscriber on a different remote machine.
2. The Octel Analog Networking Gateway protocol sends the message to the Interchange.
3. The Interchange answers the call and identifies the remote machine and subscriber to whom the message is being sent.
4. The Interchange sends the message to the remote subscriber using Octel Analog Networking Gateway protocol.
5. The remote machine answers the call, exchanges protocols with the Interchange, and allows the Interchange to play, *not* transfer, the message.
6. The remote machine records the message, as it is played, into the mailbox of the subscriber receiving the message.
7. The receiver can now listen to the message.

TCP/IP Networking's Impact on LAN Traffic

TCP/IP networking has some impact on the amount of traffic over a system's LAN connection. You can calculate this impact by multiplying the number of networked messages by the number of packets and/or number of bytes per message.

Voice Message Impact

Using an average voice message length of 60 seconds (including overhead), traffic generated over the LAN for a single voice message is approximately:

- AUDIX: 135 KB
- Aria Digital: 250 KB
- Serenade Digital: 250 KB
- VPIM v2: 330 KB

Fax Message Impact

Using an average fax message length of three pages (with 90% of all faxes having fine resolution), traffic over the LAN for a single fax message is approximately:

- AUDIX: 144 KB
- Aria Digital: 260 KB
- Serenade Digital: 260 KB
- VPIM Digital: 330 KB

This includes overhead of approximately 100 bytes per packet. Approximately every two data packets are acknowledged with a single 100-byte acknowledge packet.

E-mail Message Impact

For AUDIX, using an average e-mail message length of 5 KB, traffic generated over the LAN for a single e-mail message is approximately 5.5 KB (5.5 1-K data packets). This includes overhead of approximately 100 bytes per packet. Approximately every two data packets are acknowledged with a single 100-byte acknowledge packet.

TCP/IP Networking LAN Traffic Example

For AUDIX, during the busy hour, a single remote system generates 150 voice messages, 30 fax messages, and 50 e-mail messages using TCP/IP networking. The impact on the LAN can be calculated as follows:

KB: $[(150 \times 135,000) + (150/2 \times 100) + (30 \times 144,000) + (30/2 \times 100) + (50 \times 5500) + (50/2 \times 100)] = 24.8 \text{ MB/hour}$

Packets: $[(150 \times 135) + (30 \times 144) + (50 \times 5.5)] = 24,845$ 1K data packets/hour

$[(150 \times 135)/2 + (30 \times 144)/2 + (50 \times 5.5)/2] = 12,423$ 100 byte ACK packets/hour

Total: 37,268 packets/hour

Networking Terminology

This section provides a definition of some of the terms used in digital and AMIS analog Interchange networking.

Machine Types

Machine is a term used for any voice messaging systems. There are two types of machines:

- Local. The machine on which a subscriber is administered as a local user of that machine.
- Remote. Any machine connected through the Interchange to which a subscriber's local machine can exchange messages.

Subscriber Types

Subscriber is a term used to identify the sender or receiver of a message. There are two types of subscribers:

- Local subscriber. A subscriber administered as a local user on a local machine.
- Remote subscriber. A subscriber identified by a local machine as not residing on the local machine. Identified as an administered remote subscriber or non-administered remote subscriber.
 - Administered remote subscriber. Any subscriber that has an administered remote subscriber profile on the local machine; digital networking allows automatic sharing of databases; AMIS analog networking requires that subscribers be manually added to an AMIS machine.
 - Nonadministered remote subscriber. Any subscriber on a remote machine within the Interchange cluster for whom no subscriber profile exists.



NOTE:

Digital networking creates a temporary subscriber profile for a nonadministered subscriber.

Avaya Interchange Requirements

3

What's in This Chapter?

This chapter describes the hardware and software requirements for an Avaya Interchange system.

Cluster Configuration

The following describes the Interchange cluster configuration:

- Types of platforms:

Multi-Application Platform 5P (MAP/5P) with Interchange (5.2 or later) software installed

- Multi-Application Platform 100P (MAP/100P) with Interchange (5.1 or later) software installed

⇒ NOTE:

For specific platform information, see [Avaya Interchange Release 5.4 MAP/5P System Installation](#) or [Avaya Interchange Release 5.4 MAP/100P System Installation](#).

- Remote machines that support AUDIX® digital networking (DEFINITY® AUDIX, DEFINITY ONE™, IP600, and INTUITY AUDIX), AMIS Analog, Octel Analog, Aria Digital, Serenade Digital, or VPIM v2 Digital networking:
 - From 2 to 50 remote (endpoint) machines per MAP/5P platform
 - From 2 to 500 remote (endpoint) machines per MAP/100P platform

[Figure 3-1](#) shows the network connectivity for the Interchange.

NOTE:
The transport for all end nodes must utilize a switch transmission path adequate for the data rate being used.

A second Interchange can be added to the first to extend the cluster.

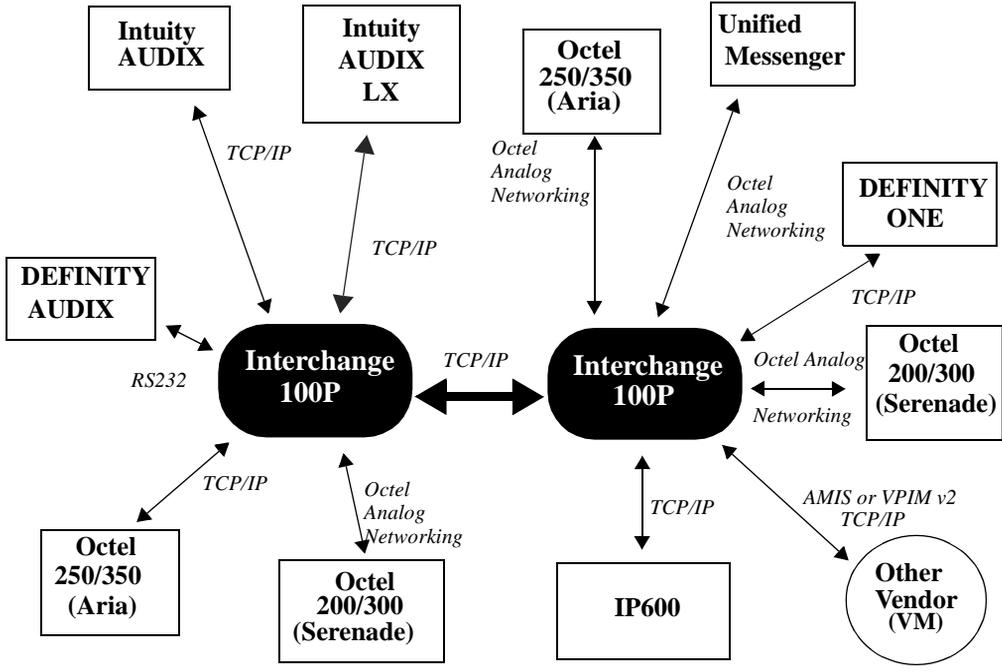


Figure 3-1. Interchange Networking Connectivity Configuration

Interchange System Requirements

The following describes the Interchange hardware and software requirements. Interchange systems are assembled, loaded, and tested prior to shipment to the installation site.

- Hardware requirements:
 - Avaya Interchange MAP/5P platform with non-mirrored dual hard drives and at least two IVC6 or *ngtr* circuit cards and one SSP (speech and signal processor) card
 - Avaya Interchange MAP/100P platform with six hard disk drives using disk mirroring and at least two IVC6 or *ngtr* circuit cards and two SSP cards



NOTE:

ngtr cards for customers outside the U.S., Canada, and Mexico



CAUTION:

SSP cards (in the amounts listed above) ARE REQUIRED in order for the Interchange to load.

- An Ethernet Workgroup Switch, which is a dedicated LAN segment, with a switched Ethernet hub



NOTE:

You can use any brand/model switch that fulfills these requirements:

- Standard-based switched 10BASE-T Hub with standard IEEE 802.3, ISO/IEC 8802-3 Ethernet
- RJ-45 (UTP cable, EIA/TIA categories 3, 4, and 5) interface
- Have at least 6 ports
- Have diagnostic capabilities (LEDs for network and system monitoring)
- SNMP agent, which is needed if you use SNMP in your network

As an alternative, you can choose a 10/100BASE-T hub, for which you would also need:

- To ensure that each port automatically senses the speed of the attached device
- To ensure compliance with IEEE 802.3, 802.3u, and ISO/8802.3 standards

- Software requirements:
 - UNIX SVR4.x
 - A subset of AUDIX Voice Messaging Release 4.4 or greater software modules
 - Interchange remote field update, if necessary
 - Oracle 7.1.3 (unique for the Interchange)
 - Interchange application software
 - INTUITY switch software

Cornerstone

Cornerstone is the name of the platform on which the Interchange product is built. The Interchange Release 5.4 supports Cornerstone Release 2.5. All existing Release 5.3 Interchange systems will need to upgrade to Cornerstone Release 2.5 when they are upgraded to Interchange Release 5.4. This is a software upgrade only, and does not require any new hardware for the existing Release 5.3 system (unless SSPs are not a part of the 5.3 system, in which case they will need to be added if Aria Digital, Serenade Digital, or VPIM will be used). All new Interchange Release 5.4 systems will be shipped from the factory with Cornerstone Release 2.5 and SSPs.

Installed Systems

The system targeted as the Interchange must have Interchange software installed. This software is assembled, loaded, and tested prior to shipment of the platform.

See [Avaya Interchange Release 5.4 MAP/5P System Installation](#) or [Avaya Interchange Release 5.4 MAP/100P System Installation](#) for complete information about hardware and software installation of the platform.

Switch Connections

The Interchange connects to a switch (either Avaya and non-Avaya) through the analog lines from the switch to the IVC6 or ngtr circuit cards in the platform. The Interchange supports the following switches:

- System 75/Definity
- System 85/Dimension
- System 25
- NEC NEAX 2400
- Rolm 8000, 9000, 9751

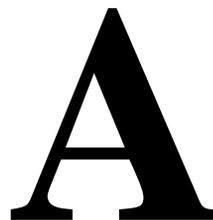
3	Avaya Interchange Requirements <i>Interchange System Requirements</i>	61
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- Northern Telecom SL-1
- Northern Telecom Meridian -1
- Northern Telecom Meridian SL-1
- Mitel SX 200D
- 5ESS
- DMS100

See [Avaya Interchange Release 5.4 MAP/5P System Installation](#) or [Avaya Interchange Release 5.4 MAP/100P System Installation](#) for connection information.

3	Avaya Interchange Requirements <i>Interchange System Requirements</i>	62
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Subscriber Interface Information



What's in This Appendix?

This appendix provides information about subscriber interface differences that result from the use of Avaya Interchange.

Subscriber Interface Differences

The following items are subscriber interface differences that are particular to the Avaya Interchange:

- The Interchange system allows a uniform length dial plan (the number of digits used when addressing a message). It consists of a network address of 3 to 10 digits. It allows for a prefix of 1 to 21 digits for an INTUITY AUDIX system. The sum of the network address and prefix is 24 digits for an INTUITY AUDIX system. A 10-digit network address dial plan is recommended.
- A “delivered” status means the message was delivered to the Interchange.
- If a message fails, the sender's incoming mailbox receives the following:
 - An error message similar to:

Message to [voice name(s)] extension [extension number(s)] failed due to [reason]. A copy of this message can be found in your incoming mailbox.

This error message can have “priority” status if this option was selected through the administration screens.
 - The actual message so that it can be resent to the destination.

- If one component of the message fails (for example, fax is not enabled on the receiving machine), the receiver is notified that a component of the message failed.

For example, if a subscriber from an INTUITY AUDIX endpoint sends a fax-only message through the Interchange to a subscriber that is only voice-enabled, the Interchange sends a message to the receiving subscriber that one or more components of the message were not received.

- A subscriber must be administered on an Interchange system in order for that Interchange to accept messages for delivery.
- Failed message IDs can be viewed using INTUITY Message Manager.
- Notification of failure to deliver a message component because the recipient is not enabled to receive a component type (voice, fax, text, binary) is the same as on the INTUITY AUDIX Release 4 system. The component that could not be delivered is stripped, and the following is prefixed to the original message: "One or more components could not be delivered, please contact the sender" <pause><voice message>.
- Octel Analog subscriber messages can optionally contain the "private/urgent" designation and voiced name of the sender as part of the actual message being sent.
- The machine name of the receiving machine is that of the Interchange delivering the message.
- The remote subscriber name contains a suffix of 2 to 8 characters at the end of the `name` field. This suffix identifies the Interchange system ID for the remote machine on which that subscriber resides.
- With Enterprise Lists, delivery status is sent to the sender of the list message as a voice, fax, or text message rather than appearing in the outgoing mailbox of the sender.
- When the Interchange database is full, subscribers continue to be added but no voice names are added; therefore, no voice name is heard when callers address that subscriber. The MAP/5P platform allows 75,000 voice names; the MAP/100P platform allows 120,000 voice names.
- All Interchange-generated messages (failures following 2 incoming message scheme, list messages, and others) are in Standard American English.
- Sender's names are handled in the following ways:
 - Octel Analog Networking, Aria digital, and Serenade digital messages to the Interchange are not configured to include sender's names.
 - Octel Analog Networking, Aria digital, and AMIS recipients receive sender's name by Interchange Prefixing.

- AUDIX and Serenade digital recipients receive sender's name from the Message Header.
- When VPIM subscribers send messages through the Interchange, the sender's name is populated on the Interchange if this information is populated in the sender's VCard (similar to header information).

AUDIX Differences

The following list applies to all systems that include AUDIX as one of its components (for example, DEFINITY ONE):

- "Scheduled message" status for AUDIX indicates that delivery has not been successfully completed, nor has it failed yet.
- Failed messages can exist in both incoming and outgoing mailboxes for INTUITY AUDIX.
- "Accessed" status is consistent on both the Interchange and INTUITY AUDIX systems.
- Large messages to AUDIX from Aria, Serenade, and VPIM will be failed with a "message length" failure code message.

AMIS Differences

The following list applies to all AMIS systems:

- AMIS messages are marked as "delivered" upon successful delivery to the Interchange. AMIS protocol does not support "accessed" status.
- Digital network mailboxes sending messages to AMIS subscribers can have the message addressed using the number or name of the AMIS subscriber, if the subscriber name has been administered.



NOTE:

The AMIS subscriber voiced name is optional.

- Digital network mailboxes receiving messages from AMIS subscribers are treated as though they were coming from another digital network mailbox. The caller hears "Message from *voice or extension*" as they usually do when receiving a message.
- AMIS subscriber messages can optionally contain the "private/priority" designation and voiced name of the sender as part of the actual message being sent.
- AMIS Analog subscribers can be administered in the following ways:
 - Administration screens
 - Bulk files

- Touchtones
- Sending messages through the Interchange system
- Sending messages to a predefined subscriber registration mailbox on the Interchange
- Enhanced Services

Aria and Serenade Differences

The following list applies to Aria and Serenade systems:

- For fax-only messages to Aria systems, “Your fax message is attached” is added as a voice component.
- The Aria Message Locator feature applies to Interchange delivery.
- When Aria subscribers send a mixed private or priority message to multiple INTUITY recipients on the same remote machine, the message is marked “priority” or “private” for all recipients, even if only one recipient is marked as such.
- Reply/Forward Indicator is supported as follows:
 - From Serenade Octel Analog to All Machine Types
 - From Serenade Digital to Serenade Digital
- Serenade Digital Call Processing Features are *not* supported (for example, Immediate Call).
- The use of “Notices” and “Messages” differs between Aria and Serenade systems as follows:
 - A notice is a positive message confirmation.
 - A message is a failure from the Interchange.
- Enterprise List usage for Octel Analog, Aria Digital, and Serenade Digital is handled in the following ways:
 - List Status Report does not indicate “accessed” for non-AUDIX recipients.
 - Positive/Negative Confirmation and Return Receipt is not supported for Octel Analog Networking, Aria digital, or Serenade digital senders.

Important Factors to Consider When Implementing an Avaya Interchange System

B

What's in This Appendix?

This appendix provides information about important considerations relative to implementing an Avaya Interchange network. It also documents differences to consider for those customers moving from an existing point-to-point network to an Interchange. Many of the issues addressed in this appendix have a direct impact on messaging end users. Discuss these issues with your Avaya representative before implementation to ensure that you have a thorough understanding of implementation requirements and results.

This appendix describes considerations related to the following topics:

- [General User Interface Considerations](#)
- [General Network Configuration Considerations](#)
- [Enterprise Lists Considerations](#)
- [Serenade-Specific Considerations](#)
- [Aria-Specific Considerations](#)
- [Unified Messenger-Specific Considerations](#)
- [VPIM Considerations](#)
- [Migration Considerations](#)

The information in this appendix is also available in other sections of the [Avaya Interchange Release 5.4 Concepts, Features, and Planning Guide](#) book and in the [Avaya Interchange Release 5.4 Administration](#) book. This appendix highlights important factors to consider with regard to an Avaya Interchange network implementation. For each of the considerations defined here, refer to those documents for additional information.

For a list of features and functions not supported by the Interchange, see [Unsupported Features](#) in [Chapter 1, Avaya Interchange Description](#).

General User Interface Considerations

This section deals with a number of general user interface considerations you should be aware of when implementing an Interchange network. These considerations include the following:

- [Remote Machine Voiced Name](#)
- [Future Delivery](#)
- [Subscriber ASCII Name Field](#)
- [Accessed / Return Receipt / Positive Confirmation/Message Disposition Notification](#)
- [Negative Confirmation](#)
- [Failed Message Notification](#)
- [Extended Absence Greeting \(EAG\) Warning Notification](#)
- [Interchange Announcements](#)
- [Delivered Indicator](#)
- [Call Sender Feature](#)

Remote Machine Voiced Name

In a point-to-point network, each remote machine is configured to recognize every other remote machine in the network. In a pure Interchange network, each remote machine knows only about the Interchange. In some existing point-to-point networks, customers can be using a feature whereby the administrator has recorded a voiced name for each remote machine so that when a subscriber on a local machine sends or receives a message, the voiced name of the remote machine is announced along with the voiced name of the remote subscriber. As mentioned, with an Interchange topology, the local machine recognizes only one remote machine: the Interchange. Therefore, the indication of the final destination remote machine is lost when moving from a point-to-point network to an Interchange network.

If your system uses this feature and you are moving from a point-to-point topology to an Interchange, you have three options to address this issue:

- Do not record any voiced name for the Interchange remote machine.
- Record a voiced name for the Interchange such as "ABC Company Network."

- Have subscribers record their location when recording their voiced names (for example, "John Smith, New York"). This can be done for everyone in the network, or only for those people with common names where there might be confusion as to the identify of the sender or recipient.

 NOTE:

This last option has been used successfully by most Interchange customers who want to maintain the voiced name of the remote machine with the subscriber's voiced name.

This concept applies to the telephone user interface and to the PC client (such as Message Manager and Visual Messenger) interface as well. For example, a subscriber who used to send and receive messages from remote subscriber 1234@intuityaudix would now see that subscriber as residing on the Interchange server name instead of the remote AUDIX message server name.

Future Delivery

When a subscriber on a system such as an Octel 250/350 system creates a message and schedules it to be delivered at a future date, the system sends the message immediately and expects the receiving system to present the message to the recipient at the appropriate time.

When a subscriber on a system such as an Intuity AUDIX system creates a message and schedules it to be delivered at a future date, the system holds the message until the appropriate time for delivery.

Interchange is designed to be a **receive and deliver** system for messages and does not hold messages under normal circumstances. The differences in how future delivery messages are handled could result in inappropriate performance.

For example, an Octel 250/350 subscriber (sender) sends a future delivery message to an INTUITY AUDIX subscriber (recipient). The sender expects the receiving system, in this case, AUDIX, to display the message at the future time specified. However, since the AUDIX system expects to display all messages when it receives them, the recipient receives the message immediately, and not at the future time specified on the sending system. Conversely, the INTUITY AUDIX thinks the sending system would only send a message when it should be presented to a receiver. The net result would be the receiver receiving the message before the appropriate time

Consequently, Interchange does not support future delivery messages when the sender is on an Octel 250/350 system and the receiver is on an Intuity AUDIX (including Definity AUDIX, Definity One, IP600, R1 AUDIX, and AUDIX LX Release 1.0), Serenade digital, or AMIS system. For those combinations, the Interchange fails the future delivery message and returns it to the sender indicating the reason for the failure.

Subscriber ASCII Name Field

To ensure the uniqueness of subscriber names on the Interchange, the node ID of the remote machine on which the subscriber resides is concatenated to the end of the subscriber ASCII name field. For example, if there is a "Smith, John" on system A with a node ID of 20 and a "Smith, John" on system B with a node ID of 21, then the ASCII name values for these subscribers will be "Smith, John 20" and "Smith, John 21."

For systems that support duplicate names within the same message server, the Interchange not only adds the node ID to the name, but a duplicate number to ensure uniqueness. For example, if there are two subscribers with the name "Jones, Mary" on the same system with a node ID of 30, then the first subscriber ASCII name will be stored on the Interchange as "Jones, Mary 30D1" and the second will be stored as "Jones, Mary 30D2."

Accessed / Return Receipt / Positive Confirmation/Message Disposition Notification

The Interchange does not support certain combinations of the feature where the sender is notified that the receiver has listened to a voice message or printed a fax. In general, the Interchange only supports this feature for the following combinations:

- AUDIX to AUDIX (INTUITY, DEFINITY)
- Octel Analog to Octel Analog (including Aria Digital)
- Serenade Digital to Serenade Digital
- VPIM to VPIM (where both endpoints support Message Disposition Notification)

Negative Confirmation

Octel 250/350 supports a feature where the sender can be notified when a recipient has received a message but has *not* listened to message for an administered period of time. Interchange only supports this feature when the recipient is on an Octel Analog or Aria Digital system.

Failed Message Notification

When a message that is sent fails to be delivered by the Interchange, the Interchange returns two messages to the original sender: one message indicates that a failure occurred and why; the second message is a copy of the original message. When the same message fails to go to multiple recipients, the Interchange groups the failed recipients into one notification message.

This failed message handling applies to all protocol types including:

- AUDIX TCP/IP
- AUDIX DCP / RS232
- Aria TCP/IP
- Serenade TCP/IP
- Octel Analog
- AMIS
- VPIM

This failure notification is a message generated by the Interchange. This is slightly different from messages that fail to be delivered from a message server to another remote machine. For example, for INTUITY AUDIX, failures are indicated in the outgoing mailbox one by one. In the case of Octel 250/350, failures are indicated as *notices* in the sender's mailbox one by one.

Extended Absence Greeting (EAG) blocks are treated as failure conditions by the Interchange.

Extended Absence Greeting (EAG) Warning Notification

When the Interchange delivers a message to a mailbox that has EAG Warning activated, the Interchange generates a message to the sender notifying him or her of this condition. When the same message goes to multiple recipients with EAG Warning activated, the Interchange lists the EAG recipients into a single notification message. Optionally, the Interchange can be administered to also include a second message with this notification that is a copy of the original message sent.

This EAG notification is slightly different from the kind of notification sent by traditional Octel message servers in a point-to-point configuration in which the systems use notices to notify senders of the condition.

For the EAG Warning feature on INTUITY AUDIX (with Aria TUI), the receiving Intuity AUDIX system generates the EAG notification.

Interchange Announcements

All Interchange announcements (that is, voice fragments generated by the Interchange) are in U.S. English only.

Delivered Indicator

In a standard point-to-point environment, a sending message server can indicate to a message sender whether a message has been delivered to the receiving system. In this situation, the receiving system (that is, the recipient's mailbox) is the final destination for the message. In an Interchange configuration, the sender's system still gives indication to the sender that the message has been delivered, but the indication is to the Interchange system.

For example, if a sender sends a message from an INTUITY AUDIX system directly to a receiving INTUITY AUDIX system in a point-to-point network, the message is placed in the Delivered state when the message is delivered to the recipient's mailbox. However, if an Interchange is connecting the two INTUITY AUDIX systems, "Delivered" means that the message was delivered to the Interchange. The concept of Accessed (that is, when the recipient listens to the message) applies in the same way as in a point-to-point configuration.

Call Sender Feature

In some Interchange networks, the Interchange dial plan can conflict with the dial plan used to make real-time calls. An example of this dial plan conflict can be seen in a DCS network. For example, a certain customer could have a DCS network in which all users in the network dial five digits to reach another person in the network. This customer could also have an Interchange network using a 10-digit Network Address. In this scenario, the 10-digit Network Address does not match the five digits a caller would dial to reach that person. As a result, when a recipient receives a message from a sender and is offered the option to "Call Sender," the sender cannot be called because the 10-digit number does not conform to the 5-digit dial plan. Again, care must be taken when designing the dial plan for an Interchange network so that all feature interactions are understood.

With the "Reply to Message" feature in a DCS network, a recipient of a call answer message can reply back to the caller using message networking. Continuing with the previous example, if a caller calls someone in the DCS network and leaves a message, the caller's ID is in the 5-digit format. If the Interchange network has 10-digit dialing, an attempt to "reply to message" does not work because the caller ID is in the 5-digit format and the networking format expects 10 digits.

In some cases where these features have become an issue, the customer has chosen to maintain the point-to-point networking for the DCS part of their network and use the Interchange for all other message server communications. These types of combinations result in [Hybrid Networks](#).

General Network Configuration Considerations

This section contains a number of general network considerations of which you need to be aware when implementing an Interchange network. These considerations include the following:

- [Analog Fallback](#)
- [Uniform Network Address Length](#)
- [Multiple Length Mailbox IDs](#)
- [Hybrid Networks](#)
- [Upgrading from Octel Analog Networking to Digital](#)
- [Impact When Moving from Point-to-Point Network to Interchange Network](#)
- [Maximum Port Number Capacities Are Not Additive](#)
- [Subscriber Bulk Add by Range Utility](#)

Analog Fallback

Octel 250/350 and Octel 200/300 systems that are networked digitally in a point-to-point configuration have the ability to “fall back” to Octel Analog if the system is unable to send the message over the TCP/IP data network. Interchange does not support this fallback feature either in an inbound (that is, messages from an Octel 250/350 or Octel 200/300 system) or an outbound direction. It is important to note that although analog fallback does not occur on the Interchange when the TCP/IP network is unavailable, messages are rescheduled for delivery (based upon predefined delivery schedules), and no messages are lost.

As more redundancies continue to be built into TCP/IP networks at the data level and these networks become more reliable, the need for analog fallback to be built at the application level becomes less of a requirement. This is true much in the same way that many other data applications (for example, e-mail, PC client access to message mailboxes, and so on.) do not depend on analog fallback at the application level.

Uniform Network Address Length

Interchange supports a uniform Network Address length of from 3 digits to 10 digits. It does not support variable length Network Addresses within the same Interchange network.

In some configurations, you can use a prefix when defining a dial plan. In the context of this document, a prefix is a number that is dialed by the sender of a message before entering the digits of the Network Address; for example, dialing a “1” before a 10-digit Network Address. The prefix “1” is not actually transmitted to

the Interchange along with the Network Address. In some networks, this can give the appearance to the sender that address lengths are variable, but in reality the same number of digits are always transmitted to the Interchange for the Network Address.

Multiple Length Mailbox IDs

Interchange does not support multiple length mailbox IDs within the same message server. Each message server can have a different length mailbox ID, but a given message server cannot have different length IDs.

Hybrid Networks

Interchange does support hybrid network configurations that use a mix of point-to-point and Interchange message server connections. It is important to be careful in planning the dial plan for this type of network to ensure that the desired delivery path is followed when subscribers use the network.

One side effect that can occur in a hybrid network if careful design of the dial plan does not occur is “double name-back.” This is a condition in which a subscriber has two paths to send a network message to a recipient: one as a direct point-to-point connection and the other through the Interchange. When this situation occurs, two remote subscriber directory entries can be stored on the local message server: one for the point-to-point path and another for the Interchange path. In this instance, senders using the “dial by name feature” can receive two responses for the same person (for example, “Press 1 for John Smith, Press 2 for John Smith”). You can prevent this condition by defining one (and only one) dial plan path by which a sender can send a message to a recipient.

Upgrading from Octel Analog Networking to Digital

Interchange does not support the ability to change the connection type for a message server networked using Octel Analog to Aria Digital or Serenade Digital. These machines must be deleted from the Interchange database and then added as Aria Digital or Serenade Digital. A side effect of this deletion and addition could be that subscriber lists stored on the message servers are affected.

Impact When Moving from Point-to-Point Network to Interchange Network

The following factors must be considered when moving from a point-to-point network to an Interchange network:

- [Lists](#)
- [Personal Address Book](#)
- [Message Headers](#)

Lists

In moving from a point-to-point network to an Interchange network, the dial plan can change so that lists stored on local message servers can be affected. This impact could require that a user re-enter the list with the new Interchange Network Address.

Aria systems support the ability to move a prefix from one remote machine to another (that is, from a remote machine connected point to point to an Interchange). When this is done, the lists that reference subscribers on the moved remote node do not change.

Personal Address Book

The deletion of remote subscribers when moving from a point-to-point to an Interchange topology also causes the inability to use the INTUITY AUDIX Personal Address Book feature (Message Manager) to identify and address deleted remote subscribers. Other related mailbox features that are affected include the Personal Directory (Touchtone User Interface Options 5, 2) and Names Directory (Touchtone User Interface Option **6, when addressing a message).

Local INTUITY AUDIX subscribers need to re-add deleted remote subscribers to their Personal Directory. The Personal Address Book and Names Directory are recreated when messaging to remote subscribers via the Interchange. The Interchange dynamic updates feature adds these subscribers to the local messaging system one-by-one on a real-time basis as messaging occurs between the systems.

Message Headers

Message header information on old or saved messages stored in a subscriber mailbox that were received from remote subscribers who were deleted (as a result of moving from a point-to-point to an Interchange design) are lost permanently. In addition, end users do not have the ability to reply to the deleted subscriber messages.

Saved messages in local subscriber mailboxes that were received from deleted remote subscribers lose their header information and indicate a message from an unknown subscriber. This condition must be addressed as part of the conversion to

an Interchange network. Subscribers need to note important saved messages and be prepared for this situation. Unnecessary saved messages need to be deleted before the Interchange conversion.

Maximum Port Number Capacities Are Not Additive

The maximum port capacities quoted for each Interchange model are not completely additive. When the overall Interchange network is designed, it is the busy hour message minutes that are used to indicate how many Interchanges are required. This total, in conjunction with the maximum number of ports of each type in the following table, is used to determine the number of Interchange systems required for a particular network. Each protocol port type has a maximum number of message minutes that it can support.

Table B-1. Maximum Number of Interchange Ports

Connection Type	MAP/100P — Maximum Number of Ports	NAO/5P — Maximum Number of Ports
Digital		
AUDIX TCP/IP		
■ LAN	4	4
■ Fast WAN (T1)	8	8
■ Slow WAN (Switched 56)	12	8
DCP	12	4
RS232 (9.6 kbps)	12	4
Aria TCP/IP	16	8
Serenade TCP/IP	16	8
VPIM	20	10
Analog		
AMIS	30	12
Octel Analog	30	12

For example, a given Interchange system which already has the maximum 16 Aria Digital ports cannot have any more ports of any type added to the system. This is because an Interchange designed with 16 Aria Digital ports has already met the maximum number of busy hour message minutes (2400) allowable for an Interchange.

Subscriber Bulk Add by Range Utility

For Octel Analog, VPIM, and AMIS remote machines, there are several possible methods of adding remote subscribers to an Interchange. The following is a list of these methods in order of preference:

1. Bulk Add by File
2. Self-Registration
3. Sending a Message through the Interchange
4. Subscriber Administration Screen
5. Demand Remote Update (Octel Analog)
6. Bulk Add by Range

The bulk add by range utility is least preferred method of adding remote subscribers. While this method is a viable option, use this method only when the other methods above cannot be used. Bulk adding subscribers by range raises the following issues:

- When using bulk add by range, the administrator needs to limit the range administered on the Interchange to the actual range (or sub-ranges) used on the remote message server. In some cases, tens of thousands of default subscribers have been added for remote machines that actually only have a few hundred subscribers. Having thousands of unused default subscribers can impact performance on the system and does come at a cost. Always use the minimal number of bulk added subscribers.
- When using the bulk add for a given remote machine (and thus, creating non-existent default subscribers), the Enterprise Lists created on the Interchange should never reference those subscribers by Network Address range (i.e. dynamically). Since many of the subscribers in the range can be non-existent, this causes the Interchange to attempt to deliver the list message to non-existent subscribers. Referencing the non-existent default subscribers by Network Address severely impacts system performance.
- Since Aria Digital and Serenade Digital systems support a demand Name Send and INTUITY AUDIX systems support Demand Remote Update to initialize the Interchange subscriber database, never use a bulk add by range for these machine types (or any of the other add methods listed at the beginning of this section). Additionally, the digital system types notify the Interchange when a new subscriber has been added so that the Interchange can update its directory. In all cases, encourage customers to upgrade to a digital connection as the directory updates and administrative procedures for digital systems are much more robust than those for analog systems.

Enterprise Lists Considerations

The Enterprise List feature of the Interchange is a powerful application that can be used to send a message to literally hundreds of thousands of subscribers across the Enterprise. This section contains a number of Enterprise List considerations of which you need to be aware when implementing an Interchange network. These considerations include the following:

- [General Enterprise List Considerations](#)
- [Enterprise List Usage for Octel Analog Networking, Aria Digital, Serenade Digital, and VPIM Users](#)
- [Enterprise Lists and Point-to-Point Networking](#)

General Enterprise List Considerations

The Enterprise List feature of the Interchange is a powerful application that can be used to send a single message to hundreds of thousands of subscribers across the Enterprise. It is important to be aware of the following general considerations when using Interchange Enterprise Lists:

- Interchange Enterprise Lists are lists and not a “broadcast” feature. The term “broadcast” implies that the sender has the option to invoke Message Waiting Indication (MWI). Examples of MWI include lighting the light on a telephone set and outcalling. Interchange Enterprise Lists do invoke MWI to notify the recipient of message receipt. For some networks, the effects of MWI must be strongly considered when using these lists. However, in many existing Interchange networks, messages are sent to every subscriber in the Enterprise without any MWI issues.
- It is strongly recommended that messages for large lists be sent out of hours during off-peak times. This is especially true when sending messages to systems with analog connectivity due to analog’s slower performance.
- Sending to large lists using AMIS Analog is not recommended. AMIS Analog delivers a message once for each recipient receiving a message. Octel Analog is somewhat better in performance due to recipient bundling, but can still cause a bottleneck as the messages delivered are actually played on the analog line and are slow. Interchange does support multiple simultaneous connection to the same AMIS Analog machine, which improves delivery performance.
- In large multi-Interchange networks, do not define a list with a large range on Interchange A that includes subscribers whose “home” Interchange is Interchange B. For example, if range 5550000–5559999 is on Interchange A and range 6660000–6669999 is on Interchange B, then divide these subscribers into two separate lists on each respective Interchange. One

hierarchical list ID can be created to reference the separate lists so that it is transparent to the sender that there are really separate lists. This method distributes the processing and improves performance.



CAUTION:

It is extremely important that you follow the recommendation to create hierarchical lists.

- Although dynamic lists (that is, selection criteria) are very powerful, they do require more processing than static (single) entries.
- When you want to send a message to all subscribers in an Enterprise using a single Enterprise List, the following suggestions can help reduce network traffic load and the effects of MWI:
 - For INTUITY AUDIX systems, reference a single mailbox per server in an Enterprise List that has “broadcast permission.” With this method, only one message is sent to each server. Once the message is deposited in the subscriber's mailbox (with broadcast permission), the subscriber can then forward the message to the rest of the subscribers on the server with or without MWI.
 - Another INTUITY AUDIX option is to create Enterprise Lists that reference local INTUITY AUDIX ELA lists consisting of all local subscribers. This practice also helps reduce network traffic load. Be careful when using Enterprise Lists and INTUITY AUDIX ELA; ensure that a range defined on an Enterprise List does not include an ELA list (unless that is the desired effect). Additionally, be careful not to create a cycle by referencing an ELA list on an Enterprise List that references the same Enterprise list.
 - For Aria systems, reference a single “bulletin broadcast” mailbox per server in an Enterprise List. With this method, only one message is sent to each server. Once the message is deposited in the “bulletin broadcast mailbox,” the message is sent to everyone on the server with the “bulletin broadcast” class of service (with MWI as an option). Use of this feature could require an Administrator to add the “bulletin broadcast” class of service to the subscriber on the Aria system.
 - For Serenade systems, an Enterprise List can be created that references a Serenade System Distribution List (SDL) consisting of all local subscribers. SDLs have the option (through parameter 145) to invoke MWI. This scenario significantly decreases network traffic load and reduces the effects of MWI.

- Many times, customers want to know exactly how much time will be required to deliver messages to their entire enterprise. This total is difficult to answer/model as the following can all affect the delivery times:
 - Throughput of the WAN/LAN
 - Type and number of TCP/IP endpoints (Intuity AUDIX, Aria, Serenade) as transcoding impacts the time
 - Number and type of endpoints and the distribution of the subscribers
 - Number of any other non-TCP/IP endpoints (Octel Analog, AMIS)
 - Number of Interchanges (i.e. distribution)
 - Other message traffic load occurring at the same time (both on Interchange and the endpoint)
 - Other performance-impacting activities (i.e. running of reports, etc.) (both on Interchange and endpoint)
 - Number and type of ports configured on each Interchange/endpoint

As a benchmark, there is an existing Interchange customer that sends a message to all 40,000 subscribers in a pure INTUITY AUDIX (that is, no digital transcoding) network during non-prime time. Network Address Ranges are used in the Interchange Enterprise List feature. This customer reports that the entire delivery process takes 3.5 hours.

Enterprise List Usage for Octel Analog Networking, Aria Digital, Serenade Digital, and VPIM Users

There are certain limitations on the Interchange for the Enterprise List feature when Octel Analog Networking, Aria Digital, and Serenade Digital users are involved. These include:

- The Enterprise List Status Report does **not** indicate “Accessed” for non-AUDIX recipients.
- Positive/Negative Confirmation and Return Receipt are not supported for Octel Analog, Aria Digital, or Serenade Digital users of Enterprise Lists.

Enterprise Lists and Point-to-Point Networking

Some customers choose to use Interchange for the Enterprise List feature while maintaining point-to-point networking connectivity. Although this arrangement is certainly a viable option, it does create a scenario for double remote name entries. For example, let's say a customer has two messaging systems (System A and System B) networked point-to-point with a 5-digit dial plan and yet both systems are connected to the Interchange using a 10-digit dial plan. Subscriber A on System A is stored on System B as a remote subscriber entry in the 5-digit format.

Subscriber A sends a message using an Interchange Enterprise List to Subscriber B on System B (using the standard reply option). If the Interchange directory view for System B is administered to allow Subscriber A to be stored on System B, then the net result after the Enterprise List use would be for Subscriber A to be stored on System B twice: once in the 5-digit (point-to-point) format and another in the 10-digit (Interchange) format. This means that when a subscriber on System B alphabetically addresses remote Subscriber A, two options would be presented to the sender: "Press 1 for Subscriber A (5 digit format) and Press 2 for Subscriber A (10 digit format)."

This double name entry can be prevented in the previous example by not allowing Subscriber A to be defined in the Interchange directory view for System B. This would still allow the Enterprise List message to be delivered from Subscriber A to Subscriber B through the Interchange, but would not allow the remote subscriber entry for Subscriber A to be stored on System B in the 10 digit (Interchange) format. The drawback to this workaround is that on receiving systems such as Intuity AUDIX, where the sender's voiced name is part of the message header, this voiced name is not announced upon playing the message since it is not stored (in the 10 digit format) on System B. Rather, the full 10 digit Network Address is announced back to the recipient. In receiving systems such as those connected using Octel Analog, the sender's voiced name is embedded in the message so the recipient hears it when the message is played. In either case, replies back to the message are to the "10 digit Network Address." Any other caveats due to the fact that the remote Subscriber A is not stored on System B although a message was received by System B would apply.

Note that the previous example applies when the reply option is set to "yes" for an Enterprise List. When the reply option is set to "yes," it is the sender of an Enterprise List that is designated as the creator of the message. When the reply option is set to "all," it is the Enterprise List ID that is the originator of the message. When the reply option is set to "no," it is the Enterprise List Deliver Agent that is the originator of the message. For these last two reply options (all and no), the customer would want to allow the 10 digit remote subscriber entries to be stored on System B in order to provide the best user experience to the recipient.

Serenade-Specific Considerations

This section contains considerations associated with Serenade systems. These considerations include the following:

- [Serenade Digital Call Processing Features](#)
- [Serenade Gateway Support](#)
- [Serenade Multiple Voice Components](#)
- [Reply, Forwarded, and Auto-Copy Message Indication](#)

Serenade Digital Call Processing Features

Interchange does not support the Call Processing features that are available when two Serenade systems are digitally connected to each other in a point-to-point configuration. These features include Immediate Call (whereby a sender of a message can be called), Live Call Across the Network, Check for Unlistened Messages, Quick Message Across the Network, and Log On Across the Network.

Serenade Gateway Support

Interchange supports connectivity to a Serenade Gateway when the gateway is part of a Serenade domain. Interchange does not support a Serenade Gateway when it is in a Remote configuration where it is the interface for nondomain message servers.

A Serenade Gateway in a Domain configuration is a Serenade system designated as the gateway for the entire cluster of digital Serenades (domain). It is the only system networked to the Interchange within the entire domain and must be connected to all of the other Serenade systems in the cluster (domain) digitally.

A Serenade Gateway in a Remote configuration is a Serenade system being used as a networking gateway for other messaging systems (connected using Octel Analog, Voicenet, etc.).

Serenade Multiple Voice Components

Serenade message servers support the concept of multiple voice components or segments within the same message. When such messages are sent through the Interchange, then all voice segments within the same message are concatenated into a single component.

Reply, Forwarded, and Auto-Copy Message Indication

When a message originates from a Serenade end point—that is a reply, forwarded, or auto-copied message—the sending Serenade system provides the ability to notify the recipient of the message of this condition. When this happens, the words reply, forwarded, or auto-copy are played in the voice component of the recipient's message.

Serenade Digital systems send this type of notification using a special message code which can only be interpreted by a receiving Serenade Digital system in order to play the appropriate voice fragment.

Serenade Octel Analog systems send this type of notification by actually inserting the announcement fragment into the voice component of the message. All machine types receiving this message can play the indication as it exists as an actual voice fragment in the message.

Therefore, Interchange only supports the reply, forwarded, and auto-copy notification for the following combinations of products:

- Serenade Digital to Serenade Digital
- Serenade Octel Analog to any other product type

In addition, replies to auto-copy messages are not supported by the Interchange. Replies to these messages are ignored by the system.

Aria-Specific Considerations

This section contains considerations associated with Aria systems. These considerations include the following:

- [Alias Mailbox Support](#)
- [Upgrading from Aspen to Aria Digital](#)
- [Mixed Private/Priority Messages from Aria](#)
- [Aria Digital Version Numbers](#)
- [8 Second Spoken Names Using Aria Octel Analog](#)
- [Subscribers with No Recorded Spoken Name](#)

Alias Mailbox Support

In Aria environments with alias mailboxes, when defining the dial plan for an Interchange, it is important that Interchange delivers networked messages to the actual mailbox ID and not the alias mailbox ID. Alias mailboxes are used in Aria systems when the call coverage number for a mailbox does not necessarily match the actual mailbox ID.

Upgrading from Aspen to Aria Digital

When you want to use digital networking for an Aria system that has been previously upgraded from an Aspen system (including Branch and Maxum), subscribers on the system must re-record their spoken (voiced) names so that the spoken name is transmitted to the Interchange. Also, in some cases, although the Aria system was installed new, the subscriber directory was loaded from an older Aspen system. These systems must also re-record the subscriber names. This is a limitation of the Aria system and is not specific to the Interchange.

To use digital networking with the Interchange, Aria systems must be at least Release 2.05. With this version, the administrator can set a flag so that subscribers in the upgraded system are automatically requested to re-record their spoken names. It is recommended that this flag be set several weeks before the digital connection is made to the Interchange in order to remove the non-conforming names.

Mixed Private/Priority Messages from Aria

When sending the same message to multiple recipients, Aria supports the ability to mark certain (but not all) recipients of the message as “private” and certain recipients (but not all) as “urgent/priority.” Many other message servers do not support this concept. That is, if someone is sending a message to multiple recipients from an Intuity AUDIX, either all of the recipients can receive the message as private or none can. The same is true for messages designated as urgent/priority. As a result, when mixed private/priority messages are sent through the Interchange, if one recipient is marked as private, then all are marked as such. The same is true for urgent/priority messages.

Aria Digital Version Numbers

Due to an issue with how an Aria Digital system sends out subscriber ASCII names, Release 3.0 of Aria is not supported as a digital end point for Interchange. Customers with Aria Release 3.0 who wish to digitally connect to the Interchange must upgrade their systems to Release 3.01.

An Aria Digital system connected to the Interchange must be release 2.05 or greater.

8 Second Spoken Names Using Aria Octel Analog

The transmission of a subscriber spoken name whose length is 8 seconds or greater is not supported when using Aria Octel Analog. This length is supported for all other machine and protocol types, including Aria Digital TCP/IP.

On average, a subscriber spoken name is 3 seconds in length. This consideration is not specific to the Interchange, but rather to Aria when using Octel Analog networking.

Subscribers with No Recorded Spoken Name

Aria Digital subscribers with no recorded spoken name are sent to Interchange upon the demand execution of an Aria Name Send. However, a new subscriber mailbox added to an Aria Digital system that has not recorded a spoken name is not sent to the Interchange as an add until the spoken name is recorded.

Unified Messenger-Specific Considerations

Review the following for information about Unified Messenger-specific considerations:

- [Unified Messenger Directory Updates](#)
- [Private Messages](#)

Unified Messenger Directory Updates

Unified Messenger uses Microsoft Exchange's directory and, as a result, has certain limitations relative to the updates of the remote subscriber directory stored on the Unified Messenger system. These limitations include:

- Unified Messenger does not execute a pull/update for nonexistent remote subscribers. All remote subscribers must be preadministered on the Unified Messenger system so that Unified Messenger can execute a pull/update.
- Unified Messenger does not support the concept of ASCII name mismatch for updating its directory (this feature is used by other Octel Analog Networking systems).
- No subscriber pushes/updates are accepted from Interchange.
- All remote subscriber entries are permanent (versus usage based) on Unified Messenger.

These are directory limitations of Unified Messenger and not of Interchange's implementation of Octel Analog.

Private Messages

Unified Messenger does not support private message marking using Octel Analog. This is important to note because private messages sent from an Interchange to a Unified Messenger recipient can be forwarded by the recipient.

Priority message markings are supported.

VPIM Considerations

Review the following for information about VPIM considerations:

- [Variable Length Mailbox IDs](#)
- [Network Address Length Greater than 10 Digits](#)
- [Network Turnaround](#)
- [Disabling Updates In/Out](#)
- [Converting from AMIS to VPIM](#)
- [Sender Voice Name and ASCII Name](#)
- [Multiple Component Handling](#)

Variable Length Mailbox IDs

The Interchange VPIM module does not support variable length mailbox IDs on the same VPIM voice mail server.

Network Address Length Greater than 10 Digits

Interchange supports a maximum mailbox ID and Network Address length of 10. In addition, Interchange supports a uniform dial plan where the Network Address length network-wide must be the same number of digits (usually 7 digits or 10 digits, but in the range from of from 3 digits to 10 digits).

None of the Avaya message servers that Interchange supports can have a mailbox ID or Network Address greater than 10 digits. Additionally, it is expected that every Interchange Release 5.4 system with a VPIM connection will have at least one Avaya message server in its network.

The VPIM specification recommends (but does not require) E.164 conformance for the format of the userid@domain address. This specification calls for a User ID value length of up to 30 digits and/or characters. Therefore, the only time a mailbox length and Network Address length could possibly exceed 10 is if the Interchange is supporting only a pure VPIM environment where those networked VPIM nodes have mailbox IDs and Network Addresses greater than 10. This condition is not expected.

As a result, Interchange Release 5.4 only supports a maximum uniform Network Address (that is, User ID) length of from 3 digits to 10 digits. Only "number" at domain (for example, #####@domain) addressing is supported using VPIM on Interchange.

If any of the Avaya message servers that Interchange supports increase the length of the mailbox ID or Network Address, then this convention on Interchange will be re-evaluated.

Network Turnaround

The Interchange VPIM module does not support network turnaround, as this is not a feature of the VPIM protocol.

Disabling Updates In/Out

The Interchange does not support the disabling of Updates In or Out for VPIM remote machines, as this concept does not apply to VPIM.

Converting from AMIS to VPIM

Interchange Release 5.4 does not support the ability to change a remote machine administered as an AMIS type to a VPIM type. The remote AMIS machine must be deleted and then re-added as a VPIM type on the Interchange for the system to support it.

Sender Voice Name and ASCII Name

Messages delivered to VPIM recipients from Interchange include the sender's voice and ASCII names in the appropriate sender's name fields. For the voice name, this is in the ADPCM format if the voice name is stored on the Interchange. It is important to note that how the names are presented to the recipient (if at all) depends upon the receiving VPIM vendor's implementation. For example, Interchange sends a voice name to some vendors that ignore this field and do not present it to the recipient.

For inbound VPIM messages received, Interchange extracts the sender's voice and ASCII names from the appropriate sender's name fields and populate the Interchange directory accordingly. It is important to note that how the names are presented to the Interchange (if at all) depends upon the VPIM vendor's implementation. For example, some vendors do not include the sender's voice name to Interchange which means that Interchange cannot send it to the recipient.

Multiple Component Handling

When a VPIM originator sends a message to a VPIM recipient through the Interchange and both the sender and recipient are on the same Interchange, the message component handling is always a binary-to-binary mapping (that is, the original MIME format). When the VPIM recipient and VPIM sender are on different Interchanges, then the message handling described in the next paragraph is used.

When a VPIM originator sends a message to a non-VPIM recipient, the voice, fax, and text components are placed into the appropriate designated components for AUDIX, AMIS, Octel Analog, Aria Digital, and Serenade Digital recipients. For each component type, its sending VPIM binary representation is removed from the MIME format and placed into the receiving machine type representation. Since these receiving machine types (AUDIX, AMIS, Octel Analog, Aria Digital, or Serenade Digital) can only support one component of each type, similar component types (voice, fax, and text) are concatenated.

Migration Considerations

Avaya does not support migration from a MAP/5P Interchange system to a MAP/100P Interchange System.

Index

A

- accessed/return receipt/positive confirmation support, [70](#)
- administration
 - AMIS Analog Gateway, [5](#)
 - Aria Digital Gateway, [7](#)
 - Octel Analog Networking Gateway, [6](#)
 - Serenade Digital Gateway, [8](#)
 - VPIM Digital Gateway, [9](#)
- administrator interface
 - adding remote machines, [33](#), [42](#)
 - defining dial plan mapping, [34](#), [42](#)
 - defining directory views, [33](#), [42](#)
 - directory views, [33](#)
 - number mapping, [33](#)
 - registering AMIS analog subscribers, [42](#)
 - registering AMIS subscribers, [42](#)
 - registering Aria subscribers, [43](#)
 - registering Serenade subscribers, [43](#)
 - registering VPIM subscribers, [44](#)
- alarm log, [50](#)
- AMIS analog
 - gateway, [5](#)
 - networking definition, [52](#)
 - networking messaging, [53](#)
- AMIS analog support
 - AMIS analog networks, [5](#)
 - digital networks, [5](#)
 - Octel Analog Networking, [5](#)
- AMIS subscribers, registering, [42](#)
- analog fallback, [73](#)
- announcements, [71](#)
- architecture, [57](#)
- Aria digital
 - considerations, [39](#)
 - mixed private/priority messages, [84](#)
 - version numbers, [84](#)
- Aria Digital Gateway, [7](#)
- Aria Digital Networking, definition, [52](#)
- Aria digital subscribers, administer, [14](#)
- Aria future delivery considerations, [30](#)
- Aria subscribers, registering, [43](#)
- Aria, Octel 250/350, [2](#)
- ASCII name field, [70](#)
- Aspen, upgrading to Aria digital, [83](#)
- AUDIX
 - accessed status, [15](#)
 - delivered status, [14](#)
 - demand remote update, [38](#)
 - dial plan, [12](#)
 - directory updates, [14](#)
 - e-mail and binary file attachment support, [3](#)

AUDIX, (continued)

- failed message IDs, [15](#)
 - failure of large messages, [39](#)
 - fax receipt, [41](#)
 - future delivery, [40](#)
 - future delivery support, [10](#)
 - number of digital ports, [11](#)
 - number of TCP/IP channels, [11](#)
 - playback of name, [5](#), [6](#)
 - scheduled message status, [14](#)
 - support for Interchange features, [20](#)
 - support for message component types, [32](#)
 - systems supported by AMIS analog, [5](#)
 - voice and fax messaging support, [3](#)
- AUDIX Digital Networking, definition, [52](#)
-

B

- backup, nightly, [3](#)
 - binary file attachments, supported systems, [3](#)
-

C

- call sender, [72](#)
 - cluster configuration, view, [58](#)
 - confirmation of messages, [34](#)
 - Cornerstone, [1](#), [60](#)
-

D

- DEFINITY ONE, [51](#)
 - delivered indicator, [72](#)
 - demand remote push
 - Octel 100, [37](#)
 - VPIM, [10](#)
 - demand remote update, [38](#)
 - digital networking
 - definition, [51](#)
 - messaging, [52](#)
 - types of networking connections, [53](#)
 - directory updates, [6](#), [9](#)
 - directory views
 - defining, [33](#)
 - description, [3](#)
-

E

- e-mail messages, supported systems, [3](#)
- endpoint subscriber updates, [45](#)
- endpoints, number supported, [2](#)

Enterprise Lists

- comparison with lists from other systems, [15](#)
- considerations, [78](#)
- description, [4](#)
- Octel Analog Networking, Aria digital, and Serenade digital users, [80](#)
- reducing network traffic load, [79](#)
- sending messages to large lists, [78](#)
- sending messages to large lists using AMIS Analog, [78](#)

Ethernet Workgroup Switch, [59](#)

Extended Absence Greeting (EAG) warning, [71](#)

F

failed message notification, [70](#)

fax messages, supported systems, [3](#)

features

- Aria digital, [7](#)
- call sender, [72](#)
- Interchange, [2](#)
- networking, [20](#)
- Octel Analog Networking, [6](#)
- Serenade digital, [8](#)
- unsupported, [50](#)
- VPIM, [9](#)

future delivery

- Aria Octel Analog Networking, [37](#)
 - combinations not supported by VPIM, [10](#)
 - comparison of Interchange features with those of other systems, [24](#)
 - considerations, [30](#), [69](#)
 - Octel 100, [37](#)
-

H

hardware requirements

MAP/100P, [59](#)

MAP/5P, [59](#)

hybrid networks, [3](#), [74](#)

I

implementation factors, [67](#)

Interchange

- administrator interface, [33](#)
- announcements, [71](#)
- description, [1](#)
- future delivery considerations, [30](#)
- installation, configuration view, [58](#)
- lists capabilities comparison, [16](#)
- number of end points supported, [2](#)
- platforms, [1](#)
- subscriber capabilities, [12](#)
- system capacities, [10](#)
- system compatibility, [2](#)

Interchange features

- Call Detail Recording, [4](#)
 - directory views, [3](#)
 - Enterprise Lists, [4](#)
 - File Transfer Protocol, [4](#)
 - list of, [2](#)
 - Simple Network Machine Protocol, [4](#)
- interface, administrator, [33](#)
- IVC6 circuit cards, [59](#)
-

L

lists

- capabilities comparison, [16](#)
 - capabilities overview, [15](#)
 - defining, [78](#)
- local machine, [56](#)
- local subscriber, [56](#)
-

M

maintenance strategy, [50](#)

MAP/100P

- hardware requirements, [59](#)
- SSP card requirement, [59](#)

MAP/5P

- hardware requirements, [59](#)
- SSP card requirement, [59](#)

message components

- delivery, [22](#)
 - e-mail and binary file, [3](#)
 - failure to deliver, [15](#), [40](#)
 - sending multiple components of the same type, [41](#)
 - sending voice components to Unified Messenger mailboxes, [38](#)
 - support, [32](#)
 - voice and fax, [3](#)
- message confirmation, [34](#)
- Message Waiting Indication, [78](#)
- migration, from MAP/5P to MAP/100P, [88](#)
- multiple length mailbox IDs, [74](#)
-

N

name playback, [5](#), [6](#)

name, voiced, [6](#)

negative confirmation, [70](#)

network configuration considerations, [73](#)

networking

- definition, [51](#)
 - features, [20](#)
 - machine type, [56](#)
 - terminology, [56](#)
- networking sessions, maximum number, [11](#)

networking subscriber types
 local, [56](#)
 remote, [56](#)
networks, hybrid, [74](#)
nightly backup, [3](#)

O

Octel 100
 demand remote push, [37](#)
 future delivery, [37](#)
 negative message confirmation, [37](#)
 positive message confirmation, [37](#)
 remote machine considerations, [37](#)
Octel 200/300, [2](#), [18](#), [25](#)
Octel 250/350, [2](#), [25](#), [31](#)
Octel Analog Networking
 definition, [52](#)
 messaging, [54](#)
 upgrading to digital, [74](#)
Octel Analog Networking Gateway, support, [2](#)

P

playback, name, [5](#), [6](#)
ports, maximum number, [11](#)
positive confirmation support, [70](#)
prerequisites, installed systems, [60](#)
priority messages, [6](#), [7](#)
private messages, [6](#), [7](#)
protocol conversion, [2](#)

R

reducing network traffic load, [79](#)
registering subscribers
 AMIS, [42](#)
 Aria, [43](#)
 Serenade, [43](#)
 VPIM, [44](#)
remote machine, [56](#)
remote machine considerations
 Aria digital, [39](#)
 Aria Octel Analog Networking, [37](#)
 Definity One, [38](#)
 IP600, [38](#)
 Octel 100, [37](#)
 Serenade digital, [39](#)
 Unified Messenger, [38](#)
 VPIM digital, [40](#)
remote machine voiced name, [68](#)

remote machines
 adding, [33](#)
 maximum number, [10](#)
remote subscribers
 administration and updating, [42](#)
 definition, [56](#)
return receipt support, [70](#)
routing information protocol (RIP), [3](#)

S

Serenade digital considerations, [39](#)
Serenade Digital Gateway, [8](#)
Serenade Digital Networking, definition, [52](#)
Serenade digital subscribers, administering, [14](#)
Serenade subscribers, registering, [43](#)
Serenade, Octel 200/300, [2](#)
SSP
 MAP/100P requirement, [59](#)
 MAP/5P requirement, [59](#)
 required for Interchange, [59](#)
subscriber ASCII name field, [70](#)
subscriber capabilities, [12](#)
subscriber interface
 differences, [63](#)
 registering AMIS subscribers, [42](#)
 registering Aria subscribers, [43](#)
 registering Serenade subscribers, [43](#)
 registering VPIM subscribers, [44](#)
subscriber types, [56](#)
subscriber updates, [45](#)
subscribers
 maximum number with voice name, [10](#)
 maximum number without voice name, [10](#)
switch connections, [60](#)
system capacities, [10](#)

T

tables
 accessed/return receipt/positive confirmation support/message disposition notification, [35](#)
 AMIS Analog/Octel Analog Networking subscriber information, [43](#)
 demand remote pull/push/name send, [45](#)
 lists capabilities, [16](#)
 message component types, [32](#)
 negative confirmation support, [36](#)
 networking features comparison, [20](#)
 subscriber update timing, [46](#)
 system capacities, [10](#)
translation support, [3](#)
transport conversion, [2](#)

U

- undeliverable messages, [6](#), [7](#)
 - Unified Messenger considerations, [38](#), [85](#)
 - uniform network address length, [73](#)
 - upgrading
 - from Aspen to Aria digital, [83](#)
 - from Octel Analog Networking to digital, [74](#)
-

V

- voice name, [5](#), [6](#)
- voiced name, [6](#), [7](#)
- VPIM
 - combinations of future delivery not supported, [10](#)
 - demand remote push, [10](#)
 - future delivery considerations, [30](#)
 - networking features, [9](#)
 - remote machine considerations, [40](#)
 - sending multiple message components to non-VPIM recipients, [41](#)
 - vendor products supported, [9](#)
- VPIM Digital Gateway
 - administration, [9](#)
 - support, [3](#)
- VPIM Digital Networking, definition, [52](#)
- VPIM subscribers
 - administer, [14](#)
 - registering, [44](#)

