



# How to Migrate Legacy Voicemail Systems

**May 28, 2009**

# Welcome



- **Hosts – Karen Manning, Suzanne Kilner, & Andy White**

- **Cisco Knowledge Network**

<http://www.CiscoKnowledgeNetwork.com/UC>

Today's Presentation Posted

Program Recordings

- **Two Question & Answer Periods**

Please use the WebEx Q&A Window to enter questions

- ***Better Collaboration on Demand*** – June show

## Resources...



- Today's Presenters

Chris Barlow – Unified Communications Business Unit

Mark Dombroski – Advanced Services, IP Communications Delivery Team

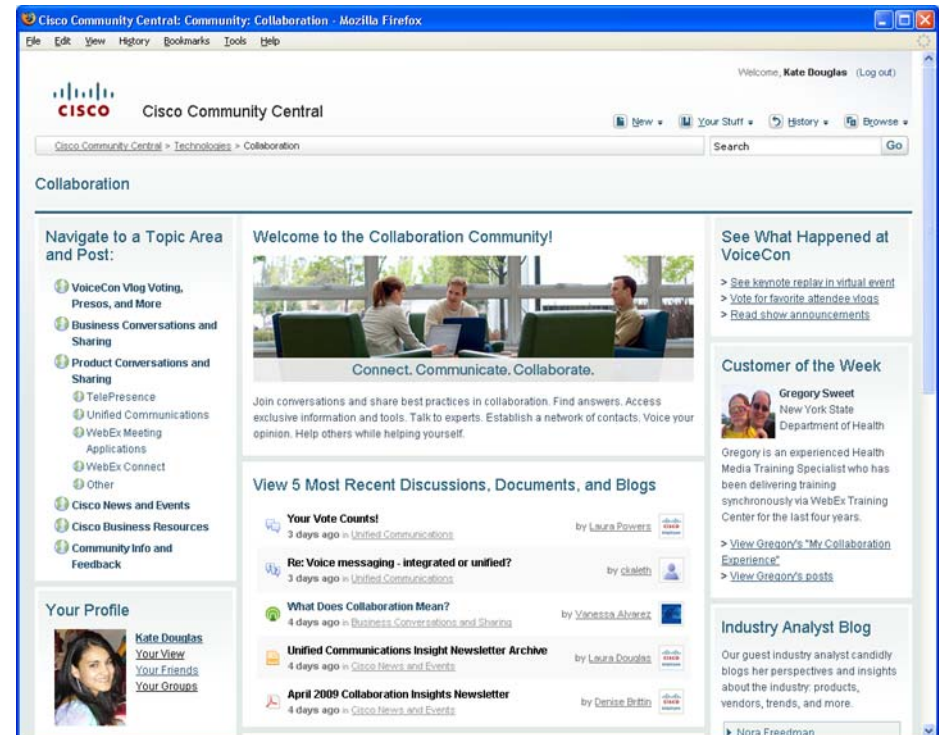
- Today's Panelists for Q&A Chat

Tony Arcoraci, Test Engineer, Voicemail Integration Expertise

Brent Rindal, Product Manager, Unified Communications Business Unit

# Visit the Cisco Collaboration Community

- **Ask your questions during the show and after**
- Find answers to business and product questions
- Access user-contributed tools and real world advice
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- Share unfiltered opinions and perspectives



[www.cisco.com/go/joinconversation](http://www.cisco.com/go/joinconversation)

# Survey



## **Cisco Knowledge Network – Feedback**

Scale: 5=Agree; 4=Somewhat Agree; 3=Neutral; 2=Somewhat Disagree; 1=Disagree

**This Cisco event was a good use of my time. [1-5]**

**Overall, the speakers were knowledgeable, informative, and engaging. [1-5]**

**I would recommend this event to others. [1 - 5]**

**My Organization has a current focus on replacing our legacy voicemail system. [Y/N]**

**We use these voicemail systems in our environment today:**

**I am interested in having Cisco, or my Cisco Partner, contact me to continue today's conversation and identify the best method for me to move away from my current voicemail system. [Y/N]**



# Cisco Knowledge Network How to Migrate Legacy Voicemail Systems

Cisco Unity Connection 7.x  
Cisco Unity 7.x



**Chris Barlow, Technical Marketing Engineer  
Unified Communications Business Unit**

**Mark Dombroski, Network Consulting Engineer  
Advanced Services Delivery Team**



# Agenda

- **Cisco Voice Messaging Product Overview**
  - Cisco Unity Connection
  - Cisco Unity
- **Legacy PBX Integrations**
  - PIMG (Analog/Digital)
  - TIMG (T1-CAS)
- **Supported Architectures**
  - Centralized solution
  - Distributed solution
  - Hybrid solutions (connected to centralized and distributed call processing)
- **High Availability Architectures**
  - Failover Redundancy
  - Geo-spatial or Site Redundancy
  - Standby Models
- **Advanced Features**
  - Calendar
  - Partitions, search spaces, search scopes
  - COBRAS (for backup, restore, and migration)
- **Interoperability**
  - VPIM
    - Nortel Call Pilot
    - Avaya Interchange
    - Nortel Meridian Mail Net Gateway
    - Avaya Message Networking Server
    - Cisco Unity Express
    - Cisco Unified Messaging Gateway
  - AMIS (Cisco Unity only)
  - Bridge (Cisco Unity only)
- **Voice Messaging Migration**
  - Overview
  - Preparation and Planning
  - Deploy the new Unity Environment
  - Migrate Voice Mailboxes
  - Validation Testing
  - Cutover to Production Service

# Agenda (Continued)

- **Octel Migration with Unity Bridge**
  - Migration Strategies
  - Basic Cisco Unity Bridge Networking with a Remote Bridge
  - Cisco Unity Bridge in Multinode Octel Networking
- **Migration Leading Practices**
  - PPDDIOO Methodology
  - Planning and Preparation
  - Migration Strategy
  - Success Criteria
  - User Requirements Gathering
- **Migration Tools**
  - Cisco Unity Bulk Import Wizard – Bulk Administration Tool (BAT)
  - Bulk Edit Utility
  - Bulk Subscriber Delete Utility – Bulk User Delete
  - Subscriber Information Dump Utility – Connection User Data Dump
  - Consolidated Object Backup and Restore Application Suite (COBRAS)
  - MBUpload.exe Mailbox Tool



# Cisco Voice Messaging Product Overview



Cisco Unity Connection 7.x

Cisco Unity 7.x

# Cisco Voice Messaging Portfolio

	Users	Messaging Type	Platform	Networking	Redundancy
Cisco Unity Express	Less than 250	Voicemail Integrated Messaging	Router-Based	500K users w/Unified Msg GW	No
Cisco UC Manager Business Edition	500	Voicemail Integrated Messaging	Linux Server-Based	No	No
Cisco Unity Connection	10,000 per server	Voicemail Integrated Messaging	Linux Server-Based	50K users	Active/Active
Cisco Unity	15,000 per server	Voicemail Integrated Messaging Unified Messaging	Windows Server-Based	250K users	Active/ Passive

**Cisco Unity Express** Cost-effective integrated voice messaging and auto attendant for branch and small office environments

**Cisco UC Manager Business Edition** Voicemail or integrated messaging with speech recognition and call routing rules on the same Linux appliance as Cisco UC Manager for medium-sized organizations

**Cisco Unity Connection** Voicemail or integrated messaging with speech recognition and call routing rules on an easy-to-manage Linux platform

**Cisco Unity** Unified messaging and intelligent voicemail for enterprise and mid-market customers

# Cisco Unity Connection 7.x

- **Easy-to-use Voicemail Plus ...**

- Speech activated dialing—corporate and personal contacts

- Speech-enabled voicemail browsing

- Microsoft Exchange Calendaring/Email/Contact Access

- Integrated messaging for PC access

- Call transfer rules—by caller, time of day, calendar

- Centralized, Distributed, or single-site deployments

- **Migration support**

- Can migrate from Cisco Unity Connection 1.x

- Can migrate from Cisco Unity 4.0(5) or later

- Can migrate from VPIM compatible VM systems

- **Standalone or Digitally Networked**

- Linux-based appliance

- Optional integration with Exchange and/or Active Directory

- No IBM Lotus Domino or MS Exchange experience required for VM admin and maintenance



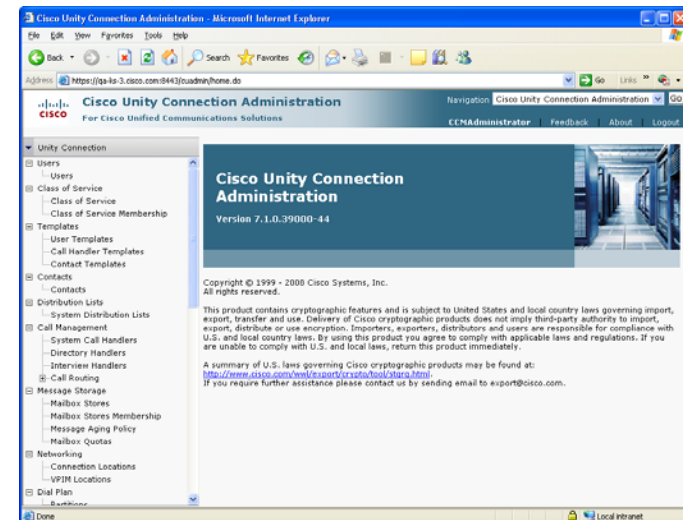
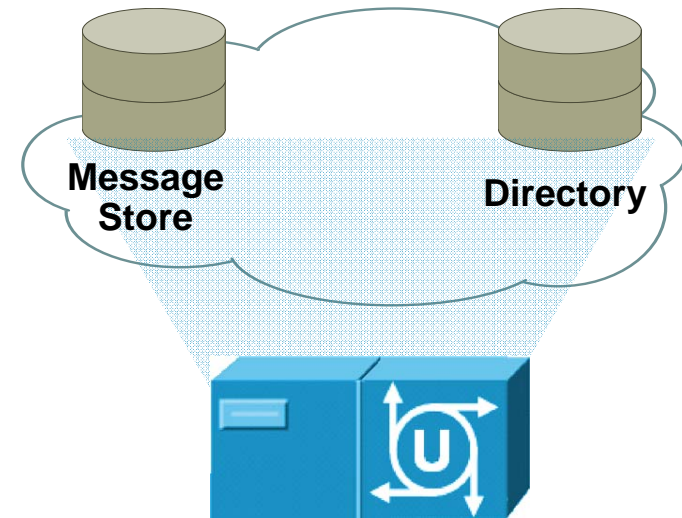
# Cisco Unity Connection 7.x Core Features

- 10,000 users/144 ports per server
- Active/Active Redundancy (up to 288 ports)
- LDAP Directory Synchronization/Authentication
- 50,000 users across 10 digitally networked nodes or 10 VPIM nodes
- ViewMail for Microsoft Outlook or IBM Lotus Notes plug-in: DVR-style message player
- Exchange Calendar Access
- Speech Recognition Features
- Support for Cisco Fax Server
- SMTP/SMS Message Notification
- Partitions, Search Spaces



# Cisco Unity Connection 7.0

- Cisco Unity Connection is built on RedHat Linux: same VOS as UCM
- Hardware is Cisco Media Convergence Server (MCS)
- Maximum 10K user count on a Cisco Unity Connection appliance
- Message store and directory are held in Informix DB
- Conversation engine is shared with Cisco Unity providing a similar conversation set
- Management is via a web browser



# Cisco Unity Connection 7.0

## Appliance Platform

- Same as Cisco Unified Communications Manager 7.0
  - Same version, same image
  - Pre-loaded on MCS servers
  - Released in lock step with CUCM
- Common platform services
  - RTMT: diagnostics, macro and micro traces, port status monitor
  - DRS: backup and restore (replaces DRT)
  - Patch management: same process as CUCM, patch OS and application together
  - ServM: start, stop and monitor processes
  - In-place upgrades (dual partition)
  - No longer requires Unity TSP



# Cisco Unity 7.0

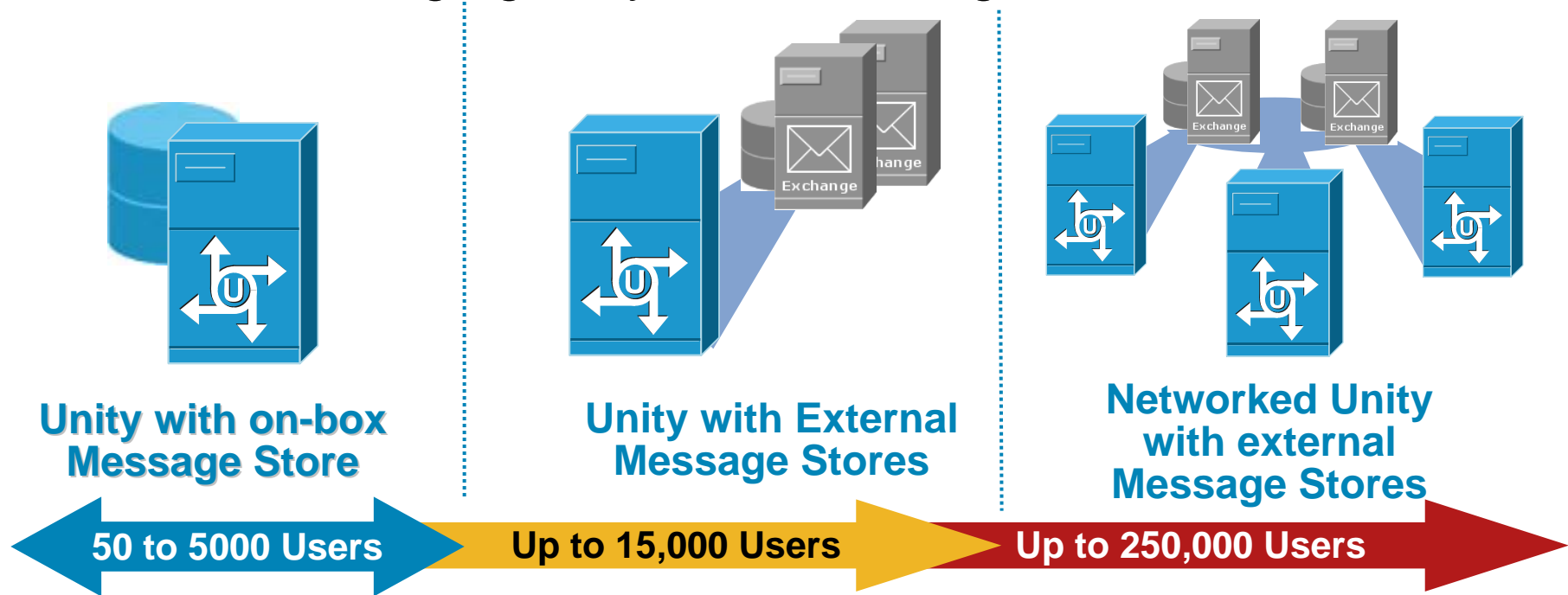
- Premier enterprise-class messaging platform, scaling to 200 ports/15,000 users (off-box message store) or 250,000 users in networked environment
- Options to deploy as voicemail **or** unified messaging systems
- Native integration with MS Exchange or Lotus Domino for UM
- Ideal for large enterprise, multi-site (centralized or distributed) customers and networked environments supporting 25+ languages
- Key migration features (multiple switch integration and message interoperability)
- Combined Cisco Unity, Cisco Unity Connection, and Cisco Unity Express deployments—a powerful option for large, distributed enterprise customers





# Cisco Unity Server Deployments

## Voice Messaging Only with Exchange



- Voicemail only deployments use Exchange 2000/2003/2007 as a message store
- Exchange 2007 must be off-box
- Each server can support 24 ,48 or 200 voice ports depending on hardware

# Cisco Unity Server Deployments

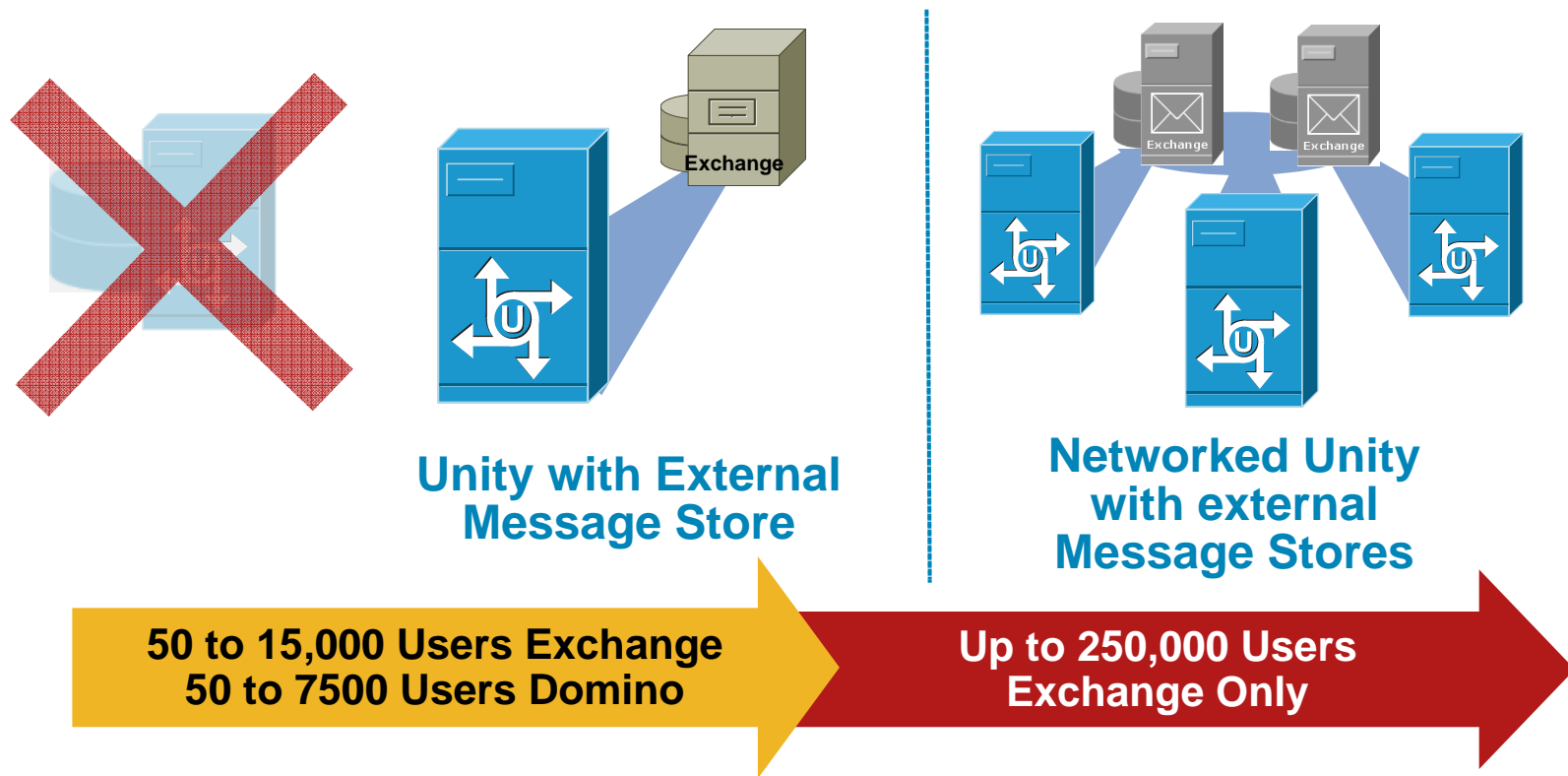
## Voice Messaging Only with Lotus Domino



- Voicemail only deployments use Domino as a message Store
- Each Server can support 24 ,48 or 144 voice ports depending on hardware

# Cisco Unity Server Deployments

Unified Messaging MS Exchange or Lotus Domino



- Unified Messaging is always deployed with an external message stores
- Each Server can support 24, 48, 144 or 200 voice ports depending on hardware and message store

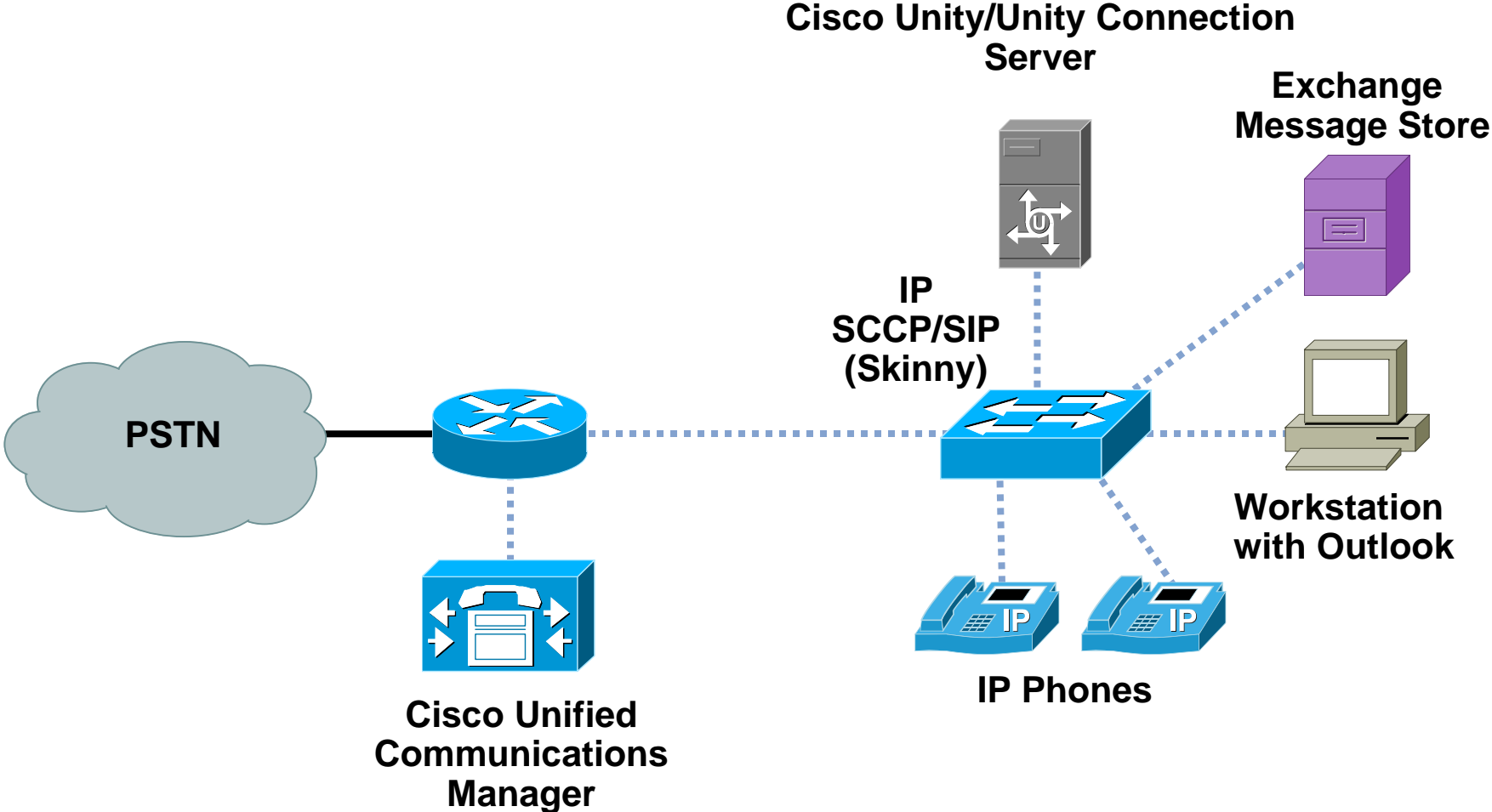
# Legacy PBX Integrations



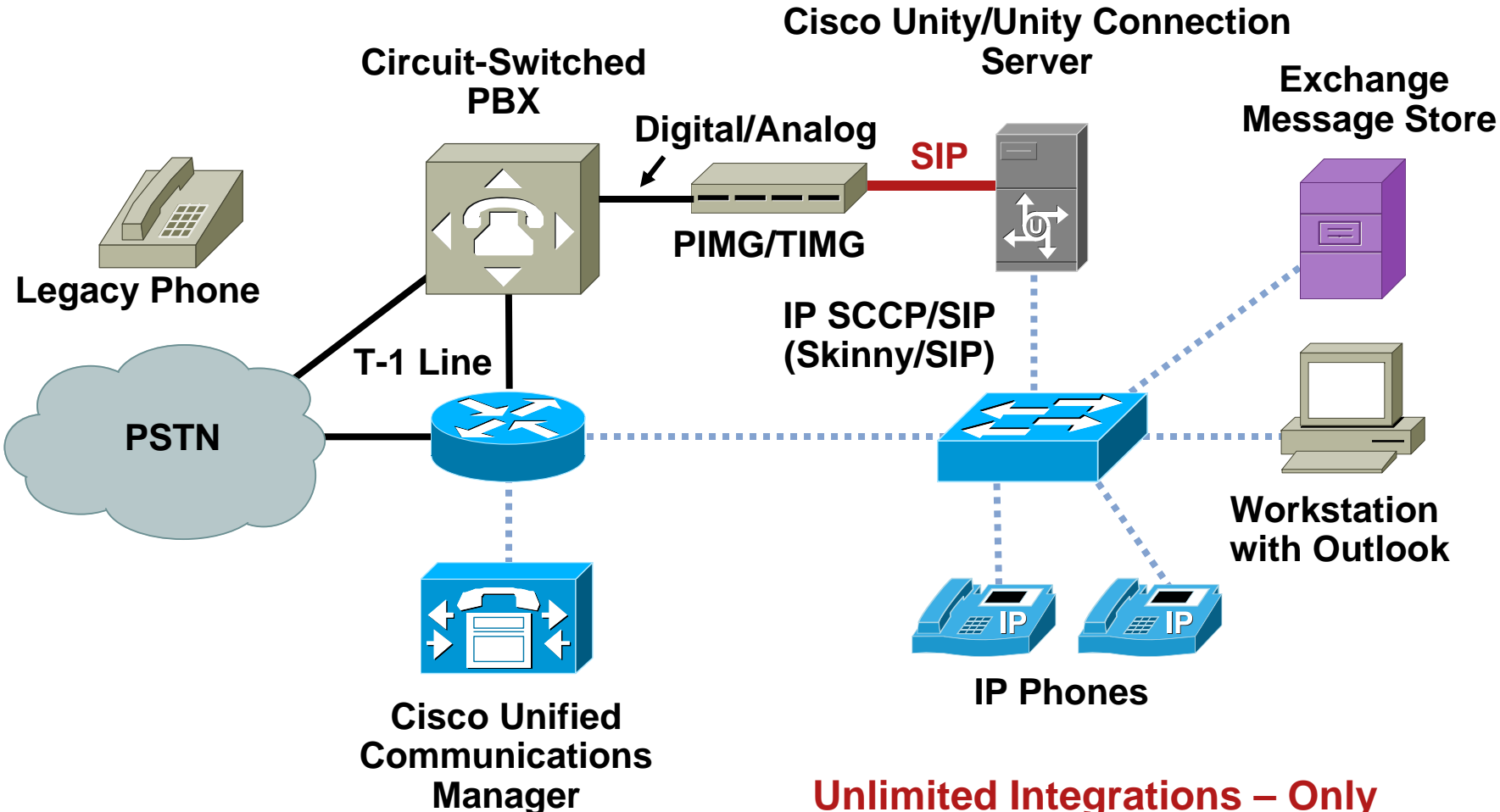
Cisco Unity Connection 7.x

Cisco Unity 7.x

# Cisco Unity/Unity Connection Cisco Unified Communications Manager

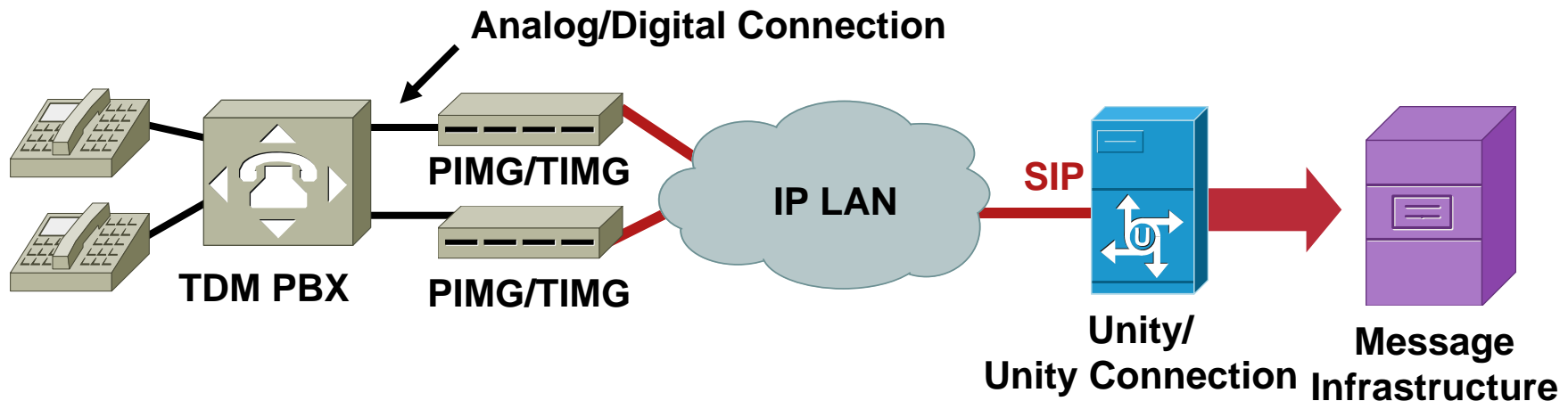


# Cisco Unity/Unity Connection Multiple Switch Integration



**Unlimited Integrations – Only limited by Number of Ports**

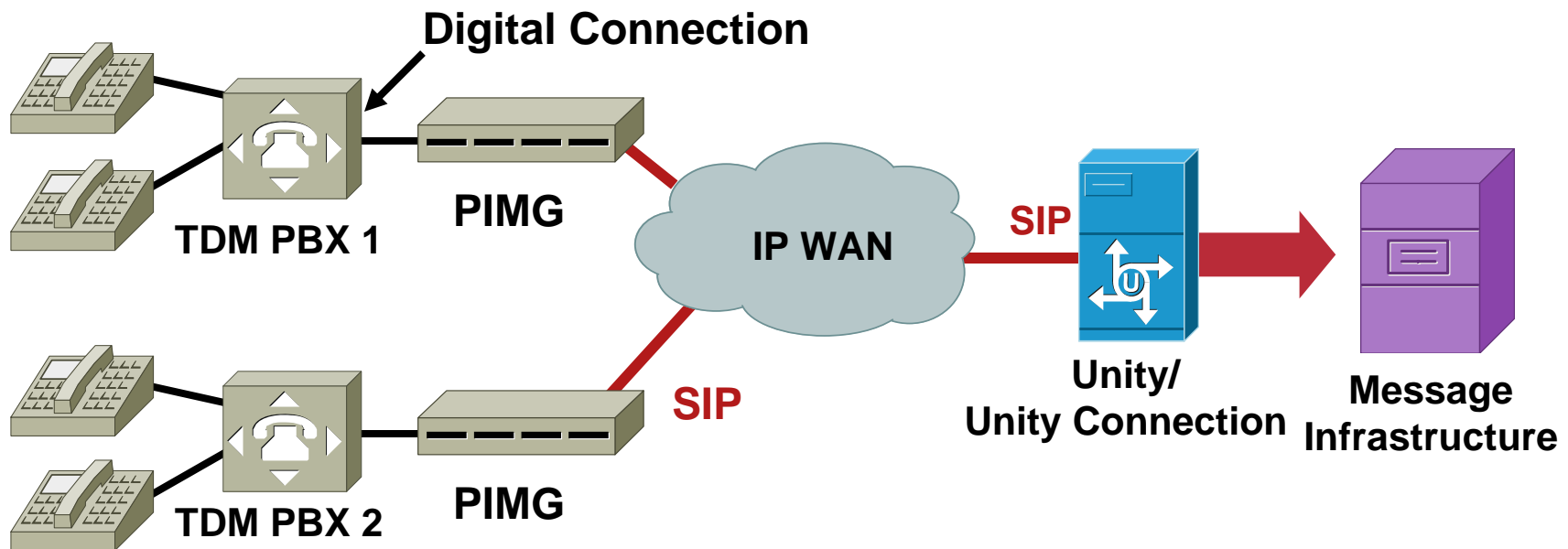
# What Is the PIMG or TIMG? PBX IP Media Gateway



- PIMG = Eight-port analog/digital box from Dialogic we resell
- TIMG = T1-CAS box from Dialogic we resell
- Digital or analog phone set connection to various PBXs
- SIP connection to Unity or Unity Connection
- Initially released along with Unity 4.0(4) in May 2004

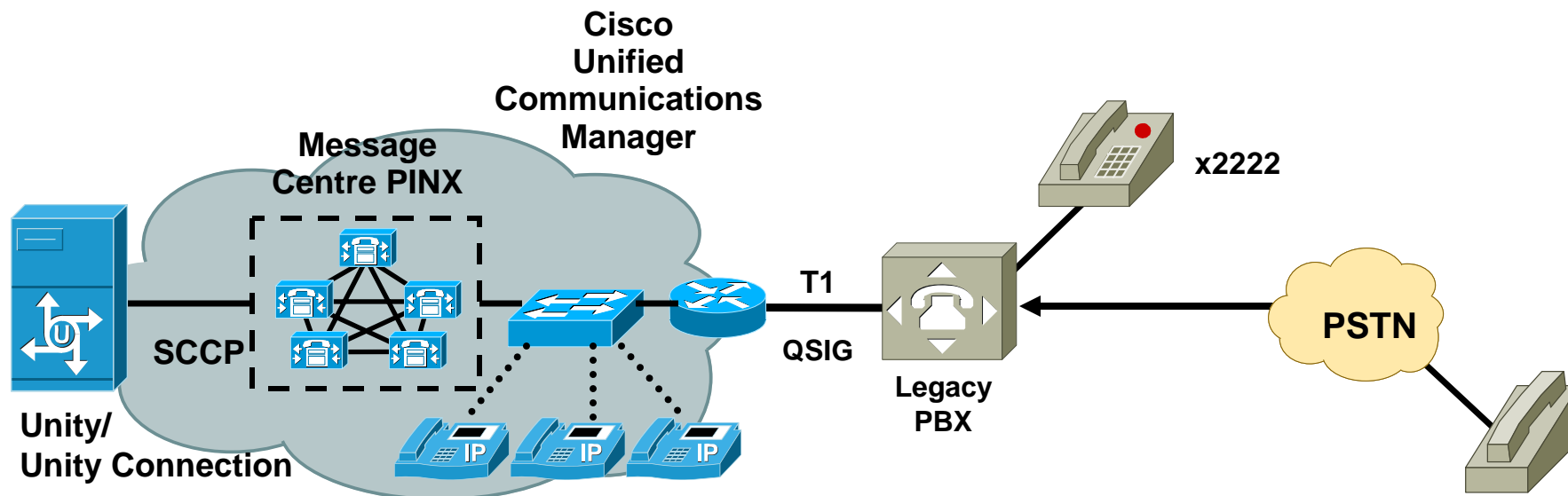


# PBX IP Media GW



- Single Unity or Unity Connection Server can support multiple integrations with legacy PBX's using PIMG or TIMG units over WAN also
- Unlimited number of integrations
- Only constrained by maximum number of ports (200 – Unity/288 – Unity Connection (with A/A cluster))

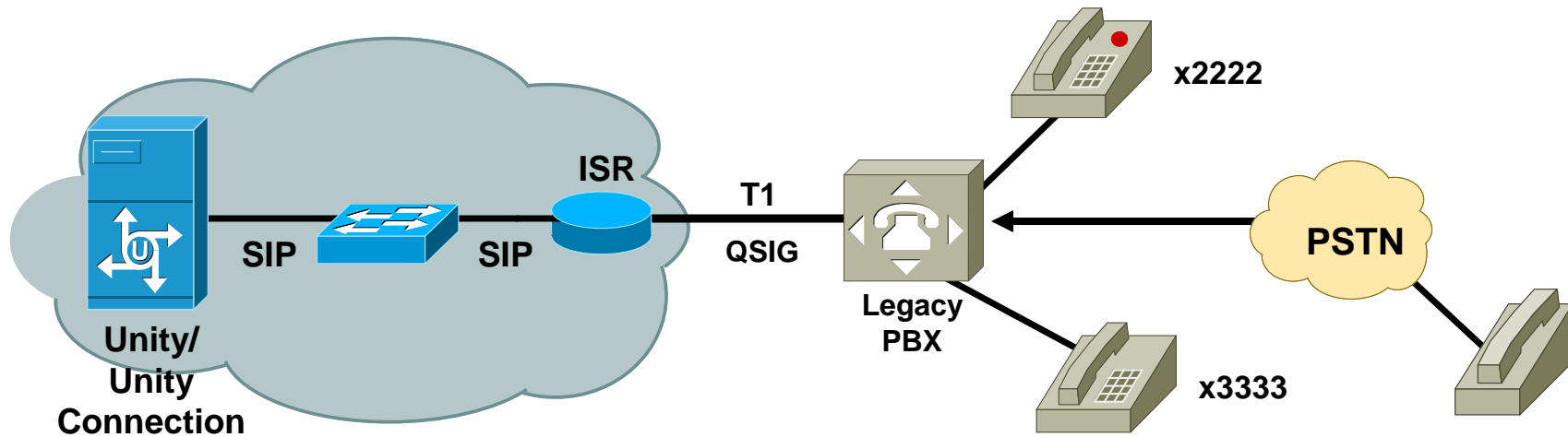
# Centralized Voicemail



- Cisco Unified Communications Manager or Cisco Unified Communications Manager Express can serve as the Message Centre PINX for Unity Connection/Unity to support phones on remote legacy PBX
- Refer to Cisco Interoperability Portal for application notes on which legacy PBX's have been tested

[http://www.cisco.com/en/US/netsol/ns728/networking\\_solutions\\_program\\_category\\_home.html](http://www.cisco.com/en/US/netsol/ns728/networking_solutions_program_category_home.html)

# Unity/Unity Connection ISR Integrations - QSIG



- Directly Connect to Legacy PBX without Cisco Unified Communications Manager
- Supported with Unity Connection Active/Active Clustering
- Cisco Unity failover and AMIS networking are not available for the integration with a QSIG-enabled phone system
- No call path replacement - calls are hairpinned on the ISR

# Cisco Unity Connection/Cisco Unity Configuration Guides

- Cisco Unity Connection Configuration Guides:

[http://www.cisco.com/en/US/products/ps6509/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html)

- Cisco Unity Configuration Guides:

[http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_and_configuration_guides_list.html)

- Refer to Cisco Interoperability Portal for application notes on which legacy PBX's have been tested for Centralized Voicemail

[http://www.cisco.com/en/US/netsol/ns728/networking\\_solutions\\_program\\_category\\_home.html](http://www.cisco.com/en/US/netsol/ns728/networking_solutions_program_category_home.html)

- Cisco Unity Connection ISR/QSIG Configuration Guide:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/connection/7x/integration/misc/guide/cuc7xintqsig.html](http://www.cisco.com/en/US/docs/voice_ip_comm/connection/7x/integration/misc/guide/cuc7xintqsig.html)

- Cisco Unity ISR/QSIG Configuration Guide:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/5x/integration/sip-qsig\\_gw/guide/cuintqsiggw.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/5x/integration/sip-qsig_gw/guide/cuintqsiggw.html)

# Supported Deployment Models

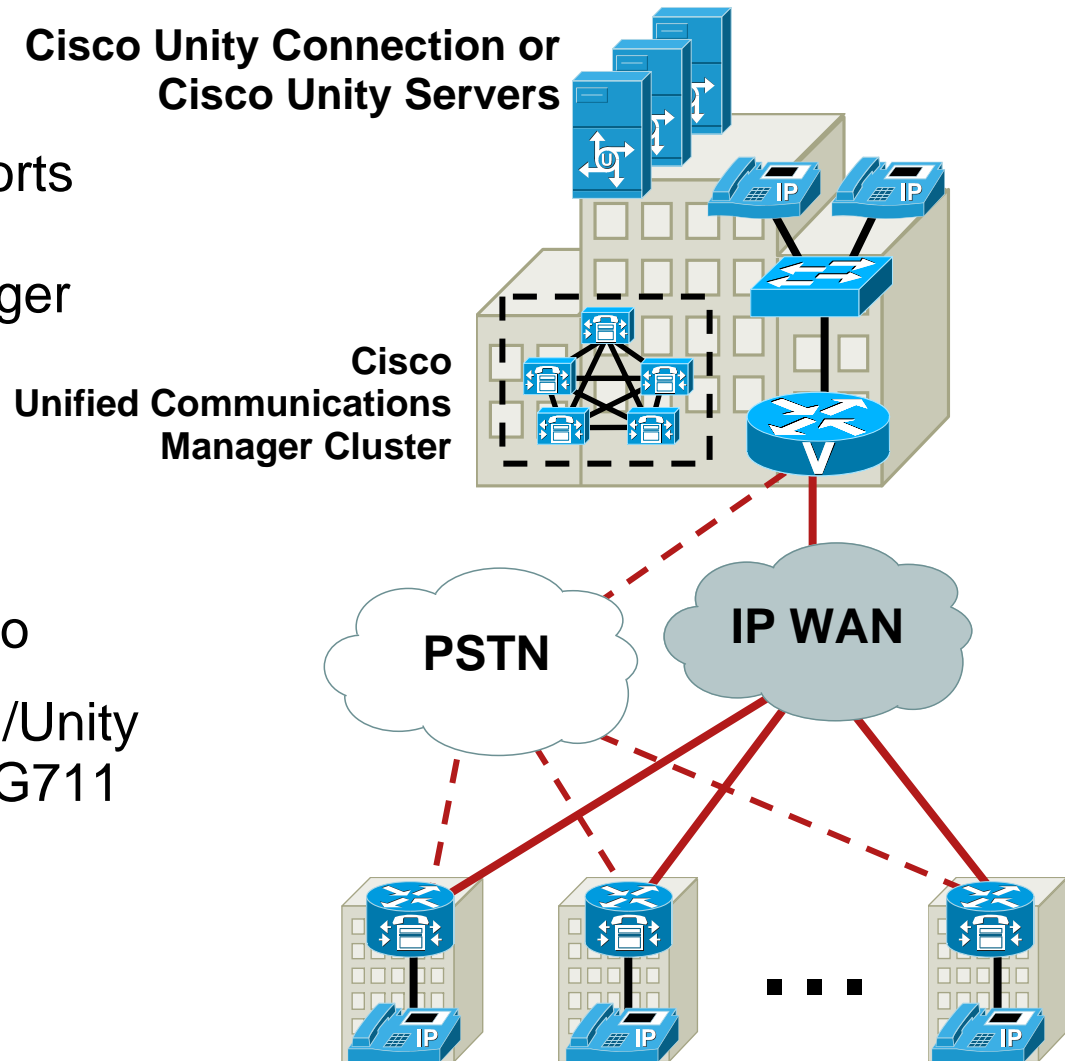


Cisco Unity Connection 7.x

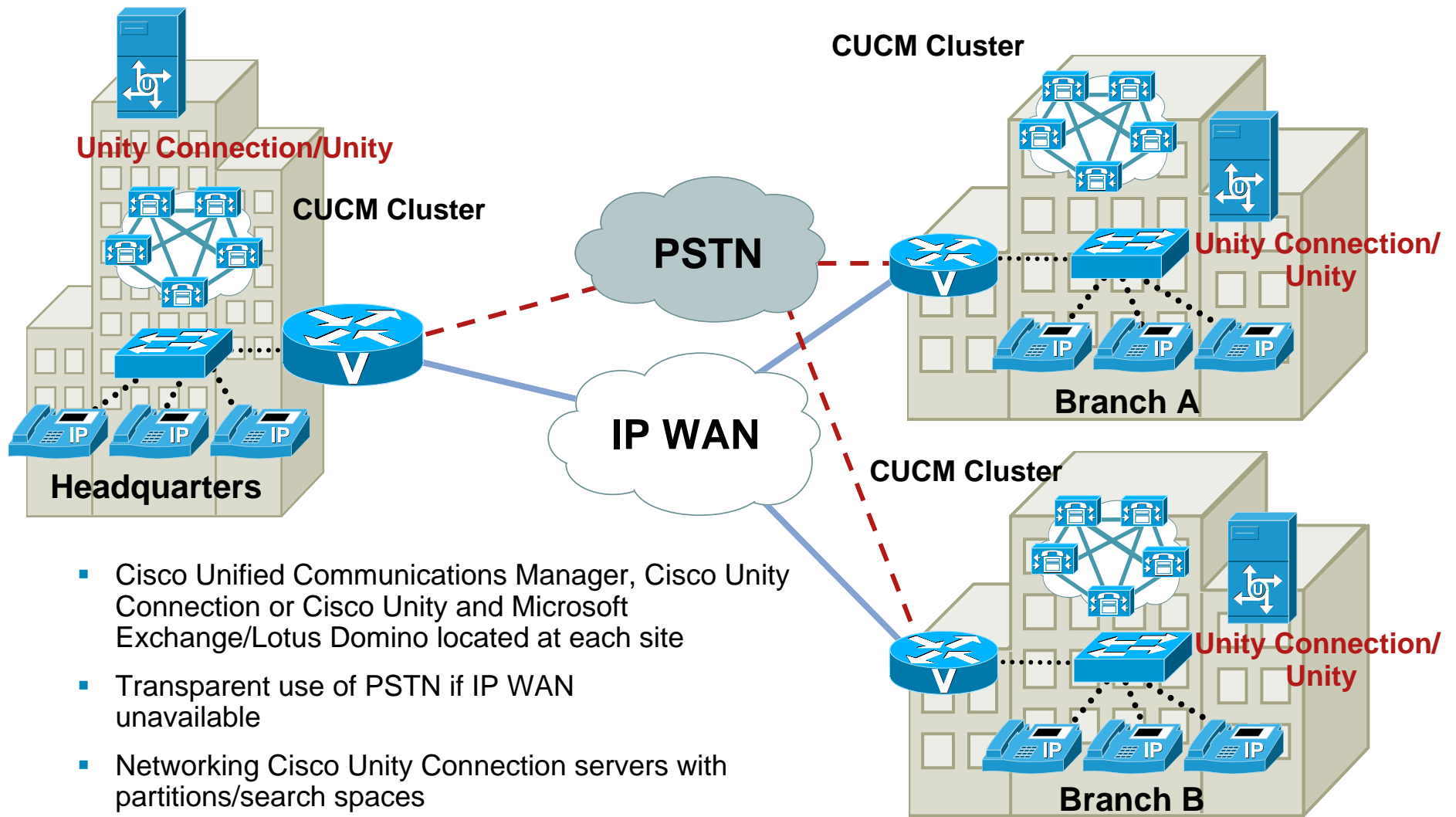
Cisco Unity 7.x

# Centralized Call Processing/Centralized Voicemail Deployments

- One Cisco Unity Connection/Unity supports multiple Cisco Unified Communications Manager clusters
- Cisco Unity should be deployed within the same LAN as Microsoft Exchange/Lotus Domino
- Cisco Unity Connection/Unity support transcoding of G711 and G729a
- QoS and WAN design
- SRST Supported



# Distributed Call Processing/Distributed Voicemail Deployments



- Cisco Unified Communications Manager, Cisco Unity Connection or Cisco Unity and Microsoft Exchange/Lotus Domino located at each site
- Transparent use of PSTN if IP WAN unavailable
- Networking Cisco Unity Connection servers with partitions/search spaces
- Networking Cisco Unity servers with dialing domain



# Combined/Hybrid Deployment Models

- Both Cisco Unity Connection and Cisco Unity support the following combined/hybrid deployment models:

Single-site messaging and single-site call processing

Centralized messaging and centralized call processing

Distributed messaging and centralized call processing

Centralized messaging and distributed call processing

Distributed messaging and distributed call processing

Centralized messaging with cluster over the WAN

Distributed messaging with cluster over the WAN

- For More Information, see the CUCM 7.0 SRND Voice Messaging Chapter:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cucm/srnd/7x/vmessage.html](http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/7x/vmessage.html)

# High Availability and Disaster Recovery



Cisco Unity Connection 7.x

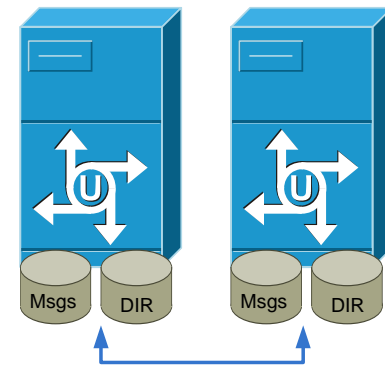
Cisco Unity 7.x

# Cisco Unity Connection 7.x Active/Active Clustering

## Active/Active Clustering

- Voicemail Only: 10K users for both stand-alone (144 ports) and Active/Active pair (288 ports)
- Integrated Messaging: 10K users/7500 clients (Unity Inbox/IMAP Idle) for both stand-alone (72 ports) and Active/Active pair (144 ports)
- Both servers can answer calls and process client requests
- Messages and directory are replicated between servers
- Only port capacity is lost when one server goes down: (VM only example)
  - 144** ports when one server is active
  - 288** ports when both servers are active
  - 10K** users when one or both servers are active

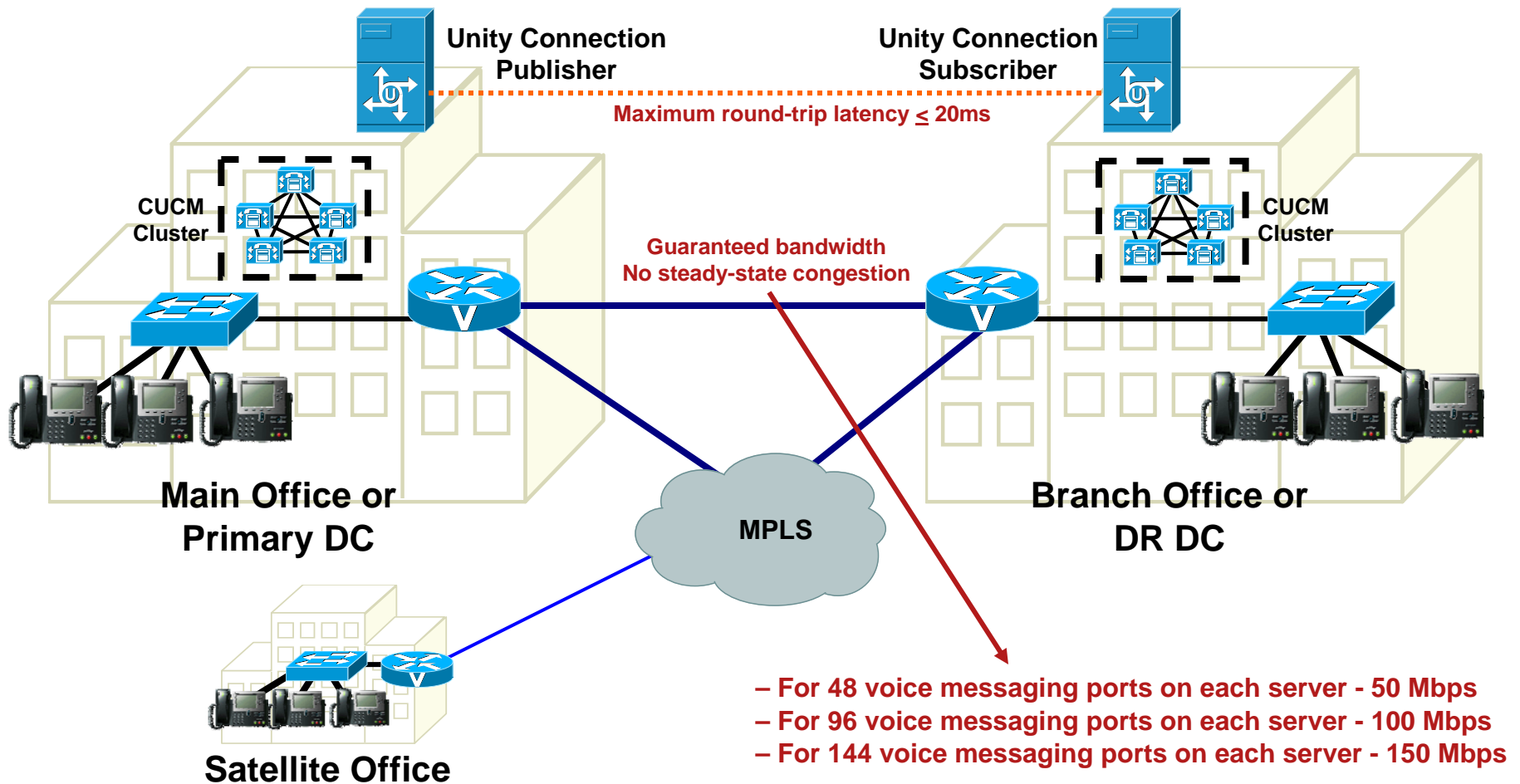
## Active/Active Pair\*



\*2 Server Solution only in  
Unity Connection 7.x

# Unity Connection 7.0/7.1 High Availability or Disaster Recovery

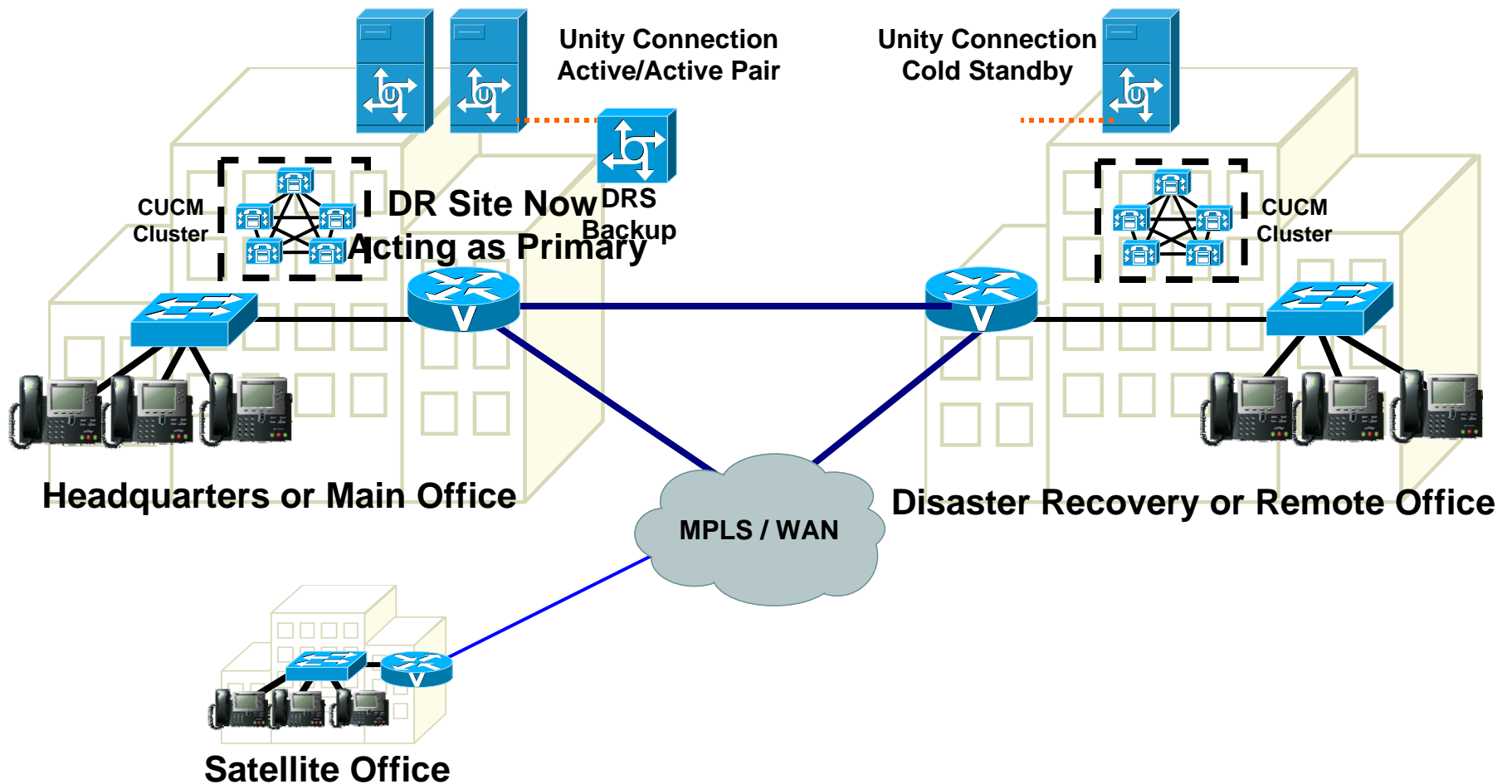
## Active/Active Servers in Different Data Centers



### 7.1: Firewall support, Published ports/protocols...

# Disaster Recovery

## Unity Connection Cold/Warm Standby



# Cisco Unity Failover - Local

## System Failover



**If the primary Unity server goes down, the failover server will automatically fail-over**

## Port Failover

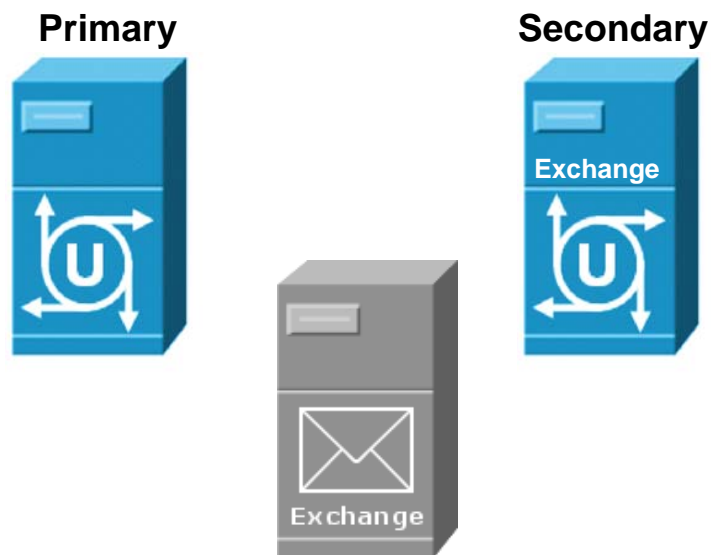


**A port on the primary has ring-no answer—the failover server will take the call (Configuration Option)**

- Failover server needs to match the configuration of the primary
- 60 day limit—the failover server will periodically monitor the primary server to see if it has come back up; if this has not happened in 60 days—the failover server will shutdown

# Cisco Unity Failover – Message Store On-box

On-box message store for VM-only in a local failover implementation



## Benefits

- Reduced server count
- Increased cost value to customer
- Less complex installation
- Saves rack space
- Widens deployment opportunities

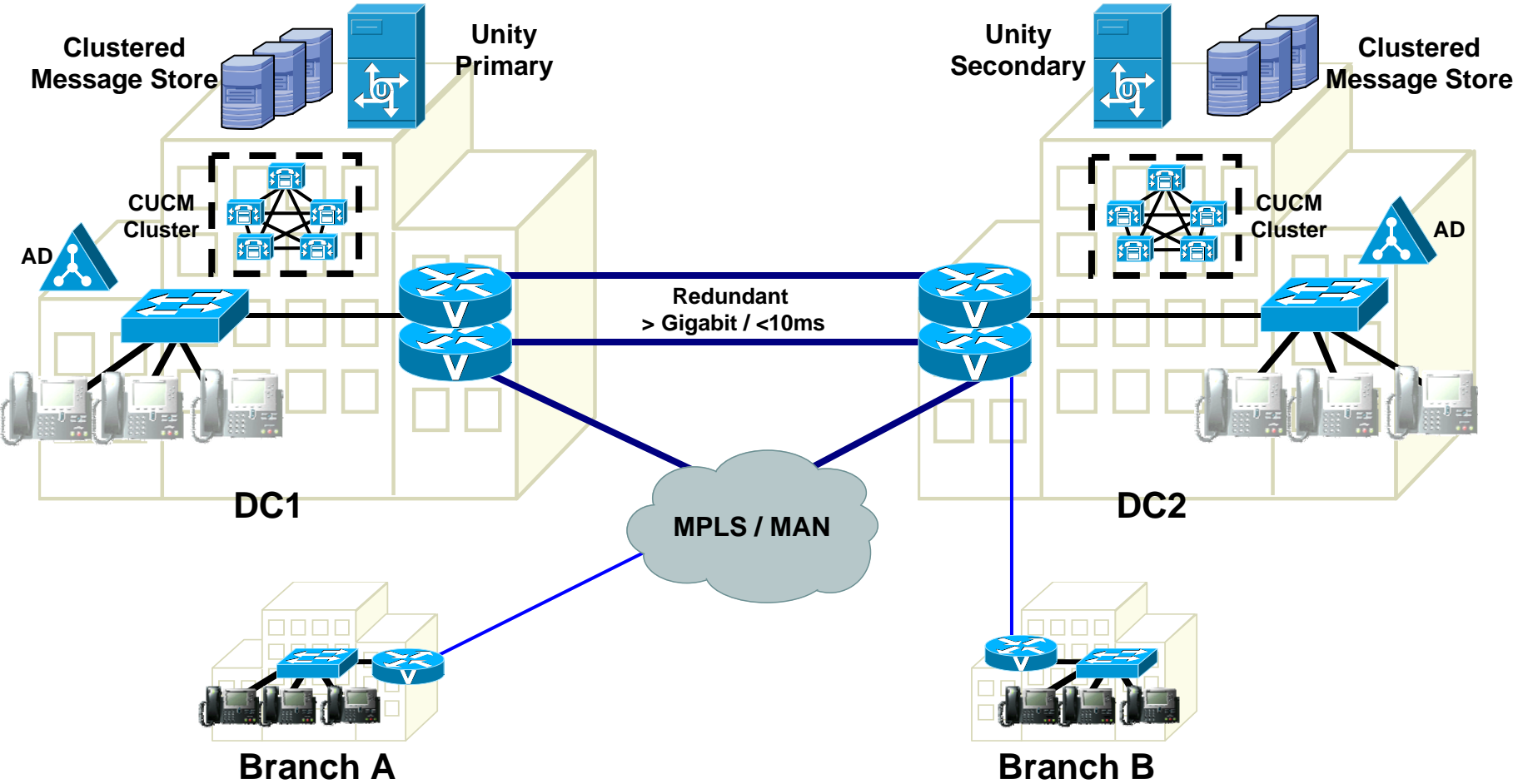
\* Not available with Domino message store



# Cisco Unity Failover Between Two Sites

- Officially TAC Supported in Unity 5.0 and later
- Functions identically as with traditional failover
- Explicit Requirements
  - Redundant Gigabit Connectivity
  - 10ms RT Latency Maximum, 5ms Recommended
  - DC/GC's at both locations
- Requirements based off of currently deployed customer Unity solutions in the field today
- Standard Failover License Used

# Cisco Unity Failover Between Two Sites



# Disaster Recovery

## Tools

- Disaster Recovery Tool (DiRT)
  - Tried and true method for restoring a Unity server
  - Must restore to same revision of Unity
  - Full DB export / import only
  - Fast when importing without messages
- COBRAS
  - New, will be officially TAC supported with the 7.0 release
  - Allows very selective backup / restore functionality
  - Let's you merge subscribers to a Unity server
  - Not as fast as DiRT
- SQL Replication – Standby Redundancy only
  - Automatic replication of Unity data
  - Must manually failover Unity

# Disaster Recovery

## Message Store Redundancy

- Unified Messaging
  - Customer should have existing Corporate email DR Strategy
  - SAN Replication over the WAN
  - Exchange Clustering
  - Server Resurrection Strategies
- Voice Mail Only
  - Messaging DR strategy needs to be formulated
  - Should be based on deployment size and time to resolution
  - If possible, mirror customers existing corporate email DR strategy
  - Exchange backup or server resurrection software should be used in larger deployments
  - DiRT or COBRAS could be used in smaller deployments

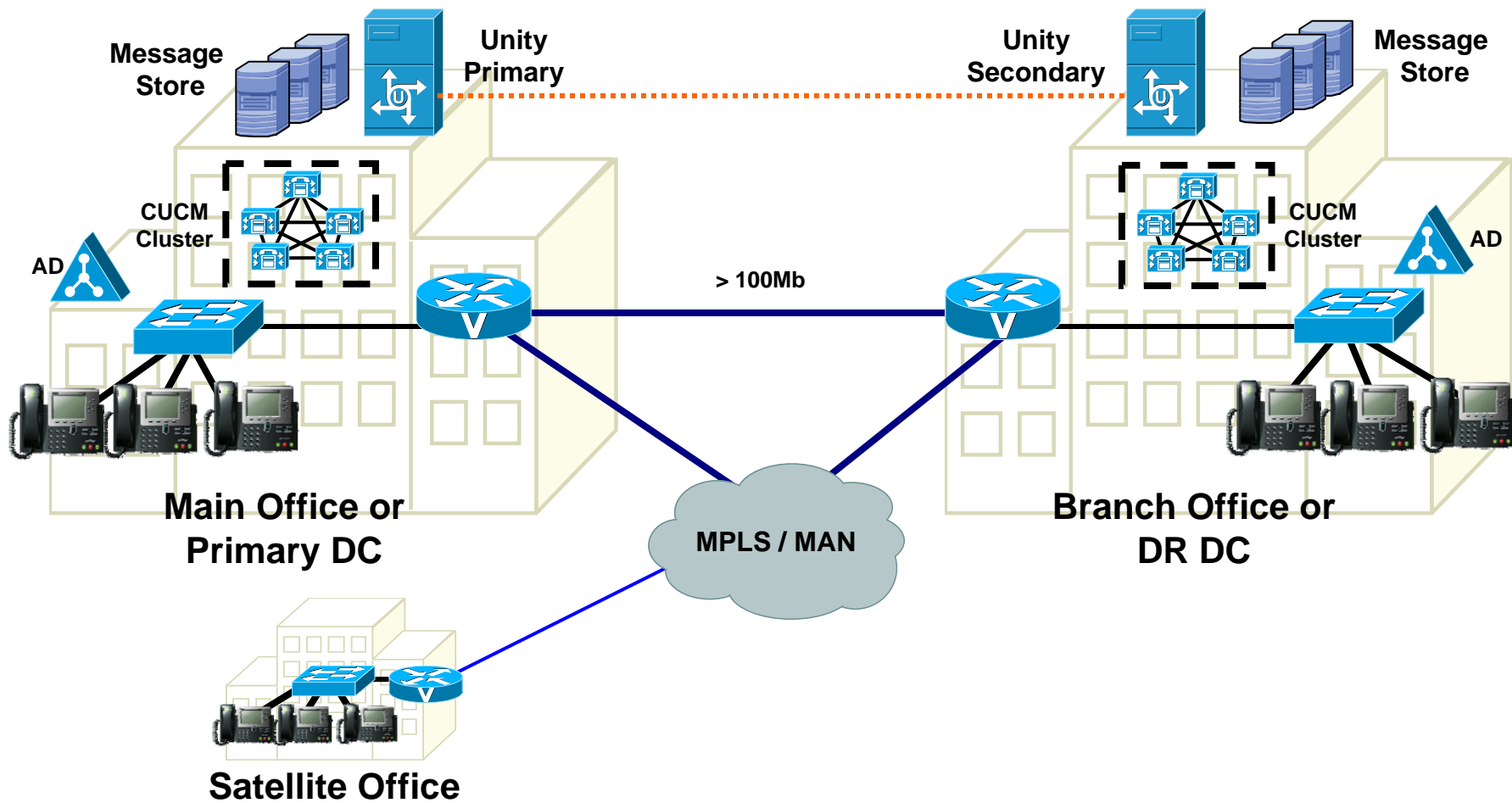
# Disaster Recovery

## Unity Standby Redundancy

- Not a Traditional Failover Configuration
- Unity Primary Server at Main Site or Primary DC
- Unity Secondary Server at DR Site
- Automatic Failover is DISABLED
- SQL Replication maintains DB consistency
- Voice Names and Greetings are replicated
- Bandwidth: 90Mb minimum
- Nightly DiRT backups still recommended
- Standard Failover License Used
- Failover only occurs in a DR Scenario

# Disaster Recovery

## Unity Standby Redundancy



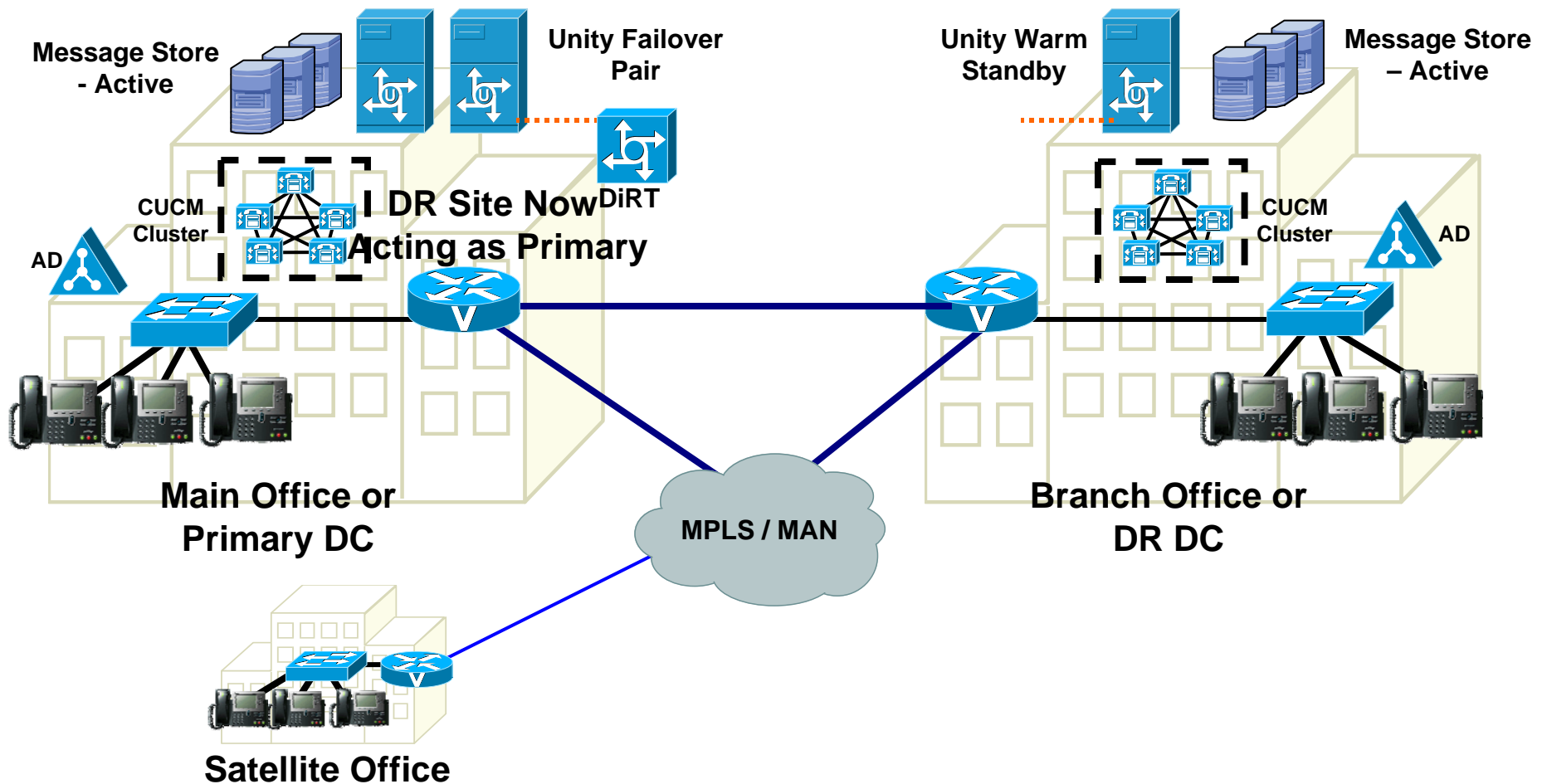
# Disaster Recovery

## Unity Warm Standby

- Unity Failover Pair at Primary Site
- Fully Built Unity Server at DR site
- Perform nightly DiRT or COBRAS backups of the Unity failover pair
- Backups are copied to DR site nightly
- Bandwidth and Latency not bound by Unity
- Leverage local failover functionality for upgrades, patches, maintenance, etc...

# Disaster Recovery

## Unity Warm Standby





# Cisco Unity Connection/Unity High Availability/Redundancy Information

- Cisco Unity Connection

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/connection/7x/design/guide/7xcucdg060.html](http://www.cisco.com/en/US/docs/voice_ip_comm/connection/7x/design/guide/7xcucdg060.html)

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/connection/7x/design/guide/7xcucdg065.html](http://www.cisco.com/en/US/docs/voice_ip_comm/connection/7x/design/guide/7xcucdg065.html)

- Cisco Unity

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/5x/design/guide/5xcudg070.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/5x/design/guide/5xcudg070.html)

- DiRT Tool

[http://www.ciscounitytools.com/App\\_DisasterRecoveryTools.htm](http://www.ciscounitytools.com/App_DisasterRecoveryTools.htm)

- COBRAS Tool

[http://www.ciscounitytools.com/App\\_COBRAS.htm](http://www.ciscounitytools.com/App_COBRAS.htm)

# Advanced Features



Cisco Unity Connection 7.x

Cisco Unity 7.x

# Cisco Unity Connection 7.x Calendaring

Unity Connection 7.x supports Calendaring Access via the TUI/VUI to the following:

- Cisco Unified MeetingPlace 7.0
- Cisco Unified MeetingPlace Express 2.x
- Microsoft Exchange 2007
- Microsoft Exchange 2003



# Cisco Unity Connection 7.x

## Partitions, Search Spaces, Search Scopes

Cisco Unity Connection 7.0 introduced Partitions, Search Spaces, and Search Scopes:

- Similar to Cisco Unified CM dial partitions and calling search spaces
- Allows for segmentation of the Unity Connection directory for dialable/addressable purposes
- Step towards tenant services...
- Administrative searches can be filtered by partition
- Supports overlapping extensions

# Cisco Unity Connection 7.x

## Migrating from Cisco Unity

- Consolidated Object Backup and Restore Application Suite – COBRAS Tool
- Will allow for migrations from Unity to Unity Connection
- Will also allow for migration from Unity Connection 1.2 to Unity Connection 7.x

**Tool does not support Unity Connection 2.x!**

**Must upgrade from Unity Connection 2.0 to 7.x**

- Tool does not allow backups of Unity Connection (any version) to be restored to any version of Unity

# Cisco Unity Connection 7.x Migrating from Cisco Unity (continued)

## Usage Scenarios

- Straight Backup and Restore for Cisco Unity Connection 7.x
- Ability to restore select objects
  - A subscriber, a subscriber's greeting and/or voice name, a subscribers messages or a single message
  - A schedule or call handler, or several call handlers
- Product migration from Cisco Unity or Cisco Unity Connection 1.2 to Cisco Unity Connection 7.x
- Merge multiple backups onto a single server
  - Multiple Cisco Unity backups onto a single Cisco Unity Connection 7.x server
- Copy complete audio text applications onto many servers

# Cisco Unity Connection 7.x

## Migrating from Cisco Unity (continued)

### Data Backed Up and Restored

- Subscribers
  - Full Subscribers
  - Does **NOT** Support Internet, VPIM, Bridge, or AMIS subscribers
  - Includes greetings, voice names, and messages
- Call Handlers
  - Includes greetings and voice names
- Schedules
- Distribution Lists
  - Including membership
- Routing Rules
- Check back often at [http://www.ciscounitytools.com/App\\_COBRAS.htm](http://www.ciscounitytools.com/App_COBRAS.htm) for data supported and updates on the tool!

# Voicemail Interoperability



Cisco Unity Connection 7.x

Cisco Unity 7.x



# Cisco Unity Connection/Cisco Unity

## Voicemail Interoperability

	AMIS – Unity Only	Unity Bridge – Unity Only	VPIM
Voicemail Supported	<ul style="list-style-type: none"> <li>▪ PhoneMail</li> <li>▪ Meridian Mail</li> <li>▪ Repartee,</li> <li>▪ Octel 100, 250, and 350</li> <li>▪ Intuity Interchange</li> <li>▪ Centigram</li> </ul>	<ul style="list-style-type: none"> <li>▪ Avaya/Octel Unified Messenger</li> <li>▪ Octel 100, 250, and 350</li> <li>▪ Intuity Interchange</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cisco Unity Connection</li> <li>▪ Cisco Unity</li> <li>▪ Cisco Unified Messaging Gateway</li> <li>▪ Cisco Unity Express</li> <li>▪ Meridian Net Gateway for Nortel Meridian Mail</li> <li>▪ Mitel/Baypoint NuPoint Messenger</li> <li>▪ Nortel CallPilot</li> <li>▪ Avaya Interchange</li> <li>▪ Avaya MNS</li> </ul>
Pros	Widely Supported and Understood for Legacy Voicemail Systems	Analog Octel Networking, Advanced Message, and Directory Sync	Digital, Industry Standard, Efficient
Cons	Basic Subscriber to Subscriber Messaging Only, No Directory Sync	No Digital Networking, No Extended Absence Greeting Across Bridge, Limited to Avaya Interchange/MNS	No Directory Sync, Not Widely Adopted or Supported for Legacy Voicemail Systems

# VPIM

## Voice Profile for Internet Mail

- Available with Cisco Unity Connection 2.0(1) and later
- Available with Cisco Unity 4.0(1) and later
- Voice-enabled SMTP message
- Sent as an e-mail

# VPIM Advantages and Caveats

## Advantages:

- Interoperability with disparate systems
- Efficient use of resources
- Immediate message delivery
- Easy to administer

## Caveats:

- Directory synch
- Name dialing
- 200 messages per session

# Cisco Unity Connection 7.x VPIM Networking

## Provides Flexible Deployment and Migration Options

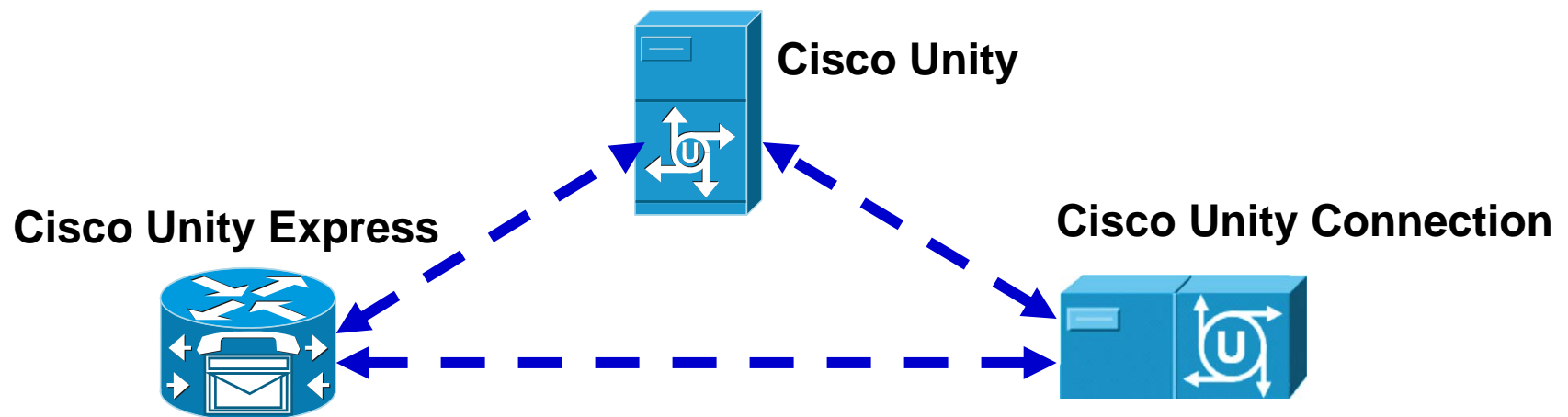
- Link Cisco Unity Connection, Cisco Unity and Cisco Unity Express systems together into a messaging network

Also integrate with 3rd party VM systems that support VPIM v2

Reply to, forward and create messages for subscribers on any networked system

Distribution lists with subscribers from multiple systems

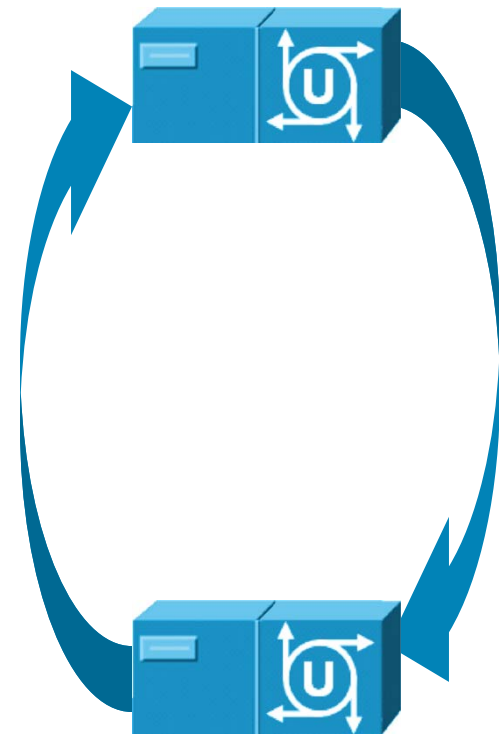
Up to 10 systems (10 delivery locations) in any combination with up to 15K total contacts in the directory (+10K local subscribers)



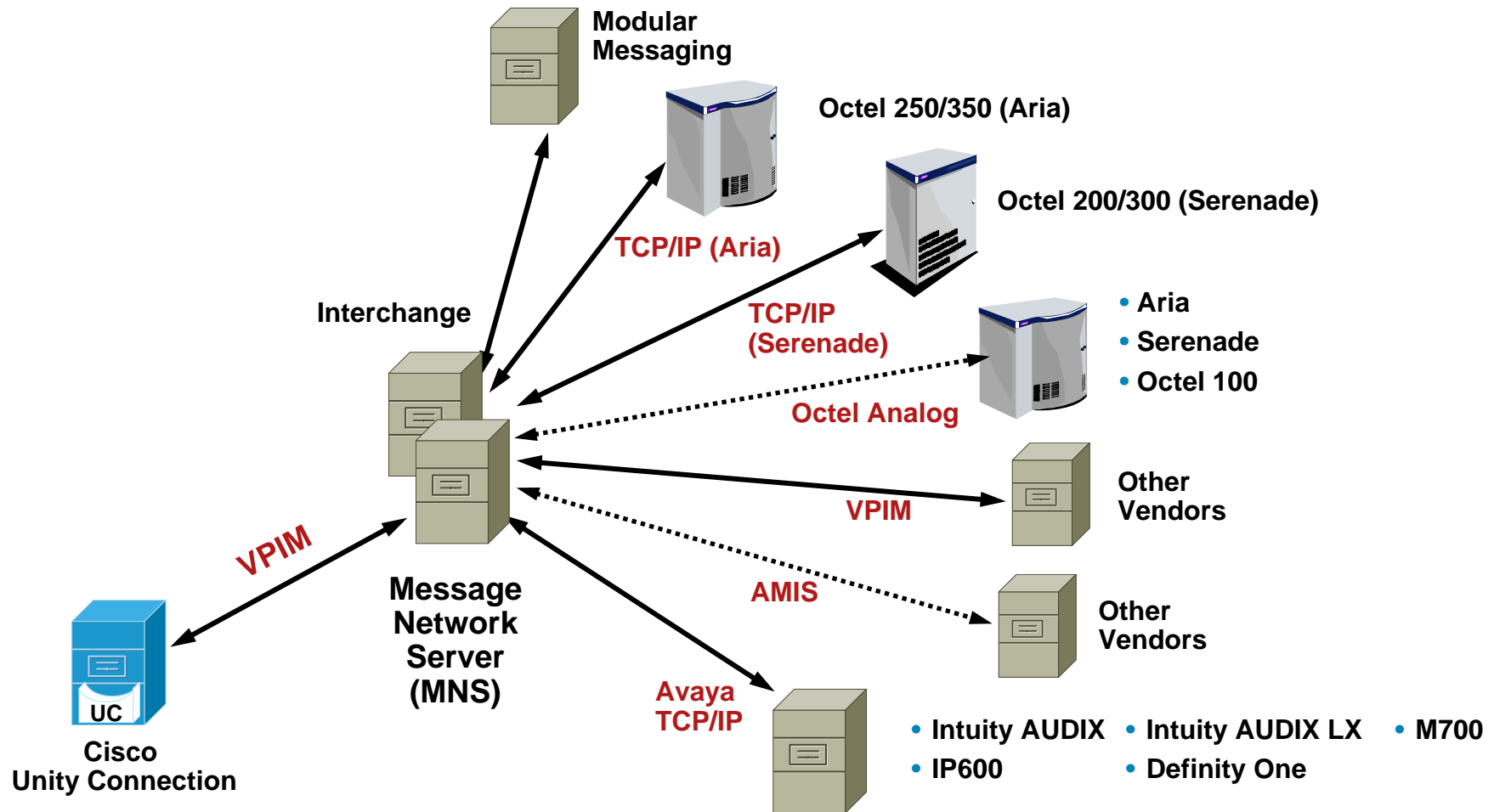
# Cisco Unity Connection 7.x VPIM Management Tools

## Minimizes Administrative Work

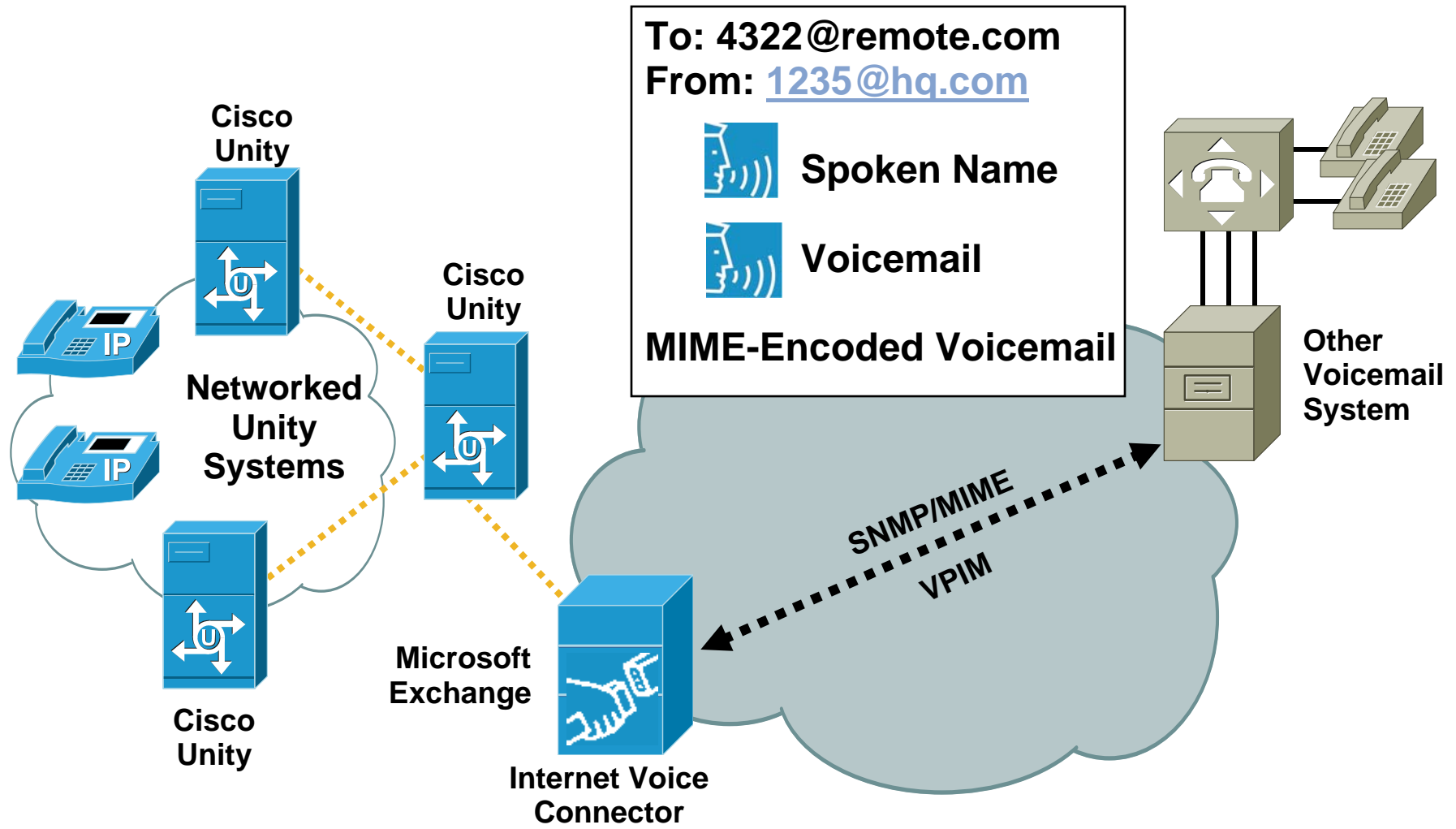
- Subscriber auto-create
  - Updates the directory when you send a message “to” that system
  - Extracts contact info from message header
  - Includes recorded name so you can get spoken name confirmation when you address a message
- Directory push
  - Can push the entire directory from one system to a target Unity Connection or Unity system
  - Includes message header and recorded name
  - Useful during initial installation to manually “mesh” multiple locations into a network



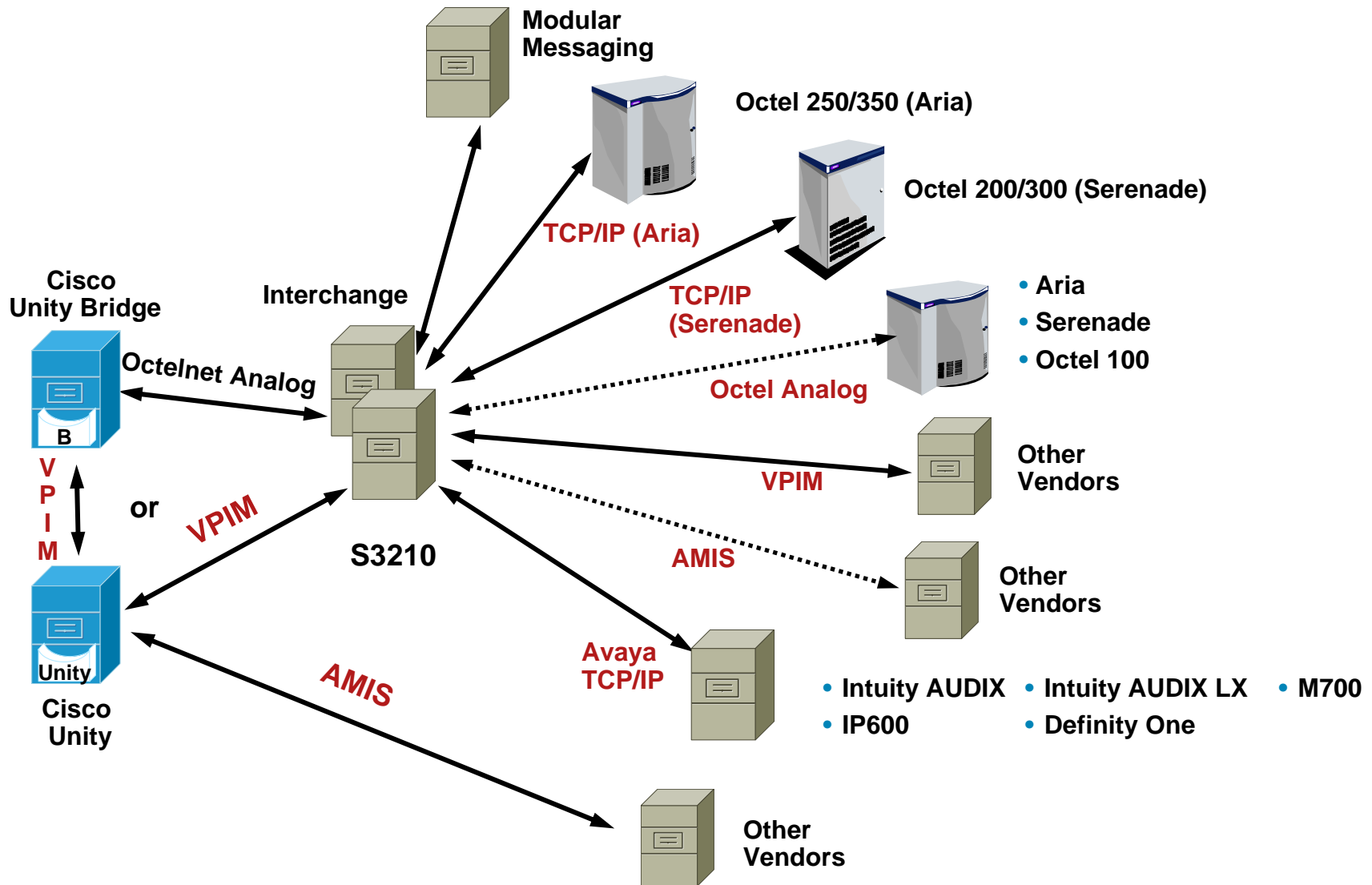
# Cisco Unity Connection and Avaya Interchange/MNS



# Cisco Unity: VPIM



# Cisco Unity and Avaya Interchange/MNS





# VPIM Message Features

- Messages marked urgent when they are sent are marked urgent when they are retrieved by the recipient
- Messages marked private when they are sent are marked private when they are retrieved by the recipient
- Subscribers can send messages to Cisco Unity distribution lists that include VPIM subscribers
- Subscribers can send fax messages, if this is supported by the remote voice messaging system

# AMIS

- AMIS

  - Support for Audix, Centigram, Meridian Mail, PhoneMail, and others

- AMIS Bridgehead model

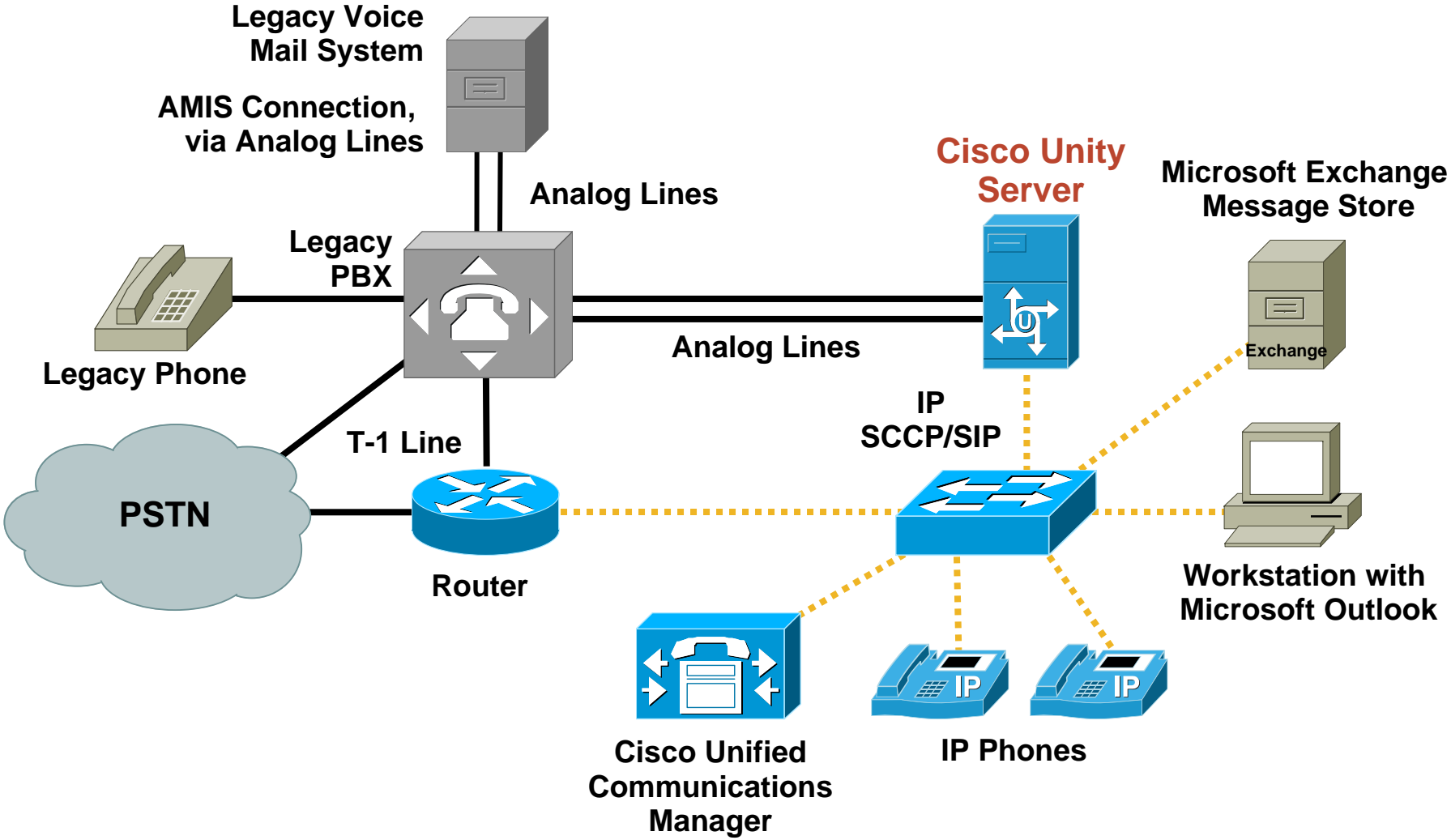
  - Digital network multiple Cisco Unity systems

  - Dedicated Cisco Unity for AMIS traffic

  - Home Internet subscriber and AMIS users on that Cisco Unity

  - May need a dedicated Unity based on traffic

# Cisco Unity: AMIS-A



# Cisco Unity Bridge Design

- **Design Scenarios**

  - Basic Octel networking

  - Multinode Octel networking

- **Design Considerations**

  - Maximum of 24 ports per Cisco Unity Bridge server

  - Selecting physical location of Cisco Unity Bridge server

  - Possible Octel reprogramming

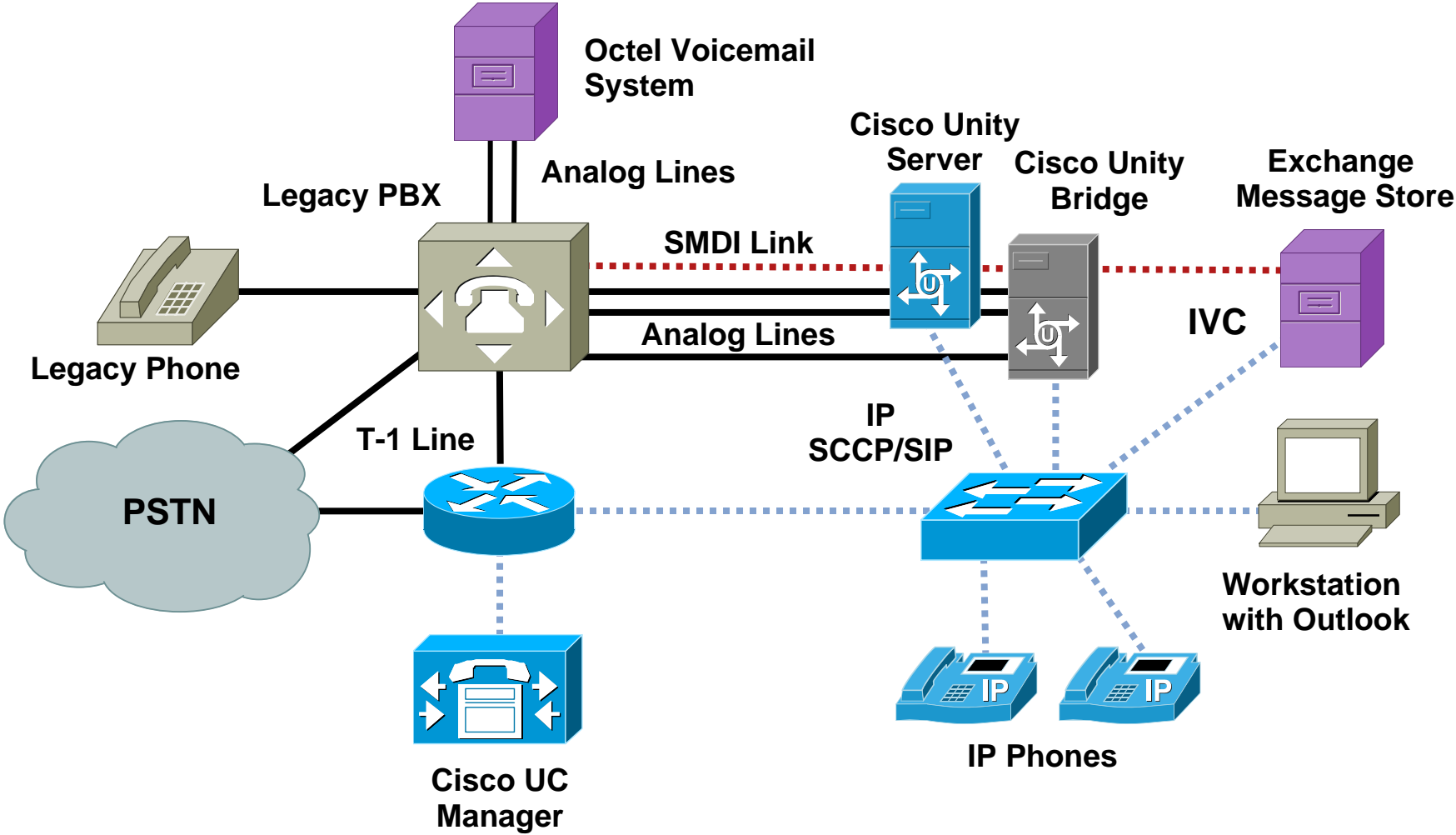
  - Networked Cisco Unity servers must have a uniform dial plan

- **Design issues**

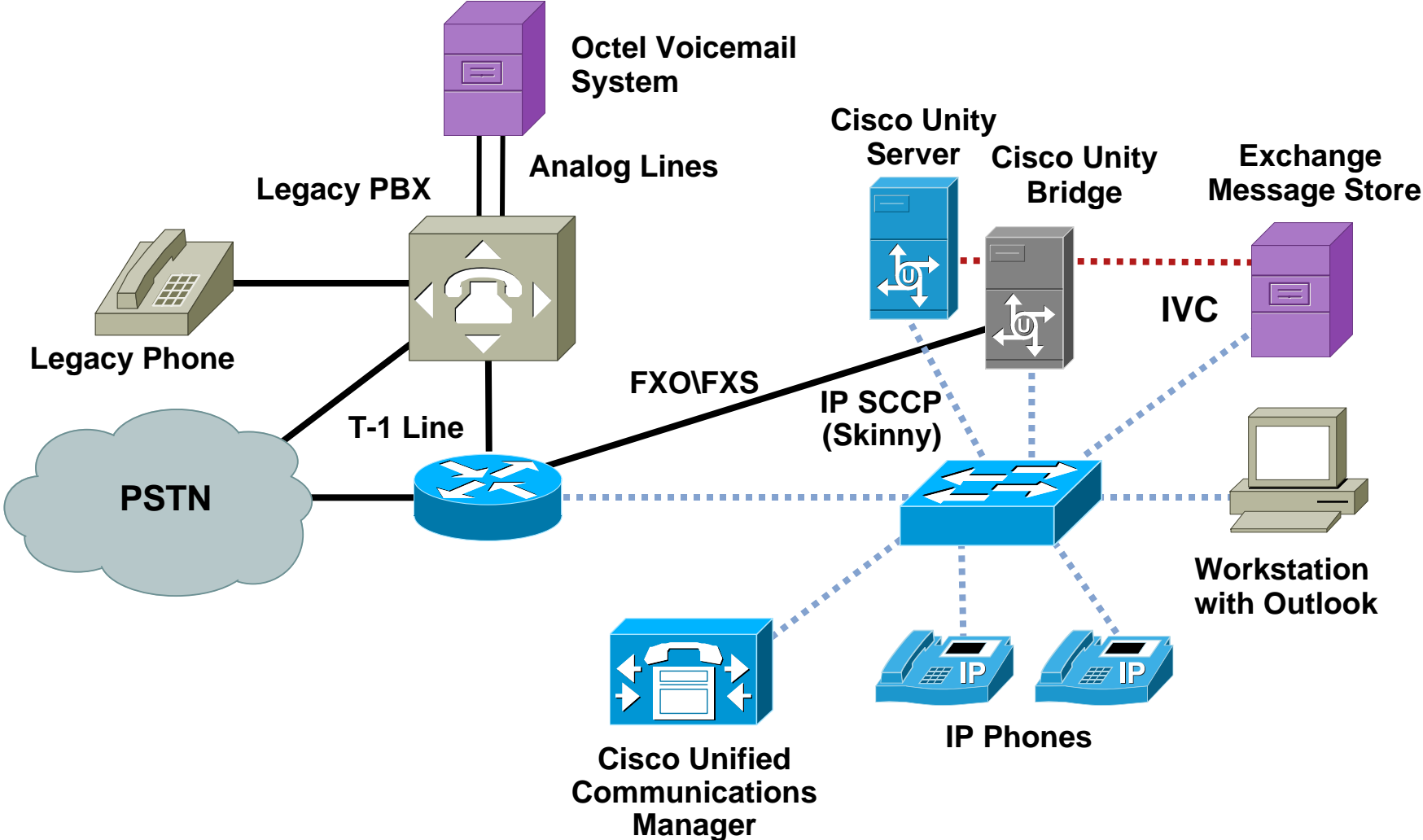
  - One Cisco Unity required per Cisco Unity Bridge

  - Analog networking to Octel networking

# Cisco Unity Bridge with Dual Integration



# Cisco Unity Bridge with Cisco Unified Communications Manager



# Cisco Unity Bridge Design Considerations

- Placement of the Internet voice connector
- Location of the Unity Bridge
- Dial plan for all Octel systems
- Is Aria Networking used
- Migration plan
  - Collapse a node
  - Collapse a partial node

# Cisco Unity Bridge Messaging Features

- Messages marked urgent when they are sent are marked urgent when they are retrieved by the recipient
- Messages marked private when they are sent are marked private when they are retrieved by the recipient; (note however that private messages from both Cisco Unity and Octel subscribers can be forwarded from Outlook, though a private message cannot be modified)
- The future delivery of messages to Octel recipients is supported
- Cisco Unity subscribers can send messages to Cisco Unity distribution lists that include Bridge subscribers
- A message from a Cisco Unity subscriber addressed to multiple Octel recipients who are on the same Octel server is transmitted once to the Bridge; if all of the recipients are on the same Octel node, the Bridge makes only one phone call to the node and transmits only one message, which then is delivered to each recipient; if the recipients are on multiple Octel nodes, the Bridge makes only one phone call to each node and transmits only one message, which then is delivered to each recipient on that node
- Fax messages can be sent, depending on Octel support



# Cisco Unity Bridge and Avaya Interchange/MNS Server

- Use analog Octel networking
- Share directory information
- Use MBUPLOAD to populate Unity DB

# Cisco Unity Bridge and Avaya Interchange/MNS Design Considerations

- What systems are behind interchange
- Does all voice messaging traffic route through interchange
- What is the numbering plan for the Interchange/MNS  
4–10 digits
- How do users address messages to Interchange/MNS

# Useful Links

- “Using VPIM Networking” in Cisco Unity Connection

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/connection/7x/administration/guide/7xcucsag250.html](http://www.cisco.com/en/US/docs/voice_ip_comm/connection/7x/administration/guide/7xcucsag250.html)

- Networking in Cisco Unity

[http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_feature\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_feature_guides_list.html)

- Unity Bridge Networking Guide

[http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_feature\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_feature_guides_list.html)

- Unity Bridge Design Guide

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/bridge/31/design/guide/bdg.html](http://www.cisco.com/en/US/docs/voice_ip_comm/bridge/31/design/guide/bdg.html)

# Q&A

# Voice Messaging Migration



Cisco Unity Connection 7.x

Cisco Unity 7.x

# Migration Overview

- Migration Preparation & Planning tasks
- Deploy the new Unity environment
- Pre-Migrate Call Application Trees
- Migrate Users from Legacy Voice Mail to the new Cisco Unity systems and environment
- Perform validation testing
- Perform cutover to new systems
- Perform post-cutover validation testing
- Prepare for end-user support requests

# Migration Preparation & Planning tasks

- Determine User requirements
- Determine Interoperability requirements
- Determine Integration requirements
- Determine Addressing and Dial-Plan requirements
- Determine Public Distribution List support
- Determine Migration Strategy and Schedule
- Establish End User Communications and training plan

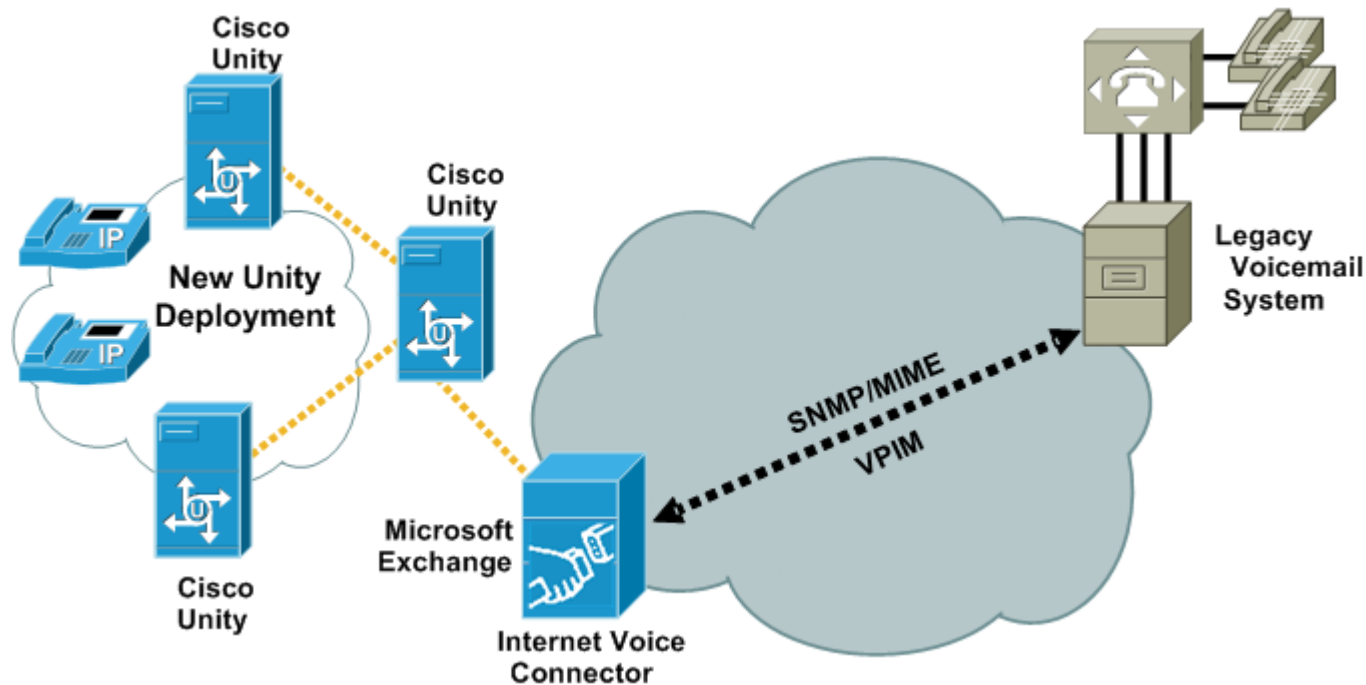
# Migration Preparation & Planning tasks

- Prepare System Design documents
- Prepare Procedure documents including Deployment, Migration, and Test Plans
- Prepare User Training and Help Resources
- Perform lab validation. Validation to Design, Procedures, and Test plans
- Perform limited Pilot to further gather feedback from users and refine Design and Processes



# Deploy new Cisco Unity Environment

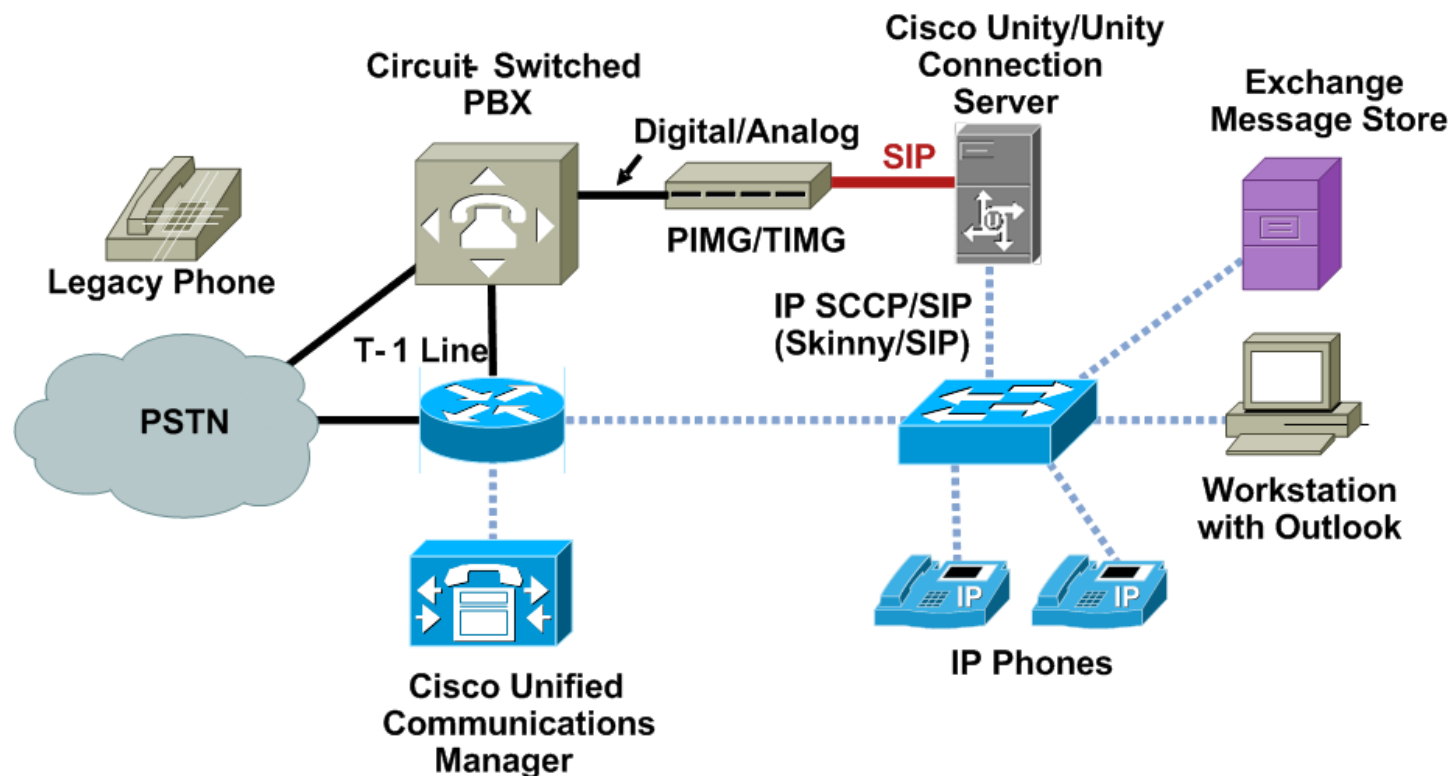
- Deploy new Cisco Unity Environment in parallel to existing legacy voice messaging
- Establish Interoperability to the legacy voice messaging system



# Prepare new Unity Environment

- Establish Integration to legacy PBX Environment. (Optional)
- Unity may also be integrated to Cisco Unified Communications Manager

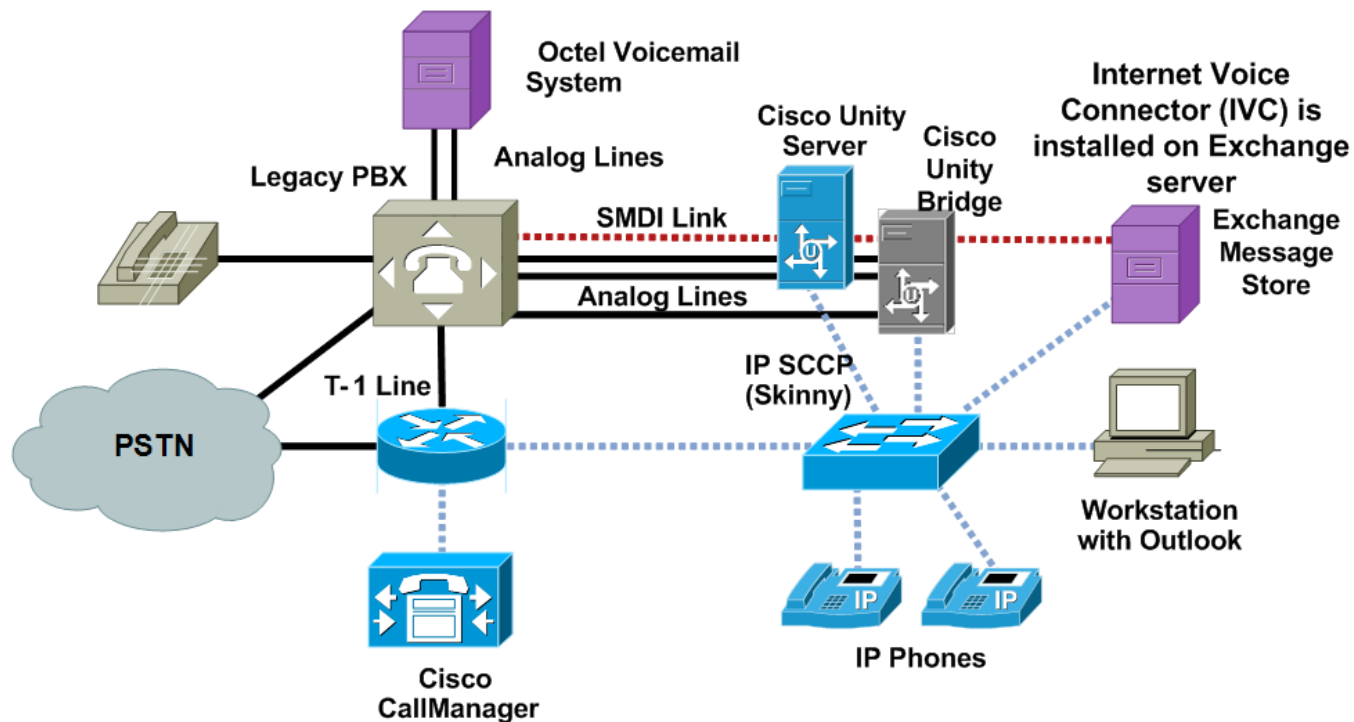
## Multiple Switch/PBX Integration



# Prepare new Unity Environment

- Establish Cisco Unity Bridge server when integrating to Octel voice messaging systems and when using Cisco Unity

Cisco Unity Bridge Configuration

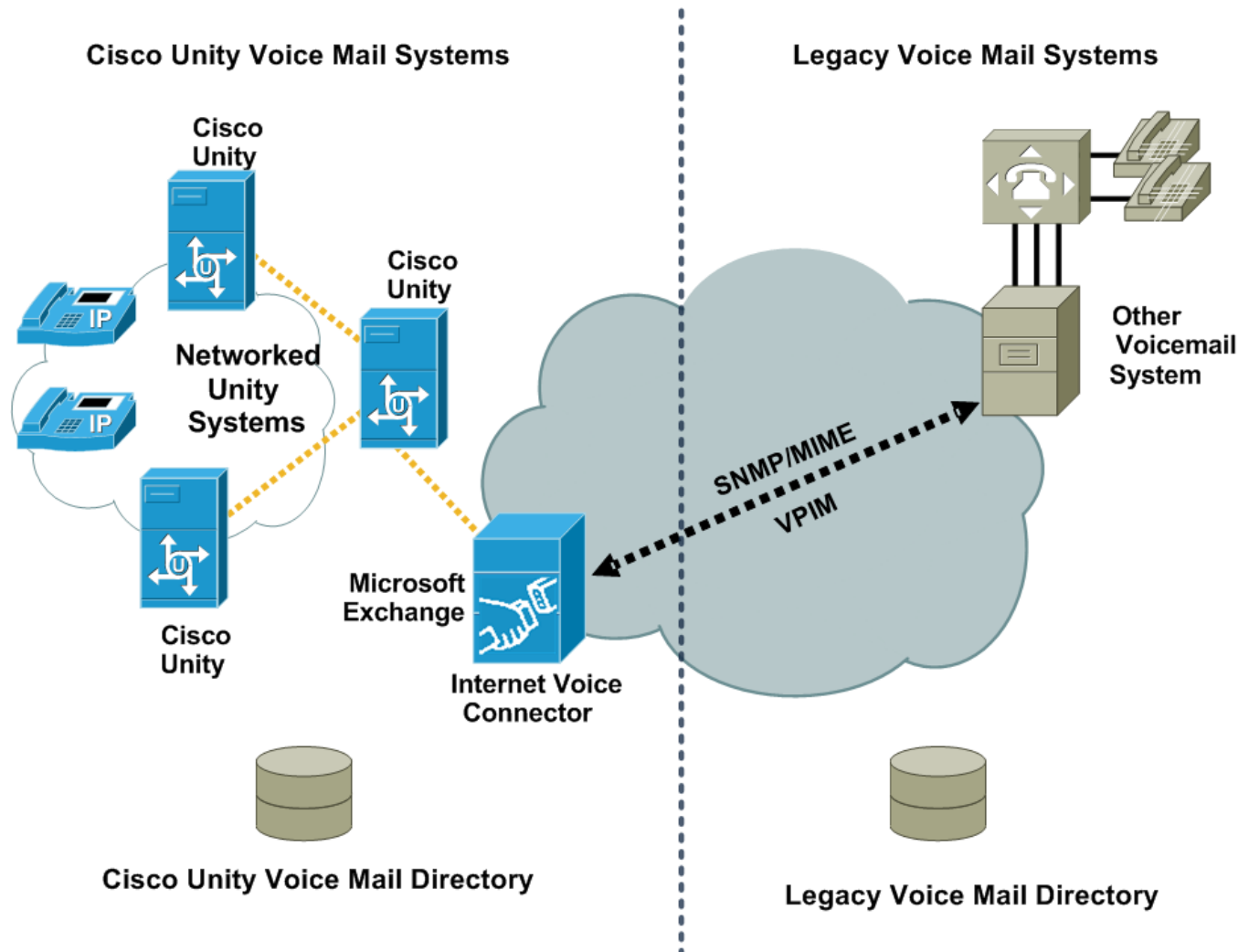


## Prepare new Unity Environment

- Establish synchronized directories between legacy and new Unity environments (Optional). Establish Remote networking mailboxes in legacy and new Unity environments.
- Build VPIM or Bridge Subscribers in Unity Directory.
- Build Remote networking mailboxes in Legacy Voice Mail Directory.
- VPIM and Bridge subscribers may be created through Bulk Import or automatically created through messaging usage.
- VPIM and Bridge subscribers provide “Recorded Name” confirmation when addressing messages and may be used for distribution list membership.

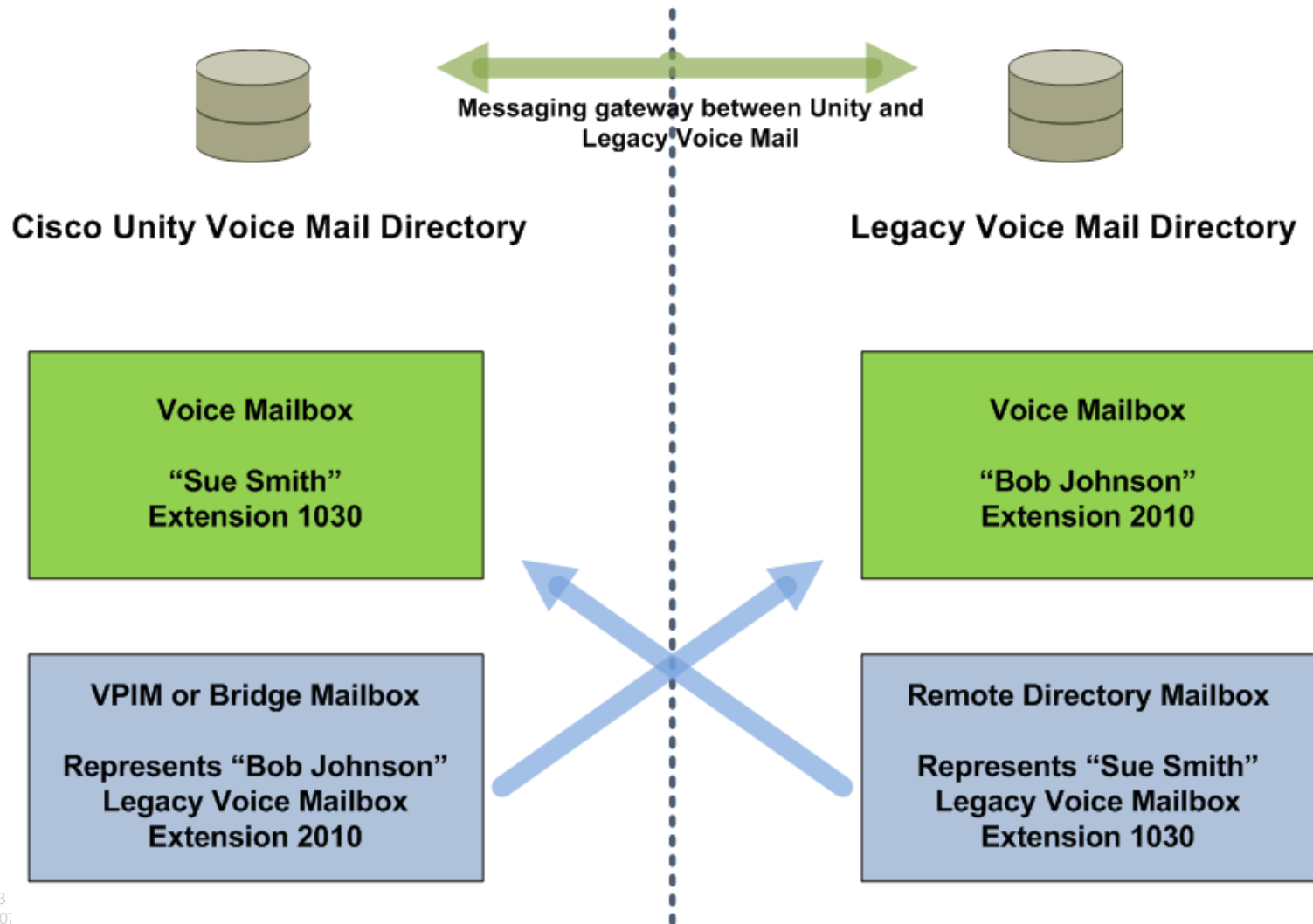
# Prepare new Cisco Unity Environment

## Separate Directories



# Prepare new Cisco Unity Environment

## Separate Directories



# Migrate to the new Cisco Unity servers

- Begin service window where changes can be made to the user environment. Legacy Voice systems may still take voice messages or taken off-line.
- Build new Cisco Unity Voice Mailboxes in new Unity Environment using the Bulk Import tools
- Remove VPIM or Bridge subscribers on Cisco Unity server (Optional)
- Delete or retain voice mailboxes in legacy environment. If voice mailboxes are retained, it is important to ensure that they do not conflict with the dial-plan.

# Migrate to the new Unity servers

- Build new “Remote Directory Mailboxes” in legacy voice messaging environment (Optional)
- Perform Validation Testing to ensure systems are working properly. Perform both System and User tests.
- Perform Cutover - Redirect inbound calls to forward to new Unity server. The new Cisco Unity servers are actively taking calls.
- Perform Post-Cutover Validation testing. This is a second set of brief tests to ensure that the systems are functioning after Cutover has been performed.
- End service window and begin official production service



# Octel Migration with Cisco Unity Bridge



Cisco Unity 7.x

# Cisco Unity Bridge Migration

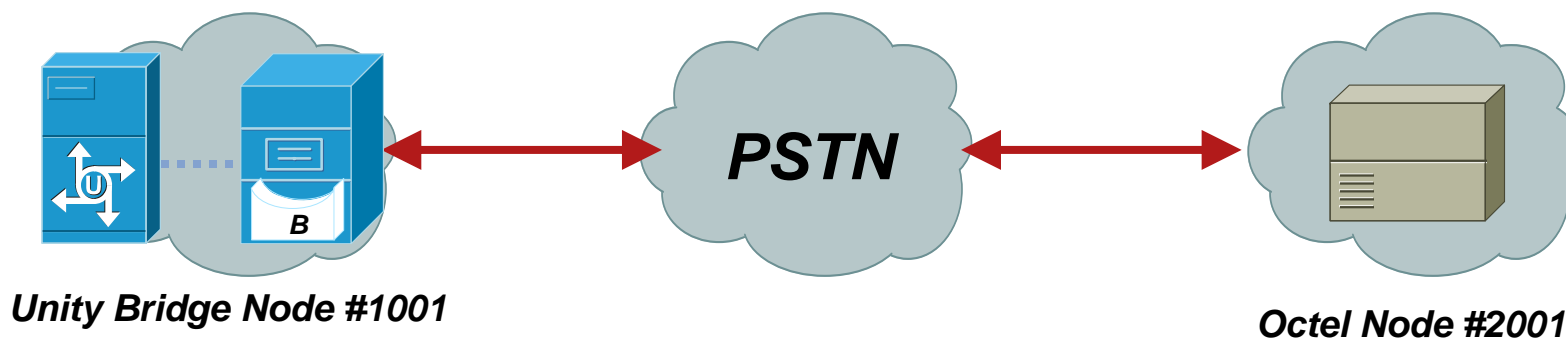
- Two strategies
  1. **Migration** from Octel environment to Cisco Unity, three months to a year—larger user population is on Octel system
  2. **Coexistence** environment, one year and beyond—equal number of users on Cisco Unity and Octel

# Basic Octel Networking



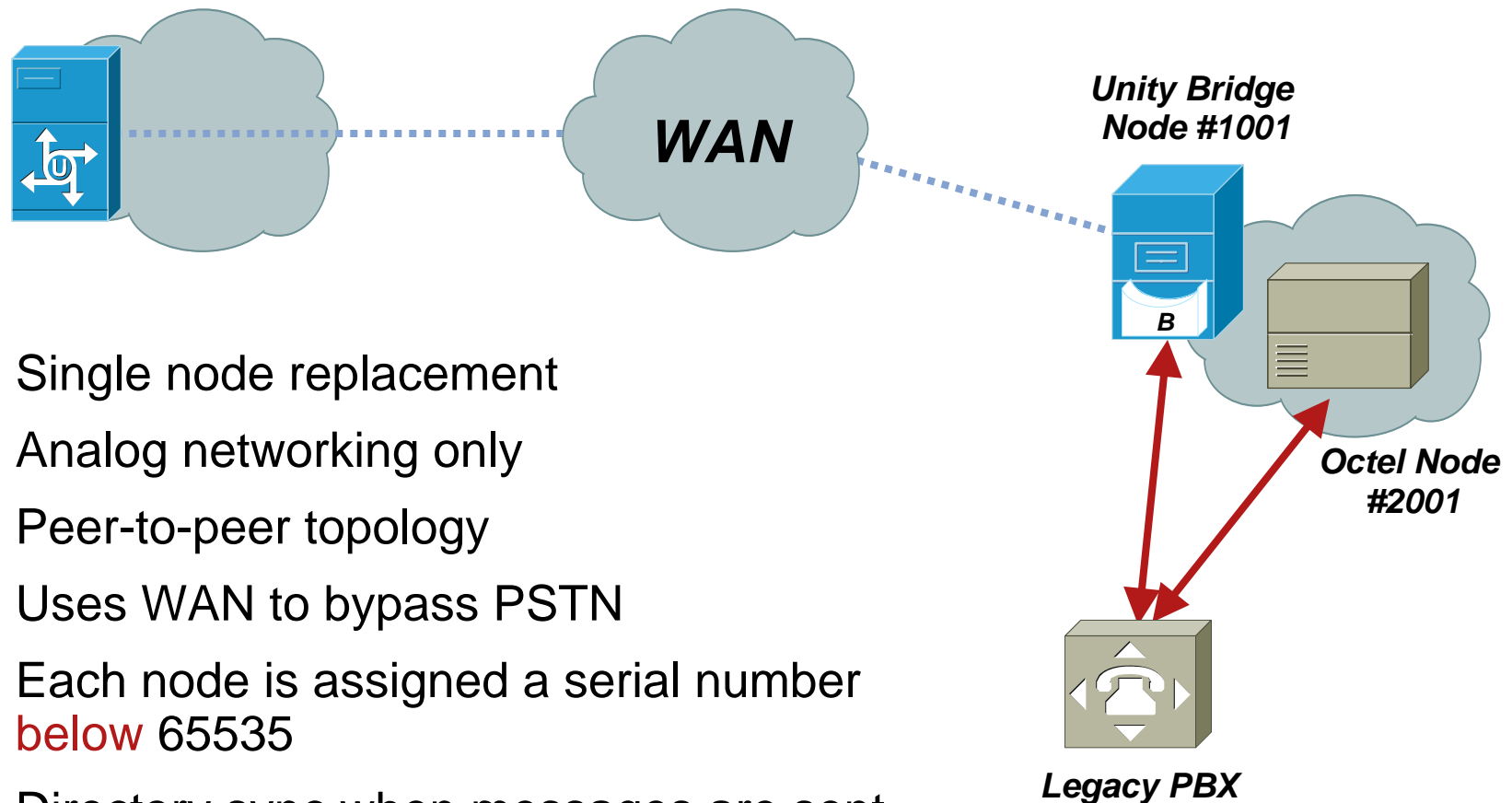
- Digital or analog networking
- Peer-to-peer topology
- Each node is assigned a serial number below 65535
- Directory sync when messages are sent between users

# Basic Cisco Unity Bridge Networking



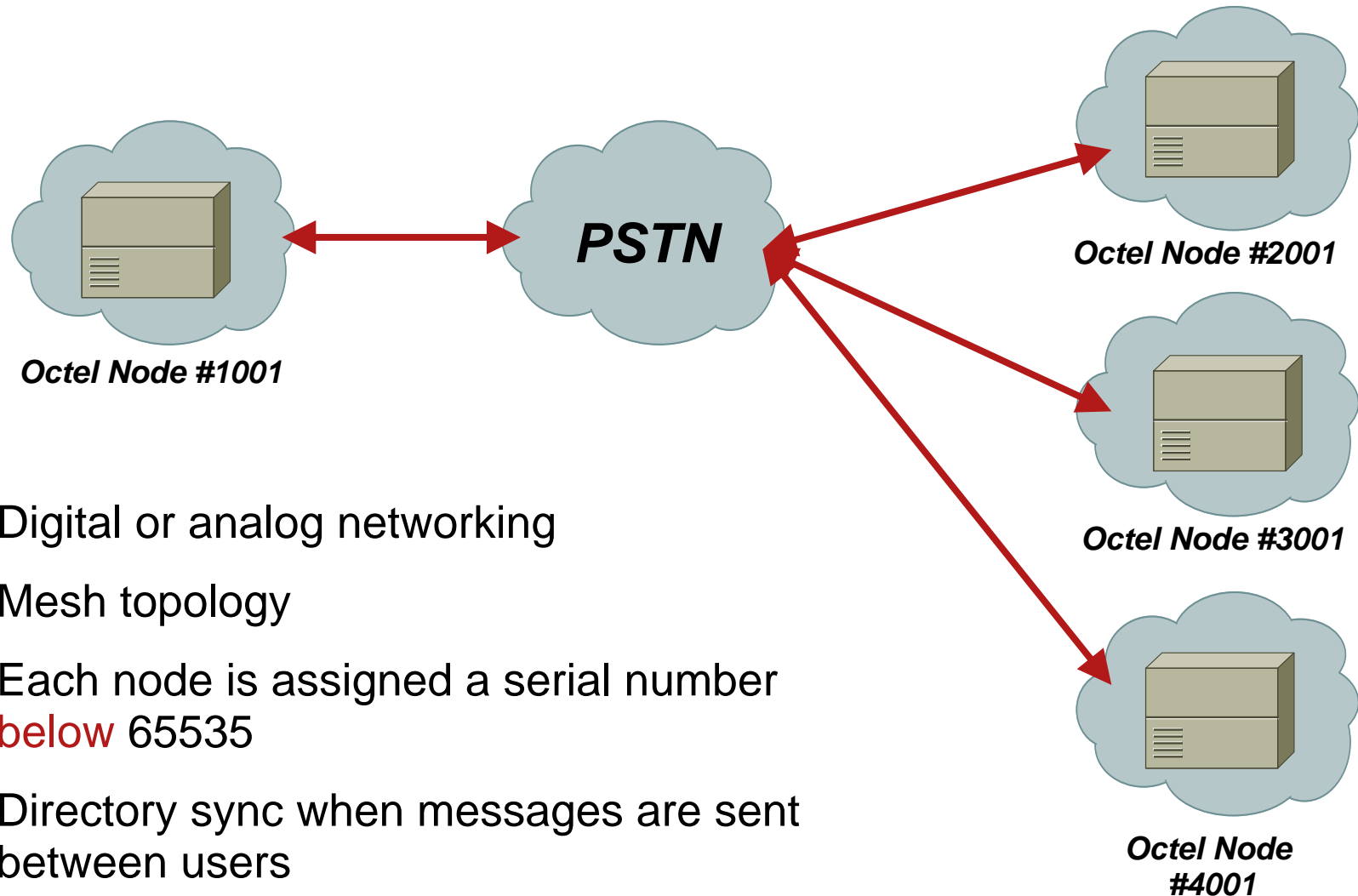
- Single node replacement
- Analog networking only
- Peer-to-peer topology
- Each node is assigned a serial number **below** 65535
- Directory sync when messages are sent between users

# Basic Cisco Unity Bridge Networking with a Remote Bridge



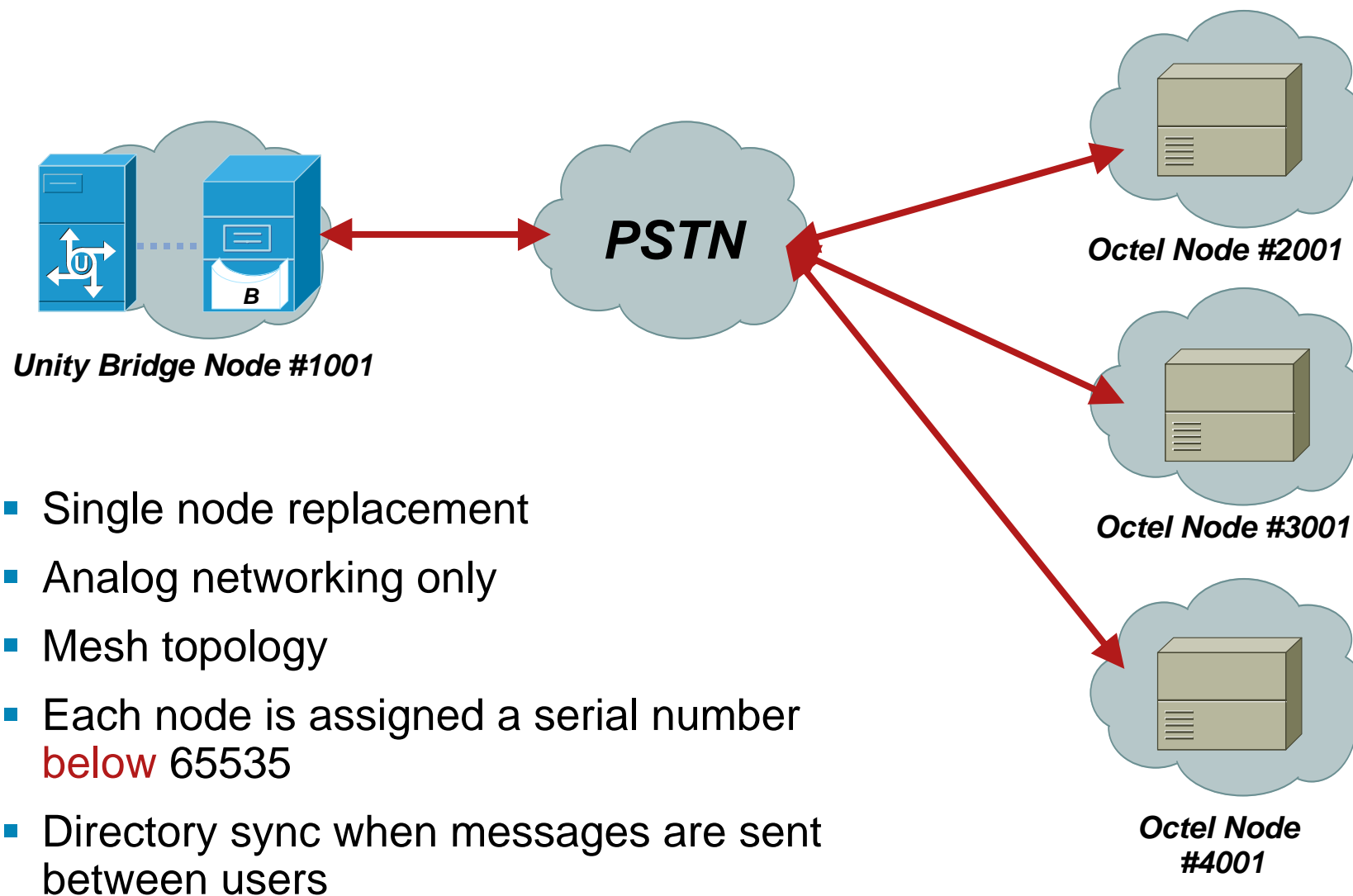
- Single node replacement
- Analog networking only
- Peer-to-peer topology
- Uses WAN to bypass PSTN
- Each node is assigned a serial number **below** 65535
- Directory sync when messages are sent between users

# Multinode Octel Networking

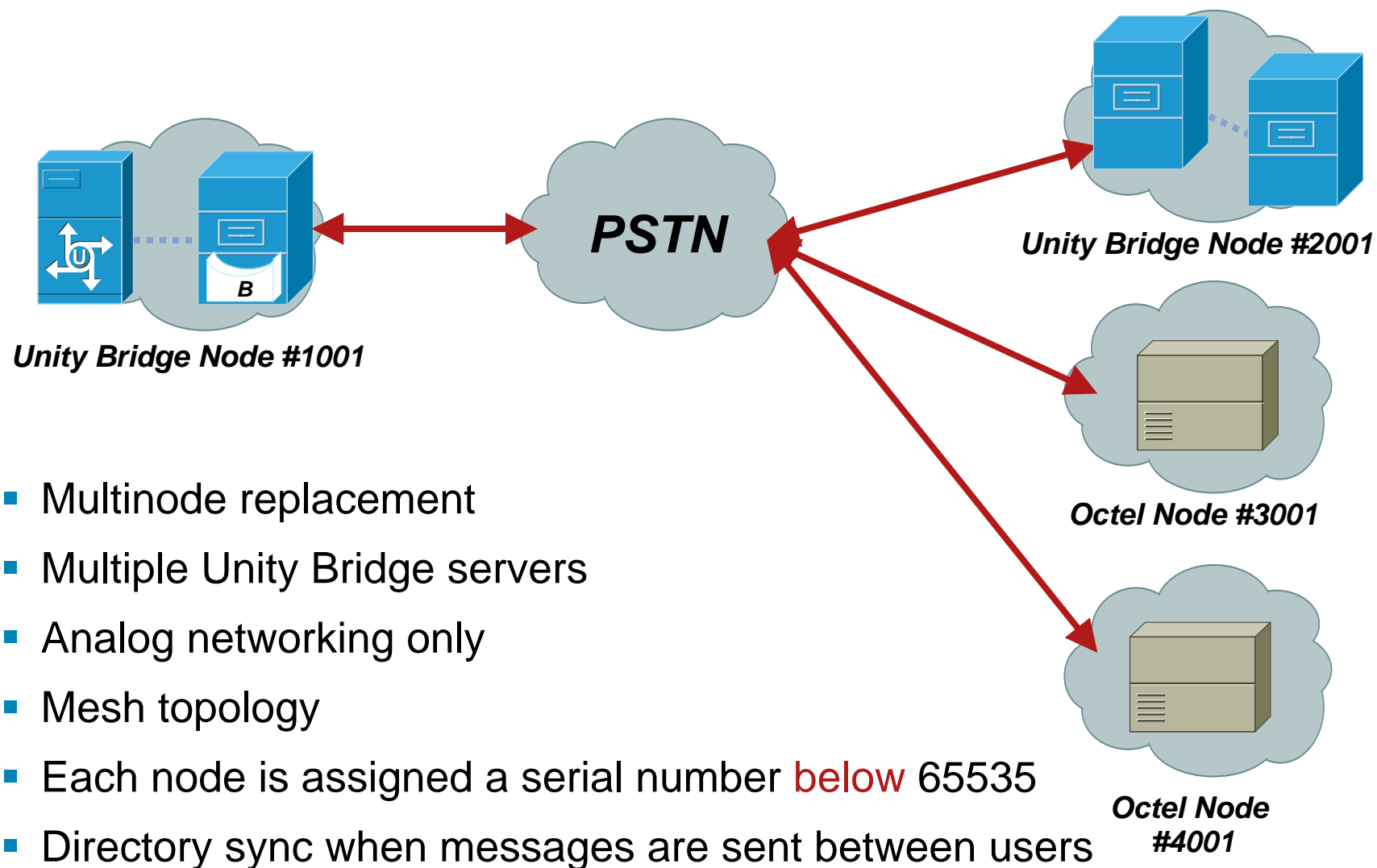


- Digital or analog networking
- Mesh topology
- Each node is assigned a serial number **below 65535**
- Directory sync when messages are sent between users

# Cisco Unity Bridge in Multinode Octel Networking (1)



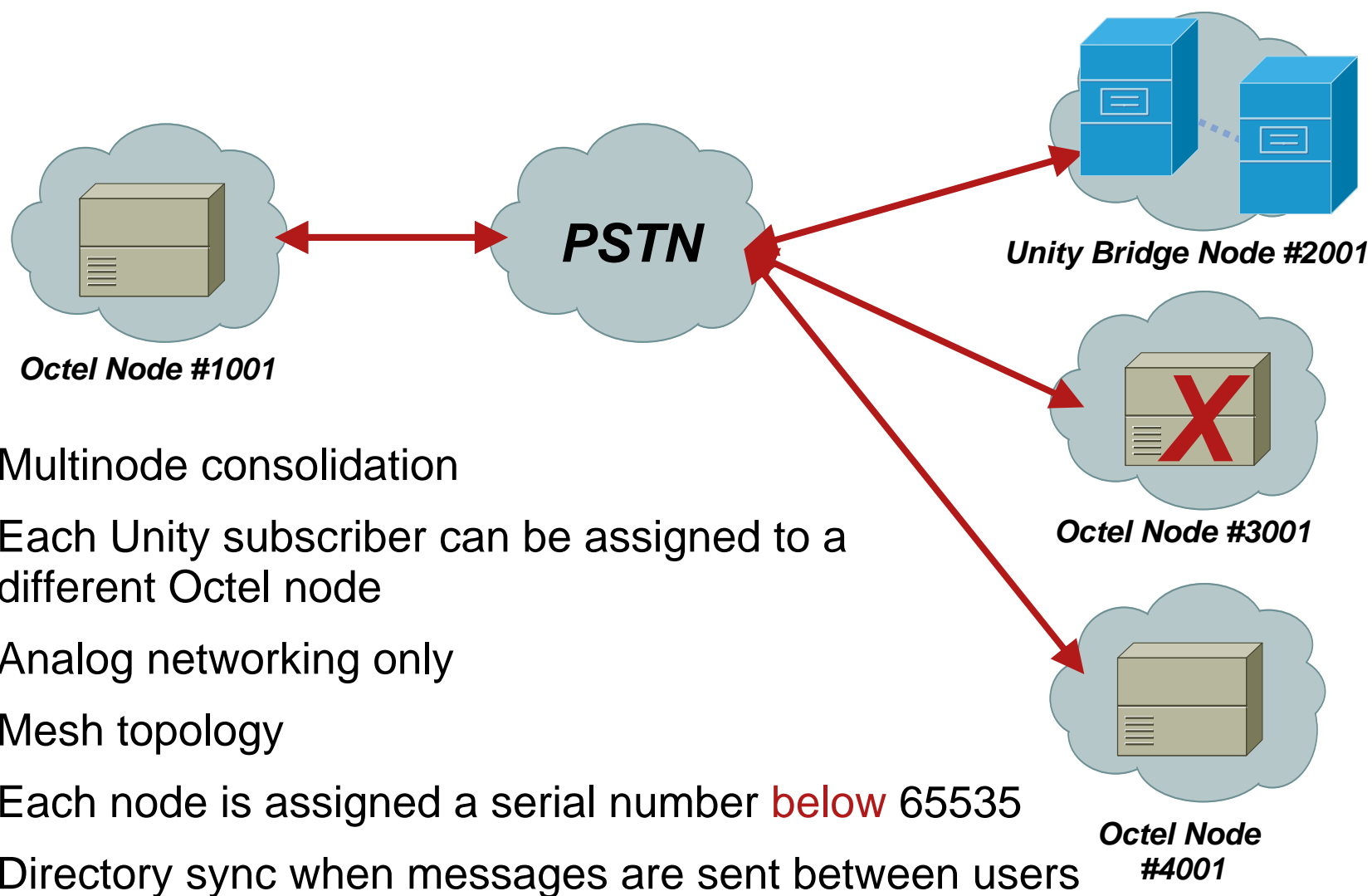
# Cisco Unity Bridge in Multinode Octel Networking (2)



- Multinode replacement
- Multiple Unity Bridge servers
- Analog networking only
- Mesh topology
- Each node is assigned a serial number **below** 65535
- Directory sync when messages are sent between users

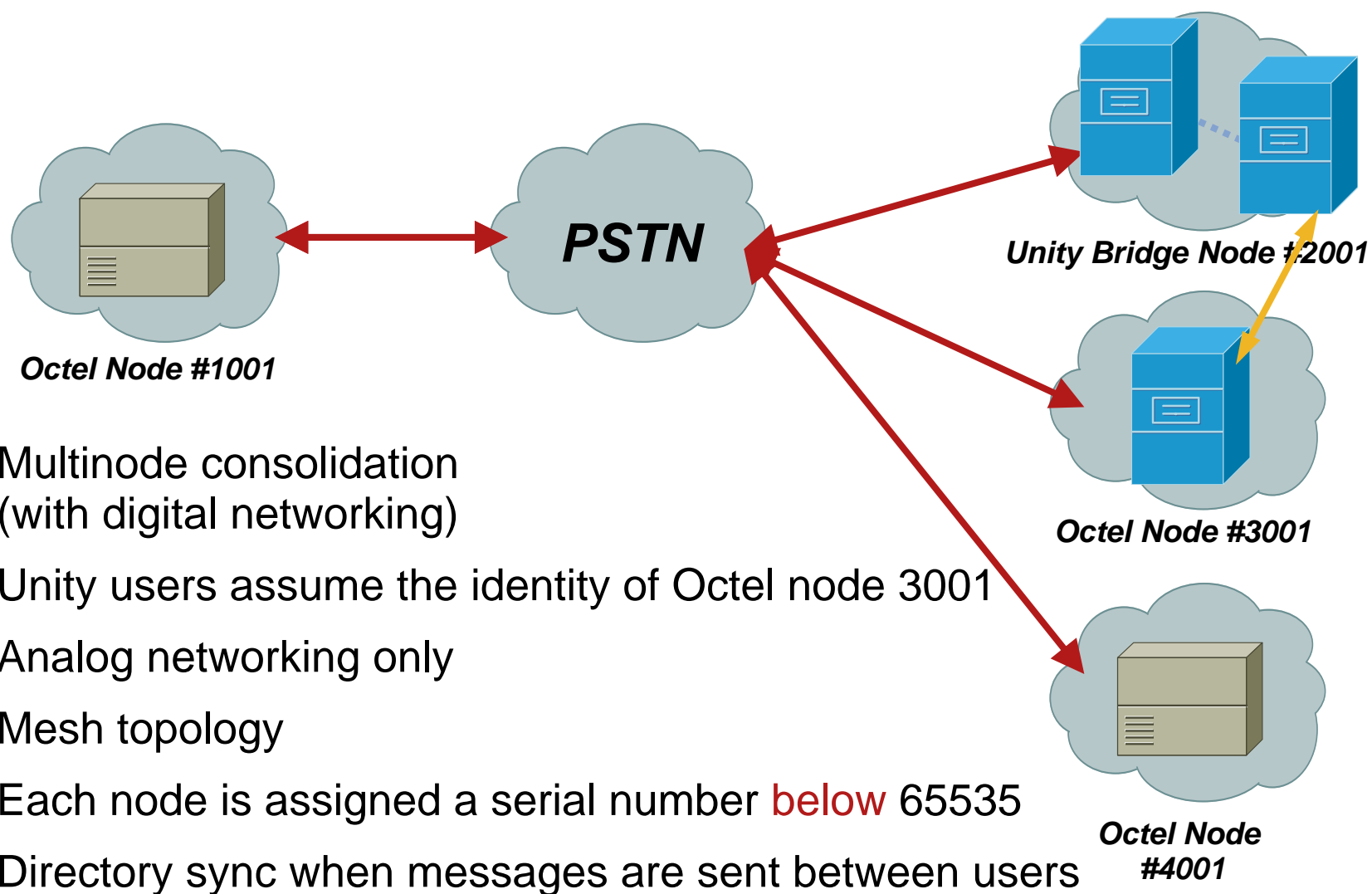


# Cisco Unity Bridge in Multinode Octel Networking (3)



- Multinode consolidation
- Each Unity subscriber can be assigned to a different Octel node
- Analog networking only
- Mesh topology
- Each node is assigned a serial number **below** 65535
- Directory sync when messages are sent between users

# Cisco Unity Bridge in Multinode Octel Networking (4)



- Multinode consolidation (with digital networking)
- Unity users assume the identity of Octel node 3001
- Analog networking only
- Mesh topology
- Each node is assigned a serial number **below** 65535
- Directory sync when messages are sent between users

# Migration Leading Practices



Cisco Unity Connection 7.x

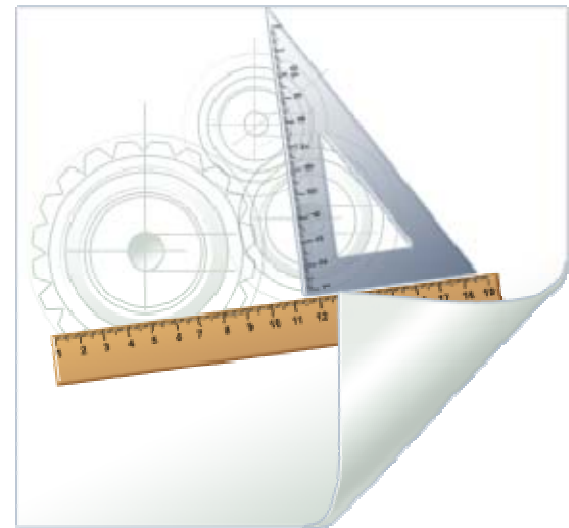
Cisco Unity 7.x

# PPDIOO Methodology

- The basis for a successful implementation and migration to Unity Voice Messaging is found within the PPDIOO methodology.
- PPDIOO refers to the six phases of the Cisco Lifecycle Services approach:
- Prepare, Plan, Design, Implement, Operate, and Optimize.
- For our discussion, we will focus on best practices found in the first four phases.

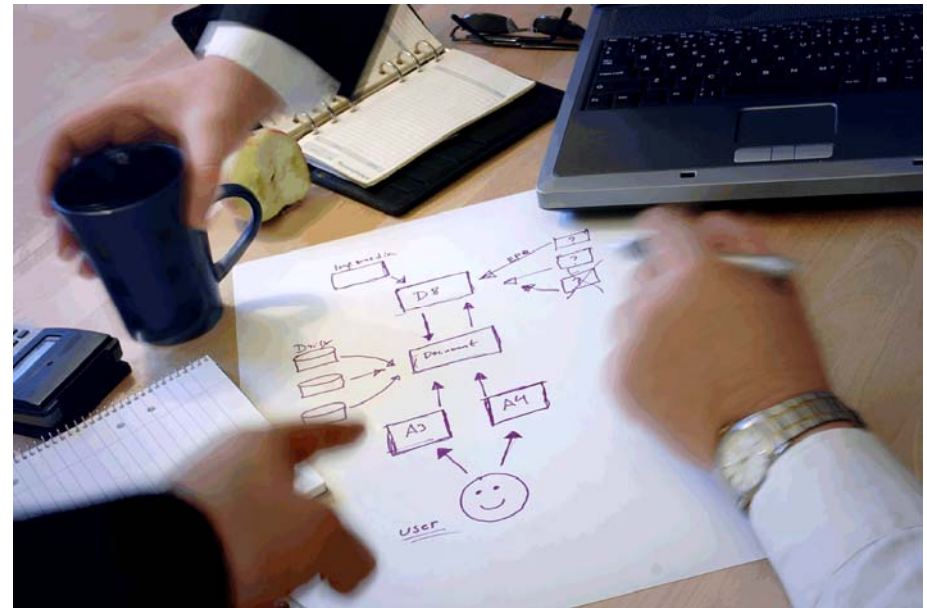
# Planning and Preparation

- Adequate Planning and Preparation is the foundation for a successful design, implementation, and migration.
- Investment into these steps will mitigate project risk and provide clear direction to achieve successful results.



# Planning and Preparation

- Requirements Gathering Examples
  - End-User Feature/Function Analysis
  - Define Success Criteria
  - Site Surveys
  - Traffic Studies
  - Capacity Studies
  - Network Readiness Assessment



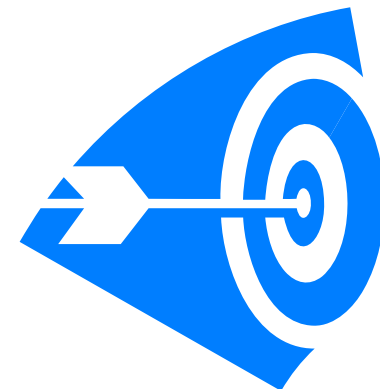
# Planning and Preparation – Migration Strategy

- Determine Migration Strategy
  - Full or partial migrations
  - Define Migration Order and Schedule
  - Service outage time windows per migration
  - Consider Business Operations Calendar
  - Back-out and recovery planning
  - Communications planning



# Requirements Gathering - Success Criteria

- The “Success Criteria” is a written statement that lists the key success factors (such as time, budget, performance, ease-of-use), the specific criteria by which the project will be measured, and the priority for each. Things to consider in this section are how each project objective listed in the section above will be deemed successful, and how the project overall will be deemed complete and successful. Success criteria should be determined by stakeholders and people who will authoritatively grade the project.
- Categories include:
  - Deployment Success Factors
  - Engineering Success Factors
  - End User Success Factors





# Success Criteria – Deployment Success Factor example

<b>Project Success Factor</b>	<b>Measurement Criteria</b>	<b>Priority</b>
<b>Successful handoff to Local Site Support</b>	<b>Local site signoff</b>	<b>High</b>
<b>Successful implementation/migration within maintenance window</b>	<b>Meets Change Management standard maintenance window</b>	<b>High</b>
<b>Identify risks and create a robust back-out plan to minimize user impacts</b>	<b>Risks and Back-out documents</b>	<b>High</b>
<b>No need to execute back-out plan</b>		<b>High</b>
<b>Successful execution of approved deployment plan</b>	<b>Meets deployment schedule</b>	<b>High</b>
<b>Technical Issues</b>	<b>Support Tickets and User Feedback post migration</b>	<b>High</b>
<b>Central Helpdesk readiness to address Unity Deployment issues (i.e. password)</b>	<b>High percentage of resolution from Central Help Desk</b>	<b>High</b>

# Success Criteria – Engineering Success Factor example

Project Success Factor	Measurement Criteria	Priority
Design meets engineering requirements for IT readiness program	IT Readiness program approval	High
Align with IT support strategy (Windows, AD, Exchange and Unity are supported by respective support teams)	Signoff from Windows, AD, Exchange and Unity teams	High
Design aligns with Cisco Best Practices and meet customer requirements	Cisco and customer approval of design	High
Supportable Design	Sign-off on support documentation	High
Designed for capacity growth over the next 5 years	Current hardware meets capacity growth projection for 5 years	Low
Design is taken into consideration for future upgrade path	Design meets Cisco / Microsoft requirements and supported upgrade paths are available	High
Positioning for additional Unity feature functionalities	Pass test cases	Medium

# Success Criteria – End User Success Factor example

<b>Project Success Factor</b>	<b>Measurement Criteria</b>	<b>Priority</b>
<b>Minimal End User Keystrokes and Functionality Changes</b>	<b>User Acceptance Test Feedback</b>	<b>High</b>
<b>No Un-communicated End User Changes</b>	<b>Support Tickets and User Feedback Post Migration</b>	<b>High</b>
<b>Minimal Voice mail Downtime During Migration</b>	<b>Does Not Exceed Communicated Downtime</b>	<b>Medium</b>
<b>No Unplanned Voicemail Downtime Due to Migrations</b>	<b>Unplanned Downtime Occurs</b>	<b>High</b>
<b>Retain Current Level of Networking Across Unity Servers During All Migrations</b>	<b>User Acceptance Test Feedback</b>	<b>Medium</b>
<b>No Negative Feedback from Customers to Executives or IT management</b>	<b>No Negative Calls to Executives or the IT management</b>	<b>High</b>
<b>Adequate Communication and Training</b>	<b>Support Tickets and User Feedback Post Migration</b>	<b>High</b>

# User Requirements Gathering – Change

- Moving to a new voice messaging system is change which requires re-learning and may cause discomfort to users.
- The overall perception of the new system is determined by the user experience and interpretation.
- Requirements gathering focused on the user experience proactively addresses the user experience and helps alleviate discomfort during the transition phase.

# User Requirements Gathering

- Focus on End-User experience.

Analyze and document the defined key presses, and conversation of the existing voice messaging system. This information can be used to customize Unity to mimic the existing system. Unity has the ability for customization, however will not be an exact match to the existing system.

- Feature Analysis of Voice messaging

Analyze and document currently used voice messaging features which are required in the new voice messaging environment. These may be functions such as broadcast messaging, networking to other voice messaging systems, special transfer or forwarding functionality.

# User Requirements Gathering

- Identify Special case functionality or power user groups

This may be special functionality that is used for a particular business group or power user. An example is the coordinated forwarding of a caller into someone's voice mail box. This type of call handling is used by receptionists or executive administrators.

- Notification analysis

There are many varieties of voice messaging notification. Message Waiting Indicator lamp, Out-dial notification, Text pager notification, DTMF pager notification. Determine the types and users of notification in the existing environment.

# User Requirements Gathering

- Call Application Trees and Call Handler structures

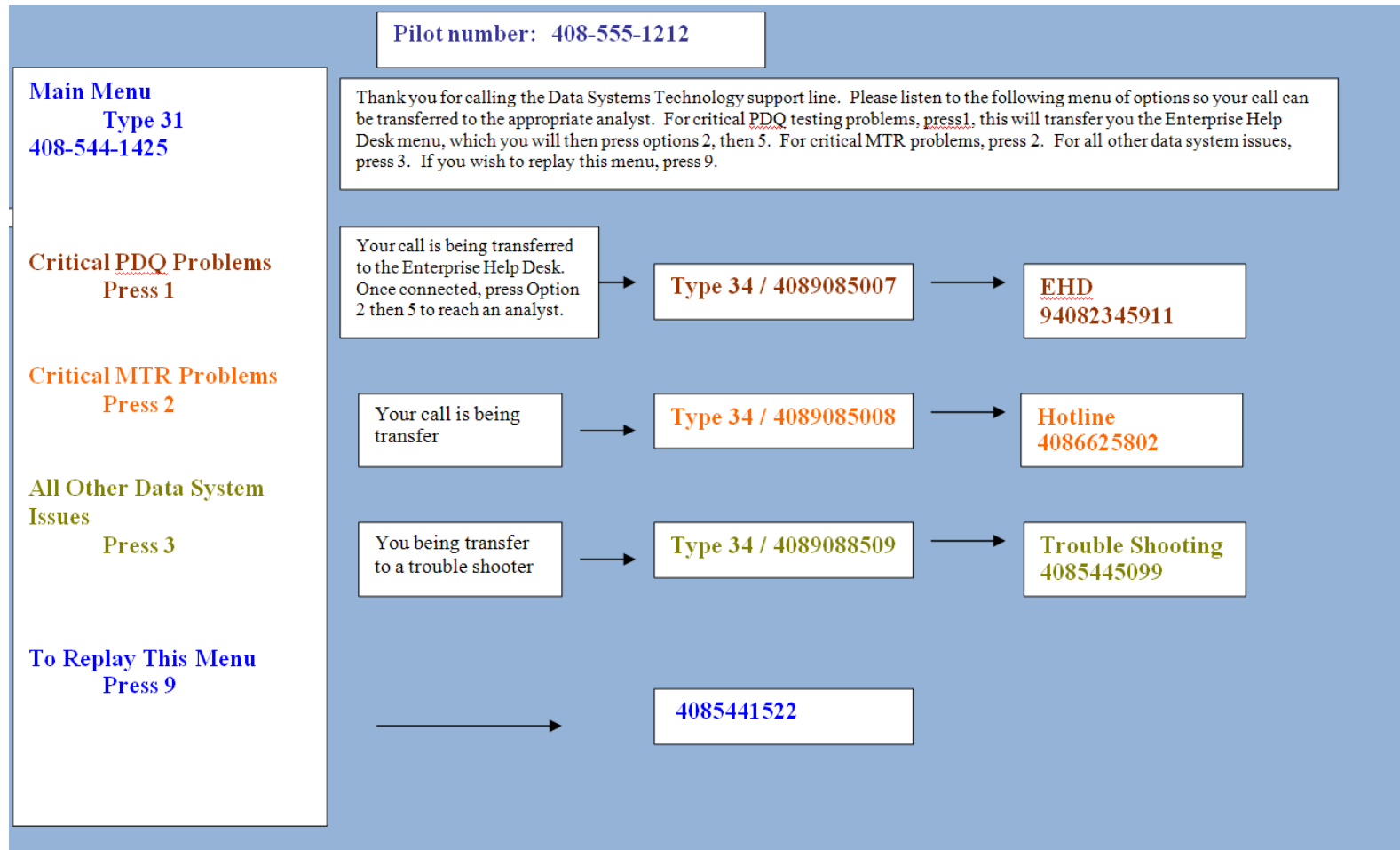
Grouping of call processing structures are commonly used to play an audio menu of greetings, process caller DTMF input to transfer callers to other systems. These structures require documentation in flowchart format indicating access numbers, input and output points, and transfer numbers. Additionally the text of each call handler greeting is to be documented. Document the active schedule of each call handler structure.

- Identify business critical usages of voice messaging

Many Call Application Tree or Call Handler structures are associated with a business function. It is important to identify the critical nature of the structures so that they may be properly tested and migrated with minimal business interruption.

# User Requirements Gathering

- Call Application Tree example





# Migration Tools



Cisco Unity Connection 7.x

Cisco Unity 7.x

# Migration Tools

- Cisco Unity Bulk Import Wizard – Bulk Administration Tool (BAT) (Cisco Unity Connection)
- Bulk Edit Utility (Cisco Unity and Unity Connection)
- Bulk Subscriber Delete Utility – Bulk User Delete (Connection)
- Subscriber Information Dump Utility – Connection User Data Dump (Cisco Unity Connection)
- Consolidated Object Backup and Restore Application Suite (COBRAS) (Cisco Unity and Unity Connection)
- MBUpload.exe Mailbox Tool - tool can be used for automating management of records in the Cisco Unity Bridge Octel Node directory

# Migration Tools – Bulk Import Wizard – Bulk Administration Tool (Connection)

- The Cisco Unity Bulk Import Wizard is a support utility which allows you to create multiple Cisco Unity subscriber accounts at once by importing user data from Active Directory, Domino Directory, or by importing user data contained in a comma-separated value (CSV) file
- The Import Wizard allows for the creation or modification of existing accounts
- Objects created by the Import Wizard include Regular Unity Subscribers, VPIM Subscribers/Contacts, Bridge accounts, and delivery locations
- The Import Wizard support the migration by bulk creating mailboxes and object on the new Unity servers

# Migration Tools – Bulk Import Wizard

**Cisco Unity Bulk Import Wizard** [X]

**Select Data To Import**  
Select the subscriber(s) you want to import

Check the box for each user that you want to import. If a user does not have a DTMF\_ACCESS\_ID specified, enter one in the grid below:

	SHORT_NAME	LAST_NAME	FIRST_NAME	DTMF_ACCESS_ID	DISPLAY_NAME
<input type="checkbox"/>	Administrator/d	Administrator			Administrator,
<input checked="" type="checkbox"/>	Test guy/dombri	guy	Test		guy, Test
<input checked="" type="checkbox"/>	Phil O'hanna/d	O'hanna	Phil		O'hanna, Phil
<input checked="" type="checkbox"/>	George O'hill/d	O'hill	George		O'hill, George
<input checked="" type="checkbox"/>	Mar Test6/dom	Test6	Mar		Test6, Mar
<input checked="" type="checkbox"/>	Mark Test7/dor	Test7	Mark		Test7, Mark
<input type="checkbox"/>	Unity4F/dombrc	Unity4F			Unity4F,
<input type="checkbox"/>	Unity4P/dombrc	Unity4P			Unity4P,

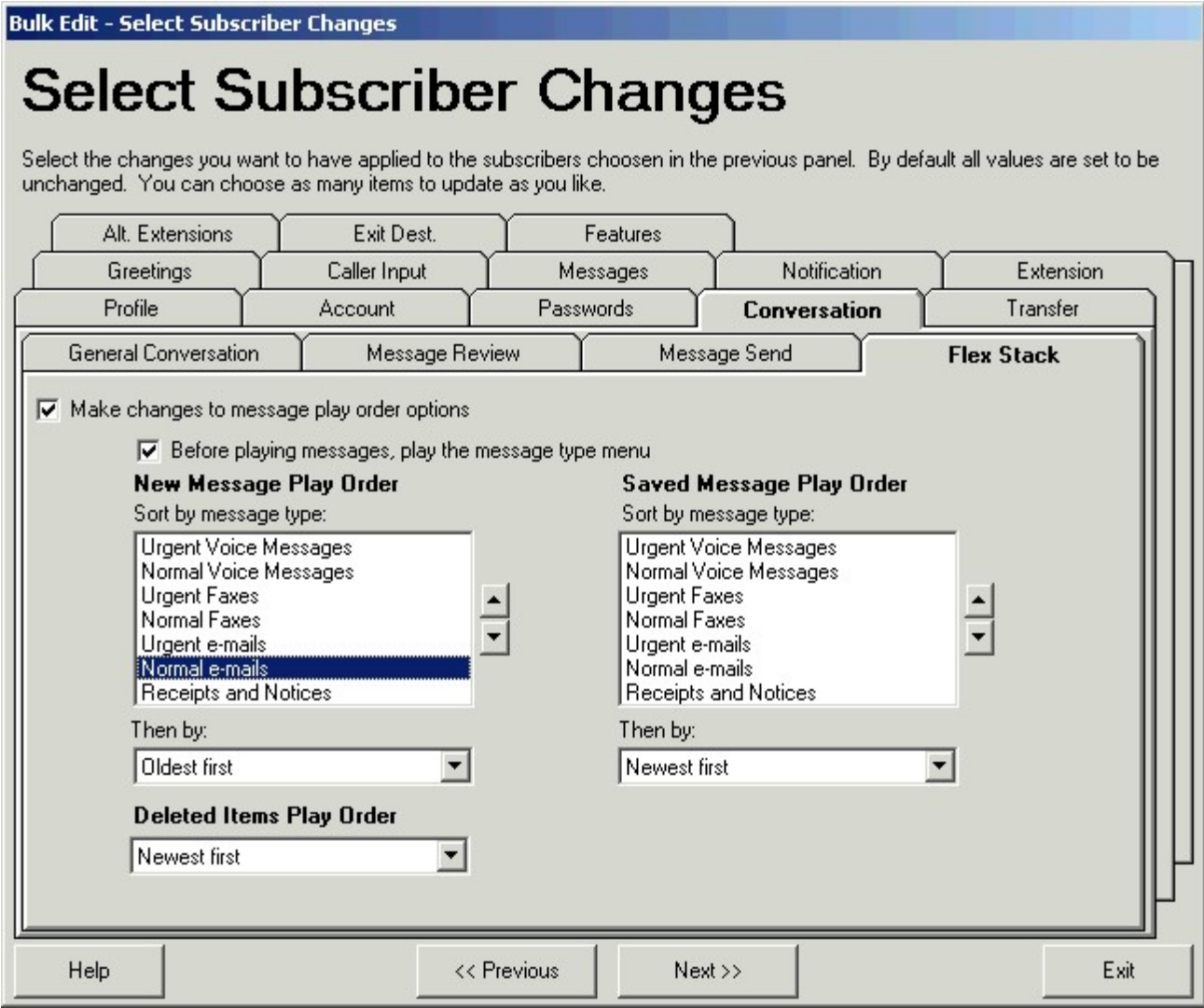
Select All      Select All With DTMF Access ID

Back      Next      Cancel      Help

# Migration Tools – Bulk Edit Utility

- The Bulk Edit Utility is designed to allow you to select large numbers of call handlers or subscribers and make changes to them in bulk quickly and easily
- Nearly every value you can see and edit through the Web System Administration is available to change en mass using Bulk Edit as well as a few items not visible in the SA
- Bulk Edit can support the migration process by editing the newly added accounts to add common configuration settings
- The Bulk Edit Utility supports both Cisco Unity and Unity Connection

# Migration Tools – Bulk Edit Utility



# Migration Tools – Bulk Subscriber Delete Utility and Bulk User Delete (Connection)

- Performs Bulk Deletion of Subscriber accounts
- The utility provides the option of only removing the subscriber information from Cisco Unity or removing the directory and messaging accounts for selected users
- The Bulk Subscriber Delete utility supports the migration by deleting “VPIM” and “Bridge” subscribers that which may be present on the Cisco Unity servers
- Bulk Deletions on Cisco Unity Connection uses the Bulk User Delete utility

# Migration Tools – Subscriber Information Dump – Connection User Data Dump (Connection)

- Exports specific information about the Unity subscribers to a file
- Data can be viewed, analyzed, or import into another application such as a database utility or Excel.
- The Information Dump can support the migration procedure when converting VPIM subscribers to regular Unity subscribers
- Utility supported in both Cisco Unity and Unity Connection



# Migration Tools – Consolidated Object Backup and Restore Application Suite (COBRAS)

- Backup and Export tool used to selectively migrate data between Unity servers
- Can be used to migrate Cisco Unity data across server versions and products. Can migrate data from Cisco Unity to Unity Connection
- Supports the legacy migration by allowing configurations to move across servers in the new Cisco Unity environment

# MBUpload.exe Mailbox Tool

- The mailbox import feature allows the import of a file containing Add, Change, and Delete records to be applied to the Octel node directory
- The Mailbox Tool is a stand-alone Command line utility that allows the Octel directory information to be maintained from an external source
- Cisco Unity Bridge automatically retrieves spoken and text names from the Octel server for names added or changed using the Mailbox Tool
- All changes are propagated to a corresponding Cisco Unity directory. (e.g. add and modify Bridge Subscriber)

# Survey



## **Cisco Knowledge Network – Feedback**

Scale: 5=Agree; 4=Somewhat Agree; 3=Neutral; 2=Somewhat Disagree; 1=Disagree

**This Cisco event was a good use of my time. [1-5]**

**Overall, the speakers were knowledgeable, informative, and engaging. [1-5]**

**I would recommend this event to others. [1 - 5]**

**My Organization has a current focus on replacing our legacy voicemail system. [Y/N]**

**We use these voicemail systems in our environment today:**

**I am interested in having Cisco, or my Cisco Partner, contact me to continue today's conversation and identify the best method for me to move away from my current voicemail system. [Y/N]**

# Q&A

