Integrating Cisco Unified Communications Applications (CAPPS)

Guide Version 1.0

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CAPPS Guide 1.0 (16 Pages)
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Warning!

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Syllabus

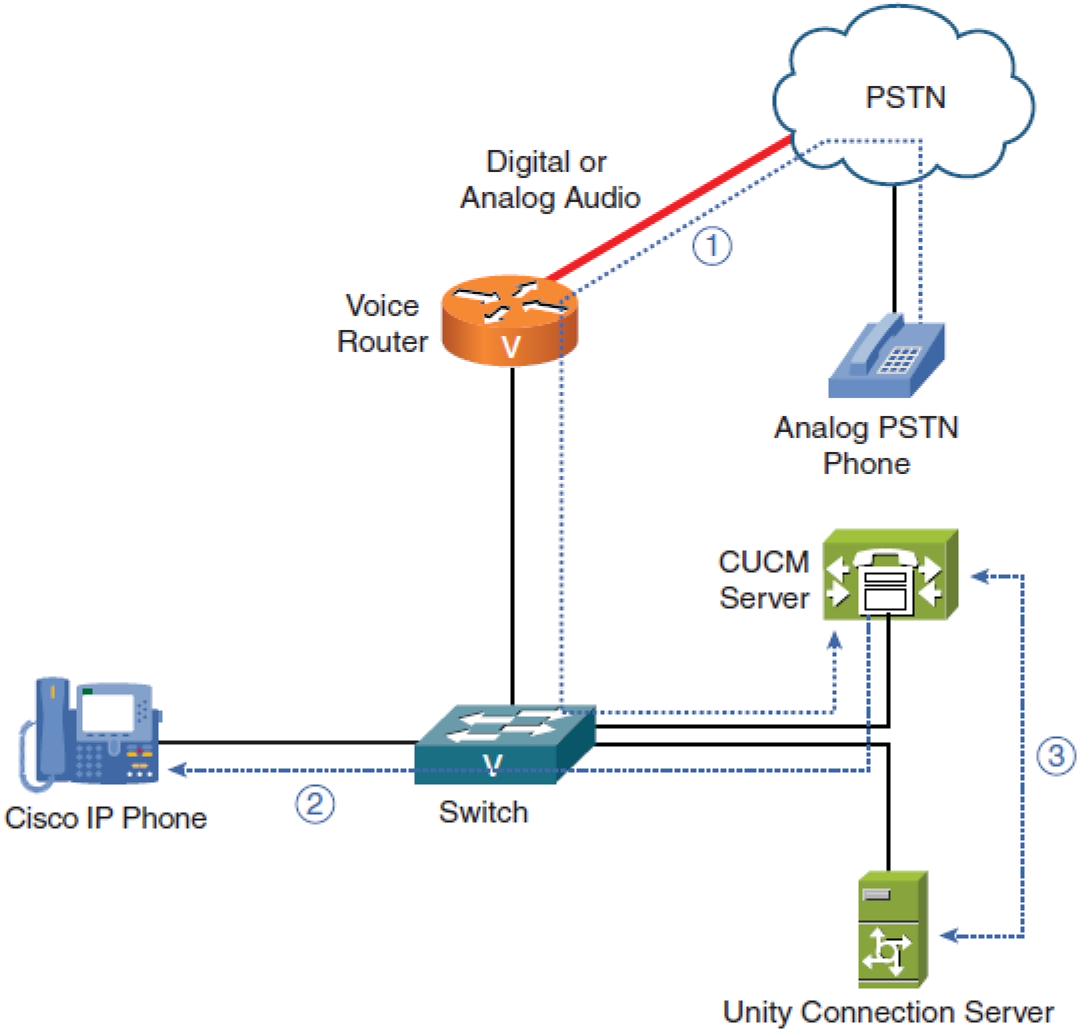
- What is Cisco Unity Connection (CUC)?
- Call Flow between CUCM and CUC
- Call Handlers
- Integrate Cisco Unity Connection and Cisco Unified Communications Manager
- Configure Cisco Unity Connection system settings
- User Configuration in CUC

Cisco Unity Connection (CUC)

- CUC is a full featured voice messaging and voice recognition system providing universal access to calls and messages as part of unified communications. Up to 20,000 mailbox users can be supported by Cisco Unity Connection
- CUC can be integrated to legacy PBX using T1 IP Media Gateway (TIMG- T1 to SIP), PBX IP Media Gateway (PIMG- provides 8 analog connections)
- CUC Users: Manual, CSV, CUCM Import, LDAP
- CUC can be integrated to CUCM by SCCP or SIP
- Access Methods: CUC provides Traditional User Interface (TUI: DTMF Relay), Voice User Interface (VUI: Voice Response and hands free interaction), IP Phone based Voice View Express to list voice mail in IP Phone’s screen.

Call Flow between CUCM and CUC

CUC can interact with CUCM by SCCP or SIP signaling protocols.


PSTN
Digital or Analog Audio
①
Voice Router
V
Analog PSTN Phone
CUCM Server
③
Cisco IP Phone
②
V
Switch
Unity Connection Server

1. An incoming call from PSTN arrives at voice gateway; the dial-peer configured on the gateway routes the call in to CUCM server
2. CUCM receives the call and rings proper IP phone. If the user doesn't answer the phone or diverted the calls to Voice mail, CUCM forwards the call to preconfigured extension number that reaches to Cisco Unity Connection
3. CUCM deliver the call to Unity Connection Server. The extension of originally called phone is contained in the signaling messages, which allows CUC to send the call to correct voice mail

- After caller leaves voice mail, CUC makes a logical call back to the MWI number on CUCM. It lights the message waiting indicator on the IP Phone.
- All these interaction between CUCM and CUC done using Voice Mail Ports, which are licensed feature. The more voice mail port license you purchase from Cisco, the more concurrent communication it supports.

Call Routing in CUC

- Two primary call routing criteria built in to CUC. It can identify Directed calls and Forwarded calls.
- Directed call is when the user hits Message button or dials Voice mail pilot number.
- Forwarded call is when user forwards to voice mail
- The information available in CUC for this decision making includes the following – (Calling Number, Called Number, Forwarded station, Phone system/ Port, Schedule)

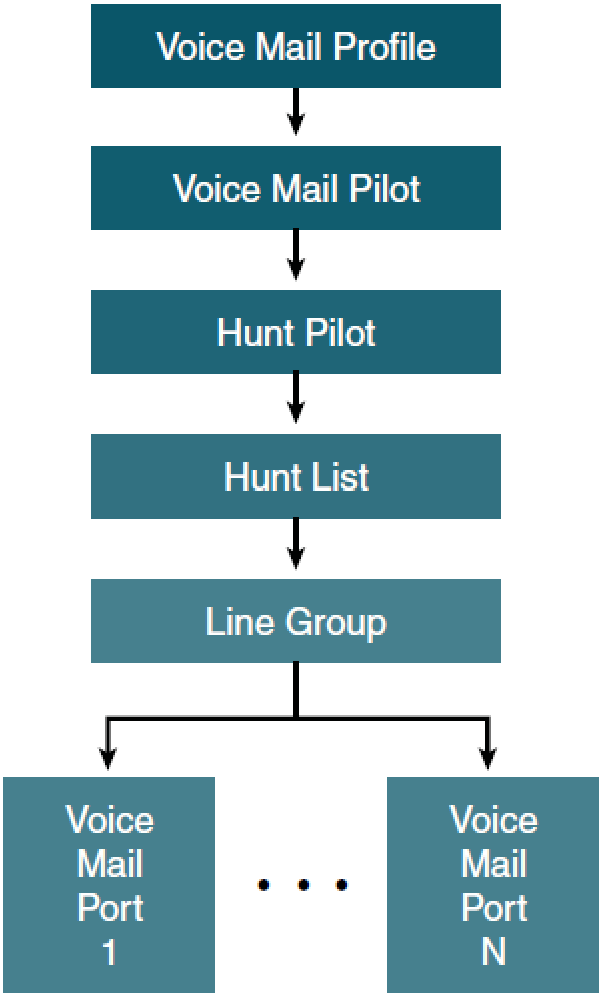
Call Handlers

All inbound calls to CUC are handled by series of call handlers. 3 basic types of call handlers are follows,

- ***System Call Handler:*** Used for greeting and can be customized to offer user input options (For Sales, press 2) and automation such as playing different greetings when business closed.
- ***Directory Handler:*** Allows caller to search the CUC directory for the user they want to contact
- ***Interview Handler:*** Provide caller with recorded information and then ask question and record callers answers in a single message.

SCCP Integration CUC to CUCM

- SCCP Integration is done by using a Hunt Pilot number. That is exactly the voice mail pilot number (Connection to CUCM)

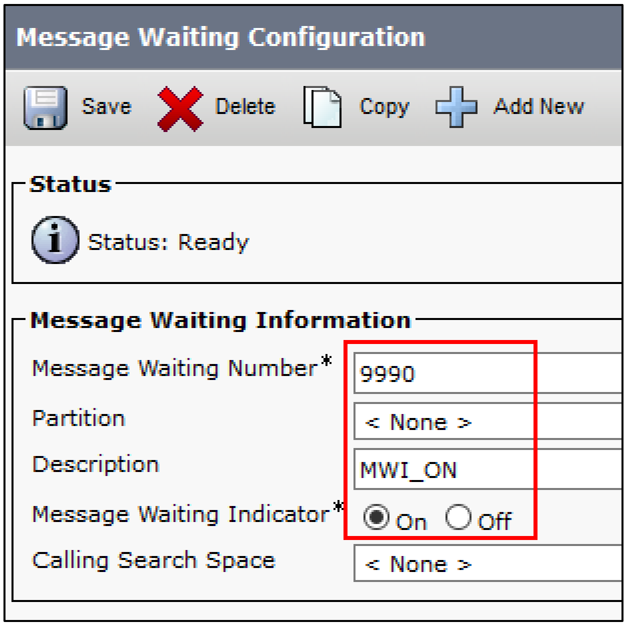

Voice Mail Profile
Voice Mail Pilot
Hunt Pilot
Hunt List
Line Group
Voice Mail Port 1
. . .
Voice Mail Port N

CUCM Side

Step 1: Message Waiting Indicator

Advanced Features → Voice Mail → Message Waiting → Add New

(Create ON & OFF numbers, The extension number should be other than internal extension numbers)



Message Waiting Configuration

Status

Status: Ready

Message Waiting Information

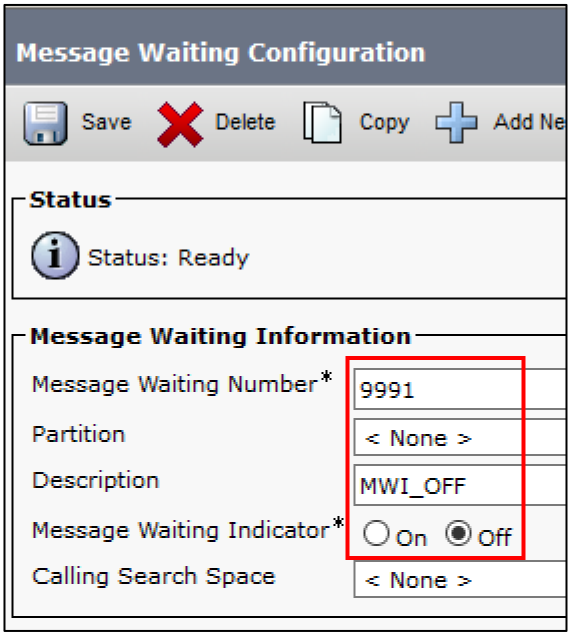
Message Waiting Number* 9990

Partition < None >

Description MWI_ON

Message Waiting Indicator* ● On ○ Off

Calling Search Space < None >



Message Waiting Configuration

Status

Status: Ready

Message Waiting Information

Message Waiting Number* 9991

Partition < None >

Description MWI_OFF

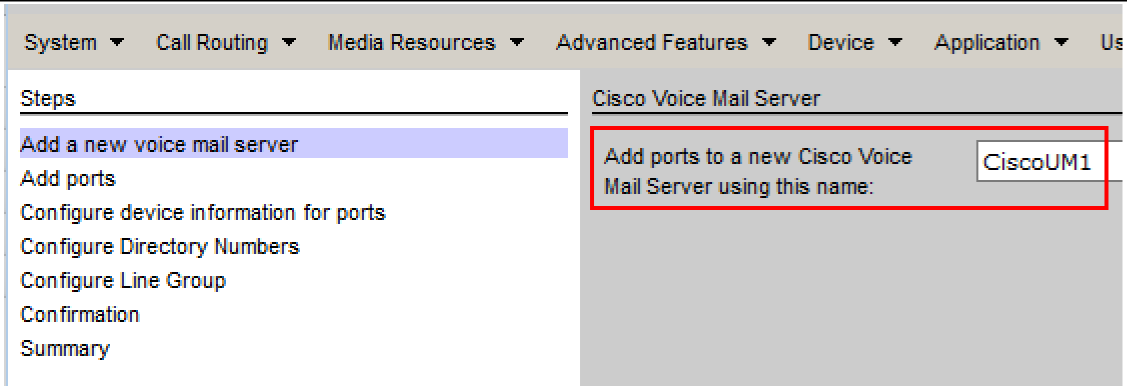
Message Waiting Indicator* ○ On ● Off

Calling Search Space < None >

Step 2: Configure Voice Mail Port

`Advanced Features → Voice Mail → Cisco Voice Mail Port Wizard`

`Add ports to a new Cisco Voice Mail Server using this name: CiscoUM1`


System
Call Routing
Media Resources
Advanced Features
Device
Application
Us
Steps
Add a new voice mail server
Add ports
Configure device information for ports
Configure Directory Numbers
Configure Line Group
Confirmation
Summary
Cisco Voice Mail Server

Add ports to a new Cisco Voice Mail Server using this name: CiscoUM1

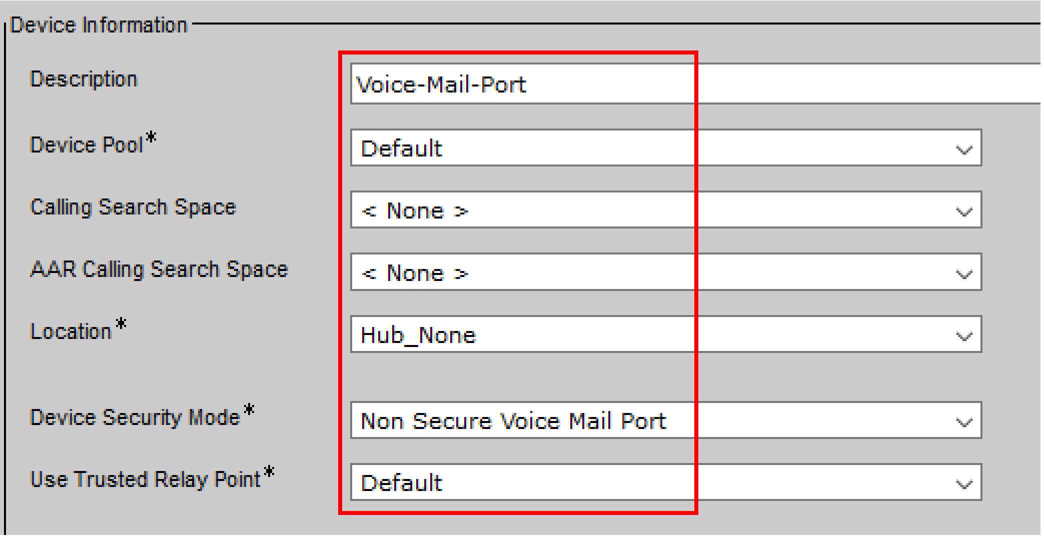
Click Next →

How many ports do you want to add? : 2

Description : Voice-Mail-Port

Device Pool* : <Select Proper Device Pool>

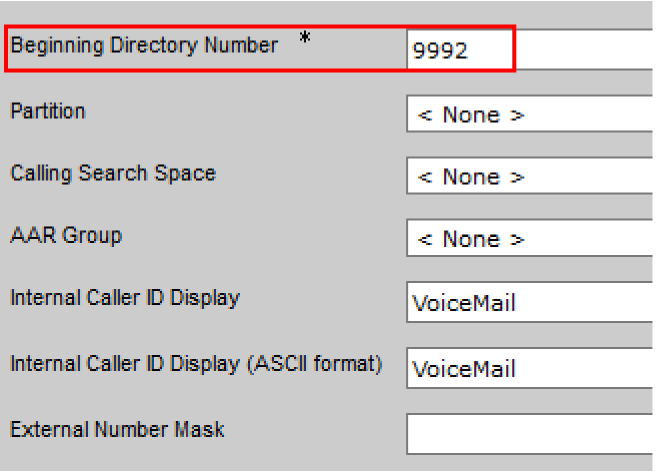
Device Security Mode : Non Secure Voice Mail Port


Device Information

Description	Voice-Mail-Port
Device Pool*	Default
Calling Search Space	< None >
AAR Calling Search Space	< None >
Location*	Hub_None
Device Security Mode*	Non Secure Voice Mail Port
Use Trusted Relay Point*	Default

Next →

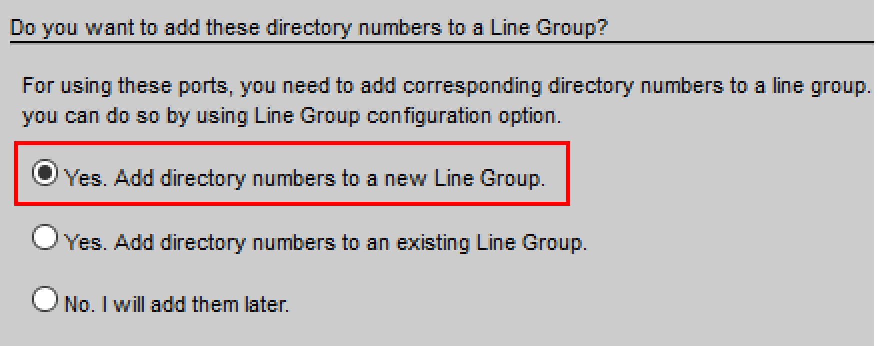
Beginning Directory Number*: 9992



Beginning Directory Number *	9992
Partition	< None >
Calling Search Space	< None >
AAR Group	< None >
Internal Caller ID Display	VoiceMail
Internal Caller ID Display (ASCII format)	VoiceMail
External Number Mask	

Next →

Click the radio button Yes. Add directory numbers to a new Line Group.



Do you want to add these directory numbers to a Line Group?

For using these ports, you need to add corresponding directory numbers to a line group. you can do so by using Line Group configuration option.

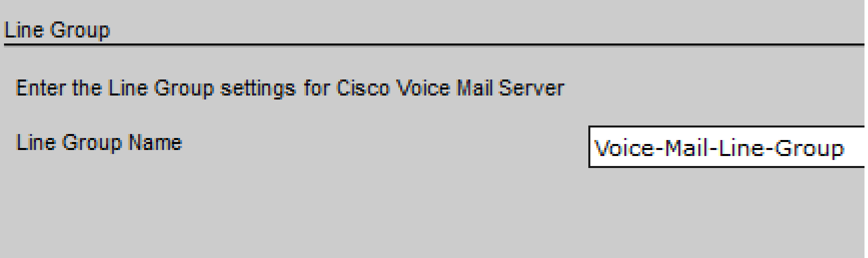
● Yes. Add directory numbers to a new Line Group.

○ Yes. Add directory numbers to an existing Line Group.

○ No. I will add them later.

→ Next

Line Group Name: Voice-Mail-Line-Group

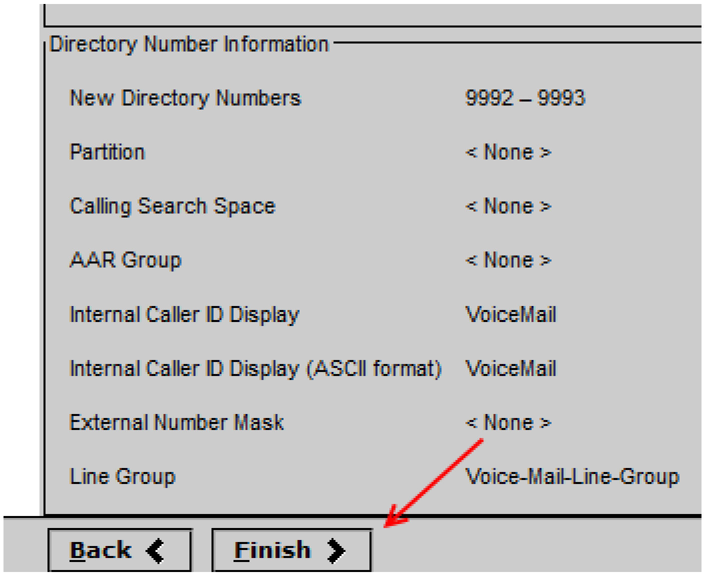


Line Group

Enter the Line Group settings for Cisco Voice Mail Server

Line Group Name: Voice-Mail-Line-Group

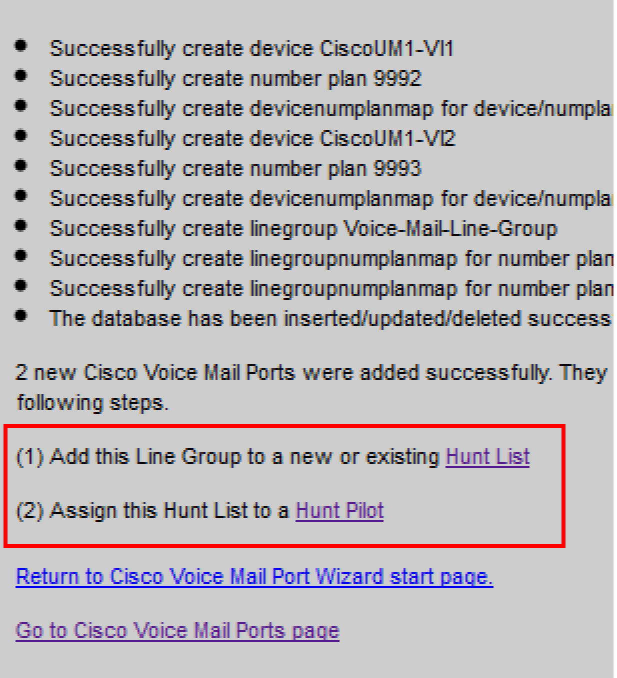
→ Next



Directory Number Information

New Directory Numbers	9992 – 9993
Partition	< None >
Calling Search Space	< None >
AAR Group	< None >
Internal Caller ID Display	VoiceMail
Internal Caller ID Display (ASCII format)	VoiceMail
External Number Mask	< None >
Line Group	Voice-Mail-Line-Group

Click Finish Button



- Successfully create device CiscoUM1-VI1
- Successfully create number plan 9992
- Successfully create devicenumplanmap for device/numpla
- Successfully create device CiscoUM1-VI2
- Successfully create number plan 9993
- Successfully create devicenumplanmap for device/numpla
- Successfully create linegroup Voice-Mail-Line-Group
- Successfully create linegroupnumplanmap for number plan
- Successfully create linegroupnumplanmap for number plan
- The database has been inserted/updated/deleted success

2 new Cisco Voice Mail Ports were added successfully. They following steps.

(1) Add this Line Group to a new or existing Hunt List

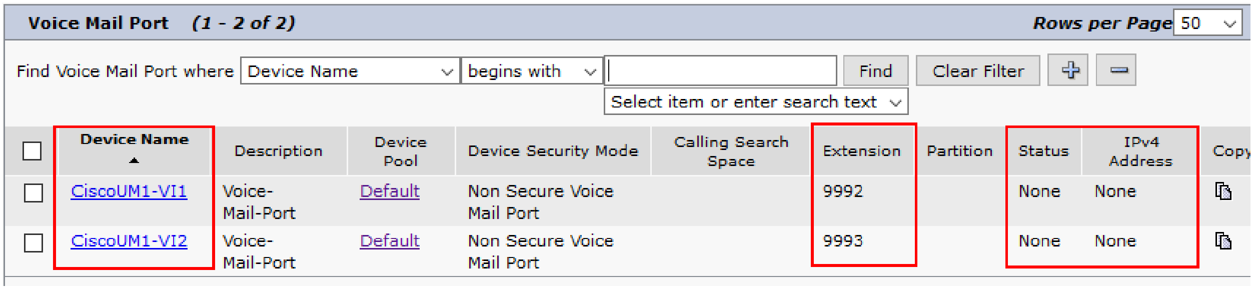
(2) Assign this Hunt List to a Hunt Pilot

Return to Cisco Voice Mail Port Wizard start page.

Go to Cisco Voice Mail Ports page

Verify Voice Mail Ports

Advanced Features → Voice Mail → Cisco Voice Mail Port → Find



Voice Mail Port *(1 - 2 of 2)*

Rows per Page 50
Find Voice Mail Port where Device Name begins with
Find
Clear Filter
Select item or enter search text

☐	Device Name	Description	Device Pool	Device Security Mode	Calling Search Space	Extension	Partition	Status	IPv4 Address	Copy
☐	CiscoUM1-VI1	Voice-Mail-Port	Default	Non Secure Voice Mail Port		9992		None	None	
☐	CiscoUM1-VI2	Voice-Mail-Port	Default	Non Secure Voice Mail Port		9993		None	None	

[Note: Status will be unknown because we have not yet configured CUC side]

Step 3: Configure Hunt List

Call Routing → Route/ Hunt → Hunt List → Add New

Name* : Voice-Mail-Hunt-List

Description : Voice-Mail-Hunt-List

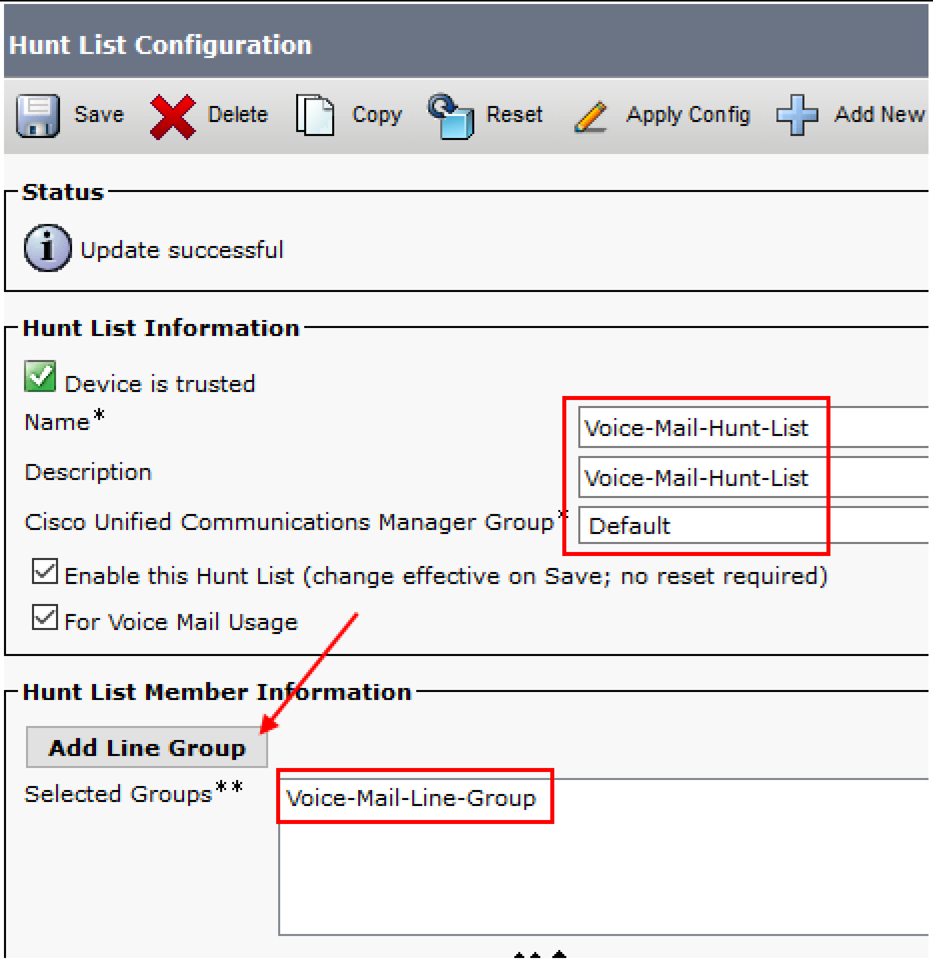
Cisco Unified Communications Manager Group : <Select Group> or Default

Check Enable this Hunt List

Check For Voice Mail Usage

→ Save

Click **Add Line Group** button → Select Voice-Mail-Line-Group and Save



Hunt List Configuration

Status

Update successful

Hunt List Information

☑ Device is trusted

Name* : Voice-Mail-Hunt-List

Description : Voice-Mail-Hunt-List

Cisco Unified Communications Manager Group* : Default

☑ Enable this Hunt List (change effective on Save; no reset required)

☑ For Voice Mail Usage

Hunt List Member Information

Selected Groups** : Voice-Mail-Line-Group

Step 4: Hunt Pilot Number Configuration

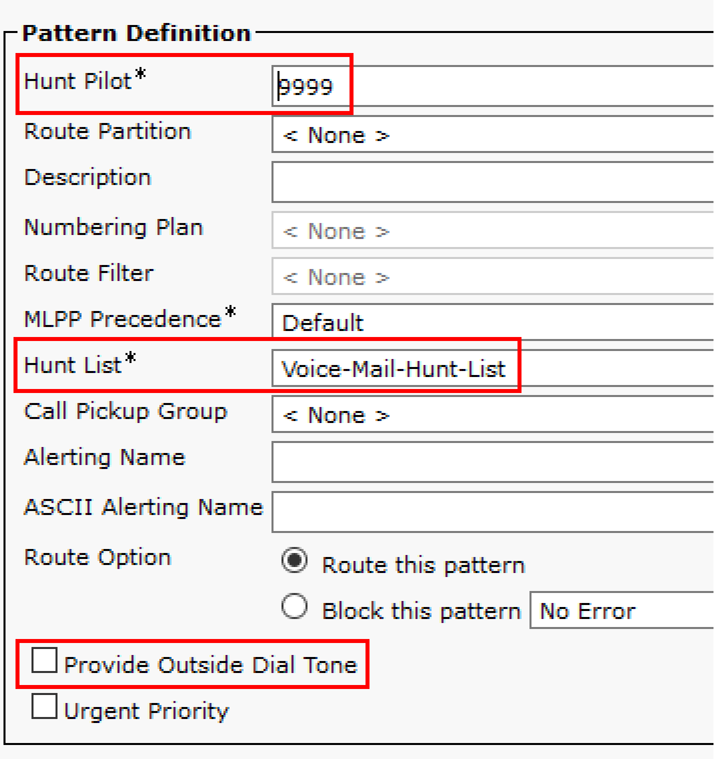
Call Routing → Route/ Hunt → Hunt Pilot → Add New

Hunt Pilot* : 9999

Hunt List : Voice-Mail-Hunt-List (Created in Step 3)

Uncheck Provide outside Dial tone

→ Save



Pattern Definition

Hunt Pilot* : 9999

Route Partition : < None >

Description :

Numbering Plan : < None >

Route Filter : < None >

MLPP Precedence* : Default

Hunt List* : Voice-Mail-Hunt-List

Call Pickup Group : < None >

Alerting Name :

ASCII Alerting Name :

Route Option : ● Route this pattern ○ Block this pattern No Error

☐ Provide Outside Dial Tone

☐ Urgent Priority

Step 5: Voice Mail Pilot

It is same as the Hunt pilot DN. It is used for Message button to dial our hunt pilot number automatically.

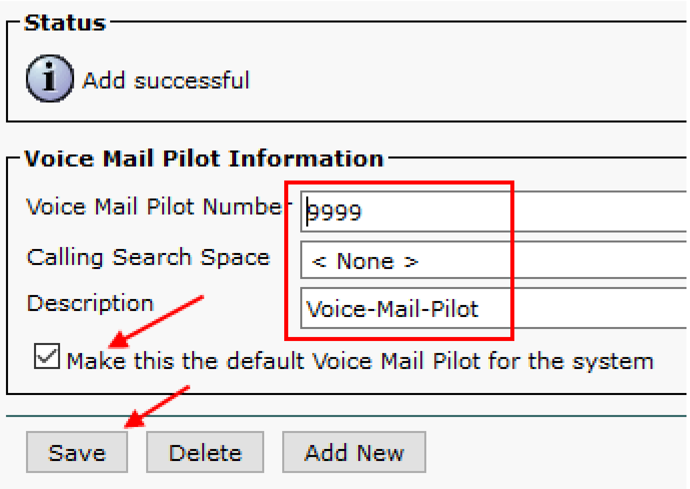
Advanced Features → Voice Mail → Voice Mail Pilot → Add New

Voice Mail Pilot Number : 9999

Description : Voice Mail Pilot

Check Make this the default Voice Mail Pilot for the system

→ Save



Status

Add successful

Voice Mail Pilot Information

Voice Mail Pilot Number : 9999

Calling Search Space : < None >

Description : Voice-Mail-Pilot

☑ Make this the default Voice Mail Pilot for the system

Step 6: Voice Mail Profile

It is used to associate the line numbers of IP phone. This way CUCM understand where to send the call when the user forwarding from his line.

Advanced Features → Voice Mail → Voice Mail Profile → Add New

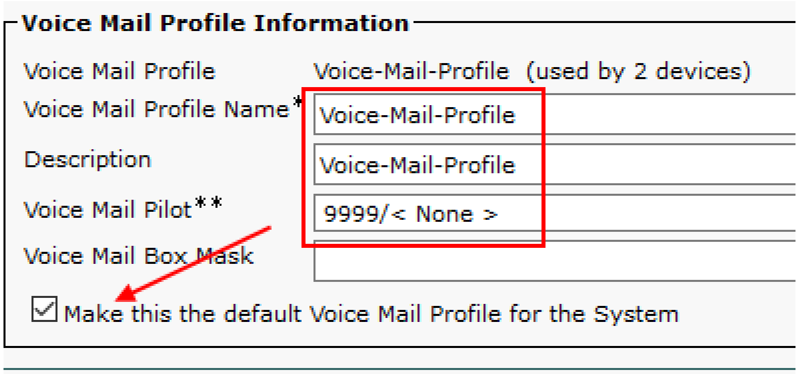
Voice Mail Profile Name : Voice-Mail-Profile

Description : Voice-Mail-Profile

Voice Mail Pilot** : 9999

Check Make this the default Voice Mail Profile for the System

→ Save



Voice Mail Profile Information

Voice Mail Profile Voice-Mail-Profile (used by 2 devices)

Voice Mail Profile Name* Voice-Mail-Profile

Description Voice-Mail-Profile

Voice Mail Pilot** 9999/< None >

Voice Mail Box Mask

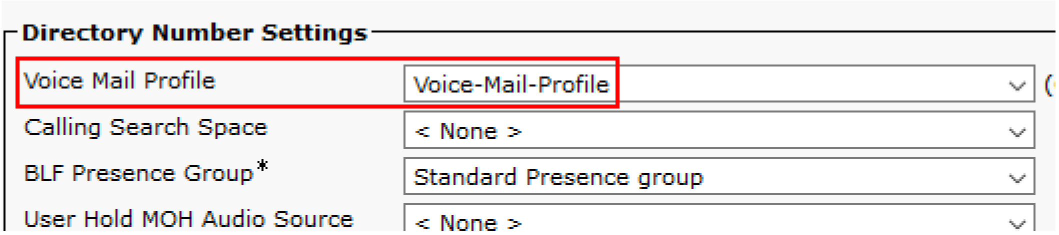
☑ Make this the default Voice Mail Profile for the System

Step 7: Associate DN

Go to line page of each phone and associate Voice mail Profile

Device → Phone → <Select Phone> → Line Page

Select Voice Mail Profile under **Directory Number Settings** area



Directory Number Settings

Voice Mail Profile Voice-Mail-Profile

Calling Search Space < None >

BLF Presence Group* Standard Presence group

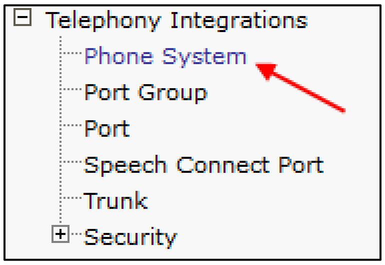
User Hold MOH Audio Source < None >

Configure forward option if required

CUC Side

Step 1: Add Phone System

Under Telephony Integration → Phone system


Telephony Integrations
Phone System
Port Group
Port
Speech Connect Port
Trunk
Security

There will be a phone system by default, use it

Step 2: Port Group Configuration

Telephony Integration → Port Group

Phone System : VM-Phone-System (Created in step 1)

Port Group Type : SCCP

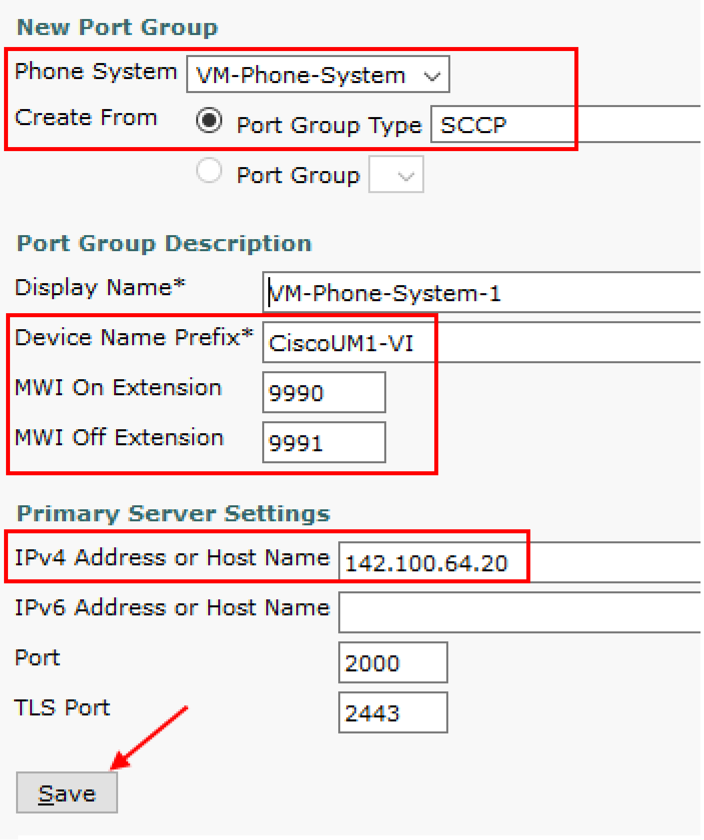
Display Name : VM-Phone-System-1

Device Name Prefix : CiscoUM1-VI *(Verify last section of step 2 in CUCM Side Config)*

MWI On Extension : 9990

MWI Off Extension : 9991

IPv4 Address or Host Name : 142.100.64.20 <CUCM_IP_Address>



New Port Group

Phone System: VM-Phone-System

Create From: ● Port Group Type: SCCP

○ Port Group

Port Group Description

Display Name*: VM-Phone-System-1

Device Name Prefix*: CiscoUM1-VI

MWI On Extension: 9990

MWI Off Extension: 9991

Primary Server Settings

IPv4 Address or Host Name: 142.100.64.20

IPv6 Address or Host Name:

Port: 2000

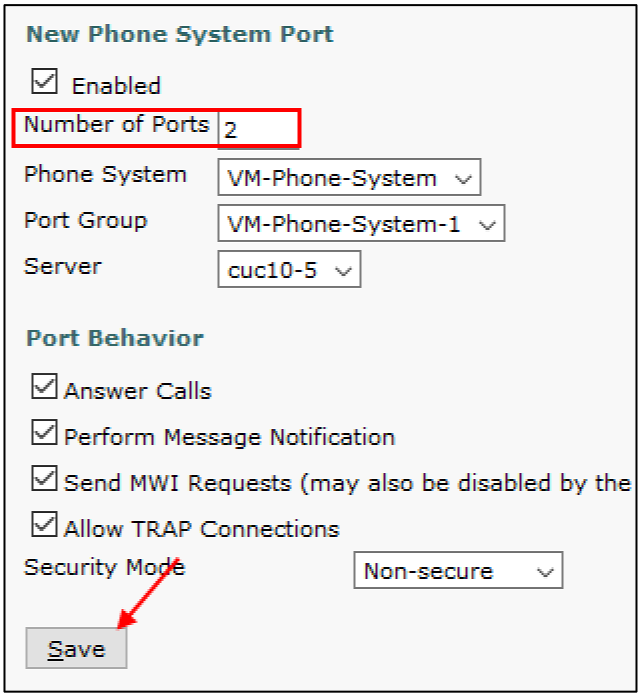
TLS Port: 2443

Step 3: Port Configuration

`Telephony Integration → Port → Add New`

`Number of Ports : 2`

`→ Save`



New Phone System Port

☑ Enabled

Number of Ports: 2

Phone System: VM-Phone-System

Port Group: VM-Phone-System-1

Server: cuc10-5

Port Behavior

☑ Answer Calls

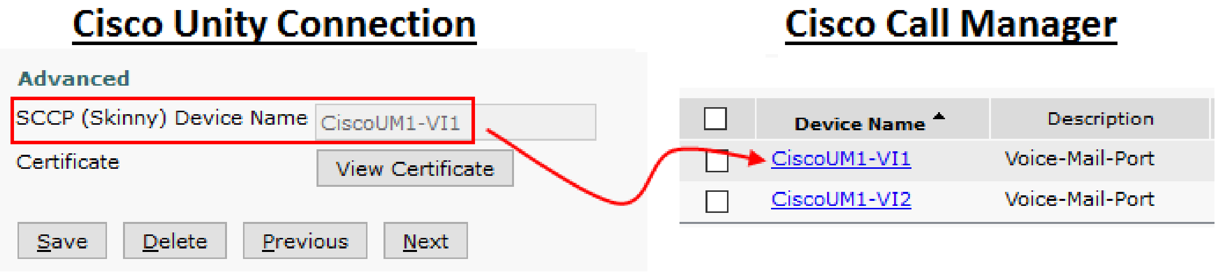
☑ Perform Message Notification

☑ Send MWI Requests (may also be disabled by the

☑ Allow TRAP Connections

Security Mode: Non-secure

Now open one port and verify SCCP (Skinny) Device Name, it should match with CUCM Voice mail Port.



Cisco Unity Connection

Advanced

SCCP (Skinny) Device Name: CiscoUM1-VI1

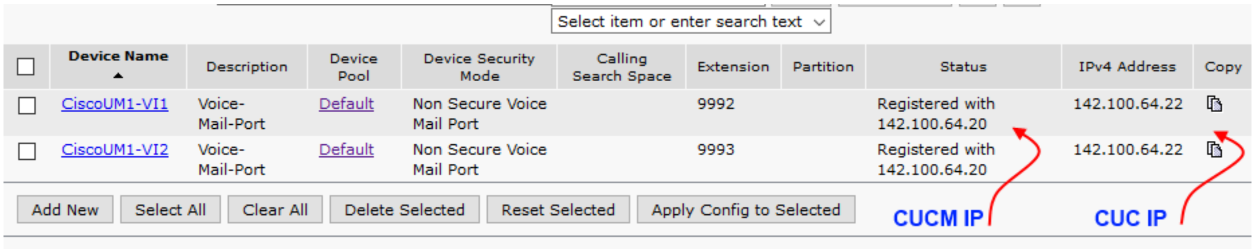
Certificate: View Certificate

Save
Delete
Previous
Next

Cisco Call Manager

☐	Device Name	Description
☐	CiscoUM1-VI1	Voice-Mail-Port
☐	CiscoUM1-VI2	Voice-Mail-Port

Now go to CUCM and check the registration status of Voice Mail Ports. All ports should be registered



Select item or enter search text

☐	Device Name	Description	Device Pool	Device Security Mode	Calling Search Space	Extension	Partition	Status	IPv4 Address	Copy
☐	CiscoUM1-VI1	Voice-Mail-Port	Default	Non Secure Voice Mail Port		9992		Registered with 142.100.64.20	142.100.64.22	
☐	CiscoUM1-VI2	Voice-Mail-Port	Default	Non Secure Voice Mail Port		9993		Registered with 142.100.64.20	142.100.64.22	

Add New
Select All
Clear All
Delete Selected
Reset Selected
Apply Config to Selected
CUCM IP
CUC IP

User Configuration and Mailbox

Step 1: Configure User

Go to Users → Users → Add New

User Type : User with Mailbox

Based on Template: voicemailusertemplate

Alias* : Jaseem

First Name : Jaseem

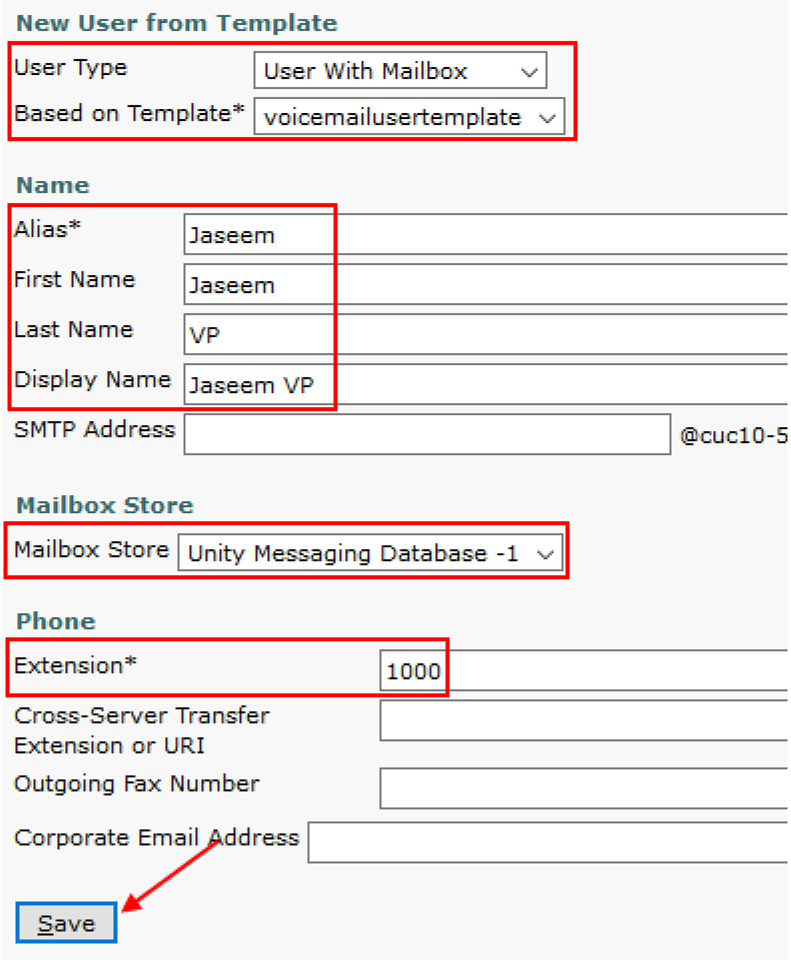
Last Name : VP

Display Name : Jaseem VP

Mail Box Store : Unity Messaging Database-1

Extension : 1000

→ Save



New User from Template

User Type	User With Mailbox
Based on Template*	voicemailusertemplate

Name

Alias*	Jaseem
First Name	Jaseem
Last Name	VP
Display Name	Jaseem VP
SMTP Address	@cuc10-5

Mailbox Store

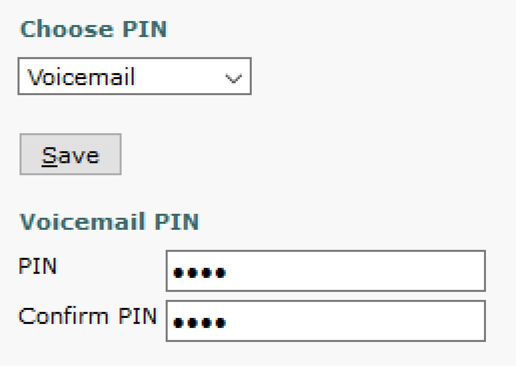
Mailbox Store	Unity Messaging Database -1

Phone

Extension*	1000
Cross-Server Transfer Extension or URI	
Outgoing Fax Number	
Corporate Email Address	

Step 2: Password Policy and Reset

Now Go to Edit → Change Password →



Choose PIN

Voicemail

Voicemail PIN

PIN	••••
Confirm PIN	••••

Step 4: Customize from IP Phone

From IP Phone press Message Button and respond to the prompted audio and finish your settings.