



COMUNICACIONES UNIFICADAS

Marzo 2026

UNIDAD 4 - CUCM

Cisco Unified Communications Manager

Cisco Unified Communications Manager (CUCM)

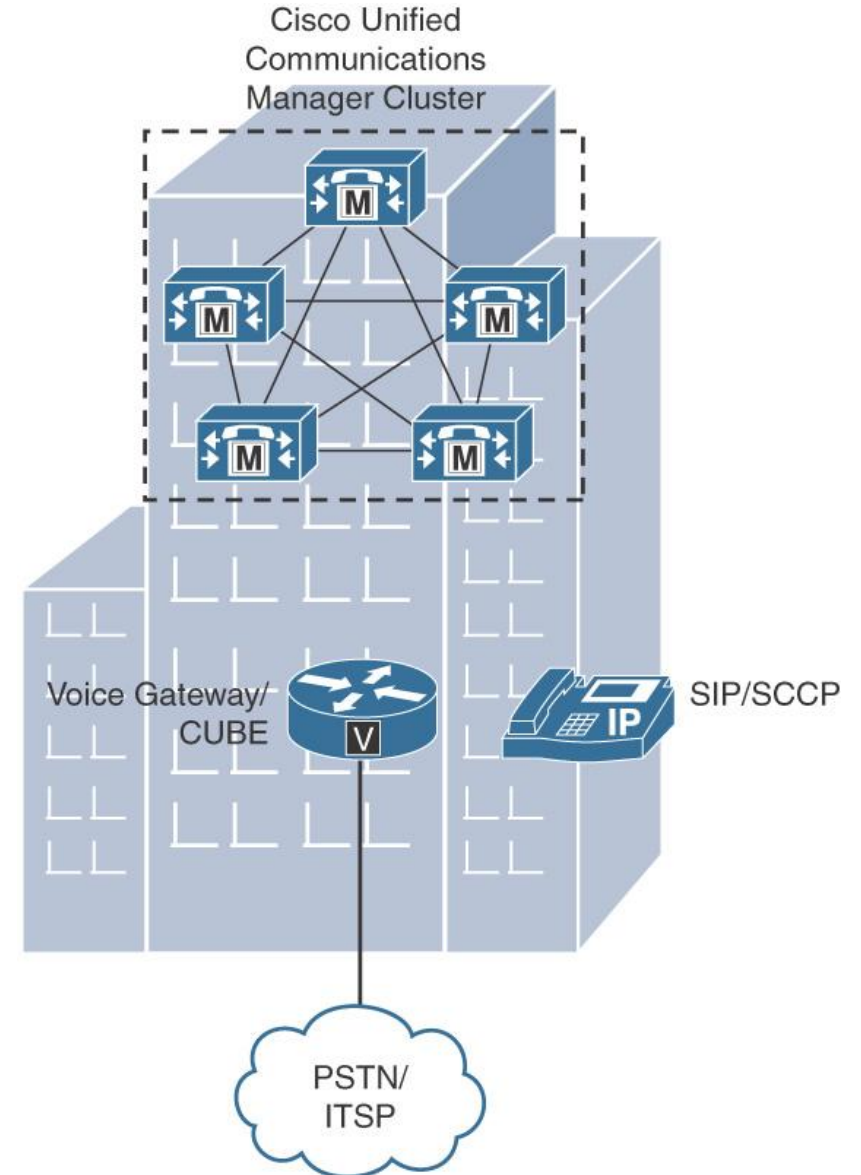


Funciones del CUCM

- Server Based
- Cluster Servers
- Integración con LDAP
- Comunicación con
 - Otro CUCM
 - Gateways

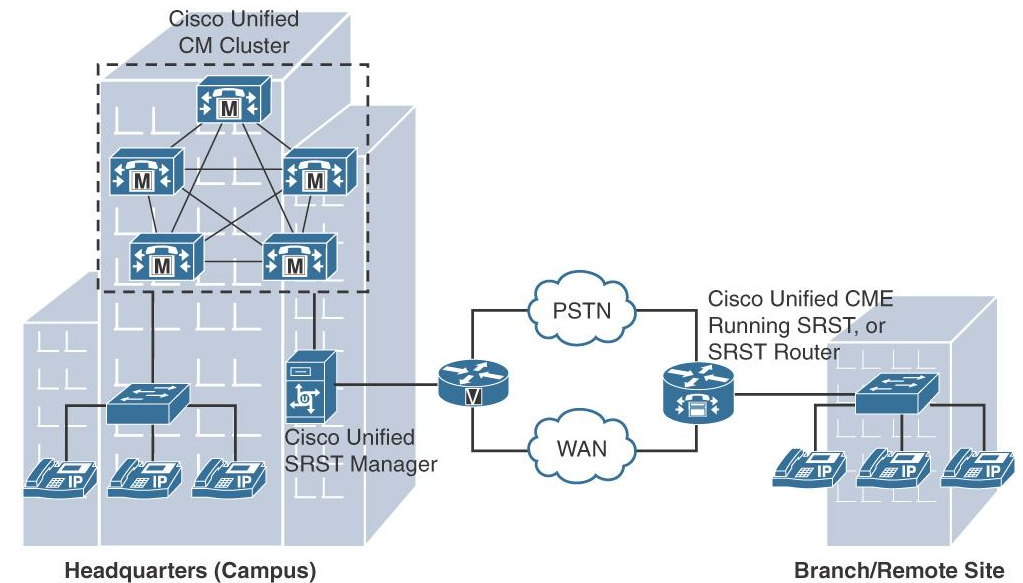
Modelo Single Site de CUCM

- Todos los servidores, aplicaciones y recursos de procesadores de señales digitales (DSP) de CUCM se ubican en la misma ubicación física o en varios edificios físicos con conectividad basada en redes de área local (LAN)
- En este modelo, las llamadas fuera de la LAN (externas) utilizan la red telefónica pública (PSTN).
- Cada clúster admite un máximo de 40 000 teléfonos IP. Si se necesita implementar más de 40 000 teléfonos IP en una configuración de un solo sitio, se pueden implementar varios clústeres dentro de una LAN y conectarlos mediante troncales entre clústeres. Las troncales de puerta de enlace que se conectan directamente a la PSTN gestionan las llamadas externas. Si existe una WAN IP entre sitios, esta se utiliza únicamente para transportar tráfico de datos; no se proporcionan servicios de telefonía a través de la WAN.



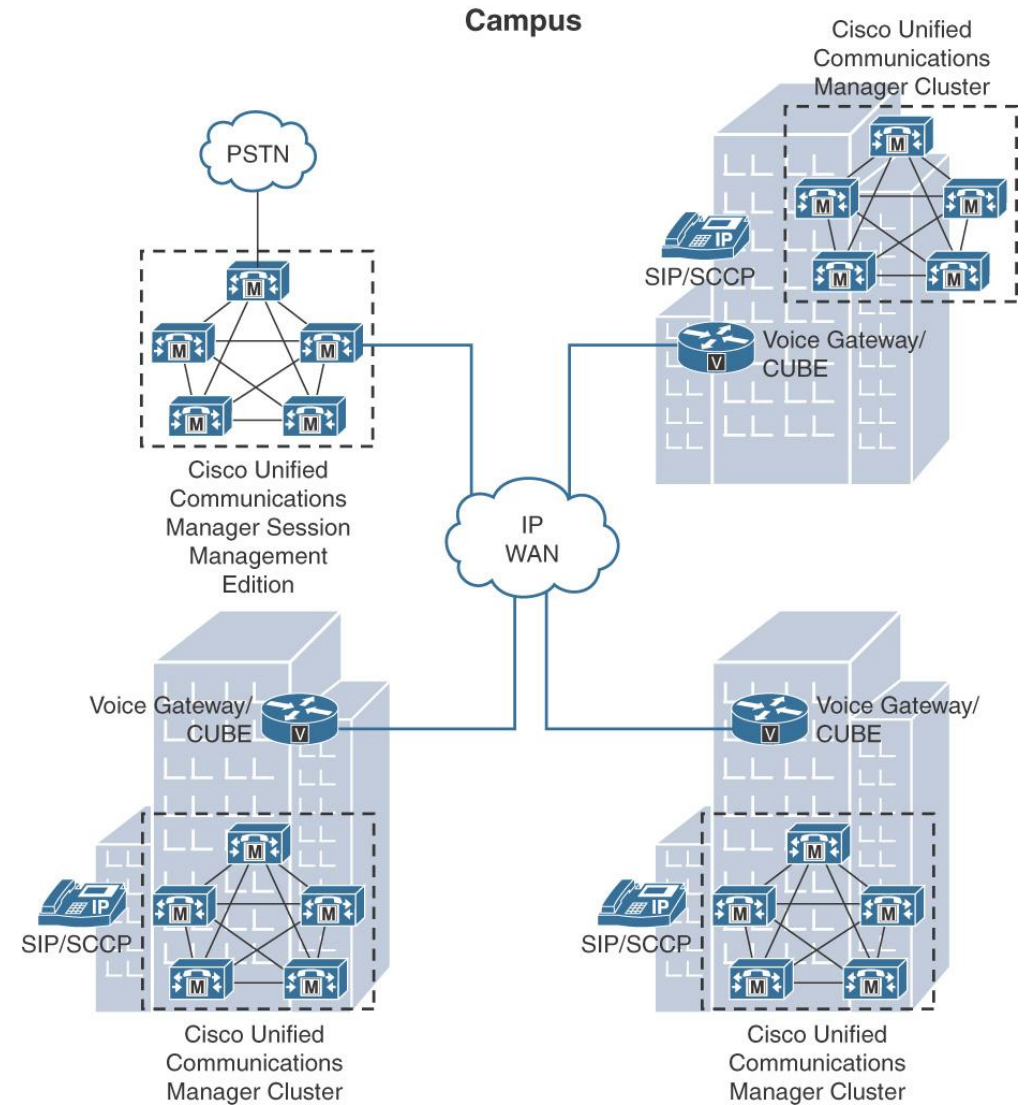
Modelo Multisite con CUCM centralizado

- La implementación multisitio con un modelo de procesamiento de llamadas centralizado consiste en un clúster de CUCM único, que presta servicios a varios sitios y utiliza la WAN IP para transportar el tráfico de telefonía IP entre ellos.
- La WAN IP también transporta la señalización de control de llamadas entre el clúster CUCM en el sitio central y los teléfonos IP en los sitios remotos.
- Las sedes remotas dependen del clúster CUCM centralizado para gestionar el procesamiento de llamadas.
- Aplicaciones como el correo de voz y los sistemas de respuesta de voz interactiva también suelen estar centralizadas para reducir los costos generales de administración y mantenimiento.
- La función de Cisco Unified Survivable Remote Site Telephony (SRST), disponible en los gateways Cisco IOS, proporciona servicios de procesamiento de llamadas a teléfonos IP remotos durante una interrupción de la WAN.
- Cuando la WAN IP falla, los teléfonos IP de la sucursal remota pueden registrarse en el router Cisco Unified SRST local.
- Este router puede procesar llamadas entre teléfonos IP registrados y enviar llamadas a otros sitios a través de la PSTN.

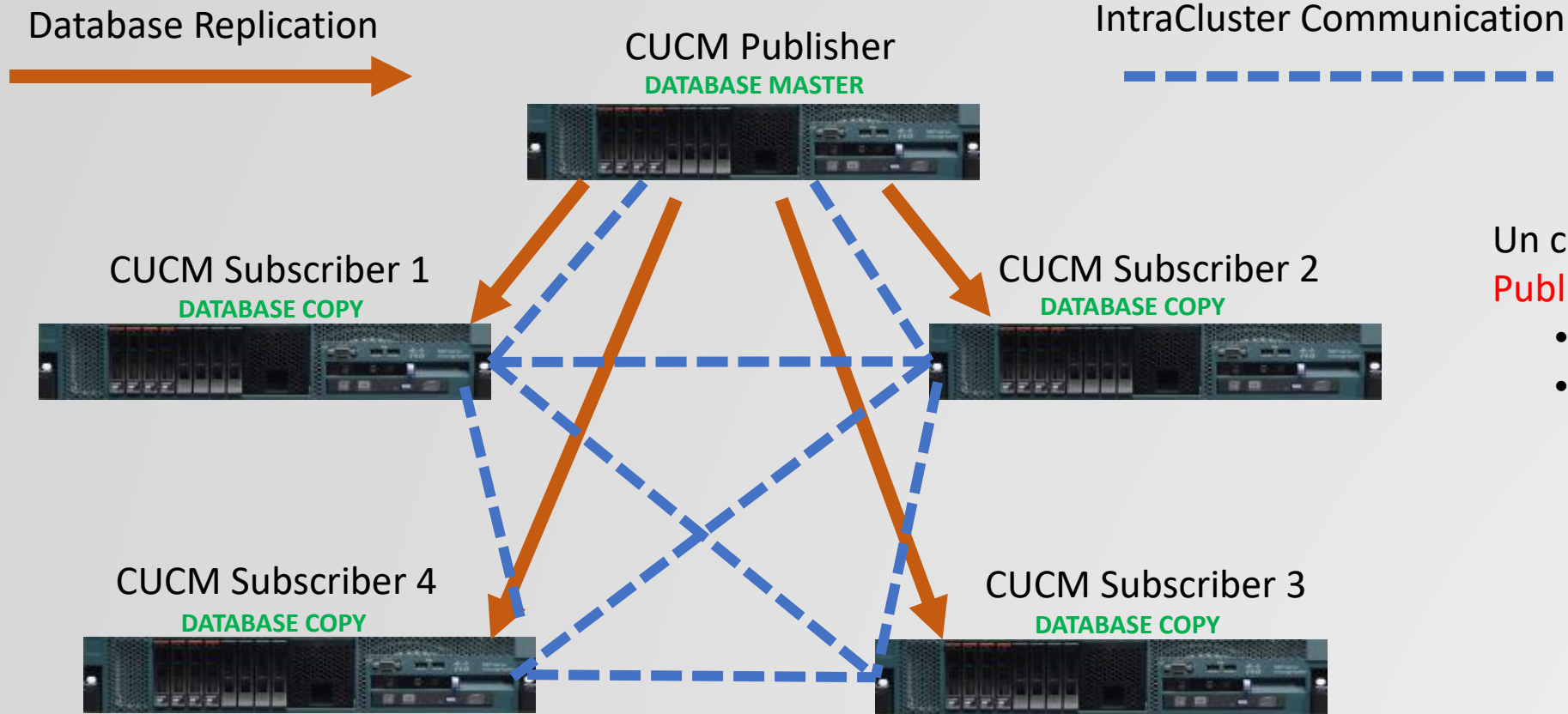


Modelo Multisite con CUCM distribuido

- El modelo para una implementación de WAN multisite con procesamiento distribuido de llamadas consta de varios sitios independientes, cada uno con su propio cluster de CUCM.
- Una WAN IP transporta el tráfico de voz entre los clústeres distribuidos.
- Las llamadas externas de cada uno de los sitios pueden enrutarse por su voice gateway local en caso de tener una conexión a PSTN mediante algún enlace saliente o, de manera centralizada o centralizarse a través del sitio principal (como se muestra en la imagen)



CUCM Clustering



Un cluster soporta un único **Publisher** y hasta **19** Subscribers:

- **8** como **call-processing**.
- **11** como recursos
 - **TFTP**
 - **Conference Bridge,**
 - **Music on Hold**
 - **Etc**

• El **primary server** de (**call processing**), no tiene por que cumplir el rol de **publisher**

CUCM Clustering

En una instalación típica, el Publisher realiza 2 funciones primarias

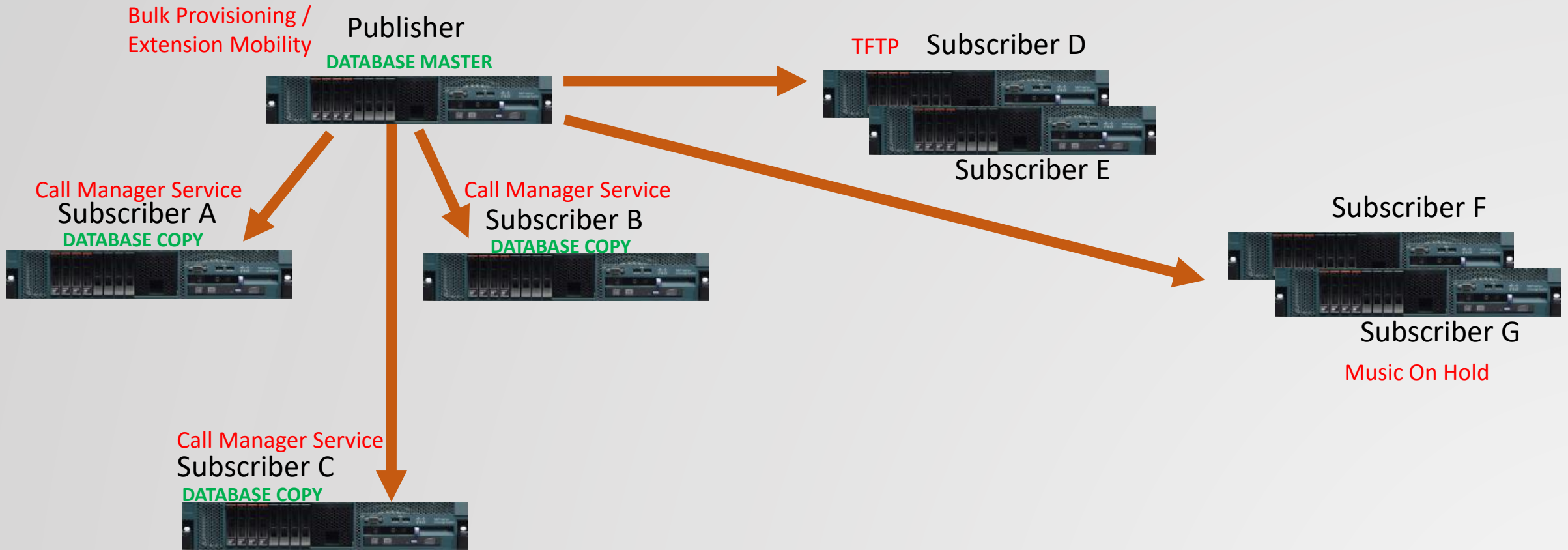
- Mantiene la única copia grabable de la base de datos (Informix)
- Sirve las solicitudes de TFTP

Cisco recomienda mover el role de TFTP a un Subscriber dedicado a partir de los 1000 teléfonos

Si el Publisher se rompe , el cluster continua trabajando con la ultima copia , pero no se puede agregar nuevos teléfonos.



CUCM Clustering



Version 14

Supported Versions of VMware vSphere ESXi= 6.7, 7.0 U1					Design Guide Upgrade Guide
Component & Capacity Point	VM Configuration Requirements click to download OVA file for this version				
	vCPU	Physical CPU Base Frequency	vRAM	vDisk	vNIC
UCM Cluster Node	Min 2 See Notes	Min 2.00 GHz See Notes	Min 6 GB See Notes	Min 1 x 80 GB See Notes	1
Notes:					
<ul style="list-style-type: none">• Run Collaboration Sizing Tool (CST) for prescriptive guidance on VM specs.• See Notes section for VM Configurations and IOPS requirements.• Refer to Cisco Collaboration Infrastructure for all other details on hardware and VMware support.• Refer to Quote Collab for modeling VM placement on a user defined hardware configuration.					
Here are some recommended starting points based on typical requirements; your requirements may be different:					
	vCPU	Physical CPU Base Frequency	vRAM	vDisk	vNIC
Small Example VM (Small Example Hardware)	2	2.00+ GHz	6 GB	1 x 100 GB	1 (1GbE+)
Medium Example VM (Medium Example Hardware)	2	2.50+ GHz	8 GB	1 x 110 GB	1 (1GbE+)
Large Example VM (Large Example Hardware)	4	2.50+ GHz	8 GB	1 x 110 GB	1 (1GbE+)

Cisco Unified Communications

Product Deployment Selection

Select the product or product suite to be installed:

Cisco Unified Communications Manager

Products not supported on current hardware:

Cisco Unity Connection

OK

<Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

Proceed with Install

Versions on the hard drive: NONE

The version on this DVD is:
 Do you want to proceed with the Install?

Yes

No

Platform Installation Wizard

This Wizard sets up the initial configuration of the platform.

Before proceeding, complete the pre-installation tasks outlined in the installation guide.

Choose <Proceed> to continue with the wizard.

Choose <Skip> to skip the configuration until later.

Choose <Cancel> to end the installation.

Proceed

Skip

Cancel

Apply Patch

Would you like to apply an upgrade patch as part of this installation?

This option will install the software from the DVD and then prompt you for the location of the additional patch to apply after the system reboots.

Yes

No

Back

Basic Install

This is the "Basic" installation option. This option installs the software version from the DVD and does not use any imported data. It asks for configuration information and then completes the install.

Continue

<Tab> <Alt+Tab> to move between elements. <Space> to select. <Enter> to proceed.

Timezone Configuraton

Choose the correct timezone from the following list:

- America/Mexico_City
- America/Miquelon
- America/Moncton
- America/Monterrey
- America/Montevideo**
- America/Montreal
- America/Montserrat



OK

Back

Help

<Arrow Up/Down> to select, <Tab> to move to another field, <OK> to exit screen.

Auto Negotiation Configuration

NIC speed and duplex in a virtual machine are determined by the Host.

They do not need to be configured in the Guest.

Please select "Continue" to proceed with the installation.

Continue

Back

<Tab>/<Alt-Tab> to move between elements, <Space> to select, <Enter> to proceed.

MTU Configuration

Do you want to change the MTU size from the OS default?

No

Yes

Back

Help

DHCP Configuration

Do you want to use Dynamic Host Configuration Protocol (DHCP) on this machine?

Yes

No

Back

Help

<Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

Static Network Configuration

Host Name CUCM-

IP Address

IP Mask

GW Address

OK

Back

Help

DNS Client Configuration

Do you want to enable Domain Name System (DNS) Client on this machine?



Yes

No

Back

Help

DNS Client Configuration

Primary DNS

192.168.1.1

Secondary DNS (optional)

Domain

example.com

OK

Back

Help

<Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

Administrator Login Configuration

Enter the Platform administration username and password.
Choose Help for username and password guidelines.

Administrator ID Administrator_

Password *****

Confirm Password *****

OK

Back

Help

Certificate Information

Enter information about your organization. This is used to generate security certificates for this node.

Organization

Unit

Location

State

Country ■
United Arab Emirates ■
United Kingdom (UK) ■

OK

Back

Help



- Si es un **Subscriber** ,
 - Se debe agregar primero:
 - Ip/Hostname previamente en el GUI del CUCM para indicar que se agrega un nuevo server al cluster

Network Time Protocol Client Configuration

NTP Server 1

192.168.1.1

NTP Server 2

NTP Server 3

NTP Server 4

NTP Server 5

OK

Back

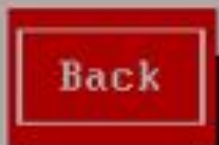
Help

Security Configuration

Enter the system security password. This password is used to secure communication between cluster nodes and will also be used by DRS for encryption of backup tar files. Choose Help for username and password guidelines.

Security Password

Confirm Password



Security Configuration

Enter the system security password. This password is used to secure communication between cluster nodes and will also be used by DRS for encryption of backup tar files. Choose Help for username and password guidelines.

Security Password

Confirm Password



<Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

SMTP Host Configuration

Do you want to configure a Simple Mail Transfer Protocol (SMTP) host for this machine?

Yes

No

Back

Help

<Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

Smart Call Home Enable Page

- Enable Smart Call Home on System Start
- Enable Anonymous Call Home on System Start
- Remind me later to configure Smart Call Home
- Disable All Call Home on System Start

OK

Back

<Tab>/<Alt-Tab> to move between elements, <Space> to select, <Enter> to proceed.

Application User Configuration

The Application User username and password are used to log into the Application administrative webpage(s).

Application User Username

Administrator_____

Application User Password

XXXXXXXXXXXXXXXXXX_____

Confirm Application User Password

XXXXXXXXXXXXXXXXXX_____

OK

Back

Help

Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

Platform Configuration Confirmation

The Platform Configuration is complete.

Select OK to continue or Back to change the configuration.

Warning: Once you select OK, you will no longer be able to modify the Platform Configuration.

OK

Back

Cancel

<Tab>/<Alt-Tab> to move between elements. <Space> to select. <Enter> to proceed.

CUCM - GUI



The screenshot displays the Cisco Unified CM Administration web interface. At the top left is the Cisco logo and the text "Cisco Unified CM Administration For Cisco Unified Communications Solutions". On the top right, there is a navigation bar with a search box containing "Cisco Unified CM Administration" and a "Go" button. Below the search bar are links for "administrator", "Search Documentation", "About", and "Logout". A horizontal menu below the navigation bar lists various system components: System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The main content area features a large teal banner with the title "Cisco Unified CM Administration", the system version "10.5.1.10000-7", and hardware details: "VMware Installation: 4 vCPU Intel(R) Xeon(R) CPU X5450 @ 3.00GHz, disk 1: 80Gbytes, 8192Mbytes RAM, Partitions aligned". To the right of the banner is a photograph of a server room aisle.

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation

[administrator](#) | [Search Documentation](#) | [About](#) | [Logout](#)

[System](#) ▾ [Call Routing](#) ▾ [Media Resources](#) ▾ [Advanced Features](#) ▾ [Device](#) ▾ [Application](#) ▾ [User Management](#) ▾ [Bulk Administration](#) ▾ [Help](#) ▾

Cisco Unified CM Administration
System version: 10.5.1.10000-7
VMware Installation: 4 vCPU Intel(R) Xeon(R) CPU X5450 @ 3.00GHz, disk 1: 80Gbytes, 8192Mbytes RAM, Partitions aligned

System ▾

Call Routing ▾

Media Resources ▾

Advanced Features ▾

Device ▾

Application ▾

User Management ▾

Server

Cisco Unified CM

Cisco Unified CM Group

Presence Redundancy Groups

Phone NTP Reference

Date/Time Group

BLF Presence Group

Region Information ▶

Device Pool

Device Mobility ▶

DHCP ▶

LDAP ▶

SAML Single Sign-On

Cross-Origin Resource Sharing (CORS)

Location Info ▶

MLPP ▶

Physical Location

SRST

Enterprise Parameters

Enterprise Phone Configuration

Service Parameters

Security ▶

Application Server

Licensing ▶

Geolocation Configuration

Geolocation Filter

E911 Messages

Device Pool



CUCM – Device Pool

- Requerido
- Opcional

Propósito:

- Brindar una manera conveniente de definir un conjunto de características comunes que se pueden agregar a los dispositivos, en lugar de asignarlas como características individuales

Previo a Configurar el Device Pool, se deben configurar:

- **Cisco Unified Communications Manager group.**
 - Lista de servidores para Registración del Teléfono
- **Date/time group.**
- **Region.**
 - Se usa si se quiere frozar el uso de codecs entre diferentes regiones logicas . De lo contrario se usa el Default
- **SRST reference.**
- **Media resource group list.**
- **Calling search space for auto-registration.**

Device Pool Information	
Device Pool:	New

Device Pool Settings	
Device Pool Name*	
Cisco Unified Communications Manager Group*	-- Not Selected --
Calling Search Space for Auto-registration	< None >
Adjunct CSS	< None >
Reverted Call Focus Priority	Default
Intercompany Media Services Enrolled Group	< None >

Roaming Sensitive Settings	
Date/Time Group*	-- Not Selected --
Region*	-- Not Selected --
Media Resource Group List	< None >
Location	< None >
Network Locale	< None >
SRST Reference*	Disable
Connection Monitor Duration***	
Single Button Barge*	Default
Join Across Lines*	Default
Physical Location	< None >
Device Mobility Group	< None >
Wireless LAN Profile Group	< None >

System ▾

Call Routing ▾

Media Resources ▾

Advanced Features ▾

Device ▾

Application ▾

User Management ▾

AAR Group

Dial Rules ▶

Route Filter

Route/Hunt ▶

SIP Route Pattern

Intercom ▶

Class of Control ▶

Client Matter Codes

Forced Authorization Codes

Translation Pattern

Call Park

Directed Call Park

Call Pickup Group

Directory Number

Dial Plan Installer

Meet-Me Number/Pattern

Route Plan Report

Transformation ▶

Mobility ▶

Logical Partition Policy Configuration

External Call Control Profile

HTTP Profile

Call Control Discovery ▶

Global Dial Plan Replication ▶



CUCM BASICS

Partitions & CSS

CUCM - Partition

Una partición comprende una agrupación lógica con características de accesibilidad similares

- **números de directorio (DN)**
- **patrones de ruta (route patterns)**
- patrones de traducción (**translation patterns**)
- puertos de casilla de voz (**voice-mail ports**)

Para simplificar, los nombres de las particiones suelen reflejar sus características, como

- PT-Celulares ,
- PT-Nacionales,
- PT-Interno,
- PT-Secretaria

¿Quién Puede llamarme?



CUCM -

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Call Routing ▾ | Media Resources ▾ | Advanced Features ▾ | Device ▾ | Application ▾

- AAR Group
- Dial Rules ▶
- Route Filter
- Route/Hunt ▶
- SIP Route Pattern
- Class of Control ▶**
 - Access List
 - Time Period
 - Time Schedule
 - Partition**
 - Calling Search Space
- Intercom ▶
- Client Matter Codes
- Forced Authorization Codes
- Emergency Location ▶
- Translation Pattern
- Call Park
- Directed Call Park

Partition Information

To enter multiple partitions, use one line for each partition entry. You can enter up to 75 partitions; the names and descriptions can have up to a total of 1475 characters. The partition name cannot exceed 50 characters. Use a comma (,) to separate the partition name and description on each line. If a description is not entered, Cisco Unified Communications Manager uses the partition name as the description. For example:

```
<< partitionName >> , << description >>  
CiscoPartition, Cisco employee partition  
DallasPartition
```

Name*

<input type="checkbox"/>		
<input type="checkbox"/>	PT-Celualres	Particion para Celulares
<input type="checkbox"/>	PT-Internos	Particion para Telefonos Internos

CUCM - NO PARTITION / PARTITION

Phone Configuration

Save ~~Delete~~ Copy Reset Apply Config

Status
Status: Ready

Association

Line	Product Type	Device Protocol
1	Cisco 8845	SIP
2		
3		
4		
5		
6		

Line [1] - 2000 (no partition)

Line [2] - Add a new DN

Add a new SD

Add a new SD

Add a new SD

Add a new SD

Add On Module(s)

Add a new SD

Device Information

- Device is Active
- Device is trusted

MAC Address*

Phone Configuration

Save ~~Delete~~ Copy Reset Apply Config + Add New

Status
Status: Ready

Association

Line	Product Type	Device Protocol
1	Cisco 8845	SIP
2		
3		
4		
5		
6		

Line [1] - 2000 in PT-Internos

Line [2] - Add a new DN

Add a new SD

Add a new SD

Add a new SD

Add a new SD

Add On Module(s)

Add a new SD

Phone Type

Product Type: Cisco 8845
Device Protocol: SIP

Real-time Device Status

Registration: Unknown
IPv4 Address: None

Device Information

- Device is Active
- Device is trusted

MAC Address*

CUCM – Calling Search Space - CSS

Un espacio de búsqueda de llamadas (**Calling search space** ,CSS) es una lista ordenada de particiones.

Los **CSS** determinan las particiones que los dispositivos buscan al intentar completar una llamada:

- Teléfonos IP
- Softphones
- Gateways .

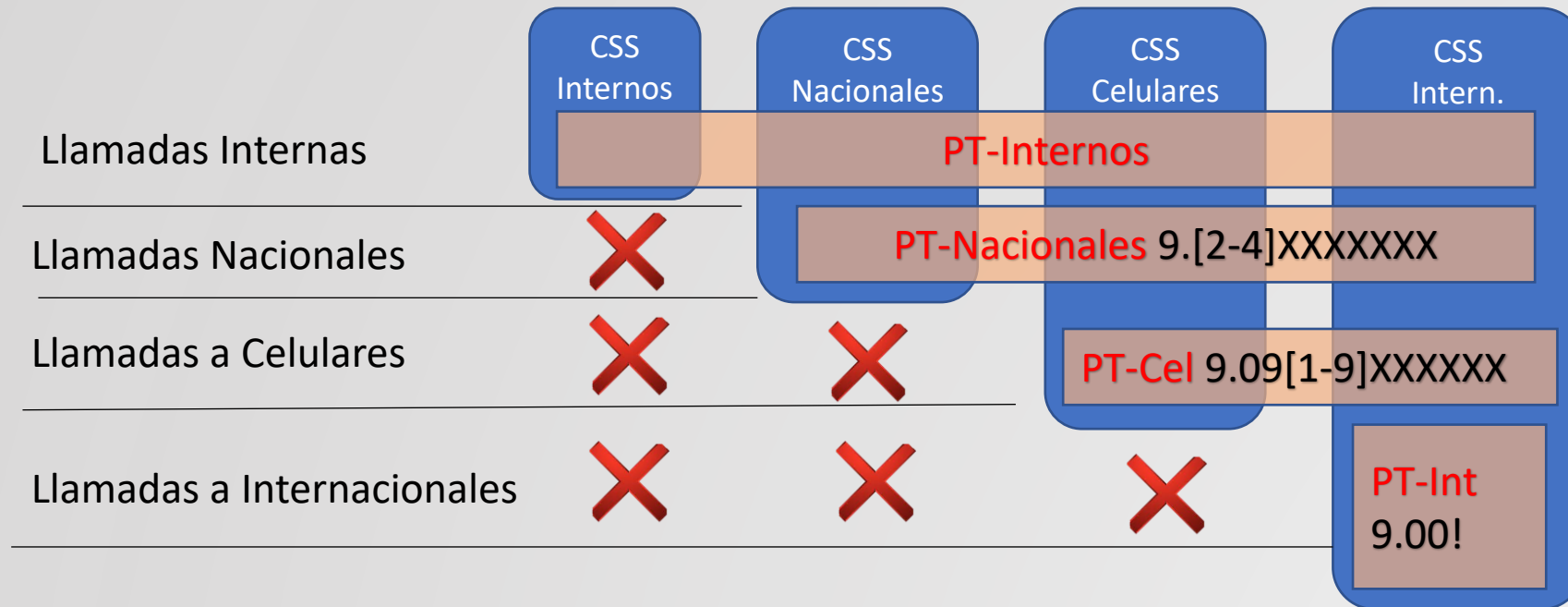
Un CSS ,con nombre “Supervisores” contiene 4 particiones : **Nacionales, Internacionales , Emergencia ,Celulares**

Un CSS, con nombre “Invitados” contiene 2 particiones: **Nacionales, Emergencia**

Si un IP-Phone o DN está configurado con el CSS "Invitado", solo busca en las particiones “Nacionales” y “Emergencia” cuando inicia la llamada.

Si un usuario que llama desde este número intenta marcar un número internacional, no se produce una coincidencia y la llamada no se puede enrutar.

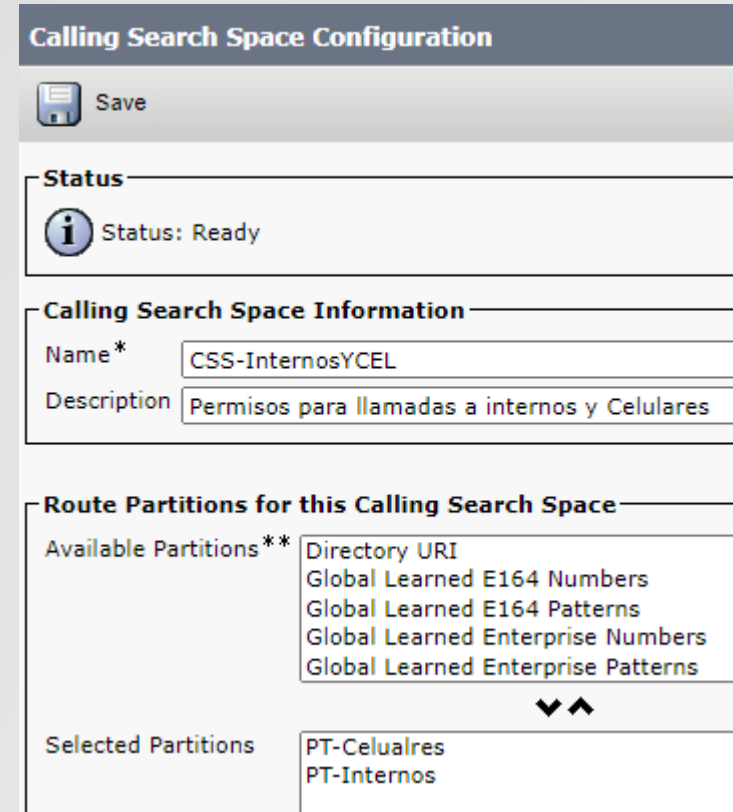
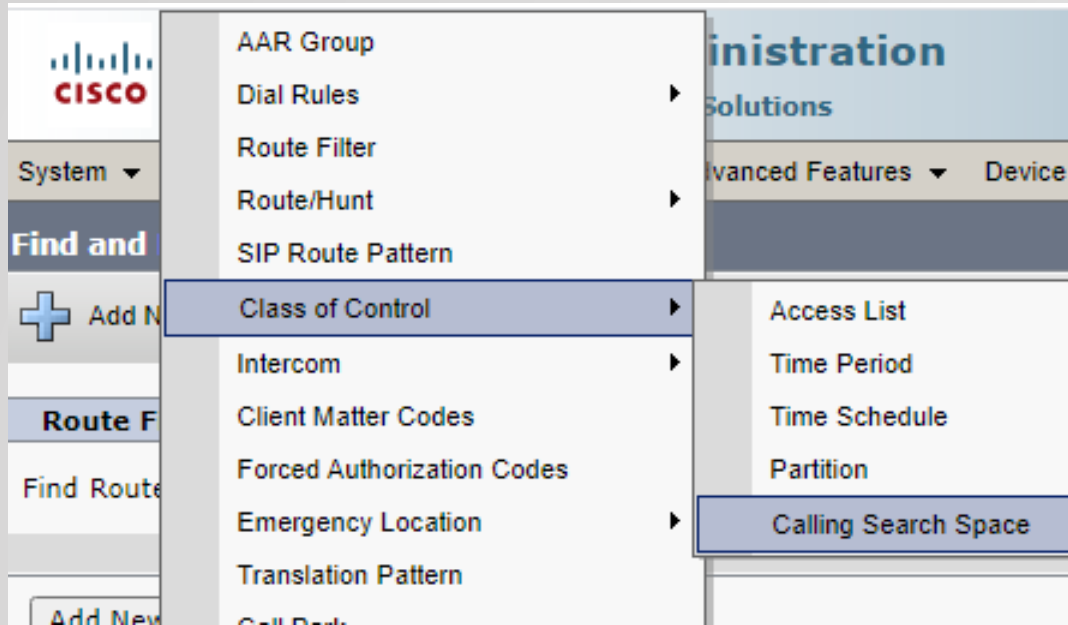
CUCM – CSS / Particiones



1. A donde puede llamar alguien
2. Ruteo Geográfico

Lista de Particiones

CUCM - CSS



Calling Search Space (1 - 1 of 1) Rows per Page 50

Find Calling Search Space where CSS Name begins with Find Clear Filter + -

<input type="checkbox"/>	CSS Name ^	Description	Copy
<input type="checkbox"/>	CSS-InternosYCEL	Permisos para llamadas a internos y Celulares	

CUCM –NULL Partition



2600 PT-Interno



2601 no partition

Ninguno de los 2 teléfonos tienen configurado un CSS

¿Pueden llamarse?

CUCM – Los CSS cumplen 2 Reglas

Siempre se puede llamar a un DN que no este en una partición



Solo se puede llamar a un DN, si la partición de ese DN esta en el CSS



CUCM – Ejercicio CSS

- 1 Usuario disca 2000
- 2 Usuario disca 3000
- 3 Secretaria disca 3000
- 4 Secretaria disca 2000
- 5 Jefe disca 2000
- 6 Jefe disca 4000
- 7 Usuario disca
9.001-801-240-7845
- 8 Jefe disca
9.099-801-478

USUARIO



- Linea 1 1000 PT_INTERNO
- Linea 2 2000 PT_INTERNO

- CSS:
 - PT_SECRETARIA
 - PT_INTERNO
 - PT_CELULARES
 - PT_NACIONALES

SECRETARIA



- Linea 1 2000 PT_SECRETARIA
- Linea 2 3000 PT_INTERNO

- CSS:
 - PT_JEFE
 - PT_INTERNO
 - PT_CELULARES

JEFE



- Linea 1 3000 PT_JEFE

- CSS:
 - PT_INTERNO
 - PT_SECRETARIA
 - PT_NACIONALES

Path Selection




Agregar GWs al CUCM

- Existen 2 maneras de integrar un Gateway de voz a un CUCM.
- 1) A través de H323 (Protocolo estándar de telefonía tradicional)
- Device/Gateway

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾


Add a new Gateway

 Next

Select the type of gateway you would like to add: _____

Gateway Type*

Next

 *- indicates required item.

Call Routing Information - Inbound Calls

Significant Digits*

Calling Search Space

AAR Calling Search Space


Prefix DN

- Redirecting Number IE Delivery - Inbound
- Enable Inbound FastStart

Connected Party Settings

Connected Party Transformation CSS

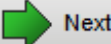
Use Device Pool Connected Party Transformation CS

Product	H.323 Gateway
Device Protocol	H.225
 Device is not trusted	
Device Name*	<input type="text" value="IPdelGW"/>
Description	<input type="text" value="IPdelGW"/>
Device Pool*	<input type="text" value="Default"/>
Common Device Configuration	<input type="text" value="< None >"/>
Call Classification*	<input type="text" value="OffNet"/>
Media Resource Group List	<input type="text" value="< None >"/>
Packet Capture Mode*	<input type="text" value="None"/>
Packet Capture Duration	<input type="text" value="0"/>
Location*	<input type="text" value="Hub_None"/>
AAR Group	<input type="text" value="< None >"/>
Tunneled Protocol*	<input type="text" value="None"/>
QSIG Variant*	<input type="text" value="No Changes"/>
ASN.1 ROSE OID Encoding*	<input type="text" value="No Changes"/>
Use Trusted Relay Point*	<input type="text" value="Default"/>
Signaling Port*	<input type="text" value="1720"/>


- 2) A través de un Troncal SIP Device/Trunk

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾

Trunk Configuration

 Next

Status


 Status: Ready

Trunk Information


Trunk Type* ▾

Device Protocol* ▾


Trunk Service Type* ▾

 *- indicates required item.

Trunk Configuration

 Save

Status

 Status: Ready

Device Information

Product:	SIP Trunk
Device Protocol:	SIP
Trunk Service Type	None(Default)
Device Name*	<input type="text" value="SIP_gwIP"/>
Description	<input type="text"/>
Device Pool*	<input type="text" value="Default"/> ▾
Common Device Configuration	<input type="text" value="< None >"/> ▾
Call Classification*	<input type="text" value="OffNet"/> ▾
Media Resource Group List	<input type="text" value="< None >"/> ▾
Location*	<input type="text" value="Hub_None"/> ▾
AAR Group	<input type="text" value="< None >"/> ▾
Tunneled Protocol*	<input type="text" value="None"/> ▾
QSIG Variant*	<input type="text" value="No Changes"/> ▾
ASN.1 ROSE OID Encoding*	<input type="text" value="No Changes"/> ▾
Packet Capture Mode*	<input type="text" value="None"/> ▾
Packet Capture Duration	<input type="text" value="0"/>

Inbound Calls

Significant Digits*	All
Connected Line ID Presentation*	Default
Connected Name Presentation*	Default
Calling Search Space	CSS_G6_Nac_Cel_Int
AAR Calling Search Space	< None >
Prefix DN	

Redirecting Diversion Header Delivery - Inbound

SIP Information

Destination

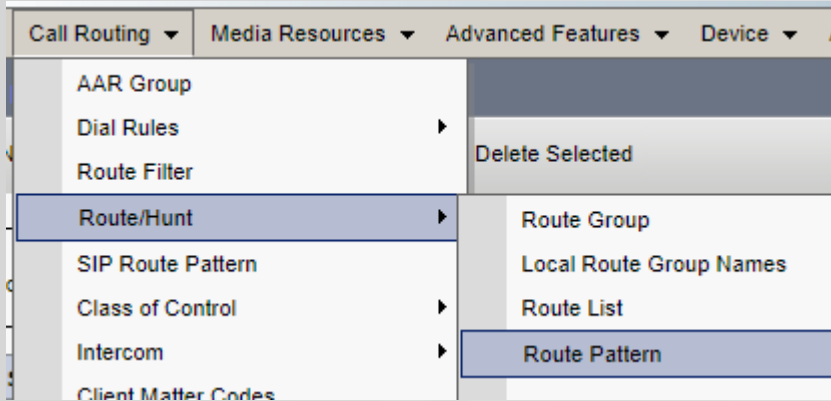
Destination Address is an SRV

	Destination Address	Destination Address IPv6
1*	IPdelGW	

MTP Preferred Originating Codec*	711ulaw
BLF Presence Group*	Standard Presence group
SIP Trunk Security Profile*	Non Secure SIP Trunk Profile
Rerouting Calling Search Space	< None >
Out-Of-Dialog Refer Calling Search Space	< None >
SUBSCRIBE Calling Search Space	< None >
SIP Profile*	Standard SIP Profile
DTMF Signaling Method*	No Preference

[View Details](#)

CUCM – Route Patterns



Pattern Definition

Route Pattern*

Route Partition

Description

Numbering Plan

Route Filter

MLPP Precedence*

Apply Call Blocking Percentage

Resource Priority Namespace Network Domain

Route Class*

Gateway/Route List* [\(Edit\)](#)

Route Option Route this pattern Block this pattern

Call Classification*

External Call Control Profile

Allow Device Override Provide Outside Dial Tone Allow Overlap Sending Urgent Priority

Require Forced Authorization Code

Authorization Level*

Require Client Matter Code

Route Patterns (1 - 1 of 1) Rows per Page 50

Find Route Patterns where begins with

<input type="checkbox"/>	Pattern ^	Description	Partition	Route Filter	Associated Device	Copy
<input type="checkbox"/>	9.09[1-9]XXXXXX	Route Pattern Para Celulares	PT-Celualres		SIPTrunktoCUP	

CUCM - Route Patterns

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask

Prefix Digits (Outgoing Calls)

Calling Line ID Presentation*

Calling Name Presentation*

Calling Party Number Type*

Calling Party Numbering Plan*

Connected Party Transformations

Connected Line ID Presentation*

Connected Name Presentation*

Called Party Transformations

Discard Digits

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

Called Party Number Type*

Called Party Numbering Plan*

ISDN Network-Specific Facilities Information Element

Network Service Protocol

Carrier Identification Code

Network Service

Service Parameter Name

Called Party Transformations

Discard Digits

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

Called Party Number Type*

Called Party Numbering Plan*

ISDN Network-Specific Facilities Information Element

Network Service Protocol

Carrier Identification Code

Network Service

Save

Info * ...

< None >
NoDigits
PreDot
10-10-Dialing
PreDot 10-10-Dialing
Called Party Numbering Plan*
PreAt
PreAt 10-10-Dialing
11D->10D
PreDot 11D->10D
Network Service Protocol
--
PreDot 11/10D->7D
Carrier Identification Code
<input type="checkbox"/>
PreAt 11D->10D
PreAt 11/10D->7D
Network Service
Intl TollBypass
PreDot IntlTollBypass
PreAt IntlTollBypass
11/10D->7D
Trailing-#
PreDot Trailing-#
10-10-Dialing Trailing-#
PreDot 10-10-Dialing Trailing-#

CUCM – Route Group

Un **route group** es una lista de devices (gateways, trunks).

Un route group puede ser configurado para manejar estas distribuciones

- **distribución circular (round-robin)**
 - es usada para distribuir recursos de carga
- **distribución arriba-abajo (top-down)**
 - para priorizar el uso de una gateway dentro de un route group

CUCM – Selection Path

Route Pattern

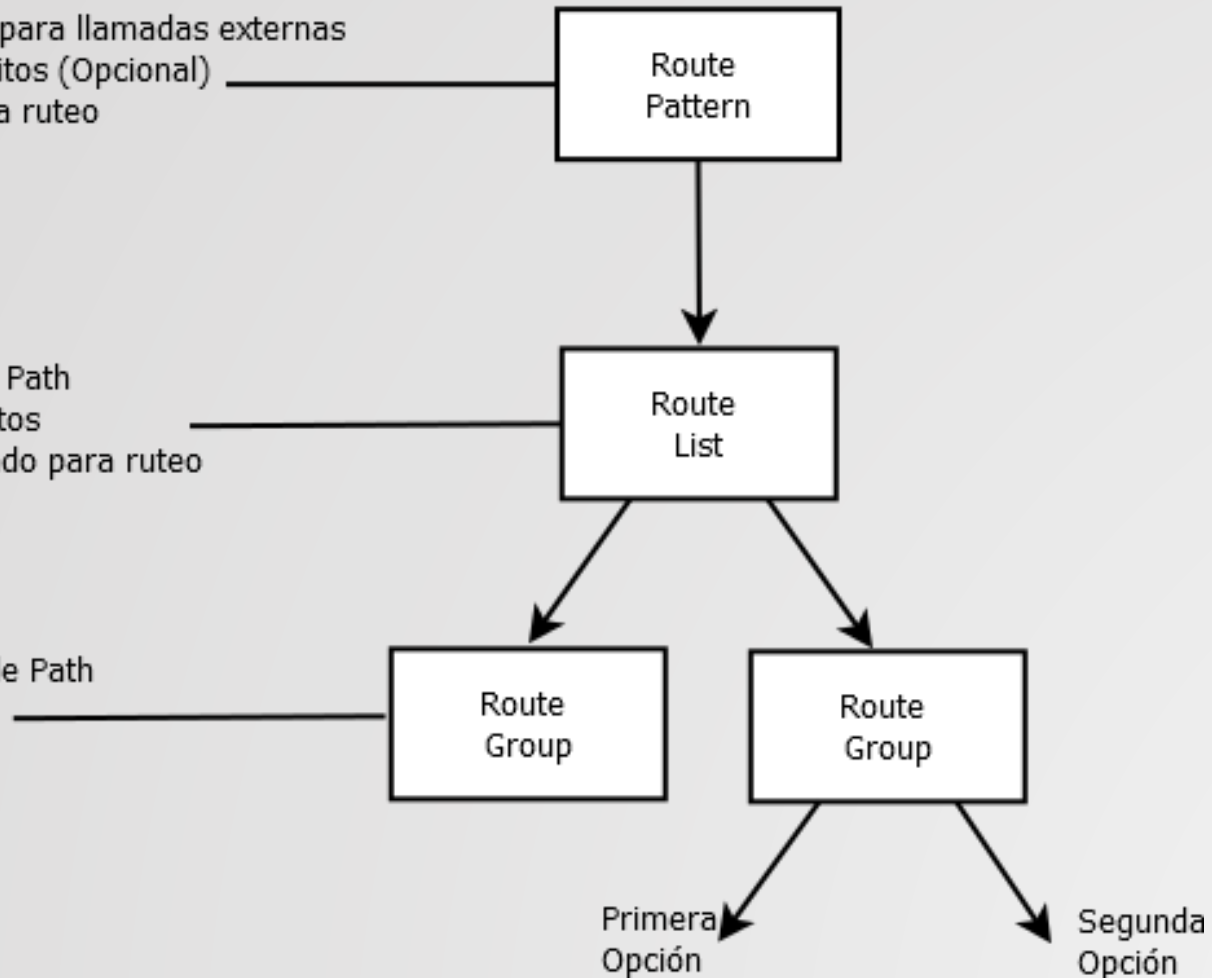
- * Matchea el número discado para llamadas externas
- * Realiza manipulación de Dígitos (Opcional)
- * Apunta a una Route List para ruteo

Route List

- * Primer nivel de Selección de Path
- * Realiza Manipulación de Dígitos
- * Apunta a un/s group priorizado para ruteo

Route Group

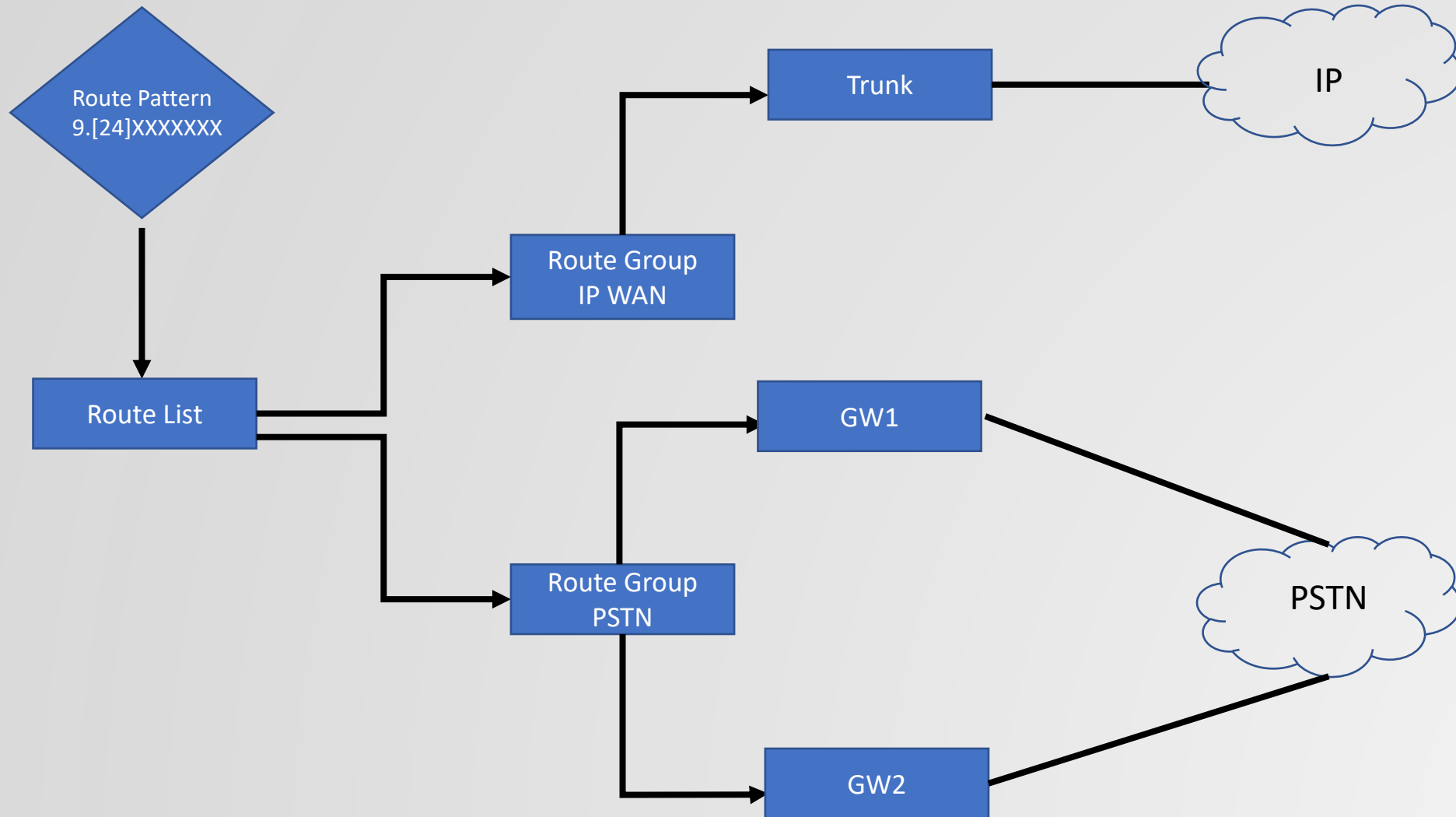
- * Segundo nivel de selección de Path
- * Apunta al dispositivo real.



CUCM – Path Selection

- Para implementar una elección de camino (path selection) en el CUCM, la lógica del procesamiento de llamada debe ser construida desde abajo hacia arriba (bottom-up)
- Cuando se crea un route group, recién ahí se pueden cargar los dispositivos que va a formar parte del grupo.
- Si los devices no existen todavía, no hay nada que se pueda correlacionar al route group
- Los siguientes pasos debe realizarse en el orden dado
 - Paso 1 Agregar Dispositivos (Gateways y trunks).
 - Step 2 Crear route groups con devices disponibles
 - Step 3 Crear route list con route group disponibles.
 - Step 4 Crear route patterns apuntando a los route lists

CUCM -



System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾ Application ▾ User Management ▾

CTI Route Point

Gatekeeper

Gateway

Phone

Trunk

Remote Destination

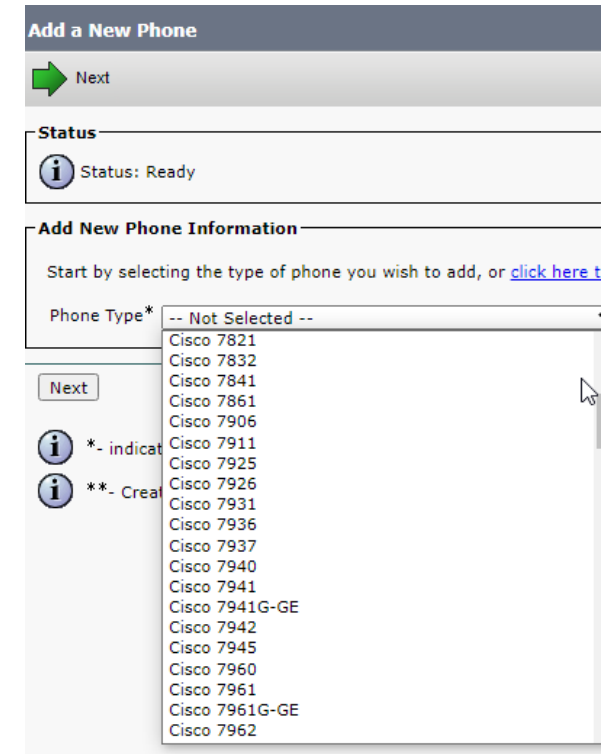
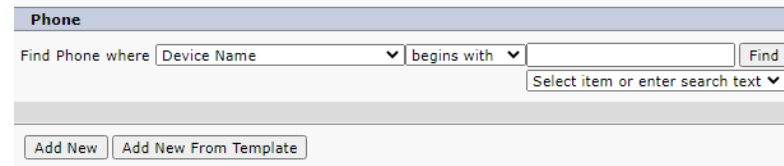
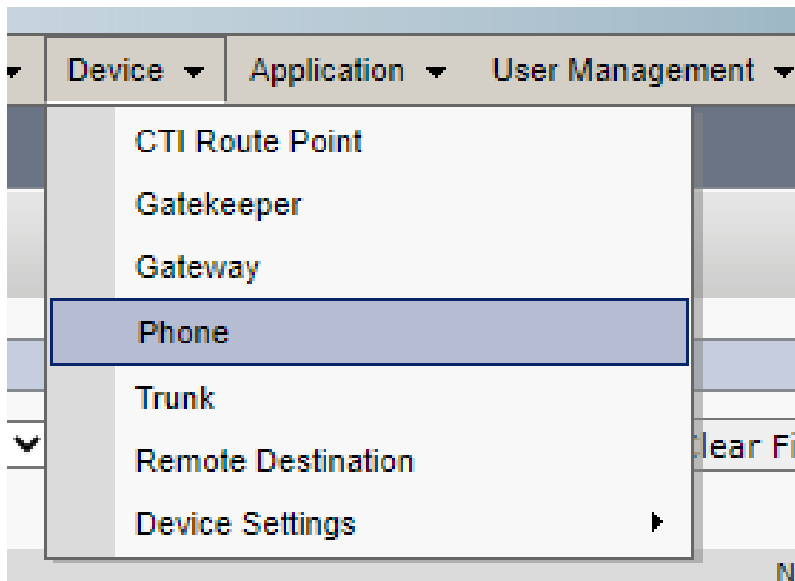
Device Settings ▶ 1

System ▾ Call Routing ▾ Media Resources ▾ Advanced Features ▾ Device ▾ Application ▾ User Management ▾

Cisco Unified CM Assistant
Configuration Wizard

Plugins

CUCM – Como agregar un IP Phone



CUCM – IP Phone

Phone Type
Product Type: Cisco 7821
Device Protocol: SIP

Device Information

Device is trusted

MAC Address*

Description

Require Activation Code for Onboarding

Device Pool* -- Not Selected -- [View](#)

Common Device Configuration < None > [View](#)

Phone Button Template* -- Not Selected --

Softkey Template < None >

Common Phone Profile* Standard Common Phone Profile [View](#)

Calling Search Space < None >

AAR Calling Search Space < None >

Media Resource Group List < None >

User Hold MOH Audio Source < None >

Network Hold MOH Audio Source < None >

Location* Hub_None

AAR Group < None >

User Locale < None >

Network Locale < None >

Built In Bridge* Default

Privacy* Default

Device Mobility Mode* Default

Owner

Owner User ID*

Mobility User ID < None >

Phone Personalization* Default

Services Provisioning* Default

Protocol Specific Information

Packet Capture Mode* None

Packet Capture Duration 0

BLF Presence Group* Standard Presence group

SIP Dial Rules < None >

MTP Preferred Originating Codec* 711ulaw

Device Security Profile* -- Not Selected --

Rerouting Calling Search Space < None >

SUBSCRIBE Calling Search Space < None >

SIP Profile* < None >

Digest User < None >

Media Termination Point Required

Unattended Port

Require DTMF Reception