

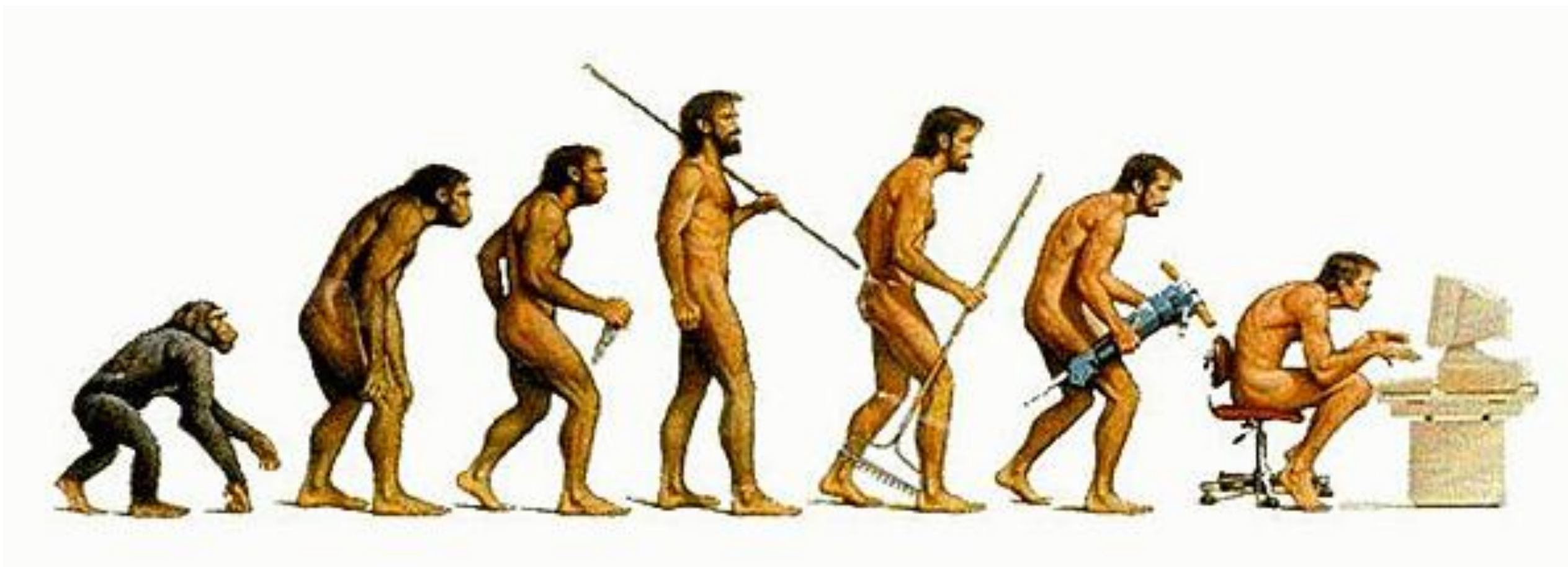
What You Make Possible



Understanding Cisco TelePresence Conductor

BRKEVT-2809

A Story of Evolution



Large Customer



Customer Contacts The Vendor



How Many?



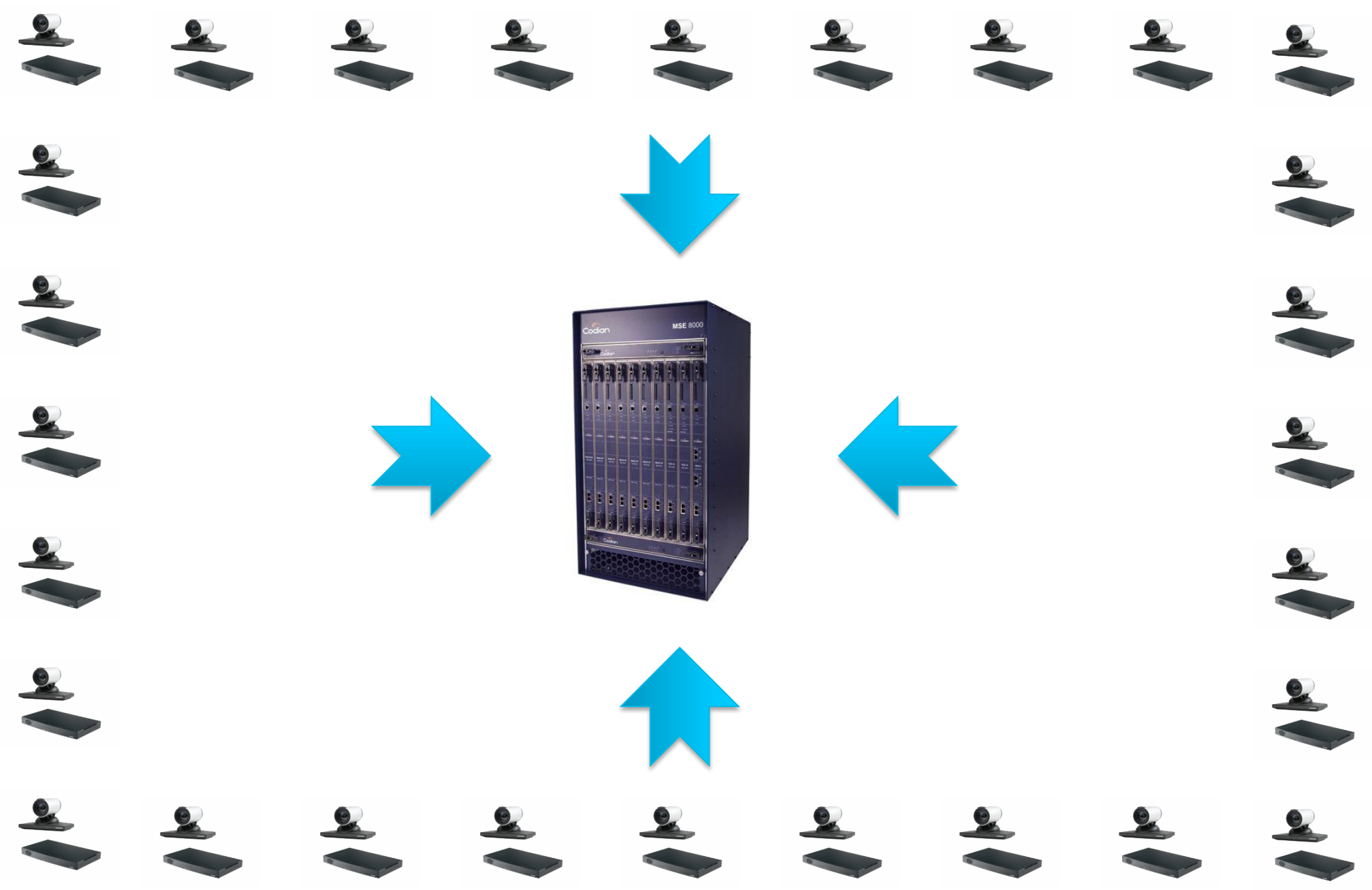
MCU and VCS



Design Time



Could be one... could be one thousand



Custom API Server

```
#!/usr/bin/env python
# -*- Mode: Python -*-
# vi:si:et:sw=4:sts=4:ts=4

"""Main program for API Server"""
"""Main program for API Server"""

import re
import datetime
from twisted.internet import threads
from twisted.internet import reactor
from twisted.internet import task
from logger import Logger

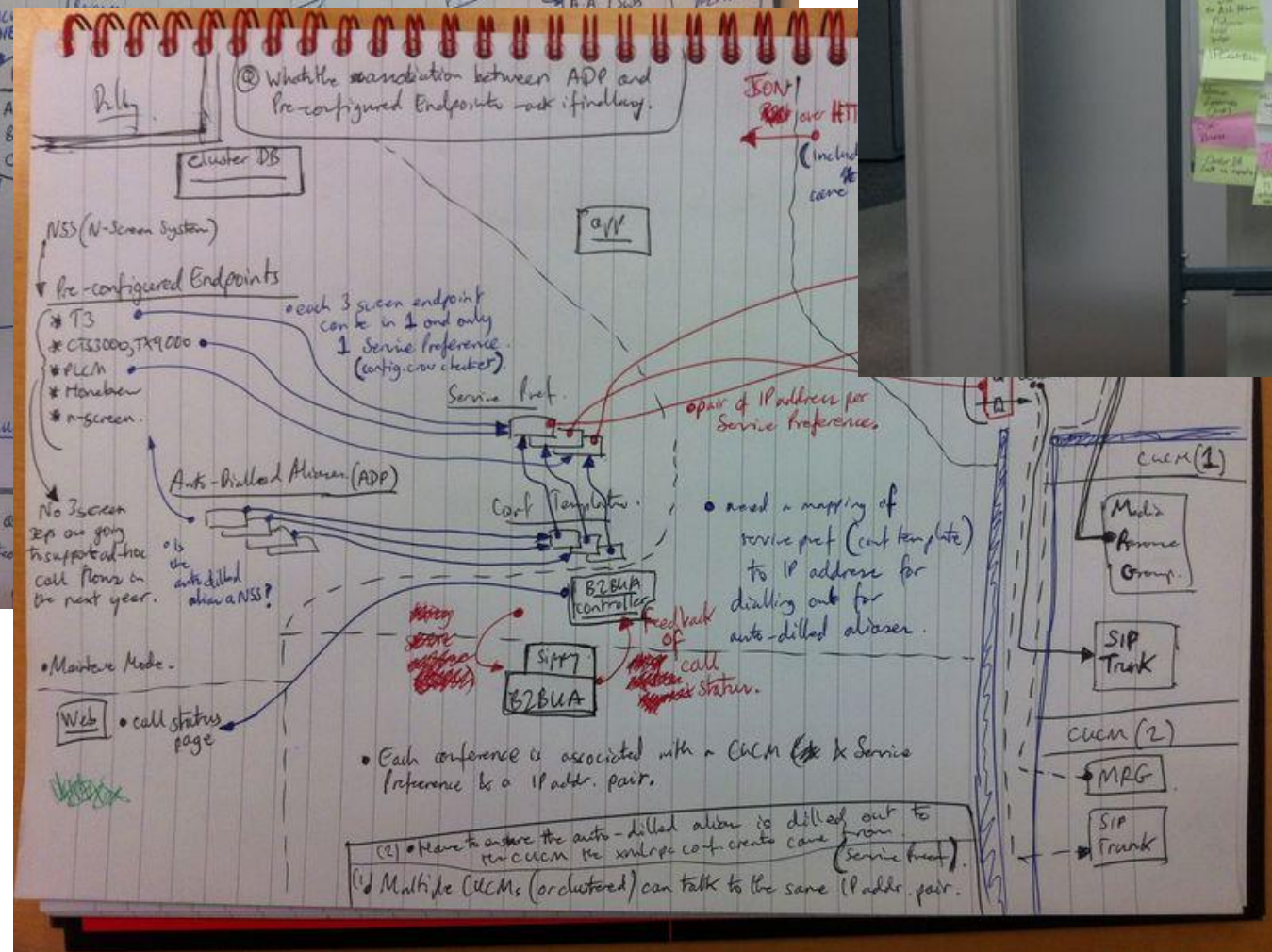
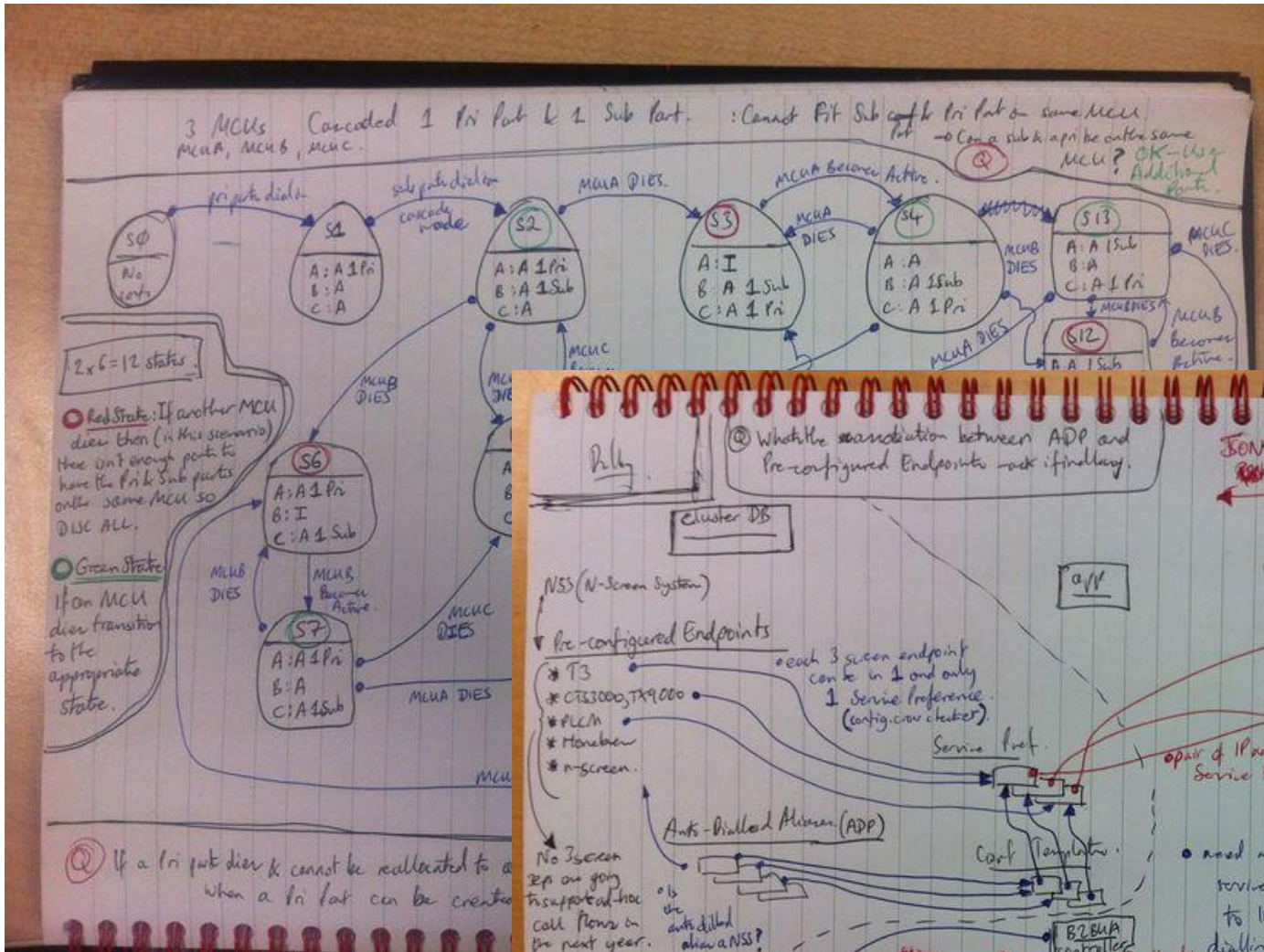
from config import Config
import mcuapi
import tmsapi
import conferenceutils
import conferenceobjects
from conferencestore import ConferenceStore
import vcslister
import vcsapi
import healthchecker
import util
```

```
def query_conferences_on_mcus():
    """Query configured MCUs for conferences and participants.

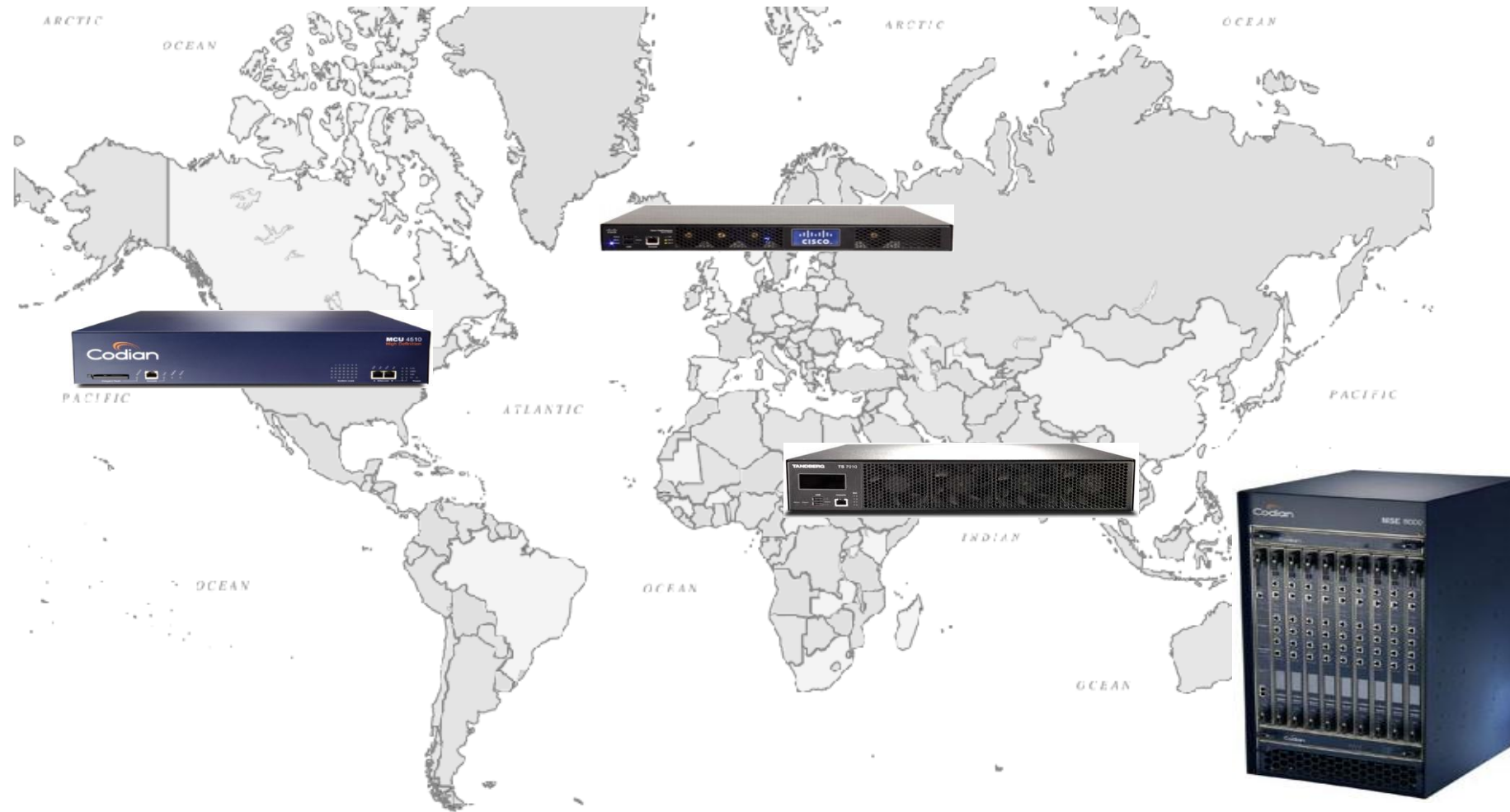
    For each configured MCU, query the MCU for conferences and participants
    by calling L{mcuapi.query_mcu_conferences()}.
    The arguments to the method are bundled into an L{MCUConnectParams}.
    The call is performed in a thread from the twisted thread pool.
    When the call has finished, the results are processed in L{handle_results()}.
    That means the results are serialised in the one function.
    """
    Logger().logger.debug("Querying conferences on all MCUs.")
    for mcu_id in Config().get_mcu_ids():
        if ConferenceStore().has_mcu(mcu_id):
            mcu = ConferenceStore().get_mcu(mcu_id)
            if not mcu.is_broken():
                mcu_config = Config().get_mcu(mcu_id)
                params = mcuapi.MCUConnectParams(mcu_config['protocol'], mcu_config['ip'],
                mcu_config['user'], mcu_config['password'])
                d = threads.deferToThread(mcuapi.query_mcu_conferences, params)
                d.addCallback(handle_results)
                d.addErrback(handle_error, src='query_conferences_on_mcus', mcu_id=mcu_id)
            else:
                Logger().logger.info("Not polling unreachable MCU %s" % mcu_id)
        else:
            Logger().logger.info("MCU %s not (yet) in ConferenceStore" % (mcu_id))
```

Engage R&D

Develop a new product



The Conductor is here



Agenda

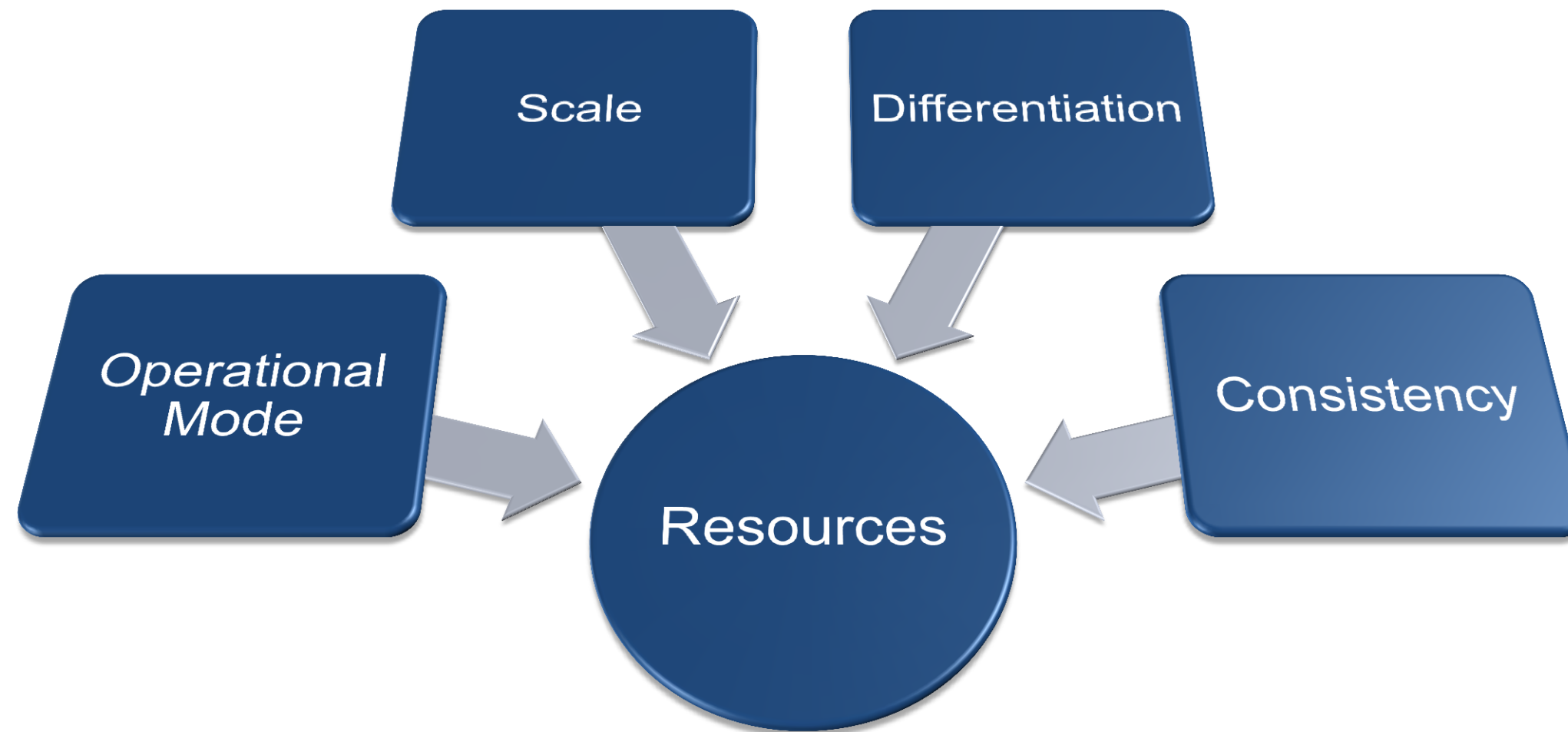
- Types of Conferences
- What is Conductor
- Network Topology
- Design Best Practice
- Configuration Overview
- Troubleshooting

Multipoint Conference Types

- Rendezvous Conference
 - Meetme
 - Static VMR
- ADHOC
 - CUCM Adhoc escalation
 - VCS Multiway
- Scheduled conference
 - Web UI
 - Calendaring (Exchange/Notes)

Conferencing Challenges

Traditional considerations for multipoint conferencing



What does TelePresence Conductor do?

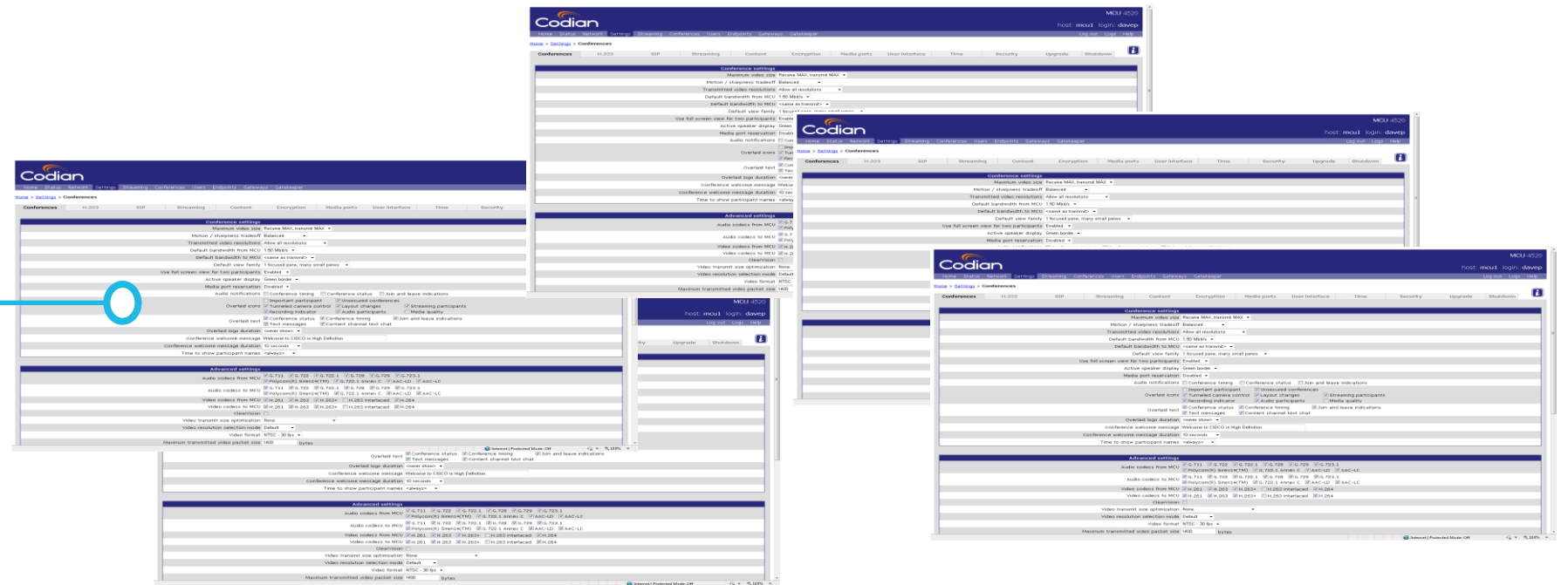


Simple Administration

Consolidate Configuration

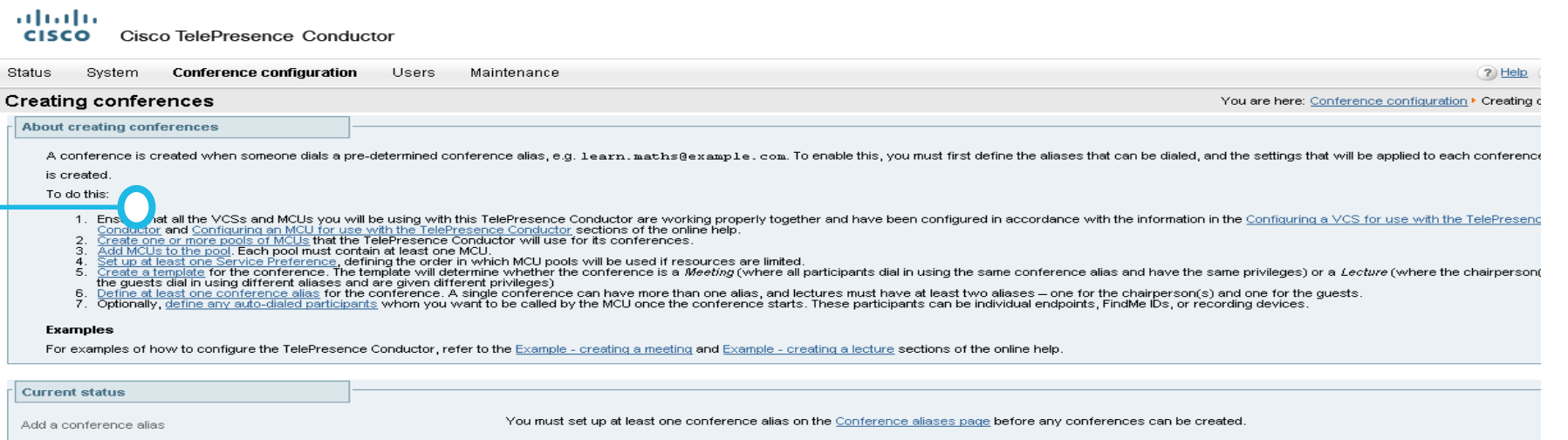
Without Conductor

Need to configure resources individually



With Conductor

Simplified configuration in one place

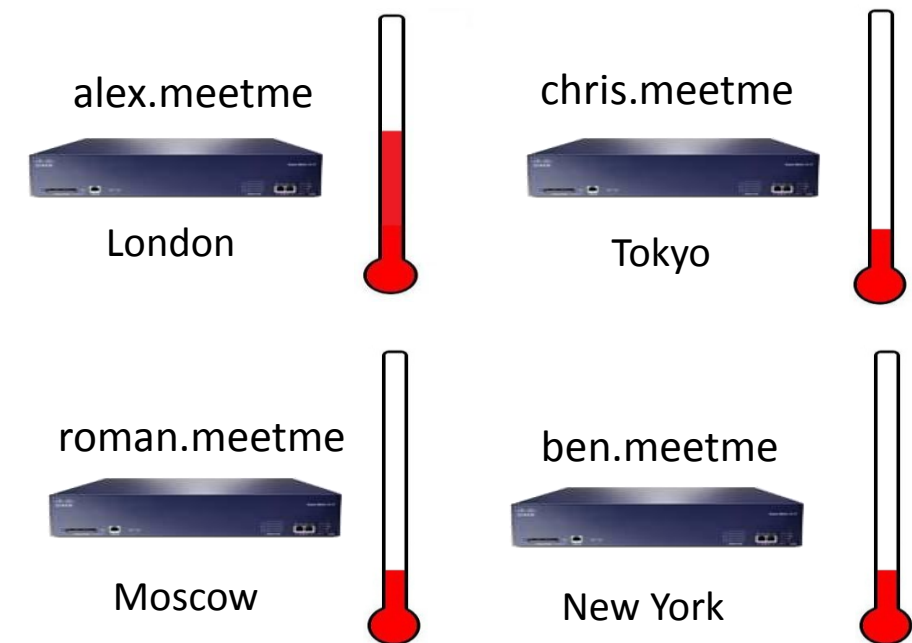


Administration Benefits

Simple Conference Administration

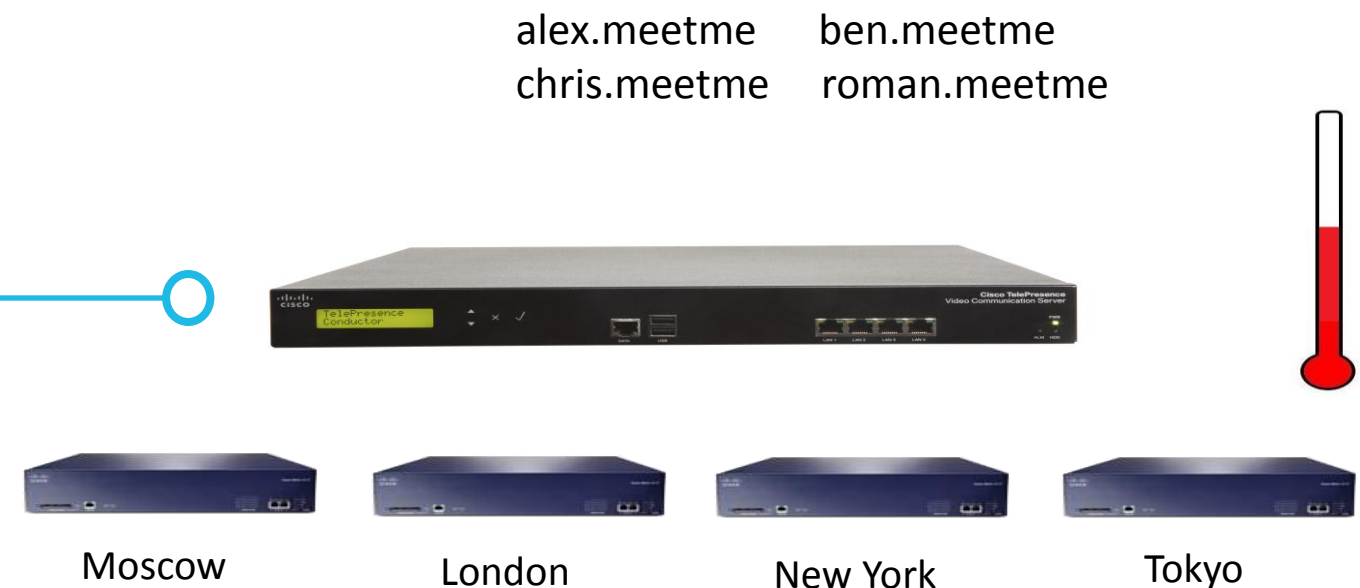
Without Conductor

Configure conferences on individual MCUs



With Conductor

Simplified configuration in one place – Shared resources



Intelligent Resource Allocation

- Simple Conference Administration

Call Control



CUCM and/or VCS

Cisco TelePresence Conductor



Cluster

Resource Pool



*MCU 5310 HD MCU
MCU 5320 HD MCU*

MCU 4200 Series

MCU 4500 Series

*MSE 8420 SD MCU
MSE 8510 HD MCU*

*TelePresence Server
(TS 7010 & MSE 8710)*



Support Multiple Conference Types

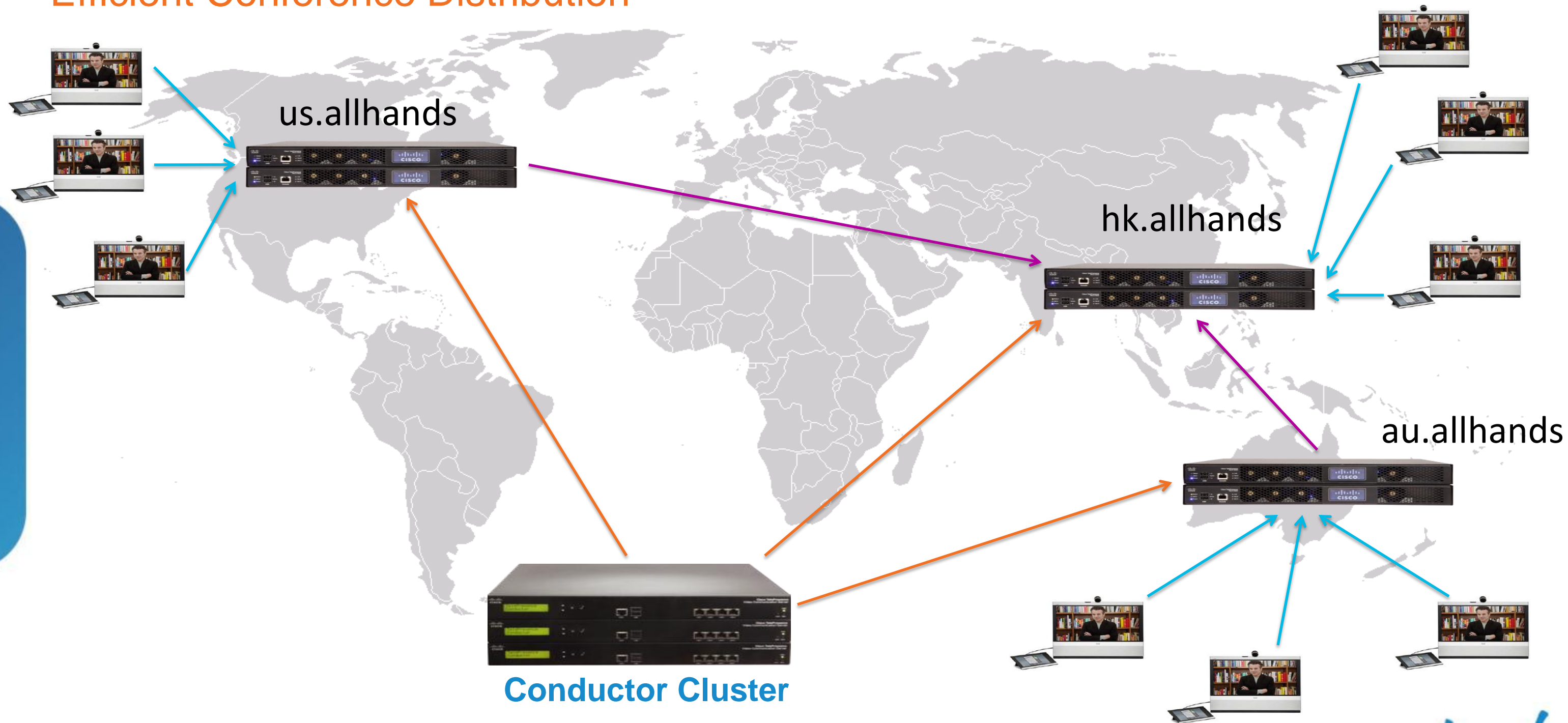
Maximise conferencing resources

- Support for TMS scheduled conference
- ADHOC conference escalation for both CUCM and VCS registered users
- Rendezvous/VMR/Static conferences



Geographical Cascading

Efficient Conference Distribution



AdHoc Conferencing

Three way call established on an MCU, intelligently selected by Conductor



An incoming call from a third person

Two way call in progress
better MCU-based experience

for mobile workers
Original call on hold



Activate Multiway



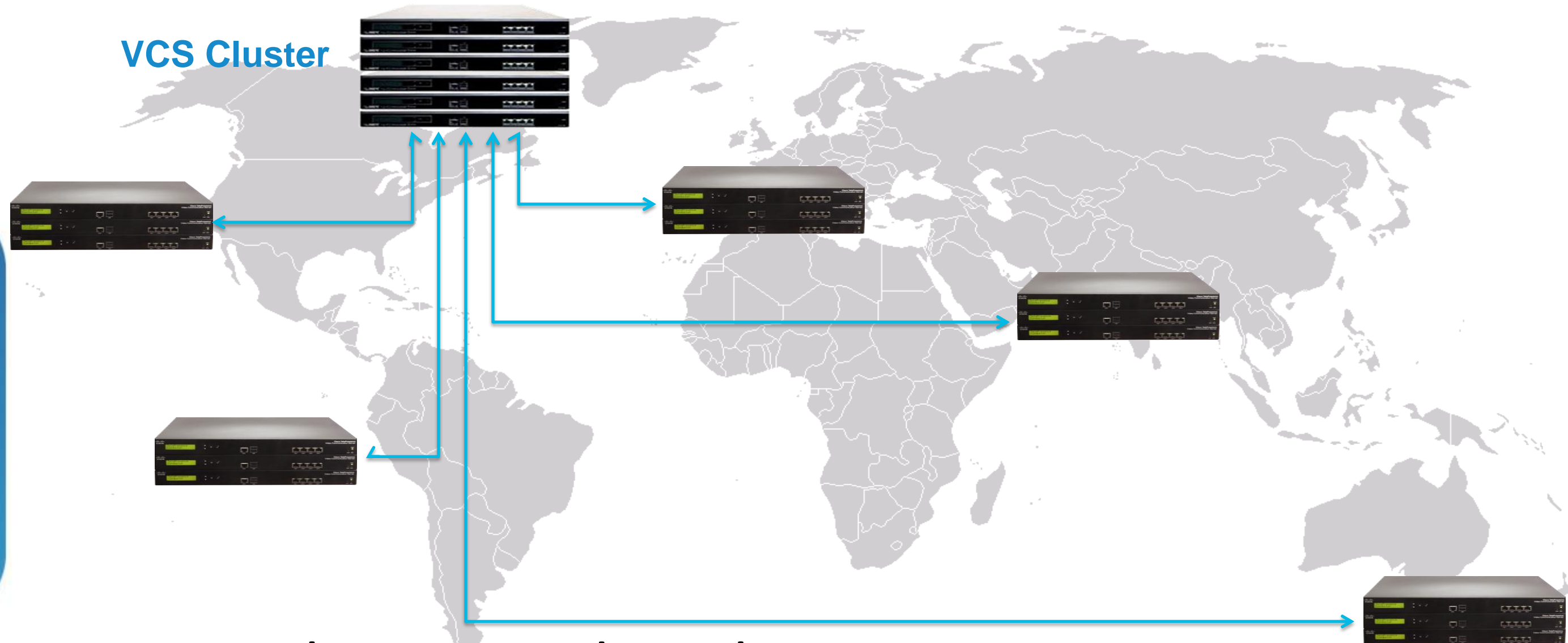
Scale

Single Conductor

Services/Configuration	Parameter
Utilised MCUs	30 MCUs
Concurrent Active Conferences	1,200 Conferences
Preconfigured Conference Template	500 Conferences
Preconfigured Conference Aliases	1,000 Aliases
Preconfigured Auto-dialed Participants	20,000 Users
Preconfigured Auto-Dialed Participants per Conference Template	5,000 participants per conference template

Design to Scale

Simple Conference Administration



Up to 20 TelePresence Conductor Clusters

Up to 300 MCUs

Clustering

- Resilient
- Active/Active design
- 3 Conductors in a cluster
- Uses IPSEC communications between peers.
- NTP needs to be configured
- Low latency connections between peers
- Failover does not impact on going calls



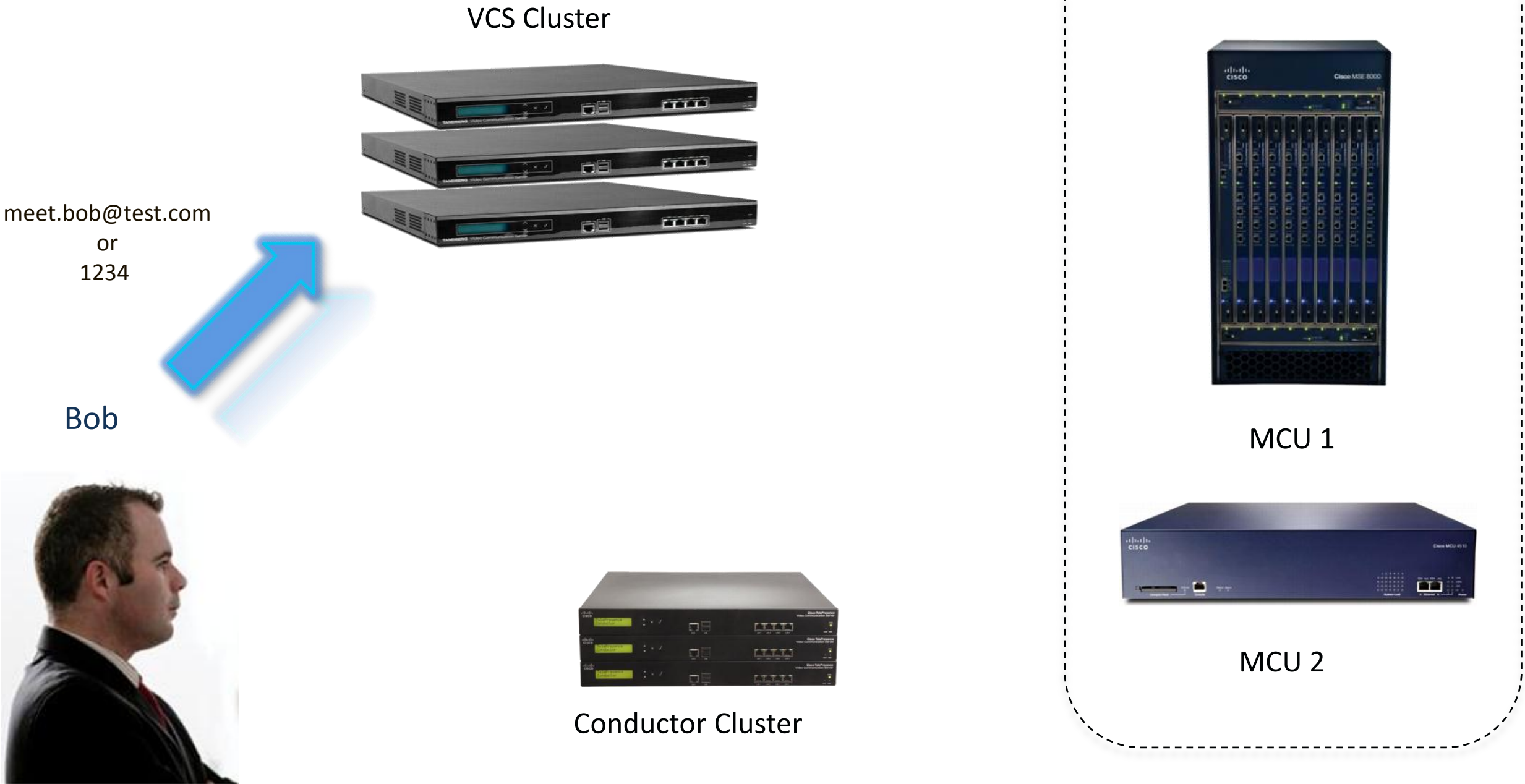
Note: Reference the deployment guide for step by step instructions to configure clustering:

- http://www.cisco.com/en/US/docs/telepresence/infrastructure/conductor/config_guide/Cisco_TelePresence_Conductor_Cluster_Creation_and_Maintenance_Deployment_Guide_XC1-2.pdf

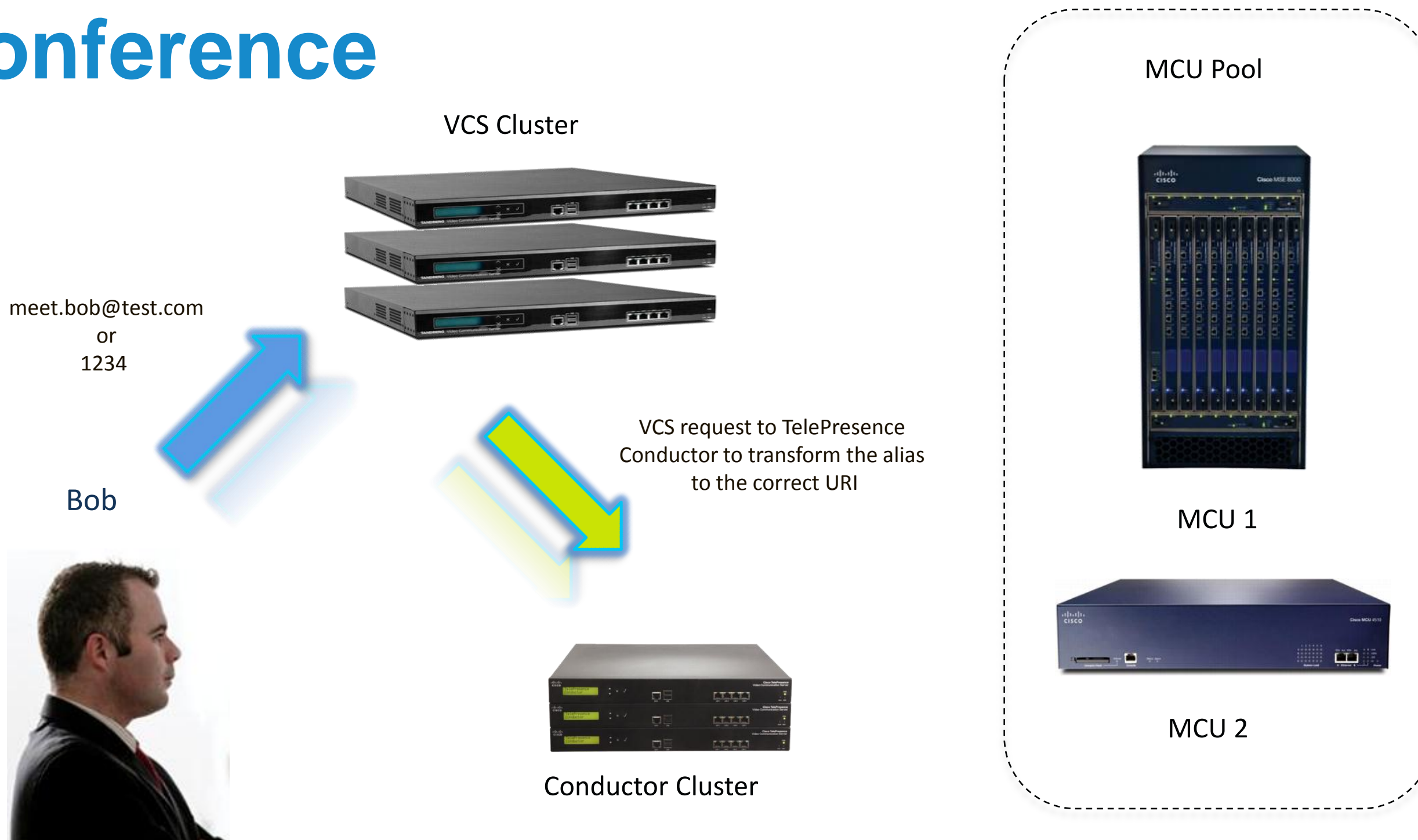
Simple Rendezvous Conferencing



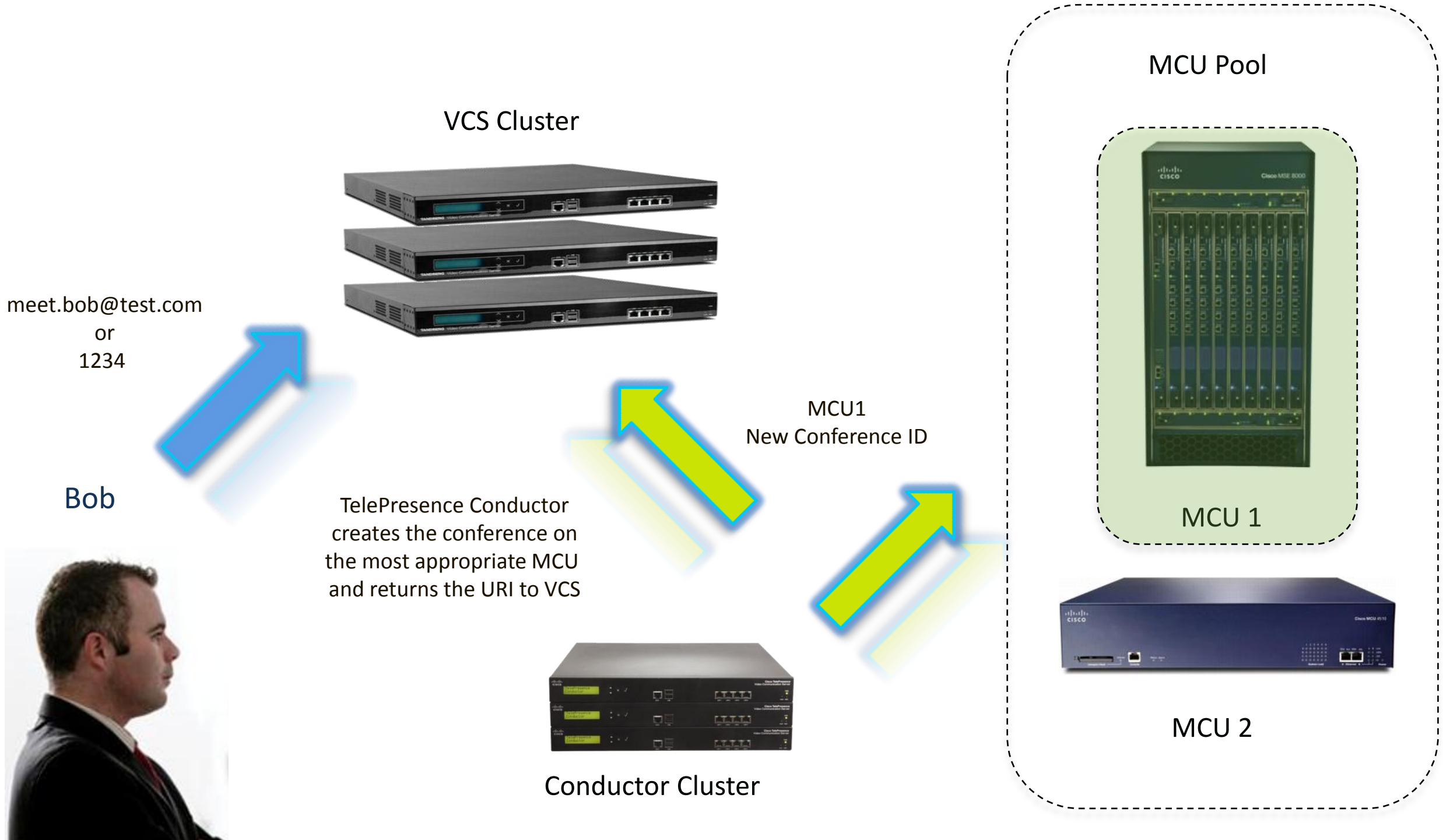
User initiates conference



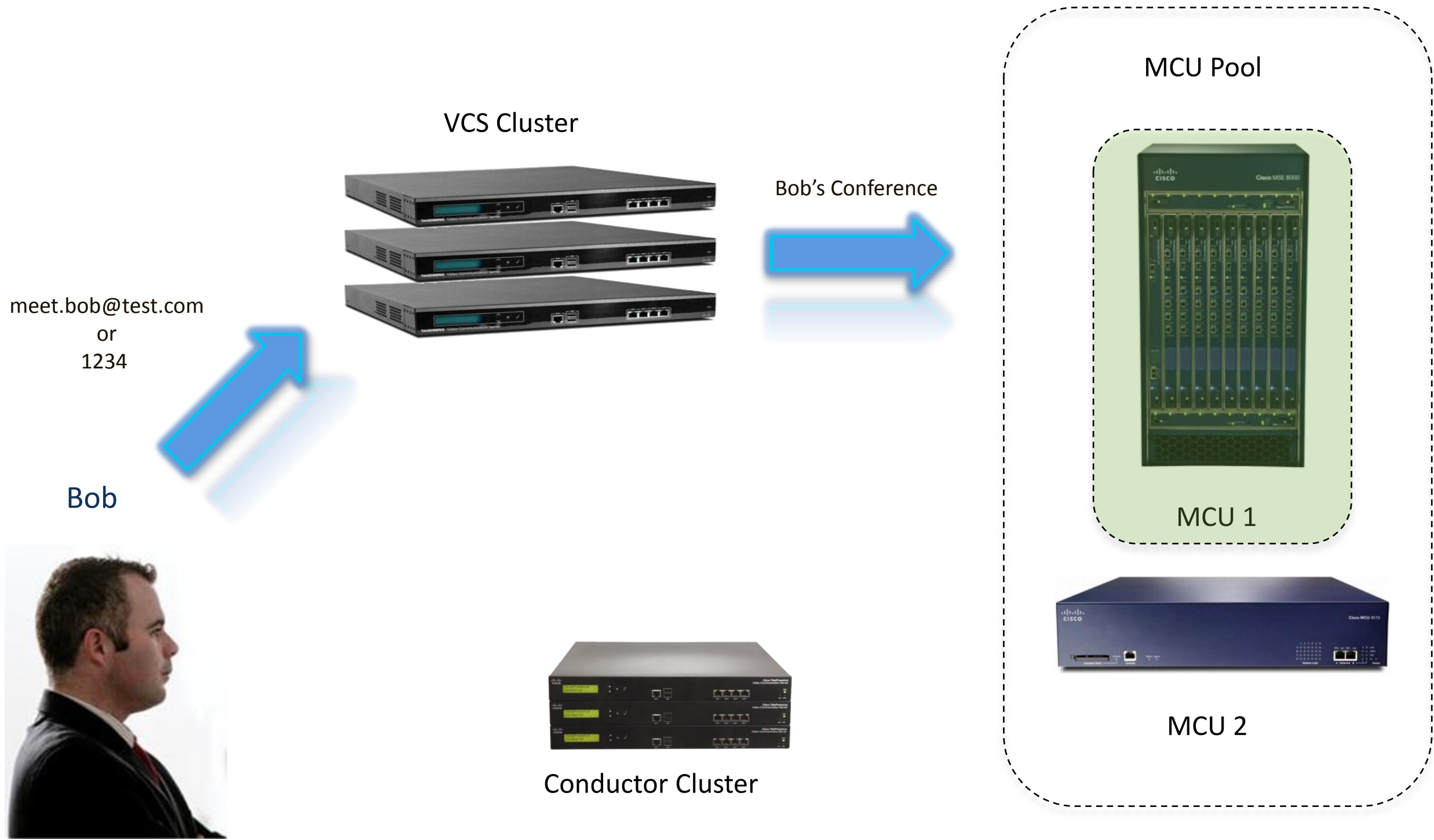
TelePresence Conductor orchestrates the conference



Intelligent conference creation



User connected to conference



Next user calls into the conference

meet.bob@test.com
or
1234



VCS Cluster



Conductor Cluster

MCU Pool

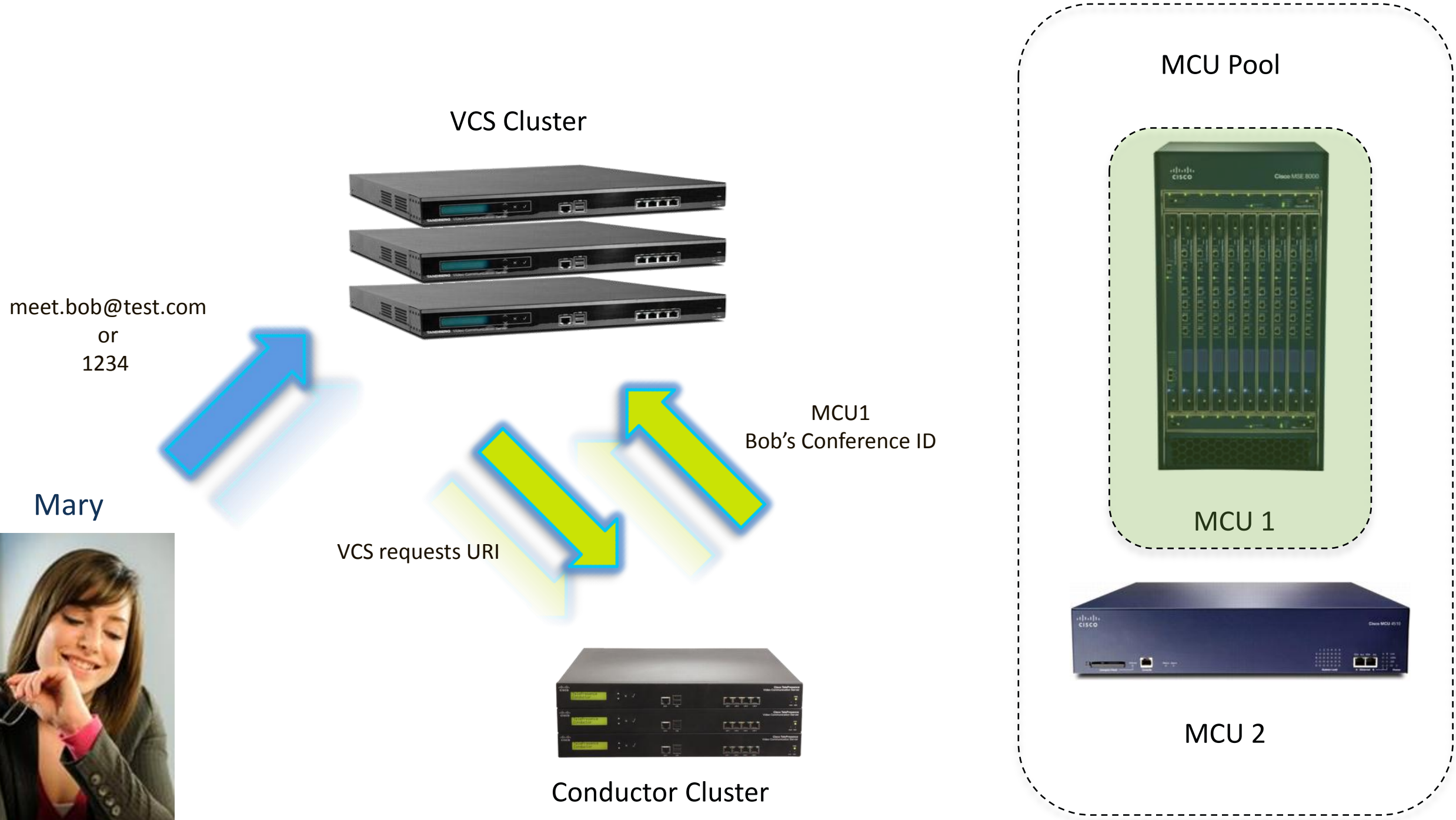


MCU 1

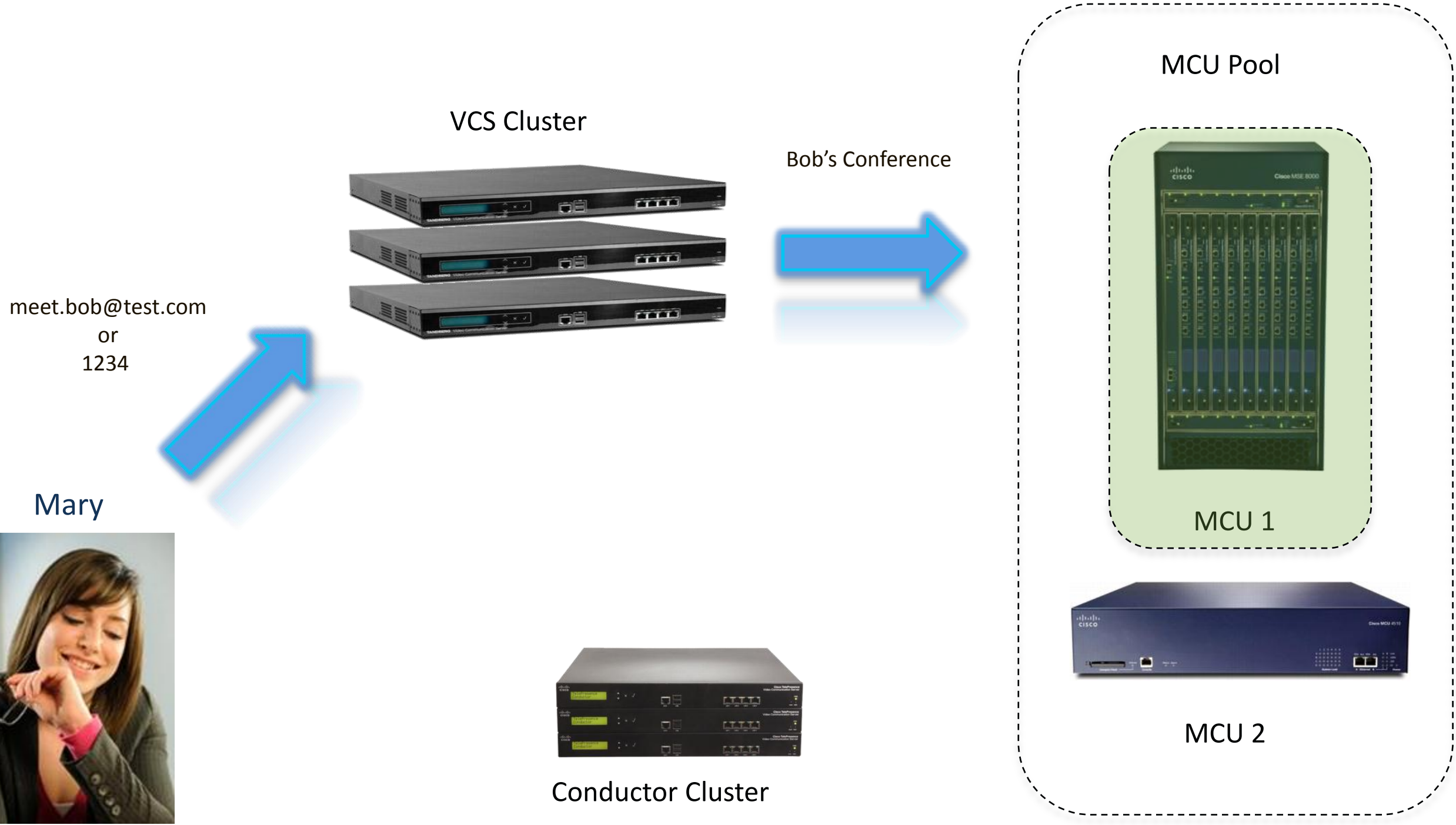


MCU 2

TelePresence Conductor directs the call



User connected to the conference



Lecture Mode Conferences



Problem: Simplicity

- The scenario

Your user wants a conference for **20 people** but with various **levels of access** based on user profile

Your user also wants the conference to be **recorded** for participants who cannot join the event

Working Example: Simplicity

- Let us consider a university lecture
 - We define a conference template for lectures
 - We define two conference aliases
 - Matching “**learn.(.*)**”
 - and “**teach.(.*)**”
 - Each forwarding to the same conference
 - Each with different roles
- Add a recording device (eg. TCS) as an auto-dialed participant



Lecturer initiates conference

Teach.lecture@test.com
or
12345



Bill



VCS Cluster



Conductor Cluster

MCU Pool

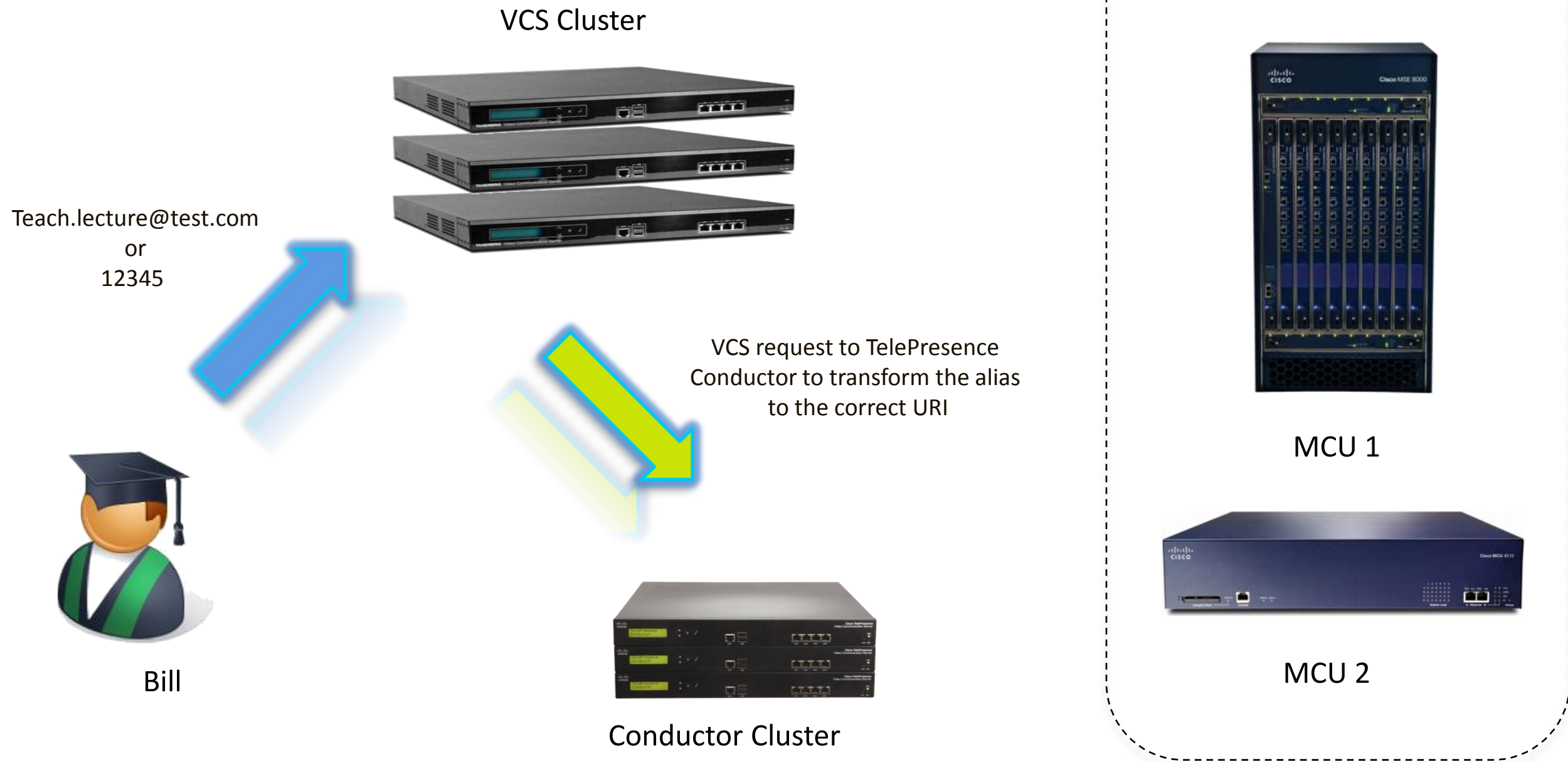


MCU 1

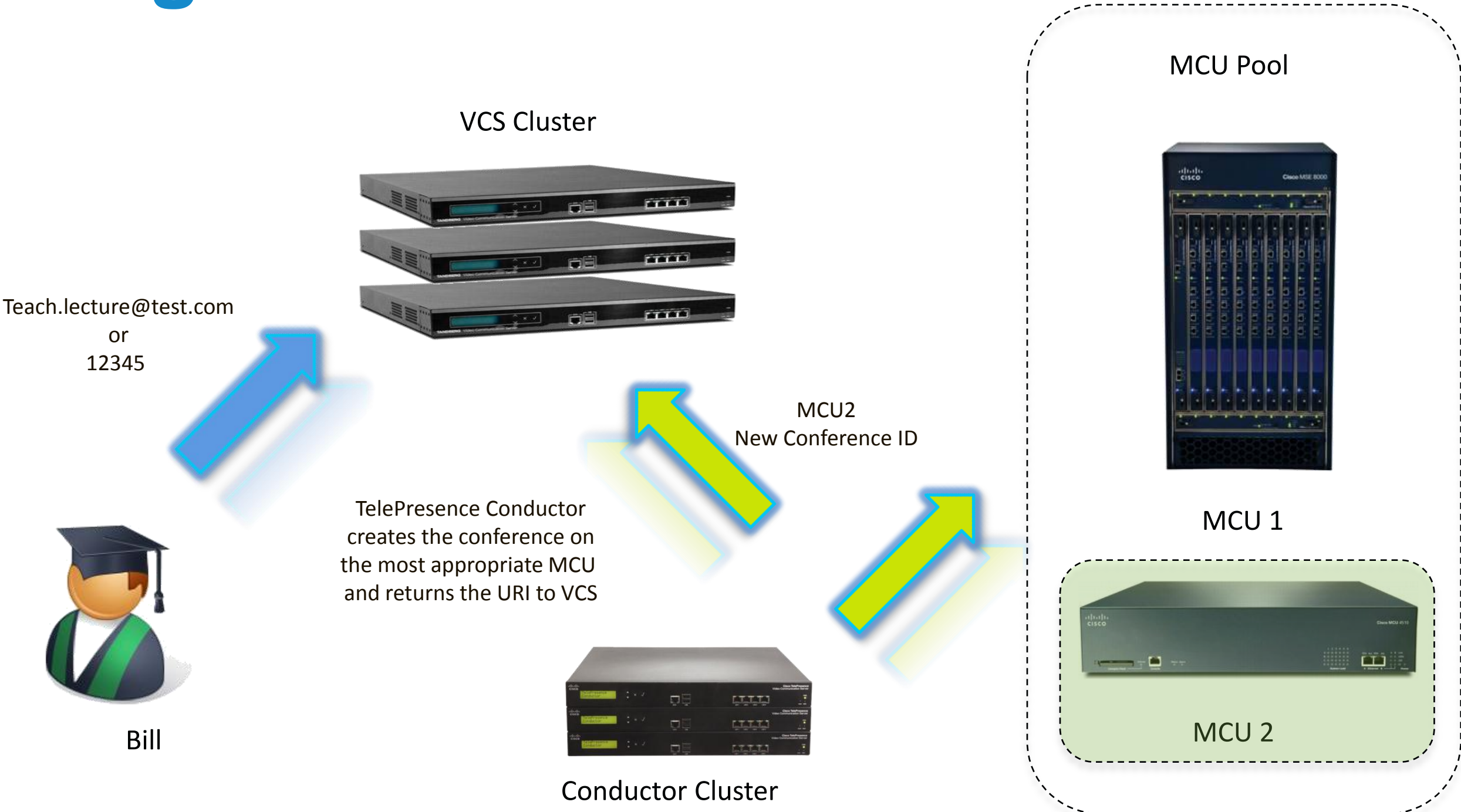


MCU 2

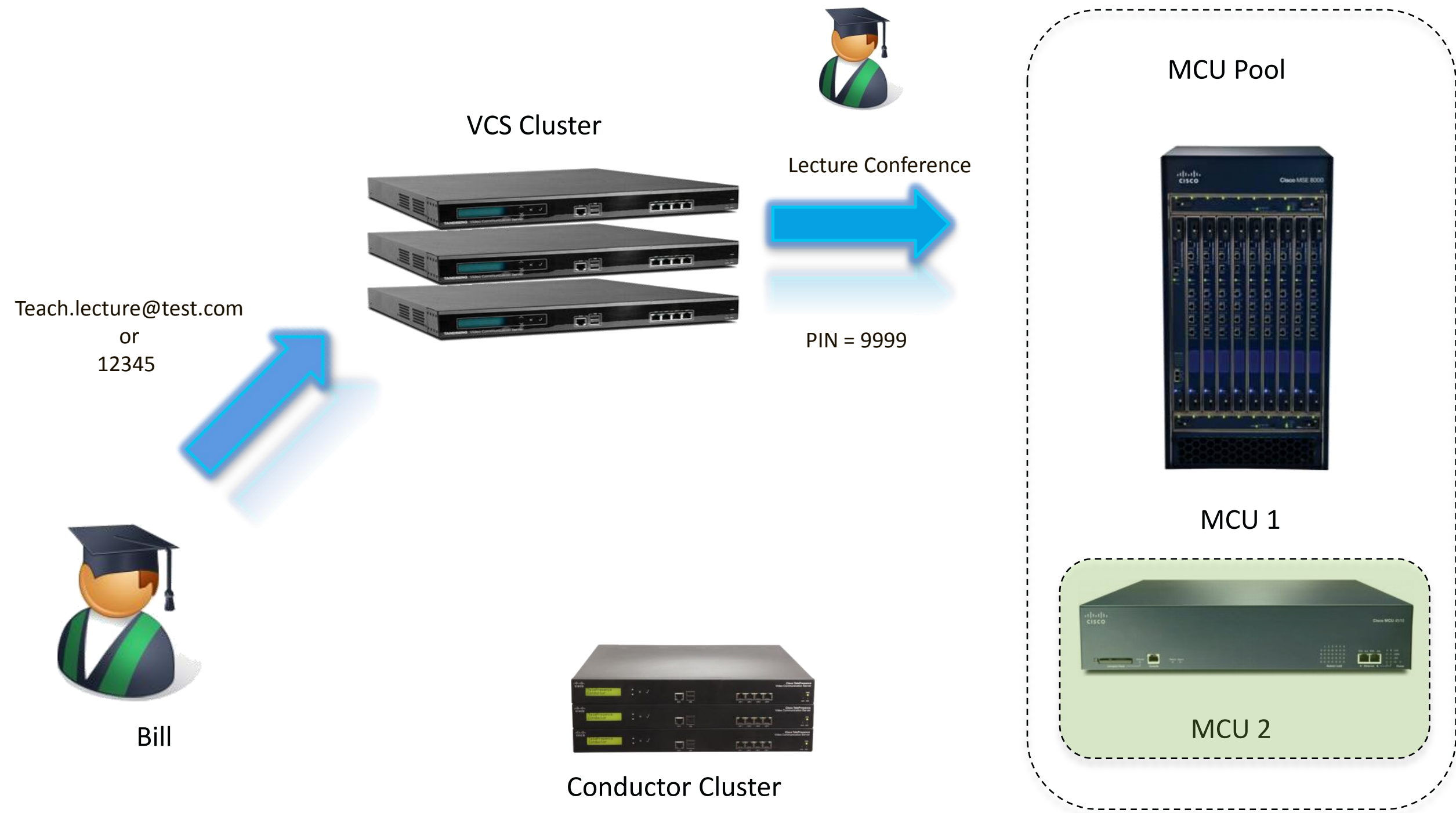
TelePresence Conductor orchestrates the conference



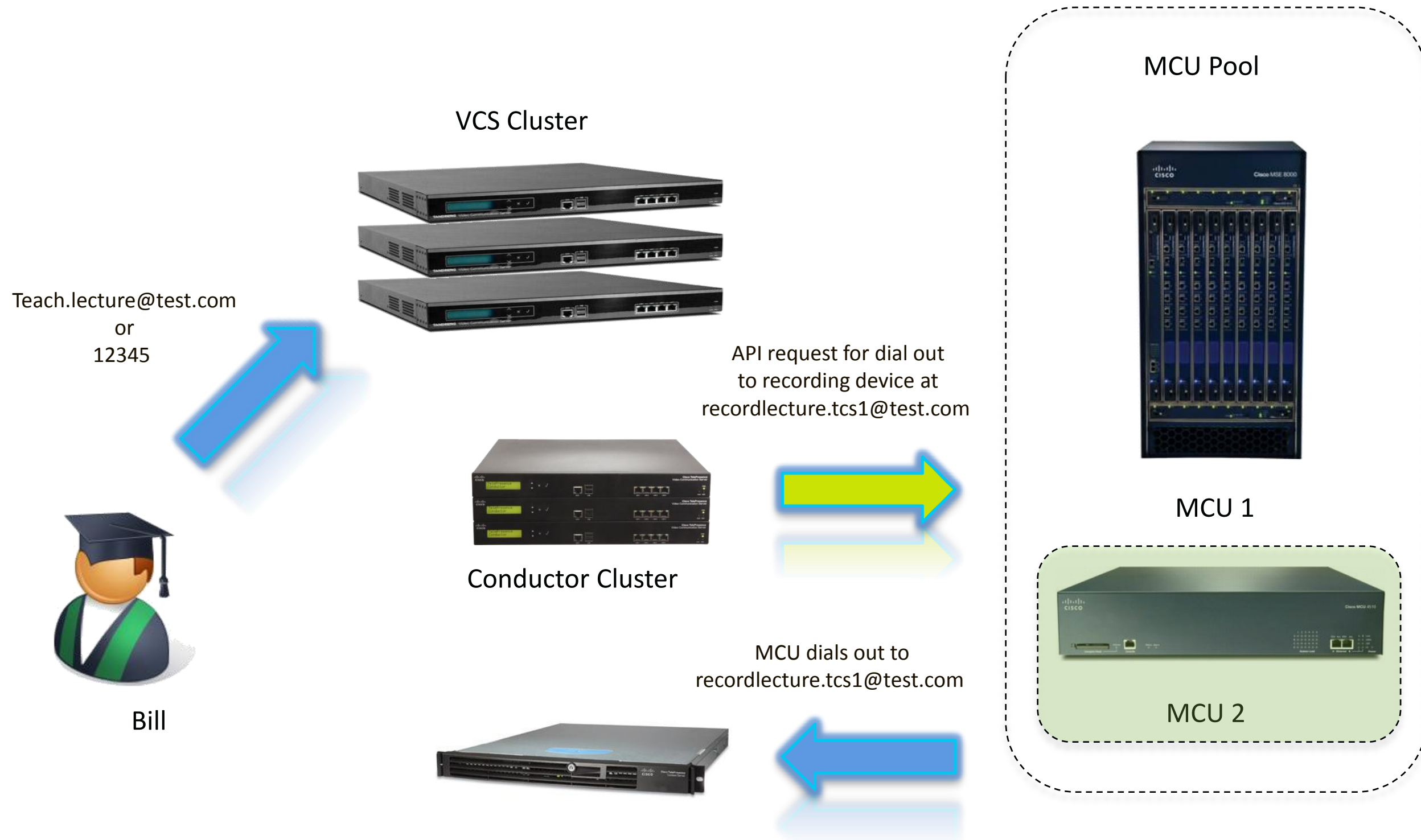
Intelligent conference creation



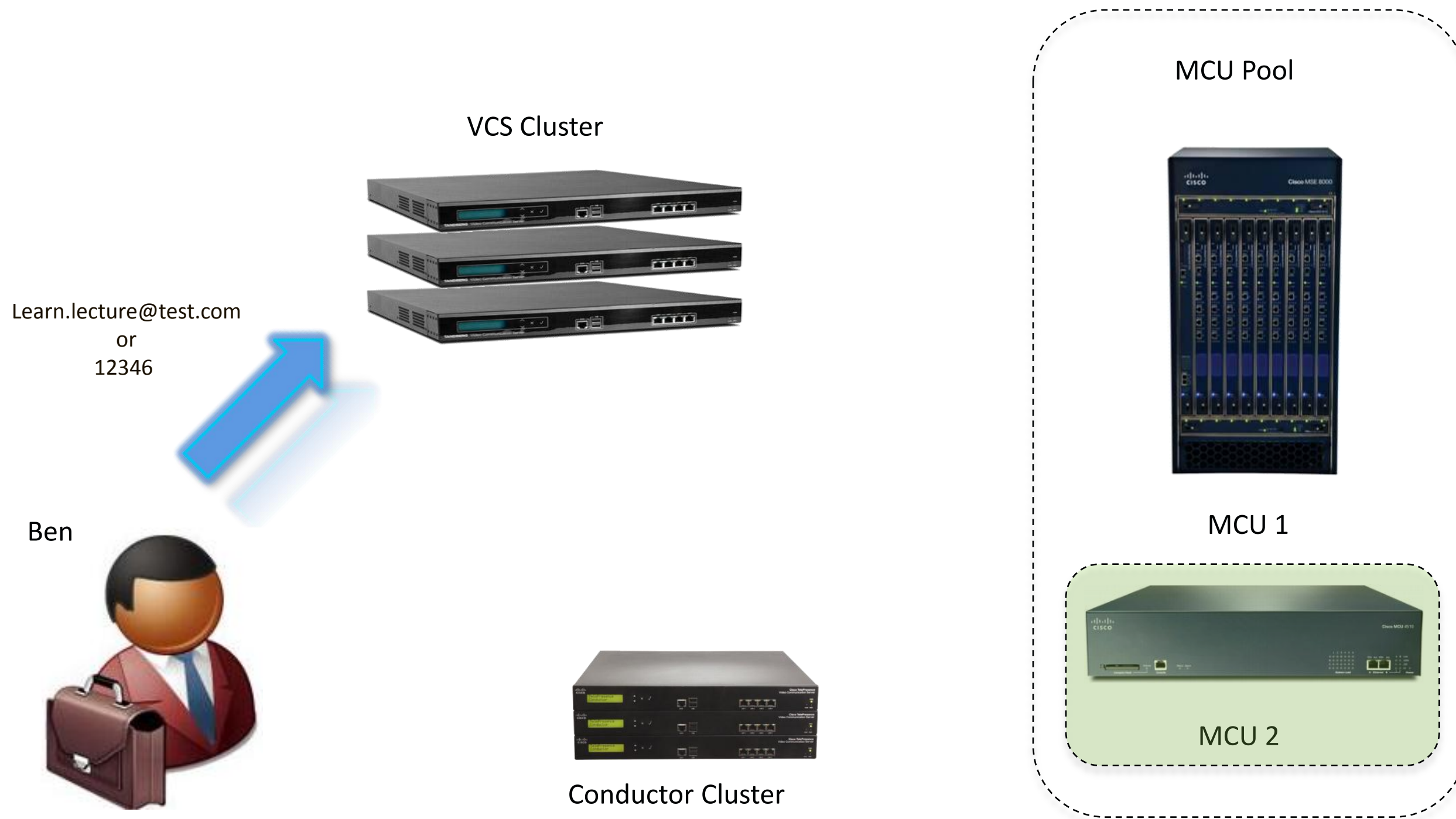
Lecturer connected to conference



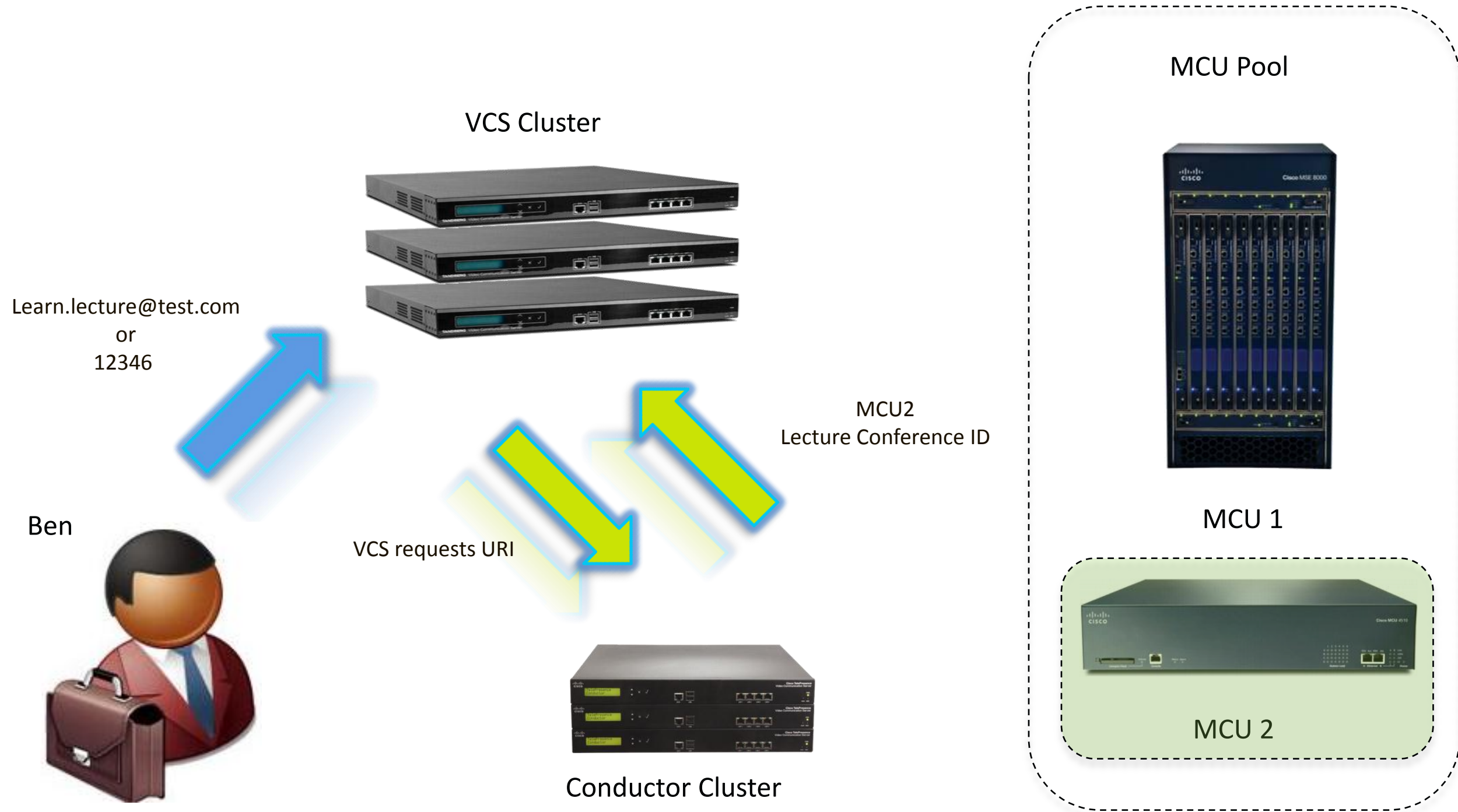
TelePresence Conductor adds recording



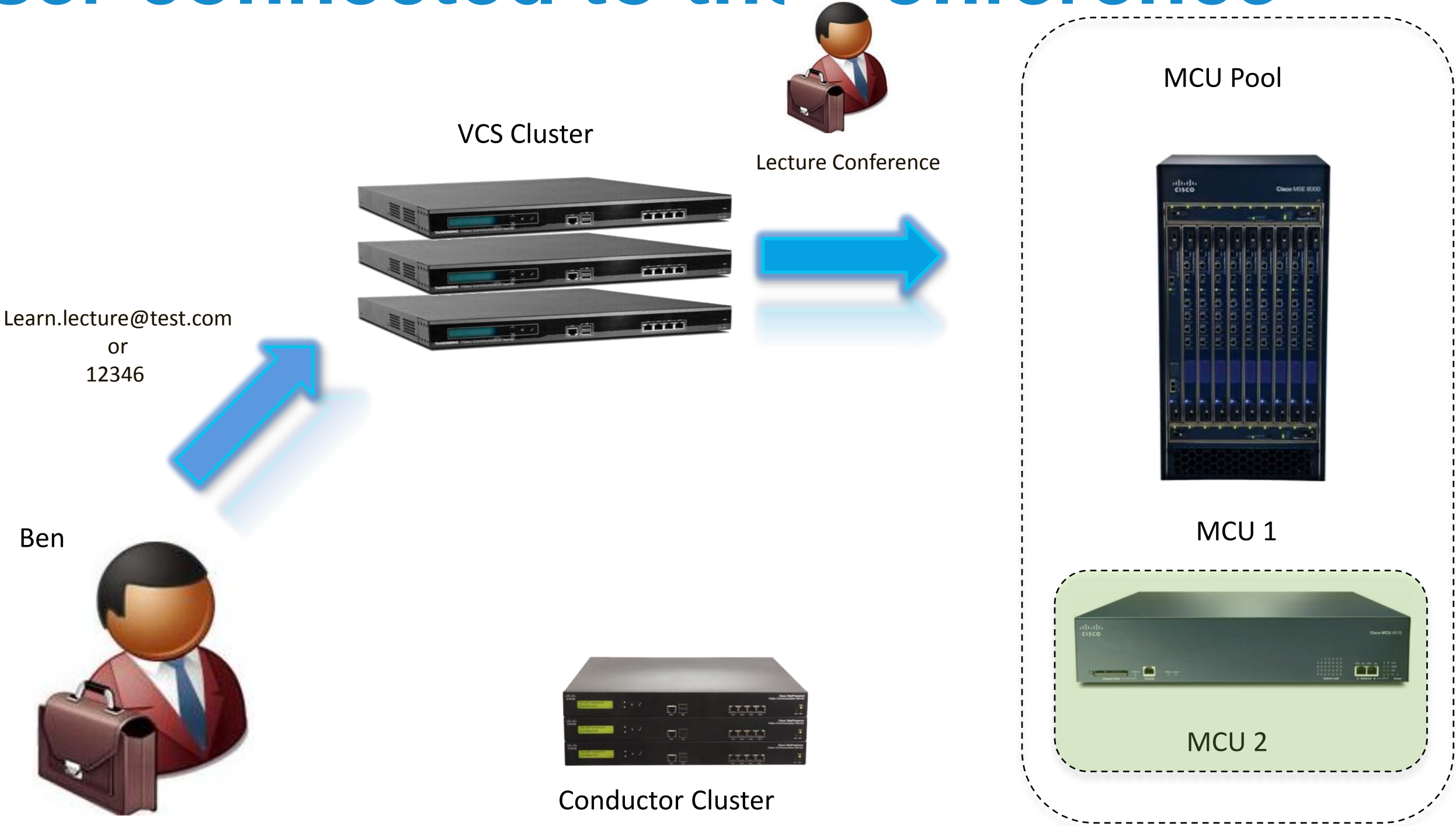
Student calls into the conference



TelePresence Conductor directs the call



User connected to the conference



Scaling Conferences

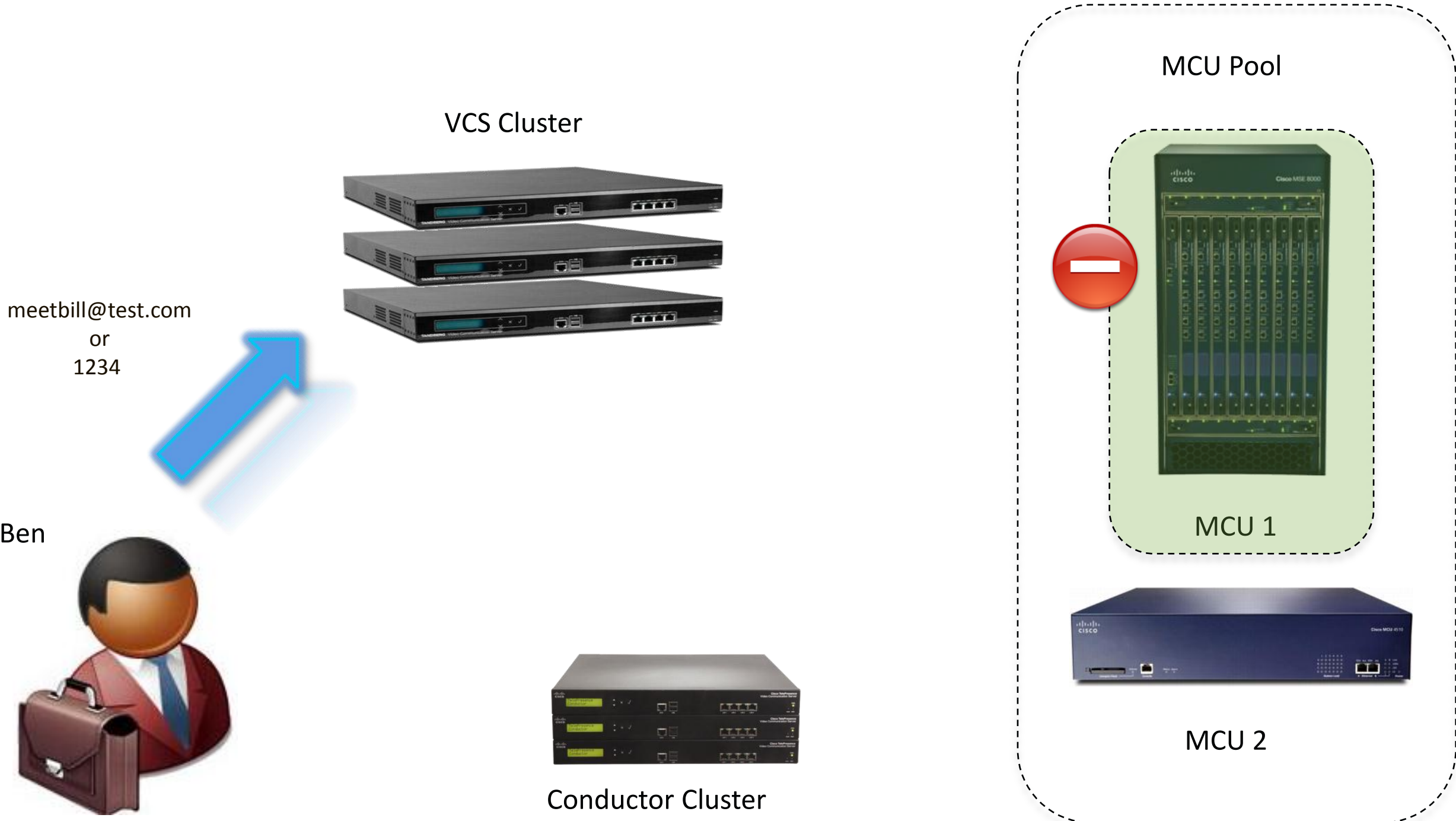


Problem: Scalability

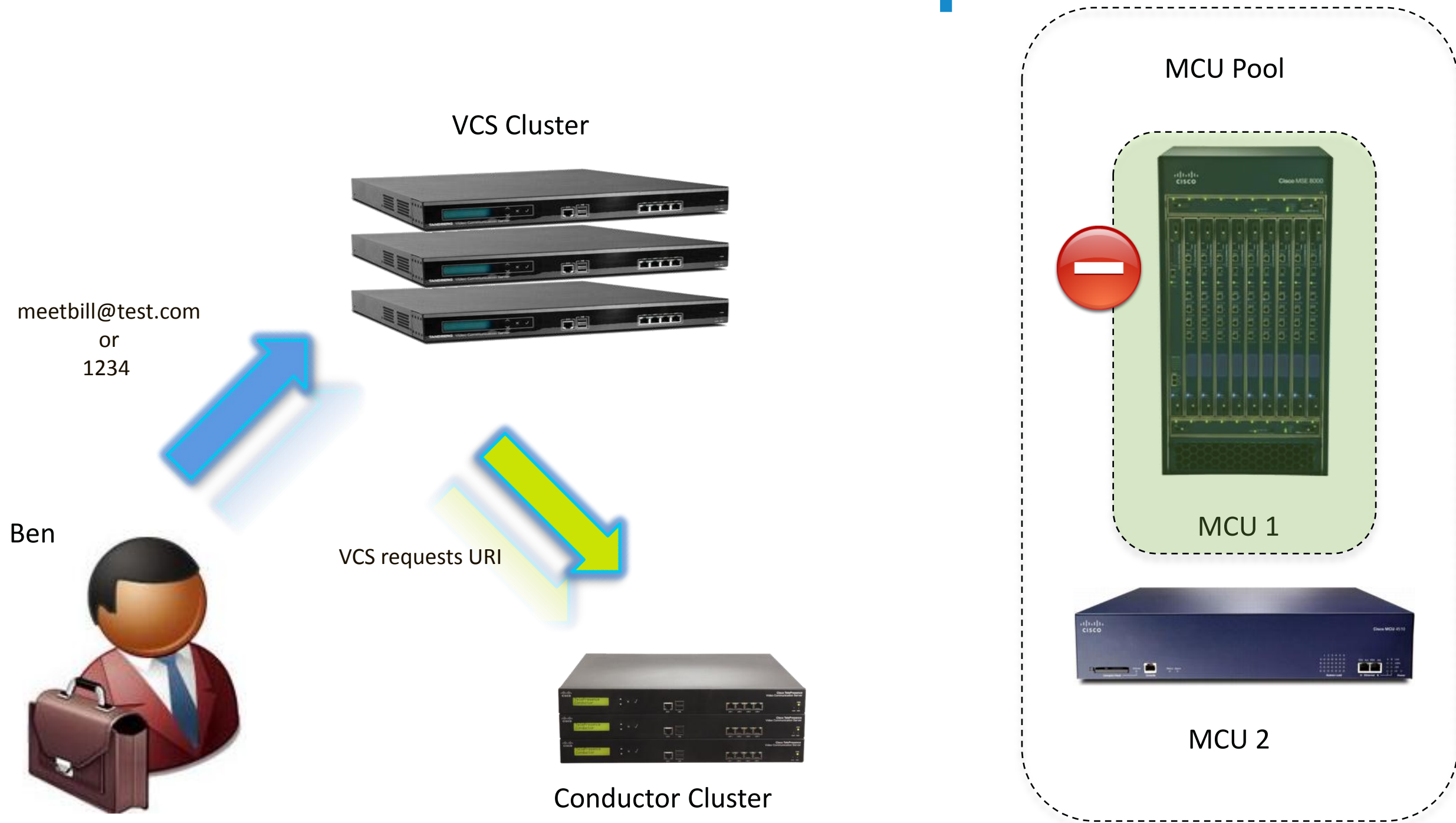
- Cisco MCU's support up to 80 participants on a single device (depending on device type)
- As conferences increase in size we are outgrowing the capacity of a single MCU
- As scale increases we need to add more MCU capacity without increasing the administrative overhead



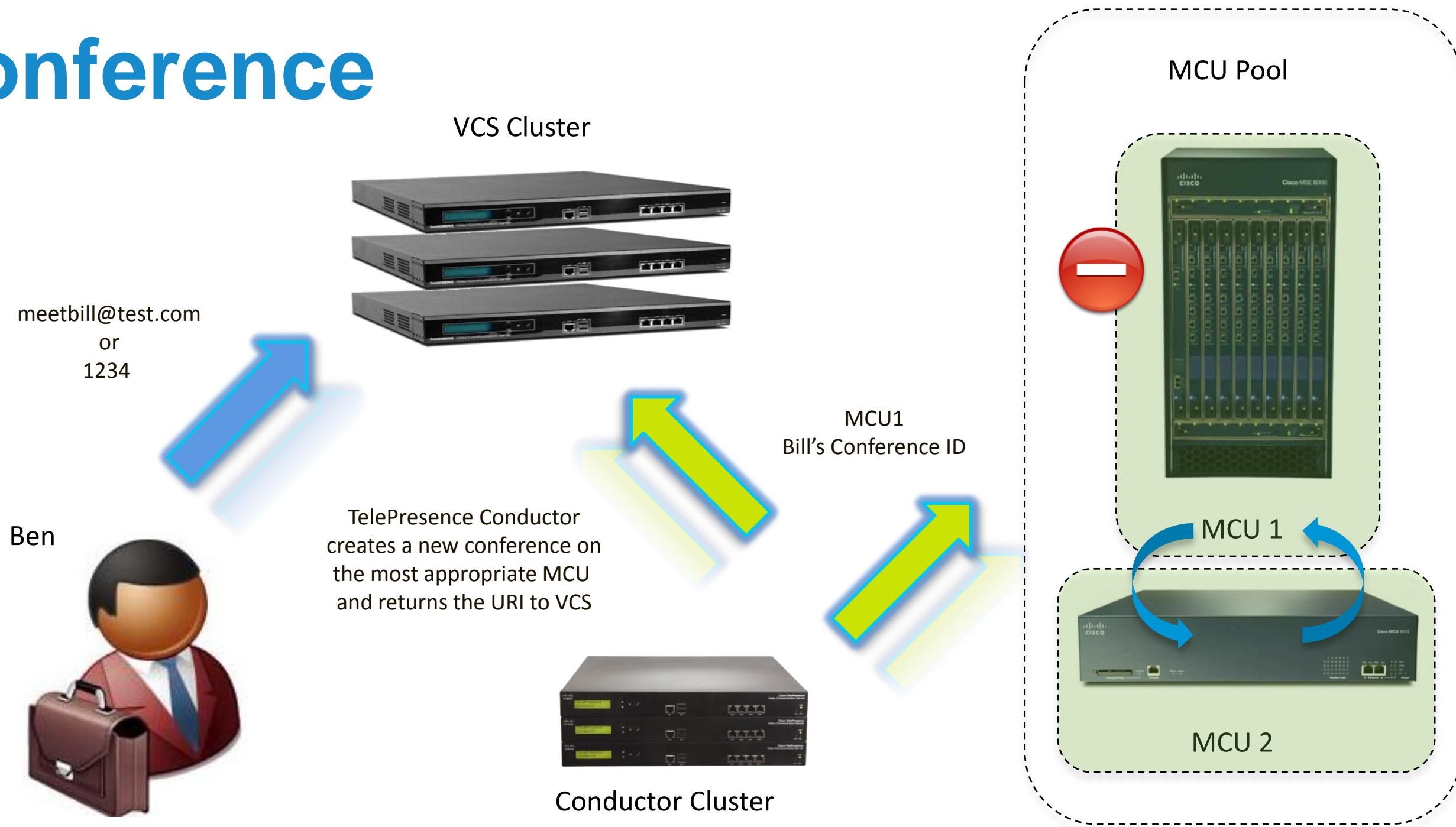
User calls into a conference – MCU full



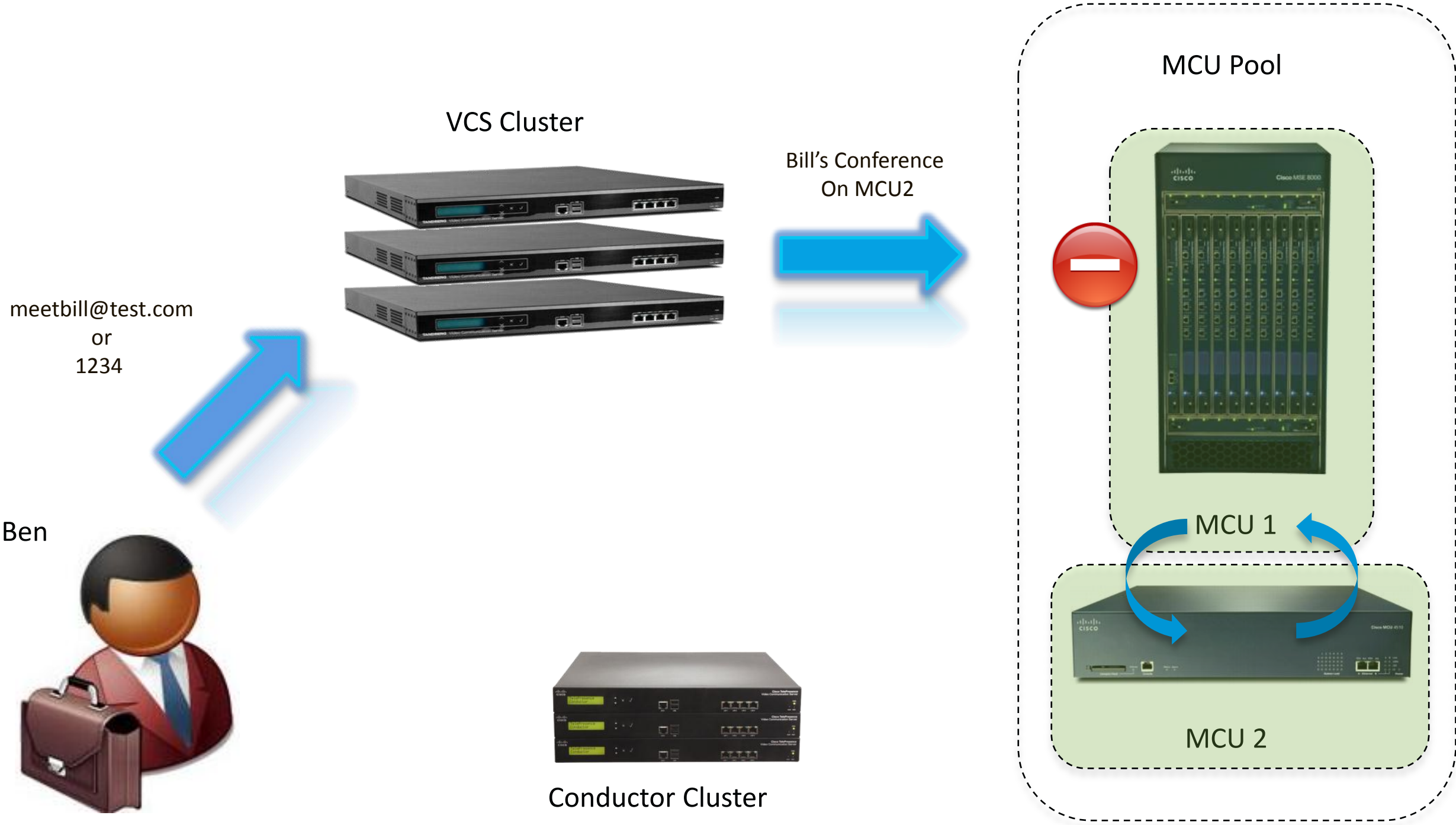
TelePresence Conductor polls MCU Pool



TelePresence Conductor starts new conference



User connected to the conference

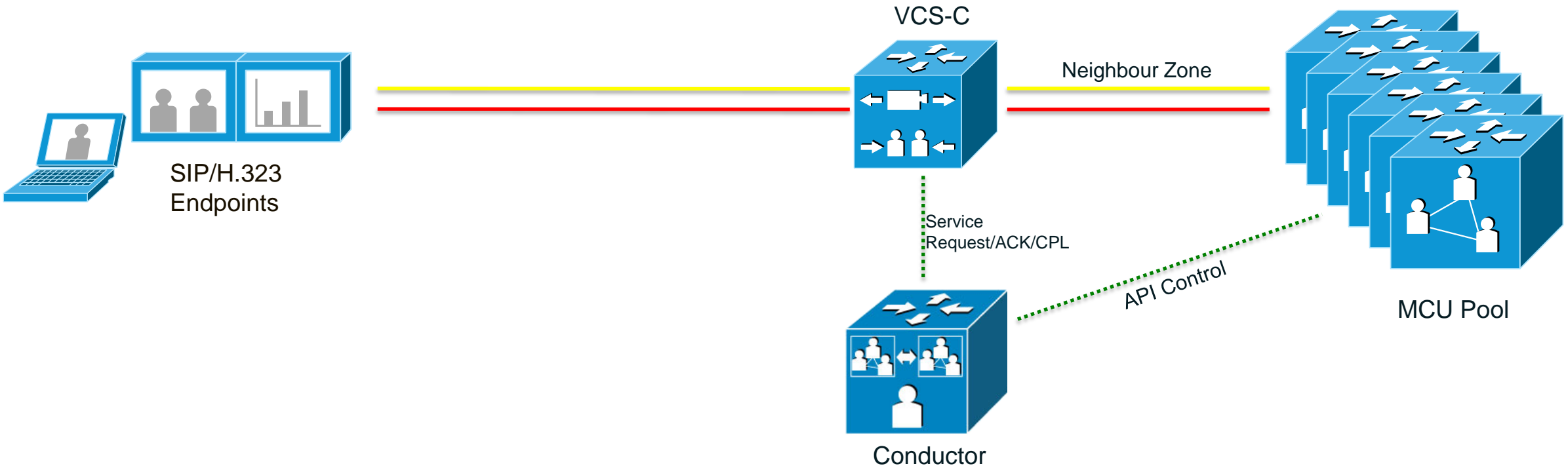


Supported Topology



Conductor Deployment Models

VCS – ADHOC and Rendezvous Conferencing Scenario



- SIP
- H.323
- ... HTTPS

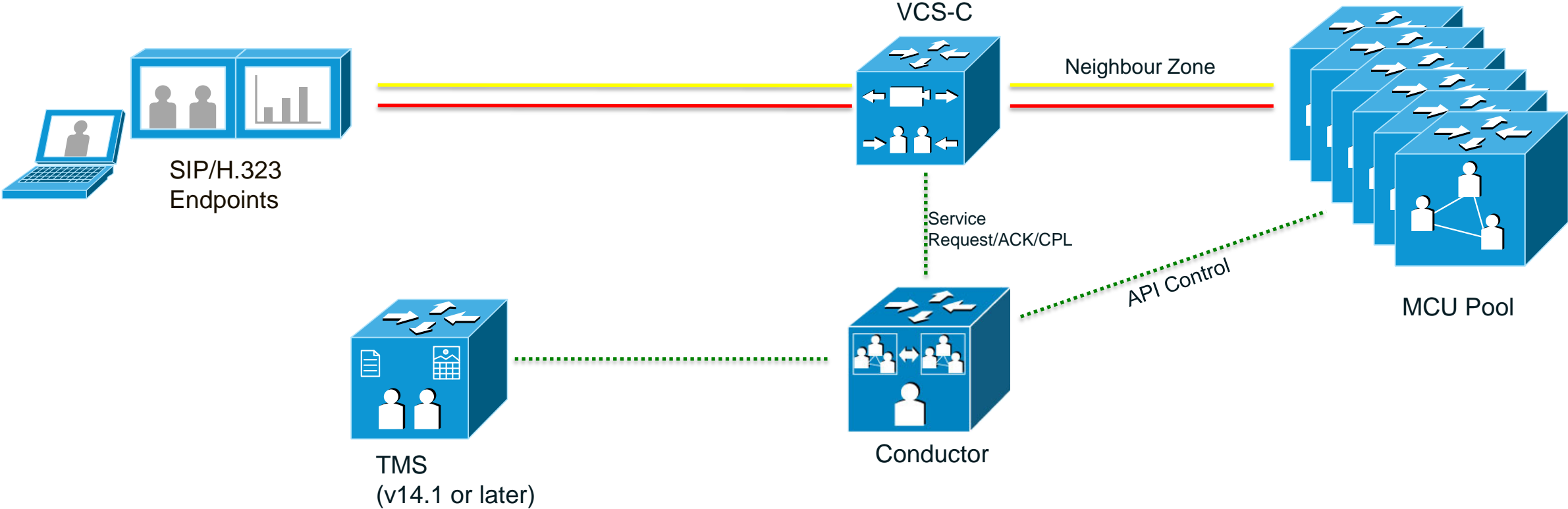
Conductor Deployment Models

VCS – Rendezvous Conferencing Call Flow



Conductor Deployment Models

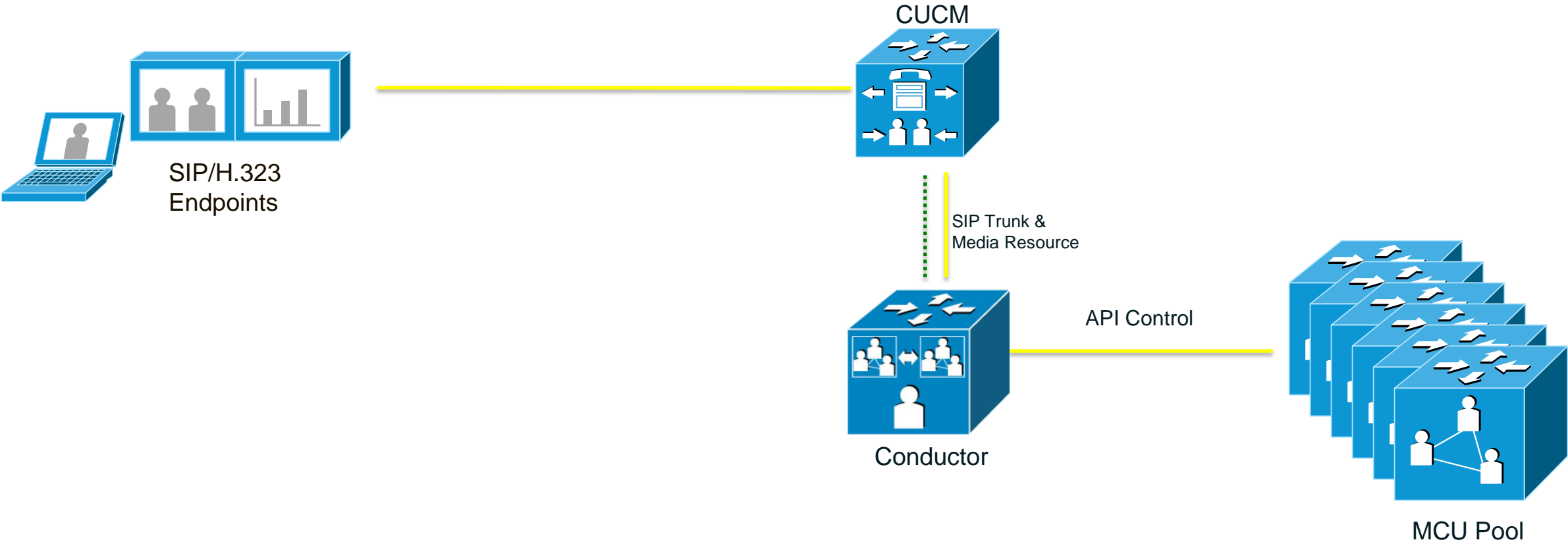
VCS – Scheduled Conferencing Scenario



- SIP
- H.323
- ... HTTPS

Conductor Deployment Models

CUCM ADHOC and Rendezvous Conference Scenario



- SIP
- H.323
- ... HTTPS

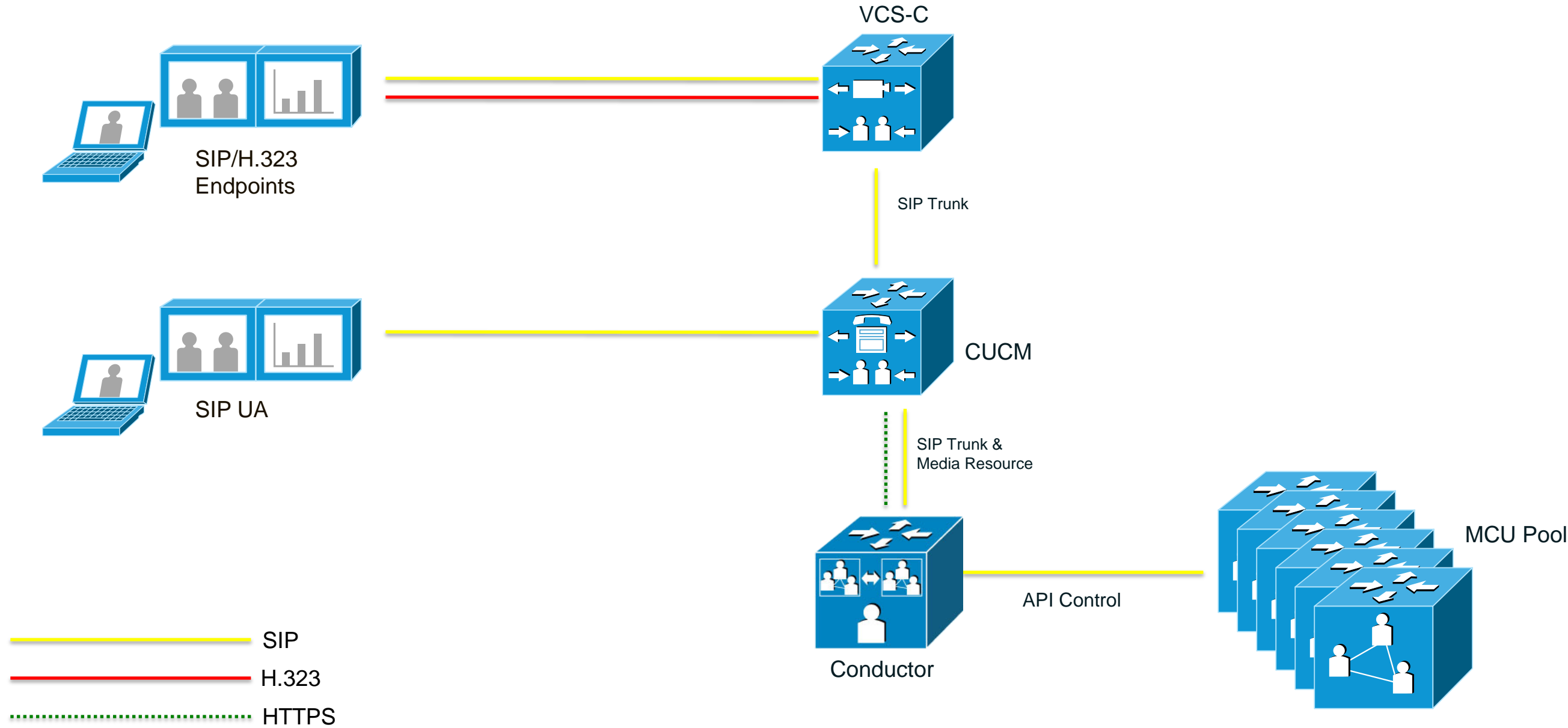
Conductor Deployment Models

CUCM AdHoc Conferencing Call Flow



Conductor Deployment Models

VCS and CUCM Conferencing Scenario



TelePresence Server

Dynamic Resource Allocation

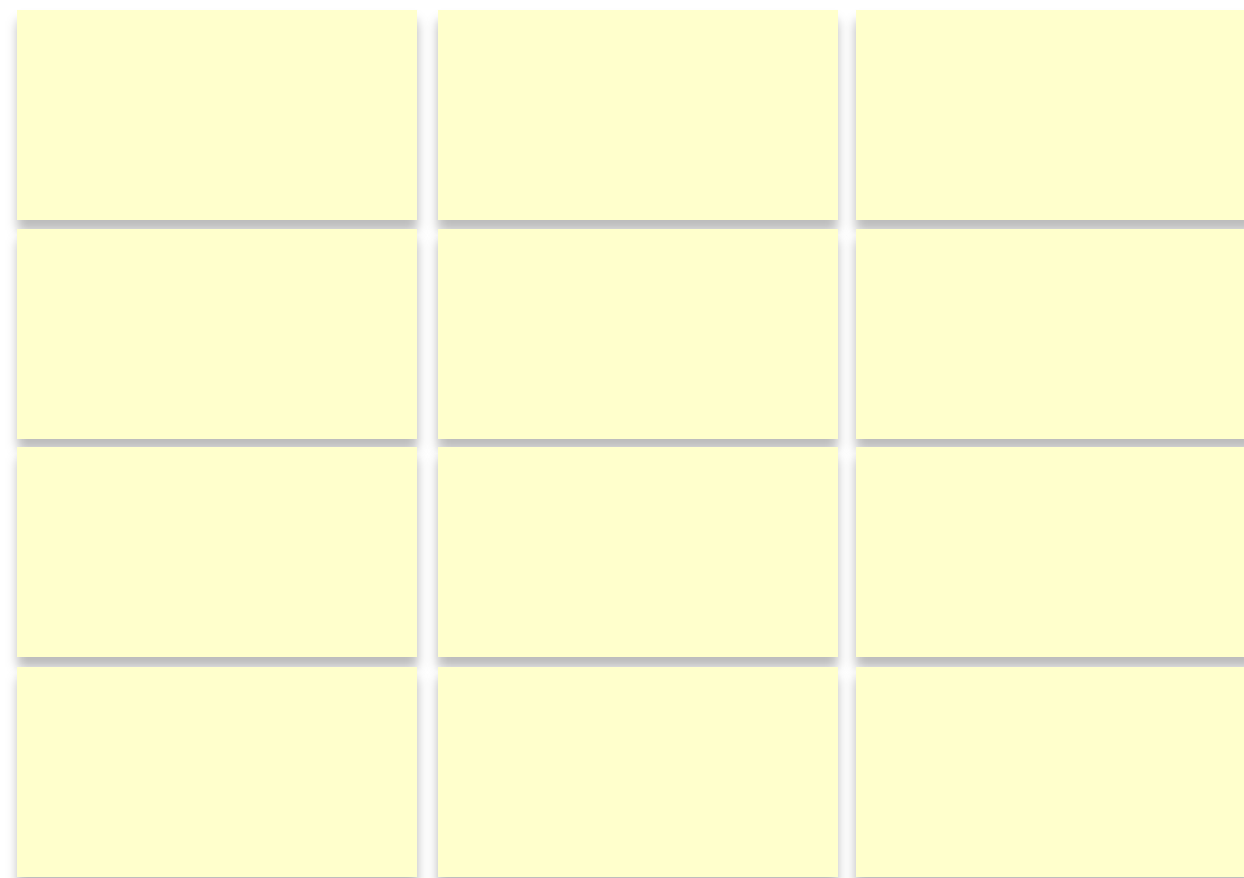


TelePresence Server Resource Optimisation

Main Video	Audio	Content	Screen Licenses Consumption
360p30	Mono	720p5	1/4
480p30	Mono	In main video	1/4
480p30	Stereo	720p5	1/3
720p30	Stereo	720p5	1/2
1080p30	Stereo	720p15	1
720p30	Stereo	720p15	1
1080p30	Stereo	720p30	1 1/2
1080p30	Stereo	1080p30	2
Dual-screen 1080p30	Stereo	720p30	2
Three-screen 1080p	Multichannel	720p30	3
Three-screen 1080p	Multichannel	1080p30	4
Four-screen 1080p	Stereo	1080p30	4

TelePresence Server Resource Optimisation

- Example with TPS8710 with 12 screen license



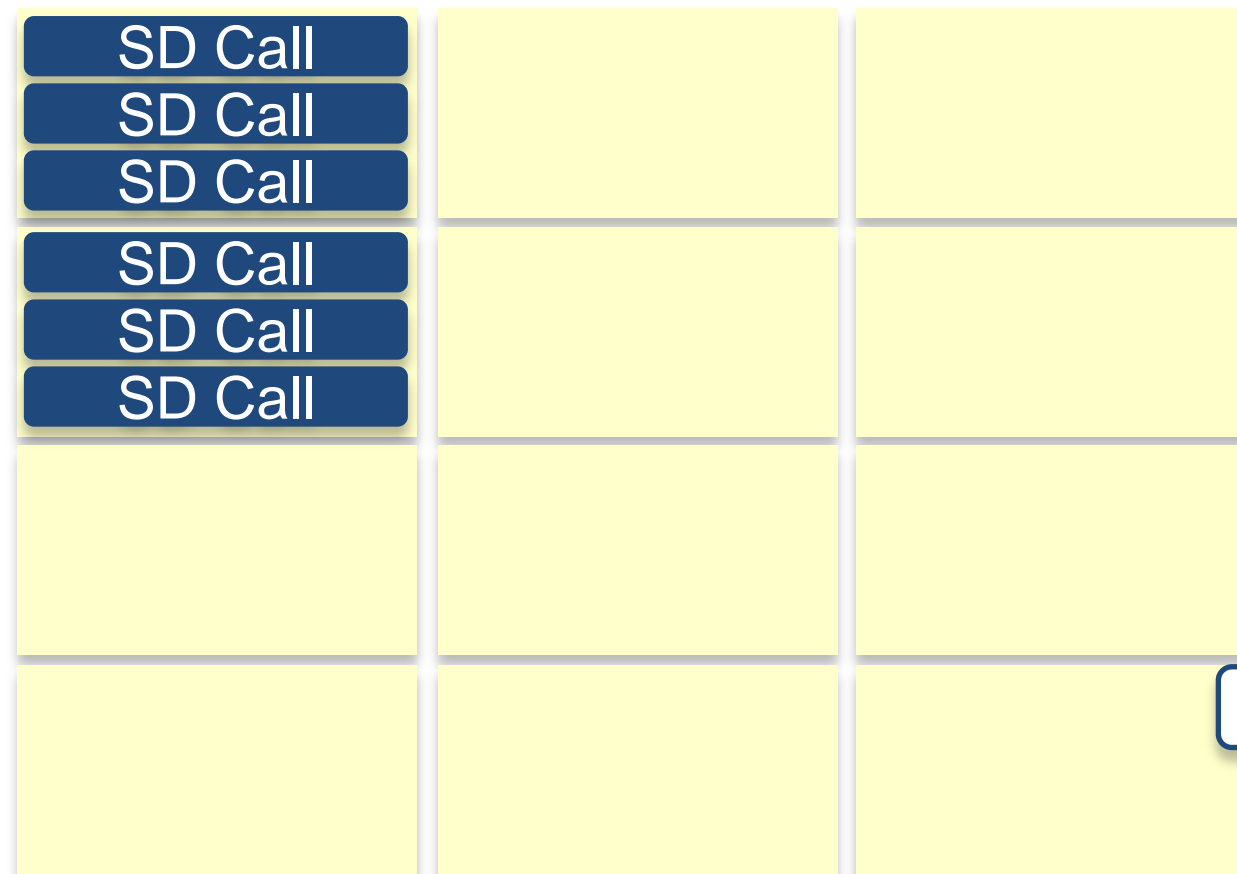
TelePresence Conductor



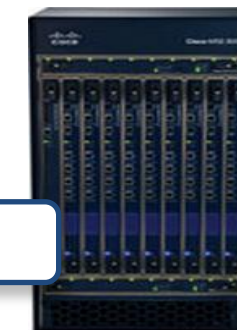
TPS 8710

TelePresence Server Resource Optimisation

- Example with TPS8710 with 12 screen license
 - Conference with 6 x SD Endpoints/UA



TelePresence Conductor

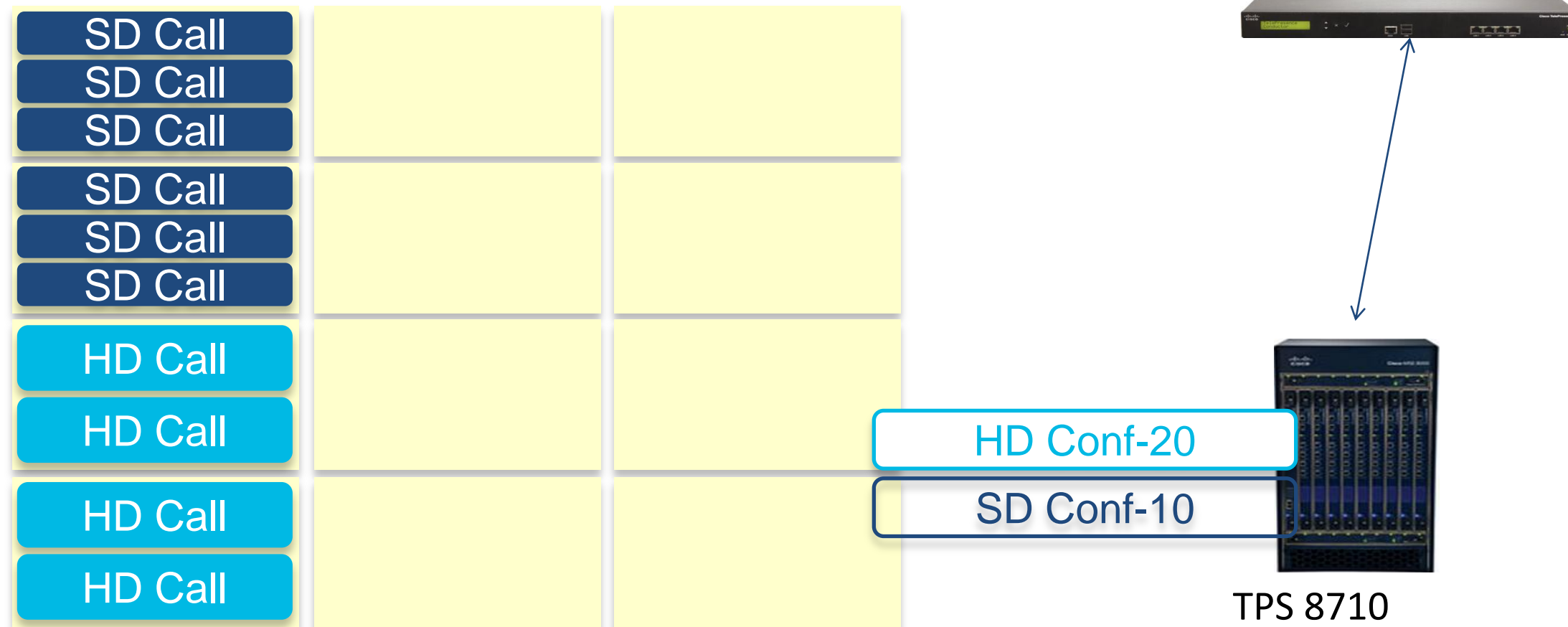


SD Conf-10

TPS 8710

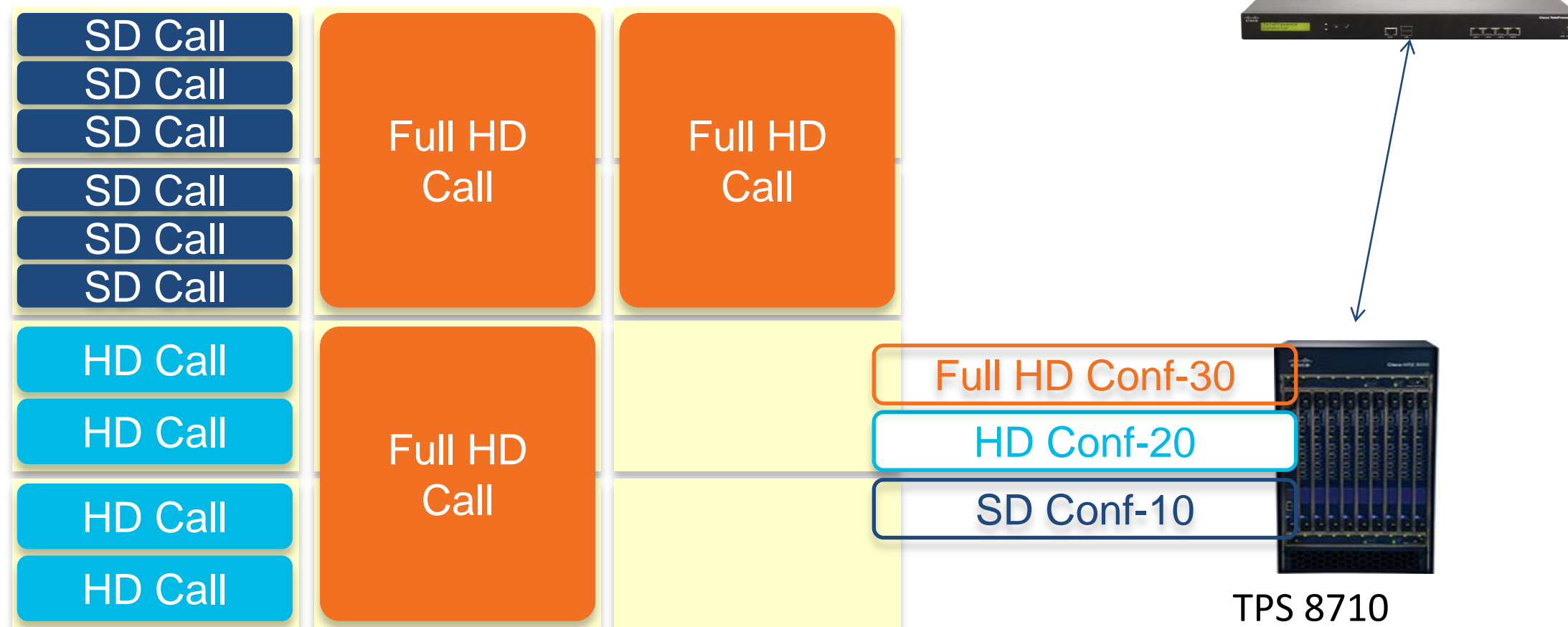
TelePresence Server Resource Optimisation

- Example with TPS8710 with 12 screen license
 - Conference with 6 x SD Endpoints/UA
 - Conference with 4 x HD Endpoints/UA



TelePresence Server Resource Optimisation

- Example with TPS8710 with 12 screen license
 - Conference with 6 x SD Endpoints/UA
 - Conference with 4 x HD Endpoints/UA
 - Conference with 3 x Full HD Endpoints/UA



Configuration



Configuration Methods

Video Communications Server

- Conductor Conference Configuration Wizard
- VCS Configuration
- MCU Configuration

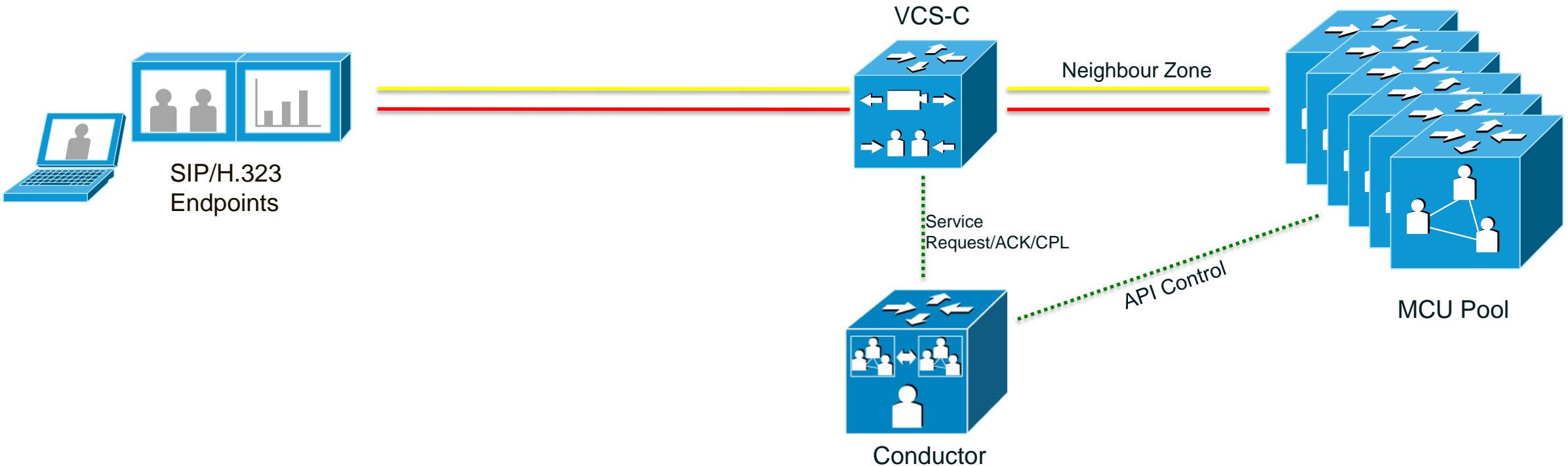
Unified Communications Server

- Conductor Configuration
- CUCM Configuration
- MCU Configuration

Conductor and VCS

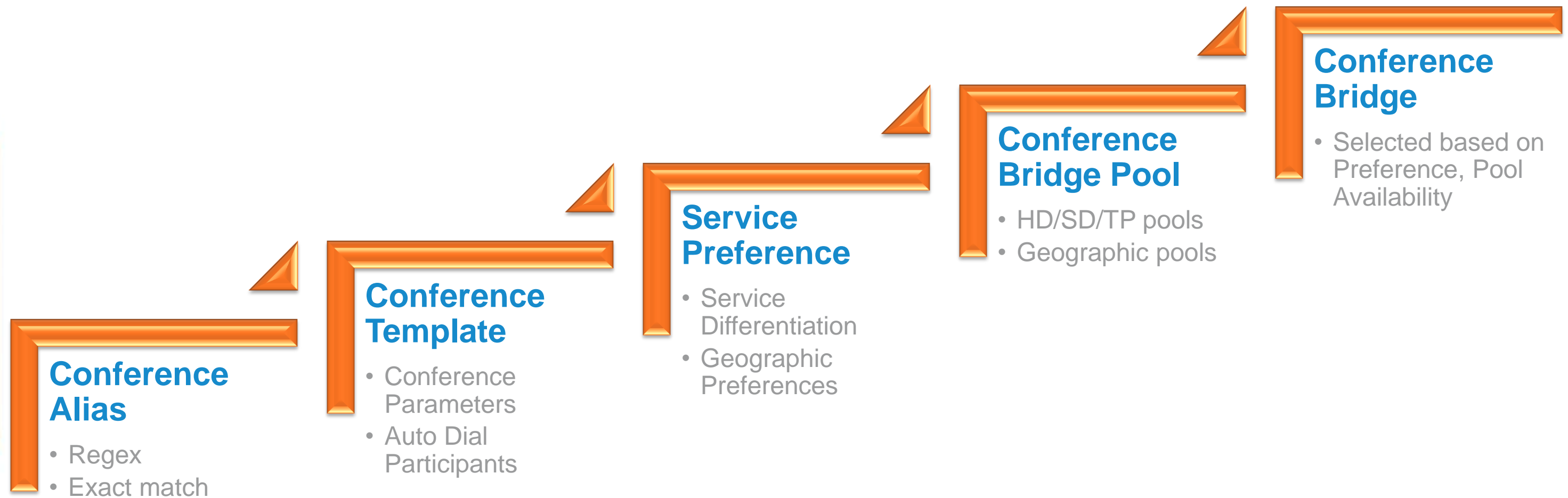


VCS Rendezvous Model Configuration



- SIP
- H.323
- ... HTTPS

Conference creation process



Conductor Conference Wizard

Login and Start the Wizard

Administrator login

Username:

Password:

The screenshot shows the Cisco TelePresence Conductor web interface. At the top left is the Cisco logo. The main header reads "Cisco TelePresence Conductor". Below this is a navigation bar with tabs: "Status", "System", "Conference configuration", "Users", and "Maintenance". The "System" tab is selected, and a dropdown menu is open, listing several options: "Basic conference configuration wizard" (highlighted in orange), "Creating conferences", "Conference bridges", "Conference templates", "Conference aliases", "Auto-dialed participants", "Unified CM locations", "Pre-configured endpoints", and "Call Policy".

On the left side of the "System" tab, there is a "System information" section with the following items:

- [System host name](#)
- [IPv4 address](#)
- Hardware up time
- Product
- Serial number
- [Software version](#)
- Software build
- Software release date
- Software ID

At the bottom of the page, there is a summary table:

Number of conference bridges	4
Number of active conferences	0



Conductor Conference Wizard

Wizard explains what is about to happen

Conference bridge Service Preference Template Alias Finish

This wizard takes you through the steps that are required to set up a basic conference configuration on your TelePresence Conductor when used in a VCS-based deployment. It results in users being able to dial into a meeting-type conference using a specified alias.

The wizard assumes that you have already configured a password, an IP address and the correct NTP settings on your TelePresence Conductor and that you have already configured your Cisco VCS and your conference bridge in accordance with the information in *Cisco TelePresence Conductor with Cisco TelePresence Video Communication Server Deployment Guide*.

You will need the following information to complete the wizard:

- Conference bridge IP address
- Protocol used to communicate with the conference bridge (HTTP or HTTPS)
- Conference bridge username and password
- Dial plan prefix configured on the Cisco VCS

Start Wizard

Conductor Conference Wizard

Create Bridge Pool

Conference bridge pool Conference bridge Service Preference Template Alias Finish

Define the pool of conference bridges

Pool name	* Sydney HD Pool	i
Description	Non - Immersive HD MCU Pool	i
Conference bridge type	TelePresence MCU	i

Back Next Cancel

(Dropdown menu for Conference bridge type is open, showing options: TelePresence MCU, TelePresence Server)

Conductor Conference Wizard

Create Bridge to add to new pool

✓ Conference bridge pool **Conference bridge** Service Preference Template Alias Finish

Enter the conference bridge information

Name	* Sydney MSE 8510 0105	i
Description	Sydney MSE 8000 One, Slot 5, 8510 HD	i
IP address or FQDN	* 10.66.127.60	i
Protocol	HTTPS	i
Conference bridge username	* conductor	i
Conference bridge password	i
Dial plan prefix	* rd-mse-0105	i

Back Next Cancel

Conductor Conference Wizard

Create a Service Preference and Conference Template

✓ Conference bridge pool ✓ Conference bridge **Service Preference** Template Alias Finish

Define a Service Preference (used for ranking the priority of conference bridge pools)

Service Preference name	* Sydney HD SP	<i>i</i>
Description	Sydney HD Service Preference	<i>i</i>

✓ Conference bridge pool ✓ Conference bridge ✓ Service Preference **Template** Alias Finish

Define a conference template (only meeting-type conferences are supported by the wizard)

Name	* meet.	<i>i</i>
Description	Standard Rendezvous Meeting 5 + 1 HD	<i>i</i>



Conductor Conference Wizard

Create a Conference Alias to assign to the Template

✓ Conference bridge pool ✓ Conference bridge ✓ Service Preference ✓ Template **Alias** Finish

Configure the conference alias

Alias name	* meet.	i
Description	Standard Meet Dot	i
Incoming alias (must use regex)	* meet\.(.*)	i
Conference name	* \1	i
Priority	* 1000	i

Conductor Conference Wizard

Done – Wizard explains what is required on VCS

✓ Conference bridge pool ✓ Conference bridge ✓ Service Preference ✓ Template ✓ Alias **Finish**

Basic conference configuration completed.

If you have already configured your conference bridge and Cisco VCS, you are now able to dial into a meeting-type conference using a conference address that is based on alias 'meet\.(*)'.

If you still need to configure your conference bridge, access it at '10.66.127.60' and configure it appropriately.

If you still need to configure your Cisco VCS perform the steps outlined in *Cisco TelePresence Conductor with Cisco TelePresence Video Communication Server Deployment Guide*, using alias 'meet\.(*)', dial plan prefix 'rd-mse-0105' and the conference bridge at '10.66.127.60'.

Finish

Administrator accounts

You are here: [Users](#) ▶ Administrator accounts

	Name ▾	State	Access level	Web access	API access	Actions
<input type="checkbox"/>	admin	✓ Enabled	Read-write	✓ Yes	✓ Yes	View/Edit
<input type="checkbox"/>	cucm	✓ Enabled	Read-write	✓ Yes	✓ Yes	View/Edit


VCS Configuration

Administrator login

Username

Password

[Home](#)



Cisco TelePresence Video Communication Server Control

Status	System	VCS configuration	Applications	Maintenance
Overview				
System information				
System name				
Up time				
Software version				
IPv4 address				
Options				
Resource usage (last up				
Non-traversal call license				
		Protocols		
		Registration		
		Authentication		
		Calls		37 minutes 9 seconds
		Local Zone		
		Zones		Zones 500
		Dial plan		Default Zone access rules
		Bandwidth		0
		Clustering		32
		Call Policy		149
		Advanced Media Gateway		500

VCS Configuration

MCU Zone Configuration

Configuration

Name ⓘ

Type Neighbor

Hop count ⓘ

H.323

Mode ⓘ

Port ⓘ

SIP

Mode ⓘ

Port ⓘ

Transport ⓘ

TLS verify mode ⓘ

Accept proxied registrations ⓘ

Media encryption mode ⓘ

VCS Configuration

MCU Zone Configuration

Authentication

Authentication policy ⓘ

SIP authentication trust mode ⓘ

Location

Peer 1 address ⓘ
H.323: Active: 10.66.127.60:1719
SIP: Active: 10.66.127.60:5061

Peer 2 address ⓘ

Peer 3 address ⓘ

Peer 4 address ⓘ

Peer 5 address ⓘ

Peer 6 address ⓘ

Advanced

Zone profile ⓘ

H.323 call signaling port ⓘ

VCS Configuration

MCU Zone Search rule

VCS configuration Applications Maintenance

- Protocols
- Registration
- Authentication
- Calls
- Local Zone
- Zones
- Dial plan
- Bandwidth
- Clustering
- Call Policy
- Advanced Media Gateway

Configuration
Transforms
Search rules
Policy services

Configuration

Rule name * rd-mse-0105 ⓘ

Description ⓘ

Priority * 1 ⓘ

Protocol Any ⓘ

Source Any ⓘ

Request must be authenticated No ⓘ

Mode Alias pattern match ⓘ

Pattern type Prefix ⓘ

Pattern string * rd-mse-0105 ⓘ

Pattern behavior Strip ⓘ

On successful match Stop ⓘ

Target * rd-mse-0105 ⓘ

State Enabled ⓘ

VCS Configuration

Conductor Policy Service

The screenshot displays the VCS Configuration web interface. On the left, a navigation menu is open, showing the following options: VCS configuration, Applications, Maintenance, Protocols, Registration, Authentication, Calls, Local Zone, Zones, Dial plan, Bandwidth, Clustering, Call Policy, and Advanced Media Gateway. The 'Policy services' option is highlighted in orange. The main configuration area is titled 'Configuration' and contains the following fields:

- Name: ⓘ
- Description: ⓘ
- Protocol: ⓘ
- Certificate verification mode: ⓘ
- HTTPS certificate revocation list (CRL) checking: ⓘ
- Server 1 address: ⓘ
- Server 2 address: ⓘ
- Server 3 address: ⓘ
- Path: ⓘ
- Status path: ⓘ
- Username: ⓘ
- Password: ⓘ
- Default CPL: ⓘ

On the right side of the configuration area, there is a status indicator: **Active. Last communication: 2012-12-09 22:19:52**

VCS Configuration

Conductor Search Rule

Configuration	
Rule name	* meet. ⓘ
Description	ⓘ
Priority	* 50 ⓘ
Protocol	Any ⓘ
Source	Any ⓘ
Request must be authenticated	No ⓘ
Mode	Alias pattern match ⓘ
Pattern type	Regex ⓘ
Pattern string	* meet.+ ⓘ
Pattern behavior	Leave ⓘ
On successful match	Continue ⓘ
Target	* Conductor 2.0 ⓘ
State	Enabled ⓘ

MCU Configuration

SIP configuration

SIP	
SIP registrar usage	Enabled <input type="button" value="v"/> Registered
SIP registrar domain	<input type="text" value="collab.cisco.com"/>
SIP registrar type	Standard SIP <input type="button" value="v"/>
Username	<input type="text" value="rd-mse-0105"/>
Password	<input type="password"/>
Allow numeric ID registration for conferences	<input type="checkbox"/>

SIP call settings	
SIP proxy address	<input type="text" value="10.66.120.39"/>
Maximum bit rate from Microsoft OCS/LCS clients	768 kbit/s <input type="button" value="v"/>
Outgoing transport	<input type="radio"/> UDP <input type="radio"/> TCP <input checked="" type="radio"/> TLS
Use local certificate for outgoing connections and registrations	<input type="checkbox"/>

MCU Configuration

H.323 Configuration

H.323	
H.323 gatekeeper usage	Enabled ▾
H.323 gatekeeper address	10.66.120.39
Gatekeeper registration type	MCU (standard) ▾
Ethernet port association	<input checked="" type="checkbox"/> Port A IPv4 <input type="checkbox"/> Port A IPv6 <input type="checkbox"/> Port B IPv4 <input type="checkbox"/> Port B IPv6
(Mandatory) H.323 ID to register	rd-mse-0105
Use password	<input type="checkbox"/> Password: <input type="text"/>
Prefix for MCU registrations	<input type="text"/>
MCU service prefix	<input type="text"/> (optional)
Allow numeric ID registration for conferences	<input type="checkbox"/>
Send resource availability indications	<input type="checkbox"/> Thresholds: <input type="text"/> conferences <input type="text"/> video ports warning: configured threshold values will be ignored

MCU Configuration

Conference Settings

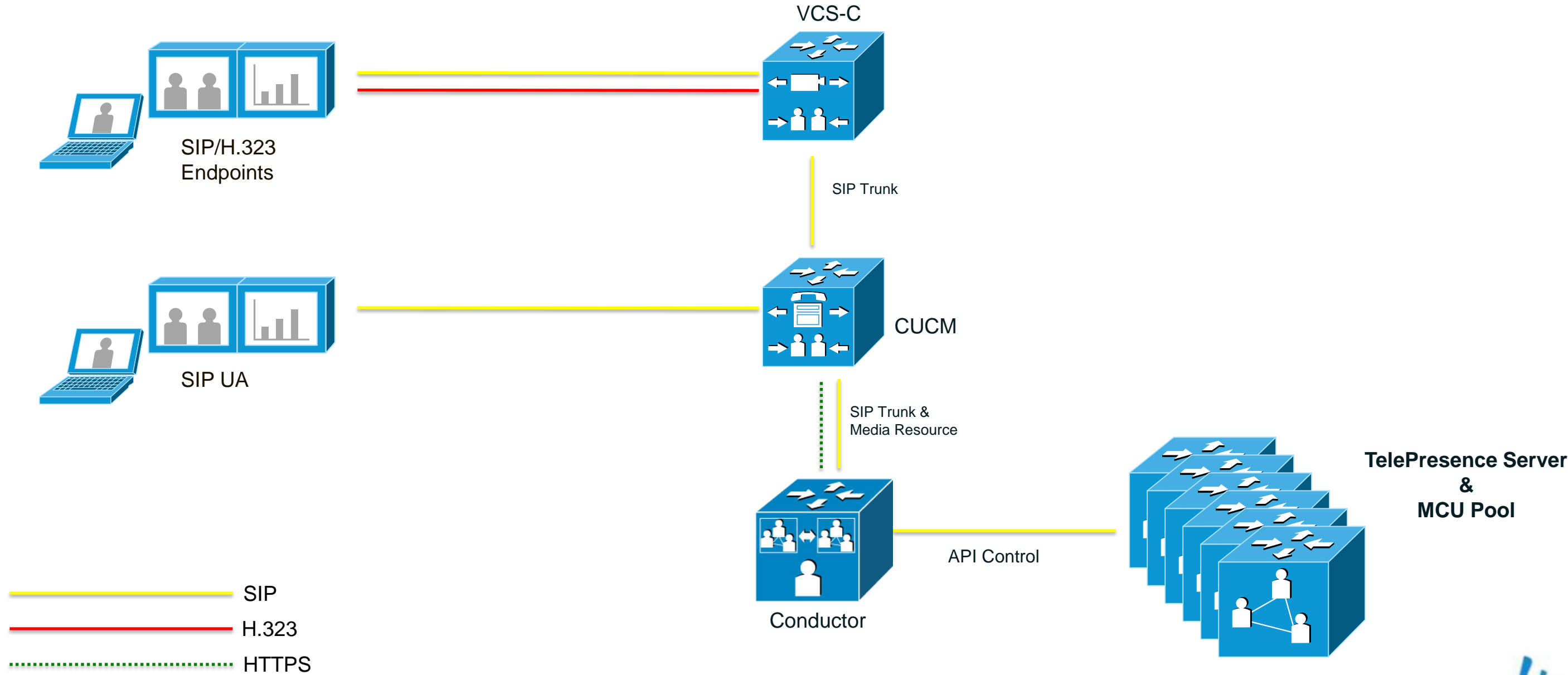
Conference settings	
Maximum video size	Receive MAX, transmit MAX ↕
Motion / sharpness tradeoff	Balanced ↕
Transmitted video resolutions	Allow all resolutions ↕
Default bandwidth from MCU	4.00 Mbit/s ↕
Default bandwidth to MCU	<same as transmit> ↕
Default view family	1 focused pane, many small panes ↕
Use full screen view for two participants	Enabled ↕
Active speaker display	Red border ↕
Media port reservation	Enabled ↕
Audio notifications	<input checked="" type="checkbox"/> Conference timing <input checked="" type="checkbox"/> Conference status <input checked="" type="checkbox"/> Join and leave indications
Overlaid icons	<input checked="" type="checkbox"/> Important participant <input type="checkbox"/> Unsecured conferences
	<input checked="" type="checkbox"/> Tunneled camera control <input checked="" type="checkbox"/> Layout changes <input type="checkbox"/> Streaming participants
	<input checked="" type="checkbox"/> Recording indicator <input checked="" type="checkbox"/> Audio participants <input type="checkbox"/> Media quality
Overlaid text	<input checked="" type="checkbox"/> Conference status <input type="checkbox"/> Conference timing <input checked="" type="checkbox"/> Join and leave indications
	<input checked="" type="checkbox"/> Text messages <input checked="" type="checkbox"/> Content channel text chat
Overlaid logo duration	<never show> ↕
Conference welcome message	<input type="text"/>
Conference welcome message duration	10 seconds ↕ no message set
Time to show participant names	10 seconds ↕

Conductor, CUCM & VCS



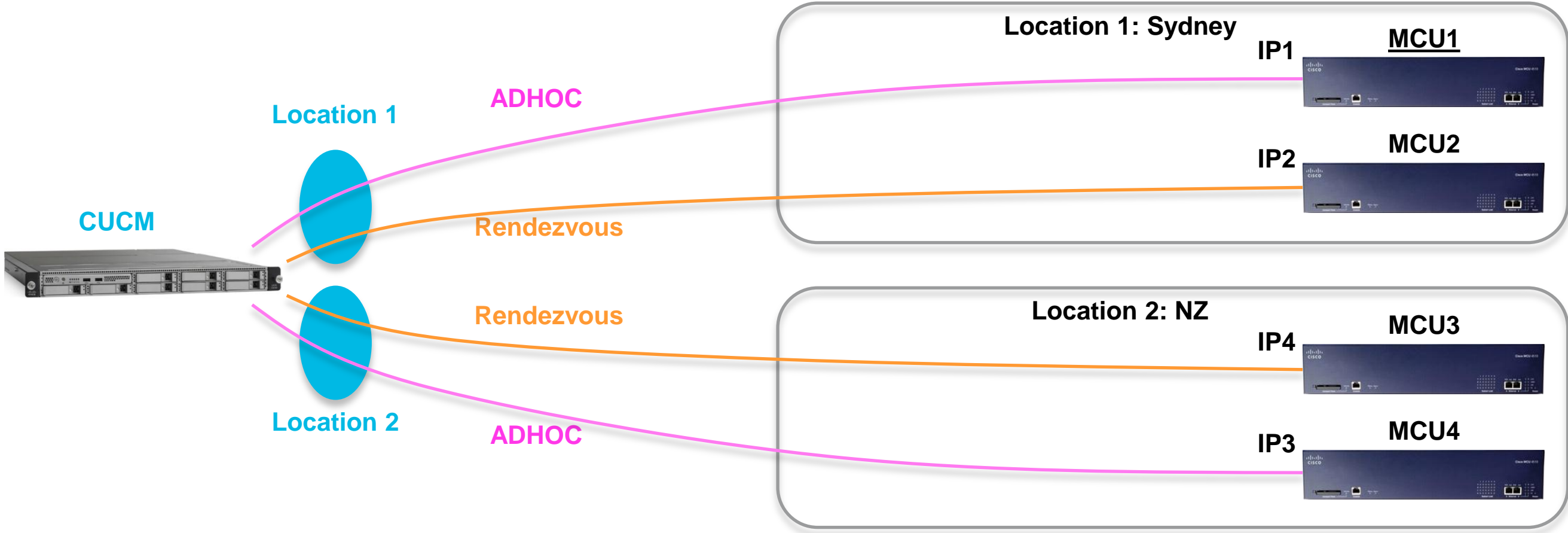
CUCM and VCS Model Configuration

VCS and CUCM Conferencing Scenario



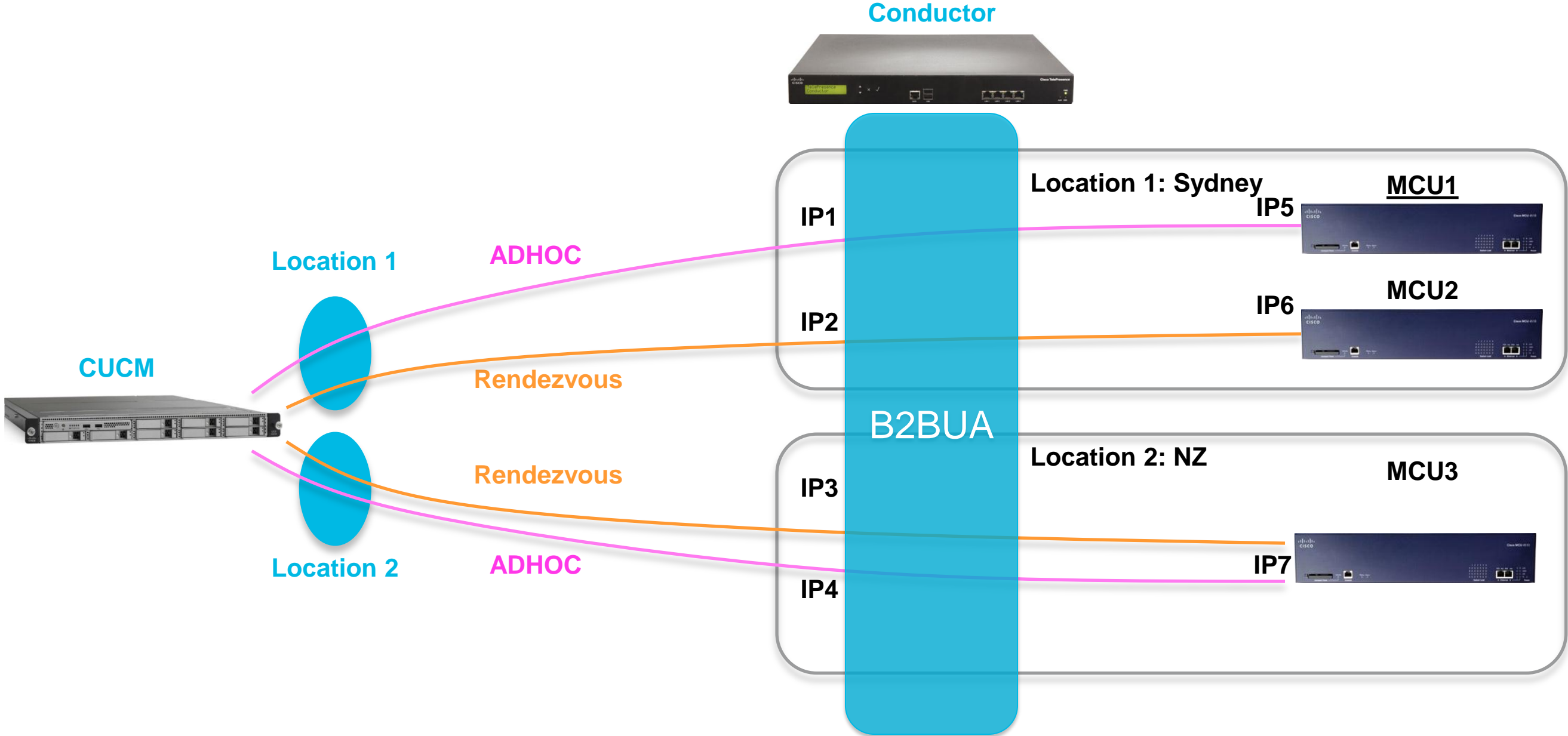
CUCM ADHOC and Rendezvous

Prior to Conductor



CUCM ADHOC and Rendezvous

With Conductor



Conductor Configuration

MCU Conference Bridge Pool

Conference bridge pools

You are here: [Conference configuration](#) > [Conference bridges](#) > [Conference bridge pools](#) > Edit

Configuration

Pool name: * Sydney HD Pool *i*

Description: Non - Immersive HD MCU Pool *i*

Conference bridge type: TelePresence MCU *i*

Raise conference bridge resource alarm: Threshold (%) 80 *i*

Unified CM location: None *i*

Conference bridges in this pool

Name	Address	State	Username	Dial plan prefix	Status	Status detail	Last unsuccessful contact attempt	Actions
<input type="checkbox"/> Sydney MSE 8510 0105	10.66.127.60	✔ Enabled	conductor	rd-mse-0105	Active		2012-12-09 21:20:29	View/Edit

[Create conference bridge](#) [Delete conference bridge](#) [Enable](#) [Busy out](#) [Select all](#) [Unselect all](#)

Conductor Configuration

MCU Conference Bridge Added to Conference Bridge Pool

Edit conference bridge You are here: [Conference configuration](#) > [Conference bridges](#) > [Conference bridge pools](#) > Edit conference bridge

Configuration

Name	* Sydney MSE 8510 0105 <i>i</i>
Description	Sydney MSE 8000 One, Slot 5, 8510 HD <i>i</i>
State	Enabled <i>i</i>
IP address or FQDN	* 10.66.127.60 <i>i</i>
Protocol	HTTPS <i>i</i>
Port	* 443 <i>i</i>
Conference bridge username	* conductor <i>i</i>
Conference bridge password	***** <i>i</i>
Dial plan prefix	rd-mse-0105 <i>i</i>
Conference bridge type	* TelePresence MCU <i>i</i>
Conference bridge pool	* Sydney HD Pool <i>i</i>
Dedicated content ports	* 0 <i>i</i>
SIP port	* 5061 <i>i</i>
H.323 cascade call routing	Gatekeeper routed <i>i</i>

Conductor Configuration

MCU Conference Bridge Pools Added to Conference Service Preference

Conference bridge Service Preferences You are here: [Conference configuration](#) ▶ [Conference bridges](#) ▶ [Conference bridge Service Preferences](#) ▶ Edit

Conference bridge Service Preference

Service Preference name * Sydney HD SP ⓘ

Description Sydney HD Service Preference ⓘ

Conference bridge type * TelePresence MCU ⓘ

Pools

Priority	Pool name	Change order
<input type="checkbox"/> 1	Sydney HD Pool Please select ⌵	



Conductor Configuration

TPS Conference Bridge Pool

Conference bridge pools

You are here: [Conference configuration](#) > [Conference bridges](#) > [Conference bridge pools](#) > Edit

Configuration

Pool name: * Immersive Pool *i*

Description: Pool for TelePresence Servers for Immersiv *i*

Conference bridge type: TelePresence Server *i*

Raise conference bridge resource alarm: Threshold (%) 80 *i*

Unified CM location: CUCM-90 *i*

Conference bridges in this pool

Name	Address	State	Username	Dial plan prefix	Status	Status detail	Last unsuccessful contact attempt	Actions
<input type="checkbox"/> Sydney MSE 8510 0106	10.66.127.61	✔ Enabled	conductor	rd-mse-0106	Active		2012-12-16 16:25:00	View/Edit

[Create conference bridge](#) [Delete conference bridge](#) [Enable](#) [Busy out](#) [Select all](#) [Unselect all](#)



Conductor Configuration

TPS Conference Bridge Added to Conference Bridge Pool

Edit conference bridge You are here: [Conference configuration](#) > [Conference bridges](#) > [Conference bridge pools](#) > Edit conference bridge

Configuration	
Name	* Sydney MSE 8510 0106 <i>i</i>
Description	TP Server 3.0 <i>i</i>
State	Enabled <i>i</i>
IP address or FQDN	* 10.66.127.61 <i>i</i>
Protocol	HTTPS <i>i</i>
Port	* 443 <i>i</i>
Conference bridge username	* conductor <i>i</i>
Conference bridge password	***** <i>i</i>
Dial plan prefix	rd-mse-0106 <i>i</i>
Conference bridge type	* TelePresence Server <i>i</i>
Conference bridge pool	* Immersive Pool <i>i</i>
SIP port	* 5061 <i>i</i>

Conductor Configuration

TPS Conference Bridge Pools Added to Conference Service Preference

Conference bridge Service Preferences You are here: [Conference configuration](#) ▶ [Conference bridges](#) ▶ [Conference bridge Service Preferences](#) ▶ Edit

Conference bridge Service Preference

Service Preference name * Sydney Immersive SP ⓘ

Description Sydney Immersive Service Preference ⓘ

Conference bridge type * TelePresence Server ⓘ

Pools

Priority	Pool name	Change order
<input type="checkbox"/> 1	Immersive Pool Please select ⌵	

Conductor Configuration

CUCM Rendezvous Template

Conference templates

You are here: [Conference configuration](#) > [Conference templates](#)

Modify conference template

Name	* CUCM Rendezvous Meeting <i>i</i>
Description	<input type="text"/> <i>i</i>
Conference type	Meeting <i>i</i>
Call Policy mode	Off <i>i</i>
Conference bridge Service Preference	* Sydney HD SP <i>i</i> Conference bridge type: TelePresence MCU
Number of cascade ports to reserve	* 1 <i>i</i>
Limit number of participants	<input type="checkbox"/> Maximum <input type="text"/> <i>i</i> There are 0 auto-dialed participants associated with this template.
Limit the conference duration (minutes)	<input type="checkbox"/> Maximum <input type="text"/> <i>i</i>
Allow content	Yes <i>i</i>
Scheduled conference	No <i>i</i>

Conductor Configuration

CUCM Rendezvous Template – Advanced (optional)

Advanced template parameters

You are here: [Conference configuration](#) > [Conference templates](#) > [Advanced template parameters](#)

Modify advanced template parameters

Template name CUCM Rendezvous Meeting

Conference bridge type TelePresence MCU

on primary on cascade

Automatic lecture mode Type 2 ⓘ Type 2 ⓘ

Timeout for automatic lecture mode type 1 0 ⓘ 0 ⓘ

Floor and chair control Floor control only ⓘ Floor control only ⓘ

Content mode Hybrid ⓘ Hybrid ⓘ

Transmitted content resolutions 4-to-3 only ⓘ 4-to-3 only ⓘ

Outgoing transcoded codec H.263+ ⓘ H.263+ ⓘ

Minimum bit rate to use for transmitted content 0 ⓘ 0 ⓘ

Conductor Configuration

CUCM AdHoc Template

Conference templates You are here: [Conference configuration](#) > [Conference templates](#) > |

Modify conferer: Advanced template parameters You are here: [Conference configuration](#) > [Conference templates](#) > [Advanced template parameters](#) > Edit

Modify advanced template parameters

Name	Template name	Immersive Meeting
Description	Conference bridge type	TelePresence Server
Conference type	Guest PIN	on primary
Call Policy mode	PIN	<input checked="" type="checkbox"/> 666 <i>i</i>
Conference bridg	Single-screen layout	<input checked="" type="checkbox"/> 777 <i>i</i>
Limit number of p	Multiscreen layout	<input checked="" type="checkbox"/> Prominent <i>i</i>
Limit the confere	Custom parameters	<input checked="" type="checkbox"/> ActivePresence <i>i</i>
Participant qualit		<input type="checkbox"/> <i>i</i>
Provision for mul		
Default maximum		
Optimize resourc		
Content quality		HD (720p 30fps) <i>i</i>
Scheduled conference		No <i>i</i>

720 60fps video, multi-channel audio) *i*

720 60fps video, multi-channel audio)
stereo audio)
leo, mono audio)
leo, mono audio)

HD (720p 30fps) *i*

Full HD (1080p 30fps / 720p 60fps)
HD (720p 30fps)
HD (720p 15fps)
1280 x 720p 15fps
1280 x 720p 5fps
Off

Conductor Configuration

CUCM AdHoc Template Optional Advanced Settings

Advanced template parameters You are here: [Conference configuration](#) ▶ [Conference templates](#) ▶ [Advanced template parameters](#) ▶ [Edit](#)

Modify advanced template parameters

Template name	Immersive Meeting		
Conference bridge type	TelePresence Server		
	<input checked="" type="checkbox"/> on	<input checked="" type="checkbox"/> primary	
Guest PIN	<input checked="" type="checkbox"/>	<input type="text" value="666"/>	i
PIN	<input checked="" type="checkbox"/>	<input type="text" value="777"/>	i
Single-screen layout	<input checked="" type="checkbox"/>	<input type="text" value="Prominent"/>	i
Multiscreen layout	<input checked="" type="checkbox"/>	<input type="text" value="ActivePresence"/>	i
Custom parameters	<input type="checkbox"/>	<input type="text"/>	i

Conductor Configuration

User Account

Configuration

Name * ⓘ

Access level ⓘ

Password * Password strength ⓘ

Confirm password * ⓘ

Web access ⓘ

API access ⓘ

State ⓘ

Administrator accounts You are here: [Users](#) > Administrator accounts

Name ▾	State	Access level	Web access	API access	Actions
<input type="checkbox"/> admin	✔ Enabled	Read-write	✔ Yes	✔ Yes	View/Edit
<input type="checkbox"/> cucm	✔ Enabled	Read-write	✔ Yes	✔ Yes	View/Edit

Conductor Configuration

Add Virtual IPs

IP You are here: [System](#) > IP

Network configuration

IPv4 gateway i

Primary LAN 1 IP address

IPv4 address i

IPv4 subnet mask i

IPv4 address range 10.66.120.0 - 10.66.120.255

Additional addresses for LAN 1

IP address ▼	
<input checked="" type="checkbox"/>	10.66.120.65
<input checked="" type="checkbox"/>	10.66.120.66

Conductor Configuration

CUCM Locations

Unified CM locations You are here: [Conference configuration](#) > [Unified CM locations](#) >

Modify Unified CM location

Location name * ⓘ

Description ⓘ

Conference type * ⓘ

Ad hoc conference settings

Ad hoc IP address (local) * ⓘ

Template * ⓘ

Rendezvous conference settings

Rendezvous IP address (local) * ⓘ

Unified CM trunk settings for outdial

Outdial local IP address Configure: Rendezvous IP address (local)

Trunk IP address ⓘ


Trunk port * ⓘ

Trunk transport protocol ⓘ

Conductor Configuration

CUCM Locations

Unified CM locations You are here: [Conference configuration](#) > Unified CM locations

 **No more additional IP addresses exist:** You must configure at least one more [additional IP](#) address before you can create a Unified CM location.

Location name	Description	Ad hoc IP address (local)	Template	Rendezvous IP address (local)	Actions
<input type="checkbox"/> CUCM-90		10.66.120.65	CUCM adhoc meeting	10.66.120.66	View/Edit

- Warning about available IP address
- Clustering – Peers require unique IP addresses

Conductor Configuration

CUCM Rendezvous Conference Alias

Modify conference alias

Name	* CUCM Rendezvous Meeting	i
Description		i
Incoming alias (must use regex)	* 5(\d{3}).*	i
Conference name	* 5\1	i
Priority	* 500	i
Conference template	* CUCM Rendezvous Meeting	i
Role type	Participant	i

Conference bridge type: TelePresence MCU

CUCM Configuration

CUCM Locations

System ▾ Call Routing ▾ Media Reso

- Server
- Cisco Unified CM
- Cisco Unified CM Group
- Phone NTP Reference
- Date/Time Group
- BLF Presence Group
- Region Information ▶
- Device Pool
- Device Mobility ▶
- DHCP ▶
- LDAP ▶
- Location Info ▶

- Location
- Location Bandwidth Manager Group
- Location Bandwidth Manager Hub Group

Location Information

Name*

Links - Bandwidth Between Sydney and Adjacent Locations

Locations (1 - 1 of 1) Rows per Page 50 ▾

Find Locations where name begins with Find Clear Filter

<input type="checkbox"/>	Location ^	Weight	Audio Bandwidth	Video Bandwidth	Immersive Bandwidth
<input type="checkbox"/>	Hub_None	50	UNLIMITED	UNLIMITED	UNLIMITED

[Hide Advanced](#)

Intra-location - Bandwidth for Devices Within This Location

Audio Bandwidth Unlimited kbps

Video Bandwidth Unlimited kbps None

Immersive Video Bandwidth Unlimited kbps None

If the audio quality is poor or choppy, lower the bandwidth setting. For ISDN, use multiples of 56 kbps or 64 kbps.

CUCM Configuration

CUCM Add Conference Bridge

Media Resources ▾	Advanced Features
Annunciator	
Conference Bridge	
Media Termination Point	

MCU Conference Bridge Info

Conference Bridge Type* Cisco TelePresence MCU

Device is trusted

Conference Bridge Name*

Destination Address*

Description

Device Pool*

Common Device Configuration

Location*

Use Trusted Relay Point*

CUCM Configuration

CUCM Add Conference Bridge

SIP Interface Info

MCU Conference Bridge SIP Port*

SIP Trunk Security Profile*

SIP Profile*

SRTP Allowed - When this flag is checked, Encrypted TLS needs to be configured in the network to provide end to end security. Failure to do so will expose keys and other information.

Normalization Script Info

Script

Enable Trace

	Parameter Name	Parameter Value	
1	<input type="text"/>	<input type="text"/>	<input type="button" value="+"/> <input type="button" value="-"/>

HTTP Interface Info

Username*

Password*

Confirm Password*

HTTP Port*

Use HTTPS



Find Conference Bridges where

<input type="checkbox"/>	Conference Bridge Name ^	Description	Device Pool	Status	IP Address
<input type="checkbox"/>	CFB_2	CFB_CUCM90	Default	Registered with 10.66.120.47	10.66.120.47
<input type="checkbox"/>	Conductor_Adhoc		DP_Sydney	Registered with 10.66.120.47	10.66.120.65


CUCM Configuration

CUCM Add Conference Bridge

Device Reset

 Reset  Restart

Status

 Status: Ready

Reset Information

Selected Device: Conductor_Adhoc (Cisco TelePresence MCU)
If a device is not registered with Cisco Unified Communications Manager, you cannot reset or restart it. If a device is registered, to restart a device without shutting it down, click the **Restart** button. To shut down a device and bring it back up, click the **Reset** button. To return to the previous window without resetting/restarting the device, click **Close**.

Note:
Resetting a gateway/trunk/media devices **drops** any calls in progress that are using that gateway/trunk/media devices. Restarting a gateway/media devices tries to preserve the calls in progress that are using that gateway/media devices, if possible. Other devices wait until calls are complete before restarting or resetting. Resetting/restarting a H323 device does not physically reset/restart the hardware; it only reinitializes the configuration loaded by Cisco Unified Communications Manager.

Find Conference Bridges where

<input type="checkbox"/>	Conference Bridge Name ^	Description	Device Pool	Status	IP Address
<input type="checkbox"/>	CFB_2	CFB_CUCM90	Default	Registered with 10.66.120.47	10.66.120.47
<input type="checkbox"/>	Conductor_Adhoc		DP_Sydney	Registered with 10.66.120.47	10.66.120.65

- For clustered Conductors, add a Conference Bridge for each cluster peer


CUCM Configuration

CUCM Media Resource Group

Media Resources ▾ Advanced Features

- Annunciator
- Conference Bridge
- Media Termination Point
- Music On Hold Audio Source
- Fixed MOH Audio Source
- Music On Hold Server
- Transcoder
- Media Resource Group**
- Media Resource Group List

Status

 Status: Ready

Media Resource Group Status

Media Resource Group: MRG_Sydney_Adhoc (used by 5 devices)

Media Resource Group Information

Name*

Description

Devices for this Group

Available Media Resources*
* ANN_2
CFB_2
Conductor_Adhoc
MOH_2
MTP_2

Selected Media Resources*

Use Multi-cast for MOH Audio (If at least one multi-cast MOH resource is available)

CUCM Configuration

CUCM Media Resource Group List

Media Resources ▾ Advanced Features

- Annunciator
- Conference Bridge
- Media Termination Point
- Music On Hold Audio Source
- Fixed MOH Audio Source
- Music On Hold Server
- Transcoder
- Media Resource Group
- Media Resource Group List**

Status

i Status: Ready

Media Resource Group List Status

Media Resource Group List: MRGL_Sydney_Adhoc (used by 5 devices)

Media Resource Group List Information

Name*

Media Resource Groups for this List

Available Media Resource Groups

Selected Media Resource Groups

MRG_Sydney_Adhoc

CUCM Configuration

CUCM Device Pool

System ▾ Call Routing ▾ Media Reso

- Server
- Cisco Unified CM
- Cisco Unified CM Group
- Phone NTP Reference
- Date/Time Group
- BLF Presence Group
- Region Information ▶
- Device Pool**

Device Pool Settings

Device Pool Name*	<input type="text" value="DP_Sydney"/>
Cisco Unified Communications Manager Group*	Default ▾
Calling Search Space for Auto-registration	< None > ▾
Adjunct CSS	< None > ▾
Reverted Call Focus Priority	Default ▾
Local Route Group	< None > ▾
Intercompany Media Services Enrolled Group	< None > ▾

Roaming Sensitive Settings





Date/Time Group*	CMLocal ▾
Region*	Default ▾
Media Resource Group List	MRGL_Sydney_Adhoc ▾
Location	Sydney ▾
Network Locale	< None > ▾
SRST Reference*	Disable ▾
Connection Monitor Duration***	<input type="text"/>
Single Button Barge*	Default ▾
Join Across Lines*	Default ▾
Physical Location	< None > ▾
Device Mobility Group	< None > ▾

CUCM Configuration

CUCM Apply Device Pool and MRGL to Devices

Association Information

Modify Button Items

- 1   [Line \[1\] - 2008 \(no partition\)](#)
----- Unassigned Associated Items -----
- 2   [Line \[2\] - Add a new DN](#)

MRGL can be applied directly to a single Endpoint instead of configuring Device Pool

Phone Type

Product Type: Cisco TelePresence Codec C40
Device Protocol: SIP

Device Information

Registration	Registered with Cisco Unified Communications Manager 10.66.120.47
IP Address	10.66.110.76
Active Load ID	TC6.0.0
Download Status	Unknown
<input checked="" type="checkbox"/> Device is Active	
<input checked="" type="checkbox"/> Device is trusted	
MAC Address*	005060844C6B
Description	Dennis C40
Device Pool*	DP_Sydney View Details
Common Device Configuration	< None > View Details
Phone Button Template*	Standard Cisco TelePresence Codec C40
Common Phone Profile*	Standard Common Phone Profile
Calling Search Space	< None >
AAR Calling Search Space	< None >
Media Resource Group List	MRGL_Sydney_Adhoc
User Hold MOH Audio Source	< None >
Network Hold MOH Audio Source	< None >
Location*	Sydney

CUCM Configuration

Add SIP Trunk Between CUCM and Conductor for Rendezvous Conferencing

Device ▾ Application ▾ User Manager

- CTI Route Point
- Gatekeeper
- Gateway
- Phone
- Trunk**
- Remote Destination
- Device Settings ▶

Device Information

Product:	SIP Trunk
Device Protocol:	SIP
Trunk Service Type	None(Default)
Device Name*	<input type="text" value="Trunk_Rendezvous_Conductor"/>
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="Use System Default"/>
Media Resource Group List	<input type="text" value="< None >"/>
Location*	<input type="text" value="Sydney"/>
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"/>

Media Termination Point Required

Retry Video Call as Audio

CUCM Configuration

Add SIP Trunk Between CUCM and Conductor for Rendezvous Conferencing

SIP Information

Destination

Destination Address is an SRV

	Destination Address	Destination Address IPv6	Destination Port		
1*	10.66.120.66		5060	+	-

Destination

Destination Address is an SRV

	Destination Address	Destination Address IPv6	Destination Port		
1*	conductor.collab.cisco.com		0	+	-

Out-Of-Dialog Refer Calling Search Space

SUBSCRIBE Calling Search Space

SIP Profile*

DTMF Signaling Method*

Normalization Script

Normalization Script

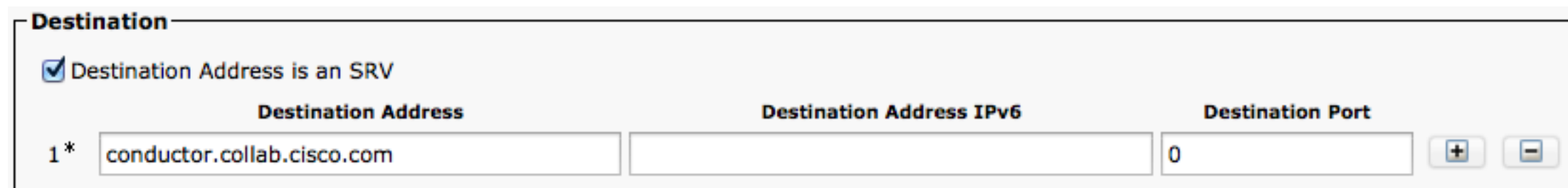
Enable Trace

	Parameter Name	Parameter Value		
1			+	-

CUCM Configuration

SIP Trunk Between CUCM and Conductor for Rendezvous Conferencing (Clustered Conductor)

- For clustered TelePresence Conductor deployment, use SRV record at destination address. CUCM, allows incoming call from the device configured in the first line of Destination Address field.
- Tick the “Destination Address is an SRV” check-box
- Leave Destination Port to “0”





The screenshot shows the 'Destination' configuration window in CUCM. It features a checked checkbox labeled 'Destination Address is an SRV'. Below this, there are three input fields: 'Destination Address' containing 'conductor.collab.cisco.com', 'Destination Address IPv6' which is empty, and 'Destination Port' containing '0'. To the right of the port field are '+' and '-' buttons. A '1*' label is positioned to the left of the first input field.


CUCM Configuration

Save then reset trunk

Device Reset

 Reset  Restart

Status

 Status: Ready

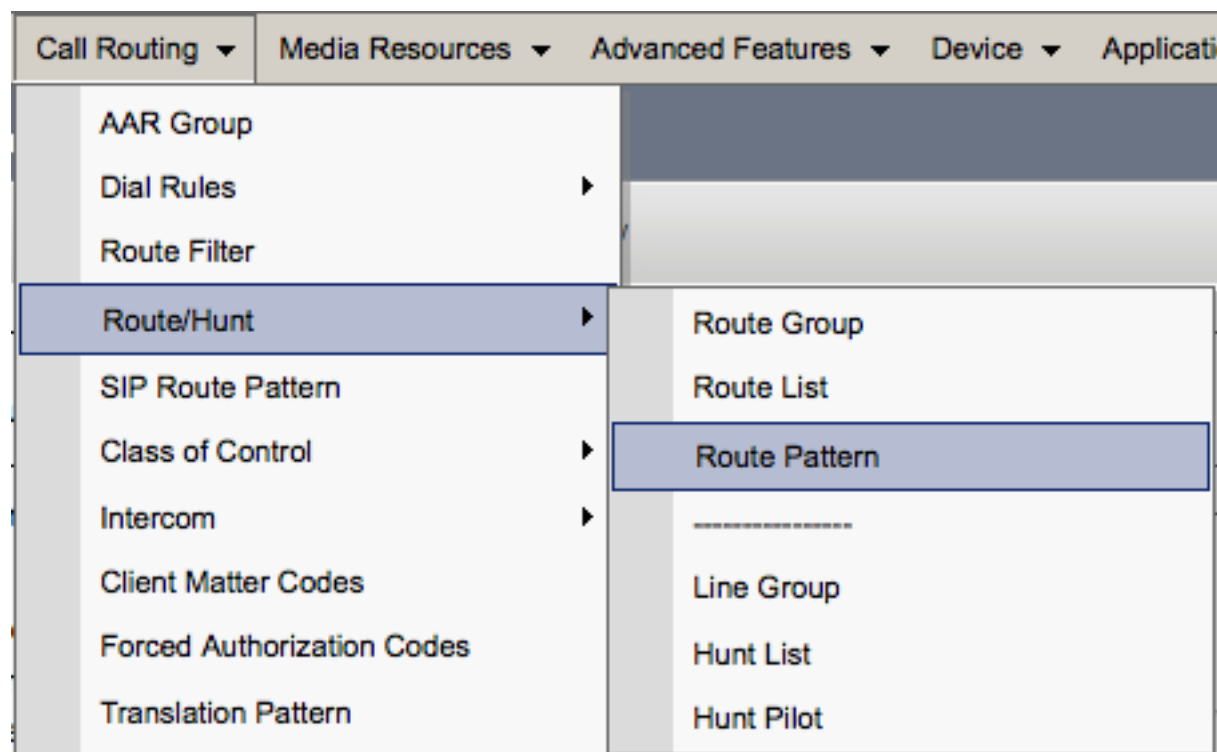
Reset Information

Selected Device: Trunk_Rendezvous_Conductor (SIP Trunk)
If a device is not registered with Cisco Unified Communications Manager, you cannot reset or restart it. If a device is registered, to restart a device without shutting it down, click the **Restart** button. To shut down a device and bring it back up, click the **Reset** button. To return to the previous window without resetting/restarting the device, click **Close**.

Note:
Resetting a gateway/trunk/media devices **drops** any calls in progress that are using that gateway/trunk/media devices. Restarting a gateway/media devices tries to preserve the calls in progress that are using that gateway/media devices, if possible. Other devices wait until calls are complete before restarting or resetting. Resetting/restarting a H323 device does not physically reset/restart the hardware; it only reinitializes the configuration loaded by Cisco Unified Communications Manager.

CUCM Configuration

Add Route Pattern, associating Rendezvous number to the trunk



Pattern Definition

Route Pattern*	5XXX
Route Partition	< None >
Description	Conductor Rendezvous Meetings
Numbering Plan	-- Not Selected --
Route Filter	< None >
MLPP Precedence*	Default
<input type="checkbox"/> Apply Call Blocking Percentage	
Resource Priority Namespace Network Domain	< None >
Route Class*	Default
Gateway/Route List*	Trunk_Rendezvous_Conductor (Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern No Error

CUCM Configuration

Modify Region settings to allow sufficient bit rate for TelePresence

Region Information

Name*

Region Relationships

Region	Audio Codec Preference	Maximum Audio Bit Rate	Maximum Session Bit Rate for Video Calls
Default	Use System Default (Factory)	256 kbps (L16, AAC-LD)	32256
NOTE: Regions not displayed		System Default	Use System Default

Modify Relationship to other Regions

Regions	Maximum Audio Bit Rate	Maximum Session Bit Rate for Video Calls
<input type="text" value="Default"/>	<input type="text" value="256 kbps (L16, AAC-LD)"/>	<input checked="" type="radio"/> 32256 kbps <input type="radio"/> Keep Current Setting <input type="radio"/> Use System Default <input type="radio"/> None

Buttons: Save, Delete, Reset, Apply Config, Add New

TelePresence Server Configuration

Operations Mode – Remotely managed

Configuration Configuration

System settings
H.323 settings
SIP settings
Operation mode

Operation mode You are here: Configuration > Operation mode

Operation mode

Apply changes

Users Logs

Users
Add new user

User


User ID	<input type="text" value="conductor"/>
Name	<input type="text" value="conductor"/>
Password	<input type="password" value="....."/>
Re-enter password	<input type="password" value="....."/>
Administrator	<input checked="" type="checkbox"/>
User attributes	
API access	<input checked="" type="checkbox"/>

Modify user Change password

TelePresence Server Configuration

SIP and H.323 Settings


SIP settings You are here: [Configuration](#) [SIP settings](#)

 This system is remotely managed

SIP

Outbound call configuration	<input type="text" value="Call direct"/>
Outbound address	<input type="text"/>
Outbound domain	<input type="text"/>
Username	<input type="text"/>
Password	<input type="text"/>
Outbound transport	<input type="text" value="TLS"/>
Negotiate SRTP using SDES	<input type="text" value="For secure transports (TLS) only"/>
Use local certificate for outgoing connections and registrations	<input type="checkbox"/>

H.323 settings You are here: [Configuration](#) [H.323 settings](#)

 This system is remotely managed

H.323 gatekeeper


Use gatekeeper	<input type="checkbox"/>
Address	<input type="text"/>
H.323 ID to register	<input type="text"/>
Password	<input type="text"/>

TelePresence Server Configuration

Network Services – Enable 5060 and 5061

Services

You are here: [Network](#) [Services](#)

 This system is remotely managed

	Port A
TCP service IPv4	
Web	<input checked="" type="checkbox"/> 80
Secure web	<input checked="" type="checkbox"/> 443
Incoming H.323	<input checked="" type="checkbox"/> 1720
SIP (TCP)	<input checked="" type="checkbox"/> 5060
Encrypted SIP (TLS)	<input checked="" type="checkbox"/> 5061
FTP	<input checked="" type="checkbox"/> 21

	Port A
UDP service IPv4	
SIP (UDP)	<input checked="" type="checkbox"/> 5060

TelePresence Server Configuration

Set Time Server

The screenshot displays the 'Upgrade' configuration page in the Cisco TelePresence Server web interface. The breadcrumb trail at the top right indicates the path: 'You are here: Configuration > Upgrade'. On the left, a navigation menu lists 'NTP', 'Enable NTP', 'UTC offset', and 'NTP host'. The main content area is titled 'Feature management' and contains the following sections:

- Activated features:**
 - MSE 8510 activation** (MMT55-Y5WUC-19A5C-P30DX)
 - Encryption** (VX8G5-YQJ3D-H5MYV-0B2PG) [remove](#)
 - Third party interop** (VXKG5-Y35MJ-M13QH-C2LYV) [remove](#)
- License keys:** **TS screen licenses x 16** (LWKUDM4BLT1G1GGJCPUK6BM22)
- Activation code:**

An 'Update features' button is located at the bottom of the feature management section.

TelePresence Server Configuration

Encryption Feature Key Added

Upgrade You are here: [Configuration](#) [Upgrade](#)

Feature management

Feature management

Activated features	MSE 8510 activation (MMT55-Y5WUC-19A5C-P30DX) Encryption (VX8G5-YQJ3D-H5MYV-0B2PG) remove Third party interop (VXKG5-Y35MJ-M13QH-C2LYV) remove
License keys	TS screen licenses x 16 (LWKUDM4BLT1G1GGJCPUK6BM22)
Activation code	<input type="text"/>

Q & A



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