



CISCO™
PARTNER

**Gold
Certified**

Demystifying Video

C-MUG

Steve Fala, Paul Smith

May 15, 2012

Agenda

- **Introduction**
- **Basic Installation**
- **Conferencing**
- **Management**
- **Outside Connections**
- **Future Technologies**

Introduction

THE NEW MILLENNIUM

Where is my jetpack?



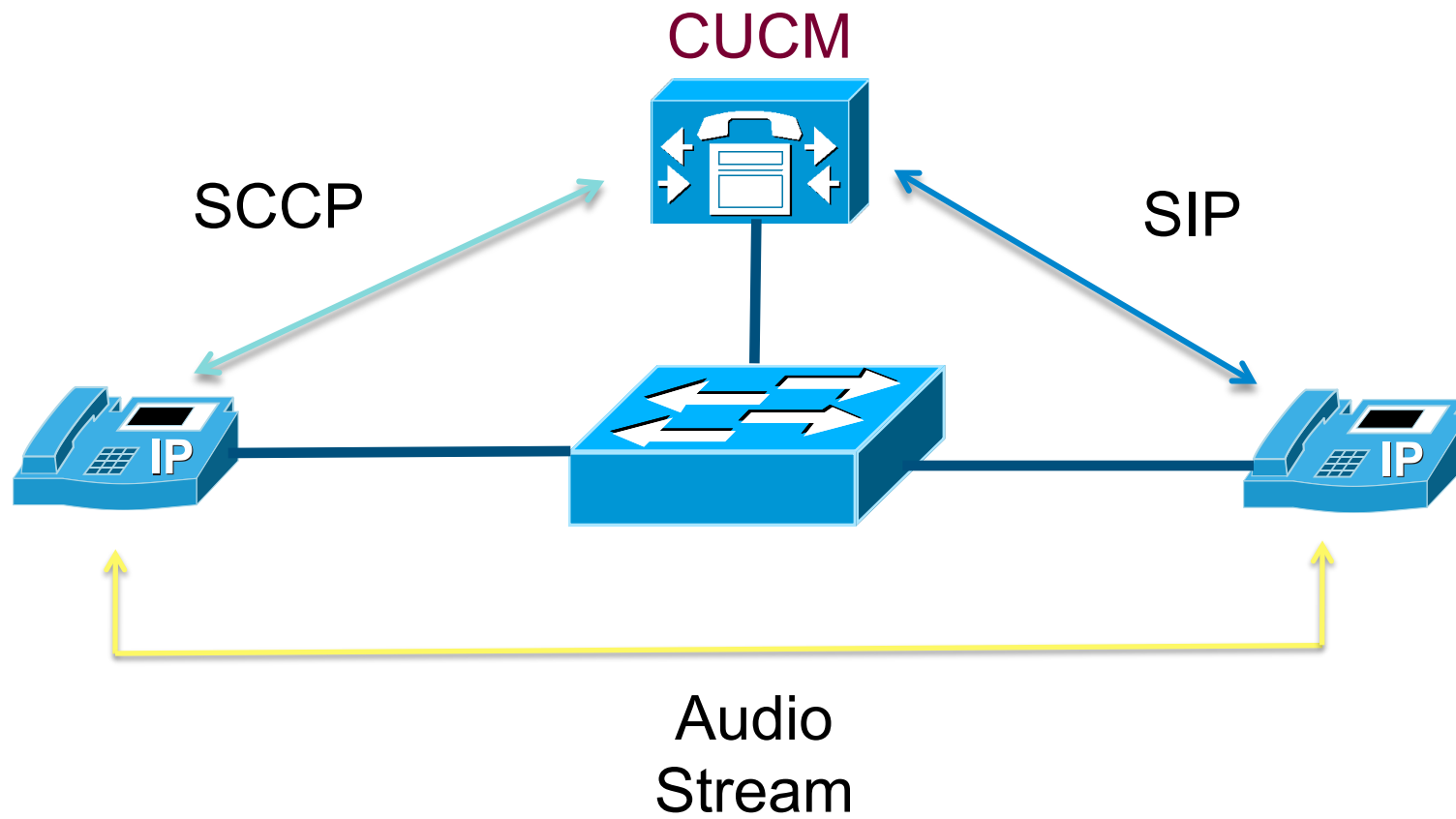
How This Will Work

- **Start with the basics**
- **Explain the hardware involved**
- **Add more functionality**
- **Explain that hardware**
- **Continue until the network is complete**
- **Use case scenario**
- **Where we're going**

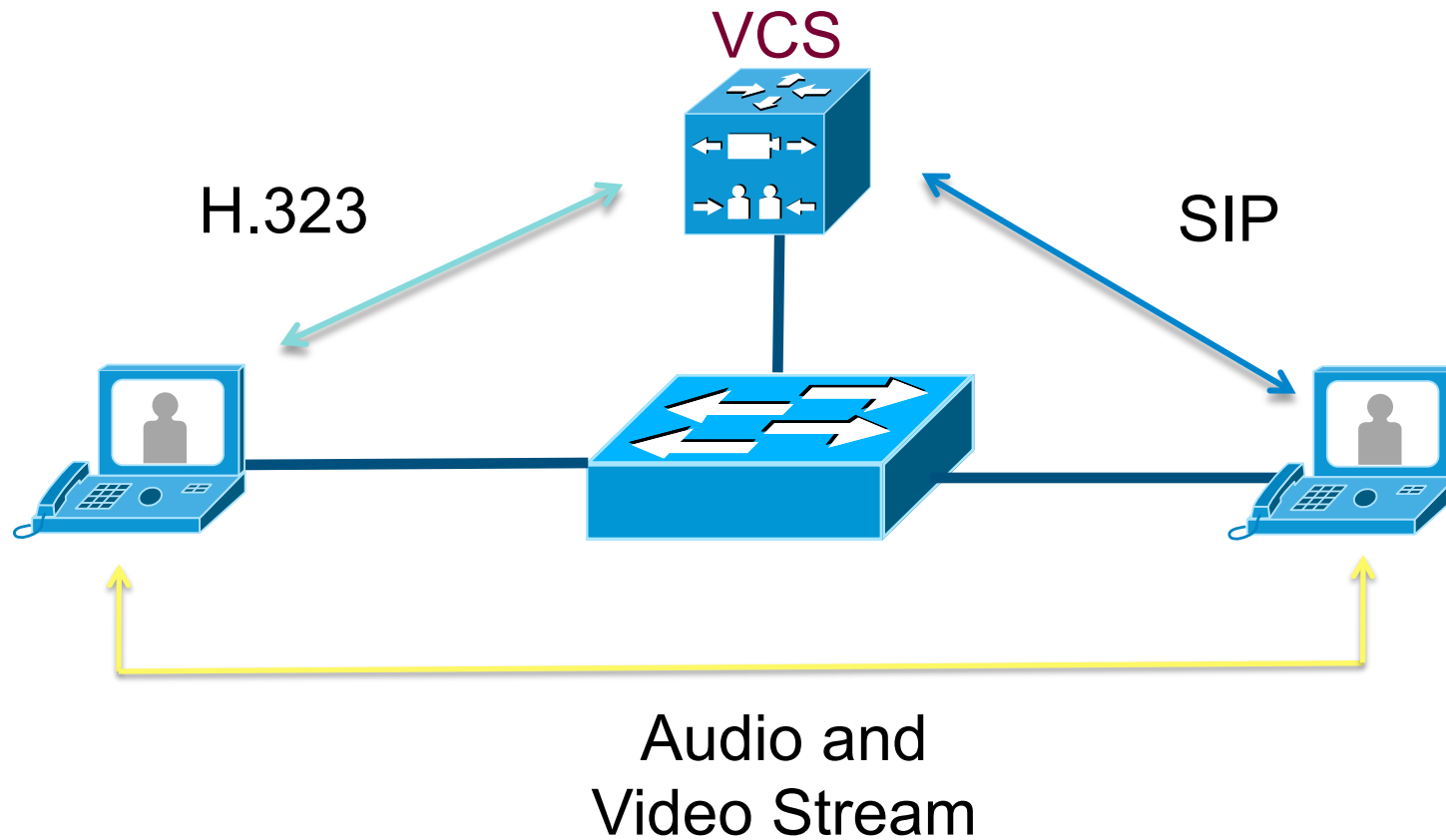
Basic Installation

POINT-TO-POINT VIDEO

Basic Audio



Basic Video



Dial by alias instead of IP



Basic Installation **ENDPOINTS**

Personal Endpoints



89XX and 99XX Desk Phones



“E” Desk Phones



“EX” Desk Phones

Room-Sized Endpoints



MX Series Devices



500 Series Devices



Profile Series Devices

Immersive Endpoints



“T” Series and
3000 Series
Devices

Codec or Codec?

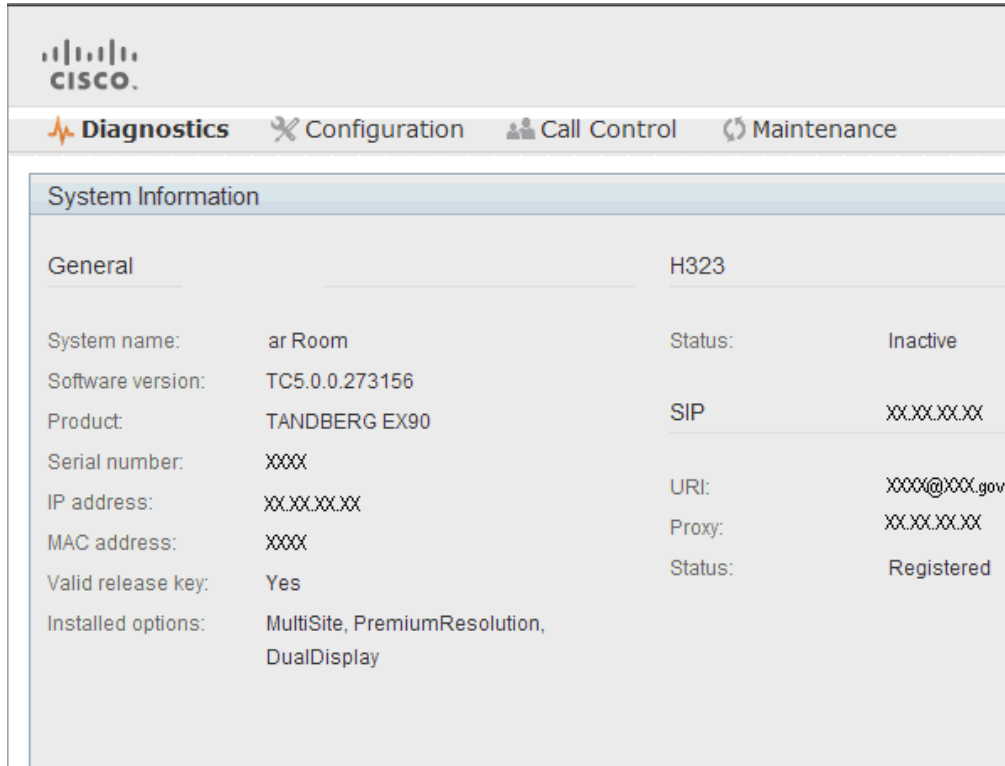
- A “Codec” is a compression standard; for example, G.711 for audio, or H.264 for video.
- A “Codec” is also a piece of coding and decoding hardware.

Cisco C90



Endpoint Configuration

Generally endpoints need to be configured to point to the VCS. These devices will have their own configuration web pages.



The screenshot displays the Cisco configuration web interface for an endpoint. The top navigation bar includes 'Diagnostics', 'Configuration', 'Call Control', and 'Maintenance'. The main content area is titled 'System Information' and shows the following details:

General		H323	
System name:	ar Room	Status:	Inactive
Software version:	TC5.0.0.273156	SIP	XXXXXXXX
Product:	TANDBERG EX90	URI:	XXXX@XXX.gov
Serial number:	XXX	Proxy:	XXXX.XXXX
IP address:	XX.XX.XX.XX	Status:	Registered
MAC address:	XXX		
Valid release key:	Yes		
Installed options:	MultiSite, PremiumResolution, DualDisplay		

Endpoint Configuration

For SIP phones, make sure the **name** of the device, the **URI** and the address of the **proxy (VCS)** are listed.

The screenshot displays a configuration window for SIP settings, organized into sections:

- SIP Profile 1:**
 - DefaultTransport:** Set to 'Auto'.
 - DisplayName:** 'ar Room'.
 - Outbound:** Set to 'Off'.
 - TlsVerify:** Set to 'Off'.
 - Type:** Set to 'Cisco'.
 - URI:** 'sip:4533@XX.XX.XX.XX'.
- Authentication 1:**
 - LoginName:** (Empty field).
 - Password:** (Empty field).
- Proxy 1:**
 - Address:** 'XX.XX.XX.XX'.



Basic Installation **THE VCS**

Video Communication Server

A **VCS** is like a Gatekeeper/SIP Registrar/CUCM for video. A VCS Control is internal and will...

- Register H.323 and SIP endpoints
- Direct calls between endpoints
- (In normal mode) Handles signaling and bandwidth management



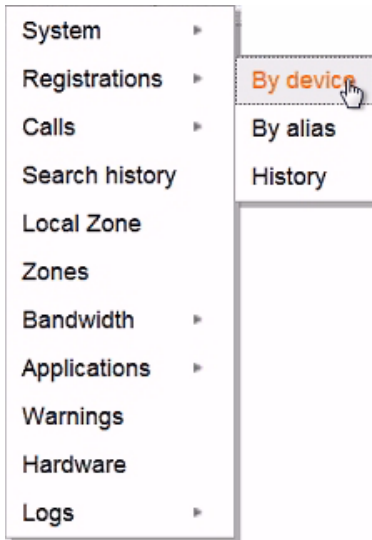
Cisco VCS

Video Communication Server

When you log into the **VCS** you get an overview of the statistics of the device.

Overview	Status	System configuration	VCS configuration	Applications	Maintenance
Overview					
System information					
System name	vcs-ctrl-01				
Up time	7 days 20 hours 22 seconds				
Software version	X5.2				
IPv4 address	10.219.32.6				
Options	60 Non-traversal Calls, 100 Traversal Calls, 2500 Registrations, Encryption, Interworking.				
Resource usage (last updated: 14:52:45)					
Traversal calls	Current	0 of 100			
	Max (peak)	2			
	Total	90			
Non-Traversal calls	Current	0 of 60			
	Max (peak)	1			
	Total	1			
Registrations	Current	6 of 2500			
	Max (peak)	6			
	Total	13			

Video Communication Server



A VCS Control can register up to **2500 endpoints**

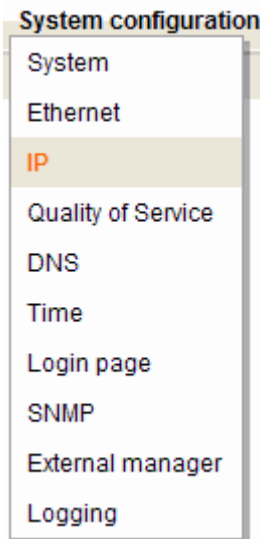
Overview **Status** System configuration VCS configuration Applications Maintenance

Registrations by device

Name	E.164	Type	Protocol	Creation time	Address
<input type="checkbox"/> Austin	5122224	Endpoint	H.323	2012-04-05 16:57:49	XX.XX.XX.XX:1719
<input type="checkbox"/> Codian01	9014622	MCU	H.323	2012-04-07 23:35:55	XX.XX.XX.XX:2222
<input type="checkbox"/> VPN3-VCS-H323_3		Gateway	H.323	2012-04-05 15:05:30	XX.XX.XX.XX:1719
<input type="checkbox"/> SOUTH	8165278	Endpoint	H.323	2012-04-10 05:56:55	XX.XX.XX.XX:1719

Video Communication Server

Start the configuration of the VCS by going to **System Configuration > IP** and fill in the address of the gateway and the Ethernet port.



A screenshot of the IP configuration page. The page is titled 'IP' and has two sections: 'Configuration' and 'LAN 1'.
In the 'Configuration' section:
- 'IP protocol' is set to 'IPv4'.
- 'IPv4 gateway' is set to 'XX.XX.XX.XX'.
- 'IPv6 gateway' is empty.
In the 'LAN 1' section:
- 'IPv4 address' is set to 'XX.XX.XX.XX'.
- 'IPv4 subnet mask' is set to '255.255.255.0'.
- 'IPv6 address' is empty.
At the bottom of the page are 'Save' and 'Restart' buttons.

On-Net Calls

Once the VCS has an IP and the phones are configured to find it, phones will register with the VCS and internal calling will be possible (including interworking).



The Environment

Behave like you're a TV studio engineer...

- **Lighting**

- Top lighting for main illumination
- Front lighting to soften features and cut shadows
- Back lighting (off to the side) to make subject stand out from the background

- **Microphones**

- Unidirectional
- Omnidirectional

The Environment

- **Background**
 - Neutral color
 - Flat backdrop
 - No patterns
 - Nothing glittery



- **Speakers and Acoustics**
 - Need to keep echo in mind

Basic Installation

CALL ROUTING

Connections to Another Device

- Besides the limit in the number of devices a **VCS** Control server can register, it can also handle only 500 concurrent calls (100 interworking calls). Large networks will probably need more than one.
- Registered devices have phone numbers so the VCS knows how to route calls to them.
- The VCS does not know about the phone numbers for devices registered to another VCS or to CUCM.

What to do?

Call Routing Decisions

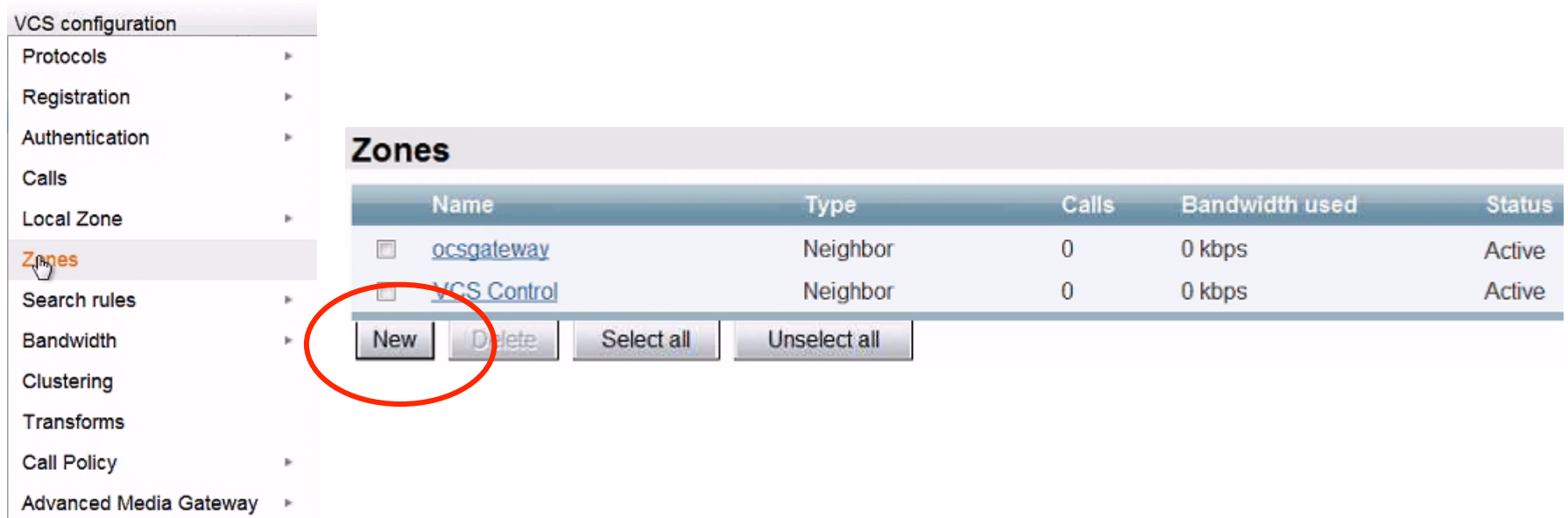
- **CUCM** – gateway/trunk object, route patterns
- **Gatekeeper** – zones, zone prefixes
- **VCS** – zones, search rules

Zone status

Name	Type	Calls	Bandwidth used	Status
DefaultZone	DefaultZone	0	0 kbps	Active
VCS Control	Neighbor	0	0 kbps	Active
Memphis CUCM	Neighbor	0	0 kbps	Active
cucTAM	Neighbor	0	0 kbps	Failed

Configure a Zone

Start by adding a new zone...



The screenshot displays the VCS configuration interface. On the left is a navigation menu with the following items: VCS configuration, Protocols, Registration, Authentication, Calls, Local Zone, Zones (highlighted), Search rules, Bandwidth, Clustering, Transforms, Call Policy, and Advanced Media Gateway. The main content area is titled 'Zones' and contains a table with the following data:

Name	Type	Calls	Bandwidth used	Status
<input type="checkbox"/> ocsgateway	Neighbor	0	0 kbps	Active
<input type="checkbox"/> VCS_Control	Neighbor	0	0 kbps	Active

Below the table are four buttons: 'New', 'Delete', 'Select all', and 'Unselect all'. The 'New' button is circled in red.

Configure a Zone

Fill in the details
(most defaults
are OK)...

Edit zone

Configuration

Name	* CUCM <i>i</i>
Type	Neighbor
Hop count	* 15 <i>i</i>

H.323

Mode	Off <i>i</i>
Port	1719 <i>i</i>

SIP

Mode	On <i>i</i>
Port	* 5060 <i>i</i>
Transport	TCP <i>i</i>
Authentication trust mode	Off <i>i</i>

Configure a Zone

Fill in the details...

...add the IP of the device in the other zone...

Edit zone

Accept proxied registrations *i*

Location

Peer 1 address *i*

Peer 2 address *i*

Peer 3 address *i*

Peer 4 address *i*

Peer 5 address *i*

Peer 6 address *i*

Advanced

Zone profile *i*

User: admin Server: IRS Lab VCS-C System time: 23:56 IST

- Cisco Unified Communications Manager
- Default
- Custom
- Microsoft Office Communications Server 2007
- Cisco Unified Communications Manager
- Nortel Communication Server 1000
- TANDBERG Advanced Media Gateway

Configure a Zone

Fill in the details...

...add the IP of the device in the other zone...

...and define the type of zone.

Edit zone

Accept proxied registrations: Allow

Location

Peer 1 address: 10.2.32.43

Peer 2 address:

Peer 3 address:

Peer 4 address:

Peer 5 address:

Peer 6 address:

Advanced

Zone profile: Cisco Unified Communications Manager

- Default
- Custom
- Microsoft Office Communications Server 2007
- Cisco Unified Communications Manager
- Nortel Communication Server 1000
- TANDBERG Advanced Media Gateway

Save Delete Cancel

User: admin Server: IRS Lab VCS-C System time: 23:56 IST

Then create a search rule.

Search Rules

Regex (Regular Expression) Wildcards

. (a dot) = any single character

d = any decimal 0-9

[] = a single character within a specified range

**** = precedes an expression

() = a group of digits or letters

? = 0 or 1 repetitions of previous

***** = 0 or more repetitions of previous

+ = 1 or more repetitions of previous

Search Rules

Examples:

.... = exactly 4 numbers or characters

g... = exactly 4 numbers or characters beginning with “g”

[2479]... = 4 numbers or characters beginning with 2, 4, 7, or 9

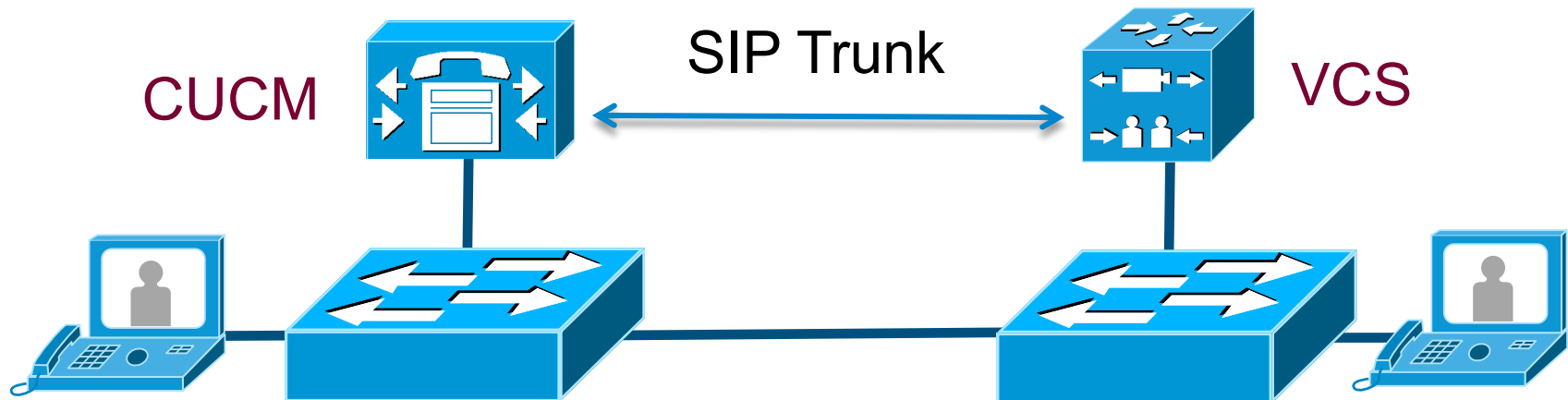
.* = any length string of digits or characters

\d+ = any length string of at least 2 digits

(.*)(@netcraftsmen\.net)? = any length string, the suffix may or may not be part of the string

Transforms

Dial strings sent to the VCS often need to be modified before they can be matched.

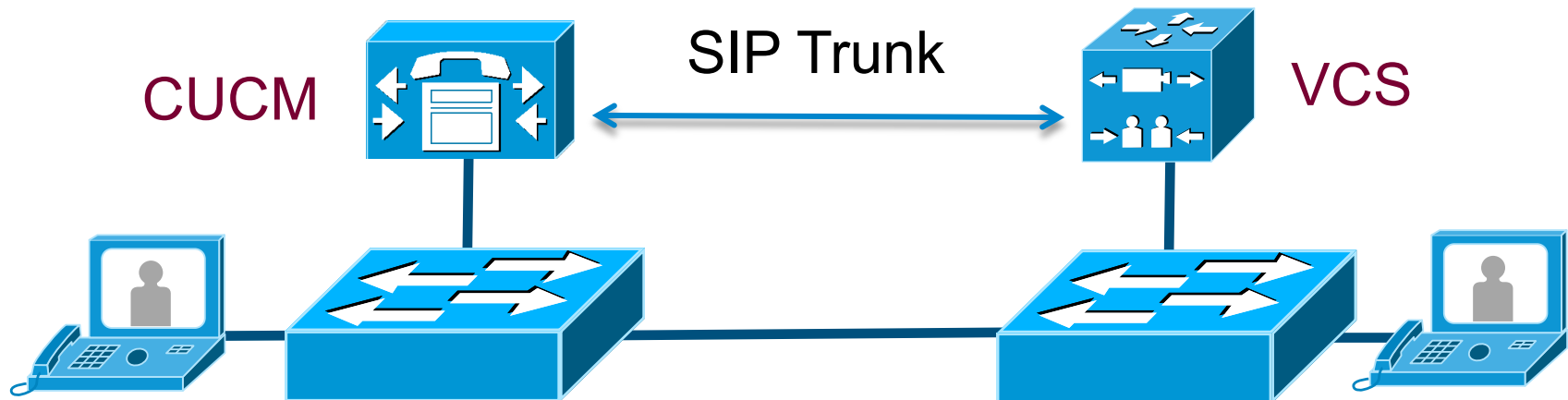


Dials 0056789 → Sends 0056789@netcraftsmen.net → Registered as 2023456789

Transforms

Search rule = (00)(\d+)(@netcraftsmen\.net)?

Replace = 20234\2



Dials 0056789 → Sends 0056789@netcraftsmen.net → Registered as 2023456789

There is a link to test replacements

Search Rules on VCS

You can put in an alias (something that's dialed), put in the search rule, and then see what the output will be...

Check pattern

Alias

Alias

Pattern

Pattern type i

Pattern string

Pattern behavior i

Replace string

Result

Result	Succeeded
Details	Alias matched pattern and was successfully transformed
Transformed alias	2025551212

Search Rules on VCS

Search rules are numbered. Lowest are checked first. Matching numbered rules query zones simultaneously. Rules are checked until there is a match or until a “Stop” is hit.

Search rules

Priority	State	Rule name	Source	Mode	Pattern type	Pattern string	Pattern behavior	On match	Target zone
<input type="checkbox"/> 50	✓ Enabled	LocalZoneMatch	Any	AnyAlias				Continue	LocalZone
<input type="checkbox"/> 30	✓ Enabled	Calls to video relay service	AllZones	AliasPatternMatch	Regex	(00)(\d+)(@xxx.gov)?	Replace	Stop	vrs-exp
<input type="checkbox"/> 110	✓ Enabled	Calls Pointing to Mem	Any	AliasPatternMatch	Regex	\d+	Leave	Continue	Mem VCS Control
<input type="checkbox"/> 110	✓ Enabled	Internal Calls to URI	Any	AliasPatternMatch	Regex	.*@xxx.gov.*	Leave	Continue	Mem VCS Control

[New](#) [Delete](#) [Enable](#) [Disable](#) [Select all](#) [Unselect all](#)

Related tasks

[Test whether a pattern match or transform has the expected result](#)

[Perform a test search for an alias](#)

Class of Restriction

- **Class of Restriction is allowing some people to use some search rules and not others. Controls access to long distance calling, controls who can be called, etc.**
- **In CUCM Class of Restriction is done with Partitions and CSSs.**
- **In a VCS, Class of Restriction is done with call policies**

Class of Restriction

Call Policies must be enabled. **CPL (Call Processing Language)** scripts can be uploaded...

Call Policy configuration

Configuration

Call Policy mode ⓘ

Policy files

Call Policy file ⓘ

CPL XSD file ⓘ

CPL extensions XSD file ⓘ

Select the new Call Policy file ⓘ

Class of Restriction

...or scripts can be created by making Call Policy rules.

Overview Status System configuration VCS configuration Applications Maintenance

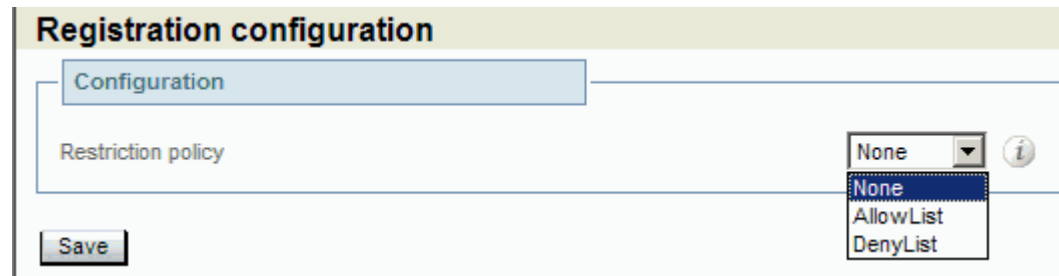
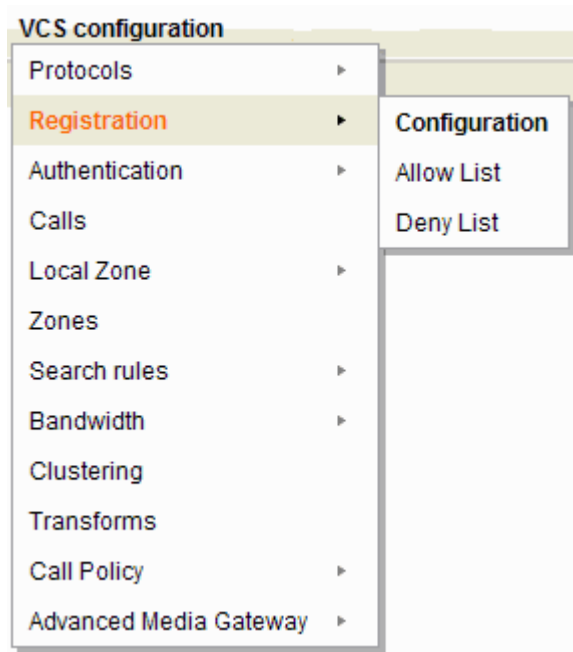
Add Call Policy rule

Add Call Policy rule

Source pattern	<input type="text" value="20255512.."/>	
Destination pattern	<input type="text" value="*002025554..."/>	
Action	<input type="text" value="Reject"/>	

Additional Security

To register, endpoints can be forced to fit a naming convention.



Can have Allow or Deny lists but not both.

Additional Security

When the type of registration is chosen, create the parameters that must be met.

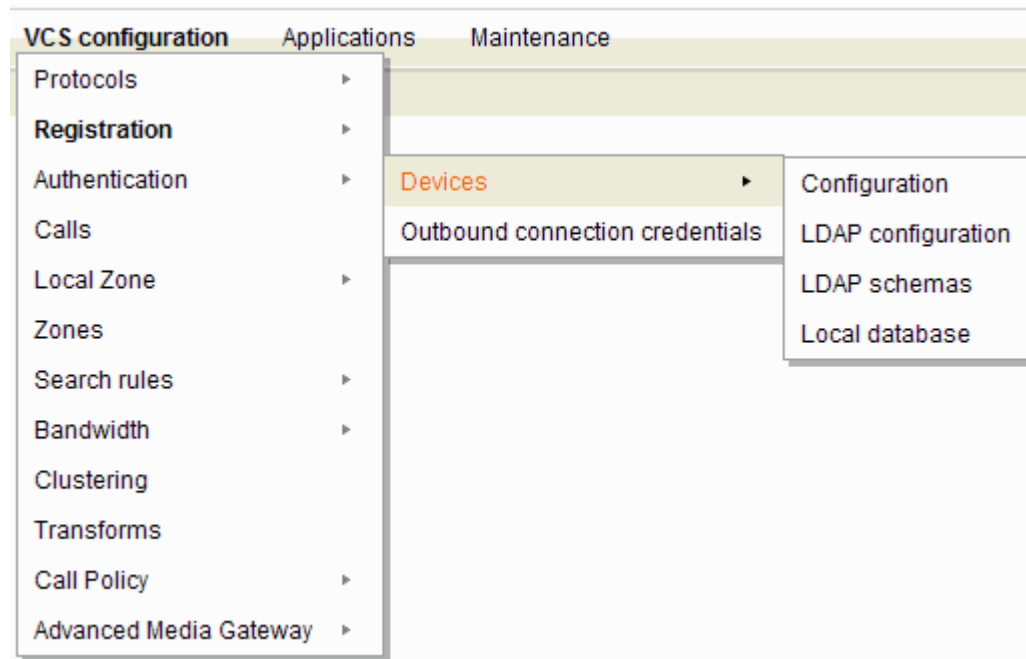
The screenshot displays a web-based configuration interface for a network device. At the top, there are navigation tabs: 'Overview', 'Status', 'System configuration', and 'VCS configuration'. Below these is a section titled 'Registration Allow List'. Underneath, there is a table header with columns 'Pattern' and 'Type'. Below the header, there are four buttons: 'New', 'Delete', 'Select all', and 'Unselect all'. The 'New' button is circled in red. A modal dialog box titled 'Create allow pattern' is open, showing a 'Configuration' section with the following fields:

- Pattern:** A text input field with an asterisk and an information icon.
- Type:** A dropdown menu with 'Exact' selected and an information icon. The dropdown list is open, showing options: 'Exact', 'Prefix', 'Suffix', and 'Regex'.
- Description:** A text input field with an information icon.

At the bottom of the dialog box, there are two buttons: 'Add Allow List pattern' and 'Cancel'.

Additional Additional Security

Can also authenticate against usernames and passwords stored in a local database or in LDAP.



Additional Additional Security

Authentication must be on or off for everyone.

Device authentication configuration

Authentication mode

Mode ⓘ

Authentication database

Database type ⓘ

Device LDAP configuration

Configuration

LDAP server ⓘ

Port * ⓘ

Encryption ⓘ

User DN ⓘ

Password ⓘ

Base DN ⓘ

Alias origin ⓘ

Conferencing

MULTIPOINT CONTROL UNITS

MCU

Video conferences are done with an MCU

- **Users can create “multiway” calls with Join.**
- **Can also create a “conference room”; users dial conference number to take part.**
- **MCUs take audio and video streams, mix them, and deliver content based on policies.**
- **Desktop content sharing using H.239 and BFCP protocols.**
- **MCUs register with the VCS.**

MCU

- **The smallest MCUs are built into some video endpoints. They can handle up to 4 people in a conference.**
- **Next step up are the 4XXX devices**
 - **4200 – 40 SD connections**
 - **4501 – 6 HD or 12 SD connections (upgrade to 12, 24)**
 - **4500 Series – Up to 40 HD (or SD) connections**



MCU

- **MCUs can also be blades in an 8000 chassis.**
 - **8510 Blade – 20 HD or 80 SD connections**
 - **8710 Blade – immersive conferences**
 - **Other blades for management of chassis, and for gateways**



MCU

Log into an MCU and see general statistics about the device.

The screenshot displays the web interface of an MCU. At the top, a navigation bar contains links for Home, Status, Network, Settings, Streaming, Conferences, Users, Endpoints, Gateways, Gatekeeper, Log out, Logs, and Help. Below this, a breadcrumb trail shows Home > Status > General. The main content area has tabs for General, Conferences, Health, and Security. The 'General' tab is active, showing a 'System status' section with the following details:

- Model **MCU 4501**
- Serial number **SM0026**
- Software version **4.0(1.54)**
- Build **6.15(1.54)**
- Uptime **77 days, 20 hours, 35 minutes**
- Host name **MCU01**
- IP address **XX.XX.XX.XX**
- CPU load **0.1%**
- Media processing load **0% (video-0%, audio-0%)**

MCU

As well as stats.
about conferences

General	Conferences	Health	Security
Conference status			
Active conferences 1			
Active auto attendants 0			
Completed conferences 0			
Completed auto attendants 5			
Active conference participants 0			
Previous conference participants 193			
Active streaming viewers 0 (0) / 12			
TCP streaming viewers 0 (0) / 12			
ConferenceMe users connected 0 (0) / 12			
Video ports in use 0 (5) / 12			
Audio-only ports in use 0 (2) / 12			
Streaming and content ports in use 0 (2) / 6			
Video status			
Incoming video streams 0 (5) unicast			
Outgoing video streams 0 (5) unicast			
Total incoming video bandwidth 0 bit/s (3.01 Mbit/s)			
Total outgoing video bandwidth 0 bit/s (3.52 Mbit/s)			
Audio status			
Incoming audio streams 0 (5) unicast			
Outgoing audio streams 0 (5) unicast			
Complex (not G.711 or G.722) audio participants 0 (1) / 12			

MCU

Under Network,
configure the
Ethernet
information.

Port A IP configuration	
IPv4 configuration	
IP configuration	Manual <input type="button" value="Renew DHCP"/>
Manual configuration	
IP address	XX.XX.XX.XX
Subnet mask	XX.XX.XX.XX
Default gateway	XX.XX.XX.XX
DNS configuration	
Host name	Codian01
Name server	
Secondary name server	
Domain name (DNS suffix)	xxx.gov
<input type="button" value="Update IP configuration"/>	
Port A IP status	
Host name	Codian01
DHCP	<in use>
IP address	XX.XX.XX.XX
Subnet mask	XX.XX.XX.XX
Default gateway	XX.XX.XX.XX
Name server	XX.XX.XX.XX
Secondary name server	
Domain name (DNS suffix)	xxx.gov

MCU

Configure the SIP Registrar Information...

Conferences	H.323	SIP	Streaming	Content	Media ports
SIP registrar settings					
SIP registrar usage			Disabled ▾		
SIP registrar domain			XX.XX.XX.XX		
SIP registrar type			Standard SIP ▾		
Use local certificate for outgoing connections and registrations			<input checked="" type="checkbox"/>		
Username			Codian01		
Password					
ID registration for scheduled conferences			Enabled ▾		
SIP call settings					
SIP proxy address					
Maximum bit rate from Microsoft OCS/LCS clients			1.50 Mbit/s ▾		
Outgoing transport			<input type="radio"/> UDP <input checked="" type="radio"/> TCP		

MCU

...or the H.323 Gatekeeper settings (or both)

Conferences	H.323	SIP	Streaming	Content	Media ports	User interface
H.323 gatekeeper settings						
H.323 gatekeeper usage <input type="text" value="Enabled"/>						
H.323 gatekeeper address <input type="text" value="XX.XX.XX.XX"/>						
Gatekeeper registration type <input type="text" value="MCU (standard)"/>						
Ethernet port association <input checked="" type="checkbox"/> Port A <input type="checkbox"/> Port B						
(Mandatory) H.323 ID to register <input type="text" value="Codian01"/>						
Use password <input type="checkbox"/> Password: <input type="text"/>						
Prefix for MCU registrations <input type="text"/>						
MCU service prefix <input type="text"/> (optional)						
ID registration for scheduled conferences <input type="text" value="Enabled"/>						
Send resource availability indications <input type="checkbox"/> Thresholds: <input type="text"/> conferences <input type="text"/> video ports						

MCU – Adding Endpoints

Need to add the devices that will be using the MCU. Add either an H.323 or a SIP device.

Endpoints

configured endpoints

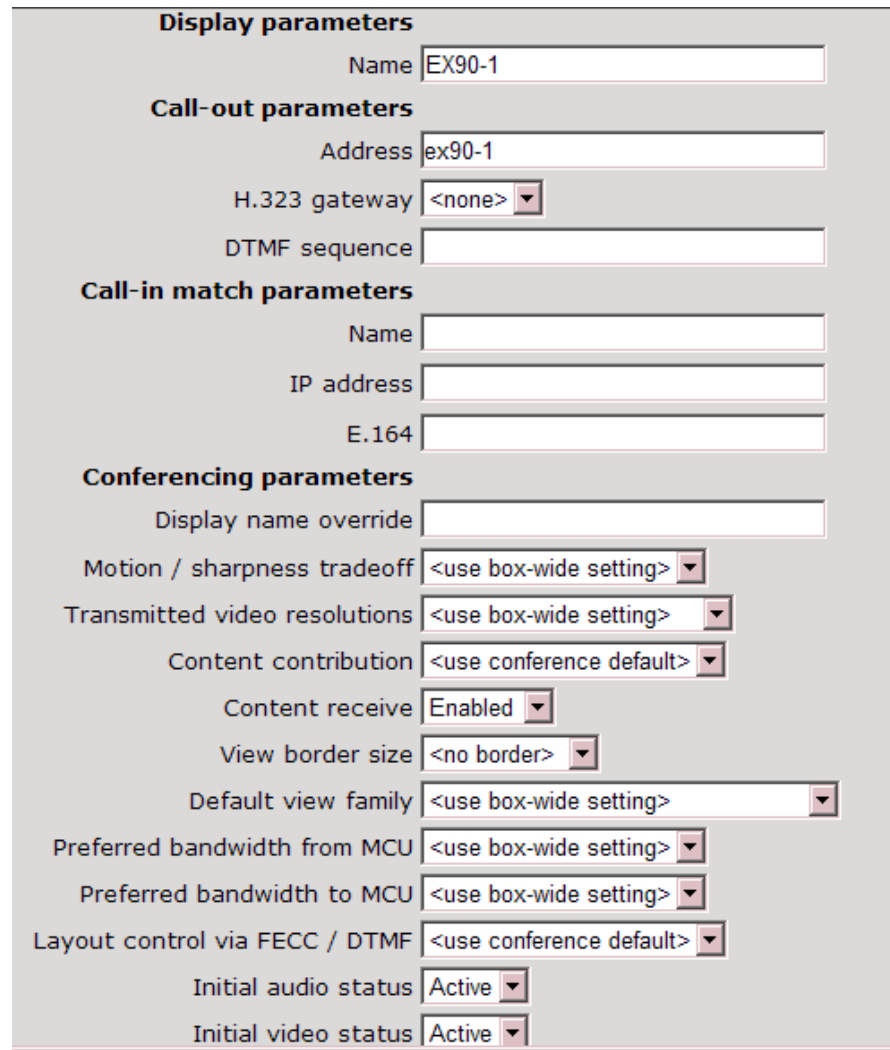
Delete selected Add H.323 Add SIP Add VNC

Name ▲	Address	Type
<input type="checkbox"/> EX90-1	ex90-1	H.323
<input type="checkbox"/> EX90-2	ex90-2	H.323

Delete selected Add H.323 Add SIP Add VNC

MCU – Adding Endpoints

The device will need a name and address at least. Other parameters can be configured.



Display parameters
Name

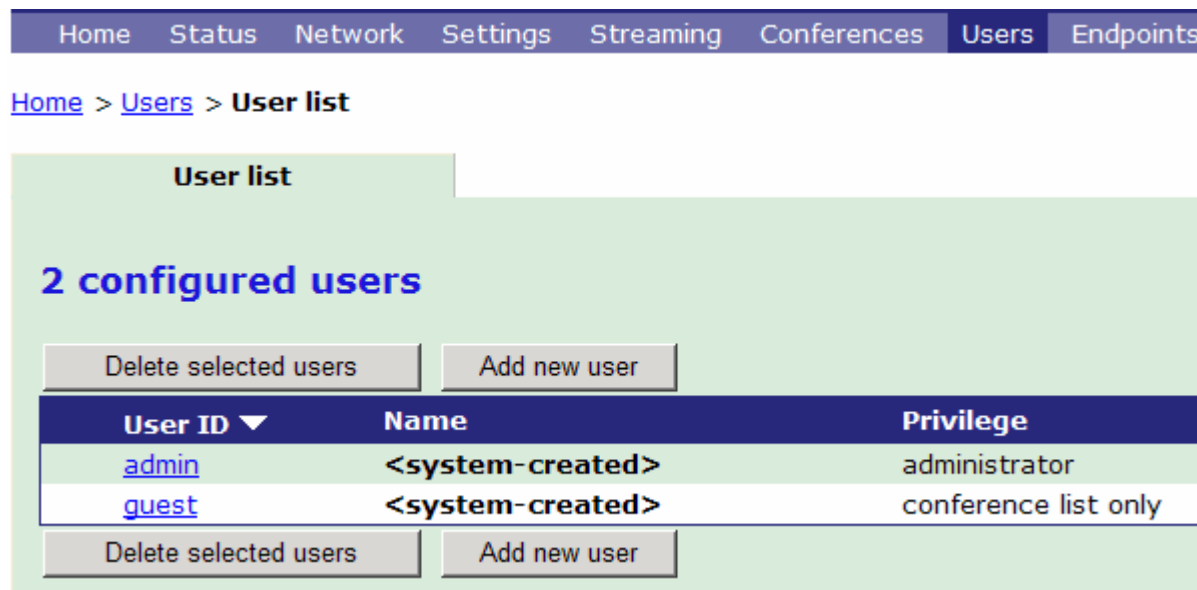
Call-out parameters
Address
H.323 gateway
DTMF sequence

Call-in match parameters
Name
IP address
E.164

Conferencing parameters
Display name override
Motion / sharpness tradeoff
Transmitted video resolutions
Content contribution
Content receive
View border size
Default view family
Preferred bandwidth from MCU
Preferred bandwidth to MCU
Layout control via FECC / DTMF
Initial audio status
Initial video status

MCU – Adding Endpoints

Users also need to be created. You can give users administrative rights here, but also rights to create a new conference.



The screenshot shows the 'Users' management page in the MCU interface. The breadcrumb trail is 'Home > Users > User list'. The page title is 'User list' and it indicates '2 configured users'. There are two buttons: 'Delete selected users' and 'Add new user'. Below is a table with columns 'User ID', 'Name', and 'Privilege'.

User ID	Name	Privilege
admin	<system-created>	administrator
guest	<system-created>	conference list only

Below the table, there are two buttons: 'Delete selected users' and 'Add new user'.

MCU – Adding Endpoints

Settings Streaming Conferences **Users** Endpoints Gateways Gatekeeper

User information

User ID

Name

Password

Re-enter password

Disable user account

Lock password

Force user to change password on next login

Privilege level

E.164 phone number

Associated video endpoint

- conference list only
- conference list plus streaming**
- conference detail
- conference creation
- conference creation and limited control
- conference creation and full control
- administrator

Information and rights are configured here.

Don't worry, there's an easier way to do this.

MCU – Conference Creation and Management

Home Status Network Settings Streaming **Conferences** Users Endpoints Gateways

[Home](#) > [Conferences](#) > **Conference list**

Conferences Auto attendants Move participants

1 active conference

Name ▼	Streaming Description	Owner	Registration
--------	-----------------------	-------	--------------

1 scheduled conference

Delete selected Add new conference

Name ▼	Numeric ID	Security	Owner	Status
--------	------------	----------	-------	--------

Delete selected **Add new conference**

MCU – Conference Creation and Management

Give the bridge a name and a number and fill in whatever other configurations you want. Or accept the defaults.

Conference "Bridge 1"

Parameters	
Name	Bridge 1
Description	<input type="text"/> (optional)
Numeric ID	9014622 (optional)
PIN	<input type="text"/> (optional)
Guest numeric ID	<input type="text"/> (optional)
Guest PIN	<input type="text"/> (optional)
Numeric ID registration	<input checked="" type="checkbox"/> H.323 gatekeeper <input checked="" type="checkbox"/> SIP registrar
When only guests remain	Take no action
Floor and chair control	Allow floor and chair control
Owner	admin
Visibility	Public
Layout control via FECC / DTMF	Enabled
Invite pre-configured participants	At the start of the conference
Mute on join	<input type="checkbox"/> Audio <input type="checkbox"/> Video
Streaming	Unicast
Content channel video	Enabled
Content contribution from endpoints	Enabled
Maximum video participants	<input type="text"/> (optional - 0 currently in use)
Maximum audio-only participants	<input type="text"/> (optional - 0 currently in use)

MCU – Conference Creation and Management

Configure the layout of the panes. Within conference select Custom Layouts.

Conference custom layout

Current status Enabled
 Disabled
 Make new participants see this view
Switch all participants to this view

Available layouts

These layouts are designed to be suitable for all video conferencing situations.

Cisco MCU Highpoints

- **Works with endpoints from different vendors (Polycom, OCS) including compatibility with standards that allow for supplemental services.**
- **Can be set up as a Media Resource in CUCM.**
- **New MCUs feature dynamic video ports which can be grabbed when needed (without reservation). Good for multiway conferences. Also makes it easier for MCU to be registered with CUCM and with a VCS at the same time.**
- **Auto-Attendant can be set**

Cisco MCU Limitations

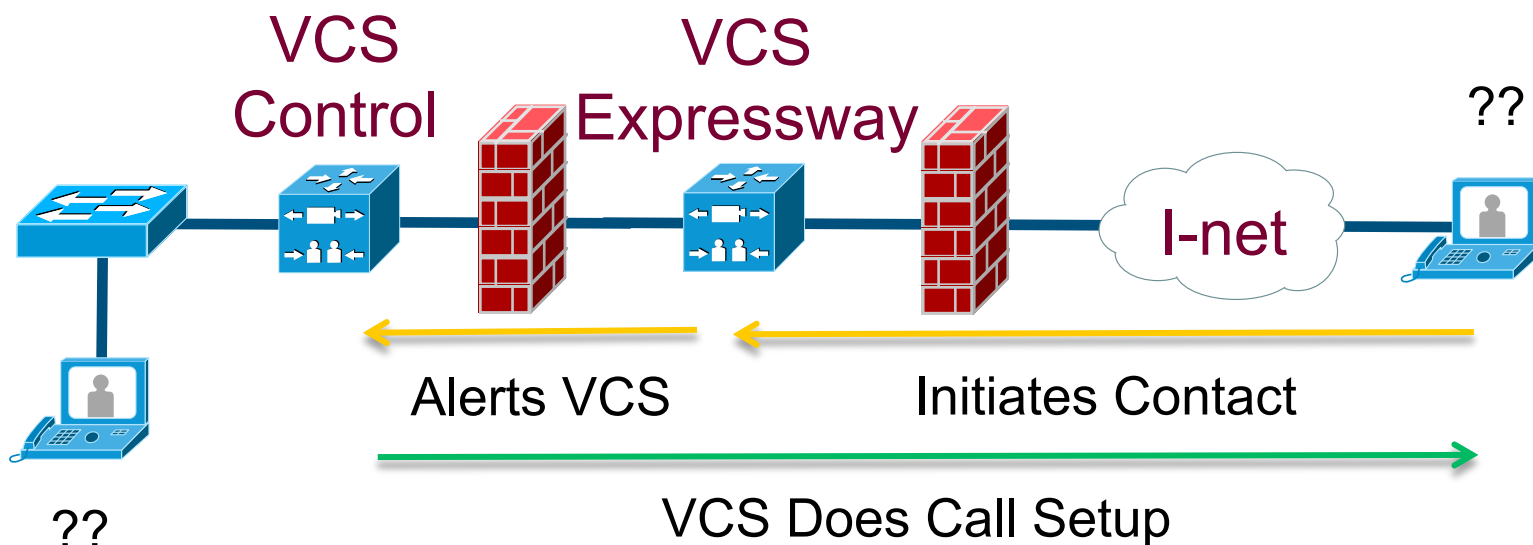
- **No bulk import of users or endpoints**
- **Scheduling of conferences can be done by users, but kind of clunky and no calendar integration.**
- **No alerts can be sent.**

Outside Connections

VCS EXPRESSWAY

The Outside World

Firewalls keep out both the good and the bad. Opening a hole in the firewall for the traffic you want could also allow traffic you don't want. Solution: NAT. Problem: NAT.

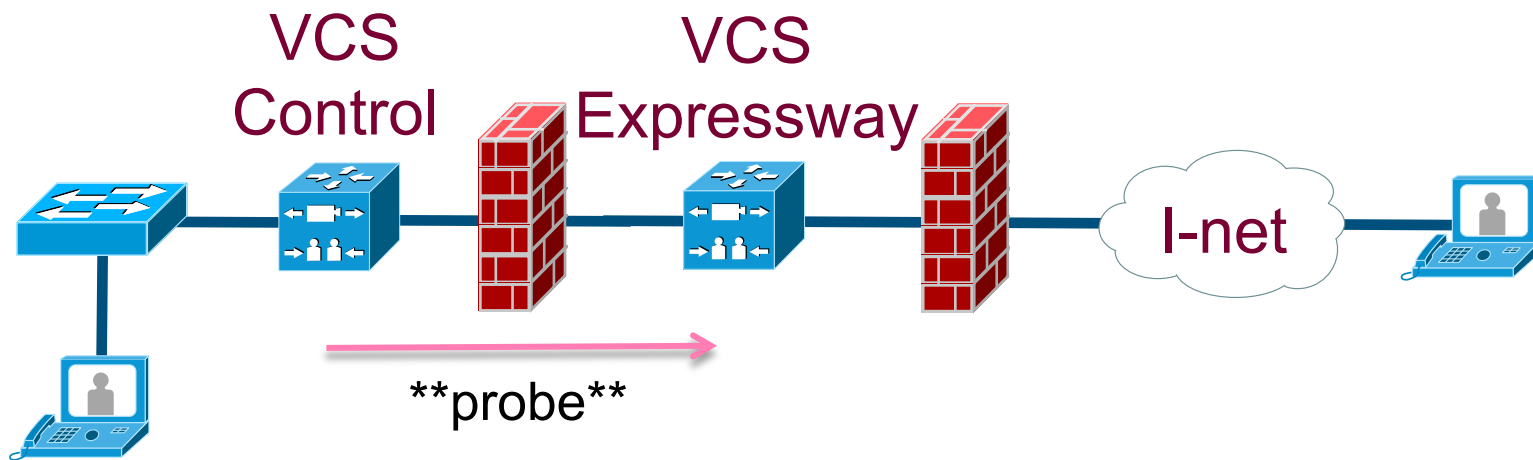


The Outside World

- **The VCS Control (traversal client) and the VCS Expressway (traversal server) are configured in the same way using zones and search rules.**
- **Outside devices (road warriors, home users, 3rd party business partners) register with the VCS Expressway.**
- **Each VCS server is configured with a traversal zone for communication through the firewall.**

The Outside World

The Client maintains a link by regularly sending packets to the Server. If a call is initiated, the Server uses the open connection to get the Client to start the connection.



The Outside World

- **The VCS Expressway is configured with a traversal zone and a specific port for the VCS Control.**
- **The VCS Control is then configured with a traversal zone and the same port.**
- **If more than one Control is used, it must have a unique zone and a unique port.**
- **The VCS Control can handle up to 500 simultaneous calls, but the Expressway can handle only 100.**

Client and Server Configuration

The traversal zone on VCS Expressway is configured first.

VCS configuration

- Protocols ▶
- Registration ▶
- Authentication ▶
- Calls
- Local Zone ▶
- Zones
- Search rules ▶
- Bandwidth ▶
- Expressway ▶
- Clustering
- Transforms
- Call Policy ▶

Edit zone

Configuration

Name * ⓘ

Type TraversalServer

Hop count * ⓘ

Client authentication username * ⓘ [Add/Edit local authentication database](#)

H.323

Mode ⓘ

Protocol ⓘ

Port * ⓘ

H.460.19 demultiplexing mode ⓘ

SIP

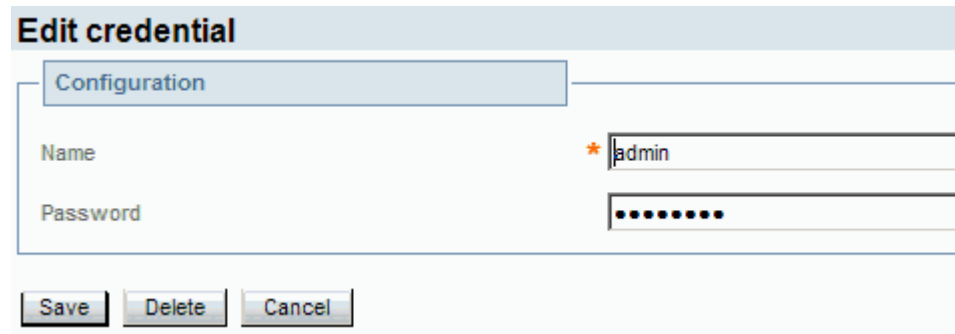
Mode ⓘ

Port * ⓘ

Transport ⓘ

Client and Server Configuration

Make sure the username and password are in the database or else the registration won't be completed.



The screenshot shows a web form titled "Edit credential". At the top, there is a "Configuration" dropdown menu. Below it, there are two input fields: "Name" with the value "admin" and a red asterisk to its left, and "Password" with a masked password of ten dots. At the bottom of the form, there are three buttons: "Save", "Delete", and "Cancel".

Client and Server Configuration

When the rest of the configurations are done, make sure search rules are created pointing to the devices both inside the firewall and outside.

Edit zone

TCP retry interval * 2 ⓘ

TCP retry count * 5 ⓘ

TCP keep alive interval * 20 ⓘ

Save Delete Cancel

Status

State	Active
SIP port	Active
H.323 port	Active
Number of calls to this zone	0
Bandwidth used on this VCS	0 kbps
Total bandwidth used across this cluster	0 kbps
Peer 1	H.323: Active: 10.2.2.151:1719 SIP: Active: 10.2.2.151:25026
Search rules targeting this zone	

Related tasks

[Configure search rules](#)

Client and Server Configuration

The VCS Server is configured pretty much the same. The only difference is the addition of the IP of the Expressway.

Edit zone

Location

Peer 1 address XXX.XXX.XXX.XXX

Peer 2 address

Status

State	Active
Number of calls to this zone	0
Bandwidth used on this VCS	0 kbps
Total bandwidth used across this cluster	0 kbps
Search rules targeting this zone	1

Related tasks

[Configure search rules](#)



Additional Options

DO MORE WITH YOUR NETWORK

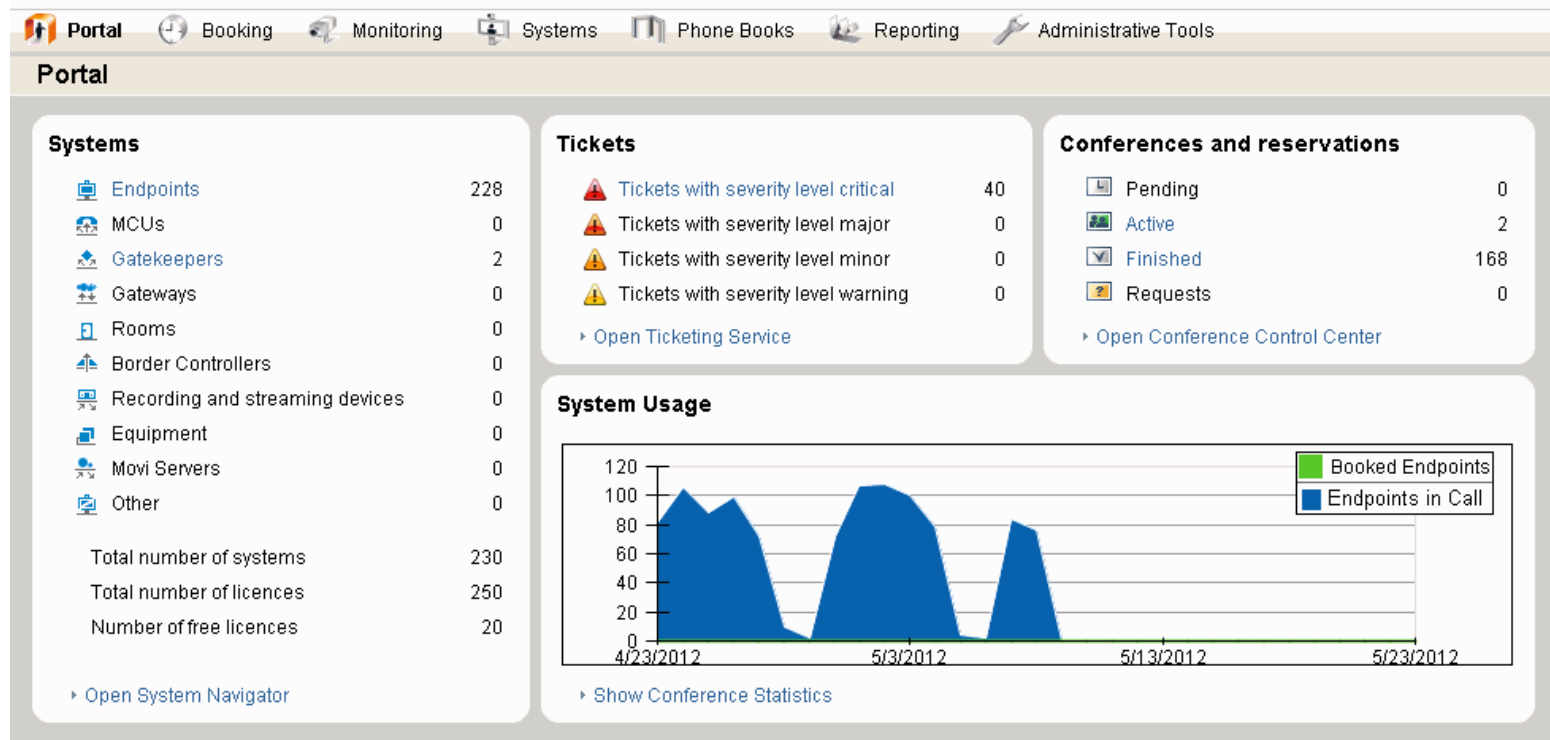
TelePresence Management System

TMS centralizes everything

- **Management of all systems and endpoints as well as provisioning of users and endpoints in one spot**
- **Active Directory integration**
- **Diagnostics of system**
- **Reporting**
- **A convenient interface for booking conferences**

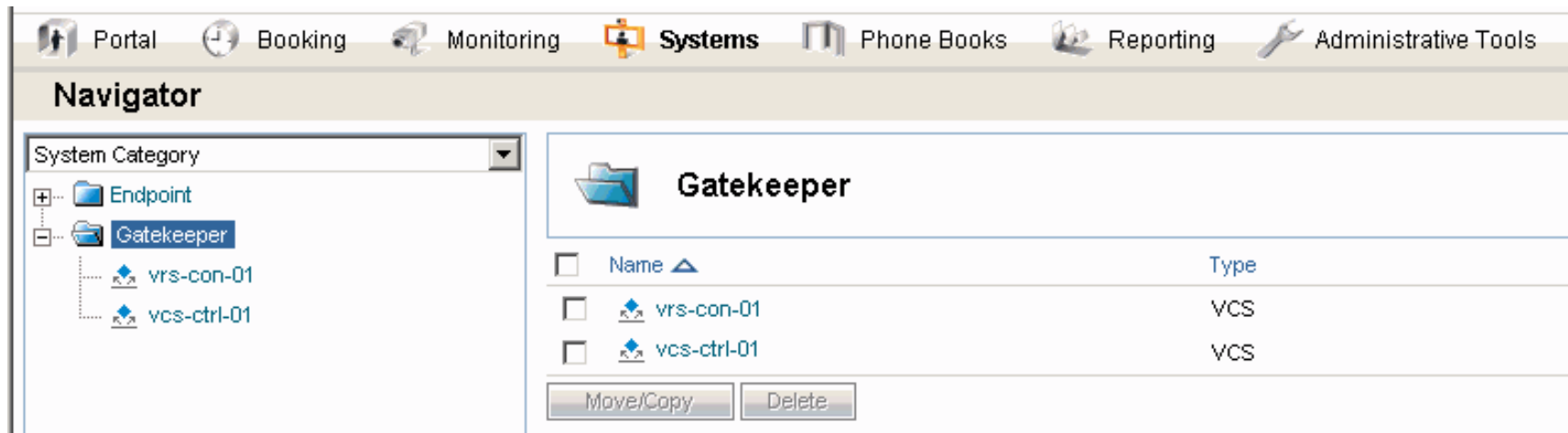
TelePresence Management System

TMS comes as a pre-loaded appliance or as an application on a Windows server. SQL 2005 is the back end.



TelePresence Management System

Endpoints and all of the rest of the devices on the video network will show up in TMS. Handy for medium to large organizations.




The screenshot displays the TMS interface with a navigation menu at the top including Portal, Booking, Monitoring, Systems, Phone Books, Reporting, and Administrative Tools. The main content area is titled "Navigator" and shows a tree view of system categories. Under "System Category", there are two folders: "Endpoint" and "Gatekeeper". The "Gatekeeper" folder is expanded, showing two sub-items: "vrs-con-01" and "vcs-ctrl-01". To the right of the tree view, a detailed view of the "Gatekeeper" folder is shown, including a table of items and action buttons.

<input type="checkbox"/>	Name ▲	Type
<input type="checkbox"/>	vrs-con-01	VCS
<input type="checkbox"/>	vcs-ctrl-01	VCS

Buttons: Move/Copy, Delete


TelePresence Management System

 **vrs-con-01**
System Type: TANDBERG VCS System status: In Call Network Address: XX.XX.XX.XX Connectivity: Reachable on LAN

[Summary](#) **[Settings](#)** [Registrations](#) [Active Calls](#) [Zones \(Neighbors\)](#) [Services](#) [Clustering](#) [Connection](#) [Permissions](#) [Logs](#)

[View Settings](#) **[Edit Settings](#)** [Extended Settings](#) [Compare Settings](#) [Ticket Filters](#)

General

Name:	<input type="text" value="vrs-con-01"/>	Status:	In Call
System Type:	TANDBERG VCS	Your Access:	Set Permissions, Manage Calls, Book, Read, Edit Settings
System Connectivity:	Reachable on LAN	System Contact:	<input type="text"/> 
Network Address:	<input type="text" value="XX.XX.XX.XX"/>	Alert System Contact when Booked:	<input type="text" value="No"/>
Manufacturer:	TANDBERG	Description:	<input type="text"/>
MAC-Address:	<input type="text" value="AA:AA:AA:AA:AA:AA"/>		
IP Zone:	<input type="text" value="Default"/>		
Time Zone:	<input type="text" value="(GMT - 05:00) Eastern Time (US & Ca)"/>		
Password:	<input type="password" value="....."/>		

Configuration

Software Version:	X5.2	Last Settings Backup:	6/2/2011 10:27:18 AM
Hardware Serial No:	52A	Last Settings Restore:	Not Registered

Network Settings

NTP Server Address:	<input type="text" value="XX.XX.XX.XX"/>
---------------------	--

TelePresence Management System

Another big plus, conference scheduling.

Portal **Booking** Monitoring Systems Phone Books Reporting Administrative Tools

New Conference

Basic Settings

Title: Start Time: Recurrence: None
Type: End Time:
Owner: Duration:

Advanced Settings

Picture Mode: Billing Code: Setup Buffer: Minutes
IP Bandwidth: Password: Tear Down Buffer: Minutes
ISDN Bandwidth: ISDN Restrict Streaming Type:
Secure: Display Extend Option On VC Master This conference will not be recorded

Participants Conference Information

Press "Add Participants" button to add participants.

TelePresence Management System

Adding attendees





Add Participants

Conference Time

Endpoints and Rooms | Users | MCUs | Phone Books | External | Templates | Equipment

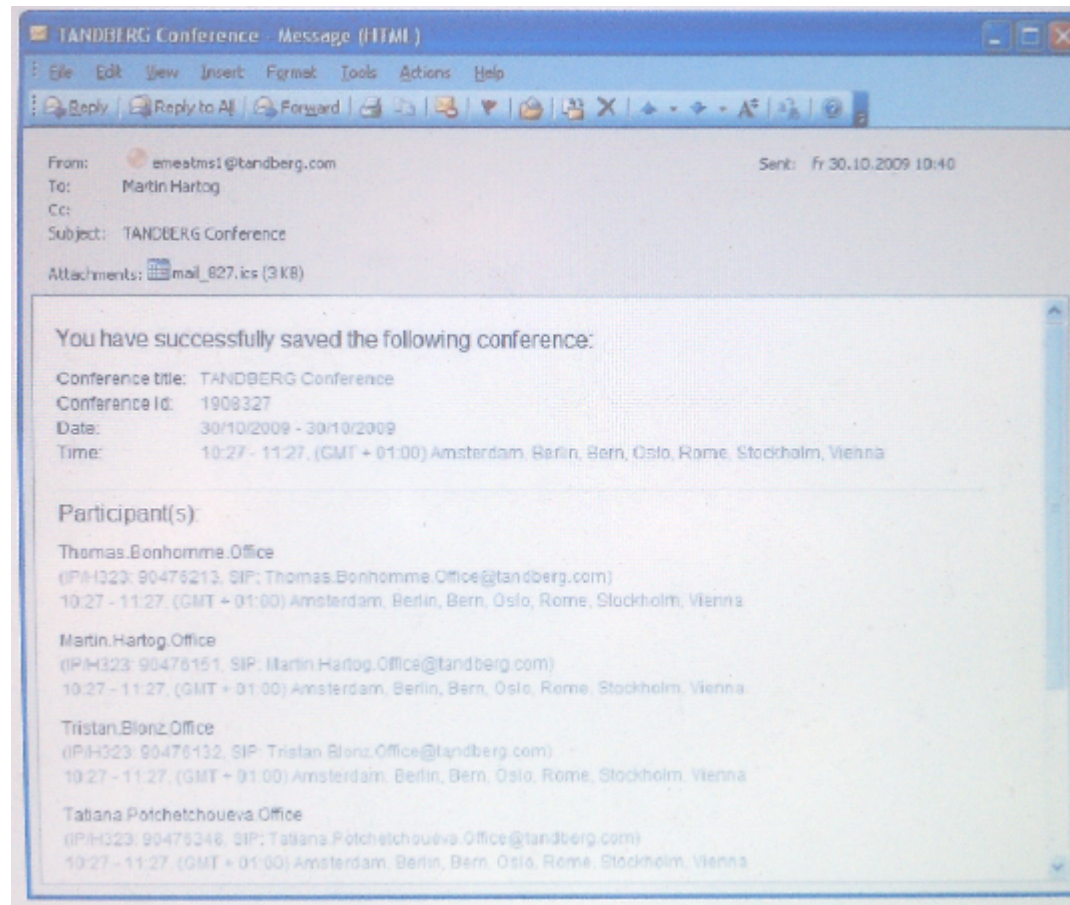
Query

Search: Folder:

<input type="checkbox"/>	Name	Actions	09	10	11am	12pm	01	02	03	04	05	06	07	08	09	10	11pm
<input type="checkbox"/>	 1821 D Blvd..	Details															
<input type="checkbox"/>	 2nd flr quiet room -..	Details															
<input type="checkbox"/>	 IH 35	Details															
<input type="checkbox"/>	 A test Unit	Details															

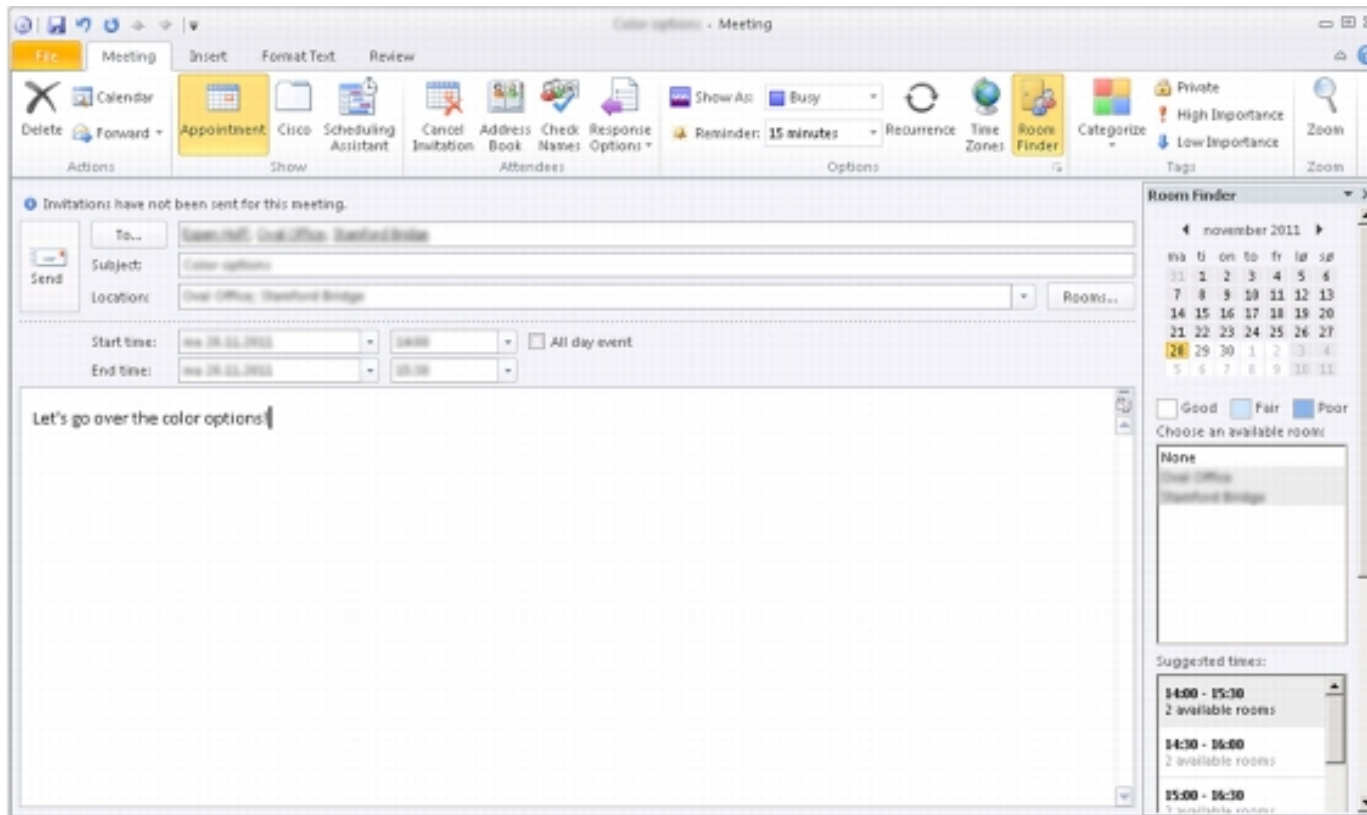
TelePresence Management System

An email is sent to conference creator.



TelePresence Management System

TMS Extension for Exchange (TMSXE) adds the ability to schedule conferences from Outlook.



Gateways

There are also gateways that can be added to connect to outside systems coming in through an ISDN connection.



**ISDN GW
3241**

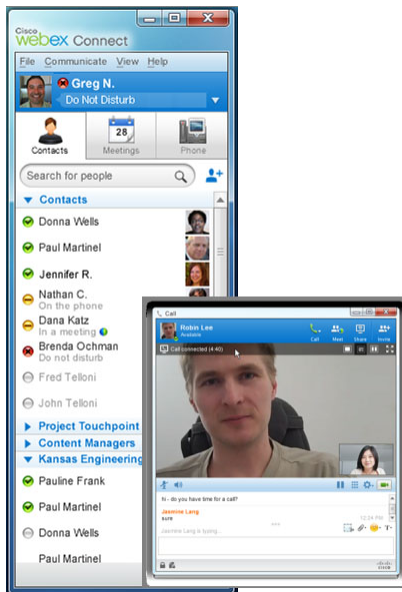


**ISDN GW
8321**

WebEx

WebEx moves conferencing to the cloud...

- **Voice, video and data collaboration done with a WebEx subscription.**
- **Can also have a WebEx Connect server on-site.**



- High-quality video for internal conferences
- Scheduling and management still done in the cloud
- Connections to outside users also done in cloud.



Future Technologies
WHERE WE'RE GOING

Incorporating CUCM

Currently possible to natively register many video endpoints to CUCM.

- **Requires CUCM 8.6**
- **Endpoints must be running SIP and using appropriate firmware (5.x)**
- **MCUs can also register as conferencing devices in Media Resources.**

Final Words on the VCS

“The VCS isn’t going anywhere. Not in the short term or the long term.”

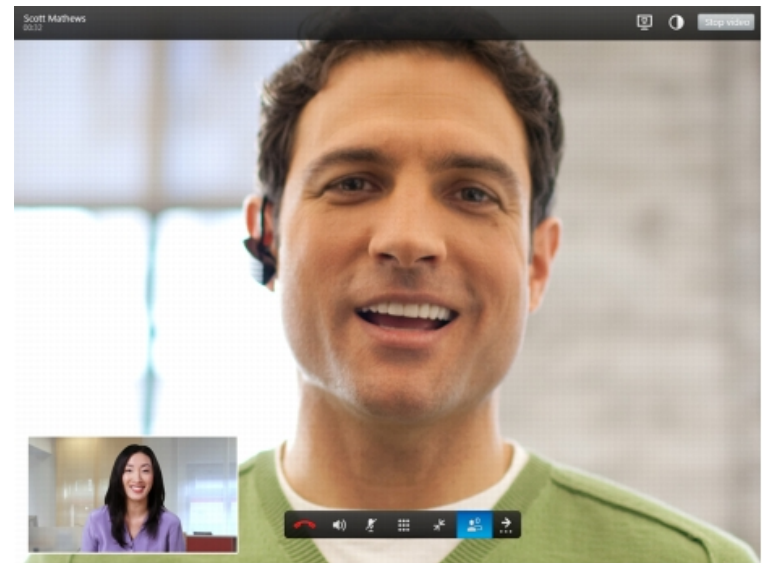
- **There are no plans to change the firewall traversal method.**
- **CUCM will never register H.323 devices.**
- **Some endpoints can’t do supplementary services without a VCS.**
- **CUCM cannot do video encryption (yet).**
- **There are many Cisco Telepresence customers who don’t have Cisco phones.**

Jabber for “N”

Everything software-related is rebranded as Jabber for something

- **MOVI is now Jabber Video**
- **Mobility clients are Jabber for iPhone and Jabber for Android.**
- **CUPC client is now Jabber for Windows or Jabber for MAC**

But Jabber Video is the only one including video...



Shameless Promotion

Cisco has announced “Jabber for Everyone”

- **If you're an existing CUCM 7.0+ customer you'll get IM/Presence Jabber clients for free.**
- **Still need a Presence server, but licensing will be included. Enough for all users in your organization.**
- **Existing maintenance contracts will cover it. Zero licensing or support costs.**

Shameless Promotion

“Jabber Video Guest Access”

- **DOES** involve the old MOVI.
- **Can sign up for the limited-functionality version for free.**
- **Paid version includes custom domain names, video conferencing, and support.**



Wrap Up
QUESTIONS



Chesapeake NETCRAFTSMEN

**E-mail: sfala@netcraftsmen.net
psmith@netcraftsmen.net**