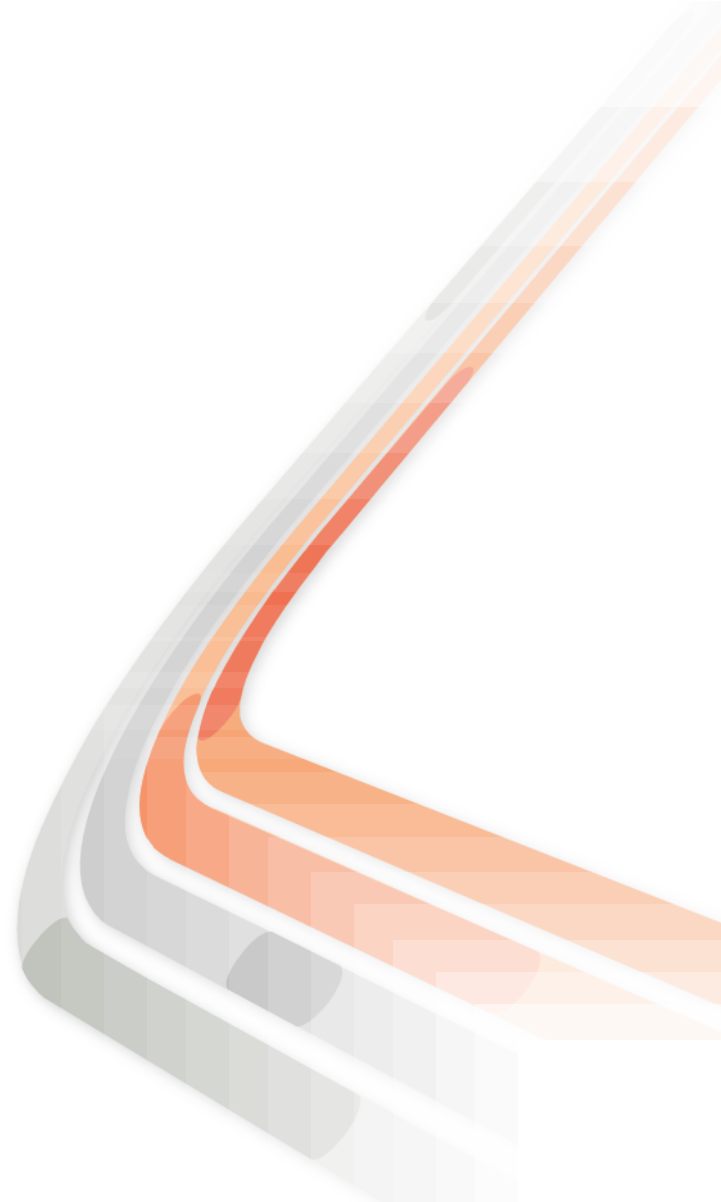




Troubleshooting Cisco Unified Contact Center Enterprise

BRKCCT-3005

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@ciscoliveeurope, #CLEUR



Housekeeping

- We value your feedback- don't forget to complete your online session evaluations after each session & the Overall Conference Evaluation which will be available online from Thursday
- Visit the World of Solutions and Meet the Engineer
- Visit the Cisco Store to purchase your recommended readings
- Please switch off your mobile phones
- After the event don't forget to visit Cisco Live Virtual:
www.ciscolivevirtual.com
- Follow us on Twitter for real time updates of the event:
@ciscoliveeurope, #CLEUR

Agenda

Troubleshooting UCCE

- UCCE Component Roles & Configuration Mapping
- What's New In 8.5
- Redundancy Overview
 - Introducing weighted PG failover
- Deep Dive Troubleshooting... *8.5 Style*
 - New and improved tools for fault / endpoint isolation
 - ❖ Unified (System) CLI ← *You will be impressed!*
 - Crisis management (non-technical)
 - Endpoint isolation and debugging
 - ❖ Tips, hacks, and oh yeah, *logs!*
- Q & A

“Tell me, and I will forget. Show me, and I may remember.

Involve me, and I will *understand.*”

~Author Unknown



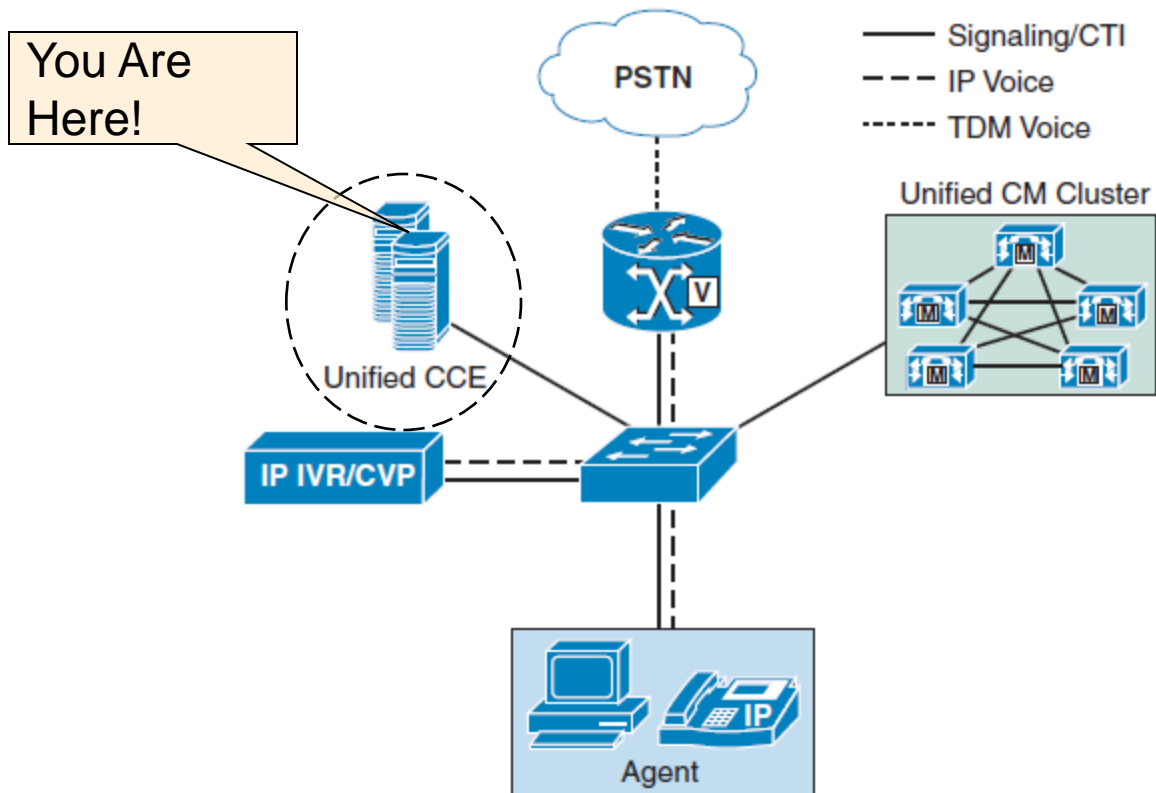
UCCE – Troubleshooting

Component Roles



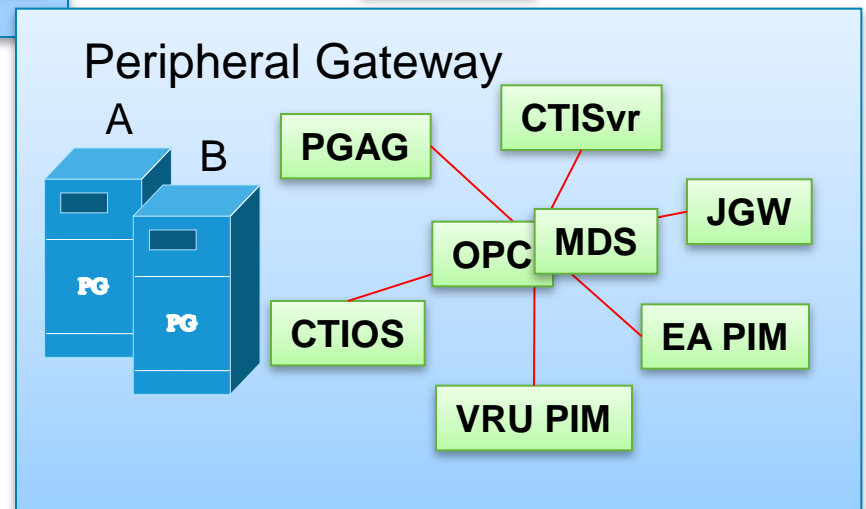
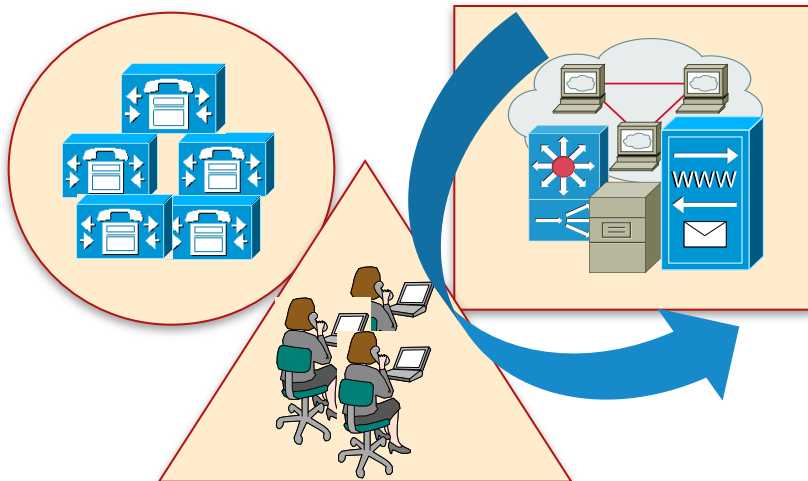
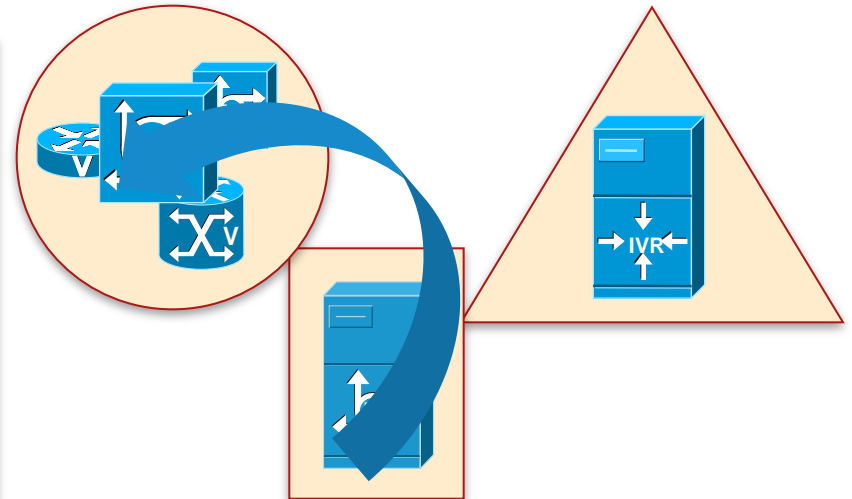
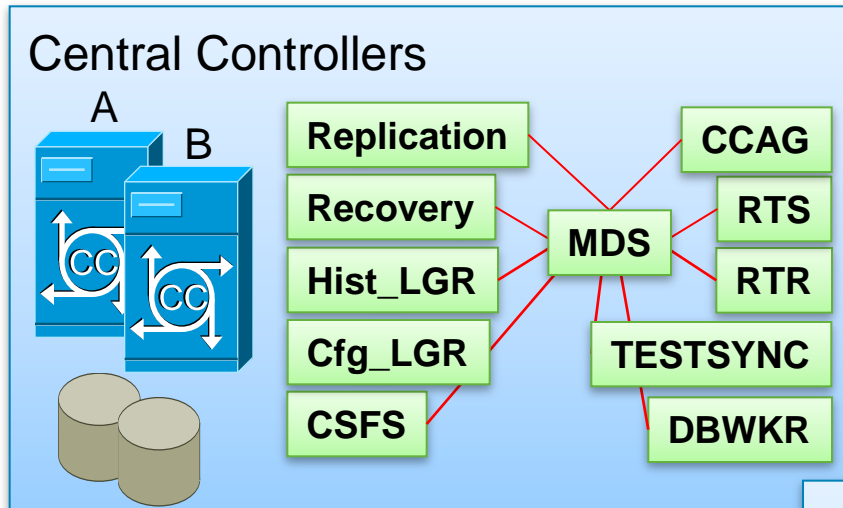
Welcome To The World Of UCCE

10,000 Foot View

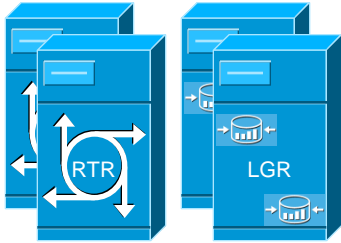


Welcome To The World Of UCCE

Component Interaction is Complex. ■ Watch Your Step!



UCCE – Component Roles



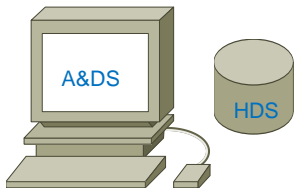
Central Controller

- **Router:** Routing engine. Executes routing scripts. Real-time data.
- **Logger:** Database. Stores configuration. 14-day historical data.



Peripheral Gateway (Types)

- **CallManager:** eapim + jgw. CTI (Agents). Agent Reporting and Monitoring (ARM) GED-188
- **TDM:** Avaya, Nortel, Aspect, etc. PIM specific. CTI (Agents)
- **IVR / VRU:** Generic PIM. GED-125
- **Media Routing:** mrpim. Email / chat route requests.

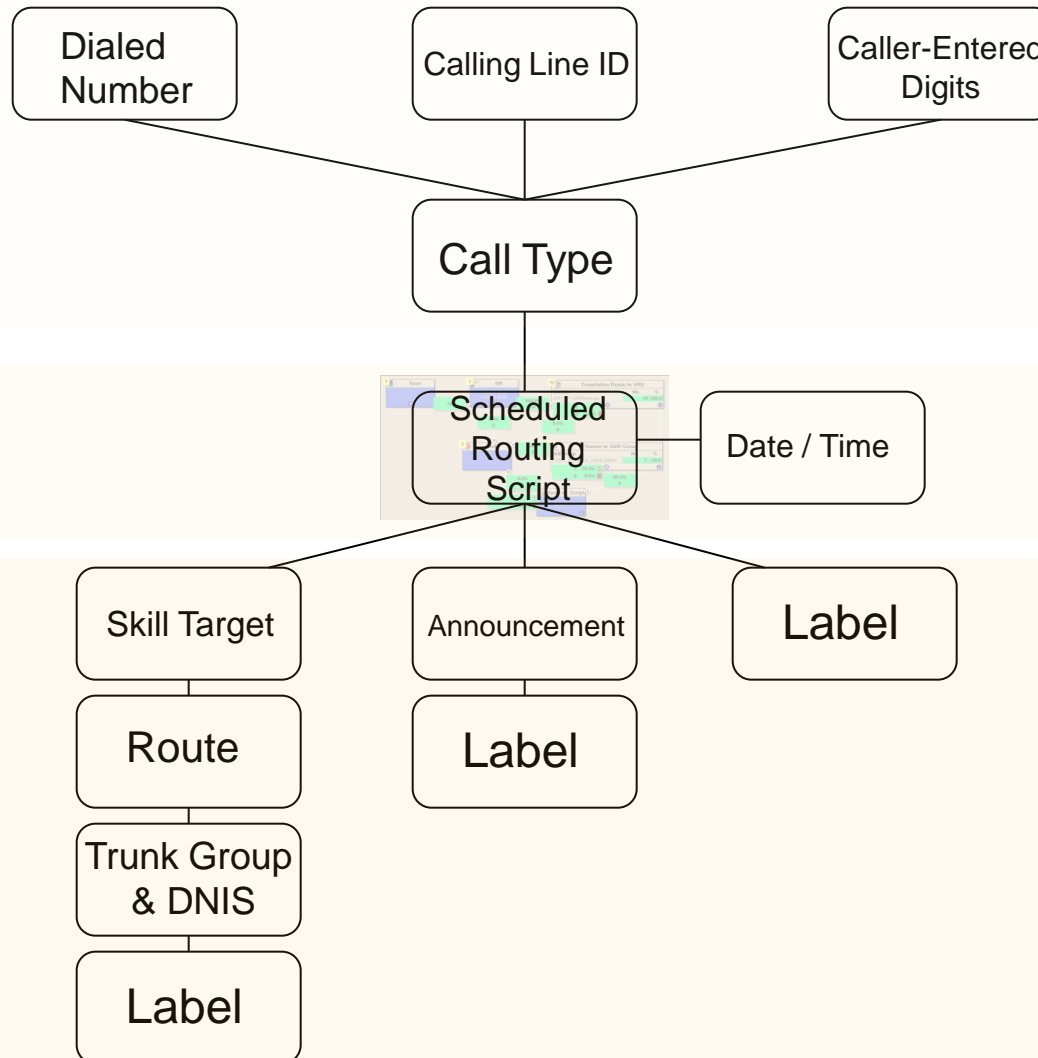


Administration and Data Server (Types) Formerly Known as A&DS

- **Client:** No local DB. Real-Time feed and configuration updates.
- **Server:** Same as client but runs a local (config) DB. Accepts client connections.
- **Configuration Only:** Same as Server but no real-time data.
- **HDS / Detail Data Server(DDS):** DDS used for System Call Trace tool.

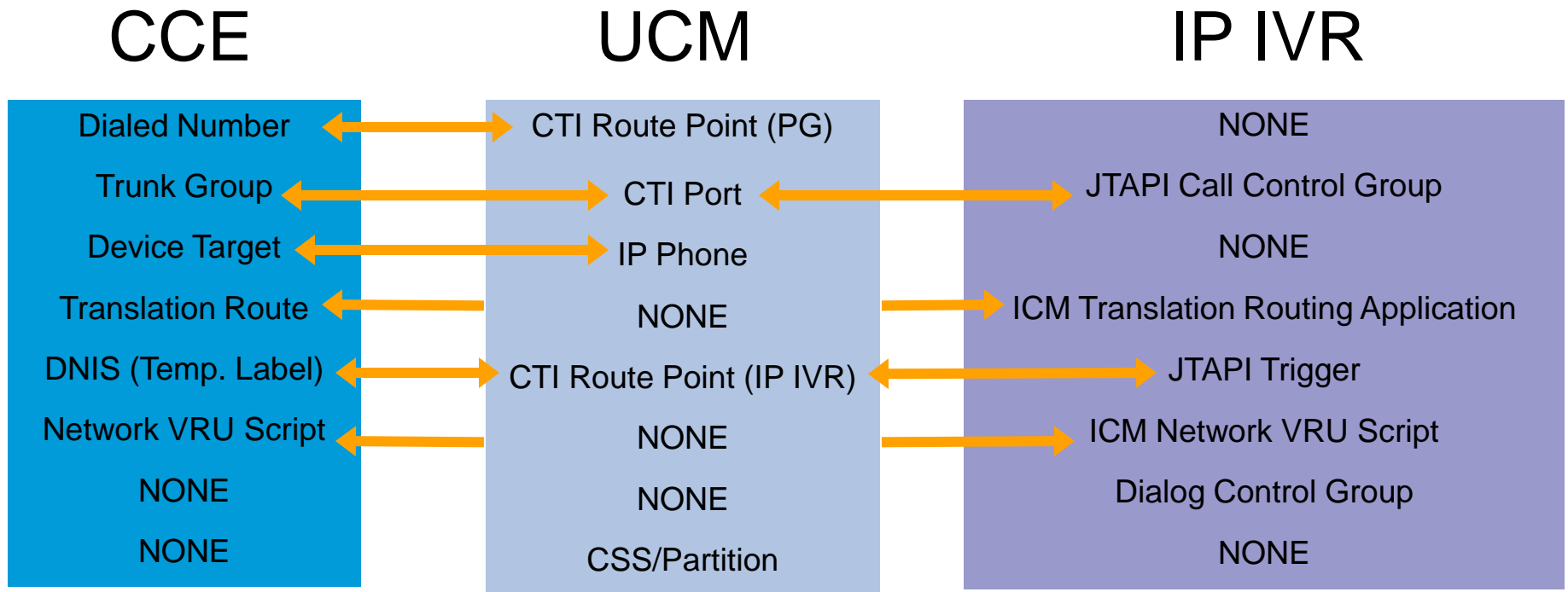
UCCE – Configuration Mapping

Router's Logical Processing



UCCE – Configuration Mapping

Device Objects

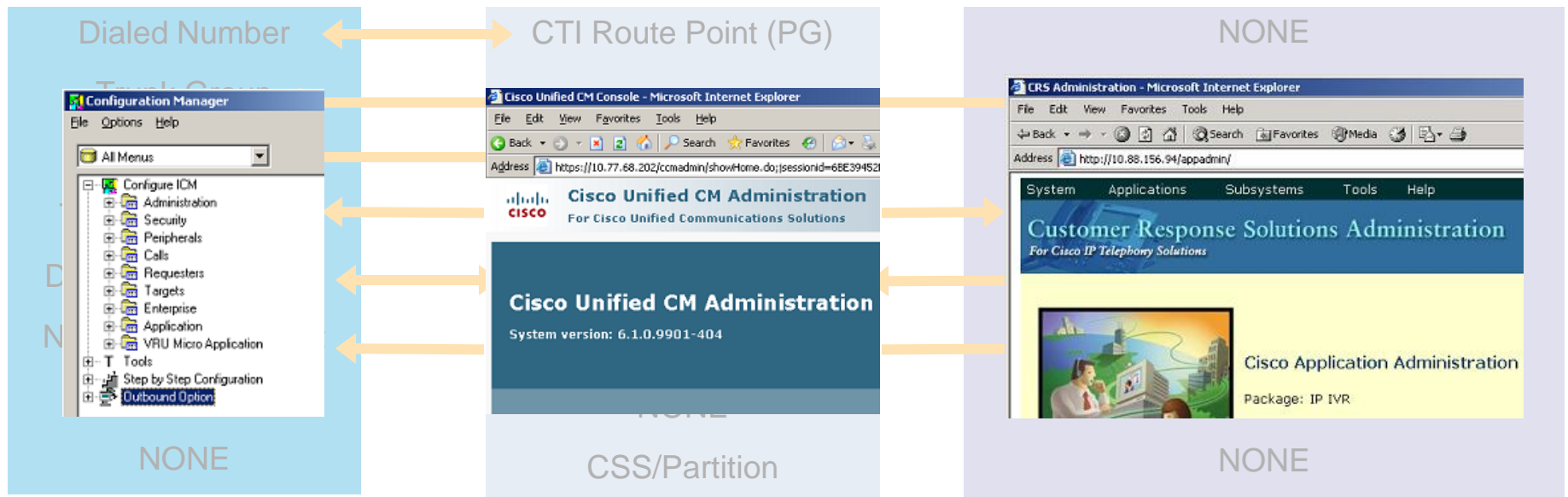


UCCE – Configuration Mapping Device Objects

CCE

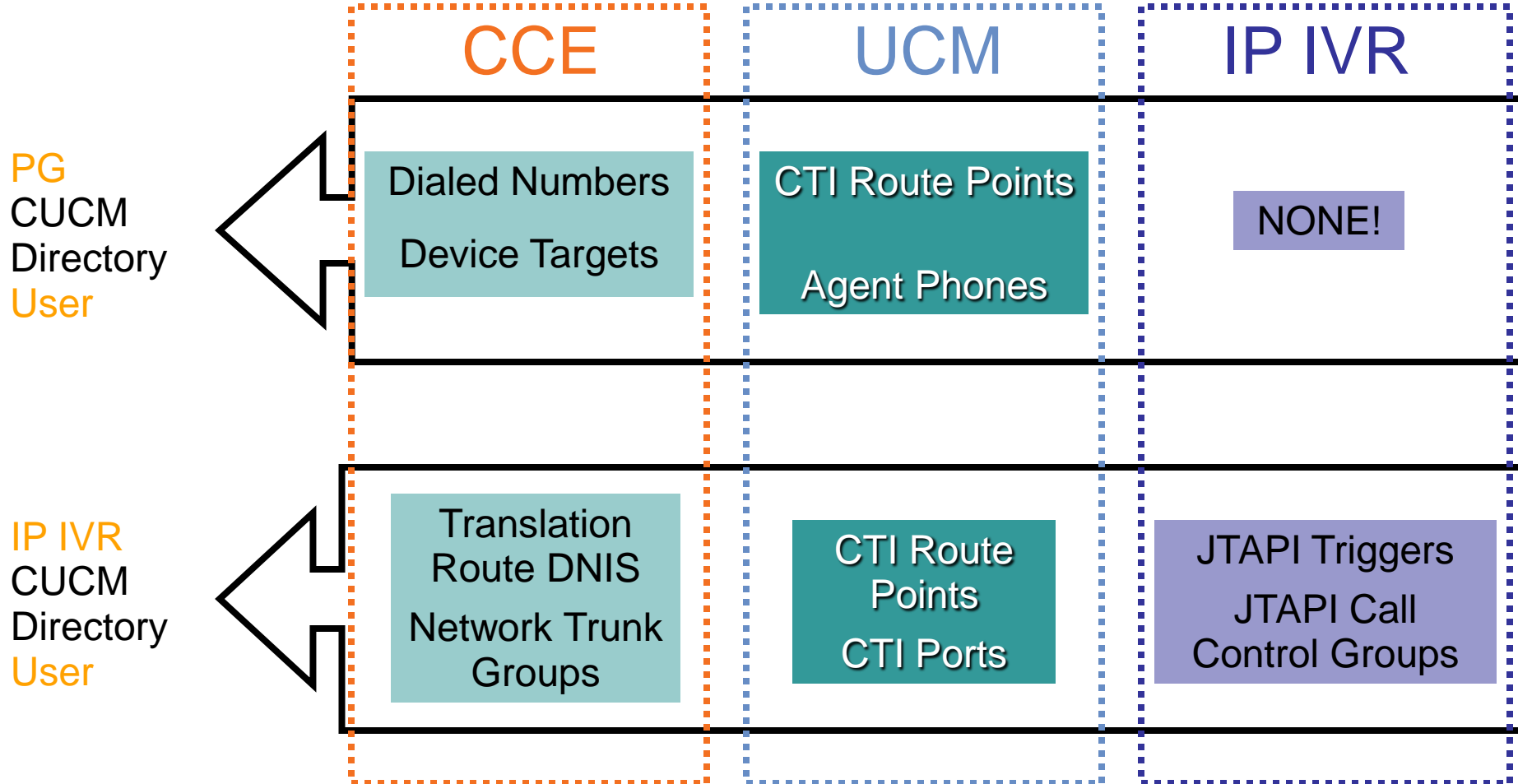
UCM

IP IVR



UCCE – Configuration Mapping

CTI Object ↔ User Associations



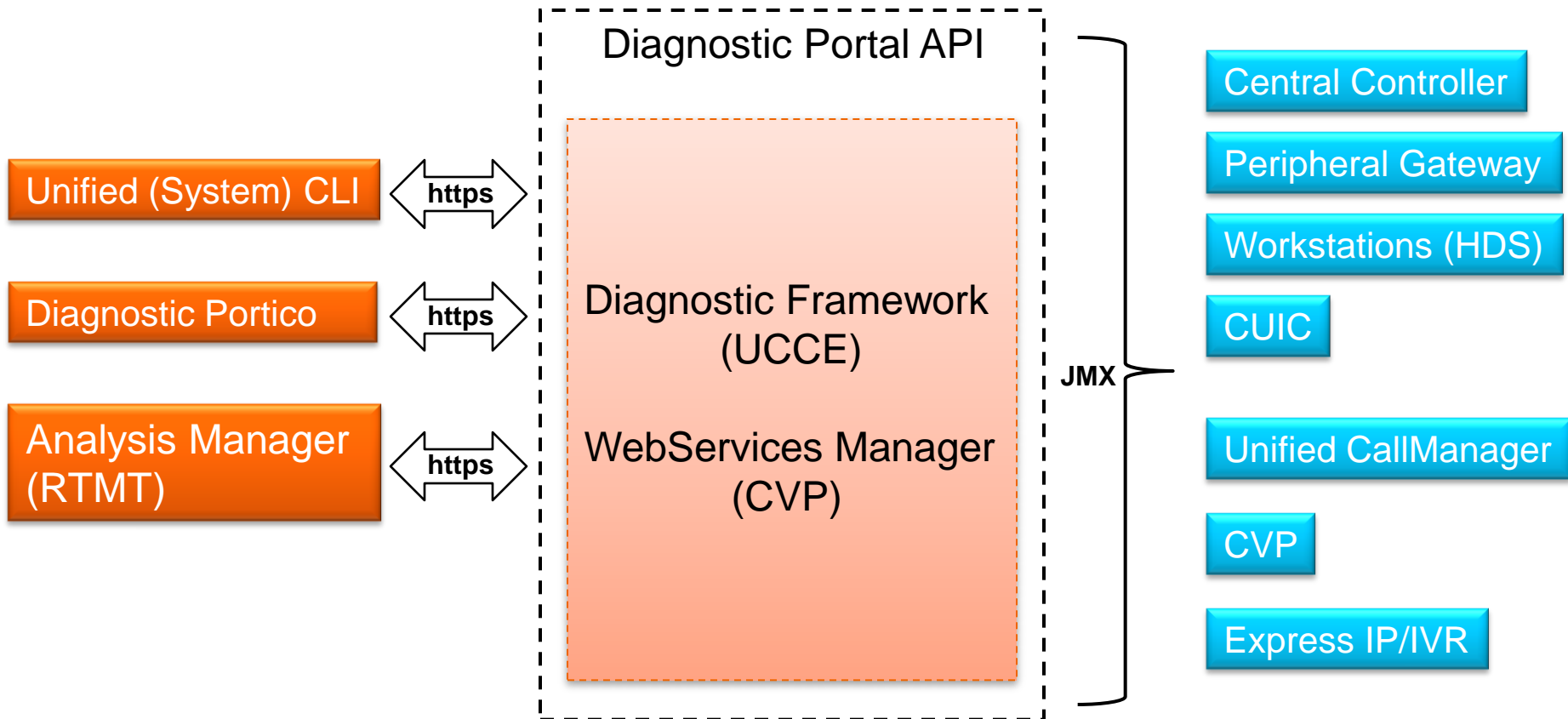
UCCE – Troubleshooting

New Stuff In v8.5



UCCE – What's New In 8.5

New *Solution* Serviceability Architecture



UCCE – What's New In 8.5

Other Enhancements

- EMS Log + OPC Capture Compression

- Uses gzip (<http://www.gzip.org/>) open source stream compressor
- Moderate CPU impact during high watermark load testing
 - ❖ 2K agents w/15
- Marginal step increase in CPU usage
 - ❖ 3K agents w/22
- Disk I/O only increased by ~10% overall

General Log Retention x10

OPC Capture Retention x4

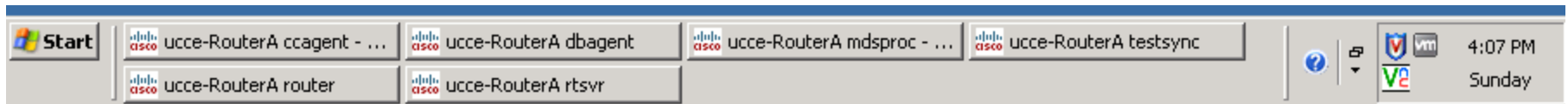
- CTIOS Hardening

- Code refactoring
 - ❖ Reducing code complexity
- Instrumentation and documentation
 - ❖ Improved error and exception handling

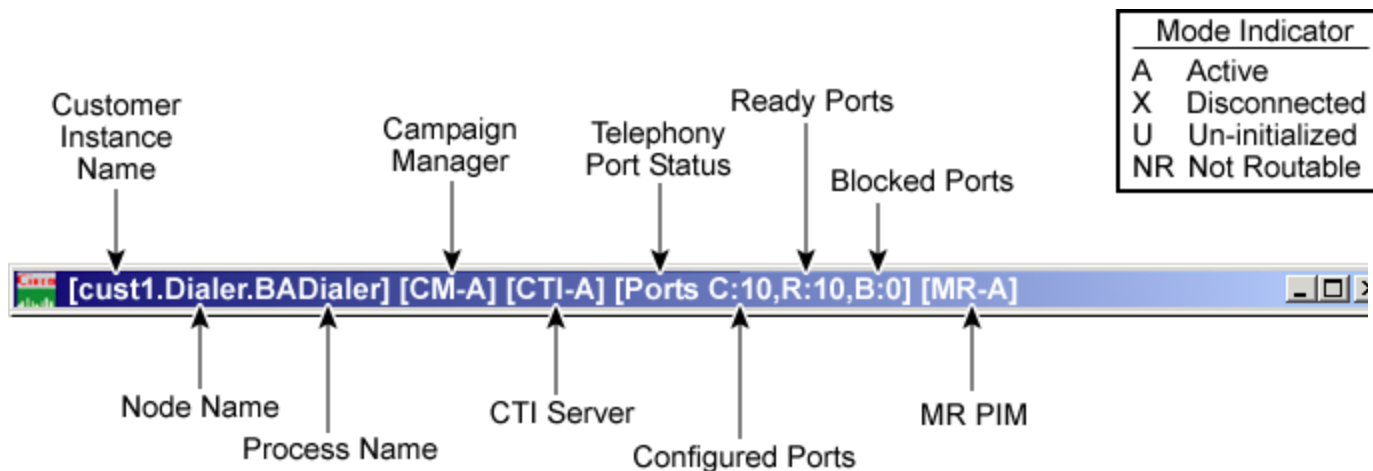
UCCE – What's New In 8.5

Other Enhancements

- Windows 2008 R2 Support (64-Bit Only)
 - OS architecture change = no more UCCE process windows



- This means no more (process) title bar indicators



UCCE – What's New In 8.5

Other Enhancements

- Windows 2008 R2 Support (64-Bit Only)
 - OS architecture change = no more UCCE process windows
 - This means no more (process) title bar indicators
- Use 'emsmon.exe' Or Diagnostic Portico As An Alternative

Usage Syntax:

emsmon <cust_instance> <node_name> <process> {system}

'system' argument is optional and only needed if connecting to remote server

Example (local): **EMSMON ucce PG1A jgw1**

Example (remote): **EMSMON ucce PG1A pim1 UCCEPG4A**

```

C:\WINDOWS\system32\cmd.exe - emsmon bxb RouterA rtr
C:\Documents and Settings\Administrator.DSLAB>emsmon bxb RouterA rtr
Events from April 19, 2011:
10:06:09 rtr Trace: EMSServer connection established in bxb\RouterA\rtr for
user Administrator.
10:06:10 rtr Real Time: TG=1 NTG=1 Total=2 Sent=2
10:06:20 rtr Real Time: P=4 Total=4 Sent=4
10:06:30 rtr Real Time: TG=1 NTG=1 Total=2 Sent=2
10:06:40 rtr Real Time: TG=1 NTG=1 Total=2 Sent=2
10:06:50 rtr Real Time: P=4 Total=4 Sent=4
10:07:00 rtr Real Time: TG=1 NTG=1 Total=2 Sent=2
10:07:10 rtr Real Time: TG=1 NTG=1 Total=2 Sent=2
    
```

Unified ICM-CCE-CCH Diagnostic Framework Portico

Hostname: ucce85.DSLab Address: 127.0.0.1

Commands:

- Alarm**
 - SetAlarms
 - GetAlarms
- Configuration**
 - ListConfigurationCategories
 - GetConfigurationCategory
- Inventory**
 - ListAppServers
- License**
 - GetProductLicense
- Log**
 - ListLogComponents
 - ListLogFiles
- Network**
 - GetNetStat
 - GetIPConfig
 - GetTraceRoute
 - GetPing
- Performance**
 - GetPerformanceInformation
 - GetPerfCounterValue
- Platform**
 - GetPlatformInformation
- Service**
 - ListServices
 - ListProcesses

ListServices

Show URL

Submit

ListServicesReply (OK)

Cisco CCBU Support Tools NodeAgent
 Description: Provides Support Tools communication support and processing
 Status: Stopped
 StartupType: Manual
 LogOnAs: LocalSystem

Cisco ICM ucce Distributor
 Description: Provides Administration & Data services for Instance ucce
 Status: Running
 StartupType: Manual
 LogOnAs: DSLAB\UCCE-DISTRIB-332AC08

Cisco ICM ucce LoggerA
 Description: Provides Call Logging services for Instance ucce
 Status: Running
 StartupType: Manual
 LogOnAs: DSLAB\UCCE-LOGGERA-93CA5DB

UCCE – What's New In 8.5

Other Enhancements

- Portico 8.5(2) Will Contain *More Verbosity*

The screenshot displays the 'ListProcesses' page in the Unified ICM-CCE-CCH Diagnostic Framework Portico. The interface is divided into a left-hand navigation pane and a main content area. The navigation pane includes sections for Commands, Alarm, Configuration, Inventory, License, Log, Network, Performance, and Platform. The 'Service' section is highlighted with an orange box. The main content area shows a list of processes grouped by component: Cisco ICM Diagnostic Framework, Logger A, Router A, Administration and Data Server, and Peripheral Gateway 1A. Each process entry includes the process name and its uptime. Annotations with arrows point to specific entries: a green arrow points to 'csfs.exe : dac1-LoggerA csfs : 2.22:44:51', another green arrow points to 'ccagent.exe : dac1-RouterA ccagent - (InSvc 0/1 PGs) : 2.21:32:30', a third green arrow points to 'rtclient.exe : dac1-Distributor rtclient : 2.22:43:58', and an orange arrow points to 'mdsproc.exe : dac1-PG1A mdsproc - (InSvc Is-Enb) : 00:03:17'. Two callout boxes provide additional information: a green box titled 'Complete process status snapshot' with a sub-item 'Linear refresh', and an orange box titled 'Color coded thresholds' with sub-items 'Red = <5min uptime' and 'Yellow = <10min uptime'. The 'Service' section in the navigation pane and the '00:03:17' uptime values are highlighted with orange boxes.

Commands:

- Alarm
 - SetAlarms
 - GetAlarms
- Configuration
 - ListConfigurationCategories
 - GetConfigurationCategory
- Inventory
 - ListAppServers
- License
 - GetProductLicense
- Log
 - ListLogComponents
 - ListLogFiles
- Network
 - GetNetStat
 - GetIPConfig
 - GetTraceRoute
 - GetPing
- Performance
 - GetPerformanceInformation
 - GetPerfCounterValue
- Platform
 - GetPlatformInformation
- Service**
 - ListServices
 - ListProcesses

Refresh From: <https://localhost:7890/icm-dp/rest/DiagnosticPortal/ListProcesses?Random=1304078152946>

Cisco ICM Diagnostic Framework
DiagFwSvc.exe : 2.22:56:01

Logger A
nodeman.exe : 2.22:44:52
nmm.exe : 2.22:44:52
csfs.exe : dac1-LoggerA csfs : 2.22:44:51
recovery.exe : dac1-LoggerA recovery : 2.22:44:51
configlogger.exe : dac1-LoggerA configlogger : 2.21:32:29
histlogger.exe : dac1-LoggerA histlogger : 2.21:32:29

Router A
nodeman.exe : 2.21:32:34
nmm.exe : 2.21:32:34
ccagent.exe : **dac1-RouterA ccagent - (InSvc 0/1 PGs) : 2.21:32:30**
dbagent.exe : dac1-RouterA dbagent : 2.21:32:30
mdsproc.exe : dac1-RouterA mdsproc - (InSvc Is-Enb Clk) : 2.21:32:30
router.exe : dac1-RouterA router : 2.21:32:30
rtsvr.exe : dac1-RouterA rtsvr : 2.21:32:30
testsync.exe : dac1-RouterA testsync : 2.21:32:30

Administration and Data Server
nodeman.exe : 2.22:44:48
nmm.exe : 2.22:44:40
rtclient.exe : dac1-Distributor rtclient : 2.22:43:58
rtdist.exe : dac1-Distributor rtdist : 2.22:43:58
updateaw.exe : dac1-Distributor updateaw : 2.22:43:58
configlogger.exe : dac1-Distributor configlogger : 2.21:11:16

Peripheral Gateway 1A
nodeman.exe : **00:03:17**
nmm.exe : **00:03:17**
mdsproc.exe : dac1-PG1A mdsproc - (InSvc Is-Enb) : **00:03:17**
opc-cce.exe : dac1-PG1A opc-cce.exe : **00:03:17**
testsync.exe : dac1-PG1A testsync : **00:03:17**

Complete process status snapshot

- Linear refresh

Color coded thresholds

- Red = <5min uptime
- Yellow = <10min uptime

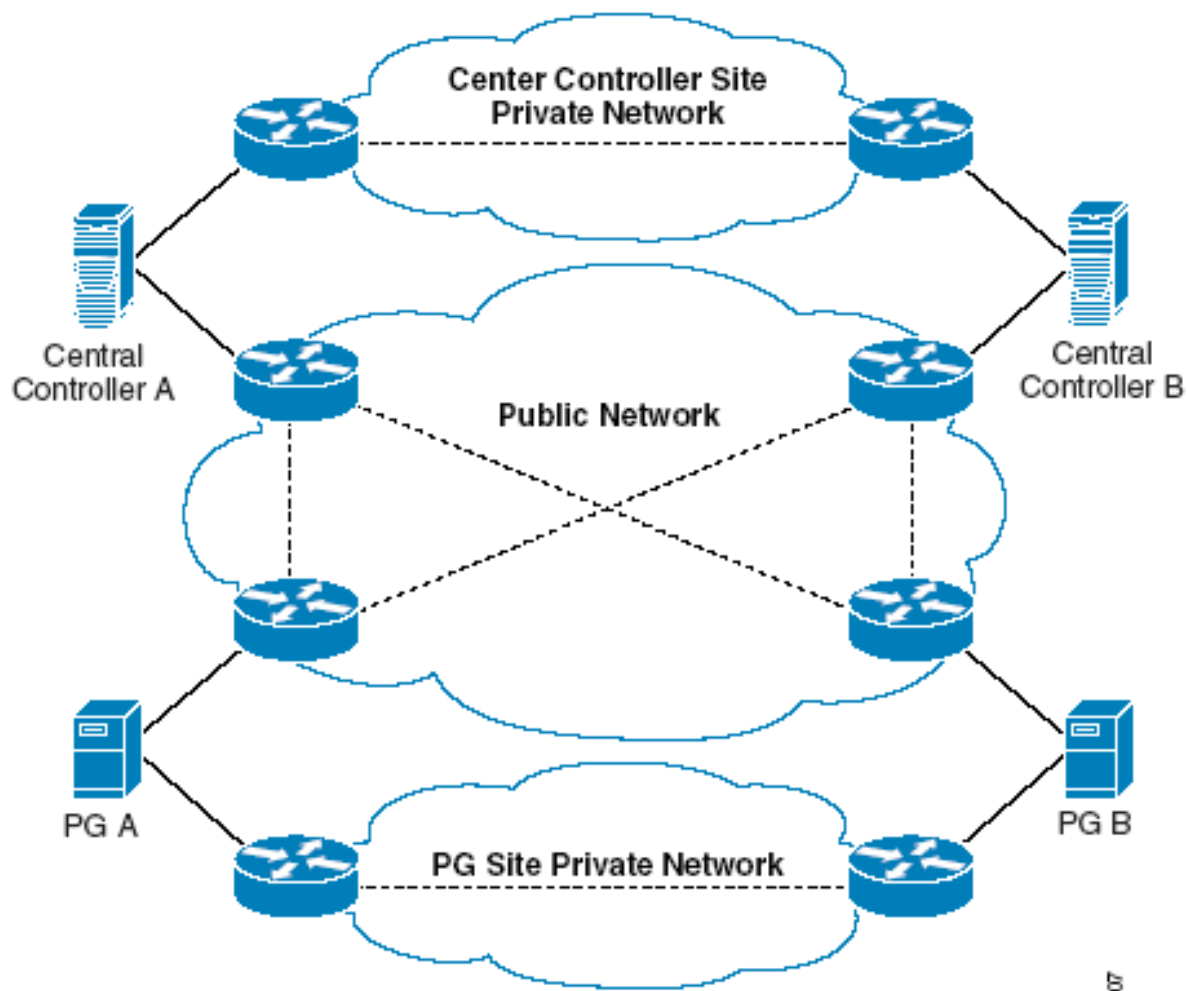
UCCE – Troubleshooting

Redundancy



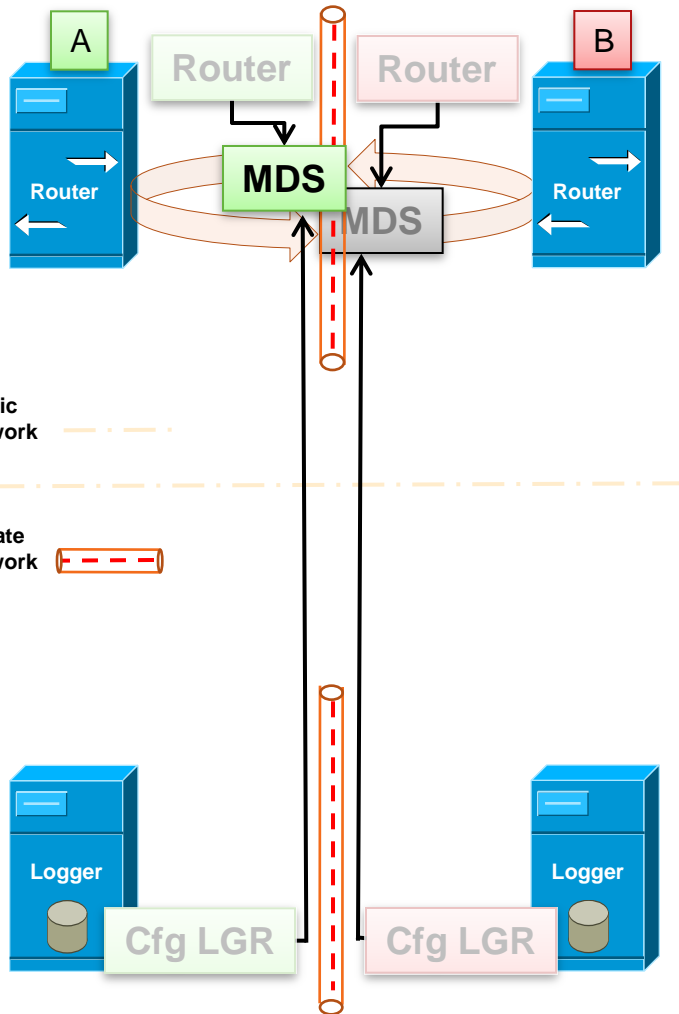
UCCE – Redundancy

Fault Tolerance Overview



UCCE – Redundancy

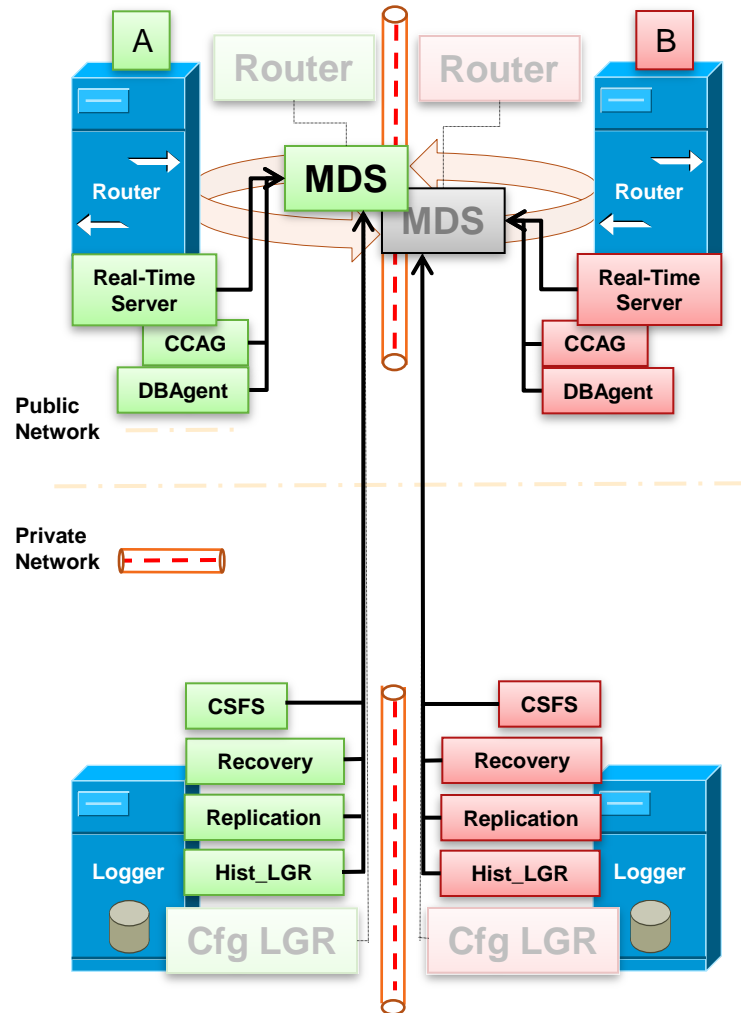
Central Controller – Peer To Peer



- Synchronizer (MDS)
 - Message Delivery System
 - Runs on the Router
 - Message forwarding and sets message priority across all processes
 - Private network
- Synchronized Zone
 - There's no active side!
 - Router process runs in lockstep
 - Duplex, side A MDS is always enabled synchronizer (clock) which provides message ordering

UCCE – Redundancy

Central Controller, MDS Registration



■ MDS A

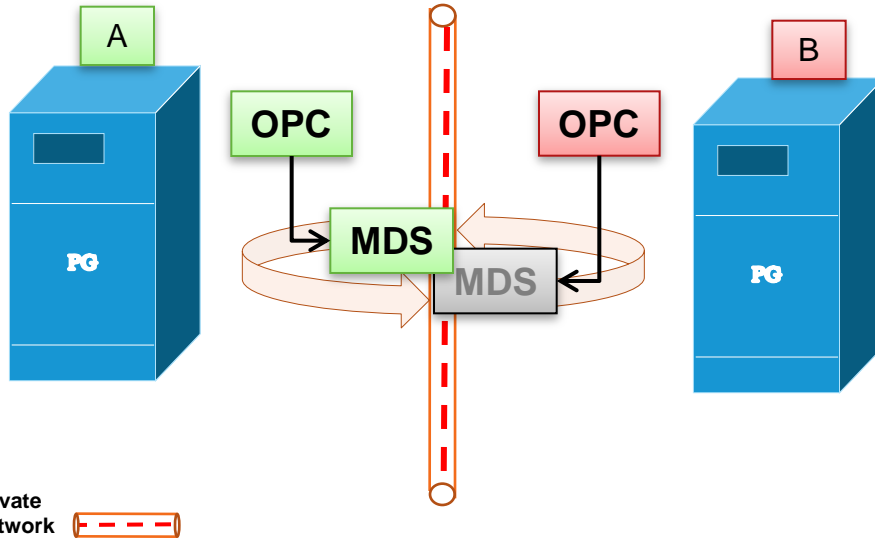
- All CC side A processes register with unique handle
- MDS side A **enabled** synchronizer (clock) when running duplex mode

■ MDS B

- All CC side B processes register with unique handle
- MDS side B **disabled** synchronizer (clock) when running duplex mode.
- Passive message handler for side B processes

UCCE – Redundancy

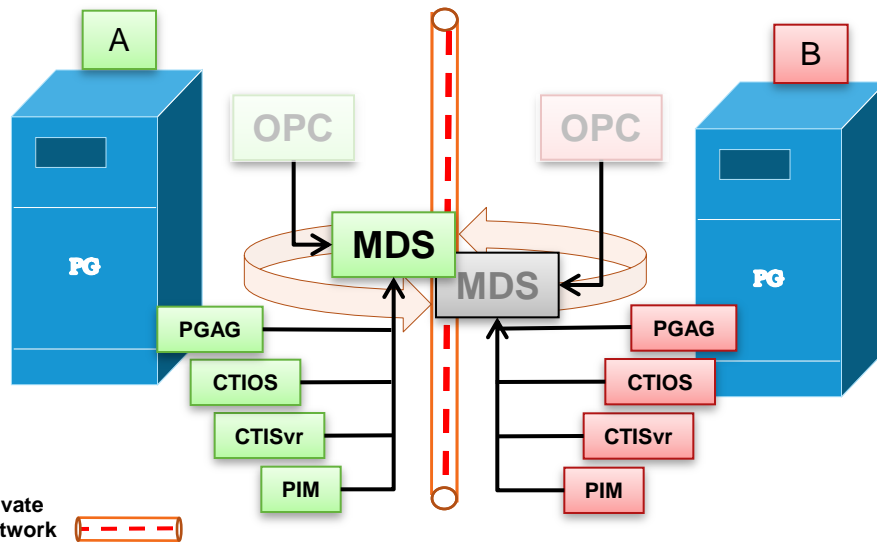
Peripheral Gateway – Peer To Peer



- Synchronizer
 - Message Delivery System
 - Message forwarding and sets message priority across all processes
- Synchronized Zone
 - mds.exe
 - opc.exe (lockstep)

UCCE – Redundancy

Peripheral Gateway, MDS Registration – A Visual



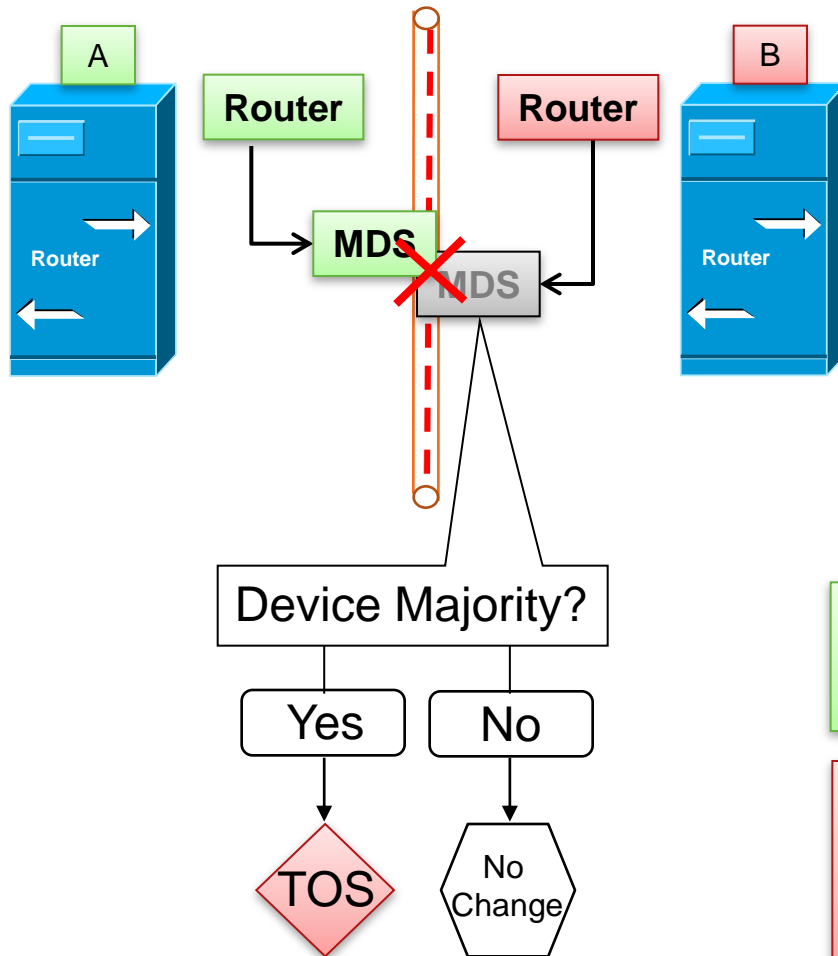
- Synchronizer
 - Message Delivery System
 - Message forwarding and sets message priority across all processes
- Synchronized Zone
 - mds.exe
 - opc.exe (lockstep)

■ Processes With Active / Idle States

- PGAG
- CTISvr (not CTIOS)
- PIM

UCCE – Redundancy

Central Controller – Fault Tolerance Logic



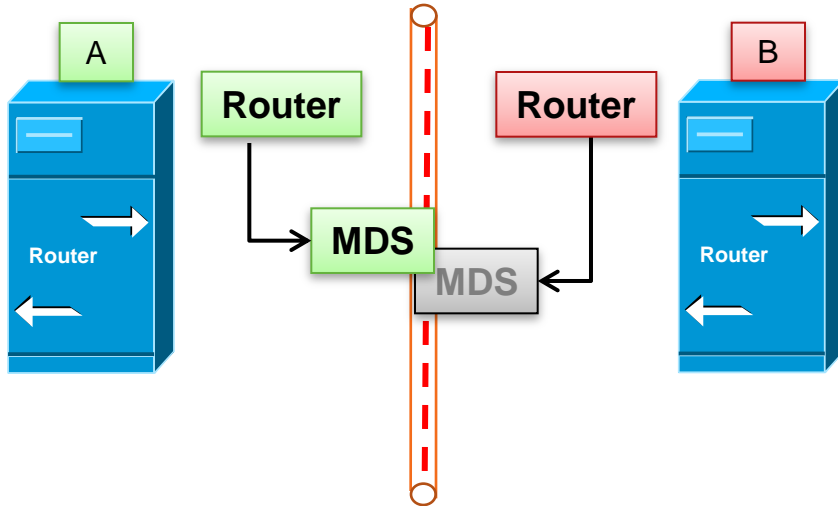
- Duplex
 - Pair enabled (A)
disabled (B)
- Simplex
 - Initiates TOS, Test Other Side via public network
 - Isolated enabled (A)
disabled (B)

ra-mds Connectivity with duplexed partner has been lost due a failure of the private network, or duplexed partner is out of service.
 ra-mds Trace: Received TOS request: sequence = 1.
 ra-mds Trace: Sending TOS response: sequence=1 status=ENABLED.
 ra-mds Synchronizer switching to non-duplex operation.

rb-mds Connectivity with duplexed partner has been lost due a failure of the private network, or duplexed partner is out of service.
 rb-mds Initiating test of peer Synchronizer.
 rb-mds Trace: Sending TOS request: sequence = 1.
 rb-mds Trace: Received TOS response: sequence=1 status=ENABLED.
 rb-mds Peer Synchronizer was found to be active.
 rb-mds Synchronizer suspending operation.
 rb-mds MDS going out of service.

UCCE – Redundancy

Central Controller, MDS State Transition On Restore



Private Link Restored

- Enabled router performs state transfer to disabled router
- PG will re-align active path to enabled / preferred side
- If MDS side B was the enabled side, the enabled role will go back to side A

```
ra-mds Initiating state transfer SEND operation.  
ra-mds Trace: Compressed 1415612 bytes into 345416.  
ra-mds State transfer operation completed successfully.
```

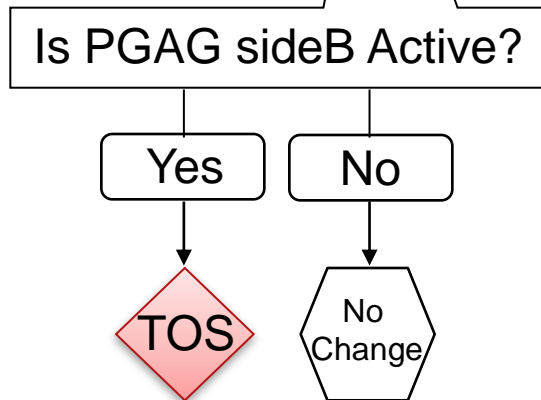
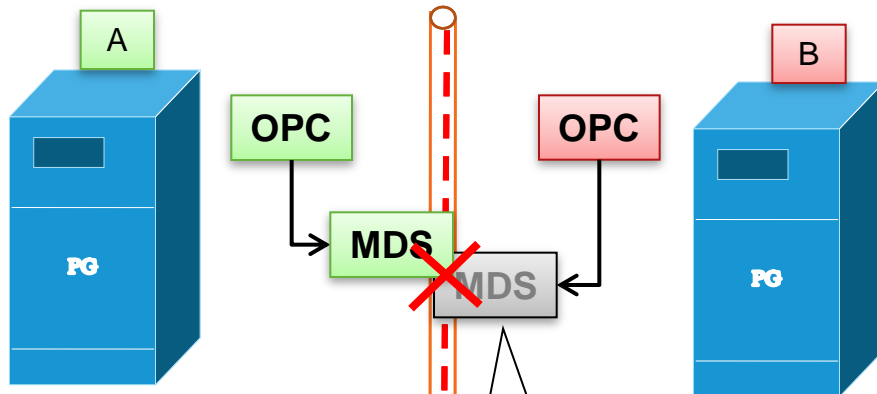
```
rb-mds Initiating state transfer RECEIVE operation.  
rb-mds Trace: Objects transferred = 13227, total bytes 1415612.  
rb-mds State transfer operation completed successfully.
```

```
20:17:02 uat-RouterA mdsproc - (InSvc Pr-Enb Clk)  
20:17:02 Communication with peer Synchronizer established.  
20:17:02 Synchronizer switching to active duplex operation.
```

```
20:17:02 uat-RouterB mdsproc - (InSvc Pr-Dsb Clk)  
20:17:02 Communication with peer Synchronizer established.  
20:17:02 Synchronizer switching to passive duplex operation.
```

UCCE – Redundancy

Peripheral Gateway – Fault Tolerance Logic



- Duplex
 - Pair enabled (A)
disabled (B)
- Simplex
 - TOS initiated only if PGAG is active on side B.
 - Isolated enabled (A)
disabled (B)

pg1a-mds Connectivity with duplexed partner has been lost due a failure of the private network, or duplexed partner is out of service.
 pg1a-mds Trace: Received TOS request: sequence = 1.
 pg1a-mds Trace: Sending TOS response: sequence=1 status=ENABLED.
 pg1a-mds Synchronizer switching to non-duplex operation.

pg1b-mds Communication with peer Synchronizer has failed.
 Last EMT Error [-519897073]: Connection broken due to loss of heartbeats.
 pg1b-mds Initiating test of peer Synchronizer.
 pg1b-mds Trace: Sending TOS request: sequence = 1.
 pg1b-mds Trace: Received TOS response: sequence=1 status=ENABLED.
 pg1b-mds Peer Synchronizer was found to be active.
 pg1b-mds Synchronizer suspending operation.
 pg1b-mds MDS going out of service.

UCCE – Redundancy Peripheral Gateway – *Enhanced* Fault Tolerance Logic

pg1b-mds Communication with peer Synchronizer has failed.
 Last EMT Error [-519897073]: Connection broken due to loss of heartbeats.
 pg1b-mds Initiating test of peer Synchronizer.
 pg1b-mds Trace: Sending TOS request: sequence = 1.
 pg1b-mds Trace: Received TOS response: sequence=1 status=ENABLED.
 pg1b-mds Peer Synchronizer was found to be active.
 pg1b-mds Synchronizer suspending operation.
pg1b-mds MDS going out of service. ← This action forces processes to failover to the other side.

(Active) Component Weight

PGAgent	10
CTISvr	20
VRU PIM	50
MR PIM	50
Agent PIM	100
Max. Total	230

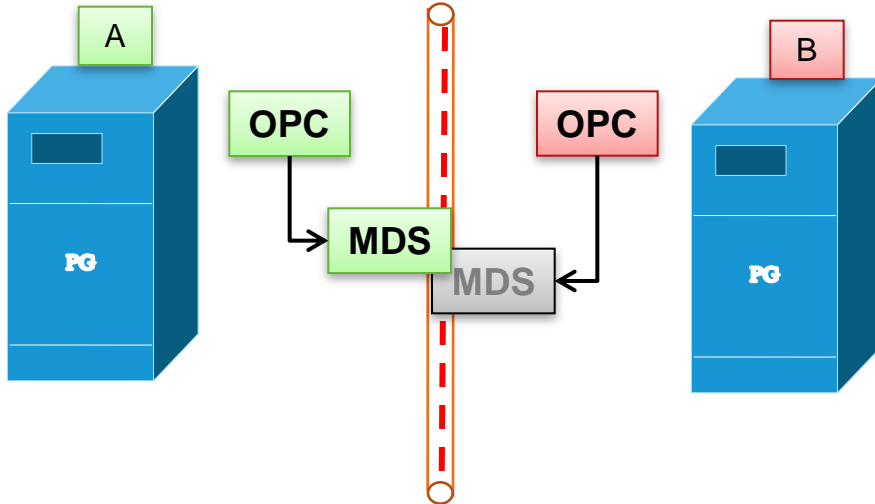
Scenario

Components on PG side A	Weight	Components on Side B	Weight
PGAgent (Disabled)	0	PGAgent (Active)	10
CTI Server (Disabled)	0	CTI Server (Active)	20
VRU PIM (Active)	50	VRU PIM (Disabled)	0
MR PIM (Active)	50	MR PIM (Disabled)	0
Non VRU (Agent) PIM (Disabled)	0	Non VRU (Agent) PIM (Active)	100
Total Weight PG side A	100	Total Weight PG sideB	130

- The Old Way: sideB process would failover to sideA
- The New Way: sideA process would failover to sideB

UCCE – Redundancy

Peripheral Gateway, MDS State Transition On Restore



Restoration

- Enabled OPC performs state transfer to disabled OPC
- If MDS side B was the enabled side, the enabled role will go back to side A.

```
01:10:58 Initiating state transfer SEND operation.  
01:10:59 Trace: Compressed 850755 bytes into 157060.  
01:10:59 State transfer operation completed successfully.
```

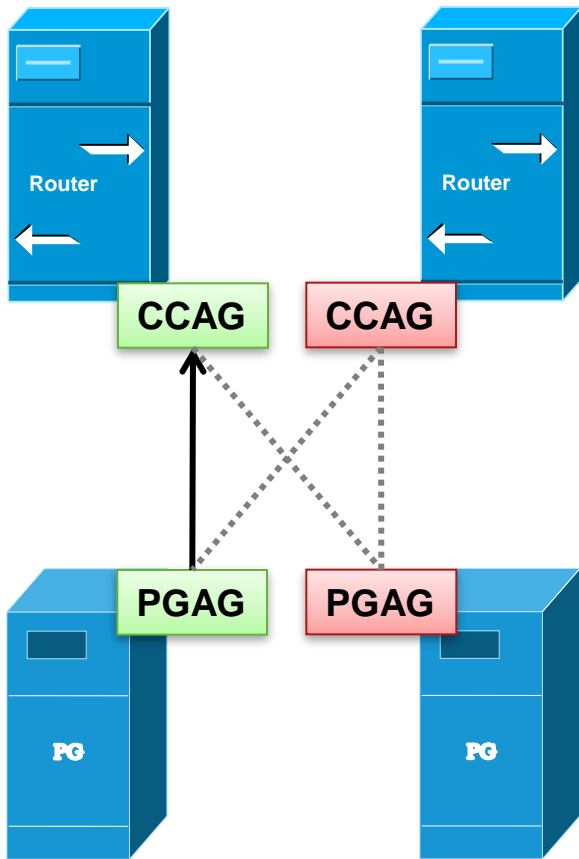
```
01:10:58 Initiating state transfer RECEIVE operation.  
01:10:59 Trace: Objects transferred = 11126, total bytes 850755.  
01:10:59 State transfer operation completed successfully.
```

```
01:00:55 Synchronizer initializing for duplex operation.  
01:00:55 Communication with peer Synchronizer established.
```

```
02:02:04 Communication with peer Synchronizer established.  
02:02:04 Synchronizer switching to passive duplex operation.
```

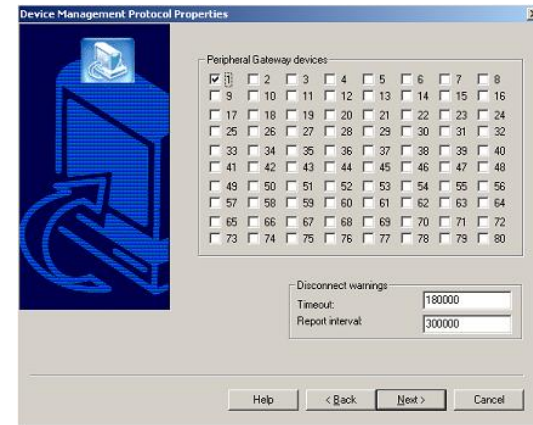
UCCE – Redundancy

Central Controller + Peripheral Gateway



Router

- Does not have concept of A and B sides for PGs
- A PG pair is a single site or DMP



Peripheral Gateway

- Only one active PGAG
- Redundant idle connections
- Network response trumps PG side preference

UCCE - trou-ble-shoot-ing

It's Not What You Do, But *How* You Do It



Deep Dive Troubleshooting Topics (1 / 2)

- Unified (System) CLI vs. Analysis Manager
 - What's the difference?
 - Setting up Analysis Manager
 - Setting up Unified (System) CLI
- Crisis Management
 - Communication, communication, communication
- Endpoint Isolation Using Logs
 - CTI (GED-188)
 - Multimedia
 - UCM
 - Lifecycle of a call with VRU queuing

Deep Dive Troubleshooting Topics (2 / 2)

- Tips, Tricks, And Hacks
 - NIC optimization
 - Agents logged on, calls per second, calls in queue
 - Watch the Router('s) expression
 - Baseline tracing (pre-8.x)
 - Agent Greeting / Whisper

UCCE - Troubleshooting

The background image is a screenshot of the Cisco Support Tools dashboard. The left sidebar contains a navigation menu with categories like 'Support Tools', 'System Management', 'Event Detection and Alert', and 'Interactive Mode'. The main content area shows the 'Support Tools Dashboard' for version 2.4.1.252. A central callout box with a blue border and white background contains the text: 'Support Tools No Longer Supported In 8.5 Diagnostic Framework: THE MOST Significant Serviceability Enhancement In UCCE Product History!'. To the right of the callout, there is a list of items: 'System Management', 'Tracing, logs, services, PerfMon, etc', 'syslog', 'Configure events and port', and 'Configure email alerts'. Below the callout, there are two screenshots of configuration pages. The first is the 'Configure the Syslog port' page, showing a table of ICM events. The second is the 'Configure email alerts' page, showing fields for SMTP Server, SMTP Port, From (Name), From (Email address), and To (Email addresses).

- System Management
 - Tracing, logs, services, PerfMon, etc
 - syslog
 - Configure events and port
 - Configure email alerts

Support Tools No Longer Supported In 8.5

Diagnostic Framework:
THE MOST Significant Serviceability Enhancement In UCCE Product History!

Configure the Syslog port:

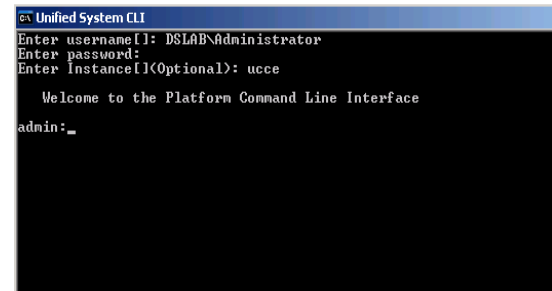
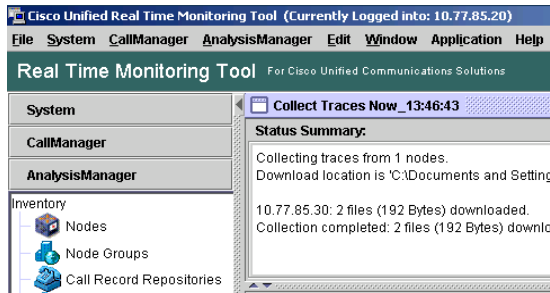
ICM			
all/none	Severity	Message ID	Event
<input checked="" type="checkbox"/>	error	0x102C001	Critical process %1 died. Rebooting node.
<input checked="" type="checkbox"/>	warning	0x102C003	Restarting process %1.
<input checked="" type="checkbox"/>	warning	0x102C009	Process %4 exited after %1 seconds. Minimum required uptime for %4 process is %2 seconds. Delaying process restart for %3 seconds.

SMTP Server*:
SMTP Port*: 25
From (Name):
From (Email address)*:
To (Email addresses)*:

* Required

UCCE - Troubleshooting Summary – Analysis Manager vs. Unified CLI

- Both Leverages 8.0 Diagnostic Framework API



Pros

- Easier To Use Than Support Tools

Cons

- Does not support multi-instance
- Requires UCM
- Thick-Client
- Analyze Call Path Very Buggy
- No CTIOS Trace Template

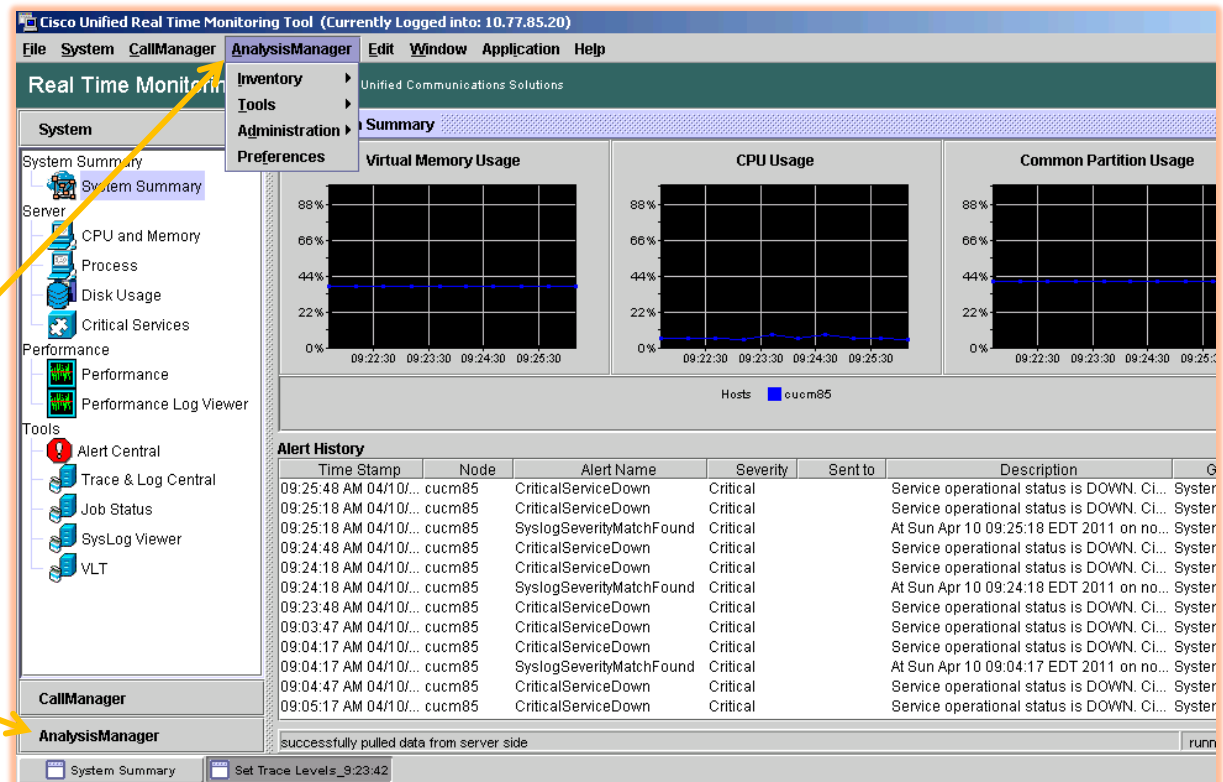
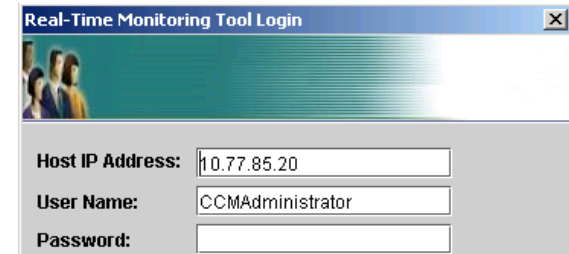
Pros

- Easier To Use Than Support Tools
- Multi-instance support
- Supports CORE solution endpoints
OEMs not yet supported
- Fellable, Extensible, *Ready To Use*

Cons

- None... Well, It's Not A GUI

UCCE - Troubleshooting (RTMT) **Analysis Manager**, Quick Start Administration



✓ Launch from Start Menu

✓ Enter UCM credentials

✓ Click either here or here

UCCE - Troubleshooting (RTMT) **Analysis Manager**, Add Nodes

✓ Inventory, Nodes

✓ Add

✓ Configure

Real Time Monitoring Tool For Cisco Unified Communications Solutions

System
CallManager
AnalysisManager

Inventory

- Nodes
- Node Groups
- Call Record Repositories
- Trace File Repositories
- Trace Templates

Tools

- Analyze Call Path
- Collect Traces Now
- Schedule Trace Collection
- Schedule Trace Settings and Collection
- Set Trace Levels
- View Configuration

Administration

- Import
- Job Status
- Upload Files

Add Node

Node Type* Unified ICM/CCE

IP/Host Name* ucce85labpg1a

Transport Protocol* HTTPS

Port Number* 7890

User Name* DSLAB\Administrator

Password*

Confirm Password*

Description Agent PG

Associated Call Record Repositories

Associated Trace File Repositories

Associated Group

- AllNodes
- UCCE85

Advanced...

* Required Fields

Save Cancel

Add Edit Delete Discover Test Connectivity

UCCE - Troubleshooting (RTMT) Analysis Manager, Add Trace Templates

- ✓ Trace Templates
- ✓ Select Node Type
- ✓ Configure

Real Time Monitoring Tool For Cisco Unified Communications Solutions

System

CallManager

AnalysisManager

Inventory

- Nodes
- Node Groups
- Call Record Repositories
- Trace File Repositories
- Trace Templates**

Tools

- Analyze Call Path
- Collect Traces Now
- Schedule Trace Collection
- Schedule Trace Settings and Collection
- Set Trace Levels
- View Configuration

Administration

- Import
- Job Status
- Upload Files

Trace Templates

Edit Trace Template

Name * AgentPG

Description CORE PG logs. JGW PIM OPC MDS and CTI.

Node Type

- Unified CM
- Unified ICME**

Component	Trace Level	Collect Trace
Router/nmm	No Change	<input type="checkbox"/>
Logger/CampaignManager	No Change	<input type="checkbox"/>
ICMDBA	Not Settable	<input type="checkbox"/>
Router/rts	No Change	<input type="checkbox"/>
Router/rtr	No Change	<input type="checkbox"/>
Web Setup Trail	Not Settable	<input type="checkbox"/>
Router/nms	No Change	<input type="checkbox"/>
Peripheral Gateway/nmm	No Change	<input type="checkbox"/>
Peripheral Gateway/opc	No Change	<input checked="" type="checkbox"/>
Peripheral Gateway/jgw1	No Change	<input checked="" type="checkbox"/>
CTI Server/nmm	No Change	<input type="checkbox"/>
Peripheral Gateway/pim1	No Change	<input checked="" type="checkbox"/>
Peripheral Gateway/mds	No Change	<input checked="" type="checkbox"/>
Peripheral Gateway/nm	No Change	<input type="checkbox"/>
Peripheral Gateway/pgag	No Change	<input type="checkbox"/>
CTI Server/ctisvr	No Change	<input checked="" type="checkbox"/>
CTI Server/nm	No Change	<input type="checkbox"/>

* Required Fields

Save Cancel

UCCE - Troubleshooting (RTMT) **Analysis Manager**, Pulling Logs

✓ Collect Traces Now

✓ Select Group or Node

✓ Configure

Real Time Monitoring Tool For Cisco Unified Communications Solutions

System
CallManager
AnalysisManager

Inventory
Nodes
Node Groups
Call Record Repositories
Trace File Repositories
Trace Templates

Tools
Analyze Call Path
Collect Traces Now
Schedule Trace Collection
Schedule Trace Settings and Collection
Set Trace Levels
View Configuration

Administration
Import
Job Status
Upload Files

Collect Traces Now

Choose a Node or Group to perform query on:
 Group Node

Name	Node Type	Description
10.77.85.10	Unified ICME	8.5 RoggerA
10.77.85.30	Unified ICME	UCCE 8.5 PG1A

Trace Template

Use Template: AgentPG **Customize...**

Start Time: [Calendar]

End Time: 04-11-2011 14:30:46

Time Zone: (GMT-5:0)Eastern Day...

View Summary OK Cancel

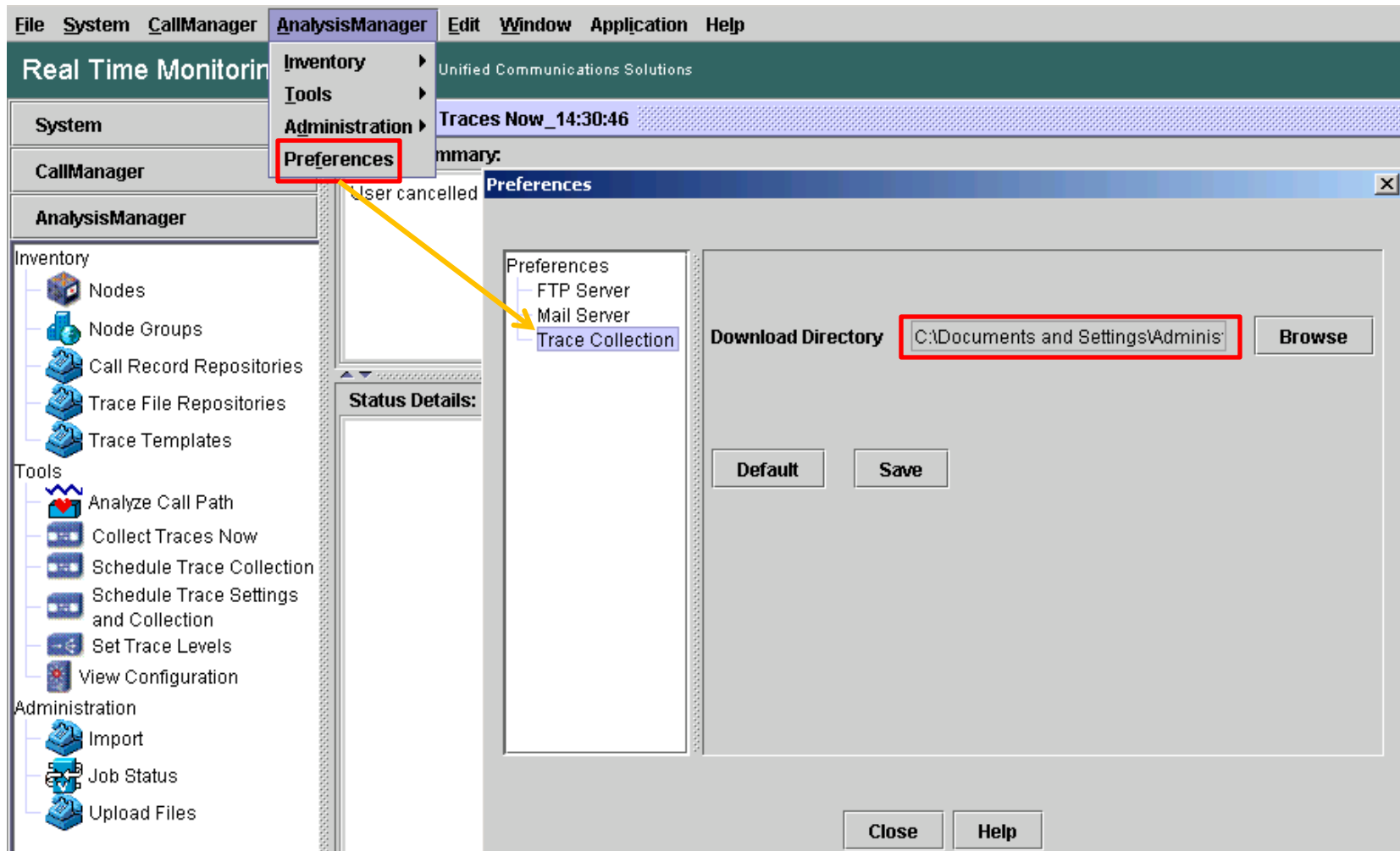
April 2011

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
14	27	28	29	30	31	1	2
15	3	4	5	6	7	8	9
16	10	11	12	13	14	15	16
17	17	18	19	20	21	22	23
18	24	25	26	27	28	29	30
19	1	2	3	4	5	6	7

12:00:00 AM

Now **OK**

UCCE - Troubleshooting (RTMT) Analysis Manager, Getting Logs



UCCE - Troubleshooting

Unified (System) CLI, UCCE Administration (1 / 2)

- Define UCCE Servers, Create “devices.csv”
 - <install_drive>:\icm\serviceability\wsccli\conf
 - Configure a “devices.csv” file by using “devices-sample.csv”

```
devices-sample.csv - Notepad
File Edit Format View Help
#####
# Sample CSV file for importing devices. File name should be devices.csv
# The file should be located at WSC_CLI_DIR/conf folder
#
# The possible values for Device Type are given below:
#
# * UCM - For Unified CM
# * CVP - For Unified CVP
# * ICM - For Unified ICME, ICM
# * UCCX - For Unified CCX
# * IOS - For IOS Gateway
# * EA - For Unified Expert Advisor
# * CUIC - For Unified IC
# * CUP - For Unified Presence
#####
#
# The column assignments are as follows:
#
# HOSTNAME -- Mandatory
# DESCRIPTION
# DEVICE_TYPE -- Mandatory
# GROUP
# USERNAME -- Mandatory
# PASSWORD -- Mandatory
# PORT_NUMBER
# ENABLE_PASSWORD
# IS_SEED_SERVER
#
# HOSTNAME, DESCRIPTION, DEVICE_TYPE, GROUP, USERNAME, PASSWORD, PORT_NUMBER, ENABLE_PASSWORD, IS_SEED_SERVER
#10.86.129.109, IOS_GW, IOS_Location1, cisco, cisco, 23, cisco,
10.77.85.15, RoggerA, ICM, , DSLAB\Administrator, cisco,
10.77.85.30, PG1A, ICM, , DSLAB\Administrator, cisco,
```

Mandatory

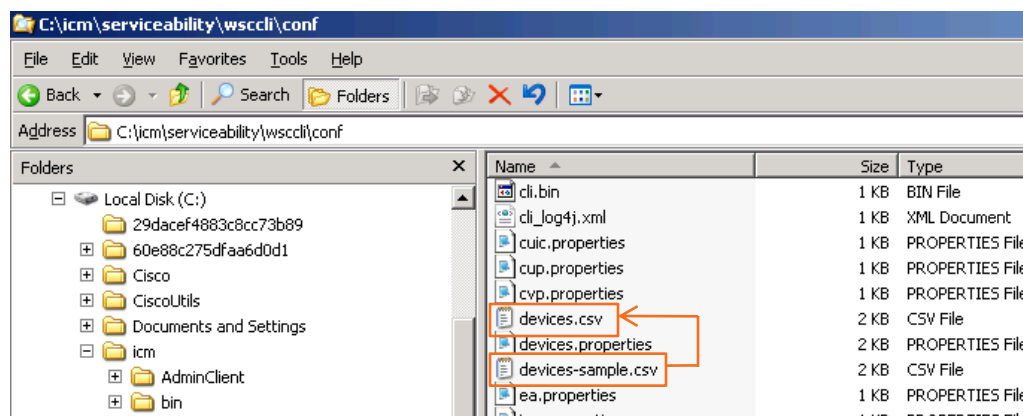
<server or IP>, <description>, <device type>, <group>, <username>, <password>

10.77.85.15,	RoggerA,	ICM,	,	DSLAB\Administrator,	cisco
10.77.85.30,	PG1A,	ICM,	,	DSLAB\Administrator,	cisco

UCCE - Troubleshooting

Unified (System) CLI, UCCE Administration (2 / 2)

- Define UCCE Servers, Create “devices.csv”
 - ✓ <install_drive>:\icm\serviceability\wsccli\conf
 - ✓ Configure a “devices.csv” file by using “devices-sample.csv”
 - Save As “devices.csv”



- Deploy “devices.csv” Across UCCE Nodes
 - Only needed for nodes that you will be using Unified CLI

Example: If you anticipate only running CLI on your AW's, then you will want to deploy this file across all of your AW's.

UCCE - Troubleshooting Unified (System) CLI, Most Used Commands



For Your
Reference

```
C:\ Unified System CLI
Enter username [DSLAB\Administrator]: DSLAB\Administrator
Enter password:
Enter Instance [ucce] (Optional): ucce

Welcome to the Platform Command Line Interface
admin: _
```

admin:system init

Initializing system mode ...

Retrieving device list. This process may take a few minutes to complete.

.....

NOTE: Use this command when you make an update or change “devices.csv”

admin:system

Initializing system mode ...

Retrieving device list. This process may take a few minutes to complete.

.....

admin(system):

NOTE: Use this command to enter system mode to collect data/logs remotely across UCCE servers.

admin(system):show version

Retrieving [version] data from device [icmroggera] ProductType [icm] ...

ICM 8.5(2) BuildNumber=37931 ES=0 PatchInstallerVer=465

Retrieving [version] data from device [icmpg1a] ProductType [icm] ...

ICM 8.5(2) BuildNumber=37931 ES=0 PatchInstallerVer=465

NOTE: Use this command in System mode to show all device versions.

UCCE - Troubleshooting Unified (System) CLI, Most Used Commands



For Your
Reference

admin(system):show devices

Device host name: icmroggera
Description: RoggerA
*Password: ******
Alternate user:
*Enable password: ******
Product type: ICM
Group:

Device host name: icmpg1a
Description: PG1A
*Password: ******
Alternate user:
*Enable password: ******
Product type: ICM
Group:

NOTE: Use this command to list all configured / recognizable devices by the active Unified CLI interface

admin(system):show debug

Retrieving [debug] data from device [icmroggera] ProductType [icm] ...

Component: icm:Router A, subcomponent: icm:rtr

Trace level = 0
Description:
Application data:

NOTE: Use this command to show current trace levels. System mode will show all UCCE server components

admin(system):show config redirect dir c:\temp

Retrieving [configuration] data from device [icmroggera] ProductType [icm] ...
Fetching configuration resource for component DumpCfg
Configuration: DumpCfg

NOTE: This command will snapshot configuration information such as: ConfigExport, Registry, DumpCfg, etc. For PG's, it will snapshot the registry.

“redirect dir” will save the “clioutput(#).zip” into the temp directory. If that directory is not present, Unified CLI will create it.

UCCE - Troubleshooting Unified (System) CLI, Most Used Commands



For Your
Reference

admin(system):debug level 1 server icmroggera component "icm:Router A" subcomponent icm:rtr

*Warning: Because running this command can affect system performance, Cisco recommends that you run the command during off-peak hours.
Do you want to continue? [y/n]: y*

Retrieving [debug_level] data from device [icmroggera] ProductType [icm] ..

*Component: icm:Router A, subcomponent: icm:rtr
Debug level is set successfully*

NOTE: Use this command to set debug tracing

admin(system):show tech-support

*Warning: Because running this command can affect system performance, Cisco recommends that you run the command during off-peak hours.
Do you want to continue? [y/n]: y*

*.....
Output is saved to "C:\icm\serviceability\wsccli\download\clioutput1.zip"*

NOTE: In System mode, this command will grab a 24hr snapshot of **all** server and subcomponent logs including OPC Capture on PG's.

It will also snapshot server versions, export ICM config, dumpcfg, registries, current debug levels, performance (PerfMon), license info, etc. In other words, it gets EVERYTHING TAC/DE would need. If you have UCM configured in "devices.csv", it will also grab a 24hr snapshot of CM/CTI/SDL logs.

```
admin(system):show ?
  show all
  show component
  show config
  show debug
  show devices
  show license
  show log
  show perf
  show platform
  show sessions
  show tech-support
  show trace
  show version

admin(system):debug level 1 server 10.77.85.10 component ?
Options: icm:Administration and Data Server
         icm:CLI Server 1A
         icm:Cisco ICM Diagnostic Framework
         icm:Logger A
         icm:Logger B
         icm:Peripheral Gateway 1A
         icm:Router A
         icm:Router B
         icm:Web Setup

admin(system):debug level 1 server 10.77.85.10 component "icm:Router A" ?
Options: redirect
         subcomponent
         <cr>
```

Help is here...

BONUS: wsccli host:<ipaddress or hostname> devicetype:<icm|ucm|cvp|ios|cup|uccx>

UCCE - Troubleshooting

References – Unified CLI / Analysis Manager

- UCCE 8.5 Serviceability Best Practices Guide

http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/ipcc_enterprise/ipccenterprise8_5_1/configuration/guide/icm85_srvg.pdf

Section 10.1.4.2.1, Page 155

- CVP 8.x Solution Reference Network Design (SRND)

http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/customer_voice_portal/srnd/8x/cvp8xsrnd.pdf

Section 13-6, Page 196

- Unified Analysis Manager (RTMT)

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/service/8_0_1/rtmt/rtmt.pdf

Section 14-1, Page 163

725 Pages ... Save Time. Use *This* Quick Start Guide!

UCCE - trou-ble-shoot-ing

Managing A Crisis



UCCE - Troubleshooting

“Trust, but *verify*.” ~Ronald Reagan

“What and when did this happen?”

“Don’t ask me.”

“What changes have you made?”

“None!”

“What version are you running?”

“9.b(7c)”

“Did you enable tracing?”

“Yes.”

“Who is affected?”

“Everyone!”

“Did you look at the logs?”

“Yep.”

“It’s been 10 minutes. When are you going to fix this?!”

- *Accurately* Confirming Critical Items Helps With...
 - ✓ Baseline(s)
 - ✓ Accurate troubleshooting
 - ✓ Improving feedback and collaboration
 - ✓ Reducing cycles, guess work, relying on luck, etc.

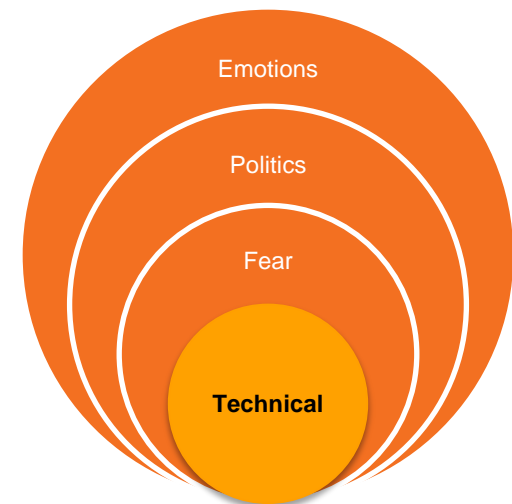
UCCE - Troubleshooting Crisis Management – Best Practices

- **Situational Analysis (*Listen*)**
 - Brokering reasonable expectations
 - Fair and balanced approach
- **Technical Analysis**
 - Formulate a baseline
 - Timelines
 - Logs, recordings, screenshots
- **Action Plan**
 - Getting beyond the crisis
 - Set clear expectations
 - Next steps / workarounds
- **Resource Management**
 - Ensuring proper resources are called and utilized
- **Solution Approach**
 - Work together; collaborate on the big picture

Situational
Management



Technical
Leadership



UCCE - Troubleshooting

Crisis Management – To Whom It May Concern...

■ Who

- Acknowledge person or group affected
- Identify stakeholders / people of influence
 - Managers and executives
 - IT vs. Business Unit(s)



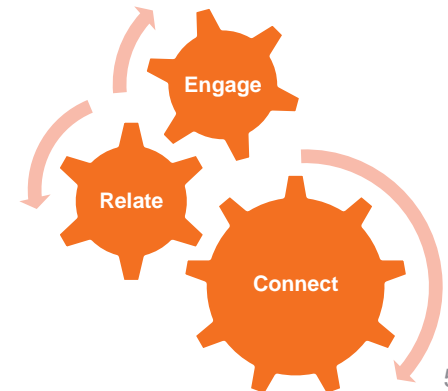
■ When

- How often should you communicate?
 - Do not react without all the facts



■ How

- Email, voice, exec updates, etc.
- Tone
 - A calm and reassuring voice goes a long way



UCCE - Troubleshooting Crisis Management – Trust *Through* Communication

To...
Cc...
Send

Subject: Agent Outage issue update, March 31 2011

General Summary: Customer XYZ experienced an unplanned outage today at one of their main contact centers located in Boston, MA. Approximately, 400 agents got logged out unexpectedly and were forced to manually log back in. Initial investigation is suggestive that the problem was isolated to only this site. No other sites were affected and call routing was not impacted.

Technical Summary: An investigation of the CTI logs showed that an Administrator on the Agent PG had manually closed the process window.

[CTISvr_sideA Log]
14:09:19:897 CG1B-nm ICM\post\CG1B node process ctisvr exited from Control-C or window close.

[CTIOS_sideA Log]
14:10:45:325 CTIOS-nm ICM\post\CTIOS node process ctios exited from Control-C or window close.

Both CTISvr and CTIOS recovered and stabilized in less than 8 minutes.

Incident Timeline:

- 14:15 – agents first reported being logged out unexpectedly
- 14:25 – agents report being able to log back in

Sentiment: Calm and collaborative but Customer XYZ needs Root Cause Analysis to understand and prevent future outages of this sort.

Next Update: Tomorrow at 09:00EDT where we will be on a conference call with the customer.

- Start with a clear headline
- Delineate political vs. technical
 - “CIO wants hourly update”
 - “The logs indicate...”
- Site direct log examples
 - Keep it **simple**
(No offense, managers!)
- Include a timeline
- Face the emotions head-on
- Set expectations on communication

NOTE: When using markups, be cognizant of mobile device users.

UCCE - Troubleshooting

Crisis Management – Technical **Baseline** (*Critical!*)

Detailed Description

Primary agent does not transition into WrapUp after call disconnect. The problem started after installing ES8 on PG3. When you uninstall ES8, the problem goes away. Very confident that ES8 induced this issue.

Issue Impact

Need accurate agent state data for CRM backend as it aids Contact Center Managers to accurately staff and more importantly, compensate the agents.

Troubleshooting Performed

Test Scenario steps:

1. Agent A (1011) receives inbound call from customer
2. Agent A consults agent B (1013)
3. Agent A toggles back to inbound call
4. Agent A selects wrap up to disconnect with inbound call CTI status is now HOLD
5. Agent A selects retrieve to reconnect with outbound consult call CTI status is now Connected
6. Agent A selects wrap up to disconnect outbound consult call CTI status is now Ready *when it should be WrapUp*. Agent B is in wrap up status.

Primary CallID: 16798318

Secondary CallID: 16798319

//At Step 4, when Ext 1011 hangs up primary call with customer.

```
12:19:26 pg1A-pim1 Trace: [ 1288]CSTAClearConnection - Peripheral::ProcessCSTAThirdPartyServiceRequest InvokeID=0xf0000048 Call(CallID=16798318 Device=1011 Type=Static)
12:19:26 pg1A-pim1 Trace: [ 2404]DeskLinkAgent::UpdateSkillGroupStates:ReserveAgentStateUpdate: Peripheral Number = 999985 Extension Number String = 1011 Skill Group Number = 7777 Line Handle = 1 Agent State = AS_HOLD Duration Current State = 0 reason code = 0 networkTargetID = 0
12:19:26 pg1A-pim1 Trace: [ 2404]DeskLinkAgent::UpdateSkillGroupStates:ReserveAgentLineUpdate: Line Handle = 0 Line Type = LT_INBOUND_ACD New Line State = LS_IDLE State Duration = 0 Skill Group Number = 7777
```

//At Step 5, Ext 1011 retrieves the consult leg.

```
12:19:39 pg1A-pim1 Trace: [ 2404]CSTA RETRIEVED, TelephonyDriver::Retrieved: SENT TO OPC CallID = 16798319 DeviceID = 1011 DeviceType = Static RetrievingDevice = 1011 LocalState = CONNECT Cause = EC_NONE
```

//At Step6, Ext 1011 hangs up the consult leg. After step6, Agent in Ext 1011 is going to Wrapup state.

```
12:19:47 pg1A-pim1 Trace: [ 2404]DeskLinkAgent::UpdateSkillGroupStates:ReserveAgentStateUpdate: Peripheral Number = 999985 Extension Number String = 1011 Skill Group Number = 7777 Line Handle = 1 Agent State = AS_WORK_READY
```

//Wrap up state was updated to clients as well.

```
12:19:47 cg1A-ctisvr Trace: SkillGroupState=WORK_READY SkillGroupDuration=0 OverallState=WORK_READY OverallDuration=0 Reason=0
```

//Immediately after putting to Wrap up state client sends READY request.

```
12:19:48 pg1A-pim1 Trace: [ 1288]CSTASetAgentState - Peripheral::ProcessCSTAThirdPartyServiceRequest InvokeID=0xf000004b Device=1011 AgentMode=READY AgentID=999985
```

UCCE - trou-ble-shoot-ing

Endpoint Isolation



UCCE - Troubleshooting

Endpoint Isolation – CTI, Who's On First?

- CTIOS CIL (API)
 - Algorithm to balance (randomize) agent session logon between sides A and B
 - Look for “SND CLIENT” events

CTIOS Log

10:54:09 CTIOS1-ctios Trace: <-- **SND CLIENT**[srv120-6976-9360]:
[**agent.5000.3022**]:EVT: Monitored eAgentStateEvent(eTalking),

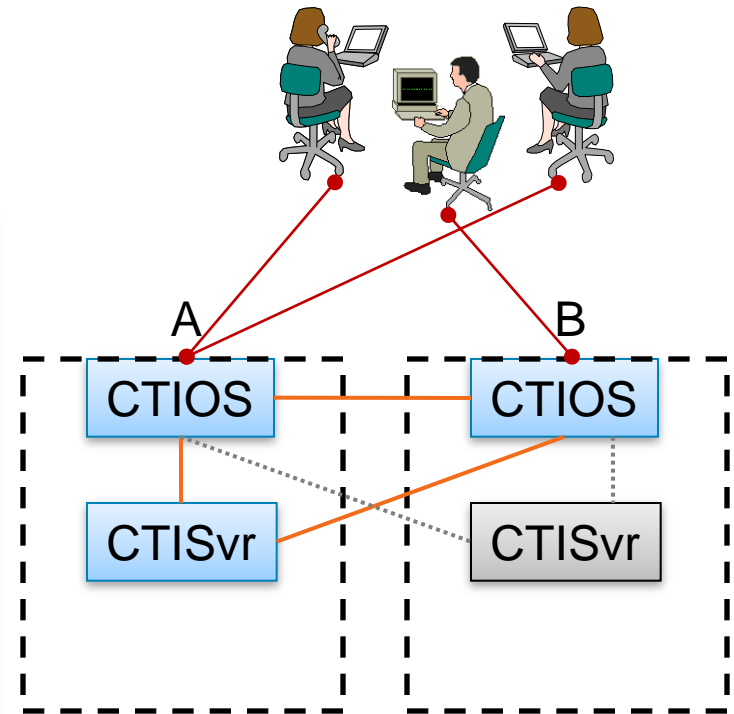
Agent ID / Extension

10:54:08 CTIOS1-ctios Trace: <-- **SND CLIENT**[srv120-6976-9360]:
[**call.5000.36820163.3044**]:EVT: eCallEndEvent, EnablementMask(0x0)

Call ID / Key

10:54:07 CTIOS1-ctios Trace: <-- **SND CLIENT**[srv120-6976-9360]:
[**skillgroup.1000.14824463**]:EVT:

Skill Group ID / Number



UCCE - Troubleshooting

Endpoint Isolation – Known CTI Issues (1 / 4)



For Your
Reference

- Common System-Impacting CTI Triggers, 7.x
 - CTIOS “OnConnectionClosed()” spot / infinite looping

```
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
11:38:31:168 CTIOS1-ctios Trace: XXX CLIENT[HDS1-045-52611-5056-676] CLOSE(), calling OnConnectionClosed()
```

- Characteristics (all must apply)
 - Events logged within same millisecond
 - Events logged contain the same client signature
 - More than 5 consecutive events occurring multiple times in 24hr period
 - Runaway looping ... oh, you'll notice! (severely degrades CTIOS)
- Resolved in 7.5(9) onwards [CSCtf94772 and CSCte23962]

UCCE - Troubleshooting

Endpoint Isolation – Known CTI Issues (2 / 4)



For Your
Reference

- Client Sending 0 Byte Packet

```
11:23:26 CTIOS1-ctios Trace: Client[00197]::HandleReadComplete, READ 0 BYTES: Requested(65445), Closing
Connection
11:23:26 CTIOS1-ctios Trace: Arguments(0132E958)::Clear(). Encountered exception releasing Arg 0x00020065.
11:23:26 CTIOS1-ctios Trace: Client[00197]: HandleReadComplete, Error: 0x12F1F0 Unknown Network Error.,
ERROR:0x00000000.
11:23:26 CTIOS1-ctios Trace: Arguments(0132E958)::Clear(). Encountered exception releasing Arg 0x00020065.
11:23:26 CTIOS1-ctios Trace: XXX CLIENT[00197], CLOSE
11:23:26 CTIOS1-ctios Trace: Arguments(0132E958)::Clear(). Encountered exception releasing Arg 0x00020065.
11:23:26 CTIOS1-ctios Trace: XXX RCV CLIENT[00197]: eOnConnectionClosed
11:23:26 CTIOS1-ctios Trace: Arguments(0132E958)::Clear(). Encountered exception releasing Arg 0x00020065.
11:23:26 CTIOS1-ctios Trace: Arguments(0132E958)::Clear(). Encountered exception releasing Arg 0x00020065.
11:23:26 CTIOS1-ctios Trace: Arguments(0132E958)::Clear(). Encountered exception releasing Arg 0x00020065.
11:23:26 CTIOS1-ctios Trace: CTIOSTrace - CConnectionMonitor::MonitorThread, Connection
(CtiosServerNode.exe_11992_11884) Abandoned
11:23:26 CTIOS1-ctios Trace: CTIOSTrace - CConnectionMonitor::RemoveClient, Removing Connection
(CtiosServerNode.exe_11992_11884)
11:23:26 CTIOS1-ctios Trace: CTIOSTrace - CConnectionMonitor::MonitorThread, Posting Quit Message
11:23:26 CTIOS1-ctios Trace: CTIOSTrace - WndProc(WM_DESTROY)
11:23:28 CTIOS1-ctios Initializing Event Management System (EMS) Library. ← Crash!
```


UCCE - Troubleshooting

Endpoint Isolation – Known CTI Issues (3 / 4)



For Your
Reference

■ ServiceBroker And Generic Exceptions

```
15:20:07 CTIOS1-ctios CTI OS Server has generated an exception in ServiceBroker::ProcessRequest processing
eEnableSkillGroupStatisticsRequest.\nDetails:\nLast Error: 0\n
CTI OS Server has Encountered exception....
```

```
16:31:39 CTIOS1-ctios CTI OS Server has generated an exception in ServiceBroker::ProcessRequest processing
eDisableSkillGroupStatisticsRequest.\nDetails:\nLast Error: 997\n
CTI OS Server has Encountered exception....
```

```
09:00:38:228 CTIOS1-ctios Trace: ClientMgr[00E69AA0]: AddAcceptingClients, caught unknown exception
```

- Most exceptions result in a (small) memory leak
- CTIOS service would degrade to where it's doing nothing but exception handling
 - All agent related requests would start to fail
- Resolved in 7.5(10) onwards [CSCth12205, CSCtg55020, CSCtg41640, and CSCsz38982]
 - Primarily through CTIOS hardening efforts

UCCE - Troubleshooting

Endpoint Isolation – Known CTI Issues (4 / 4)



For Your
Reference

- **CTISvr** → **CTIOS** Transmit Queue Overflow

```
11:38:31:720 cg6A-ctisvr Trace: TransportProtocol::QueueMSG - CTIOSServer (SessionID 8) , Message queued: (3000
msgs in the queue, max:3000)
11:38:31:720 cg6A-ctisvr Transmit queue limit of 3000 messages exceeded by client CTIOSServer (session 8).
11:38:31:720 cg6A-ctisvr Trace: ... SessionProtocol:: Session 8 ProcessFailureEvent(E_CTI_UNSPECIFIED_FAILURE) ...
11:38:31:720 cg6A-ctisvr Trace: ... SessionProtocol::FailSession 8 (E_CTI_UNSPECIFIED_FAILURE) ...
11:38:31:720 cg6A-ctisvr Trace: SessionProtocol::PurgeApplicationMessage for Session 8
(CLIENT_EVENT_REPORT_REQ)
11:38:31:720 cg6A-ctisvr SESSION 8: Terminating client CTIOSServer at (204.79.19.46:1221),
E_CTI_UNSPECIFIED_FAILURE

11:38:31:840 CTIOS1-ctios Trace: CNotSecureNetPort(00E2A9E0)::SendData, send, WARNING,, Connection to Host[],
Connection reset by peer. (WSAECONNRESET), Error Number(10054).
11:38:31:840 CTIOS1-ctios Trace: XXX RCV CLIENT[HDS1-045-52611-5056-676]: eOnConnectionClosed
```

- Two Primary Causes

- CTIOS behaving abnormally, unable to process message queues
- Configuring beyond SRND stated boundaries: SkillGroups, Agents, and SG/Agent mappings

UCCE - Troubleshooting

Endpoint Isolation – Multimedia, CTISvr Vs. MRPIM

- CTISvr = Agent State & Task Updates

- Is the agent routable?
- Is the MRD interruptible?
- Max. concurrent task limit

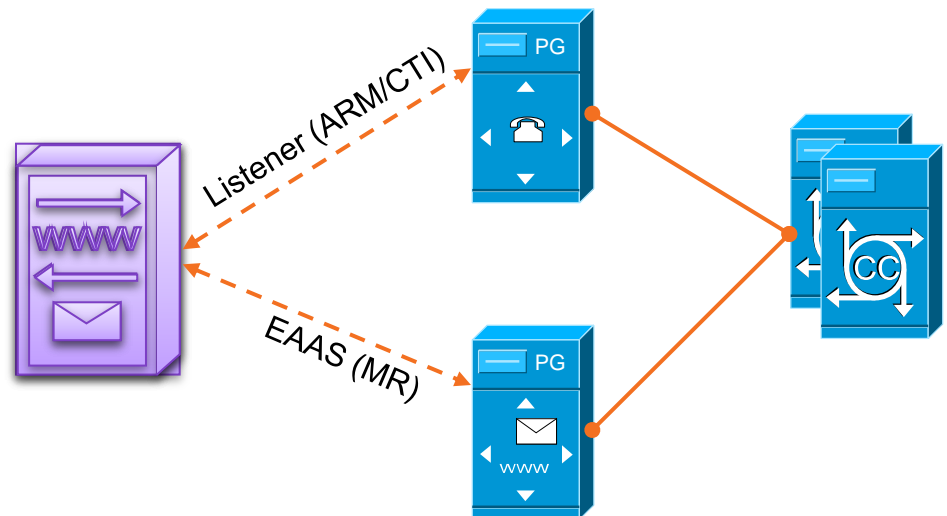
Listener

- MR PIM = Route Requests

- New task request to UCCE
- Do this with task response from UCCE

EAAS

NOTE: Example used here is Cisco Unified E-Mail Interaction Manager (EIM)

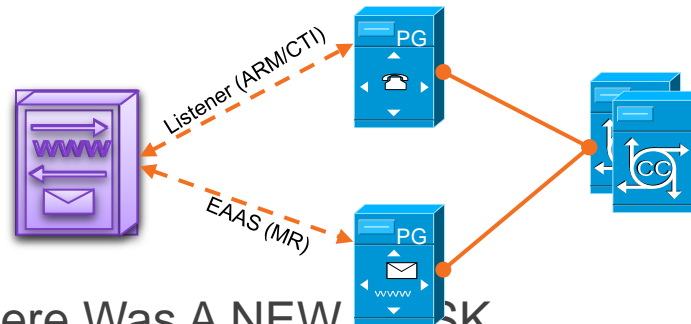


UCCE - Troubleshooting

Endpoint Isolation – Multimedia, MRPIM (1 / 3)



For Your Reference



- In The Beginning, There Was A **NEW_TASK**

```
15:27:18:399 pg4B-pim1 Trace: Application->PG:  
Message = NEW_TASK; Length = 155 bytes  
DialogueID = (585) Hex 00000249  
SendSeqNo = (1) Hex 00000001  
MRDomainID = (5000) Hex 00001388  
PreviousTask = -1:-1:-1  
PreferredAgent = Undefined Service = (0) Hex 00000000  
CiscoReserved = (0) Hex 00000000  
ScriptSelector: Main_UCCE_Chat  
Call Variable 1: 6649  
Call Variable 2:  
Call Variable 3:  
Variable Name: user.cim.activity.id  
Value: 6649
```

(CTISvr) AGENT_PRE_CALL_EVENT

```
15:27:18:856 pg4A-pim1 Trace: PG->Application:  
Message = DO_THIS_WITH_TASK; Length = 108 bytes  
DialogueID = (450) Hex 00001c2  
SendSeqNo = (1) Hex 00000001  
IcmTaskID = 149692:336: 1 ← Router CallKey  
SkillGroup = (903) Hex 00000387  
Service = Undefined  
Agent = (5025) Hex 000013a1  
AgentInfo: 10598 ← AgentID  
Label:  
Call Variable 1: 6649  
Call Variable 2:  
Call Variable 3:  
Variable Name: user.cim.activity.id  
Value: 6649
```

UCCE - Troubleshooting

Endpoint Isolation – Multimedia, CTISvr (2 / 3)



For Your Reference

- Pre-Call Indicator, Links The RouterCallKey & DialedNumber

```
15:27:18 cg1A-ctisvr Trace: DEVICE_TARGET_PRE_CALL_IND - Instrument=10598 RouterCallKey=149692 336 NetworkTargetID=0
15:27:18 cg1A-ctisvr Trace: ServiceSkillTargetID=-1(-1) SkillGroupSkillTargetID=5023(903)

15:27:18 cg1A-ctisvr SESSION 2: MsgType:AGENT_PRE_CALL_EVENT (MonitorID:0 NumNamedVariables:1 NumNamedArrays:0
15:27:18 cg1A-ctisvr SESSION 2: ServiceID:N/A SkillGroupNumber:903 SkillGroupID:5023 SkillGroupPriority:0 MRDID:5002
15:27:18 cg1A-ctisvr SESSION 2: AgentInstrument:"10598" RouterCallKeyDay:149692 RouterCallKeyCallID:336
15:27:18 cg1A-ctisvr SESSION 2: RouterCallKeySequenceNum:1 ANI:"6649" DialedNumber:"CIM.EIM.CHAT" CED:"MikeChen123"
15:27:18 cg1A-ctisvr SESSION 2: ExpandedCallContxt:<TotalBytes=28> user.cim.activity.id="6649" FltCallTypeID:5003
15:27:18 cg1A-ctisvr SESSION 2: PreCallInvokeID:1070 )
```

- (Chat ONLY) Interrupt Sent To CTISvr

```
15:27:18 cg1A-ctisvr Trace: ProcessARMAgentInterruptAdvisoryEventMsg -- InvokeID = 98, MRDID = 5000, InterruptingMRDID = 5002, ICMAgentID = 5025

15:27:18 cg1A-ctisvr SESSION 3: MsgType:AGENT_INTERRUPT_ACCEPTED_IND (InvokeID:0x62 MRDID:5000 ICMAgentID:5025 )

15:27:18 cg1A-ctisvr Trace: ProcessAgentInterruptAcceptedInd - sessionID 3
15:27:18 cg1A-ctisvr Trace: SendARMMsg -- InvokeID = 98, MRDID = 5000, ICMAgentID = 5025, SessionID = 3
```

UCCE - Troubleshooting

Endpoint Isolation – Multimedia, CTISvr (3 / 3)



For Your Reference

- Accepting The Task That's Being Offered

```
15:27:18 cg1A-ctisvr SESSION 2: MsgType:OFFER_TASK_IND (InvokeID:0x4ade MRDID:5002 ICMAgentID:5025
15:27:18 cg1A-ctisvr SESSION 2: TaskID:149692/336/1ARMSkillGroupID:5023 ARMServiceID:N/A )
15:27:18 cg1A-ctisvr Trace: ProcessOfferTaskInd - sessionID 2
15:27:18 cg1A-ctisvr Trace: SendARMMsg -- InvokeID = 19166, MRDID = 5002, ICMAgentID = 5025, TaskID = 149692/336/1
SkillGroupID = 5023, ServiceID = -1, SessionID = 2

15:27:19 cg1A-ctisvr SESSION 2: MsgType:START_TASK_IND (InvokeID:0x4ae0 MRDID:5002 ICMAgentID:5025
15:27:19 cg1A-ctisvr SESSION 2: TaskID:149692/336/1ARMSkillGroupID:5023 ARMServiceID:N/A )
15:27:19 cg1A-ctisvr Trace: ProcessStartTaskInd - sessionID 2
15:27:19 cg1A-ctisvr Trace: SendARMMsg -- InvokeID = 19168, MRDID = 5002, ICMAgentID = 5025, TaskID = 149692/336/1
SkillGroupID = 5023, ServiceID = -1, SessionID = 2
```

- Agent Reserved For Chat SG; Busy Other For The Rest

```
15:27:18 cg1A-ctisvr Trace: AGENT_EVENT: ID=102 Periph=5000 Ext=10598 Inst=10598 Sig=CTIOSServer
15:27:18 cg1A-ctisvr Trace: SkillGroupState=RESERVED SkillGroupDuration=0 OverallState=RESERVED OverallDuration=0
15:27:18 cg1A-ctisvr Trace: MRDID=5002 NumTasks=1 MaxTaskLimit=1 AgentMode=1 AgentAvailabilityStatus=0 ICMAgentID=5025
15:27:18 cg1A-ctisvr Trace: SkTgtID=5025 SkGrpNo=0x387 SkGrpID=5023 NumLines=1 CurLine=0 ClientStatus=0x1

15:27:18 cg1A-ctisvr Trace: AGENT_EVENT: ID=102 Periph=5000 Ext=10598 Inst=10598 Sig=CTIOSServer
15:27:18 cg1A-ctisvr Trace: SkillGroupState=BUSY_OTHER SkillGroupDuration=0 OverallState=RESERVED OverallDuration=0
15:27:18 cg1A-ctisvr Trace: MRDID=5002 NumTasks=1 MaxTaskLimit=1 AgentMode=1 AgentAvailabilityStatus=0 ICMAgentID=5025
15:27:18 cg1A-ctisvr Trace: SkTgtID=5025 SkGrpNo=0x3f8e SkGrpID=5009 NumLines=1 CurLine=0 ClientStatus=0x1
```



For Your Reference

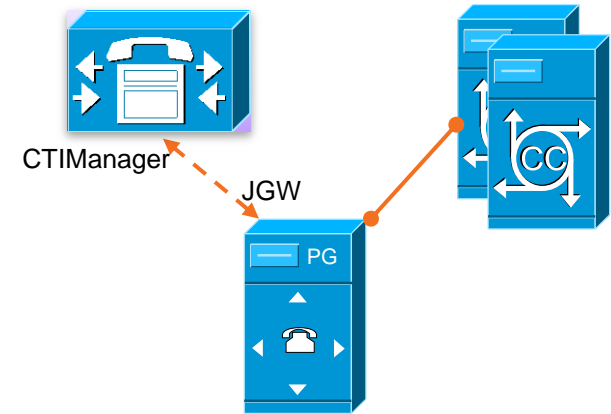
UCCE - Troubleshooting

Endpoint Isolation – Unified CallManager, JGW (1 / 2)

Agent Consult Failure

CallID	CallStatus	CallType	DNIS	A
33733465	Held	ACD IN	18018	23
33733469	Initiated	OUT		

Ext: 18018 Inst: 18018 Agent ID: 18018



Capture Critical Agent Baseline For Call Tracking

- Screenshot and client-side logs that contain CallID

13:35:36:259 pg1A-jgw1 Trace: **MsgConsultationCall**: ActCID: **33733465** ActConnDev: 18018/0 ConType: 1 **DialedNum: 908452740845**
 InVID: 895363950
 13:35:36:446 pg1A-jgw1 Trace: **CallCtlTermConnHeldEv** CID: **33733465** Addr: 18056 Term: SEP000802B50CCF **Calling: 01304212818**
 Called: 18056 LastRed: 801016 Cause: NORMAL

13:35:36:446 pg1A-jgw1 Trace: **CiscoConsultCallActive**: CID: **33733469** (269450/2) ConsultingCID: 33733465 (269355/2) NewCID:
 33733469 (269450/2) ConsultingTerm: SEP000802B50CCF ConsultingAddr: 18018
 13:35:36:446 pg1A-jgw1 Trace: **MsgServiceInitiated**: CID: 33733469 ConnDevID: 18018/0 ConsCID: 33733465 ConsConnDevID:
 18056/0 LocConnInfo: 1 Cause: -1 DevTgDevStr: 18018

13:35:36:446 pg1A-jgw1 Trace: Calling ciscoConnection[**33733469**].redirect(**908452740845**,
 CALLED_ADDRESS_SET_TO_REDIRECT_DESTINATION) , DEFAULT_SEARCH_SPACE ...



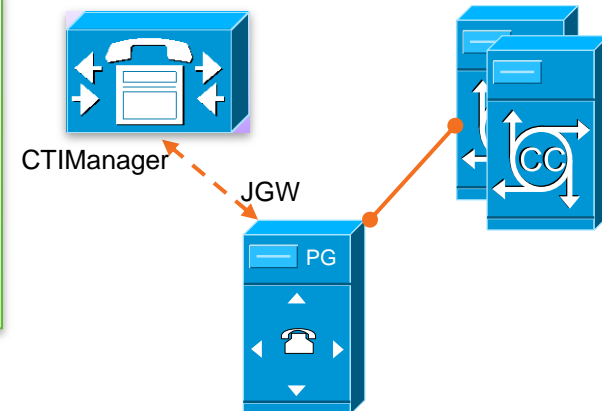
For Your Reference

UCCE - Troubleshooting Endpoint Isolation – Unified CallManager, JGW (2 / 2)

- Search For Common Errors
 - Exception / Failed / “could not meet post conditions”

13:35:37:712 pg1A-jgw1 Trace: Call to ciscoConnection[33733469].redirect(908452740845, CALLED_ADDRESS_SET_TO_REDIRECT_DESTINATION) , DEFAULT_SEARCH_SPACE **encountered exception**. com.cisco.jtapi.InvalidPartyExceptionImpl: **Request failed because of an invalid destination.**

13:35:37:712 pg1A-jgw1 Trace: Call to call[33733469].consult([18018,SEP000802B50CCF],908452740845) **encountered exception**. com.cisco.jtapi.PlatformExceptionImpl: **Could not meet post conditions of call.consult()**



What Does UCM CTI/SDL Say?

233645274| 04/11/11 13:35:37.175| 002| SdlSig | DaReq | wait | Da(2,100,28,1) |
 Cdcc(2,100,22,569877) | (2,100,143,183085).90-(Port 61219:10.131.100.51)| [R:NP - HP: 0, NP: 4, LP: 0, VLP: 0, LZP: 0 DBP: 0]
 CI=34573408 Fqdn= **Cgpn=01304212818 Number=908452740845 requestID=8594773** DigitAnalysisComplexity=0

233645276| 04/11/11 13:35:37.175| 002| SdlSig | DaRes | intercept_da | Cdcc(2,100,22,569877) |
 Da(2,100,28,1) | (2,100,143,183085).90-(Port 61219:10.131.100.51)| [R:NP - HP: 0, NP: 0, LP: 1, VLP: 0, LZP: 0 DBP: 0]
 CI=34573408 **Block PotentialMatchesExist OffNetrequestID =8594773**

Check Partition / Calling Search Space



For Your Reference

UCCE - Troubleshooting

Endpoint Isolation – Lifecycle Of A Call With Queuing (1 / 2)

UCM / Agent PG:

pg1A-opc Trace: CSTA_ROUTE_REQUEST (PID=5000) - currentRoute=8005551234 callingDevice=4002 routedCall=(CallID=16789481 Device=4002 Type=Dynamic)

pg1A-opc Trace: ICR_CONNECT:: RCID=5000 callID=16789481 XRefID=45 RoutelD=-1

RouteSelect=2251 RouteSelectState=8 TRPeripheralTargetID=-1

ErrorCode=0 RtrCallKey=(149147-508) UUI= ECCSize=0

Central Controller (Router):

ra-rtr Trace: Dialog (47 x 13 : 0 0) transfer label = 2251

ra-rtr Trace: Runscript sent. Dialog (47 x 13 : 0 0) pending

ra-rtr Trace: Dialog (47 x 13 : 0 0) handling dialog error conf, Call state(35651648).

ra-rtr Trace: Dialog (47 x 13 : 0 0) resuming (DialogErrorConf received.) status (1)

ra-rtr Trace: Canceling queuing for call 508

VRU PG:

pg2A-opc Trace: ProcessDialogErrorConf - !INFORM! - DID:12 on PID:4500 is diverted to PID:5000

pg2A-pim2 Trace: PG->VRU: Service Control Message (= Message Type 47); Message Length 53 bytes

Run Script Req (= Subtype 7); DialogueID: (12) 0000000c;

SendSeqNo: (1)00000001 Invoke ID: (1) 00000001

Script Name: Basicq

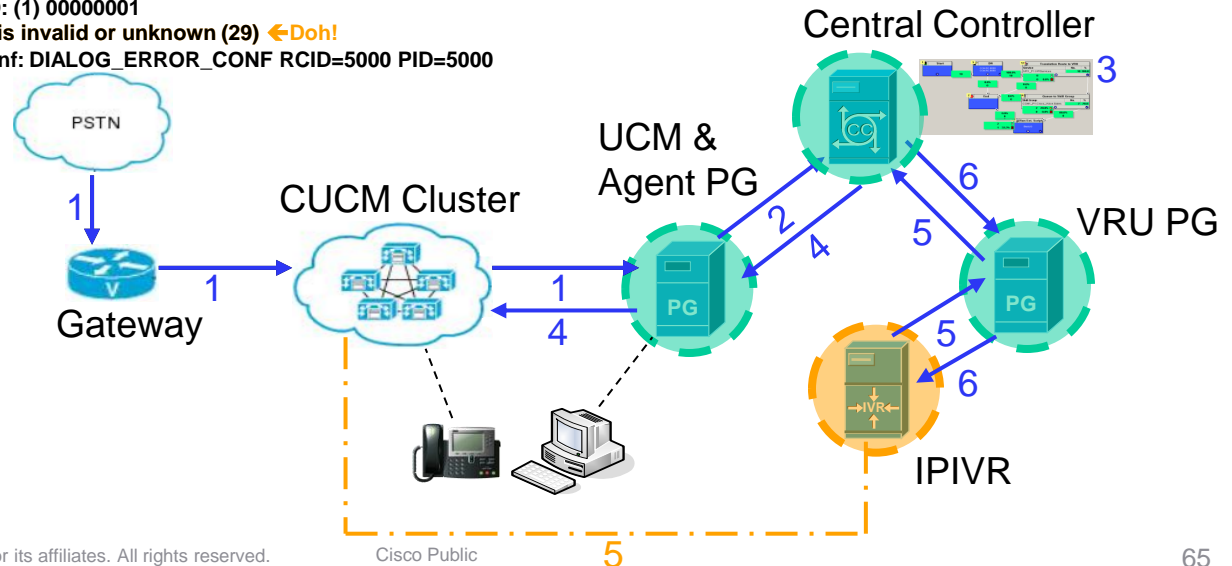
pg2A-pim2 Trace: VRU->PG: Service Control Message (= Message Type 47); Message Length 20 bytes

Dialogue Failure Conf (= Subtype 11); DialogueID: (12) 0000000c;

SendSeqNo: (2)00000002 Invoke ID: (1) 00000001

Error Code: The Script ID Specified is invalid or unknown (29) ←Doh!

pg2A-pim2 Trace: Dialogue::ToRouter_DialogErrorConf: DIALOG_ERROR_CONF RCID=5000 PID=5000





For Your Reference

UCCE - Troubleshooting

Endpoint Isolation – Lifecycle Of A Call With Queuing (2 / 2)

Customer Response Solutions Administration

For Cisco Unified Communications



← IP IVR

Script Management

- [Create New Folder](#)
- [Rename Folder](#)
- [Delete Folder](#)
- [Upload New Scripts](#)

Folder path: ..

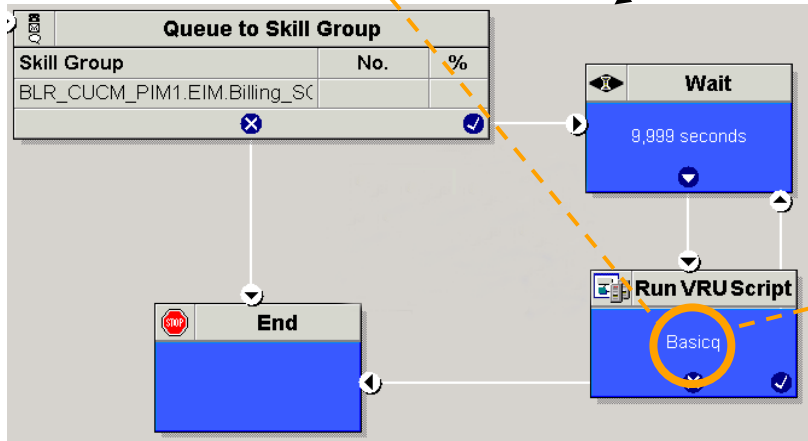
Repository Datastore free space: 2046 MB

Name	Size	Date Modified	Modified By	Actions
BasicQ.aef	9.97 KB	05/12/2009 02:02:57 PM	admin	

First Previous Next Last Page 1 of 1

The page uses pop-up windows. If you have pop-up blocker software installed, configure it to enable pop-ups for this site.

UCCE Configuration



Network VRU Script List

Attributes

Name	* Basicq
Network VRU	* IPIVR_VRU
VRU script name	Basicq
Timeout	* 180 seconds
Configuration param	
Customer	<None>
Interruptible	<input checked="" type="checkbox"/>
Overridable	<input type="checkbox"/>
Description	

UCCE - Troubleshooting

Interrogating The Logger (or admin)

- Detective stuff ... sort of.
- Dump Review – DumpCFG, Standard

Find the Recovery key

The screenshot shows the SQL Query Analyzer interface. The query window contains the following SQL code:

```
select RecoveryKey from Config_Message_Log
where DateTime between '01/01/2009 00:00' and '01/01/2009 12:00'
```

The results grid shows the following data:

	RecoveryKey
1	517558521000.0
2	517558521001.0
3	517558521002.0
4	517558521003.0

The status bar at the bottom indicates: Query batch c UCCE72 (8.0) DSLAB72\administrator (231) cisco_sideA 0:00:00 4 rows Ln 11, Col 1

Syntax and Output

```
dumpcfg <database>[@server] <low recovery key> [high recovery key]
dumpcfg cisco_sideA@10.77.56.3 517558521000 517558521003
```

```
[ 517558521000.0, Add, Jan 1 2009 08:26AM ]
PID: 4980
MachineName: IPCCLABAW01
UserDomain: IPCCLAB
UserName: mikchen
ProcessName: trwizard(upcc)
SQLServerUserName: dbo

[ 517558521001.0, Delete, t_Translation_Route, Jan 1 2009 08:26AM ]
SkillTargetID: 35287
ChangeStamp: 0

[ 517558521002.0, Add, Jan 1 2009 10:05AM ]
PID: 4848
MachineName: IPCCLABAW01
UserDomain: IPCCLAB
UserName: mikchen
ProcessName: scripted(upcc)
SQLServerUserName: DBO

[517558521002.0, Update, t_Master_Script, Jan 1 2009 10:05AM ]
ObjectAccessLevel: 0
MasterScriptID: 5067
CustomerDefinitionID: 0
CustomerIdShadow: 0
EntityID: 1
CurrentVersion: 4294967295
NextAvailableVersion: 178
ChangeStamp: 327
ScriptType: 1
EnterpriseName: PROMPTER
Description:
```

UCCE - Troubleshooting

Dump Review – DumpCFG, New Via Diagnostic Portico

Hostname: **ucce85.DSLab** Address: **127.0.0.1**

Commands:

- Alarm**
 - SetAlarms
 - GetAlarms
- Configuration**
 - ListConfigurationCategories
 - GetConfigurationCategory**
- Inventory**
 - ListAppServers
- License**
 - GetProductLicense
- Log**
 - ListLogComponents
 - ListLogFiles
- Network**
 - GetNetStat

GetConfigurationCategory

Category: ←

TableList: ←

FromDate: MM/DD/YYYY / / : : Eastern Standard Time (UTC -4:00)


ToDate: MM/DD/YYYY / / : : Eastern Standard Time (UTC -4:00)


Show URL

Initiating Download...

File Download

Do you want to open or save this file?

 Name: DumpCfg_20110419130631036_3563896.zip
Type: Compressed (zipped) Folder, 182 bytes
From: 10.77.85.10

 While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

UCCE - trou-ble-shoot-ing

NIC Optimization



UCCE - Troubleshooting

NIC Optimization – “Must Have” Baseline (1 / 2)



For Your
Reference

- NIC Teaming Not Supported
 - In reality, this offers little value in terms of fault tolerance ... when was the last time you had a NIC card die?
 - Load balancing can negatively affect critical HW I/O continuity
- Binding Order
 - Public NIC should be listed first followed by Private NIC
- Speed And Duplex Settings
 - Always full duplex (exceptions with some peripherals, e.g. Avaya)
 - Statically set and must match on both the NIC and Switch Port, respectively
 - Use Auto/Auto ONLY when running Gigabit NIC/Switch
 - Best Practices tech tip ...
http://www.cisco.com/en/US/products/sw/custcosw/ps1001/products_tech_note09186a00808160f4.shtml

UCCE - Troubleshooting

NIC Optimization – “Must Have” Baseline (2 / 2)



For Your
Reference

- TCP/IP Offloading, Potential Loss of Server Network Connection
 - <http://www.cisco.com/en/US/ts/fn/632/fn63215.html>
 - <http://blogs.technet.com/b/networking/archive/2008/11/14/the-effect-of-tcp-chimney-offload-on-viewing-network-traffic.aspx>
 - http://en.wikipedia.org/wiki/TCP_Offload_Engine

- Microsoft TCP/IP Stack Logic Affects MDS TCP Characteristics (RTT)
 - <http://www.cisco.com/en/US/ts/fn/620/fn62508.html>

- Microsoft Scalable Networking Pack With TCP/IP Offloading
 - <http://support.microsoft.com/default.aspx?scid=kb;EN-US;948496>

UCCE - trou-ble-shoot-ing

CPS, ALO, CiP, & *More!*



UCCE - Troubleshooting

Router Instrumentation – Real-Time Stats

- Performance Monitor

The screenshot displays the Performance Monitor application interface. On the left, a tree view shows the hierarchy: Console Root > System Monitor > Performance Logs and Alerts > Counter Logs. The 'Counter Logs' folder is highlighted with a blue dashed box. A dashed orange arrow points from this box to the 'Add Counters...' button in the 'UCCE Health Properties' dialog box.

The 'UCCE Health Properties' dialog box is open, showing the 'General' tab. The 'Current log file name' is 'C:\PerfLogs\UCCE Health_000002.blg'. Below this, there is a section for 'Counters' with an empty list. The 'Add Counters...' button is highlighted with a blue dashed box.

The 'Add Counters' dialog box is also open, showing the following settings:

- Use local computer counters
- Select counters from computer:
- Path: \\UCCE85
- Performance object: Cisco ICM Router (indicated by a yellow arrow)
- All counters
- Select counters from list:
- Selected counters: Agents Logged On, Calls In Progress, Calls In Queue, Calls In Router, Calls/sec, Max Process Time(ms) (indicated by a yellow arrow)
- All instances
- Select instances from list:
- Selected instances: Total, ucce RouterA (indicated by a yellow arrow and a yellow box labeled 'New in 8.x')
- Buttons: Add, Explain, Close

UCCE - Troubleshooting

Router Instrumentation – Real-Time Stats

- SNMP Polling

The screenshot displays a network management interface for SNMP polling. On the left, a tree view shows the MIB structure under 'CISCO-CONTACT-CENTER-APPS-M'. The 'cccaRouterEntry' subtree is highlighted with an orange box, containing 'cccaRouterSide', 'cccaRouterCallsPerSec', 'cccaRouterAgentsLoggedOn', and 'cccaRouterCallsInProgress'. On the right, the 'V1 / V2' tab shows real-time statistics for host 10.77.30.7 and object ID .1.3.6.1.4.1.9.9.473.1.3.1.1.1. The statistics are:

- Enabled: `cccaRouterSide.0.1:-->sideA(1)` (indicated by an orange arrow)
- Current CPS: `cccaRouterCallsPerSec.0.1:-->4` (indicated by an orange arrow)
- Poor Agent!: `cccaRouterAgentsLoggedOn.0.1:-->1` (indicated by an orange arrow)
- Current CIP: `cccaRouterCallsInProgress.0.1:-->3396` (indicated by an orange arrow)

The 'Syntax' field is set to 'CccaComponentS' and the 'Status' field is set to 'current'. The 'MIB Node Description' field contains the text: "The router side indicates which of the duplex pair this entry represents of an enterprise contact center application fault tolerant router functional component. The router side value is either 'A' or 'B'. For simplex configurations, the router side value defaults to 'A'."

UCCE - trou-ble-shoot-ing

RTTEST: expr



UCCE - Troubleshooting

Router Expression Test – Real-Time Snapshots

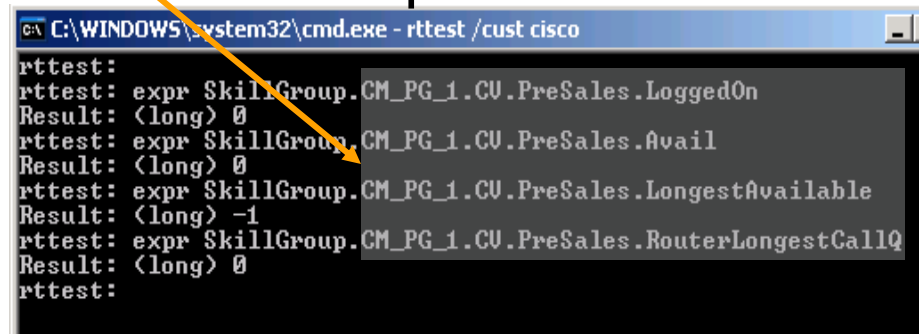
Uses

- Troubleshooting call routing
- Validating Consider If & MED formulas
- Just for fun!

Usage: expression Expression [/long LongResult] [/float FloatResult] [/char CharResult] [/wild Wildcard] [/invalid] [/error] [/disable] [/help] [/?]

```
SkillGroup.CM_PG_1.CV.PreSales.RouterCallsQNow>5||SkillGroup.CM_PG_1.CV.PreSales.RouterLongestCallQ >120  
Route.RT1.CallsInProgress  
CallType.INST.RouterCallsQNowNow>0
```

Expression



```
C:\WINDOWS\system32\cmd.exe - rttest /cust cisco  
rttest:  
rttest: expr SkillGroup.CM_PG_1.CV.PreSales.LoggedOn  
Result: (long) 0  
rttest: expr SkillGroup.CM_PG_1.CV.PreSales.Avail  
Result: (long) 0  
rttest: expr SkillGroup.CM_PG_1.CV.PreSales.LongestAvailable  
Result: (long) -1  
rttest: expr SkillGroup.CM_PG_1.CV.PreSales.RouterLongestCallQ  
Result: (long) 0  
rttest:
```

UCCE - Troubleshooting

Router Expression Test – Real-Time Snapshots

- The WATCH Command
 - Extension of the 'Expression' cmd
 - Automated, Live, Real-Time, Instant
- Remember To Turn Off
 - Low processing overhead
 - Always good not to tax the router

Watch

```
C:\WINDOWS\system32\cmd.exe - rttest /cust cisco
rttest:
rttest: watch SkillGroup.CM_PG_1.CV.PreSales.Avail
Watch 0 added.
rttest:
rttest: watch /delete 0
rttest:
```

- Watch The Router Log
 - No special tracing needed
 - Standard EMS log print

Router Log

```
14:04:24 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 22 = 18
14:04:24 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 23 = 17
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 24 = 16
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 25 = 15
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 26 = 14
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 25 = 15
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 26 = 14
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 27 = 13
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 28 = 12
14:04:25 ra-rtr Trace: SkillGroup.CM_PG_1.CV.PreSales.Avail = 40 - 29 = 11
```

UCCE - Troubleshooting

Router Expression Test – Real-Time Snapshots

Dump_Vars

```
C:\WINDOWS\system32\cmd.exe - rtttest /cust cisco
RTTEST Release 7.2.6.0 , Build 20617
rtttest: dump_vars /group 5001
Idx Strg Urbl Value Name
0 25 0 0 AgentOutCallsTimeTo5
1 24 0 0 AgentOutCallsTo5
2 36 0 0 AnswerWaitTimeTo5
3 13 0 0 Avail
4 27 0 0 AvailTimeTo5
7 32 0 0 BusyOther
8 33 0 0 BusyOtherTimeTo5
9 34 0 0 CallsAnsweredTo5
10 22 0 0 CallsHandledTo5
11 37 0 0 CallsOfferedTo5
12 21 0 0 HandledCallsTalkTimeTo5
13 23 0 0 HandledCallsTimeTo5
14 39 0 0 Hold
15 40 0 0 HoldTimeTo5
16 12 0 0 LoggedOn
17 26 0 0 LoggedOnTimeTo5
18 70 20 -1 LongestAvailable
20 14 0 0 NotReady
21 28 0 0 NotReadyTimeTo5
24 69 0 0 PercentUtilizationTo5
25 15 0 0 Ready
26 38 0 0 ReservedAgents
27 35 0 0 ReservedStateTimeTo5
28 1 0 0 RouterCallsQNow
29 5 0 0 RouterCallsAbandQTo5
30 0 0 0 RouterCallsAbandQHalf
31 0 0 0 RouterCallsAbandQToday
32 0 0 0 RouterQueueCallsHalf
33 0 0 0 RouterQueueCallsToday
34 16 0 0 TalkingIn
35 41 0 0 TalkingInTimeTo5
36 18 0 0 TalkingOther
37 17 0 0 TalkingOut
38 42 0 0 TalkOutTimeTo5
39 43 0 0 TalkOtherTimeTo5
40 29 0 0 TalkTimeTo5
41 45 0 0 TransferInCallsTimeTo5
42 44 0 0 TransferInCallsTo5
43 46 0 0 TransferOutCallsTo5
```

Expression

```
C:\WINDOWS\system32\cmd.exe - rtttest /cust cisco
rtttest:
rtttest: expr SkillGroup.CM_PG_1.CV.PreSales.LoggedOn
Result: (long) 0
rtttest: expr SkillGroup.CM_PG_1.CV.PreSales.Avail
Result: (long) 0
rtttest: expr SkillGroup.CM_PG_1.CV.PreSales.LongestAvailable
Result: (long) -1
rtttest: expr SkillGroup.CM_PG_1.CV.PreSales.RouterLongestCallQ
Result: (long) 0
rtttest:
```

SG Info

```
SQL Query Analyzer
File Edit Query Tools Window Help
cisco_sideA
Query - UCCE72.cisco_sideA.DSLAB72\Administrator - Untitled1*
select * from t_Skill_Group where
EnterpriseName like 'CM_PG_1.CV.PreSales%'
SkillTargetID ScheduleID PeripheralID EnterpriseName
1 5001 NULL 5000 CM_PG_1.CV.PreSales
2 5021 NULL 5000 CM_PG_1.CV.PreSalesOvrFlow
Query batch completed. UCCE72 (8.0) DSLAB72\Administrator (2
```

UCCE - Troubleshooting

- Router Expression Test – Syntax Samples

Router Running Memory Expression (expr)

```
rttest: expr SkillGroup.<Your Ent. SkillGroupName>.LoggedOn  
SkillGroup.<Your Ent. SkillGroupName>.Avail  
SkillGroup.<Your Ent. SkillGroupName>.LongestAvailable  
SkillGroup.<Your Ent. SkillGroupName>.RouterLongestCallQ
```

- Router Running Memory Dump (dump_vars)

```
rttest: dump_vars /group <skillgroupSkillTargetID>
```

- Router Running Memory WATCH cmd

```
rttest: watch SkillGroup.<Your Ent. SkillGroupName>.LoggedOn  
SkillGroup.<Your Ent. SkillGroupName>.Avail  
SkillGroup.<Your Ent. SkillGroupName>.LongestAvailable  
SkillGroup.<Your Ent. SkillGroupName>.RouterLongestCallQ
```

UCCE - trou-ble-shoot-ing

Baseline Tracing



UCCE - Troubleshooting

Pre-8.x Baseline Tracing Recommendations

- CallRouter **RTRTrace**
 - Config Changes + Route Request + Network VRU + Translation Route + Call Queuing + CallType RealTime + INRC (Routing Client Dialogue)
- Peripheral Gateway
 - CTIOS – **Registry** EMSTraceMask 0x60A0F
 - CTISvr – **Registry** EMSTraceMask 0x000000F8
 - OPC – **OPCTEST** debug /agent /routing /closedcalls /cstacer /ctimsg /inrcmsg /calls + **registry** EMSTraceMask 0x40
 - EAPIM – **Procmon** VRUPIM – **Registry** EMSUserData to hex 7F F7 C0
trace tp* /on
trace precall /on
trace *event /on
trace csta* /on
trace periph* /on
trace opc* /on
 - MRPIM – **Registry** EMSTraceMask = 0xF8
EMSUserData = DF
 - JGW – **Procmon**
trace JT_TPREQUESTS /on
trace JT_JTAPI_EVENT_USED* /on
trace JT_PIM_EVENT /on
trace JT_ROUTE_MESSAGE /on
trace *CONF* /on

UCCE - Troubleshooting

Enabled Perfmon Counters

- Always Enabled: 1MB Per File / 45 Days Max

Object	Instance	Counter	Thresholds
Processor	_Total	% Processor Time	<50% 50% - 60% >60% (sustained)
Process	_Total	Handle Count	<=2 x [# CPUs] (continuous)
Memory		Page Faults / sec	<10 >=10 >10 (sustained)
Memory		Committed Bytes	Relative to paging, demand for virtual
Memory		Pages / sec	<10 >10 (continuous)
System		Threads	Reference
System		Processor Queue Length	<2 x [# CPUs] >= 2 x [#CPUs] (sustained)
System		Processes	Reference

- These are sampled at a one-minute interval; counter values are stored here:
licm\log\Perf_MACHINENAME_YYYYMMDDHHMMSS.CSV

UCCE - trou-ble-shoot-ing

Agent Greeting / Whisper

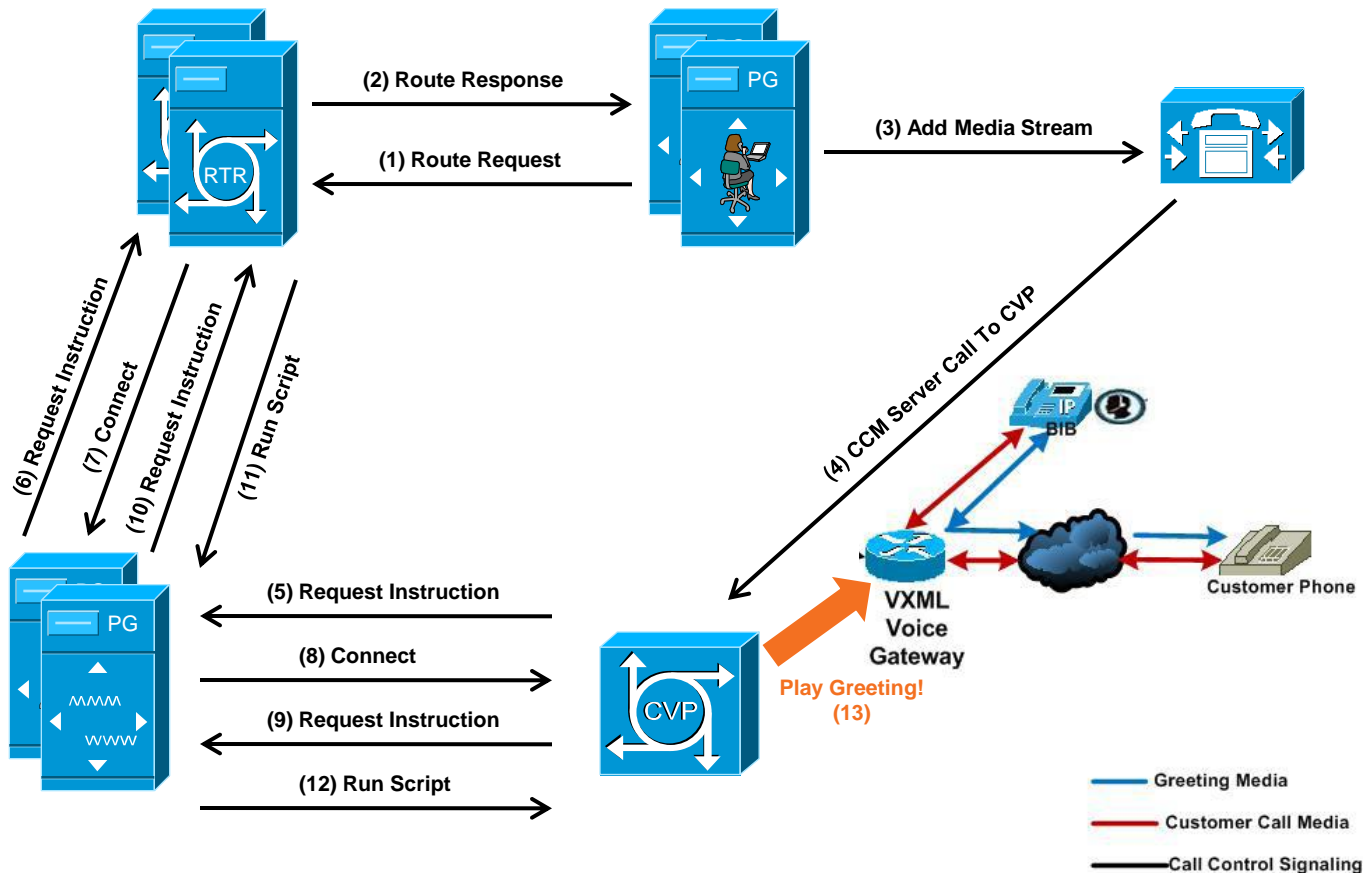


UCCE - Troubleshooting

Agent Greeting / Whisper

- Short <15 Sec. Agent Intro Played To Both Agent + Caller
 - Allows agents to review CRM / screen pop (call screening)
 - Saves agents from having to repeat the same per-call introduction
 - Alerts agents of customer status (Gold / Platinum / New Customer)
 - This is the main purpose of Agent Whisper
 - Old legacy (TDM) features
- Requirements
 - SIP only. H.323 not supported
 - G.711 (for recording only) and G.729 (customer + agent calls)
 - G.722 is not supported
 - UCCE / CVP / CTIOS / CM must be 8.5(1) or higher
 - UCM phones with BiB (Built in Bridge)

UCCE - Troubleshooting Agent Greeting Call Flow



1 -2: When agent answers the call, the Agent PIM sends a route request to the router and gets the route response back.

3: Agent PIM instructs UCM to connect to the VRU, adding media to the call.

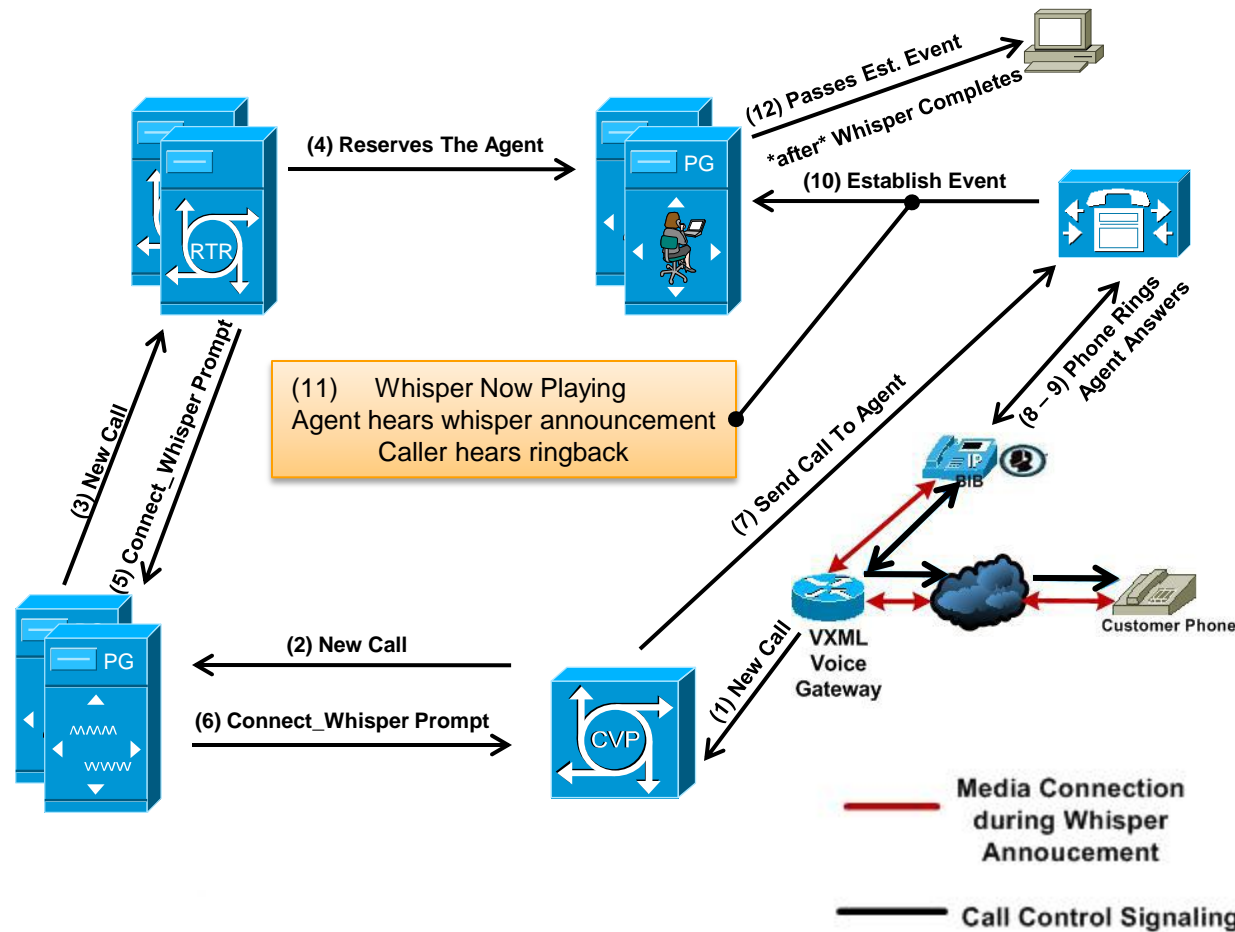
4: UCM initiates server call to CVP. After CVP answers, UCM allocates the agent phone's BiB resource.

5 -12: CVP gets a Run Script request from the router.

13: CVP instructs VXML gateway to play the agent greeting media file. VXML voice gateway plays the media file to Phone's BIB.

Agent and customer both hear the greeting.

UCCE - Troubleshooting Agent **Whisper** Call Flow



- 1: CVP receives a new call from PSTN.
- 2-3: CVP sends new call to VRUPIM and VRUPIM notifies ICM Router.
- 4: Router reserves agent.
- 5-6: ICM Router sends label with Whisper prompt to CVP.
- 7: CVP sends the call to UCM.
- 8-9: Agent receives and answers the call.
- 10: UCM sends established event to AgentPIM. AgentPIM will hold the event until Whisper Announcement is done playing.
- 11: CVP tells VXML GW to play ringback to the caller and the Whisper Announcement to the agent. After Whisper Announcement plays, CVP connects the agent to the customer and notifies UCCE.
- 12: AgentPIM is notified of Whisper Announcement complete and sends the established event to the agent desktop.

UCCE - Troubleshooting Agent Greeting Peripheral Error Messages

- Event Viewer On The PG Is A Good Place To Start

Error Message	Definition
ERR_ILLEGAL_CALLSTATE	Associated with an invalid state of a call.
CALL_DROPPED	Associated with an invalid call.
BIB_NOT_CONFIGURED	BiB not configured on agent device.
RESOURCE_NOT_AVAILABLE	Allocation request failure with BiB.
MEDIA_CONNECTION_FAILED	BiB calls fail to make media connection.
START_STREAM_MEDIA_FAILED	General failure to start the audio stream (for any reason).
STOP_STREAM_MEDIA_FAILED	General failure to stop the audio stream (for any reason).
REQUEST_ALREADY_PENDING	Duplicate request through Agent Greeting API.
NO_STREAMING_MEDIA_SESSION	Invoking a stop request while there is no existing media stream to stop.
EXISTING_STREAMING_MEDIA_SESSION	Duplicate request through Agent Greeting API.

UCCE - Troubleshooting

Agent Greeting / Whisper Technical Baseline

- Pull Event Viewer Logs
 - CVP Application Server
 - Agent PG
 - ICM Router
- Use Unified System CLI 'show tech-support'
 - 'devices.csv' file should contain CVP and UCM servers along with all relevant UCCE servers
- Search DocWiki
 - Agent Greeting:
<http://docwiki.cisco.com/wiki/Special:Search?search=agent+greeting>
 - Agent Whisper:
<http://docwiki.cisco.com/wiki/Special:Search?search=agent+whisper>

UCCE - Troubleshooting Summary And *Thank You*

- Major Serviceability Enhancement In 8.x
 - Diagnostic Framework + Compression
 - Extremely flexible and comprehensive
- Do Not Shelve This Preso, Use It
 - Quick start, step-by-step guides with screenshots
 - Sample syntax to get you going right away
 - Real log examples
- “Trust, but verify.” ~Ronald Reagan
 - Precision and accuracy, always
- Have A Safe And Enjoyable Trip Back Home
 - ...or wherever your final destination may be.

Learn. Connect.
Collaborate. *together.*

Q & A



Connect with Your Peers and Cisco

- Discuss business, IT, architecture, adoption and product topics with peers
 - Unified communications, collaboration applications, customer care, telepresence
- Interact with Cisco Product Managers, Technical Marketing Engineers and Services Consultants
- Learn about new product announcements
- Join the Collaboration User Group
 - Influence product direction
 - Access to Beta trials
 - Exclusive programs, advisory groups and briefings
 - Membership is free!

Cisco Collaboration Community and User Group

The screenshot displays the Cisco Communities website interface. At the top, there is a navigation bar with the Cisco logo, 'Cisco Communities', a 'Directory' dropdown, and a search bar. Below the navigation bar, the page title is 'Collaboration'. The main content area features an announcement banner for 'Watch New Announcements Webcasts and Win!'. To the left, there are sections for 'Sign up for Email Notifications', 'Navigate to a Topic and Post' (listing various topics like 'Cisco Collaboration Virtual Launch Experience', 'Enterprise Social Software', etc.), and 'Popular Tags'. The central focus is a 'Cisco Cius Announcement and Customer Stories' section with a tablet image and a 'Product Announcements' dropdown. Below this is an 'About the Collaboration Community' section and a 'Collaboration User Group Dashboard' which includes a 'Join User Group How' section with 'Log into Community' and 'Join User Group' buttons, and a grid of images representing various user group benefits like 'Beta and Early Field Trials', 'Technical Briefings', etc.

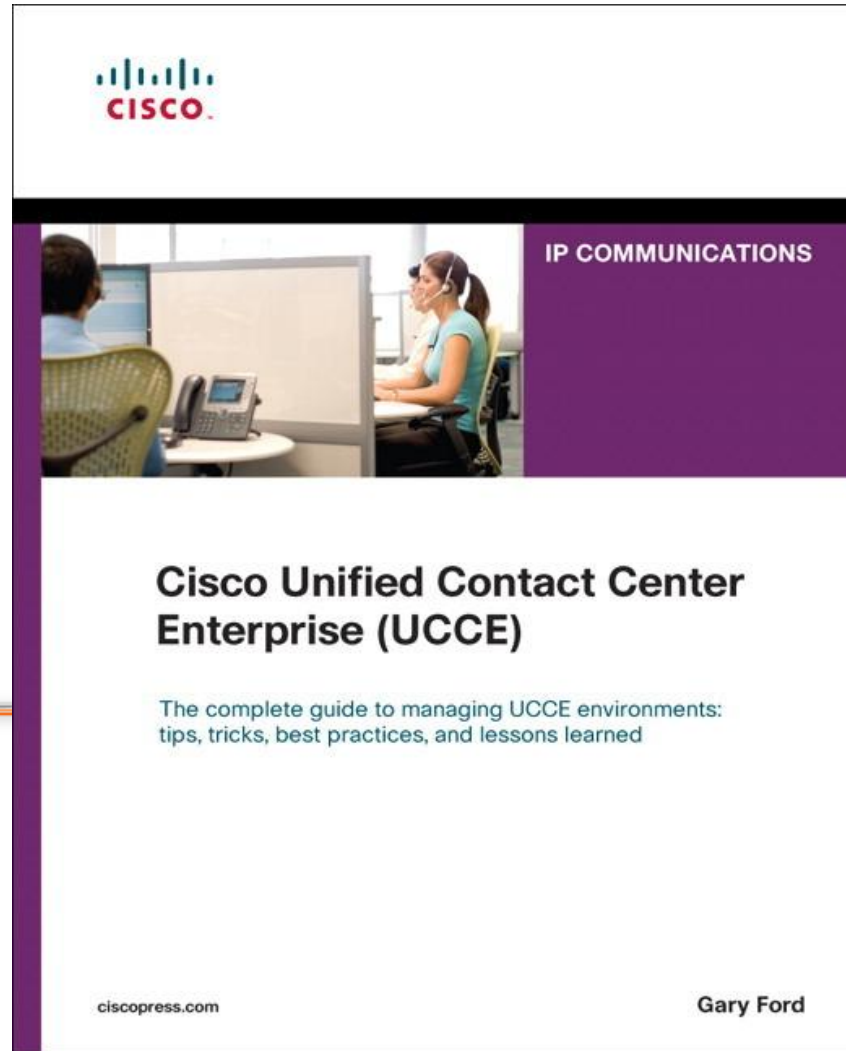
Visit the Collaboration Community and join the Collaboration User Group at:

www.cisco.com/go/joinconversation

Recommended Reading

BRKCCT- 3005

Learn. Connect.
Collaborate. *together.*

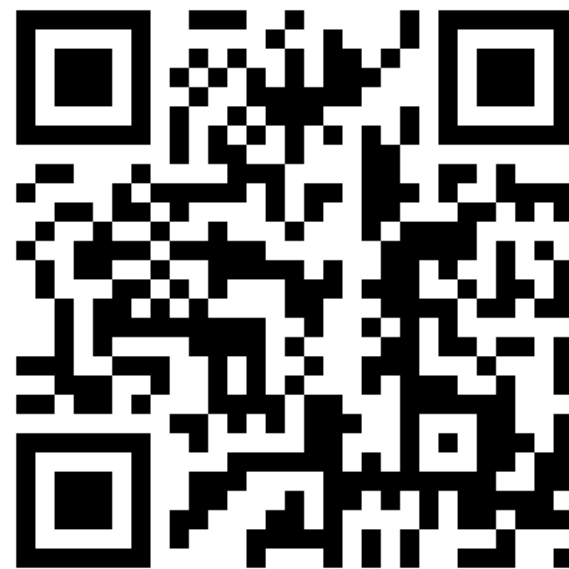


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- Surveys can be found on the Attendee Website at www.ciscoliveLondon.com/onsite which can also be accessed through the screens at the Communication Stations
- Or use the Cisco Live Mobile App to complete the surveys from your phone, download the app at www.ciscoliveLondon.com/connect/mobile/app.html

1. Scan the QR code
(Go to <http://tinyurl.com/qrmelist> for QR code reader software, alternatively type in the access URL above)
2. Download the app or access the mobile site
3. Log in to complete and submit the evaluations



<http://m.cisco.com/mat/cleu12/>



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Thank you.

