Designing and Deploying Cisco Unified Contact Centre Express

BRKUCC-2059

www.ciscolivevirtual.com
Agenda

- Customer Care Overview
- Contact Centre Product Portfolio
- Design Best Practices
- Deployment Best Practices
Customer Care Overview
Why Customer Care?

- Generating Revenue – Sell a product / service
- Increasing Customer Satisfaction
- Provide communications channels for your customers
- Provide Support for a product / service
- Building Customer Loyalty
Contact Centre’s are everywhere…

- Sales
- Customer Service
- Order Fulfillment
- IT Help Desk
- HR
- Travel Centre
- Accounts Payable
- Competition Lines
- Product Recalls
- Quiet Line
- Support Services
- Emergency Line
Conventional Customer Care
Limited communication channels
Customers want to Communicate
At any time, from any location, and on any device
What tools are used to service customers?

- Pen
- Sticky Notes
- Accounting Systems
- Phone
- Customer Relationship Management Systems
- Help Desk Systems
- Intranet
- Internet Applications
- Payroll System
- Social Networks
- Internet
- Knowledge Bases
- Email
- Order Systems
- Supplier Systems
Customer Care Portfolio
Cisco’s Unified Contact Centre Express

Highly Integrated Contact-Centre in a Box!

- Self Service
  - Speech
  - VoiceXML
  - Touchtone

- Desktop application
  - Cisco Agent and supervisor Desktop

- WFO
  - CR, QM, AQM, WFM integration

- Video
  - Training Kiosks
  - TelePresence

- Reporting
  - Real-time & Historical Cradle to Grave

- Contact Routing
  - Sophisticated ACD, Preview Outbound, Email

- Management
  - Centralised, web-based Administration

- Interoperability
  - Easy, low cost 3rd party integration

Intelligent Network
Workforce Optimisation (WFO)

- Call / Screen Recording
- Quality Management
- Workforce Planning
Cisco SocialMiner with UCCX

Social Customer Engagement

1. Capture
2. Analyse & Prioritise
3. Communication Workflow
4. Assign & Engage
5. Continuous Refined Search

Customer

Customer Care Agent
Design Best Practices
What should I be asking?

- Why?
- Who?
- Outcomes?
- When?
Four Primary Functions in UCCX

- IVR – Interactive Voice Response
- ACD – Automatic Call Distributor
- CTI – Computer Telephony Integration
- Outbound
IVR Functions—Basic and Advanced

- Basic
  - Prompt and collect DTMF
  - Basic Call Control
  - Basic XML Data Processing

- Advanced
  - Database (ODBC) Integration
  - HTTP-Triggered Scripted Applications for Speech Recognition Applications
  - Java Object Support
  - Integration to 3rd Party Speech Servers
  - Outbound dialing with Call Progress Analysis (CPA)
ACD Functions—Basic and Advanced

- **Basic**
  - Call Routing and Queuing
  - Cisco Agent Desktop
  - IP Phone Agent
  - Supervisor Desktop
  - Historical and Real Time Reporting

- **Advanced**
  - Skills-Based Contact Routing
  - Queue Prioritisation
  - Wrap up Timer and Associated Codes
  - Agent Based Routing
  - Multi-Line ACD monitoring
  - Outbound Campaigns
  - Inbound Email Routing
CTI Functions—Basic and Advanced

- **Basic**
  - Enterprise Data Window in CAD Agent Desktop or IP Phone
  - Data-Only Pop During Inbound Call Arrival
  - Basic Call, IVR, and Agent Statistics

- **Advanced**
  - Customised Workflows Enabling Passing Data to 3rd Party Apps
  - Keystroke Macro-Enabled Screen Pops
  - Embedded Web Browser Integration
  - Email response pane
UCCX Functionality

- Inbound Voice
- Agent Email
- Systems Integration
- Social Media
- Self Service
- Reporting
- Planning and Management
- Recording
- Quality Management
- Outbound Voice/IVR
UCCX Package Options

**Standard**
- IP Phone Agent
- ACD
- Reporting
- Reason Codes

**Enhanced**
- Cisco Agent Desktop
- IVR (basic)
- Workflow
- Agent Chat
- Wrap Up Codes
- Real-time Reports

**Premium**
- IVR (advanced)
- Outbound
- Agent Email
- Multi Tab Browser
- Graphical Displays
- SocialMiner
- Database Integration
- Java Integration
Call Recording and Quality Management

**Call Recording**
- 100% Voice Recording and Archival
- Powerful Search Utility
- Desktop or Server recording

**Quality Management**
- Call Recording
- Quality Evaluations

**Advanced Quality Management**
- Quality Management
- Screen Recording
Selecting a Deployment Model
Single Site Deployment

- All agents and supervisors are in the same location
- Single node Unified CCX with no redundancy
- Two nodes Unified CCX for HA with server redundancy
- Bandwidth consideration: None
Remote Branch Agent

- May require transcoder for calls between sites
- Bandwidth consideration:
  - CAD/CSD call control and agent state events
  - Historical and Real-time Reports
Unified CCX HA over WAN

- Provide site redundancy for disaster recovery
- Latency: 80 ms RTT between Unified CCX nodes (same as CUCM CoW)
- HA over WAN bandwidth consideration
Cisco Recording Architecture

- Desktop
- Network
- Server (SPAN)
Cisco SocialMiner with UCCX

- Integration into UCCX via Agent Email
- Deploy in DMZ or Internal
- OVA Template available
Optional Servers Deployment

- Automatic Speech Recognition/Text To Speech: LAN
- Wallboard Server: LAN/WAN
- Email Server: LAN/WAN
- WFM/QM: LAN/WAN
- Enterprise Database: LAN/WAN
Planning for High Availability
High Availability over the WAN

Designed to Provide Disaster Recovery Protection

- Active and Secondary servers are geographically deployed in separate Data Centres
- 1 ms heartbeats and 10 missed heartbeats initiates failover
- 3 Key WAN based failover scenarios are detected and recovered from
  - Active server or services in primary Data Centre fail
  - The entire Data Centre containing the Master fails
  - The WAN link between the two Data Centres becomes unavailable (island mode)
Unified CCX Engine Failover
Data Centre Failure

DC1

Pub
Sub1

DC2

Sub2

WAN

Branch
WAN Link Failure – Island Mode
Automatic Master Re-election After Island Mode Recovery

DC1
- Preferred Master
- Pub
- Sub 1

WAN

DC2
- Sub 2

Branch

© 2012 Cisco and/or its affiliates. All rights reserved. Cisco Public
Agent Failover in Island Mode

CAD shows ‘NOT READY’
Selecting a Hardware Platform
Hardware Selection and Sizing

- Both Media Convergence (MCS) and Unified Computing System (UCS) servers are supported
- Each server class have differing solution maximums
- Always allow for growth when selecting hardware
- Check the UCCX Data Sheet for support and sizing
- Use the UCCX solution sizing tool
Cisco Unified Computing System (UCS)

Blade and Rack Mount Servers for UCCX

- B Series blade support
- C Series Rack Mount support
- Three UCCX VMWare Profiles
  - 100 / 300 / 400 Agents
- Large VM profile supports current system maximums
  - e.g. 400 agents, 42 supervisors
- UCCX WFO options support
# Unified CC Express 8.5 Server Capacity and Limits

<table>
<thead>
<tr>
<th></th>
<th>MCS-7845</th>
<th>MCS-7835</th>
<th>MCS-7825</th>
<th>MCS-7816</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Agents</strong></td>
<td>300</td>
<td>150</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td><strong>Agent E-Mail</strong></td>
<td>120</td>
<td>120</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Number of Supervisors</strong></td>
<td>32</td>
<td>15</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td><strong>Number of IVR Ports</strong></td>
<td>300</td>
<td>150</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td><strong>Number of Recording sessions</strong></td>
<td>32</td>
<td>32</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td><strong>Number of Monitoring sessions</strong></td>
<td>32</td>
<td>15</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>
UCCX on Business Edition 6000

- Integrated single server solution for 100-1000 users
- Including
  Voice
  Unified Messaging
  Mobility
  Presence
  Contact Centre
  Video Capabilities
Agent Desktop Virtualisation

- Citrix
- VMWare VDI
- Softphone control of IP Phone

- Virtualisation Experience Infrastructure compatible with Customer Collaboration
- Virtualisation Experience Client 2100/2200
  - Finesse Agent and Supervisor Desktop
  - IP Phone
  - Cisco Unified Intelligence Centre

- Virtualisation Experience Client 4200
  - Single device for communication, collaboration and compute
  - Multimedia Capture and Recording
  - No phone requirement
  - Home router and VPN
Solution Sizing
UCCX Thresholds

- 400 Maximum logged in agents or inbound IVR Ports (UCS only, MCS = 300)
- UCS – XL Profile -> 5 CPU Core + 8 Gig memory
- 6000 Maximum BHCC
- 42 Maximum Supervisors
- 100 Preview Outbound Agents
- 150 Outbound IVR ports
Unified CCX Solution Sizing Tool

- Provides sizing for all solution components including CUCM and gateways
- Takes a variety of UCCX specific inputs
  - Agent License Package
  - Amount of Agents/Supervisors
  - WFO requirements
- Creates a solution sizing report complete with server sizing
  - Server Types and capacities
  - IVR ports / Gateway capacities

http://tools.cisco.com/cucst/
**Step 1: Package Selection**

### Unified Contact Center Express | Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Defaults</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Software Release</strong></td>
<td>8.5(1)</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>Package Type</strong></td>
<td>Enhanced</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>High Availability Deployment</strong></td>
<td>No</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>Total Number of Concurrent Agents Handling Inbound Calls</strong></td>
<td>78</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>Number of Supervisors</strong></td>
<td>2</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>Maximum Number of Customer Service Queues (CSQs) Required</strong></td>
<td>5</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>Do you want to add a CR Server?</strong></td>
<td>No</td>
<td>![Help](? icon)</td>
</tr>
<tr>
<td><strong>Codec for Unified CCX Based Recording and Playback Session</strong></td>
<td>G.711</td>
<td>![Help](? icon)</td>
</tr>
</tbody>
</table>
## Step 2: Hardware Platform

<table>
<thead>
<tr>
<th>Output</th>
<th>Values</th>
<th>Defaults</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHCC Values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inbound</td>
<td>1052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unified CCX Servers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selected Unified CCX Package Type</td>
<td>Enhanced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Platform</td>
<td>VM - UCCX_100</td>
<td>MCS-7816-I3-CCX1</td>
<td></td>
</tr>
<tr>
<td>Server Type</td>
<td>C210 M2</td>
<td>B200 M2</td>
<td></td>
</tr>
<tr>
<td>Unified CCX Server Available Capacity</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VMs</th>
<th>vCPUs</th>
<th>RAM (GB)</th>
<th>vDisk (GB)</th>
<th>vNICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total B200 M1 VM Resources Needed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total B200 M2 VM Resource Needed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total C210 M1 VM Resources Needed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total C210 M2 VM Resource Needed</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>146</td>
</tr>
<tr>
<td>Total C200 M2 VM Resources Needed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total VM Resources Needed</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>146</td>
</tr>
</tbody>
</table>
### Step 3: Call Processing

#### Unified Contact Center Express | Inbound

<table>
<thead>
<tr>
<th>Service Level Goal (SLG)</th>
<th>Defaults</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 90%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Answer Time</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>sec 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 sec</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of Incoming calls through Unified Border Element (IP-IP GW)</th>
<th>Defaults</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self Service</th>
<th>Defaults</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Call Treatment Time (sec)</td>
<td>sec 80</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inbound BHCA</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Step 4: Solution Sizing

#### Growth Factor

| Percentage of Unified Contact Center Express Growth | 10% |

#### Unified Contact Center Express

<table>
<thead>
<tr>
<th>Primary Platform</th>
<th>VM - UCCX_100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified CCX Server Available Capacity</td>
<td>50.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>vCPUs</th>
<th>RAM (GB)</th>
<th>vDisk (GB)</th>
<th>vNICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCCX Resources Needed</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Unified Contact Center Express [With Growth Factor]

<table>
<thead>
<tr>
<th>Primary Platform</th>
<th>VM - UCCX_100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified CCX Server Available Capacity</td>
<td>47.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>vCPUs</th>
<th>RAM (GB)</th>
<th>vDisk (GB)</th>
<th>vNICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCCX Resources Needed with Growth</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>
Sizing Bandwidth
Primary Bandwidth Considerations

- Signalling and Call Control
  - IP Phone / Gateway
  - Agent Desktop

- Voice Codec
  - Desktop Monitoring
  - HAoWAN
HAoWAN Bandwidth

- Delay: Maximum round-trip time = 80ms
- Minimal bandwidth requirement -

<table>
<thead>
<tr>
<th>Deployment Type</th>
<th>Between Unified UCCX server</th>
<th>Between Unified CCX and Remote Unified CM Servers</th>
<th>Database</th>
<th>ICSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACD</td>
<td>1.2 Mbps</td>
<td>800 kbps</td>
<td>1.544 Mbps (T1)</td>
<td>70 kbps per 100 BHCA</td>
</tr>
<tr>
<td>IP-IVR</td>
<td>1.2 Mbps</td>
<td>200 kbps</td>
<td>1.544 Mbps (T1)</td>
<td>25 kbps per 100 BHCA</td>
</tr>
</tbody>
</table>
Additional Bandwidth Considerations

- Historical Report
- Wallboard
- Enterprise Database
- Email traffic for SMTP Server
- WFO
UCCX Integration
# Application Integration

<table>
<thead>
<tr>
<th>Functional Applications</th>
<th>The CSR Desktop</th>
<th>CSR Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales and Marketing</strong></td>
<td>CRM</td>
<td>Softphone</td>
</tr>
<tr>
<td>Order Management</td>
<td></td>
<td>Call Scripting</td>
</tr>
<tr>
<td>Product/Service Catalog</td>
<td></td>
<td>IM/Chat</td>
</tr>
<tr>
<td><strong>Logistics</strong></td>
<td>Inventory Management</td>
<td>Notes</td>
</tr>
<tr>
<td>Distribution Management</td>
<td></td>
<td>E-Mail</td>
</tr>
<tr>
<td><strong>Finance</strong></td>
<td>Billing</td>
<td>Disposition System</td>
</tr>
<tr>
<td>Customer Information System</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal Operations</strong></td>
<td>Document Management</td>
<td></td>
</tr>
<tr>
<td>Knowledge Base/FAQs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cisco Agent Desktop’s Work Flow Paradigm

- Work Flows follow an Event / Rule / Action behaviour

**EVENT**
Telephony or ACD Event

1:N

**RULE**
Evaluates Rule

• Calling Number is / is not
• Variable is / is not

N:M

**ACTION**
Executes Actions or Integrations

• Submit HTTP request
• launch .exe and pass value
• Deliver IPC Message
• Execute macro

- Ringing
- Answered
- Dropped
- Not Ready / Ready
Customer places call to 1-800-Help and gets Agent.

Cisco Unified Contact Centre routes the call to an Agent.

Agent needs an expert’s assistance. Launches Cisco Agent Desktop’s Chat Window to locate Expert.

CUPS indicates an Expert is available to help Agent with Customer’s question.

Agent and Expert Chat. The Agent can also transfer, conference and deliver call information to the SME.

Customer places call to 1-800-Help and gets Agent.

Cisco Unified Presence
Deployment Best Practices
Before you deploy UCCX

- UCCX 8.x is an appliance based product running on Linux
- Installing UCCX 8.x will format the hard drive (upgrade)
- In HA mode, always install the primary node first, followed by the secondary node
- Ensure your server hardware is supported
- Supported browsers –
  - Internet Explorer 6.0 and later,
  - Firefox 2.0 and later
Installation Configuration Information

- DNS Enable
- DNS Primary/Secondary
- Domain
- Gateway Address
- Hostname
- IP Address and Mask
- MTU Size
- NIC Duplex
- NIC Speed
- NTP Server
- SMTP Location
- Time Zone
Licensing
License changes in UCCX 8.x

- Node locked licenses
- Based on the “license” MAC, not physical MAC
- License MAC is derived by deployment information, IP Address, host name, NTP server etc
- License MAC can be obtained before or after install
  - After install – Run CLI command “show status”
  - Before install – Use the Answer File Generator
Licensing Process

- Re-host a license – licensing@cisco.com
- Demo License available on installation DVD
Deployment Tools
UCS OVA Templates

- Predefined hardware allocations
- User profile sizes
- OVA’s available –
  - UCCX 100 Agents
  - UCCX 300 Agents
  - UCCX 400 Agents
  - WFM
  - Recording and Quality Management
  - SocialMiner
Script Repository

- Downloadable script repository
- Range of basic to advance scripts
- Documented feature list and code explanation
- Customise for specific requirements
- Scripts include
  - Call Back in Queue, Web Call Back, Database Dips
  - and many more

Download Repository - https://communities.cisco.com/docs/DOC-25504
Additional Resources

- Cisco.com – www.cisco.com/go/uccx
  Data sheets
  Compatibility Matrix
  Solution Reference Network Design Guide
  Community Support Page
  https://supportforums.cisco.com/community/netpro/collaboration-voice-video/contact-center
Summary

- Customers want to communicate in a variety of new ways, at any time
- Application integration is key to customer care success
- Design solutions to meet customer needs
- Solution sizing tool for accurate sizing and growth
- Use deployment tools to accelerate deployment
Q & A
Complete Your Online Session Evaluation

Complete your session evaluation:

- Directly from your mobile device by visiting [www.ciscoliveaustralia.com/mobile](http://www.ciscoliveaustralia.com/mobile) and login by entering your username and password
- Visit one of the Cisco Live internet stations located throughout the venue
- Open a browser on your own computer to access the Cisco Live onsite portal

Don’t forget to activate your Cisco Live Virtual account for access to all session materials, communities, and on-demand and live activities throughout the year. Activate your account at any internet station or visit [www.ciscolivevirtual.com](http://www.ciscolivevirtual.com).
Appendix
Bandwidth Sizing
Agent Bandwidth
Signalling/Call Control for IP Phone and GW

Unified CCX
Unified CM
DC-1
IP WAN
PSTN
DC-2
CAD Desktops

Voice Signalling Bandwidth (SCCP)

<table>
<thead>
<tr>
<th># of IP Phones</th>
<th>10 Calls</th>
<th>20 Calls</th>
<th>30 Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 10</td>
<td>3 Kbps*</td>
<td>5 Kbps*</td>
<td>7 Kbps*</td>
</tr>
<tr>
<td>20</td>
<td>6 Kbps*</td>
<td>10 Kbps</td>
<td>14 Kbps</td>
</tr>
<tr>
<td>30</td>
<td>8 Kbps</td>
<td>15 Kbps</td>
<td>21 Kbps</td>
</tr>
<tr>
<td>50</td>
<td>14 Kbps</td>
<td>24 Kbps</td>
<td>35 Kbps</td>
</tr>
</tbody>
</table>

*Minimum queue BW = 8 kbps
Agent Bandwidth
Signalling/Call Control for CAD Desktop

CAD Desktop Bandwidth

<table>
<thead>
<tr>
<th># of IP Phones</th>
<th>10 Calls</th>
<th>20 Calls</th>
<th>30 Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 10</td>
<td>1.6 Kbps</td>
<td>1.6 Kbps</td>
<td>1.6 Kbps</td>
</tr>
<tr>
<td>20</td>
<td>3.2 Kbps</td>
<td>3.2 Kbps</td>
<td>4.0 Kbps</td>
</tr>
<tr>
<td>30</td>
<td>4.0 Kbps</td>
<td>4.8 Kbps</td>
<td>5.6 Kbps</td>
</tr>
<tr>
<td>50</td>
<td>7.2 Kbps</td>
<td>8.0 Kbps</td>
<td>9.6 Kbps</td>
</tr>
</tbody>
</table>

CAD bandwidth calculator:
## Agent Bandwidth

### Voice Codec

<table>
<thead>
<tr>
<th>CODEC</th>
<th>Sampling Rate</th>
<th>Voice Payload in Bytes</th>
<th>Bandwidth w/o Layer 2</th>
<th>Bandwidth with Ethernet (14 Bytes of Header)</th>
<th>Bandwidth with Frame Relay (4 Bytes of Header)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.711</td>
<td>20 Msec</td>
<td>160</td>
<td>80 Kbps</td>
<td>85.6 Kbps</td>
<td>81.6 Kbps</td>
</tr>
<tr>
<td>G.711</td>
<td>30 Msec</td>
<td>240</td>
<td>74 Kbps</td>
<td>78.4 Kbps</td>
<td>75.7 Kbps</td>
</tr>
<tr>
<td>G.729A</td>
<td>20 Msec</td>
<td>20</td>
<td>24 Kbps</td>
<td>29.6 Kbps</td>
<td>25.6 Kbps</td>
</tr>
<tr>
<td>G.729A</td>
<td>30 Msec</td>
<td>30</td>
<td>18 Kbps</td>
<td>22.4 Kbps</td>
<td>19.7 Kbps</td>
</tr>
</tbody>
</table>

Agent Bandwidth
Desktop Monitoring

Unified CCX with VoIP Mon/Rec

Unified CM

CSD
DC-1

PSTN

IP WAN

CAD
DC-2

CAD Desktops

M

S

IP Voice

TDM Voice

Monitoring

Recording