Bringing Better User Experiences to the Desktop

Stefan Karapetkov
Emerging Technologies Director

Fall Internet2 Members Meeting
New Orleans, Louisiana
16 October 2008
Universities deploy room-based video systems to connect lecture rooms and auditoriums, and to enable remote participation in classes.

Universities often use home-grown (internally developed) or off-the-shelf software for desktop computers that provides some elements of video communication.

The disparity of networking protocols leads to incompatible systems, i.e. video soft clients cannot talk to room-based systems, and vice versa.

Management of video networks emerges as the single most important issue for deployments across educational institutions.
Our Vision:
VC2 – Next-gen Visual Communication

- **Any Audience**: Individuals, teams, thousands
- **Any Time**: Real-time, streamed, archived
- **Any Place**: Office, remote, mobile
- **Any Device**: PC, phone, personal / room telepresence
## Our Vision: VC2 Characteristics

<table>
<thead>
<tr>
<th>Traditional Video</th>
<th>VC2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult for user</td>
<td>Easy &amp; intuitive</td>
</tr>
<tr>
<td>Reasonable quality</td>
<td>High Definition</td>
</tr>
<tr>
<td>Primarily room</td>
<td>Room, Desktop &amp; Mobile</td>
</tr>
<tr>
<td>Telecom-oriented</td>
<td>IT integrated</td>
</tr>
<tr>
<td>Limited scale</td>
<td>Very large scale</td>
</tr>
<tr>
<td>Difficult to manage</td>
<td>Common management</td>
</tr>
<tr>
<td>Proprietary</td>
<td>Open, standards-based</td>
</tr>
</tbody>
</table>
Video Network Elements

- Personal Telepresence
- Room Based Telepresence
- Video Border Proxy
- Management Application
- Soft Client
- Gateways
- Media Servers
- Recording
- GK/Proxy
- Presence
- Directory
- Content Mgmt

POLYCOM
Software Upgrades

Video Endpoint A

Software Load A

Management Application

Software Load B

Video Endpoint B

Software Load C

Video Soft Client C
Management App Dashboard (CMA)
Initial Configuration

- DHCP Server
  - DHCP Request
  - DHCP Response
  - Room Based Telepresence
  - Computer
  - Soft Client
Use of DNS SRV to Find Management Server

DNS SRV query: 'management' service in domain 'ABC.edu'

DNS response:
- mgmt1.ABC.edu prio2
- mgmt2.ABC.edu prio3
- mgmt3.ABC.edu prio1
Pulling XML Provisioning Data over HTTPS

1. TLS Client Hello
2. TLS Server Hello with server certificate & key
3. TLS client certificate & key
4. Request Provisioning
5. XML Provisioning Data
6. HTTPS Pipe
7. Management Application

Video Client
Key Network Servers

- directory.ABC.edu
- sip_server.ABC.edu
- presence.ABC.edu

Management Application

XML Provisioning Data:
- SIP server = sip_server.ABC.edu
- Directory server = directory.ABC.edu
- Presence server = presence.ABC.edu
Provisioning Groups and Sites

Georgetown campus

Management Application

Qatar campus
Scalable Cascaded Software Deployment

Start download at 01:00:00

Management Application

Download Server

Start download at 01:00:02

Start download at 01:00:04

POLYCOM

15
Device Monitoring

Management Application

SNMP Alarm: SIP stack error

SNMP Alarm: DSP malfunction

CPU overload
Scheduling Screen Example (CMA 5000)
Conclusion

- Personal / desktop video is starting to gain traction at universities and schools.

- Scalable device and client management are required for successful rollout.

- Tight integration with the IT environment will make video easier to deploy.

Stefan.Karapetkov@polycom.com