SIP-H.323 Interworking

ipDialog, Inc.
1762 Technology Drive Suite 124
San Jose CA 95110-1307 USA

Phone (408) 451-1430
Fax (408) 451-1440

URL www.ipdialog.com

Joon Maeng
jmaeng@ipdialog.com
SIP and H.323

- IETF SIP
  “Session Initiation Protocol”
- IETF proposed standard – RFC 2543
- March 1999

- ITU H.323
  “Packet-based multimedia communications system”
- Ratified in 1996
- Version 4 ratified in November 2000
Needs for SIP-H.323 Interworking

- There are many existing H.323 based solutions. SIP is gaining popularity, especially in VoIP
  - H.323 was defined with video conferencing in mind initially. Many VoIP products also use H.323
  - Most implementations based on SIP are audio only
- Interworking will become important
  - Companies with different protocols may merge
  - Transition from one protocol to another in the enterprise will create a mixed protocol environment
  - Service providers with different protocols have to interwork
  - Enterprises with different protocols have to communicate with each other via service providers
SIP-H.323 Interworking Background

- SIP-H.323 IWF BOF at IETF-47 in March 2000
  - A consolidated effort after discussions with IETF, ITU, IMTC and ETSI participants
- IETF allowed a SIP-H.323 interworking subgroup under SIP WG
- SIP-H.323 IWF became a work item in Session Initiation Protocol INvestiGation (SIPPING) WG
  - http://www.softarmor.com/sipping/
- The team in IETF is defining SIP-H.323 interworking requirement draft and SIP-H.323 interworking draft to produce informational RFCs
SIP-H.323 IWF Environment

Same admin domain

Different admin domain
Signaling Mapping Only

H.323
- Control/Devices
  - RAS
  - H.245
  - Q.931
  - Codec
  - RTP
  - RTCP
  - TCP
  - UDP
  - IP

SIP
- Control/Devices
  - SDP
  - SIP
  - Codec
  - RTP
  - RTCP
  - TCP
  - UDP
  - IP

ASN.1 PER encoding
Text based encoding
Call Setup Problems

- Mapping three piece of info for call establishment
  - Address, media type and port addresses
- SIP carries these in INVITE and its response
- H.323 spreads them across different stages
- Map multistage H.323 to single stage in SIP
- H.323 v2 fast-start supports single stage but is optional
Media Description Mismatch

- SIP/SDP (dynamically choose from listed modes)
  - List of alternative set of algorithms
  - a= G.711 Mu law, G.723, G.729
  - v= H.261

- H.323/H.245 (choose from give set of modes)
  - Specify inter-media constraints
  - {[G.711 Mu law, G.723, G.729] [H.263]}
  - {[G.728] [H.261]}

- Algorithm selection by IWF or endpoints?
Other Problems

- Registration: how to register users to foreign networks?
  - e.g., registering H.323 users to SIP registrar and vice versa
- Security: H.323 uses H.235 and SIP does Basic, Digest, PGP
- QoS
SIP-H.323 IWF Requirements

- Mapping H.323 Version 2 and SIP Version 2
- Basic call establishment/termination only
- Mapping H.245 and SDP
- Address resolution
- No media processing will be done in IWF
- Neither SIP UA nor H.323 EP is aware of the IWF presence
- 2nd phase will include optional messaging, advanced features, and services
Current Status

- Requirement draft: draft-agrawal-sip-h323-interworking-reqs-02.txt
- Interworking draft: draft-agrawal-sip-h323-interworking-01.txt
- The team mailing list is sip-h323@yahoogroups.com. You can sign up for yahoogroups mailing lists at www.yahoogroups.com
Islands of Protocols?

Service Provider A (H.323)
- Enterprise 1: Proprietary IP PBX
- GW

Service Provider B (SIP)
- Enterprise 2: IP PBX (Megaco)
- GW

Enterprise 3: IP PBX (SIP)
- GW

Enterprise 4: IP PBX (H.323)
- GW
Multiple Protocol Support

- Devices such as cell phones and IP telephones may have to support multiple protocols.
- ipDialog has demonstrated call set up among multiple protocols in a simple SIP/Megaco phone.
- ipDialog software stacks will support SIP, H.323, Megaco and MGCP with uniform APIs.