Appendix

Configuration of Cisco Unified Communications Manager 5.x to 12.x

The dedicated guide for establishing the communication link between Callisto UCM and versions 5.x to 12.x of the Cisco Unified Communications Manager can be found here.

Example dial-peer for T.38 fax on a Cisco gateway

Because the Cisco Unified Communications Manager older than version 5.x does not support SIP/T.38 reliable, Callisto uses SIP/T.38 on the PSTN gateway directly.

Example of a VoIP Callisto dial-peer:

```
voice class uri Callisto sip
 host CALLISTO

dial-peer voice 100 voip
description CALLISTO_FAX
destination-pattern <Internal Callisto fax number>;
session target ipv4:<Callisto IP address>;
fax protocol t38 ls-redundancy 0 hs-redundancy 0
ip qos dscp cs5 media
no vad
codec g711alaw
session protocol sipv2
incoming uri from Callisto
dtmf-relay sip-notify
```

The settings t38 (support of real time Fax over IP) and no vad (disable “Voice Activity Detection”) are crucial.

In case of problems like incompletely transmitted documents, refer to chapter Network Clock Timing in the Cisco High Density Voice/Fax Network Modules documentation.

Activating T.38 and pass-through on a Cisco gateway

To transport T.38 and still able to use analog pass-through devices use the following settings on the gateway:

```
voice service voip
  fax protocol t38 fallback pass-through g711alaw
```

Used TCP/UDP Ports

Source	Destination	Protocol	Port	Description
Client	CALLISTO	http/https	TCP/80, TCP/8080,	Web Frontend, Fax

Source	Destination	Protocol	Port	Description
			TCP/443	Service
Client (admin)	CALLISTO	telnet	TCP/23	CLI
Client (COC)	CALLISTO	TCP	TCP/27864	COC encrypted
Client (COC)	CALLISTO	TCP	TCP/27866	COC unencrypted
Phone	CALLISTO	http/https	TCP/80, TCP/16002, TCP/443	Phone Services
CALLISTO	CUCM	https	TCP/443	AXL
CALLISTO	CUCM	SIP/SIPS	TCP&UDP/5060, TCP/5061	SIP Trunk
CALLISTO	CUCM	RTP/SRTP	UDP 49152-65535	SIP Trunk
CALLISTO	CUCM	CTI/QBE	TCP/2748	JTAPI
CALLISTO	CUPS	REST	TCP/8082, TCP/8083	Presence Server
CALLISTO	Phone	http/https	TCP/80, TCP/443	XML Message
CALLISTO	Phone	RTP/SRTP	UDP 49152-65535	SIP RTP
CALLISTO	Mail Server	SMTP	TCP/25	E-Mail delivery
CALLISTO	Time Server	NTP	UDP/123	TimeSync
CALLISTO	Backup Server	FTP	TCP/21	FTP Backup
CALLISTO	Backup Server	FTP	TCP/(depends on server)	FTP Backup passive range
CALLISTO	Syslog Server	Syslog	UDP/514, TCP/6514	Syslog
CUCM	CALLISTO	SIP/SIPS	TCP&UDP/5060, TCP/5061	SIP Trunk
CUCM	CALLISTO	RTP/SRTP	UDP 49152-65535	SIP Trunk
CUCM	CALLISTO	CTI/QBE	TCP/2789	JTAPI
CUCM	CALLISTO	SFTP	TCP/22	SFTP CDRs
CUPS	CALLISTO	REST	TCP/8843	Presence Server
CUPS	CALLISTO	SIP	TCP/27865	SIP SIMPLE Presence Server
SNMP Client	CALLISTO	SNMP	UDP/161, UDP/162	SNMP