Instant Messaging, Presence and Collaboration

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Agenda

- An Introduction to Presence
- Presence in Cisco Unified Call Manager
- Cisco Unified Presence Server
- Presence Enabled Applications
  - Cisco IP Phone Messenger (IPPM)
  - Cisco Unified Personal Communicator
  - Using CUPS with Microsoft LCS

What is Presence Awareness

- What is “Presence”?

  Information about a person’s willingness and availability to communicate

- Examples of presence in action today

  IM “Buddy List” status indication

  “Busy” tone on traditional phone

  Contact Center Agent status

- Publish / Subscribe / Notify

  A Person can publish presence information to other users via a Presence Service.

  Users of the Presence Service can subscribe to receive Notification of Status Change of a Person

A Quick Review on SIP…..

- **The Session Initiation Protocol** (SIP) is an application layer control (signaling) protocol for:
  - creating
  - modifying and
  - terminating

  multimedia sessions with one or more participants
- SIP is defined in a number of RFC documents with the core document being RFC3261-5 plus many more!!!!!

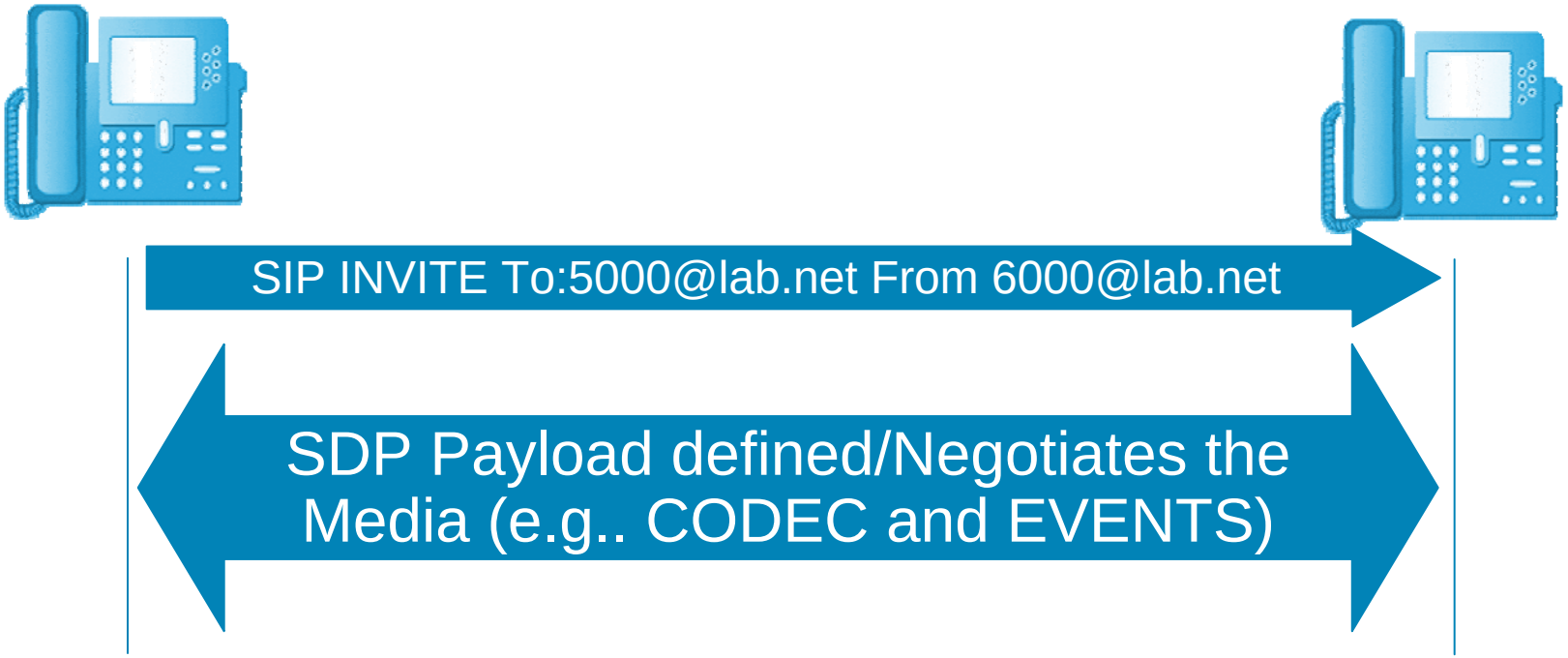
RFC: **REQUEST FOR COMMENTS:** Through the Internet Society, engineers and computer scientists may publish discourse in the form of an **RFC** memorandum, either for peer review or simply to convey new concepts, information, or (occasionally) engineering humor. The Internet Engineering Task Force (IETF) adopts some of the proposals published in **RFCs** as Internet standards.

SIP Methods from RFC 3261

- INVITE—A user or service is being invited to participate in a multimedia session
- ACK—Confirms that a client has received a final response to an INVITE request
- BYE—Terminates an existing session; can be sent by any user agent (in a multiparty session)
- CANCEL—Cancels pending requests; does not terminate sessions that have been accepted
- OPTIONS—Queries the capabilities of servers
- REGISTER—Registers the user agent with the registrar server of a domain

SIP Payloads

- During a Session setup a SDP (Session description protocol) Payload will be used to negotiate the Media
- SDP is just one example of a SIP Payload, different SIP applications can will use different Payloads



QUESTION:
So how do I do presence with SIP?

The Answer is SIMPLE! (Literally)

SIP for **I**nstant **M**essaging and **P**resence **L**everaging **E**xtensions

- SIMPLE uses the SIP Framework defined in RFC3261-65 and others to provide SIP extensions to allow Presence and IM applications to use SIP.

- SIMPLE was based on work completed in
  - RFC 2778 A Model for Presence and Instant Messaging
  - RFC 2779 Instant Messaging / Presence Protocol Requirements

IETF SIMPLE Working Group

This working group focuses on the application of the Session Initiation Protocol (SIP, RFC 3261) to the suite of services collectively known as instant messaging and presence (IMP).

- A Presence Event Package for the Session Initiation Protocol (SIP) (**RFC 3856**)
- A Watcher Information Event Template-Package for the Session Initiation Protocol (SIP) (**RFC 3857**)
- An Extensible Markup Language (XML) Based Format for Watcher Information (**RFC 3858**)
- Indication of Message Composition for Instant Messaging (**RFC 3994**)
- Timed Presence Extensions to the Presence Information Data Format (PIDF) to Indicate Status Information for Past and Future Time Intervals (**RFC 4481**)
- RPID: Rich Presence Extensions to the Presence Information Data Format (PIDF) (**RFC 4480**)
- CIPID: Contact Information in Presence Information Data Format (**RFC 4482**)
- A Data Model for Presence (**RFC 4479**)
- A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists (**RFC 4662**)
- An Extensible Markup Language (XML) Based Format for Event Notification Filtering (**RFC 4661**)
- Functional Description of Event Notification Filtering (**RFC 4660**)

RFC2778: How does presence work? (1) Starting with a Person…..

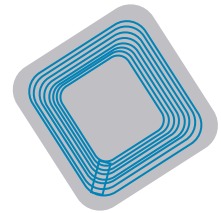
PERSON “A”

- A Person (**PRESENITY**) may use multiple communication services/devices
- The status of these devices can **PUBLISHED** to a presence Service.

Desk Phone

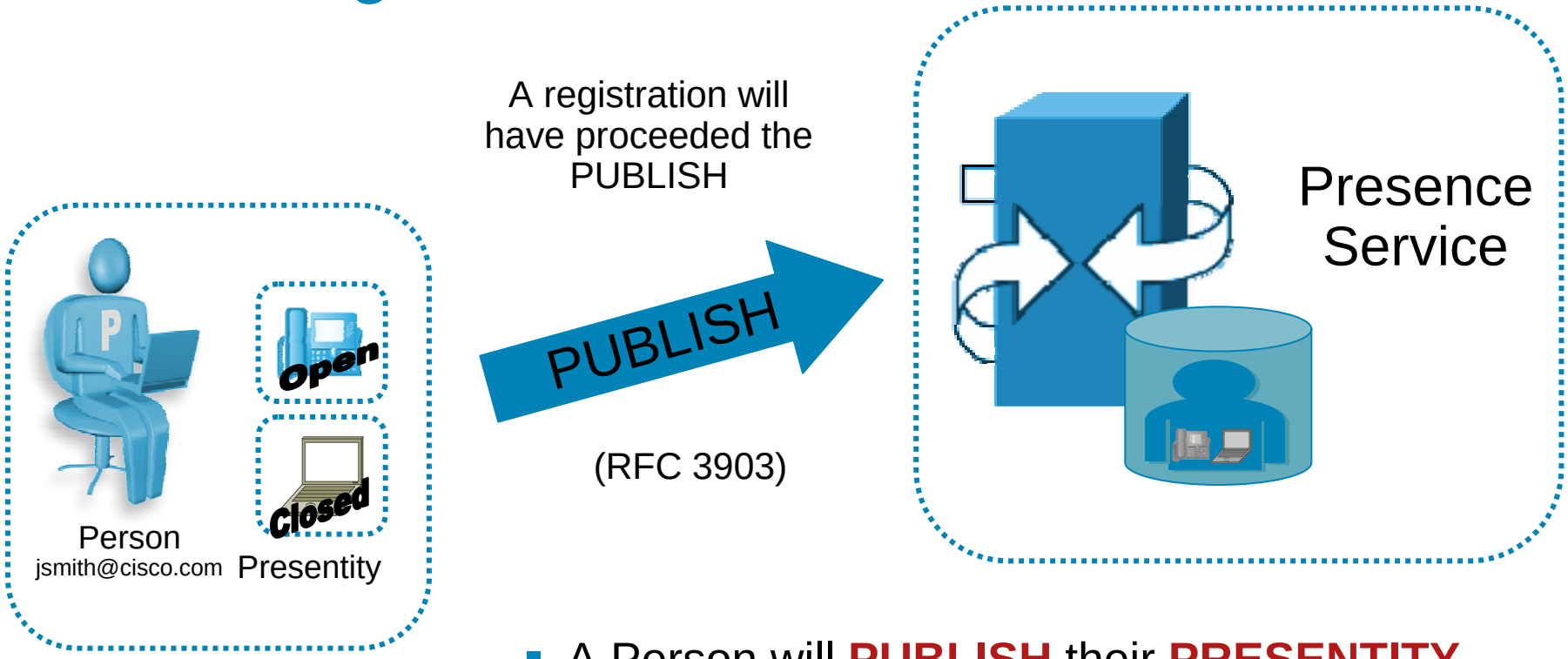
Smart Phone

IM Application



RFI Tag!!!! (Rich Presence)

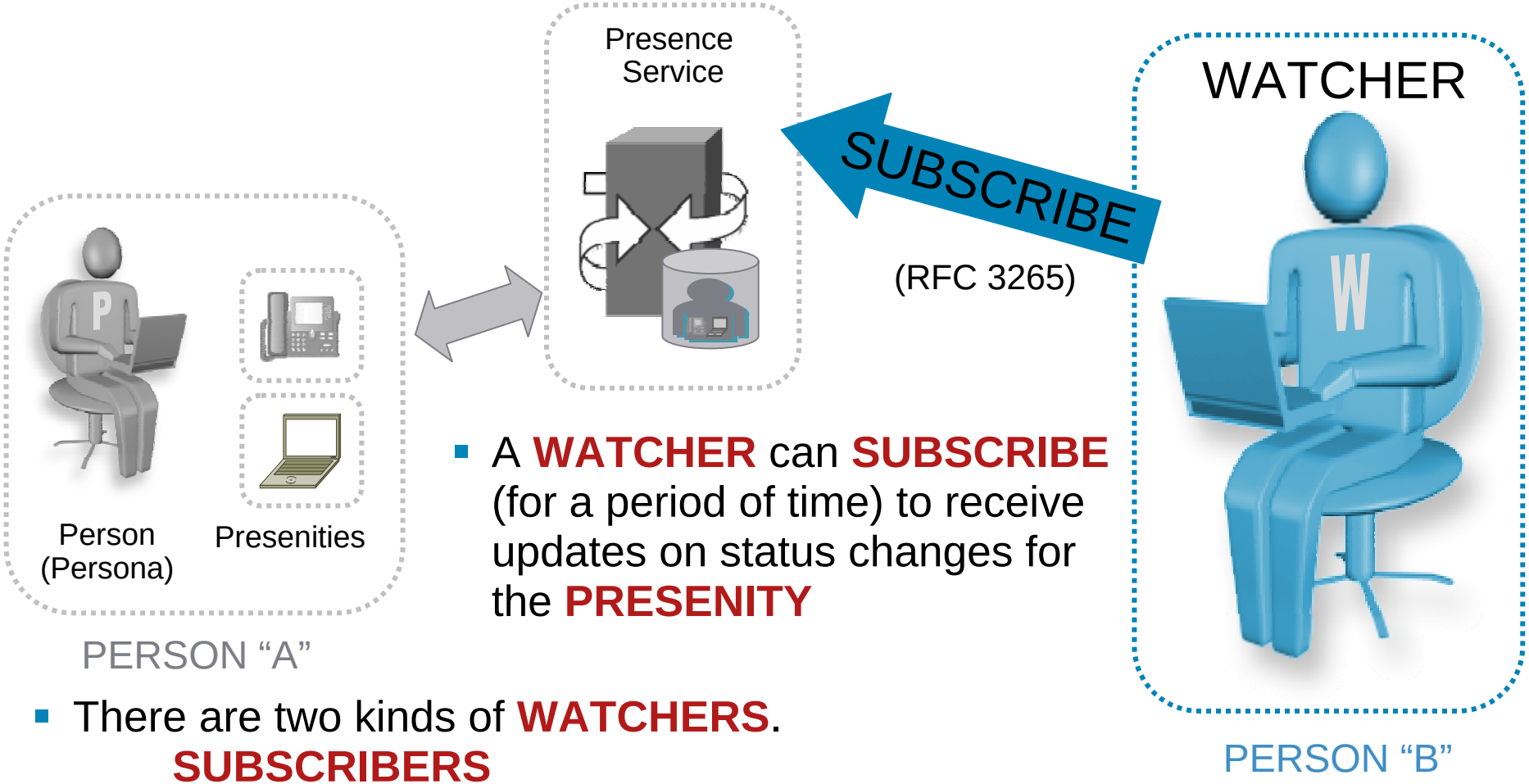
RFC2778: How does presence work? (2) Publishing Status of Devices



- A Person will **PUBLISH** their **PRESENTITY** using their SIP Address of record (AOR) Example=jsmith@cisco.com
- They will publish the status of communication Services/Devices to the **PRESENCE SERVICE** using their **PRESENTITY**

RFC 2778: A Model for Presence and IM

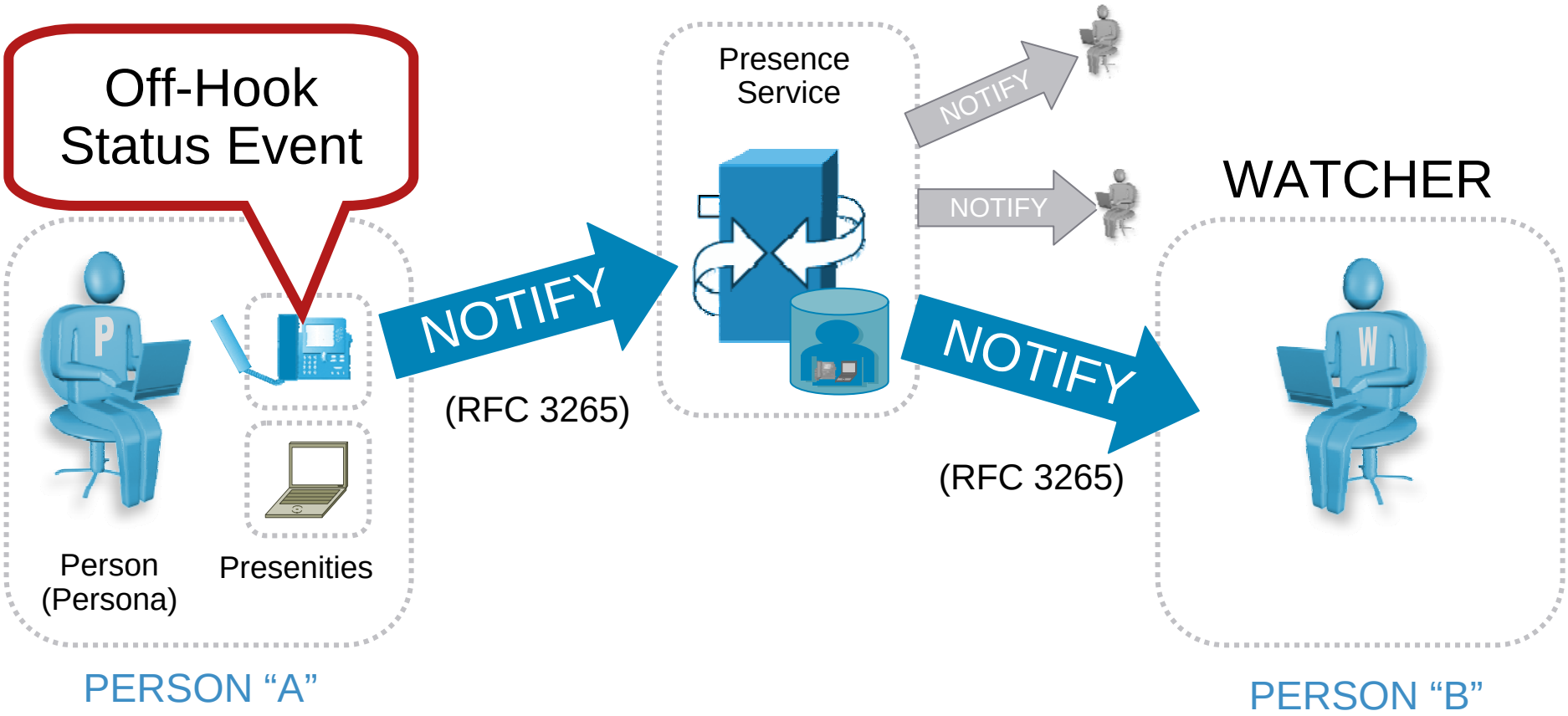
RFC2778: How does presence work? (3) Introducing the WATCHER



- A **WATCHER** can **SUBSCRIBE** (for a period of time) to receive updates on status changes for the **PRESENITY**

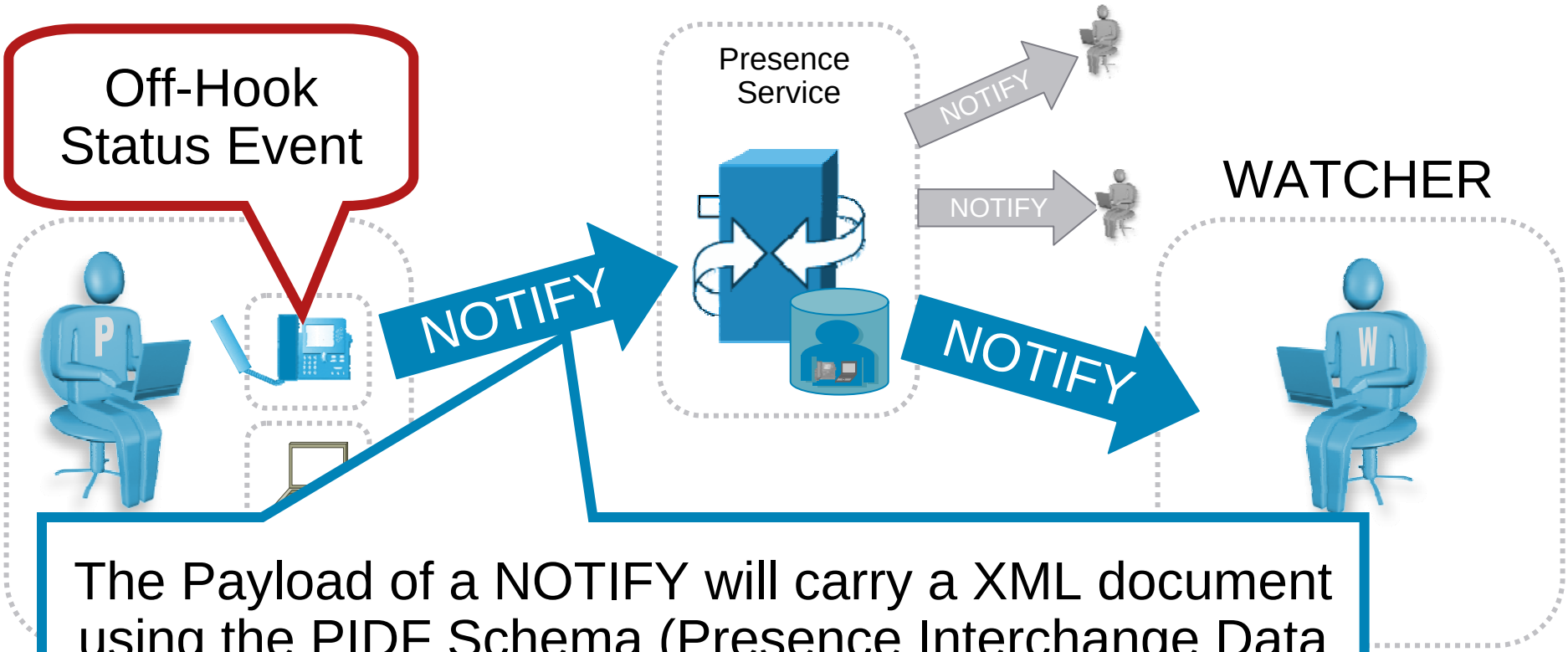
- There are two kinds of **WATCHERS**.
  - **SUBSCRIBERS**
  - **POLLERS/FETCHERS**
- A Watcher can (and most likely will) also have a Presentity

RFC2778: How does presence work? (4) Events requiring NOTIFICATION



- On a Change of status the **PRESENITY** is updated on the Presence Server.
- The Presence Server will Notify all the subscribers of the **PRESENITY**

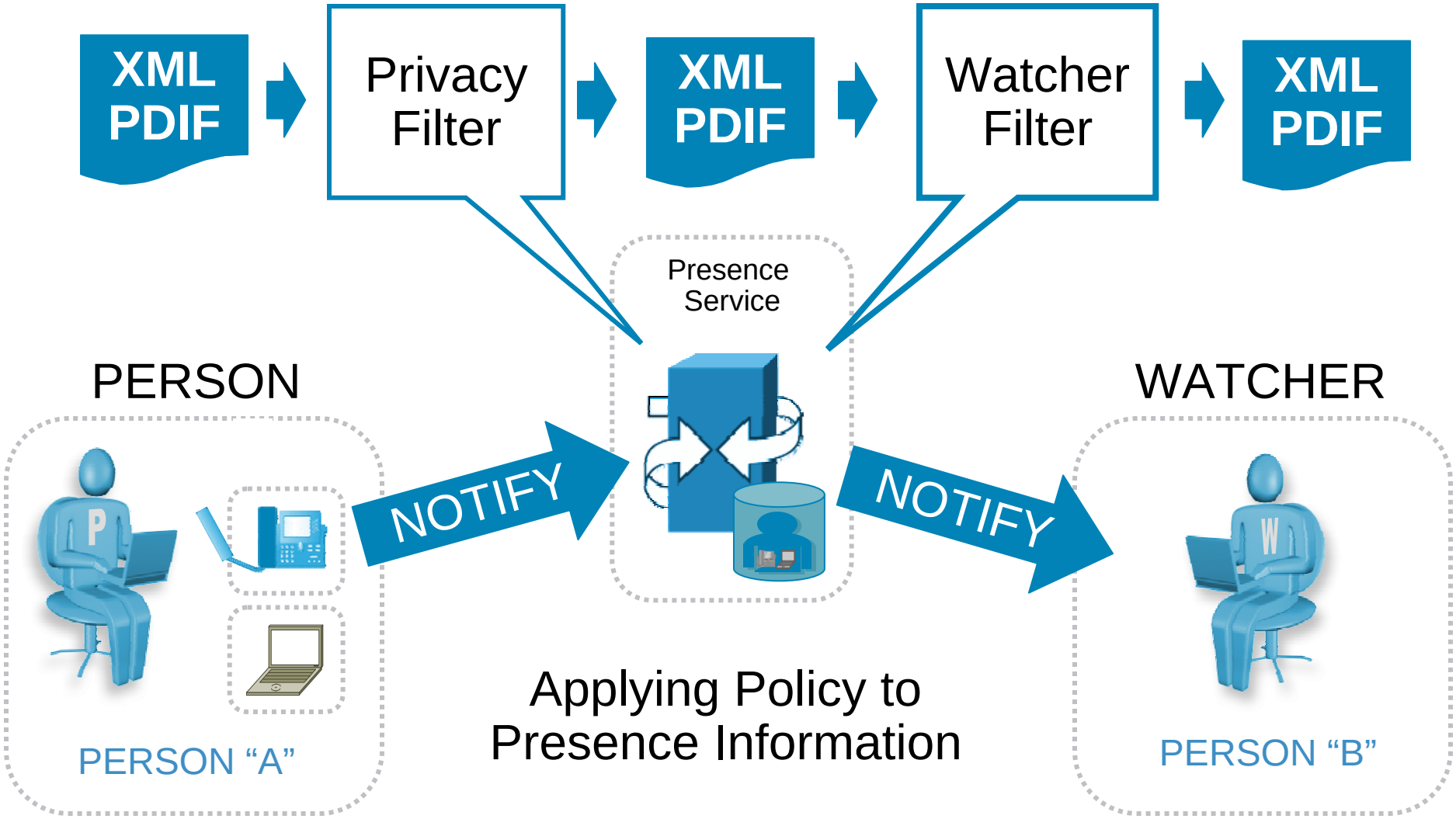
RFC2778: How does presence work? (4)
SIP Payload for events



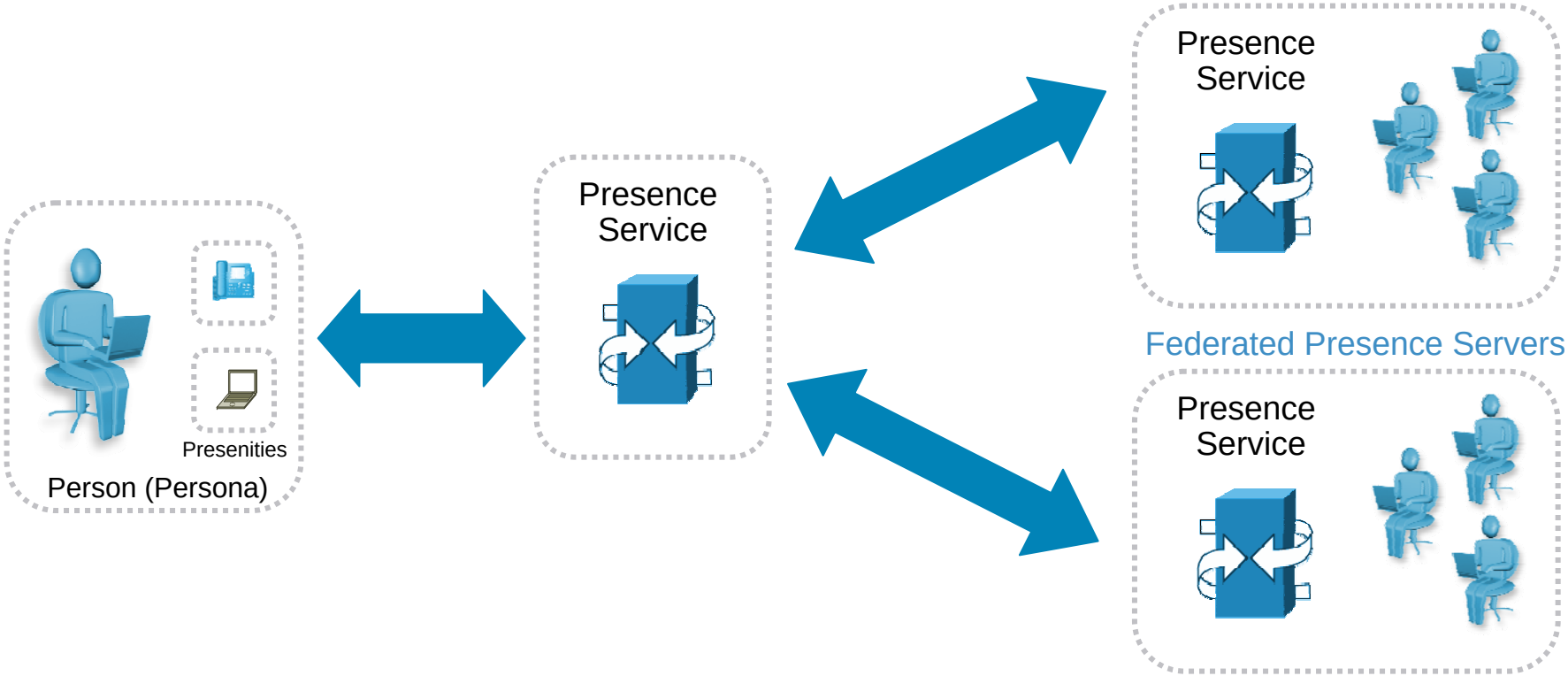
The Payload of a NOTIFY will carry a XML document using the PIDF Schema (Presence Interchange Data Format) owned by a PERSONA (RFC 4479/4480)

This is an XML document format detailing the updated status of PRESENITIES owned by a PERSONA

RFC2778: How does presence work? (5)
What if I don't want somebody to see me?

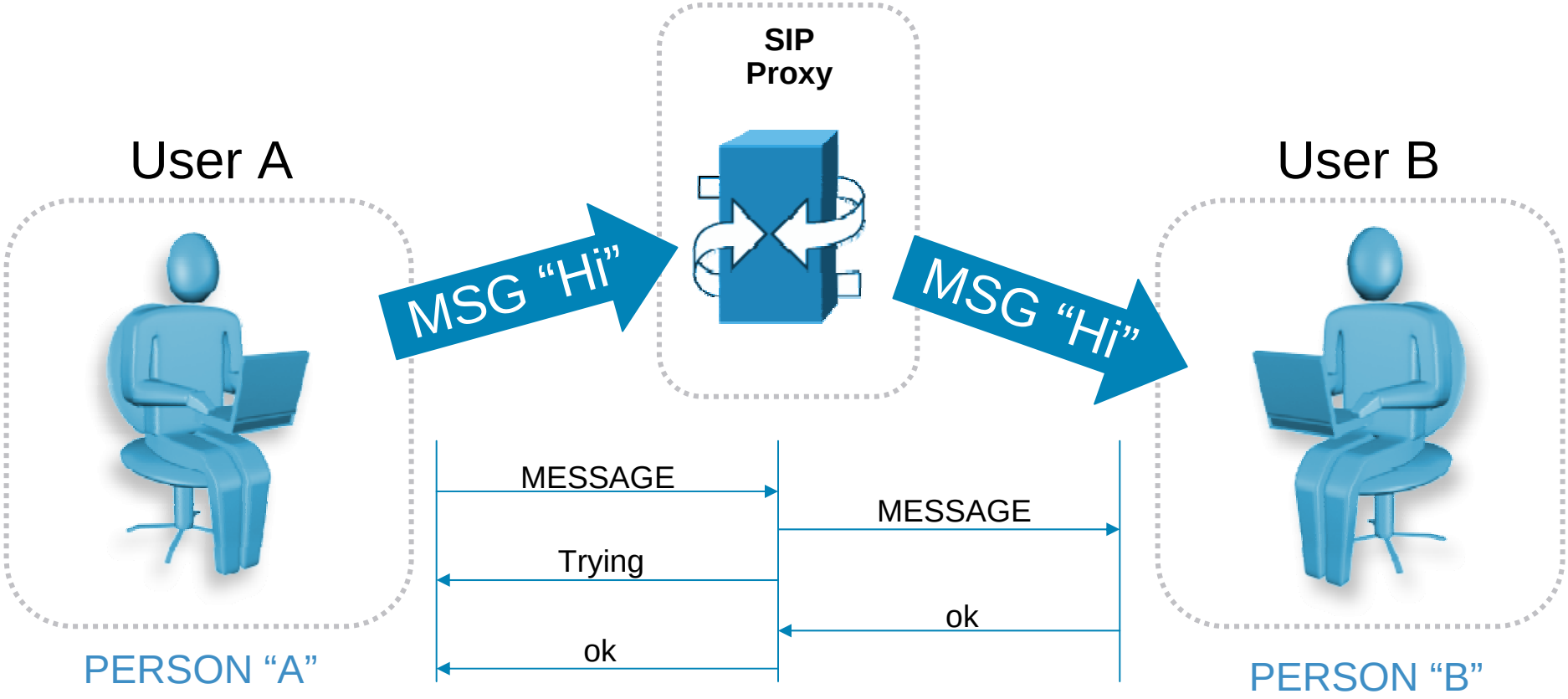


How does presence work?
Federation of Presence Servers



- The interconnection of Presence Servers is possible. This is called **FEDERATION**.
- FEDERATION could be between Presence server in an organisation, between organisations or to public Presence services.

How does Instant Messaging work? Using RFC3428 SIP MESSAGE Method



- RFC3428 details the SIP Message Method which can be used for Instant message services over SIP

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Cisco Unified Call Manager Presence

Presence with Call Manager Endpoints

Speed Dial Key

Call Lists (History/Directory)

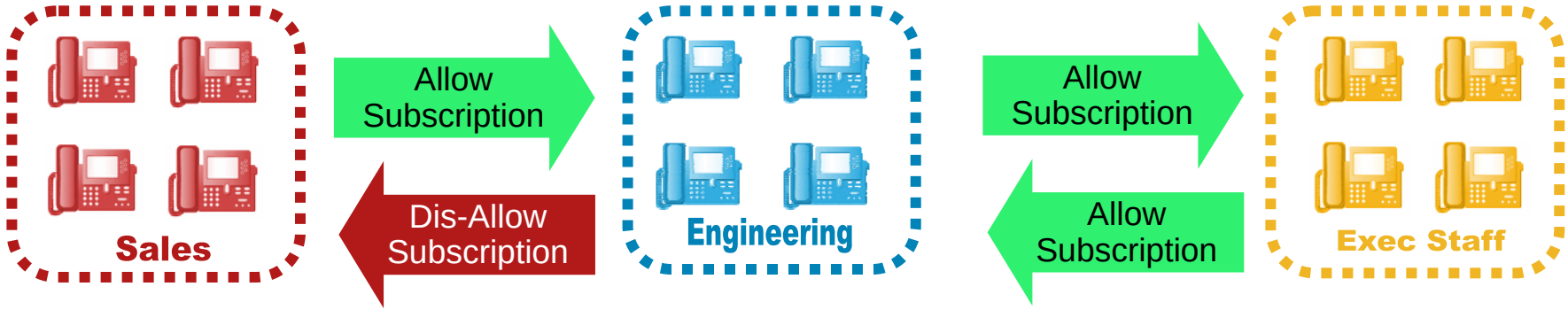
- Presence Information can be displayed as Busy Indication Icons / Busy Lamps on Call Manager Endpoints
- Presence can be shown on Speed dials and also is available in Call list depending on model of endpoint.
- States include BUSY, IDLE and UNKOWN

*BLF in Call lists required Enterprise parameter “BLF for Call Lists” to be enabled

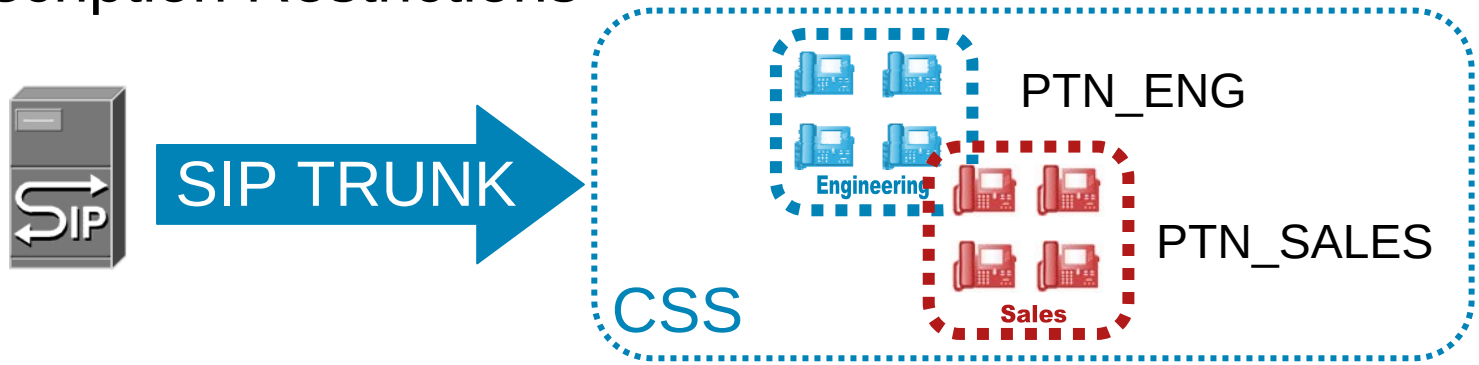
Cisco Unified Call Manager Presence

Controlling Access with Presence Groups

- Restrictions to Presence Access can be provided with Presence Groups



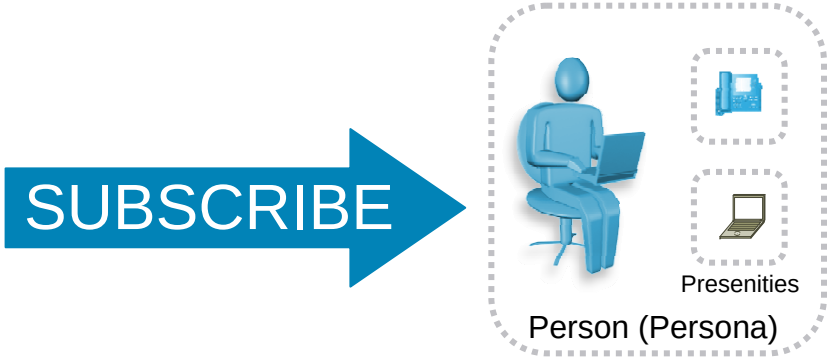
- Trunks use Calling Search Spaces fro Presence Subscription Restrictions



So is Call Manager a Presence Server?

- Call Manager will allow you to subscribe to the status of a Directory Number (Line)

- A Presence Server will allow you to subscribe to a Person and receive aggregated status across one or multiple devices.



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Cisco Unified Presence Server 1.0 Feature Content

- IP Phone Messenger

  Integrated IM capability within Cisco IP Phones

- Unified Personal Communicator Feature Server

  Data store, Presence aggregator, Application interface, Routing engine for Unified Personal Communicator

- SIMPLE Network Interface

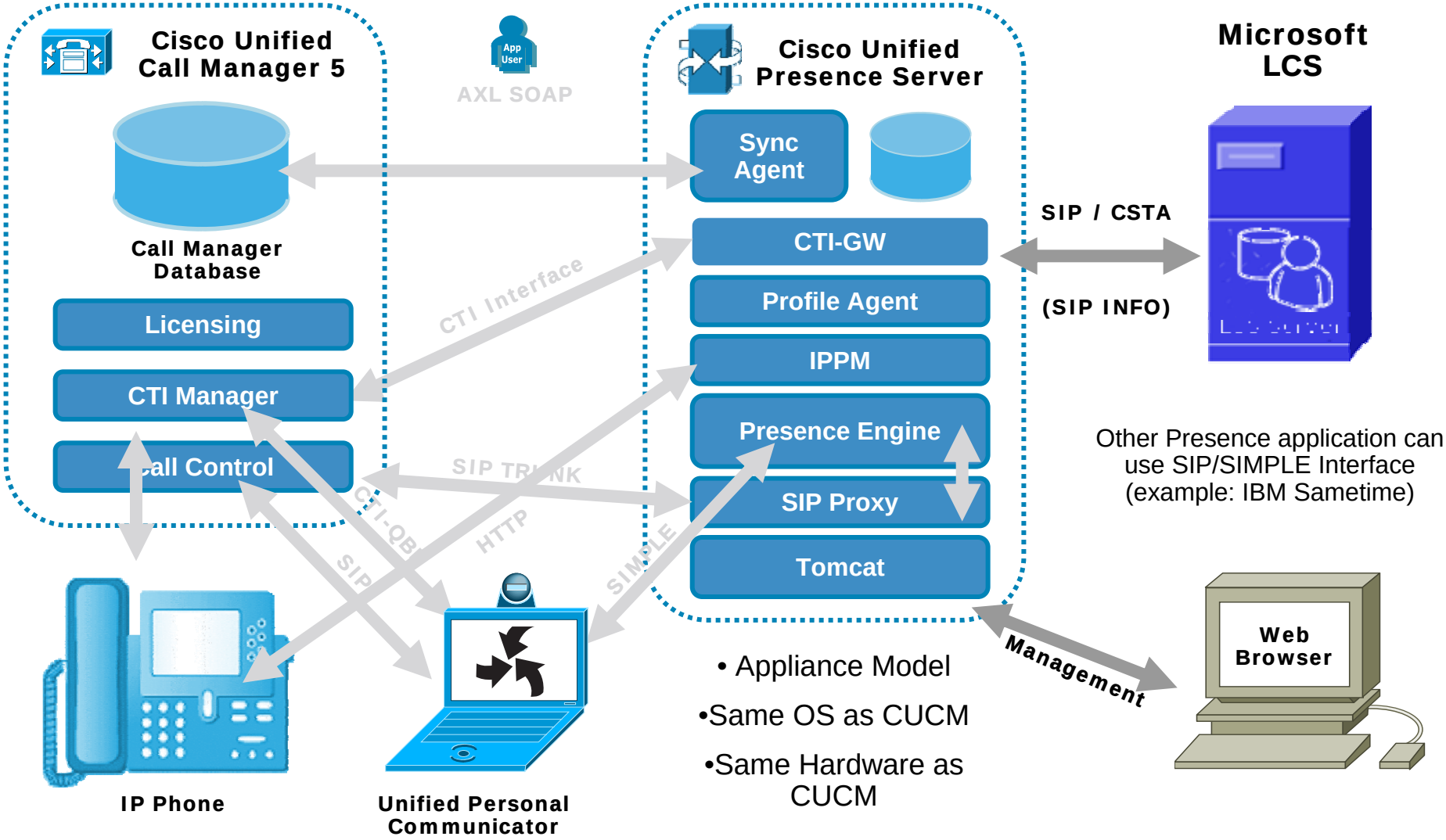
  IETF Standard interface to pass/receive Presence information

- Click To Dial / Phone Monitoring interoperability with Microsoft LCS 2005 / Office Communicator

  CSTA to CTI gateway to support functionality of MOC

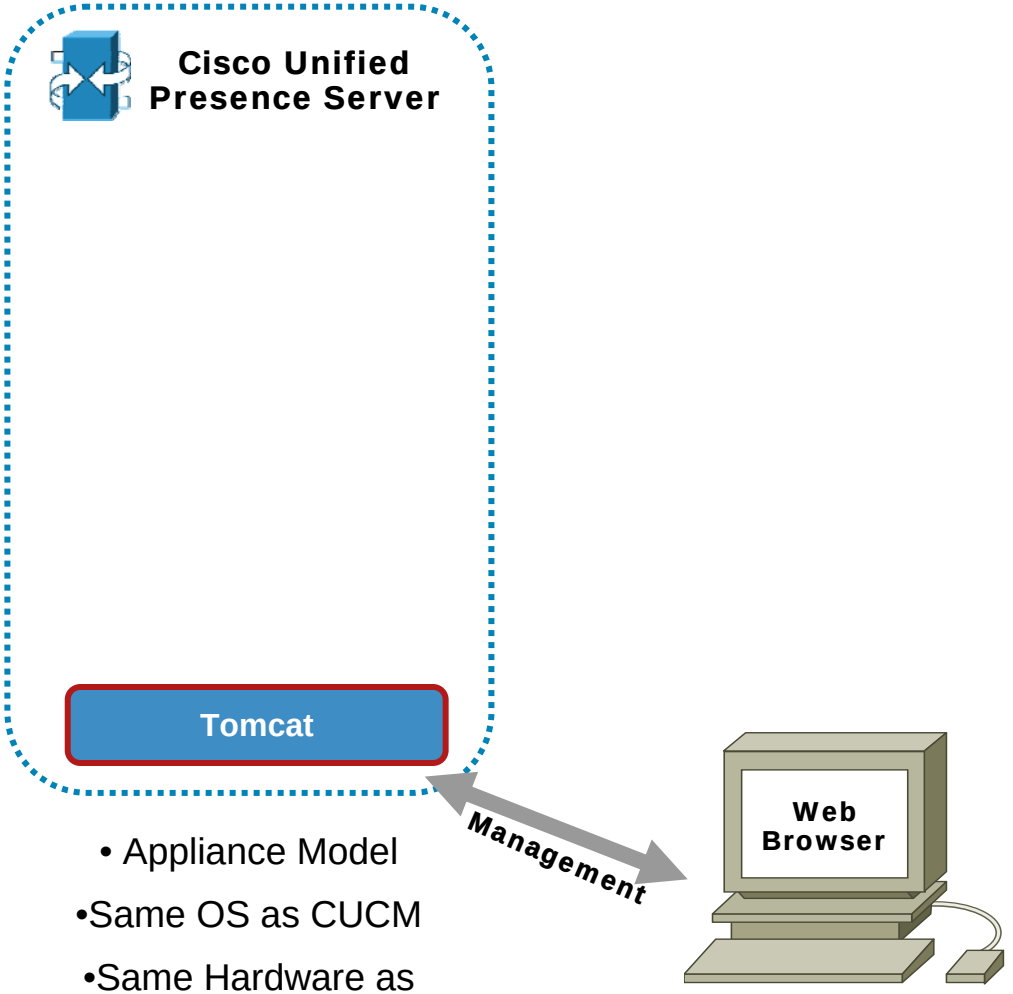
Cisco Unified Presence Server

Overview of CUPS Appliance



Cisco Unified Presence Server

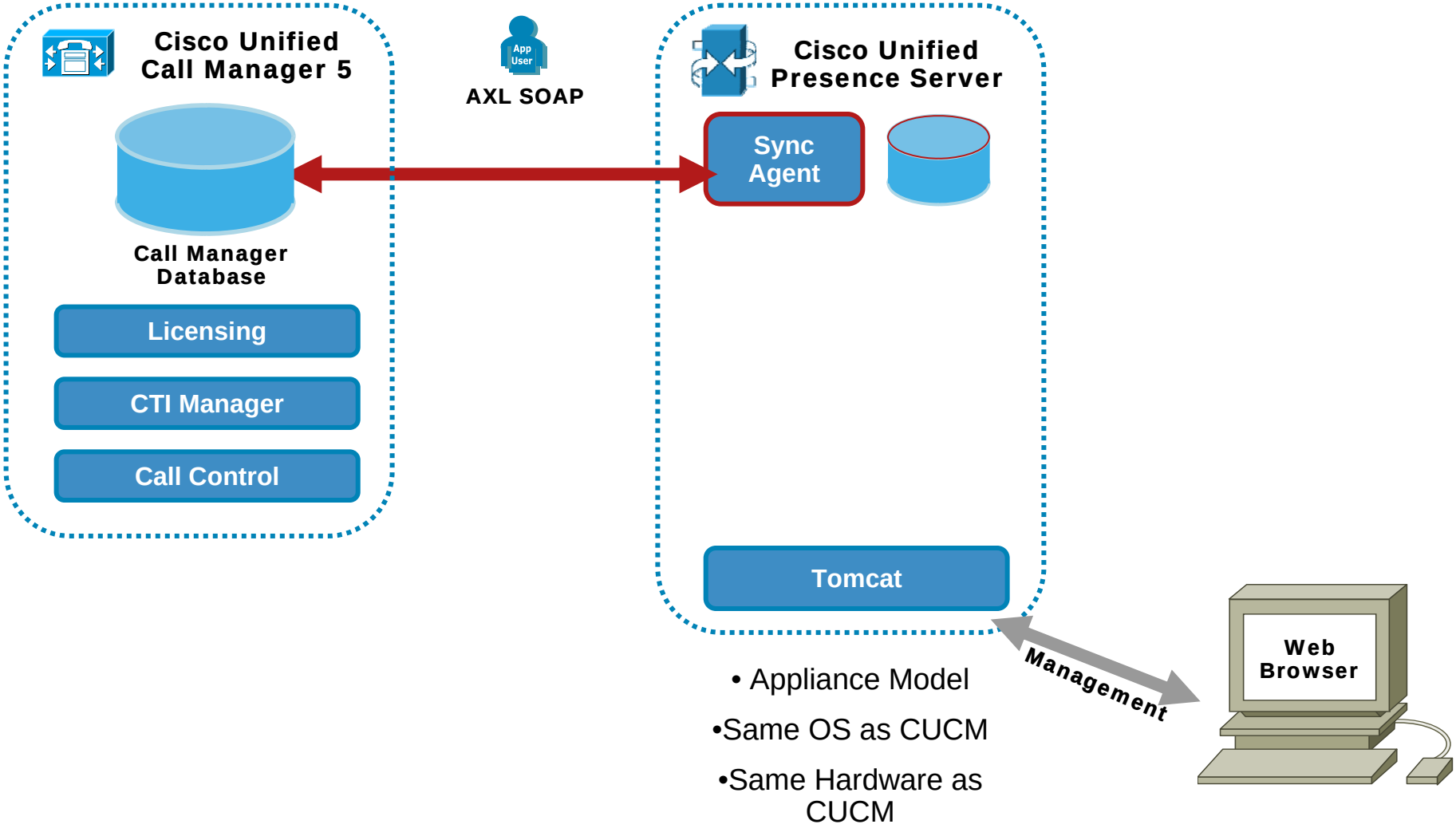
Overview of CUPS Appliance



- Appliance Model
- Same OS as CUCM
- Same Hardware as CUCM

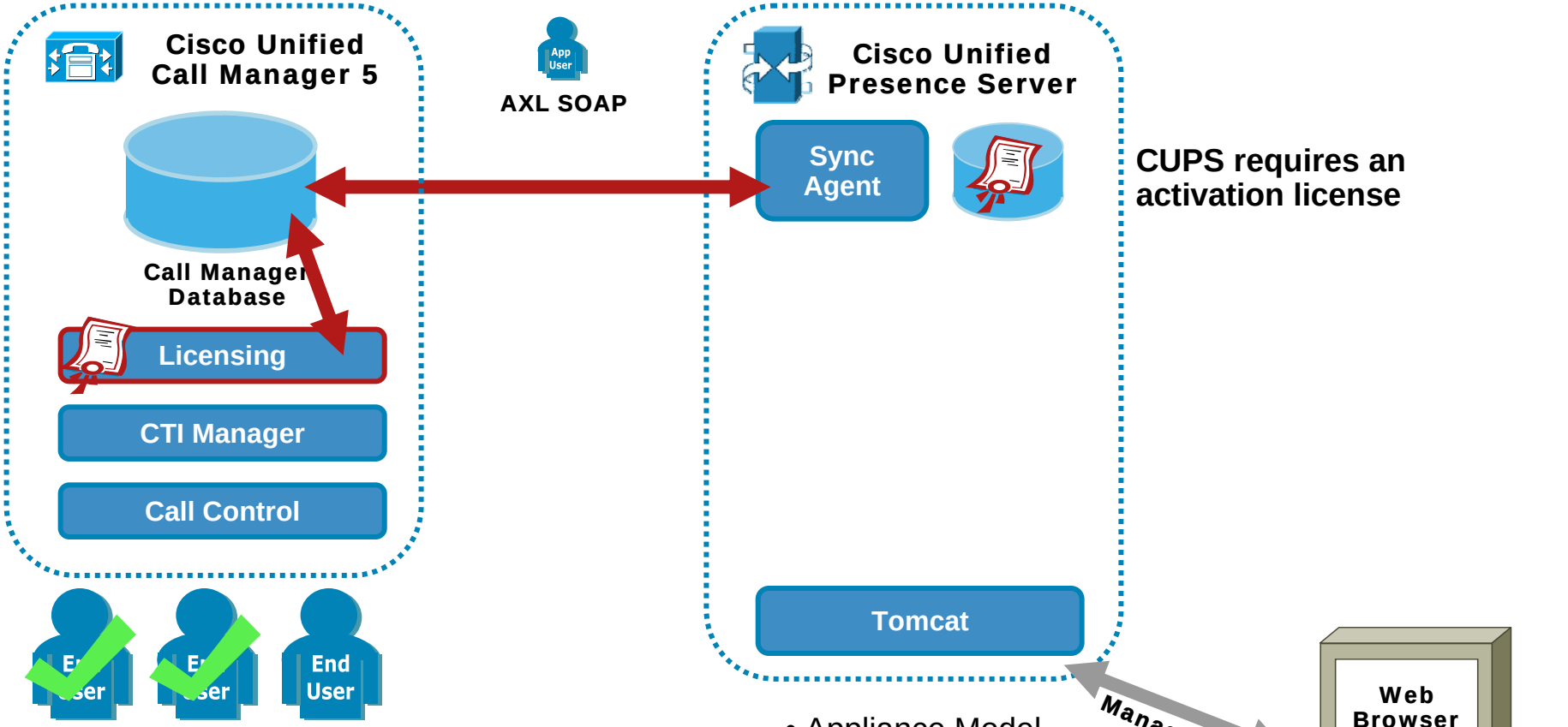
Cisco Unified Presence Server

Sync Agent replication from Call Manager DB



Cisco Unified Presence Server

Licensing and User Activation on CUPS



- CUPS uses Call Manager Device Units to active users on the Server
- Additional Units are required for some configurations

- Appliance Model
- Same OS as CUCM
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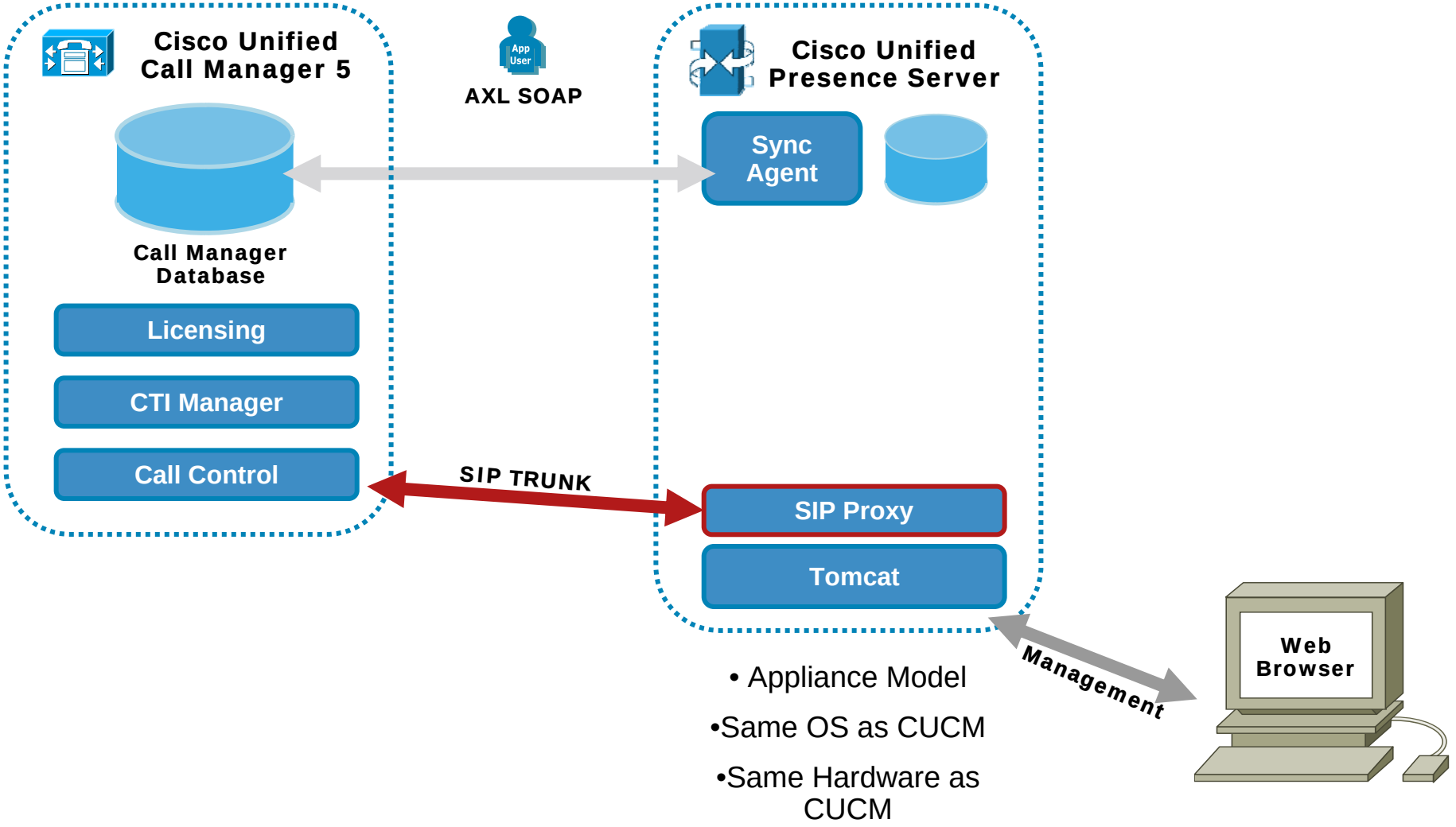
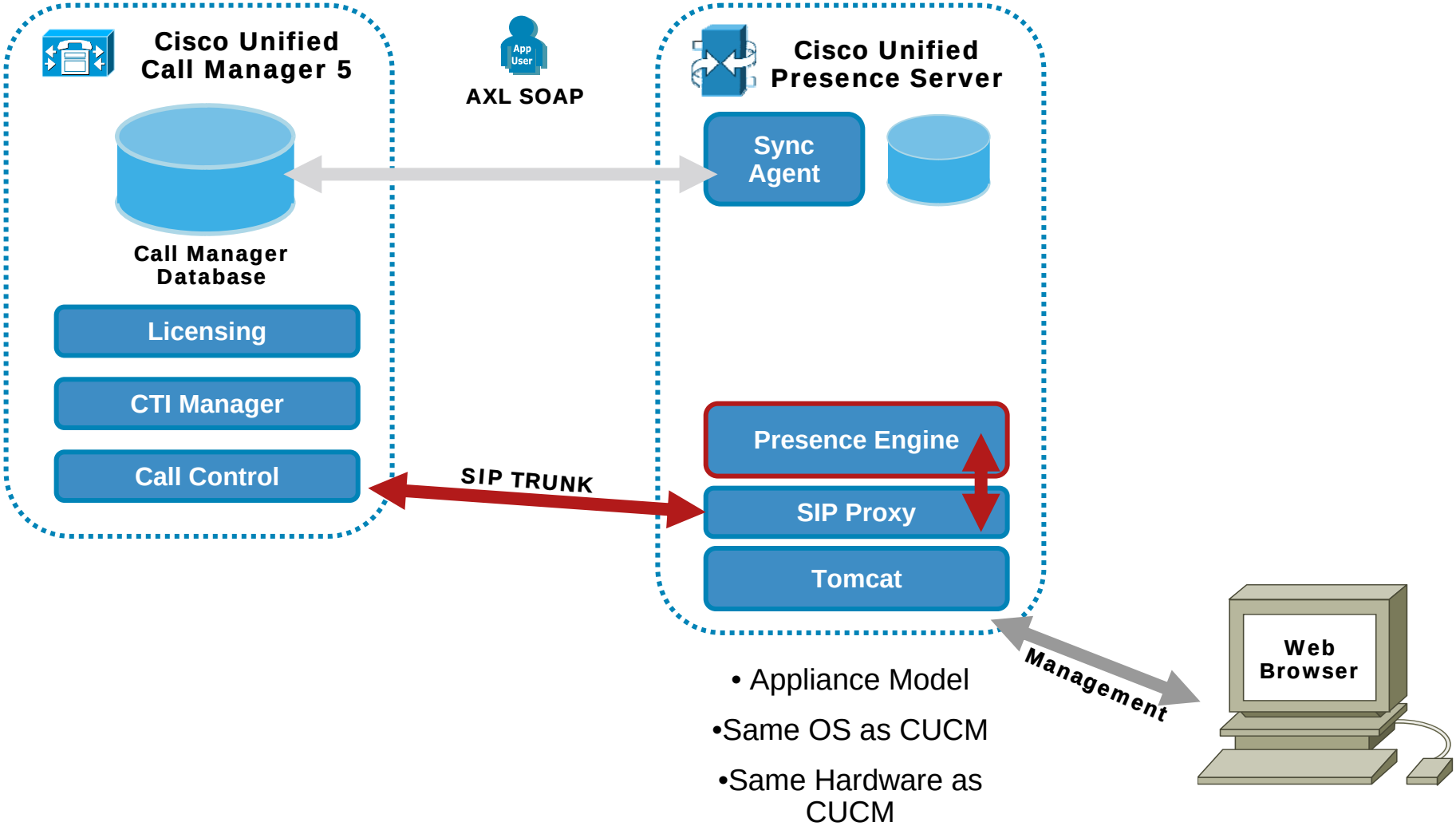
Cisco Unified Presence Server

SIP Routing using the SIP Proxy Server



Cisco Unified Presence Server

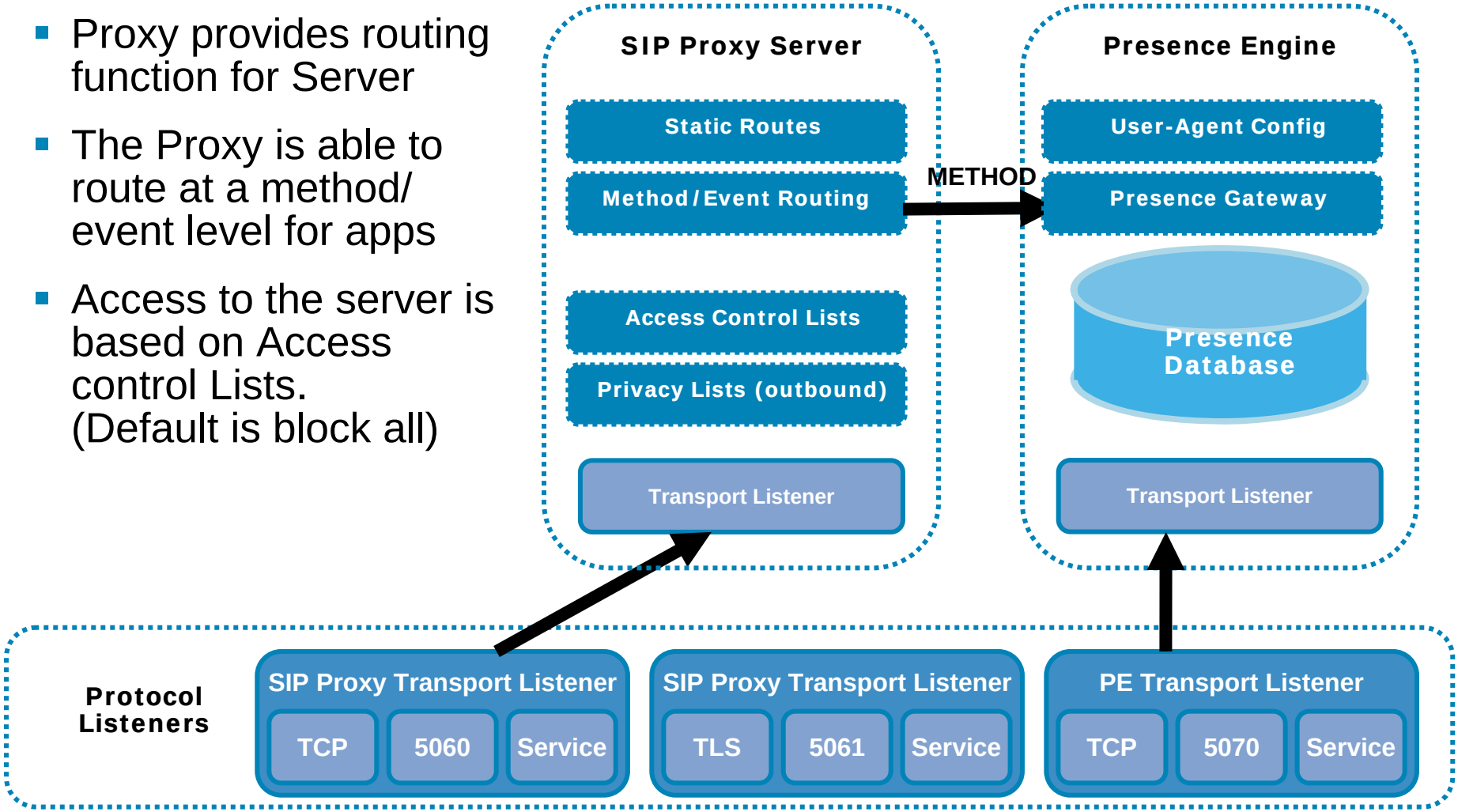
Presence Engine maintains reach-ability information



Cisco Unified Presence Server

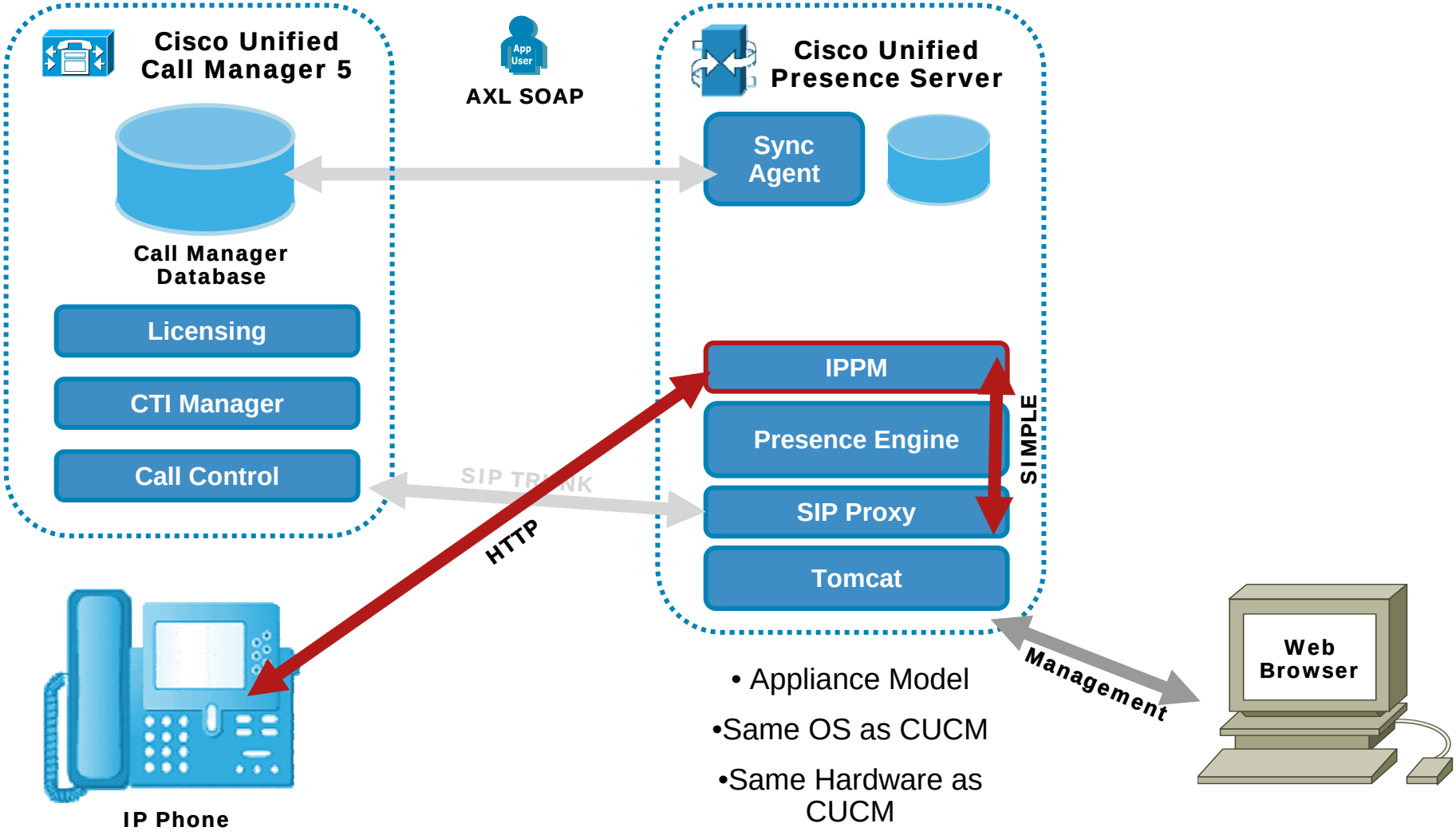
SIP Proxy and Presence Engine Relationship

- Proxy provides routing function for Server
- The Proxy is able to route at a method/ event level for apps
- Access to the server is based on Access control Lists. (Default is block all)



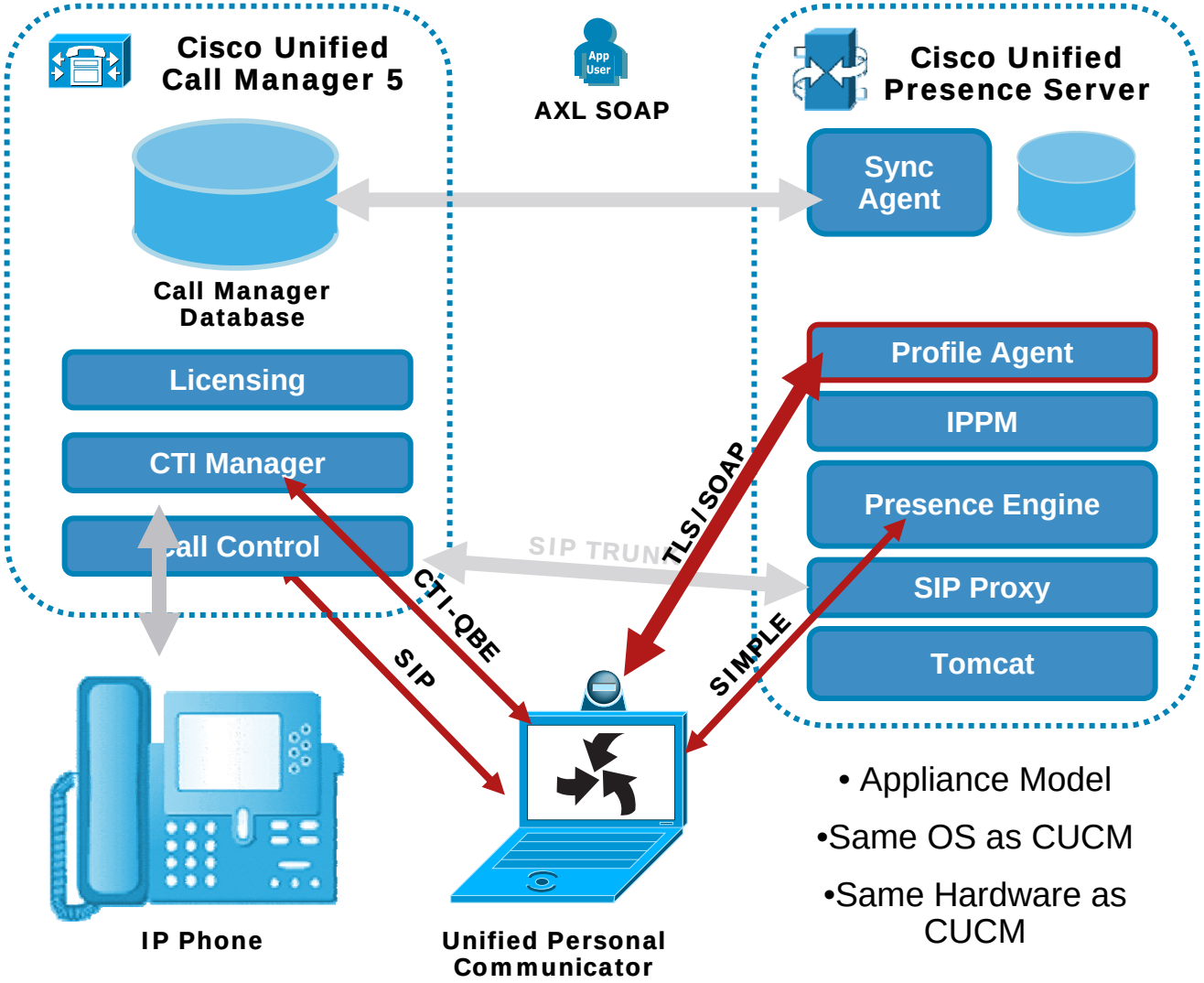
Cisco Unified Presence Server

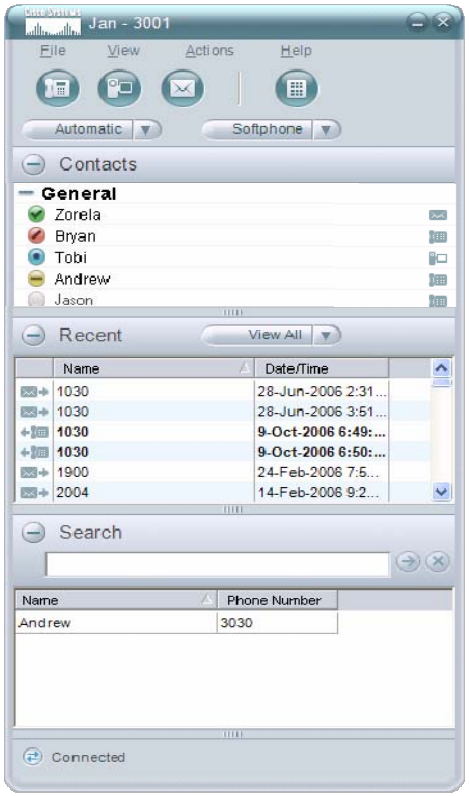
IPPM: HTTP / SIP/SIMPLE Gateway



Cisco Unified Presence Server

Unified Client Configuration download

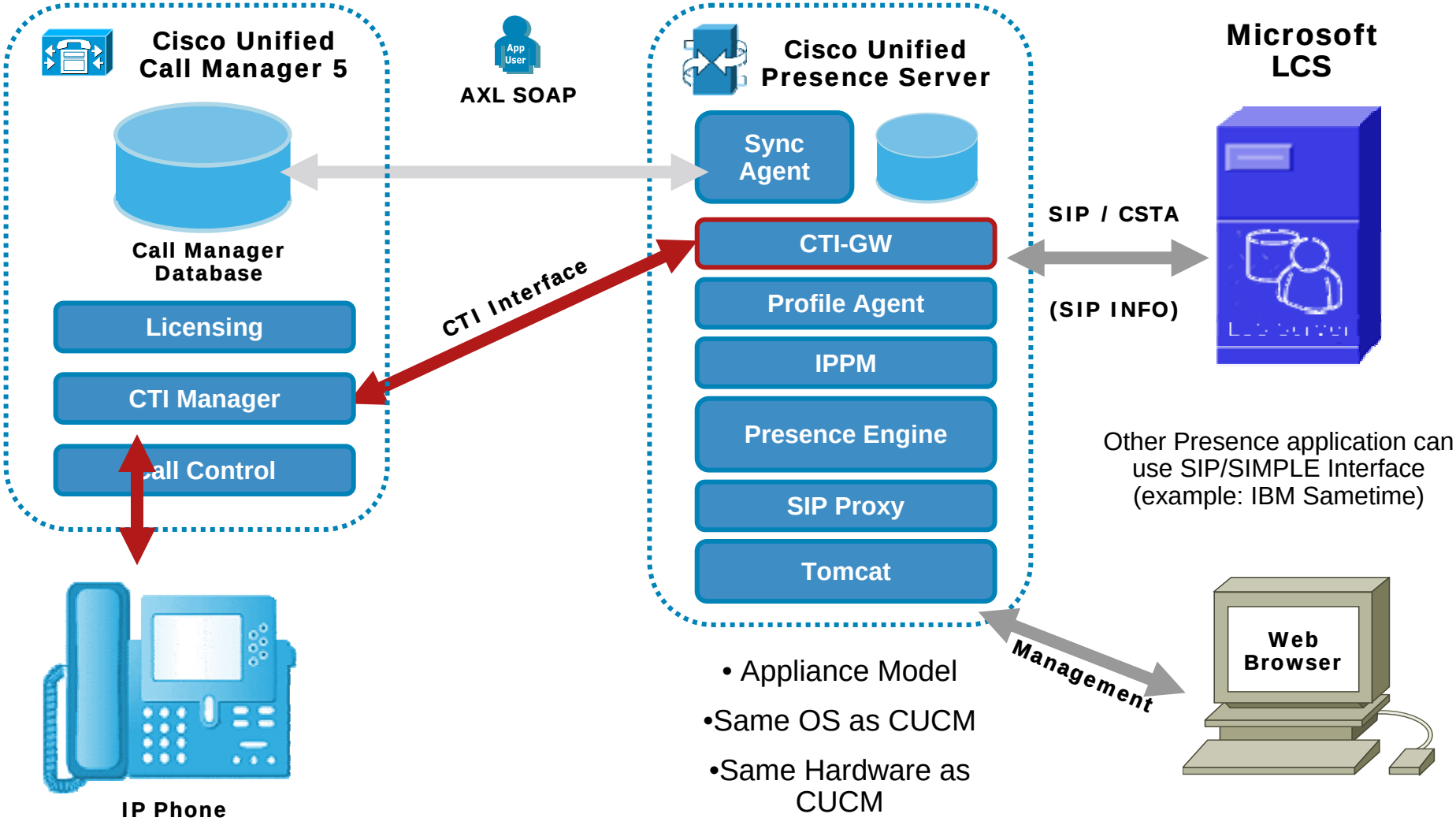




- Appliance Model
- Same OS as CUCM
- Same Hardware as CUCM

Cisco Unified Presence Server

Microsoft LCS Integration using uaCSTA



- Appliance Model
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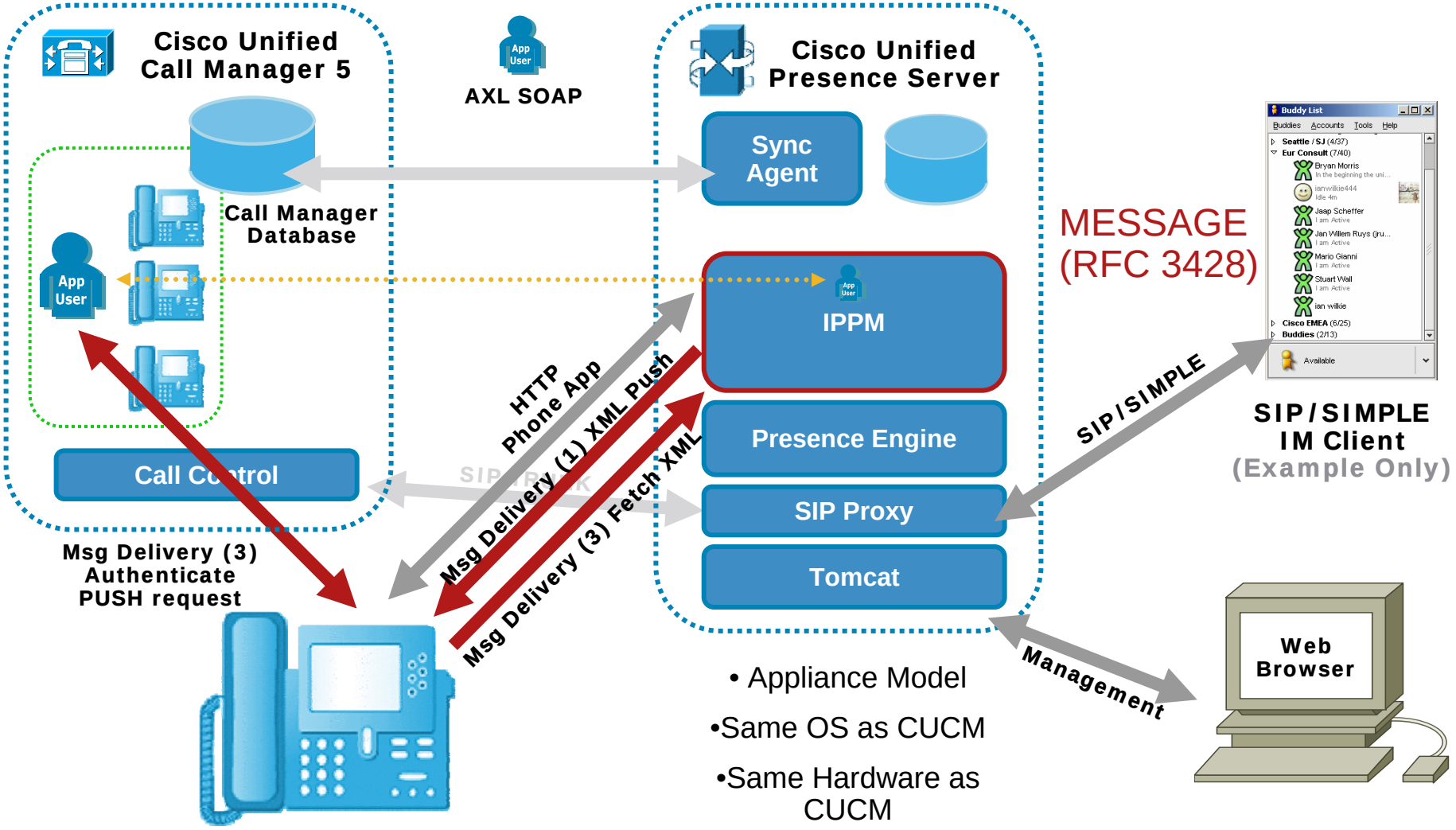
IP Phone Messenger

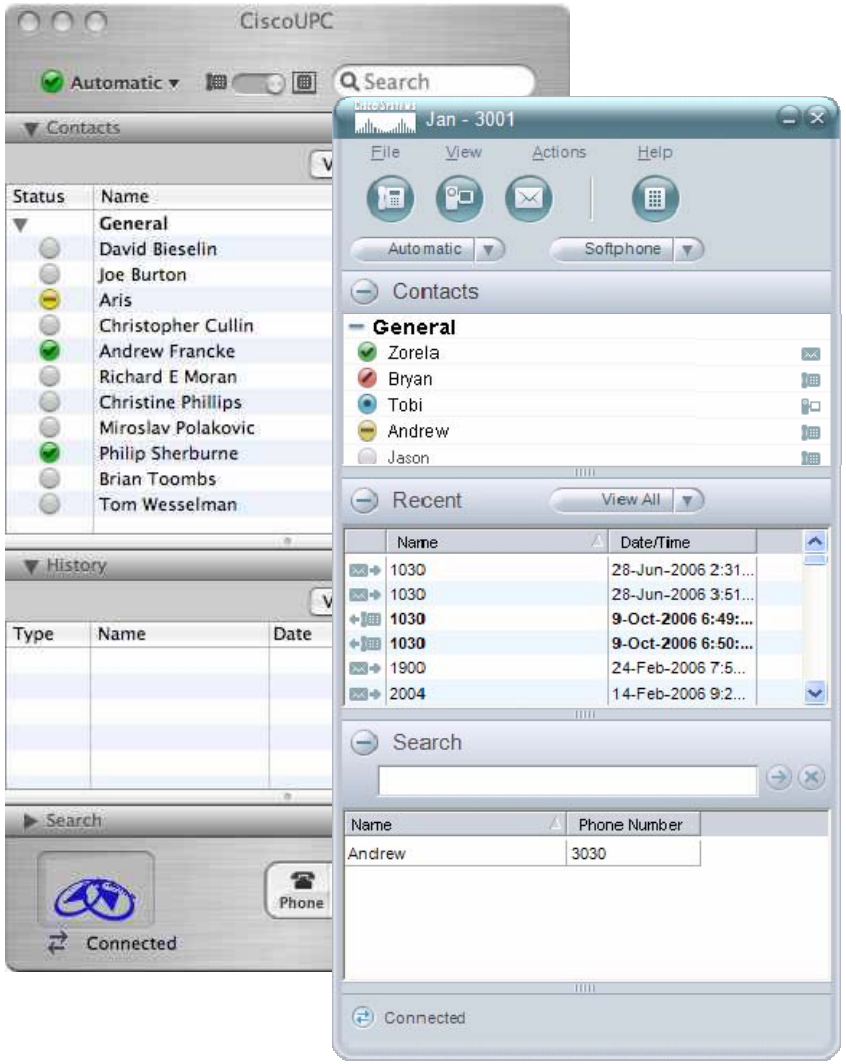
- IPPM provides an Integrated IM capability within Cisco IP Phones
- Server component provides HTTP/S to SIMPLE gateway
- Phone Service provide Messaging and Presence interface to end user
- Web Service provides user access to phone services setting and Broadcast message function

IP Phone Messenger

IPPM: HTTP / SIP/SIMPLE Gateway



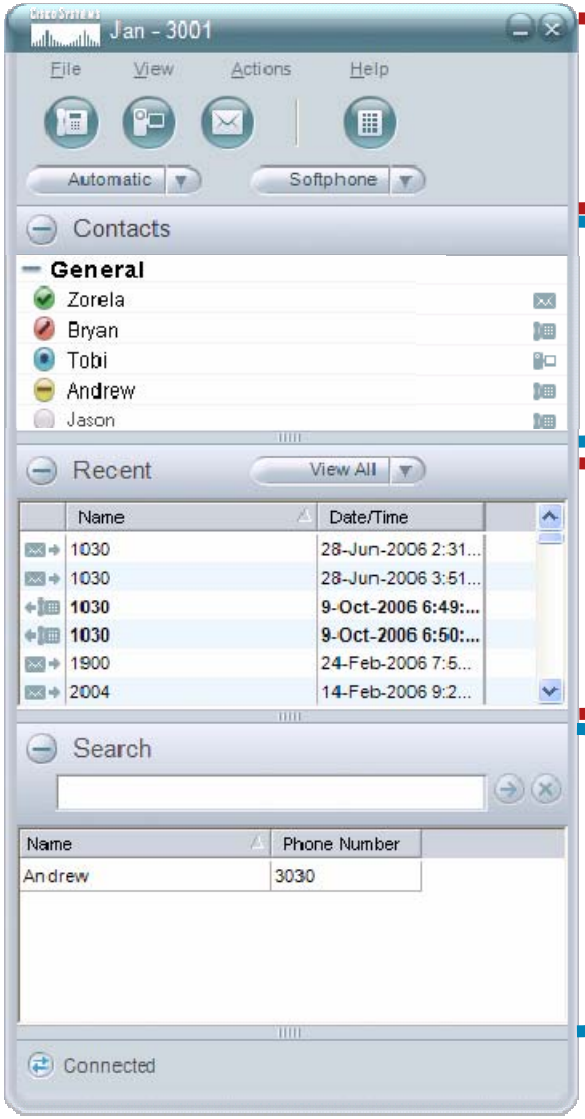
Cisco Unified Personal Communicator (CUPS)



- Cisco Unified Personal Communicator features an easy-to-use interface that streamlines the communications experience and facilitates collaboration.
- CTI Desktop Control
- SIP Softphone
- Presence/Reachability
- Unity Connection Support
- Desktop Collaboration
  (using MeetingPlace Express)
- Supports Mac OSx and Windows XP clients

Cisco Unified Personal Communicator

Communication Hub



Menu, Icon and Mode Controls

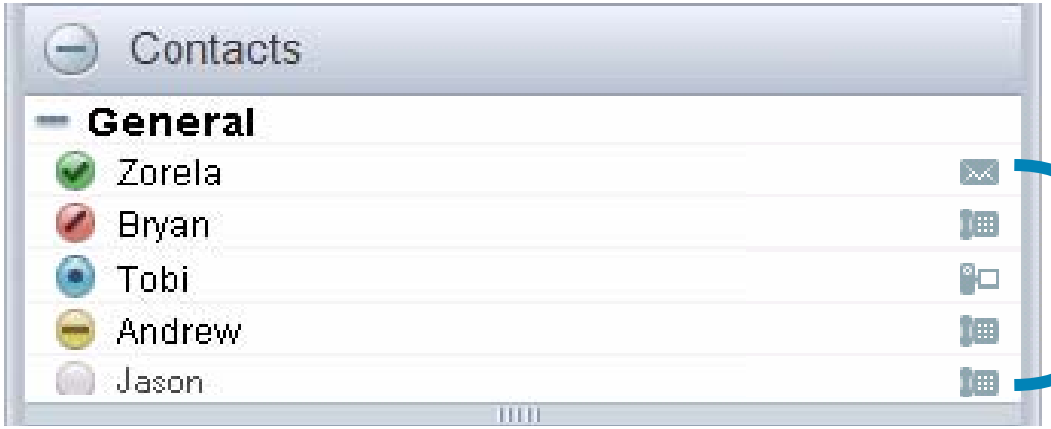
Contact List with current presence status and preferred contact method

Recent Communication including access Unity Connection Voicemail

Directory Search Control and Search results

Cisco Unified Personal Communicator

Contact Groups and Presence



Preferred method of contact as defined by User

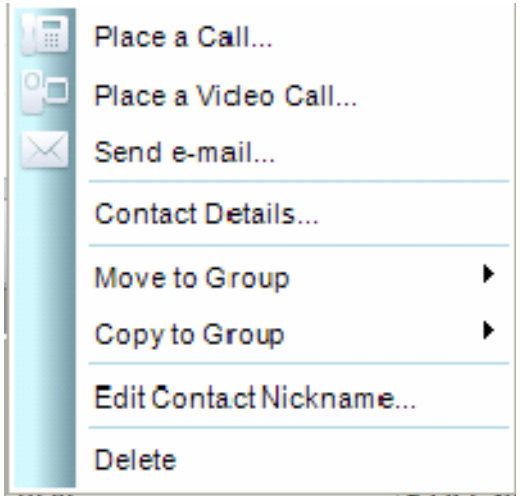
Available

Away

Busy

Idle

Presence not available



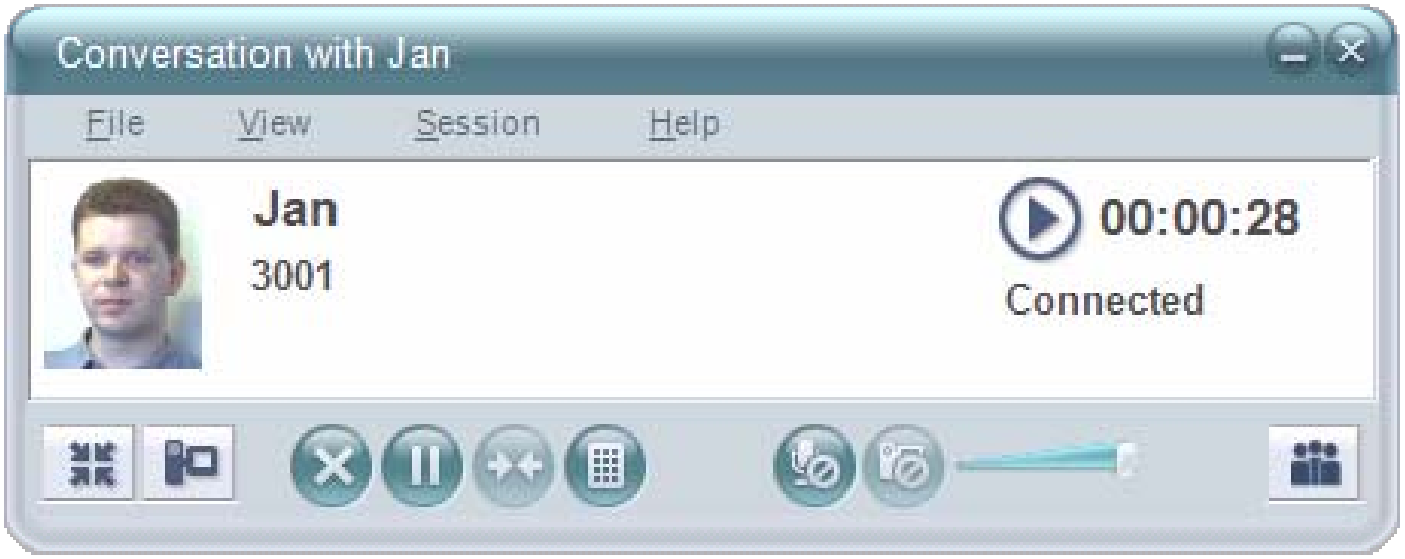
Right-Click provides access call and contact management

This is in addition to the Call Icons on the main hub view.

Cisco Unified Personal Communicator

Making a Call (1)

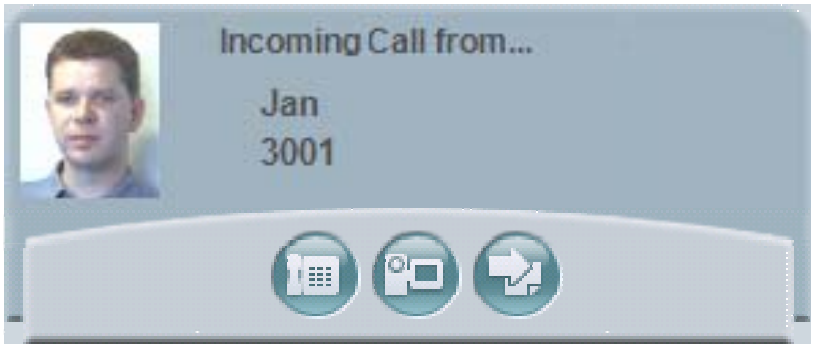
- A User would start a Call by selecting a Contact and a Call Medium
- The Conversation Dialogue is display on the Calling Client



Cisco Unified Personal Communicator

Making a Call (2)

- The Called Client will display a Toaster Popup Window



- This will allow the Called Client to:
  - Accept the Call as a Voice Call
  - Accept the Call as a Video Call
  - Forward the Call to Voicemail

Cisco Unified Personal Communicator

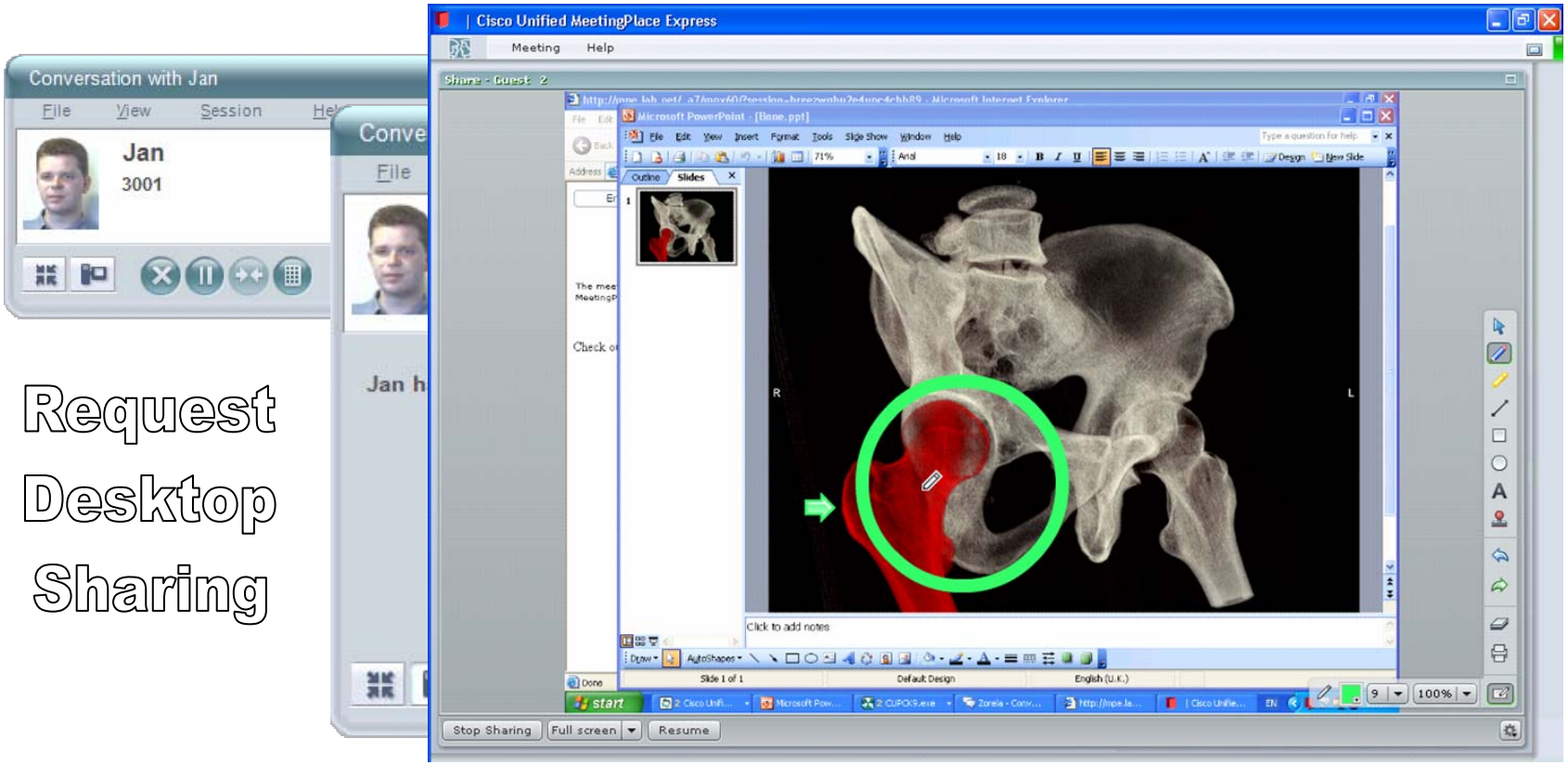
Making a Call (3)

- Additional Conversation mediums can be added to the call

Cisco Unified Personal Communicator

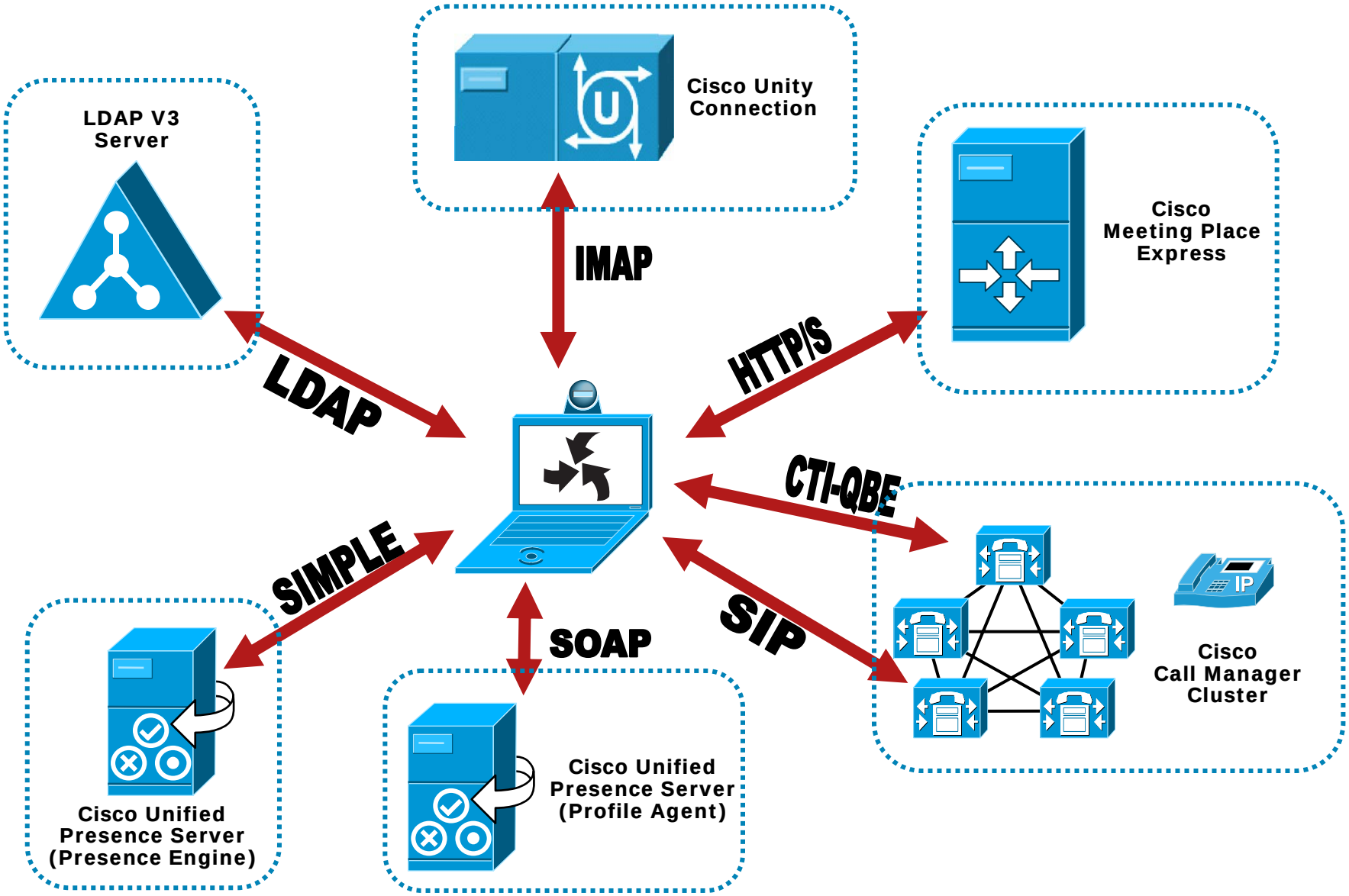
Making a Call (4)

- Desktop sharing when enabled allows the sharing of any window, application or the entire desktop



Cisco Unified Personal Communicator

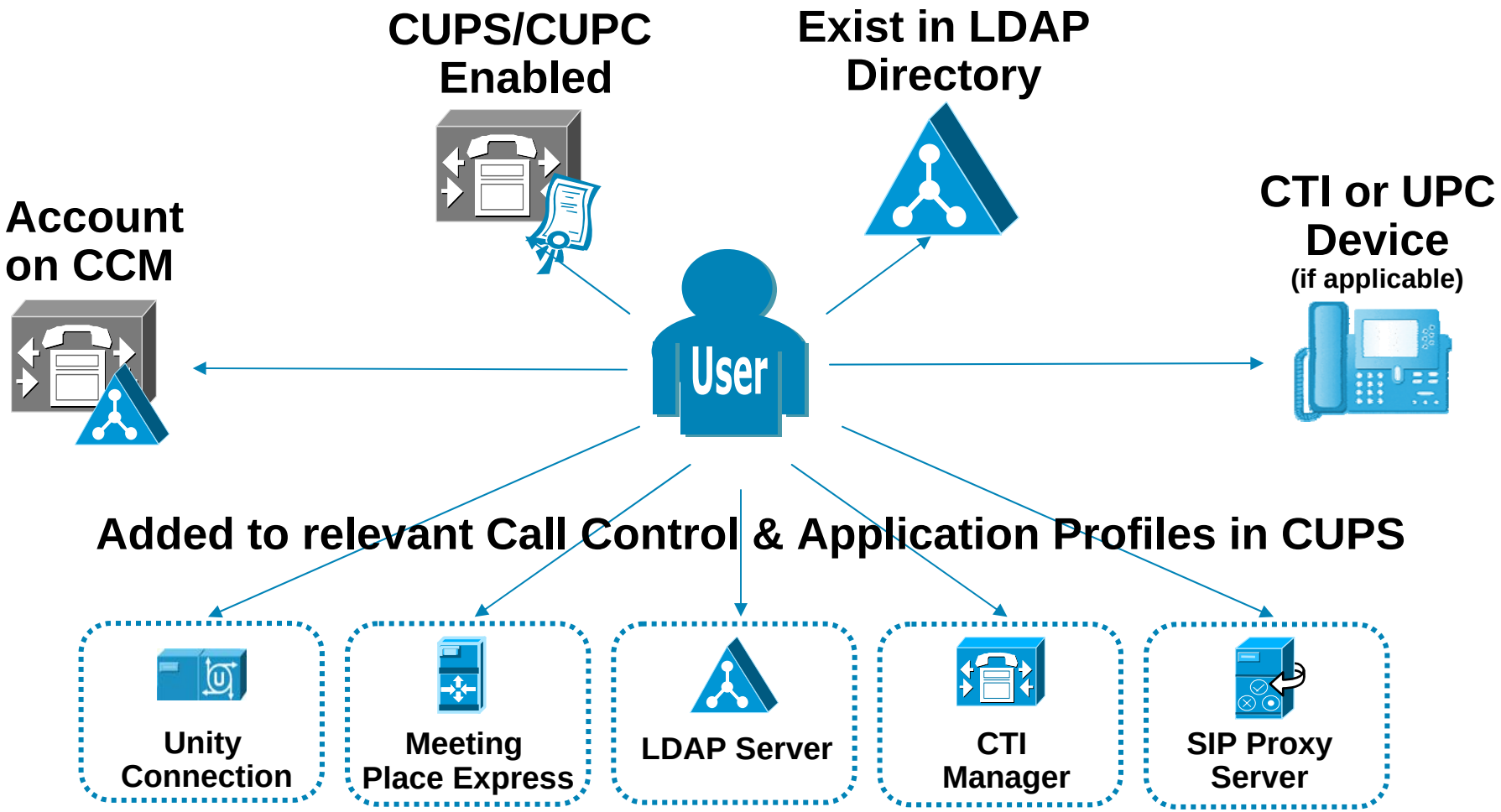
Protocol Overview



Cisco Unified Personal Communicator

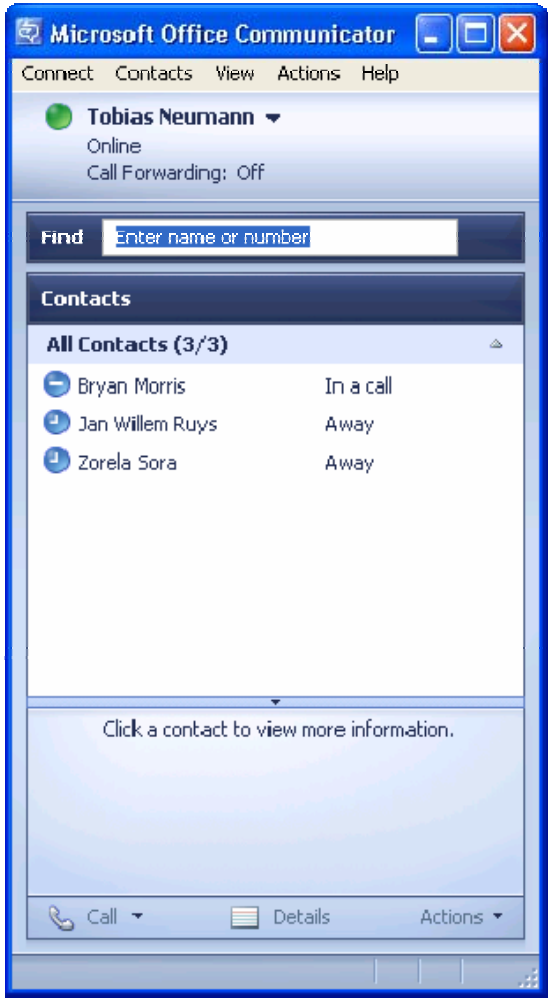
Adding a CUPC User to CUPS

- To login to a CUPC Client the User must have….



Using CUPS with Microsoft LCS

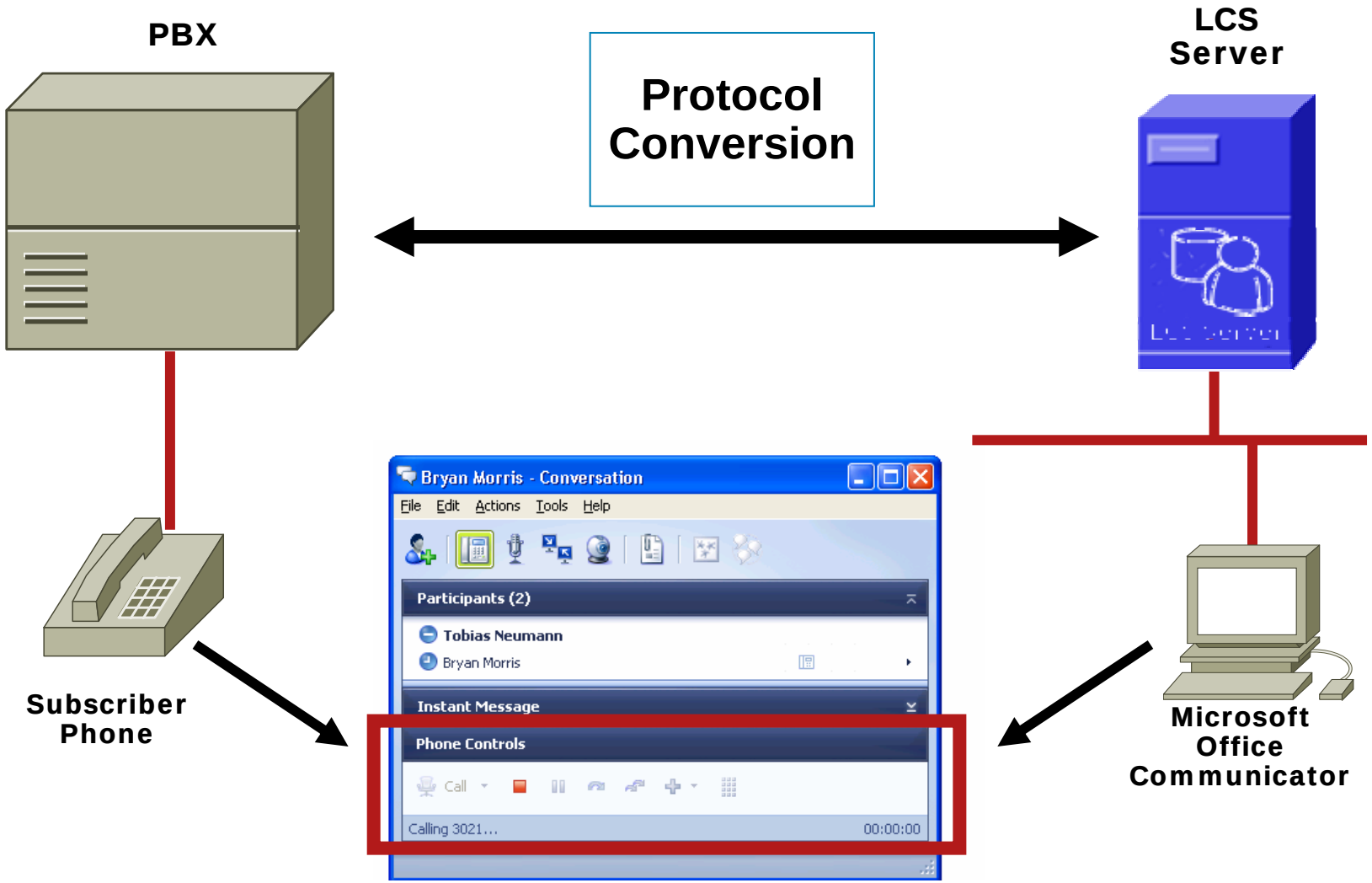
Microsoft Office Communicator



- Microsoft Office Communicator is User Client for LCS
- MOC is a SIP User Agent (UA)
- The provide multiple methods of communication including:
  - Instant Messaging
  - Voice (Softphone)
  - Video (using PC Camera)
  - Application Sharing (using Net meeting)
  - White boarding (using Net meeting)

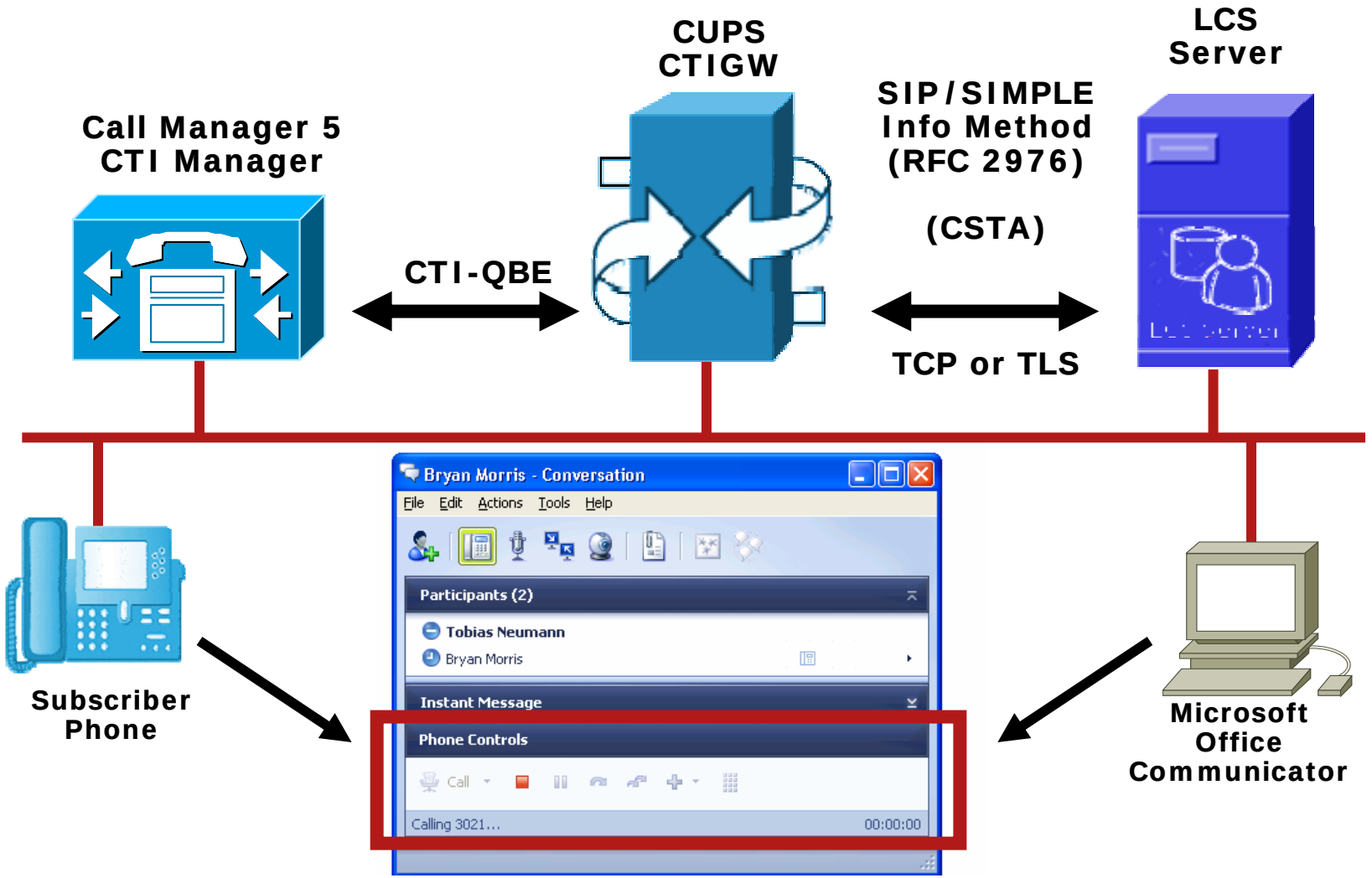
Using CUPS with Microsoft LCS

MOC/LOC Telephone Integration



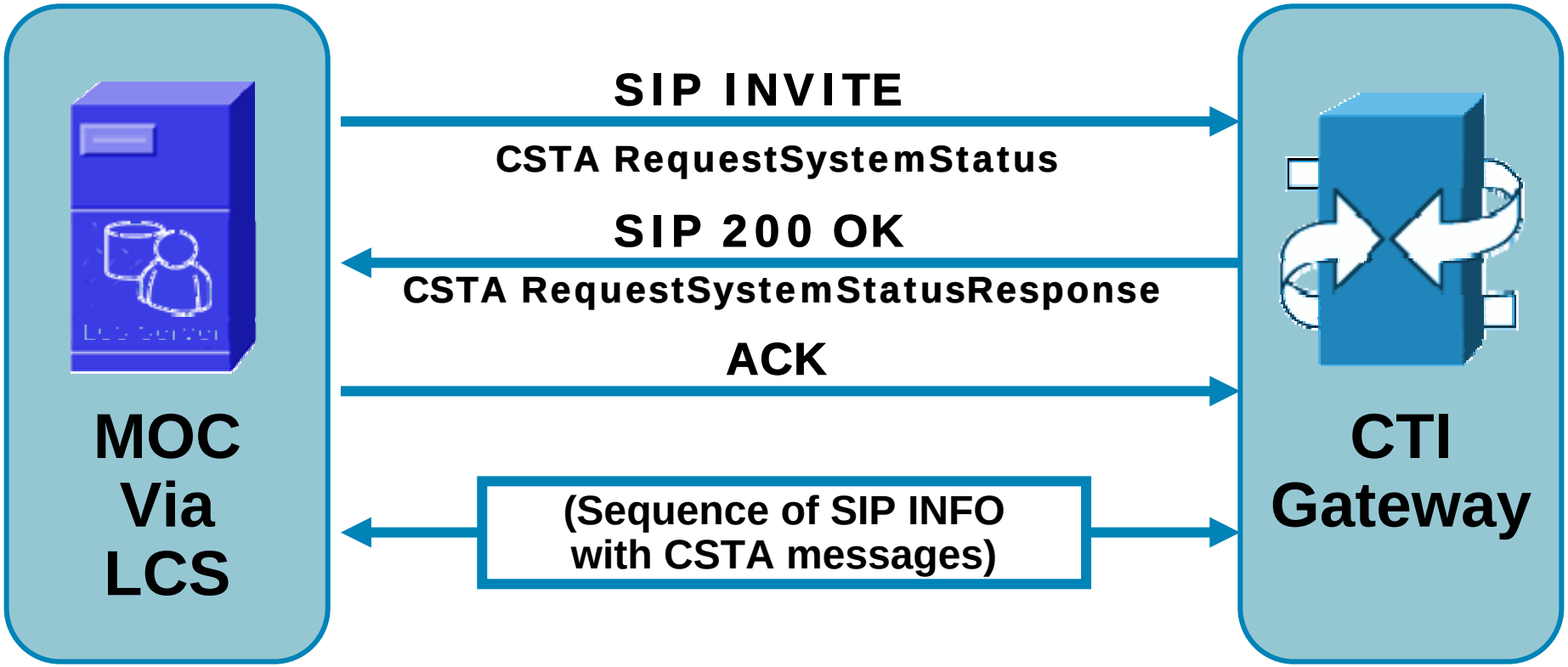
Using CUPS with Microsoft LCS

CCM MOC/LOC Telephone Integration



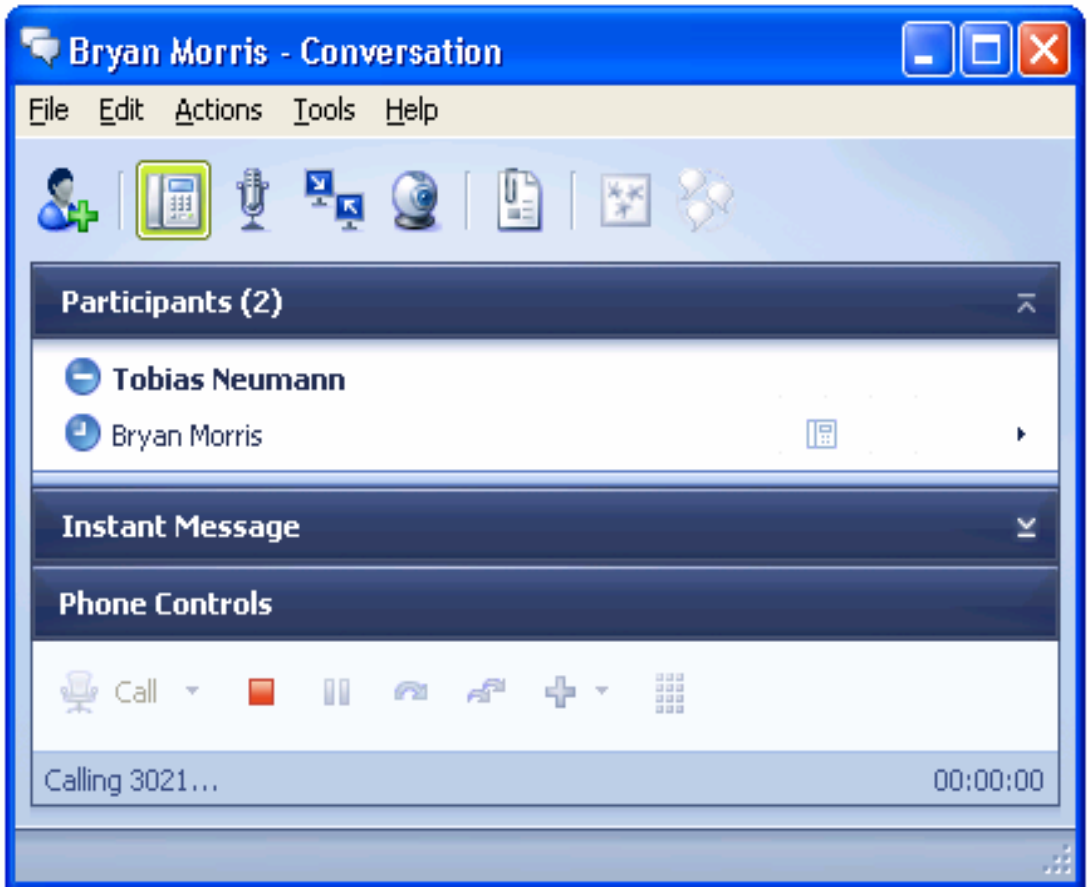
Using CUPS with Microsoft LCS

CSTA Communication



Using CUPS with Microsoft LCS

MOC Telephone Integration



MOC VOIP Feature

MOC TDM/IP PBX

- Make Call/Click to Call
- Answer Call
- Clear/Hang-up Call
- Deflect Call
- Hold Call
- Single Step Transfer
- Retrieve call
- Generate DigitDTMF
- Reconnect Call
- Set Forwarding
- Set Do Not Disturb
- Get Forwarding
- Get Do Not Disturb

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Providing Telephone Presence

- Current Presence is displayed by the MOC client
- Example: Smart Tags (Green Dots) show users are available

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Providing Telephone Presence

- Current Presence is displayed by the MOC client
- Example: Smart Tags (Green Dots) show users are available
- With telephone integration telephony presence is now indicated by these tags

What have we learned?

- Examined what presence delivers and how it works
- How presence functionality is imbedded in Call Manager
- The Architecture of the Cisco Unified Presence Server
- Some of Applications that can use the services of the Cisco Presence Server
  - –IP Phone Messenger
  - –Cisco Unified Personal Communicator
  - –Microsoft Live Communications Server 2005
  - –Applications that Support SIP/SIMPLE

Q and A