



# UC API (Cius, Jabber SDK)

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# Agenda

- UC API Overview
- Cius
- Jabber SDK

# UC API Categories

## APIs Fall Into Specific Categories

- Provisioning
  - Make changes to the Application's actual configuration
- Serviceability
  - Allow you to collect information about the current state of the system
  - Provide access to historical information such as logs and CDR
- Device Monitoring and Call Control
  - Allow you to monitor the real-time state of a device
  - Provide a way to instruct the system on how to route a call
- Other
  - Allow you to extend the functionality of the system
  - Allow you to integrate UC into other business applications

# IP Phone APIs

<http://developer.cisco.com/web/ipps>

<http://developer.cisco.com/web/jmapi>

- Other

XML Services (XSI)

MIDlets

# CUCM APIs

- Provisioning  
AXL
- Serviceability  
SNMP  
PerfMon
- Device Monitoring and Call Control  
JTAPI  
TAPI (TSP)  
Webdialer
- Other  
Extension Mobility

# Voice Gateway APIs

<http://developer.cisco.com/web/vgapi>

- Provisioning
- Serviceability
- Device Monitoring and Call Control
  - TCL IVR
  - Voice XML
- Other



# Unity Connection APIs

<http://developer.cisco.com/web/cuc>

- Provisioning
- Serviceability
- Device Monitoring and Call Control
- Other



# UCCX APIs

- Provisioning
- Serviceability
  - SNMP
  - PerfMon
- Device Monitoring and Call Control
  - UCCX CTI
  - Finesse
- Other



# Webex API

<http://developer.webex.com>

- Provisioning
- Serviceability
- Device Monitoring and Call Control
- Other
  - URL-based
  - SOAP



Cius

# Cius APIs

<http://developer.cisco.com/web/cius-developer>

- Provisioning
- Serviceability
- Device Monitoring and Call Control
- Other
  - Android APIs
  - Cisco Cius API Extensions – Video, Phone

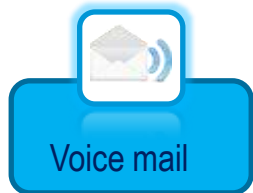
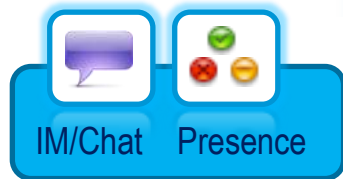
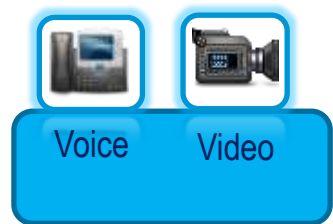




# Jabber SDK

# Cisco Jabber Web SDK

## SDK to Collaboration-Enable Web Applications



Easily add collaboration to web applications and business processes

Extend collaboration to cloud-based applications (firewall / VPN session required)

# Cisco Jabber Software Development Kit

## Web APIs

- Supports Web-based UC applications and integrations
- Simplifies and Enables 3<sup>rd</sup> Party Application and Device Development
- Enables common applications and services across multiple OSes and Devices



Reference UI  
HTML / CSS / Javascript

### Web UC Services \*

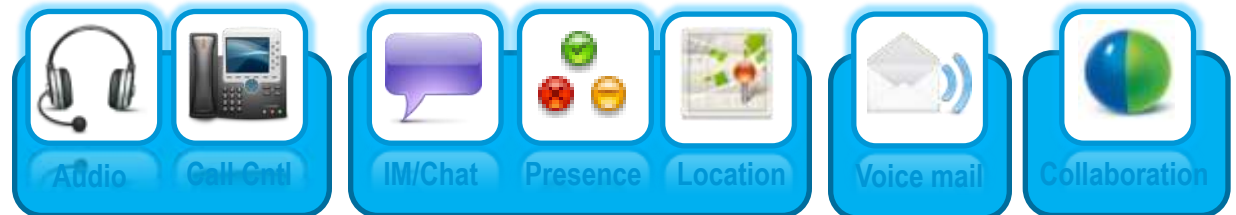
(Directory, Authentication, Logging, Config, Notifications)

Web Phone  
(AJAX)

CAXL  
(AJAX)

CUMI  
(REST)

Webex  
(URL)



\* Roadmap Item based on Customer/developer feedback

# Completed Integration: Pervasive Cisco UC in Enterprise Social Software Application



- Cisco QUAD uses the Jabber SDK APIs!

Real-time Collaboration

Non-real-time blogs, posts, discussions

- User Capabilities

View presence

Click 2 call

Click 2 IM

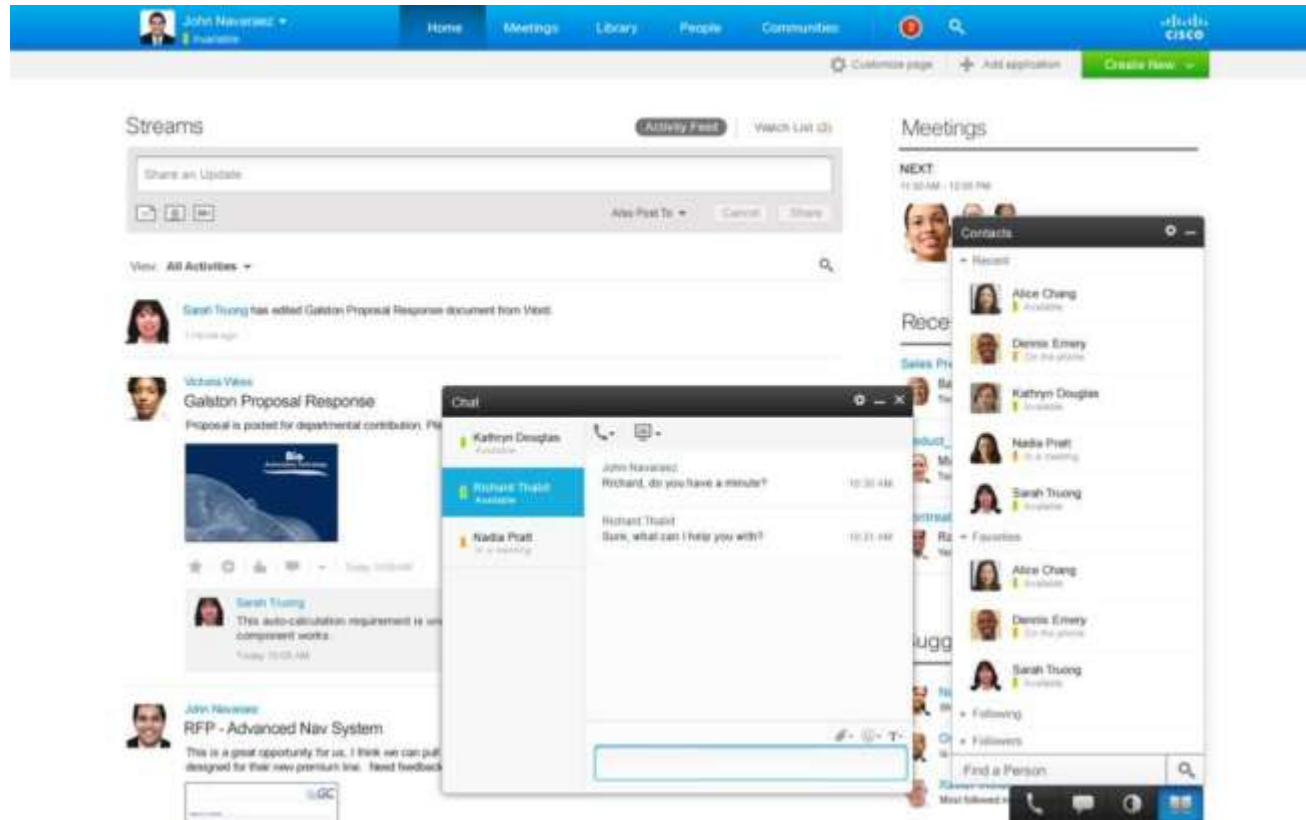
Click 2 Webex

Click 2 Video\* (1H2012)

- User Interface

Contact Name Card

UC barlet



UC function exposed  
in contact card and barlet



Chat



Call



Webex

QUAD Flash Demo: <http://www.cisco.com/assets/prod/col/vid/quad-comm.mp4>

# Use Case: Cisco UC enabled Corporate Directory Portal

- Jabber SDK APIs: XMPP (CAXL), Web Phone (AJAX), Video\* (PVE)
  - Compelling search and connect : real-time collaboration within corporate directories
  - User Capabilities: Presence, Click 2 Call / IM / WebEx today, Click 2 Video\* (1H2012)

Presence  
enabled

IM / Chat  
enabled

Click 2 WebEx  
enabled

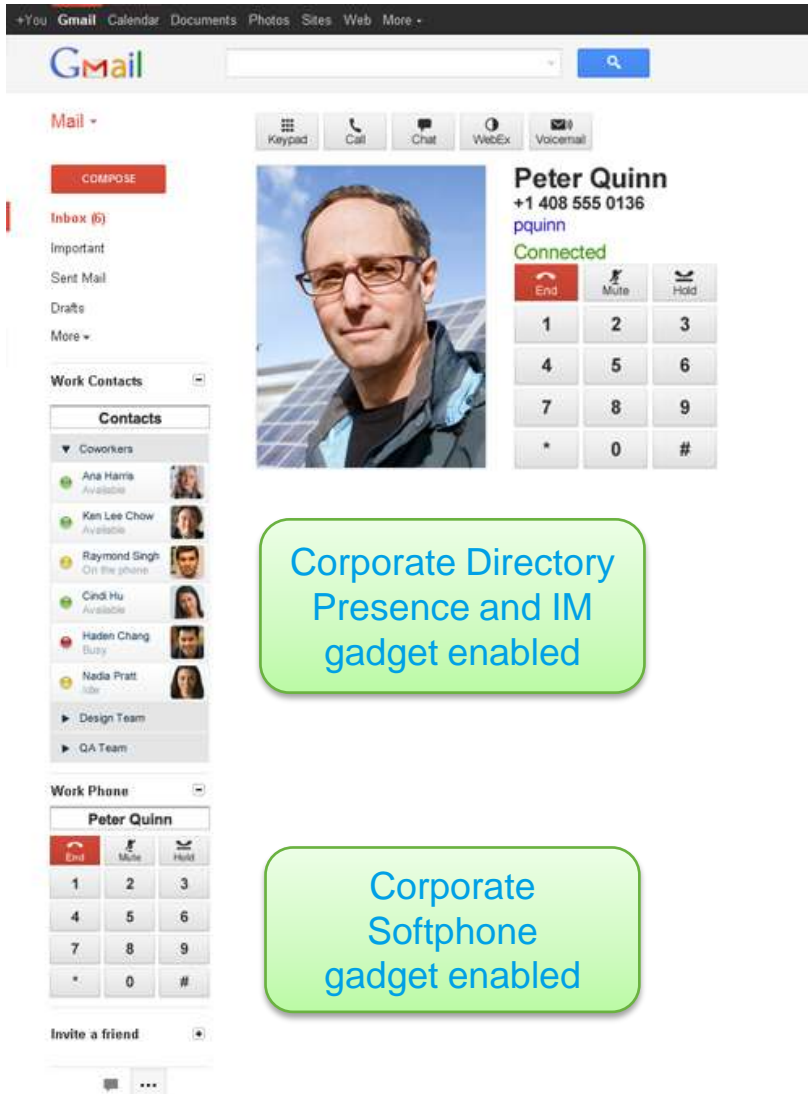
Click 2 Call  
enabled

Click 2 Video\*  
enabled

The screenshot displays the CWI Company Portal interface. At the top, the CWI logo and 'Company Portal' text are visible, along with a 'Logout' link. A search bar is located below the header. The main content area features a profile for Scott McDaniel (smcdaniel), a Thermal Analyst at Motor Engineering, with his contact number +1 408 555 0197. A green circle highlights a row of four icons: Email, Call, Chat, and WebEx. Below the profile, there are sections for 'Expertise' and 'Reporting Structure'. The 'Reporting Structure' lists three contacts: Hans Munitz, Christine Chen, and David Tran, each with a status indicator (Available or On the phone). A video call window is open, showing Scott McDaniel, with a green circle highlighting the 'End', 'Mute', and 'Hold' buttons at the bottom. On the right side, there is a 'Contact List' with two sections: 'Coworkers' and 'Design Team', each listing several contacts with their status (Available, On the phone, Busy, In a meeting, Sharing desktop).



# Use Case: Jabber SDK with Gmail Gadgets



Corporate Directory  
Presence and IM  
gadget enabled

Corporate  
Softphone  
gadget enabled

- Cisco UC Enable Gmail and Google Apps for Business
- Cisco Jabber APIs
  - Web Softphone (AJAX)
  - IM / Presence (CAXL)
- User Capabilities
  - View Presence
  - Click 2 IM
  - Click 2 Call
- Deployment Requirement
  - Corporate VPN active session
- Flash Demo: Completed Integration  
<http://www.youtube.com/watch?v=plGyEubjBrU>



# Presence Server API

# CUP APIs

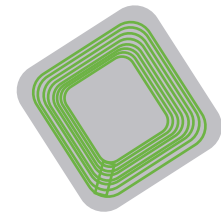
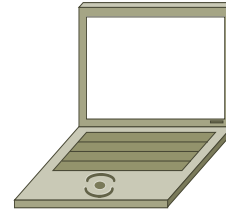
<http://developer.cisco.com/web/cupapi>

- Provisioning
  - User AXL
- Serviceability
  - SNMP
  - PerfMon
- Device Monitoring and Call Control
  - Presence SOAP
  - Presence BOSH
  - SIP SIMPLE
  - XMPP Jabberwerx
- Other



# 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  
Clients publish presence information to other users who are called subscribers
- Federation and “Presence by Observation”  
Combining presence information from multiple devices and making this information available for other applications



# Presence Terminology - Presentity



PERSON "A"

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



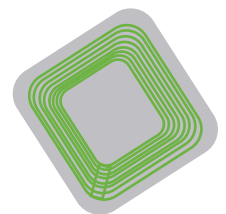
Desk Phone



Smart Phone



IM Application



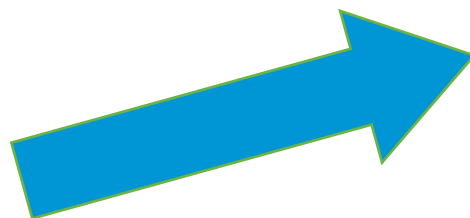
RFI Tag

# Presence Terminology - Presentity

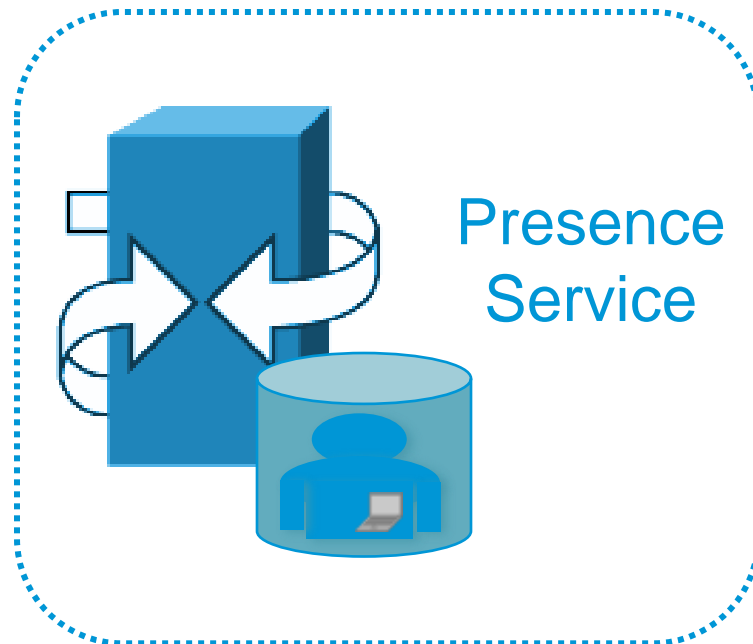


PERSON "A"

A registration will  
have preceded the  
PUBLISH



(RFC 3903)



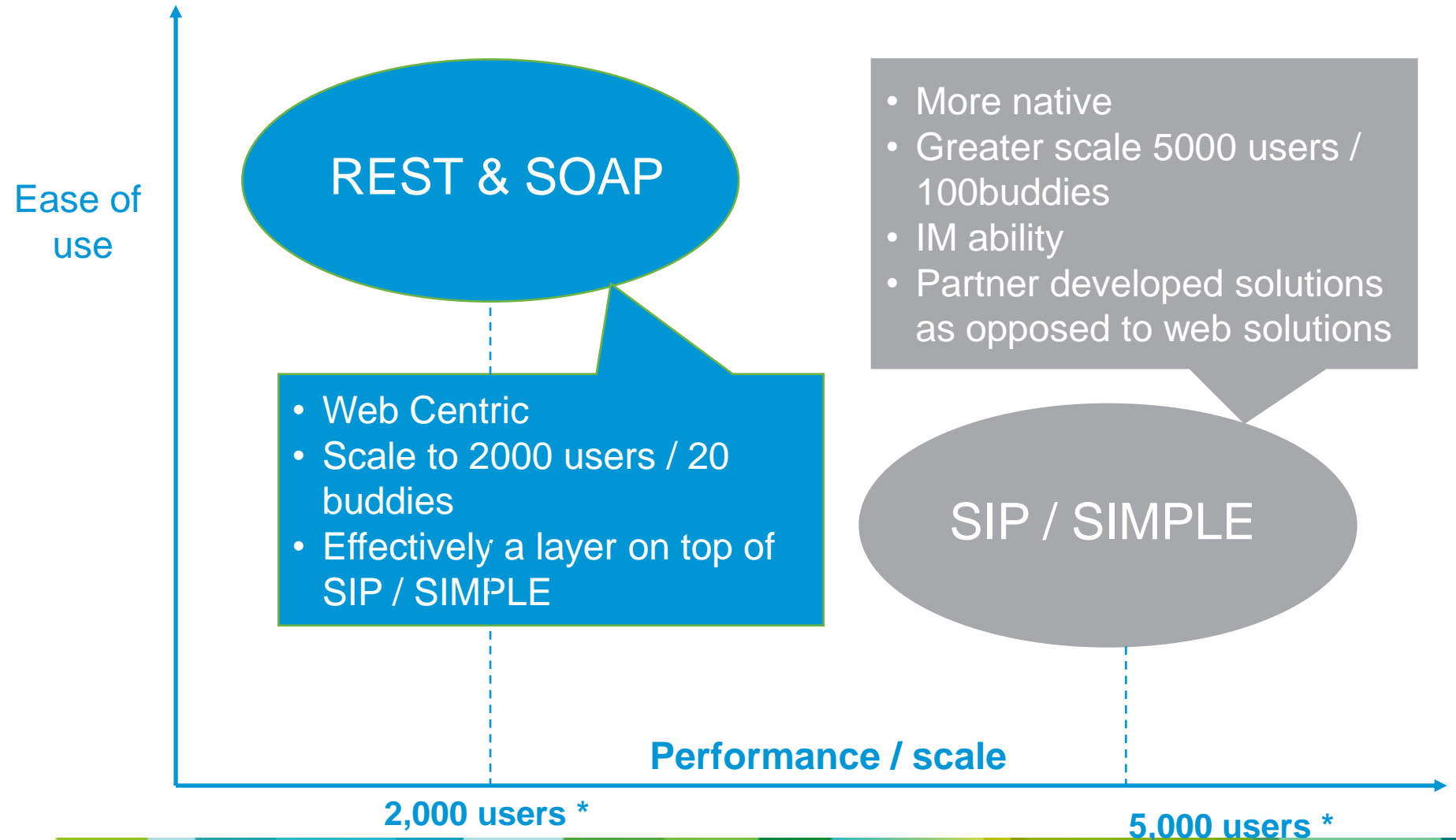
- A Person will **PUBLISH** their **PRESENTITY** state using their SIP Address of record (AOR) Example=[joe@cisco.com](mailto:joe@cisco.com)
- They will publish the status of communication Services/Devices to the **PRESENCE SERVICE** using their **PRESENTITY**

# Cisco Unified Presence API's (CUP)

<http://developer.cisco.com/web/cupapi>

- The purpose of the API's in CUP is to provide
  - 3rd party developers access to the published interfaces of CUP
  - A mechanism for developers to create value add applications
- In CUP 1.0 / 6.0 Cisco provided access to SIP/SIMPLE API
  - In CUP 7.0 this is further enhanced to provide access via REST and SOAP API's
- REST & SOAP API's
  - Will ease the ability for developers to create presence related applications
  - Provide presence capability into WEB 2.0 environments
  - Targeting server to server integration capabilities
- SOAP (Simple Object Access Protocol)
- REST (Representational State Transfer) – Recommended over SOAP, see the Jabber Client Section
- SIMPLE (SIP for Instant Messaging & Presence Leveraging Extensions)

# Which Interface to Use & When



\* Capacity numbers are “indicative” and dependant on application, server type etc..

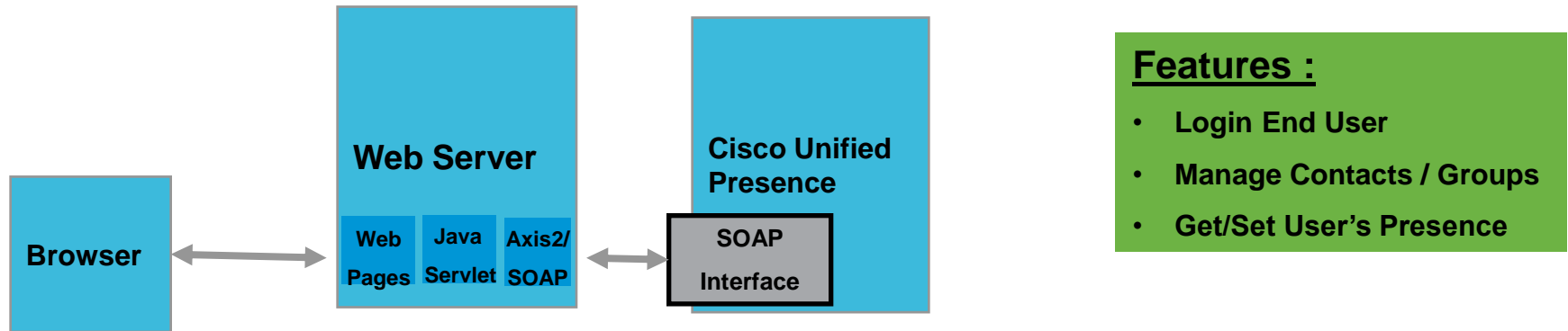


# Which Interface to Use & When

Interface / attribute	SIP / SIMPLE	REST / SOAP
Ease of use	Native Protocol	Web Centric and Web Developer oriented
Presence	Yes	Yes
IM / Presence	Yes	Presence (Yes) IM (No)
Performance / Scale *	5,000 users / 100 buddies	2,000 users / 20 buddies

\* Capacity numbers are “indicative” and dependant on application, server type etc..

# Presence API Reference Application



- Reference web application packaged as a .WAR file for deployment to a J2EE container such as Apache Tomcat
  - Can be installed on a development machine and pointed at CUP
  - Demonstrates the main functionality available through the API
  - Provides a guide to developers on how to use the interface
  - Source code published
- SDK documentation containing a detailed API reference
  - Guidance to developers on how to use the interface



# Jabber IM SDK

# Unified Communications Web SDK 8.x Focus

- Instant Messaging, Presence, Pub/Sub via Cisco Unified Presence (on-prem) and Webex (off-prem) SDKs.















IE 7, 8  
FireFox 3  
Safari  
Chrome

Windows  
Mac  
Linux

**Web 2.0 Interfaces (REST/SOAP) & Javascript SDKs**



# Cisco Ajax XMPP Libraries (CAXL)

- CAXL is a **Web 2.0 JavaScript client DK** for integration of Instant messaging, Presence and Roster services.
- Evolution of Jak  former **jabberwerx** suite
- **Common SDK** for on-prem (CUP) and off-prem (Webex) integration.
- Supported on the following Browsers and Operating Systems
  -  IE 6\*,7 & 8 
  -  Firefox 3.5/3.6   
  -  Safari 4  
  -  Chrome 5 
- Client-server communication is via **BOSH**
- Distribution via **CDN**. Current release is CAXL 2.1

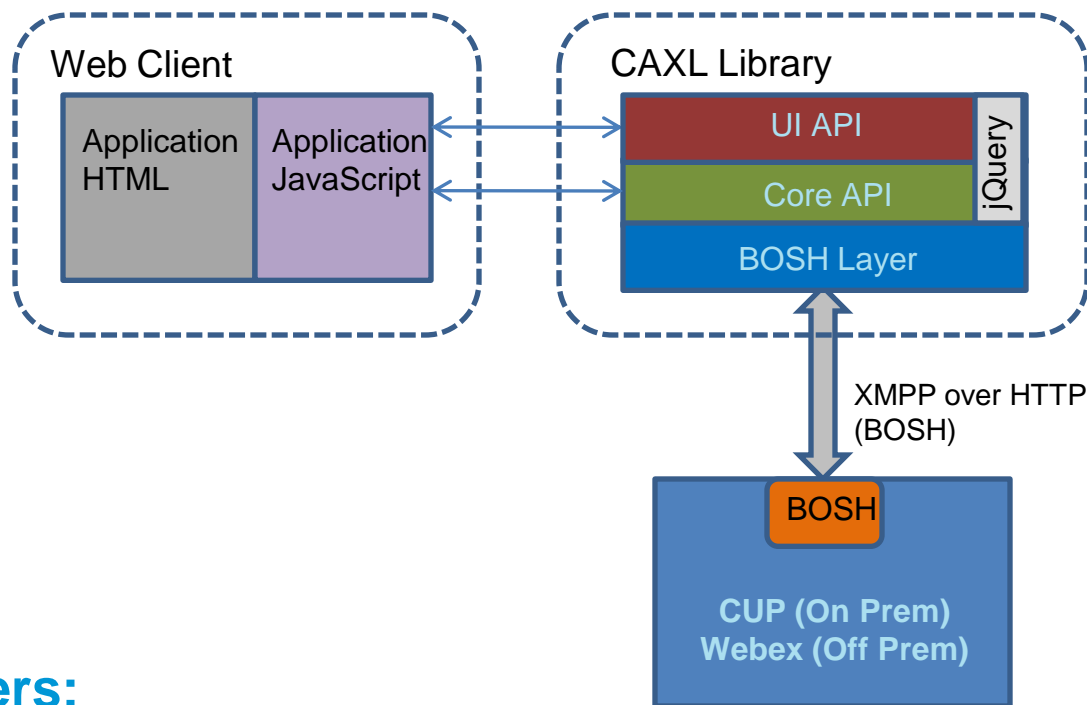
# CAXL Functionality

- User Authentication
- Roster Presence and Roster (Contacts List) management
  - Ability to Add/Update/Remove Contacts.
  - Ability to move contacts between groups.
- My presence
  - Ability to set device presence.
  - When integrated with CUP, SDK can be configured to set CAXL device presence to be the same as Presence engine composed presence.
- Temporary Presence Subscriptions
  - Ability to create temporary subscriptions to users who are not on your roster (“Quick Contacts”)
  - Ability to do bulk subscribe/unsubscribe of temporary subscriptions. Useful in multi-page applications where each page may have a different list of users.

# CAXL Functionality

- 1:1 Instant Messaging
  - Ability to initiate and receive P2P IM
  - Supports xHTML-IM rich-text.
- Multi-user chat room (including Persistent Chat)
  - Ability to create adhoc and persistent chat rooms
  - Ability to invite and be invited to chat rooms.
  - Ability to search for existing chat rooms
- Pub/Sub Applications (e.g. for GeoLocation)
  - Personal Eventing Protocol - Ability to create/publish/subscribe to pub/sub service nodes on a server.

# CAXL High-Level Architecture



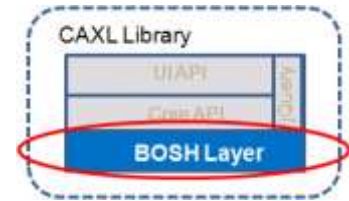
## Three Layers:

- **BOSH Layer**: a low-level BOSH client layer (may evolve to be replaced by HTML 5 WebSockets).
- **Core API**: a high-level API for IM, presence, roster, pub/sub built on low level API
- **UI API**: UI API components built on top of the core JabberWerx API

**jQuery**: an open-source library for searching, traversing, and manipulating the browser's DOM

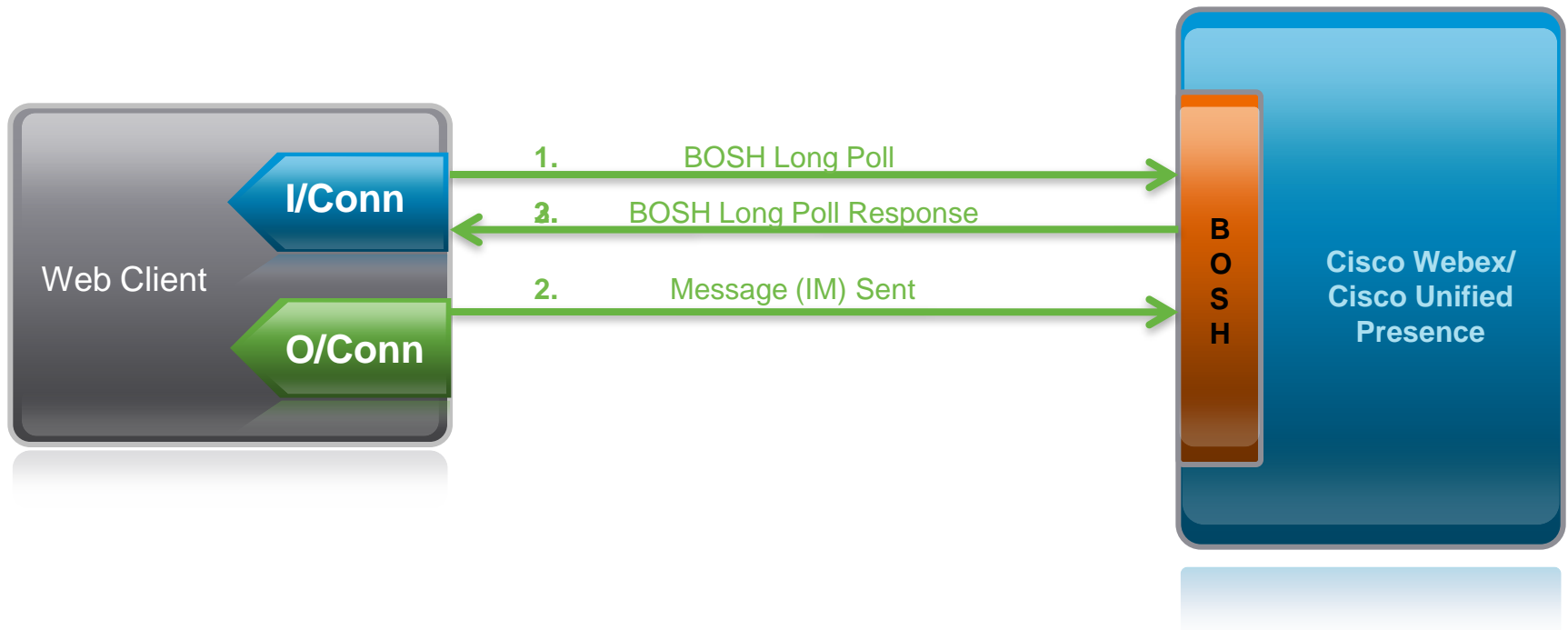


# What is BOSH?



- **B**idirectional-streams **O**ver **S**ynchronous **H**TT**P**
- Tunnel **XMPP over HTTP**
- Short latency
- **Standardized** at the XMPP Standards Foundation (XSF)
  - Generic BOSH: [XEP-0124](#)
    - Theoretical uses for other protocols
    - None other than XMPP defined
    - Note the version history
  - XMPP over BOSH: [XEP-0206](#)

# How does BOSH works?

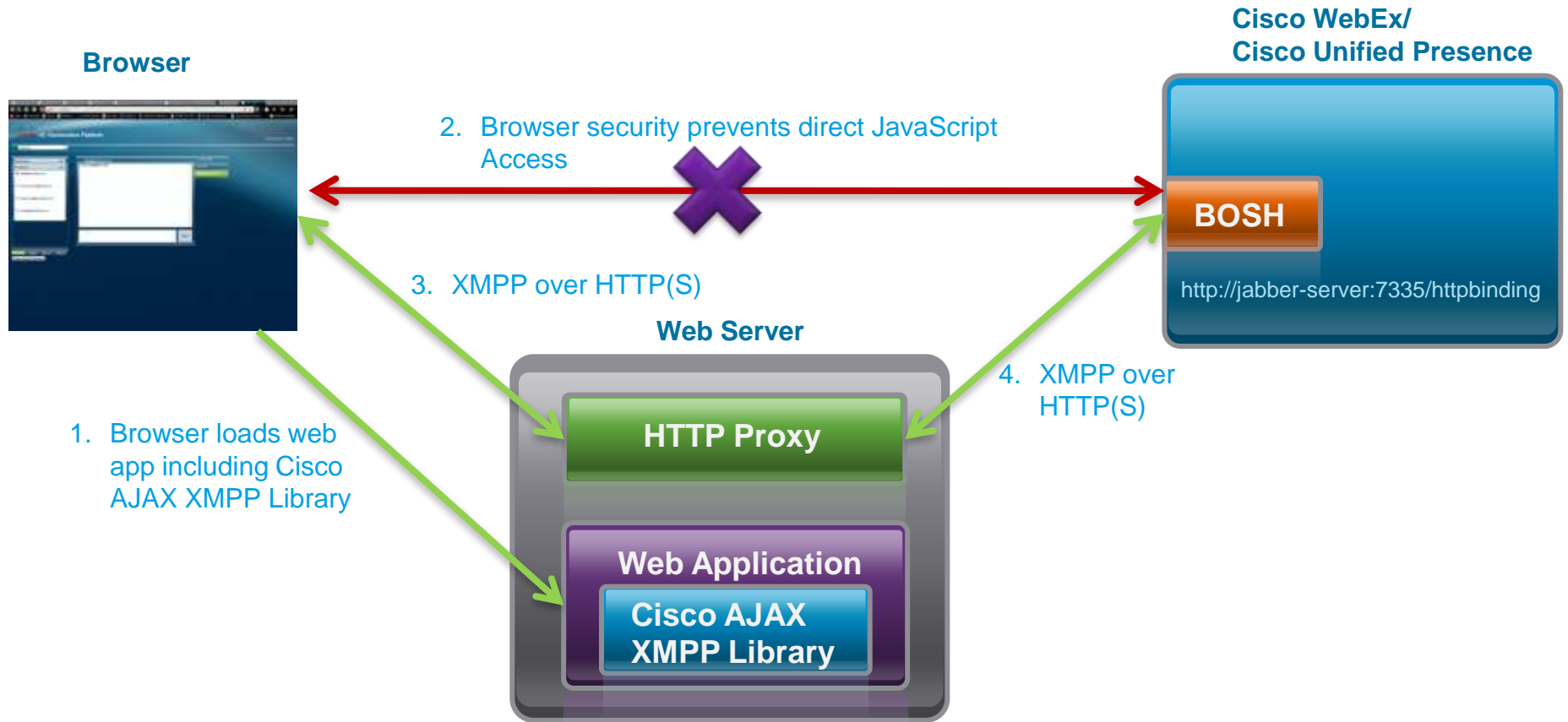




# Deployment Considerations

- Browser restrictions
  - 2 HTTP connection limit
    - [http://www.openajax.org/runtime/wiki/The\\_Two\\_HTTP\\_Connection\\_Limit\\_Issue](http://www.openajax.org/runtime/wiki/The_Two_HTTP_Connection_Limit_Issue)
  - Cross-server communications
    - CUP/Webex support for Cross Origin Resource Sharing (CORS) targeted for upcoming CY 2010 releases.
    - <http://www.w3.org/TR/cors/>
- Asynchronous HTTP communication challenges:
  - HTTP proxying
  - Load-balancing/Failover

# Deployment Architecture



# Summary

- Rich Cisco UC APIs (on any product)
- Cius – standard Android 2.2 + camera + IP phone APIs
- Jabber SDK
  - Instant Messaging & Presence - CAXL
  - Voice - Web Communicator plugin

Thank you.

