Cisco Support Community Expert Series Webcast

Service Discovery Using User Data Service

Raees Shaikh and Vasanth Kumar
Technical Leader, Collaboration / Technical Services Engineer

May 27, 2014

Cisco Support Community – Expert Series Webcast

- Today's featured experts Raees Shaikh and Vasanth Kumar
- Ask questions now about User Data Service

Raees Shaikh

Technical Leader, Collaboration

Vasanth Kumar

Technical Services Engineer

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Topic: Service Discovery Using User Data Service

May 27, 2014

Panel of Experts

Aashish Dua
Customer Support Engineer

Sankar Voleti
Customer Support Engineer

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Thank You For Joining Us Today!

Today's presentation will include audience polling questions.

We encourage you to participate!

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If you would like a copy of the presentation slides, click the PDF file link in the chat box on the right or go to:

https://supportforums.cisco.com/document/12213581/service-discovery-using-user-data-service-slides-live-webcast

Or, https://supportforums.cisco.com/expert-corner/knowledge-sharing

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Polling Question 1

What's your comfort level in ILS Implementation/troubleshooting?

a. Successfully Implemented in 9.x but not in 10.x

b. I know implementation part but find it difficult while troubleshooting.

c. Successfully Implemented in 9.x and migrated to 10.x

d. I haven't done such implementation so far.

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Submit Your Questions Now!

Use the Q & A panel to submit your questions and the panel of experts will respond.

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Service Discovery Using User Data Service

Raees Shaikh and Vasanth Kumar
Technical Leader, Collaboration / Technical Services Engineer

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Agenda

- ILS Networking
- User Data Service
- Jabber Client Service Discovery
- UDS with Expressway Edge

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Inter-cluster Lookup Service

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Overview

- ILS Networking Joins multiple clusters
  - Password based authentication (non-encrypted)
  - Bulk Certificate Exchange which allows TLS communication between networked cluster
- ILS Networking allows :
  - URI Syncing (9.x) and Global dial plan replication (10.x) with PSTN failover.
  - Populates Advanced Features > Cluster view Section
  - Allows Cluster discovery which UDS uses for Service Discovery

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ILS Network – Inside a Cluster

- ILS is a service that is activated per server, not per cluster.
- When a cluster starts or joins an ILS network, the default configuration is to activate and start the ILS service on all the servers in the cluster.
- An admin can choose to activate the service only on particular servers within a cluster, if desired.
- The ILS is designed so that the CM admin should not have to worry much about individual servers within the cluster, at least as far they relate to the ILS.

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Hub and Spoke Topology

- Each Communications Manager cluster in a ILS network can be either a HUB or a SPOKE
- A Communications Manager Cluster with a ILS “StandAlone Role” is never part of ILS Cluster even if it’s running ILS
- Hub Clusters form a full mesh topology
- Hub Cluster also syncs with Spoke Cluster(one or many) if any. A Spoke can have only one Hub Cluster.

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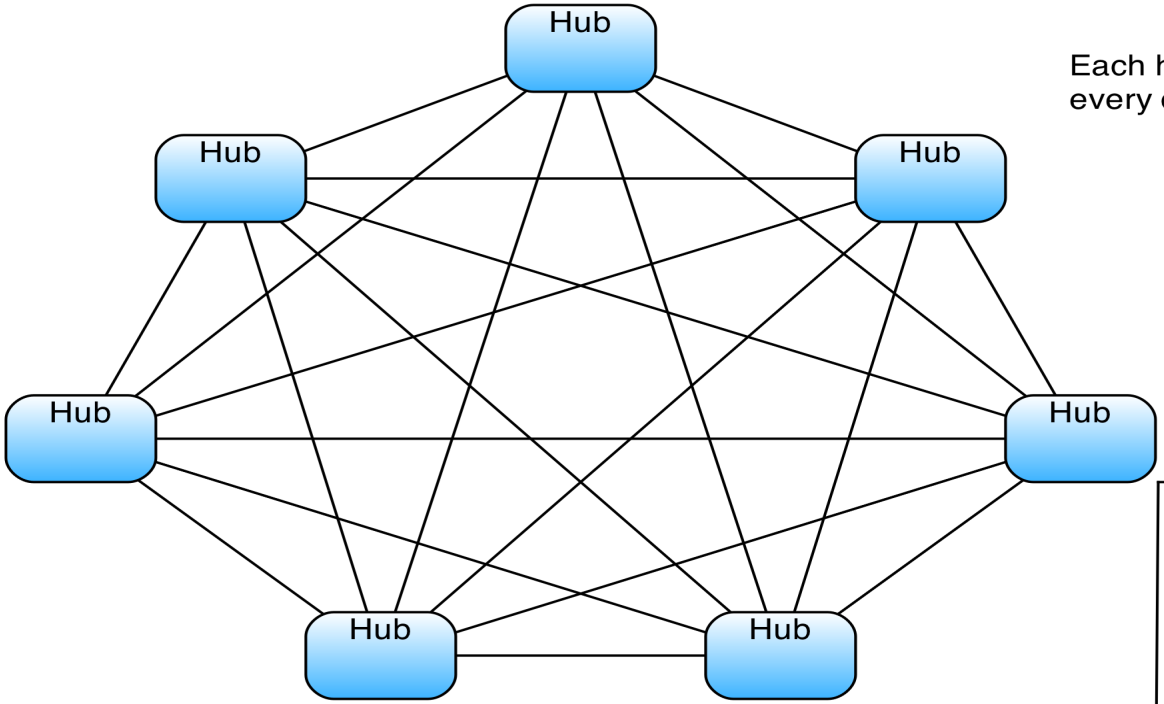
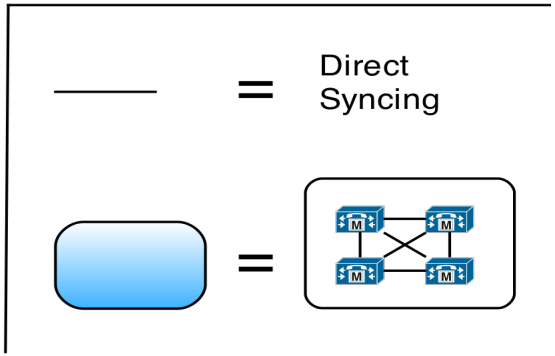
ILS Networking – Full Mesh Topology



Each hub syncs directly with every other hub



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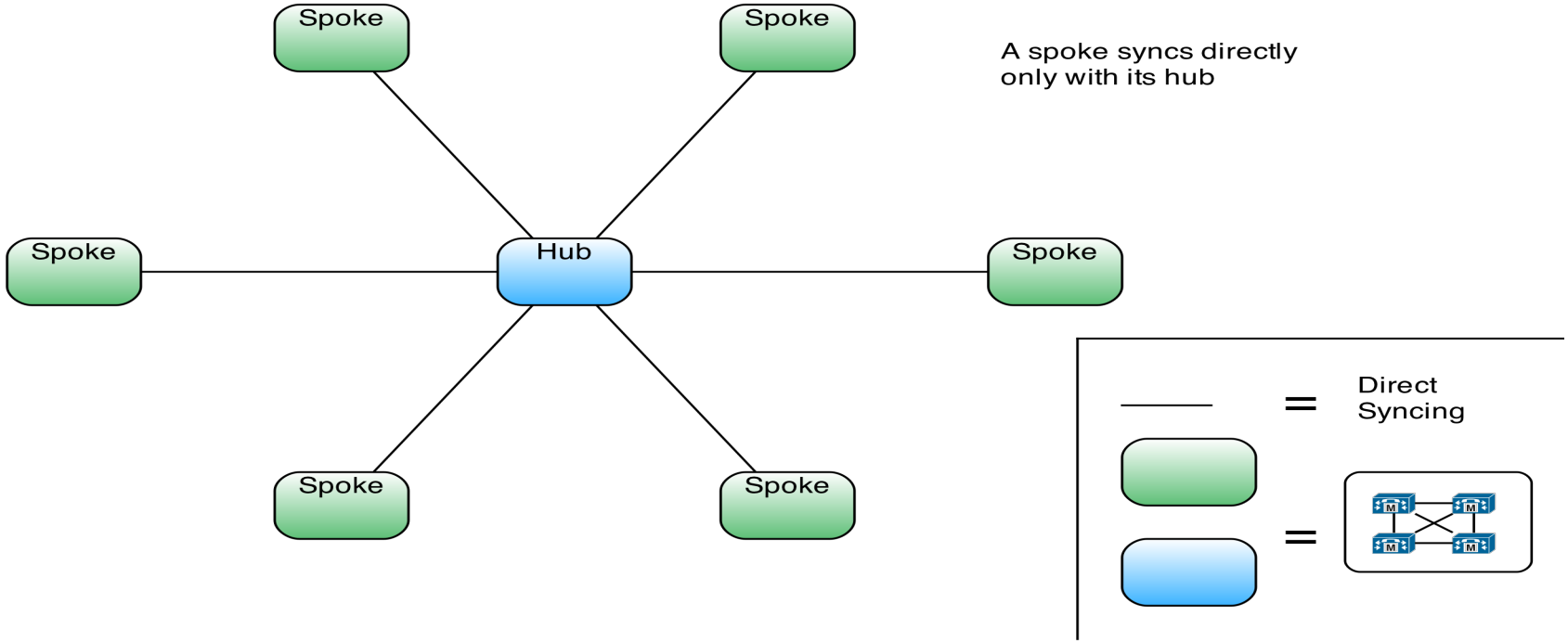
ILS Networking - Wheel Topology



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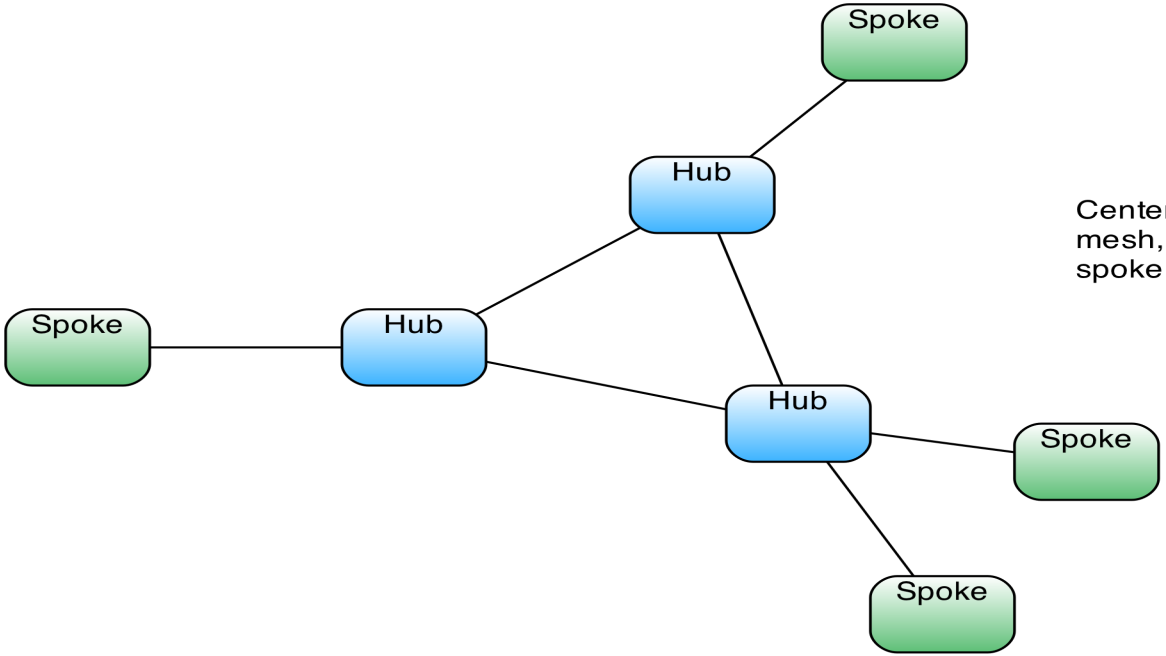
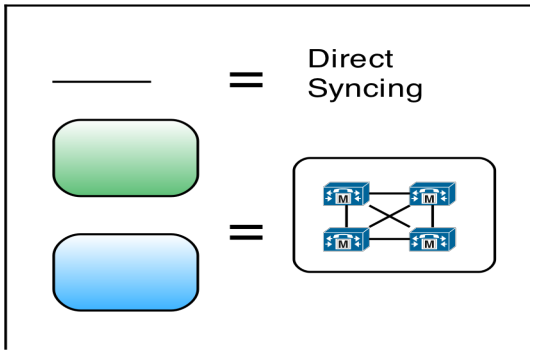
ILS Networking – Distributed Hub and Spoke



Center core of hubs in full mesh, each with its own spoke or spokes



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ILS Network – Pull based Synchronization

- Synchronization between the clusters is pull based on the interval defined on the ILS Configuration Page.
- Interval for synchronization between the cluster is user configurable which can be set between 1 minute to 24 hours
- Every synchronization interval each hub cluster pulls information from cluster with which it's in direct sync. This ensures all the data is synced in the ILS network.
- Maximum of three hops to sync data across any ILS Network (Spoke to Hub to Hub to Spoke)

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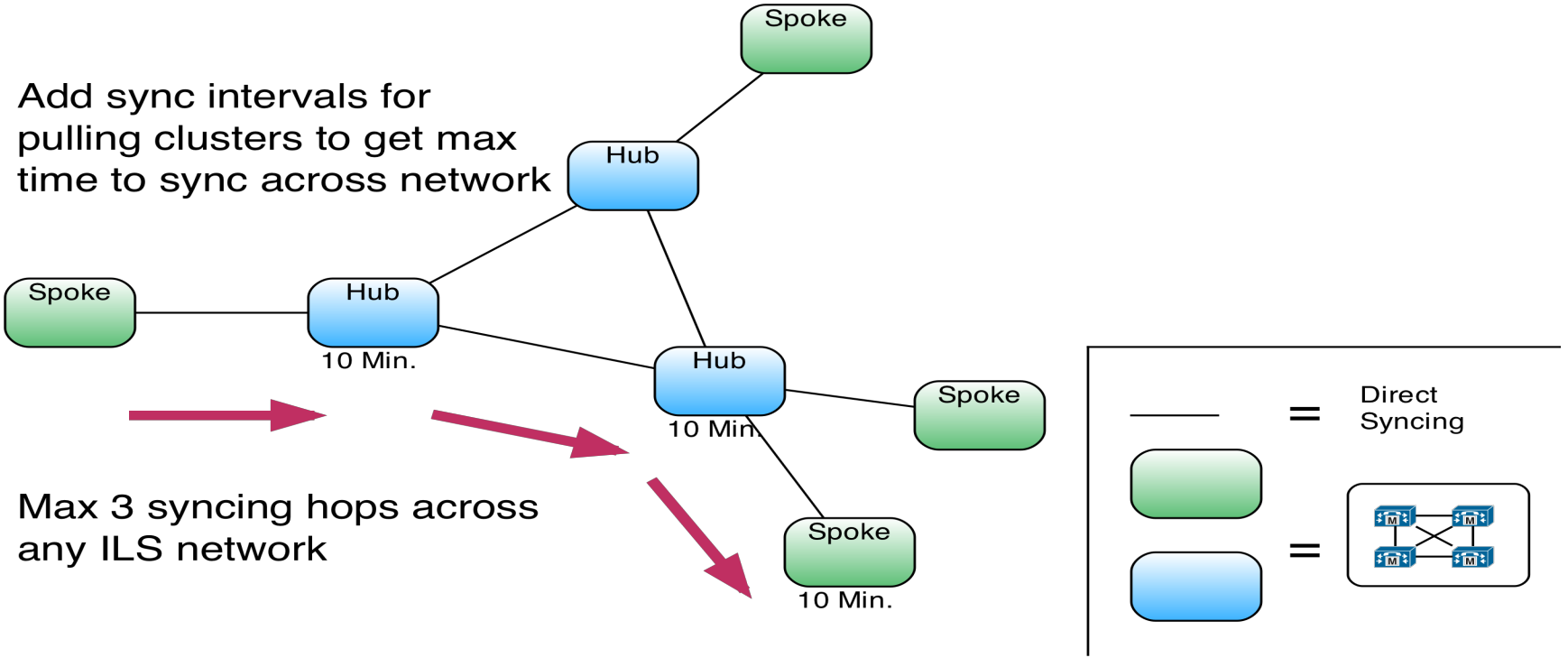
ILS Networking – Pull Based Syncing



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Polling Question 2

How much awareness you have about UDS service in UCM?

a. Not really sure what it does?

b. I know jabber makes use of UDS service but don't really understand the implementation

c. I just started reading about it and plan to develop my own application

d. I have implemented client application which leverage UDS

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Cisco User Data Service

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User Data Service

- New web service available on Cisco Unified Communications Manager 9.x and 10.x
- Designed for web applications which can run on any device
- Easy to learn and use
  - User-based model
  - Standard RESTful web-development
  - Uses common terminology
- Secure Transport and Access
  - All interactions through HTTPS
  - Access to user information requires authentication
- Simplified User Authentication
  - No need for proxy rights based on Administrator credentials

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User Data Service

- New service on Unified CM 9.x & 10.x
  - Service installed by default
  - Activated on all nodes
  - Network Service -- cannot be disabled but stopped
    - Service control pages used to start or stop
- User Data Service runs on Tomcat
  - UDS has a maximum of 40 concurrent HTTP requests per server
    - Requests over throttle limit receive HTTP Error 503 (Service Unavailable)
- Optimized for multiple device management
  - Enables developer to apply settings across all devices / extensions consistently

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Find users home cluster

GET /clusterUser

- Must know the user's "username"
  - /clusterUser?username=<userId>|<email>|<UPN>
  - Example
    https://dc1-ccm-sub.vasank.com/cucm-uds/clusterUser?username=jdoe

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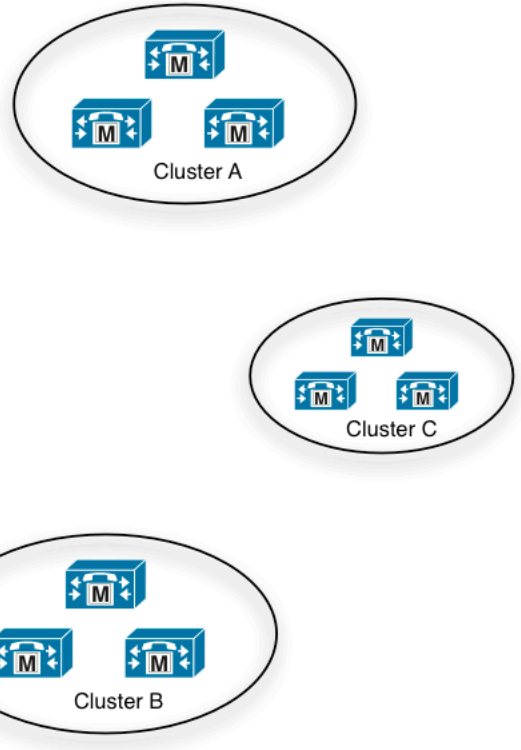
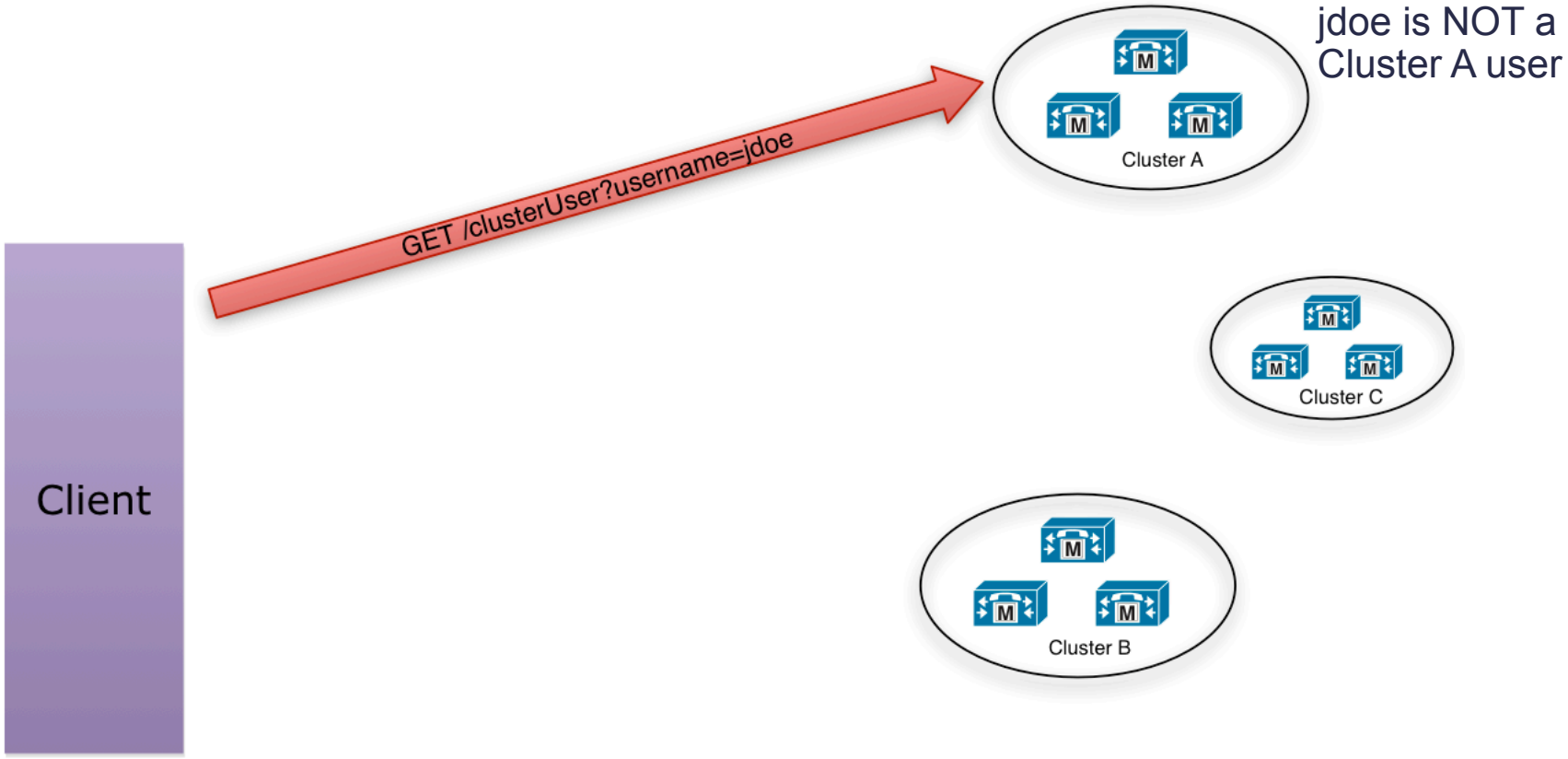
Find users home cluster

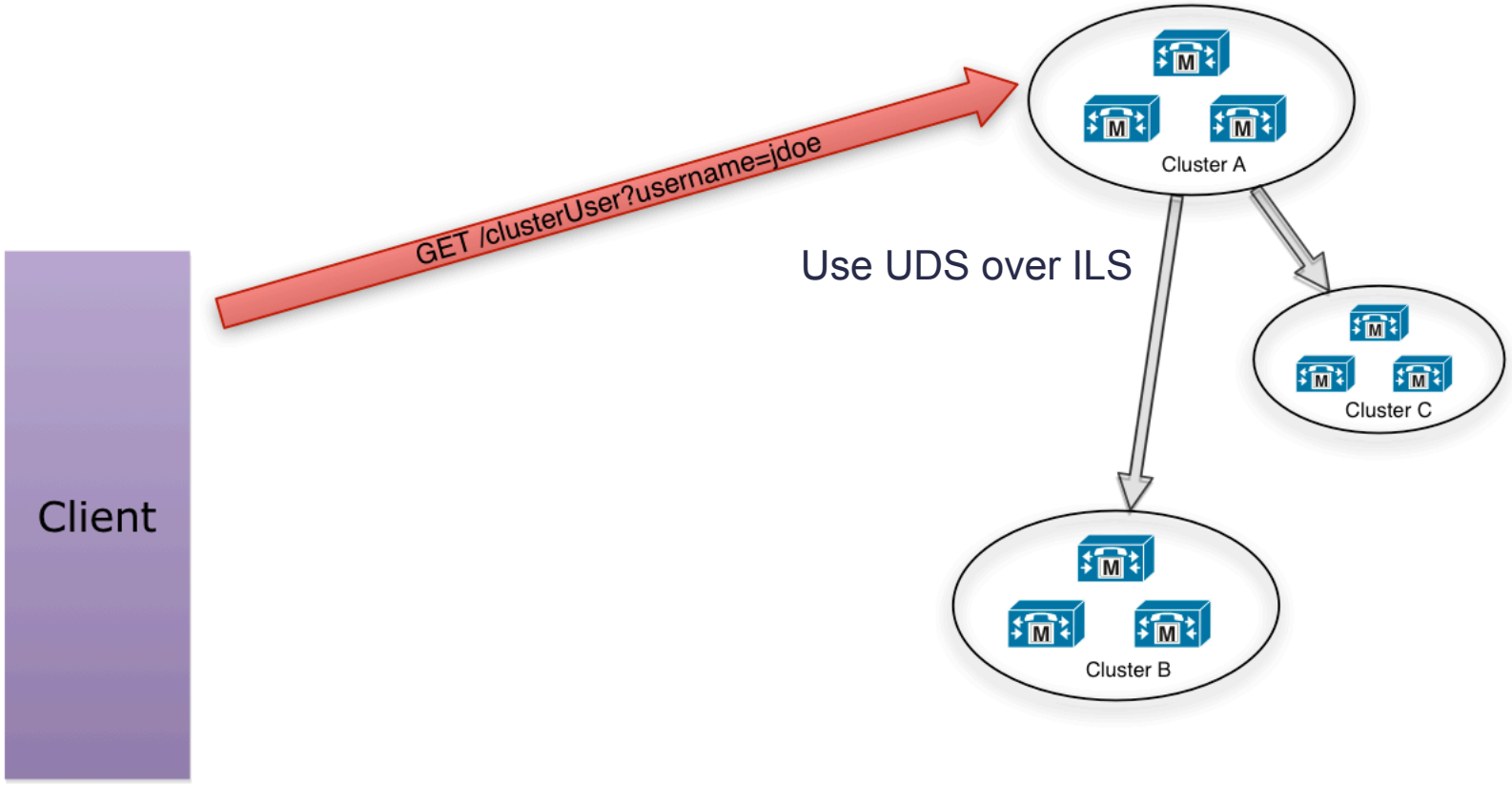
Client



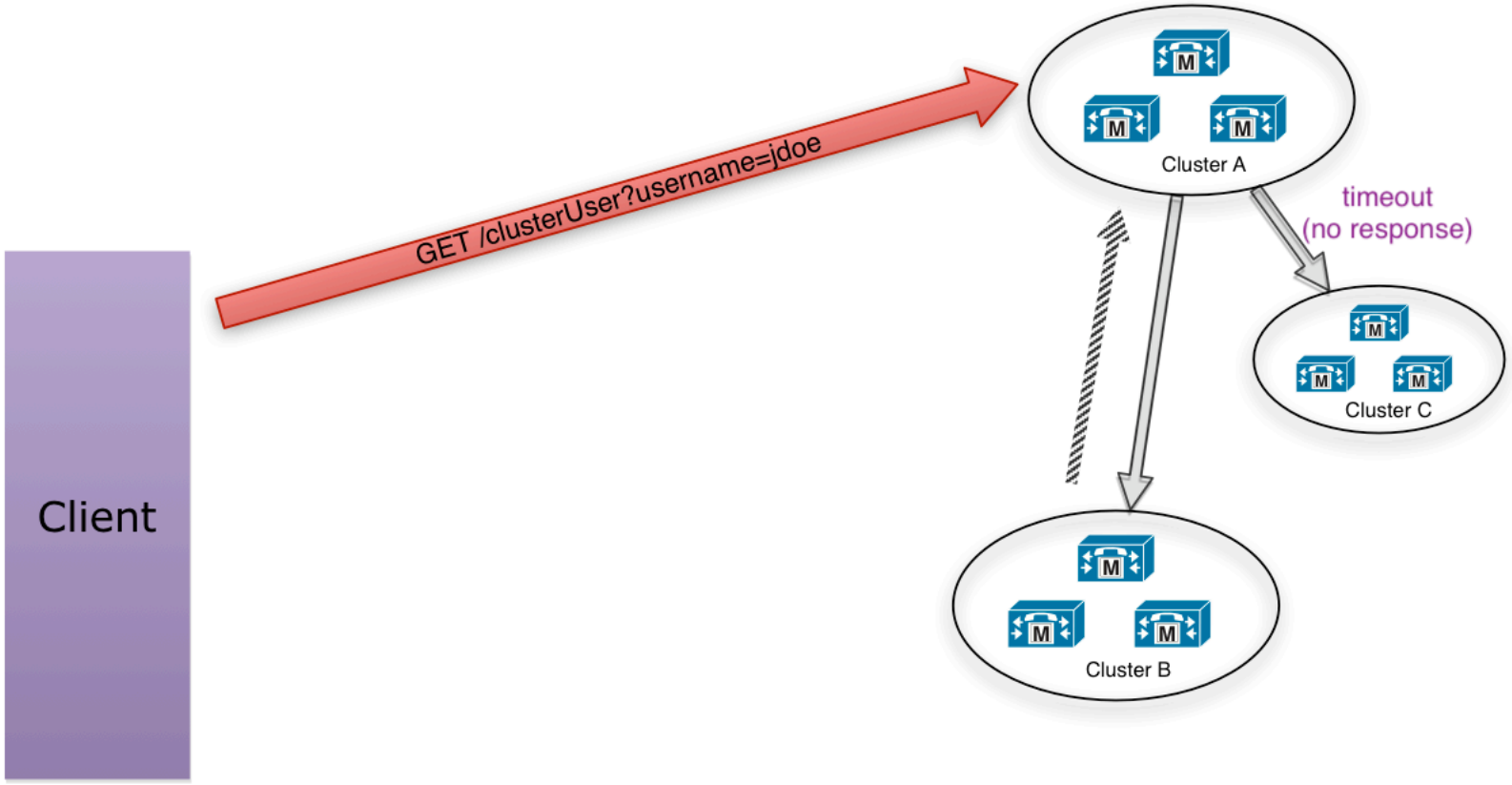
Find users home cluster



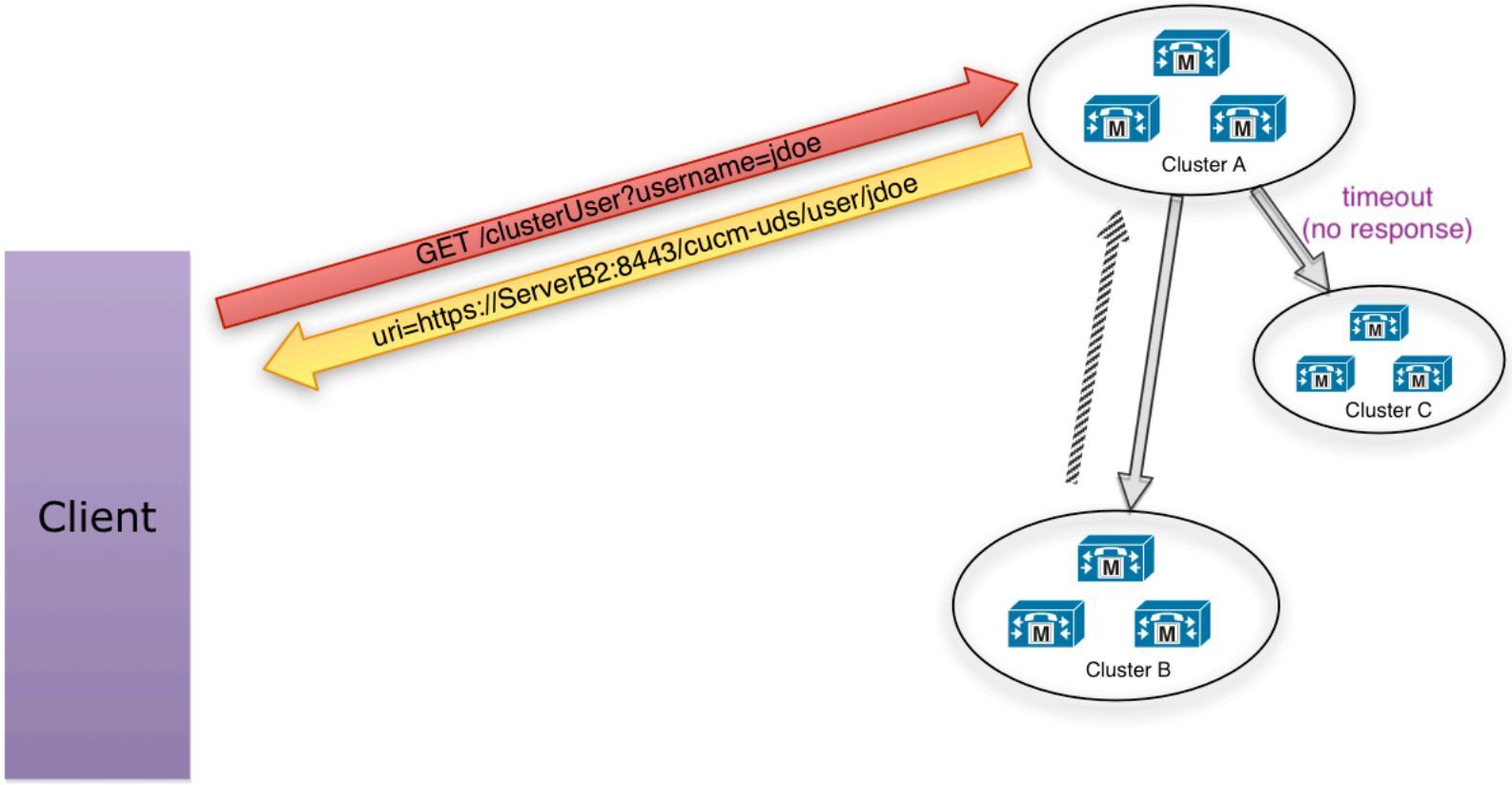
Find users home cluster



Find users home cluster



Find users home cluster



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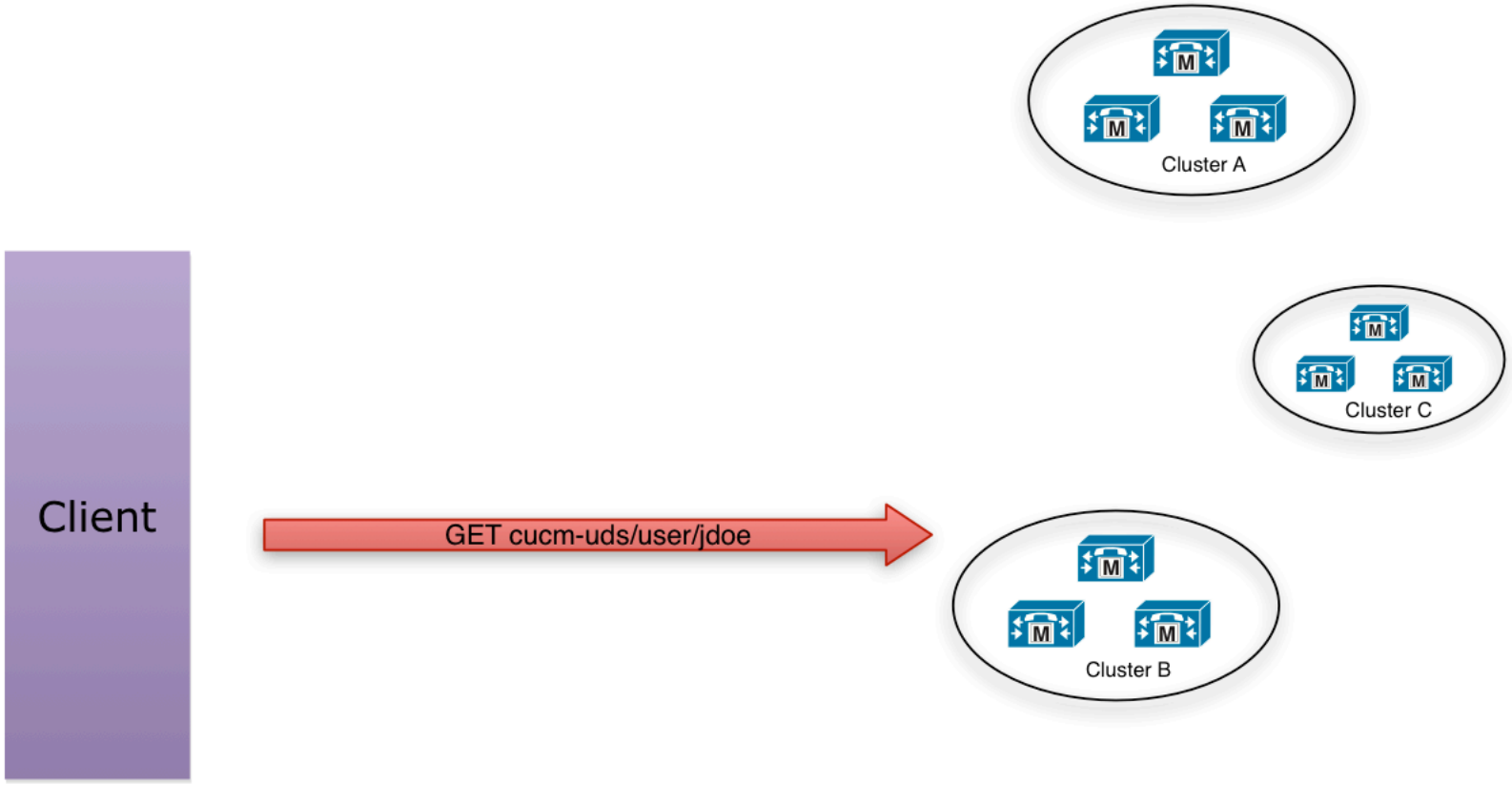
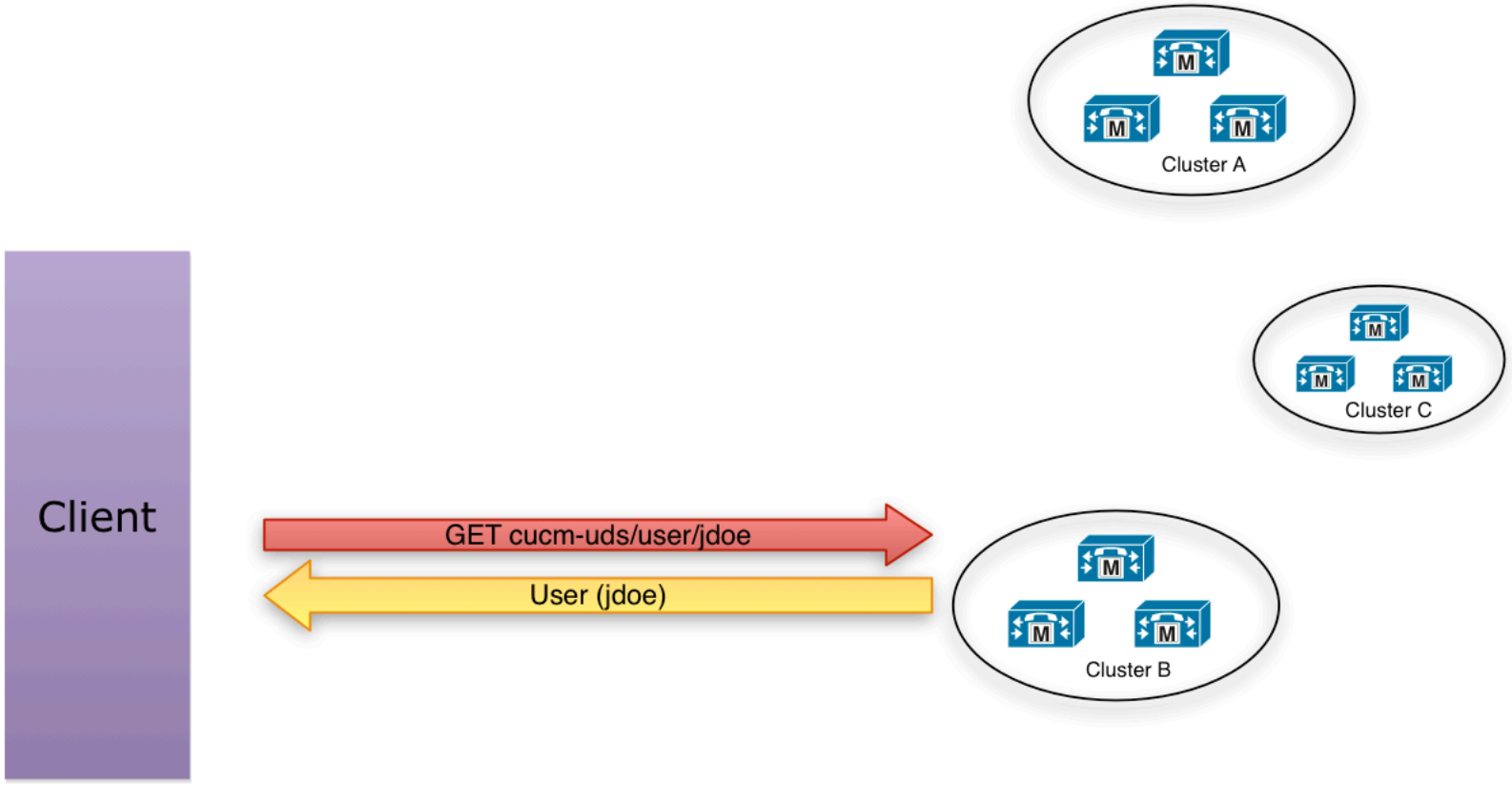
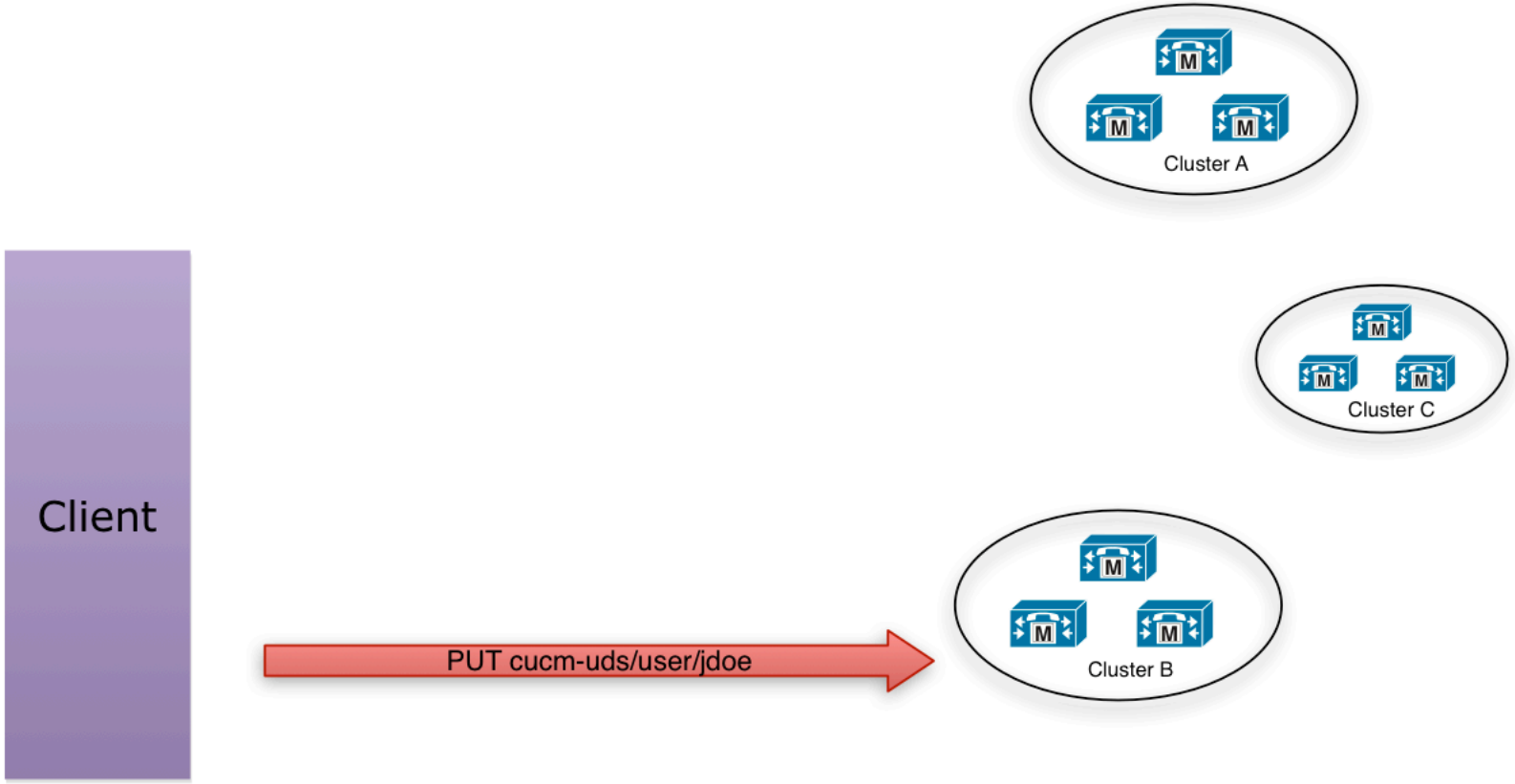


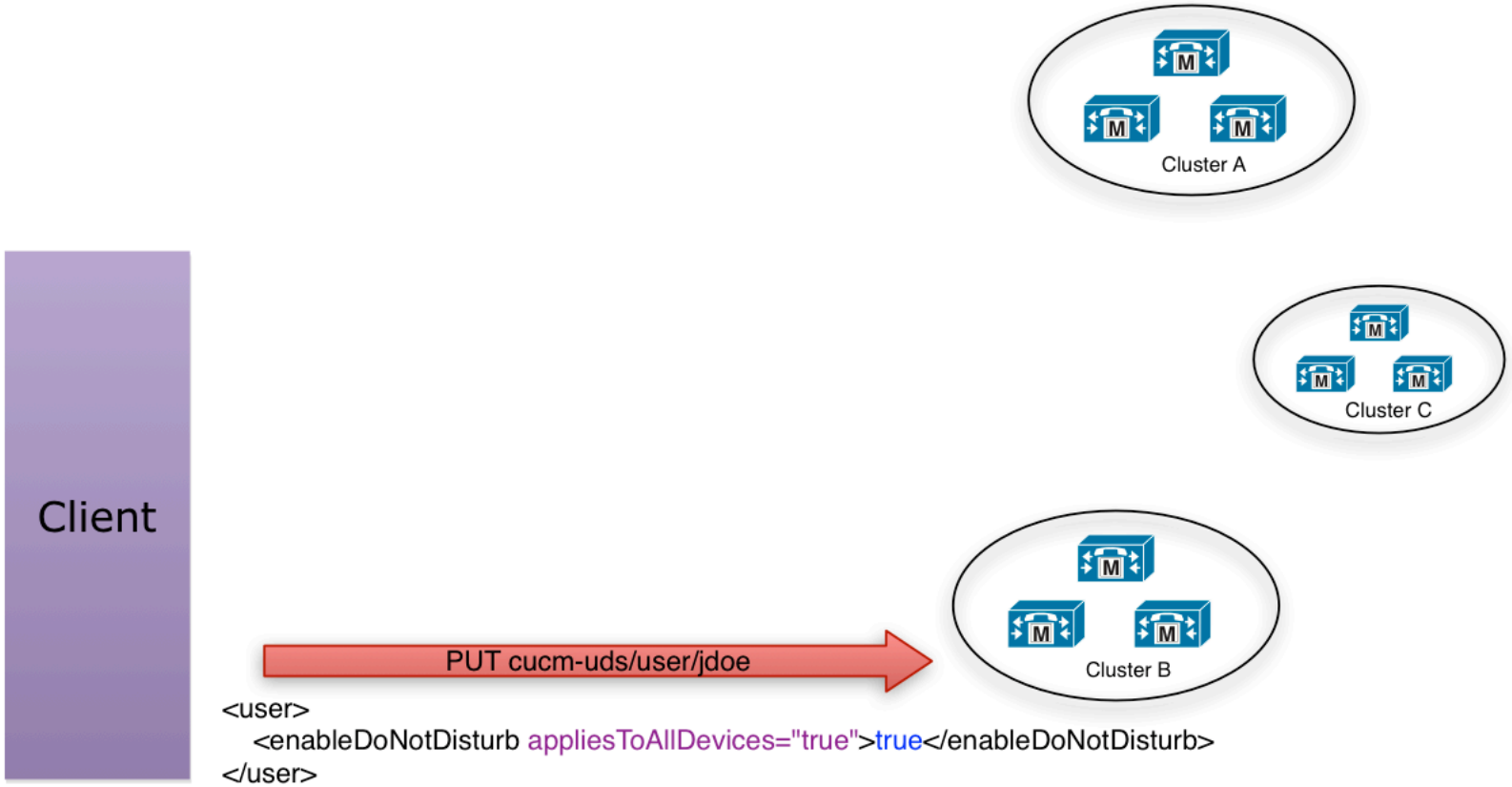
Find users home cluster



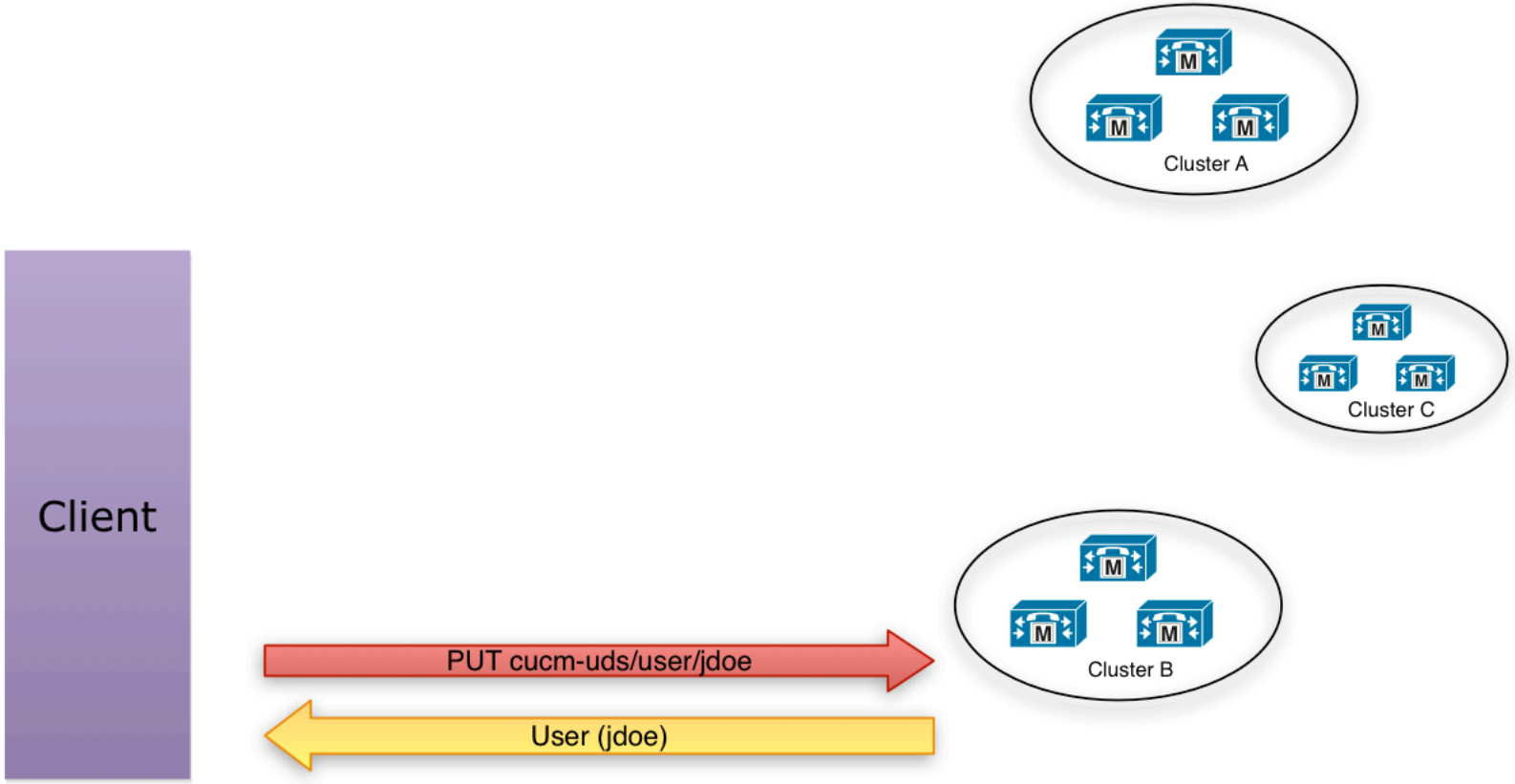
Managing User Preferences Application Flow



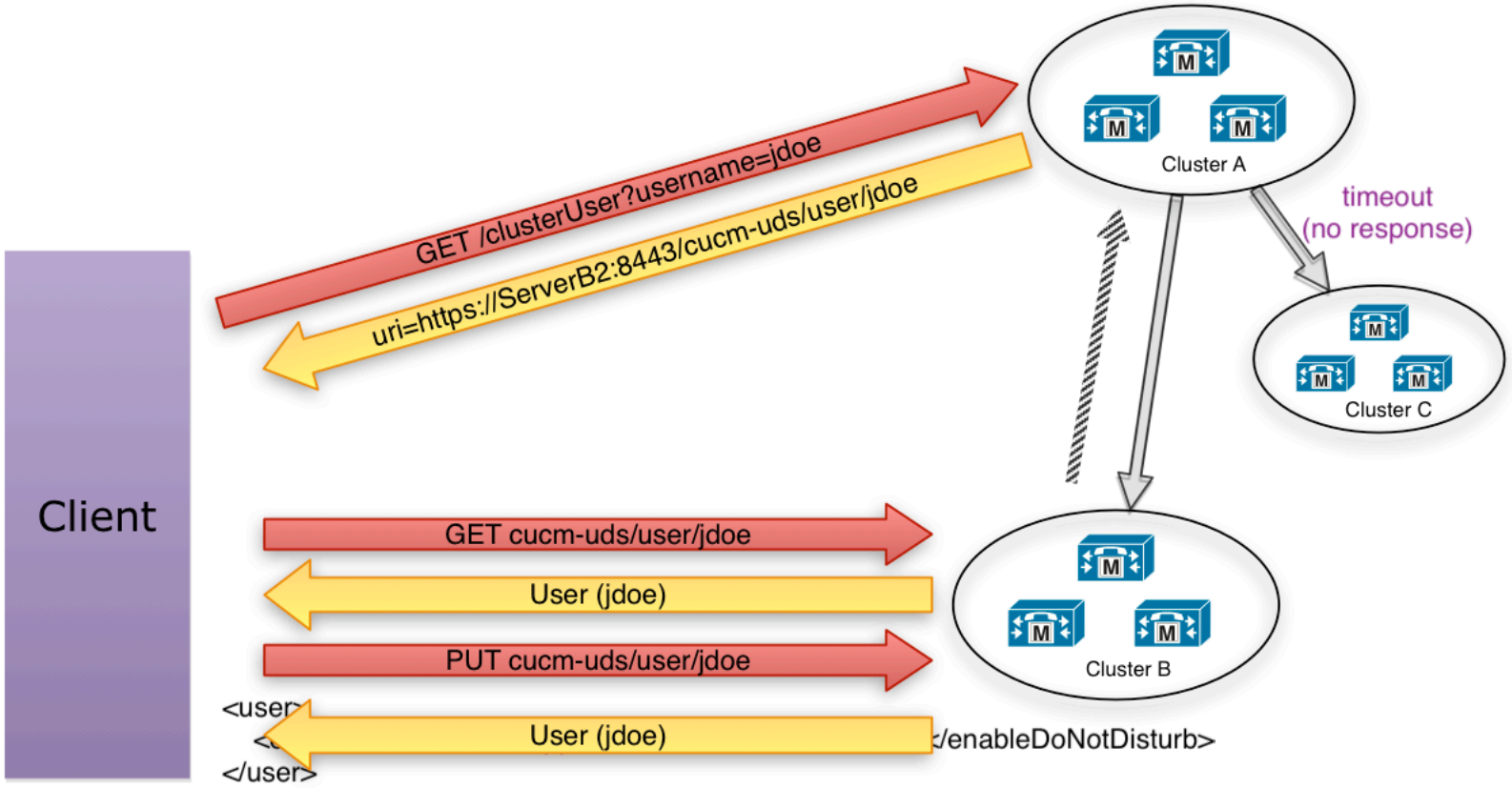
Managing User Preferences Application Flow



Managing User Preferences Application Flow



Managing User Preferences Application Flow



Find users home cluster

- Response

```
−<clusterUser version="10.0.1" uri="https://dc1-ccm-sub.vasank.com/cucm-uds/clusterUser?username=jdoe">
    <result found="true" uri="https://cs-ccm-pub.vasank.com:8443/cucm-uds/user/jdoe" version="10.0.1"/>
    <homeCluster serversUri="https://cs-ccm-pub.vasank.com:8443/cucm-uds/servers">cs-ccm-pub.vasank.com</homeCluster>
  −<homeClusterDetails>
      <selfProvisioningSecureMode>true</selfProvisioningSecureMode>
      <adminProvisionMode>false</adminProvisionMode>
    </homeClusterDetails>
  </clusterUser>
```

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Jabber Client Service Discovery

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Introduction

- Enables clients to automatically detect and locate services
- Queries network for DNS SRV records
- Allows administrators to centrally configure Jabber with server side changes.
- Removes the need to use bootstrap file or having to instruct users to manually configure client
- Goal of discovery is to find a primary source of authentication

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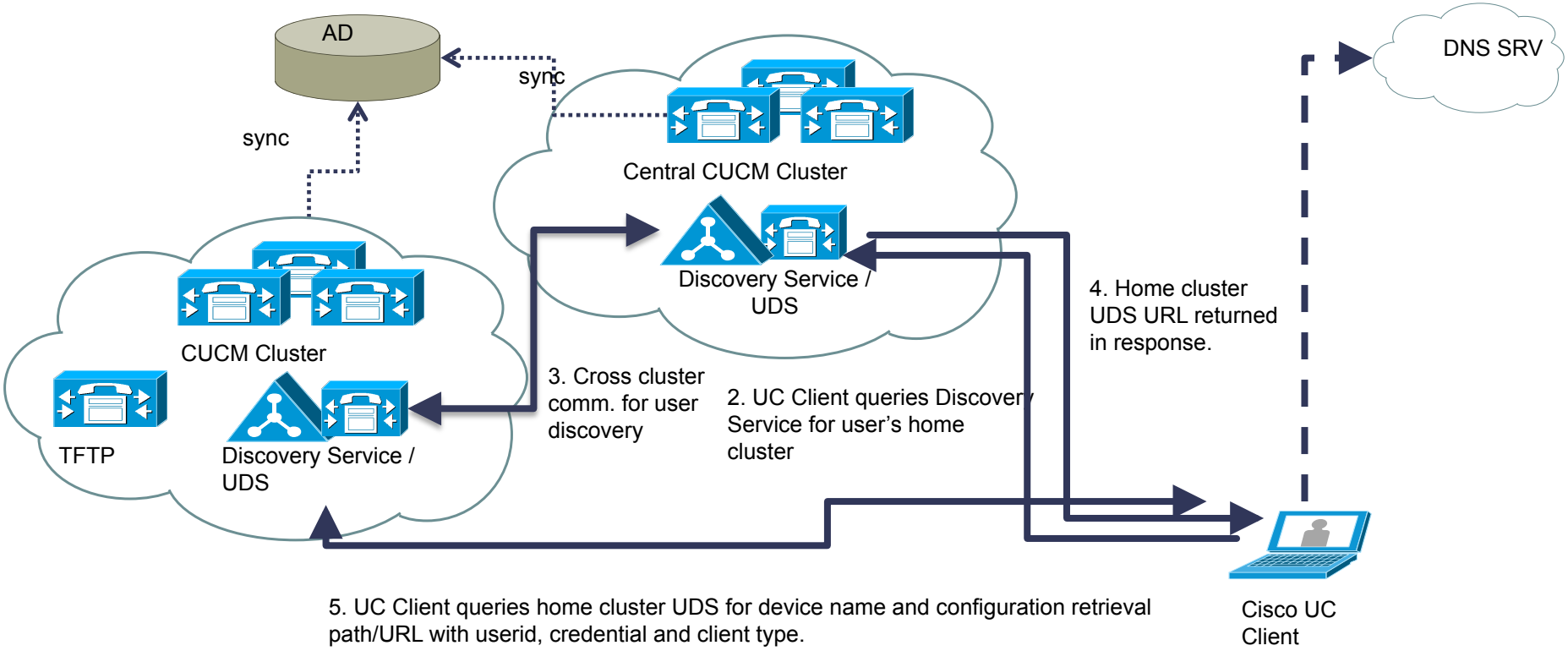
Architecture – Cluster Discovery



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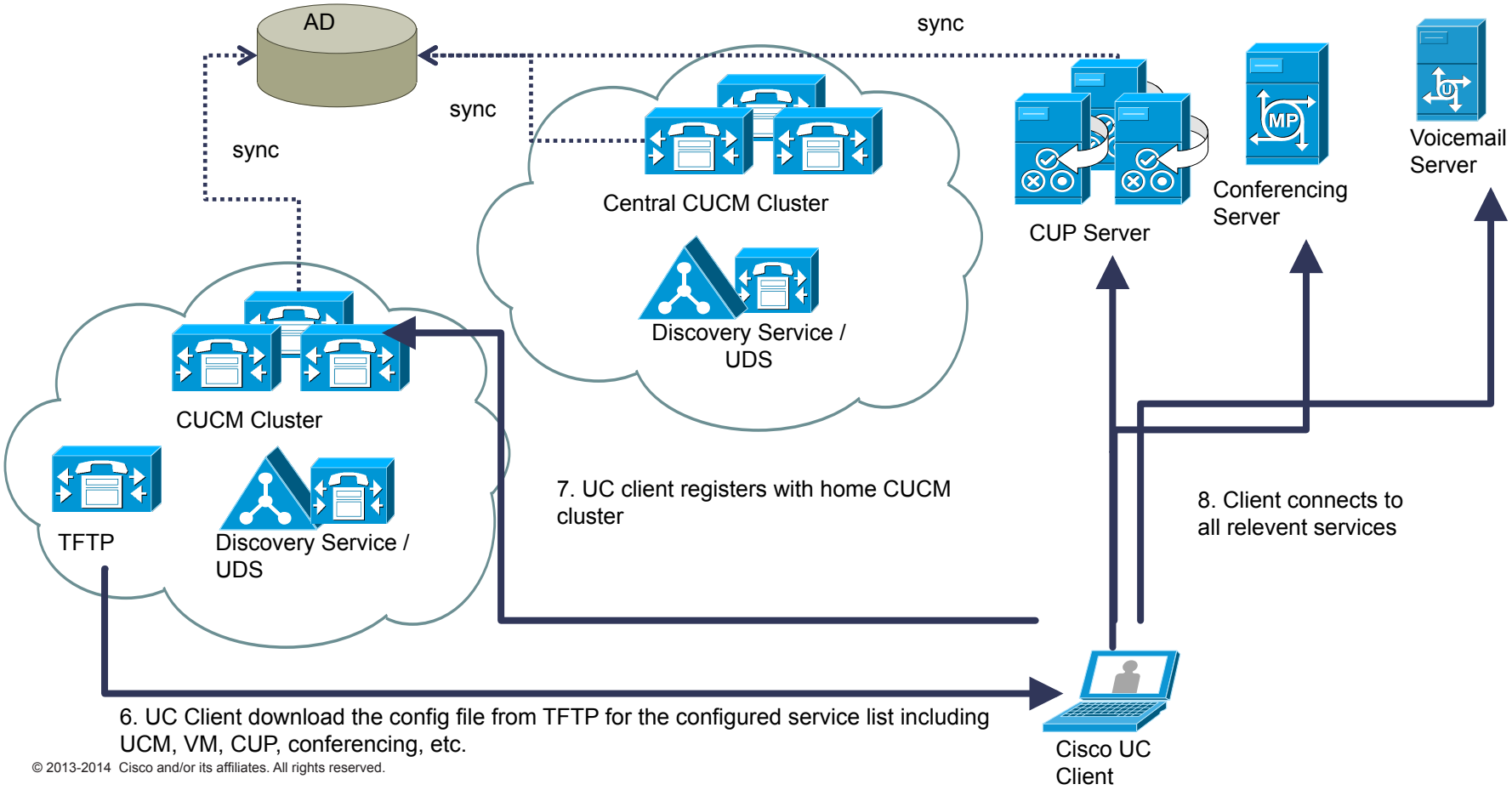
Architecture – Service Discovery



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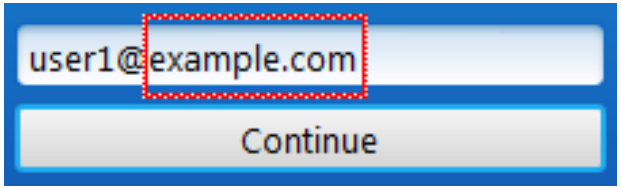
Jabber SRV Query



- Jabber asks user for “email address”
- “example.com” portion after @ is taken
- Discovery starts querying local DNS server for the SRV records in the following sequence:
  - **_cisco-uds._tcp.example.com** (location of Cisco Unified Communications Manager version 9.0+)
  - **_cuplogin._tcp.example.com** (location of Cisco Unified Presence 8.x)
- Once record is found the address of the server is returned and Jabber prompts user to enter credentials to authenticate.
- Only asked once at the very first startup

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Jabber Version 9.6 Sign-In Flow

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Service Discovery/Configuration Overview

- All administrative provisioning for UC Client done on CUCM
  - Only service specific (e.g. IM & Presence) configuration done on specific server
- Configuration is more user/user group focused than device focused
- Service Profile(s) mechanism to group common server settings into component to assign to users/user groups
- Service Profile comprised of settings allowing client to connect to:
  - Voice/Video (SIP/CTI)
  - IM & Presence (WebEx/CUP)
  - Directory (Basic/Advanced (EDI) or UDS)
  - Voicemail
  - Web Conferencing (On/Off Prem)
- Supports different client types (CIPC Mode, CUCI's, Jabber, Web etc.)
- Supports different deployment models (Full UC, IM Only, Desk-phone Only)

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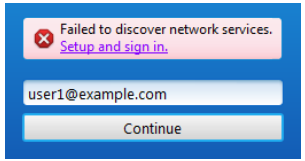
Configuration – Turning On/Off

- Discovery is on by default, therefore client always queries for SRV records*.
- If no SRV records are found client will show error message recommending user to manually configure server connections.
- Install switch can be used to configure default primary authentication source – error message will not be shown.



*Jabber uses cached configuration on subsequent launches.

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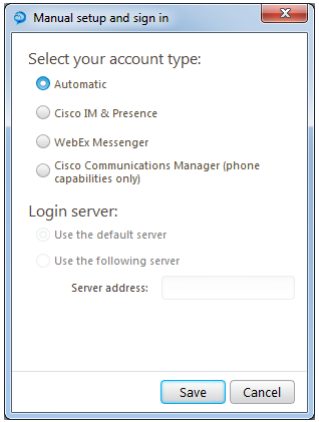
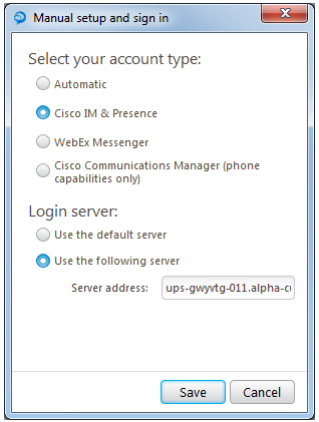
Manual Configuration

- Manual setup dialog allows user to configure their primary authentication source.





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Important Information

- Discovery cache never expires
  - Any new SRV records deployed will not be picked up by the client
  - Cache can be manually cleared by deleting “%appdata%\Cisco\Unified Communications\Jabber\CSF\Config\service-location.xml”
- New format of bootstrap file is used
  - Settings from 9.2 bootstrap file will not be picked up
  - Administrators have to use install switches to create new bootstrap file

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UDS with Expressway Edge

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DNS SRV Lookup

- The client/endpoint does query DNS servers to retrieve service (SRV) records that provide the location of servers.
- Clients/endpoints outside the internal network must be able to resolve '_collab-edge._tls.<domain>' SRV record which must point to the ExpressWay E server.
- Clients/endpoints but also ExpressWay C must be able to resolve '_cisco-uds._tcp.<domain>' SRV record which must point to the CUCM cluster.
- The external DNS may not resolve '_cisco-uds._tcp' SRV records
- The internal DNS may not resolve '_collab-edge._tls' SRV records

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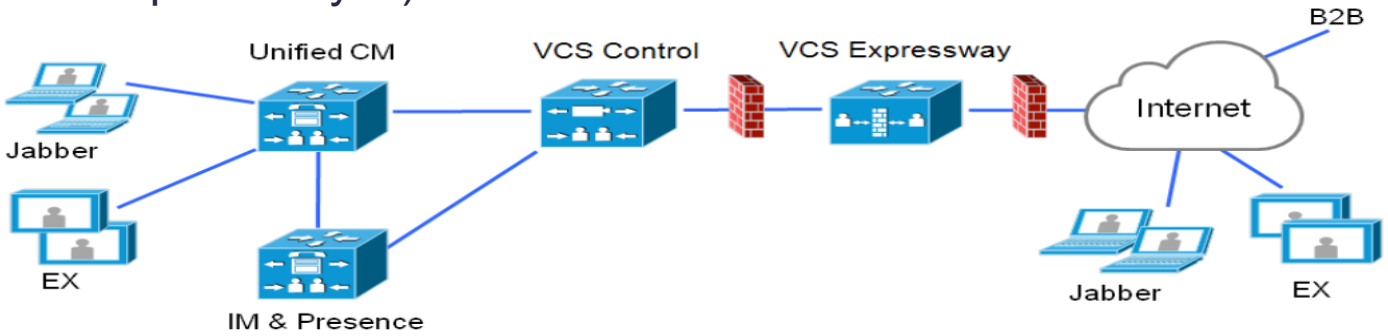
Mobile and Remote Access - Deployment Scenarios

- Single network elements
  - ✓ In this scenario there are single (non-clustered) Unified CM, IM & Presence, VCS Control and VCS Expressway servers (or combination of Expressway-C and Expressway-E)



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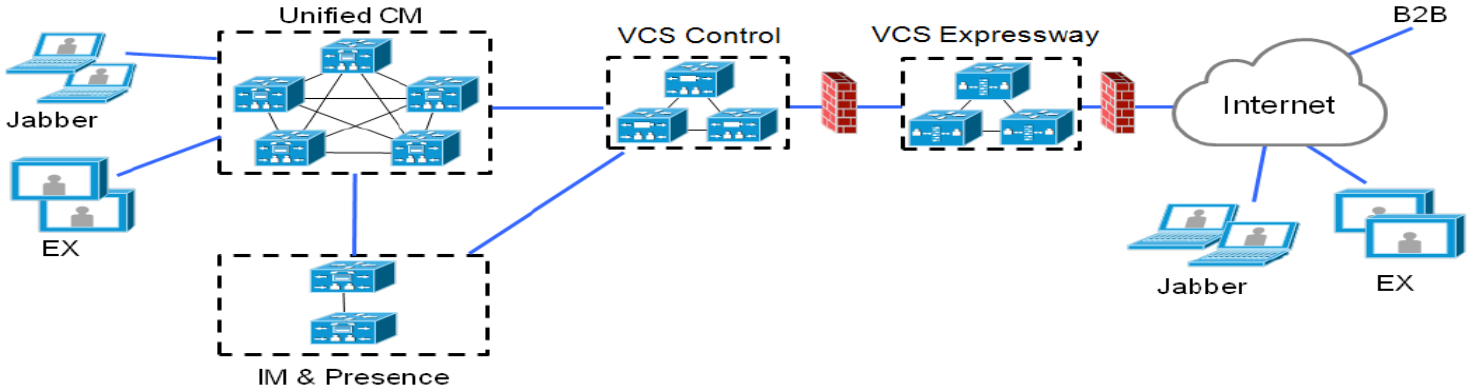
Mobile and Remote Access - Deployment Scenarios

- Single clustered network elements
  - ✓ In this scenario each network element is clustered Unified CM, IM & Presence, VCS Control and VCS Expressway servers (or combination of Expressway-C and Expressway-E)



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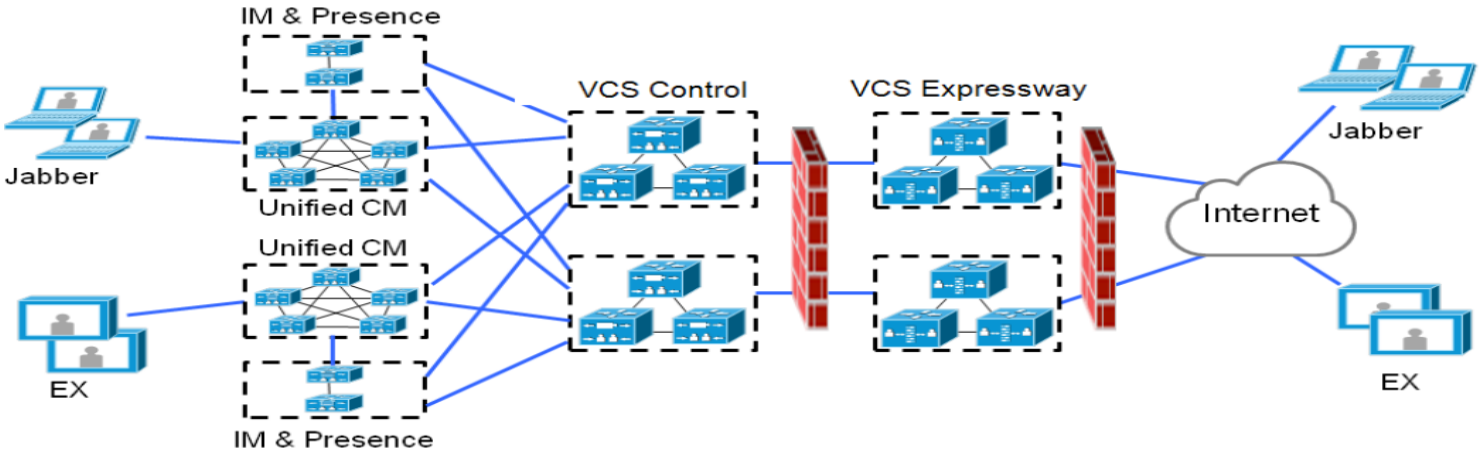
Mobile and Remote Access - Deployment Scenarios

- Multiple clustered network elements
  - ✓ In this scenario there are multiple clusters of each network element of Unified CM, IM & Presence, VCS Control and VCS Expressway servers (or combination of Expressway-C and Expressway-E)



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Polling Question 3

After attending this session how confident you are in configuring & implementing UDS over ILS network?

a. Need more help in understanding the concept

b. I did understand the concept, but need more assistance in configuration

c. I am confident with the concepts & can easily deploy UDS over IDS

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Submit Your Questions Now!

Use the Q & A panel to submit your questions and our expert will respond

Ask the Expert Event with Raees Shaikh and Vasanth Kumar

If you have additional questions, you can ask Raees and Vasanth. They will be answering from May 27 through June 6, 2014.

https://supportforums.cisco.com/discussion/12213571/ask-expert-service-discovery-using-user-data-service

You can catch the video or read the Q&A five business days after the event at

https://supportforums.cisco.com/expert-corner/knowledge-sharing

Trivia Question (Select the correct answer)

What do Intercluster Look Up Service and one of the world's biggest advertising agencies have in common?

a. The large international division of Ogilvy and Mather helped Cisco re-brand themselves with the smaller, more compact Cisco logo for placement on it's products and software including Cisco Unified Communications Manager 7.0.

b. Cisco and one of the world's largest advertising agencies -Ogilvy and Mather launched a series of intercommunity awareness campaigns about the benefits and the process of Intercluster Look Up Service to further educate Cisco employees.

c. Ogilvy and Mather, one of the world's largest advertising companies, use Intercluster Lookup Service via their usage of Cisco Unified Communications Manager 7.0 ILS cluster discovery service allows Cisco Unified Communications Manager to learn about remote clusters without the need for an administrator to manually configure connections between each cluster, making communication and connection smoother.

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June Expert Series Webcast – Portuguese

TOPIC: VPN – Configuring and Troubleshooting

Wednesday, June 4

11:00 a.m. Brasilia City Time

3:00 p.m. West Lisbon

7:00 a.m. San Francisco

10:00 a.m. New York City

Join Cisco Expert:

Itzcoatl Espinosa

During this live event, Itzcoatl will give an introduction to the basic concepts used for implementing GET VPN (Group Encrypted Transport VPN) as well as its configuration and verification.

Registration for this live webcast:

http://tools.cisco.com/gems/cust/customerSite.do?METHOD=W&LANGUAGE_ID=P&SEMINAR_CODE=S20639&PRIORITY_CODE=

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June Expert Series Webcast – English

TOPIC: Integrating Cisco Cloud Security with Adaptive Security Appliance (ASA)

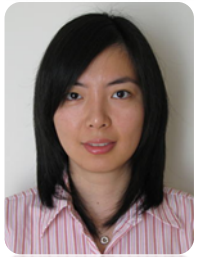
Tuesday, June 24

9:00 a.m. San Francisco

12:00 p.m. New York

5:00 p.m. London

6:00 p.m. Paris



Join Cisco Expert:

Maite Cadenas Sanchez and Jennifer Halim

During the live event, Cisco subject matter experts Maite Cadenas and Jennifer Halim will explain how to integrate Cloud Web Security (CWS) with Adaptive Security Appliance (ASA).

Registration for this live webcast:

http://tools.cisco.com/gems/cust/customerSite.do?METHOD=E&LANGUAGE_ID=E&SEMINAR_CODE=S20711&PRIORITY_CODE=#

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Ask the Expert Events – Current

Topic: Cisco Nexus Architecture Designs

Join subject matter expert **Ahmad Manzoor of AGCN Pakistan**

Learn and ask questions about Cisco Nexus architecture designs.

Ends June 6

Topic: Troubleshooting Cisco UCS with Fibre Channel Storage

Join Cisco Experts **Ali Aslanpour** and **Jalpa Patel**

Learn and ask questions about Cisco Unified Computing System Fibre Channel Storage connectivity and best practices for your environment as well as troubleshooting issues.

Ends June 6

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Ask the Expert Events – Upcoming

Topic: Planning, Designing and Implementing Mobile Remote Access (Collaboration Edge)

Join Cisco Experts **Aashish Jolly** and **Abhijit Singh Anand**

Learn and ask questions about mobile remote access (Collaboration Edge)

Starts June 9

Topic: Introduction to IOS XR

Join Cisco Expert Anilkumar Dantu

Learn and ask questions about basic fundamental difference between IOS & IOS-XR , how IOS XR as operating system is packaged , boot-up procedure in IOS- XR, Basic configuration & configuration file system difference between IOS & IOS-XR.

Starts June 23

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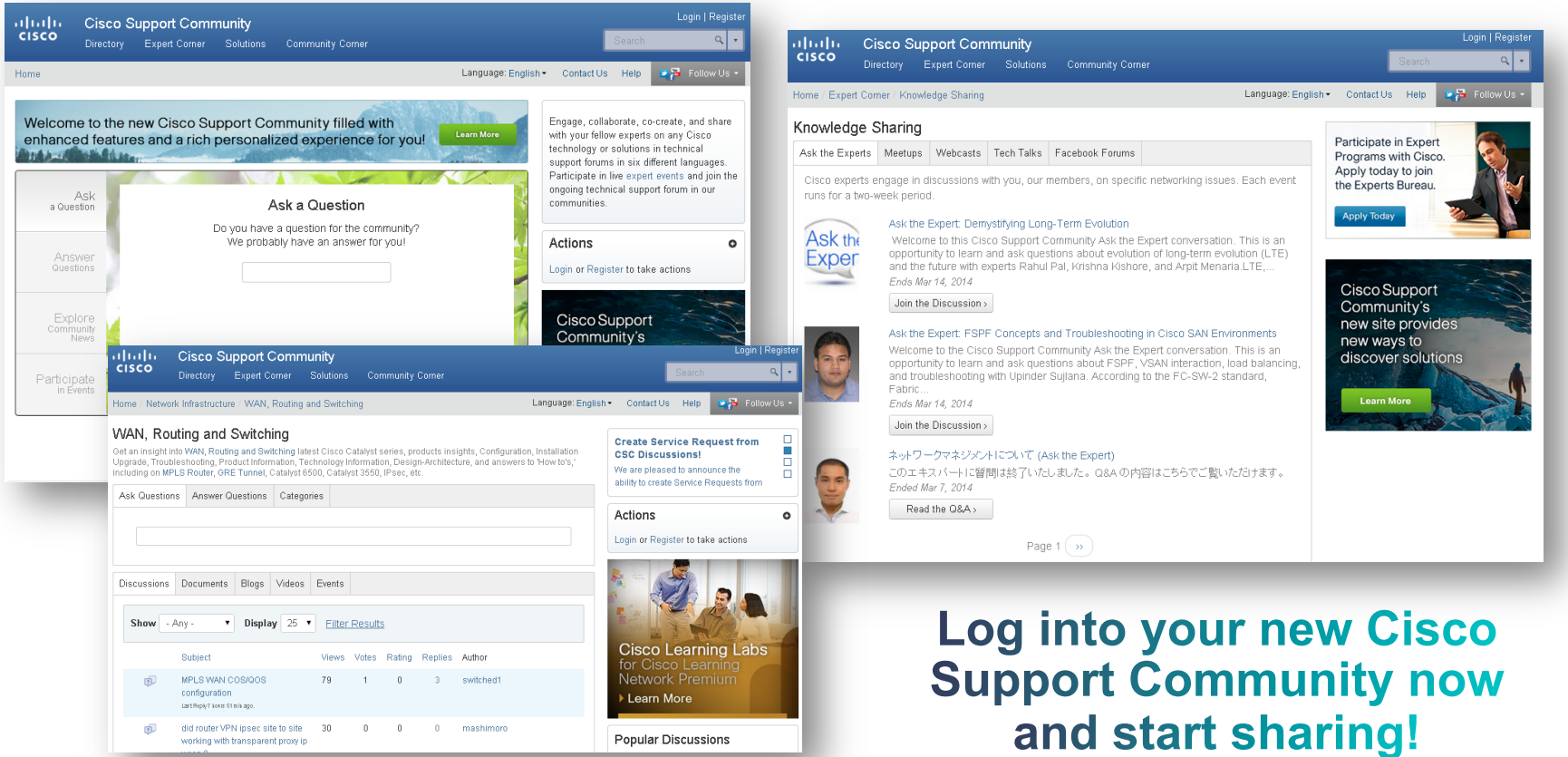

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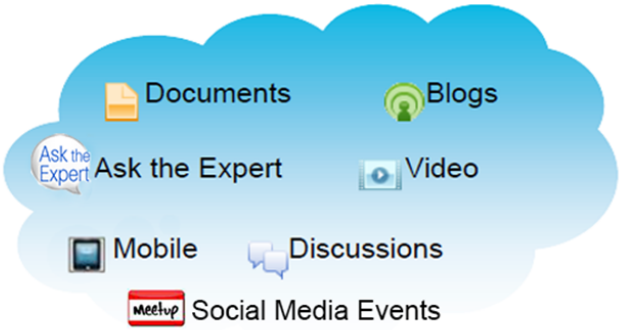

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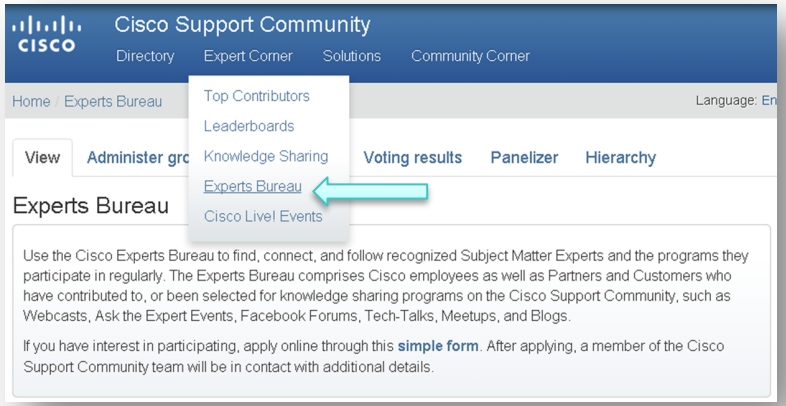

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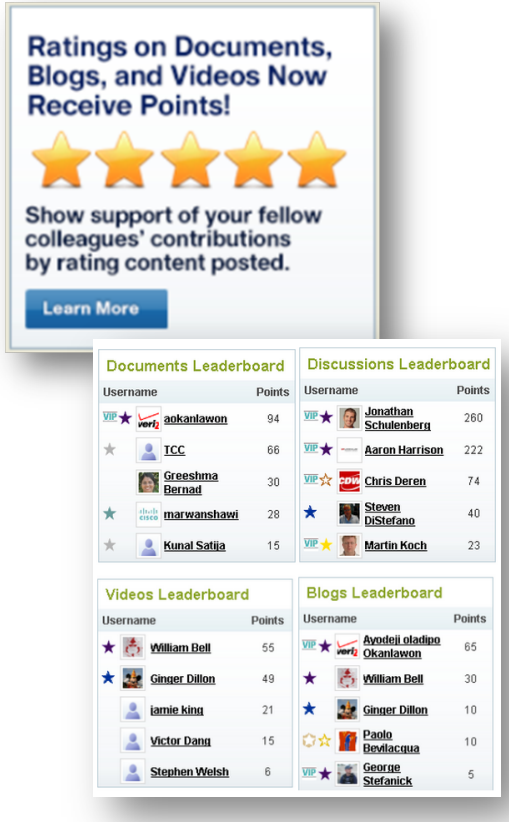

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Trivia Question (Select the correct answer)

What do Intercluster Look Up Service and one of the world's biggest advertising agencies have in common?

a. The large international division of Ogilvy and Mather helped Cisco re-brand themselves with the smaller, more compact Cisco logo for placement on it's products and software including Cisco Unified Communications Manager 7.0.

b. Cisco and one of the world's largest advertising agencies -Ogilvy and Mather launched a series of intercommunity awareness campaigns about the benefits and the process of Intercluster Look Up Service to further educate Cisco employees.

c. Ogilvy and Mather, one of the world's largest advertising companies, use Intercluster Lookup Service via their usage of Cisco Unified Communications Manager 7.0 ILS cluster discovery service allows Cisco Unified Communications Manager to learn about remote clusters without the need for an administrator to manually configure connections between each cluster, making communication and connection smoother.

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Please take a moment to complete the evaluation

Thank you.