Mobile and Remote Access Overview

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About Mobile and Remote Access

Cisco Unified Communications Mobile and Remote Access (MRA) is part of the Cisco Collaboration Edge Architecture. It allows endpoints such as Cisco Jabber to have their registration, call control, provisioning, messaging and presence services provided by Cisco Unified Communications Manager (Unified CM) when the endpoint is outside the enterprise network. The Expressway provides secure firewall traversal and line-side support for Unified CM registrations.

The MRA solution provides the following functions:

- **Off-premises access**: a consistent experience outside the network for Jabber and EX/MX/SX Series clients
- **Security**: secure business-to-business communications
- **Cloud services**: enterprise grade flexibility and scalable solutions providing rich Cisco Webex integration and service provider offerings
- **Gateway and interoperability services**: media and signaling normalization, and support for non-standard endpoints
Third-party SIP or H.323 devices can register to the Expressway-C and, if necessary, interoperate with Unified CM-registered devices over a SIP trunk.

Unified CM provides call control for both mobile and on-premises endpoints. Signaling traverses the Expressway solution between the mobile endpoint and Unified CM. Media traverses the Expressway solution and is relayed between endpoints directly. All media is encrypted between the Expressway-C and the mobile endpoint.

Core Components

Any MRA solution requires Expressway and Unified CM, with MRA-compatible soft clients and/or fixed endpoints. The solution can optionally include the IM and Presence Service and Unity Connection. This guide assumes that the following items are already set up:

- A basic Expressway-C and Expressway-E configuration, as specified in the Expressway Basic Configuration (Expressway-C with Expressway-E) Deployment Guide. (The document describes the networking options for deploying Expressway-E in the DMZ.)
• Unified CM and IM and Presence Service are configured as specified in the configuration and management guides for your version, at Cisco Unified Communications Manager Configuration Guides.

• If used, IM and Presence Service and/or Unity Connection are similarly configured as specified in the relevant Cisco Unified Communications Manager Configuration Guides.

**Mobile and Remote Access Ports**

Information about MRA ports is available in the Cisco Expressway IP Port Usage Configuration Guide at the Cisco Expressway Series Configuration Guides page. This includes ports that can potentially be used between the internal network (where the Expressway-C is located) and the DMZ (where the Expressway-E is located), and between the DMZ and the public internet.

**Protocol Summary**

The table below lists the protocols and associated services used in the Unified Communications solution.

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<th>Protocol</th>
<th>Security</th>
<th>Service</th>
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<td>SIP</td>
<td>TLS</td>
<td>Session establishment – Register, Invite etc.</td>
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<tr>
<td>HTTPS</td>
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<td>Logon, provisioning/configuration, directory, visual voicemail</td>
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<td>Media</td>
<td>SRTP</td>
<td>Media - audio, video, content sharing</td>
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<td>XMPP</td>
<td>TLS</td>
<td>Instant Messaging, Presence, Federation</td>
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</tbody>
</table>

**Figure 3: Protocol Workload Summary**

- Inside firewall (Intranet)
- DMZ
- Outside firewall (Public Internet)

- Collaboration Services
- Unified CM
- Expressway C
- Expressway E
- Unity Connection
- Conferencing Resources
- Internet
- SIP  TLS  Session establishment – Register, Invite etc.
- Media  SRTP  Audio, Video, Content Share
- HTTPS  TLS  Logon, Provisioning/Configuration, Contact Search, Visual Voicemail
- XMPP  TLS  Instant Messaging, Presence
Jabber Client Connectivity Without VPN

The MRA solution supports a hybrid on-premises and cloud-based service model. This provides a consistent experience inside and outside the enterprise. MRA provides a secure connection for Jabber application traffic and other devices with the required capabilities to communicate without having to connect to the corporate network over a VPN. It is a device and operating system agnostic solution for Cisco Jabber clients on Windows, Mac, iOS and Android platforms.

MRA allows Jabber clients that are outside the enterprise to do the following:

- Use Instant Messaging and Presence services
- Make voice and video calls
- Search the corporate directory
- Share content
- Launch a web conference
- Access visual voicemail

Note: Cisco Jabber Video for TelePresence (Jabber Video) does not work with MRA.

Clients and Endpoints Supported with MRA

Details of which clients and endpoints are MRA-compatible are in MRA-Compatible Client Versions.

For information about which features are supported over MRA for specific clients and endpoints, refer to the relevant product documentation:

- Jabber clients

- Cisco IP Phone 7800 Series (desk phones)
  See “Phone Features Available for Mobile and Remote Access Through Expressway” in the “Phone Features and Setup” chapter, Cisco IP Phone 7800 Series Administration Guide for Cisco Unified Communications Manager on the Maintain and Operate Guides page.

- Cisco IP Conference Phone 7832
  See “Phone Features Available for Mobile and Remote Access Through Expressway” in the “Phone Features and Setup” chapter, Cisco IP Conference Phone 7832 Administration Guide for Cisco Unified Communications Manager on the Maintain and Operate Guides page.

- Cisco IP Phone 8800 Series (desk phones)
  See “Phone Features Available for Mobile and Remote Access Through Expressway” in the “Phone Features and Setup” chapter, Cisco IP Phone 8800 Series Administration Guide for Cisco Unified Communications Manager on the Maintain and Operate Guides page.

- Cisco IP Conference Phone 8832
See “Phone Features Available for Mobile and Remote Access Through Expressway” in the “Phone Features and Setup” chapter, *Cisco IP Conference Phone 8832 Administration Guide for Cisco Unified Communications Manager* on the Maintain and Operate Guides page.
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