Push Notifications Support in Release 11.5(1)SU2

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Note If your deployment includes Cisco Jabber on iPhone and iPad clients, Cisco highly recommends that you upgrade to a minimum release of Cisco Unified Communications Manager 11.5(1)SU3 to receive full support for the Push Notifications solution with voice and video calling as well as high availability for instant messaging.

If you are currently running Release 11.5(1)SU2 with Push Notifications and don't want to upgrade, Release 11.5(1)SU2 provides limited Push Notifications support for IM and Presence. Refer to the contents of this appendix for Push Notifications information that is relevant to your release.

Release 11.5(1)SU2 provides Push Notification support for IM and Presence (without High Availability

The following restrictions apply to the Push Notifications feature with Release 11.5(1)SU2:

- High Availability for IM and Presence is not supported for Jabber on Cisco iPhone and iPad.

- Voice call support—Cisco Jabber on iPhone and iPad clients cannot receive incoming voice calls when the Jabber client is in suspended mode. If you want to use Jabber on iPhone or iPad for calling, configure Single Number Reach.

Minimum Releases

IM and Presence support is provided for Push Notifications in Cisco Unified Communications Manager and IM and Presence Service Release 11.5(1)SU2 with the following minimum compatible releases:

- Cisco Prime License Manager 11.5(1)SU2 in a co-resident deployment or 11.5.1SU1 (Build11.5.1.10000-4) in a standalone deployment.

- Cisco Jabber 11.8.1

- Cisco Expressway x8.9 (if MRA is deployed)

Terminated Push Notifications for Service Shutdowns

Note Terminated Push Notifications are included with Release 11.5(1)SU2 only. The Push Notifications High Availability feature introduced with 11.5(1)SU3 replaces Terminated Push Notifications.

When a Cisco Jabber for iPhone and iPad client begins running in the background, the IM and Presence Service queues all instant messages, Presence updates, and other XMPP stanzas (for example, chat room invites) on the local server. Only when the Jabber user clicks on an IM notification, or moves the client back to the foreground, does the IM and Presence Service send all queued messages to the Jabber client.

If the Cisco XCP router stops or is restarted (for example, an administrator restarts the service for a configuration change or upgrade), the IM and Presence Service flushes out the message queue resulting in all queued messages being lost.

However, before the service shuts down, the IM and Presence Service sends a terminated push notification to Cisco Jabber for iPhone and iPad clients notifying them that the service is shutting down and that all queued messages are lost. The Jabber user must move the client back to the foreground to create a new session so that Push Notifications are enabled in this new session.

Failover Situations

If a node fails suddenly, no terminated push notification gets sent and all instant messages, Presence updates, and XMPP stanzas that were queued on the failed node are lost. If High Availability is configured for IM and Presence, the backup node in the Presence Redundancy Group takes over, but the queue on the failed node is still lost. When the backup node takes over, it sends an iOS system notification to the user and the user must click the notification to bring Jabber back to the foreground and create a new session. Push Notifications is not enabled until the new session is created.

Note Cisco recommends that you configure High Availability for the IM and Presence Service so that your deployment has redundancy. For configuration details, see the *Configuration and Administration Guide for IM and Presence Service*.

Push Notifications Configuration Task Flow - Release 11.5(1)SU2

Complete the following tasks to configure Push Notifications in Release 11.5(1)SU2.

Before you begin

Push Notifications Prerequisites

Procedure

	Command or Action	Purpose
Step 1	Synchronize Licenses, on page 3	Synchronize licenses in Cisco Prime License Manager.

	Command or Action	Purpose
Step 2	Open Ports for Push Notifications in Release 11.5(1)SU2, on page 3	Make sure that relevant outbound ports are open in Cisco Unified Communications Manager, IM and Presence Service, and Cisco Jabber.
Step 3	Enable Push Notifications (Release 11.5(1)SU2), on page 4	Onboard the IM and Presence Service cluster for Push Notifications.
Step 4	Restart Expressway-E	If you have Mobile and Remote Access (MRA) deployed, restart the Expressway-E. If you fail to do this, Expressway-E does not recognize the Push capability of the IM and Presence Service and does not send push notifications.

Note For Mobile and Remote Access (MRA) deployments with Cisco Expressway, see the *Mobile and Remote Access via Cisco Expressway Deployment Guide* at the below URL for information about Push Notifications with Expressway.

https://www.cisco.com/c/en/us/support/unified-communications/expressway-series/products-installation-and-configuration-guides-list.html

Synchronize Licenses

Procedure

Step 1 In Cisco Prime License Manager, select the **Product Instance** tab.

Step 2 Click **Synchronize Licenses**.

Open Ports for Push Notifications in Release 11.5(1)SU2

Make sure that the following outbound ports are open in Cisco Unified Communications Manager, IM and Presence Service, and in your Cisco Jabber for iPhone or iPad client.

Table 1: Port Requirements for Push Notifications in Release 11.5(1)SU2

From	To	Port	Port Description
Cisco Unified Communications Manager	Cisco cloud	443/TCP	HTTPS-based Subscription requests to Fusion Onboarding Service at `fos-a.wbx2.com` from publisher node

From	To	Port	Port Description
IM and Presence Service	Cisco cloud	443/TCP	HTTPS-based communications: • Authentication requests to Common Identity Service at `idbroker.webex.com` • Push notifications to the Push REST service at `push.webexconnect.com` This port should be open for all cluster nodes.
Cisco Jabber client (when operating behind a firewall)	Apple cloud	5223/TCP	Communications with Apple Push Notification service.
Cisco Jabber client	Apple cloud	443/TCP	Fallback port for 5223 if wi-fi is used.

Note In addition, port 9966 is used internally by the Cisco Push Notification Service to communicate with the Cisco CallManager Service on all Cisco Unified Communications Manager cluster nodes. This port needs to be open in the firewall if communication between nodes in your cluster traverse through a firewall (for example the nodes are located in a different subnet if as an example they are clustered over the WAN). In this case, this port needs to be open in the firewall so that these services can communicate.

Enable Push Notifications (Release 11.5(1)SU2)

Use this procedure in Release 11.5(1)SU2 to set up the Push Notifications feature for Cisco Jabber for iPhone and iPad clients in your Cisco Unified Communications Manger and IM and Presence Service cluster.

Note With this release, Push Notifications provides instant messaging support. For Push Notifications call support, upgrade to at least release 11.5(1)SU3.

Before you begin

Make sure that port 443 is open from the Cisco Unified Communications Manager publisher node for outbound HTTPS requests.

Procedure

Step 1 Log in to the Cisco Unified Communications Manger publisher node.

Step 2 From Cisco Unified CM Administration, choose **Advanced Features** > **Cisco Cloud Onboarding**.

Step 3   Check the **Enable Push Notifications and Send Troubleshooting and Analytics Information to Cisco Cloud** check box.

Step 4   Check the **I want Cisco to manage the Cisco Cloud Service CA Certificates required for this trust** check box to have the system update certificates automatically.

> **Note**   If you leave the check box unchecked, you will have to obtain CA certificates manually and copy them to Cisco Unified Communications Manager and IM and Presence Service. For details, see Certificates for Cloud Connection.

Step 5   If you want to use an HTTP Proxy, check the **Enable HTTP Proxy** check box and enter the server details.

Step 6   Click **Save**.

Step 7   On the publisher node only, restart the Cisco Tomcat service to install Cisco-managed certificates.

a)   Log in to the Command Line Interface.

b)   Run the `utils service restart Cisco Tomcat` command.

Step 8   After the Cisco Tomcat service restarts, return to the **Cisco Cloud Onboarding Configuration** window. The **Status** indicates that "**Cisco Cloud Onboarding Pending**".

Step 9   Make sure the following check boxes are checked. You may need to recheck them:

  • **Enable Push Notifications and Send Troubleshooting and Analytics Information to Cisco Cloud**
  • **I want Cisco to manage the Cisco Cloud Service CA Certificates required for this trust**

Step 10   Click **Save**
The cluster initiates a Push Notifications subscription request. When the request completes, and Push Notifications is enabled, the **Status** field displays the message "**Cloud Onboarding Completed**".

Step 11   Restart the **Cisco XCP Router** service for all IM and Presence Service cluster nodes:

a)   Click the **Control Center - Network Services** link that appears in the **Status** area of the Cisco Cloud Onboarding window. If no link appears, log in to the Cisco Unified Serviceability interface and select **Tools** > **Control Center - Network Services**.

b)   From the **Server** drop-down list box, choose the IM and Presence database publisher node, and click **Go**.

c)   Under **IM and Presence Services**, select the **Cisco XCP Router** service.

d)   Click **Restart**.

e)   Repeat this step for all IM and Presence cluster nodes.

> **Note**   Restarting the **Cisco XCP Router** does not update the **Status** message in the **Cisco Cloud Onboarding Configuration** window of Cisco Unified Communications Manager. If you complete the above procedure for all nodes and then return to the **Cisco Cloud Onboarding Configuration** window, the **Status** message will still say that you need to restart the Cisco XCP Router. However, you need restart it only once on each IM and Presence cluster node.

> **Note**   If you want to disable Push Notifications, uncheck the **Enable Push Notifications and Send Troubleshooting and Analytics Information to Cisco Cloud** check box and click **Save**. After saving, restart the Cisco XCP Router on all IM and Presence Service cluster nodes.

What to do next

If your deployment includes Cisco Expressway, restart the Expressway-E. Otherwise Expressway-E doesn't recognize the push capability on the IM and Presence Service, and does not send PUSH messages to Jabber

clients. For details, see the *Cisco Expressway Administrator Guide* at the Expressway Maintain and Operate Guides page.

Push Notifications Counters in 11.5(1)SU2

Release 11.5(1)SU2 contains a subset of the counters that are available with Release 11.5(1)SU3. With Release 11.5(1)SU2 the following **Cisco XCP Config Manager** counters provide Push Notifications informaiton:

- NumberOfPushSuccess

- NumberOfPushFailure

- TargetInvalid

- TargetExpired

The following **Cisco XCP Push** performance counters provide Push Notifications information for 11.5(1)SU2:

- PushEnabledSessionsApns

- PushEnableReqRcvdApns

- PushErrorApns

- PushSentSilentApns

- PushSentDisconnApns

- PushEnabledSessionsApnsBeta

- PushEnableReqRcvdApnsBeta

- PushErrorApnsBeta

- PushSentSilentApnsBeta

- PushSentDisconnApnsBeta

- PushEnabledSessionsApnsDev

- PushEnableReqRcvdApnsDev

- PushErrorApnsDev

- PushSentSilentApnsDev

- PushSentDisconnApnsDev

- PushEnabledSessionsApnsLoad

- PushEnableReqRcvdApnsLoad

- PushErrorApnsLoad

- PushSentSilentApnsLoad

- PushSentDisconnApnsLoad

- PushEnabledSessionsApnsTest

- PushEnableReqRcvdApnsTest

- PushErrorApnsTest

- PushSentSilentApnsTest

- PushSentDisconnApnsTest

For descriptions of these counters, see Performance Counters for Push Notifications.

Open Caveats - Release 11.5(1)SU2

The following table lists open caveats for deploying the Push Notifications solution with Release 11.5(1)SU2 of Cisco Unified Communications Manager and IM and Presence Service. These issues may cause unexpected behavior. Bugs are listed in alphabetical order by component and then in numerical order by severity.

Table 2: Open Caveats - Release 11.5(1)SU2

Defect	Severity	Component	Headline
CSCvc71472	3	xcp	MRA jabber user disconnect
CSCvc86151	3	xcp-router	XCP Router stuck during the shutdown phase
CSCvc86422	3	xcp-router	XCP Router which wrongly increments JSM received stanzas counter.
CSCvd09710	3	xcp-router	Jabber client receives duplicate push notifications for the same message