



# 1 Covene Cohesion – Administrator Guide

---

A Modular Platform for Video Conferencing Management

April 4, 2018

Software Version 4.8

Document Revision 1.0

## 2 Table of Contents

---

3	Overview .....	6
	The Cohesion Web Portal .....	6
	Active Directory Integration .....	6
	Pexip Infinity Integration .....	6
	Cisco TMS Integration.....	8
	SMTP Integration .....	8
	Microsoft Outlook Integration .....	8
	Microsoft Exchange Web Services Integration .....	8
	Skype for Business Integration .....	9
	Endpoint Integration for Pexip Infinity .....	10
4	Supported Scheduling Workflows.....	11
	Outlook Workflows for Pexip Infinity without Exchange Integration .....	11
	Creating a Meeting .....	11
	Updating a Meeting.....	13
	Cancelling a Meeting .....	15
	Outlook Workflows for Pexip Infinity with Exchange Integration.....	16
	Creating a Meeting .....	16
	Updating a Meeting.....	17
	Cancelling a Meeting .....	19
	Outlook Workflows for Skype for Business .....	19
	Creating a Meeting .....	19
	Updating a Meeting.....	21
	Cancelling a Meeting .....	22
	Web Scheduler Workflows for Pexip Infinity with SMTP Integration .....	23
	Creating a Meeting .....	23
	Updating a Meeting.....	24
	Cancelling a Meeting .....	26
	Web Scheduler Workflows for Pexip Infinity with Exchange Integration .....	27
	Creating a Meeting .....	27
	Updating a Meeting.....	29
	Cancelling a Meeting .....	31
	Web Scheduler Workflows for Skype for Business.....	32
	Creating a Meeting .....	32

	Updating a Meeting.....	32
	Cancelling a Meeting .....	33
5	Initial System Setup Checklist .....	35
	Accessing the System .....	35
	Cohesion Web Interface .....	35
	Cohesion Outlook Add-in.....	36
	Microsoft Skype for Business Outlook Add-In.....	36
6	Active Directory Integration .....	37
7	User Administration .....	39
	Adding Users .....	39
	Removing Users .....	39
	General User Settings .....	39
	Microsoft Exchange Mailbox.....	40
	Display .....	40
	Pexip Infinity Provisioning.....	40
	Pexip Infinity Security .....	40
	Delegation.....	41
	Pexip Infinity Email Templates .....	41
	Individual User Settings.....	42
	Display .....	42
	Pexip Infinity Provisioning.....	42
	Pexip Infinity Security .....	43
	Delegation.....	43
	Pexip Infinity Email Templates .....	43
	Resetting User Settings for All Users to User Settings Defaults .....	44
8	Email Integration.....	45
	Supported Email Systems.....	45
	None.....	45
	SMTP Server .....	45
	Microsoft Exchange Server .....	46
	Email Settings.....	46
	SMTP Email Server .....	47
	Microsoft Exchange .....	47
	Microsoft Skype for Business Settings.....	48
	Welcome Email.....	48

9	Meeting Resources.....	49
	General Resource Settings.....	49
	Default Connection Settings for Pexip Infinity.....	49
	Exchange Resources.....	50
	Endpoint Management for Pexip Infinity.....	50
	Configuring a New Resource.....	50
	General.....	50
	Connection Settings for Pexip Infinity.....	51
	Endpoint Management for Pexip Infinity.....	51
	Modifying an Existing Resource.....	52
10	Pexip Infinity Integration.....	53
	Alias Settings.....	53
11	Cisco TMS Integration.....	56
	Enabling Cisco TMS Integration.....	56
12	Backup and Recovery.....	57
	Snapshot Settings.....	57
	Snapshot Management.....	57
13	System Settings.....	58
	Status Summary.....	58
	General Settings.....	58
	Network.....	58
	Certificate Policies.....	58
	History.....	58
	Customizations.....	58
	Restarting the System.....	59
	Resetting the System.....	59
	License Information.....	59
	Viewing the License.....	59
	Viewing the End User License Agreement.....	59
	Updating the License File.....	60
14	Appendix A: Service Configuration File.....	61
	File Location.....	61
	Options.....	61
15	Appendix B: Web Configuration File.....	62
	File Location.....	62

	Options.....	62
16	Appendix C: Variable Substitution.....	63
	Variables.....	63
	Fields with Variable Support .....	64
	Using Variables .....	65
	Variable Usage Example .....	65
17	Appendix D: Exchange Service Account Configuration .....	67
	Integrating with Exchange Earlier than 2010 SP2 RU4.....	67
18	Appendix E: Skype for Business Configuration .....	68
	DirectDial and OneLaunch Route Configuration .....	68
	CourtesyCall Route Configuration .....	68
19	Appendix F: Backup and Restoration Procedures .....	69
	System Imaging.....	69
	Directory Backup .....	69
	Database Backup .....	69
	MongoBackup.ps1 .....	69
	MongoRestore.ps1 .....	70
20	Appendix G: Troubleshooting.....	71
	Active Directory .....	71
	Endpoint Integration .....	71
	Exchange Integration .....	72

## 3 Overview

---

The Covene Cohesion platform is designed to complement an organization's IT infrastructure through integration of its established hardware and software products.

At the core of the system is the Cohesion service, a Windows service that runs on a Windows server and manages communications between the third-party systems with which it integrates. Currently Cohesion can integrate with the following systems:

- **Active Directory (required):** Defines the authorized users of the system.
- **Pexip Infinity:** Provides the system the ability to schedule video meetings and connection automation for virtual meeting rooms (VMRs) residing on the Pexip infinity platform.
- **Cisco TMS:** Provides the system the ability to schedule video meetings for the Cisco TMS platform. Dial automations and resource availability are managed by the TMS system.
- **Microsoft Outlook:** Provides a customizable button in the Outlook calendar ribbon to schedule meetings populate the meeting invitation with the meetings connection information.
- **Exchange:** Meetings scheduled directly through the web portal are automatically populated in Exchange and meeting invitations are sent via the user's Exchange mailbox as if they had sent the meeting invitation through Outlook.
- **Microsoft Skype for Business:** Allows resources added to Skype for Business meetings be configure dial automation for room resources at the scheduled meeting time.
- **SMTP Mail Server:** Scheduled meeting information is sent to participants via an SMTP mail server.
- **Endpoints:** Supported endpoints can be configured to use a set of additional dial automations.

### The Cohesion Web Portal

The Cohesion web portal provides the systems primary user interface, enabling administrators the ability to configure the system, and users the ability to manage meetings and personal settings.

### Active Directory Integration

Active Directory and the Windows domain controller serve as the authority for authenticating and authorizing users. The Cohesion server reads a set of Active Directory security groups to determine if a user is authorized. Users must be on the domain and assigned membership to one of these security groups to access the system. When accessing the system through the web portal or through the Outlook add-in, the system authenticates the user through the domain controller, then authorizes the user by checking the user's group membership in Active Directory.

See Active Directory Integration for more information.

**NOTE:** Active Directory is a required system for Covene Cohesion.

### Pexip Infinity Integration

Enabling Pexip Infinity integration provides Cohesion the ability to automate the management of virtual meeting rooms on the Pexip Infinity Platform on behalf of its users.

Users scheduling Pexip Infinity virtual meeting rooms have the choice of types of scheduling to choose from:

- **Static:** The user has a single virtual meeting room with connection information that never changes. Meetings can be scheduled for this virtual meeting room but the room is always available to join outside the meeting time window. This type is advantageous for unscheduled ad-hoc meetings since scheduling a meeting is not necessary for users to connect.
- **Dynamic:** The virtual meeting room only exists a limited time before and after the scheduled meeting times. Users will not be able to connect to this meeting outside the window. Connection information and security PINs can be regenerated for each meeting, providing a higher level of security. Scheduling two meetings that overlap use separate VMRs so users in different meetings join separate virtual meeting rooms. This type is advantageous meetings where a higher level of security and compartmentalization is desired.

Virtual meeting room configurations in Pexip Infinity require the definition of one or more aliases that define how users can connect into the virtual meeting room. Each alias in a meeting typically represents a method or protocol used to the meeting, such as SIP or H.323. Cohesion can be configured to generate any number of aliases. Aliases can be configured to be generated based on combinations of the following data:

- **Static information:** Constant names or numbers.
- **User information:** The current user's active directory information, such as their name or phone number.
- **Numbers:** Ranges of numbers, random or sequential.

Pexip [Infinity Integration](#) for more information.

## Cisco TMS Integration

Configuring TMS integration will allow meetings scheduled from the web portal and the Cohesion Outlook Add-in to be booked in TMS. TMS systems that correspond to Cohesion resources by name will be configured for the meeting. If SIP and/or H.323 are enabled in the integration settings, each participant invited to the meeting will be allocated as a participant for the meeting.

Resources added to Cohesion can be configured to correspond to TMS systems, by ensuring the Cohesion resource has the same name as the desired TMS system. When resources are invited to a meeting through the web portal, or by email address via Outlook, any systems matching the names of the resources will be added to the TMS conference. Cohesion does not provide dial automation for TMS meetings since TMS already provides this functionality.

See Cisco TMS Integration for more information.

## SMTP Integration

Cohesion can be configured to use an SMTP server to send invitations for scheduled meetings and email with new account information to users. *This feature is mutually exclusive with Microsoft Exchange integration.*

See Email Integration for more information.

## Microsoft Outlook Integration

The Cohesion Outlook Add-In is a Microsoft Outlook Add-In that is installed onto the user's computer running Outlook. The add-in is packaged as an installer (MSI) that places a custom button on the user's calendar ribbon that communicates directly with the Cohesion service to create new meetings. The button icon and text are customizable.

## Microsoft Exchange Web Services Integration

Integration with Exchange through Exchange Web Service (EWS) provides the system with several abilities:

- Meetings scheduled through the web interface will send meeting invitations through Exchange.
- Updates to meetings in Outlook clients that do not have the Cohesion Outlook Add-In installed will update automatically.
- Cohesion no longer checks if a resource is available during meeting scheduling. Instead, dial automation for meeting resources invited to meetings will only occur if the Exchange resource accepts the meeting.
- Dial automation support for resources invited to Microsoft Skype for Business meetings may be configured.

*Requires Exchange Server 2010 SP1 or greater (2013, 2016, O365). Combinations of multiple versions and multiple servers is supported but may require additional service account configuration.*

Exchange Web Services (EWS) integration enables Cohesion to monitor updates made to meetings on clients where the Outlook add-in is not installed, maintaining synchronization between Cohesion and Outlook scheduled meetings. When this integration is enabled, Exchange becomes the



scheduling authority, and dial automations will only occur when a resource has accepted the meeting invitation in Exchange. Cohesion will also use EWS to send new account information to users via email. This feature is mutually exclusive with SMTP integration. See [Email Integration](#) for more information.

## Skype for Business Integration

When this integration is configured, the Cohesion system will monitor Skype for Business meetings created in Outlook. If these meetings invite any resources that are configured for dial automation, and the resources accept the meeting invitation, the configured dial automation will take place. Skype for Business integration requires Exchange Web Services integration to be configured. *This feature requires Pexip Infinity integration and additional configuration of the Pexip Infinity management node.*

See Meeting Resources and

Pexip Infinity Integration for more information.

## Endpoint Integration for Pexip Infinity

Resources defined in Cohesion operating Cisco TC, Cisco CE, or F9 software may be configured to provide extended dial-automation options. Enabling this feature allows for a disconnection warning message to be displayed on the codec at a configurable number of minutes before the disconnection occurs. The extended dialing options provides two extra dialing options:

- **CourtesyCall:** At the start of the meeting, VMR will automatically dial the meeting. A user must be present to answer the call.
- **DirectDial:** At the start of the meeting, the codec will automatically dial into the meeting. Since the codec is initiating the dial out to the virtual meeting room, a user does **not** need to be present to answer the call, but the endpoint may be disconnected if the meeting is protected by a PIN and it is not entered within the timeout period.
- **OneLaunch:** At the start of the meeting, the endpoint device will display a dialog to the user interface of the endpoint, alerting the user that the meeting is ready, and providing an option to connect to the meeting.

**NOTE:** Some codecs are designed to work with a separate device such as a touch panel, and may display dialogs on only the touch panel, only the screen, or both. If the codec displays dialogs only on a touch panel, and the codec is not configured with one, the user will not be able to see and interact with the dialogs, preventing the dial automation workflow. This functionality is controlled by the codec manufacturer's software, and not Cohesion.

Enabling this dial automation requires configuring the codec information in the settings of the specific resource.

See Meeting Resources for more information.

## 4 Supported Scheduling Workflows

The workflows the system can support depends upon the conferencing systems and email server with which it is configured. Table 5.1 lists the workflows supported for possible Cohesion configurations.

Supported Configurations		Scheduling Workflow Support					
Conferencing Integration	Email Integration	Outlook (Windows)		Outlook (Mac/O365)		Cohesion Web	
		Create	Update/Cancel	Create	Update/Cancel	Create	Update/Cancel
Pexip Infinity	SMTP	Yes <sup>1</sup>	Yes <sup>1</sup>	No	No	Yes	Yes
	Exchange	Yes <sup>1</sup>	Yes	No	Yes	Yes	Yes
Cisco TMS	SMTP	Yes <sup>1</sup>	Yes <sup>1</sup>	No	No	Yes	Yes
	Exchange	Yes <sup>1</sup>	Yes	No	Yes	Yes	Yes
Microsoft Skype for Business	Exchange	Yes <sup>2</sup>	Yes	Yes <sup>2</sup>	Yes	No	Yes

<sup>1</sup> Requires the Covene Cohesion Outlook Add-In.

<sup>2</sup> Requires the Microsoft Skype for Business Outlook Add-In.

**Table 5.1: Supported Scheduling Workflows**

Pexip and TMS systems integration support is mutually exclusive, however Skype for Business integration can be enabled with or without TMS or Pexip integration enabled. A Pexip Infinity server is required to dial a resource into a Skype for Business meeting, but Pexip integration configuration is not required for this to function.

### Outlook Workflows for Pexip Infinity without Exchange Integration

#### Creating a Meeting

##### Preconditions:

- The Cohesion Outlook Add-In is installed on the Outlook client.
- Pexip Infinity integration is enabled.

##### Workflow:

- **Step 1:** A meeting is created by clicking the Cohesion Outlook Add-In meeting button on the Outlook client's calendar ribbon. The meeting window will appear, populated with the meeting connection information. An unscheduled meeting is created in the system to reserve the Pexip Infinity aliases used in the connection information. The user proceeds to **Step 2**.
- **Step 2:** The user configures the desired meeting details, most importantly participants and schedule, and proceeds to **Step 3a** or **Step 3b**.

- **Step 3a:** The user closes the meeting window before sending or saving. The unscheduled meeting created in **Step 1** is deleted from the system. The workflow ends.
- **Step 3b:** The user clicks the 'Send' button:
  - If any resources corresponding to the email addresses invited to the meeting are not available during the requested time:
    - The user will be presented with an error message
    - The email is not sent.
    - The user proceeds to **Step 2**.
  - Otherwise:
    - The meeting is scheduled for the request time.
    - The meeting email is sent by the Outlook client to the invited attendees.
    - All resources reserved by the meeting are guaranteed that their configured dial automations will occur.
    - **The workflow ends.**

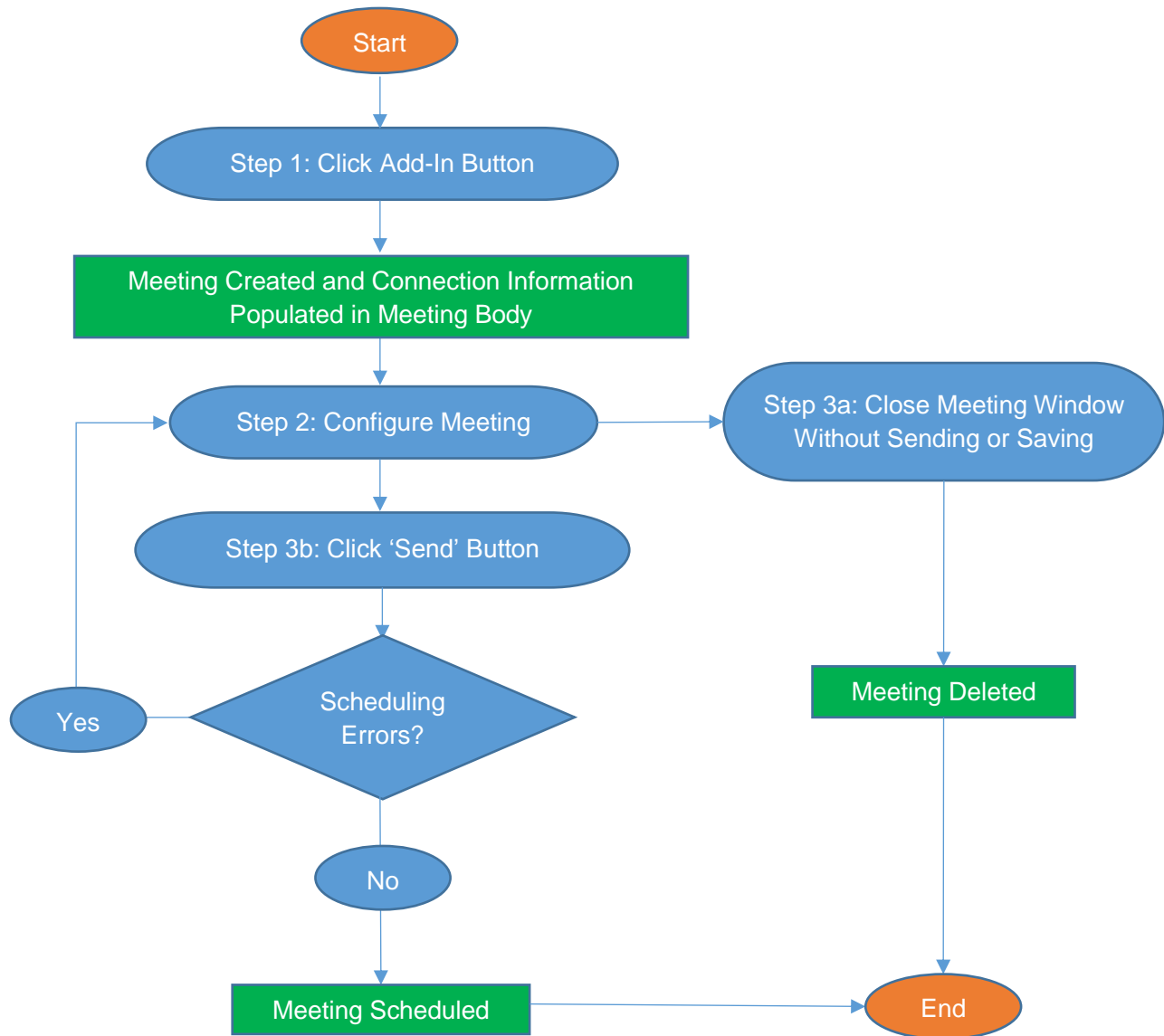


Figure 1: Creating a Meeting in Outlook for Pexip Infinity without Exchange Integration

## Updating a Meeting

### Preconditions:

- The Cohesion Outlook Add-In is installed on the Outlook client.
- The meeting was created using the Cohesion Outlook Add-In. Meetings previously created with the Cohesion Web scheduler when the system is configured with SMTP integration cannot be updated from Outlook.

### Workflow:

- **Step 1:** The user opens a previously created Cohesion meeting in the Outlook client, and proceeds to **Step 2**.
- **Step 2:** The user makes desired adjustments to the meeting, and proceeds to **Step 3**.
- **Step 3a:** The user closes the meeting window before sending or saving:
  - The existing meeting in the Cohesion system remains unchanged.

- **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Update' button:
  - If any resources corresponding to the email addresses invited to the meeting are not available during the requested time:
    - The user will be presented with an error message and the email will not be sent, and the user proceeds to **Step 2**.
  - Otherwise:
    - The meeting is scheduled for the request time.
    - The subsequent updated meeting email is sent by the Outlook client to the invited attendees.
    - Any resources connected to the original meeting will be disconnected if they are configured for auto-disconnect and the updated meeting is not presently occurring.
    - Any resources reserved by the meeting are guaranteed that their configured dial automations will occur.
    - **The workflow ends.**

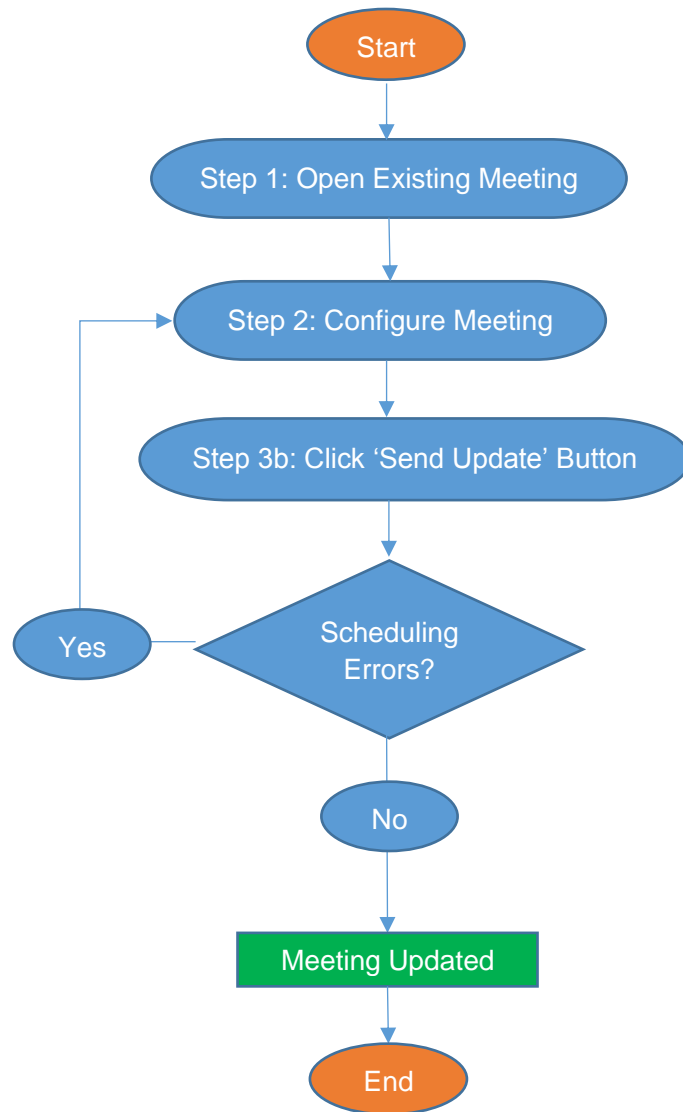


Figure 2: Updating a Meeting in Outlook for Pexip Infinity without Exchange Integration

## Cancelling a Meeting

### Preconditions:

- The Cohesion Outlook Add-In is installed on the Outlook client.
- The meeting was created using the Cohesion Outlook Add-In. Meetings previously created with the Cohesion Web scheduler when the system is configured with SMTP integration cannot be cancelled from Outlook.

### Workflow:

- **Step 1:** The user opens a previously created Cohesion meeting in the Outlook client and clicks the 'Cancel Meeting' button, and proceeds to **Step 2**.
- **Step 2:** The user makes desired adjustments to the meeting body, and proceeds to **Step 3a** or **3b**.
- **Step 3a:** The user closes the meeting window before cancelling:
  - The existing meeting in the Cohesion system remains unchanged.

- **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Cancellation' button:
  - The meeting is deleted.
  - The meeting cancellation email is sent by the Outlook client to the invited attendees.
  - Any resources reserved by the meeting are freed, and any resources connected to the meeting with disconnection automation enabled are immediately disconnected.
  - **The workflow ends.**

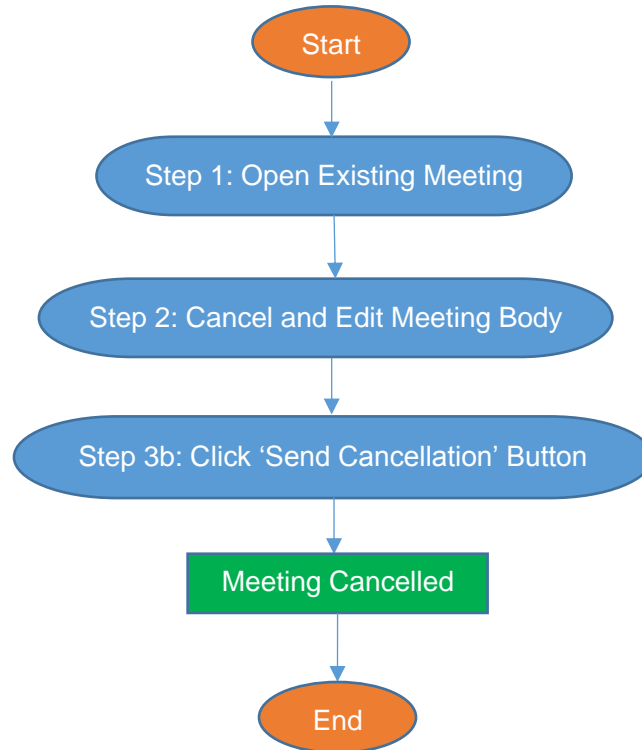


Figure 3: Updating a Meeting in Outlook for Pexip Infinity without Exchange Integration

## Outlook Workflows for Pexip Infinity with Exchange Integration

### Creating a Meeting

#### Preconditions:

- The Cohesion Outlook Add-In is installed on the Outlook client.
- Pexip Infinity integration is enabled.

#### Workflow:

- **Step 1:** The user clicks the Cohesion Outlook Add-In meeting button on the Outlook client's calendar ribbon:
  - The meeting window will appear, populated with the meeting connection information.
  - A placeholder meeting is created in the system to reserve the Pexip Infinity aliases used in the connection information.
  - The user proceeds to **Step 2**.
- **Step 2:** The user configures the desired meeting details, participants, and schedule, and proceeds to **Step 3a** or **Step 3b**.



- **Step 3a:** The user closes the meeting window before sending or saving:
  - The placeholder meeting is removed from the system.
  - **The workflow ends.**
- **Step 3b:** The user clicks the 'Send' button:
  - The meeting is scheduled for the request time.
  - The meeting email is sent by the Outlook client to the invited attendees.
  - Any resources connected to the original meeting will be disconnected if they are configured for auto-disconnect and the updated meeting is not presently occurring.
  - Resources invited to the meeting are NOT guaranteed that their configured dial automations will occur. Dial automations will occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.
  - **The workflow ends.**

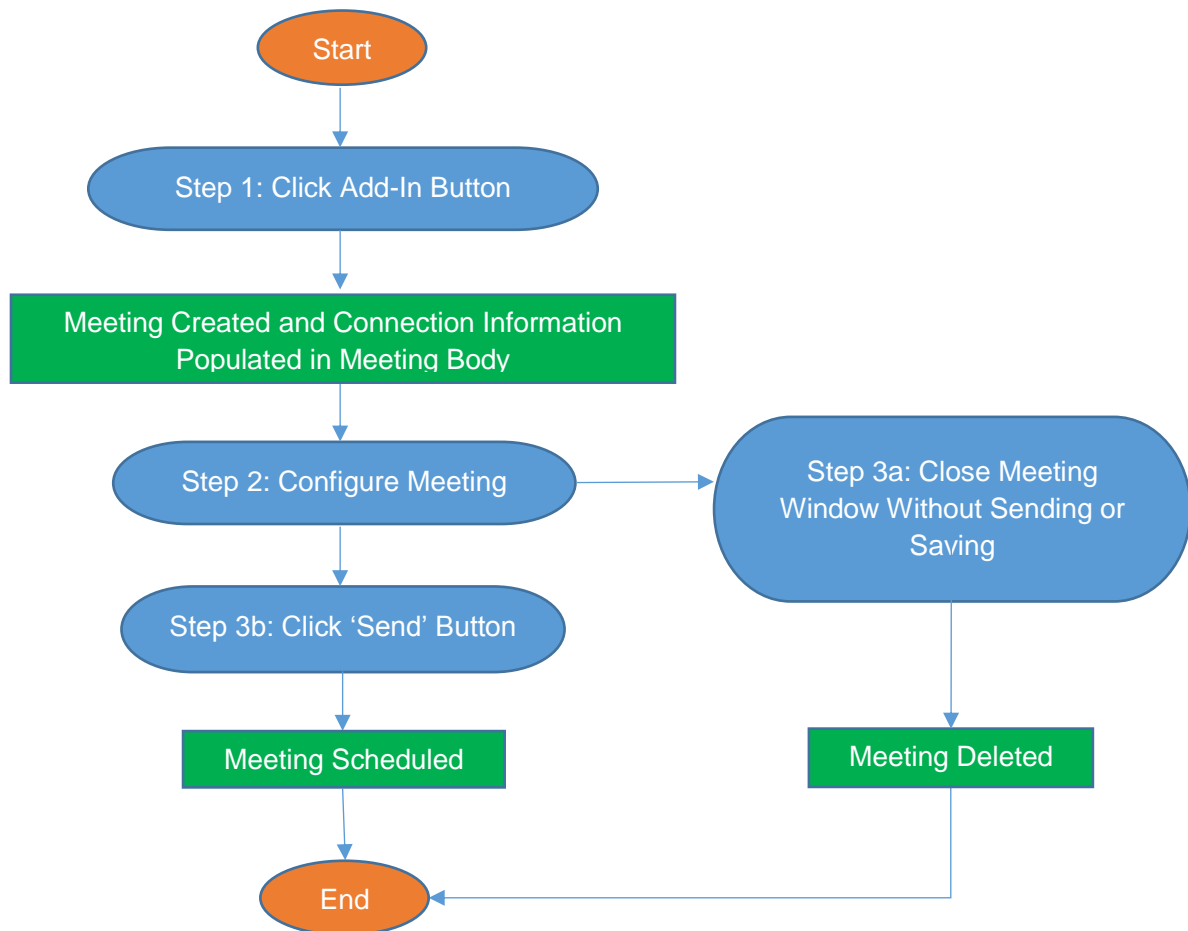


Figure 4: Create Meeting Workflow in Outlook (Pexip and SMTP)

## Updating a Meeting

**Preconditions:**

- The meeting was created using the Cohesion Outlook Add-In. Meetings previously created with the Cohesion Web scheduler when the system is configured with SMTP integration cannot be updated from Outlook.

**Workflow:**

- **Step 1:** The user opens a previously created Cohesion meeting, and proceeds to **Step 2**.
- **Step 2:** The user makes desired adjustments to the meeting, and proceeds to **Step 3a** or **3b**.
- **Step 3a:** The user closes the meeting window before sending or saving:
  - The existing meeting in the Cohesion system remains unchanged.
  - **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Update' button:
  - The meeting is scheduled for the request time.
  - The subsequent updated meeting email is sent by the Outlook client to the invited attendees.
  - Any resources connected to the original meeting will be disconnected if they are configured for auto-disconnect and the updated meeting is not presently occurring.
  - Resources invited to the meeting are **NOT** guaranteed that their configured dial automations will occur. Dial automations will only occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.
  - **The workflow ends.**

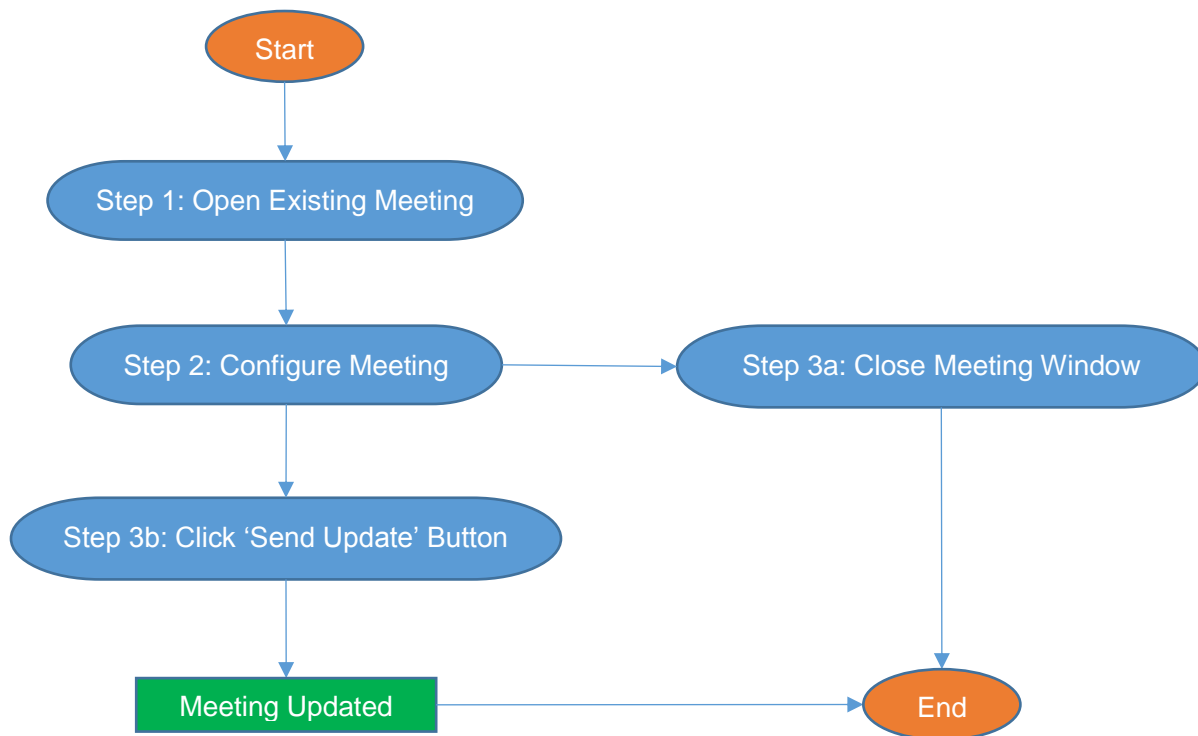


Figure 5: Update Meeting Workflow in Outlook (Pexip and SMTP)

## Cancelling a Meeting

### Preconditions:

- The meeting was created using the Cohesion Outlook Add-In. Meetings previously created with the Cohesion Web scheduler when the system is configured with SMTP integration cannot be cancelled from Outlook.

### Workflow:

- **Step 1:** The user opens an existing Cohesion meeting in the Outlook client and clicks the 'Cancel Meeting' button, and proceeds to **Step 2**.
- **Step 2:** The user makes desired adjustments to the meeting body, and proceeds to **Step 3a** or **3b**.
- **Step 3a:** The user closes the meeting window before cancelling:
  - The existing meeting in the Cohesion system remains unchanged.
  - **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Cancellation' button:
  - The meeting is deleted.
  - The meeting cancellation email is sent by the Outlook client to the invited attendees.
  - Any resources reserved by the meeting are freed, and any resources connected to the meeting with disconnection automation enabled are immediately disconnected.
  - **The workflow ends.**

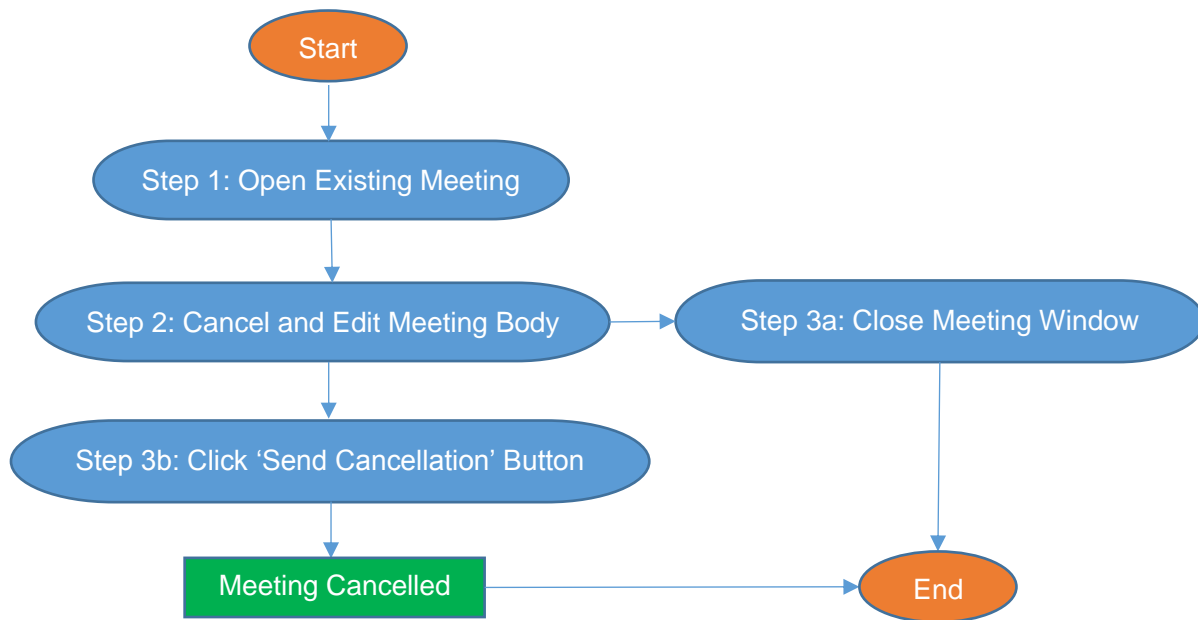


Figure 6: Cancel Meeting Workflow in Outlook (Pexip and SMTP)

## Outlook Workflows for Skype for Business

### Creating a Meeting

#### Preconditions:

- The Microsoft Skype for Business Add-In is installed on the Outlook client.
- Exchange integration is enabled.

- Dial automations for Skype for Business resources are enabled and configured (see General Resource Settings).

**Workflow:**

- **Step 1:** The user clicks the Microsoft Skype for Business Add-In meeting button on the Outlook client's calendar ribbon:
  - The meeting window will appear, populated with the meeting connection information.
  - The user proceeds to **Step 2**.
- **Step 2:** The user configures the desired meeting details, participants, and schedule, and proceeds to **Step 3a** or **Step 3b**.
- **Step 3a:** The user closes the meeting window before sending or saving:
  - **The workflow ends.**
- **Step 3b:** The user clicks the 'Send' button:
  - The meeting is scheduled for the request time.
  - The meeting email is sent by the Outlook client to the invited attendees.
  - Any resources connected to the original meeting will be disconnected if they are configured for auto-disconnect and the updated meeting is not presently occurring.
  - Resources invited to the meeting are **NOT** guaranteed that their configured dial automations will occur. Dial automations will occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.
  - **The workflow ends.**

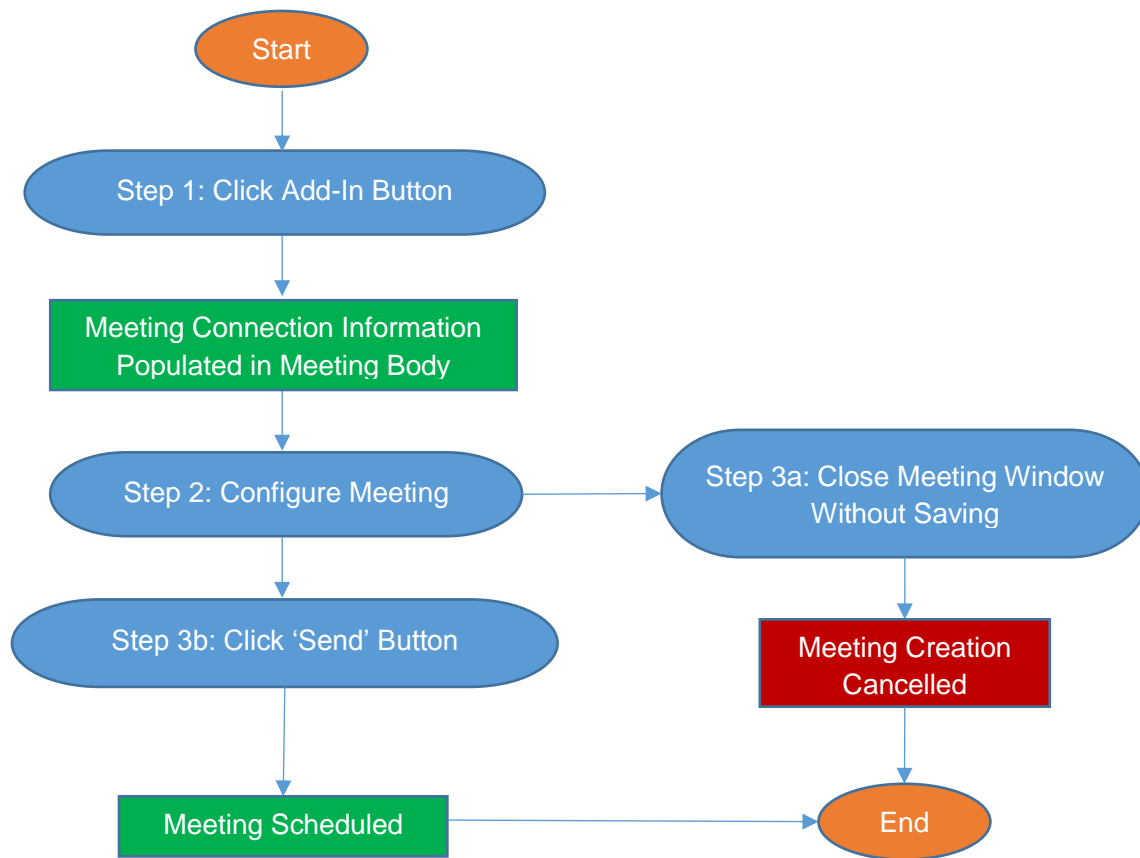


Figure 7: Create Meeting Workflow for Skype for Business in Outlook

## Updating a Meeting

### Preconditions:

- Exchange integration is enabled.
- Dial automations for Skype for Business resources are enabled and configured (see General Resource Settings).

### Workflow:

- **Step 1:** The user opens a previously created Skype for Business meeting.
- **Step 2:** The user makes desired adjustments to the meeting, and proceeds to **Step 3a** or **3b**.
- **Step 3a:** The user closes the meeting window before sending or saving:
  - The existing meeting in the Cohesion system remains unchanged.
  - **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Update' button:
  - The meeting is scheduled for the request time.
  - The subsequent updated meeting email is sent by the Outlook client to the invited attendees.
  - Resources invited to the meeting are NOT guaranteed that their configured dial automations will occur. Dial automations will occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a

decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.

- **The workflow ends.**

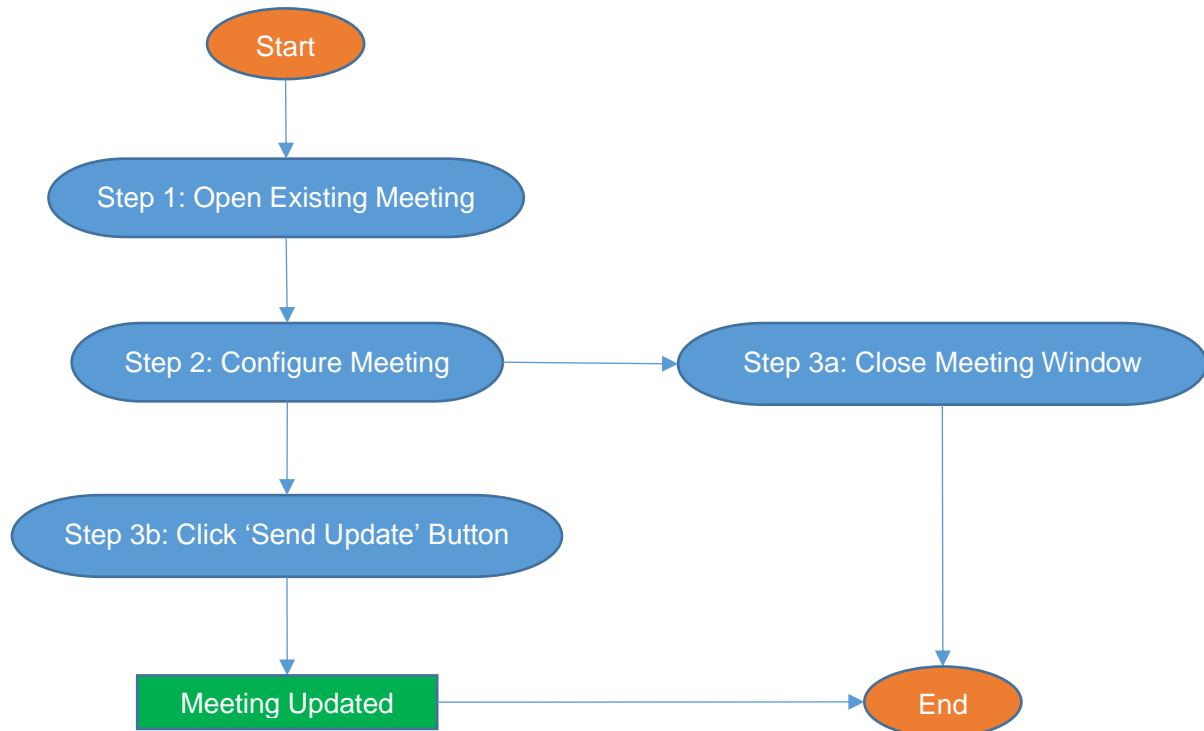


Figure 8: Update Meeting Workflow for Skype for Business in Outlook

## Cancelling a Meeting

### Workflow:

- **Step 1:** The user opens an existing Skype for Business meeting in the Outlook client and clicks the 'Cancel Meeting' button, and proceeds with **Step 2**.
- **Step 2:** The user makes desired adjustments to the meeting body, and proceeds with **Step 3a** or **3b**.
- **Step 3a:** The user closes the meeting window before cancelling. The existing meeting remains unchanged. **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Cancellation' button:
  - The meeting is deleted.
  - The meeting cancellation email is sent by the Outlook client to the invited attendees.
  - Any resources reserved by the meeting are freed, and any resources connected to the meeting with disconnection automation enabled are disconnected.
  - **The workflow ends.**

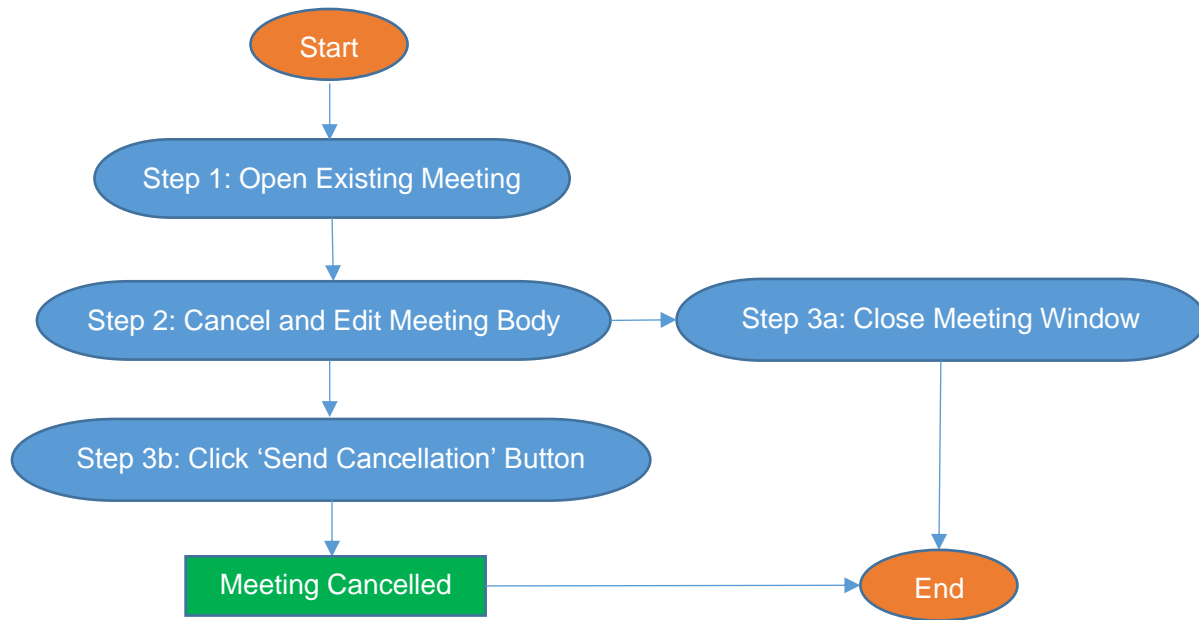


Figure 9: Cancel Meeting Workflow for Skype for Business in Outlook

## Web Scheduler Workflows for Pexip Infinity with SMTP Integration

### Creating a Meeting

#### Preconditions:

- SMTP integration is enabled.
- Pexip Infinity integration is enabled.

#### Workflow:

- **Step 1:** The user navigates to the URL of the Create Meeting page.
- **Step 2:** The user selects the meeting schedule, participants, and resources, then clicks the Schedule Meeting button:
  - If the selected resources are not available during the scheduled time, or other errors are returned from the server:
    - The meeting is not and the errors are displayed on the page and the user proceeds with **Step 2**.
  - Otherwise:
    - The meeting is scheduled for the request time.
    - The meeting email is sent by the Outlook client to the invited attendees.
    - Any resources configured to auto-disconnect from the original meeting will be disconnected if they have been removed from the updated meeting or the meeting time is changed so that it is not presently occurring.
    - The user is redirected to the Compose Email page.
    - The user proceeds to **Step 3a** or **3b**.
- **Step 3b:** The user clicks the Skip Sending button:
  - No email is sent.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**

- **Step 3a:** The user modifies the subject and body of the host and guest emails, and clicks the Send Email button:
  - The host meeting email is sent individually to all participants configured as hosts.
  - The guest meeting email is sent to all participants configured as guests.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**

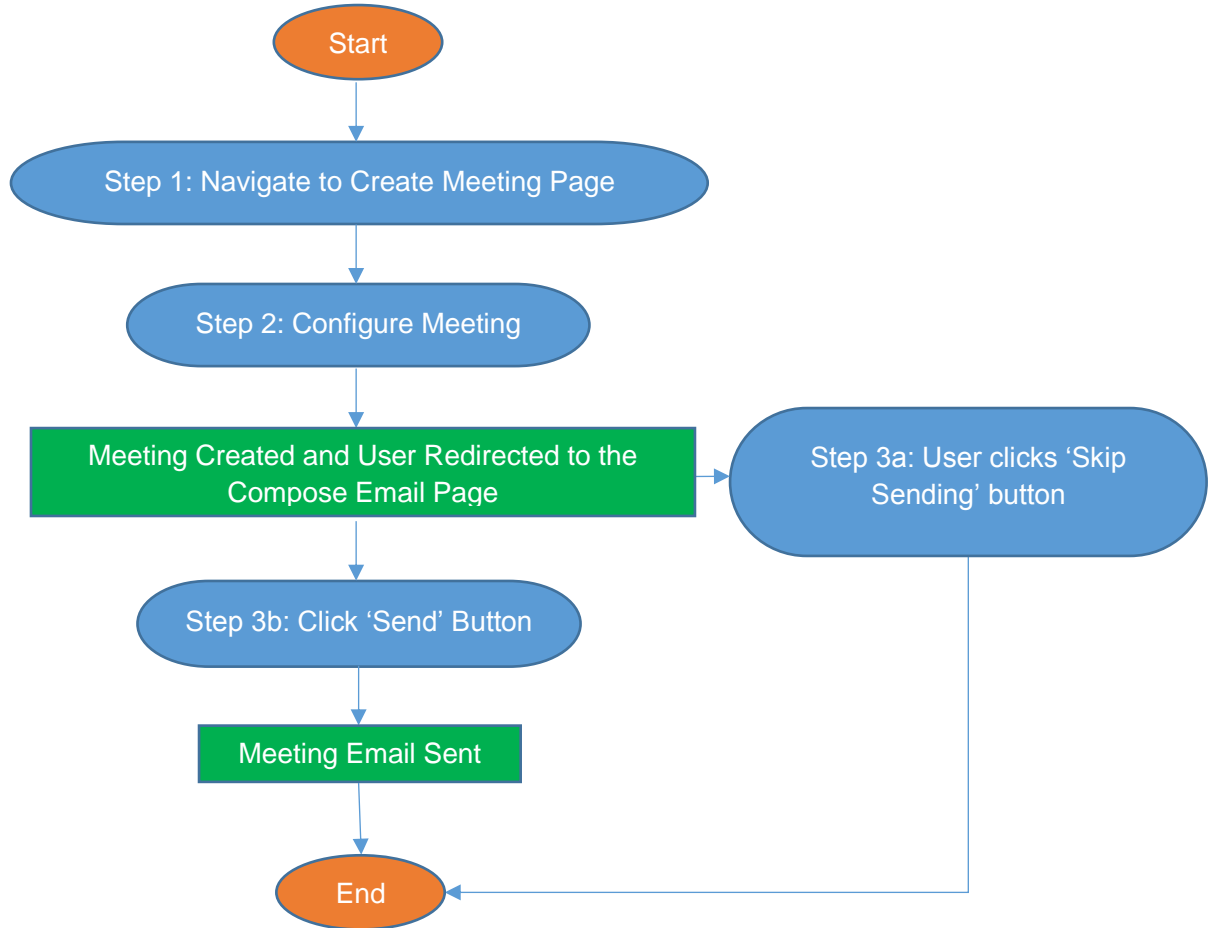


Figure 10: Create Meeting Workflow in Web Scheduler (Pexip and SMTP)

## Updating a Meeting

### Preconditions:

- SMTP integration is enabled.
- Pexip Infinity integration is enabled.

### Workflow:

- **Step 1:** The user clicks the edit button next to a meeting in the meetings list in the web scheduler, and proceeds to **Step 2**.
- **Step 2:** The user selects the meeting schedule, participants, and resources, then clicks the Schedule Meeting button:
  - If resources are not available during the scheduled time or other errors are returned from the server:



- The meeting is not scheduled (or modified if already an existing meeting)
  - The errors are displayed on the page.
  - The user proceeds to **Step 2**.
- Otherwise:
  - The meeting is scheduled for the request time.
  - The meeting email is sent by the Outlook client to the invited attendees.
  - Any resources configured to auto-disconnect from the original meeting will be disconnected if they have been removed from the updated meeting or the meeting time is changed so that it is not presently occurring.
  - The user is redirected to the Compose Email page.
  - The user proceeds to **Step 3**.
- **Step 3:** The user modifies the subject and body of the host and guest emails, and proceeds to **Step 4a** or **4b**.
- **Step 4a:** The user clicks the Send Email button:
  - The host meeting email is sent individually to all participants configured as hosts
  - The guest meeting email is sent to all participants configured as guests
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**
- **Step 4b:** The user clicks the Skip Sending button:
  - No email is sent.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**

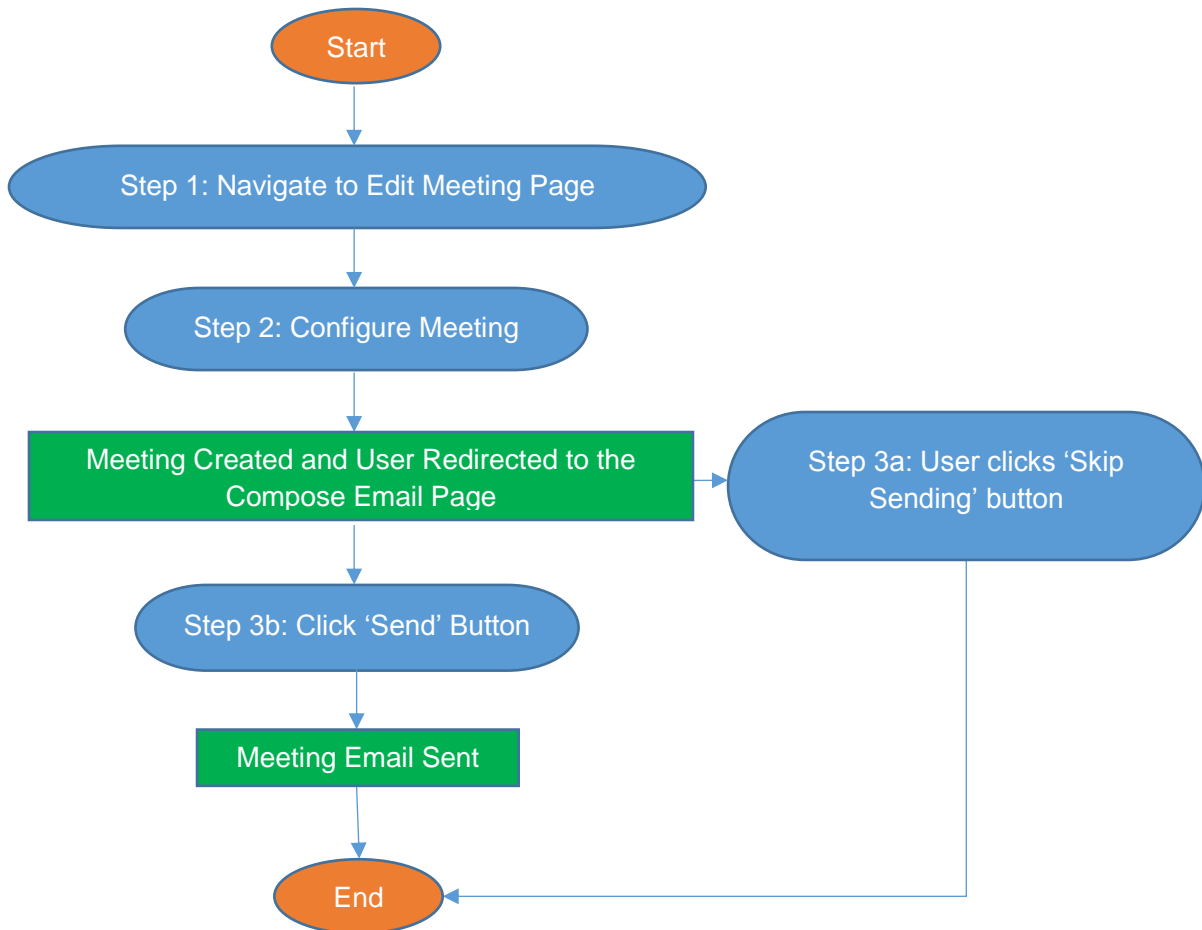


Figure 11: Update Meeting Workflow in Web Scheduler (Pexip and SMTP)

## Cancelling a Meeting

### Preconditions:

- SMTP integration is enabled.
- Pexip Infinity integration is enabled.

### Workflow:

- **Step 1:** The user clicks the edit button next to a meeting in the meetings list in the web scheduler.
- **Step 2:** The user clicks the Cancel Meeting button.
  - If the meeting invitations have not been sent for the meeting:
    - The meeting is removed from the system.
    - **The workflow ends.**
  - Otherwise
    - The user is redirected to the cancel meeting page and proceeds to **Step 3.**
- **Step 3:** The user edits the host and guest email information and clicks the Cancel & Send button:
  - The host cancellation meeting email is sent individually to all participants configured as hosts
  - The guest cancellation email is sent to all participants configured as guests.
  - The meeting is removed from the system.

- The user is redirected to the meetings list page.
- **The workflow ends.**

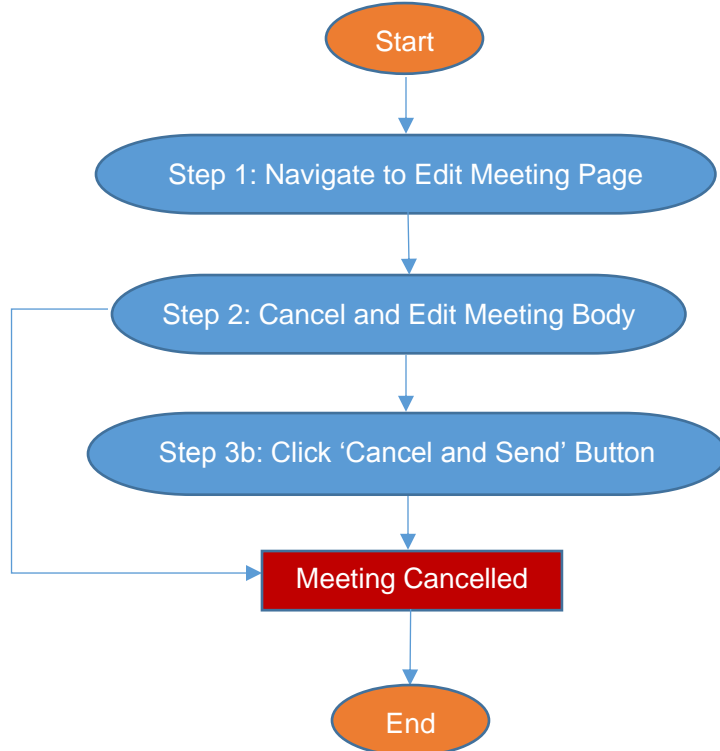


Figure 12: Cancel Meeting Workflow in Web Scheduler (Pexip and SMTP)

## Web Scheduler Workflows for Pexip Infinity with Exchange Integration

### Creating a Meeting

#### Preconditions:

- Exchange integration is enabled.
- Pexip Infinity integration is enabled.

#### Workflow:

- **Step 1:** The user navigates to the URL of the Create Meeting page.
- **Step 2:** The user selects the meeting schedule, participants, and resources, then clicks the Schedule Meeting button.
  - If errors are returned from the server:
    - The meeting is not schedule and the errors are displayed on the page.
    - The user repeats **Step 1**.
  - Otherwise, if no errors are returned:
    - The meeting is scheduled for the request time.
    - Any resources configured to auto-disconnect from the original meeting will be disconnected if they have been removed from the updated meeting or the meeting time is changed so that it is not presently occurring.

- Resources invited to the meeting are **NOT** guaranteed that their configured dial automations will occur. Dial automations will occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.
  - The user is redirected to the Compose Email page.
  - The user proceeds to **Step 3a, 3b, or 3c.**
- **Step 3a:** The user modifies the subject and body of the meeting email, and clicks the Send Email button:
  - The meeting is saved on the user's calendar in Exchange.
  - The meeting email is sent to all participants and resources through the user's Exchange mailbox.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**
- **Step 3b:** The user clicks the Skip Sending button:
  - No email is sent.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**
- **Step 3c:** The user modifies the subject and body of the meeting email, and clicks the Save button:
  - The meeting email is saved on the user's calendar in Exchange.
  - No email is not sent for the meeting.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**

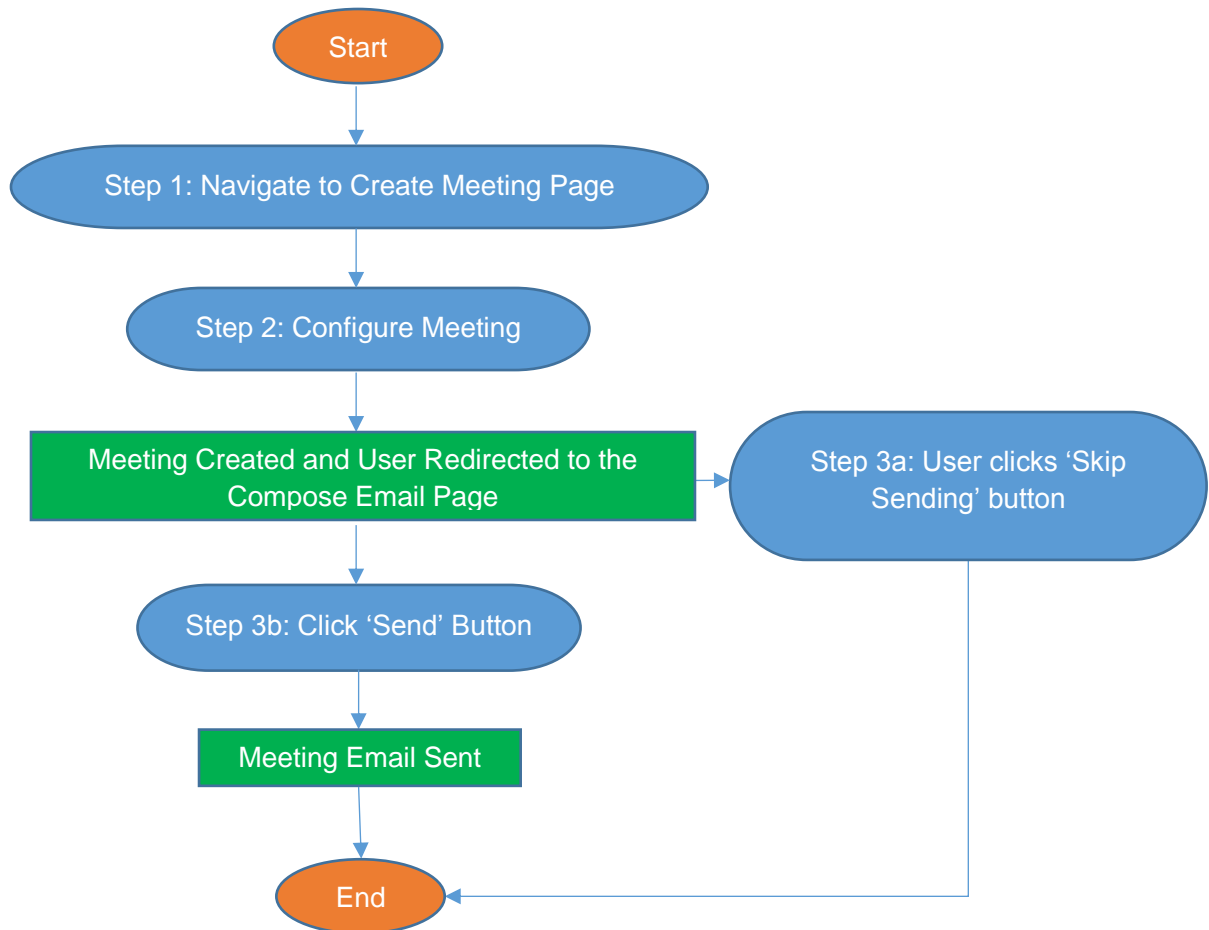


Figure 13: Create Meeting Workflow in Web Scheduler (Pexip and Exchange)

## Updating a Meeting

### Preconditions:

- Exchange integration is enabled.
- Pexip Infinity integration is enabled.

### Workflow:

- **Step 1:** The user clicks the edit button next to a meeting in the meetings list in the web scheduler.
- **Step 2:** The user modifies the meeting schedule, participants, and resources, then clicks the Schedule Meeting button.
  - If errors are returned from the server:
    - The meeting is not scheduled and the errors are displayed on the page and the user repeats step 1
  - Otherwise
    - The meeting is scheduled for the request time.
    - Any resources configured to auto-disconnect from the original meeting will be disconnected if they have been removed from the updated meeting or the meeting time is changed so that it is not presently occurring.

- Resources invited to the meeting are **NOT** guaranteed that their configured dial automations will occur. Dial automations will occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.
  - The user is redirected to the Compose Email page.
  - The user proceeds to **Step 3a, 3b or 3c.**
- **Step 3a:** The user modifies the subject and body of the meeting email, and clicks the (Re)send Email button:
  - The meeting is saved on the user's calendar in Exchange.
  - The meeting email is sent to all participants and resources through the users Exchange mailbox.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**
- **Step 3b:** The user clicks the Skip Sending button:
  - No email is sent.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**
- **Step 3c:** The user modifies the subject and body of the meeting email, and clicks the Save button:
  - The meeting email is saved on the user's calendar in Exchange but no email is not sent for the meeting.
  - The user is redirected to the meeting confirmation page.
  - **The workflow ends.**

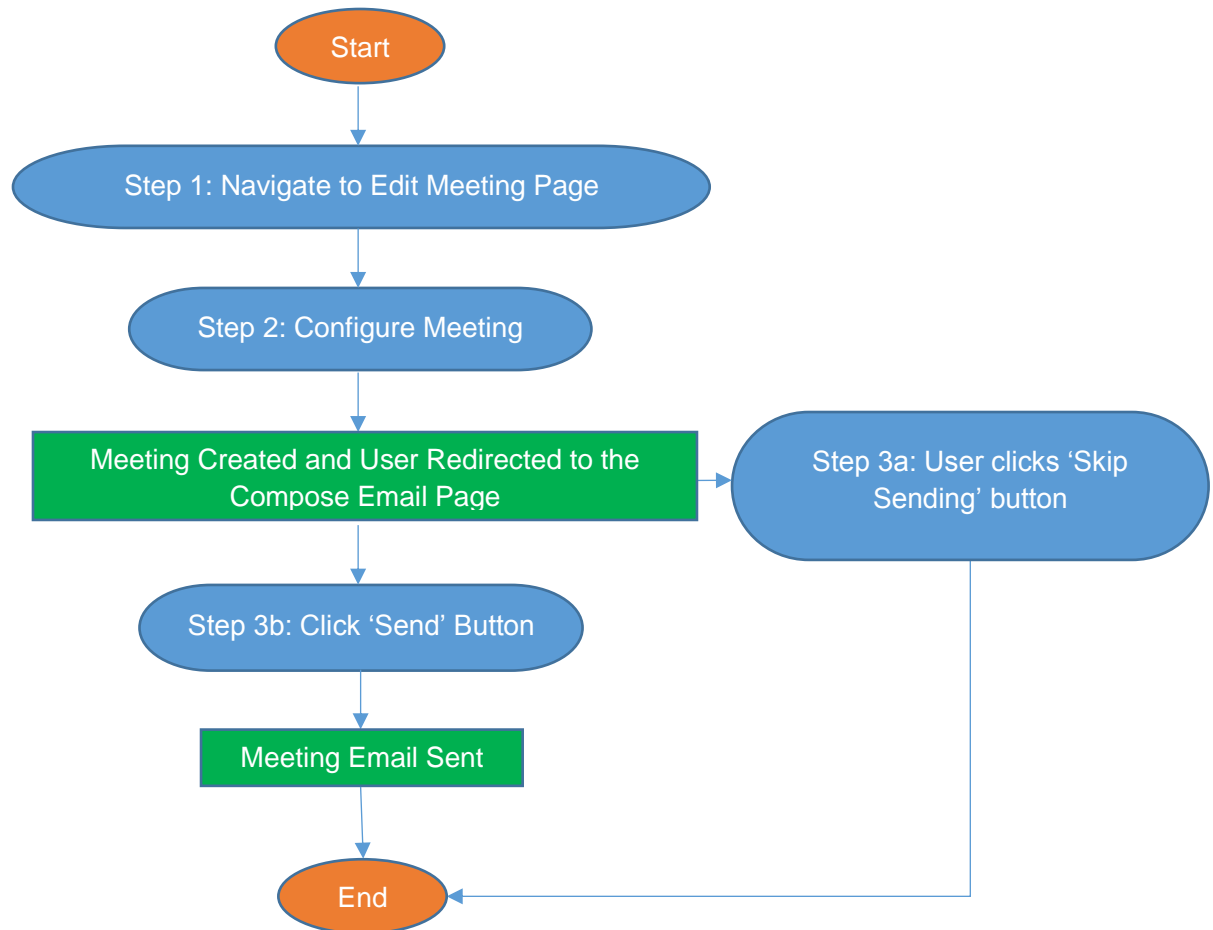


Figure 14: Update Meeting Workflow in Web Scheduler (Pexip and Exchange)

## Cancelling a Meeting

### Preconditions:

- Exchange integration is enabled.
- Pexip Infinity integration is enabled.

### Workflow:

- **Step 1:** The user clicks the edit button next to a meeting in the meetings list in the web scheduler, and proceeds to **Step 1**.
- **Step 2:** The user clicks the Cancel Meeting button:
  - If the meeting invitations have **NOT** been sent for the meeting:
    - The meeting is removed from the system and from the user's calendar Exchange (if it exists).
    - **The workflow ends.**
  - Otherwise, if the meeting invitations have been sent for the meeting:
    - The user is redirected to the cancel meeting page.
    - The user proceeds to **Step 3**.
- **Step 3:** The user edits the host and guest email information and clicks the Cancel & Send button:
  - The host cancellation meeting email is sent through the user's Exchange mailbox.

- The meeting on user's Exchange calendar is cancelled.
- The meeting is removed from the system.
- The user is redirected to the meetings list page.
- **The workflow ends.**

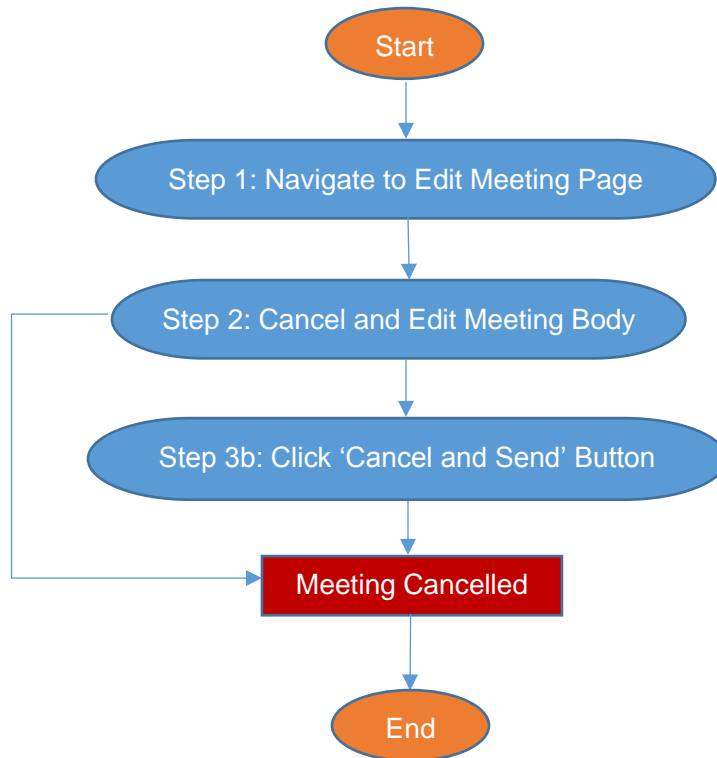


Figure 15: Cancel Meeting Workflow in Web Scheduler (Pexip and Exchange)

## Web Scheduler Workflows for Skype for Business

### Creating a Meeting

The web scheduler cannot be used to create new Skype for Business meetings.

### Updating a Meeting

#### Preconditions:

- The meeting was created using the Microsoft Skype for Business Add-In.

#### Primary Steps:

- **Step 1:** The user browses to the scheduling page for a previously created Skype for Business meeting. This may be done by clicking the edit button on the desired meeting in the meetings list, and proceeds to **Step 2**.
- **Step 2:** The user makes desired adjustments to the meeting and clicks the 'Update Meeting' button, is redirected to the email composition page, and proceeds to **Step 3**.
- **Step 3:** The user makes the desired adjustments to the email subject and body and clicks the 'Save and Send' button:
  - The meeting is scheduled for the request time.



- The subsequent updated meeting email is modified on the user's calendar in Exchange and sent by Cohesion through the user's Exchange mailbox to the invited attendees.
- Resources invited to the meeting are **NOT** guaranteed that their configured dial automations will occur. Dial automations will occur if the resource in Exchange accepts the meeting. This may be configured in Exchange to be a manual or automatic process for the resource. When the automatic process is configured and the resource is already scheduled for another meeting, the meeting will send a decline reply the user. It is suggested that the user first check that the invited resources are available before sending the meeting.
- **The workflow ends.**

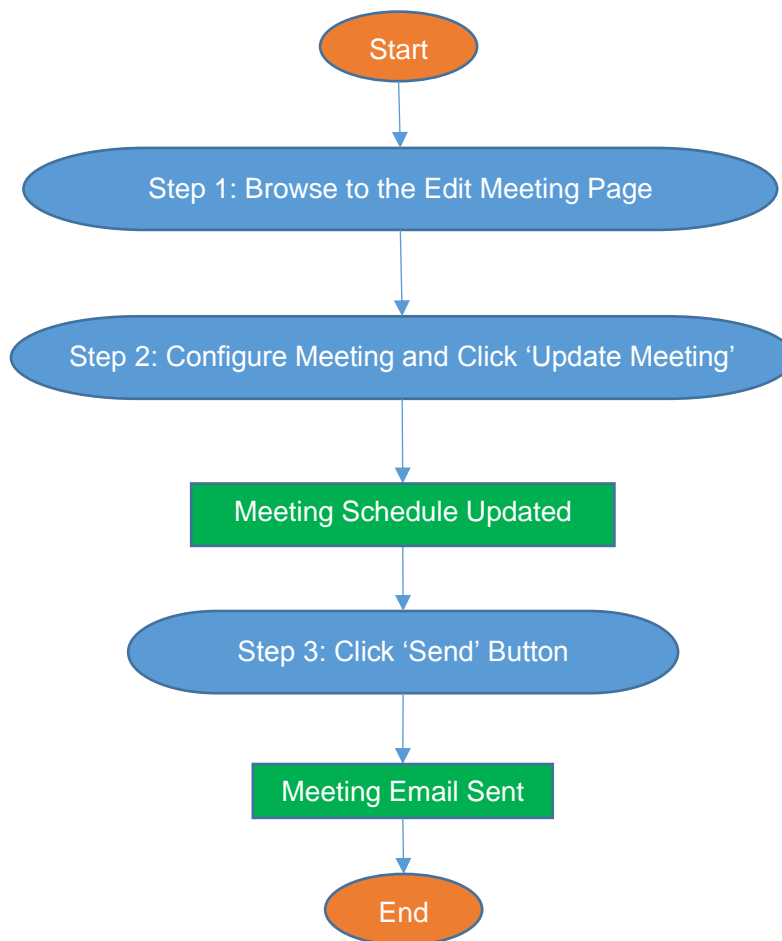


Figure 16: Update Meeting Workflow for Skype for Business in Outlook

## Cancelling a Meeting

### Preconditions:

- The meeting was created using the Microsoft Skype for Business Add-In.

### Workflow:

- **Step 1:** The user opens a previously created meeting and clicks the 'Cancel Meeting' button, and proceeds to **Step 2**.

- **Step 2:** The user makes desired adjustments to the meeting body, and proceeds to **Step 3a** or **3b**.
- **Step 3a:** The user closes the meeting window before cancelling:
  - The existing meeting remains unchanged.
  - **The workflow ends.**
- **Step 3b:** The user clicks the 'Send Cancellation' button:
  - The meeting is deleted.
  - The meeting cancellation email is sent by the Outlook client to the invited attendees.
  - Any resources reserved by the meeting are freed, and any resources connected to the meeting with disconnection automation enabled are disconnected.
  - **The workflow ends.**

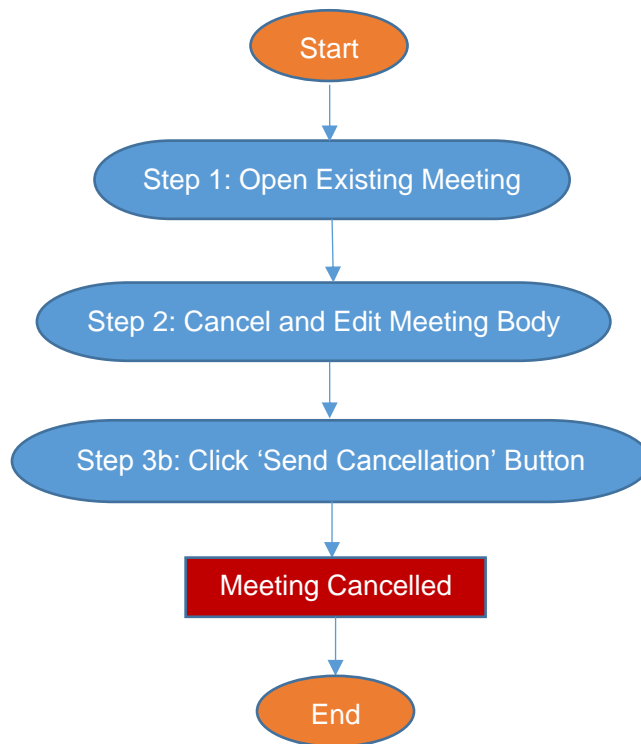


Figure 17: Cancel Meeting Workflow for Skype for Business in Outlook

## 5 Initial System Setup Checklist

---

For Cohesion to properly function after installation, further configuration is required. The following steps are the minimum needed configuration procedures that must be completed before the system will be functional and should serve as your checklist is configuring a new Cohesion system.

1. **Enable and Configure Active Directory Integration:** This will allow users to log into the web portal and use the Cohesion Outlook Add-In. See [Active Directory Integration](#) to enable this feature.
2. **Enable and Configure a Conferencing System Integration:** Enable either Pexip Infinity integration Cisco TMS integration. This is required to schedule meetings. See [Pexip Infinity Integration](#) or [Cisco TMS Integration](#).
3. **Configure Alias Settings (Pexip only):** This will customize the aliases that are generated for each meeting. This may be required for users and resource to successfully connect to the virtual meeting rooms created for a meeting. See [Pexip Infinity Integration](#).
4. **Configure Email Settings:** Defines the email system that will be used. While configuring an email system is not required, users will not receive meeting invitations if no email system is configured. See [Email Integration](#) for more information.
5. **Configure General User Settings:** This will ensure email templates, per user settings, and user permissions are customized. Email templates may need to be modified if additional alias settings were added or removed in Step 1. See [User Administration](#) for more information.
6. **Configure General Resource Settings:** This will define default values for new resource, Skype for Business dial automation options, and global endpoint settings. See [Meeting Resources](#) for more information.
7. **Add Resources:** A resource represents a meeting participant that can be automatically connected and disconnected to and from a scheduled meeting. These typically correspond to physical conference rooms or endpoint devices. See [Meeting Resources](#) for more information.
8. **Web Portal Customizations:** Navigate to the General Settings page and configure the landing page content, support information, and branding on the navigation bar.

### Accessing the System

There are currently three methods of accessing the system features: The web interface, the Microsoft Outlook Add-In for Pexip Infinity or Cisco TMS, and Microsoft Outlook Skype for Business Add-In. All users are required to authenticate through Windows Authentication in all methods of access.

### Cohesion Web Interface

Both users and administrators may access the Cohesion Web Interface. There are two modes of access that affect the permissions of the user:

- **External Access:** If the user successfully authenticates with Windows domain credentials, user and administrative privileges are assigned based upon AD group membership. If AD integration has not yet been configured, external access is effectively disabled.
- **Direct Local Access:** If the user accesses the web interface directly from the local system where Cohesion is installed and successfully authenticates with Windows domain

credentials, administrative privileges will be granted to the user. This is the only method of access available when the system is first installed.

**WARNING:** Restrict access to the computer which Cohesion is installed. Any user that can successfully log into the web server, while directly on the server, with domain credentials can potentially access administrative functions in Cohesion.

### **Cohesion Outlook Add-in**

The add-in requires Outlook to first be installed. After installation of the Cohesion add-in, it will be operational by the user if the user is logged into the computer with Windows domain credentials, and a configured user in the Cohesion system.

### **Microsoft Skype for Business Outlook Add-In**

When Exchange integration is configured, and management of Skype for Business meetings is enabled in the General Resource Settings, resources invited to Skype for Business meetings created by Cohesion users will be connected automatically into the meeting based on the resources configured dial automation. *Requires Pexip Infinity integration.*

## 6 Active Directory Integration

---

There are two types of users that can access the Cohesion system: Users and Administrators. Users have limited access to their own meetings, meetings of users of which they are designated as delegates, and their personal user settings. Administrators have full access to all settings and meetings.

- The user and administrator groups must be two separate AD groups.
- You must use security groups.
- You cannot use built-in groups such as Domain Users.

**NOTE:** Groups that are not security groups or that are built-in groups may not read correctly and result in users to appear missing in Cohesion.

Once the groups are created in AD, users assigned as members to the groups will be given authorization to use Cohesion.

Active Directory settings can be viewed by navigating to **Settings > Active Directory Settings**. The settings have the following options:

- **Enable:** Enables integration when checked. Unchecking this option removes all users and meetings from the system, preventing all user access other than direct local access.
- **Username and Password (optional):** Specifying a username will use specific credentials to access AD and is not typically required. Leave blank to use the local system privileges.
- **LDAP Path:** The bind path to access the domain where the user and administrator groups are located.

Example: For the domain *acme.com*, the path specified would be:

LDAP://dc=acme,dc=com

**NOTE:** The LDAP path is not a search space. Do not specify organizational units (OUs) in this path.

- **Administrators:** The name of the administrator group.
- **Users:** The name of the user group.
- **Synchronization Period:** The number of minutes between automatic synchronizations. Synchronizations occur in the background and will not prevent system functionality.

Once settings are saved, the system will immediately begin reading Active Directory and adding users to the system. If welcome email sending is configured, new users added to the system will receive a welcome email. Any existing users in the system that are no longer authorized will be removed and have their meetings canceled and removed.

To have the system **automatically read and update** without modifying Active Directory settings, click the **Synchronize** button at the top right of the page.

**NOTE:** Users will be authorized as a user or as an administrator if they belong directly or indirectly to the defined administrator group. For example: If user ***JSmith*** belongs to group ***New York Admins***, and ***New York Admins*** belongs to group ***Covene Cohesion Admins***, and ***Covene Cohesion Admins*** is defined as the value for the **Administrator** group, User ***JSmith*** is considered an administrator.

**NOTE:** If a user account is removed from a user group, it will not affect active virtual meeting rooms on the Pexip node. Active meetings will remain provisioned until all participants of the meeting have disconnected.

# 7 User Administration

---

## Adding Users

Before adding users, ensure that the email settings and default user settings have been configured as desired. Configuring the default settings will ensure new users will have accounts created with the intended settings. Configuring the email settings will ensure that new account welcome emails will be distributed correctly when the account is created. *Welcome emails are disabled by default.*

To grant a user access to the system, add the user to the AD group associated with either the Administrator or User group configured in Cohesion. See [Active Directory Integration](#) for instructions on configuring user groups.

Once a user is added to a group, they will be able to start using the system immediately. However, the account on the Cohesion system will not be created until the user attempts to use the web interface or use the Outlook Add-In, or Active Directory synchronization is executed. When the system is restarted, it will read the group membership again in Active Directory and create the new accounts for any new user(s) it detects.

When an account is created, the account will be created from the current default user settings, and if welcome emails are configured, an email will also be sent to the email of the user, notifying them of their new account.

## Removing Users

Users are removed once the system detects that they are no longer a member of the User or Administrator group, or if AD settings are disabled. While the user will immediately be revoked access to the system, the account information and meetings may remain on the system until either the user attempts to access the system, one of the user's meetings starts or ends, or Active Directory synchronization is executed.

## General User Settings

The general user settings contain values with which all new accounts will be initialized. **However, once a user's account has been established, changes to these settings will not update existing users.** For this reason, it is recommended that these settings be configured prior to adding users to the User group.

The defaults can be viewed by clicking **Settings > General User Settings** on the top navigation bar. The settings are organized into five sections. Each section is controlled by a permission setting. The permission setting may be set to one of the following values:

- **Allow User Modification by Default:** New user's settings are initialized from default settings and may change settings in the section.
- **Prohibit User Modification by Default:** New user's settings are initialized from default settings and may NOT change settings in the section.
- **Allow User Modification Globally:** New user's settings are initialized from default settings and ALL users may change settings.
- **Prohibit User Modification Globally:** New user's settings are initialized from default settings and ALL users may NOT change settings.

- **Use Default Values Globally:** ALL users ALWAYS use the specified default values and may NOT change settings in the section.

Below are the sections of available in the general user settings:

## Microsoft Exchange Mailbox

- **Synchronize:** Click this button to synchronize any new updates in Exchange. This may take time if there are other mailboxes awaiting synchronization. *This button is only accessible to administrators.*
- **Clear Cache:** Click this button to autodiscover the mailbox, clear any synchronization cache and resynchronize. This process may take significant time depending on the size of the mailbox and the load on the system. *This button is only accessible to administrators.*

## Display

- **Display Permissions:** The permissions for the display settings.
- **Default Time Zone:** The default time zone that will be used when displaying dates and times.

## Pexip Infinity Provisioning

- **Provisioning Permissions:** The permissions for provisioning settings.
- **Default Lead Time (Minutes):** The default number of minutes before a meeting that the virtual meeting room will be created.
- **Default Lag Time (Minutes):** The default number of minutes after a meeting that the virtual meeting room will be removed.
- **Default Max Callrate In:** The default bandwidth input limit. Enter a value in this field to limit the bandwidth of media being received by the Pexip Infinity from each individual participant dialed in to the Virtual Meeting Room.
- **Default Max Callrate Out:** The default bandwidth output limit. Enter a value in this field to limit the bandwidth of media being sent from the Pexip Infinity to each individual participant dialed in to the Virtual Meeting Room.

**NOTE:** **Default Max Callrate In** and **Default Max Callrate Out** will affect meetings provisioned after the field is changed. Changes to all other fields will only affect new meetings.

**WARNING:** Setting Security Permissions to global or changing PIN generation information when the Security Permissions is global will cause PINs to regenerate for users with user settings that do not already conform to the specified default security settings. Users that have PINs regenerated will receive welcome emails if the system is configured to do so.

## Pexip Infinity Security

- **Security Permissions:** The permissions for security settings.
- **Default Enable Meeting Room Pins:** Specifies if meetings created by the user will be configured with PINs.
- **Default Host PIN Generation Method:** The method by which the host PINs will be generated.
- **None:** The value specified in the *Default Host Pin* field will be used for new accounts.



- **Random:** A random PIN will be generated with a number of digits specified by the *Default Host PIN Length* field.
- **Last Name:** A PIN will be generated from the user's last name, as it would map to the letters on a telephone key pad, with a number of digits specified by *Default Host PIN Length* field. Symbols, spaces, and any non-alpha character will generate a zero (0) digit.
- **Default Host PIN Length:** Sets the desired length of host PIN. PIN must match the specified length the Guest PIN (applicable only for *Random* and *Last Name* default PIN generation methods).
- **Default Guest PIN Generation Method:** The method by which the PIN will be generated.
  - **None:** The value specified in the *Default Guest Pin* field will be used for new accounts.
  - **Random:** A random PIN will be generated with a number of digits specified by the *Default Guest PIN Length* field
  - **Default Guest PIN Length:** Sets the desired length of guest PIN. PIN must match the specified length the host PIN (applicable only for *Random* guest PIN generation).

## Delegation

- **Default Delegation Permissions:** The permissions for delegation settings.

**NOTE:** Delegation configuration is not required in Cohesion for meetings booked through Outlook.

## Pexip Infinity Email Templates

Email templates define the formatting used to generate the email body information placed in the meeting invitation email. Host fields are only available when SMTP integration and Pexip Infinity integration is enabled. Host templates are only used with the web interface.

- **Default Template Permissions:** The permissions for email settings.
- **Default Host PIN Message Template\*:** The default PIN message used for invitations sent to meeting hosts.
- **Default Host Email Subject Template \*:** The default subject used for invitations sent to meeting hosts.
- **Default Host Email Body Template \*:** The default body used for invitations sent to meeting hosts.
- **Default Guest PIN Message Template \*:** The default PIN message used for invitations sent to meeting guests.
- **Default Guest PIN Subject Template \*:** The default PIN message used for invitations sent to meeting guests.
- **Default Guest Email Body Template \*:** The default body used for invitations sent to meeting guests.

\* This field supports variable substitution. See Appendix C: Variable Substitution for more information.

**NOTE:** PINs have the following constraints:

A PIN must use the digits 0-9 only.

A PIN must be between 4 and 10 digits in length.

Host and guest PINs must be different.

Host and guest PINs must have the same number of digits.

A host PIN may not be left blank if PIN numbers are enabled.

## Individual User Settings

The list of user settings for all users can be viewed by clicking **Users > User Directory** on the top navigation bar. A user's user settings can be viewed by clicking on the link in the Username column for the desired user. Alternatively, user settings for the current account can be viewed by clicking **Settings > My User Settings**.

The following operations are available:

- **Show Meetings:** Shows all scheduled meetings for the user.
- **Provision Static Meeting (Pexip only):** Provisions a static virtual meeting room for the user. Once a static virtual meeting room is provisioned for the user, all future meetings the user schedules will be scheduled for the static room. If the room is later deleted, any new meetings the user schedules will dynamically generate meeting rooms for the meeting timeframe.
- **Send Welcome Email:** Sends a welcome email to the user.

## Display

- **Allow User to Modify Display Settings:** Only modifiable by Administrators when global settings are not specified in the User Settings Defaults. Specifies whether the user may modify this section with their own user settings. Unchecking this box will prevent users from modifying their own settings but still allow them to view them.
- **Time Zone:** The time zone that will be used when displaying dates and times to this user in the web interface.

## Pexip Infinity Provisioning

- **Allow User to Modify Provisioning Settings:** Only modifiable by Administrators when global settings are not specified in the User Settings Defaults. Specifies whether the user may modify this section with their own user settings. Unchecking this box will prevent users from modifying their own settings but still allow them to view them.
- **Lead Time (Minutes):** The number of minutes before a meeting that the virtual meeting room will be created for this user.
- **Lag Time (Minutes):** The number of minutes after a meeting that the virtual meeting room will be removed for this user.
- **Max Callrate In:** The bandwidth input limit for this user. Enter a value in this field to limit the bandwidth of media being received by the Pexip Infinity from each individual participant dialed in to the Virtual Meeting Room.
- **Max Callrate Out:** The bandwidth output limit for this user. Enter a value in this field to limit the bandwidth of media being sent from the Pexip Infinity to each individual participant dialed in to the Virtual Meeting Room.

**NOTE:** **Max Callrate In** and **Max Callrate Out** will affect meetings provisioned after the field is changed. Changes to all other fields will only affect new meetings.

## Pexip Infinity Security

- **Allow User to Modify Security Settings:** Only modifiable by Administrators when global settings are not specified in the User Settings Defaults. Specifies whether the user may modify this section his or her own user settings. Unchecking this box will prevent users from modifying their own settings but still allow them to view them.
- **Enable Meeting Room Pins:** Check the box to configure meeting PINs.
- **Host PIN:** The PIN required to access the meeting as a host.
- **Guest PIN Generation Method:** The method by which the PIN will be generated.
  - **None:** The value specified in the *Default Guest Pin* field will be used for each meeting.
  - **Random:** A random PIN will be generated with a number of digits specified by the *Default Guest PIN Length* field, for each meeting.
  - **Default Guest PIN Length:** Sets the desired length of guest PIN. PIN must match the specified length the host PIN (applicable only for *Random* guest PIN generation).

## Delegation

- **Allow User to Modify Delegation Settings:** Only modifiable by Administrators when global settings are not specified in the User Settings Defaults. Specifies whether the user may modify this section his or her own user settings. Unchecking this box will prevent users from modifying their own settings but still allow them to view them.
- **Add Delegator:** Adds a delegator by name or email. Each username in delegation list in user settings now link to that user's user settings page (admin only)
- **Users Authorized to Delegate:** The users that may create, modify, and delete meetings on behalf of the current user.
- **Users Authorizing Delegation:** The users for which the current user may create, modify, and delete meetings.

## Pexip Infinity Email Templates

Email templates define the formatting used to generate the email body information placed in the meeting invitation email. Host related fields are only available when SMTP integration and Pexip Infinity integration is enabled. *Host templates listed below are available only when using the web interface with SMTP integration and Pexip Infinity Integration.*

- **Allow User to Modify Email Settings:** Only modifiable by Administrators when global settings are not specified in the User Settings Defaults. Specifies whether the user may modify this section his or her own user settings. Unchecking this box will prevent users from modifying their own settings but still allow them to view them.
- **Host Email Subject Template\*:** The subject used for invitations to meeting hosts.
- **Host PIN Message Template\*:** The PIN message used for invitations to meeting hosts.
- **Host Email Body Template\*:** The body used for invitations to meeting hosts.
- **Guest Email Subject Template\*:** The subject used for invitations to meeting guests.
- **Guest PIN Subject Template\*:** The PIN message used for invitations to meeting guests.
- **Guest Email Body Template\*:** The body used for invitations to meeting guests.

\* This field supports variable substitution. See Appendix C: Variable Substitution for more information.

## Resetting User Settings for All Users to User Settings Defaults

To reset all settings for all existing users to the settings defined in the user settings defaults, click **User > Reset All Users' Settings** from the navigation bar. This will cause all users to have their user settings overwritten with the user settings defaults, generate new PIN information, while keeping their existing scheduled meetings. *Note: If email settings have been configured to send a new account welcome email, one will be sent.*

## 8 Email Integration

---

Email settings define the information used to select the type of email system. While integration with a mail server is not required, users will not be able to send email invitations from the web interface and system will be unable to send welcome email to new users.

### Supported Email Systems

Cohesion supports either a SMTP server or Exchange server. Based on the email system, meeting workflows will be slightly different

#### None

When no email system is configured, the system does not send any email in any of its workflows, but Outlook clients with the Cohesion Outlook Add-In installed will send meeting emails through their respective Exchange servers.

- **Scheduling Authority:** Cohesion is designated as the scheduling authority: During scheduling, if any resources invited to the meeting are already in use at the scheduled time, the meeting will be rejected and an error message will be displayed.
- **New User Workflow:** No welcome email will be sent to new users.
- **Outlook Meeting Workflow:** Meetings can be created, modified, and cancelled from an Outlook client where the Cohesion Outlook Add-In is installed. These meetings will be viewable, modifiable, and cancellable from the web interface, but updated or cancelled invitations cannot be sent to participants from the web interface.
- **Web Interface Workflow:** Meetings can be created, modified, and cancelled from the web interface, but no meeting invitations will be sent.
- **Skype for Business Workflow:** Not available in this configuration.

#### SMTP Server

When an SMTP server is selected, all email originating from the Cohesion server is sent through the SMTP server. Outlook clients with the Cohesion Outlook Add-In installed will send email through their respective Exchange server. SMTP server credentials are not required; the SMTP server must be configured to trust email sent from the Cohesion server.

- **Scheduling Authority:** Cohesion is designated as the scheduling authority: During scheduling, if any resources invited to the meeting are already in use at the scheduled time, the meeting will be rejected and an error message will be displayed.
- **New User Workflow:** Welcome email is sent through the SMTP server.
- **Outlook Meeting Workflow:** Meetings can be created, modified, and cancelled from an Outlook client where the Cohesion Outlook Add-In is installed. These meetings will be viewable, modifiable, and cancellable from the web interface, but updated or cancelled invitations cannot be sent to participants from the web interface since the meeting originated in Outlook.
- **Web Interface Workflow:** Meetings can be created, modified, and cancelled from the web interface. Meeting invitations for these meetings may be received in Outlook but cannot be cancelled or modified through the Outlook client.
- **Skype for Business Workflow:** Not available in this configuration.

## Microsoft Exchange Server

When Exchange is selected, welcome email, and meeting invitations from meetings created through the web interface are sent through Exchange. Meetings created through the web interface and Cohesion Outlook Add-In both create meetings in the same Exchange account, allowing the user to easily make updates to the same meeting in both the web interface or Outlook as needed.

When enabled, the system will establish a streaming connection to the mailbox of each user in the system. This streaming information allows the system to maintain synchronization with corresponding meetings in Exchange and the responses from room resources. Status information for each mailbox are provided in the External Accounts page, accessible from the Settings menu.

NOTE: The system supports configuring the system for SMTP server with Exchange integration running in safe mode. This configuration is recommended when migrating from an SMTP server configuration to make sure mailboxes are connecting correctly before migrating to Exchange only. If the system is unable to connect a user's or resource's mailbox, the dial automations for the meeting will not occur. See the next section for more information.

- **Scheduling Authority:**
  - **With Pexip Infinity integration:** Exchange is designated as the scheduling authority: Dial automations for resources invited to a meeting will only be provided if the resource has accepted the meeting in Exchange.
  - **With Cisco TMS integration:** TMS is designated as the scheduling authority: During scheduling if any resources invited to the meeting are already in use in TMS at the scheduled time, the meeting will be rejected and an error message will be displayed.
- **New User Workflow:** Welcome email is sent through the Exchange server.
- **Outlook Meeting Workflow:** Meetings can be created, modified, and cancelled from an Outlook client where the Cohesion Outlook Add-In is installed. These meetings will be viewable, modifiable, and cancellable from the web interface. *This workflow requires the Cohesion Outlook Add-In.*
- **Web Interface Meeting Workflow:** Meetings can be created, modified, and cancelled from the web interface, and will appear as though the user did so from their Outlook client. Once created these meetings will be viewable, modifiable, and cancellable from the user's Outlook client. *This workflow does NOT require the Cohesion Outlook Add-In but is highly recommended if Outlook will be used to make meeting modifications.*
- **Skype for Business Workflow:** When Skype for Business meetings are enabled, and a user creates a Skype for Business meeting in Outlook with a resource registered in Cohesion, and the resource accepts the meeting, Cohesion will provide the configured dial automation for the resource. *This workflow does NOT require the Cohesion Outlook Add-In.*

## Email Settings

The email settings are accessed by selecting the Email Settings option from the Settings menu in the web interface. The following options are provided:

- **Email System:** The type of email system that will be used. The email system has three options:
  - **None:** No email system will be used.
  - **SMTP Server:** Email will be sent through an SMTP server.

- **Microsoft Exchange Server:** Email will be sent by Exchange. User mailboxes will be monitored for meeting updates, removals, and free/busy status changes of resources. *Requires Exchange Server 2010 SP1 or greater, 2013, 2016, or O365.*
- **SMTP Server and Microsoft Exchange Server (Safe Mode):** Same as the SMTP Server option but Exchange integration will be passively activated. When passively activated, Exchange mailboxes will be discovered and connected but will not be used by the system. This provides the ability to make sure Exchange integration is correctly working before fully enabling Exchange integration, and is suggested when migrating the system from the SMTP Server configuration.
- **Username:** The username of the service account required to access the Microsoft Exchange Server. The service account must be an exchange account with application impersonation permissions. See [Appendix D: Exchange Service Account Configuration](#) for more information.
- **Password:** The password of the service account required to access the Microsoft Exchange Server.
- **System Email Address:** The email address that email will originate from when the system sends email. Must be a valid Exchange mailbox when using Exchange (or Exchange in Safe Mode) as the email system.

## SMTP Email Server

- **SMTP Host Name:** The host name of the SMTP mail server.
- **Port:** The port of the SMTP mail server.

## Microsoft Exchange

- **Proxy Address:** This is an optional proxy address to use when communicating with Exchange.
- **Change Credentials:** Click this button to modify the service account credentials before saving the settings.
- **Clear Cache:** Click this button to clear autodiscovery and synchronization data for all mailboxes. Clearing the cache will clear the synchronization data that is used to efficiently request the latest mailbox changes from the server, requiring the mailbox to synchronize against the full scope of events.

**WARNING:** Depending on the number of mailboxes in the system, it may take significant time to autodiscover and resynchronize all mailboxes, during which time sending meeting updates from the web interface, and dial automations may not take place for mailboxes that have not completed synchronization.

- **Mailboxes:** Click this button to view the list of Exchange mailboxes.
- **Reinitialize:** Click this button to reconnect and synchronize all mailboxes.
- **Autodiscover URL:** The URL to the Exchange autodiscover service. This is optional but it is highly recommended that this value be defined as it will reduce the mailbox discovery time the first time a mailbox is discovered for a user or a resource that is added. For Exchange environments with multiple autodiscover services, set this to the autodiscover URL that will be used for the majority of mailboxes.
- **Account Permissions:** This option can be set to Impersonation or Delegation. If the service account has been assigned Application Impersonation privileges (the recommended option)

set this option to Impersonation. If the service account has been assigned delegation permissions set this option to Delegation.

**NOTE:** When using the Delegation option, the account should be given delegation permissions to each user and resource mailbox in the system. Delegation is supported specifically for organizations where acquiring a service account with Application Impersonation privileges is not possible. When using delegation, the system can no longer subscribe to mailbox updates from the Exchange Server, so all updates will be periodically requested. Depending on the number of mailboxes in the system, this may take longer than the defined synchronization period.

- **Synchronization Period:** The number of seconds between mailbox synchronizations for mailboxes that are not streaming. Mailboxes may not be streaming due to using a delegation account, when the stream has not yet been created, or if the mailbox is unable to stream.
- **Max Autodiscovery Threads:** The number of threads assigned to find user mailboxes. Defaults to 6.
- **Max Synchronization Threads:** The number of threads assigned to reading meetings on mailboxes. Defaults to 6.
- **Max Connection Threads:** The number of threads assigned to setup streaming of mailboxes. Defaults to 6.
- **Max Concurrency:** The number of concurrent requests that can be made to the Exchange server. For Exchange Online (O365) this should be set to 27. For other versions of Exchange, this corresponds to the EWSMaxConcurrency policy parameter assigned to the service account. See [https://msdn.microsoft.com/en-us/library/office/jj945066\(v=exchg.150\).aspx#bk\\_ThrottlingConsiderations](https://msdn.microsoft.com/en-us/library/office/jj945066(v=exchg.150).aspx#bk_ThrottlingConsiderations) for more information.
- **Enforce Resource Availability in Web Scheduler:** When this option is enabled, and a user attempts to schedule a meeting using the web scheduler, with a resource that is already in use during the requested time, the meeting will not be scheduled and the user will be shown an error message. This occurs for any meeting on the resources calendar, not just meetings scheduled through Cohesion. This option does not guarantee the resource will accept the meeting once the meeting invitation is sent, so users may still receive an email from the resource, indicating it has declined the meeting.

## Microsoft Skype for Business Settings

- **Skype for Business Dialing Enabled:** Check this box to enable Skype for Business dialing.
- **Dial Domain:** The domain that the endpoint is instructed to dial when DirectDial or OneLaunch dialing is performed for a Skype for Business meeting. Also requires configuring a Pexip gateway rule see [Appendix E: Skype for Business Configuration](#) for more information.

## Welcome Email

- **Send Welcome Email to New Users:** Check this box to send welcome email to new users.
- **Subject\*:** The subject of the welcome email.
- **Body\*:** The body of the welcome email.

\* This field supports variable substitution. See Appendix C: Variable Substitution for more information.



## 9 Meeting Resources

---

Meeting resources represent physical endpoints or TMS systems that can be reserved by a meeting. Meetings may invite meeting resources, and each resource may be configured to be automatically connected when the meeting starts, and automatically disconnected once the meeting ends. The number of resources that may be created may be limited by the product license, depending on features and versions licensed.

Resources in the Cohesion system can be associated with resources in Exchange. When configuring a resource in Cohesion, use the email address of the Exchange resource to associate the Cohesion resource with it. When a meeting is scheduled through the Outlook Add-In, any resources in the meeting that contain email addresses matching resources in the Cohesion system will be scheduled for the meeting.

Resource booking behavior varies based upon configured integrations:

- **TMS Integration (with or without Exchange):** Resources are scheduled based upon availability of corresponding systems in TMS. A TMS meeting will not be scheduled if a system is busy during the requested time.
- **SMTP Server Integration with Pexip Integration:** The resource is reserved if it is not being used at the requested meeting time by any other meeting in Cohesion. If the resource is in use for the requested time, the meeting is rejected and the user is alerted of the conflict in the scheduling interface.
- **Microsoft Exchange Integration with Pexip Integration:** The resource will be considered reserved by the meeting based upon its free/busy status in Exchange. Cohesion will not prevent meetings from being scheduled if the resource is unavailable. Resources that do not have a free/busy status of 'Accepted' will not have dial automation for the meeting. If the free/busy status changes during a meeting, it may cause the resource to immediately connect or disconnect, based upon the new free/busy status. The free/busy status of a resource in Cohesion is updated when Exchange sends an update, the mailbox is synchronized, and at the start of a meeting.

### General Resource Settings

Meeting resource defaults serve as the default values that are automatically populated when creating a new resource. All fields have default values except for Name, Email Address, and URI.

### Default Connection Settings for Pexip Infinity

- **Allow Users to Override Auto-Dial Settings:** Check this box to enable users to change auto-dial settings when scheduling a meeting via the Cohesion web portal.
- **Default System Location:** The Pexip Infinity Location.
- **Default Protocol:** The protocol the endpoint uses.
- **Default Dial Automation:** The type of call origination, can be set to either Courtesy call, Direct Dial or One Launch.
- **Default Disconnect Automation:** When enabled, automatically disconnects the resource from the call at the meeting end time.
- **Default Auto-Dial Retries:** Enter the default number of times to dial the endpoint.

- **Default Auto-Dial Retry Interval (seconds):** Enter the default number of seconds between dial attempts.

## Exchange Resources

**NOTE:** Requires Exchange integration and Pexip integration.

**NOTE:** In addition to Cohesion configuration, additional configuration within your network is required to support this feature. Specifically, as this domain is related to call control, you must configure DNS, a SIP registrar/proxy or a H.323 gatekeeper to route calls to the Pexip conference nodes when calls to this domain are dialed.

## Endpoint Management for Pexip Infinity

The following settings apply to resources that have Endpoint Management enabled. *Requires Pexip Infinity integration.*

- **Feedback Hostname:** The Covene cohesion server hostname. Required for OneLaunch.
- **Feedback ID:** The feedback slot ID used to register feedback events from the endpoint. Refer Cisco Endpoint documentation for more details. Required for OneLaunch.
- **One Launch Message:** The message on OneLaunch menu that displays meeting organizer name and meeting subject. Required for OneLaunch.
- **Disconnect Warning Title:** The title of the warning message.
- **Disconnect Warning Message:** The disconnect warning message before the meeting end time.
- **Minutes Before Disconnect Warning:** The number of minutes before the meeting end time the disconnect warning appears. Setting this value to 0 will prevent the warning message from being displayed.

**NOTE:** Some endpoints are designed to work with a separate device, such as a touch panel, and may display messages on the panel or on the video screen. This functionality is controlled by the endpoint and not the Cohesion system.

## Configuring a New Resource

To configure a new resource, click on **Resources > New Resource**, configure the settings and click on **Save** button.

### General

- **Name:** A descriptive name for the resource. Must not be in use by another resource.
- **Email Address:** An email address associated with the resource. Must not be in use by another resource. Required to schedule resources in Outlook and Exchange.
- **Location:** This a cosmetic field for administrative tracking of where the resource is placed.

**IMPORTANT:** The email address of a resource is used to identify it amongst participants when scheduling a meeting via Outlook and when Exchange updates are received. Ensure the email address is correctly defined.

**IMPORTANT:** The name of a resource is used to identify the corresponding TMS system when booking a TMS meeting. Ensure the name of the resource is correctly defined if it corresponds to a system in TMS.

## Connection Settings for Pexip Infinity

- **System Location:** The Pexip location that the resource will be dialed from when the resource is connected to a Pexip virtual meeting room when using CourtesyCall dial automation.
- **URI:** The URI to dial the endpoint. The same URI may be used once for each protocol. This is the same as the alias for H.323 calls.
- **Protocol:** The protocol used to connect to the resource.
- **Allow Users to Override Auto-Dial Settings:** Check this box to enable users to change auto-dial settings when scheduling a meeting via the Cohesion web portal.
- **Role:** The role of the resource in the meeting.
- **Dial Automation:** There are 3 ways of placing calls, CourtesyCall, DirectDial and OneLaunch.
  - **CourtesyCall:** Cohesion commands the Pexip management node to dial the endpoint and connects it into the virtual meeting room. A user at the resource endpoint may be required to answer the call unless the endpoint is configured to auto-answer the call.
  - **DirectDial:** Cohesion commands the endpoint to dial into the virtual meeting room. *Requires an endpoint running TC7, CE8, or F9 series software. If a PIN is required to join the meeting, the user must enter the PIN or the call will eventually be disconnected.*
  - **OneLaunch:** A confirmation dialog is displayed on the endpoint at the meeting start time, and upon user confirmation, Cohesion commands the endpoint to dial into the virtual meeting room. The confirmation message is customizable. *Requires an endpoint running TC7, CE8, or F9 series software.*
- **Auto-Disconnect:** Check this box to disconnect the endpoint when the meeting ends.
- **Number of Auto-Dial Retries:** Enter the number of times to retry dialing the endpoint.
- **Auto-Dial Retry Interval (seconds):** Enter the number of seconds between dial attempts.

## Endpoint Management for Pexip Infinity

Enabling this feature allows a resource to be associated with a physical endpoint, providing the ability to display disconnect warning messages, and configure two additional dial automations: DirectDial and OneLaunch.

- **Test OneLaunch:** This button will appear if the endpoint has previously been successfully configured and saved. Click this button to send a OneLaunch test menu to the endpoint. Clicking OK on the menu will then cause a confirmation menu to display. If this confirmation menu does not appear, the endpoint is unable to send a message back to the server, so check the endpoint logs for feedback errors and make sure the Feedback Host Name in the General Resource Settings is correctly set.

- **Change Credentials:** This button will appear if the credentials were previously entered successfully. Click this button to modify the endpoint credentials before saving.
- **Enable:** Check this box to enable endpoint management for this resource.
- **Software Version:** A read-only field indicating the software version of the endpoint.
- **Host Name:** The host name of the endpoint.
- **Username:** The username required to access the endpoint.
- **Password:** The password required to access the endpoint.

## Modifying an Existing Resource

1. Click **Resources > Resource Directory** from the top navigation bar to view the list of resources configured in the system. Resource list indicates number of meetings using each resource and links to a filtered list of those meetings.
2. Click the link in the Name column in the row of the desired resource to edit the resource.
3. Make the desired changes.  
Click **Save** to save modifications.

# 10 Pexip Infinity Integration

---

Enabling Pexip Infinity integration allows Cohesion to create virtual meeting rooms for scheduled meetings.

**WARNING:** The Cohesion system will only manage its own virtual meeting rooms, and will preserve any existing virtual meeting rooms that were provisioned on the Pexip Infinity platform. However, it is not recommended that virtual meeting rooms be created outside the control of the Cohesion system as this could result in alias conflicts and prevent the Cohesion system from functioning properly.

The Covene Cohesion server will synchronize with Pexip Infinity when restarted, reset, or the Windows service or server are restarted. Meetings that have been manually created through the Pexip interface or another interface will be accounted for, will never be modified, and will not be deleted unless manually done so by an administrator. During synchronization, users will be able to update and delete meetings but will be unable to create new meetings. The synchronization period depends on the number of VMRs on the Pexip system.

**WARNING:** If you need to create static meetings with the Pexip administration interface, **restart** the Covene Cohesion server using the **System > Restart** option to ensure the new VMRs are synchronized. This will prevent alias conflicts between virtual meeting rooms.

The Pexip Infinity Settings supply the connection information of the Pexip Infinity Management Node, the administrative credentials required for the service to access the node, and the Pexip Infinity Conference Node URL.

**NOTE:** The Pexip management node password is encrypted within Cohesion.

1. To set the Pexip Settings, click **Settings > Pexip Infinity Settings**, from the top navigation bar.
2. Enter the Pexip management node information in the following fields:
  - **Enable:** Check this box to enable Pexip Infinity integration.
  - **Hostname:** The hostname of the Pexip management node.
  - **Username:** The username for the Pexip management node web portal.
  - **Password:** The password for the Pexip management node web portal.
  - **Syslog UDP Port:** The port number used to receive syslog entry communications from remote host.
  - **WebRTC Server Address:** The address used to connect WebRTC clients. May be blank if WebRTC clients will not be used.
  - **Description Format:** Defines the description written to a Pexip Infinity virtual meeting room. This field supports variable substitution.

## Alias Settings

**NOTE:** Alias settings only apply to meetings scheduled for Pexip Infinity.

Alias settings define how the names for a virtual conference room are generated. Aliases are important for generating connection information, and are typically formatted for a connection protocol, such as SIP or H.323. The list of alias settings can be viewed by clicking **Settings > Alias Settings**.

To create a new alias entry, click the **New** button. To edit an existing alias settings entry, click the link in the name column under the corresponding alias settings entry in the alias settings list and to delete the existing alias enable the checkbox before the alias and click the delete button. Alias protocol now selectable in alias settings.

An alias settings entry is comprised of following fields:

- **Name:** A unique name used to identify the alias. This is used when referencing the generated alias from other fields via variable substitution.
- **Alias Format:** The information used to generate a new alias. This field may include a resolver. This field supports variable substitution.
- **Protocol:** The protocol associated with the alias. This value determines the alias that is used to dial a resource into a VMR for some types of dial automation.
- **Use as Meeting Name:** Enable this check box to use the alias as the meeting name when generating the Pexip Infinity virtual meeting room.
- **Conformance:** Enforces formatting rules for the alias that is generated. The following options are available:
  - **None:** No changes will be made to alias.
  - **URI:** For SIP URIs, this feature will remove excluded characters in the alias per RFC 2396.

**NOTE:** For fields which support variable substitution, see [Appendix C: Variable Substitution](#) for more information.

**TIP:** The alias format field can be used to reference other aliases generated for the same meeting. This is helpful when parts of an alias need to be the same across a set of aliases for a meeting.

Aliases generated for a meeting are guaranteed to be unique so that one meeting's connection information does not conflict with another's. When generating an alias, the system will use the information in the **Alias Format** field, if the generated alias conflicts, it will add a number to the end of the alias until it finds an alias that is not in use. Because some aliases need to conform to a specific format, a mechanism called a **resolver** can be specified in the **Alias Format** field to instruct the system how to resolve conflicts. The resolver can be specified with one of the following syntaxes:

```
#{minDigits}
```

```
#{minDigits, minValue}
```

```
#{minDigits, minValue, maxValue}
```

```
#{minDigits, minValue, maxValue, flags}
```

Parameters:

- **minDigits:** The minimum number of digits to use. Zeros will be used to pad numbers with fewer than the specified digits. Specifying 0 will cause the system to generate an alias without a number if possible.
- **minValue:** The minimum value to generate.
- **maxValue:** The maximum value to generate.
- **flags:** A quoted string of options. Specifying "r" will cause a random number to be generated.

Examples:

1. To generate a random 4-digit number in the range 1000 to 9999 use the following alias format:

```
#(4, 1000, 9999, "r")
```

A random numeric alias is the recommended alias to avoid creating aliases that must go through the conflict resolution process. This type of alias is also useful when creating aliases used by participants dialing in via telephone.

2. To generate an alias compliant with a SIP URI, specify URI in the Conformance field and use the following in the alias format:

```
example#(0)@mydomain.com
```

Note the resolver "#(0)" is specified. The system will attempt to generate example@mydomain.com, if that is not available, it will generate example0@mydomain.com, if that is not available it will generate example1@mydomain.com, and continue to increment the numeric value to avoid a conflict with the alias.

3. To generate an alias compliant with a SIP URI and based on the user's username, specify URI in the Conformance field and use the following in the alias format:

```
$(User.Username)#(0)@mydomain.com
```

When a user creates a new meeting the username (as Cohesion has imported it from AD) will be used in the generation of the alias. You could alternatively specify the user ID or any other field from AD as well.

# 11 Cisco TMS Integration

---

Enabling Cisco TMS integration allows Cohesion to create scheduled meetings on Cisco TMS as a one-step process. Cohesion system will not manage dial automation for resources attending Cisco TMS meetings as this functionality will be automated by TMS.

**NOTE:** The Cisco TMS Integration feature is licensed separately.

## Enabling Cisco TMS Integration

Settings for TMS integration are viewed by selecting the Settings menu in the web portal and clicking Cisco TMS Settings. The following fields are available:

- **Enable:** Enables Cisco TMS integration.
- **Host Name:** The host name of the TMS server.
- **Use SIP Protocol:** When checked, each participant invited to the meeting will be added as a participant to the TMS conference with the SIP protocol.
- **Use H.323 Protocol:** When checked, each participant invited to the meeting will be added as a participant to the TMS conference with the H.323 protocol.
- **Default Email Body:** The message populated in the Outlook meeting before the meeting information is sent. Once sent the message will be replaced with the conference connection information generated by TMS.

**NOTE:** When both SIP and H.323 protocols are used, at least one participant of each protocol will be present in the conference to account for external participants. Participants will not be duplicated for each protocol but additional participants may be added to ensure at least one participant is added for each configured protocol.

When neither SIP or H.323 protocols are used, conference participants will be limited to systems only.



## 12 Backup and Recovery

---

Backups are created in the form of snapshots -- zip files containing an export of the database, and image files from the web site's /content/images/custom directory. Manually created snapshots created from the interface may additionally include log files from the service, database, and web server, providing an easy way to gather data to send to Covene support during an incident.

Backup and recovery can be completed through the Recovery page, accessed through the Settings menu.

### Snapshot Settings

The snapshot settings located on the Recovery page define the path where snapshots are stored, and automatic snapshot scheduling.

- **Snapshot Directory:** The physical path where snapshots are stored. This location defaults to a directory in the installation folder, but it is recommended that this path be changed to a network drive to prevent loss of data in the event of a local drive failure.

NOTE: When specifying a directory on a network drive, use the full network path (e.g. \\backups\cohesion\). Do not use a drive mapping (e.g. Z:\cohesion).

- **Snapshot Automation:** Specifies the schedule for taking automated snapshots of the system.
  - **None:** No snapshots will be automatically created.
  - **Hourly:** Snapshots will be created hourly on the specified minute.
  - **Daily:** Snapshots will be created daily on the specified hour and minute.
  - **Weekly:** Snapshots will be created weekly on the specified day of week, hour, and minute.

NOTE: If the system was offline during the time a scheduled snapshot was scheduled, the system will create the snapshot as soon as it is back online.

### Snapshot Management

The snapshot management section on the Recovery page allows the user to view, create, upload, download, delete, and restore snapshots.

- **Create Snapshot:** Clicking this button will immediately create a snapshot file. Checking the "Include logs since" checkbox will include service, database, and web server logs since the date specified in the date field.
- **Upload Snapshot:** Clicking this button will open a dialog allowing the administrator to upload a snapshot file through the browser.
- **Download:** Clicking this button will download the snapshot file.
- **Restore:** Clicking this button will prompt the user, and upon confirmation, restore the database and images stored in the snapshot, and reinitialize the system.
- **Delete:** Clicking this button will delete the snapshot file.

# 13 System Settings

---

## Status Summary

The status summary page provides the status of the database and the service, and displays any action items, errors, and warnings that need to be addressed.

- **Version:** The version of Cohesion currently running on the system.
- **Service Online:** This check box is enabled if the service is online.
- **Database Online:** This check box is enabled if the database is online.
- **Info:** These items indicate some actions must be taken to finish configuring the system.
- **Warnings:** These items indicate problems that have been detected in the system that may be preventing the system from functioning properly.
- **Errors:** This section includes items that indicate problems in the system that are preventing the system from functioning properly.
- **Systems:** This section includes information and status of some of the Cohesion subsystems, such as the Scheduler, Microsoft Exchange, and Pexip Infinity.

## General Settings

### Network

- **Proxy Address:** This is an optional proxy address to use when communicating outside the local network.

### Certificate Policies

Certificate policies apply to communications requiring the validation of certificates, such as TLS and SSL connections. These connections exist between the Pexip Infinity management node, TMS server, Exchange Web Services, and endpoints. Ignoring certificate errors is not recommended but may be necessary when initially configuring the system or troubleshooting problems.

- **Ignore Certificate Chain Errors:** The connection will be allowed if the certificate has chain errors. Chain errors can occur when certificates are self-signed.
- **Ignore Certificate Name Mismatch Errors:** All the connection if the certificate does not match the hostname. This error may be occurring if an IP rather than a hostname is being used to establish the connection.
- **Ignore Unavailable Certificate Errors:** Allow the connection even if the certificate is not provided.

### History

- **Save Meeting History:** This is an experimental feature that keeps track of meeting changes to in the database. This feature should not be enabled in production environments.

### Customizations

These settings allow modification to some parts of the web portal pages. Each part is modifiable through an embedded HTML editor. The editor will allow images in the web server's images directory to be inserted into the HTML.

Administrators may also upload additional images, but it requires the IIS\_IUSRS group be granted write permissions on the /content/images/custom directory of the web site. To conserve web server

resources, it is recommended that uploaded images be in a compressed format such as JPEG or PNG.

- **Navigation Bar Header Customization:** Sets the HTML that defines the graphics and text on the navigation bar to the left of the menus in the web interface. Images may be inserted and uploaded through the editor to the images directory for the web site.
- **Landing Page Customization:** Sets the HTML that defines the graphics and text on the root page of the web interface. Images may be inserted and uploaded through the editor to the images directory for the web site.
- **Support Page Customization:** Sets the HTML that defines the graphics and text on the support page of the web interface. The support page is accessed from the About menu. Images may be inserted and uploaded through the editor to the images directory for the web site.

NOTE: Overwriting images in the /content/images directory on the web server is highly discouraged. Images should be placed in the /content/images/custom directory where they will be backed up by snapshots and will not be inadvertently overwritten during software upgrades.

TIP: To restore a customized section to the system default, view the plain HTML (</> button), remove all HTML markup, click Update, then click Save.

## Restarting the System

Restarting the system will initialize the application without restarting the server or service. During this process, the system will synchronize with Active Directory and synchronize other enabled systems, such as Pexip Infinity Server, Microsoft Exchange Server, and managed endpoints.

Restarting the system is completed by clicking **Settings > Restart System**.

## Resetting the System

Resetting the system will cause the database to remove all meetings and user settings (excluding default user settings). All VMRs will be removed from Pexip Infinity, except for rooms that were not created by the Cohesion system.

The system will then synchronize with AD and Pexip Infinity, initializing all users to the current default user settings.

Resetting the system is useful when pushing out a unified set of default settings to all users is necessary.

Resetting the system is completed by clicking **Settings > Reset System**.

## License Information

### Viewing the License

The product license information can be viewed by clicking **System > License**.

### Viewing the End User License Agreement

The license agreement is accessed by clicking **About > EULA**.

## Updating the License File

The license file is updated by replacing the existing license file with the new license.dat file in the Service folder (defaults to C:\Program Files (x86)\Covene\Covene Cohesion Server\Service). Then navigating a browser to the web portal, selecting Restart System from the Settings menu, and confirming the restart.

# 14 Appendix A: Service Configuration File

---

The service configuration file is an XML file that defines the majority of the critical configuration values in the system. Modifications to the file will not affect the system until the **Covene Cohesion Service** is restarted from the Windows service panel. In some cases, a system reset from the system page in the web interface will be required after the service restart.

## File Location

The file location is located at **C:\Program Files (x86)\Covene\Covene Cohesion Server\Service\CohesionWindowsService.exe.config**, but this location may vary depending on the system and installation options. All configurable options, excluding the **Address** option, are defined as key/value pairs located in the document in the node path **/configuration/appSettings/add**.

## Options

- **LicenseFileName:** Defines the license file name. If a full path is not specified, the system will search for the file in the same directory as the configuration file. Requires a service restart to take effect.
- **LogPath:** Defines the file path of the log file. The system will not log when this value is absent. Ensure the process has write access to the file location. Requires a service restart to take effect.
- **TCP Address:** Specifies the address and port of the TCP connect with which the application will communicate with clients. Located in an attribute called **address**, in the node path **/configuration system.serviceModel/services/service/endpoint**, with the **binding** attribute set to **netTcpBinding**.

**WARNING:** Changing the port of the **TCP Address** will require changing the port in the **Address** option in the Outlook Add-in configuration file which is set during installation of the Outlook add-in. See the *Covene Cohesion Add-In for Microsoft Outlook – Installation Guide* for more information.

# 15 Appendix B: Web Configuration File

---

The web service configuration offers some options for changing the branding on the web site.

Extensive customization is possible if required, please contact your reseller or Covene if you require advanced customization of the user or administration interfaces.

## File Location

The file location is located at **C:\inetpub\wwwroot\CohesionWebServerWeb.config**, but this location may vary depending on the system and installation options. All configurable options are defined as key/value pairs located in the document in the node path **/configuration/appSettings/add**.

## Options

- LogPath: The web application log directory.

# 16 Appendix C: Variable Substitution

---

Many settings support variable substitution allowing fields to include other fields and system information that is dynamically resolved when the field is used. The fields documented below represent the variables and variable substitution capabilities.

## Variables

Variable	Property	Description
User	Username	The user's Windows sAMAccountName.
	FirstName	The user's first name as defined in AD.
	LastName	The user's last name, as defined in AD.
	DisplayName	The user's display name as defined in AD.
	EmailAddress	The user's email address as defined in AD.
UserSettings	Username	The user's Windows sAMAccountName.
	LeadTimeMinutes	The number of minutes prior to a meeting start time that a conference room will be created for any meeting owned by this user.
	LagTimeMinutes	The number of minutes after to a meeting end time that a conference room will be removed for any meeting owned by this user.
Meeting	Name	The conference room name (the first alias generated from the client settings).
	HostPin	The host PIN for the meeting.
	GuestPin	The guest PIN for the meeting.
	Name	The name of the client settings entry.
	StartTime	The meeting start time (UTC).
	EndTime	The meeting end time (UTC).
	LocalStartTime	The meeting start time (in the meeting's scheduled time zone).
	LocalEndTime	The meeting end time(in the meeting's scheduled time zone).
	LocalStartDate	The meeting start date.( in the meeting's scheduled start date).
	LocalEndDate	The meeting end date.( in the meeting's scheduled end date).

Variable	Property	Description
	TimeZoneDisplayName	The display name of the meeting's scheduled time zone display name. The display name is localized based on the culture of the server.
	TimeZone	The standard name of the meeting's scheduled time zone.
AD	<Any variable in the Active Directory attributes for a user>	Accesses user attributes in active directory. The user for which the attribute is accessed, is based on the context of the settings. The value will resolve to an empty string if the value is not defined.
Alias	<Indexed by the alias settings name in quotes>	The conference room alias for the specified index. Example: $\$(Alias["WebRTC"])$
PexipSettings	WebRTCServerAddress	The address of the WebRTC server used by web browsers to connect to conference rooms.

## Fields with Variable Support

The following table list the fields that support variable substitution, and the variable groups they support.

Settings	Field(s)	Supported Variables
Alias Settings	Alias Format	Meeting User UserSettings Alias PexipSettings AD
Email Settings	(Welcome Email) Subject (Welcome Email) Body	User* UserSettings* PexipSettings AD*
User Settings	Host Pin Message Guest Pin Message	Meeting User



	Host Email Subject Guest Email Subject Host Email Body Guest Email Body	UserSettings PexipSettings AD Alias
General User Settings	Default Host Pin Message Default Guest Pin Message Default Host Email Subject Default Guest Email Subject Default Host Email Body Default Guest Email Body	Meeting User UserSettings PexipSettings AD Alias
Pexip Infinity Settings	Description Format	Meeting User UserSettings Alias

\* For email settings, User, UserSettings and AD variable groups will be associated with the user for which the email will be generated.

## Using Variables

Variables are used in the following format: The **Variable Name** is specified, followed by a period, then the **Property Name**, then the entire expression is enclosed with parentheses and preceded with a dollar sign.

`$(Variable.Property)`

The AD variable resolves to Active Directory user attributes. Since attributes may contain more than one value, any variable can be indexed by adding a zero based index enclosed by square brackets at the end of the variable name. The following example resolves to the first value in the Active Directory attributes for the user.

`$(AD.extensionName[0])`

The Alias variable is indexed by the name of the alias settings which is specified in quotation marks.

`$(Alias["URI"])`

**NOTE:** When using a variable in a field: If a variable is entered in a field that does not support the variable or the variable name is incorrectly typed, an error will appear on the web page form.

## Variable Usage Example

**Example:** To customize a meeting greeting to include the meeting organizer's first and last name in the greeting, as well as information regarding the number of minutes prior to the meeting that the

conference room will be available, the User Settings for a user could be configured with the greeting field as follows:

Please join `$(UserSettings.FirstName) $(UserSettings.LastName)` in a meeting. The meeting will be available to join `$(UserSettings.LeadTimeMinutes)` minutes before the start time.

# 17 Appendix D: Exchange Service Account Configuration

---

Cohesion supports integration with Exchange Server 2010 SP1 or later. An Exchange service account is required for Exchange integration. The service account must be granted *Application Impersonation* permissions for the Exchange mailboxes corresponding to all Cohesion users. Hybrid Exchange environments involving multiple combinations of Exchange versions are supported but the service account must be configured to have *Application Impersonation* across all the environments.

**WARNING:** If the service account is denied access to a user's mailbox or the user does not have an Exchange mailbox, the user will be unable to send email for meetings through the web interface, and resources will not automatically dial for that user's meetings.

*Please refer to the Microsoft Exchange documentation linked below for configuring Application Impersonation.*

*Exchange 2010:*

[https://msdn.microsoft.com/en-us/library/office/bb204095\(v=exchg.140\).aspx](https://msdn.microsoft.com/en-us/library/office/bb204095(v=exchg.140).aspx)

*Exchange 2013 and Exchange Online (O365):*

[https://msdn.microsoft.com/en-us/library/office/dn722376\(v=exchg.150\).aspx](https://msdn.microsoft.com/en-us/library/office/dn722376(v=exchg.150).aspx)

## Integrating with Exchange Earlier than 2010 SP2 RU4

If integrating with a version of Exchange earlier than 2010 SP2 RU4, additional throttling policy modifications are required. Prior to Exchange 2010 SP2 RU4, the budgets allocated by the throttling policy to the service account are not shared with the impersonated account. This means that in older versions, the connection made to each mailbox is not budgeted on the mailbox but on the service account, so it is only able to monitor 10 mailboxes by default. The service account must, at a minimum, be able to establish a number of concurrent connections to Exchange Web Services (EWS) equal to the number of users in the system. To set the number of concurrent connections, the policy for the service account must define the value for *EWSMaxConcurrency* accordingly.

*Please refer to the Microsoft Exchange documentation linked below for more information about Exchange 2010 throttling policies:*

[https://technet.microsoft.com/en-us/library/dd297964\(v=exchg.141\).aspx](https://technet.microsoft.com/en-us/library/dd297964(v=exchg.141).aspx)

# 18 Appendix E: Skype for Business Configuration

---

In order for resource dial automations to correctly connect a call between a Skype for Business meeting and a resource, a Pexip Infinity gateway routing rule must be created on the Pexip Infinity management node by following the steps below:

## DirectDial and OneLaunch Route Configuration

The following steps configure a gateway routing rule to support resource connections configured for DirectDial and OneLaunch in Skype for Business meetings.

1. Log in to the Pexip Infinity management node.
2. Navigate to Service Configuration -> Distributed Gateway.
3. Click the **Add Gateway Routing Rule** button at the bottom of the table.
4. Assign the desired **Name**, **Description**, and **Priority**.
5. Set the **Destination alias regex match** field, substituting “gateway\domain\.com” with the domain matching the **Dial Domain** configured in the **General Resource Settings**, and enter the following:

```
onprem\.(.+)\.(.+@gateway\domain\.com(.*)?
```

NOTE: if using a Skype for Business server that is on premises, keep the `onprem` in the string as listed above. Otherwise when using a server hosted in the O365 cloud, replace `onprem` with `o365`. You can add both as separate rules if using both services, just be sure to set the domain in step 6 correctly for each one.

6. Set the **Destination alias regex replace string** to the following, substituting “domain.com” with the domain of your Skype for Business environment:

```
\1@domain.com;gruu;opaque=app:conf:focus:id:\2
```

7. Set the **Protocol** field to Lync (MS-SIP).
8. Click the **Save** button at the bottom of the form.

## CourtesyCall Route Configuration

The following steps configure a gateway routing rule to support resource connections configured for CourtesyCall in Skype for Business meetings.

1. Log in to the Pexip Infinity management node.
2. Navigate to Service Configuration -> Distributed Gateway.
3. Click the **Add Gateway Routing Rule** button at the bottom of the table.
4. Assign the desired **Name**, **Description**, and **Priority**.
5. Set the **Destination alias regex match** field, substituting “gateway\domain\.com” with the domain to be configured. This domain should match the **Dial Domain** configured in the **General Resource Settings**:

```
(.*)@gateway\domain\.com;gruu;opaque=app:conf:focus:id:(.*)
```

Set the **Destination alias regex replace string** to the following, substituting “domain.com” with the domain to be configured:

\1@domain.com;gruu;opaque=app:conf:focus:id:\2

6. Set the **Protocol** field to Lync (MS-SIP).
7. Click the **Save** button at the bottom of the form.

## 19 Appendix F: Backup and Restoration Procedures

---

In addition to snapshots, the following are additional backup strategies for the Cohesion system.

### System Imaging

The Cohesion system may be backed up by creating an image of the server. This can take time and require significant storage space, but is the most complete way of backing up and restoring the system. All configuration files and database data (including encrypted system credentials) will be recovered. This requires 3<sup>rd</sup> party software not provided with Cohesion.

### Directory Backup

Copying the installation directory will preserve configuration files, the database, but if the operating system is reinstalled, any credentials encrypted in the database may need to be reconfigured (i.e. endpoint or Pexip Infinity credentials). The installation directory is typically C:\Program Files (x86)\Covene\Covene Cohesion Server\ but may vary if custom MSI flags were used during installation. This may be completed by 3<sup>rd</sup> party backup software, custom scripts, or by manually copying the directories. This is typically inefficient when backing up database files as the files tend to be very large, allocating more data than what is actually stored.

### Database Backup

Performing a database backup is the fastest and most space efficient method available. This is also done when using the built-in snapshot feature. Using the utilities bundled with mongo, the database can be exported and imported. Configuration and installation files are not preserved. This method works best as a frequent backup strategy paired with one of the previous strategies.

Included in the installation are two Powershell scripts to help implement this strategy. These scripts are installed to the <installation path>/Service/Scripts directory.

### MongoBackup.ps1

This script will back up the database. Maintains the last 5 backups at the specified backup location in folders labeled 0 (latest backup) through 5 (earliest backup).

This script can be run manually but it is suggested that the script be automated to run at a specific frequency with Windows Task Scheduler.

The script takes two parameters:

- Backup Path – The location to store the backup data. This path should be mapped to a network drive to ensure the data is secured at an external location.
- Cohesion Path (Optional) – The location of the Cohesion installation. If the default directory was used for installation, this parameter can be omitted.

Examples:

- Running from the command line for a default installation:

```
powershell -file MongoBackup.ps1 "Z:\backup"
```

- 

- Running from the command line for a custom installation path:

```
powershell -file MongoBackup.ps1 "Z:\backup" "C:\mycustominstalldir\Covene\Covene Cohesion Server"
```

## MongoRestore.ps1

This script will restore the latest backup backed up by the MongoBackup.ps1 script. Before restoring, stop the Cohesion Windows Service.

The script takes two parameters:

- Backup Path: The location to store the backup data. This path should be a mapped to a network drive to ensure the data is secured at an external location.
- Cohesion Path (Optional): The location of the Cohesion installation. If the default directory was used for installation, this parameter can be omitted.

Examples:

- Running from the command line for a default installation:

```
powershell -file MongoRestore.ps1 "Z:\backup"
```

- 

- Running from the command line for a custom installation path:

```
powershell -file MongoRestore.ps1 "Z:\backup" "C:\mycustominstalldir\Covene\Covene Cohesion
```

# 20 Appendix G: Troubleshooting

---

## Active Directory

**Symptom:** The system users shown in Cohesion are incorrect.

Potential Causes:

- The software was installed on a server functioning as a domain controller. Make sure the software is installed on a server that is not functioning as a domain controller.
- The group name(s) are incorrectly defined in the Active Directory Settings. Make sure the group names are correctly defined.
- The users have not been assigned as members to the group(s). Make sure group membership is correctly assigned in Active Directory.
- The LDAP path is incorrectly specified in the Active Directory Settings. Make sure the LDAP path is correct and does not include OU information.

A PowerShell script is installed with the software that can be used to verify Active Directory information for a specified LDAP path and groups. The script is installed at <installation path>/Service/Scripts/ADGroupRead.ps1. The script can be run from a windows command prompt. The script outputs the resulting information to a file that can aid troubleshooting.

The script takes 6 parameters:

- LDAP Path: The root path for the domain. This path should reflect the same path specified in the Active Directory Settings, and should not include Organization Unit or Group information.
- Administrator Group Name: The name of the administrator group.
- User Group Name: The name of the user group.
- Output File: The file to write output to.
- Username (optional): The username used to authorize access to Active Directory. The credentials of the current user will be used if this value is not specified.
- Password (optional): The password used to authorize access to Active Directory. The credentials of the current user will be used if this value is not specified.

Example:

```
powershell -file ADGroupRead.ps1 "LDAP://DC=acme,DC=com" "Covene Cohesion Admin" "Covene Cohesion User" "output.txt" "username" "password"
```

## Endpoint Integration

**Symptom:** DirectDial automation works for the endpoint but OneLaunch does nothing when the menu button is pressed.

Potential Causes:

- The Feedback Hostname in the General Resource Settings is incorrectly set.
- The endpoint cannot resolve the DNS name specified for the Feedback Hostname in the General Resource Settings.

These problems can be verified in the endpoint log that can be viewed by navigating a browser to the endpoint hostname.

**Symptom:** DirectDial automation works for the endpoint but the OneLaunch menu and the disconnection warning message does not appear on the video screen.

Potential Causes:

- The endpoint is designed to work with a touch panel. For some Cisco endpoints, the message may differ depending on the model of the device and the version of the endpoint software.

## Exchange Integration

**Symptom:** One or more user accounts have started to list the following error: Subscription Create Failed: The request failed. The remote server returned an error: (401) Unauthorized.

**Potential Cause:** The service account may have expired. Service account password expiration may not cause this problem across all mailboxes when the expiration occurs.