

Synergy SKY Meeting Server Installation and Configuration Guide

SMS v2.3

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Introduction

About Synergy SKY Meeting Server

New technologies have made it possible for enterprise collaboration solutions to work seamlessly together. Today Skype for Business users and video conferencing users participate in joint meetings as standard, with high-quality video, audio and content sharing. There are still some challenges, however, when it comes to the user experience.

Joining a meeting using Skype is easy, but the video conference user has to dial the meeting address from a video touch pad or a remote control. It may not even be possible to dial the address from an endpoint if the meeting is hosted in Office365 (Skype Online). Automating the connection process is therefore of great value to organizations.

Synergy SKY Meeting Server (SMS) solves this by automatically connecting video-enabled meeting-rooms to Skype meetings using Cisco One Button To Push (Cisco OBTP) or Polycom Click To Join (Polycom CTJ). The end-user simply schedules a new Skype meeting in Microsoft Outlook and adds the required video-enabled meeting-rooms. SMS manages the connection and brings the Cisco OBTP or Polycom CTJ information to the video endpoint. You can also forward a Skype meeting invitation to a video-enabled meeting-room and automatically enable Cisco OBTP or Polycom CTJ. SMS removes the risk of typing errors, and ensures that all meetings start on time.

In addition, SMS can be used to schedule meetings in personal VMRs, and for Cisco and Pexip environments, in one-time-VMRs, sending the Cisco OBTP or Polycom CTJ information to the scheduled video endpoints and dialing out to endpoints that do not support Cisco OBTP or Polycom CTJ.

SMS is shipped as a Windows installer with a simple setup wizard that enables quick deployment.

The solution supports Pexip, Cisco CMS and StarLeaf Cloud environments, and on-premises installations of Skype and Microsoft Exchange as well as Office 365.

How Synergy SKY Meeting Server works

This section gives an overview of SMS features and how the product works; configuration is explained in more detail in the following chapters.

Feature overview

SMS supports the following feature set:

- Booking Skype meetings using Outlook: SMS creates a Skype URI for the meeting that is sent as Cisco One Button To Push (Cisco OBTP) or Polycom Click To Join (Polycom CTJ) to all video endpoints scheduled in the same meeting.
- Booking one-time-VMRs (Cisco and Pexip only): the endpoints receive the URI as Cisco OBTP or Polycom CTJ.
- SMS can identify patterns in meeting room invitations so that the endpoint can be populated with Cisco OBTP or Polycom CTJ information for personal VMRs (e.g. meet.js@example.org).
- SMS dials out to booked endpoints that don't support Cisco OBTP or Polycom CTJ.
- Emails containing the dial-in information for the meeting can automatically be sent to the meeting participants.

Limitations

Cisco CMS

At this time SMS can only dial out from one-time-vmrs on CMS, not from personal VMRs and Skype for Business (S4B) meetings. This means that for S4B calls and personal VMR calls when using CMS, the meeting can only be joined via Cisco OBTP/Polycom CTJ.

StarLeaf Cloud

At this time SMS can be used to enable Cisco OBTP/Polycom CTJ for the following scheduled meetings:

- Office 365,
- Skype for Business on-premise
- StarLeaf Cloud

Overall process from install to end user

1. After installation, video admins add the following information into the SMS configurator tool:
 - Exchange server connection settings.
 - MCU details (Pexip MCU that acts as Skype Gateway, Cisco CMS MCU for Dual Home meetings, or StarLeaf Cloud).

- Exchange video-enabled meeting-room resources.

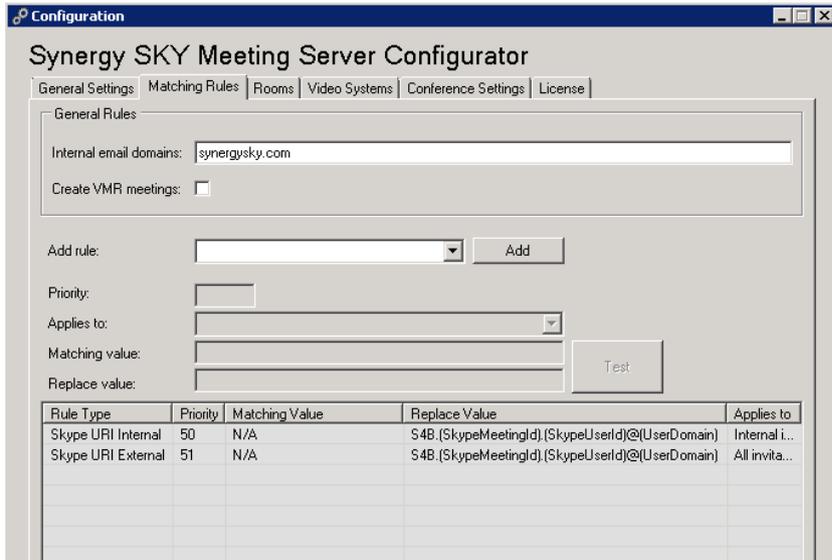
- Users book a Skype, personal VMR or one-time-VMR video meeting from Outlook, inviting one or more video-enabled meeting-room resources.
- SMS monitors the meeting-rooms at the interval specified in **Polling interval in minutes**, to check if they receive a meeting invite. This is how it works with a Pexip MCU:
 - Skype invitations sent to meeting-room resources include a URI in this format: `sip:js@example.org;gruu;opaque=app:conf:focus:id:TTC86056` which SMS rewrites to a URI the meeting-room endpoint can call eg: `S4B.TTC86056.js@example.org` (this format is defined in **Matching Rules** in the configurator).
 - For one-time-VMR meetings, the URI is generated based on the format defined in **Matching Rules** in the configurator.
 - For personal VMR meetings, the URI in the invite body is identified as the URI.
- The URI is sent to the endpoint as Cisco OBTP or Polycom CTJ ready for attendees to start the meeting.
- The call is routed either through Pexip to the Skype server, using a gateway rule on the Pexip MCU, or through Cisco CMS to the Skype server, using the Dual Home technology, or through the StarLeaf Cloud to the Skype server.

How the Skype URIs are generated

Skype URIs for SMS should be based on your company dial plan.

Pexip

In this example, using a Pexip MCU, our **URI Prefix** is S4B (for Skype for Business). We recommend using a prefix that easily identifies these URIs on your network as Synergy SKY Meeting Server Skype for Business URIs.

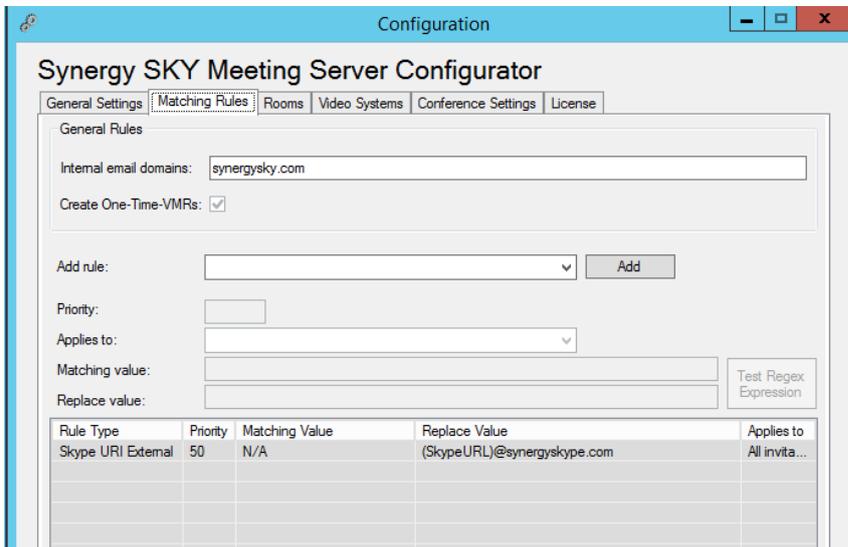


The second part of the URI is the **Skype Meeting ID**, and the last part is the **Skype User ID**.
 A URI created from our matching rule pattern looks like this:

URI Prefix	Skype Meeting ID	Skype User ID	Full URI
S4B	TTC86056	js@example.org	S4B.TTC86056.js@example.org

Cisco CMS

With CMS, the format of the replace value is *(SkypeURL)@CompanyCMSDomain.local* where "CompanyCMSDomain.local" is the routing domain that ensures the call is routed to the CMS.



This domain must also be added as a "Targets Lync Simplejoin" domain on the CMS under **Configuration > Incoming Calls**.

Incoming call handling

Call matching

	Domain name	Priority	Targets spaces	Targets users	Targets IVRs	Targets Lync	Targets Lync Simplejoin	Tenant	
<input type="checkbox"/>	synergysky.com	0	yes	yes	no	no	no	no	[edit]
<input type="checkbox"/>	synergysky.com	0	yes	yes	yes	no	yes	no	[edit]

StarLeaf Cloud

The Skype URI sent to the endpoint is the URI of the gateway call provisioned in the StarLeaf Cloud by SMS.

This URI is in this format: *numeric@customername.call.sl*

How the call is routed

Pexip

There must be a **Destination alias match** in a gateway rule on the Pexip that corresponds to the matching rule URI pattern so that when the endpoint dials the skype URI, it is routed correctly.

The protocol for this rule must be MS-SIP.

The screenshot shows the Pexip Infinity Conferencing Platform configuration page. The user is logged in as 'admin'. The navigation menu includes Status, System Configuration, Platform Configuration, Call Control, Service Configuration, Users, and Utilities. The 'Service Configuration' section is active, showing 'Select Call Routing Rule to change'. Below this, there is a search bar and a table of call routing rules. The table has columns for Priority, Name, Description, Incoming, Outgoing, Call location, Registered only, Connect, SIP, Lync/SFB, H323, Destination alias match, Replace string, Call target, Out location, Protocol, and Enabled. A single rule is listed with the following details:

Priority	Name	Description	Incoming	Outgoing	Call location	Registered only	Connect	SIP	Lync/SFB	H323	Destination alias match	Replace string	Call target	Out location	Protocol	Enabled
1	To Skype Meeting		✓	✓	Any Location	•	✓	✓	•	✓	S4B\([a-zA-Z0-9]+\)\.(+@.+)	\2;gruu;opaque=app:conf:focus.id:\1	Registered device or external system	Skype	Lync/SFB (MS-SIP)	True

Below the table, a summary row highlights the 'Destination alias match', 'Replace string', and 'Protocol' for the selected rule:

Destination alias match	Replace string	Protocol
S4B\([a-zA-Z0-9]+\)\.(+@.+)	\2;gruu;opaque=app:conf:focus.id:\1	Lync (MS-SIP)

See Pexip documentation for more information on creating gateway rules.

Note: If calls go through a VCS, you need a search rule on the VCS to send calls corresponding with the prefix of your URI pattern to Pexip (in our example, S4B).

Cisco CMS

The call is routed through the CMS to Skype using the Dual Home functionality:

1. When a Skype meeting is forwarded to a video-enabled meeting-room that has been added to SMS, SMS tells the endpoint to call URL@simplejoindomain.
2. The VCS routes the call to CMS.
3. On CMS, the call hits the incoming calls simplejoin rule and CMS sets up the call.

Note: The "Lync simplejoin domain" must be present on the VCS.

StarLeaf Cloud

1. The endpoint calls out to the StarLeaf Cloud using the URI it received from SMS.
2. The StarLeaf Cloud calls the Skype meeting.

Note: The cloud call is automatically terminated if the endpoint call is terminated.

Requirements

Windows Server software

Operating system	Additional features required
Windows Server 2008 r2 64 bit (or newer)	Microsoft .NET 4.5.1 Framework

Windows Server hardware

Number of video-enabled meeting rooms	CPU	RAM	HDD
0 - 100	4 Cores	8 GB	20 GB
100 - 300	4 Cores	16 GB	50 GB
300+	4 Cores	32 GB	100 GB

Network requirements

Source	Destination	Protocol	Port (TCP unless otherwise stated)	Description
Synergy SKY Meeting Server	Microsoft Exchange	HTTPS	443	Scheduling.
Synergy SKY Meeting Server	Cisco TMS	HTTP HTTPS	80 443	Tracking codecs on DHCP.
Synergy SKY Meeting Server	Pexip MCU	HTTPS	443	Initiating dial-out calls. Provisioning one-time VMRs.
Synergy SKY Meeting Server	StarLeaf Cloud: https://api.starleaf.com	HTTPS	443	Provisioning gateway call in StarLeaf Cloud.
Synergy SKY Meeting Server	Cisco CMS	HTTP HTTPS	80 443	Initiating dial-out calls. Provisioning one-time VMRs.
Synergy SKY Meeting Server	Cisco codecs	HTTP HTTPS	80 443	Updating codecs with Cisco OBTP information.
Synergy SKY Meeting Server	Polycom codecs	N/A	N/A	N/A - SMS does not talk to the codec - the Polycom endpoints get the meetings from Exchange.
Synergy SKY Meeting Server	Synergy SKY Upgrade service	HTTP	80	Automatic upgrade of SMS via this URL: http://synergysky.com/upgradeService/
Synergy SKY Meeting Server	Internet	HTTP HTTPS	80 443	SMS requires internet access to find the address to the Skype meeting for CMS Office 365 meetings, and for all external Skype invitations that are forwarded.

Service accounts

Account type	Permissions required
Microsoft Exchange User (with a mailbox)	Full access to meeting room resource mailboxes.
Pexip MCU	Admin API account or LDAP API account.
Cisco CMS	Admin API account.
StarLeaf Cloud	You need to have Allow scheduling external conferences enabled on your organization's account. See "How to create a StarLeaf Cloud authorization token" on page 36
Cisco codecs	Admin user account.

Account type	Permissions required
Polycom codecs	N/A - SMS does not talk to the codec - the Polycom endpoints get the meetings from Exchange.
Cisco TMS (optional - used to track codecs on DHCP)	Site administrator user account.

Device support

Device	Version	Comments
Microsoft Exchange	On Prem and Office 365 (Exchange Online) <ul style="list-style-type: none"> • 2010 SP2 and later • 2013 all SPs • 2016 	
Cisco TMS	12.0 - 15.5	
Pexip MCU	12 - 15.1	
Cisco CMS	1.8 - 2.2	Must be configured with Dual Home: The "Lync simplejoin domain" must be present on the VCS if the endpoints route calls through one. Also, the CMS must have a working Lync outbound rule set up (Trunk type: Lync).
StarLeaf Cloud	N/A	You need to have Allow scheduling external conferences enabled on your organization's account. See "How to create a StarLeaf Cloud authorization token" on page 36
Cisco codecs: <ul style="list-style-type: none"> • C-series • MX-series • SX-series • EX-series • DX-series • Cisco Spark Room Kit 	<ul style="list-style-type: none"> • TC5.x and newer • CE8.x and newer 	Note that only dial out is currently supported for endpoints registered on the Spark service.
Polycom codecs: <ul style="list-style-type: none"> • HDX • Group series 	All versions supporting Polycom CTJ	<p>Polycom HDX does not support Office 365, so it cannot currently get the Polycom CTJ if the room is in Office 365.</p> <p>The endpoints must be configured to poll calendar data from Exchange using the Polycom Calendaring service:</p> <ul style="list-style-type: none"> • The Polycom endpoints must be configured to get the meetings from their own room account in Exchange. • SMS will rewrite the body of these meetings in the Exchange room accounts to embed the URI of the meeting in a Polycom-friendly way.

Exchange Room requirements

When deploying Synergy SKY Meeting Server (SMS), we recommend considering the following Microsoft Exchange Room properties in order to unlock the full potential of the product.

The embedded test tool in the SMS Configurator can be used to verify most of these properties, and suggests PowerShell commands to configure the rooms according to the SMS recommendations.

Property name	Function in Microsoft Exchange	Function in Synergy SKY Meeting Server	Recommended Setting	Required
DeleteSubject	<p>Specifies whether to remove or keep the subject of incoming meeting requests.</p> <p>Valid input for this parameter is <i>\$true</i> or <i>\$false</i>.</p> <p>The default value is <i>\$true</i>.</p> <p>This parameter is used only on resource mailboxes where the AutomateProcessing parameter is set to <i>AutoAccept</i>.</p>	<p>When set to <i>\$true</i>, Exchange deletes the subject of the meeting which means SMS does not display a meeting title on the touch panel of the video system.</p> <p>If you want the subject of the meeting to be hidden, you can select the Private flag when booking the meeting in Outlook, even if this property is set to <i>\$false</i>.</p> <p>See also RemovePrivateProperty.</p>	<i>\$false</i>	Yes, if you want the meeting to be displayed on the touch panel.
DeleteComments	<p>The DeleteComments parameter specifies whether to remove or keep any text in the message body of incoming meeting requests.</p> <p>Valid input for this parameter is <i>\$true</i> or <i>\$false</i>.</p> <p>This parameter is used only on resource mailboxes where the AutomateProcessing parameter is set to <i>AutoAccept</i>.</p>	<p>When set to <i>\$true</i>, Exchange deletes the body of the meeting invitation when booking rooms.</p> <p>As the matching rules rely on reading content in the body of the email, this stops Regex and the Skype URI External rule from working in SMS.</p>	<i>\$false</i>	Yes, so that your matching rules work correctly.
ProcessExternalMeetingMessages	<p>The ProcessExternalMeetingMessages parameter specifies whether to process meeting requests that originate outside the Exchange organization.</p> <p>Valid input for this parameter is <i>\$true</i> or <i>\$false</i>.</p> <p>The default value is <i>\$false</i>.</p> <p>By default, meeting requests that originate outside of the organization are rejected.</p>	<p>When set to <i>\$false</i>, Exchange will not allow external users to book Rooms resources.</p> <p>However, a room is booked on behalf of the organizer if a user forwards an invite into a room. This setting must therefore be set to <i>\$true</i> to allow internal users to forward invitations to external Skype meetings into their meeting rooms, so that they can benefit from easy calling into external Skype meetings.</p> <p>Note: Administrators can still avoid external users booking their rooms directly by using an internal domain in the room's alias (e.g. <i>meetingroom@synergysky.local</i>)</p>	<i>\$true</i>	Yes, so that forwarding invites from external users works correctly.
RemovePrivateProperty	<p>The RemovePrivateProperty parameter specifies whether to clear the private flag for incoming meeting requests.</p> <p>Valid input for this parameter is <i>\$true</i> or <i>\$false</i>.</p> <p>The default value is <i>\$true</i>.</p> <p>By default, the private flag for incoming meeting requests is cleared. To ensure the private flag that was sent by the organizer in the original request remains as specified, set this parameter to <i>\$false</i>.</p>	<p>When set to <i>\$true</i>, Exchange removes the Private flag when a Room is booked as a resource in a meeting flagged as Private in Outlook. This means that the meeting title is visible to everyone for all meetings.</p> <p>By setting this property to <i>\$false</i> you can hide the title on meetings that are booked as Private in Outlook, while showing the title of all other meetings.</p>	<i>\$false</i>	No.

Property name	Function in Microsoft Exchange	Function in Synergy SKY Meeting Server	Recommended Setting	Required
AutomateProcessing	<p>The AutomateProcessing parameter enables or disables calendar processing on the mailbox.</p> <p>This parameter takes the following values:</p> <ul style="list-style-type: none"> <i>None</i> Both the resource booking attendant and the Calendar Attendant are disabled on the mailbox. <i>AutoUpdate</i> Only the Calendar Attendant processes meeting requests and responses. <i>AutoAccept</i> Both the Calendar Attendant and resource booking attendant are enabled on the mailbox. This means that the Calendar Attendant updates the calendar, and then the resource booking assistant accepts the meeting based upon the policies. <p>The default value on a resource mailbox is <i>AutoAccept</i>.</p> <p>The default value on a user mailbox is <i>AutoUpdate</i>, but you can't change the value on a user mailbox.</p>	<p>Meetings that are booked in Room resources are stored as <i>Tentative</i> unless this setting is set to <i>AutoAccept</i>.</p> <p>Tentative meetings are not processed by SMS, as you can book multiple tentative meetings within the same time interval in one resource.</p>	<i>AutoAccept</i>	Yes.
AllRequestInPolicy AllRequestOutOfPolicy RequestInPolicy RequestOutOfPolicy	<p>These parameters specify whether to allow users to submit policy requests.</p> <p>Valid input for these parameters are <i>\$true</i> or <i>\$false</i>.</p> <p>The default value is <i>\$false</i>.</p>	<p>Meetings booked in Room resources that are configured with either of these properties that require meetings to be approved by a delegate, will not be processed by SMS until they are approved.</p> <p>This will lead to a significant delay for the meeting organizers, and is therefore not recommended.</p>	<i>\$false</i>	Recommended: configure so that approval is not required.

We recommend running the following script to set the required permissions on all rooms:

```
Add-MailboxPermission -Identity <roomAlias> -User <ServiceAccount> -AccessRights FullAccess
Set-CalendarProcessing <roomalias> -DeleteComments $false -RemovePrivateProperty $false -
AddOrganizerToSubject $false -DeleteSubject $false -ProcessExternalMeetingMessages $true
```

Installing Synergy SKY Meeting Server

You will be provided with an installer: *SetupProject.msi*.

1. Double click to run the installer.



2. Follow the simple install wizard, clicking **Next** to accept the license agreement, select the install location, and choose whether to launch SMS when installation completes.
3. Once the install has completed, you will see a shortcut to the configuration tool on the desktop.



Configuring Synergy SKY Meeting Server

All configuration of the Synergy SKY Meeting Server (SMS) is done using the configuration tool.

Task 1: Launching the configuration tool and installing the service

1. Start the configuration tool by double-clicking on the SMS icon on the desktop.

Note: On startup, the server checks for updates, so if you do not have internet access configured on the server, you will see an error here.

2. Click **Install Service** to install the SMS service on the server - once installed this button disappears from the configuration tool.

The **Start** and **Stop** buttons are used once the service is installed to stop and start it, as necessary.

Configuration

Synergy SKY Meeting Server Configurator

General Settings | Matching Rules | Rooms | Video Systems | Conference Settings | License | Network | Upgrade | About

Start Stop **Service is not installed** Install Service

Notifications

Admin Contact Email addresses:

Notifications: Endpoint Connection problems Date/Time problems License Warnings Software Upgrade

Exchange Connection info

EWS Uri:

EWS Service Account Username:

EWS Service Account Domain:

EWS Service Account Password:

Polling interval in minutes:

MCU Connection info

MCU address / hostname:

MCU Username:

MCU Password:

TMS Connection info (optional)

Cisco TMS address / hostname:

Cisco TMS Username:

Cisco TMS Password:

Preserve TMS bookings:

Test notification email Test connections NEXT >>

Version: 2.3 Build 22 Release Candidate - not for use in production environments Test Exchange Rooms Save Changes *

Note: Pressing Ctrl + F5 reveals the **Uninstall Service** button in the place of the **Install Service** button, which when clicked, uninstalls the service from the server.

Task 2: Configuring the General Settings

Fill in the fields in the **General Settings** tab as follows:

Section/Field name	Description
Notifications	Contact details for the administrator who should receive notifications of any problems in the platform, for example if SMS fails to push Cisco OBTP or Polycom CTJ information to endpoints.
Admin Contact Email Addresses	The email addresses of administrators who will receive email notifications for the specified events. Use a comma to separate multiple email addresses.
Notifications	Specify which events will trigger an email to be sent to the administrator email addresses specified above.
Exchange Connection info	The Exchange Web Service (EWS) details for your Exchange environment.
EWS Url	The Exchange Web Service (EWS) URL: if using Office 365, then you can normally use the default value already populated here: https://outlook.office365.com/EWS/Exchange.asmx
EWS Service Account Username	The username of the EWS service account. Microsoft Exchange sometimes requires the username to be in the format of "domain\username" and sometimes "username@domain". In the latter cases the domain field is not used, but still required. For details of the permissions required for the service account, see "Requirements" on page 9
EWS Service Account Domain	The domain of the EWS service account.
EWS Service Account Password	The password of the EWS service account.
MCU Connection info	A Pexip Infinity Management Node, Cisco CMS Master Node or StarLeaf Cloud URL is required so that SMS can: <ul style="list-style-type: none"> • launch outbound calls to non-Cisco OBTP or Polycom CTJ systems • provision one-time-VMRs when booking non-Skype meetings (Cisco and Pexip only) <p>Note that for StarLeaf you need to request an authentication token that gives you access to Skype for Business interworking.</p>
MCU address / hostname	The address of the MCU. Will normally start with https:// For StarLeaf Cloud enter https://api.starleaf.com
MCU Username	The username of an admin account on the MCU. For StarLeaf Cloud, enter <code>X-SL-AUTH-TOKEN</code>
MCU Password	The password of an admin account on the MCU. For StarLeaf Cloud, enter the access token from the StarLeaf Portal. See "How to create a StarLeaf Cloud authorization token" on page 36
TMS Connection info (optional)	Optionally you can add Cisco TMS to your SMS; this is of value if the video systems are configured with dynamic IP addresses (DHCP) in your environment. SMS will then query TMS for updated IP addresses if it is unable to connect to the video systems. Adding TMS also makes it easier to add video systems, as they can then be selected from a list instead of having to enter their IP addresses manually.
Cisco TMS address / hostname	The hostname or IP address of the TMS server. This could be prefixed with either http:// or https:// . SMS assumes TMS is installed on the default web application named /TMS (e.g. http://tms.company.com/tms).
Cisco TMS Username	The username of a Site Administrator in TMS. The username would normally be prefix with the NETBIOS domain (e.g. <code>company\admin</code>).
Cisco TMS Password	The password of a Site Administrator in TMS.
Preserve TMS Bookings*	Check the checkbox if SMS should preserve meetings that are pushed to the codec by other booking systems such as Cisco TMS. Enabling this feature will result in more network activity and higher cpu usage on the codec and on SMS because SMS will increase the verification rate to ensure the video conferencing system has the correct meetings added. We recommend that you only enable this feature during a trial or migration phase.

*Note that TMS pushes out the meetings later than SMS and therefore overwrites the meetings that are pushed out by SMS. Note the following regarding using the **Preserve TMS Bookings** setting above:

TMS	SMS without Preserve TMS Bookings	SMS with Preserve TMS Bookings
Pushes out a list of all meetings to endpoint when a meeting is booked, updated or deleted.	Pushes out a list of meetings for the next 24 hours when a meeting is booked, updated or deleted.	Pushes out a list of meetings for the next 24 hours when a meeting is booked, updated or deleted.
	Verifies and overwrites (if necessary) the meeting list on the endpoint every hour with meetings stored in SMS for the next 24 hours.	Verifies and merges (with TMS meetings if necessary) the meeting list on the endpoint every hour with meetings stored in SMS for the next 24 hours.
	Verifies and overwrites (if necessary) the meeting list on the endpoint at Conference Start Buffer before every meeting starts (start-up buffer is by default 10 minutes) with meetings stored in SMS for the next 24 hours.	Verifies and overwrites (with TMS meetings if necessary) the meeting list on the endpoint at Conference Start Buffer before every meeting starts (start-up buffer is by default 10 minutes) with meetings stored in SMS for the next 24 hours.
		Verifies and overwrites (with TMS meetings if necessary) the meeting list on the endpoint continuously while a meeting is in progress with meetings stored in SMS for the next 24 hours.

Task 3: Testing that email is working

Click **Test notification email** to send a test email to the **Admin Contact Email Addresses** using the **EWS Service Account** defined in the sections above.

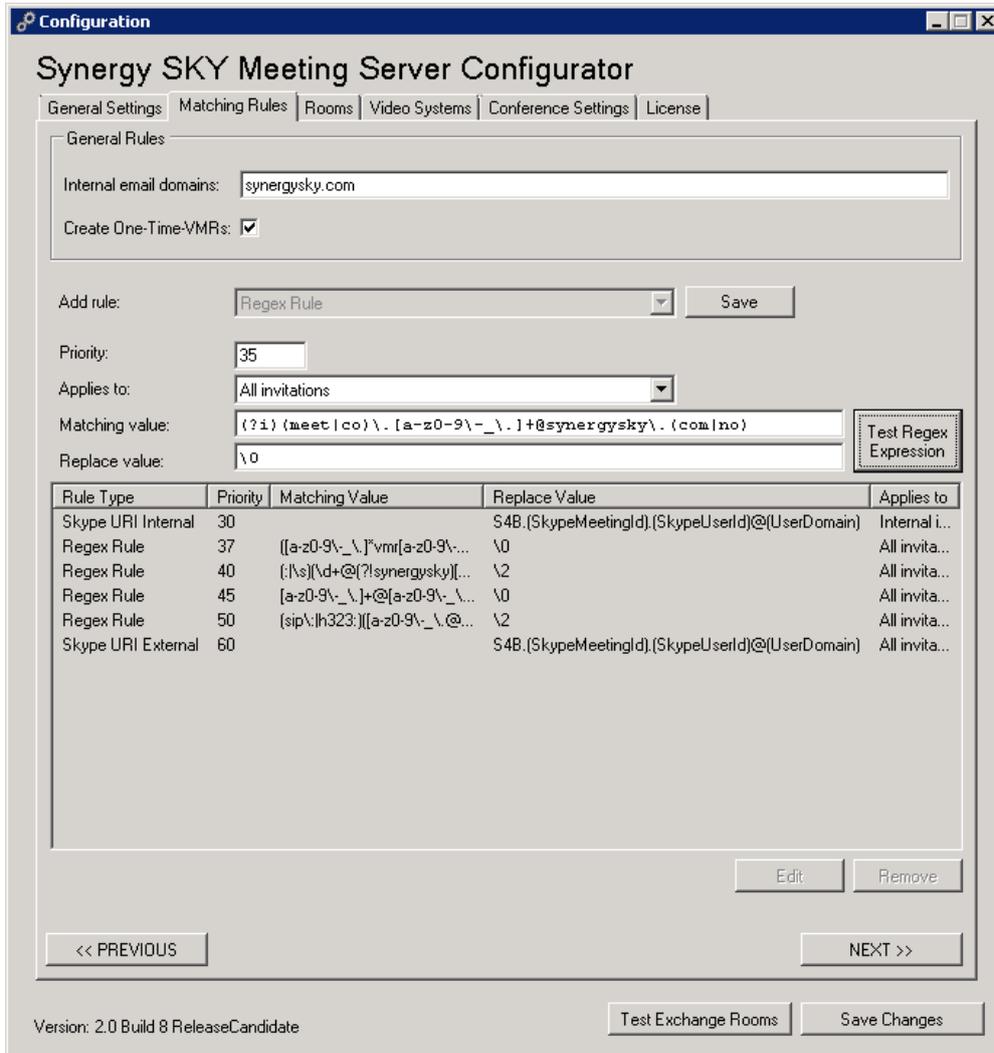
Task 4: Creating Matching Rules

After configuring the **General Settings**, you need to create matching rules.

The matching rules in SMS allow you to define how calendar bookings should be processed.

As an example, you can create rules that define that SMS should do the following:

1. Look for personal VMRs in invites from internal users.
2. Look for Skype invites from all users.
3. Create a one-time-VMR if neither 1 or 2 apply.



Configuring the General Rules

Configure the **General Rules** as follows:

Field	Description
Internal email domains	Specify a comma separated list of the email domains your organization uses. This list is used to determine whether a meeting room invitation is sent from an internal or external user. It is also used to determine which users are internal and external when sending out connection information emails. (e.g. <i>synergysky.com</i> , <i>synergysky.eu</i> , <i>synergysky.us</i>)
Create One-Time-VMRs	When this box is ticked, SMS will provision one-time-VMRs when a meeting is booked in a video-conferencing-enabled meeting room, and none of the rules in the rule list are met. This is then seen as a “default” rule with the lowest priority. The VMRs will be provisioned with an alias and pin codes as defined in Conference Settings , and dial-in information will be sent out as configured. Note: This field is disabled in StarLeaf Cloud environments.

Creating the rules

First, select the type of rule you want to add from the **Add Rule** dropdown menu:

Rule type	Description
Skype URI Internal	<p>Note: Not applicable for Cisco CMS</p> <p>This rule makes SMS look for Skype invites in hidden text in the invite.</p> <p>This will normally work for all Skype meetings when the invitation is sent internally in the organization. The information may however be lost if the email jumps multiple Exchange servers, or when the invite comes from someone outside the organization.</p> <p>This rule can only be added once.</p>
Skype URI External	<p>This rule analyzes the Hyperlink in the body of the invitation to find the URI of the Skype meeting. This will work in most environments, both internally and externally, but is slower. It is therefore recommended to use this as a fallback rule with lower priority than the Skype URI Internal rule.</p> <p>This rule can only be added once.</p>
Regex Rule	<p>This rule enables you to use Regex to define how you want SMS to work. You can define your own pattern matches, and differentiate between invitations from internal and external organizers.</p> <p>You can define both matching patterns and replace patterns to transform the URI when required.</p> <p>This rule can be added multiple times.</p>

Skype URI Internal

This rule does not apply if using Cisco CMS.

Configure the remaining fields as follows:

Field	Description
Priority	The priority defines the order in which the rules are applied. The lowest number gives the highest priority. (E.g. 1 is processed before 5).
Applies to	Internal invitations
Matching value	Not applicable
Replace value	<p>Pexip:</p> <p>S4B. (SkypeMeetingId) . (SkypeUserId) @ (UserDomain)</p> <p>where:</p> <ul style="list-style-type: none"> SkypeMeetingId = alphanumeric meeting Id found in every Skype meeting invite SkypeUserId = the userpart of the organizer's Skype SIP URI UserDomain = the domain in the organizer's Skype SIP URI <p>NOTE: For Organizations with a Pexip Gateway hosted by a Service Provider, the recommended pattern would be:</p> <p>S4B. (SkypeMeetingId) . (SkypeUserId) _ (UserDomain) @serviceProvidersDomain.com</p> <p>This allows the Service Provider to strip away their domain and replace the underscore with @ before sending the call through the Pexip Gateway.</p> <p>StarLeaf Cloud:</p> <p>This field is disabled as the required value is automatically configured.</p>

Skype URI External

Configure the remaining fields as follows:

Field	Description
Priority	The priority defines the order in which the rules are applied. The lowest number gives the highest priority. (E.g. 1 is processed before 5).
Applies to	External invitations
Matching value	Not applicable

Field	Description
Replace value	<p>Pexip: Use the same format as for Skype URI Internal.</p> <p>CMS: <i>(SkypeURL)@CompanyCMSDomain.local</i></p> <p>where: CompanyCMSDomain.local = the routing domain that ensures the call is routed to the CMS.</p> <p>Note: This domain must also be added as a "Targets Lync Simplejoin" domain on the CMS under Configuration > Incoming Calls.</p> <p>StarLeaf Cloud: This field is disabled as the required value is automatically configured.</p>

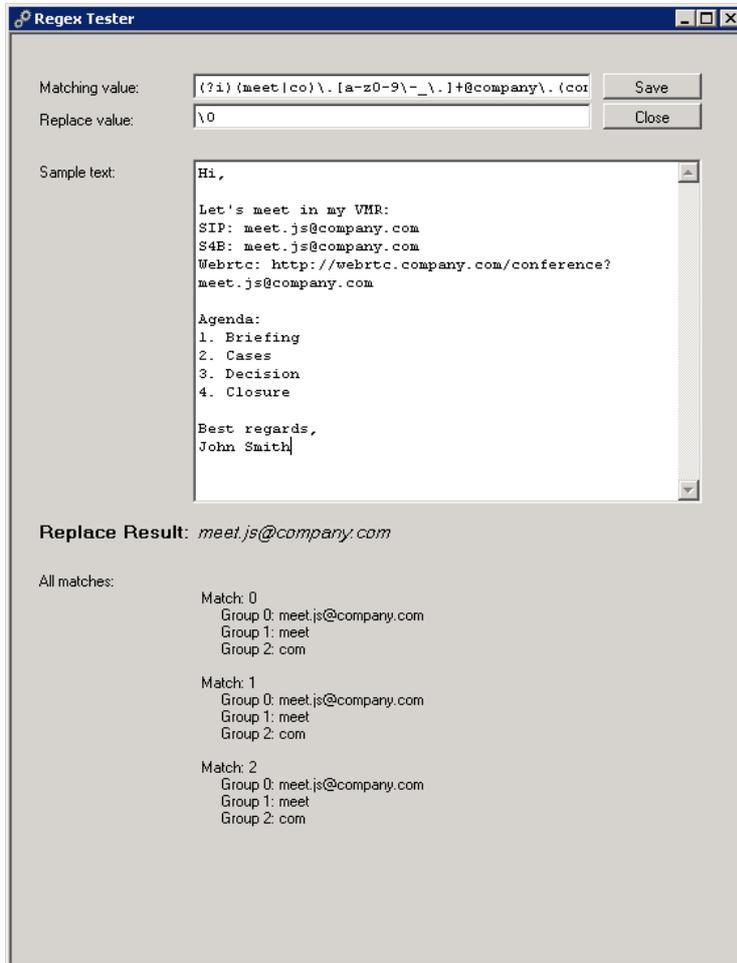
Regex

Configure the remaining fields as follows:

Field	Description
Priority	The priority defines the order in which the rules are applied. The lowest number gives the highest priority. (E.g. 1 is processed before 5).
Applies to	All invitations
Matching value	<p>This field defines the Regex rule for matching data. For example: <i>\d@company.com</i> will match all URIs starting with a number and ending with <i>@company.com</i></p>
Replace value	<p>This field defines how the matched data should be transformed before being sent to the endpoint.</p> <p>Pexip: The value <i>\0</i> uses the entire matched value, while <i>\1</i> matches the first pair of parenthesis and so on. Example: Matching Value: Id: (\d) Replace Value: \1@video.company.com Email body: Conference Id: 123456789 URI = 12346789@video.company.com</p> <p>CMS: If you have CMS for internal dual-home, you can use a regex rule to look for "conference id: 123456" from internal meeting organizers.</p>

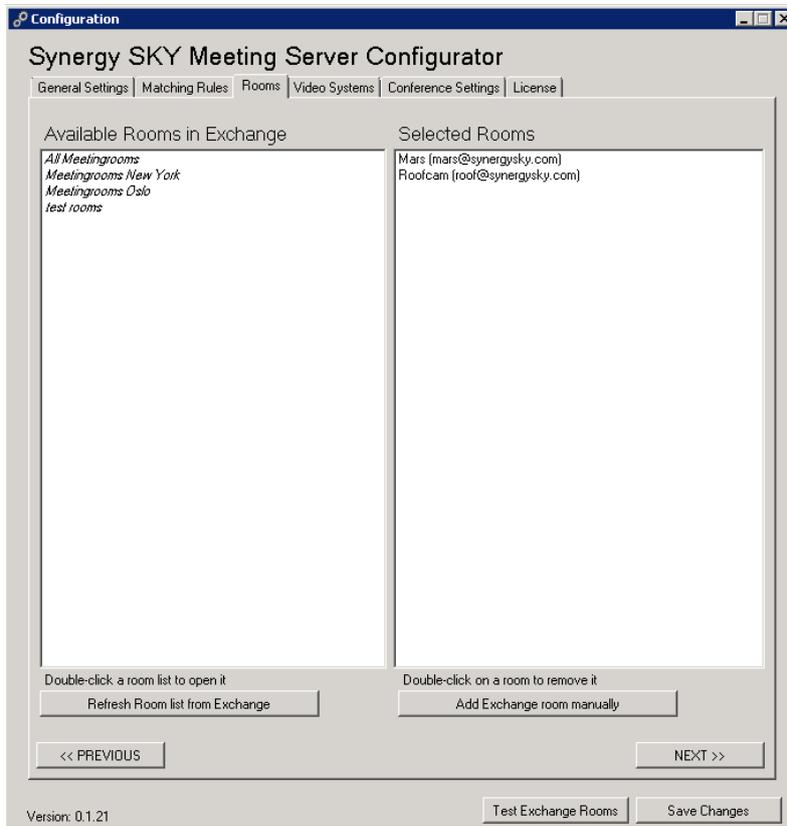
Testing, editing and deleting rules

Click the large **Test** button in the **Add Rules** area of the **Matching Rules** tab to launch the **Regex Test Tool**. The tool will help you identify any errors in your regex by testing a **Matching Value** and **Replace Value** towards a text field:



Task 5: Adding Rooms

This tab is where you choose which meeting-room resources in Exchange should be monitored by SMS. The Microsoft Exchange User service account requires Full Calendar Access to these rooms. For more details see ["Requirements" on page 9](#).

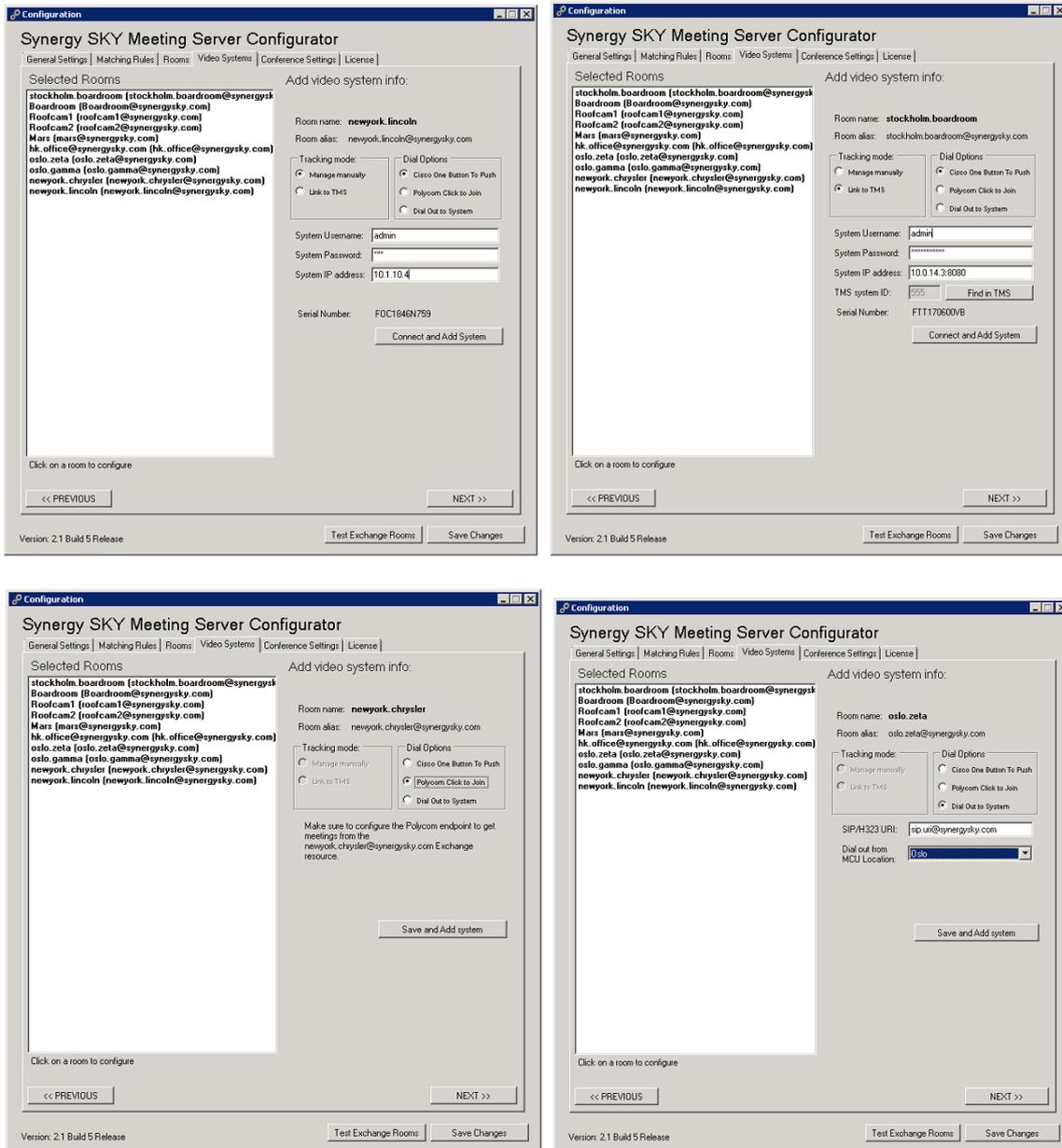


This table explains the fields and buttons on the **Rooms** tab:

Section/Field name	Description
Available Rooms in Exchange	<p>This list shows a list of Exchange Room Lists from your Exchange environment. Room lists are special address books in Exchange that only contain Rooms.</p> <p>If no room lists are shown, ask your Exchange administrator to create one for you based on the examples below.</p> <p>Once a list of Room Lists is shown, double-click a list to open it. You can then double-click rooms to add them to the Selected Rooms list.</p> <p>Example for creating room lists in PowerShell:</p> <pre>\$RoomAlias = Get-Mailbox -RecipientTypeDetails RoomMailbox -Filter (Office -eq 'HQ') select -ExpandProperty Alias New-DistributionGroup -RoomList -Name 'HQ Meetingrooms' -Members \$RoomAlias \$RoomAlias = Get-Mailbox -RecipientTypeDetails RoomMailbox select -ExpandProperty Alias New-DistributionGroup -RoomList -Name 'All Meetingrooms' -Members \$RoomAlias</pre>
Selected Rooms	<p>This list shows which rooms are added to SMS. They must be "connected" to video systems in the Video Systems tab before they can be used. Double-clicking rooms in this list will remove them.</p>
Refresh Room list from Exchange	<p>This button is used to refresh the room list from Exchange.</p> <p>Note: It can take up to 15 minutes before a room list is visible here after adding a room list in Exchange.</p>
Add Exchange room manually	<p>Click this button to add rooms from Exchange manually.</p> <p>This is done by providing a display name and an alias for the room.</p>

Task 6: Adding Video Systems

This is where you connect the Exchange meeting-room resources to the Video Systems. The video systems can be defined manually or retrieved from Cisco TMS.



This table explains the fields and options on the **Video Systems** tab:

Section/Field name	Description
Selected Rooms	<p>This list shows a list of all Exchange Rooms that are added to SMS.</p> <ul style="list-style-type: none"> Correctly configured systems are shown in bold. Rooms that are not connected to video systems are shown with normal text. Rooms with incorrect details are show with strike-through text. <p>Select a room to configure it.</p>

Section/Field name	Description
Tracking mode	<ul style="list-style-type: none"> • Manage manually: Use if you want to add the video system's details manually (video systems with static IP address). • Link to TMS: Use if you want the video system to be tracked by TMS (video systems with DHCP). Clicking Find in TMS launches a TMS system browser. There may be a delay the first time the system browser launches. <ul style="list-style-type: none"> ◦ System Username: The admin account for the video system (e.g. <i>admin</i>). ◦ System Password: The password for the admin account. The system password is not available from TMS, so you will always have to add this manually. ◦ System IP address: The IP address or hostname of the video system.
Dial Options	<p>This setting defines whether the video system should get One-Button-to-Push (Cisco OBTP) or Click-to-Join (Polycom CTJ) messages or be dialed out to.</p> <ul style="list-style-type: none"> • Cisco One Button to Push: The video system will receive Cisco OBTP information about upcoming meetings (limited to the next 24 hours). For a list of supported video systems, see "Device support" on page 10. • Polycom Click To Join: The video system will receive Polycom CTJ information about upcoming meetings. Polycom endpoints will get the meetings for 'today'. The endpoint must get the meetings from Exchange. Note that HDX does not support Office 365. For a list of supported video systems, see "Device support" on page 10. • Dial Out to System: The video system will receive an incoming call from the Pexip MCU/GW at the meeting start time. If the connection attempt fails, the MCU will retry connecting according to the settings in the Conference Settings tab. <ul style="list-style-type: none"> ◦ SIP/H323 URI: The URI the video system can be reached on. This URI must be dialable by the Pexip MCU/GW. ◦ Dial out from MCU Location: The location the Pexip MCU/GW will use when making the call.
Connect and Add System	<p>Displayed if Dial Options: <i>Cisco One Button To Push</i> is selected.</p> <p>Click this button to test the connection and add the settings.</p> <p>The serial number of the video system will be saved and remembered by SMS to ensure it's sending the Cisco OBTP information to the correct video system.</p>
Save and Add System	<p>Displayed if Dial Options: <i>Polycom Click to Join</i> or <i>Dial Out to System</i> are selected.</p> <p>Click this button to add the settings.</p>

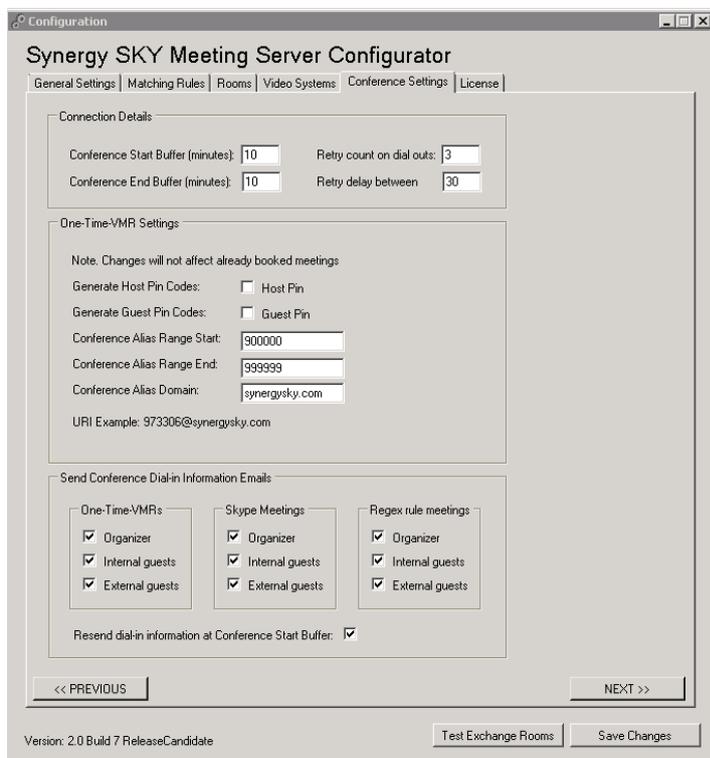
Note: SMS performs a nightly check of connectivity and time/date of all Cisco OBTP-enabled endpoints. If configured on the **General Settings** tab of the configurator, admins are notified of any issues identified during this check. The check takes place between 2am and 3am local server time; this is non-configurable.

Note: If the video system's codec is replaced for any reason, and the video system is not linked to and imported from Cisco TMS, you must re-add the video system here.

Task 7: Configuring Conference Settings

The conference settings define:

- conference configuration
- one-time-VMR pin and URI details
- who receives conference dial-in information emails



Configure the fields in the **Conference Settings** tab as follows:

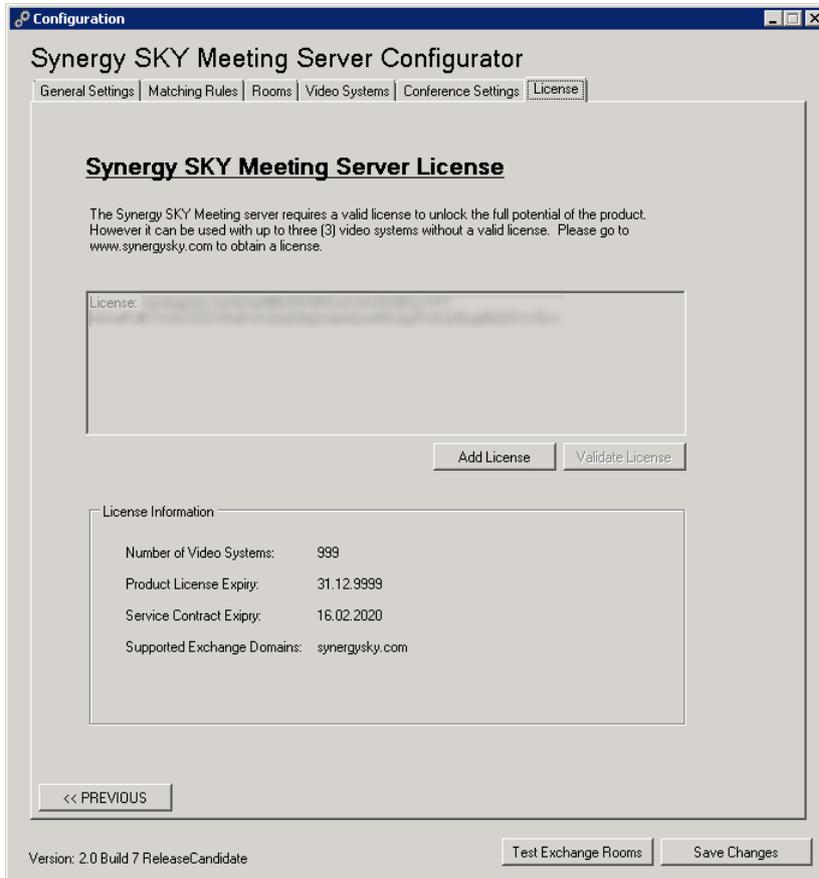
Section/Field name	Description
Connection Details	
Conference Start Buffer (Minutes)	The start buffer defines when VMRs are provisioned and can be dialed into, and it defines when the green button in the Cisco OBTP or Polycom CTJ message can be pressed on the video system. It also defines when Dial-in information is resent to the invitees if Resend dial-in information at Conference Start Buffer is ticked.
Conference End Buffer (Minutes)	The end buffer defines when the VMRs are de-provisioned and the remaining participants are disconnected.
Retry count on dial outs	The retry count controls how many call attempts are made to dial-out video systems if the initial connection attempt fails.
Retry delay between	The retry delay controls how long SMS will wait between the dial out attempts per participant.
One-Time-VMR Settings	<p>If you have specified that SMS should create one-time VMRs, this is where you define whether the one-time VMRs should be configured with pin codes, and the numeric alias number range and domain so the VMRs can be reached via an IVR from telephones.</p> <p>The pin codes are included in the emails that are sent out to the Organizer and internal/external guests.</p> <p>Note: If using pin codes, you must update the email templates to ensure that the host pin is not sent to guest participants.</p>
Host pin	A 4-digit pin code will be randomly generated for each one-time VMR for hosts to use to start the meeting.
Guest pin	A 4-digit pin code will be randomly generated for each one-time VMR for guests to use to join the meeting.
Conference Alias Range Start	This defines the start value of the number range used to create the URIs (e.g. 900000).
Conference Alias Range End	This defines the end value of the number range used to create the URI (e.g. 9999999).

Section/Field name	Description
Conference Alias Domain	This defines the domain of the URI.
Send Conference Dial-in Information Emails	<p>This section specifies whether the organizer, internal guests and external guests should receive a dial-in information email when meetings are booked.</p> <p>To edit the email templates, go to <code>C:\SynergySKY\SynergySKYEnterpriseScheduling\emailTemplates</code> and manually edit the templates using an HTML editor. See "Configuring Email templates" on page 27.</p> <p>Note: The email domain list in the Matching Rules tab is used to determine which guest participants are internal/external.</p>
One-Time-VMRs	Specify who will receive the dial-in information email when a one-time-vmr meeting is booked.
Skype Meetings	Specify who will receive the dial-in information email when a Skype meeting is booked.
Regex rule meetings	Specify who will receive the dial-in information email when a regex rule meeting is booked.
Resend dial-in information at Conference Start Buffer	Choose whether a dial-in information email will be sent to the specified recipients at the start of the conference start buffer, for example 10 minutes before the conference starts.

Task 8: Adding a License

Add a license for your SMS installation, obtained from www.synergysky.com.

You can use SMS with up to 3 video systems without a valid license, but a valid license is required to unlock the full potential of the product.



The screenshot shows the 'Synergy SKY Meeting Server Configurator' window with the 'License' tab selected. The window title is 'Configuration'. The main content area is titled 'Synergy SKY Meeting Server License' and contains the following text: 'The Synergy SKY Meeting server requires a valid license to unlock the full potential of the product. However it can be used with up to three (3) video systems without a valid license. Please go to www.synergysky.com to obtain a license.'

Below the text is a large text input field labeled 'License:'. To the right of the input field are two buttons: 'Add License' and 'Validate License'.

Below the input field is a section titled 'License Information' containing a table with the following data:

Number of Video Systems:	999
Product License Expiry:	31.12.9999
Service Contract Expiry:	16.02.2020
Supported Exchange Domains:	synergysky.com

At the bottom left of the main content area is a button labeled '<< PREVIOUS'. At the bottom of the window are three buttons: 'Version: 2.0 Build 7 ReleaseCandidate', 'Test Exchange Rooms', and 'Save Changes'.

Note: You can choose for administrators to receive email notifications if the license is about to expire, this is configurable on the **General Settings** tab of the configurator tool.

Task 9: Configuring Email templates

Depending on the type of meeting booked, the following emails are sent out to users from SMS:

Type of email	Description	Email template file name
Error Recurring Meeting	Sent when a recurring meeting is booked with no end date as this is not supported in SMS.	<i>error_recurringmeeting.html</i>
Organizer Invite	Sent to the meeting organizer when a one-time-vmr meeting is booked.	<i>organizerInvite.html</i>
Internal Invite	Sent to internal participants when a one-time-vmr meeting is booked. Includes dial-in information for the meeting.	<i>internalInvite.html</i>
External Invite	Sent to participants external to your organization when a one-time-vmr meeting is booked. Includes dial-in information for the meeting.	<i>externalInvite.html</i>
Organizer Invite Skype	Sent to the meeting organizer when a Skype meeting is booked.	<i>organizerInviteSkype.html</i>
Internal Invite Skype	Sent to internal participants when a Skype meeting is booked.	<i>internalInviteSkype.html</i>
External Invite Skype	Sent to external participants when a Skype meeting is booked.	<i>externalInviteSkype.html</i>
Organizer Invite Static	Sent to the meeting organizer when a regex rule meeting is booked.	<i>organizerInviteStaticVMR.html</i>
Internal Invite Static	Sent to the internal participants when a regex rule meeting is booked.	<i>internalInviteStaticVMR.html</i>
External Invite Static	Sent to the external participants when a regex rule meeting is booked.	<i>externalInviteStaticVMR.html</i>

The email templates are located here: `C:\SynergySKY\SynergySKYEnterpriseScheduling\emailTemplates` and you can edit them using an HTML editor.

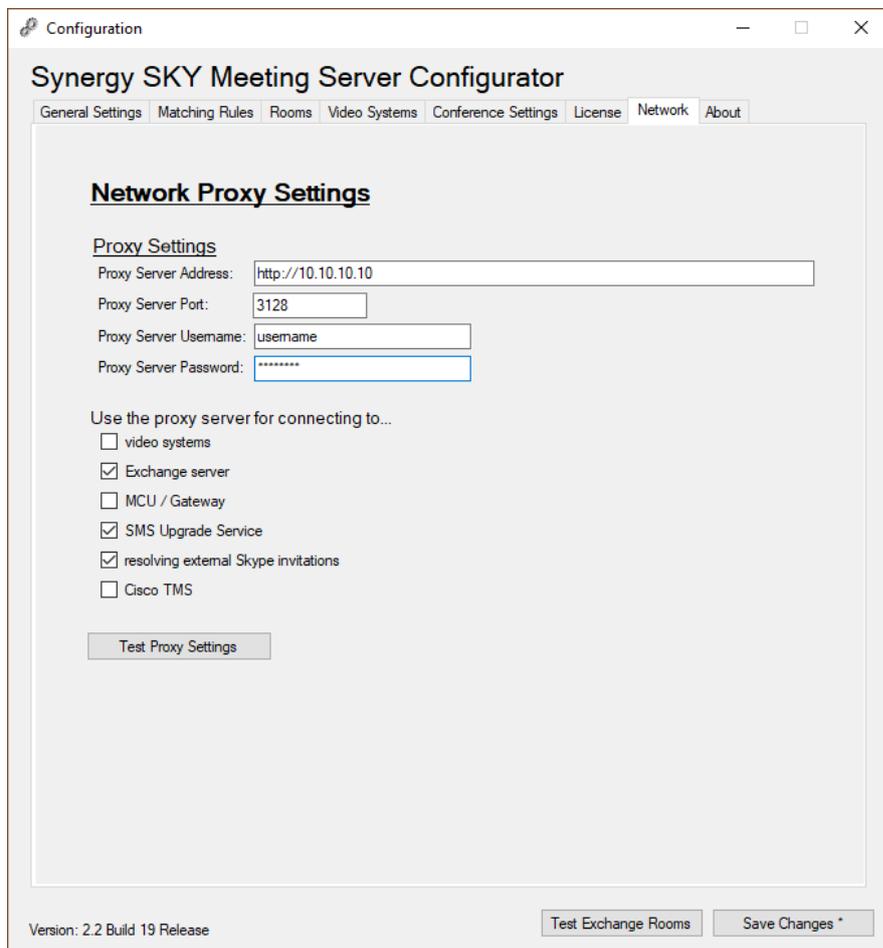
You can edit all text that is not between the % symbols. You can remove any % attributes that you do not want to display in your emails.

The following attributes can be used in the templates:

Attribute name	Description	Example
%URI%	The full URI of the meeting	12346578@company.com
%NumericVMRURI%	The numeric part of the meeting	12346578
%HostPin%	The pin code for the host of the meeting	2412
%GuestPin%	The pin code for the guests of the meeting	0211
%starttime%	The start time of the meeting	01.01.2017 10:00
%endtime%	The end time of the meeting	01.01.2017 11:00
%subject%	The subject of the meeting	Board meeting
%invitebody%	The full body of the meeting invitation	...
%organizer_firstname%	The first name of the meeting organizer	Jane
%organizer_lastname%	The last name of the meeting organizer	Smith
%organizer_email%	The email address of the meeting organizer	jane.smith@example.org
%invitee%	The name of the person the meeting invite is sent to.	John Jones
%isPrivate%	A flag indicating if the meeting is booked as Private or not	True

Task 10: Configuring a proxy server (optional)

You can configure SMS with a proxy server and specify which components you want to use the proxy server for in the configurator on the **Network** tab. Once configured, you can test whether it is working correctly.



The screenshot shows the 'Configuration' window for the Synergy SKY Meeting Server Configurator. The 'Network' tab is selected, and the 'Network Proxy Settings' section is active. The 'Proxy Settings' section includes the following fields:

- Proxy Server Address:
- Proxy Server Port:
- Proxy Server Username:
- Proxy Server Password:

Below these fields, there is a section titled 'Use the proxy server for connecting to...' with the following options:

- video systems
- Exchange server
- MCU / Gateway
- SMS Upgrade Service
- resolving external Skype invitations
- Cisco TMS

A 'Test Proxy Settings' button is located below the options. At the bottom of the window, there is a 'Version: 2.2 Build 19 Release' label, a 'Test Exchange Rooms' button, and a 'Save Changes *' button.

Example meeting scenarios

Scenario 1: Booking a Skype meeting with one or more video-enabled meeting-rooms

Description	Requirements	Example rule
<ul style="list-style-type: none"> Meeting organizer schedules a Skype meeting using Outlook. The invite includes video-enabled endpoints/meeting-rooms. SMS sends the endpoints/meeting-rooms the Skype meeting URI as the One Button to Push (Cisco OBTP) or Click to Join (Polycom CTJ) message. 	Skype URI Internal matching rule	<ul style="list-style-type: none"> Pexip: <ul style="list-style-type: none"> S4B.(SkypeMeetingId).(SkypeUserId)@(UserDomain) StarLeaf Cloud: <ul style="list-style-type: none"> Auto-generated
	Skype URI External matching rule	<ul style="list-style-type: none"> Pexip: <ul style="list-style-type: none"> S4B.(SkypeMeetingId).(SkypeUserId)@(UserDomain) Cisco CMS 2.2 or later + O365 Skype for Business (CMS 2.2 or later): <ul style="list-style-type: none"> Matching value: None Replace value: (SkypeURL)@CompanyCMSDomain.local StarLeaf Cloud: <ul style="list-style-type: none"> Auto-generated
	Regex	Cisco CMS + Internal on premises Skype for Business server: <ul style="list-style-type: none"> Matching value: id\s*(\d+) Replace value: \1@YourInternalVideoDomain.com

Scenario 2: Booking a Personal VMR (Virtual Meeting Room) meeting with one or more video-enabled meeting-rooms

Description	Requirements	Example rule
<ul style="list-style-type: none"> Meeting organizer schedules an ordinary Outlook appointment. The invite includes video-enabled endpoints/meeting-rooms. The invite email body includes a personal VMR uri, for example in the email signature. SMS sends the endpoints/meeting-rooms the personal VMR URI as the Cisco OBTP or Polycom CTJ message. 	<ul style="list-style-type: none"> Regex matching rule A valid URI included in the email body, for example in the email signature. 	(meet vrm)\.[a-z0-9\-_\.\,]+\@example\.com

Scenario 3: Booking a One-time-VMR with one or more video-enabled meeting-rooms

Description	Requirements	Example rule
<ul style="list-style-type: none"> Meeting organizer schedules an ordinary Outlook appointment. The invite includes video-enabled endpoints/meeting-rooms. There is no URI anywhere in the body of the invitation that matches any of the regex matching rules. SMS creates a one-time URI on the Pexip MCU and sends the endpoints/meeting-rooms the one-time-VMR URI as the Cisco OBTP or Polycom CTJ message. An email containing the dial-in information for the one-time-VMR is sent to the invitees (optional). 	<ul style="list-style-type: none"> In the SMS Configurator, Create VMR is selected. 	N/A

Scenario 4: Forwarding an existing invitation to a video-enabled meeting-room

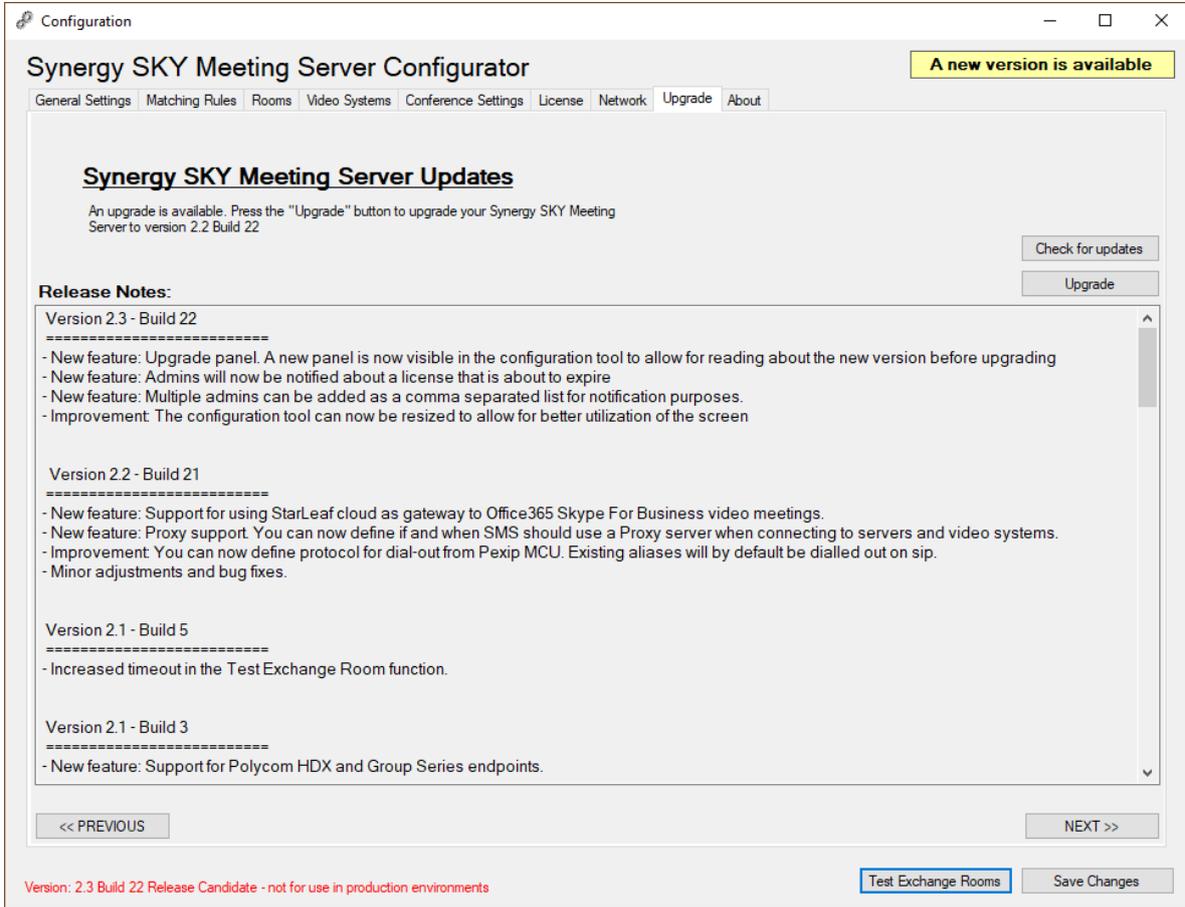
Description	Requirements	Example rules
<ul style="list-style-type: none"> • User receives a meeting invite from someone internal or external to their organization and wants to join the meeting from a video-enabled endpoint/meeting-room. • User forwards the invite to the endpoint/meeting-room. • SMS understands how to process the meeting from the contents of the invite email. • SMS forwards the appropriate dial string to the meeting-room as the One Button to Push (Cisco OBTP) or Click to Join (Polycom CTJ) message. <p>Currently the following meeting types are supported for forwarding in SMS:</p> <ul style="list-style-type: none"> • Skype • Personal VMR • One-time-VMR • WebEx • Cisco Spark • Starleaf VMR • StarLeaf Scheduled Meeting • BlueJeans • Videxio • Videonor 	<ul style="list-style-type: none"> • Skype internal/external matching rule • Regex matching rules 	<ul style="list-style-type: none"> • Skype <ul style="list-style-type: none"> ◦ Pexip: <ul style="list-style-type: none"> ◦ Matching value: None ◦ Replace value: S4B.(SkypeMeetingId).(SkypeUserId)@(UserDomain) ◦ Cisco CMS: <ul style="list-style-type: none"> ◦ Matching value: None ◦ Replace value: (SkypeURL)@CompanyCMSDomain.local ◦ StarLeaf Cloud <ul style="list-style-type: none"> ◦ No matching rule configuration required • Personal VMR <ul style="list-style-type: none"> ◦ Matching value: ([a-z0-9\-_\.]*(meet vmr)[a-z0-9\-_\.]*)@[a-z0-9\-_\.]+ ◦ Replace value: \0 • One-time-VMR <ul style="list-style-type: none"> ◦ Matching value: \d+@[a-z0-9\-_\.]+ ◦ Replace value: \0 • WebEx <ul style="list-style-type: none"> ◦ Matching value: \d+@[a-z0-9\-_\.]*webex[a-z0-9\-_\.]+ ◦ Replace value: \0 • Cisco Spark <ul style="list-style-type: none"> ◦ Matching value: \d+@meet.ciscospark.com ◦ Replace value: \0 • Starleaf VMR <ul style="list-style-type: none"> ◦ Matching value: \d+@starleaf.call.sl ◦ Replace value: \0 • BlueJeans <ul style="list-style-type: none"> ◦ Matching value: https://bluejeans.com/(\d+) ◦ Replace value: \1@sip.bjn.vc • Videxio <ul style="list-style-type: none"> ◦ Matching value: [a-z0-9\-_\.]*vmr@videxio.com ◦ Replace value: \0 • Videonor <ul style="list-style-type: none"> ◦ Matching value: [a-z0-9\-_\.]*@videonor.net ◦ Replace value: \0 • Internal Skype meetings with CMS (pre 2.2) <ul style="list-style-type: none"> ◦ Matching value: id:\s*(\d+) ◦ Replace value: \1@YourInternalVideoDomain.com

Manually upgrading SMS

You can **Check for updates** and **Upgrade** from the **Upgrade** tab in the configurator tool.

A message is displayed to notify you if there is a new version available.

This tab displays the release notes for the current version.



Troubleshooting

Using the log

SMS logs all activity. The default log location is:

`C:\SynergySKY\SynergySKYEnterpriseScheduling\Logs\log.log`

The logs roll over once they have reached 10Mb, and a maximum of 10 log files are kept.

Here is example output from a successfully booked Skype meeting including one SMS meeting room resource:

```
2017-03-17 13:51:40,713 [MeetingSynchronizerThread] INFO - 0 cancelled meetings found.
2017-03-17 13:51:40,713 [MeetingSynchronizerThread] INFO - Total meetings in list: 4.
2017-03-17 13:51:40,713 [MeetingSynchronizerThread] INFO - Sleeping for 6 second(s)
2017-03-17 13:51:49,166 [MeetingSynchronizerThread] INFO - Getting body for Test Meeting - 17.03.2017 14:30:00 - 17.03.2017 15:00:00. Isrecurring: False
2017-03-17 13:51:49,916 [MeetingSynchronizerThread] INFO - sip:ph@example.org;gruu;opaque=app:conf:focus:id:05H8BT73
2017-03-17 13:51:49,916 [MeetingSynchronizerThread] INFO - Found Skype_URI Internal rule match: S4B.05H8BT73.ph@example.org
2017-03-17 13:51:49,916 [MeetingSynchronizerThread] INFO - URI of meeting 'Test Meeting' set to 'S4B.05H8BT73.ph@example.org'
2017-03-17 13:51:51,212 [MeetingSynchronizerThread] INFO - 1 updated meetings found.
2017-03-17 13:51:51,212 [MeetingSynchronizerThread] INFO - 0 nonSupported meetings found.
2017-03-17 13:51:51,212 [MeetingSynchronizerThread] INFO - 0 cancelled meetings found.
2017-03-17 13:51:51,212 [MeetingSynchronizerThread] INFO - Total meetings in list: 5.
2017-03-17 13:51:51,228 [MeetingSynchronizerThread] INFO - Sleeping for 6 second(s)
2017-03-17 13:51:53,134 [OSIPThread] INFO - Sending out OBTP information to endpoint meetingroom1@example.org for meeting 'Test Meeting'.
2017-03-17 13:51:53,134 [OSIPThread] INFO - Updating endpoint meetingroom1@example.org with OBTP information
2017-03-17 13:51:55,540 [OSIPThread] INFO - Endpoint meetingroom1@example.org successfully updated with OBTP information
2017-03-17 13:52:00,774 [MeetingSynchronizerThread] INFO - 0 updated meetings found.
2017-03-17 13:52:00,774 [MeetingSynchronizerThread] INFO - 0 nonSupported meetings found.
2017-03-17 13:52:00,774 [MeetingSynchronizerThread] INFO - 0 cancelled meetings found.
2017-03-17 13:52:00,774 [MeetingSynchronizerThread] INFO - Total meetings in list: 5.
```

We recommend using [Baretail](#) to monitor the log while troubleshooting.

Database

- SMS uses a file-based database. The default location for the database is:
`C:\SynergySKY\SynergySKYEnterpriseScheduling\databases`
- One database file is created per meeting. The databases folder also contains a folder for each Exchange room, in which a synchronization cookie is stored.
 - The cookie ensures that when SMS queries Exchange, only updated meetings are returned.
 - You can delete the cookie if you want to perform a full synchronization for a meeting room.
- The database is stored fully in memory on the server, with the file system as a backup. The SMS service may therefore take a while to start if there are many rooms and/or many future meetings in the database.

Exchange permissions

Invalid permissions in Exchange will lead to unexpected behavior in SMS.

If the Exchange service account does not have appropriate calendar access, you will see authorization errors in the log.

Here are some common errors with setting exchange permissions:

- Failure to set the “DeleteComments=\$false” will remove the body of the invitation, and make it impossible for SMS to find information in the body.
- Failure to set the “AddOrganizerToSubject=\$false” and “DeleteSubject=\$false” will remove the subject of the meeting, and make SMS send the incorrect Cisco OBTP or Polycom CTJ information to the video endpoint
- Failure to set “ProcessExternalMeetingMessages=\$true” will hinder internal users forwarding invitations to external S4B meetings to the meeting rooms
- Failure to set “RemovePrivateProperty=\$false” may make SMS send the subject of a private meeting as Cisco OBTP or Polycom CTJ information to the video endpoint – thereby exposing a sensitive meeting subject on the video system’s touch panel
- Failure to set “AutomateProcessing=\$true” will stop meetings from being processed, thereby hindering SMS from seeing the meetings

Licenses

Customers can fully utilize SMS with up to three video systems without a valid license.

SMS will stop working as soon as the license expires. Administrators configured to receive email notifications about licenses will be notified every 7 days for the months preceding the license expiry date, and for the last 7 days before the license expires.

A license that is expired will stop SMS from being upgraded.

An expired or invalid license will result in an entry in the log while starting up the SMS service clearly stating that the license is invalid.

Common troubleshooting scenarios

Cisco OBTP or Polycom CTJ button does not appear on the endpoint touch panel

Symptoms	Probable causes	Actions
When booking a Skype or one-time-VMR meeting that includes one or more Exchange resource meeting room (s) as a participant, the Cisco OBTP or Polycom CTJ button never appears on the meeting room(s) touch panel.	SMS could not find Skype meeting information or VMR information (based on regex rules).	Check the log for details, and correct the rules accordingly.
	SMS failed in reading the booking in Exchange.	Open the Configuration tool and use the Test Exchange Rooms button to test that the rooms are correctly configured.
	SMS cannot contact the endpoint.	Go to the Video Systems and press Connect and save to verify that SMS can connect to the endpoint.

One-Time-VMR is not provisioned on the MCU

Symptoms	Probable causes	Actions
Calls to/from one-time-VMR meetings are failing.	SMS cannot contact the MCU.	Press the Test Connections button in the configuration tool to verify that SMS can communicate with the MCU.
	VMR licenses are depleted.	Check that you have sufficient VMR licenses on the MCU.
	Conflicting alias on the MCU.	Check the log for details.

One-Time-VMR is not deprovisioned on the MCU

Symptoms	Probable cause	Actions
The VMRs are not disappearing from the MCU after the meeting is finished, which would eat up VMR licenses and potentially stop later one-time-vmr meetings from being provisioned due to conflicting aliases.	SMS cannot contact the MCU.	<ul style="list-style-type: none"> Press the Test Connections button in the configuration tool to verify that SMS can communicate with the MCU. Check the log for details.

Error in configurator when adding rooms

Symptoms	Probable cause	Actions
Error '401 Unauthorized' when accessing the Rooms tab in the configuration tool.	SMS cannot authenticate to Exchange using the credentials in the configuration tool.	<p>In the SMS Configurator General Settings tab, check the format of the EWS Service Account Username. Sometimes Microsoft Exchange requires that the username is entered using one of the following formats:</p> <ul style="list-style-type: none"> domain\username username@domain

Dial-out to meeting room does not happen at meeting start time

Symptoms	Probable cause	Actions
SMS does not dial out to a meeting room participant at the meeting start time.	<ul style="list-style-type: none"> SMS cannot contact the MCU. VMR is not correctly provisioned: The MCU location that SMS is instructing the MCU to dial out from is not correctly configured. 	Check SMS log and MCU log for details.

Dial-out from the video system (Green Cisco OBTP or Polycom CTJ button) does not work

Symptoms	Probable cause	Actions
The Cisco OBTP or Polycom CTJ button is disabled and cannot be pushed.	The button becomes activated at the "startup buffer" time, and cannot be pushed before that.	Check the SMS configuration.
The button is pushed, but call fails to connect.	VMR is not correctly provisioned: The uri is invalid due to incorrect regex rules.	<ul style="list-style-type: none"> Check the SMS logs and regex configuration. Check the call history on the endpoint to see what it tried to call. Check the "Search History" in the VCS to see if there was a call routing issue.

Recipients do not receive dial-in information emails when meeting is booked

Symptoms	Probable cause	Actions
Specified recipients do not receive any email containing dial-in information when meeting is booked	<p>Error in email template.</p> <p>SMS cannot contact the Exchange server - Invalid configuration.</p>	<p>Check the syntax of the HTML in your email templates.</p> <p>Check the configurator General Settings tab to ensure that the server and credentials are correct and that you are using the correct format for the EWS Service Account Username.</p>

Appendix 1: Using Synergy SKY Meeting Server with AMX/Crestron for Cisco endpoints

AMX and Crestron panels are usually custom installations developed to solve a specific issue at a customer site. AV technicians responsible for the custom installation can use the following information to integrate with SMS:

1. Program the AMX/Crestron to listen to changes in the OBTP information (or poll on regular intervals).
2. Register an event listener in the Cisco (C-series and SX-series) CUIL using the following command:
xfeedback register event/bookings
3. When you see this message ***e Bookings Updated**, get the updated info with this command: **xcommand Bookings List**
Note that all time/date values returned from the command **xcommand Bookings List** are returned in UTC time, therefore the Crestron/AMX integrator must convert this to localtime for the endpoint before presenting it on the touch panel.
We also recommend that the button to initiate the call should become enabled at the start buffer (x SECONDS before meeting start time) and that it should remain clickable until the endtimebuffer (y MINUTES after the meeting end time) to make it possible to rejoin a meeting that runs over the scheduled time.
4. It is easier to parse the info if you set up the session to get responses in xml. You can do this when you open the session using this command: **xpreferences outputmode xml**
5. The URI to dial is extracted from the **DialInfo** element in the list of meetings (from point 2). E.g. **Bookings > Booking 1 > DialInfo > Calls > Call 1 > Number: meet.someone@synergysky.com**
6. If you want the participant to be presented as the name of the meeting rather than the URI that was dialed, you can use the optional Dial command parameter: **BookingId** which allows you to refer back to the booking when launching the call. **BookingId** is the Id in the booking list.

More information can be found here: [Cisco C Series Codec API Guide](#)

Appendix 2: How to create a StarLeaf Cloud authorization token

To allow SMS to connect to the StarLeaf Cloud:

- you must create an integration for it on the StarLeaf Portal. This will give you the access token that SMS requires. This is described below.
- contact StarLeaf Support and ask for **Allow scheduling external conferences** to be enabled on your organization’s account.

Prerequisite:

1. Log in to the StarLeaf Portal: <https://portal.starleaf.com>.
2. Go to **Integrations > Add integration**:
 - **Type**: *Custom integration*
 - **Name**: Provide a name for this integration
 - Do not enable **Administrator privileges**

3. Click **Apply**. You will see the access token.
Note that the image below only shows an example. You must follow this process for the organization that the client will modify.

4. Go to **Synergy SKY server > General Settings**:
 - **MCU address/hostname**: enter *https://api.starleaf.com*
 - **MCU username**: enter *X-SL-AUTH-TOKEN*
 - **MCU password**: enter the **access token** from the StarLeaf Portal

An example configuration is shown below:

The screenshot shows the 'Configuration' window for the Synergy SKY Meeting Server. The window title is 'Configuration' and the main title is 'Synergy SKY Meeting Server Configurator'. The interface includes several tabs: 'General Settings', 'Matching Rules', 'Rooms', 'Video Systems', 'Conference Settings', and 'License'. The 'General Settings' tab is active, showing a status bar with 'Start', 'Stop', and 'Running' buttons. Below the status bar are four main sections for configuration:

- Contact:** Admin Contact Name: John Smith; Admin Contact Email: john.smith@example.com
- Exchange Connection info:** EWS Url: https://outlook.office365.com/EWS/Exchange.asmx; EWS Service Account Username: serviceaccount@example.com; EWS Service Account Domain: example.com; EWS Service Account Password: [masked]; Polling interval in minutes: 1
- MCU Connection info:** MCU address / hostname: https://api.starleaf.com; MCU Username: X-SL-AUTH-TOKEN; MCU Password: [masked]
- TMS Connection info (optional):** Cisco TMS address / hostname: [empty]; Cisco TMS Username: [empty]; Cisco TMS Password: [empty]; Preserve TMS bookings: [checkbox]

At the bottom of the configuration area are buttons for 'Test notification email', 'Test connections', and 'NEXT >>'. At the very bottom of the window are 'Version: 2.2 Build 6 Beta', 'Test Exchange Rooms', and 'Save Changes' buttons.

Security

Note: It is worth remembering that the access token provides login access to the organization. Therefore, keep it secret. If you think security of the token has been compromised, regenerate the token.

You can regenerate the access token at any time (**Portal > Integrations > Edit integration**). If you do so, you will need to enter the new token as the **MCU password** in **Synergy SKY server > General Settings**.

Appendix 3: Deleting unwanted future meetings

If you want to delete future scheduled meetings for an employee who has left the company in order to free up resources, this can be done by configuring a user with specific permissions so they can run PowerShell commands to delete the meetings.

Setting the correct O365 permissions for the user you are connecting with:

1. Access the Exchange admin center through <http://outlook.office365.com> with a global administrator account.
2. Click **permissions > admin roles**.
3. Click **+** to add a new role.
4. Enter a name and description for the role.
5. Click **+** under **Roles** to add *Mailbox Import Export* role. Click **ok**.
6. Click **+** under **Members** to add the user who will run the Windows PowerShell commands to delete the meetings.
7. Click **save**.

Note: The *Mailbox Import Export* role is required when using the *Search-Mailbox* cmdlet with *-DeleteContent*. By default, the *Mailbox Import Export* role is not assigned to any role group. This is why we need to create a new role group. You can also add the role to a built-in role group if you wish. After performing this activity, you will need to wait for 10 minutes, restart Windows PowerShell and restart the Exchange Online session.

For detailed instructions on setting up a connection to PowerShell on Office365 for the first time, see: [Connecting to PowerShell on Office365](#).

Example meeting deletion scenarios with commands - in these examples, my user is *jane.smith@synergysky.com* and the employee I want to delete the bookings from is *john.doe@synergysky.com*:

Scenario	PowerShell command
Find all meetings in all rooms that are booked by John Doe, and log it in a folder called "SearchAndDeleteLog" in my mailbox	Get-Mailbox -RecipientTypeDetails RoomMailbox Search-Mailbox -SearchQuery "from:john.doe@synergysky.com" -DeleteContent -LogLevel Full -TargetMailbox "jane.smith@synergysky.com" -TargetFolder "SearchAndDeleteLog"
Find all meetings called "Sales Meeting" in the Boardroom and delete them without logging it (it's still logged on-screen)	Search-Mailbox -Identity "boardroom@synergysky.com" -SearchQuery "subject: Sales Meeting" -DeleteContent

You can also combine searches and include multiple parameters, like this one:

Scenario	PowerShell command
Find all meetings in all rooms that are booked by me with a meeting subject of 'Sales Meeting' in all rooms	Get-Mailbox -RecipientTypeDetails RoomMailbox Search-Mailbox -SearchQuery "from:jane.smith@synergysky.com" AND subject:"Sales Meeting" -DeleteContent