SYNERGY SKY

Synergy SKY Meeting Server Installation and Configuration Guide

SMS v2.0

June 2017

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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 (OBTP). 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 OBTP information to the video endpoint. You can also forward a Skype meeting invitation to a video-enabled meeting-room and automatically enable OBTP. SMS removes the risk of typing errors, and ensures that all meetings start on time.

In addition, SMS can be used to schedule non-Skype meetings in personal VMRs, or in Pexip one-time-VMRs, sending the OBTP information to the scheduled video endpoints.

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

The solution supports on-premise 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.

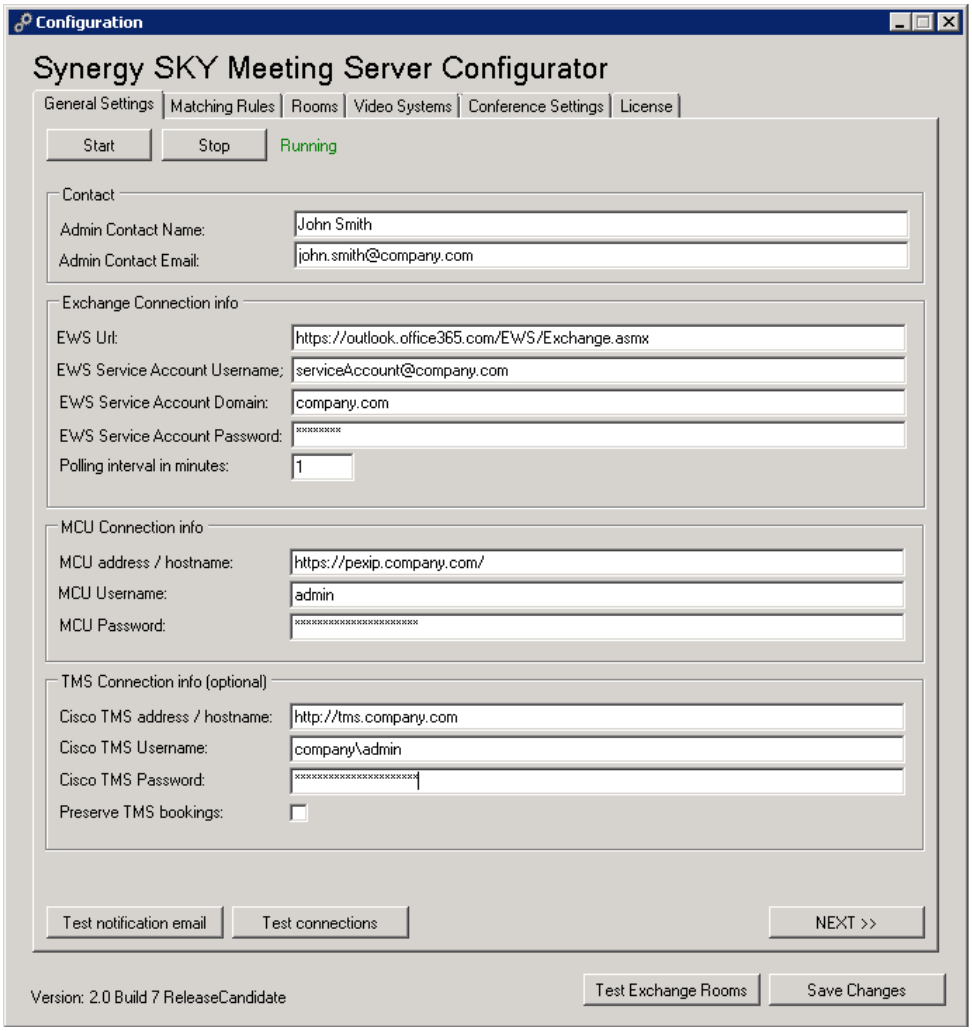
Feature overview

SMS supports the following feature set:

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

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)
   - Exchange video-enabled meeting-room resources.

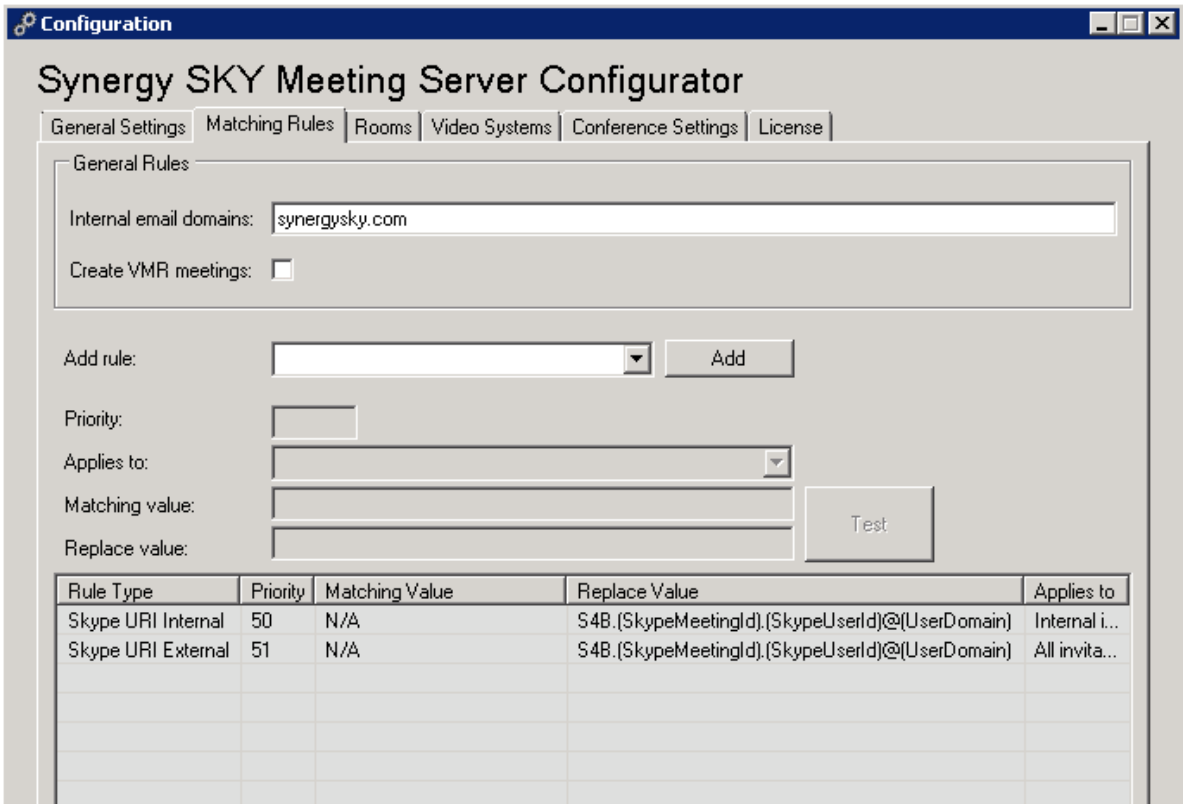


2. Users book a Skype, personal VMR or Pexip one-time-vmr video meeting from Outlook, inviting one or more video-enabled meeting-room resources.
3. SMS monitors the meeting-rooms at the interval specified in **Polling interval in minutes**, to check if they receive a meeting invite :
   - Skype invitations 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.
4. The URI is sent to the endpoint as OBTP ready for attendees to start the meeting.
5. The call is routed through Pexip to the Skype server, using a gateway rule on the Pexip MCU.

How the Skype URIs are generated

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

In our example, 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**.

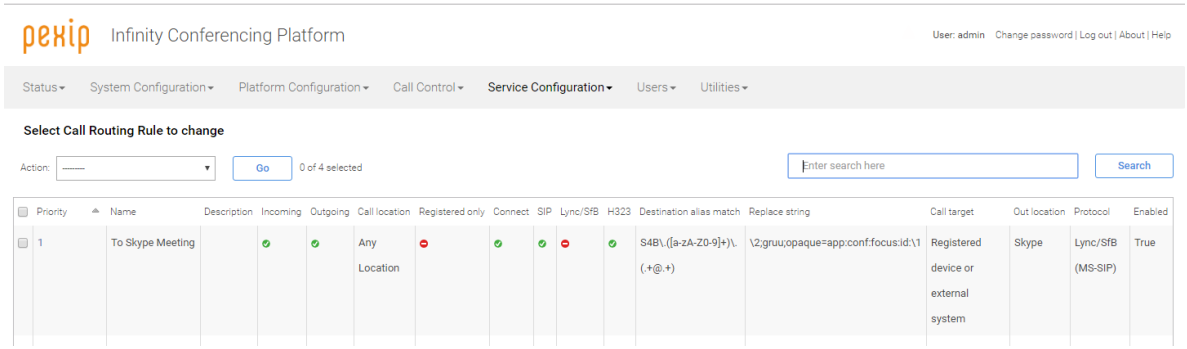
A URI created from our matching rule pattern looks like this:

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

How the call is routed

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.



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).

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	Cisco codecs	HTTP HTTPS	80 443	Updating codecs with OBTP information.
Synergy SKY Meeting Server	Synergy SKY Upgrade service	HTTP	80	Automatic upgrade of SMS via this URL: *http://synergysky.com/upgradeService/*

Service accounts

Account type	Permissions required
Microsoft Exchange User (with a mailbox)	Full access to meeting room resource calendars.
Pexip MCU	Admin API account or LDAP API account.
Cisco Codecs	Admin user account.
Cisco TMS (optional - used to track codecs on DHCP)	Site administrator user account.

Device support

Device	Version
Microsoft Exchange	On Prem and Office 365 (Exchange Online) • 2010 SP2 and later • 2013 all SPs • 2016
Cisco TMS	12.0 - 15.5
Pexip MCU	12 - 15

Device	Version
Cisco codecs: • C-series • MX-series • SX-series • EX-series • DX-series • Cisco Spark Room Kit	All versions supporting OBTP. Note that only dial out is currently supported for endpoints registered on the Spark service.

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
AddOrganizerToSubject	Specifies whether the meeting organizer's name is used as the subject of the meeting request. Valid input for this parameter is *$true* or *$false*. The default value is *$true*.	When set to *$true*, Exchange overwrites the subject of the meeting with the name of the organizer, which means SMS displays the organizer's name instead of the meeting title on the touch panel of the video system. 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 *$false*. See also **RemovePrivateProperty**.	*$false*	Yes, if you want the meeting name displayed on the touch panel.
DeleteSubject	Specifies whether to remove or keep the subject of incoming meeting requests. Valid input for this parameter is *$true* or *$false*. The default value is *$true*. This parameter is used only on resource mailboxes where the **AutomateProcessing** parameter is set to *AutoAccept*.	When set to *$true*, Exchange deletes the subject of the meeting which means SMS does not display a meeting title on the touch panel of the video system. 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 *$false*. See also **RemovePrivateProperty**.	*$false*	Yes, if you want the meeting to be displayed on the touch panel.
DeleteComments	The **DeleteComments** parameter specifies whether to remove or keep any text in the message body of incoming meeting requests. Valid input for this parameter is *$true* or *$false*. This parameter is used only on resource mailboxes where the **AutomateProcessing** parameter is set to *AutoAccept*.	When set to *$true*, Exchange deletes the body of the meeting invitation when booking rooms. As the matching rules rely on reading content in the body of the email, this stops Regex and the **Skype URI External** rule from working in SMS.	*$false*	Yes, so that your matching rules work correctly.
ProcessExternalMeetingMessages	The **ProcessExternalMeetingMessages** parameter specifies whether to process meeting requests that originate outside the Exchange organization. Valid input for this parameter is *$true* or *$false*. The default value is *$false*. By default, meeting requests that originate outside of the organization are rejected.	When set to *$false*, Exchange will not allow external users to book Rooms resources. 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 *$true* to allow internal users to forward invitations to external Skype meetings into their meeting rooms, so that they can benefit from easy calling into external Skype meetings. **Note**: Administrators can still avoid external users booking their rooms directly by using an internal domain in the room's alias (e.g. *meetingroom@synergysky.local*)	*$true*	Yes, so that forwarding invites from external users works correctly.

Property name	Function in Microsoft Exchange	Function in Synergy SKY Meeting Server	Recommended Setting	Required
RemovePrivateProperty	The **RemovePrivateProperty** parameter specifies whether to clear the private flag for incoming meeting requests. Valid input for this parameter is *$true* or *$false*. The default value is *$true*. By default, the private flag for incoming meeting requests is cleared. To ensure the private flag that was sent by the organizer in the original request remains as specified, set this parameter to *$false*.	When set to *$true*, Exchange removes the Private flag when a Room is booked as a resource in a meeting flagged as Private in Outlook. This means that the meeting title is visible to everyone for all meetings. By setting this property to *$false* you can hide the title on meetings that are booked as Private in Outlook, while showing the title of all other meetings.	*$false*	No.
AutomateProcessing	The **AutomateProcessing** parameter enables or disables calendar processing on the mailbox. This parameter takes the following values: • *None* Both the resource booking attendant and the Calendar Attendant are disabled on the mailbox. • *AutoUpdate* Only the Calendar Attendant processes meeting requests and responses. • *AutoAccept* Both the Calendar Attendant and resource booking attendant are enabled on the mailbox. This means that the Calendar Attendant updates the calendar, and then the resource booking assistant accepts the meeting based upon the policies. The default value on a resource mailbox is *AutoAccept*. The default value on a user mailbox is *AutoUpdate*, but you can't change the value on a user mailbox.	Meetings that are booked in Room resources are stored as *Tentative* unless this setting is set to *AutoAccept*. Tentative meetings are not processed by SMS, as you can book multiple tentative meetings within the same time interval in one resource.	*AutoAccept*	Yes.
AllRequestInPolicy **AllRequestOutOfPolicy** **RequestInPolicy** **RequestOutOfPolicy**	These parameters specify whether to allow users to submit policy requests. Valid input for these parameters are *$true* or *$false*. The default value is *$false*.	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. This will lead to a significant delay for the meeting organizers, and is therefore not recommended.	*$false*	Recommended: configure so that approval is not required.

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

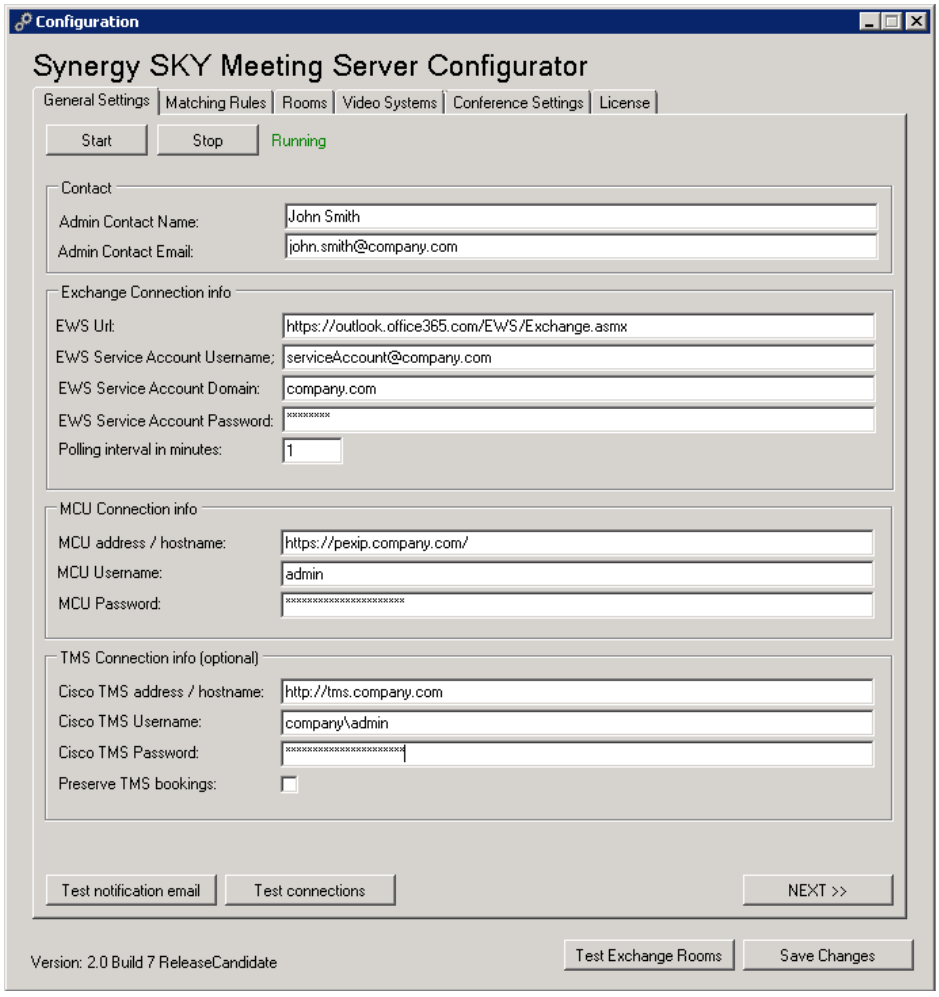
All configuration of the Synergy SKY Meeting Server (SMS) is done using the configuration tool.

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.



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
Contact	Contact details for the administrator who should receive notifications of any problems in the platform, for example if SMS fails to push OBTP information to endpoints.
Admin Contact Name	The name of the administrator.
Admin Contact Email	The email address of the administrator.
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 7
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 is required so that SMS can launch outbound calls to non-OBTP systems, and provision one-time Virtual Meeting Rooms (VMRs) when booking non-Skype meetings.
MCU address / hostname	The address of the Pexip Management Node. Will normally start with *https://*
MCU Username	The username of an admin account on the Pexip Management Node.
MCU Password	The password of an admin account on the Pexip Management Node.
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. SMSwill 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. *company\admin*).
Cisco TMS Password	The password of a Site Administrator in TMS.

Task 3: Testing that email is working

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

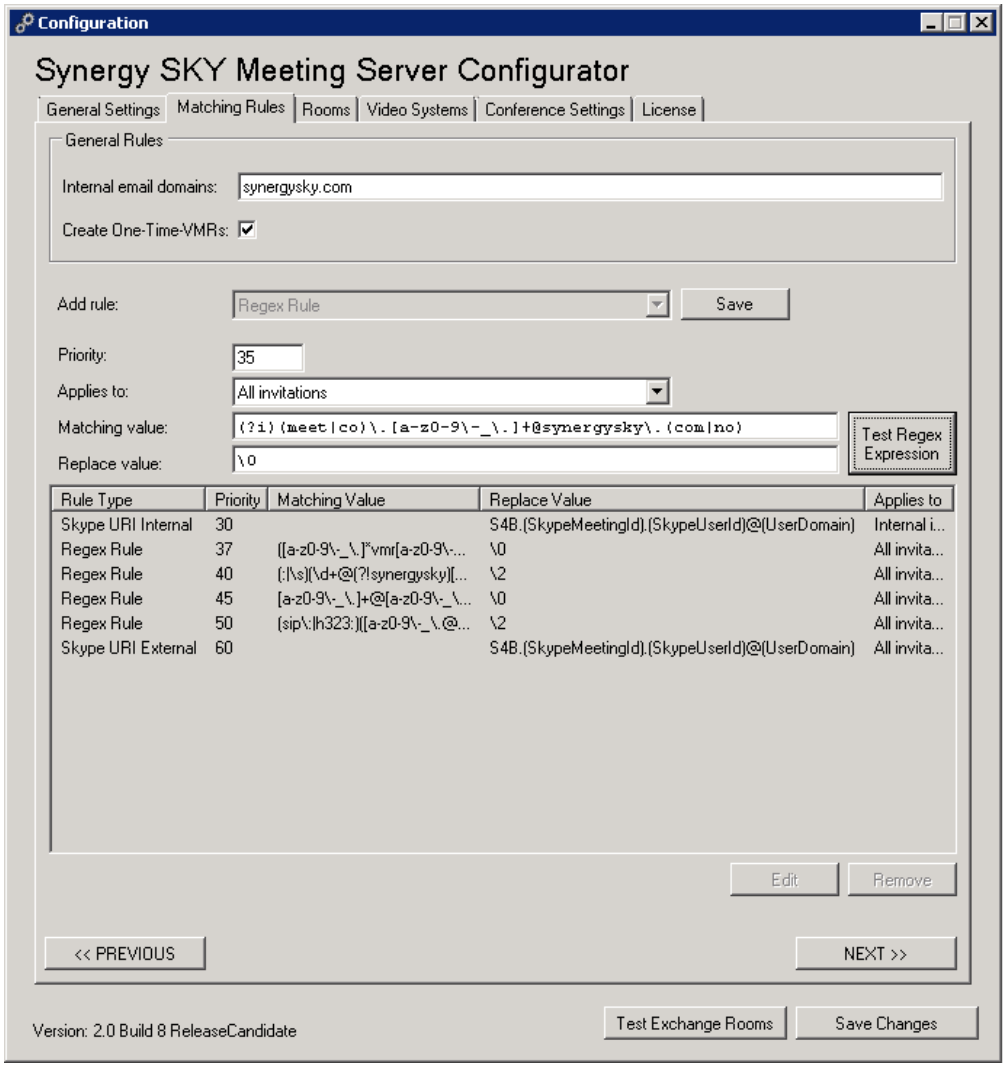
Task 4: Creating Matching Rules

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. *synergysky.com, synergysky.eu, synergysky.us*)
Create VMR meetings	When this box is ticked, SMS will provision one-time VMRs in Pexip 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.

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	This rule makes SMS look for Skype invites in hidden text in the invite. 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. This rule can only be added once.

Rule type	Description
Skype URI External	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. This rule can only be added once.
Regex Rule	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. You can define both matching patterns and replace patterns to transform the URI when required. This rule can be added multiple times.

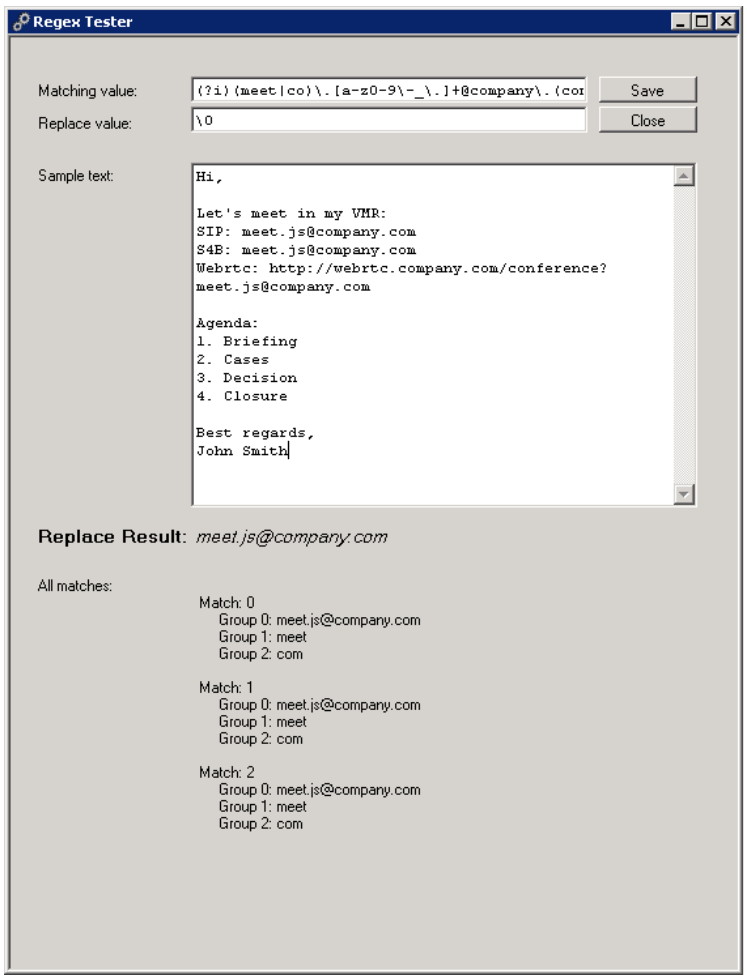
Configure the remaining fields as follows:

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	This setting defines whether the rule applies to internal, external or all invitations.
Matching value	This field defines the Regex rule for matching data. This setting only applies to Regex rules. (e.g. *\d@company.com* will match all URIs starting with a number and ending with *@company.com*)

Replace value	This field defines how the matched data should be transformed before being sent to the endpoint.
	The default for Skype URIs is:
	`S4B.(SkypeMeetingId).(SkypeUserId)@(UserDomain)`
	where:
	• `SkypeMeetingId` = alphanumeric meeting Id found in every Skype meeting invite
	• `SkyperUserId` = the userpart of the organizer's Skype SIP URI
	• `UserDomain` = the domain in the organizer's Skype SIP URI
	The value `\0` uses the entire matched value, while `\1` 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
	NOTE: For Organizations with a Pexip Gateway hosted by a Service Provider, the recommended pattern would be:
	`S4B.(SkypeMeetingId).(SkypeUserId)_(UserDomain)@serviceProvidersDomain.com`
	This allows the Service Provider to strip away their domain and replace the underscore with @ before sending the call through the Pexip Gateway..

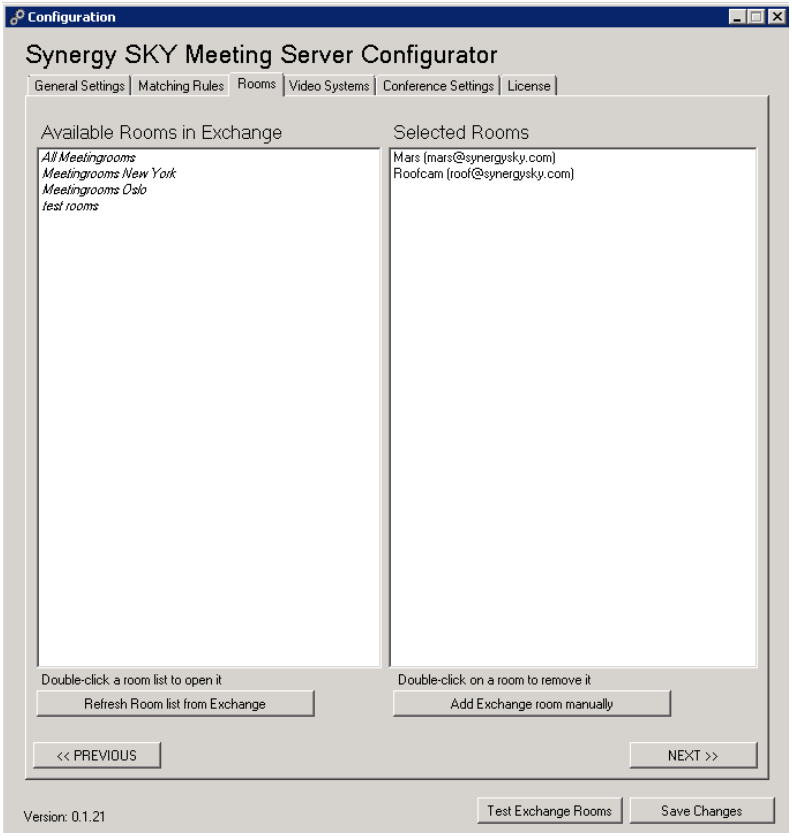
Testing, editing and deleting rules

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 7.



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

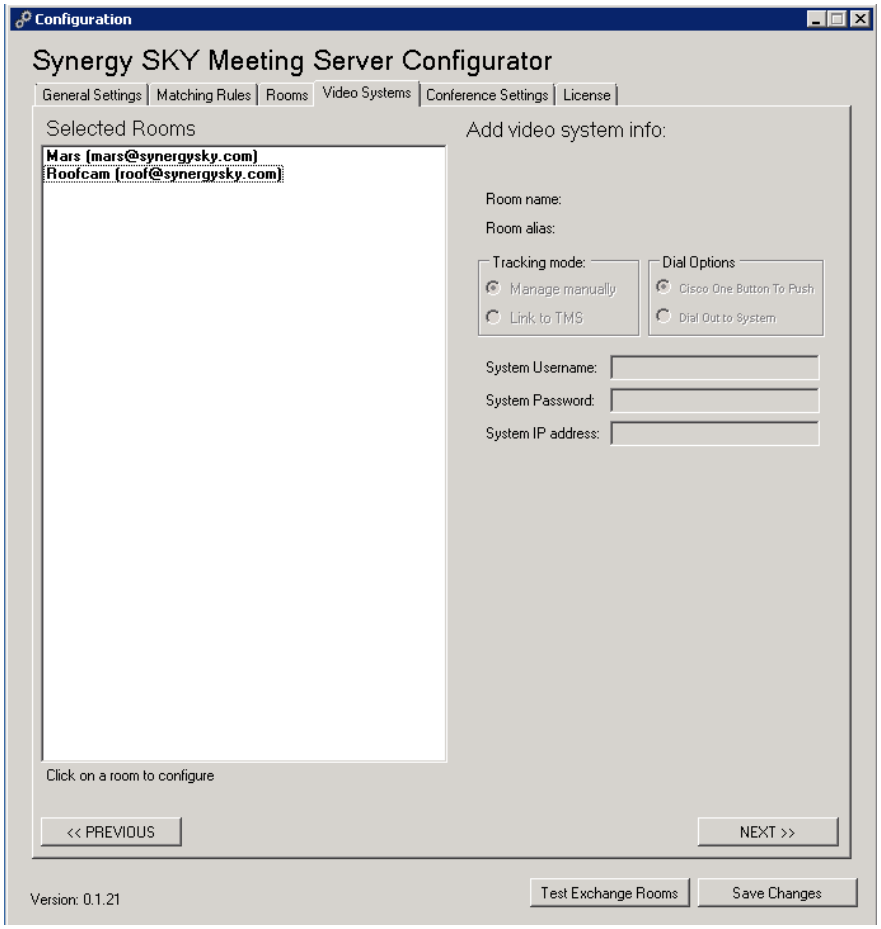
Section/Field name	Description

Available Rooms in Exchange	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.
	If no room lists are shown, ask your Exchange administrator to create one for you based on the examples below.
	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.
	Example for creating room lists in PowerShell:
	`$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`

Selected Rooms	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.
Refresh Room list from Exchange	This button is used to refresh the room list from Exchange. **Note:** It can take up to 15 minutes before a room list is visible here after adding a room list in Exchange.
Add Exchange room manually	Click this button to add rooms from Exchange manually. This is done by providing a display name and an alias for the room.

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	This list shows a list of all Exchange Rooms that are added to SMS. • 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. Select a room to configure it.

Tracking mode	• **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.
	  ◦ **System Username**: The admin account for the video system (e.g. *admin*).
	  ◦ **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.

Section/Field name	Description

Dial Options	This setting defines whether the video system should get One-Button-to-Push (OBTP) messages or be dialed out to.
	• **Cisco One Button to Push**: The video system will receive OBTP information about upcoming meetings (limited to the next 24 hours). For a list of supported video systems, see "Device support" on page 7.
	• **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.
	  ○ **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.

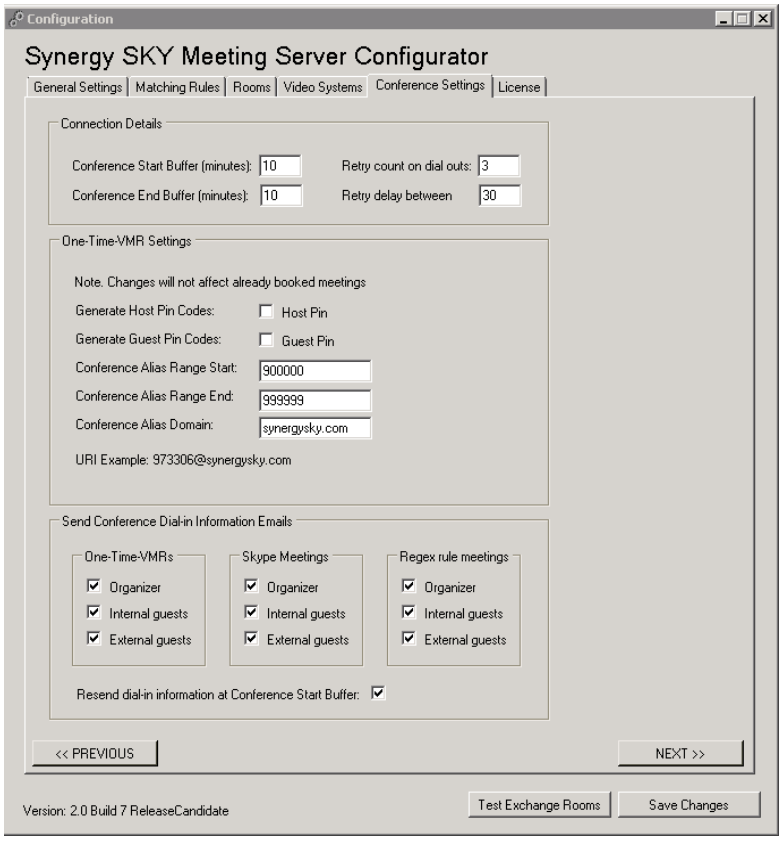
Connect and Add System	Click this button to test the connection and add the settings. The serial number of the video system will be saved and remembered by SMS to ensure it's sending the OBTP information to the correct video system.

Note: If the video system's codec is replaced for any reason, 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:

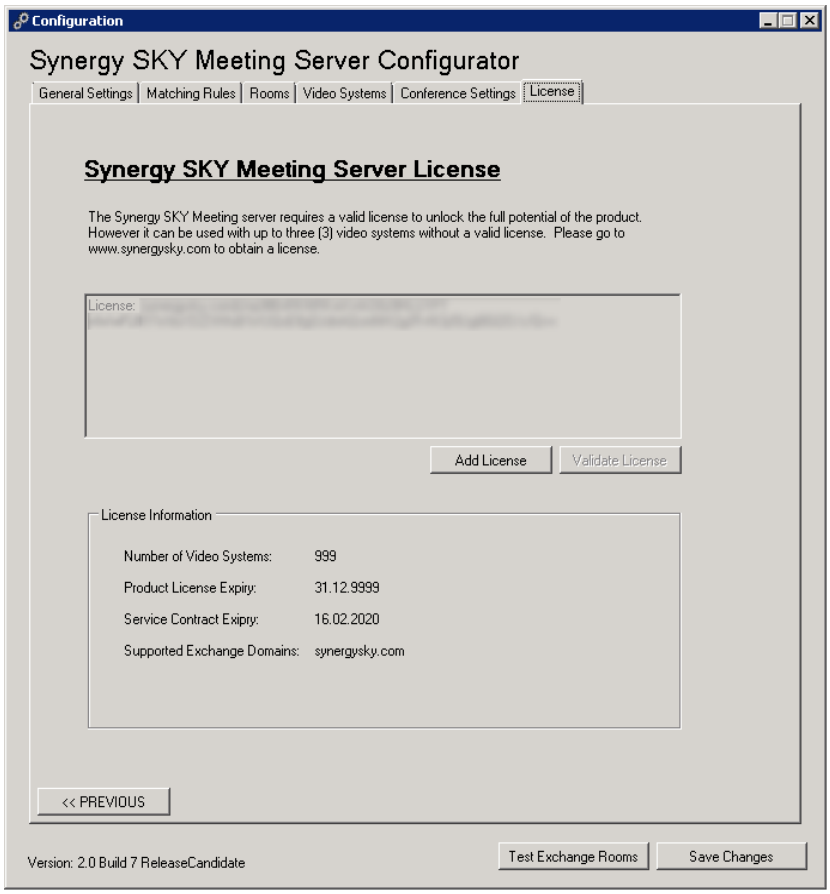
Section/Field name	Description
Connection Details	
Conference Start Buffer (Minutes)	The start buffer defines when VMRs are provisioned and can be dialed into, and it defines when the green button in the OBTP message can be pressed on the video system. It also defines when Dial-in information is resent to the invitees if **Resend dial-in information at Conference Start Buffer** is ticked.

Section/Field name	Description
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	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. The pin codes are included in the emails that are sent out to the Organizer and internal/external guests. **Note:** If using pin codes, you must update the email templates to ensure that the host pin is not sent to guest participants.
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*).
Conference Alias Domain	This defines the domain of the URI.
Send Conference Dial-in Information Emails	This section specifies whether the organizer, internal guests and external guests should receive a dial-in information email when meetings are booked. To edit the email templates, go to *C:\SynergySKY\SynergySKYEnterpriseScheduling\emailTemplates* and manually edit the templates using an HTML editor. See "Configuring Email templates" on the next page. **Note:** The email domain list in the **Matching Rules** tab is used to determine which guest participants are internal/external.
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.



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.	*error_recurringmeeting.html*
Organizer Invite	Sent to the meeting organizer when a one-time-vmr meeting is booked.	*organizerInvite.html*
Internal Invite	Sent to internal participants when a one-time-vmr meeting is booked. Includes dial-in information for the meeting.	*internalInvite.html*
External Invite	Sent to participants external to your organization when a one-time-vmr meeting is booked. Includes dial-in information for the meeting.	*externalInvite.html*
Organizer Invite Skype	Sent to the meeting organizer when a Skype meeting is booked.	*organizerInviteSkype.html*
Internal Invite Skype	Sent to internal participants when a Skype meeting is booked.	*internalInviteSkype.html*
External Invite Skype	Sent to external participants when a Skype meeting is booked.	*externalInviteSkype.html*
Organizer Invite Static	Sent to the meeting organizer when a regex rule meeting is booked.	*organizerInviteStaticVMR.html*
Internal Invite Static	Sent to the internal participants when a regex rule meeting is booked.	*internalInviteStaticVMR.html*
External Invite Static	Sent to the external participants when a regex rule meeting is booked.	*externalInviteStaticVMR.html*

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

Example Meeting Scenarios

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

Description	Requirements	Example rule
• 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 (OBTP) message.	Skype URI Internal matching rule	S4B.(SkypeMeetingId).(SkypeUserId)@(UserDomain)

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

Description	Requirements	Example rule
• 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 OBTP message.	• 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
• 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 OBTP message. • An email containing the dial-in information for the one-time-VMR is sent to the invitees (optional).	• 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
• 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 (OBTP) message. Currently the following meeting types are supported for forwarding in SMS: • Skype • Personal VMR • One-time-VMR • WebEx • Cisco Spark • BlueJeans • Videxio	• Skype internal/external matching rule • Regex matching rules	• Skype ◦ Matching value: S4B.(SkypeMeetingId).(SkypeUserId)@(UserDomain) ◦ Replace value: None • Personal VMR ◦ Matching value: ([a-z0-9\-_\.]*(meet|vmr)[a-z0-9\-_\.]*)@[a-z0-9\-_\.]+ ◦ Replace value: \0 • One-time-VMR ◦ Matching value: \d+@[a-z0-9\-_\.]+ ◦ Replace value: \0 • WebEx ◦ Matching value: \d+@[a-z0-9\-_\.]*webex[a-z0-9\-_\.]+ ◦ Replace value: \0 • Cisco Spark ◦ Matching value: \d+@meet.ciscospark.com ◦ Replace value: \0 • BlueJeans ◦ Matching value: https://bluejeans.com/(\d+) ◦ Replace value: \1@sip.bjn.vc • Videxio ◦ Matching value: [a-z0-9\-_\.]+vmr@videxio.com ◦ Replace value: \0 • Internal Skype meetings with CMS (pre 2.2) ◦ Matching value: id:\s*(\d+) ◦ Replace value: \1@YourInternalVideoDomain.com

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 [OBTPThread] INFO  - Sending out OBTP information to endpoint meetingroom1@example.org for meeting 'Test Meeting'.
2017-03-17 13:51:53,134 [OBTPThread] INFO  - Updating endpoint meetingroom1@example.org with OBTP information
2017-03-17 13:51:55,540 [OBTPThread] 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 whenSMSqueries 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=$false” will remove the subject of the meeting, and make SMS send the incorrect OBTP information to the video endpoint
- Failure to set “ProcessExternalMeetingMessages=$true” will hinder internal users forwarding invitations to external S4B meetings to the meeting rooms
- Failure to set “RemovePrivateProperty=$false” may make SMS send the subject of a private meeting as OBTP information to the video endpoint – thereby exposing a sensitive meeting subject on the video system’s touch panel
- Failure to set “AutomateProcessing=$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.

A license that has expired will stop working:

- When the server or SMS service is restarted.
- When the SMS Configurator is re-started.

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

OBTP 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 OBTP 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.	• 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.	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: • 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.	• 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 OBTP button) does not work

Symptoms	Probable cause	Actions
The OBTP 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.	• 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	Error in email template.	Check the syntax of the HTML in your email templates.
	SMS cannot contact the Exchange server - Invalid configuration.	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**.

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

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`**
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