



Cisco TelePresence Management Suite Extension for IBM Lotus Notes

Installation and Getting Started Guide

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Introduction

This document describes the Cisco TelePresence Management Suite Extension for IBM Lotus Notes (Cisco TMSXN) installation process. The software is an optional add-on component to Cisco TelePresence Management Suite (Cisco TMS), which gives users the ability to schedule video conferences, book meeting rooms and invite participants using their Lotus Notes client. The video conferencing systems are registered in a resource database on the Domino server, allowing end users to view their availability when making bookings.

The extension uses software components installed on the Lotus Domino server. Therefore, client machines do not need to be modified. This gives system administrators a centrally deployed solution, simplifying maintenance.

See <http://www.lotus.com> for more information about IBM Lotus Domino and IBM Lotus Notes.

How to use this document

The installation procedure for Cisco TelePresence Management Suite Extension for IBM Lotus Notes depends on the version of IBM Lotus Notes/Domino that you use. Therefore, some of the subsections will include version numbers in the heading indicating which version(s) they are valid for. Steps in subsections without version numbers apply to all versions of IBM Lotus Notes/Domino.

Note: Users of IBM Lotus Domino/Notes 7.x should note that the menu option described in this document as **File > Application** is called **File > Database** in the 7.x user interface.

Requirements

Server requirements

Product	Additional requirements and recommendations
Windows Server 2000 SP3	Internet Explorer 5.5 or later
Windows Server 2003	Internet Explorer 6.0 or later
Windows Server 2008 (32 bit)	Internet Explorer 7.0 or later
Windows 2008 Server R2 (64 bit)	Internet Explorer 7.0 or later

Note: Cisco TMSXN 11.3.1 for IBM Lotus Domino 8.5.x may be installed as a 32-bit or 64-bit application. If running IBM Lotus Domino as a 32-bit application on a 64-bit server, the 32-bit Cisco TMSXN application must be used.

Domino requirements

IBM Lotus Domino Server running one of the following versions:

- 7.0.x
- 8.0.x
- 8.5.x

Permission requirements

Completing the installation requires:

- Access to Lotus Notes, Administrator, and Designer clients.
- Ability to copy and move files to the Domino Server.
- Access to the Domino Server to modify local files.
- An account with full Administrator Access on the Domino Server.
- An account with permissions to create and edit users, create and sign databases, and the ability to edit the Server Configuration Document.

Client requirements

The following clients have been tested with Cisco TelePresence Management Suite Extension for IBM Lotus Notes version 11.3.1:

- IBM Lotus Notes 7.0.4
- IBM Lotus Notes 8.0
- IBM Lotus Notes 8.5.2

Other minor versions within these major versions of Notes and Domino may be compatible, but only the above have been tested for compatibility by Cisco TelePresence.

Cisco TMS requirements

Version	11.5 or later. Cisco TMSXN utilizes Cisco TelePresence Management Suite Extension Booking API version 2.
Network	<ul style="list-style-type: none"> ■ HTTP (HTTPS optional) connectivity is required from the Exchange Server to Cisco TMS. ■ Cisco TMS must be able to send email to the Exchange Server's domain.
Licensing	<p>One of the following:</p> <ul style="list-style-type: none"> ■ One Cisco TelePresence Management Suite Extension for IBM Lotus Notes option key per 25 endpoints integrated with Cisco TMS, usually recommended for smaller deployments. See below for detail on how system licenses are activated. ■ One Application Integration Package option key per IBM Lotus Domino Server integrated with Cisco TMS, recommended for deployments with a large number of systems to be integrated.

Enabling option keys

To enable an option key in Cisco TMS:

1. Go to **Administrative Tools > General Settings**.
2. In the **Licenses and Option Keys** pane, click **Add Option Key**.
3. Input the option key string.
4. Click **Save**.

Per system licensing

Note that each system to be integrated with IBM Lotus Domino must already have been added to and licensed for use with Cisco TMS.

Once the Cisco TMSXN license option has been activated in Cisco TMS, the **Allow Remote Bookings** setting determines whether each system is using a license.

The first time Lotus Notes booking is used for a system, **Allow Remote Bookings** will be toggled to Yes for that system in Cisco TMS, provided a license is available. If no more licenses are available, **Allow Remote Bookings** will still be set to *No* for that system, and the requested booking will be denied. A Cisco TMS ticket will be generated to notify the administrator that no more licenses are available.

To view and/or manually modify the setting:

1. In Cisco TMS, go to **Systems > Navigator**.
2. Select the system you want.
3. Click the **Settings** tab.
4. In the **TMS Scheduling Settings** pane, you will find **Allow Remote Bookings** set to Yes or No.
5. If you want to modify the setting, click **Edit Settings**.
6. Use the checkbox to toggle the setting.
7. Click **Save**.

Note: The **Allow Remote Bookings** setting is only visible if one or more Cisco TMSXN keys have been activated in Cisco TMS. If an Application Integration Package option is also activated, the setting will be void and therefore hidden.

System names and IDs

Best practice for system naming in IBM Lotus Domino and Cisco TMS

The name of a system in Cisco TMS is only a label, therefore it can be changed without doing any Lotus resource re-configuration. However, for consistency and ease of maintenance, we recommend that all installations have consistent names in both Lotus and the Cisco TMS web interface.

System IDs in Cisco TMS

When defining resource accounts in Domino, use Cisco TMS system IDs to link the two. In Cisco TMS, a system's ID will not change unless the system is completely purged from the database. Systems should not be purged and re-added to Cisco TMS unless absolutely necessary. Doing so will make the system appear as a completely different system in Cisco TMS, along with a new system ID.

If a system's ID changes and the system is also represented in Lotus, you must update the ID listed for that system in the Lotus Resource database manually.

Adding systems to Cisco TMS after installation of Cisco TMSXN

After completing the Cisco TMS Integration with Lotus, the requirements for adding new systems to Cisco TMS change slightly. When adding systems to Cisco TMS, it is important to add them to Lotus before the systems are made available for booking in Cisco TMS.

This can be done by setting **Allow booking** to *No* for a system in Cisco TMS until it also has been added to Lotus. If a system is booked in Cisco TMS before it has been added to Lotus, the meetings booked prior to the system being created in Lotus will not replicate over to the Lotus calendars.

Note: This requirement only applies after Cisco TelePresence Management Suite Extension for IBM Lotus Notes has been installed, and for systems you intend to make available for booking in Lotus.

Installing and upgrading

Complete the steps described in this chapter to do a first-time installation and configuration or an upgrade of the Cisco TelePresence Management Suite Extension for IBM Lotus Notes package with the Cisco TelePresence Management Suite.

Steps that are optional, that apply only to first-time installations or only when upgrading, are clearly marked throughout the process.

Note: As the Domino server needs to be restarted during the installation process, performing the installation out of hours is strongly recommended.

The term “Domino directory” is used throughout this document. The location of this directory is user configurable during installation, and can for example be **C:\Lotus\Domino**.

All integration files are included as part of the **Cisco_TMSXN_v11_3_1.zip** archive. The archive includes three zip files:

- TMSXN_ForDominoV70.zip (for servers running IBM Lotus domino 7.x or 8.0.x)
- TMSXN_ForDominoV85_x86.zip (for servers running 32 bit IBM Lotus Domino 8.5.x)
- TMSXN_ForDominoV85_x64.zip (for servers running 64 bit IBM Lotus Domino 8.5.x)

Stop the Domino Server

Note: This step applies to upgrades only and is not required for first-time installations.

Before starting the upgrade process, stop the Domino service by going to **Control Panel > Administrative Tools > Services**.

User Account Control (UAC)

We recommend that this setting is on for increased Domino server security. An administrator can verify that UAC is on by going to **Control Panel > User Accounts** and clicking “Turn User Account Control on or off”.

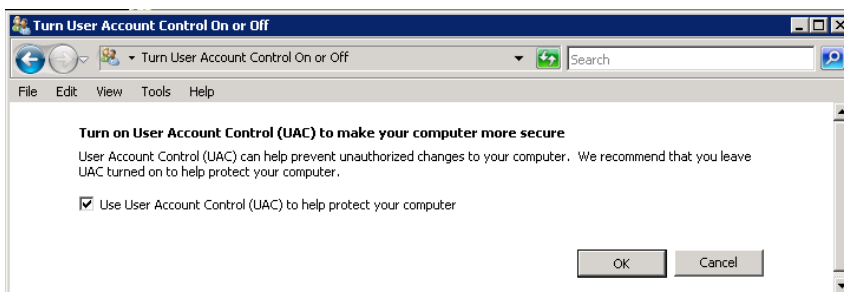


Figure 1: Turning on User Account Control

Copying the required files to the IBM Lotus Domino Server

1. Choose and download the appropriate .zip archive for your version of IBM Lotus Domino. If your version is Domino 8.5.x, also determine whether your installation of IBM Lotus Domino is 32 bit or 64 bit (this can be checked in the Windows processes).

2. Copy the downloaded archive to your Domino Server and extract it to a temporary folder. If using FTP, make sure that binary mode is used.
3. Extract the **Javafiles.zip** archive to a temporary directory on the Domino server.
 - a. Copy **TMSConference.jar** (found in the bin directory of the **Javafiles.zip** file) to the **jvm\lib\ext** directory of the Domino directory.
 - b. New installations only: Copy the files in the **lib** directory in the extracted **Javafiles.zip** archive to the same directory. Do not overwrite the existing files if some or all of the files are already present.
4. Verify the proper file security permissions on the copied .jar files. Right-click on the copied .jar files and select **Properties**. Go to the **Security** tab, and make sure that the Windows user (System user) that the Domino processes run under has at least *Read* access.
5. Windows 7, Vista and 2008 users of Domino 7.x or 8.0.x only: If User Account Control is active on the Domino server, right click the .jar files and select **Unblock**.
6. Upgrading users only: Delete the existing template files from your Domino Data Directory. The files are called:
 - Domino 7.x or 8.0.x: **tmsresrc7.ntf** and **tmsmail7.ntf**
 - Domino 8.5.x: **tmsresrc8.ntf** and **tmsmail85.ntf**
7. Copy the template files extracted previously to your Domino Data directory.
 - Domino 7.x or 8.0.x: **tmsresrc7.ntf** and **tmsmail7.ntf**. This modified Notes 7 template is also supported in Notes 8. (See <http://www-1.ibm.com/support/docview.wss?uid=swg21264690> for additional information.)
 - Domino 8.5.x: **tmsresrc8.ntf** and **tmsmail85.ntf**
8. Verify the proper file security permissions on the copied template files by right-clicking on them and selecting **Properties**. In the **Properties** dialog, make sure *Read-only* is cleared. Go to the **Security** tab, and make sure that the Windows user (System user) that the Domino processes run under has full access to these files.
9. Copy the **TMSEventCatcher.dll** file extracted previously into your Domino Program Folder.
10. Verify the proper file security permissions on the copied **TMSEventCatcher.dll** file by right-clicking on it and selecting **Properties**. In the **Properties** dialog, make sure *Read-only* is cleared. Go to the **Security** tab and make sure the Windows user (System user) that the Domino processes run under has at least *Read* access.
11. Windows 7, Vista and 2008 users of Domino 7.x or 8.0.x only: If User Account Control is active on the Domino server, right click the **TMSEventCatcher.dll** file and select **Unblock**.

Updating the java.policy file

Note: Upgrading users do not need to perform this step.

The java.policy file must be updated to allow Cisco TMSXN to use web services. The file is by default found in the **jvm\lib\security** folder of your Domino directory.

1. Open the file in a text editor.
2. Add the following line inside an existing grant statement (see figure below):

```
permission java.util.PropertyPermission "java.protocol.handler.pkgs", "write";
```

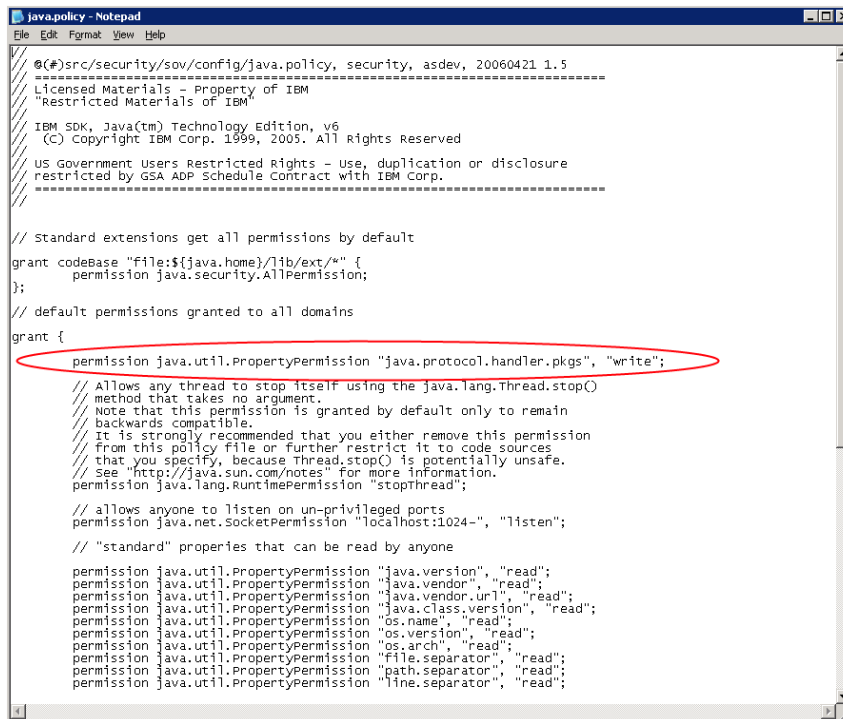


Figure 2: An updated java.policy file

3. Save and close the java.policy file.

Editing the notes.ini file

Note: Upgrading users do not need to perform this step.

The notes.ini file is by default found in the Domino directory.

1. Open the notes.ini file in a text editor.
2. Add these lines to the top of the file (see also the figure below):

```
TMSResourceDatabaseName=Video Conference Resources
TMSDeleteAgentName=RemoveConferenceParticipant
EXTMGR_ADDINS=TMSEventCatcher.dll
```

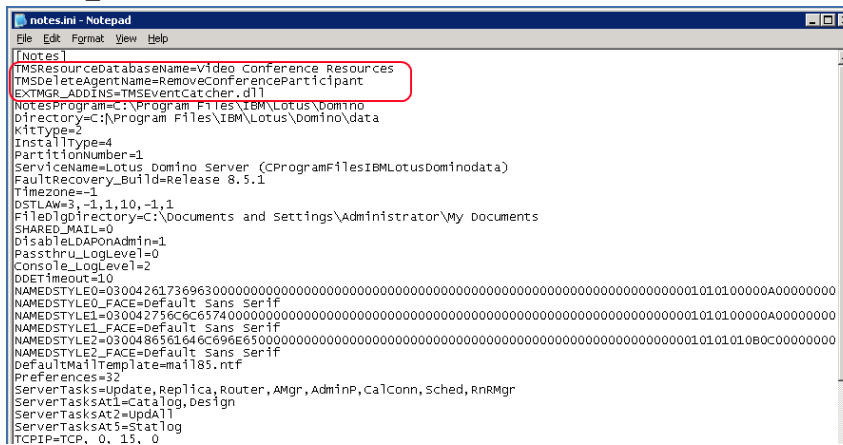


Figure 3: An updated notes.ini file

It is important that only one instance of each of these statements exists in the notes.ini file. If one of these lines already exists in the notes.ini file, you must modify the existing line to include these values.

For the TMSResourcesDatabaseName variable, the name must match the name you intend to give the resource reservation database to be used for video conferencing rooms. This database will be created in a later step. We recommend using the name Video Conference Resources.

3. Save and close the file.

Restarting the Domino Service

Restart the Domino Service to apply the changes made either by:

- using the restart server command in the Domino console
- restarting the Lotus Domino Service in the Services Console found at **Start > Administrative Tools > Services**

Signing the templates

The new template files must be signed with an appropriate ID from your organization.

Domino security requires that “new mail” agents run on the home server (mail server) of the signer. Because the templates include “new mail” agents, the ID that signs the templates must have a mailbox located on the server where you are installing the integration package.

Note: If you ignore this requirement, the agents are unable to run.

It is recommended you create a utility account on the Domino Server for the purpose of signing the “new mail” agents. Alternatively, you can configure Domino to ignore this security requirement by modifying the **notes.ini** file to include the option **AMgr_DisableMailLookup = 1**. Note that this will affect *all* “new mail” agents running on the server.

To sign the templates:

1. Open Domino Administrator and select the server that you copied the template files to.
2. Go to the **Files** tab and select the **data** folder. In the **Show me:** drop-down list change the view to *Templates Only*.
3. Highlight the two Cisco TMS templates, **TMS Resource Reservations** and **TMS Mail** (Depending on the version of Notes, this will be 7 for V7.0.x and V8.0.x of Notes, and 8.5 for V8.5.x of Notes.)
4. Right-click on the templates and select **Sign...**
 - a. Choose Active User's ID to sign using the current user's ID.
 - b. Make sure that the user has sufficient permissions to sign templates and that the user has a mailbox on this Domino server.
5. Select *All design documents*.
6. Click **OK**.

The status bar shows the number of databases processed and the number errors if any occurred. See the Domino Server logs for additional information if any errors occur.

You may get a Cross Certificate Warning because your organization does not have a trust to /TANDBERG or /Cisco. This should be handled according to your organization's policies.

Replacing the resource template

Note: This step applies to upgrades only and is not required for first-time installations.

1. From the Domino Administrator, open the Video Conference Resources
2. Go to **File > Application > Replace Design....**
3. Choose the template server, click **Show advanced templates** and choose **TMS Resource Reservations (version).ntf**.
4. Click **Replace**.

Creating the Cisco TMS Resource Reservation Database

Note: Upgrading users do not need to perform this step.

Open Domino Administrator and select the server hosting the installation files. Go to the Administration menu and select Full Access Administration.

If you cannot get full access, permissions can be granted to the server:

1. Go to the Configuration tab for the server and select Current Server Document.
2. In the Security tab modify the Full Access Administrators field.
3. Add the user ID of the user completing the installation
4. Save and close the server document. (You may have to close and reopen your Administrator session to update your permissions.)

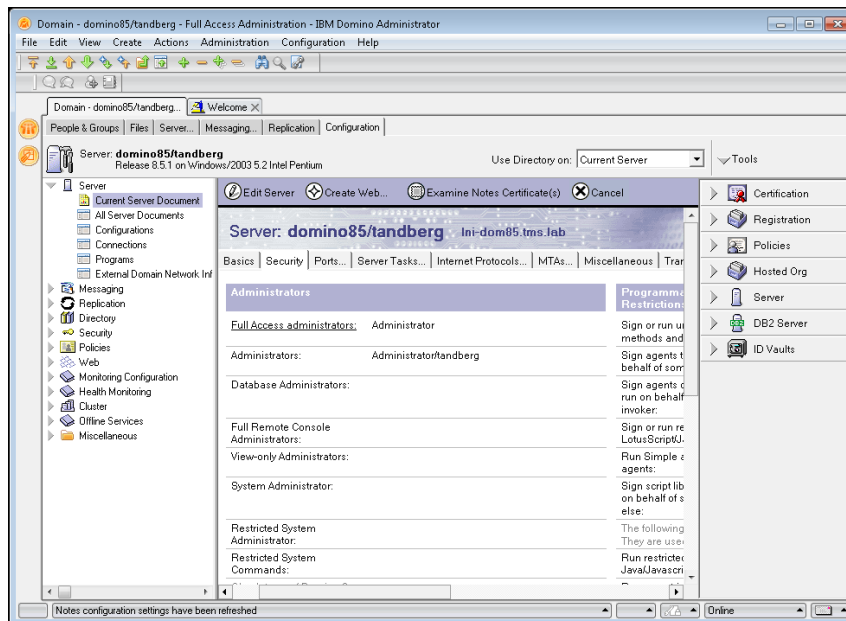


Figure 5: Adding user ID to the Full Access Administrators field

5. Once you have Full Access Administration successfully checked without any errors, open **File Menu > Application > New...**
6. In the Specify New Database Name and Location section, select the server that the integration package is being installed on.
7. Set the Title field to the value that you specified in the TMSResourceDatabaseName variable in the notes.ini file (Video Conference Resources, if you followed the recommendation in this document).
8. In the Specify Template for New Application section:
 - Select the server that the integration package is being installed on.
 - Select the Show advanced templates check box. The template list updates.
 - Select the TMS Resource Reservations template.
9. Click **OK** to create the database. The Notes status bar shows progress updates.

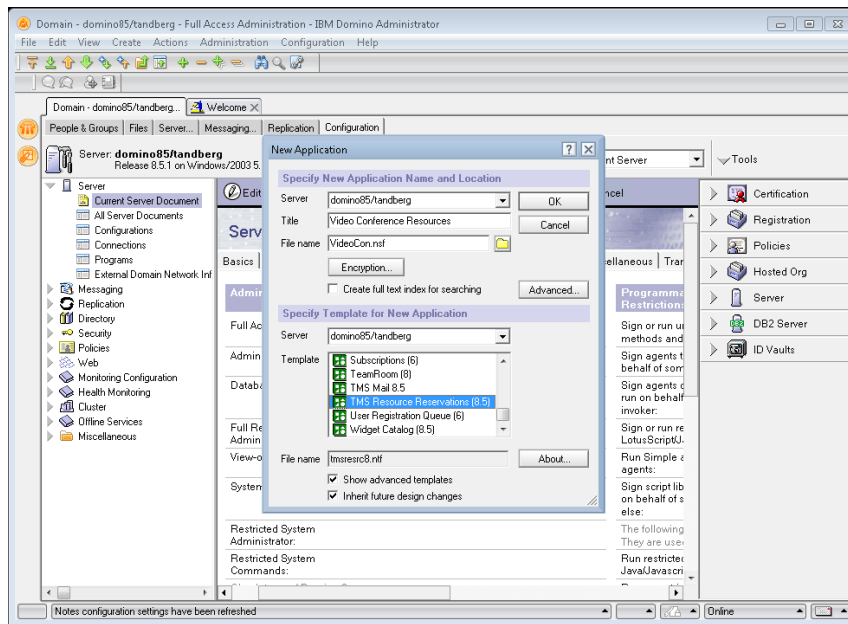


Figure 6: Creating a new database

Creating a Service Account on the Domino Server

Note: Upgrading users do not need to perform this step.

This account will act as the owner of the video resources. Make this account a normal (restricted) user.

1. Open the server in Domino Administrator, for example by using **File > Open Server...**
2. Under **People & Groups**, Select the **People** item and select **Register...** from the right pane

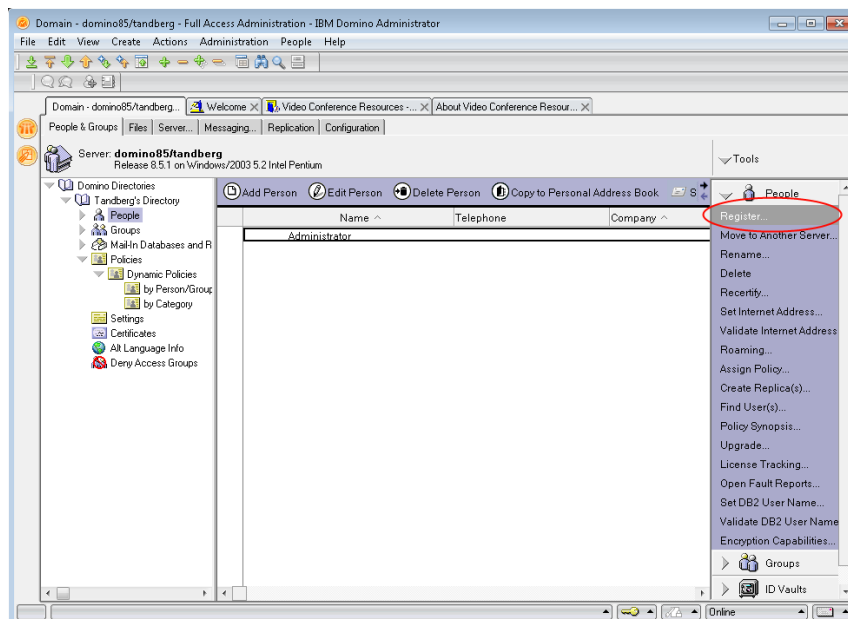


Figure 7: The People > Register... item from the right pane

3. If prompted for a certifier, choose **Supply certifier ID and password**. Click **Certifier ID...** and provide the associated cert.id file. Enter the certifier's password when prompted.

4. In the Register Person page, We recommend setting the following properties:
 - **First Name:** TMS
 - **Last Name:** Service
 - **Short Name:** TMS-Service
 - **Password:** Strong password of your choice
5. Click **Register** and then **Yes** to add person to the registration queue.
6. The background job registering the new account may take several minutes to complete. When you see the "Person registered successfully!" message, close the Register Person window by clicking **Done**.

Figure 8: The Register Person page

Creating a service account on the Cisco TMS server

Note: Upgrading users do not need to perform this step.

A user must be specified on the Cisco TMS server to be used as the login for Cisco TMSXN. This user must be able to log onto the Cisco TMS server and have access to all the systems you intend to make available through Lotus Notes. This user will appear as the owner of all meetings booked through Lotus.

We recommend creating a separate user for the integration using the username **TMSLotus** for this account:

1. Create a new Windows account. This can either be a domain account, or a local account on the Cisco TMS server. You can use any name and username for the account. The account needs no special Windows permissions except being able to log into Cisco TMS' IIS server. Log into Cisco TMS using the new user account to verify the account's settings. When prompted for user profile information, specify a first and last name to identify the user as the Lotus Service account. The email address can be any email address, but cannot be left blank.

- Log into Cisco TMS using an administrator account that has user configuration permissions. Verify that the newly-created service account has sufficient group permissions to book all systems intended to be made available to Lotus Notes users and Booking permission for all systems that you wish to integrate with Lotus Notes. Navigate to **Administrative Tools > User Administration > Groups**, hover the mouse over the relevant group, press the drop-down icon, and select Set permissions.

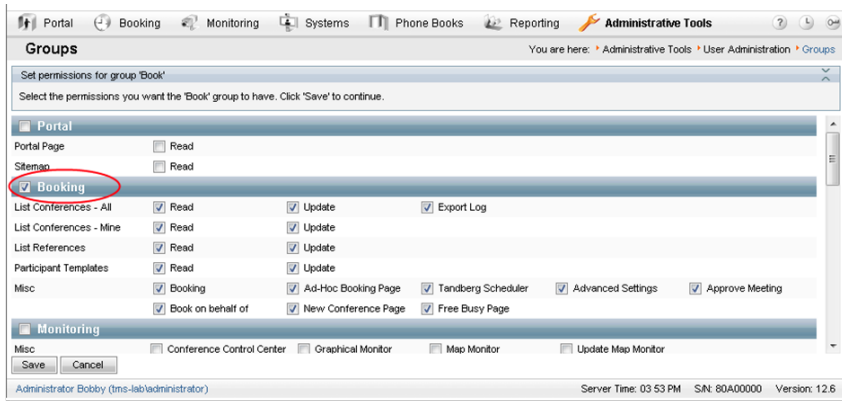


Figure 9: Creating a new user group having the Booking permission

Adjusting the web permissions on the Cisco TMS server

Note: Upgrading users do not need to perform this step.

The Java implementation on the Domino Server cannot support the default Integrated Authentication permissions set on the Cisco TMS web site. Therefore the web site must be altered to allow “Basic Authentication” login methods:

- Open the IIS Manager on the Cisco TMS Server.
- Navigate through the directories to **Default WebSite > TMS > external > booking**.
- Right-click on the **Bookingservice.asmx** file and select Properties.
- In the **Properties** dialog, click the **File Security** tab and locate the Authentication and Access Control panel. Click **Edit...**
- Make sure both the **Integrated Windows Authentication** and **Basic Authentication** checkboxes are selected.
- Click **OK** to close the **Authentication Methods** window.
- Click **OK** again to close the **Properties** window for **bookingservice.asmx**.
- Close the IIS Manager.

Enable secure communication

Note: HTTPS is optional, and if opting to use HTTP, this section can be skipped.

In order to use HTTPS, both the Cisco TMS server and Notes must be configured. To set up the Cisco TMS server for HTTPS, do the following.

- Use **makecert.exe** to create a self-signed certificate. Makecert.exe is available from Windows SDK Update site, and is also included in the .NET installations. An example of makecert.exe to generate a certificate is shown below.

Note: This is for V2.0 of .NET framework, and has not been tested with V3.5 of .NET framework.
 makecert.exe -r -pe -a SHA1 -ss my -sr LocalMachine -n “CN=%ComputerName%” -b 01/01/2000 -e

01/01/2050 -eku 1.3.6.1.5.5.7.3.1 -sky exchange -sp "Microsoft RSA SChannel Cryptographic Provider" -sy 12
 Replace %ComputerName% with the name of the computer.

2. Open IIS Manager and right click on the Cisco TMS site, and select Properties.
3. Go to **Directory Security > Secure communications**, and select Server certificate.
4. When the wizard pops up, click Next, and then Assign an existing certificate. You can now see the certificate that was created in step 1, click Next to see information about the certificate, and click Next again to complete the installation. Cisco TMS is now configured for HTTPS.

To set up the Notes server, the certificate chain must be added to the Java certificate store:

1. Export the Cisco TMS server certificate to a .cer file. Copy the file to the Domino server, for example **c:\certificates\tmscertificate.cer**.
2. Log in to the Domino server.
3. Open a command prompt on the Domino server.
4. Change directory to **<Domino directory>\jvm\lib\security**, for example **cd Program Files\Lotus\Domino\jvm\lib\security**.
5. Import the certificate by writing **..\..\bin\keytool.exe -import -trustcacerts -keystore cacerts -alias <myname> -file <location of certificate file>\tmsserverauth.cer**. It is advisable to give the certificate a proper alias (for example TMS_server_certificate).
6. Restart the Domino server.

Enabling agents in Resource Database (IBM Lotus Notes/Domino versions 7.x and 8.0.x)

1. Start Lotus Domino Designer and open the Resource Reservations Database that you created earlier (normally called "Video Conference Resources") by going to **File > Application > Open...**, selecting the server where the database was created, and then selecting the database from the list.
2. Expand the Shared Code item from the view in the left frame.
3. Click on Agents.
4. The main frame lists all the agents in the database. Five or six (depending on the Domino version) of the agents have red and yellow icons next to them, marking them as disabled.

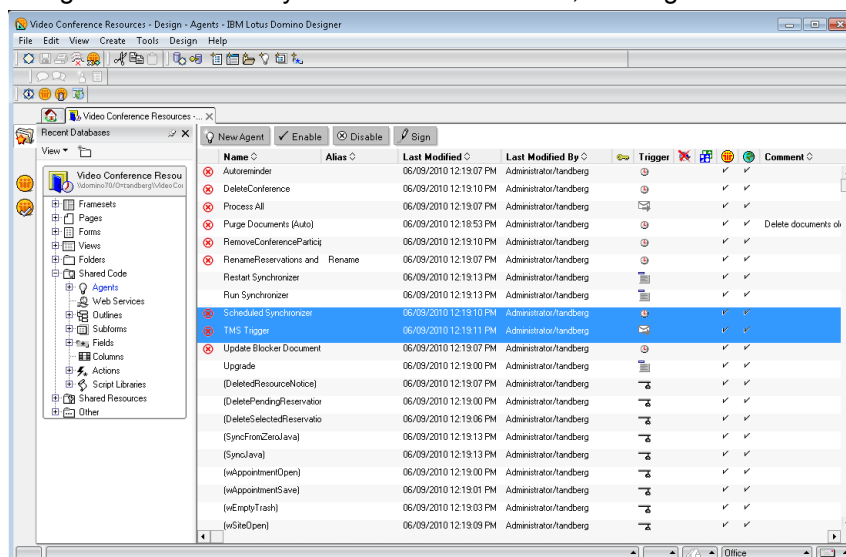


Figure 10: Listing the agents in Domino Designer 7.0

5. Hold down the Control (Ctrl) key, and highlight **Scheduled Synchronizer** and **TMS Trigger**. Then click **Enable** at the top of the list. You are prompted for the server on which the agents should run — the server on which the database is created. The database and agents must be on the same server. Close the agent dialog.
6. Double-click Scheduled Synchronizer. Make sure On schedule is selected. In the drop-down list to the right of Schedule... select More than once a day.

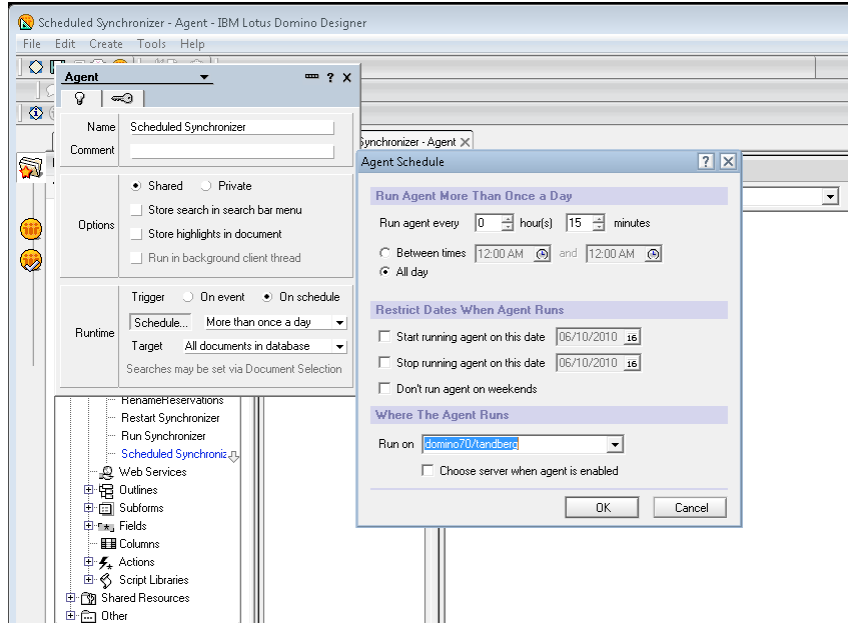


Figure 11: Configuring the run-time of the Scheduled Synchronizer agent

7. Click **Schedule...** to open the Agent Schedule window.
 - a. Set the interval to 0 hours and 15 minutes.
 - b. Verify that the **Run on** drop-down list is pointing to the correct server.
 - c. Click **OK**.
8. Save and close the Scheduled Synchronizer Agent.
9. Close the database and Domino Designer.

Enabling agents in Resource Database (IBM Lotus Notes/Domino version 8.5.x)

1. Start Lotus Domino Designer and open the Resource Reservations Database that you created earlier (normally called "Video Conference Resources") by going to **File > Application > Open...**, selecting the server where the database was created, and then selecting the database from the list.
2. From the Applications pane, expand the Code item list to the left.
3. Double-click on Agents.
4. The main frame lists all the agents in the database. Approximately eight (depending on the Domino version) of the agents have yellow icons next to them, marking them as disabled.

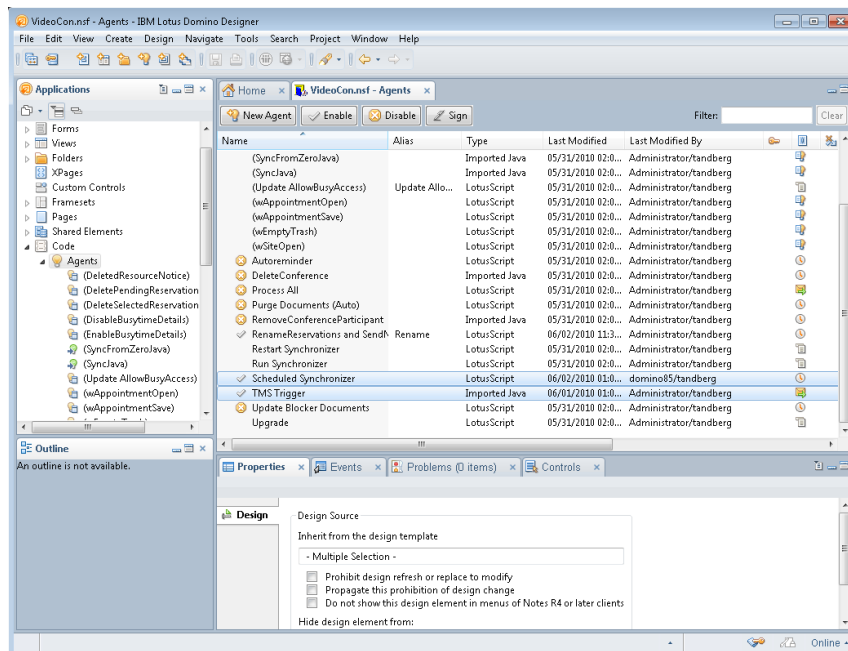
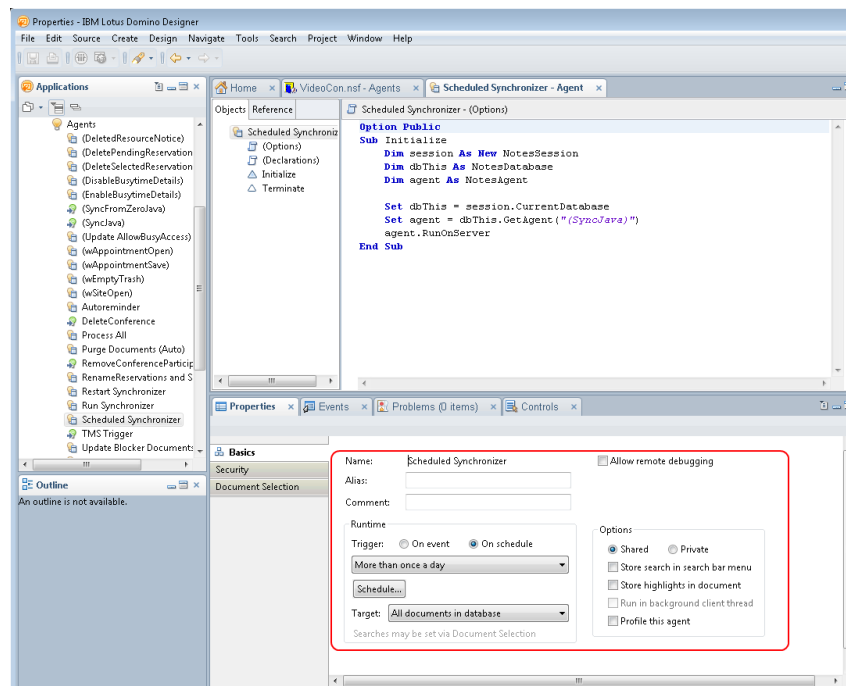


Figure 12: Listing the Agents of the database

5. Hold down the **Ctrl** key, and click on **Scheduled Synchronizer** and **TMS Trigger**. Click the **Enable** button at the top of the list. The database and agents must be on the same server. Close the agent dialog.
6. Double-click **Scheduled Synchronizer**. Locate the **Properties** section near the bottom. Select the **On Schedule** radio button under **Runtime > Trigger**, and select **More than once a day** in the drop-down list



below.

Figure 13: Configuring the run-time of the Scheduled Synchronizer agent

7. Click **Schedule...** to open the Agent Schedule window. Set the interval to 0 hours and 15 minutes, and verify that the Run on drop-down list has the correct server selected. Click **OK**.

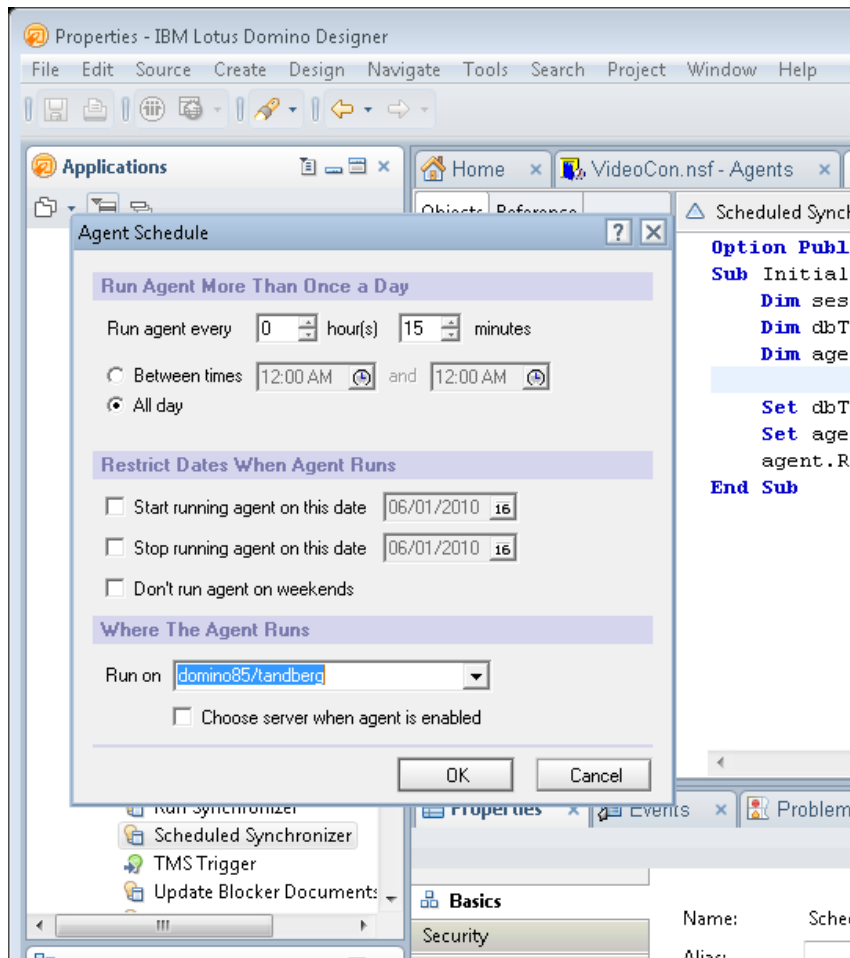


Figure 14: The Agent Schedule window

8. Save and close the Scheduled Synchronizer Agent.
9. Close the database and Domino Designer.

Configuring the Cisco TMS settings of the Resource Database

Note: Upgrading users do not need to perform this step.

1. Open Domino Administrator using a server administrator ID.
2. Open the resource reservation database that you created in the previous steps by going to **File > Application > Open** and selecting the server on which the database was created. Then select the database as you named it in the notes.ini file (default name: "Video Conference Resources"), and click **Open**.
3. Go to **File > Application > Access Control** to open the Access Control List window.
4. Select the current user ID from the list, and select the *Admin* and *Create Resource* roles. Optionally, you can add additional users to these roles to enable those users to be able to modify the configuration document and add additional resources. Additional user roles can also be added post-installation.

In some installations, one or both of the checkboxes might be missing. See the [Troubleshooting Cisco TMSXN](#) chapter of this document for more information.

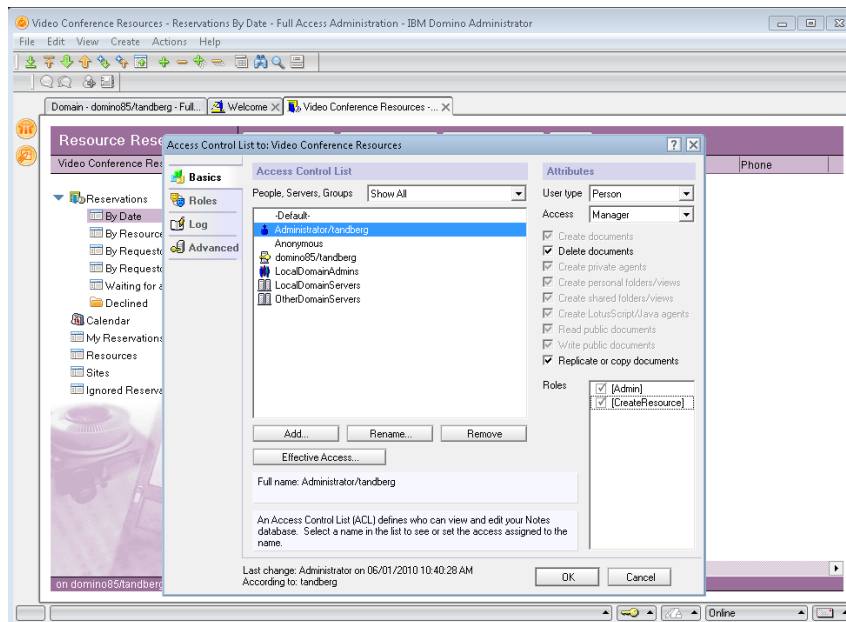


Figure 15: Checking the Admin and Create Resource check boxes

5. Close the database and re-open it. You now see a TMS Admin choice on the left side of the database.
6. Open the Cisco TMS Admin document to configure the integration settings.
7. Enter the Domino service account in the Service Account field.
8. Enter the IP or DNS name of the Cisco TMS Server in the **Host name** field.
9. Enter the username and password of the TMS Service Windows account (including the domain, if applicable).
10. If you have completed the [Enable secure communication](#) section, select Yes in the field HTTPS. If not, select No.
11. An additional option titled Automatic Update is displayed. Because of a known issue with Lotus Notes, the Free/Busy information for booked resources is not handled by the Room and Resources Manager. As a work around for this release, you can automatically refresh the Free/Busy information after each booking event. This is enabled by default, but if you are experiencing severe delays, consider turning off this option. (For an in-depth description of this issue, please contact your local IBM representative. The issue is reported to IBM Quality Engineering as SPR# MMQN6QWC6K.)
12. Click **Save and Close** to save your changes to the document.

Configuring the Domino Rooms for Cisco TMS Systems

Note: Upgrading users do not need to perform this step.

Each system that will be bookable through Lotus Notes must be represented as a Room within Domino. This step must be done by the userID that was added to the Reservation Database with the role of create resource completed in the previous section.

Note: To get a consolidated list of all systems, open a web browser and enter the URL below. If you only have one Application Integration License, you must perform this step from the Domino Server itself. Substitute TMSADDRESS with the IP or DNS name of your Cisco TMS server.

[http://\[TMSAddress\]/tms/external/booking/remotesetup/remotesetupservice.aspx?op-GetSystems](http://[TMSAddress]/tms/external/booking/remotesetup/remotesetupservice.aspx?op-GetSystems)

In the page that opens, click **Invoke**. This opens a page listing all the systems in Cisco TMS along with their name and System IDs. Print or save this list as a reference for later steps in the installation.

1. You must know the system ID of each system in Cisco TMS that you wish to integrate with Lotus. This can be found on the View Settings page for each system in the System Navigator, or see the above note.
2. Using Domino Administrator, open the resource reservation database by going to **File Menu > Application > Open** and select the server on which the database was created and the database as you named it in the **notes.ini** file.
3. At least one Site document must be defined. Sites affect how rooms are grouped in the Address Book displayed in the Notes clients. Create a Site document by selecting Sites from the list and clicking New Site.
4. Fill in the **Site Name** field with the desired name for example: **Washington DC Conference Rooms**, then click **Save and Close**.
5. Create a resource for each Cisco TMS system you want to represent in Lotus Notes. Click **New Resource** and complete the appropriate fields:
 - **Name** – Name to be displayed in Notes for the room (Required)
 - **Site** – Site Document to associate this room to (Required)
 - **Description** – Optional description
 - **TMS-ID** – System ID associated with the device in Cisco TMS that this room represents (Required)
 - **Capacity** – People capacity of the room
 - **Availability** – Time period during which this room will be shown as bookable in Notes.
 - **Owner restrictions** – Make sure this is set to Autoprocessing
 - **List of names** – This must be set to the name of the TMS service user only.
 - **Owner's name** – This must be set to the name of the TMS service user only.
6. Do not modify the remaining fields. Click **Save and Close** to save your changes.

Repeat these steps for each Cisco TMS system you wish to represent in Notes.

Starting the synchronizer

After all the resources have been added to the resource database, the synchronizer process must be started by going to **Actions > Run synchronizer**. This is a one-time step and does not need to be repeated even if additional resources are added at a later time.

Updating the mail template for Notes users

Video booking functionality can be offered to Lotus Notes users in several ways.

- Use of an existing mail template without modification.
- Adding the additional video conference functionality to the existing mail template
- Pushing the provided TMS-modified standard mail template. This file is called **tmsmail7.ntf** for Notes 7.0.x and 8.0.x users, and **tmsmail85.ntf** for Notes 8.5.x users.

The first method allows users to book rooms, but they will not have any of the additional functionality, for example being able to set conference parameters or specific additional sites such as external dial-in or dial-out sites.

The second method may be required if the organization is already using a customized mail template. The last method is the recommended method because it provides the most video options to users in the standard Lotus Notes mail format. The mail template that users use can be updated in several ways, but one method is as follows:

1. Open Domino Administrator and select the server containing the mail files of the user to be updated.
2. Select the **Files** tab and then the **mail** folder.
3. Select the user to be updated.
4. Go to **File > Application > Replace Design...**
5. Select the server on which the Cisco TMS templates were installed and then select TMS Mail (7 for Notes 7.0.x/8.0.x, and 8.5 for Notes 8.5.x) and click **Replace**.

Calendar options in the Cisco TMS mail template

Using the calendar to request a meeting does not change from standard Lotus Resource booking, therefore that process is not covered in this document. Please refer to your Lotus Notes help for information on using the Calendar and Address Book.

The mail template supplied by Cisco TelePresence is based on the standard Lotus Mail template (corresponding to Lotus version), but includes an additional button on the Calendar page. This button gives access to a window in which users can:

- Define external participants for the meeting (both dial-in and dial-out).
- Request a web conference from Cisco TMS.
- Specify conference parameters such as bandwidth and layout.

This functionality is not required to be able to book meetings from Lotus in Cisco TMS, but if you intend to give users the ability to override the conference defaults or use one of the additional features, you must update the user's template.

After it has been updated, the template includes a new button **Video Conference Advanced Options** in the **New Calendar Entry** document.

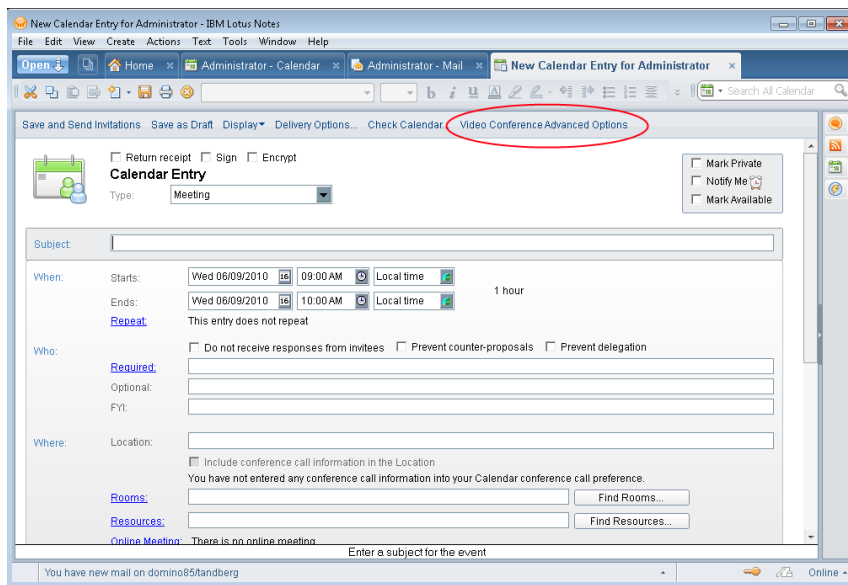


Figure 16: The Video Conference Advanced Options button

When a user clicks this button, a new pop-up window opens (see figure below) in which you can set conference-specific parameters, or add external participants to the meeting. You can define audio or video sites that are not defined as Integrated rooms in your setup to be External Dial-Out sites (audio or video) and they will be called automatically when the meeting starts. In addition, you can reserve ports for people to call into the meeting, both audio and video ports, by defining them to be External Dial-in participants.

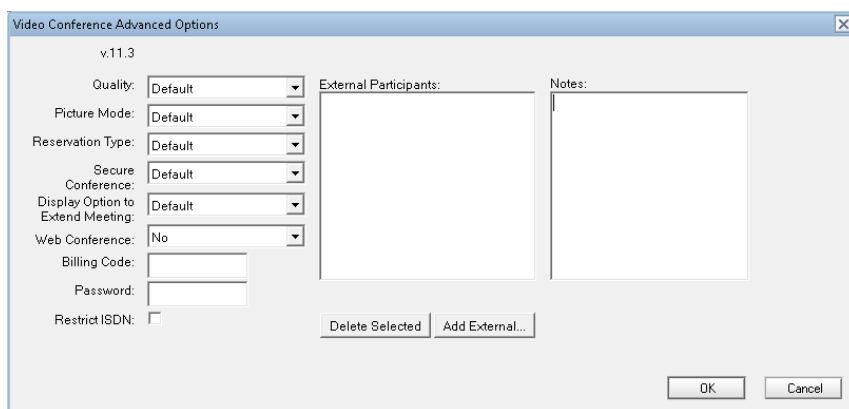


Figure 17: The Video Conference Advanced Options window

Verifying the installation

After completing the installation, it is recommended to test that meeting changes are synchronized both from Lotus to Cisco TMS and from Cisco TMS to Lotus.

IBM Lotus Domino to Cisco TMS

To verify that meetings booked from IBM Lotus Domino are also being saved in Cisco TMS, create a test meeting for a date in the future in your calendar using two rooms in Lotus that are integrated with Cisco TMS.

Check that:

- You receive a meeting request email for each room.
- You receive a meeting confirmation for each room.
- The meeting is shown in Cisco TMS under **Booking > List Conferences**.

If the tests are not successful, troubleshoot the issue using the sections below.

Process overview for meetings created in IBM Lotus Notes

The steps taken when booking a meeting from Lotus are described below. Use this workflow to help you diagnose where a failure is occurring if your test meeting does not complete successfully.

1. A user creates a meeting request in their calendar and clicks send to send the invitations.
2. The Lotus Notes client sends meeting requests to participants, including each room selected for the meeting. These are displayed in the meeting organizer's Inbox.
3. The meeting requests for the rooms show up in the Reservation Database under **Reservations > Waiting for Approval**.
4. The "Waiting for Approval" requests are processed by the Cisco TMS Trigger agent.
5. The Integration components log into the Cisco TMS server and try to create a meeting using the details from the Lotus meeting request.
6. Cisco TMS tries to book the meeting request and will accept or reject the meeting if it is not possible to book.
7. If the meeting is accepted by Cisco TMS, the reservations requests are approved and moved out of the Waiting for Approval view and into the Reservation Database calendar and can be seen in the Date and By Resource views in the Reservation Database. If the meeting is rejected by Cisco TMS, the reservation requests are denied and moved into the Declined view of the Reservation Database.
8. The email messages accepting or declining the meeting are then sent to the meeting requester by Domino from the Reservation Database.

Troubleshooting

If the test booking is not successful and the organizer does not get an email notification of acceptance for each room in the test meeting, you can use the list below to troubleshoot each phase of the process to help diagnose the problem.

Steps 1 and 2

User never sees meeting request email messages after sending a meeting request

Look at the Lotus Notes Client or User Actions. Be sure to refresh the Inbox (F9) to check for new email.

Step 3

Meeting requests do not show up in the Reservation Database Waiting for Approval View

- Make sure that the request is not in other views in the Database.
- Check whether the user selected proper rooms.
- Check the Domino mail system to verify that email is being delivered.

Step 4

Requests show up in Waiting for Approval but stay there indefinitely

- Check the Domino Server Log of the Integration Server for signs that the Cisco TMS Trigger Agent has run.
- If you see logging activity from the Cisco TMS Trigger Agent, look for possible failure reasons in the Domino Server log.
- If you do not see logging activity from the Cisco TMS Trigger Agent, verify the installation steps around enabling the Cisco TMS Trigger Agent.

Step 5

Requests are rejected with 401 error messages

- Verify that Cisco TMS Service Account login information is saved in the Cisco TMS Admin Document of the Reservation Database.
- Verify login information of the Cisco TMS Service Account by manually trying to log into Cisco TMS's web page using the same account information.
- Verify the installation steps to change the security settings of the Cisco TMS Booking page.

Step 6

Cisco TMS rejects the meeting request.

- Verify the rejection by trying to book the same meeting in Cisco TMS directly. If the meeting is rejected, Lotus can be excluded as the problem and, either the conference settings are incompatible with the systems, or the problem is permissions related.
- For conference settings, make sure that all systems are available, have compatible dialing information, and can support the conference type being requested.
- For permissions-related issues, make sure that each system has their Scheduling permissions enabled (under Navigator > Settings).

The meeting is possible when it is booked from Cisco TMS directly, but gets rejected when booked through IBM Lotus Domino.

- Look at the error message returned from Cisco TMS in the rejection.
- A possible error is that the Cisco TMS Service Account does not have permission to book the system.

Steps 7 and 8

The meeting is accepted in Lotus, but does not show up in Cisco TMS.

Make sure that you are not filtering out the meeting when using the List Conferences page. Check the date range and user filters.

Cisco TMS to IBM Lotus Domino

To verify that meetings from Cisco TMS are also being saved in Lotus, create a test meeting in Cisco TMS for a date in the future using two systems that are integrated with Lotus. For a successful replication check that after 5 minutes, the meeting shows up in the Reservation Database under **Reservations > By Date** or **Reservations > By Resource**.

Process overview for meetings created in Cisco TMS

The steps taken when booking a meeting from Cisco TMS are described below. Use this workflow to help diagnose where a failure is occurring if your test meeting does not complete successfully.

1. A booking change of some type is made in Cisco TMS.
2. Cisco TMS keeps a log of all booking activity.
3. The Scheduled Synchronizer Agent is running on the Domino Server at 5 minute intervals and keeps track of the last booking change relayed by Cisco TMS.
4. At a timed mark, the Scheduled Synchronizer Agent runs and requests changes made since the last saved change from Cisco TMS.
5. Cisco TMS provides all the booking changes and Cisco TMSXN processes the changes which are relevant for systems integrated with Lotus.
6. The integration package directly modifies the reservations in the Reservation Database.
7. If the test meeting does not carry through to the Domino Reservation Database, use the symptoms and tips below to troubleshoot the issue.

Troubleshooting

Meetings do not show up in the Reservation Database Calendar

- Make sure that test meeting participants are integrated with Lotus – check the ID of the Resource Document for the site and verify that it matches the system ID for the system in Cisco TMS (Navigator > Settings).
- Check the Domino Server log for signs that the Scheduled Synchronizer Agent is running and it is running at 5 minute intervals.

No signs in the Domino Server Log that the Scheduled Synchronizer Agent is running

Verify that the Scheduled Synchronizer Agent is enabled according to Cisco TMSXN instructions.

Frequently asked questions about Cisco TMSXN booking

How is the booking process and what sort of confirmation does the user receive?

1. The Notes user adds the video resources in to a meeting as an ordinary meeting room. Free/busy information is displayed in the calendar as usual.
2. The Notes user sends the meeting request.
3. There is now a "two phase" commit:
 - a. The Domino server sends a tentative accept to the user with the message that there are owner restrictions on the "video" resource. The "owner" of the meeting is the TMS Domino service user.
 - b. The TMS agent will then pick up the booking from the Domino resource database and do a booking of the related video system in the Cisco TMS server, and "accept" the meeting request as the resource owner.
4. The Notes user then gets an "accept" message. If the user has booked two or more systems, the Notes user will receive an email notification from Cisco TMS with the routing and connection information. This email message must be distributed to other video participants by the organizer.

Why do I get multiple meeting requests when I book a meeting?

Lotus sends a separate meeting request for each room selected for the meeting. You will receive an email for each request, acceptance, or denial for each room selected in the meeting request.

Do I need to keep the meeting request email messages?

No, the request, accept, and reject emails are not required in order for the meeting to run and do not include any additional information beyond that in your calendar entry. Cisco TMS will send a separate email with call routing information for your meeting.

My meeting was rejected by the rooms, but is still in my calendar. Why?

Cisco TMSXN does not touch your personal calendar. If a meeting you book is denied, your calendar document still exists. You should update your calendar appropriately if a meeting is rejected.

How long do I have to wait before I receive accept/reject emails for my reservation?

The delay before receiving the response to your requests is dependent on your specific Lotus installation because all requests in Lotus are handled via email and are handled asynchronously. As such, there are delays and timers built into Lotus before the requests are received by the server and returned to you. Typically, on a default Lotus installation, you receive replies within 1-3 minutes.

I booked my meeting in IBM Lotus Notes, why isn't it showing up in Cisco TMS under My Meetings?

If you received the meeting accept email messages, the meeting has been booked in Cisco TMS. The meeting is booked in Cisco TMS under the integration user, not under your username. By default, normal users cannot see another user's bookings in Cisco TMS. However, if you are an administrator or a user with appropriate permissions, you will see your meeting in Cisco TMS booked by the Integration user.

Can I book a meeting in Cisco TMS and have it show up in Lotus Notes?

Yes, but Lotus Notes users are encouraged to use the Lotus Notes Calendar to book meetings when using Cisco TMSXN. Meetings booked in Cisco TMS will automatically propagate to Lotus Notes after the Scheduled Synchronizer Agent has run. However, the meeting will only be in the Reservation Database Calendar, not in your own Calendar. You have to accept the booking confirmation email to add the event to your Calendar, or create a Calendar entry manually.

Can I edit my meeting that was booked using Lotus Notes in Cisco TMS?

Yes, if you have permission to modify another user's bookings, you can edit the meeting booked in Cisco TMS and the Resource Database Calendars in Lotus Notes after the Scheduled Synchronizer Agent has run. However, the meeting will only be in the Resource Database Calendars, not your own Calendar. You must use the iCalendar attachment in your booking confirmation email to add the event to your Calendar, or create an entry manually.

Can I book a recurrent meeting from my Lotus Notes client using Cisco TMS integrated rooms?

Yes, booking recurrent meetings is supported with Cisco TMSXN. All recurring patterns in Lotus Notes are supported.

Can I use the Cisco TMS Phone books when booking from my Lotus Notes Calendar?

No, Cisco TMS Phone books are not available from Cisco TMSXN. Systems not listed in your Lotus Notes Address Book can be added to the meeting as External Participants.

Alternatively, if there are numbers or sites that you use often that you would like to have available for booking in Lotus, We recommend defining a room in Cisco TMS to represent the contact and making a resource representation of that room in Cisco TMSXN. This allows a non-managed device to be booked in both Cisco TMS and Lotus Notes.

What are the differences between the standard IBM Lotus Notes email template and the Cisco TMS template?

The main difference is that the TMS template has an extra "tab" that provides advanced video booking options like manual/automatic call launch, dial-ins, dial-out, bandwidth, and so on. The relations between the Domino resources and the Cisco TMS resources are maintained by the Resource database template.

The template is optional, and one may also choose to deploy it selectively for a subset of users.

What are the disadvantages of not using the supplied email templates?

While still able to book video resources, only the Cisco TMS defaults for bookings will be used, and no external participants can be added by the Notes user.

Is resource booking via Domino Web Access (iNotes) supported?

Resources set up with Cisco TMSXN can be booked via the iNotes web interface, but the extra Video Conference Settings button will not be available. Therefore the extra settings on that page are also unavailable and only conference defaults will be used.

Why do I see strange date/time values in the recurrence settings for the recurrent meeting acceptance email message?

This means that you do not have the Cisco TMS Mail template applied to your Lotus user settings. The described behavior appears only with the default IBM template. The actual meeting date/time are displayed correctly in the user Calendar even with the default template. This is as a known issue when the Cisco TMS Mail template is not used.

What is the TMS-Service account?

It is recommended that the administrator set up this account to be used as the owner and delegate for the video resource. Cisco TMSXN then authenticates towards Domino as the TMS-Service account.

Does installing Cisco TMSXN affect other third-party software already integrated with the Domino server, such as WebEx?

No, Cisco TMSXN should not affect or restrict other applications.

Can Cisco TMSXN integrate with multiple Domino resource databases?

No, Cisco TMSXN will only work with one resource database.

Technical description of Cisco TMSXN

Overview

Cisco TelePresence Management Suite Extension for IBM Lotus Notes allows Lotus Notes Client users connected to a Domino Server to book, update and delete video conferences directly from within their Lotus Notes client. The integration is based upon representing each system in Cisco TMS as a room in a resource reservation database in Domino. Video conferences are scheduled by inviting the rooms to a meeting in the Calendar, or by making reservations directly in the Resource Reservation Database. Notes functionality such as free-time information and Address Book entries from the Resource Reservation Database are kept intact, but reservations/cancellations in this database will not be committed until they have been processed by the Cisco TMS server and committed in Cisco TMS. The mail template of the Lotus Notes users can be replaced or updated to allow video conference-specific properties to be specified when scheduling a meeting with video rooms. The Lotus Notes client will never contact the Cisco TMS server directly.

Synchronizing changes from Cisco TMS

The Scheduled Synchronizer Agent is installed on the Domino server and propagates all the bookings/changes/cancellations performed on Cisco TMS into the Domino Resource Reservation Database. Cisco TMSXN tracks a transaction log kept on the Cisco TMS server to make sure that the database is up to date. The Scheduled Synchronizer Agent polls the Cisco TMS server at a specified time interval to retrieve changes, and updates and processes changes in the Resource Reservation Database, as required. Activity for the Scheduled Synchronizer Agent can be viewed in the Domino Server log.

Synchronizing changes to Cisco TMS

Bookings and updates from the Lotus Notes clients are delivered by the Domino Mail system to the Resource Reservation Database and queued. After a request reaches the database, the AgentManager initiates the Java agent TMSTrigger installed on the Domino Server to process the request. This agent submits the booking or meeting update to Cisco TMS, which in turn tries to commit the change to the Cisco TMS database. After successfully booking in Cisco TMS, this process moves the Lotus Notes client's request from the pending queue to the Reservations view in the Resource Reservation Database on the Domino server, and sends a meeting acceptance email to the Notes user who submitted the reservation, together with the information about the meeting (call route, web conference details etc.). If the meeting could not be booked in Cisco TMS, the agent will send a meeting reject email to the Lotus Notes user who submitted the reservation—with the reason why the meeting could not be booked (such as system not available, no MCU to host the meeting, no gateway available). Once booked, the meeting appears in Cisco TMS with the owner of the meeting being the Cisco TMS Service Account created during installation. All meetings booked through Lotus are owned by this user account in Cisco TMS.

Cancellations from the Lotus Notes client are not queued, but are performed “on the fly”. The Lotus Notes client tries to delete the reservation in the Resource Reservation Database, and this event will be handled by the compiled **TMSEventCatcher.dll** on the Domino Server that will start a java agent that will contact the Cisco TMS server and cancel the meeting. If the meeting is active, the video conference is ended. If the Cisco TMS server cannot be contacted, the reservation will not be deleted.

Only Resource Calendars are modified by Cisco TMSXN. User Calendars are not modified, and users are responsible for adding/removing changes if they are not the user who is initiating the meeting change.

Communication between Cisco TMS and IBM Lotus Domino

All communication with the Cisco TMS server is done using web services (HTTP), implemented in Java on the Domino server. The network link between the Cisco TMS server and the Domino server should not cross a public network, because HTTPS is not currently supported in the java communication library. The Lotus Notes clients do not communicate directly with Cisco TMS; all communication is done through the integration installed on the Domino server.

Troubleshooting Cisco TMSXN

This chapter guides you through typical challenges faced during installation, and shows you how to identify and solve them.

Understanding log files

By default Lotus Domino Server logs are stored on server where Lotus Domino is installed.

For example, if the Lotus Domino Server is installed in c:\IBM\Domino\, then the log files are located at c:\IBM\Domino\data\IBM_TECHNICAL_SUPPORT\.

If the Lotus Domino Server is running in console mode (that is, not as a Windows service), you can also view log messages directly in the console.

Changing the log level

You can increase or decrease the number of log messages produced by the Cisco TMSXN component. Log in to Lotus Notes as an Administrator and open the Video Conference Resources database.

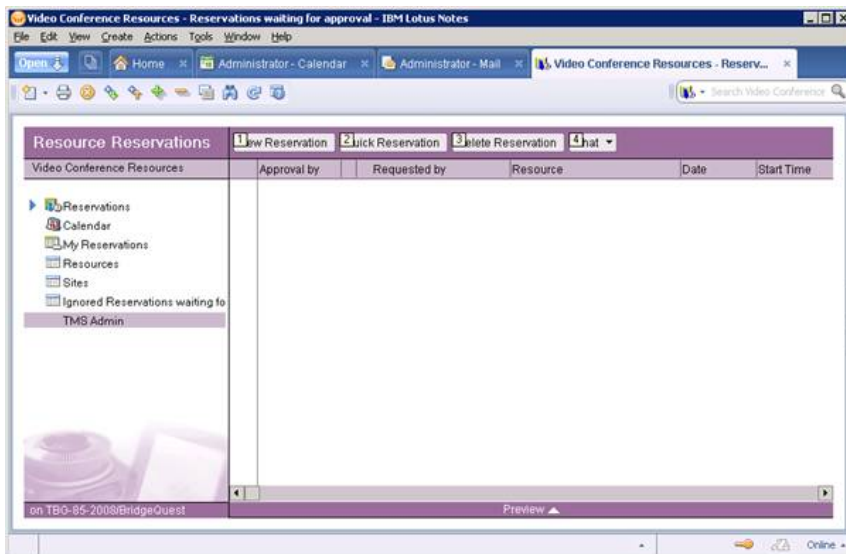


Figure 18: The Video Conference Resources database.

Open the TMS Admin view on the left-hand menu. If there is no TMS Admin option available, then go to the [TMS Admin view is not available](#) section.

View the available settings on TMS Admin and select the Debug mode option (see figure below).

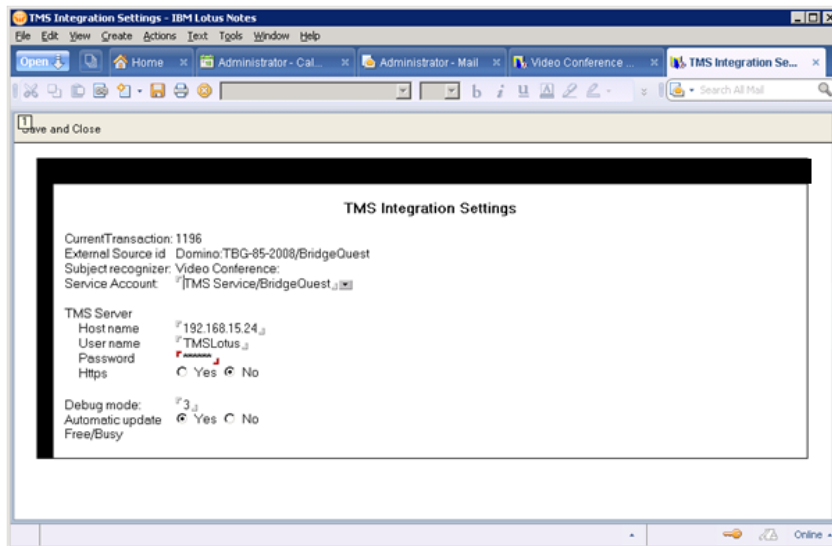


Figure 19: Changing the log level

Currently you can set values from 0 (minimal debug) to 3 (all available debug). If you experience problems and want to troubleshoot Cisco TMSXN, set this value to 3, click the **Save and Close** button and restart the Lotus Domino Server.

Note: Increasing the log level may affect the performance of the Domino server.

TMS Admin view is not available

After a clean Cisco TMSXN installation or upgrade, the TMS Admin view might not be available under the administrative role. This is due to a missing installation step. Please verify the following steps:

1. Open Domino Administrator using a server administration ID.
1. Open the Resource Reservation Database Video Conference Resources.
1. Open Access Control for the database, and select File > Application > Access Control.
1. Verify that the Admin and Create Resource check boxes are selected for the current (Administrative) user ID or for the other user you are using for the Cisco TMSXN integration.
1. If the Admin role is not available, click on the Roles tab and manually add a role called Admin (figure below). Then return to step 4.

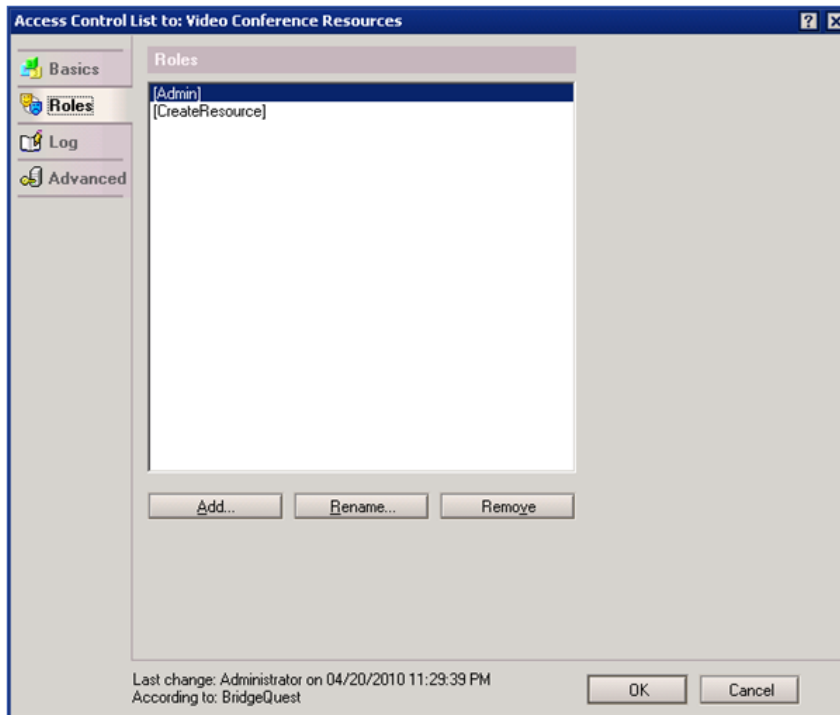


Figure 20: Adding an Admin role

It is impossible to book resources after a Cisco TMSXN upgrade

Sometimes after upgrading from a previous Cisco TMSXN version, you may experience difficulties booking Cisco TMS resources from Lotus Clients. A typical case is:

1. You create a meeting and book a Cisco TMS resource (room).
1. You do not get an acceptance/decline email message and your meeting is not visible in Cisco TMS after the expected time has passed (maximum 15 minutes in a default configuration).

There are two potential places to check:

- First, check that both Lotus Agents TMS Trigger and Scheduled Synchronizer are enabled and set to scheduled execution on your Domino Server (default is 5 every minute). Wait (maximum 15 minutes in a default configuration) and verify that bookings are processed.
- If the booking is still not processed open Video Conference Resources database in Notes as Administrative user, open Resources view, select all resources and execute action Run Synchronizer from the Actions menu.

Server connection problems

If you experience Domino connection problems saying that the TCP/IP host not found, this indicates a general Domino set up problem that is not related to the Cisco TMSXN component. However, testing indicates that the following steps can solve this issue.

1. Open Domino Administrator and go to the Configuration > Server-Connections view.

1. Check that the connection to your Domino Server is presented there, and if not, create it by clicking the Add connection button.
1. Open the server connection (whether previously existing or created at step 2) and verify that the Use the port(s) parameter is set to TCP/IP.

Expired SSL certificates

If you have enabled HTTPS communication as described in the [Enable secure communication](#) section of this document, and the SSL certificate has expired, users will receive decline notices saying:

“Cannot establish SSL connection to TMS server. Underlying reason: Certificate expired. Please contact your system administrator.”

To install a new SSL certificate to IIS and Domino, follow the steps below. For information on how to create SSL certificates, see the [Enable secure communication](#) section.

1. Open IIS Manager.
2. Right click on the Cisco TMS site and select Properties.
3. Select Directory Security, and select the Server certificate in the Secure communications section.
4. In the pop-up wizard, click Next, and Assign an existing certificate.
5. Select the appropriate certificate from the Available Certificates list, click Next to see information about the certificate, and click Next again to complete the installation.
6. Click Windows Start > Run... and type certmgr.msc to run Certificates Manager.
7. Expand Trusted Root Certification Authorities, right click Certificates and choose All Tasks > Import.
8. When the wizard displays, click Next, and then point to the new certificate's .cer file.
9. Click Next and verify that the certificate will be stored in Trusted Root Certification Authorities, and click Next and Finish to complete the import.
10. Copy the file to the Domino server, for example c:\certificates\tmscertificate.cer.
11. Log in to the Domino server.
12. Open a command prompt on the Domino server.
13. Change directory to <Domino directory>\jvm\lib\security.
14. Import the certificate by using the following command

```
..\bin\keytool.exe -import -trustcacerts -keystore cacerts -alias <myname> -file <location of certificate file>\tmscertificate.cer.
```

Give the certificate a proper alias (for example TMS_server_certificate). Default java keystore password is changeit.
15. Restart the Domino server.

Switch from HTTPS to HTTP

1. Open IIS Manager, right-click on the site containing the Cisco TMS applications and select Properties.
2. On the Web Site tab, set the field IP address to (All Unassigned).
3. Select the Directory Security tab, and click Edit in the Secure communications section.
4. Select the Require secure channel (SSL) checkbox and in the Client certificates section select Ignore client certificates.
5. Click **OK** twice and restart IIS.
6. Open TMS Admin in Video Conference Resources Reservation database and set the HTTPS radio button to No.
7. Click Save and Close.

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Cisco TelePresence Management Suite Extension for IBM Lotus Notes

(previously known as TANDBERG Management Suite Lotus Notes Integration)

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