

User manual

Web Services

Exchange Calendar Connector

Introduction

This document provides installation and deployment information for administrators planning to deploy the **ews-calendar** compatible with Innes digital signage.

The **ews-calendar** is the bridge element allowing the Innes devices to communicate with:

- **Microsoft Exchange Server 2007**
- **Microsoft Exchange Server 2010**
- **Microsoft Exchange Server 2013**
- **Microsoft Exchange Server 2016**
- **Microsoft Exchange Server 2019**
- **Office 365¹**

¹*Basic authentication only*

The next steps must be followed to guarantee a correct deployment.

- Add and configure Microsoft Exchange resource accounts
- Install and configure **ews-calendar**
- Configure the view

System Requirements

The requirements must be met before the installation.

- Fully http or https access to Microsoft Exchange Server 2007, 2010, 2016, Office 365. Make sure that the network configuration doesn't blocks the communication between Innes PlugnCast Server and Microsoft Exchange Server
- Exchange Web Service must be enabled on Microsoft Exchange Server
- Microsoft Exchange Server time and time zone must be set properly

Compatibilities

- **Innes PlugnCast Server** V2.50.32 (or above)
- **Innes Briva Calendar** V2.0.0 (or above)

Microsoft Exchange Accounts Configuration

This section describes how to configure your Microsoft Exchange Accounts to be accessible by **ews-calendar**. This section applies just to the most common configurations, given that different resource configurations can be done by Microsoft Exchange

The following steps must be done for each room.

1. Create a room account in Microsoft Exchange Server ⁽¹⁾
2. Create a room mailbox for the room account ⁽²⁾
3. Configure the account according to the type ([3.1 Configure Resource Account](#) or [3.2 Configure User Account](#)).

The configuration of the room account depends on the type of the exchange account. Generally, in Microsoft Exchange 2007 or 2010 the type of the room accounts is **resource**. On the step 3 just one type of configuration should be applied ([3.1 Configure Resource Account](#) or [3.2 Configure User Account](#)).

3.1 Configure Resource Account

This is the common type of architecture in Microsoft Exchange 2007 or 2010 for room accounts.

The only way to access resource mailboxes is to use a delegate access ⁽³⁾.

Create a normal user account that will be used as delegate. Be sure that the user account mailbox is created.

The next steps must be done by using the **Exchange Management Shell**.

3.1.1 Set the exchange user account as a delegate on the room account

Exchange 2007:

```
>Set-MailboxCalendarSettings "<roomname>" -ResourceDelegates:"<username>"
```

Exchange 2010:

```
>Set-CalendarProcessing "<roomname>" -ResourceDelegates "<userPrimarySMTPAddress>"
```

3.1.2 Set room mailbox access rights for the delegate account.

Exchange 2007:

```
>Add-MailboxPermission "<roomname>" -AccessRights fullaccess -User:"<username>"
```

Exchange 2010:

¹ For detailed information about Managing Resource Mailboxes: <http://technet.microsoft.com/en-us/library/bb124374%28EXCHG.80%29.aspx>

² For detailed information: <http://technet.microsoft.com/en-us/library/bb124952%28EXCHG.80%29.aspx>

³ For detailed information about delegate access: <http://msdn.microsoft.com/en-us/library/bb204081%28v=EXCHG.140%29.aspx>

```
>Add-MailboxPermission "<roomname>" -AccessRights FullAccess -User:"<username>"
```

3.1.3 Set room mailbox extended rights for the delegate account. Delegate account must grant the "Receive-As" permission for the room mailbox.

Exchange 2007:

```
>Add-ADPermission -Identity:"<roomname>" -User:"<username>" -ExtendedRights:Receive-As
```

Exchange 2010:

```
>Add-ADPermission -Identity "<roomname>" -User "<username>" -ExtendedRights "receive as"
```

The **<username>** is the full name of the delegate account.

The **<roomname>** is the full name of the room account.

Example

This example shows how to add a delegate account to the resource, where the delegate account full name is **Delegate** and the resource account full name is **Room A**.

Exchange 2007:

```
>Set-MailboxCalendarSettings "Room A" -ResourceDelegates:"Delegate"
```

```
>Add-MailboxPermission "Room A" -AccessRights fullaccess -User:"Delegate"
```

```
>Add-ADPermission -Identity:"Room A" -User:"Delegate" -ExtendedRights:Receive-As
```

Exchange 2010:

```
>Set-CalendarProcessing "Room A" -ResourceDelegates "delegate@exchange2010.innes.fr"
```

```
>Add-MailboxPermission "Room A" -AccessRights FullAccess -User: "Delegate"
```

```
>Add-ADPermission -Identity "Room A" -User "Delegate" -ExtendedRights "receive as"
```

Resource Scheduling Options

The next steps are optional but highly recommendable.

3.1.4 Automatically accept meeting requests and process cancellations

```
>Set-MailboxCalendarSettings "<roomname>" -AutomateProcessing:Autoaccept
```

3.1.5 Automatically decline conflicting meeting requests

```
>Set-MailboxCalendarSettings "<roomname>" -AllowConflicts:0
```

Example

```
>Set-MailboxCalendarSettings "Room A" -AutomateProcessing:Autoaccept
```

```
>Set-MailboxCalendarSettings "Room A" -AllowConflicts:0
```

- Default MS Exchange room configuration is optimized to reduce ICS size (default not supporting meeting description, meeting attachments...). In order to have expected management of attachments and private attribute management, please ensure first with PowerShell that the Exchange or o365 configuration is managing properly this event attributes. On Exchange Server station Open Exchange Management shell and type this command to get Room 1 configuration"
- `Get-MailboxCalendarSettings "Room 1" | fl` has to returns
 - RemovePrivateProperty = FALSE
 - DeleteAttachments = FALSE
 - AllowRecurringMeetings = TRUE
- If not, please contact your administrator

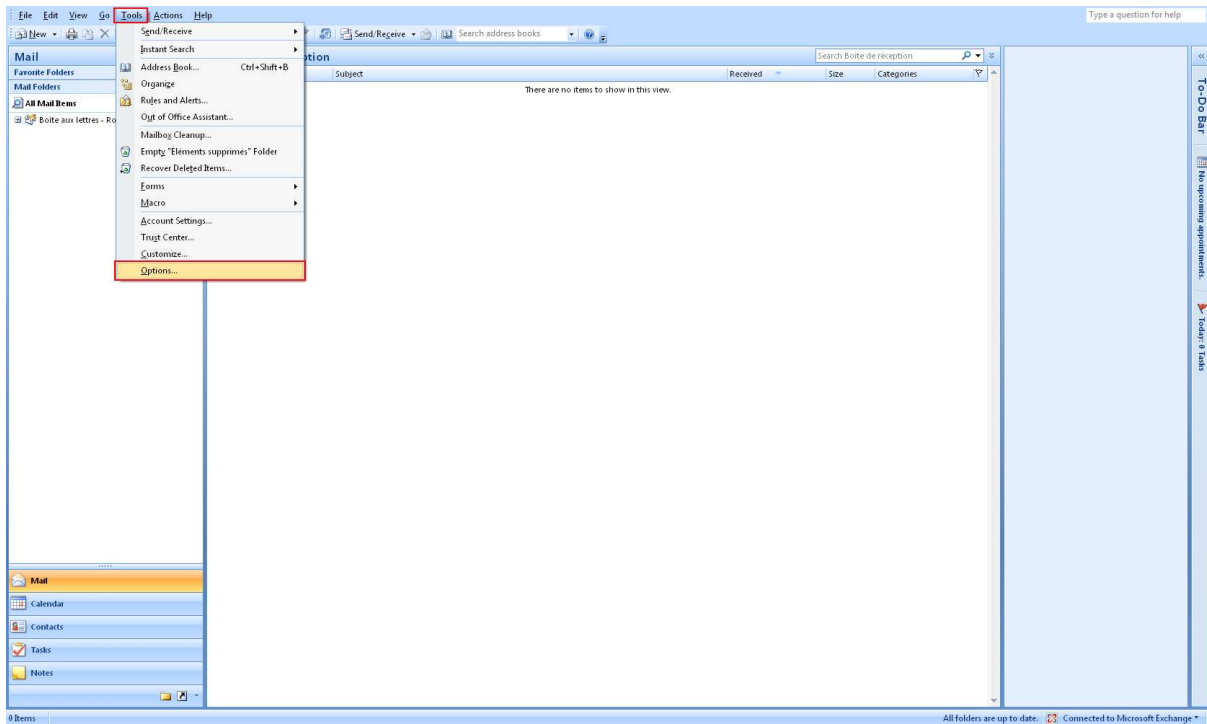
3.2 Configure User Account

This is not the recommended architecture in Microsoft Exchange 2007 or 2010 for room accounts. Otherwise if your Microsoft Exchange is using this architecture, you can follow the configuration steps describe here.

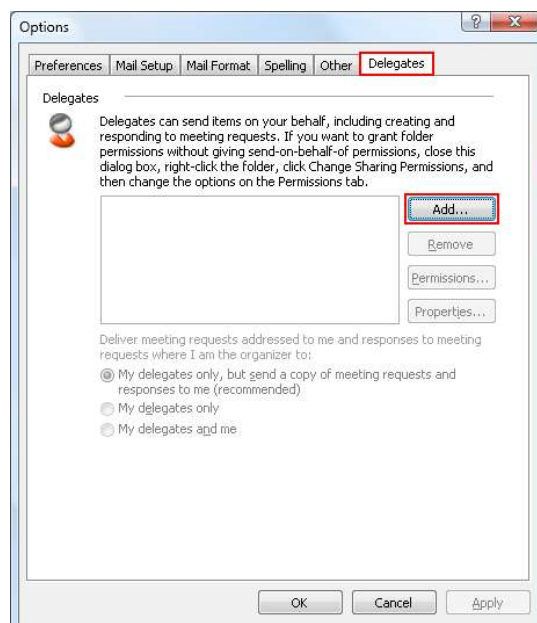
The next steps must be done by using **Microsoft Outlook**.

3.2.1 Open Microsoft Outlook and log-in as the room user account.

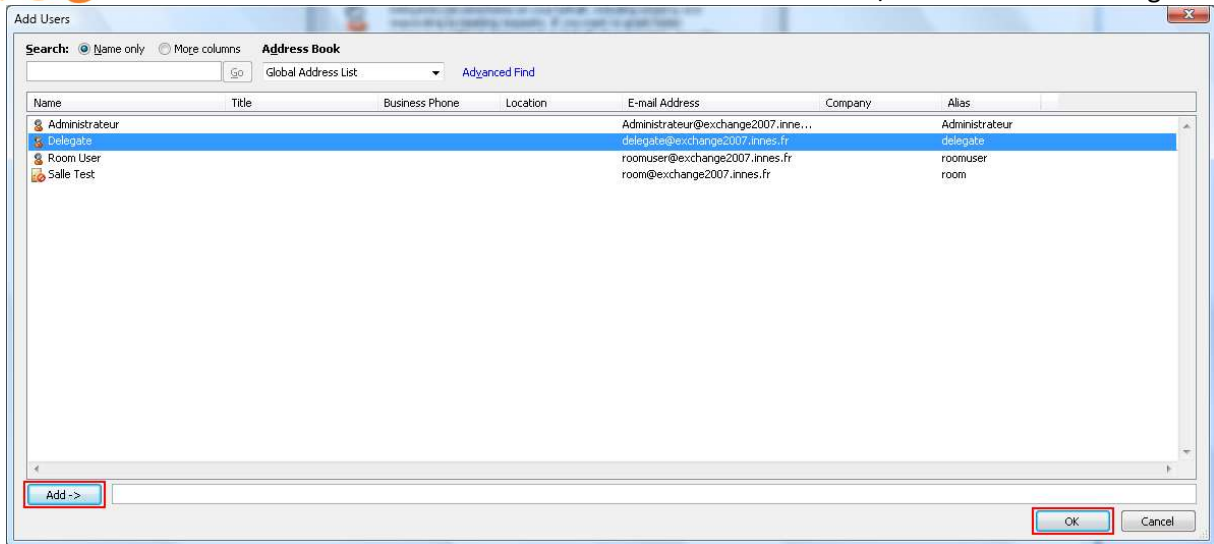
3.2.2 Go to the menu “Tools” and click “Options...”.



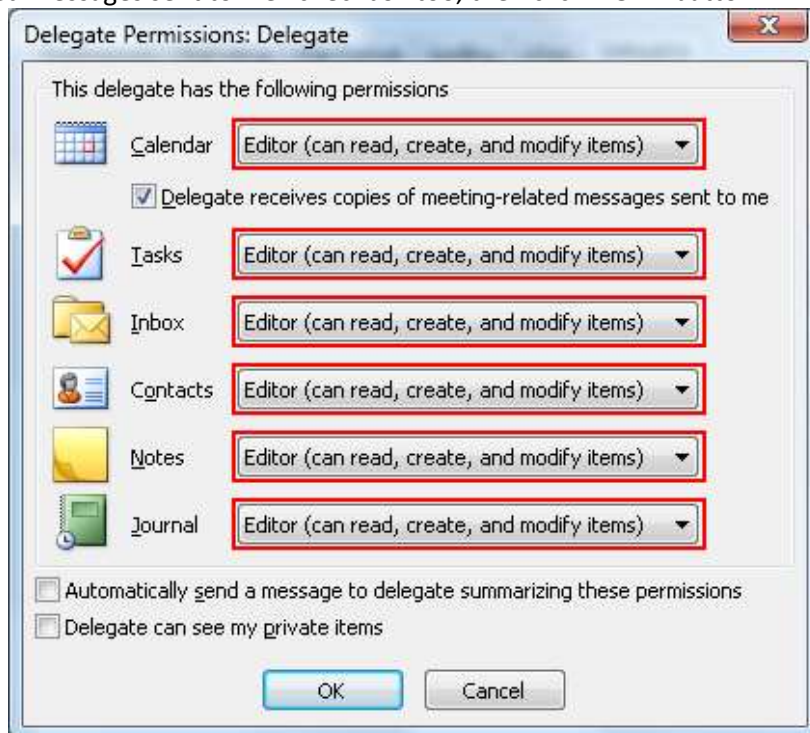
3.2.3 Go to the tab “Delegates” and click “Add...” button.



3.2.4 Select the delegate user account, click “Add->” button, then click “Ok” button.



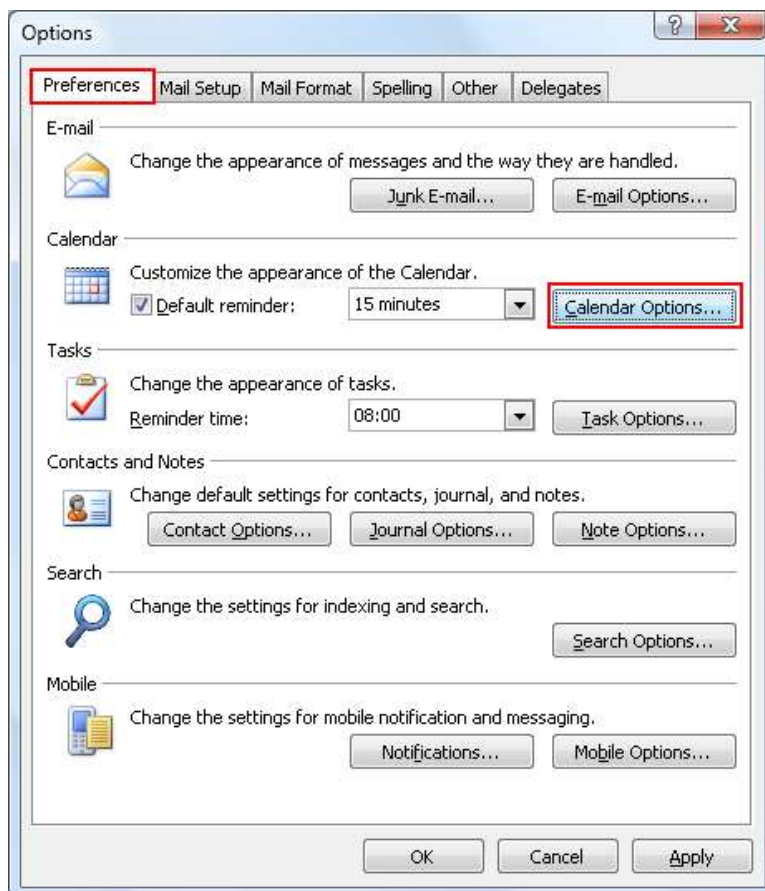
3.2.5 For each option select the permission “Editor (Can read, create or modify items)”. Select “Delegate receives copies of meeting-related messages sent to me” checkbox too, then click « Ok » button.



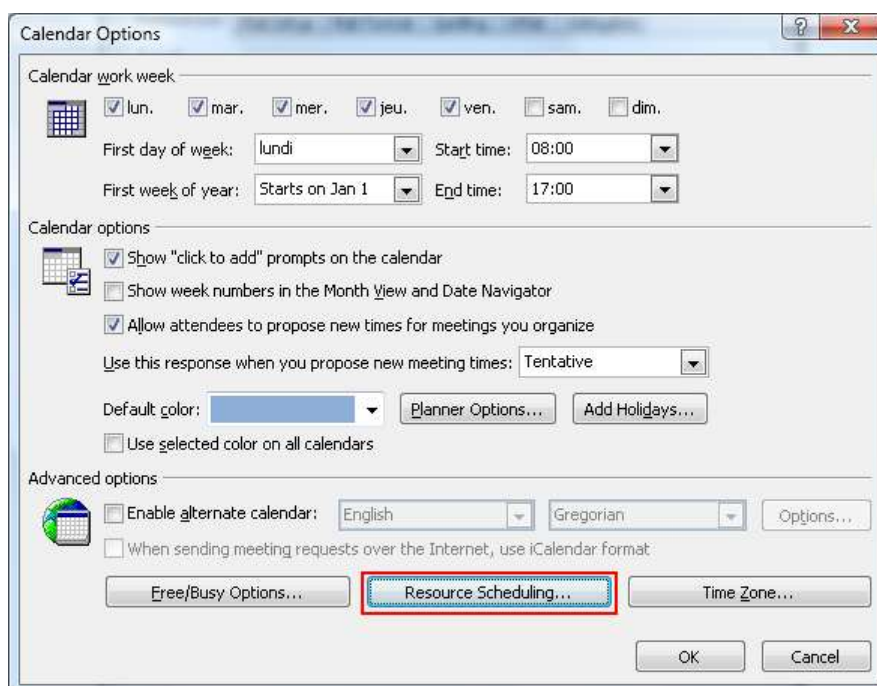
Resource Scheduling Options

The next steps are optional but highly recommendable.

3.2.6 Go to the tab “Preferences” and click “Calendar Options...” button.

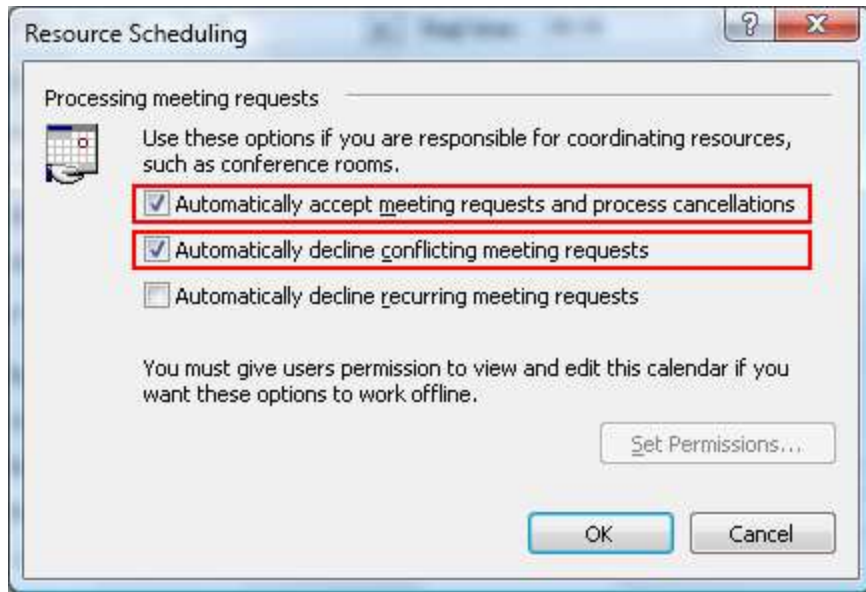


3.2.7 Click on “Resource Scheduling...” button.



3.2.8 Select the checkbox “Automatically accept meeting requests and process cancellations”.

3.2.9 Select the checkbox “Automatically decline conflicting meeting requests”.



Applet Configuration: ews-calendar

1. Installation

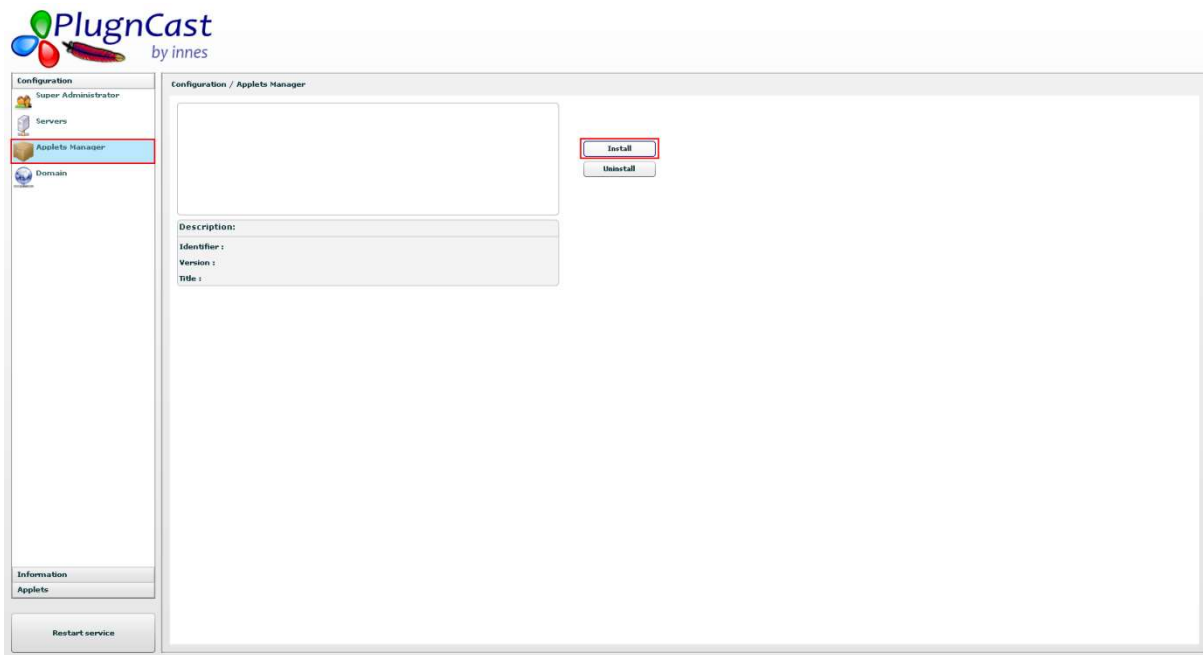
1.1. Go to the Innes Plugncast Server Web Interface with your internet browser.

<http://<host>/configuration>

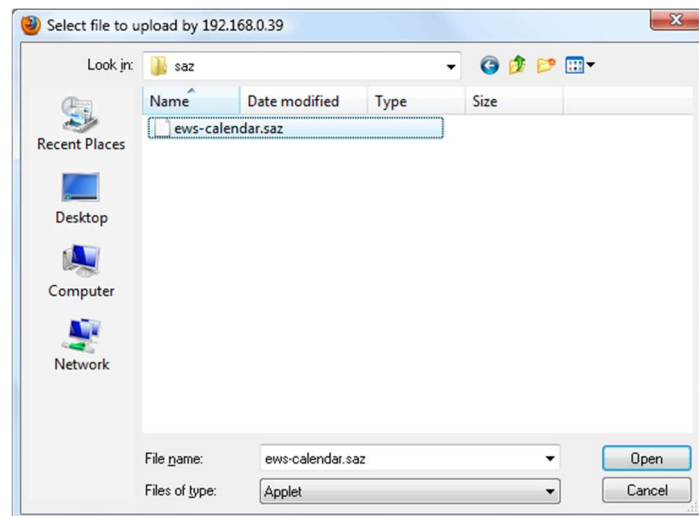
The **<host>** is the IP address or DNS of your Innes PlugnCast Server.

1.2. Log-in as “Super Administrator”

1.3. Go to “Applets Manager” and click “Install” button.



1.4. Select your *ews-calendar.saz* file and follow the installation steps.



2. Configuration

The configuration file *configuration.xml* for **ews-calendar** is located here:

<Innes PlugnCast Data Folder>\Server\.accounts**<domain>**\.applets\.ews-calendar\configuration.xml

The **<Innes PlugnCast Data Folder>** is the data folder of Innes PlugnCast.

The **<domain>** is your currently domain.

Examples

In these examples **<domain>** value is **my_company.com**

Vista Example

C:\Users\Public\Documents\Innes PlugnCast\Server\.accounts\my_company.com\.applets\.ews-calendar\configuration.xml

XP Example

C:\Documents and Settings\All Users\Documents\Innes PlugnCast\Server\.accounts\my_company.com\.applets\.ews-calendar\configuration.xml

The configuration file is auto-explained and contains different configuration examples.

After editing the configuration file make sure that it respects the XML specification.

The configuration file must be encoded in UTF-8. Be sure that you editing software don't changes the characters encoding.

Be careful with XML escaping ⁽⁴⁾. Observe the following entities:

- < represents "<"
- > represents ">"
- & represents "&"
- ' represents "'"
- " represents '"'

The configuration of ews-calendar has two parts: **2.1 Server Configuration** and **2.2 Calendar Configuration**.

⁴ For detailed information <http://www.w3.org/TR/xml-entity-names/> or http://en.wikipedia.org/wiki/List_of_XML_and_HTML_character_entity_references

2.1. Server Configuration

It is possible to configure multiple servers in the configuration file. If multiple servers are configured, be sure that the id attribute of each server is unique.

Within the tag `<scs:servers>`, take a look to the *Example 1* in the configuration file. This example is disabled, to enable it, remove the xml commentary tags at the beginning and the end of the block.

Disabled:

```
<!-- Example 1: -->
```

```
<!--<scs:server>
```

```
...
```

```
</scs:server-->
```

Enabled:

```
<!-- Example 1: -->
```

```
<scs:server>
```

```
...
```

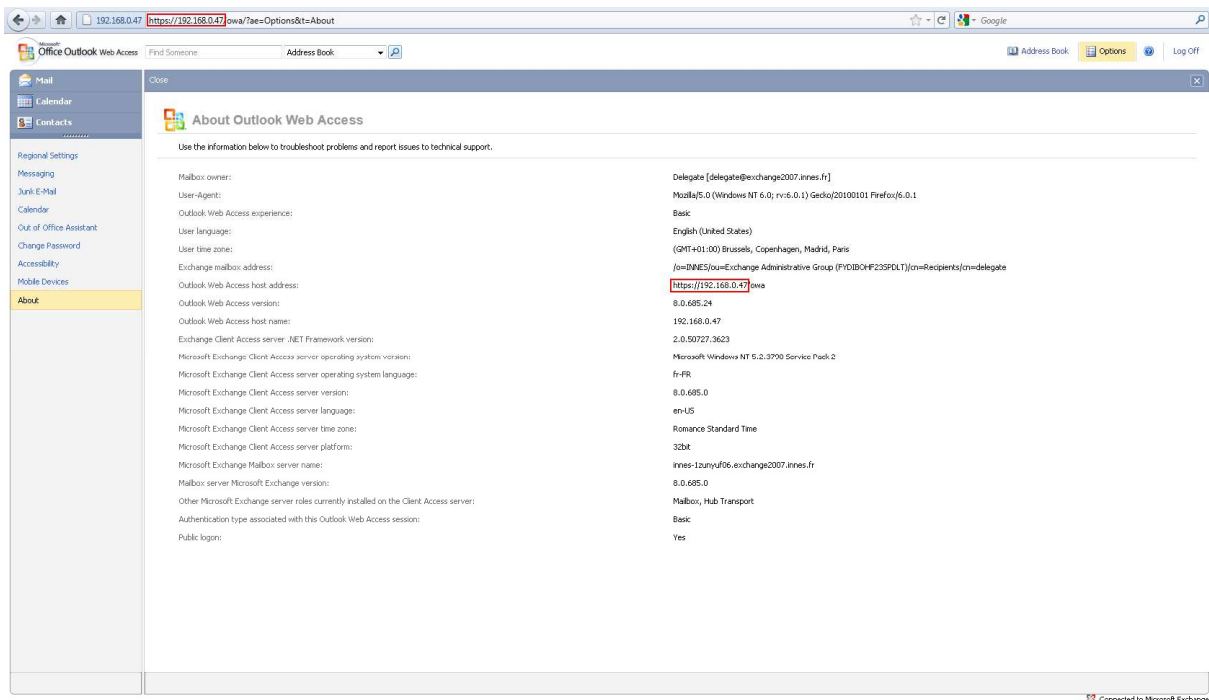
```
</scs:server>
```

2.1.1 Server baseuri

The baseuri is formed like this: `<protocol>://<host>`.

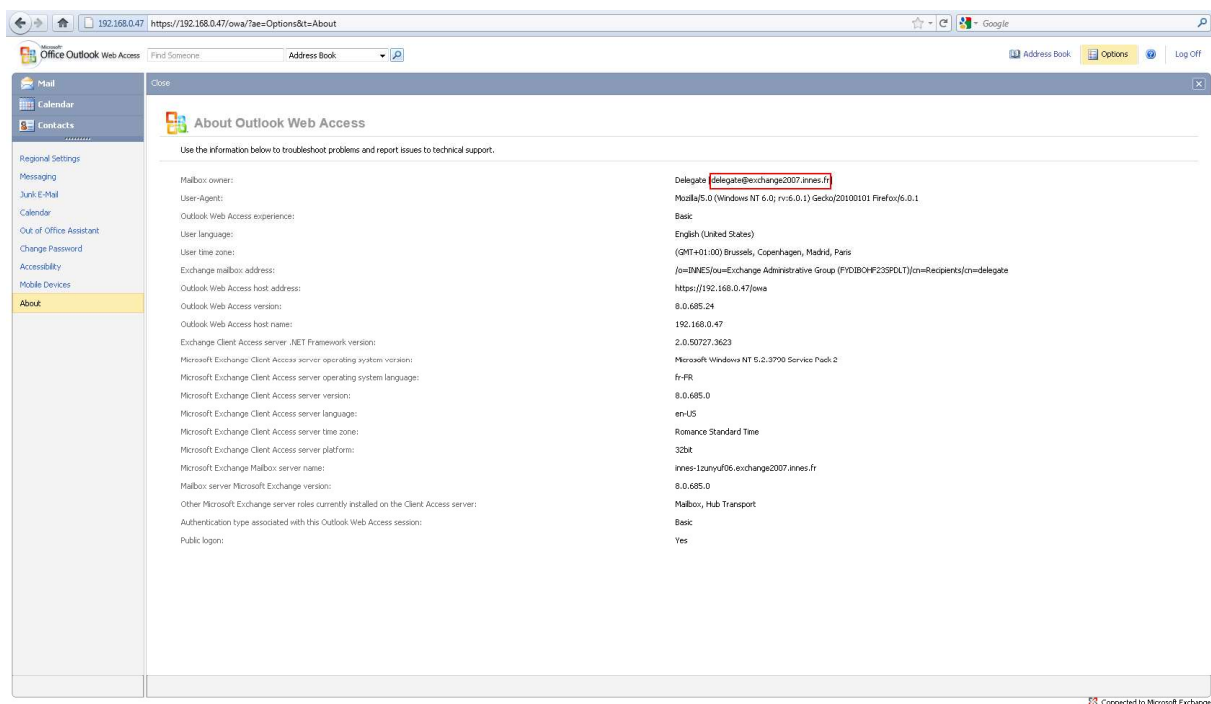
Note that the baseuri is used to connect to the Microsoft Exchange Server via EWS, the connection URL is `<protocol>://<host>/EWS/Exchange.asmx`

In the next example the baseuri is <https://192.168.0.47>.



2.1.2 Server username

The username is the delegate account. In the next example the username is delegate@exchange2007.innes.fr.



Note: If a local exchange domain is used in your architecture, use this domain instead. For example, if “*.local” is the local exchange domain the username to configure is delegate@exchange2007.innes.local

2.1.3 Server password

The delegate account password.

2.1.4 Server authentication Scheme

The access authentication scheme to use against the Exchange server. The default value is “ntlm”. Possible values are “ntlm”, “basic”, “digest”, and “gssnegotiate”.

3.1.6 Server Configuration Examples

3.1.6.1 Basic example

```
<scc:server id="serverId" type="ews">
  <scc:baseuri>https://192.168.0.47</scc:baseuri>
  <scc:label>Mon serveur Exchange 2007/2010</scc:label>
  <scc:authentication type="http-authentication">
    <scc:credentials>
      <scc:username>delegate@exchange2007.innes.fr</scc:username>
      <scc:password>pwd</scc:password>
    </scc:credentials>
  </scc:authentication>
</scc:server>
```

3.1.6.2 Basic example with a local domain

```
<scc:server id="serverId" type="ews">
  <scc:baseuri>https://192.168.0.47</scc:baseuri>
  <scc:label>Mon serveur Exchange 2007/2010</scc:label>
  <scc:authentication type="http-authentication">
    <scc:credentials>
      <scc:username>delegate@exchange2007.innes.local</scc:username>
      <scc:password>pwd</scc:password>
    </scc:credentials>
  </scc:authentication>
```

3.1.6.2 Basic example with a Basic Access Authentication

```
<scc:server id="serverId" type="ews">
  <scc:baseuri>https://192.168.0.47</scc:baseuri>
  <scc:label>Mon serveur Exchange 2007/2010</scc:label>
  <scc:authentication type="http-authentication">
    <scc:scheme>basic</scc:scheme>
    <scc:credentials>
      <scc:username>delegate@exchange2007.innes.local</scc:username>
      <scc:password>pwd</scc:password>
    </scc:credentials>
  </scc:authentication>
```

2.2 Calendar Configuration

It is possible to configure multiple calendars in the configuration file. If multiple calendars are configured, be sure that the id attribute of each calendar is unique.

Within the tag <fcc:calendars>, take a look to the *Example 1* in the configuration file. This example is disabled, to enable it, remove the xml commentary tags at the beginning and the end of the block.

Disabled:

```
<!-- Example 1: -->
<!--<fcc:calendar>
...
</fcc: calendar >-->
```

Enabled:

```
<!-- Example 1: -->
<fcc: calendar >
...
</fcc: calendar >
```

2.2.1 Id attribute

The id attribute identifies a calendar. It is used lately as a reference to the calendar, we recommend assigning ids easy to remember.

2.2.2 Server attribute

The server attribute is a reference to a configured server. The server attribute is formed like this: url(#<serverid>).

Exemple : *url(#myServer)*

2.2.3 Resource parameter

The resource parameter contains the Primary SMTP Address of the room where to retrieve the calendar events.

Multiple resource parameters can be configured in the same <fcc:calendar> tag. In this case we assume that these resources have the same delegate account access.

If any resource parameter is configured the default exchange user calendar is used.

If you are planning to deploy a multi-room view on one screen, we highly recommend grouping multiple resource parameters within the same calendar.

The following parameters are optional and for advanced use.

2.2.4 Request window parameter

The request window parameter specifies the number of days from the present where the calendar events area retrieved. The default value is 7.

2.2.5 Cache persistence parameter

This parameter specifies the life time of the cache in seconds. The default value is 300.

2.2.6 SendCacheOnServerError parameter (available since version V1.10.14)

The default value is false. If this parameter is enabled (value true), the connector sends the calendar from the cache (if present) in case of error while retrieving the new calendar information.

2.2.7 Username parameter

This parameter allows configuring a different username from the one configured on the server.

2.2.8 Password parameter

This parameter allows configuring a different password from the one configured on the server.

2.2.9 Label parameter

The value of this parameter replaces location property of the calendar events.

2.2.10 StartOffset parameter

This parameter specifies the end offset in seconds of the alarm. Default value is zero.

2.2.11 StartRelated parameter

This parameter specifies from where the offset is calculated. Default value is "event-start". Possible values are "event-start", "event-end", "day-start", and "day-end".

startRelated	startOffset	Result
event-start	-600	An alarm is set 600 seconds (10 minutes) before the start of the event.
day-start	0	An alarm is set at 00:00:00 of the event date.

2.2.12 EndOffset parameter

This parameter specifies the start offset in seconds of the alarm. Default value is zero.

2.2.13 EndRelated parameter

This parameter specifies from where the offset is calculated. Default value is "event-end". Possible values are "event-start", "event-end", "day-start", and "day-end".

endRelated	endOffset	Result
event-end	600	An alarm is set 600 seconds (10 minutes) after the end of the event.
day-end	0	An alarm is set at 23:59:59 of the event date.

2.2.14 FilterIsCancelled parameter

This parameter specifies if cancelled calendar items are filtered. Default value is true.

2.2.15 FilterIsDraft parameter

This parameter specifies if draft calendar items are filtered. Default value is false.

2.2.16 FilterIsMeeting parameter

This parameter specifies if meeting calendar items are filtered. Default value is false.

2.2.17 FilterSensitivity parameter

This parameter specifies which calendar items are filtered according their sensitivity. Possible values are “Personal”, “Confidential”, “Private”, and “Normal”. Default value is null.

- In case MeetingRoom has not to display private meeting,
Add this line

```
- ``<param name="filterSensitivity">Personal,Confidential,Private</param>``
```

inside the tag **scc:calendar id** in
C:\Users\Public\Documents\Innes Briva\Server\accounts\innes_domaine\applets\ews-calendar\configuration.xml

```
- ``<scc:calendar id="all_rooms" server="url(#serverId)">``
  - ``<param name="filterSensitivity">Personal,Confidential,Private</param>``
  - ``</scc:calendar>``
```

- Exchange does not manage properly private attribute (filterSensitivity) when attribute is updated only after meeting creation. To solve the issue, enter the meeting directly with the private option activated

2.2.18 FilterImportance parameter

This parameter specifies which calendar items are filtered according their importance. Possible values are “Low”, “Normal” and “High”. Default value is null.

3.2.13 Calendar Configuration Examples

3.2.13.1 Basic Examples

3.2.13.1.1 Basic example for “room@exchange2007.innes.fr” resource

```
<scc:calendar id="room" server="url(#serverId)">
  <param name="resource">room@exchange2007.innes.fr</param>
</scc:calendar>
```

3.2.13.2 Advanced Examples

3.2.13.2.1 Multiple resources (Summarization)

Multiple resource information can be merged into one calendar. See the example below for “room@exchange2007.innes.fr” and “demo@exchange2007.innes.fr”:

```
<scc:calendar id="all" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="resource">demo@exchange2007.innes.fr</param>
</scc:calendar>
```

3.2.13.2.2 RequestWindow

This example shows how to get a calendar populated with the events between the next two days from the present.

```
<scc:calendar id="room" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="requestwindow">2</param>
</scc:calendar>
```

3.2.13.2.3 Cache persistence

For test purposes set cachePersistence parameter to zero to avoid cache confusion.

```
<scc:calendar id="room" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="cachePersistence">0</param>
</scc:calendar>
```

3.2.13.2.4 Label example

The calendar events will all have ‘My Salle’ value in the iCalendar property LOCATION.

```
<scc:calendar id="room" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="label">My Room</param>
</scc:calendar>
```

3.2.13.2.5 Display events 10 minutes before

This example shows how to display events 10 minutes (600 seconds) before event starts. The events will disappear at the end of the event. This configuration affects all events.

```
<fcc:calendar id="room" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="startRelated">event-start</param>
    <param name="startOffset">-600</param>
</fcc:calendar>
```

3.2.13.2.6 Current and future day events

This example shows how to display future and current events of the day. The events will disappear at the end of the event. This configuration affects all events.

```
<fcc:calendar id="room" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="startRelated">day-start</param>
    <param name="startOffset">0</param>
</fcc:calendar>
```

3.2.13.2.7 Hide events 10 minutes after their end

This example shows how to display events 10 minutes (600 seconds) before event starts. The events will disappear 10 minutes after the end of the event. This configuration affects all events.

```
<fcc:calendar id="room" server="url(#serverId)">
    <param name="resource">room@exchange2007.innes.fr</param>
    <param name="startRelated">event-start</param>
    <param name="startOffset">-600</param>
    <param name="endRelated">event-end</param>
    <param name="endOffset">600</param>
</fcc:calendar>
```

2.2.13.2.8 Enable send calendar cache on server error

This example shows how to enable sendCacheOnServerError parameter. The connector sends the calendar in the cache (if present) in case of error while retrieving the new calendar information.

```
<fcc:calendar id="room" server="url(#plugncast)">
    <param name="resource">.medias/.applets/.calendarui/room.ics</param>
    <param name="sendCacheOnServerError">true</param>
</fcc:calendar>
```

3.2.13.2.9 Filter personal, confidential and private events

This example shows how to filter personal, confidential and private events.

```
<scc:calendar id="room" server="url(#serverId)">  
  <param name="resource">room@exchange2007.innes.fr</param>  
  <param name="filterSensitivity">Personal,Confidential,Private</param>  
</scc:calendar>
```

You can test the whole configuration accessing to the following address:

<http://<host>/plugnCast/.applets/.ews-calendar/2ical.php?calendarId=<calendarId>>

The **<host>** is the IP address or DNS of your Innes PlugnCast Server.

The **<calendarId>** is the reference of the calendar to test.

Example:

<http://localhost/plugnCast/.applets/.ews-calendar/2ical.php?calendarId=room1>

This address returns a *meetingroom.ics* file that contains the result of the configured calendar.

Please, if any error message is displayed check your configuration.

You can also test your configuration by using the console mode of the view.

View Configuration

Multiple views can be proposed in our system, please follow the installation instructions of your specific view.