



OnTime

Group Calendar IBM

Installation and Configuration Manual

**OnTime® Group Calendar Exchange addendum
Version 6.0.x**



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OnTime® Group Calendar

Installation Manual

The main audience for this manual is IBM Notes/Domino Administrators and users who have experience in administrating IBM Notes databases. It is expected that the reader of this manual is no stranger to the Domino environment and know how to configure server documents using the Domino, Administrator client.

Note: In the following text the name 'OnTime® Group Calendar' has been shortened to 'OnTime GC'.

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Microsoft® Exchange® features in OnTime® Group Calendar

New functionality has been added to provide synchronization of calendar entries from Microsoft® Exchange®, both on-premises and from Microsoft® Offices 365®. The solution is primarily for customers who have IBM Domino® users that are migrated to Microsoft® Exchange®. The solution may also be used for new Microsoft® Exchange® users, but one of the basic requirements is, that the user is in the IBM Domino® Directory with the same primary email address as in Microsoft® Exchange®.

Requirements

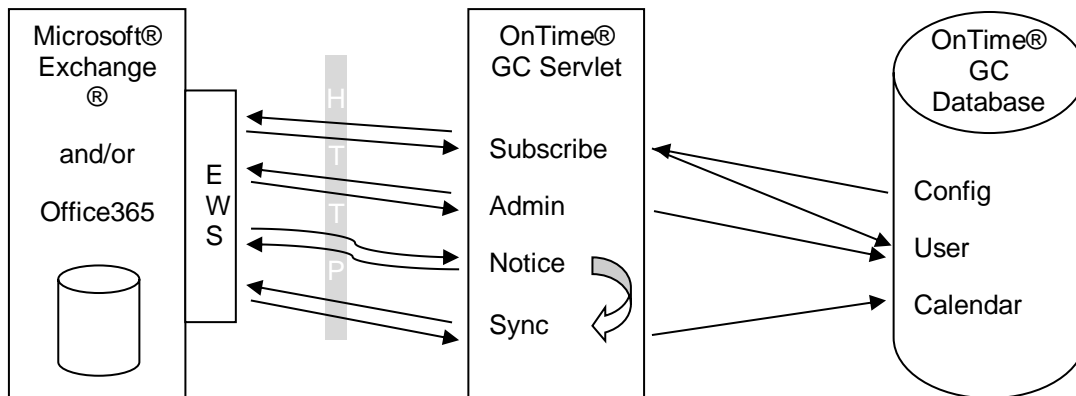
- An OnTime® Group Calendar license key, providing access to the functionality.
- Basic authentication must be enabled for Exchange Web Services.
- All users synchronized from Microsoft® Exchange® environments must be present in the IBM Domino® Directory with the same primary email address.
- Synchronization of Persons, Rooms, and Resources/Equipment is configured from groups. These groups have to have an email address in Exchange/Office 365. Hidden groups and “Office 365 Group” are not supported.
- All login credentials verification is done by the IBM Domino® server, so password management is done using IBM Domino®. The authentication configured must be session based (form based). Make sure to have proper license in IBM Domino® for any none IBM Domino® users created in IBM Domino® to provide web access.
- Microsoft® Exchange® servers are configured to provide the Microsoft® Exchange® Web Service interface, accessible from IBM Domino® server.
- An Impersonation user, used solely for OnTime® Group Calendar, is created for each Microsoft® Exchange® server configured, and the password is stored in the configuration database (encoded, not human readable).
- The impersonation users have to have a mailbox - minimum type 1 in Office 365. Assign the user the role “ApplicationImpersonation”.
- As Microsoft® Exchange® servers do throttling per Impersonation user, an impersonation user in common with another application is not supported.
- Microsoft® Exchange® server, on-premises or Microsoft® Office365®, must be able to make http/https request the IBM Domino® server is running the system. Firewall roles need to be opened for http (port 80) or https (port 443) between the server running OnTime® Group Calendar and Microsoft® Exchange® server(s) – both ways.

Limitations

The limitations are where Microsoft® Exchange® mail users are limited compared to IBM Domino® mail users

- The user can create personal calendar entries but not for other users in the Microsoft® Exchange® environment. A Microsoft® Exchange® user, therefore, cannot be an Editor in the role assignment.
- No support for Microsoft® Exchange® users delegation profile (ACL in IBM Domino®)
- Microsoft® Outlook® options in ‘Show as’ is translated to only “Busy”/“Free”.
- A member of a meeting is visible as their Microsoft® Exchange® display name only, in the clients - not their email and/or configured Display name in OnTime® Group Calendar.
- Users membership to groups shown in OnTime is by IBM Domino® names, and any Dynamic assignments are from IBM Domino® databases.

Architecture



This illustration is to get an overview of the involved parts and shortly how they interact. It does not show the client side, as this is identical to the IBM Domino® synchronization, and data is stored in the same database.

Please notice the difference between the arrows to and from the Exchange EWS, Exchange Web Services. The 'Subscribe', 'Admin' and 'Sync' all initiate the communication, sends a request and get a reply. While for the Notice it is the Microsoft® Exchange® server that initiates, sends a request and requires a response.

Installation

First ensure OnTime® Group Calendar is installed, configured and running for IBM Domino® users.

Make sure the license key has the Microsoft® Exchange® option and requirements regarding Impersonation and firewall are in place. To verify the license, have a look in the “Help” – “About this Application” of the OnTime® Group Calendar Config database, and check for “Microsoft® Exchange®” in the modules.

The Microsoft® Exchange® service consists of a servlet that will be installed on the IBM Domino® server. This requires the IBM Domino® HTTP service to be running and configured. It is recommended to use Internet site documents when configuring an IBM Domino® HTTP service, but it is not necessary – A host name to reach the servers servlet must be available.

Configuration

From the OnTime® Group Calendar configuration database – Server Settings document:

Specify Exchange server settings for the Domino server running the Microsoft® Exchange® services in the OnTime ‘Server Settings’ document:

Click the ‘Add Server’ button for each logical Microsoft® Exchange® environment.

Exchange Servers	
Servlet URL	http://server1.ontimesuite.com/servlet/ontimegcex
Email Lookup view	(\$Users)
Server	Users
exchange.server.org	
pod51046.outlook.com	OnTimeGC

Servlet URL: Specify protocol and DNS name for the OnTime server. The path “/servlet” is read from IBM Domino® Directory.

Email Lookup View: Specify the lookup view

Below the OnTime Domino server’s Server Settings document you will see a ghosted line for Exchange details:

Server Name	Info	Admin	Monitored Servers	Client Database	Log
Server2/OnTime	Domain: OnTime ✓		Server2/OnTime	OnTime\ontimegccl	Logging Info - Filepath: OnTime\ontimegcLog.nsf (3days)
Exchange Server name: exchange.server.org - Users: OnTimeGC					
Exchange Server name: pod51046.outlook.com - Users: OnTimeGC					

Click the Exchange Server line for details:

Exchange Server Configuration

Domino Server

Server	Server2/OnTime @ OnTime	<input type="checkbox"/> Disable
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Exchange Server setup

Server URL	http://exchange.server.org/EWS/Exchange.asmx	
Impersonation Username	impersonation@ontimesuite.omnimicrosoft.com	
	- Password Stored -	
Sync	Persons	OnTimeGC
	Rooms	OnTimeGC-Rooms
	Resources	OnTimeGC-Resources
Subscription URL	http://demo.ontimesuite.com/servlet/ontimegcex	
Keep Alive	10 min.	
Connection Timeout	2.000 ms.	
Read Timeout	10.000 ms.	
Max Cal Item Entries	1000	
Trace	<input type="checkbox"/> Trace Communication	

Server URL: The protocol and DNS name for the Microsoft® Exchange® servers 'Microsoft® Exchange® Web Service' interface.

Impersonation Username: The login name for the impersonation user, configured for OnTime® Group Calendar.

Impersonation Password: Enter the password, it will be encoded during save and cleared from the field.

Sync

Persons: Distribution Lists of Persons that should be part of OnTime® Group Calendar.
(As the EWS does not provide user type identification, configuration distribution lists have to be set up for each user type)

Rooms: Distribution Lists of Rooms to be part of OnTime® Group Calendar.

Resources: Distribution Lists of Resources to be part of OnTime® Group Calendar.

Subscription URL: The URL the current IBM Domino® servlet can be reached at, seen from the Microsoft® Exchange® server point.
Remember the firewall configuration.

Keep alive:	The keep-alive time- default 10 min. – For a large number of users increase the number. Ex 1.000 users about 60min. Having a low number adds network and server request load. A large number could result in long inactivity before new subscriptions are established.
Connect Timeout:	Default 2.000 ms. For Office365 it should be higher, current tests show 5.000ms works fine.
Read Timeout:	Default 10.000 ms. For Office365 it should be higher, current tests show 30.000ms works fine.
Max Call Entries	Default 1000 – may be changed in Exchange on-premise servers
Trace Communication:	Add log info of messages sent between IBM Domino® and Microsoft® Exchange® server. (Only enable for detailed trace, and asked for during support)

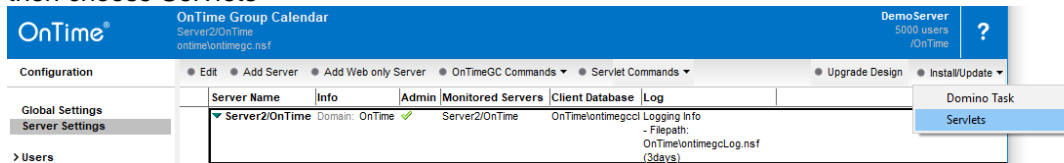
Click the button 'Test Connection' to check your connection to the Exchange server.

For each Microsoft® Exchange® server endpoint create this document

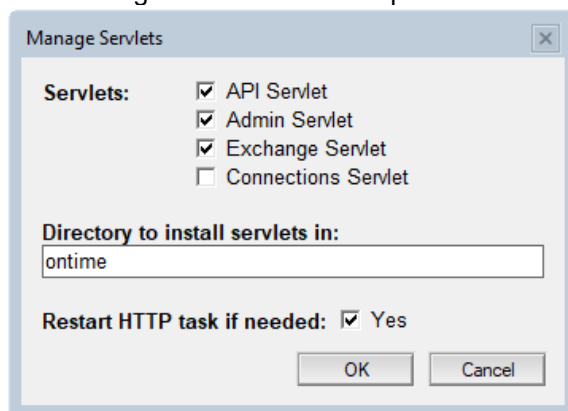
- ex. One for on-premise and one for Office365.

Installing OnTime GC Exchange Servlet

1. Go to the Server Setting view in OnTime GC Config database, click the install/Update button - then choose Servlets



2. The 'Manage Servlets' box will open:



Add a check mark for 'Exchange Servlet' – do not remove other check marks for Servlets, it will remove already installed servlets.

Clicking 'OK' do the following 4 steps:

- a) Adds the OnTimeGCEX.jar file in your preferred directory
- b) Updates the 'servlets.properties' file in the Domino data directory.
- c) Updates the server document's 'Domino Web Engine' setting – example below.
- d) Restarts the web server if necessary

The 'Servlets' button also works with OnTime on a Linux server.

An example of a Domino server document - 'Domino Web Engine' configured for servlets:

Server: **Server2/OnTime** ontime2demo.intravision.dk

Basics | Security | Ports... | Server Tasks... | Internet Protocols... | MTAs... | Miscellaneous | Transactional Logging | Shared Mail | DAOS | DB2

HTTP | Domino Web Engine | DIIOP | LDAP

HTTP Sessions	Java Servlets
This section does not apply as "Load Internet configurations from Server\Internet Sites documents" has been enabled.	<p><u>Java servlet support:</u> Domino Servlet Manager</p> <p><u>Servlet URL path:</u> /servlet</p> <p><u>Class path:</u> domino\servlet; ontime\OnTimeGC.jar; ontime\OnTimeGCAdmin.jar; ontime\OnTimeGCCConn.jar; ontime\OnTimeGCEx.jar</p> <p><u>Servlet file extensions:</u></p>

Manual Installation of the Exchange servlet

In case you want to change/add parameters in the servlet.properties file, please have a look below.

Find the Servlet in the Servlet folder of the OnTime GC installation package.

1. **Add the OnTimeGCEx.jar-file to the Domino Server**
Our recommendation is to add it to the same directory as the OnTime GC Configuration database – i.e. \ontime. This makes it easier to maintain OnTime GC files and databases.

2. **Let Domino know that it needs to run Servlets**
Configure the Server document in the Domino Directory, to enable the Domino Server to run Servlets.
 - Go to the Domino Directory (NAB)
 - Find the Server Document
 - Select tabs 'Internet Protocols'/'Domino Web Engine'
 - Find the Java Servlets section
 - Enable the Domino Servlet Manager
 - The servlet URL path should be left to default value (/servlet)
 - Add the OnTimeGCEx.jar to your 'Class path'. Beware of the casing of this file.

3. The servlets.properties file

Example of file content:

```
servlets.startup=ontimegc ontimegadmin ontimegcex

servlet.ontimegc.code=com.ontimesuite.api.servlet.OnTimeGC
servlet.ontimegc.initArgs=

servlet.ontimegadmin.code=com.ontimesuite.admin.servlet.OnTimeGCAAdmin
servlet.ontimegadmin.initArgs=

servlet.ontimegcex.code=com.ontimesuite.exchange.servlet.OnTimeGCEx
servlet.ontimegcex.initArgs=
```

List of “servlet.ontimegcex.initArgs” parameters:

- parameters are separated by commas.

Server	The server the OnTime Config database is located on (default = the current server)
Filepath	The filepath for the OnTime Config database (default = "ontime/ontimegc.nsf")
Threads	Number of thread to use during synchronization of users (default = 1) Recommendations: 1-3 in a small environment (< 1000 users) 3-5 in a larger environment. Too many threads could result in throttling on the Exchange server.
ProxyHost	A proxy host for connecting to Exchange server. It can be an ip address as well (default = none)
ProxyPort	A proxy port for connecting to Exchange server (default = 0)

Example of servlet.ontimegcex.initArgs setting:

```
servlet.ontimegcex.initArgs=Server=Server2/OnTime,Threads=3,ProxyHost=theproxy.example.com,ProxyPort=4242
```

4. If any of the above has been changed, please restart the HTTP server.

Running the Microsoft® Exchange® servlet

During the start of the IBM Domino® HTTP task and servlet container, the OnTime® Group Calendar servlet will connect to the Microsoft® Exchange® server(s) and do the following:

1. Resolve the Distribution Lists (Persons, Rooms & Resources).
2. For each new user, it creates an entry in the Config database with only the email and the Microsoft® Exchange® name.
3. Establishes a subscription on the Microsoft® Exchange® server.

Every minute it will:

1. Verify subscription for any expired (keep alive) and any requested re-subscribe.

Every hour it will:

1. Resolve the Distribution lists, add new users and remove obsolete users from the database.

Every day it will (at midnight):

1. For each Microsoft® Exchange® user in the config database (found in the Distribution Lists) read the Microsoft® Exchange® user information for the meta data (Full name, Location, Department, etc.) and update the config database.
2. Calculate the Roles according to the Roles documents.

On a request from Microsoft® Exchange® server the servlet performs the following tasks:

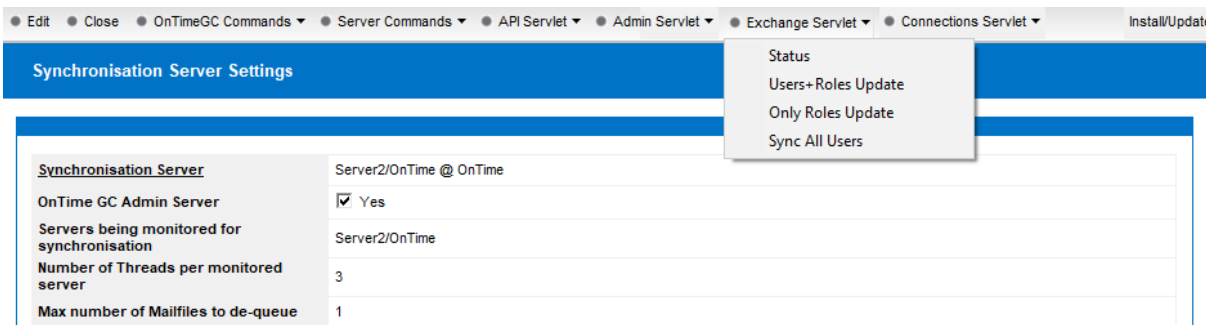
1. Synchronises a user that has modified data.
2. Requests re-subscribe for users when informed by Microsoft® Exchange® server.
3. Unsubscribes any obsolete user.
4. Unsubscribes any obsolete subscription.
5. Replies on keep alive status.

If an administrator makes changes to Server settings parameters, a restart of the servlet is necessary by using the command action “HTTP Restart” or issuing the IBM Domino® server console command “restart task http”.

A change of members in a Distribution List will be processed hourly. To force an update use the ‘Exchange Servlet Commands’ action ‘Users+Roles Update’ from the Server Settings document.

Exchange Servlet Commands

- from the Server Settings document in the OnTime GC Config database.



- Status Returns status information of the servlet.
- Users+Roles Update Requests the servlet to update the Subscribe list, reads all users metadata and recalculates roles.
- Only Roles Update Requests the servlet to recalculate roles.
- Sync All Users Requests sync of all users, by adding each user to the synchronization queue. The synchronization thread will then process them one by one.

Example from clicking 'Exchange Servlet'/Status:

