



Group Calendar for HCL Domino

Installation and Configuration Manual

**OnTime® Group Calendar Microsoft Exchange
addendum Version 11.8.x**



Trademarks

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OnTime® Group Calendar

Installation Manual

The main audience for this manual is Notes/Domino Administrators and users who have experience in administering 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.

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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 Microsoft® Offices 365®. The solution is primarily for customers who have HCL Domino® users that is 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 HCL Domino® Directory with the same primary email address as in Microsoft® Exchange®.

The UFT feature (Universal Free Time) enables HCL Notes, iNotes, Verse clients to see other users Free Time for both Domino and Exchange users.

Requirements

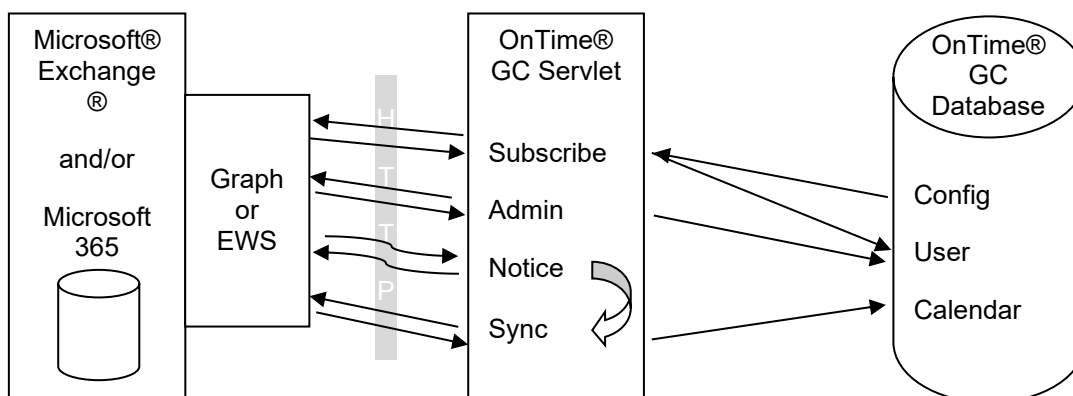
- Authentication
 - On-premises - Basic authentication must be enabled for Exchange Web Services on-premises.
 - Microsoft 365 (graph) – Graph authentication.
 - Microsoft 365 (ews) Anchor EWS user authentication.
The Anchor user must have a mailbox - minimum type 1 in Microsoft 365. Assign the user the role “ApplicationImpersonation”.
- All users synchronised from Microsoft® Exchange® environments must be present in the HCL Domino® Directory with the same primary email address and forwarding address.
- The synchronisation of Persons, Rooms, and Resources/Equipment is configured from groups. These groups must have an email address in Exchange/Microsoft 365. Hidden groups and “Microsoft 365 Group” are not supported.
- All login credentials verification is done by the HCL Domino® server, so password management is done using HCL Domino®. The authentication configured must be session-based (form-based). Make sure to have proper license in HCL Domino® for any none HCL Domino® users created in HCL Domino® to provide web access.
- As Microsoft® Exchange® servers do throttling per Impersonation user, an impersonation user in common with another application is not recommended.
- The Domino server must be running at least TLS 1.2 to securely communicate with Exchange in Microsoft 365®
- Firewall roles need to be opened for http (port 80) or https (port 443) between the server running OnTime® Group Calendar and Microsoft 365® Exchange® server(s).
For outgoing access to Microsoft 365 please allow the following Microsoft servers
<https://outlook.office365.com>
<https://login.microsoftonline.com>
<https://graph.microsoft.com>
- Microsoft® Exchange® server, on-premises or Microsoft 365®, must be able to make https requests to the Domino® server running the system.
- We recommend applying an IP filter in the firewall. Please refer to the following link for more details: Microsoft Graph Change Notifications.
Incoming IP for Graph <https://learn.microsoft.com/en-us/microsoft-365/enterprise/additional-office365-ip-addresses-and-urls?view=o365-worldwide>

Limitations

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

- The user can create, edit, delete 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.
- 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 HCL Domino® names, and any Dynamic assignments are from HCL Domino® databases.
- A Microsoft® Exchange® user cannot create a poll in 'OnTime Pollarity'.

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 HCL Domino® synchronisation, and data is stored in the same database.

Please notice the difference between the arrows to and from the Graph services – or Exchange Web Services (EWS). 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

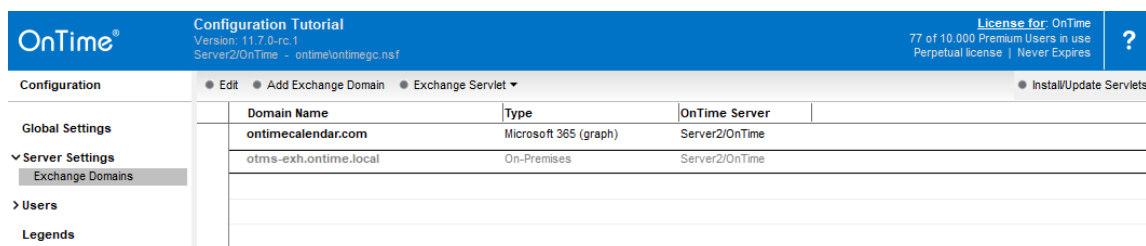
First ensure OnTime® Group Calendar 11.8.x or newer is installed, configured and running for HCL Domino® users.

Make sure the requirements regarding 'Impersonation User' and firewall are in place.

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

Configuration for Exchange server

From the OnTime® Group Calendar configuration database – click >Server Settings/Exchange Domains:



The screenshot shows the OnTime Configuration interface. The top bar includes the OnTime logo, version information (11.7.0-rc.1), and license details (77 of 10,000 Premium Users in use, Perpetual license). The left sidebar shows the navigation menu with 'Server Settings' expanded and 'Exchange Domains' selected. The main area displays a table with columns: Domain Name, Type, and OnTime Server. Two entries are listed: 'ontimecalendar.com' (Microsoft 365 (graph)) and 'otms-exh.ontime.local' (On-Premises).

Domain Name	Type	OnTime Server
ontimecalendar.com	Microsoft 365 (graph)	Server2/OnTime
otms-exh.ontime.local	On-Premises	Server2/OnTime

Click the 'Add Exchange Domain' button for each logical Microsoft® Exchange® environment.

The configured Exchange servers will show as lines in the 'Exchange Domains' view.

Click 'Edit' or double-click a line to configure OnTime access to the Exchange server.

Authentication to Exchange

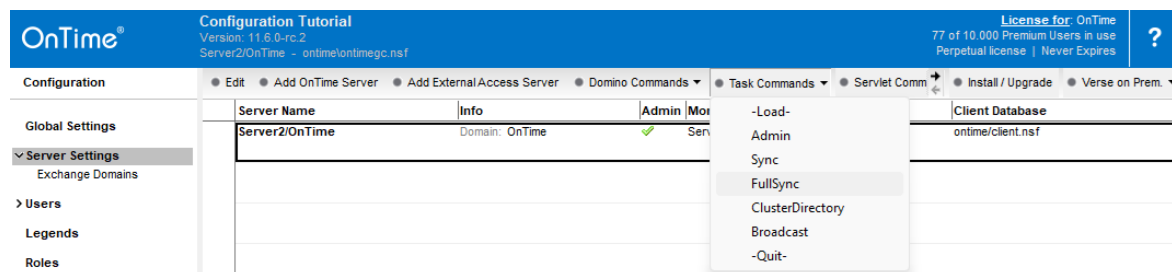
OnTime supports the following types of authentications to Office 365,

- Microsoft 365 (Graph)
- Microsoft 365 (EWS)
- On-Premises

Note: We recommend making a new Azure Application, Secret key, API permissions and use these, for more control of which keys are used in which context. This also makes a roll back and forward easy.

Roll back – to before 11.7 – refer to the section **Roll back from OnTime version x**

Note: If you change from one Domain Type to another, you must run a Full synchronization of OnTime:



Domain Type 'Microsoft 365 (graph)'

Click the button 'Add Exchange Domain' for a new Exchange Domain:

Exchange Domain Configuration

Exchange Domain	
Domain Name	ontimecalendar.com <input type="checkbox"/> Disable
Domain Type	Microsoft 365 (graph)
OnTime Server	Server2/OnTime


Enter Domain Name.


Choose Domain Type 'Microsoft 365 (graph)'

Choose the OnTime server responsible for maintaining this domain.

Scroll down to 'Exchange Server Settings'

Exchange Server Settings

App Registration: 	
Directory (tenant) ID	
Application (client) ID	
Client Secret Value	
Verify	

Click  - at 'App Registration' to login to the Azure.portal (<https://portal.azure.com>)

Obtain the three values by going through the procedure below.

Note: We suggest Notepad as a media in-between for copying the values to OnTime.

Click 'Verify' to check the functionality of the three values.

Procedure to register the OnTime Application in 'Microsoft Entra ID' for Graph

- a) Login to the Azure.portal (<https://portal.azure.com>)
- b) Click view 'Manage Microsoft Entra ID'
- c) Click 'App registrations'
- d) Click 'New registration'
- e) Enter a name for the application, do not change checkbox (Single tenant) and click register.
- f) On next page (Overview) Copy the values [Application (client) ID] and [Directory (tenant) ID]
- g) On the page Certificates & secrets, click 'New client secret'. Choose Expires - Never. Click Add. Copy the secret value.
- h) On the page 'API permissions', click 'Add a permission'.
- i) Click 'Microsoft Graph'

- j) Click 'Application Permissions'
- k) Search for the following permissions - tick and click 'Add' each permission

Application.Read.All, Calendars.ReadWrite, GroupMember.Read.All,
Mail.Send, MailboxSettings.ReadWrite , Place.Read.All, User.Read.All.

You may remove 'User.Read', if already selected.

- l) Click 'Grant admin consent'
- m) Click 'Grant admin consent'
- n) Click 'Yes' to answer the question ' Do you want to grant consent ...'
- o) Click the 'Certificate & secrets' tab

In the OnTime Exchange Server Configuration, click the graphic at 'Application (client) ID' to paste the Application ID from Microsoft Azure. Repeat this step with the Azure ID from 'Directory (tenant) ID and the 'Client Secret Value'.

Domain Type 'Microsoft 365 (ews)'

Click the button 'Add Exchange Domain' for a new Exchange Domain:

Exchange Domain	
Domain Name	ontimecalendar.com <input type="checkbox"/> Disable
Domain Type	Microsoft 365 (ews) <input checked="" type="checkbox"/>
OnTime Server	Server2/OnTime <input type="checkbox"/>


Enter Domain Name.

Disable: Tick to disable this configuration.

Choose Domain Type 'Microsoft 365 (ews)'

Choose the OnTime server responsible for maintaining this domain.

Scroll down to 'Exchange Server Settings'

Exchange Server Settings	
Anchor EWS user	<input type="text"/>
App Registration: 	
Directory (tenant) ID	<input type="text"/>
Application (client) ID	<input type="text"/>
Client Secret Value	<input type="text"/>
<input type="button" value="Verify"/>	

Anchor EWS User:

Is a user required only for technical purposes.

EWS API fails when a user is not provided for a call. Some calls have an explicit user, others don't. There have to be a user in the call, so that EWS does not fail, we introduced an anchor user, which is simply a valid user that has no special abilities, apart from making EWS API succeed on the user-less calls.

App registration

Obtain values from MS Azure – look below

Verify

Click the 'Verify' button to verify the connection.

Note: We suggest Notepad as a media in-between for copying values to OnTime.

Procedure to register the OnTime Application in 'Microsoft Entra ID'

- a) Login to the Azure portal (<https://portal.azure.com>)
- b) Click view 'Manage Microsoft Entra ID'
- c) Click 'App registrations'
- d) Click 'New registration'
- e) Enter a name for the application, do not change checkbox (Single tenant) and click register.
- f) On next page (Overview) Copy the values [Application (client) ID] and [Directory (tenant) ID]
- g) On the page Certificates & secrets, click 'New client secret'. Choose Expires - Never. Click Add. Copy the secret value.
- h) On the page 'API permissions', click 'Add a permission'.
- i) Click 'Microsoft Graph'
- j) Click 'Application Permissions'
- k) Search for the following permissions - tick and click 'Add' each permission

Calendars.ReadWrite, Directory.Read.All, MailboxSettings.ReadWrite,
People.Read.All, Place.Read.All, User.Read.All,

You may remove 'User.Read', if already selected.
- l) Click 'Add a permission'
- m) Click 'Microsoft Graph'
- n) Click 'Delegated permissions'
- o) Search for EWS, tick:
EWS.AccessAsUser.All
- p) Click 'Add a permission'
- q) Click 'APIs my organization uses'
- r) In the field for search, enter 'Office'
- s) Click 'Office 365 Exchange Online'
- t) Click 'Application permissions'
- u) Tick 'full-access_as_app'
- v) Click 'Add permissions'
- w) Click 'Grant admin consent'
- x) Click 'Yes' to answer the question 'Do you want to grant consent ...'

- y) Click the 'Certificate & secrets' tab
- z) Click 'New client secret'
- aa) Copy the value

In the OnTime Exchange Server Configuration, click the graphic at 'Application (client) ID' to paste the Application ID from Microsoft Azure. Repeat this step with the Azure ID from 'Directory (tenant) ID' and the 'Client Secret Value'.

Domain Type 'On-Premises'

Click the button 'Add Exchange Domain' for a new Exchange Domain:

Exchange Domain Configuration	
Exchange Domain	
Domain Name	otms-exh.ontime.local <input checked="" type="checkbox"/> Disable
Domain Type	On-Premises
OnTime Server	CPH006/IntraVision

Domain Name DNS Ref. to your local exchange server
Disable: Tick to disable this configuration

Domain Type 'On-Premises'

Server: Domino name of your OnTime server

Scroll down to 'Exchange Server Settings'

Exchange Server Settings	
Exchange Server URL	https://otms-exh.ontime.local/EWS/Exchange.asmx
Impersonation:	
Username	ius@ontime.local
Password	New: <input type="password"/> - Password Stored -
<input type="button" value="Verify"/>	

Exchange Server URL Ref. to the Exchange servers EWS service

Impersonation Username: The email address 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.

Verify Click the 'Verify' button to verify the connection.

Multi Servers

In larger OnTime environments with several thousands of users, it is possible to share the load of subscription of the Exchange users among more than one OnTime server.

To configure 'Multi Servers', open an exchange server document:

● Edit ● Close ● Change to Multi servers

Exchange Domain Configuration

Exchange Domain	
Domain Name	otms-exh.ontime.local <input type="checkbox"/> Disable
Domain Type	On-Premises
OnTime Server	Server2/OnTime

Users	
Premium Users:	
Persons	tutorial-users@ontimecalendar.com
Rooms	tutorial-rooms@ontimecalendar.com
Resources	tutorial-equipment@ontimecalendar.com

Click the button 'Change to Multi servers' at the top.

A new sub-document is created with. Further the server has the role of 'Admin' among the 'Multi Servers'.

The main document shows 'multi' as the OnTime server is part of a 'Multi Server' configuration.

OnTime® Configuration Tutorial Version: 11.7.0-rc.1 Server2/OnTime - ontime\ontimegc.nsf License for: OnTime 77 of 10,000 Premium Users in use Perpetual license | Never Expires ?

● Edit ● Add Exchange Domain ● Add Exchange Domain Server ● Install/Update Servets

Configuration	Domain Name	Type	OnTime Server
Global Settings	otms-exh.ontime.local	On-Premises	- multi -
▼ Server Settings	Server2/OnTime (Admin) - Subscribe Disabled		
Exchange Domains	otms-exh.ontime.local	On-Premises	Server2/OnTime
Users			
Legends			
Roles			

If you open the main document, you will see that the layout of the 'Exchange Domain Configuration' document has changed with only two lines in the section 'Exchange Domain'. To revert back to 'Single Server' use the button 'Change to Single Server'.

● Edit ● Close ● Change to Single server

Exchange Domain Configuration

Exchange Domain	
Domain Name	otms-exh.ontime.local <input type="checkbox"/> Disable
Domain Type	On-Premises

The line with OnTime Server is moved down to a list of Ontime Servers.

OnTime Servers
OnTime Server
Server2/OnTime

If you open the sub-document, you will see 'Domain Admin Server' as ticked.

A new field 'OnTime Cluster Mate' is present. This field may be configured with another OnTime server, which is the 'Cluster Mate'.

Two 'Cluster Mates' will share the task of subscribing and synchronizing the users approximately evenly.

The two cluster mates will check if the other mate is running and if not, the remaining server will take the double load of subscription, including the Admin role, if necessary.

Exchange Domain Server Configuration		
Exchange Domain		
Domain Name	otms-exh.ontime.local	
Domain Type	On-Premises	
OnTime Server	Server2/OnTime	OnTime Cluster Mate
Domain Admin Server	<input checked="" type="checkbox"/> Yes	

Users

In the 'Exchange Domain Configuration' scroll to the section 'Users' to include users in OnTime.

Users	
Premium Users:	
Person Groups	allpersons@ontime.local; lmc@ontime.local
Room Groups	AllRooms@ontime.local
Resource Groups	allresources@ontime.local
Freetime Users:	
Persons	
Exclude Users	
Domino Directory Email lookup view	(\$Users)

Premium Users:

- 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.

Freetime Users:

- Persons:** Users with reduced features in OnTime. Only freetime/busytime may be seen in OnTime. Meetings may be booked.

Convert Domino to Exchange Users

Convert Domino to Exchange Users	
Forwarding domain(s)	@ontimecalendar.com @ontimecalendar.dk
Domino domain(s)	

- Forwarding domain(s):** When migrating users from Domino mail to Exchange mail, you may add a new exchange email in the Notes Person Document in the 'Forwarding address' field. The OnTime synchronization will change to the new Exchange domain(s) referenced here.
- Domino domain(s):** When migrating users from Domino mail to Exchange mail, you may add a 'Domino Domain' to migrate.
The OnTime synchronization will change to the new Exchange domain(s) referenced here.

Options

Options	
Read Permissions	<input checked="" type="checkbox"/> Yes
Custom	Read entries details

Not Ticked – OnTime ignores permissions set on users across Exchange Domains and only rely OnTime Roles.

Read Permissions
Custom

Ticked
As graph do not specify the level of custom permission you can set the permission level - default is 'Read entries details'

Subscribe Settings

Subscribe Settings	
Notice URL	<input type="text" value="http://example.example.com/_servlet/ontimeexchange"/>
Expiration	<input type="text" value="4230"/> min.
Disable Subscribe	<input checked="" type="checkbox"/> Disable <small>Disable if testing on a server that the Exchange/Office365 server can't connect to. Require manual sync.</small>

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

Expiration: The keep-alive time- default 10 min. – For a large number of users increase the number, for example, 5.000 users about 20 min. Having a low number adds network and server request load. A large number could result in long inactivity before new subscriptions are established.

Disable Subscribe Is used for initial configuration of Exchange servers. It is used if MS Exchange cannot access the OnTime server. The synchronization is then manual.

HTTP Connections Settings

In the 'Exchange Domain Configuration' - scroll to the section 'HTTP Connections Options'

HTTP Connection Settings	
Connection Timeout	5.000 ms.
Read Timeout	30.000 ms.
Proxy	Host: Port
Trust All Certificates	<input checked="" type="checkbox"/> Yes

- Connection 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.
- Proxy Host: A proxy host for connecting to Exchange server. It can be an ip address as well (default = none).
- Proxy Port: A proxy port for connecting to Exchange server (default = 0)
- Trust All Certificates: For initial setup and test, enable

Graph Settings

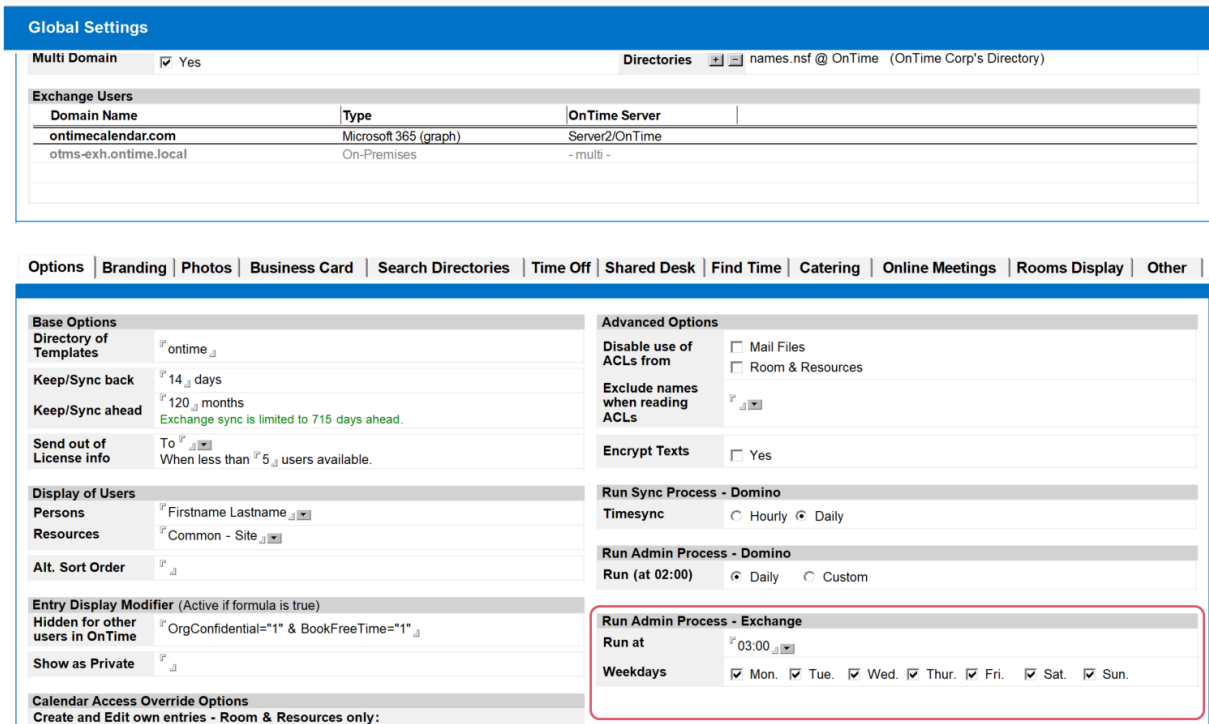
Graph Settings			
Only make changes to these settings after receiving instruction from OnTime Support.			
Batch Users Info	2 threads	Expand Groups	3 threads
Batch Permission	10 threads	Synchronize	3 threads
Batch Expand Group Emails	3 threads		
Batch Subscribe	3 threads		

EWS Settings

Exchange Web Services (EWS) Settings			
Only make changes to these settings after receiving instruction from OnTime Support.			
Expand Groups	5 threads	Subscribe	10 threads
Users Info	10 threads	Synchronize	3 threads
Permissions	10 threads		

Scheduling the 'Admin Process' task

Choose 'Global Setting' from the left-side panel of the Main document in the OnTime Configuration database. Then, go to the 'Option' tab and select '**Run Admin Process – Exchange**'. From here, you can schedule how often and at what time this process should run automatically.



The screenshot shows the 'Global Settings' form in the OnTime Configuration database. The 'Option' tab is selected, and the 'Run Admin Process - Exchange' section is highlighted with a red box. This section allows scheduling the 'Run Admin Process - Exchange' task.

Global Settings

Multi Domain: ☒ Yes Directories: names.nsf @ OnTime (OnTime Corp's Directory)

Domain Name	Type	OnTime Server
ontimecalendar.com	Microsoft 365 (graph)	Server2/OnTime
otms-exh.ontime.local	On-Premises	- multi -

Options | Branding | Photos | Business Card | Search Directories | Time Off | Shared Desk | Find Time | Catering | Online Meetings | Rooms Display | Other

Base Options

Directory of Templates: ontime

Keep/Sync back: 14 days

Keep/Sync ahead: 120 months
Exchange sync is limited to 715 days ahead.

Send out of License info: To: When less than 5 users available.

Display of Users

Persons: Firstname Lastname

Resources: Common - Site

Alt. Sort Order:

Entry Display Modifier (Active if formula is true)

Hidden for other users in OnTime: OrgConfidential="" & BookFreeTime=""

Show as Private:

Calendar Access Override Options

Create and Edit own entries - Room & Resources only:

Advanced Options

Disable use of ACLs from: ☐ Mail Files ☐ Room & Resources

Exclude names when reading ACLs:

Encrypt Texts: ☐ Yes

Run Sync Process - Domino

Timesync: ☐ Hourly ☒ Daily

Run Admin Process - Domino

Run (at 02:00): ☒ Daily ☐ Custom

Run Admin Process - Exchange

Run at: 03:00

Weekdays: ☒ Mon. ☒ Tue. ☒ Wed. ☒ Thur. ☒ Fri. ☒ Sat. ☒ Sun.

Throttling

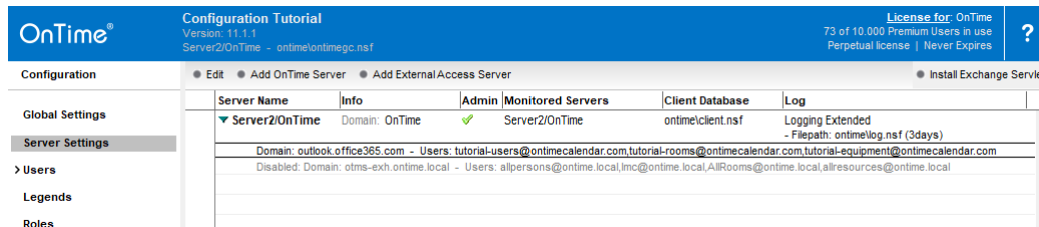
OnTime is a highly scalable application that has been optimized for both performance and throughput. However, when optimizing these aspects, it's common to encounter throttling for certain functions. Throttling is when the number of API requests a user or system can make within a specified time is limited, and Microsoft applies these limits in various ways through the Graph / EWS API.

To handle more API requests simultaneously, OnTime splits tasks across multiple threads. While this improves performance, it also increases the risk of throttling. If the throttling limit is exceeded, Microsoft Graph will restrict further requests from that client for a period. When throttling occurs, Microsoft Graph responds with an HTTP status code 429, 503, 509 (Too Many Requests), causing the requests to fail.

The default values for the maximum number of simultaneous threads in the Graph / EWS API, as shown in the screenshot above, have been successfully tested by IntraVision. However, these values may need to be adjusted over time based on your specific environment. We recommend consulting with your OnTime partner or IntraVision before making any changes to these values.

Installing OnTime Exchange Servlet

1. Go to the Server Setting view in OnTime Config database, choose the line for your configuration of your Exchange server.
Click the button 'Install Exchange Servlet'

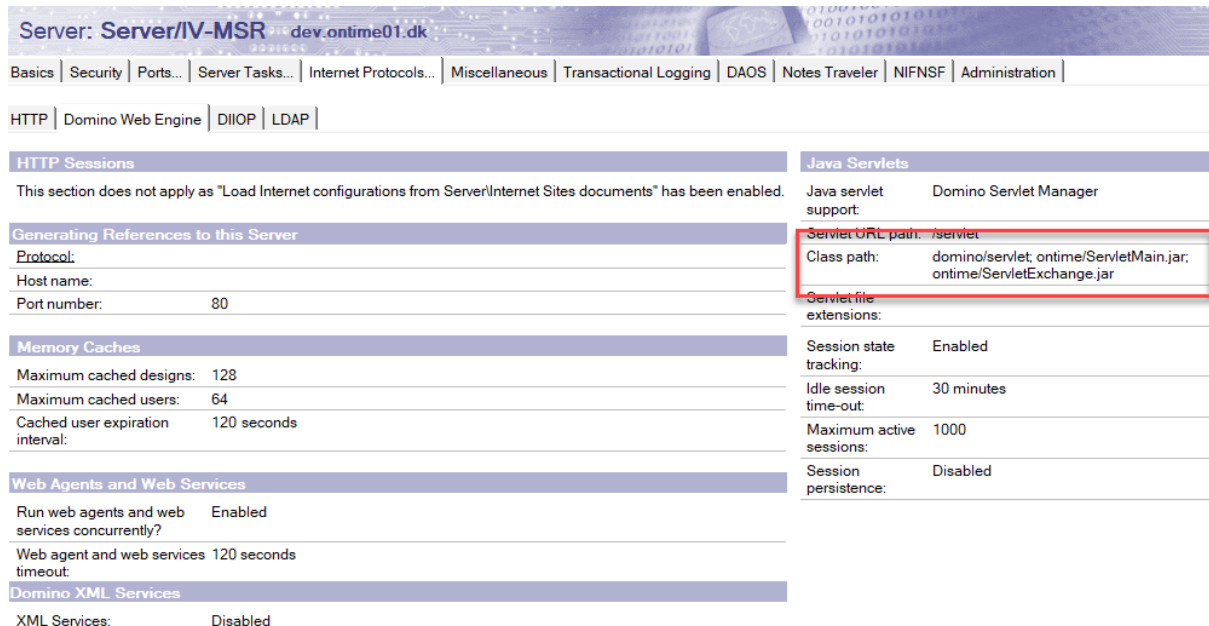


Clicking 'OK' does the following 4 steps:

- a) Adds the ServletExchange.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 webserver if necessary

The 'Install Exchange Servlet' button also works with OnTime on a Linux server.

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



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 installation package.

1. Add the ServletExchange.jar-file to the Domino Server

Our recommendation is to add it to the same directory as the OnTime Configuration database – i.e. \ontime. It makes it easier to maintain OnTime 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 not be changed from the default value (/servlet)
- Add the ServletExchange.jar to your 'Class path'. Beware of the casing of this file.

Note: There is a Domino default 'Class path' reference to domino /servlet. Please create a directory '/servlet' in the '/domino/data/domino/' folder otherwise; you will get a warning in the Domino Console when you enable the 'Domino Servlet Manager'.

3. The servlets.properties file

Example of file content:

```
servlets.startup=ontimegc ontimeexchange

servlet.ontimegc.code=com.ontimesuite.servlet.main.Main
servlet.ontimegc.initArgs=

servlet.ontimeexchange.code=com.ontimesuite.servlet.exchange.Exchange
servlet.ontimeexchange.initArgs=
```

List of “servlet.ontimeexchange.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")

Examples of servlet.ontimegcex.initArgs settings:

servlet.ontimegcex.initArgs=Server=Server2/OnTime

OR if you want to state both a server and a Filepath:

servlet.ontimegcex.initArgs=Server=Server2/OnTime,Filepath=ontime/ontimegc.nsf

4. If there are any changes of the above, please restart the Domino HTTP server.

Running the Microsoft® Exchange® servlet

During the start of the HCL 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:

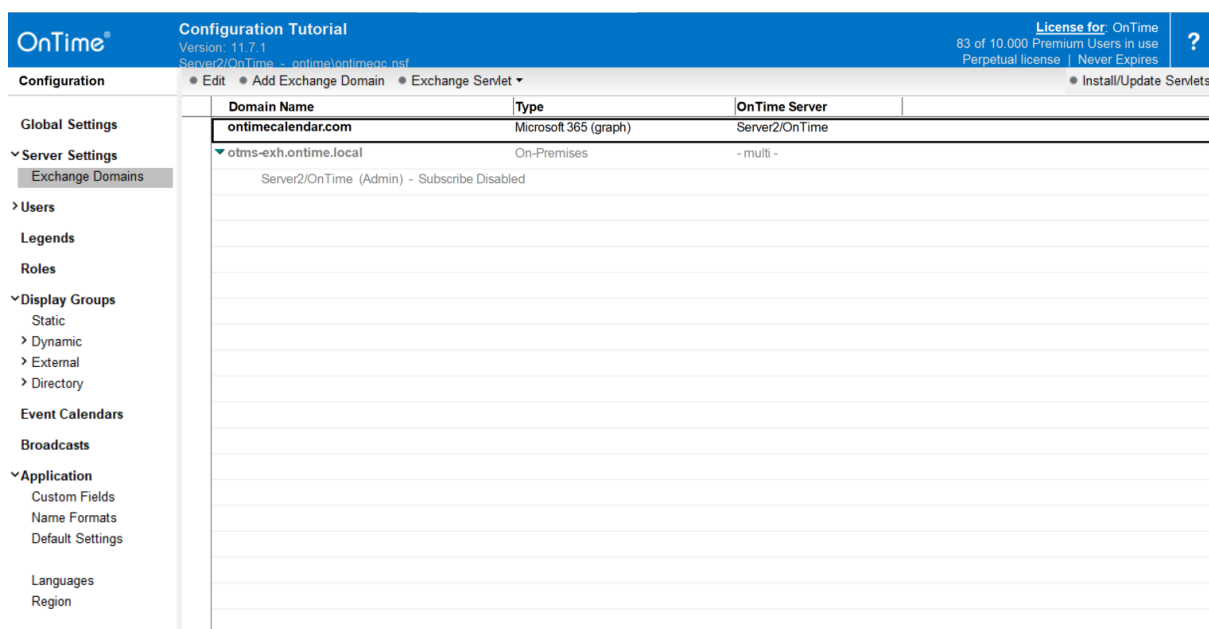
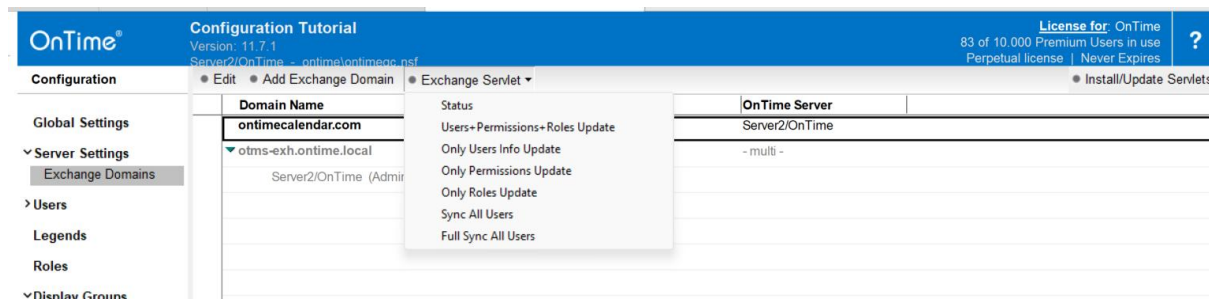
1. Synchronises a user that has modified data.
2. Requests re-subscribe for users when informed by Microsoft® Exchange® server.
3. Unsubscribes any obsolete user.
4. Unsubscribes any obsolete subscription.
5. Replies on keep-alive status.

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 HCL Domino® server console command “restart task http”.

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

Exchange Servlet Commands

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



Status

Returns status information of the servlet.

Users+Permission+Roles Update

Requests the servlet to update the Subscribe list, reads all users metadata and recalculates roles.

Only Users Info Update
 Only Permissions Update
 Only Roles Update

Requests the servlet to update users' info
 Requests the servlet to update permissions
 Requests the servlet to recalculate roles

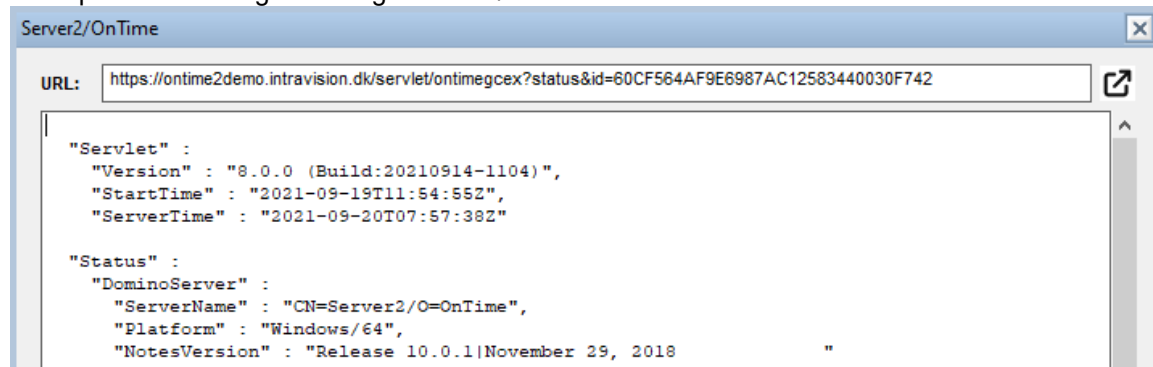
Sync All Users

Requests update synchronisation of all users, by adding each user to the synchronisation queue. The synchronisation thread will then process them one by one.

Full Sync All Users

Requests full synchronisation of all users, by adding each user to the synchronisation queue. The synchronisation thread will then process them one by one.

Example from clicking 'Exchange Servlet'/Status:



The screenshot shows a web browser window with the title "Server2/OnTime". The address bar contains the URL: `https://ontime2demo.intravision.dk/servlet/ontimegcex?status&id=60CF564AF9E6987AC12583440030F742`. The main content area displays a JSON object representing the status of the servlet and the Domino server.

```
"Servlet" :  
  "Version" : "8.0.0 (Build:20210914-1104)",  
  "StartTime" : "2021-09-19T11:54:55Z",  
  "ServerTime" : "2021-09-20T07:57:38Z"  
  
"Status" :  
  "DominoServer" :  
    "ServerName" : "CN=Server2/O=OnTime",  
    "Platform" : "Windows/64",  
    "NotesVersion" : "Release 10.0.1|November 29, 2018"
```

UFT – Universal Free Time

The feature UFT is dependent on a Domino server task called 'OnTimeUFT'.

Per default it is installed at the OnTime server together with the main OnTime task, OnTimeGC.

The OnTimeUFT task is responsible for collecting 'Free Time' information from both Domino and Exchange users.

In a smaller setup you might have installed OnTime on the Domino mail server, so the UFT will work for letting HCL Notes, iNotes, Verse mail clients see 'Free Time' for other users across Domino and Exchange.

In a larger setup you might have the OnTime server monitoring more Domino mail servers.

Example from the OnTimeGC database/Server Settings:

OnTime Server Settings	
OnTime Server	Server2/OnTime @ OnTime
Synchronization Settings	
Servers being monitored for synchronisation	Server2/OnTime
Monitored servers excluded from update in personal mail databases.	

All Domino mail servers that acts as 'HomeServer' for HCL Notes, iNotes or Verse clients must have the 'OnTimeUFT' task running.

If the 'OnTimeUFT' task is missing on a mail server you may find it in your OnTime installation package in the folder: OnTimeGC-x.x\ExtraFiles\Tasks\Windows64.

The file name is 'nontimeuft.exe' - the character 'n' is for Windows (NT).

Note: The OnTimeUFT task is currently not supported with Domino on Linux.

Please copy this file to the Domino program directory of the Domino mail servers, where it is missing.

The task must be added to the 'notes.ini' parameter 'ServerTasks' as 'OnTimeUFT' (without the character 'n'), a parameter for referencing the OnTime server is required.

Example of the ServerTasks parameter (all in one line) in 'notes.ini':

```
ServerTasks=Replica,Router,Update,AMgr,Adminp,Sched,CalConn,
RnRMgr,http,OnTimeGC,OnTimeUFT http://ontime.example.com
```

If you do not want to restart the Domino server after this change in the 'notes.ini' you may load the task in the Domino console with:

```
>load OnTimeUFT http://ontime.example.com
```

This configuration may alternatively be made through 'https'.

For debug in the Domino console, if you contact OnTime support:

```
>tell OnTimeUFT quit
```

```
>load OnTimeUFT http://ontime.example.com -debug
```

Roll back from OnTime version 11.8.x

When upgrading from a previous version to the new OnTime version 11.8.x there are a couple of changes that does not roll back without manual actions.

1. Servlet file names and their class/code names have been changed.
2. Exchange Server documents are copied to new Exchange Domain documents.
3. New requirements for Azure API permissions.

1) Change of servlet names

“OnTimeGC.jar”

class name: “com.ontimesuite.main.servlet.OnTimeGC”

code name: “ontimegc”

is changed to

“ServletMain.jar

class name: “com.ontimesuite.servlet.main.Main”

code name: “ontimegc”

“OnTimeGCEx.jar”

class name “com.ontimesuite.exchange.servlet.OnTimeGCEx”

code name: “ontimegcex”

is changed to

“ServletExchange.jar “

class name “com.ontimesuite.servlet.exchange.Exchange”

code name: “ontimeexchange”

This means a roll back needs the following:

Update Domino Directory - Server Document – Internet Protocols – Domino Web Engine – Java Servlets – Class path

Server: **Server/IV-MSR** dev.ontime01.dk

Basics | Security | Ports... | Server Tasks... | Internet Protocols... | Miscellaneous | Transactional Logging | DAOS | Notes Traveler | NIFNSF | Administration |

HTTP | Domino Web Engine | DIIOP | LDAP |

HTTP Sessions

This section does not apply as "Load Internet configurations from Server/Internet Sites documents" has been enabled.

Generating References to this Server

Protocol: _____
 Host name: _____
 Port number: 80

Memory Caches

Maximum cached designs: 128
 Maximum cached users: 64
 Cached user expiration interval: 120 seconds

Web Agents and Web Services

Run web agents and web services concurrently? Enabled
 Web agent and web services timeout: 120 seconds

Domino XML Services

XML Services: Disabled

Java Servlets

Java servlet support: Domino Servlet Manager

Servlet URL path: /servlet

Class path: domino/servlet; ontime/ServletMain.jar; ontime/ServletExchange.jar

Servlet file extensions: _____

Session state tracking: Enabled
 Idle session time-out: 30 minutes
 Maximum active sessions: 1000
 Session persistence: Disabled

In old version this was "ontime/OnTimeGC.jar" and "ontime/OnTimeGCEx.jar"

If you forget to change these before running the installer of the old OnTime, then both old and new filenames will be listed, and you need to remove the Ontime 11.8.x file names.

The file "[NotesData]/Servlet.properties" as it is in OnTime 11.8.x

```
servlet.ontimegc.code=com.ontimesuite.servlet.main.Main
servlet.ontimegc.initArgs=
```

```
servlet.ontimeexchange.code=com.ontimesuite.servlet.exchange.Exchange
servlet.ontimeexchange.initArgs=
```

```
servlets.startup=ontimegc ontimeexchange
```

If you only have OnTime servlet you can remove the file, and the installer will recreate correctly. Alternatively, this is the entries in a previous version of OnTime

```
servlet.ontimegc.code=com.ontimesuite.main.servlet.OnTimeGC
servlet.ontimegc.initArgs=
```

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

```
servlets.startup=ontimegc ontimegcex
```

2) Exchange Server documents

When starting the OnTimeGC task and it runs the “fixup” process, it will verify if there are any new Exchange Domain documents. If not, it will copy all existing Exchange Server documents to the new Exchange Domain documents.

This means the “old” documents will not be changed or removed and are hidden in OnTime 11.8.x. This also means removing the new Exchange Domain document and reload the task will copy a new set.

The number of threads in the old version was a “global” value, where now it is number of threads for the given Exchange Domain. So, when upgrading and having multiple exchange domain, this number should be validated and updated accordingly.

When rolling back, the old OnTime version will not show the new Exchange Domain documents, and they will do no “harm”, so you can leave them for a future roll forward to OnTime 11.8.x again.

As the old Exchange Server documents are left untouched, they should still work – unless you have changed Azure keys or any other parameters, then you need to update the old documents accordingly.

3) New Azur API permissions

If the Domain is on M365 you would need to update the Domain Type to “Microsoft 365 (graph)”. This also means that the required Azur API permissions is changed. The new required list is: “Application.Read.All”, “Calendars.ReadWrite”, “GroupMember.Read.All”, “Mail.Send”, “MailboxSettings.Read”, “Place.Read.All”, “User.Read.All”. And you will properly remove “EWS.AccessAsUser.All”.

So a roll back you have to ensure the Azure API permission “EWS.AccessAsUser.All” is still there.