



OnTime

Group Calendar IBM

Installation and Configuration Manual

**OnTime® Group Calendar Exchange appendix
Version 5.4.x**



Trademarks

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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.

The manual follows these font conventions:

- **Bold** – Group names
- **Underlined bold** (Hyperlinked) – Section/chapter
- [**Bold in brackets**] – Functions, buttons
- *Italic* – Information, Field
- [*Italic in brackets*] – Checkboxes, access rights

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Microsoft[®] Exchange[®] features in OnTime[®] Group Calendar

Since OnTime[®] Group Calendar version 3.7.0 new functionality has been added to provide synchronization of calendar entries from Microsoft[®] Exchange[®], both on premises and from Microsoft[®] Office 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 same primary email address as in Microsoft[®] Exchange[®].

Requirements

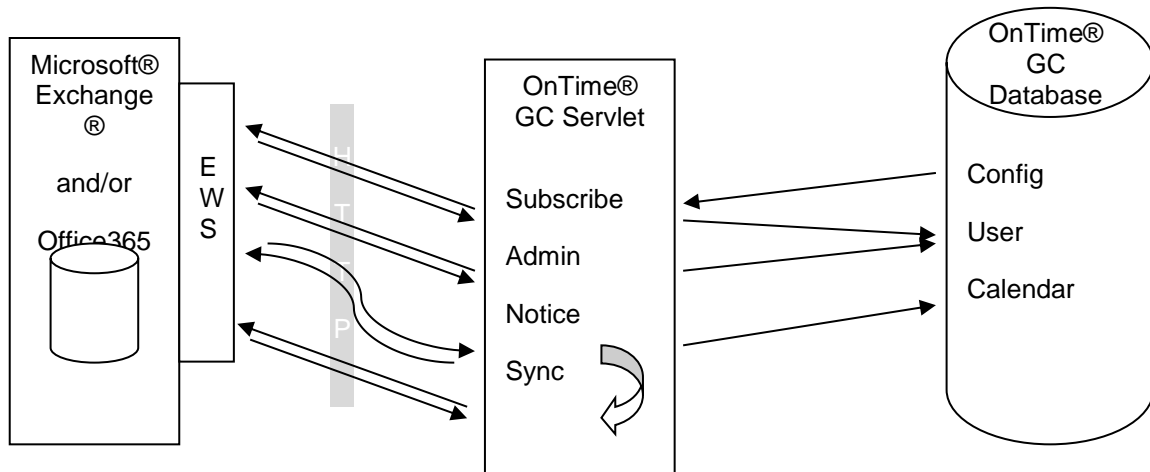
- An OnTime[®] Group Calendar license key, providing access to the functionality.
- Basic authentication must be enabled for Exchange Web Services.
- All users synchronized from Microsoft[®] Exchange[®] environments must be present in the IBM Domino[®] Directory with the same primary email address.
- Synchronization of Persons, Rooms, and Resources/Equipments 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 non 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 mail box - 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 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

- Not able to create calendar entries in Microsoft[®] Exchange[®] environment. Microsoft[®] Exchange[®] users can therefore not 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 same database.

Please notice the difference between the arrows to and from the Exchange 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 reply.

Installation

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

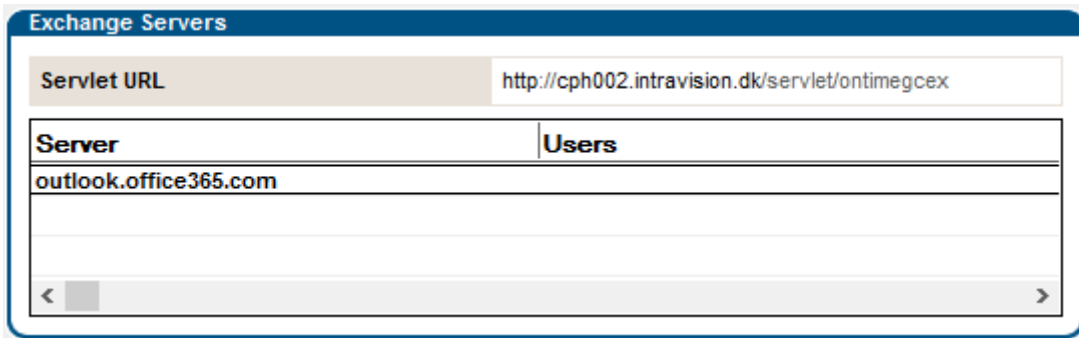
Make sure the license key has the Microsoft® Exchange® option and requirements regarding Impersonation and firewall are in place. To verify the license have a look in the “Help” – “About this Application” of the OnTime® Group Calendar Config database, and check for “Microsoft® Exchange®” in the modules.

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 a 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:

Specify server Settings for the Domino server running the Microsoft® Exchange® services:



Servlet path: Where the servlet code should be stored on the IBM Domino® server - Typically where the rest of OnTime® is installed. Alternatively in the common servlet directory “domino/servlet”.

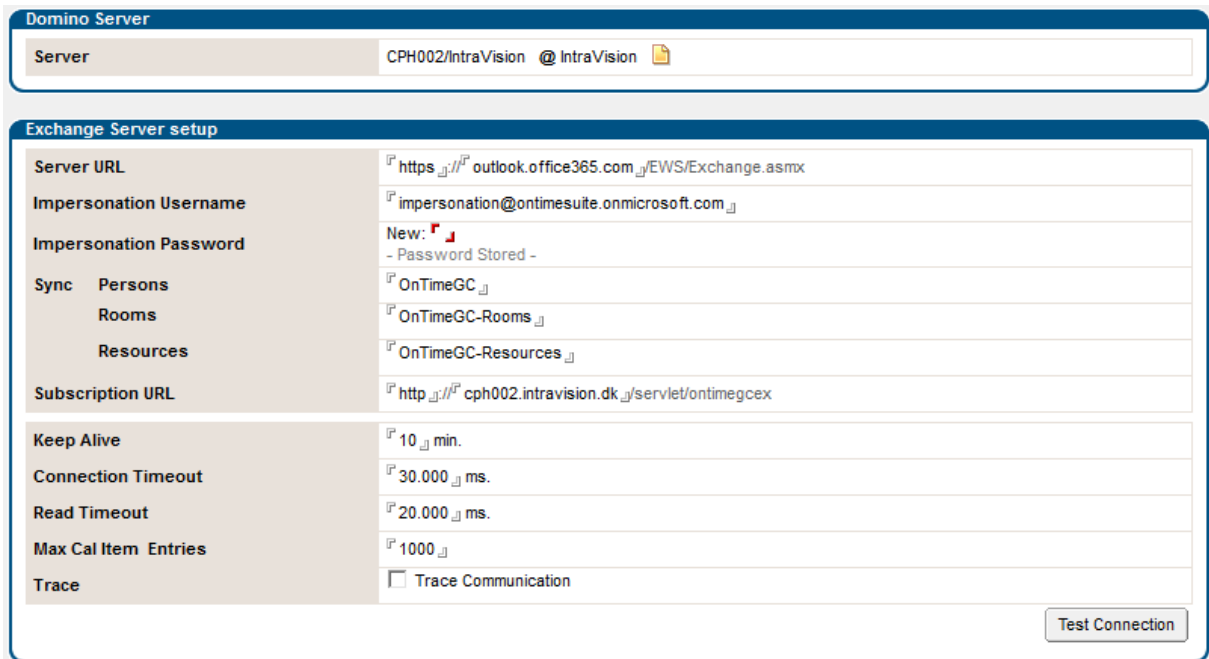
Servlet URL: Specify protocol and DNS name for the used internet site. The path (here “/servlet”) is read from IBM Domino® Directory.

“Add Server” – Needs to be done for each logical Microsoft® Exchange® environment.

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



Click the Exchange Server line for details:



The screenshot shows a configuration window for a Domino Server. At the top, the server is identified as 'CPH002/IntraVision @ IntraVision'. Below this, the 'Exchange Server setup' section is expanded, showing the following fields:

- Server URL:** https://outlook.office365.com/EWS/Exchange.asmx
- Impersonation Username:** impersonation@ontimesuite.onmicrosoft.com
- Impersonation Password:** New: - Password Stored -
- Sync:**
 - Persons:** OnTimeGC
 - Rooms:** OnTimeGC-Rooms
 - Resources:** OnTimeGC-Resources
- Subscription URL:** http://cph002.intravision.dk/servlet/ontimegcex
- Keep Alive:** 10 min.
- Connection Timeout:** 30.000 ms.
- Read Timeout:** 20.000 ms.
- Max Cal Item Entries:** 1000
- Trace:** Trace Communication

A 'Test Connection' button is located at the bottom right of the configuration area.

- 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 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 has to be setup 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 firewall configuration.
- Keep alive:** The keep alive time- default 10 min. – For large number of users increase 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 subscribes are established.

- Connect Timeout: Default 2.000 ms.
For Office365 it should be higher, current tests shows 5.000ms works fine.
- Read Timeout: Default 10.000 ms.
For Office365 it should be higher, current tests shows 30.000ms works fine.
- Max Call Entries Default 1000 - for Office365.
- 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)

For each Microsoft® Exchange® server endpoint create this document, ex. One for on premise and one for Office365.

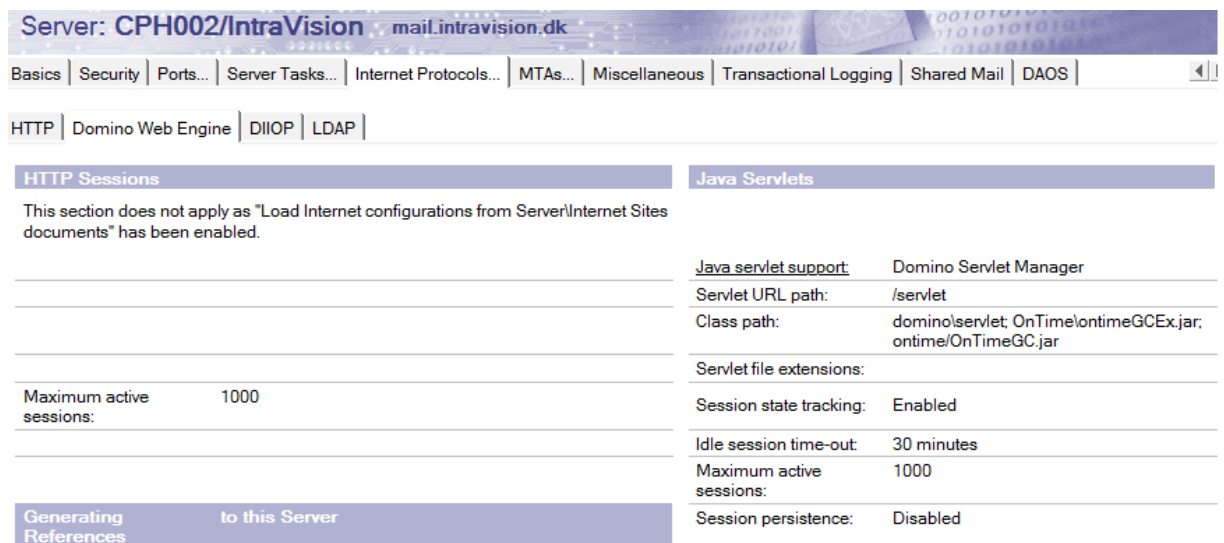
Adding / Update Servlet

Note: On a Linux server this automated action is not supported, and each step has to be done manually.

- please refer to Manual Installation

In the OnTime® Group Calendar Config database, in the Server settings document use the Action button 'Install/Update Servlet'. This action will run through the following 4 steps:

1. It will modify fields in the BM Domino® Directory server document on the tab 'Internet Protocols...' – 'IBM Domino® Web Engine':



The screenshot shows the configuration page for 'Server: CPH002/IntraVision' with the 'Internet Protocols...' tab selected. The 'Java Servlets' section is active, displaying the following settings:

<p>This section does not apply as "Load Internet configurations from Server\Internet Sites documents" has been enabled.</p>	
Maximum active sessions:	1000
Java servlet support:	Domino Servlet Manager
Servlet URL path:	/servlet
Class path:	domino\servlet; OnTime\ontimeGCEx.jar; ontime\OnTimeGC.jar
Servlet file extensions:	
Session state tracking:	Enabled
Idle session time-out:	30 minutes
Maximum active sessions:	1000
Session persistence:	Disabled

Java servlet support: Sets it to "IBM Domino® Servlet Manager".
If already set to "Third Party Servlet Support" the action will exit, as the admin then need to know if it can be changed.

Class path: Adds the file OnTime® servlet path to the field.

- The 'servlet.properties' file (common to all servlets) in the IBM Domino® data directory will be changed:

Adds following lines

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

Appends

"ontimegcex" to the 'servlets.startup=...' line

- The servlet file will be detached:

The OnTime® Group Calendar servlet file 'ontimegcex.jar' file is detached to the directory specified in the configuration. (sub path under IBM Domino® data directory)

- The HTTP task is restarted:

If any of the above has been changed a 'Tell Http Restart' is sent to the server.

Manual Installation

In case you want to change/add parameters in the servlet.properties file please have a look below. If the Domino server is running on Linux, you have to use this "Manual Installation" with the following 4 steps.

Find the Servlet in the Servlet folder of the OnTimeGC Release (version 3.11 or newer). If running a Windows environment, use the install button in the GC Configuration database. Please refer to

Adding / Update Servlet_

- Add the OnTimeGC.jar-file to the Domino Server**

Our recommendation is to add it to the same directory as the OnTimeGC Configuration database. This makes it easier to maintain OnTimeGC files and databases.

Recommendation:	[data]\ontime\OnTimeGC.jar
Default suggestion by Domino: (Domino Directory Server Document)	[data]\domino\servlet

- 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)

3. The server.properties file

Example of file content:

```

servlet.ontimegc.code=com.ontimesuite.gc.servlet.OnTimeGC
servlet.ontimegc.initArgs=ConfigServer=CPH001/IntraVision

servlet.ontimegcex.code=com.ontimesuite.gcex.OnTimeGCEx
servlet.ontimegcex.initArgs=Server=CPH001/IntraVision,Filepath=ontime/ontimegc.nsf

servlets.startup=ontimegc ontimegcex
    
```

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=Srv001/IntraVision,Threads=3,ProxyHost=theproxy.intravision.dk,ProxyPort=4242

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

Running the Microsoft[®] Exchange[®] servlet

During 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 subscribe on the Microsoft[®] Exchange[®] server.

Every minute it will:

1. Verify subscribes 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 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 command "Tell Http Restart".

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 meta data and recalculates roles.
- Only Roles Update** Requests the servlet to recalculate roles.
- Sync All Users** Requests a sync of all users, by adding each user to the synchronization queue. The synchronization thread will then process them one by one.

Each servlet command can also be submitted from a standard http request (browser or web application) like:

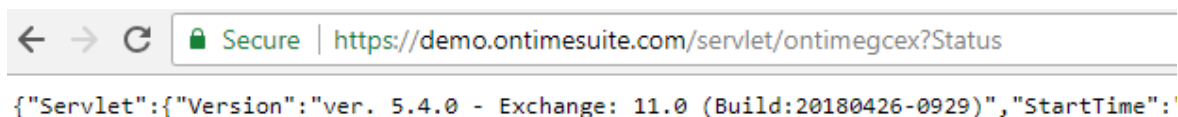
Status:

<http://www.myserver.org/servlet/ontimegcex?Status>

Returns status information of the servlet

The result is a Json string with information.

Example:



Users+Roles Updates:

<http://www.myserver.org/servlet/ontimegcex?UsersAll>

Requests the servlet to update the Subscribe list, read all users meta data and recalculates roles.

Example:



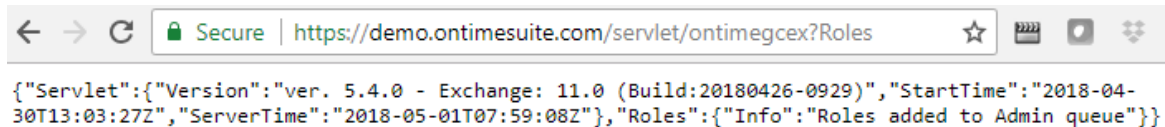
```
{ "Servlet": { "Version": "ver. 5.4.0 - Exchange: 11.0 (Build:20180426-0929)", "StartTime": "2018-04-30T13:03:27Z", "ServerTime": "2018-05-01T07:57:17Z"}, "UsersAll": { "Info": "UsersAll added to Admin queue" } }
```

Only Roles Update:

<http://www.myserver.org/servlet/ontimegcex?Roles>

Requests the servlet to recalculate roles.

Example:



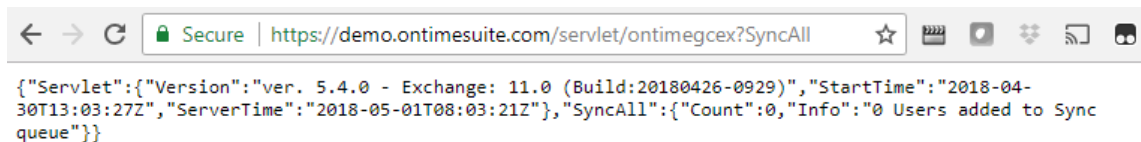
```
{ "Servlet": { "Version": "ver. 5.4.0 - Exchange: 11.0 (Build:20180426-0929)", "StartTime": "2018-04-30T13:03:27Z", "ServerTime": "2018-05-01T07:59:08Z"}, "Roles": { "Info": "Roles added to Admin queue" } }
```

Sync All Users:

<http://www.myserver.org/servlet/ontimegcex?SyncAll>

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

Example:



```
{ "Servlet": { "Version": "ver. 5.4.0 - Exchange: 11.0 (Build:20180426-0929)", "StartTime": "2018-04-30T13:03:27Z", "ServerTime": "2018-05-01T08:03:21Z"}, "SyncAll": { "Count": 0, "Info": "0 Users added to Sync queue" } }
```