



Operations Manual

Fabasoft Private Cloud

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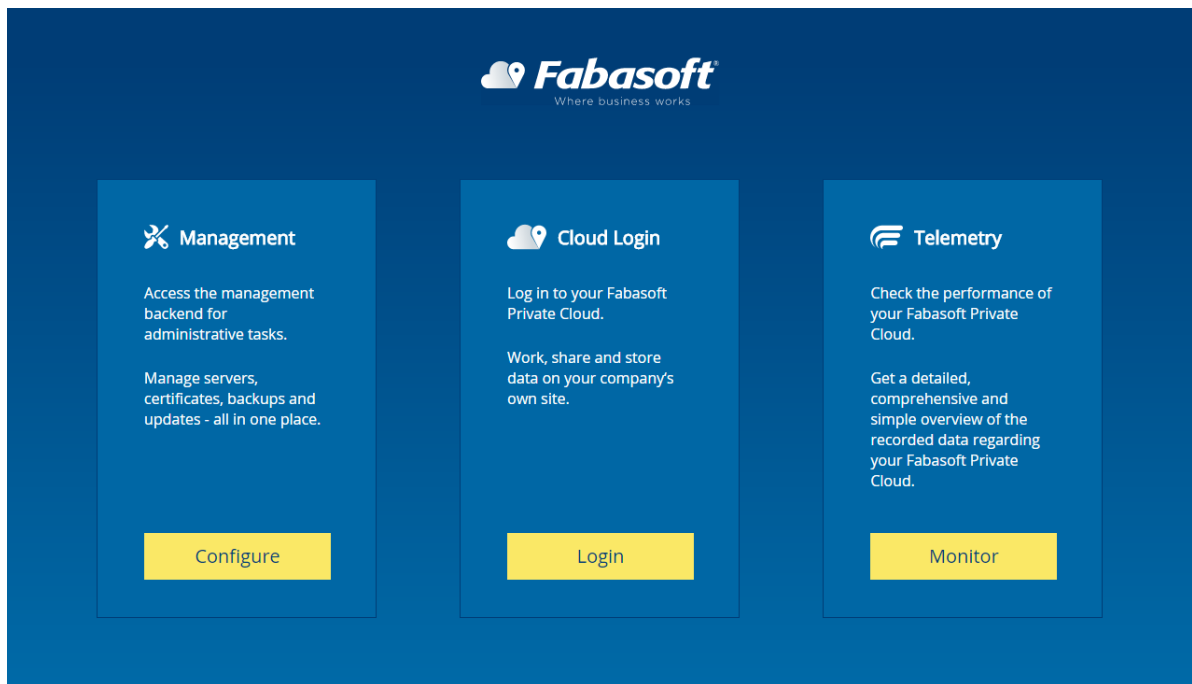
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1 Introduction

The Fabasoft Private Cloud lets you protect your valuable corporate knowledge in your data center. This document shows you how to administer, configure and maintain your Fabasoft Private Cloud.



You can start the Fabasoft Private Cloud Management interface with a web browser by connecting to an IP address of one of your Fabasoft Private Cloud nodes. After the initial installation an overview page will navigate you to the different areas.

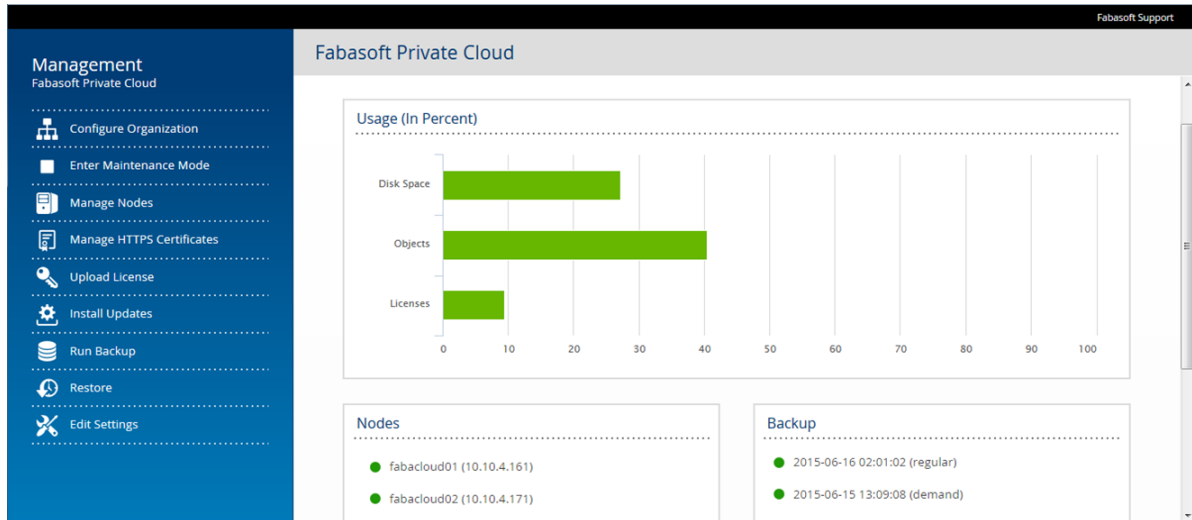


Access to the Fabasoft Private Cloud Management might be restricted to specific client IP addresses. This restriction can be defined in the initial installation and can be changed anytime in the Fabasoft Private Cloud Management.

The Fabasoft Private Cloud Management can be started in parallel from different web browsers or different web browser tabs. It is not possible to run more than one task in the Fabasoft Private Cloud Management at the same time.

2 Starting and Stopping the Fabasoft Private Cloud

The Fabasoft Private Cloud Management shows the current power state of the Fabasoft Private Cloud nodes in the “Nodes” widget.



You can start or stop a node by using the “Manage Nodes” action.

Note: If you are shutting down the node where you are connected to or the management service is currently running on, you will receive a timeout and the progress bar will never finish. You can then connect to the Fabasoft Private Cloud Management on the other node. The power off command is executed correctly and is not needed to be repeated.

2.1 Stopping a Node

To stop one node of the Fabasoft Private Cloud, perform the following steps:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address>/`, preferably on the node that should stay online.
2. Click “Configure” and log on with the user `management`.
3. Click “Manage Nodes”.
4. Click “Stop Node” in the line of the node that you would like to stop.
5. Confirm the stop request by clicking “Yes”.

Services that were running on this node are automatically failing over to the other node. Depending on which services are currently running on the node, short downtime during the failover may occur.

2.2 Starting a Node

To start one node of the Fabasoft Private Cloud, perform the following steps:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address>/` on the node that is online.
2. Click “Configure” and log on with the user `management`.
3. Click “Manage Nodes”.
4. Click “Start Node” in the line of the node that you would like to start.

5. Confirm the start request by clicking "Yes".

2.3 Stopping Both Nodes

If you need to shut down both nodes of the Fabasoft Private Cloud it is recommended to stop one node after another. Therefore you have to perform the following steps:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Manage Nodes".
4. Click "Stop Node" in the line of node 2 (that you are not currently connected to).
5. Confirm the stop request by clicking "Yes".
Note: It might be that you are disconnected or get a timeout because the management service was running on the stopped node. In that case the management service is failing over automatically. You need to refresh your web browser by pressing "F5". If node 2 is marked as down, you can continue.
6. Click "Manage Nodes".
7. Click "Stop Node" in the line of node 1 (that you are currently connected to).
8. Confirm the stop request by clicking "Yes".
Note: The progress bar will not finish because both nodes are now stopped. You will be disconnected from the Fabasoft Private Cloud Management.

2.4 Starting Both Nodes

You do not necessarily need to start the nodes in a specific order. To prevent data loss, the Fabasoft Private Cloud will not be available until you start the node that was stopped last.

To start a Fabasoft Private Cloud node you can either press the power button on the server directly, or you can use the management functionality of the hardware management tool (Dell iDrac) in the following way:

1. Open the Dell iDrac in a web browser with `https://<iDrac IP address>/`.
2. Navigate to "Overview" > "Server" and click "Power".
3. Choose "Power on system" and click "Apply".
4. Repeat steps 1 to 3 for the other node

2.5 Stopping Services (Maintenance Mode)

The maintenance mode can be used to prevent users from accessing the Fabasoft Private Cloud without stopping both nodes. Fabasoft Private Cloud services are stopped, the management interface and Fabasoft app.telemetry is still available.

To enter or leave the maintenance mode, perform the following steps:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Enter Maintenance Mode" or "Leave Maintenance Mode".

4. Confirm the request by clicking "Yes".

3 Managing HTTPS Certificates

Access to the Fabasoft Private Cloud and the Fabasoft Private Cloud Management is only possible with HTTPS. You can change the TLS certificate in the following way:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Manage HTTPS Certificates".
4. Choose "Management Access" or "Fabasoft Private Cloud Access".
5. Click "Generate CSR" for creating a Certificate Signing Request (CSR).
6. Enter the necessary data for a CSR.
7. Click "Create" and take the generated CSR to request a certificate from a certificate authority.
Note: You have to also add an additional SAN in the certificate for Fabasoft Private Cloud access for `cert.<FQDN of the Fabasoft Private Cloud access>`. This is necessary to allow authentication with client certificates. Example: If your FQDN is `cloud.example.com` then you have to request the additional SAN `cert.cloud.example.com` in the certificate.
8. Import the new certificate in the Fabasoft Private Cloud Management.

4 Updating the License

There might be situations where you need to update the Fabasoft Private Cloud license (e.g. after a trial, or after a contract year). You can check the current expiration date of the Fabasoft Private Cloud license with the following steps:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Upload License".
The current expiration date is displayed. You can then cancel the dialog.

You can update the Fabasoft Private Cloud license with the following steps:

1. Save the license, that has been provided by Fabasoft Licensing, on your client.
2. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
3. Click "Configure" and log on with the user `management`.
4. Click "Upload License".
5. Choose the license saved in step 1.
6. Click "Upload".

5 Changing Settings

During the installation you have to take various settings about the integration of the Fabasoft Private Cloud in your infrastructure. You can change these settings later on in the Fabasoft Private Cloud Management.

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Edit Settings".
4. Change the desired settings and click "Apply".

Note: Changing settings might have impact on the availability of the Fabasoft Private Cloud.

6 Data Security

6.1 Synchronization Between the Nodes

When the Fabasoft Private Cloud is in operation, metadata and contents are saved. Both metadata and contents are saved synchronously on both nodes. Metadata is stored in a relational database system (synchronously mirrored on both nodes), contents/documents are stored in a file system in parallel on one file service on each node. Prerequisite for allowing synchronization is the availability of the cluster LAN.

If the synchronization is interrupted missing data will be automatically synchronized after the synchronization is re-established. Resync of metadata will start timely. Resync of contents will start once a day at 02:00 a.m., or when a manual or scheduled backup runs. The duration of a resync operation depends on the amount of not synchronized data.

Monitoring of the data synchronization state can be done with Fabasoft `app.telemetry` as described in chapter 7.1 "Data Synchronization".

6.2 Backup

A full metadata backup is carried out at least once a day with database backups on dedicated file services. Independently from the backup schedule, these backups will be kept internally in the Fabasoft Private Cloud for at least 3 days and maximum 180 days (cleanup is done automatically depending on the used backup disk space).

When a backup on an external share is configured, the following data is backed up according to the configured backup schedule:

- Fabasoft Private Cloud metadata (full metadata backup and write ahead logs)
- Fabasoft Private Cloud contents (synchronization of changes)
- Fabasoft `app.telemetry` metadata (full metadata backup and write ahead logs)
- Fabasoft Private Cloud directory services data (full metadata backup)
- Fabasoft Private Cloud configuration

The customer is responsible for securing access to the backup share.

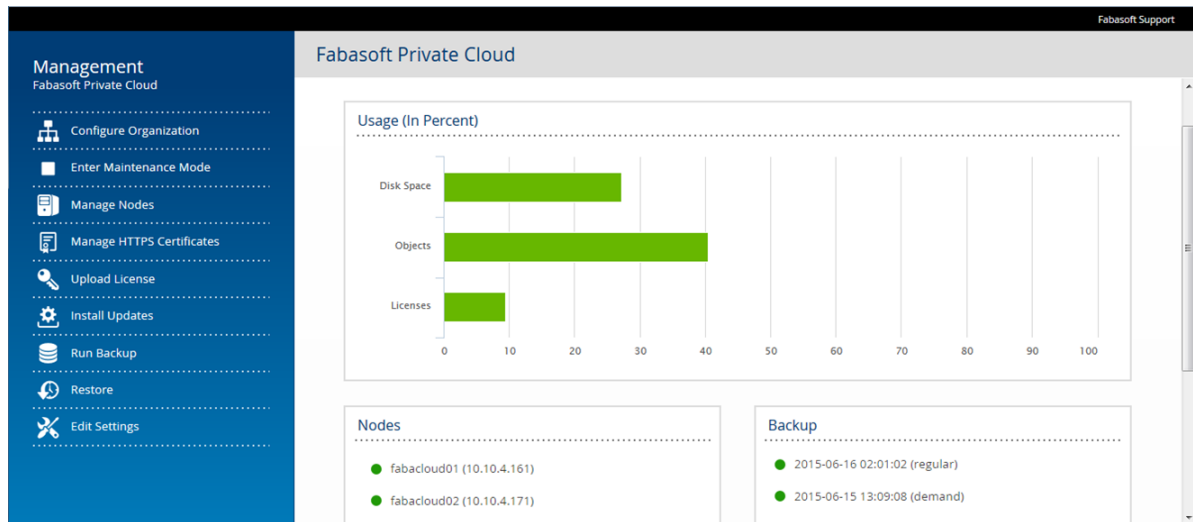
6.2.1 Backup Settings

The backup settings can be changed in the following way:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Edit Settings".
4. Click "Backup" on the left side.
5. Change the desired settings and click "Apply".

6.2.2 Backup State

The state of the previously executed backups is displayed in the Fabasoft Private Cloud Management in the "Backup" widget.



Click on a specific backup to get a detailed log.

Backup Overview

Backup

Name 2015-06-17 02:01:02 (regular)
Status ● OK

Details

```
Starting backup on 2015-06-17 at 02:01:02.  
Creating backup of the Fabasoft Private Cloud database... completed.  
Creating backup of the Fabasoft Private Cloud file system... completed.  
Creating backup of LDAP... completed.  
Creating backup of Fabasoft app.telemetry... completed.  
Creating backup of the Fabasoft Private Cloud configuration... completed.  
Creating backup of the Fabasoft Private Cloud Certificates... completed.  
Creating backup of the Configuration Management... completed.  
Backup of your Fabasoft Private Cloud completed successfully on 2015-06-17 at 02:06:04.
```

6.2.3 Run a Backup

You can run a backup independently from the backup schedule in the following way:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Run Backup".
4. Confirm that you want to start a backup with "Yes".

6.2.4 Restore

Due to the redundancy of the Fabasoft Private Cloud a restore from an older backup should not be necessary in the event of a single error. If you really need to restore your Fabasoft Private Cloud to an older state, it is recommended to contact Fabasoft Support before doing the restore to clarify if there is really no better solution for your scenario.

You can start a restore in the following way:

1. Open the Fabasoft Private Cloud Management in a web browser with `https://<IP address of node 1 or 2>/`.
2. Click "Configure" and log on with the user `management`.
3. Click "Restore".
4. Choose the desired backup (make sure that this backup is still available on your backup share).
5. Confirm that you want to start the restore with "Yes".

Attention: All current data of the Fabasoft Private Cloud will be deleted by the restore process.

6.3 Self-Encrypting Disks

Data is saved on self-encrypting disks (SED, FIPS 140-2 Level 2). This protects the data in case of the loss of hardware.

Further information about security key and RAID management can be found on <http://www.dell.com/support/article/us/en/19/SLN164101/EN>.

7 Monitoring

With Fabasoft `app.telemetry` you can measure the performance and monitor the status of the Fabasoft Private Cloud. You can start Fabasoft `app.telemetry` by clicking "Monitor" in the overview page of the Fabasoft Private Cloud Management. If you are prompted for your credentials, please log on with the user `management` and the password that you have defined in the initial installation.

In the "Dashboard" view, you will get an overview about the current usage of your Fabasoft Private Cloud.

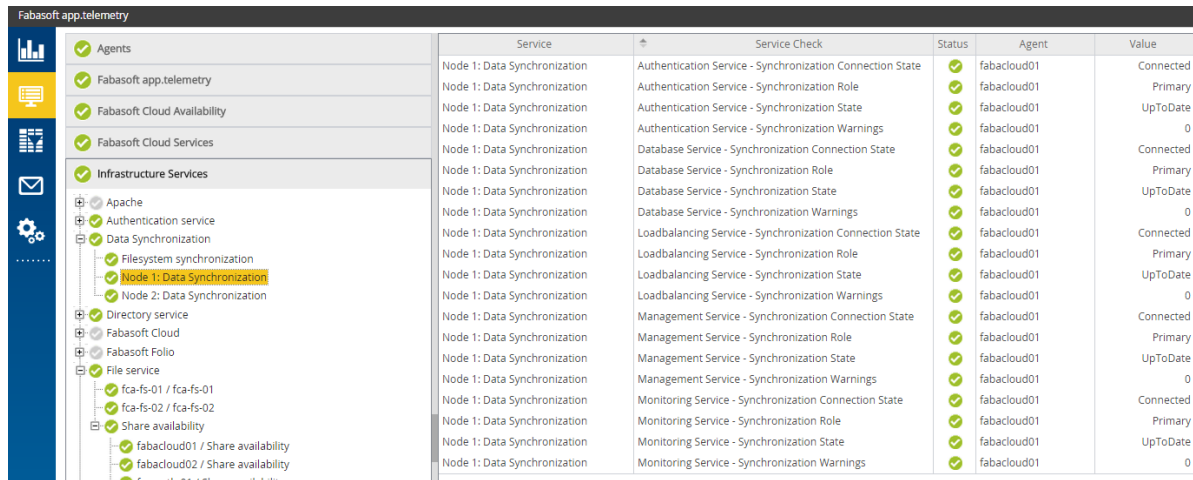
The "Status" view is for more detailed system monitoring. The group "Fabasoft Cloud Availability" indicates if the Fabasoft Private Cloud is available from the user's perspective based on health checks from both nodes. If there is an error, email notifications will be sent to the email address that you have defined in the initial installation. You can change this setting in the Fabasoft Private Cloud Management with "Edit Settings" > "Infrastructure" > "Notifications".

The "Applications" view gives you the possibility of generating ad hoc reports of user requests and doing detailed performance analysis of one or more telemetry requests.

Feedback sessions sent with the support button within the Fabasoft Private Cloud web browser client can be found in the "Inbox".

7.1 Data Synchronization

Monitoring of synchronization states can be done with Fabasoft app.telemetry in the status view:



Service	Service Check	Status	Agent	Value
Node 1: Data Synchronization	Authentication Service - Synchronization Connection State	✓	fabacloud01	Connected
Node 1: Data Synchronization	Authentication Service - Synchronization Role	✓	fabacloud01	Primary
Node 1: Data Synchronization	Authentication Service - Synchronization State	✓	fabacloud01	UpToDate
Node 1: Data Synchronization	Authentication Service - Synchronization Warnings	✓	fabacloud01	0
Node 1: Data Synchronization	Database Service - Synchronization Connection State	✓	fabacloud01	Connected
Node 1: Data Synchronization	Database Service - Synchronization Role	✓	fabacloud01	Primary
Node 1: Data Synchronization	Database Service - Synchronization State	✓	fabacloud01	UpToDate
Node 1: Data Synchronization	Database Service - Synchronization Warnings	✓	fabacloud01	0
Node 1: Data Synchronization	Loadbalancing Service - Synchronization Connection State	✓	fabacloud01	Connected
Node 1: Data Synchronization	Loadbalancing Service - Synchronization Role	✓	fabacloud01	Primary
Node 1: Data Synchronization	Loadbalancing Service - Synchronization State	✓	fabacloud01	UpToDate
Node 1: Data Synchronization	Loadbalancing Service - Synchronization Warnings	✓	fabacloud01	0
Node 1: Data Synchronization	Management Service - Synchronization Connection State	✓	fabacloud01	Connected
Node 1: Data Synchronization	Management Service - Synchronization Role	✓	fabacloud01	Primary
Node 1: Data Synchronization	Management Service - Synchronization State	✓	fabacloud01	UpToDate
Node 1: Data Synchronization	Management Service - Synchronization Warnings	✓	fabacloud01	0
Node 1: Data Synchronization	Monitoring Service - Synchronization Connection State	✓	fabacloud01	Connected
Node 1: Data Synchronization	Monitoring Service - Synchronization Role	✓	fabacloud01	Primary
Node 1: Data Synchronization	Monitoring Service - Synchronization State	✓	fabacloud01	UpToDate
Node 1: Data Synchronization	Monitoring Service - Synchronization Warnings	✓	fabacloud01	0

The service groups “Node 1: Data Synchronization” and “Node 2: Data Synchronization” show the state of each cluster node. The following counters are available for each synchronized device:

- Synchronization Connection State
“Connected” indicates, that there is a connection between the primary and secondary device. This is the normal operation mode.
- Synchronization Role
“Primary” indicates, that the synchronized device is used for operations on this node, data is synchronized to the “Secondary” device with the same name.
- Synchronization State
“UpToDate” indicates the normal operation mode. Other states are possible if the connection to the other node is lost (e.g. downtime of a node), or if the paired devices are not synchronized (e.g. re-synchronization after bringing a node back online).
- Synchronization Warnings
If the state or the connections state are outside the normal operation mode, a warning condition will be raised automatically in this counter.

The service group “File system synchronization” indicates if the job that searches for missing files on one of the nodes is running regularly.

8 Devices

On the devices the Fabasoft Cloud Client has to be installed.

- Fabasoft Cloud Client
It is highly recommended to use the Fabasoft Cloud Client whenever it is possible. The client has to be installed by the users themselves. It is provided for download when opening the Fabasoft Private Cloud Web Client. If enterprise policies do not allow installing software, administrators can distribute the enterprise client. The functionality of the Fabasoft Cloud Client and Fabasoft Cloud Enterprise Client is the same.
Note: Administrative rights are needed to activate the Windows Explorer visualization that is necessary for the synchronization functionality. If this functionality is not used, no administrative rights are needed.

- Fabasoft Cloud Enterprise Client

In the enterprise environment the installation of software is sometimes not possible (e.g. users are not allowed to execute MSI files or with the use of terminal servers). The enterprise client is installed for all users of a computer (so-called per-machine installation) and can be centrally distributed by administrators. For information about deploying MSI files refer to the documentation of your deployment tool.

Deploy the `CloudClientEnterprise.msi` installation package per-machine:

`https://<host private cloud>/cloud/fscasp/content/lib/CloudClientEnterprise.msi`

Note: You have to ensure that no Fabasoft Cloud Client is installed on the devices.

Note:

- The installation of the Fabasoft Cloud Client and the Fabasoft Cloud Enterprise Client on the same computer is not supported.
- The same client is used for the Fabasoft Cloud and for the Fabasoft Private Cloud. If both systems are used, the auto-update functionality of the client always installs the latest version.

8.1 General Information

If a device is not optimally configured, the Fabasoft Private Cloud Web Client shows the necessary configuration steps in the "Web Browser State". The user has to carry out the described steps. To avoid manual steps for users the following preparation guide has to be checked:

<https://help.privatecloud.fabasoft.com/index.php?topic=doc/Fabasoft-Cloud-Client/index.htm>