

LucaNet 13 – Technical Information for LucaNet On-Premises

Notes

- The database systems cited herein have undergone comprehensive testing. When using other database systems, LucaNet cannot ensure that the LucaNet ETL scripts will work without errors.
- The system requirements and limitations vary a great deal based on the operating system and processor type at hand, as well as on the installed components of the database system in use. If necessary, inquire with the respective manufacturer about the system requirements for your hardware and software configuration.
- The specific usage parameters at hand (the amount of data to be processed, the number of documents, etc.) are another key factor. If necessary, discuss the database server that suits your particular needs with your LucaNet consultant.

Caution

- The system requirements and limitations correspond to the manufacturer specifications issued in October 2018.
- The system requirements and limitations of older versions of the database management systems covered may deviate from the specifications in this document.

2.6.3 Network architecture

The LucaNet software, the ERP system and the database server can be on any of the servers in a company network. This makes it possible to host the ERP system on a local installation of LucaNet, for example. The database server containing LucaNet.**Financial Warehouse** can be installed on a third server.

We recommend installing the database software for LucaNet.**Financial Warehouse** and the LucaNet server on the same computer. This can achieve an acceleration of ETL processes by a factor of three.

Note: In situations where it is not possible to install LucaNet.**Financial OLAP Server** and LucaNet.**Financial Warehouse** on the same computer, we recommend installing the two software components on the same network.

3 Security concept

The LucaNet software has a comprehensive security concept that includes both the protection of your data in the LucaNet software and the mapping of your individual security policies using a comprehensive authorization concept.

3.1 Access protection in the software

Data Transfer

A choice between no encryption or SSL encryption (TLS 1.1 or higher) can be made when transferring between LucaNet.**Financial OLAP Server** and the client applications.

Password encryption

The PBKDF2 procedure is used to authenticate users for all software components (that is, servers and all clients).

Administration of LucaNet.Financial OLAP Server

LucaNet.**Financial OLAP Server** is administrated by means of the application LucaNet.**Server Administrator**.

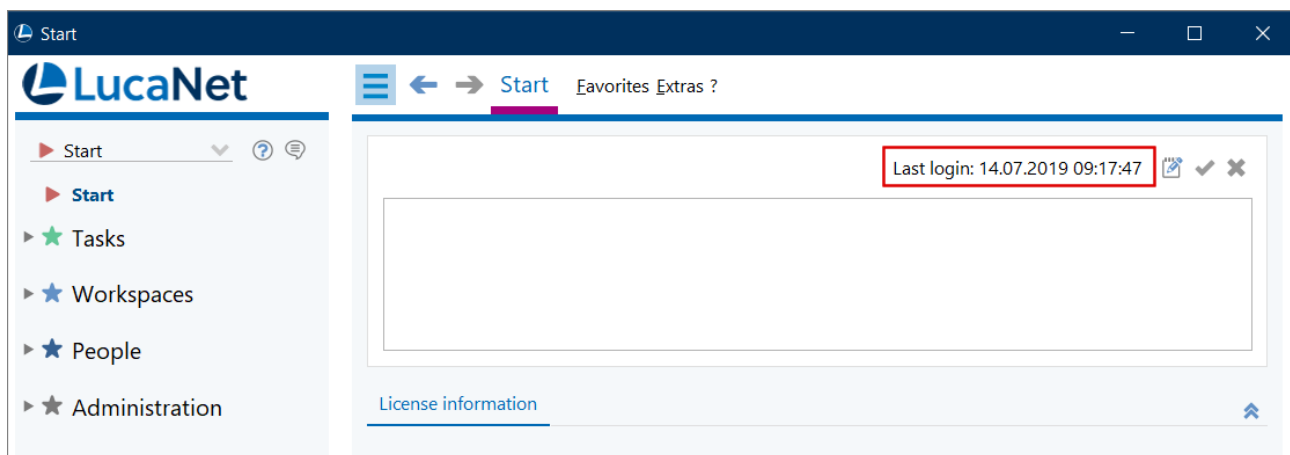
Administrative tasks such as creating, backing up, and deleting databases take place in LucaNet.**Server Administrator**. Furthermore, access to it can be used to manage software updates, carry out regular backups, and view server log files.

Permission to access LucaNet.**Server Administrator** does **not** include any access rights to view the contents of the managed databases, with the exception of the following statistical data:

- Number and names of created users
- Number and names of created reporting entities
- Number and names of created data levels
- Number of cost centers

Database access

Every database user must identify themselves with a user name and a PBKDF2-encrypted password. Each login operation is recorded with a time stamp. The most recent access attempt is displayed to users on the start-up screen as in the following example:



To increase password security, policies can be defined as to their length, complexity, and how often they must be changed.

To grant LucaNet employees temporary access to a database for support purposes, users of type LucaNet.**Certified Professional** that do not require a license can be created and configured in every database:

- To satisfy audit requirements, users of type LucaNet.**Certified Professional** should always have the full names of the accessing user in the form *FirstnameLastname* as user names in line with LucaNet's naming conventions. The user John Smith Doe would have the user name JohnSmithDoe, for example.
- A user of type LucaNet.**Certified Professional** has the exact access permissions it was granted during configuration. Due to audit requirements (security policies), a customer may object to users of type LucaNet.**Certified Professional** being granted full write and read permissions across the board. In such cases, individual arrangements can be made as to the access permissions these support users should have.
- All actions performed by users of type LucaNet.**Certified Professional** are registered in the change log, which makes it possible to determine what tasks the users in a given database have carried out at any time.
- If continued access to a database is (temporarily) no longer required for a user of this kind, the user can be blocked for the relevant period (or permanently).

Access to LucaNet.Financial Warehouse

After initial setup, the authorization for access to LucaNet.**Financial Warehouse** can be restricted by assigning a customer-specific password so that only the customer has access to LucaNet.**Financial Warehouse**. From this moment, LucaNet can access LucaNet.**Financial Warehouse** only upon customer request.

3.2 Data backup concept

Overview

LucaNet.**Financial OLAP Server** uses an in-memory database for providing data for the application. Because the RAM is volatile, several fallback levels are implemented in order to guarantee safety against breakdowns and thus the availability of the data. The following fallback levels are implemented:

- **import**
Backups can be used to store the entire LucaNet database on a separate drive so that the latest data can be accessed even in the event of a server failure. Data backups consist of XML-based raw data that are zipped and encrypted and stored in LNARC format, i.e. in a LucaNet-specific archive format. Each backup contains the current state of the database in encrypted form and all binary files.
- **Snapshots**
Snapshots are backup copies of the main memory. Each snapshot is a binary file that is comprised technically of a one-to-one copy of the object-oriented data model at a particular point in time. Snapshots can be interpreted only by LucaNet.**Financial OLAP Server** for which they were created.
- **Transaction log**
The transaction log is always based on a snapshot and contains all of the changes that have been executed since the creation of the snapshot on the database in the context of writing transactions.

Creating backups

To prevent data loss, automated or manual backups of the managed databases can be created in LucaNet.**Financial OLAP Server**. You can create a backup of your database(s) at any time. The database state at the time of the backup is saved as an LNARC file and stored in the file system.

You can store the database either through LucaNet.**Server Administrator** or in the currently used database directly in LucaNet.**Financial Client**.

As a rule, data backups are created automatically overnight in LucaNet, using the so-called job control. The job control contains the job **Perform backup**, which is used to automatically create data backups. We recommend saving this backup to a network drive located on a server that is also part of your backup strategy.

Encryption of backups

All backups are password-protected and encrypted using the **AES** algorithm. By default, the password of a backup is the license number. Alternatively, it is possible to assign individual passwords for the data backup(s) by using the option **Encrypt backup with individual password**.

Decoding and using a backup is impossible without knowing the password of the backup.

Importing backups

Data backups can be imported at any time. The original database at the time of the backup will be restored by the LucaNet software as part of this process. Backups can be imported into higher releases of the LucaNet software or in other LucaNet.**Financial OLAP Servers**. Should the worst-case scenario occur and an import into the existing LucaNet.**Financial OLAP Server** is no longer possible, the LucaNet software can be reinstalled and the data backup can be imported into the new LucaNet server.

Please note that when using a backup, the changes made in the source database since the last backup will be lost.

Data recovery based on snapshots (recovery concept)

LucaNet.**Financial OLAP Server** always stores all of the changes made as a snapshot and in the transaction log on the hard drive parallel to on-going work.

If the computer crashes during operation, the server will reconstruct the changes from the hard drive at the time of the next start-up and restores the data up to the last storage time prior to the crash. Recovery of the data in the RAM from the files on the hard drive is called **loading the database**.

Because the transaction log is written asynchronously in the background (possibly with a time delay of a few milliseconds), at most the last change, which could not be logged completely in the transaction log, could get lost.

Recovery based on VM images

We also recommend that the image of the VM on which LucaNet.**Financial OLAP Server** is installed to be stored at the shortest intervals possible. In this way, a fallback level is created that enables the recovery of LucaNet.**Financial OLAP Server** without having to reinstall it. When creating VM images, it is not necessary to back up the entire RAM of the VM.