



Netavis sMart Data Warehouse 6.2

Installation and Administration Guide

English



Netavis sMart Data Warehouse 6.2 Installation and Administration Guide

Valid from sMart Data Warehouse 6.2

Published in April 2020

The software described in this manual is licensed under the terms of the Netavis end user license agreement and may only be used in accordance with these terms.

Copyright

Copyright © 2020 Netavis Software GmbH. All rights reserved.

Netavis is a trademark of Netavis Software GmbH. All other trademarks are trademarks of their respective holders.

Netavis Software GmbH
Handelskai 388, Top 221
A-1020 Vienna
Austria

Tel +43 (1) 503 1722

info@netavis.net

www.netavis.net

Contents

1 System requirements	4
2 Application Architecture	6
3 Installation	7
4 Update	8
5 Deployment	9
6 Moving instances to another server	10
7 Local customization	11
8 Network	12
9 System Manager	13

1 System requirements

- Architecture: 64-bit
- CPU: Quad Core processor
- Memory: 8GB RAM
- HDD: 1TB

Note: In case sMart Data Warehouse is only used for security applications with data from fewer than five Netavis Observer systems and less than three parallel users then a dual-core CPU and 4GB RAM are sufficient. However on systems with 4GB RAM the **Max. memory usage** option in the [System Manager](#) has to be set to 2GB!

- Operating System:
 - CentOS 6.x/7.x/8.x and Red Hat Enterprise Linux 6.x/7.x/8.x
 - Required software:
 - firewalld (only required for CentOS 7.x and Red Hat Enterprise Linux 7.x, needs to be manually enabled in 7.2+)
 - libaio
 - ncurses-compat-libs (only required for CentOS 8.x and Red Hat Enterprise Linux 8.x systems: # dnf install ncurses-compat-libs)
 - python2 or python3

Note: CentOS 8.x and Red Hat Enterprise Linux 8.x require the explicit execution of # python2 or # python3 per default. However, the command # update-alternatives --config python allows you to configure whether python2 or python3 shall be used when executing # python.

- unzip
- x11org libraries (only required for CentOS 6.x/7.x and Red Hat Enterprise Linux 6.x/7.x systems: #yum groupinstall "X Window System")
- zip

Note: If issues related to permissions or access rights occur during installation (or updates) please check your system's security settings such as the SELinux status.

- Windows 8, Windows 8.1, Windows 10, Windows Server 2008, Windows Server 2012, and Windows Server 2016
 - Required software:
 - .NET Framework 3.5

Note: The .NET Framework needs to be installed prior to starting the sMart Data Warehouse installation.

- Timezone:
 - Please ensure that the system is configured for the correct timezone before installing sMart Data Warehouse.
- SSL Certificate:
 - Per default sMart Data Warehouse will use a secure HTTPS connection for all browser requests. In order for browsers to recognize that this in fact a secure HTTPS connection an appropriate SSL certificate needs to be uploaded to the sMart Data Warehouse server after installation (see chapter 9 *System Manager* on page 13 for further information). Without such a SSL certificate browsers may show warnings about unsecure connections when using the sMart Data Warehouse system.

2 Application Architecture

The installed application consists of three services:

- Linux:
 - Data Warehouse (Tomcat web-application server)
Registered name: warehouse
Runs automatically at startup
 - Data Warehouse Database (MariaDB database server)
Registered name: warehouse-db
Runs automatically at startup
 - Data Warehouse Manager (Tomcat web-application server)
Registered name: dwh-manager
Runs automatically at startup
- Windows:
 - Data Warehouse (Tomcat web-application server)
Registered name: Netavis Data Warehouse
Runs automatically at startup
 - Data Warehouse Database (MariaDB database server)
Registered name: Netavis Data Warehouse Database
Runs automatically at startup
 - Data Warehouse Manager (Tomcat web-application server)
Registered name: Netavis Data Warehouse Manager
Runs automatically at startup

Installed files:

- %DWH_HOME%/backup → application and database backups
- %DWH_HOME%/components → required software components
- %DWH_HOME%/deployment → Deployment and application maintenance
- %DWH_HOME%/export → Exported reports
- %DWH_HOME%/import → External files to be imported
- %DWH_HOME%/local → Local customization
- %DWH_HOME%/upgrade → Release archive used for upgrade (deprecated as of sMart Data Warehouse 6.0)
- %DWH_HOME%/local.properties → application configuration
- %DWH_HOME%/starter.sh (Windows: starter.bat)
- %DWH_HOME%/stopper.sh (Windows: stopper.bat)
- %DWH_HOME%/uninstall.sh (Windows: uninstall.bat)

3 Installation

The application is delivered as a zip file: sMart-x.x.x-linux-x64.zip OR sMart-x.x.x-win-x64.zip (x.x.x is version of release)

1. Copy the zip archive to the server (location doesn't matter).
2. Unpack the zip to an optional location.
 - Result: sMart-x.x folder with following content:
 - components.zip
 - install.py OR install.exe
 - release-x.x.x.zip
 - upgrade.py OR upgrade.exe
3. Change directory to sMart-x.x.
4. Start install script:
 - Linux: Execute python install.py as root
 - Windows: Run install.exe as administrator
5. Type path to folder where you want to install the application (%DWH_HOME%).
 - In case of folder doesn't exist, it will be created.
 - Disk space for the path is checked. You must have at least 20 GB free space to be able to install the application.

Note: On Windows sMart Data Warehouse cannot be installed under C:\Users!

6. Installer automatically chooses required ports from the currently unused ones. Chosen ports and folders are printed on the screen waiting for confirmation. Settings are stored %DWH_HOME%/local.properties. There is an option at this point to modify the configuration by changing values in the file manually. In case of modification the installer process shouldn't be interrupted, changes need to be done in other session/window. You need to consider that other software installed on the same machine which using ports and currently not running. In most cases no modification is required.
7. Type user name for system administrator.
8. Type password for system administrator.
9. Clean up:
 - Delete sMart-x.x.x-linux-x64.zip OR sMart-x.x.x-win-x64.zip.
 - Delete sMart-x.x folder with its content.
10. Log in to the application with system administrator

4 Update

The new version of a release is delivered as a zip file: sMart-x.x.x-linux-x64.zip OR sMart-x.x.x-win-x64.zip (x.x.x is version of release)

1. Copy the zip file of the new release to any folder on the system.
2. Unzip the file into a temporary folder.
3. Change directory to the sMart-x.x sub-directory within the temporary folder.
4. Start the update process
 - Linux: Execute python upgrade.py as root
 - Windows: Run upgrade.exe as administrator and then run upgrade.bat
4. Users must log out and then log in again in order for changes such as new menu items to become visible in the browser.

Note: New versions of sMart Data Warehouse may require a new license key! Additionally, after updates system administrators are encouraged to verify that new permissions that may have been added (e.g. "Map Configuration" and "Maps" in sMart Data Warehouse 2.0) are appropriately assigned to roles in sMart Data Warehouse. The Super Admin role will automatically receive access to newly added permissions.

5 Deployment

Apache Ant scripts are used for application deployment functions.

Usage

Change directory to %DWH_HOME%/deployment

Execute (Linux): ./ant %FUNCTION_NAME%

Execute (Windows) : ant %FUNCTION_NAME%

Functions

db.backup → creates a backup of the database to %DWH_HOME%/backup/db.

db.restore → restores the database using one of the available backups.

app.backup → creates a backup of the application to %DWH_HOME%/backup/app.

app.restore → restores the application using one of the available backups.

start.all → starts Database and Application service.

stop.all → stops Database and Application service.

start.db → starts Database service

stop.db → stops Database service

start.tomcat → starts Application service

stop.tomcat → stops Application service

deploy → re-deploy web-applications in Tomcat Application service.

collect.logs → collect server log files to a zip: %DWH_HOME%/deployment/dwh-logs.zip

6 Moving instances to another server

In case that a sMart Data Warehouse instance needs to be moved from one server to another, the steps are as follows:

New Server:

1. Install sMart Data Warehouse on the new server (it must be the same version!)
2. Stop application service on the new server → `./ant stop.tomcat`

Old Server:

3. Stop application service on old server → `./ant stop.tomcat`
4. Create database backup on the old server → `./ant db.backup`
5. Copy database backup to the new server: `%DWH_HOME%/backup/db/`
6. In case of using external upload process (ftp, rsync). Change the configuration to transfer files to the new server's `%DWH_HOME%/import` folder.*
7. Copy content of export, import, local folder to the new server.

New Server:

8. Restore database from backup on the new server → `./ant db.restore`
9. Start application service → `./ant start.tomcat`

* Required software (vsftpd, rsync), user access/permissions needs to be configured.

7 Local customization

As of sMart Data Warehouse 1.1.0 it is possible to customize an instance via the graphical interface in System Settings - Customization.

In general, local customization files are stored in the following folder:

%DWH_HOME%/local → Local customization

Custom strings, logos, icons, colors, fonts,... can also be configured in these files. This customization is then valid for the local sMart Data Warehouse instance.

8 Network

General topics:

- The application itself can be accessed through the Tomcat Application Server's port and the default HTTPs port is 8080. The port can be changed during the installation process (see Installation step 6 in section *8 Network* on page 12) and later in the System Manager (see chapter *9 System Manager* on page 13 for further information). Installation takes care of opening the port in the firewall settings for incoming requests.
- Make sure that a DNS server is configured for the server.
- Additionally the System Manager default port is 8070.
 - Prior to installation this port can be changed in the %DWH_HOME%/local.properties file under "manager.port".
 - Post-installation this port can be changed by:
 1. Stopping the warehouse and dwh-manager services
 2. Changing the value for the "manager.port" in %DWH_HOME%/local.properties file
 3. Switching into the %DWH_HOME%/deployment directory
 4. Executing ./ant upgrade.manager
 5. Starting the warehouse and dwh-manager services

sMart Data Warehouse requires internet connection for the following features:

- OpenStreetMap maps
 - *.openstreetmap.org
 - Port 80
- Weather statistics
 - api.openweathermap.org
 - Port 80
- Email sending (except SMTP server is on the local network)
 - Port depending on the SMTP server config

9 System Manager

The sMart Data Warehouse System Manager can be used for a variety of maintenance tasks such as creating and restoring backups, starting and stopping the sMart Data Warehouse services, downloading log files, and making changes to the service configuration. The system manager is available via browser and can be accessed by entering the IP address of the sMart Data Warehouse system and the System Manager port, whereby the default port is 8070 (e.g. 192.168.0.123:8070).

Note: As of sMart Data Warehouse 3.0 the System Manager is only accessible via HTTPS (e.g. <https://192.168.0.123:8070/>)!

System Manager

Data Warehouse Service

RUNNING

Service Configuration

Port:
 Server Shutdown Port:
 Disable HTTPS:
 Max. memory usage [E.g.: 6 GB] (Min. required: 2 GB): GB

-SSL Certificate-
Current Certificate:
 CN=NETAVIS, OU=NETAVIS, O=NETAVIS, L=Budapest, ST=Pest, C=HU
 Password:

Upload (Replace):
 Keine ausgewählt

Proxy

Host: Port:
 User: Password:
 Non proxy hosts:

System Backups

Schedules

Type	Cycle	Actions

FTP/SFTP Server

Hostname / IP: Port:
 Username: Password:
 Remote directory path:

Data Warehouse Service:

- **Start:** Starts the sMart Data Warehouse services.
- **Stop:** Stops the sMart Data Warehouse services.
- **Show log files:** Opens a separate window where the logs are shown.
- **Download log files:** Downloads the sMart Data Warehouse log files as a .zip file.

Service Configuration:

To make changes to the service configuration the sMart Data Warehouse services need to be stopped. Then press **Edit** to be able to change the configuration and save the configuration by pressing **Save**. Afterwards the sMart Data Warehouse services need to be started again.

- **Port:** Here the sMart Data Warehouse port (default: 8080) can be changed.
- **Server Shutdown Port:** Here the internal server shutdown port (default: 8005) can be changed.

- **Disable HTTPS:** If this option is activated then sMart Data Warehouse accepts HTTP connections on the port configured above.
- **Max. memory usage:** Here the maximum amount of memory the sMart Data Warehouse services will use (in Gigabyte) can be configured.
- **SSL Certificate:** Here a new SSL certificate can be uploaded to replace the self-signed certificate which is provided upon installation. Additionally the certificate's password can be entered.
- **Proxy:** Here a proxy server through which sMart Data Warehouse traffic is routed (e.g. to access OpenStreetMap maps or weather information from a system which is otherwise not connected to the Internet) can be configured. Select the checkbox to configure and activate the proxy whereby the following information is needed:
 - **Host:** IP address of the proxy server
 - **Port**
 - Protocol: **HTTP** or **HTTPS**
 - **User** (optional)
 - **Password** (optional)
 - **Non proxy hosts** (optional): Hosts or network segments (separated by "|") which should not be routed via the proxy server (e.g. 192.168.*|10.10.*)

System Backups:

In this section it is possible to configure schedules for automatic backups as well as manually creating and restoring backups. Two types of backups are available:

- **Full database backup:** This backup option includes all of the configuration and the data stored in the sMart Data Warehouse system (with the exception of the license and the customizations of fonts, colours, icons, etc. which are not included).
- **Database config backup:** This backup option only includes the configuration of the sMart Data Warehouse system (again with the exception of the license and the customizations of fonts, colours, icons, etc. which are not included).

To manually create a backup press **Backup Now!**, select the type of backup you want to create, and then press **Create backup**. You can select and directly download previously created backups by pressing **Download Backup**.

To restore a backup the sMart Data Warehouse services need to be stopped. Then press **Restore Backup**, select from the available backups (whereby only backups compatible with the current sMart Data Warehouse version are shown), press **Restore** and then confirm the system restore.

If a backup stored on an FTP server or another location should be restored then it first needs to be uploaded to the sMart Data Warehouse server's %DWH_HOME%/backup/db directory. Please note that the filename of the backup needs to end with the exact sMart Data Warehouse version number in order for the backup to be shown in the System Manager (e.g. db-config-2.0.1.sql works but db-config-2.0.1-11-12-2017.sql doesn't work).

To configure a schedule for automatic backups press **Edit** to be able to change the configuration and then press **Add**. Then you can select:

- **Backup type:** Whether the aforementioned **Full database backup** or **database config backup** should be made.

- **Backup cycle:** How often the backup should be made: daily, weekly (including the day of the week), monthly (including the day of the month). The name of daily / weekly / monthly backups started with D-, W-, M- respectively.
- **Time:** At what time of the day the backup should be made.
- **FTP Upload:** Whether the backup should be uploaded to a remote location via FTP/SFTP.

Previously created schedules can be edited and removed via the corresponding actions.

In order for the FTP upload option to work an **FTP/SFTP Server** needs to be configured as a destination:

- **Hostname / IP:** Hostname or IP address of the remote server where the backup should be stored.
- **Port:** Port of the chosen protocol on the remote server.
- **FTP/SFTP:** Select whether the **FTP** or **SFTP** protocol should be used.
- **Username:** The user needs to have the required permissions to be able to upload the files to the destination.
- **Password:** The corresponding password.
- **Remote directory path:** Absolute path of the remote directory where the backup should be stored.
- **Test connection:** Pressing this button tests whether a connection can be established with the entered values.