# USER GUIDE

<table>
<thead>
<tr>
<th>Product</th>
<th>Snow Inventory Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>5.4</td>
</tr>
<tr>
<td>Release date</td>
<td>2018-04-05</td>
</tr>
<tr>
<td>Document date</td>
<td>2018-04-20</td>
</tr>
<tr>
<td>CONTENTS</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td><strong>1 Introduction</strong></td>
<td>4</td>
</tr>
<tr>
<td>1.1 New installation vs Upgrade</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Prerequisites</td>
<td>4</td>
</tr>
<tr>
<td>1.3 Definitions</td>
<td>5</td>
</tr>
<tr>
<td>1.4 Comparison of Inventory Server roles</td>
<td>5</td>
</tr>
<tr>
<td><strong>2 Installation</strong></td>
<td>7</td>
</tr>
<tr>
<td>2.1 Installation package</td>
<td>7</td>
</tr>
<tr>
<td>2.2 Create a Master Server instance</td>
<td>8</td>
</tr>
<tr>
<td>2.3 Create a Service Gateway instance</td>
<td>12</td>
</tr>
<tr>
<td>2.4 Create a Standalone Receiver instance</td>
<td>14</td>
</tr>
<tr>
<td>2.5 Create new database</td>
<td>16</td>
</tr>
<tr>
<td>2.6 Export devices</td>
<td>18</td>
</tr>
<tr>
<td><strong>3 Management</strong></td>
<td>20</td>
</tr>
<tr>
<td>3.1 Stop and start a service</td>
<td>20</td>
</tr>
<tr>
<td>3.2 Change configuration</td>
<td>20</td>
</tr>
<tr>
<td>3.3 Change service account</td>
<td>21</td>
</tr>
<tr>
<td>3.4 Remove service</td>
<td>21</td>
</tr>
<tr>
<td>3.5 Additional options</td>
<td>21</td>
</tr>
<tr>
<td><strong>4 Command line</strong></td>
<td>22</td>
</tr>
<tr>
<td>4.1 Command: start</td>
<td>23</td>
</tr>
<tr>
<td><strong>5 Uninstall</strong></td>
<td>24</td>
</tr>
<tr>
<td>5.1 Master Server</td>
<td>24</td>
</tr>
<tr>
<td>5.2 Service Gateway</td>
<td>24</td>
</tr>
<tr>
<td><strong>6 Known limitation</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>7 Troubleshooting</strong></td>
<td>26</td>
</tr>
<tr>
<td>7.1 Installation</td>
<td>26</td>
</tr>
<tr>
<td>7.2 Certificates</td>
<td>26</td>
</tr>
<tr>
<td><strong>8 Advanced configuration</strong></td>
<td>28</td>
</tr>
<tr>
<td>8.1 Configuration file</td>
<td>28</td>
</tr>
<tr>
<td>8.2 Encryption of inventory data</td>
<td>28</td>
</tr>
<tr>
<td>8.3 Site name authentication</td>
<td>29</td>
</tr>
<tr>
<td>8.4 Restrict processing of files</td>
<td>31</td>
</tr>
<tr>
<td>8.5 Web application patterns</td>
<td>32</td>
</tr>
<tr>
<td>8.6 Client certificate whitelist</td>
<td>32</td>
</tr>
<tr>
<td>8.7 Computer identity - HostNameOnly mode</td>
<td>33</td>
</tr>
</tbody>
</table>
1 INTRODUCTION

This document describes how to install, configure, manage, and troubleshoot Snow Inventory Server.

1.1 NEW INSTALLATION VS UPGRADE

This guide describes how to install Snow Inventory Server 5.

For environments that have Snow Inventory Server 3.2 in production and plan do upgrade, contact Snow Software or your local Snow partner for assistance with the necessary pre-upgrade checks and post-upgrade validations.

1.2 PREREQUISITES

1.2.1 SYSTEM REQUIREMENTS

For information on system requirements, see the document System Requirements for all Snow products, which is available for download at http://www.snowsoftware.com/int/download.

1.2.2 CERTIFICATES

For communication using HTTPS, an SSL certificate must be available prior to the installation of Snow Inventory Server is started.

1.2.3 USER ACCOUNTS

The database to use in the installation process of Snow Inventory Server could either be created beforehand or via Server Manager during the installation itself.

If the Snow Inventory database has been created beforehand, a SQL account with db_owner privileges is needed for accessing that database.

If the Snow Inventory database is to be created via Snow Inventory Server Configuration Manager, a SQL account with sa privileges is needed. This account will be used for accessing the database after the installation, so it is recommended to reduce the account privileges to a db_owner level after the installation.
1.3 DEFINITIONS

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discovery site name</strong></td>
<td>Used for identification of the Inventory server and for all discovery data. A Discovery site name can be of a geographical or organizational nature, or any other that will suit the needs.</td>
</tr>
<tr>
<td></td>
<td>Example: A Master Server is to be set up to communicate with Service Gateways and/or devices in the Nordic countries. To be able to identify all discovered devices from those regions in Inventory Server, the Master Server will group them into discovery site NORDICS.</td>
</tr>
<tr>
<td><strong>Snow Inventory Agents</strong></td>
<td>Snow Inventory Agents collect software information, software usage (metering), hardware specifications, and user information from the computers within the organization. Each agent sends its inventory result to a Master Server instance for processing, either directly or via a Service Gateway instance.</td>
</tr>
<tr>
<td><strong>Master Server</strong></td>
<td>The Master Server instance receives the inventory data reported by the agents, processes the data and writes to the Inventory database. Also, it processes and writes Active Directory Discovery data to the database.</td>
</tr>
<tr>
<td><strong>Service Gateway</strong></td>
<td>To ensure high-availability of the Master Server, Service Gateway instances can be configured for load-balancing. Service Gateway instances can also serve as proxies in segmented networks.</td>
</tr>
<tr>
<td><strong>Standalone Receiver</strong></td>
<td>The Standalone Receiver can be used in environments where the agents are not allowed to communicate directly with a Master Server or a Service Gateway. This can be the case in companies with high security requirements or in environments with no internet access.</td>
</tr>
<tr>
<td></td>
<td>The Standalone Receiver instance receives inventory data from the agents and any SIM connectors, and then saves the data either locally or to a file share. A process must then be in place for transferring the inventory data from the &quot;isolated&quot; environment to the Master Server or any Service Gateway.</td>
</tr>
<tr>
<td><strong>Snow Inventory database</strong></td>
<td>The Snow Inventory database is used for storing the inventory data reported by the Snow Inventory agents. The Inventory database is an SQL server database.</td>
</tr>
</tbody>
</table>

1.4 COMPARISON OF INVENTORY SERVER ROLES

The table describes the major differences in the Inventory Server roles.

**Table 1. Comparison of Inventory Server 5 functionality**

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Master Server</th>
<th>Service Gateway</th>
<th>Standalone Receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires a license</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Requires a database connection</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Provides Cloud metering API</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Can be configured through Snow MACC (Admin Console)</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Functionality</td>
<td>Master Server</td>
<td>Service Gateway</td>
<td>Standalone Receiver</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Supports distribution of agent configurations</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Supports Network Discovery and Active Directory Discovery</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Supports deployment of agents</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Supports automatic updates (via Snow Update Service, SUS)</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Provides legacy API for IDR/web application metering</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Supports data gathering from agents, SIM connectors, and legacy clients</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Can be used in isolated networks</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>
2 INSTALLATION

The installation files of Snow Inventory Server 5 are delivered as an installation package. Once the package has been installed, installation and configuration of Master Server and Service Gateways can take place by using the Snow Inventory Server Configuration Manager.

2.1 INSTALLATION PACKAGE

The installation package is called SnowInventoryServerSetup.exe and includes the following components:

- Snow Inventory Server
- Snow Management and Configuration Center (will only be installed if Snow License Manager is not already installed on the target machine)
- Snow Inventory Admin Console plug-in (plug-in for Snow Management and Configuration Center)
- Snow Update Service (SUS)

When running the installation, a selection must be made whether to install a Master Server or a Service Gateway. A Master Server installation includes all of the components listed above, while a Service Gateway installation only includes the Snow Inventory Server component.

NOTE

- Inventory 5 will share the components Snow Management and Configuration Center (SnowMACC) and Snow Update Service (SUS) with Snow License Manager 8. Therefore, these components will always be installed in the location of the system variable %PROGRAM FILES% and not in the selected destination folder. Please make sure that the user running the installation package has access to that path.
- Snow Update Service will be installed in a default folder on the C: drive. Do not move Snow Update Service from this location as this is not a supported configuration.

2.1.1 SNOW UPDATE SERVICE

After installation, start Snow Update Service manually and check for any available updates. For detailed information, see the document User guide, Snow Update Service.

2.1.2 DEFAULT LOCATION OF FILES

The table below shows the default locations of the server files and configuration file after installation. Also, the table shows the default locations of the log files.

<table>
<thead>
<tr>
<th>File name</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>snowserver.exe</td>
<td>C:\Program Files\Snow Software\Snow Inventory\Server</td>
<td>Executable file for Inventory Server</td>
</tr>
<tr>
<td>snowserverconfig.exe</td>
<td>C:\Program Files\Snow Software\Snow Inventory\Server</td>
<td>Executable file for Inventory Server Configuration Manager</td>
</tr>
</tbody>
</table>
### 2.1.3 DATA FOLDERS

The table shows the data folders that are used by the Inventory Server. They are created when the server is started for the first time.

<table>
<thead>
<tr>
<th>Folder name</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>announcements</td>
<td>C:\Program Files\Snow Software \Snow Inventory\Server\Incoming \announcements</td>
<td>This folder contains discovery information from the Inventory server discovery and the Snow Integration Connectors that send discovery data.</td>
</tr>
<tr>
<td>data</td>
<td>C:\Program Files\Snow Software \Snow Inventory\Server\Incoming \data</td>
<td>This folder contains inventory information from the Inventory Agents and the Snow Integration Connectors that send inventory data.</td>
</tr>
<tr>
<td>stats</td>
<td>C:\Program Files\Snow Software \Snow Inventory\Server\stats</td>
<td>This folder contains internal statistics of the Inventory server.</td>
</tr>
</tbody>
</table>

### 2.2 CREATE A MASTER SERVER INSTANCE

**NOTE**
If a new database is to be created via Snow Inventory Server Configuration Manager, a user account with **sa** privileges is required in the Database step.

1. Start Snow Inventory Server Configuration Manager (run `snowserverconfig.exe`).
2. On the Welcome page of the Snow Inventory Server Configuration Manager, click **Create master server**.
3. In the **License Key** step, type the **Company name** that the license key has been issued to, and the associated **License key**.
4. **Click Next.**

5. **In the Database step:**
   a. Type a **Name** or a **Network address** for the SQL server instance to be used.
   b. In the **Name of database** box, type the name of an already existing Inventory 5 database, or the name of a database to be created.
   c. Select one of the following authentication alternatives:
      - Select the **Use Windows Authentication** check box.
      - Type **User ID** and **Password** of an SQL user account with permissions to connect to (or create) the database.
   d. To add additional settings for the database connection, select the **Use these additional connection string properties** check box, and then type the properties in the box that is displayed. Use semi-colon as delimiter.
6. Click **Next**.

7. A connection to the specified database is established.

8. Click **OK**.

9. In the **Credentials for administrator user** step:
   a. Type an **Administrator user name**.
   b. Type the associated password in the **Administrator password** and **Re-type password** boxes.

   This administrator account will be used as the default account for logging in to the Snow Inventory plug-in in Snow Management and Configuration Center.

10. Click **Next**.
11. In the **HTTP Bindings** step:

- For **HTTPS** (recommended)
  Select an existing server certificate in the list. Select **Network interface**, and type a **Port** and a **DNS name** that will be used for accessing this Snow Inventory server.

- For **HTTP**
  Type a **Port** and a **DNS name** that will be used for accessing this Snow Inventory server.

**NOTE**
If Snow Inventory will use the same port as another application on the server, for example Snow License Manager, this is achieved by using unique **DNS names** for each respective application.

12. Click **Next**.

13. In the **Server settings** step:

a. Type a **Discovery site name**. This site name will be used for this Snow Inventory server and for all discovered devices.

b. Type the path to the **Incoming folder** where all inventory files will be received before they are processed in the database, or click ☐ to browse for the folder.
14. Click **Next**.

15. A **Summary** of the configuration is presented.

16. To create the Master Server instance according to the specified configuration, click **Create**.

17. To return to a previous page and make changes, click **»**.

### 2.3 CREATE A SERVICE GATEWAY INSTANCE

1. Start Snow Inventory Server Configuration Manager (run `snowserverconfig.exe`).

2. On the Welcome page of the Snow Inventory Server Configuration Manager, click **Create Service Gateway**.

3. In the **HTTP Bindings** step:
   - For **HTTPS** (recommended)
     Select an existing server certificate in the list. Select **Network interface**, and type a **Port** and a **DNS name** that will be used for accessing this Snow Inventory server.
   - For **HTTP**
     Type a **Port** and a **DNS name** that will be used for accessing this Snow Inventory server.
4. Click **Next**.

![Image of Snow Inventory Server Configuration Manager](image)

5. In the **Server Settings** step:
   
a. Type a **Discovery site name**. This site name will be used for the Inventory server and for all discovered devices.

b. Type the path to the **Incoming folder** where all inventory files will be received before they are forwarded to the Inventory Master Server, or click **»** to browse for the folder.

c. If you want to use certificate authentication between the Gateway and the Master, select the **Use client certificate for authentication** check box and then select a certificate in the **Client certificate** list.

d. In the **Forward address** box, enter the URI of the Inventory Master Server where the inventory files will be sent for processing, or to another Service Gateway instance.

6. Click **Next**.

![Image of Snow Inventory Server Configuration Manager](image)
7. A **Summary** of the configuration is presented.

8. To create the Service Gateway instance according to the specified configuration, click **Create**.

9. To return to a previous page and make changes, click 🔍.

### 2.4 CREATE A STANDALONE RECEIVER INSTANCE

An Inventory Server with the Standalone Receiver role gathers inventory data from agents and any SIM connectors, but instead of sending it forward to the Master Server, either directly or via the next Service Gateway in line, it keeps and stores the data.

**NOTE**

- A Standalone Receiver can only receive data from Inventory agents and SIM connectors. It cannot communicate with the Master Server or any Service Gateways in the Inventory infrastructure.
- Since the Master Server does not know about its existence, the Standalone Receiver isn’t visible in the Snow Inventory Admin Console.
- Updates of the Standalone Receiver and the agents reporting to it must be performed manually.

To install a Standalone Receiver:

1. Start Snow Inventory Server Configuration Manager (run `snowserverconfig.exe`).

2. On the Welcome page of the Snow Inventory Server Configuration Manager, click **Create Service Gateway**.

3. Click **Standalone Receiver**.

4. In the **HTTPS Bindings** step:
   - For **HTTPS** (recommended):
     Select an existing server certificate in the list. Select **Network interface**, and type a **Port** and a **DNS name** that will be used for accessing this Snow Inventory server.
   - For **HTTP**:
     Type a **Port** and a **DNS name** that will be used for accessing this Snow Inventory server.
5. Click **Next**.

6. In the **Server Settings** step, type the path to the **Incoming folder** where all inventory files will be received by the Standalone Receiver, or click to browse for the folder.

7. Click **Next**.

8. A **Summary** of the configuration is presented.

9. To create the Standalone Receiver instance according to the specified configuration, click **Create**.

10. To return to a previous page and make changes, click

During the installation, the **StandaloneReceiver** element of the configuration file is created and configured, where:
- **IncomingFolder** is the location where the inventory data will be stored, either in a local folder or on a file share.

- **BaseAddress** is the default endpoint address (including the port number) where the Standalone Receiver will receive data.

**EXAMPLE**

```xml
<Configuration>
  <StandaloneReceiver>
    <Server>
      <IncomingFolder>D:\Incoming</IncomingFolder>
      <BaseAddress>http://MyStandaloneReceiver:8778</BaseAddress>
    </Server>
  </StandaloneReceiver>
</Configuration>
```

### 2.5 CREATE NEW DATABASE

1. Start Snow Inventory Server Configuration Manager (run `snowserverconfig.exe`).
2. On the Welcome page of the Snow Inventory Server Configuration Manager, click **Click here for additional options...**
3. In the **Additional options** dialog box, click **Create database**.
4. In the **Database** step:
   a. Type a **Name** or a **network address** for the SQL server instance to be used.
   b. Type the **Name of database** to be created.
   c. Select one of the following authentication alternatives:
      - Select the **Use Windows Authentication** check box.
      - Type **User ID** and **Password** of an SQL user account with permissions to create the database.
   d. To add additional settings for the database connection, select the **Use these additional connection string properties** check box and type the properties in the box that is displayed. Use semi-colon as delimiter.
5. Click **Next**.
6. In the **Credentials for administrator user** step:
   a. Type an **Administrator user name**.
   b. Type the associated password in the **Administrator password** and **Re-type password** boxes.

   This administrator account will be used as the default account for logging in to the Snow Inventory plug-in in Snow Management and Configuration Center.

7. Click **Next**.

8. A **Summary** of the configuration is presented.

9. To create the database according to the specified configuration, click **Create**.

10. To return to a previous page and make changes, click ☐️.
2.6 EXPORT DEVICES

Use the export functionality to migrate data or to consolidate databases. This functionality is only compatible with Snow Inventory 5 databases.

1. Start Snow Inventory Server Configuration Manager (run snowserverconfig.exe).
2. On the Welcome page of the Snow Inventory Server Configuration Manager, click Click here for additional options...
3. In the Additional options dialog box, click Export devices.
4. In the Database step:
   a. Type a Name or a network address for the SQL server instance to be used.
   b. Type the Name of database to be exported.
   c. Select one of the following authentication alternatives:
      ▪ Select the Use Windows Authentication check box.
      ▪ Type User ID and Password of an SQL user account with permissions on the database (db_owner).
   d. To add additional settings for the database connection, select the Use these additional connection string properties check box and type the properties in the box that is displayed. Use semi-colon as delimiter.
5. Click Next.

6. In the Export database step:
   a. Type the path to the Output folder for the export file, or click to browse for the folder.
   b. Use the Limit historical data to at the most option to set a limit for export of information, such as metering and login history.
7. Click **Export**.

8. When the information has been exported, click **Finish**.
3 MANAGEMENT

When Snow Inventory Server is installed, the Welcome page of the Snow Inventory Server Configuration Manager shows a number of administrative tasks. Information on whether the service is running or not is displayed, as well. This example is from a Master Server instance.

NOTE

- To enable the options **Change configuration**, **Change service account** and **Remove master/service gateway service**, the current service needs to be stopped.
- Local administrator privileges are required for starting and stopping the service instance.

3.1 STOP AND START A SERVICE

The Master Server service is responsible for receiving and processing inventory data from the agents, and for communicating with the agents. If the service is stopped, data will neither be received nor processed. If manual changes have been made to the configuration file of the Inventory server (snowserver.config), the Master Server service needs to be restarted for the changes to come into effect.

The Service Gateway service is responsible for receiving inventory data from the agents and forwarding that data to the Master Server. Also, it is responsible for all discovery activities. If the service is stopped, neither inventory data nor discovery data will be handled.

3.2 CHANGE CONFIGURATION

In a scenario where the address or name of the Snow Inventory database has changed, this configuration including user credentials can be set using the **Change database connection settings** option. This option is only applicable to a Master Server.
3.3 CHANGE SERVICE ACCOUNT

By default, the Inventory services are run by Local System. This can be changed in order to meet any internal policies within the organization.

NOTE

- The service account needs to have Log on as a service rights.
- In a scenario where Active Directory Discovery will be used as an inventory source, the service needs to be run by an account with read privileges in that specific Active Directory.

To stop using a specified service account and go back to using Local System, type the following credentials on the Set service logon credentials page:

- Log on account = \LocalSystem
- Password = (anything but blank)

3.4 REMOVE SERVICE

When a Master Server instance is removed from the server, the service is uninstalled and the database is left intact.

When a Service Gateway instance is removed from the server, the service is uninstalled.

3.5 ADDITIONAL OPTIONS

For more information, see Installation.
## 4 COMMAND LINE

The general command line format for the Snow Inventory Server is:

```plaintext
snowserver.exe [options] [<command> [<arguments>]]
```

### Global option

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-c &lt;config-file&gt;</td>
<td>Specify the server configuration file to use, default is <code>snowserver.config</code>.</td>
</tr>
<tr>
<td>-j &lt;#threads&gt;</td>
<td>Number of worker threads, default is one thread per logical processor.</td>
</tr>
<tr>
<td>-log-dir &lt;dir&gt;</td>
<td>Override log directory</td>
</tr>
<tr>
<td>-log-stdout</td>
<td>Redirect log output to stdout</td>
</tr>
<tr>
<td>-max-error-count &lt;n&gt;</td>
<td>Maximum number of accepted errors before giving up</td>
</tr>
<tr>
<td>-v</td>
<td>Enable verbose mode</td>
</tr>
<tr>
<td>-w &lt;dir&gt;</td>
<td>Specify the working directory</td>
</tr>
<tr>
<td>-?</td>
<td>Print help text and exit</td>
</tr>
</tbody>
</table>

### Available commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>copyright</td>
<td>Show copyright notice</td>
</tr>
<tr>
<td>dmc</td>
<td></td>
</tr>
<tr>
<td>install</td>
<td></td>
</tr>
<tr>
<td>lt</td>
<td>Print available log tags</td>
</tr>
<tr>
<td>standalone</td>
<td>Run the server as a standalone process (console application)</td>
</tr>
<tr>
<td></td>
<td>Run two server configurations in the same process</td>
</tr>
<tr>
<td>start</td>
<td></td>
</tr>
<tr>
<td>stop</td>
<td></td>
</tr>
<tr>
<td>test</td>
<td>&lt;test-case&gt;</td>
</tr>
<tr>
<td>uninstall</td>
<td></td>
</tr>
<tr>
<td>update</td>
<td>Update service using files from stage directory</td>
</tr>
<tr>
<td></td>
<td>Set version information</td>
</tr>
</tbody>
</table>

Type `<command> -?` for more information on a specific command.
4.1 COMMAND: START

The start command cannot be used with command line arguments in a command prompt. Instead, it uses arguments entered in the registry, which means that arguments must be set in the registry in order for the start command to take effect. The arguments are set in the following path:

**Registry path:**

Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SnowInventoryServer5

**Key:**

ImagePath

**Example:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Default)</td>
<td>REG_SZ</td>
<td>(value not set)</td>
</tr>
<tr>
<td>Description</td>
<td>REG_SZ</td>
<td>Snow Inventory infrastructure service. Facilitates communication between servers and agents across the...</td>
</tr>
<tr>
<td>DisplayName</td>
<td>REG_SZ</td>
<td>Snow Inventory Server (5.0)</td>
</tr>
<tr>
<td>ErrorControl</td>
<td>REG_DWORD</td>
<td>0x00000001 (1)</td>
</tr>
<tr>
<td>ImagePath</td>
<td>REG_SZ</td>
<td>&quot;F:\Snow Software\Inventory Server 5\snowserver.exe&quot; -w &quot;F:\Snow Software\Inventory Server 5&quot; -j 4</td>
</tr>
<tr>
<td>ObjectName</td>
<td>REG_SZ</td>
<td>LocalSystem</td>
</tr>
<tr>
<td>Start</td>
<td>REG_DWORD</td>
<td>0x00000002 (2)</td>
</tr>
<tr>
<td>Type</td>
<td>REG_DWORD</td>
<td>0x00000010 (16)</td>
</tr>
</tbody>
</table>
5  **UNINSTALL**

Snow Inventory Server is uninstalled via **Programs and Features** in the Windows **Control Panel**.

### 5.1  MASTER SERVER

The uninstall of a Master Server is managed differently depending on if Snow License Manager is installed on the same machine, or not.

- **Snow License Manager is installed**
  When Snow License Manager is installed on the same machine as the Master Server, only the Inventory Server and the Admin Console plug-in components will be removed together with all related registry keys and values. Existing installations of Snow Update Service (SUS) and Snow Management and Configuration Center (SnowMACC) will be left unaltered.

- **Snow License Manager is not installed**
  When Snow License Manager is not installed on the same machine as the Master Server, all components will be removed (Inventory Server, Admin Console plug-in, SUS, and SnowMACC) together with all related registry keys and values. All folders and Windows local services are removed, as well.

### 5.2  SERVICE GATEWAY

When a Service Gateway is uninstalled, the Inventory Server component is removed. All folders and Windows local services are removed, as well.
6 KNOWN LIMITATION

There is a known limitation with setup packages for older versions of Snow License Manager (version 8.0.04 and lower).

Scenario:

- Snow Inventory Server (Master Server or Service Gateway) and Snow License Manager are installed on the same machine
- Snow License Manager was installed using a setup package with version 8.0.04 or lower.

If Snow License Manager is uninstalled, registry keys will be deleted, not only those related to Snow License Manager but also keys related to Inventory Server, Snow Management and Configuration Center (SnowMACC), and Snow Update Service (SUS).

To correct this, use the repair functionality in Snow Inventory Installer which resets all registry keys and values so that Snow Inventory, SnowMACC, and SUS can work properly as before.

The repair functionality is available via Programs and Features in the Windows Control Panel.

1. Select Snow Inventory in the list of installed programs.
2. Click Uninstall.
   The Snow Inventory 5 Server Setup dialog box appears.
3. Select Repair, and then click Next.
# Troubleshooting

The following chapter contains tips related to troubleshooting of both installation and running of the Snow Inventory Server 5.

## 7.1 Installation

If the installation for some reason cannot be completed and must be cancelled, the Inventory 5 database must be deleted manually, and a new one must be created.

## 7.2 Certificates

### 7.2.1 Conflicting Certificates

A certificate is bound to the IP address and port configuration of the computer.

If a certificate is selected in the HTTP Bindings step of the installation process, but another different certificate is already associated with that \(<ip>:<port>\) combination, a warning will be displayed and the installation cannot proceed.

Information on any existing bindings can be found in the registry:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HTTP\Parameters\SslBindingInfo
```

The \(<ip>:<port>\) parameter is typically used with the unassigned IP address 0.0.0.0 but can be used to bind to a specific interface as well. However, the port has to be unique and you can only have a single certificate hash bound to a specific port.

To remove existing bindings:

```
> netsh http delete sslcert ipport=0.0.0.0:443
```

To add new bindings:

```
> netsh http add sslcert ipport=0.0.0.0:443 certhash=ABCD... appid={...}
```

### 7.2.2 SSL Certificate Add Failed, Error: 1312

During the Snow Inventory installation, this error might occur in case the public key (.crt file) of the certificate has been accidently imported instead of the archive file (.pfx) which includes the private key. The installation will fail and the error is displayed in the setup XML log.

This can be verified in the Certificates MMC since a certificate with a private key is indicated by an icon with a key.
To solve this:

1. Delete the faulty certificate.
2. Import the correct certificate.
3. Re-run the installation.
8 ADVANCED CONFIGURATION

8.1 CONFIGURATION FILE

A basic configuration file is created and built up by all the settings made during the installation.

The configuration file consists of the following elements:

```xml
<Configuration>
  <Master>...</Master>
  <ServiceGateway>...</ServiceGateway>
  <StandaloneReceiver>...</StandaloneReceiver>
  <Logging>...</Logging>
  <AgentIdentity>...</AgentIdentity>
  <ModuleConfiguration>...</ModuleConfiguration>
</Configuration>
```

**NOTE**

- All elements in the Inventory Server configuration file are case-sensitive.
- Depending on what to be installed, only one of the Master, ServiceGateway, or StandaloneReceiver elements can be used at a time in the configuration file.

8.2 ENCRYPTION OF INVENTORY DATA

The inventory result (snowpack file) is encrypted using the default crypto key. With the tool AESKEYGEN, which can be ordered from Snow Support, custom crypto keys can be created for a certain agent or group of computers.

The tool creates a key that needs to be copied to a folder on the Inventory server (all keys must be located in the same folder) as well as to a folder on the computer(s) to be inventoried. The file is named `<fingerprint>.cryptkey`.

Use this setting in the configuration file of the Inventory server to specify the folder where the crypto keys are located:

```xml
<Master>
  <Server>
    <CryptoKeyFolder>drive:\path\to\folder\with\cryptokeys</CryptoKeyFolder>
  </Server>
</Master>
```

Use these settings in the configuration file of the agent to specify the fingerprint of the crypto key to use for Snowpack encryption, and the folder where it is located (optional):

```xml
<SystemSettings>...
  <Setting key="snowpack.encryption_fingerprint" value="b6089ea5556a6ab86775bf19ed65791c"/>
  <Setting key="snowpack.encryption_path" value="path/to/folder/with/cryptokey"/>
</SystemSettings>
```

If no folder path is specified, the path to the agent itself will be used.
8.3 SITE NAME AUTHENTICATION

Site name authentication is only applicable to Snow Inventory agents, that is for Snow Inventory 5 and higher versions, and not for Snow Inventory clients, that is for Snow Inventory 3.7 and lower versions.

By default, the Inventory server processes files (.snowpack and .inv files) from any site. However, by specifying a list of site names in the configuration file of the server it is possible to control which sites to process data from.

Besides the site name, information on a so called "thumbprint" can also to be specified; a secret shared between the agent and the server. In this case the thumbprint of an SSL certificate is used and needs to be distributed to all computers within the current site. The thumbprint is then included in the HTTP header of the incoming connection when the inventory file is sent to the server. If no thumbprint is specified, all inventory files from that site will be blocked.

Site names and thumbprints are specified in the SiteNameAuthenticationList element of the server configuration file:

```xml
<SiteNameAuthenticationList>
  <SiteName name=""/>
  <Thumbprint>...</Thumbprint>
</SiteNameAuthenticationList>
```

The control is carried out by checking both the site name and the thumbprint against the SiteNameAuthenticationList element. In the control, the site name is either approved or not according to the following definitions (also, see image):

- **Site name approved = Yes**
  - The site name is listed in the server configuration file, and the thumbprint matches one of the specified site name-thumbprint pairs.
  - The site name is not listed in the server configuration file.

- **Site name approved = No**
  The site name is listed in the server configuration file, but:
  - the thumbprint doesn't match one of the defined site name-thumbprint pairs, or
  - no thumbprint is defined for the site in the server configuration file.
Figure 1. The process for deciding which inventory files to process when site name authentication is used.

1. Decide what certificate to use. The thumbprint is shown in the properties of the certificate and can be copied from there.
2. Create a .pfx file containing the certificate (and the thumbprint).
3. List the site name and the corresponding thumbprint(s) in the SiteNameAuthenticationList element of the server configuration file.
4. Distribute the .pfx file to the computers within the site. This is done as an agent update job in the Inventory Server Admin Console, where the .pfx file is included as a support file.
EXAMPLE
In this example, two thumbprints are specified for site MyCompany1 while no thumbprint is specified for site MyCompany2. Site MyCompany3 is not specified.

<SiteNameAuthenticationList>
  <SiteName name="MyCompany1">
    <Thumbprint>9C85010679CF10F8F04895914835BA06A4FB61AC</Thumbprint>
    <Thumbprint>156CE5D2A979267199550AF49A77DAA6BAF6D07D</Thumbprint>
  </SiteName>
  <SiteName name="MyCompany2" />
</SiteNameAuthenticationList>

The result of this configuration would be:

- .snowpack files that have site name MyCompany1 will only be processed if they have a thumbprint that matches
- .snowpack files that have site name MyCompany2 will be blocked
- .snowpack files with site name MyCompany3 will be processed.

8.4 RESTRICT PROCESSING OF FILES

By default, all types of files are processed by the Inventory Server. However, by using the whitelisting and blacklisting functionality in the configuration file of the server it is possible to control what type of files to process, or not to process.

Use the <WhiteList> element to define file extensions of all file types to be processed, or use the <BlackList> element to define file extensions of all file types not to be processed.

This example will only process files with extensions .exe and .txt:

<Master>
  <DataProcessor>
    <ApplicationProcessing>
      <FileExtensions>
        <WhiteList>
          <Extension>exe</Extension>
          <Extension>txt</Extension>
        </WhiteList>
      </FileExtensions>
    </ApplicationProcessing>
  </DataProcessor>
</Master>
This example will process all files but the ones with the extensions .dll and .log:

```xml
<Master>
  <DataProcessor>
    <ApplicationProcessing>
      <FileExtensions>
        <BlackList>
          <Extension>dll</Extension>
          <Extension>log</Extension>
        </BlackList>
      </FileExtensions>
    </ApplicationProcessing>
  </DataProcessor>
</Master>
```

**NOTE**
If file extensions have been defined in the `<WhiteList>` element, any defined extensions in the `<BlackList>` element will be ignored.

### 8.5 WEB APPLICATION PATTERNS

The Snow Inventory Agent for Windows can meter usage of web applications. Configuration of which web applications to meter is done in the web user interface of Snow License Manager.

Information on published web application patterns needs to be available on the Inventory Server, where it can be checked by the agents. To configure Inventory Server where to look for this information, use the following setting in the `<ModuleConfiguration>` element of the Inventory Server configuration file:

```xml
<ModuleConfiguration>
  <Module typeName="SnowSoftware.Inventory.Server.MasterServerModule">
    <Setter propertyName="SnowLicenseManagerConfigurationUri">
      "http://SLMSERVER/IDX/InventoryConfigUpdate.ashx"
    </Setter>
  </Module>
</ModuleConfiguration>
```

### 8.6 CLIENT CERTIFICATE WHITELIST

Use the `ClientCertificateWhitelist` element to define which certificates the clients are allowed to use in the communication with the server. Depending on how the infrastructure is set up, make the `Server` configuration in the `Master` or in the `ServiceGateway` element.

Example:

```xml
<Server>
  <RequireClientCertificate>true</RequireClientCertificate>
  <ClientCertificateWhitelist>
    <Thumbprint>a2bc6b0d3db17c9eed17647393f079eabc95238f</Thumbprint>
    <Thumbprint>a3bc8b0d7db17a9eed17523993f079eabe25938f</Thumbprint>
  </ClientCertificateWhitelist>
</Server>
```

**NOTE**
If the `RequireClientCertificate` is set to true, `Thumbprint` elements must be specified under `ClientCertificateWhitelist`, or any client certificate will be allowed.
8.7 COMPUTER IDENTITY - HOSTNAMEONLY MODE

In Snow Inventory, an inventoried computer is identified by its site name, hostname, BIOS manufacturer and BIOS serial number, and unique identifier (UID). If one of these properties changes while at the same time, all other properties stay the same, Snow Inventory assumes that it is still the same computer. This behavior might not be desired in a scenario where, for example, a VM is cloned. Despite being a unique computer, the clone could get the same BIOS serial number and/or UID as the cloned VM.

Use the `<HostNameOnly>` element in the server configuration file to enable the **HostNameOnly mode** for a subset of computers. In this way, the identification is forced to use only site name and hostname to distinguish between those computers.

The subset of computers is defined through boolean expressions that evaluate groups of criteria. The table shows the parameters that can be used in the expressions. Use "*" as a wildcard character.

**NOTE**
The HostNameOnly mode applies for all computers that report to Snow Inventory, via both Inventory agents and Inventory clients.

<table>
<thead>
<tr>
<th>Available criteria group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiteNames</td>
<td>The site name of the computer, defined in the Inventory Agent configuration file.</td>
</tr>
<tr>
<td></td>
<td><strong>EXAMPLE</strong> &lt;SiteName&gt;MySite&lt;/SiteName&gt;</td>
</tr>
<tr>
<td>ConfigNames</td>
<td>The name of the Inventory Agent configuration, defined in the agent configuration file.</td>
</tr>
<tr>
<td></td>
<td><strong>EXAMPLE</strong> &lt;ConfigName&gt;MyWindowsConfig&lt;/ConfigName&gt;</td>
</tr>
<tr>
<td>HostNames</td>
<td>The hostname of the computer.</td>
</tr>
<tr>
<td></td>
<td><strong>EXAMPLE</strong> &lt;HostName&gt;MyServer1*&lt;/HostName&gt;</td>
</tr>
<tr>
<td>BiosSerialNumbers</td>
<td>The BIOS serial number of the computer.</td>
</tr>
<tr>
<td></td>
<td><strong>EXAMPLE</strong> &lt;BiosSerialNumber&gt;123456*&lt;/BiosSerialNumber&gt;</td>
</tr>
</tbody>
</table>

NOTE
The HostNameOnly mode applies for all computers that report to Snow Inventory, via both Inventory agents and Inventory clients.
### Available criteria group

<table>
<thead>
<tr>
<th>Available criteria group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OperatingSystems</td>
<td>The operating system of the computer. The Name attribute of the OperatingSystem tag from the agent is used, for example <em>Windows</em>, <em>AIX</em>, <em>Red Hat Enterprise Linux Server</em>, or <em>macOS</em>. <strong>EXAMPLE</strong>&lt;br&gt;&lt;br&gt;<code>&lt;OperatingSystem&gt;*Windows*&lt;/OperatingSystem&gt;</code> <strong>NOTE</strong>&lt;br&gt;&lt;br&gt;Take a look in the Admin Console to see what Operating System Names are reported by the inventoried computers.</td>
</tr>
<tr>
<td>IsVirtualized</td>
<td>Define if the computer is virtualized (true). <strong>NOTE</strong>&lt;br&gt;&lt;br&gt;Currently applicable for the Unix agent only.</td>
</tr>
</tbody>
</table>

### 8.7.1 CONFIGURATION

A **SiteConfiguration** group contains a boolean expression and groups of criteria. Each group is given a name used as identifier in the boolean expression. Each group of criteria is evaluated to **true** or **false**, depending on whether the evaluated computer fulfills the criteria or not, and then it is added in the boolean expression. Finally, if the boolean expression evaluates to **true**, then HostNameOnly mode is used to identify the computer.

**NOTE**
- All of the criteria tags are optional.
- The criteria are not case sensitive.
- There can be multiple **SiteConfiguration** groups to account for different site configurations.

#### 8.7.1.1 DEFAULT configuration

From Inventory Server version 5.1.7, the configuration file is delivered with a default configuration for HostNameOnly mode applicable to virtual servers (LPAR) on Unix AIX:

```
<AgentIdentity>
  <HostNameOnly>
    <SiteConfiguration expression="\{A\} AND \{B\}"/>
    <IsVirtualized name="A">True</IsVirtualized>
    <OperatingSystems name="B">
        <OperatingSystem>AIX</OperatingSystem>
    </OperatingSystems>
  </SiteConfiguration>
</HostNameOnly>
</AgentIdentity>
```

For older installations of Inventory Server, manually add the element to the configuration file.
8.7.1.2 Configuration Examples

EXAMPLE 1

**Target:** All computers in all sites.

```xml
<Configuration>
  <AgentIdentity>
    <HostNameOnly>
      <SiteConfiguration expression="{A}">
        <SiteNames name="A">
          <SiteName>*</SiteName>
        </SiteNames>
      </SiteConfiguration>
    </HostNameOnly>
  </AgentIdentity>
</Configuration>
```

EXAMPLE 2

**Target:** All computers in *MySite*, and with a configuration that is either *MyConfig1* or *MyConfig2*.

```xml
<Configuration>
  <AgentIdentity>
    <HostNameOnly>
      <SiteConfiguration expression="{A} AND {B}">
        <SiteNames name="A">
          <SiteName>MySite</SiteName>
        </SiteNames>
        <ConfigNames name="B">
          <ConfigName>MyConfig1</ConfigName>
          <ConfigName>MyConfig2</ConfigName>
        </ConfigNames>
      </SiteConfiguration>
    </HostNameOnly>
  </AgentIdentity>
</Configuration>
```

EXAMPLE 3

**Target:** All computers with operating system *AIX*, and with a configuration that is either *MyConfig1* or *MyConfig2*.

```xml
<Configuration>
  <AgentIdentity>
    <HostNameOnly>
      <SiteConfiguration expression="{A} AND {B}">
        <ConfigNames name="A">
          <ConfigName>MyConfig1</ConfigName>
          <ConfigName>MyConfig2</ConfigName>
        </ConfigNames>
        <OperatingSystems name="B">
          <OperatingSystem>aix</OperatingSystem>
        </OperatingSystems>
      </SiteConfiguration>
    </HostNameOnly>
  </AgentIdentity>
</Configuration>
```

EXAMPLE 4

**Target:** All computers that meet either Scenario 1 or Scenario 2.
Scenario 1:

- site is **MySite**
- configuration is **MyConfig1** or **MyConfig2**
- operating system is **AIX**
- computer name does **not** contain the string **bde**
- computer name is **not** equal to **host2**

Scenario 2:

- the BIOS serial number is **To Be Filled By O.E.M., System Serial Number**, or **0123456789**.

```xml
<Configuration>
  <AgentIdentity>
    <SiteConfiguration expression="((A) AND (B) AND (E) and not(C)) or (D)">
      <SiteNames name="A">
        <SiteName>MySite</SiteName>
      </SiteNames>
      <ConfigNames name="B">
        <ConfigName>MyConfig1</ConfigName>
        <ConfigName>MyConfig2</ConfigName>
      </ConfigNames>
      <HostNames name="C">
        <HostName>*bde*</HostName>
        <HostName>host2</HostName>
      </HostNames>
      <BiosSerialNumbers name="D">
        <BiosSerialNumber>To Be Filled By O.E.M.</BiosSerialNumber>
        <BiosSerialNumber>System Serial Number</BiosSerialNumber>
        <BiosSerialNumber>0123456789</BiosSerialNumber>
      </BiosSerialNumbers>
      <OperatingSystems name="E">
        <OperatingSystem>aix</OperatingSystem>
      </OperatingSystems>
    </SiteConfiguration>
  </AgentIdentity>
</Configuration>
```

### 8.8 Module Configuration

There is some configuration that can be made in the `<ModuleConfiguration>` element of the Inventory Server configuration file. As seen in the example, the ModuleConfiguration tag can be added as the last tag in the configuration file (before the closing `</Configuration>` tag).
The following sections describe some useful modules. For detailed configuration examples, see Technical Reference: Module Configuration examples for Snow Inventory Server (.xml file).

8.8.1 FILE PROCESSING

**SNOWSOFTWARE.INVENTORY.DATAPROCESSOR.FILEPROCESSORMODULE**

This module is used for configuration of data processing settings for the inventory files.

<table>
<thead>
<tr>
<th>propertyName</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MaxDegreeOfConcurrency</strong></td>
<td>Allowed number of inventory files that can be concurrently processed.</td>
</tr>
<tr>
<td>(Former IDP setting MultiProcessCount)</td>
<td>Default = 2 x number of processor cores of the computer</td>
</tr>
<tr>
<td><strong>UserName</strong></td>
<td></td>
</tr>
<tr>
<td><strong>AllowHostnameAsDomain</strong></td>
<td>Set to true, the computer name is allowed to be used as domain part of the logon name (logon locally scenarios).</td>
</tr>
<tr>
<td></td>
<td>Default = true</td>
</tr>
<tr>
<td><strong>ClearUserDomain</strong></td>
<td>Set to true, the domain part is allowed to be removed from the logon name.</td>
</tr>
<tr>
<td></td>
<td>Default = false</td>
</tr>
<tr>
<td><strong>UserNameSuffixRemovalPattern</strong></td>
<td>Regular expression.</td>
</tr>
<tr>
<td></td>
<td>Default = [null] - Do not change.</td>
</tr>
<tr>
<td>propertyName</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>ElementProcessorSet</td>
<td>A sub-set of the elements that are processed and stored in the database. To only process and store information that is presented in Snow License Manager, remove the following elements from the module configuration:</td>
</tr>
<tr>
<td></td>
<td>DEVICE_DRIVER</td>
</tr>
<tr>
<td></td>
<td>EXPANSION_SLOT</td>
</tr>
<tr>
<td></td>
<td>FONT</td>
</tr>
<tr>
<td></td>
<td>KEYBOARD</td>
</tr>
<tr>
<td></td>
<td>MODEM</td>
</tr>
<tr>
<td></td>
<td>MOUSE</td>
</tr>
<tr>
<td></td>
<td>MULTIMEDIA</td>
</tr>
<tr>
<td></td>
<td>ODBC</td>
</tr>
<tr>
<td></td>
<td>PCI_BUS</td>
</tr>
<tr>
<td></td>
<td>PORT</td>
</tr>
<tr>
<td></td>
<td>SCSI_ADAPTER</td>
</tr>
<tr>
<td></td>
<td>TAPE_DRIVE</td>
</tr>
<tr>
<td></td>
<td>UNIVERSAL_SERIAL_BUS</td>
</tr>
</tbody>
</table>

**EXAMPLE**

```xml
<xml version="1.0"/>
<Module>
  <Module type_name="SnowSoftware.Inventory.DataProcessor.FileProcessorModule">
    <Setter property_Name="MaxDegreeOfConcurrency">16</Setter>
    <Setter property_Name="UserName">{ "AllowHostnameAsDomain": false, "ClearUserDomain": false, "UserNameSuffixRemovalPattern": null }</Setter>
  </Module>
</ModuleConfiguration>
```

**8.8.2 ACTIVE DIRECTORY DISCOVERY**

**SNOWSOFTWARE.INVENTORY.DISCOVERY.ACTIVEDIRECTORY.** **ACTIVEDIRECTORYDISCOVERYMODULE**

This module is used for configuration of Active Directory Discovery settings.
#### Property Name: Interval

**Description:**
Set the period of time for when a new Active Directory Discovery scan will begin after the previous scan has completed (D.HH:MM:SS).

**EXAMPLE**
With an *Interval* to "7.00:00:00" the next scan will start 7 days after the previous scan completed.

---

#### 8.8.3 NETWORK DISCOVERY

**SNOWSOFTWARE.INVENTORY.DISCOVERY2.NETWORKDISCOVERYMODULE**

This module is used for configuration of Network Discovery settings.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval</td>
<td>Set the period of time for when a new Network Discovery scan will begin after the previous scan completed (D.HH:MM:SS). Default = 1.00:00:00</td>
</tr>
</tbody>
</table>

**EXAMPLE**
With the default *Interval"1.00:00:00"* the next scan will start 1 day after the previous scan completed.

**NOTE**
If the value is set to less than 30 seconds, the server will use an interval of 30 seconds.

---

**EXAMPLE**

```xml
<ModuleConfiguration>
  <Setter propertyName="Interval" value="00:30:00"/>
</ModuleConfiguration>
```
8.8.4 GARBAGE COLLECTION

**SNOWSOFTWARE.INVENTORY.SERVER.GARBAGECOLLECTIONMODULE**

This module is used for configuration of garbage collection settings. Garbage collection is used for removal of historical inventory data from the Inventory database.

<table>
<thead>
<tr>
<th>propertyName</th>
<th>Description</th>
</tr>
</thead>
</table>
| IsEnabled          | Set to **true**, garbage collection will run. Only set number of value changes will be saved.  
|                    | Set to **false**, no garbage collection will run.  
|                    | Default = **true**                                                          |
| MaxSequenceNumbers | Number of saved value changes.  
|                    | Default = **1**                                                              |
| SqlCommandTimeOut  | Set the time limit of duration (in seconds) for how long garbage collection will run for each individual data table of the client. When set to **0**, the duration has no limit (infinite duration).  
|                    | Default = **30**                                                            |
| DaysOfCumulativeTableHistoryToKeep | Set number of days to keep historical data of user login, metering, metering concurrency, and cloud metering.  
|                    | Default = **365**                                                            |

**EXAMPLE**

```xml
<ModuleConfiguration>
  <Setter propertyName="IsEnabled">true</Setter>
  <Setter propertyName="MaxSequenceNumbers">2</Setter>
  <Setter propertyName="SqlCommandTimeOut">45</Setter>
  <Setter propertyName="DaysOfCumulativeTableHistoryToKeep">90</Setter>
</ModuleConfiguration>
```

8.8.5 OWIN WEB API SERVER

**SNOWSOFTWARE.INVENTORY.SERVER.OWINWEBAPISERVERMODULE**

This module is used for configuration of multiple URL:s with different ports. This can be used in scenarios where the Inventory Master server (Endpoint) is required to receive data on different ports.
### 8.8.6 PERFORMANCE STATISTICS

**SNOWSOFTWARE.INVENTORY.SERVER.REPLICATION.MEASUREMENTMETRICREPLICATIONMODULE**

This module enables archiving of performance statistics of the data processing. The feature is used for troubleshooting, and has little impact on the server performance.

<table>
<thead>
<tr>
<th>propertyName</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IsEnabled</td>
<td>Manage measuring of data processing performance statistics.</td>
</tr>
<tr>
<td></td>
<td>Default = <strong>false</strong></td>
</tr>
</tbody>
</table>

#### EXAMPLE

```xml
<ModuleConfiguration>
  <Module typeName="SnowSoftware.Inventory.Server.Replication.MeasurementMetricReplicationModule">
    <Setter propertyName="IsEnabled">true</Setter>
  </Module>
</ModuleConfiguration>
```

### 8.8.7 CLOUD METERING

**SNOWSOFTWARE.INVENTORY.CLOUDPETERING.CLOUDPETERINGMODULE**

This module is used for configuration of Cloud metering settings.
<table>
<thead>
<tr>
<th>propertyName</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IncomingFolder</td>
<td>The folder on the Inventory Server where the DIS rules distributed by SUS will be stored.</td>
</tr>
<tr>
<td></td>
<td>Default = C:\ProgramData\SnowSoftware\Inventory\Resources\DIS Rules</td>
</tr>
<tr>
<td>Interval</td>
<td>Set the period of time for how often the Inventory Server will check the IncomingFolder for updates (D:HH:MM:SS).</td>
</tr>
<tr>
<td></td>
<td>Default = 12:00:00 (12 hours)</td>
</tr>
</tbody>
</table>

**EXAMPLE**

```xml
<ModuleConfiguration>
  - <Module type="SnowSoftware.Inventory.CloudMetering.CloudMeteringModule">
    <Setter propertyName="IncomingFolder">C:\ProgramData\SnowSoftware\Inventory\Resources\DIS Rules</Setter>
    <Setter propertyName="Interval">12:00:00</Setter>
  </Module>
</ModuleConfiguration>
```