

USER GUIDE

SERVICE GATEWAY INSTALLATION AND FUNCTIONALITY

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CONTENTS

1 Introduction	3
1.1 System requirements	3
2 Installation package	4
2.1 Default location of files	4
2.2 Data folders	5
3 Create a Service Gateway instance	6
4 Service Gateway functionality	8
4.1 Updates and communication	8
4.2 Handling of snowpacks	9
4.3 Web metering	9
4.4 Logging	9

1 INTRODUCTION

A Snow Inventory 5 infrastructure consists of one or more Inventory databases and Master Server instances, and Inventory Agents for one or several platforms. To ensure high-availability of the Master Server, Service Gateway instances can be configured for load-balancing. This makes it possible to have the Inventory Agents configured for multiple Service Gateways when sending and receiving data, to have fallback options if one of the Service Gateways is unavailable.

The Service Gateway instances can also serve as proxies in segmented networks.

This document describes installation and functionality of a Service Gateway in Inventory 5.

1.1 SYSTEM REQUIREMENTS

For information on system requirements, see [Snow System Requirements](#) document, in the Snow Knowledge Base, which is available for customers and partners.

2 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

- Snow Inventory will share the components Snow Management and Configuration Center (SnowMACC) and Snow Update Service (SUS) with Snow License Manager. 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 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.

File name	Location	Description
snowserver.exe	C:\Program Files\Snow Software\Snow Inventory\Server	Executable file for Inventory Server
snowserverconfig.exe	C:\Program Files\Snow Software\Snow Inventory\Server	Executable file for Inventory Server Configuration Manager
snowserver.config	C:\Program Files\Snow Software\Snow Inventory\Server	Configuration file
snowserver.log	C:\ProgramData\Snow Software\Snow Inventory\Server	Log file

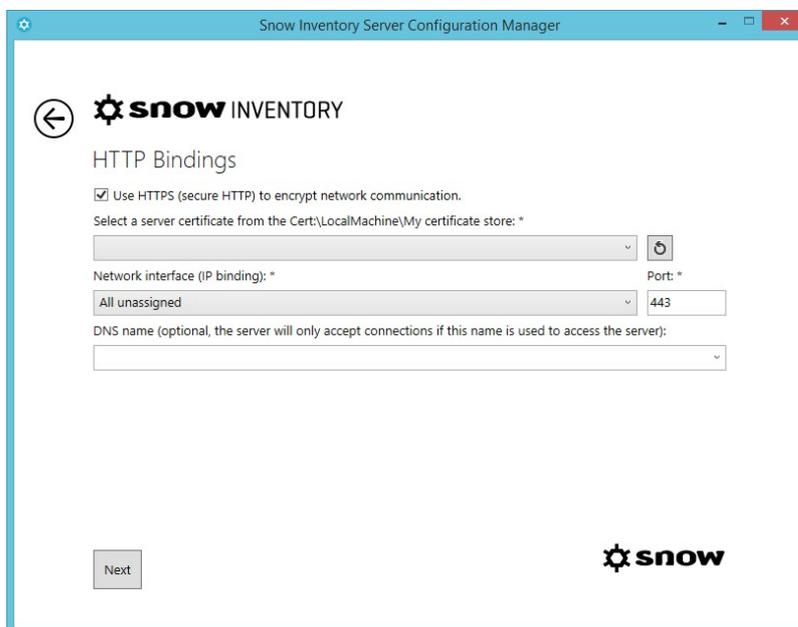
2.2 DATA FOLDERS

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.

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

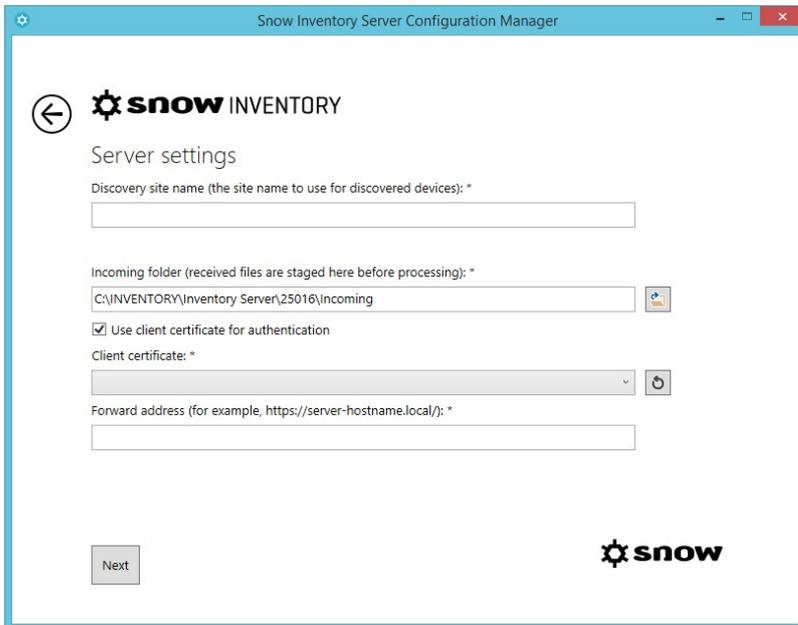
3 CREATE A SERVICE GATEWAY INSTANCE

1. Start Snow Inventory Server Configuration Manager (run **snoserverconfig.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**.



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**.



Screenshot of the Snow Inventory Server Configuration Manager window. The window title is "Snow Inventory Server Configuration Manager". The main content area is titled "Server settings" and contains the following fields and options:

- Discovery site name (the site name to use for discovered devices): *
- Incoming folder (received files are staged here before processing): *
C:\INVENTORY\Inventory Server\25016\Incoming
- Use client certificate for authentication
- Client certificate: *
- Forward address (for example, https://server-hostname.local/): *

A "Next" button is located at the bottom left of the configuration area. The Snow logo is visible in the bottom right corner of the window.

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 .

4 SERVICE GATEWAY FUNCTIONALITY

4.1 UPDATES AND COMMUNICATION

The Service Gateway will check for server updates every hour or when the Service Gateway service is started. It then compares its own server version with the version of its Master Server. If the version is lower, the Service Gateway asks the Master Server to send its .exe file, and then tries to update itself. The time interval of these checks can be configured through the **ServerUpdateModule** element in the configuration file of the Service Gateway. Also, it is possible to disable the updates.

Every 30 seconds, the Service Gateway asks the Master Server if there are any commands to be executed in the database. If so, it receives the commands from the Master and puts them into an own queue. The time interval can be changed through the configuration. In this example, the interval has been changed to once every 15 minutes.

EXAMPLE

The snowserver.config of the Service Gateway

```
<ModuleConfiguration>
  <Module
    typeName="SnowSoftware.Inventory.Server.ServiceGatewayCommandControlModule">
    <Setter propertyName="Interval">"00:15:00"</Setter>
  </Module>
</ModuleConfiguration>
```

Depending on the setup of the Master Server, the Service Gateway asks for updates and commands over HTTP or HTTPS. The requests are either sent directly to the Master Server, or sent via other Service Gateways installed "upstream" in the Inventory 5 infrastructure.

4.1.1 EXECUTE COMMANDS FROM THE ADMIN CONSOLE (MASTER SERVER)

When the Service Gateway receives a list of commands to be executed from the Master Server, it will put them into queue where they will be processed in the same way as on the Master. You can see the list of commands in the **System Events** view in the Admin Console (Snow MACC), where you also find the results of the execution. More detailed information about commands processed by the Service Gateway can be found in the Service Gateway log files, see [Logging](#).

Discovery settings are stored locally on the Service Gateway in an encrypted file called **SnowInventoryServer5.db** (located in **C:\ProgramData\SnowSoftware\Inventory\Server\LocalStorage**). This file includes everything the Service Gateway needs to know to be able to start (or continue) both Active Directory Discovery or Network Discovery depending on the commands from the Master Server.

4.1.2 AGENT UPDATES VIA THE SERVICE GATEWAY

When the Service Gateway receives a request for an update from an Inventory agent, it forwards the request to the Master Server. After receiving an answer from the Master Server, the Service Gateway immediately forwards it to the agent. There is no special logic in the middle, i.e. no caching or temporary storage of the files.

4.2 HANDLING OF SNOWPACKS

Once an Inventory agent is ready to send a snowpack (inventory result file) to the Service Gateway, it tries to connect to it. If the Service Gateway responds, the agent is allowed to send the file to it. The snowpack is then temporarily stored in the **processing** folder (default location is **C:\Program Files\Snow Software\Snow Inventory\Server\Incoming\data\processing**) until the Service Gateway tries to pass it on to the Master Server. This is typically done every 30 seconds.

If the Master Server isn't reachable from the Service Gateway, the files will be stored in the **processing** folder until the Master Server is reachable again.

4.3 WEB METERING

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.

On the Master Server, you need to specify the IDX URL to License Manager so that the Master Server knows where to get the web application patterns from. This setting is only required on the Master Server, it is not needed on the Service Gateway. Just make sure to add the Service Gateway IDX endpoint in the Inventory agent configuration.

EXAMPLE

System setting in snowagent.config

```
<Setting key="idx.endpoint" value="http://servicegateway/v1/Inventory.ashx" />
```

4.4 LOGGING

All log files of the Service Gateway are located in the **C:\ProgramData\SnowSoftware\Inventory\Server** folder. Only the last five log files are kept and by default, the files are configured to be maximum 2MB in size.

Configure the maximum log file size in the **server.config** file by using the **MaxLogSize** parameter (in megabytes). Also, it is possible to filter the log to only show specified tags.

EXAMPLE

The snowserver.config of the Service Gateway

```
<Logging>
  <Tags>
    <Tag>discovery</Tag>
    <Tag>discovery-active-directory</Tag>
  </Tags>
  <MaxLogSize>1024</MaxLogSize>
</Logging>
```

4.4.1 LOG DETAILS

EXAMPLE

Service Gateway asks for updates

```
2017-08-22T07:42:22+02:00;command-control;;;Sending /hello and checking server
update
2017-08-22T07:42:23+02:00;request-pipe;request-153;;;Added POST http://
servicegateway/api/client/hello to queue.
2017-08-22T07:42:23+02:00;request-pipe;request-153;;;Dequeued.
2017-08-22T07:42:23+02:00;request-pipe;request-153;;;Result 200 OK.
2017-08-22T07:42:23+02:00;request-pipe;request-154;;;Added POST http://
servicegateway/api/commands/Ly2Zlt2dKuu/get to queue.
2017-08-22T07:42:23+02:00;request-pipe;request-154;;;Dequeued.
2017-08-22T07:42:23+02:00;request-pipe;request-154;;;Result 204 No Content.
```

EXAMPLE

Active Directory Discovery - connecting and starting

```
2017-08-22T07:51:31+02:00;discovery-active-directory;;;Connecting to 'LDAP://
DC=contoso,DC=com' ...
2017-08-22T07:51:32+02:00;discovery-active-directory;;;Successfully connected to
'LDAP://DC=contoso,DC=com', returned ID is ca6bbcc5-60d3-4c54-a618-9b953b7a5f9f
2017-08-22T07:51:32+02:00;discovery-active-directory;;;Starting Active Directory
discovery crawler...
2017-08-22T07:51:32+02:00;discovery-active-directory;;;Active Directory
discovery of 'LDAP://DC=contoso,DC=com' started.
```

EXAMPLE

Network Discovery

The target computer does not allow Win RPC connections and that causes problems when trying to deploy an agent to that computer.

```
2017-08-29T09:41:53+02:00;discovery;192.168.X.X;;;SNMP discovery started.
2017-08-29T09:41:53+02:00;discovery;192.168.X.X;;;SSH discovery started.
2017-08-29T09:41:53+02:00;discovery;192.168.X.X;;;WinRpc discovery started.
2017-08-29T09:41:53+02:00;discovery;192.168.X.X;;;Running IP fingerprintingg
2017-08-29T09:41:58+02:00;discovery;192.168.X.X;;;DNS lookup started
2017-08-29T09:41:58+02:00;discovery;192.168.X.X;;;SNMP scan success
2017-08-29T09:41:58+02:00;discovery;192.168.X.X;;;win-rpc ping error
'SocketException: No connection could be made because the target machine actively
refused it 192.168.X.X:135' occurred.
```

EXAMPLE

Receiving a file and passing it forward

```
2017-08-22T08:13:32+02:00;request-pipe;request-1659;;;Added POST http://
servicegateway/api/receiver/receive to queue.
```