Danfoss AK-SM 720 Driver JACE8000/MAC36/Supervisor
ALVASYS-DR-AKIP10 - ALVASYS driver for Device Network Interconnected Protocol
Suitable for Danfoss AK-SM 720 System Manager and Danfoss New Generation devices. Software installation and configuration manual.

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1 History

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2.3.0.1	29/04/21	S. Strapparava	Changes on configuration interface Chapter 4 – Driver configuration Capter 6 – How to create a simulator
	23.8.2022	M.Meriano	Update driver for N4.7+N4.8+N4.9+N4.10+

2 Index

1History 2

2 Index 2

3Confidentiality Notice 3

4Introduction 3

Requirements 3

Module 3

Compatibility 4

5Installing the software 4

Installing the driver into the JACE/HAWK unit 5

6Example of installation and configuration 6

7Danfoss AK-SM 720 System Manager configuration 7

8Driver configuration 9

9Discovering devices 13

10Discovering points 14

11Configuration 15

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4 Introduction

Requirements

- Niagara 4.x (>= 4.7)
- A license to use the ALVASYS-DR- AKIP driver. Other device limit or proxy-point limits may apply to your license. For license details and options, see the ALVASYS-DR-AKIP price list.

Module

The ALVASYS-DR-SMSIP Driver is contained in two files:

- **`ALVASYS-DR-AKIP-rt.jar`**

Compatibility

Platforms

The ALVASYS-DR-SMSIP driver runs on Niagara 4.x (>= 4.4) platforms.

Tested versions

Niagara 4.9.x

5 Installing the software

Installing the ALVASYS-DR-SMSIP driver is simple.

It requires a basic knowledge of the Tridium Niagara 4 and execute a few steps as described hereafter.
The driver, a Java "**`.jar`**" executable file, is usually shipped in a zip file.
Its name is generated according to the following structure:

`ALVASYS-DR-AKIP-rt_<version number>` (i.e. ALVASYS-DR-AKIP-rt_v1.0.3.1)

The number of the version characterises the features included in the driver and may vary from time to time.
An additional text file is normally added to the zip file, in order to explain the main features of the release.
Its name may appear as follow:
`Note on SwVer <version number>` (i.e. Note on SwVer 1.0.3)

Installing the driver on your PC
The following procedures describe how to set-up the driver.

Step 1	First of all unzip the files which contains the driver and technical notes.
Step 2	Rename the files, changing theirs name into **ALVASYS-DR-AKIP-`rt and ALVASYS-DR-AKIP-wb`** Extension **`.jar`** should remain as well.
Step 3	Copy the two **`jar`** files into the **`modules`** directory of your Niagara **`Work Bench`**.
Step 4	Restart your **`Work Bench`**.
Step 5	After restarting, the file should appears in the list of available software, which can be shown clicking on the **`Software Manager`** section of the **`Platform`** of your **`Work Bench`**.

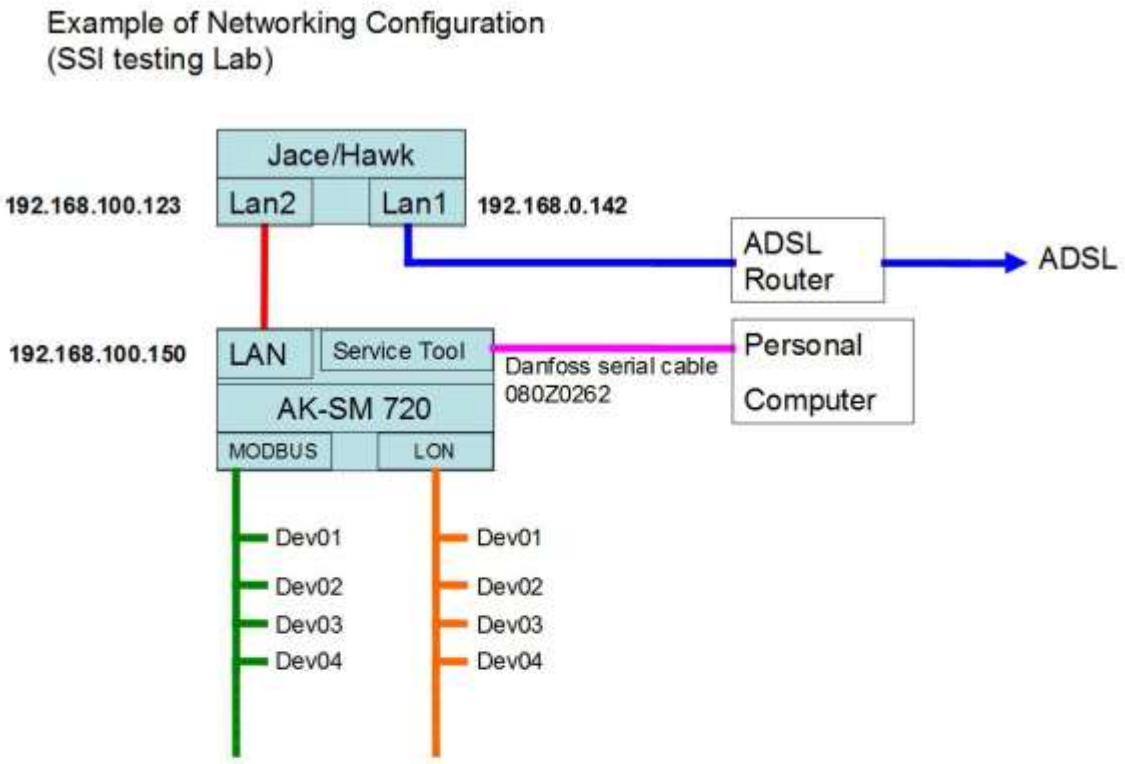
Installing the driver into the JACE/HAWK unit

Step 1	Through the **Work Bench** get connected to a JACE/HAWK running unit.
Step 2	Transfer the **ALVASYS-DR-AKIP** module into the unit under the folder **modules**.
Step 3	This can be done by activating the standard Tridium procedure for software upgrading or simply copying the **jar** files by the **File Transfer Client** procedure, available under the list of the **Platform** options in your **Work Bench**. Destination directory inside the Jace8000 is: **/opt/niagara/modules** For further details on how to transfer files from **Work Bench** to JACE/HAWK units, refer to the official Tridium documentation.
Step 4	After copying the driver into the JACE/HAWK unit, force a reboot.

6 Example of installation and configuration

In order to fully explaining the hardware/software installation, the examples included in this manual refer to a system running at ALVASYS testing labs.

The following figures show the network architecture and physical connections:

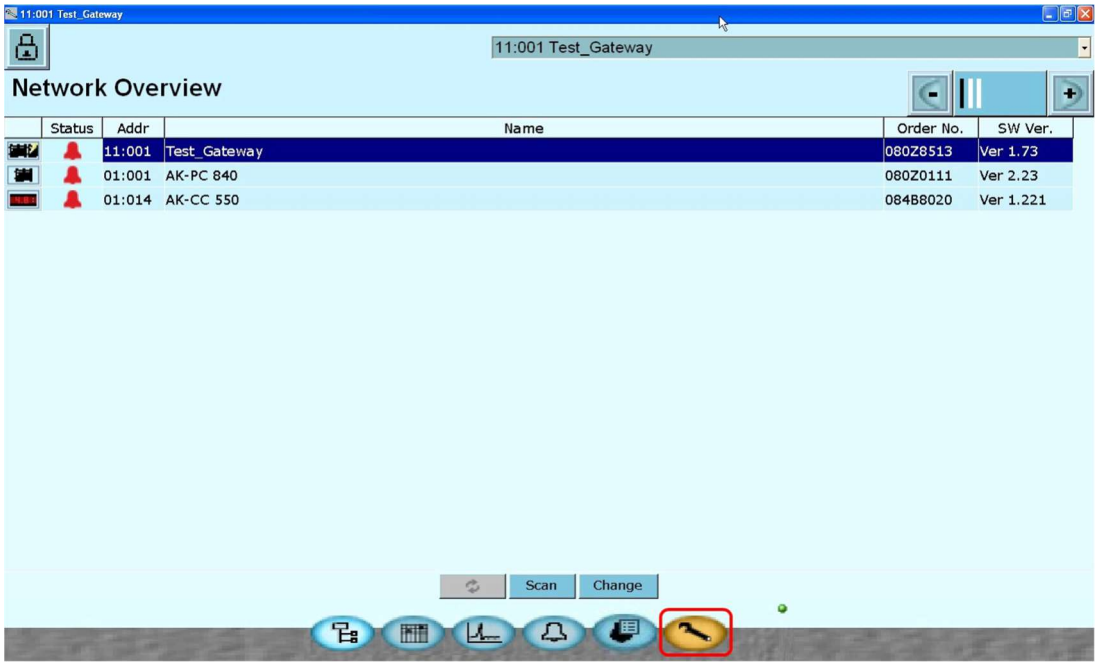


7 Danfoss AK-SM 720 System Manager configuration

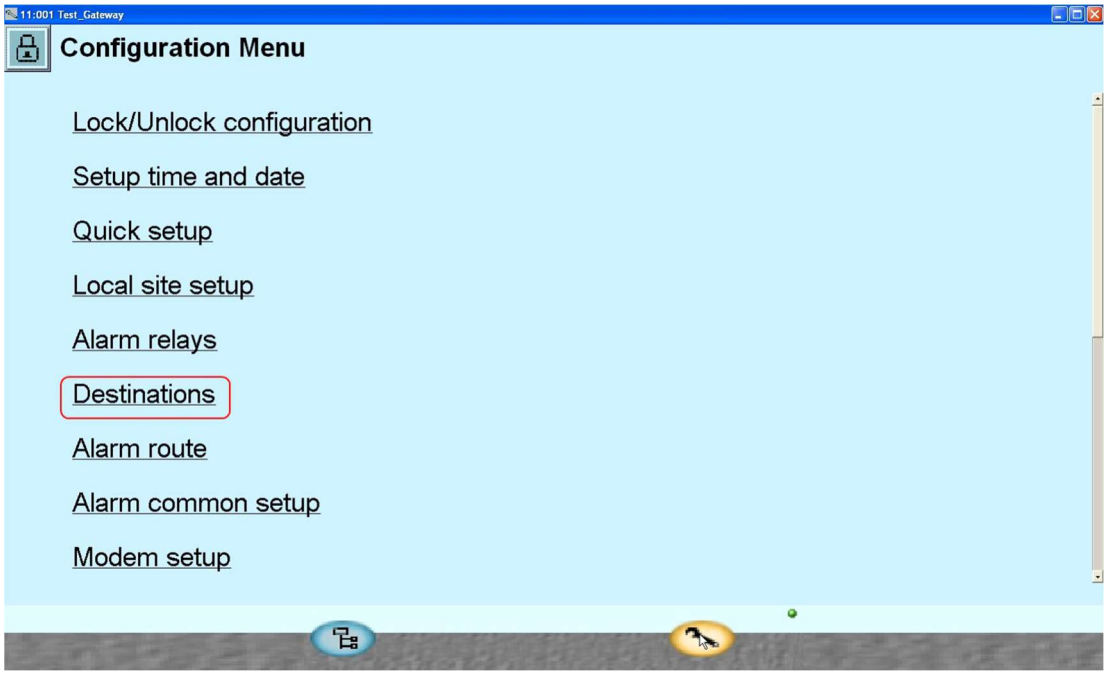
Before proceeding with the configuration of the driver, a re-direction of the communication messages has to be completed at AK-SM 720 level.

According to the proposed scheme, the following figures show how to change the destination of the AK-SM 720 messages:

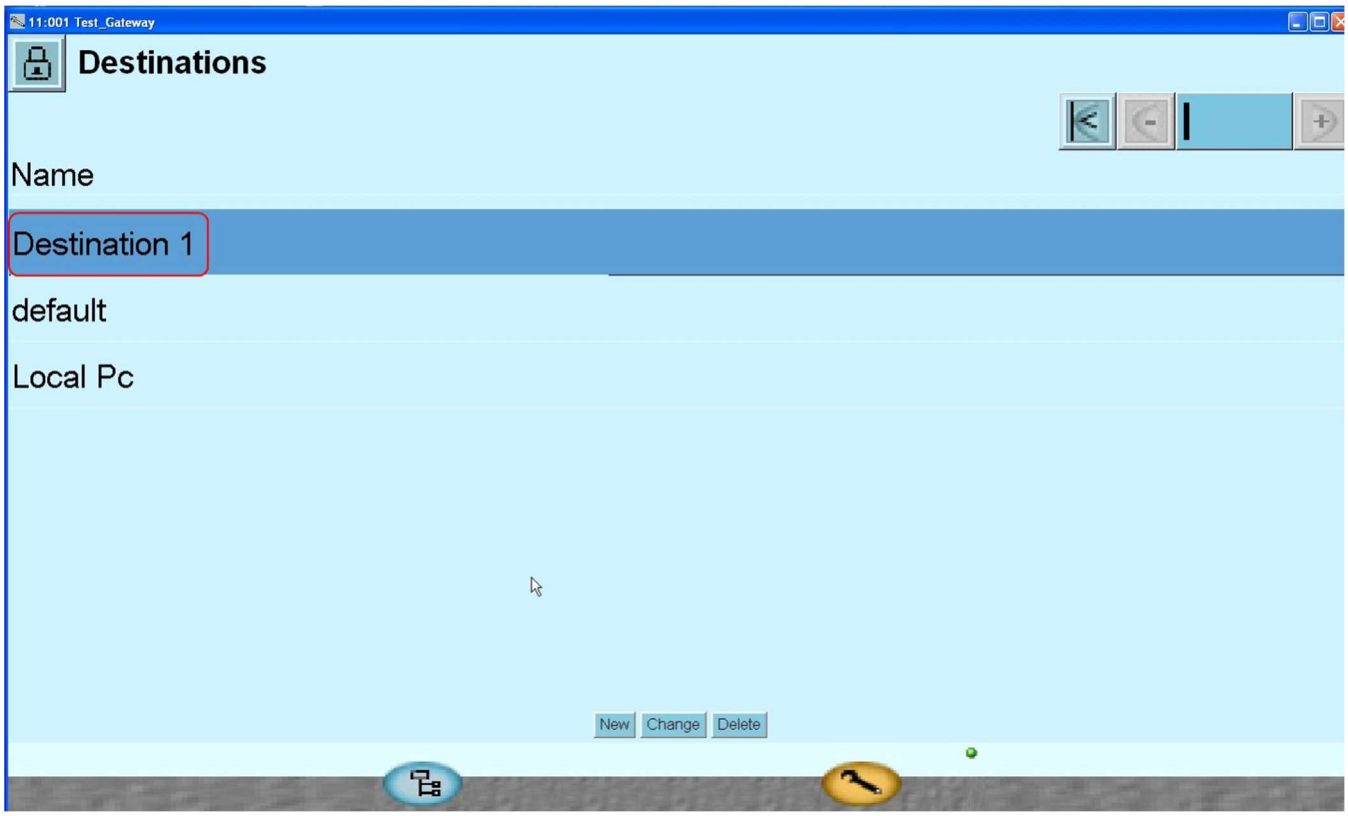
1. Get connected to the AK-SM 720 by means of the Danfoss Service Tool software and open the Configuration Menu:



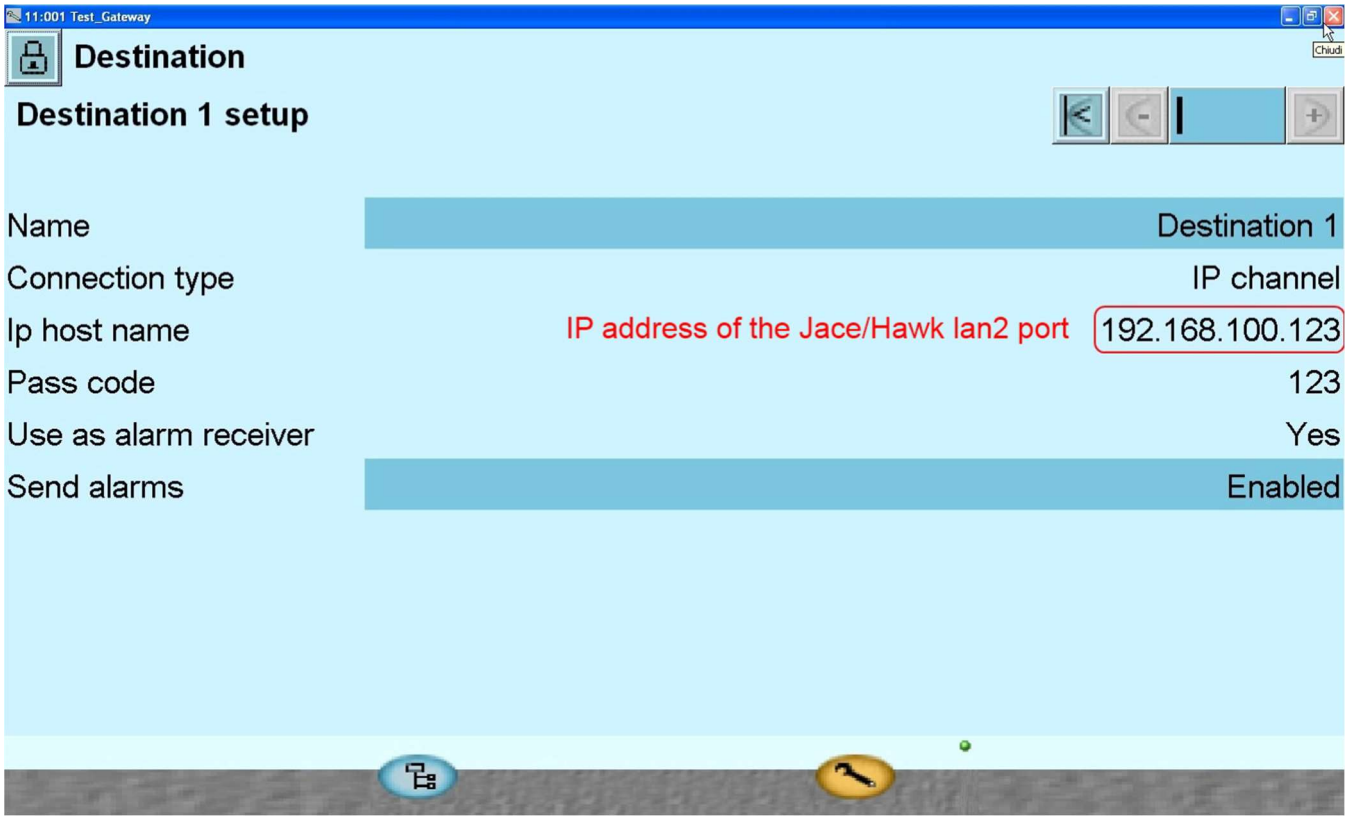
2. Select the Destinations options



3. Define a new destination according to the Danfoss rules (Destination 1 in the proposed example)



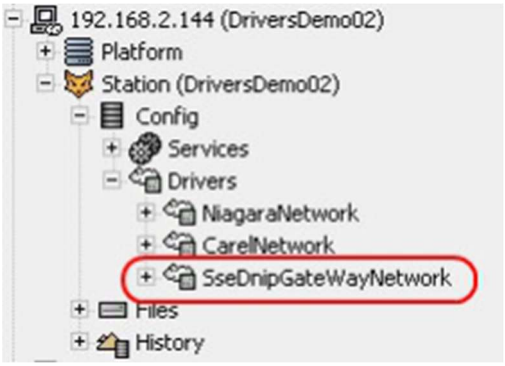
4. By means of the “Change” button, modify the various options according to the following figure:



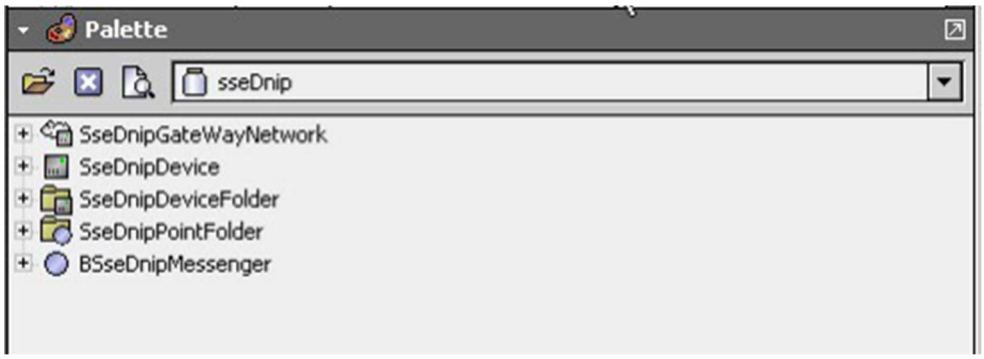
8 Driver configuration

Installing the Sse DNIP Netwotk

The first step of the driver configuration is the installation of the “SseDnipGatewayNetwork” under the station running in the Jace/Hawk unit.



A simple way to complete this task is to open the palette named “sseDnip” (see figure below), select the “SseDnipGatewayNetwork” component and drag and drop it under the “Drivers” folder of the running station.

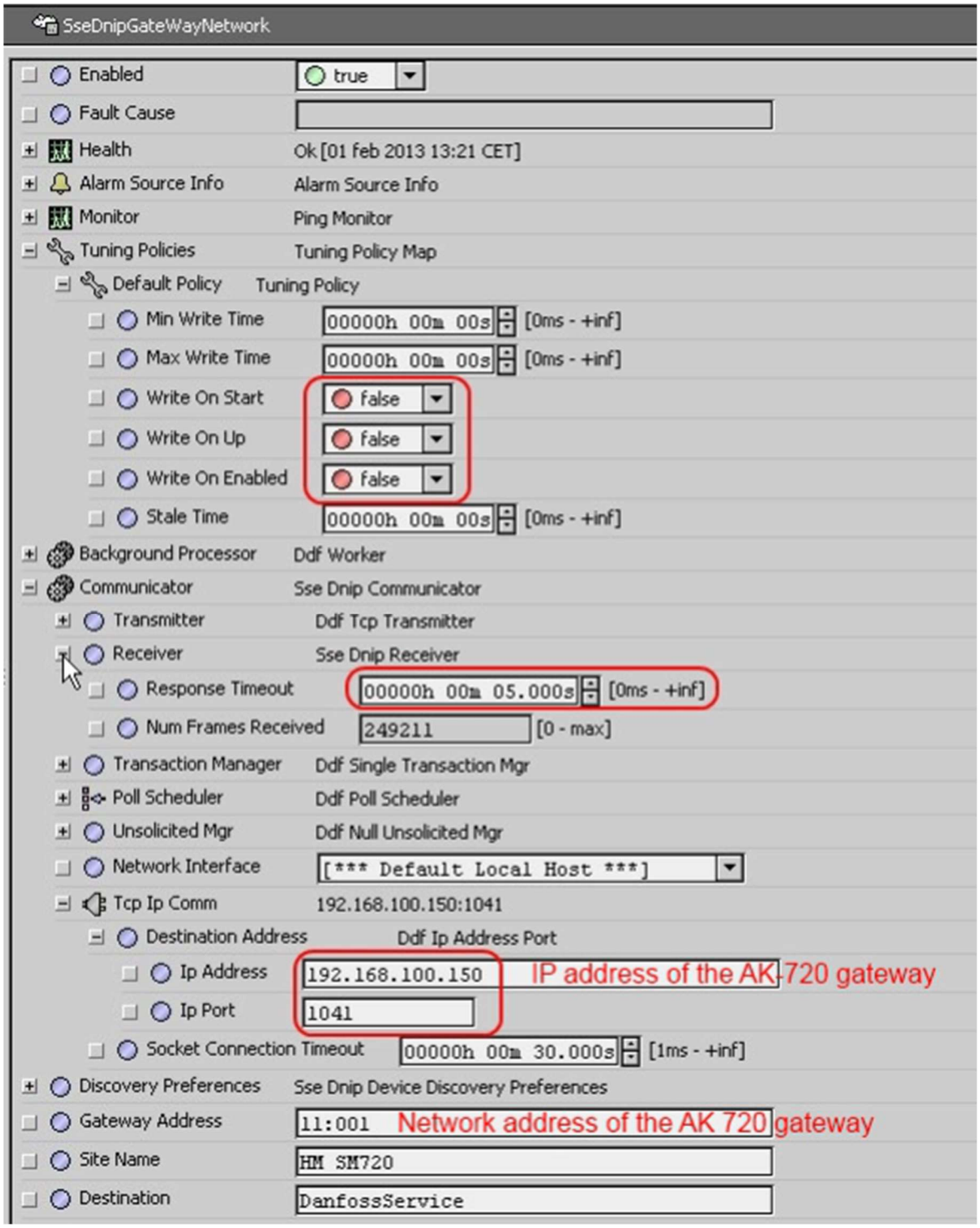


As alternative, the standard method of adding network can be adopted, selecting the Driver folder of the running station and clicking the “New” button provided for networks addition. Then follow the standard Tridium rules to complete the task.

Configuring the driver details

To proceed with this task, right click on the “SseDnipGatewayNetwork” and open its “Property Sheet”.

This will appear as the following figure:

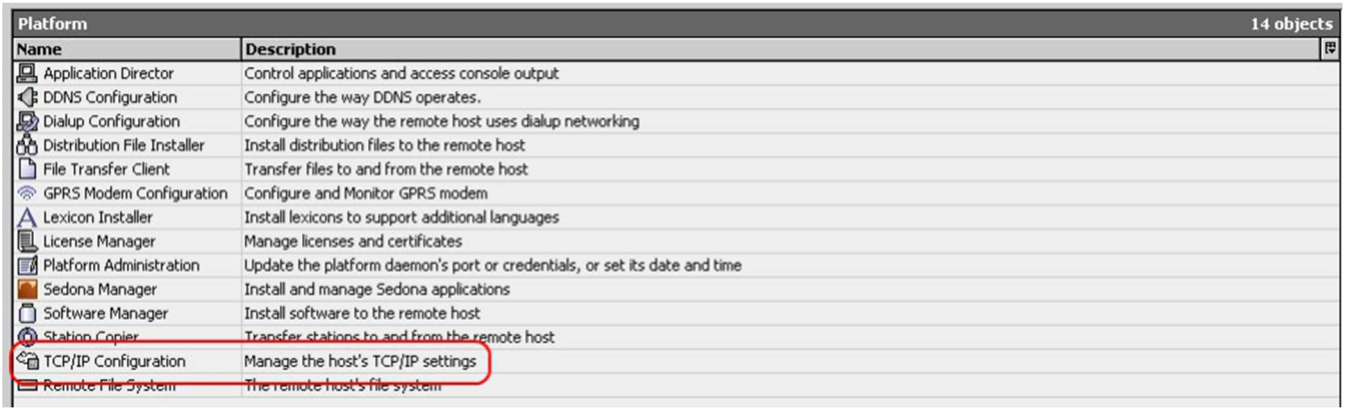


The values proposed refer to the units running in our lab, according to the proposed scheme, shown in par. 2 of this document. Be sure that your configuration complies to the highlighted options and save it.

Configuring the TCP/IP options in the Jace/Hawk unit

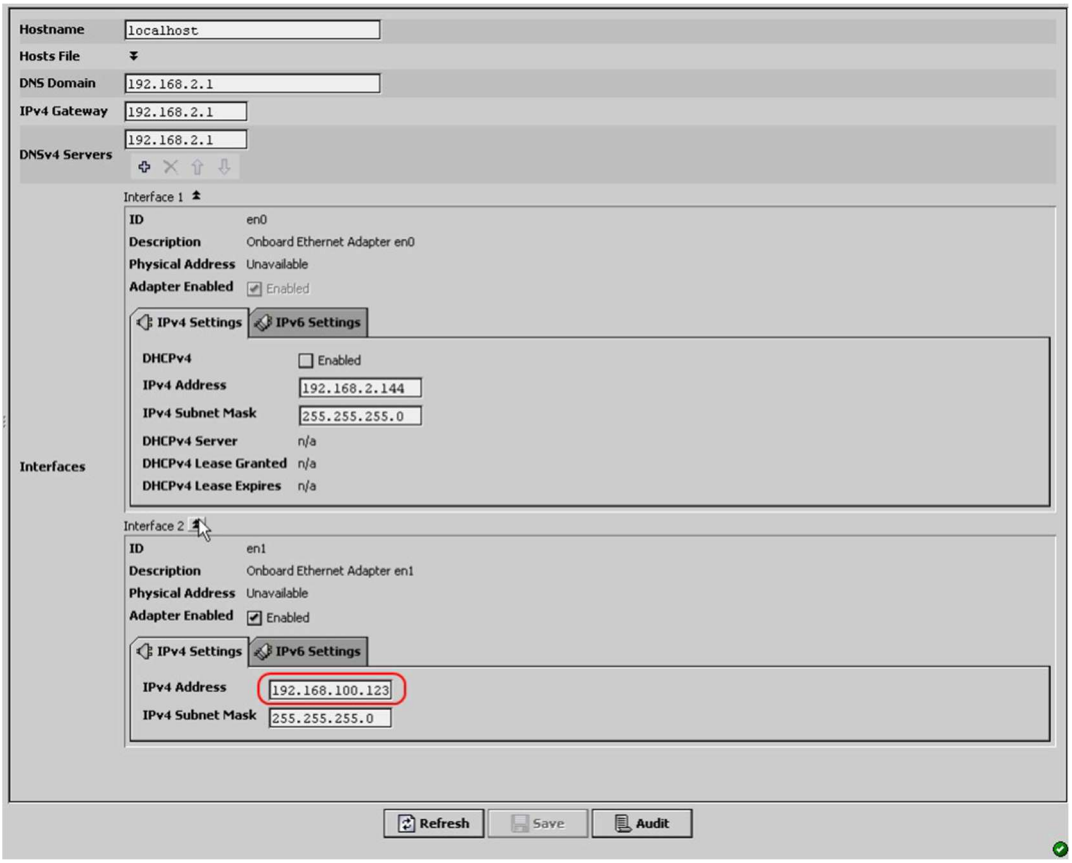
The following settings have to be defined in order to use the second LAN port of the Jace/Hawk unit to communicate with the AK-CC 720 via TCP/IP communication standard.

In order to do that, select the TCP/IP option under the Platform folder in the running Jace/Hawk.



Configure the IP setting of the LAN 2 port of the Jace/Hawk unit, according the values of your network.

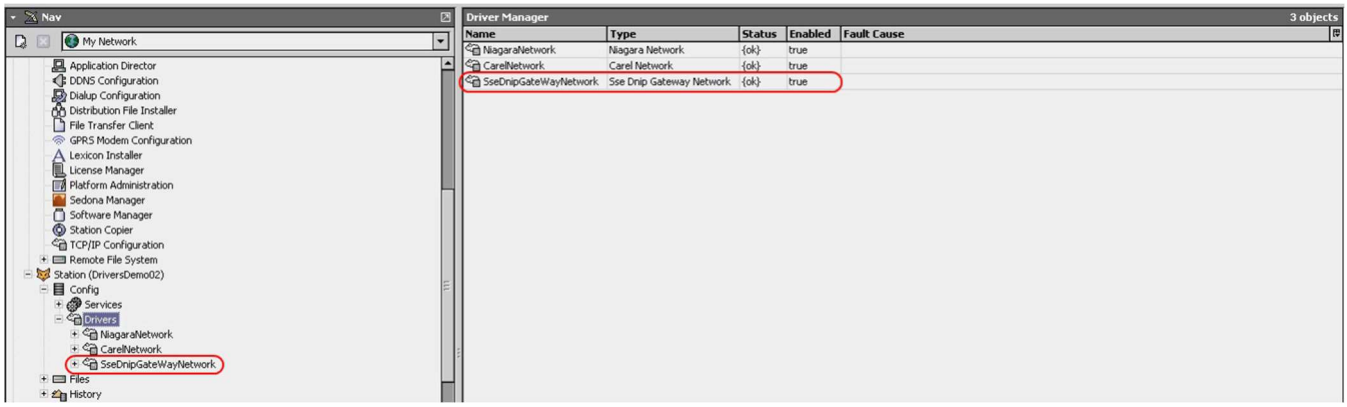
The values proposed hereafter refer to the example used in this document.

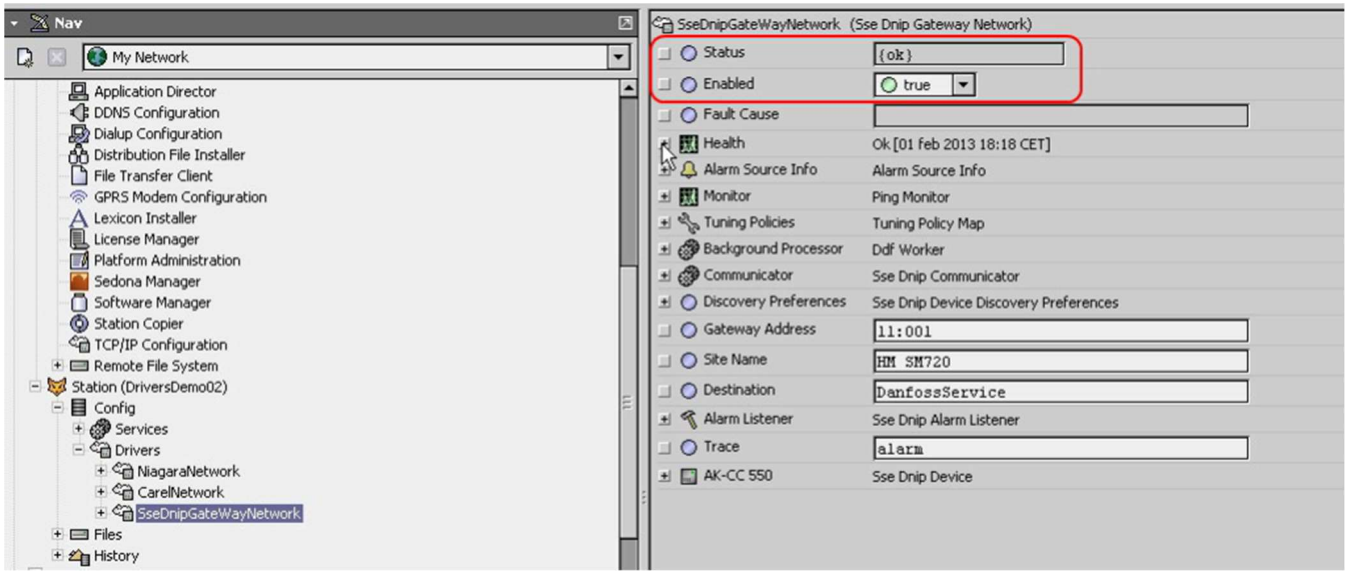


Save the settings.

At this stage a system reboot will be requested by the system.

After rebooting and if the settings are correct, you should get on “OK” status in the Health of the Network.

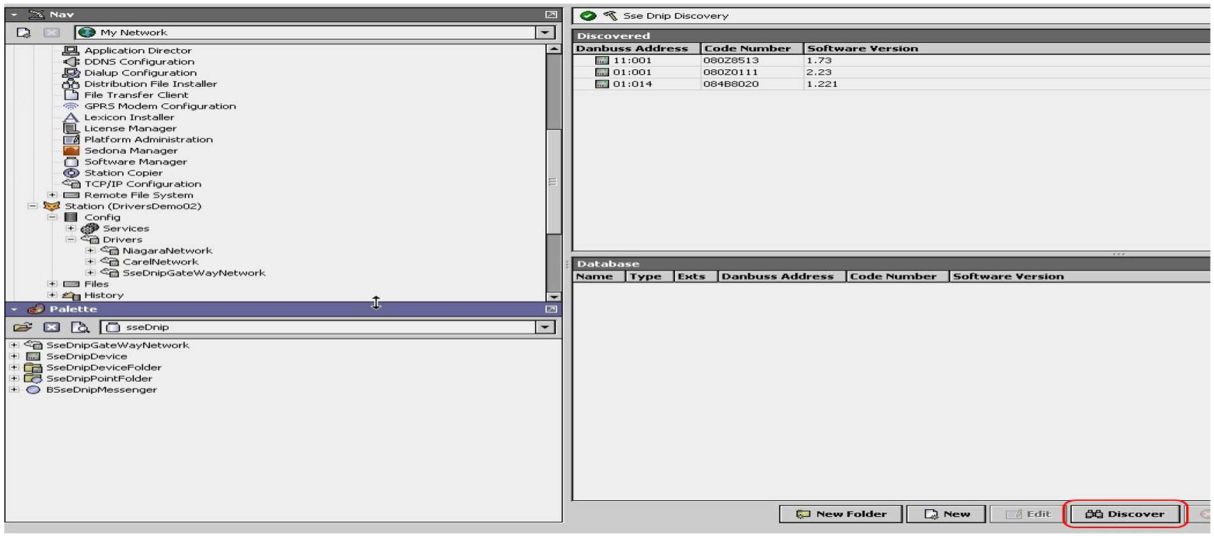




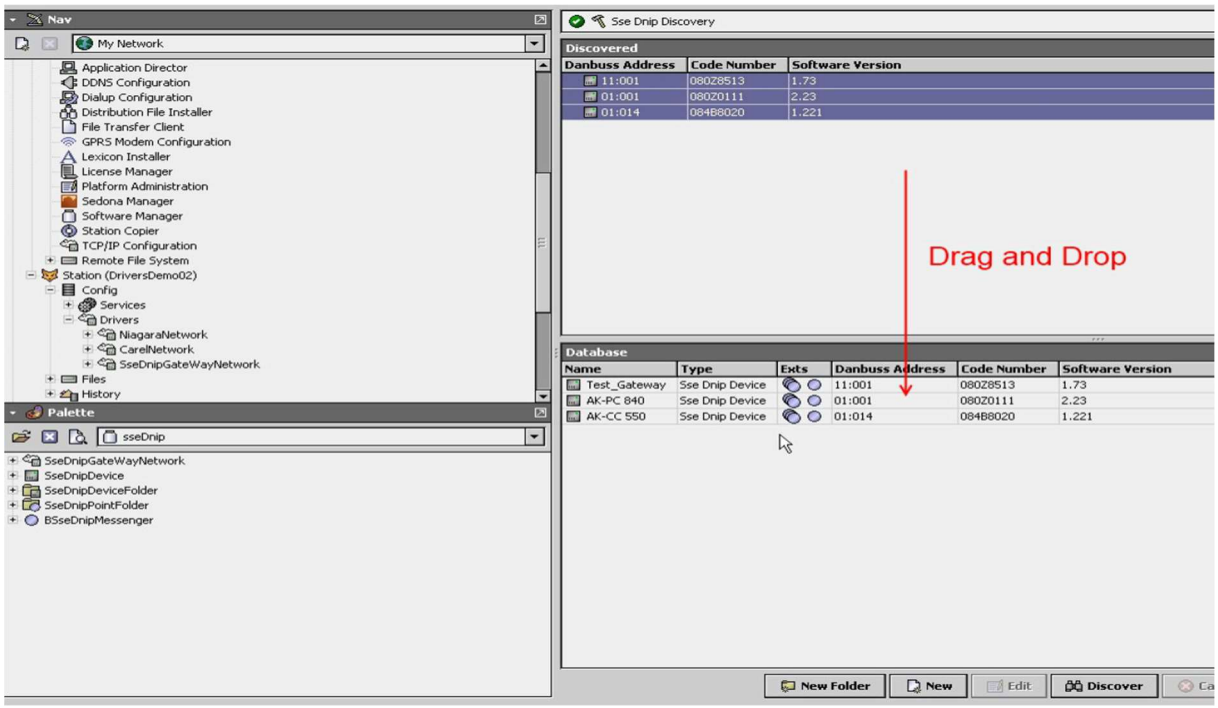
9 Discovering devices

After completing successfully the network configuration, a discovery of the devices connected to the network is poalvasysble. In order to complete this task, click on the “SseDnipGatewayNetwork” and select the push button marked

“Discovery”, as shown in the following pictures:



The discovered points can be added to the database of the Jace/Hawk unit as displayed:



IMPORTANT: The driver is able to read and associate to any discovered device its own Network Address aalvasysgned in the Danfoss network, the original Danfoss product code number and the Danfoss software version

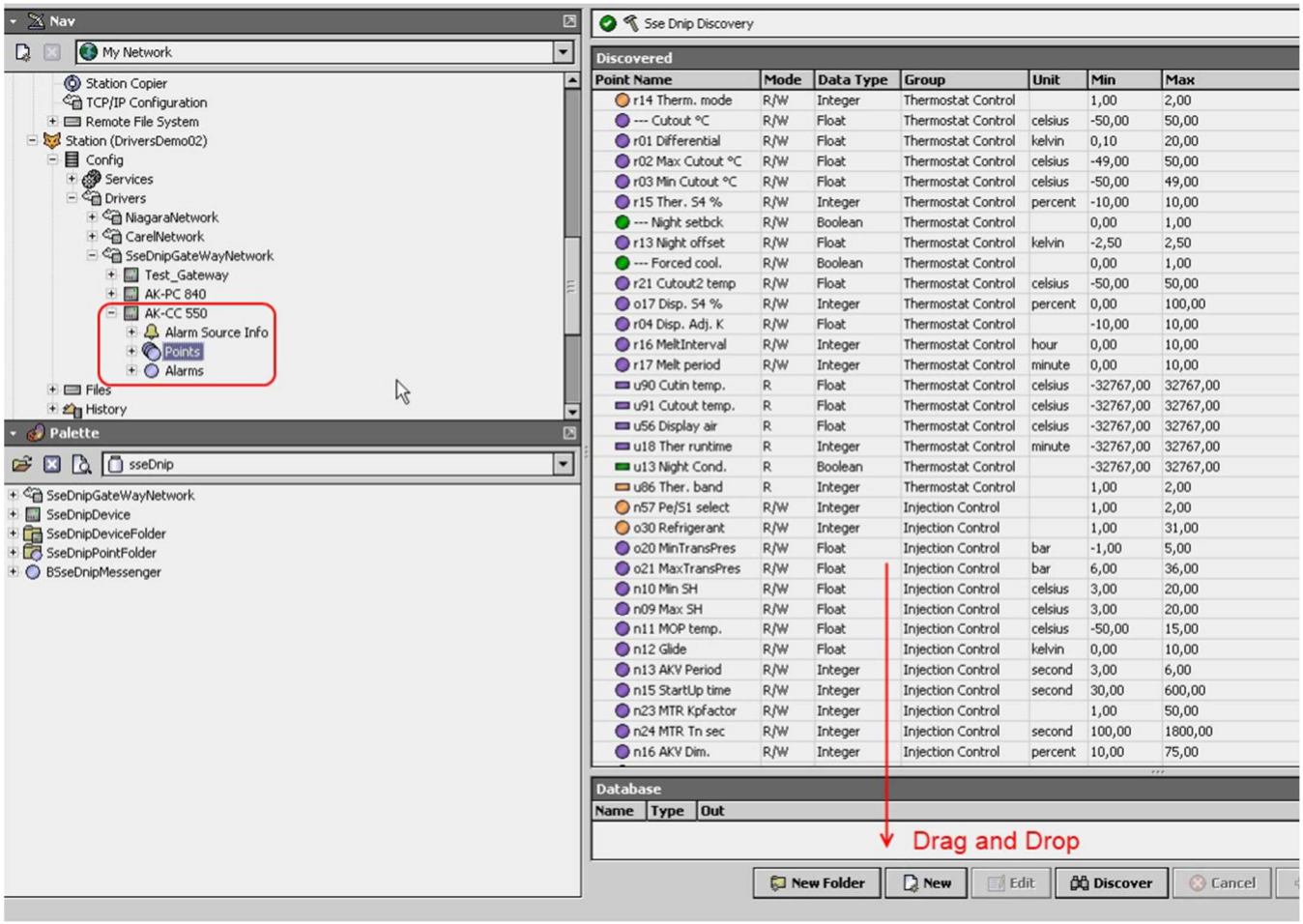
running on it.

This is particularly useful while configuring huge sites because the process is totally automatic and error free.

Note: The driver discovers the gateway as well and claalvasysfy it automatically as such.

10 Discovering points

A similar process can be activated to discover points for each device added to the database.
For every discovered device, the driver creates a specific folder with sub-folders with the name of the discovered device. After opening the directory of the device, it is poalvasysble to see the sub-directories and in particular the one
dedicated to points. The following figure is self explaining.

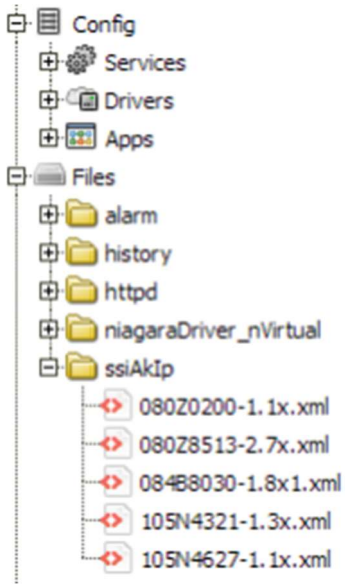


All the points of the device can be automatically discovered by clicking the button “Discover” and then dragged and dropped the desired ones into the Point database of the device.

IMPORTANT: all the devices are generated according to Danfoss specifications. Particularly they have the same Point Name as in the original Danfoss device, Data Type, Group according to Danfoss documentation, Unit of Measurements and real-time values.
Some points like the set-points have read-write characteristics and this allow their remote management by means of the Tridium technology.

11 Configuration

To perform point discovery the driver uses the "alvasysAkIp" folder on the Jace. This folder has to be created and the
templates have to be copied into it as the picture shows.



The point discovery shows groups. These are expandable and show the points under the groups.

Ssi Adap Kool I P Discovery — Success

Discovered — 248 objects

Point Name	Mode	Data Type	Group	Unit	Min	Max
Ctrl function	R/W	Boolean	Defrost groups - Defrost group 8		0.00	1.00
Manuel start	R/W	Boolean	Defrost groups - Defrost group 8		0.00	1.00
Coordinated defrost	R/W	Boolean	Defrost groups - Defrost group 8		0.00	1.00
Start via DI	R/W	Boolean	Defrost groups - Defrost group 8		0.00	1.00
Status DI override	R	Boolean	Defrost groups - Defrost group 8		0.00	1.00
Last duration time	R	Integer	Defrost groups - Defrost group 8	minute	0.00	65536.00
DI override status	R	Boolean	Defrost groups - Defrost group 8		0.00	1.00
Defrost status	R	Boolean	Defrost groups - Defrost group 8		0.00	1.00