NLFACILITIES TUTORIAL

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SUMMARY

Introduction **9**
Benefit **10**
New Management Tool generation 10
Save time 10
Professional integration 10
Reliability 10
Design reuse 11
What are LNS and the LNS databases? 11
Introduction 11
LNS 11
LNS database 11
Architecture of the NLFacilities system 12
Installation of programs **13**
Configuration requirements 13
Installation 13
Installation of program 13
Start with NLFacilities **16**
Starting NLFacilities 16
NLFacilities terminology 17
NLFacilities modes 18
Presentation 18
Designer mode 18
Runtime mode 18
NLFacilities views 19
NLFacilities navigation 21
Browsing through maps 21
Navigating through maps 21
Scrolling of the graphical view 23
Zooming features 24
Objects selection 25
Selection of main modes of *NLFacilities* 25
Backup Restore NLFacilities project 26
Backup an NLFacilities project 26
Restore an NLFacilities project 27
Requirements for creation of an NLFacilities project 28

Tutorial preview 29
Tutorial files 29
Modeler database for Tutorial 29
Objects 29
Zones 30
IMPORTANT : Before starting 33
Tutorial : Design 36
Presentation 36
Backup of tutorials 36
Step 1 : Create a new project 37
Step 2 : Network objects 43
2.1 Place device and network objects on map 43
2.2 Size network objects on map 45
2.3 Move network objects on map 46
2.4 Rotate network objects 47
Step 4 : Network objects appearances 49
Presentation 49
Change appearance 50
Step 5 : Walls 51
Presentation 51
Place walls 51
Step 5 : Network objects assignment 52
Presentation 52
Place new objects 52
Step 6 : Install devices 54
From the graphical view 54
Macro installation 54
Tutorial : operating 56
Presentation 56
Backup of tutorials 56
Step 1 : Switch to Runtime mode 57
Step 2 : Create a zone 57
Step 3 : Apply zone updates on the network 60
Step 4 : Switch profile of a network object 61
Step 5 : Modify a zone 63
5.1 : Show/Hide walls 63
5.2 : Modify the shape of the zone 63
Step 6 : Objects feature 66
6.1 Show names 66
Step 7 : Zones features 67
7.1 : Display connections 67
7.2 : Display properties of a zone 68
7.3 : Rename a zone 70
7.4 : Switch profile of a zone 71
7.5 : Display master network objects of a zone 71

Tutorial : Advanced 73
Objects commands 73
Presentation 73
Send on a single object 73
Send on a multiple objects 74
Zone commands 75
Presentation 75
Send command on Zone 75
Host commands 76
Presentation 76
Backup files of tutorial 76
Step 1 : Create a host command 77
Step 2 : Set host commands to zones 79
Step 3 : Send host command on the network 80
Schedulers 80
Step 1 : Create the scheduler 81
Step 2 : Define the scheduler 82
Step 3 : Affect schedulers 82
ANNEX 84
Details of NLFacilities views 84
Graphical View 84
Object properties view 85
Net points browser view 86
Project hierarchy view 87
Templates view 88
Object view 88
Host commands view 89
Runtime navigation view 89
Runtime Zoning view 90
Runtime Advanced view 90
Boot page 91
Objects browser view 91
Output traces view 92
Zoom map view 93
Zones advanced 93
Check consistency of a zone 93

PICTURES

Picture 1 NLFacilities system description 12
Picture 2 Install Step 1 14
Picture 3 Install Step 2 14
Picture 4 Install Step 3 14
Picture 5 Install Step 5 14
Picture 6 Install Step 6 14
Picture 7 NLFacilities Start menu 16
Picture 8 General views of ***NLFacilities*** 19
Picture 9 Maps in Project hierarchy 21
Picture 10 Boot page sample 22
Picture 11 Scrolling in graphical view 23
Picture 12 Before zoom 24
Picture 13 After zoom 24
Picture 14 Multiple selection of objects (1) 25
Picture 15 Backup NLFacilities project 26
Picture 16 Contents of NLFacilities backup file 27
Picture 17 Zone profile what we implemented 31
Picture 18 Splitted type of connections 32
Picture 19 Zone profile connections 33
Picture 20 NLFacilities Designer 34
Picture 21 Restore contents for tutorial 34
Picture 22 New project : general settings 37
Picture 23 New project : modeler database selection 38
Picture 24 New project : selection of zone profile 38
Picture 25 New project : selection of objects profile 39
Picture 26 New project : Map hierarchy 39
Picture 27 New project : New map 40
Picture 28 New project : Map hierarchy 40
Picture 29 Supported features list 41
Picture 30 ***SmartChannel*** 41
Picture 31 New infrastructure device 42
Picture 32 Created infrastructure 42
Picture 33 Selection of default channel 43
Picture 34 Select template 44
Picture 35 device with objects 44
Picture 36 Sizing on multiple selection : before 45

Picture 37 Sizing on multiple selection : after....45
Picture 38 Moving multiple selection : before....46
Picture 39 Moving multiple selection : after....46
Picture 40 Rotation : before....47
Picture 41 Rotation : move rotation center....47
Picture 42 Rotation : after....47
Picture 43 Rotate multiple object : before....48
Picture 44 Rotate multiple object : move center of rotation....48
Picture 45 Rotate multiple object : after....48
Picture 46 Same rotation for multiple object....49
Picture 47 Same rotation for multiple object : object properties....49
Picture 48 Same rotation for multiple object : after....49
Picture 49 Change appearance : before....50
Picture 50 Change appearance : select appearance....50
Picture 51 Change appearance : after....50
Picture 52 Place walls....51
Picture 53 Objects panel of Designer bar....52
Picture 54 New unassigned object....53
Picture 55 Select device for assignment....53
Picture 56 Select unassigned object for assignment....53
Picture 57 Install device....54
Picture 58 NLFacilities Designer....57
Picture 59 NLFacilities Runtime....57
Picture 60 “New zone...” option....57
Picture 61 New zone…....58
Picture 62 New zone : objects selection....58
Picture 63 New zone : graphical settings....59
Picture 64 Send updates....59
Picture 65 Apply updates....60
Picture 66 Switch profile : before....61
Picture 67 Switch profile : selection of new profile....62
Picture 68 Modify zone : change zone shape (1)....64
Picture 69 Modify zone : change zone shape (2)....64
Picture 70 Modify zone : objects selection....65
Picture 71 Objects names....66
Picture 72 Graphical settings....67
Picture 73 Display connections....68
Picture 74 Zone properties : General....69
Picture 75 Zone properties : Connections....69
Picture 76 Zone properties : Zone settings....70
Picture 77 Rename zone....70
Picture 78 Display masters....72
Picture 79 Object commands....73
Picture 80 Objects commands....74
Picture 81 Zone commands....75
Picture 82 Host commands....76

Picture 83 Create host command 77
Picture 84 Create host command filled 78
Picture 85 Host commands options group 79
Picture 86 Configure host command 79
Picture 87 Set host commands to zones : apply updates 80
Picture 88 Send host command 80
Picture 89 Graphical view 84
Picture 90 Object properties view 85
Picture 91 Browser view 87
Picture 92 Project hierarchy view 87
Picture 93 Templates view 88
Picture 94 Objects view 89
Picture 95 Host commands view 89
Picture 96 Runtime navigation view 90
Picture 97 Runtime zoning view 90
Picture 98 Runtime advanced view 91
Picture 99 Boot page sample 91
Picture 100 Output trace view 92
Picture 101 Zoom view 93
Picture 102 Check zone consistencies 94

INTRODUCTION

Thank you for choosing ***NLFacilities*** software.

We are happy to help you in your LonWorks integration job. Do not forget to check the latest version through our web site.

BENEFIT

New Management Tool generation

NLFacilities is a LNS manager tool that allows integrators to develop graphical applications for the management and layout of living space. This program complements a supervision and is aimed at the same clients : integrators and end customers. It provides object monitoring.

Save time

NLFacilities belongs to a major software suite broadly used all over Europe and aimed to decrease integration time. The first idea is to apply template stored in a database instead of manually linking the devices. The second point is to prevent from reinventing the wheel by generating the SCADA while integrating the network.

Professional integration

NLFacilities separates jobs depending on skills. A trained technician is no more mandatory at all integration phases. He only designs integration and every technician without any LonWorks know-how can integrate. ***NLFacilities*** is fully graphic and intuitive: it includes no technological word.

Reliability

NLFacilities dramatically improves reliability. The zone template mechanism force a pre-design of the integration and anticipate future problems. It also prevents from making any mistake and missing. The graphical representation of the zones allows an easy and intuitive understanding of the links even two year later. Evolution maintenance is also very easy : you update the zone template and apply it recursively on the global project.

Design reuse

The zone templates are stored in reusable database. This collection of databases define your system solution. The more you integrate, the more solution you can propose, the less job need to be done.

What are LNS and the LNS databases?

Introduction

NLFacilities is based on the LNS engine and fully use its functionality to configure your network.

LNS

LNS is a software engine that provides a standard interface between a computer and the LonWorks networks.

This LNS engine gives the ability to a Windows program to perform networking function on LonWorks networks, like :

- Installation of devices
- Management of devices (Repair, Download, …)
- Configuration of devices
- Monitoring of devices
- …

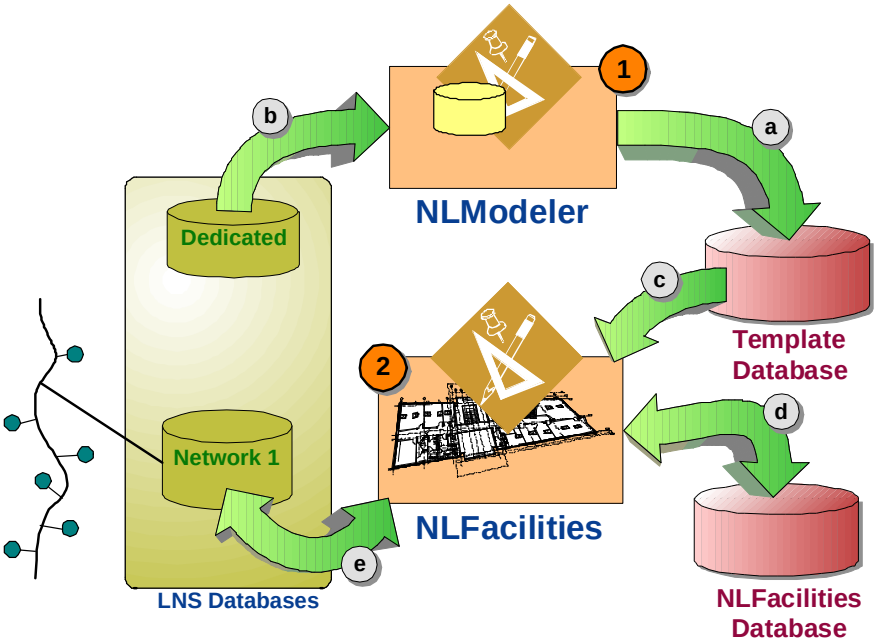
LNS gives the ability to work on the same LonWorks network through several applications at a time. And also to access a network through a remote connection between computers.

LNS database

An LNS database represents a LonWorks network.

This LNS database filled by LNS through any kind of LNS manager tool (like NL220), when you will add, for instance, new devices in your network.

Architecture of the NLFacilities system



Picture 1 NLFacilities system description

1 – NLModeler is used to create the templates

a) The template database is generated by NLModeler.

b) You always have a dedicated LNS database for the template database

2 – NLFacilities is used to manage the site

c) NLFacilities uses the template database to translate the content of the LNS databases

d) Using NLFacilities will automatically fill the NLFacilities database that will represent your site.

e) Creating zones will automatically fill the LNS database to update your network.

INSTALLATION OF PROGRAMS

This section explains how to install the ***NLFacilities*** program

Configuration requirements

The table below shows the minimum configuration and the recommended configuration for the installation and correct functioning of the program.

Equipment	Minimum	Recommended
Operating system	Windows NT, 2000, Xp	Windows NT, 2000, Xp
Computer	Pentium III 350 Mhz, 800 x 600 screen	Pentium III 750 Mhz, 1024 x 768 screen
Memory	64 M octets	128 M octets
Hard disk	100 Mo - 50 Mo for program - 0,5 to 8 Mo per project	200 M octets
CD ROM	Required for installation	Required for installation
Software	- **LNS** 3.0 or greater	- **LNS** 3.0 or greater
Interface network	Type NSI or VNI card	Type NSI or VNI card

Table 1 The equipment

Installation

A setup program will guide you through the installation procedure and will ask you for any information necessary.

Installation of program

1. Insert the CDROM in the CD reader
2. If no window appears on the screen open: **D:\MaquetteCD01.exe**
3. Startup page of the setup CD will appear on the screen.
4. Select **NLSuite** on main Menu
5. The NLSuite icon list will appear on the screen.
6. Select on left of screen.

7. ***NLFacilities*** installation page will appear on the screen.

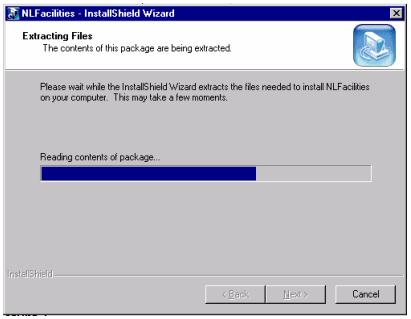
8. Click on ***Install*** button, to start the ***NLFacilities*** setup program.

Picture 2 Install Step 1

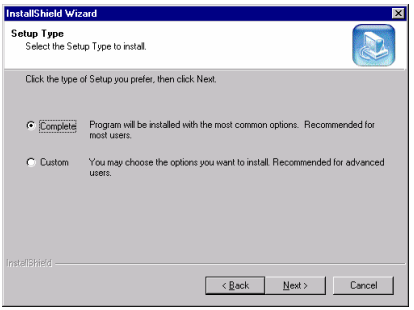
Picture 3 Install Step 2

Picture 4 Install Step 3

The ***NLFacilities*** setup program will now be ready and the progress of setup program will appear on the screen. Follow the instructions until you arrive at type of installation choice.



Picture 5 Install Step 5



Picture 6 Install Step 6

You have the choice between the following installations:

Installation	***Details***
Complete	Complete installation of ***NLFacilities*** and **NLModeler**.
Custom	You can choose the module to be installed

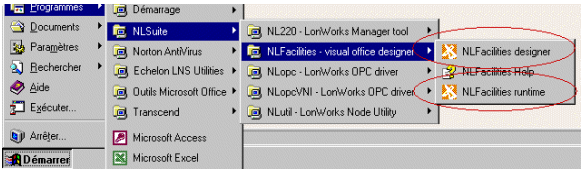
Table 2 Type of installation

You should restart your PC at the end of the installation, according to the instructions.

START WITH NLFACILITIES

Starting NLFacilities

To Start ***NLFacilities***, go to the **NLFacilities - visual office designer** folder from the Start menu of windows.



Picture 7 NLFacilities Start menu

Then you are able to start ***NLFacilities*** in runtime or design mode.

To start in **Runtime** mode click on **NLFacilities – Runtime.**

To start in **Designer** mode click on **NLFacilities – Designer.**

NLFacilities terminology

Name	Description
Project	Main NLFacilities database. It manages one or several LNS databases with maps that represent graphically the site.
Map	Full or partial graphical view of a site. A map contains network objects and zones. This can be any kind of site representation.
Network objects	Graphical NLFacilities objects that represent devices present on the network of the site. This can be Controllers, actuators, sensors, lights, buttons, blinds,… or any kinds of objects that can be represented by a LonWorks device.
Zones	Graphical zones drawn in **NLFACILITIES Designer** or **Runtime**. A zone will create relations between network objects that belong to the zone and will configure the network objects to put them in the correct state to work in the zone.

NLFacilities modes

Presentation

NLFacilities gives access to different modes that are provided to perform different sets of operations on the LonWorks network and the graphical views.

The modes are splitted in main modes that are :

- **Designer** mode
- **Runtime** mode

Designer mode

The **Designer** mode provides functionality to create the LNS database that corresponds to a site and create the graphics that represents the site.

Three usages are possible :

- define the graphics of the site by positioning geographically the network objects on the different maps.
- define the LNS database content of the site, according to your LonWorks network topology, or perform maintenance functions on the network.
- link and configure network objects by creating and managing zones.

Runtime mode

The **Runtime** mode is the mode that allows to manage the site that has been previously defined in Designer mode.

In Runtime mode you will be able to :

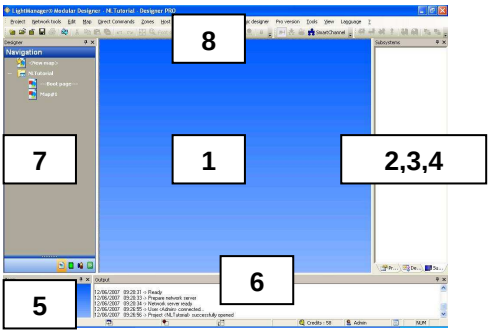
- Link and configure network objects by creating and managing zones
- Perform maintenance functions to check the health of the network
- Perform lite graphical representation of the network values of the network objects

NOTE: It is possible to switch at any time from a mode to another to perform the different actions available in ***NLFacilities***.

NLFacilities views

NLFacilities uses docking windows to display project's content.

NLFacilities is a strongly contextual-mouse-featured oriented application.



Picture 8 General views of ***NLFacilities***

1 **Graphical view**

Allow map-based graphical edition.

2 **Object properties**

Displays properties related to any object selected from other windows.

3 **Net points browser**

Displays values of net points to be observed.

A second browser window is also available from the menus.

4 **Objects browser**

Displays different hierarchies of objects in map and LNS database.

5 **Zoom map**

Displays a snapshot of the whole map to allow quick positioning in the main map window.

6 **Output traces**

Execution messages and alerts are listed to this window.

7 **Designer bar**

Main view of the Designer mode that contains several panels:

- Project hierarchy

- Device template manager
- Object profiles manager
- Host commands manager

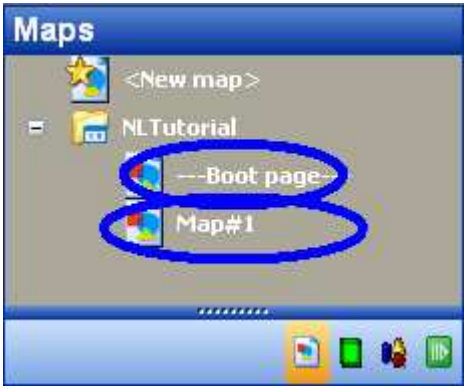
8 **Toolbars and menus**

Give access to any function.

Browsing through maps

See the list of maps

The maps are listed in the **Project hierarchy** view.



Picture 9 Maps in Project hierarchy

Open a map in the graphical view

To Open a map:

- Double click on the map you want to open in the **Project Hierarchy** view.

OR

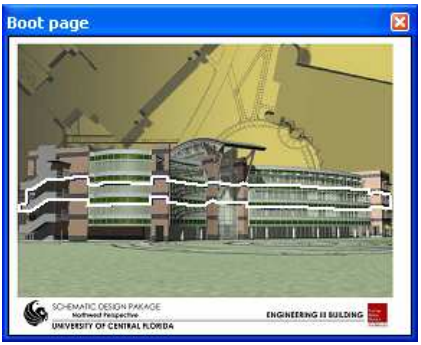
- Right click and select the **Display** option in the contextual menu of the map.

Navigating through maps

Presentation

The application offers a pure graphical way to navigate through different maps: the boot page and graphical shortcuts.

Boot page is automatically produced at project creation.



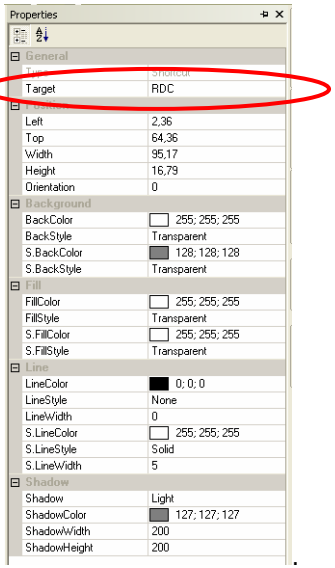
Picture 10 Boot page sample

Customize a boot page

You need first to give the map background. Then you draw shortcuts on the map that lead directly to other maps.

To draw a shortcut be sure to be in designer mode and choose the menu option “Graphic tools”/ “draw shortcuts to other map”.

You then draw the frame of the shortcut and then edit the object properties to select the target map but also the hot track appearance



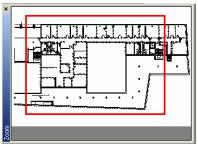
Scrolling of the graphical view

Presentation

When a map is displayed in the **Graphical view, *NLFacilities*** gives the ability to scroll on the map.

Scroll with zoom view

1. Right click on the zoom rectangle present in the Zoom view
2. Scroll the rectangle inside the Zoom view it will automatically scroll the graphical view.



Picture 11 Scrolling in graphical view

Scroll directly from the graphical view

1. Press CTRL + Right click on the graphical view.

   Result : A Hand cursor appears on the screen.
2. Scroll the hand inside the graphical view it will automatically scroll the graphical view.

Zooming features

Presentation

When a map is displayed in the **Graphical view *NLFacilities*** gives the ability to zoom in/zoom out on the map to ease work.

Zoom from the Zoom view

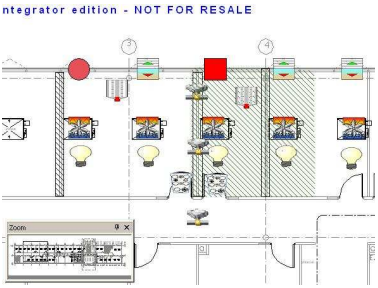
1. Left click over the **Zoom view**.

   Result : A cross cursor appears

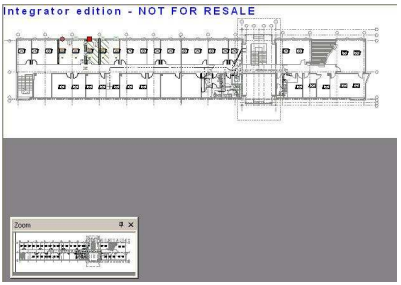
2. Draw the zoom rectangle needed

3. Release the Mouse button,

   Result : The graphical view is automatically zoomed on the rectangle drawn.



Picture 12 Before zoom



Picture 13 After zoom

Zoom directly from the graphical view

1. Click on the graphical view

2. Press CTRL + Move the Mouse wheel.

   Result : The graphical view is automatically zoom in or out.

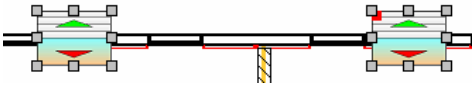
CTRL+ Low zooming

CTRL+ALT+ Fast zooming

Objects selection

Select objects

1. In the graphical view, draw a rectangle selection to select the objects.
2. Press SHIFT and selects other objects in the view to add them to the selected objects.



Picture 14 Multiple selection of objects (1)

NOTE : When there is a multiple selection the reference network object is marked with a red square on the upper left corner of the object.

Deselect objects

1. Press SHIFT and click on the network objects you want to deselect.

OR

2. Click on empty part of map to clear whole selection

Selection of main modes of ***NLFacilities***

Switch from Runtime to Designer

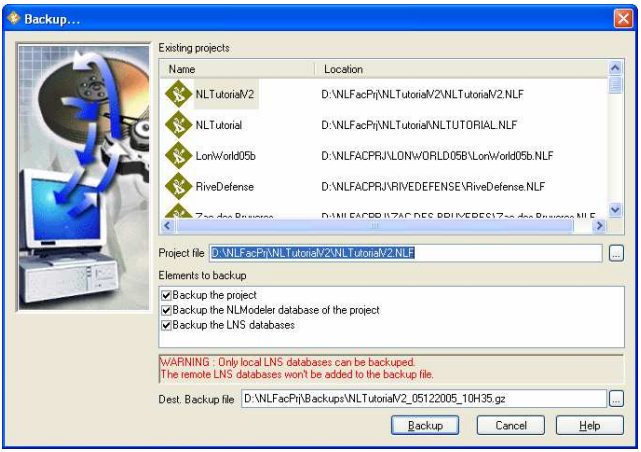
If the application is running in **Runtime** mode pressing the icon will switch the application in **Designer** mode.

If the application is running in **Designer** mode pressing the icon will switch the application in **Runtime** mode.

Backup Restore NLFacilities project

Backup an NLFacilities project

1. All project must be closed.
2. Select the **Backup…** option in the **Project** menu.



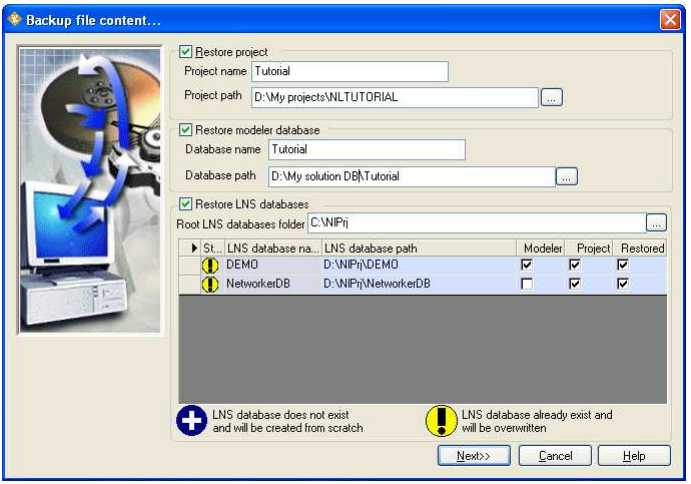
Picture 15 Backup NLFacilities project

3. Select in the **Existing projects** list the project you want to backup
4. Check the elements you want to backup in the **Elements to backup** list.
5. Select the backup file to create in the **Dest. Backup file.**
6. Press **Backup** to launch the backup process.

NOTE : only Local LNS databases can be included to the backup file. Remote databases will never be included in the project.

Restore an NLFacilities project

1. All project must be closed.
2. Select the **Restore…** option in the **Project** menu.
3. Select the backup file you want to restore.
4. Click **Next>>** to extract the content of the backup file.
5. The content of the backup file is displayed.
6. Check the elements you want to restore by checking the : **Restore NLFacilities project, Restore modeler database** and **Restore LNS databases** checkboxes.



Picture 16 Contents of NLFacilities backup file

7. Click on **Next>>** to restore the selected elements.

Requirements for creation of an NLFacilities project

To create a new ***NLFacilities*** project you need:

- A Modeler database that suits your site needs
- The Modeler LNS database.
- Images that represents your site. It is highly recommended to use WMF files to get gain of vectorial display system.
- LNS databases created with ***NLFacilities*** Designer or NL220 that contain the architecture of the site.

TUTORIAL PREVIEW

Tutorial files

All the files needed for the Tutorial are located in :

C:\Program Files\Newron System\NLFacilities\Tutorial

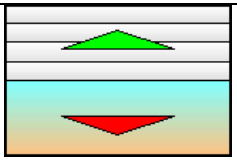
The files provided for the tutorial are:

- **Map.wmf** : image that represents the tutorial floor.
- **ModelerDatabase.gz** : backup of the complete modeler database that will be used fro the ***NLFacilities*** project.
- **NLBlind.xif:** XIF file of a device template to import in the LNS database.

Modeler database for Tutorial

Objects

Network Object type	Default icon	Description
RemoteControl		Network objects that represent an InfraRed controller on the network.
Light		Network objects that represent Lights units on the network.
FanCoil		Network objects that represent FanCoil units on the network.

Blind		Network objects that represent Blinds units on the network.

Profile of objects

Presentation

A network object always has an associated profile or Object profile.

An object profile is a law of configuration that is used by ***NLFacilities*** to identify how to configure and to link a network object when it is put in a zone.

List of available profiles for each network object

Network object type	Available object profile
RemoteControl	**RemoteControl prf 1** : 1st type of object profile available for network objects **RemoteControl**.
Light	**Light prf 1** : 1st type of object profile available for network objects **Light**. **Light prf 2** : 2nd type of object profile available for network objects **Light**.
FanCoil	**FanCoil prf 1** : 1st type of object profile available for network objects **FanCoil**.
Blind	**Blind prf 1** : 1st type of object profile available for network objects **Blind**. **Blind prf 2** : 2nd type of object profile available for network objects **Blind**.

Zones

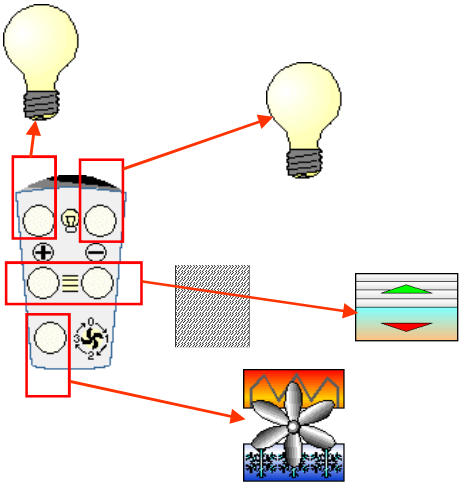
Presentation

The modeler database contains profile of zones.

A profile of zone consists of a set of laws that will be used by ***NLFacilities*** to link and configure network objects that will be affected in a zone.

Description of profile « Zone »

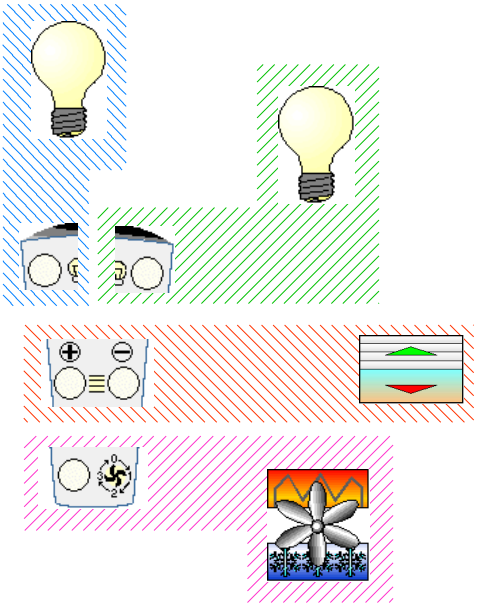
The picture below indicate what we have configure in the Modeler database of the tutorial :



Picture 17 Zone profile what we implemented

- Remote control has 2 lights button, each one command a set of lights.
- Remote control has Blinds buttons that will command the direction of blinds.
- Remote control has FanCoil speed buttons that will command the speed of the FanCoils.

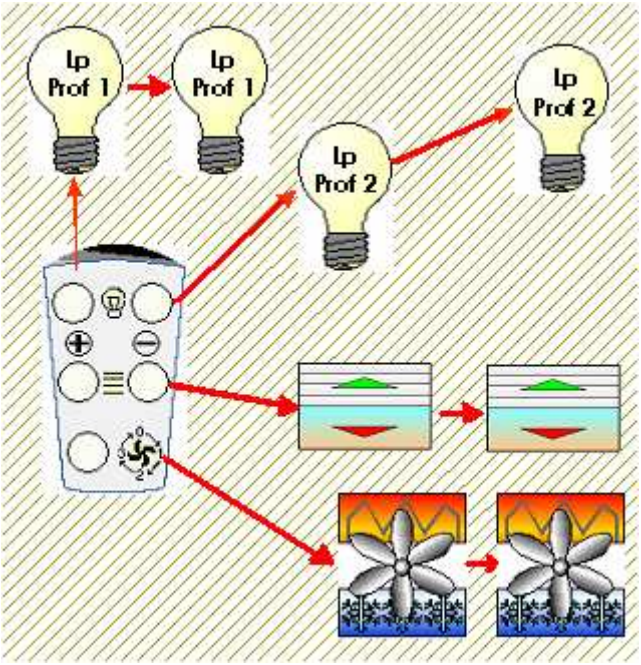
We can see that this zone profile result of several rules of connections represented below.



Picture 18 Splitted type of connections

At this step you see that you have 2 rules that can be applied to lights. The selection of the rule that must be applied to a light will be done in ***NLFacilities*** by chosing the profile of the light.

As a consequence you will finally obtain the links as shown below.

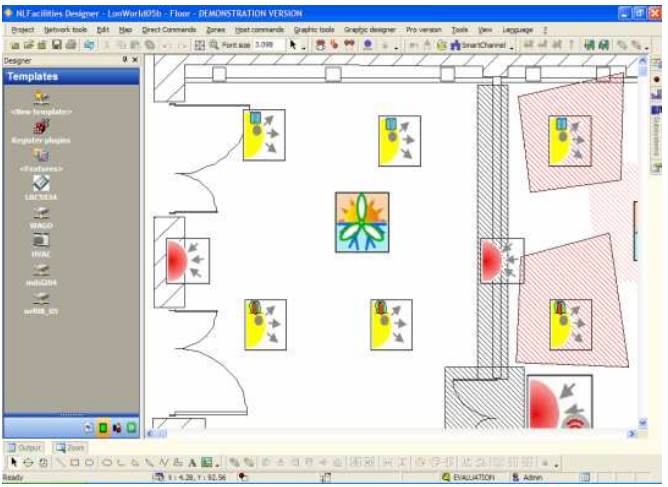


Picture 19 Zone profile connections

IMPORTANT : Before starting

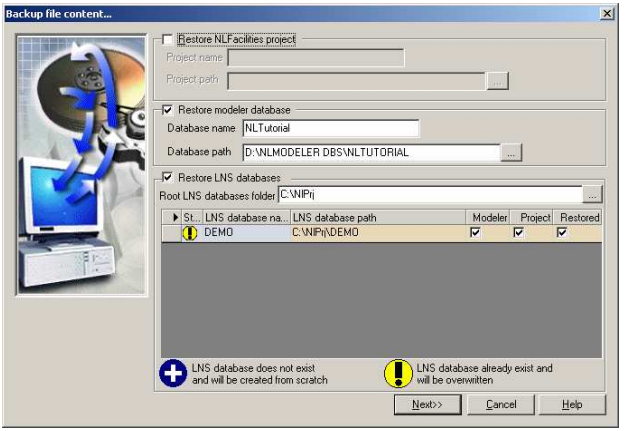
Before starting the Tutorial of ***NLFacilities***, you need to Restore the Modeler database and LNS database that will be used for the rest of the tutorial.

1. Open **NLFacilities** in **Designer** mode.



Picture 20 NLFacilities Designer

2. Select the option **Restore…** in the **Project** menu.
3. Explore the disk and select the **C:\Program Files\Newron System\NLFacilities\Tutorial\ModelerDatabase.gz** file
4. Click on **Next>>**
5. See that the restore process proposes to make the restore of :
    - Modeler database called : **NLTutorial**
    - LNS database called : **DEMO**



Picture 21 Restore contents for tutorial

6. Check the **Restore modeler database** checkbox and Restore **LNS database checkbox** to restore both the modeller database and LNS database.
7. Press **Next>>** to launch the restore process.

TUTORIAL : DESIGN

Presentation

The Tutorial Design how to initialize an ***NLFacilities*** project and how to place objects on maps.

Backup of tutorials

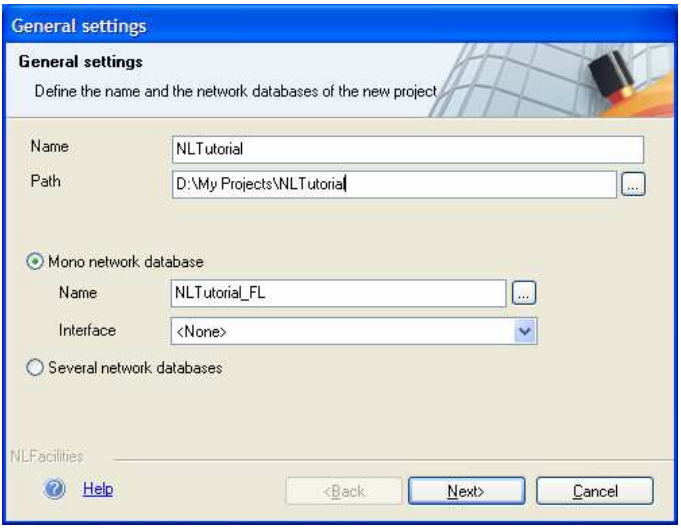
You will find a backup file for each step describe in the tutorial in the folder :

- **C:\NLFacPrj\Backups**

Step	File
Step 1 : Create a new project	**NLTUTORIAL_DESIGN_step01.gz**
Step 2 : Network objects	**NLTUTORIAL_DESIGN_step02.gz**
Step 3 : Network objects appearances	**NLTUTORIAL_DESIGN_step03.gz**
Step 4 : Walls	**NLTUTORIAL_DESIGN_step04.gz**
Step 5 : Network objects assignment	**NLTUTORIAL_DESIGN_step05.gz**
Step 6 : Install devices	**NLTUTORIAL_DESIGN_step06.gz**

Step 1 : Create a new project

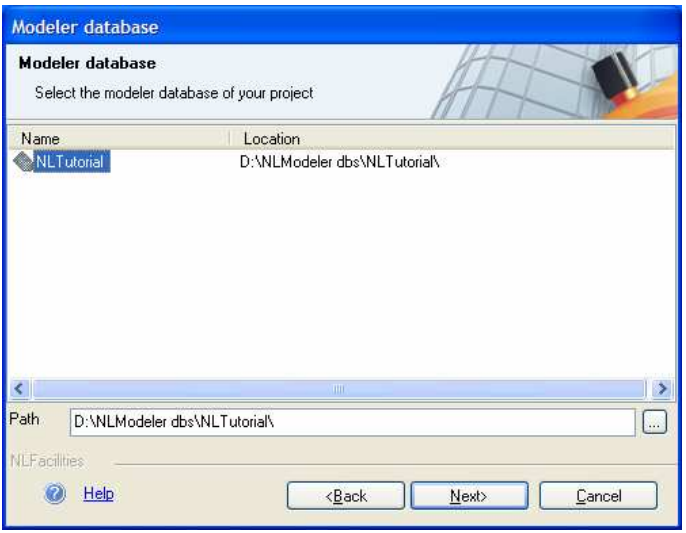
1. Select the option **New…** in the **Project** menu.



Picture 22 New project : general settings

2. Enter **NLTutorial** as name for the new project.

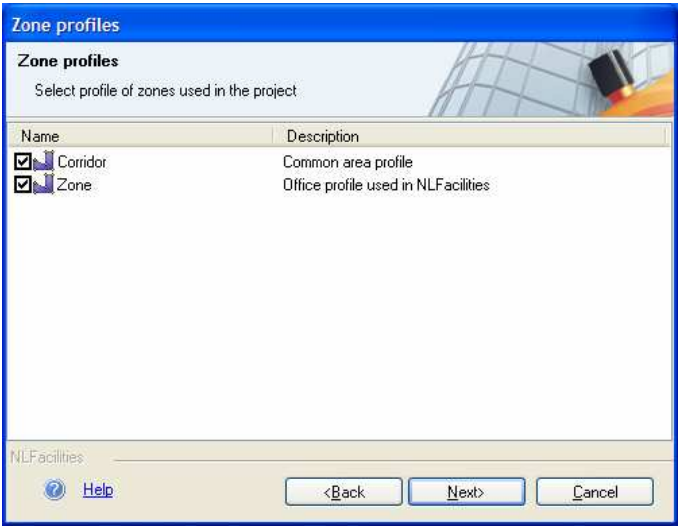
3. Leave default settings
    a. Leave the default path gave by ***NLFacilities*** as location of storage for the project.
    b. Leave the Mono network database settings. It means that the project will work only on a single network database.
4. Click **Next>>**
5. ***NLFacilities*** asks for the Modeler database that will be used to create the project. Select the **NLTutorial** modeler database that is present in the list of modeler database found.
    a. If no modeler database are found, click on **Browse…**, explore through the disk to the **C:\NLModeler Dbs\NLTutorial** folder and select the **Modeler.ndb** file.



Picture 23 New project : modeler database selection

6. Click **Next>>**

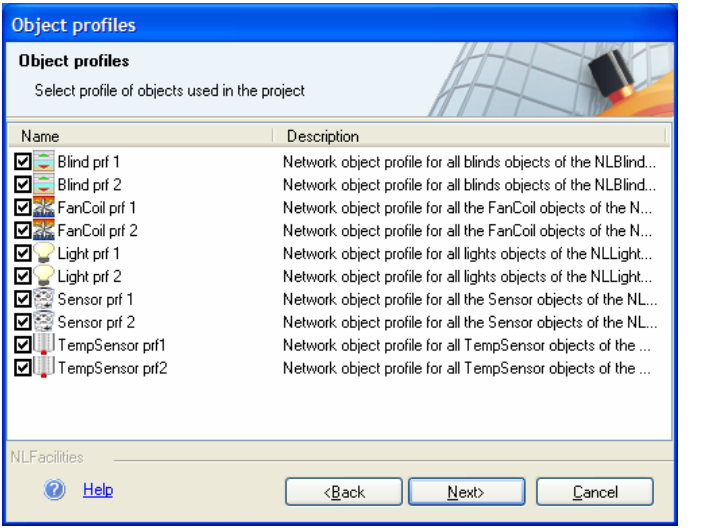
7. ***NLFacilities*** asks for the selection of zone profiles that will be available in the project. Check the **Corridor** and **Zone** profiles



Picture 24 New project : selection of zone profile

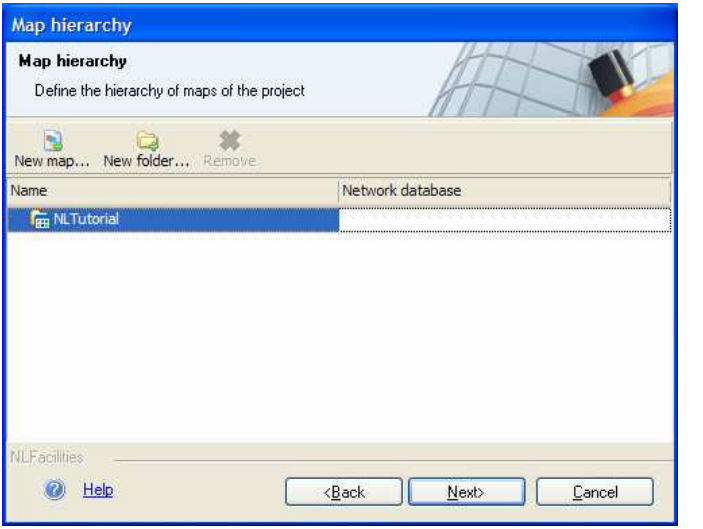
8. Click **Next>>**

9. ***NLFacilities*** asks for the profile of objects that will be available in the project. Check all the available profiles in the list.



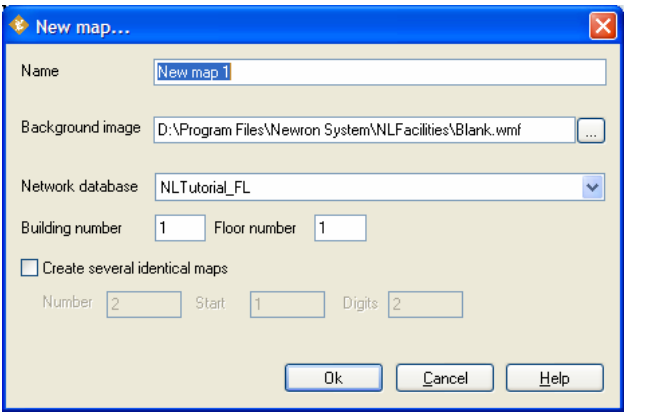
Picture 25 New project : selection of objects profile

10. Click on **Next>>** to define maps



Picture 26 New project : Map hierarchy

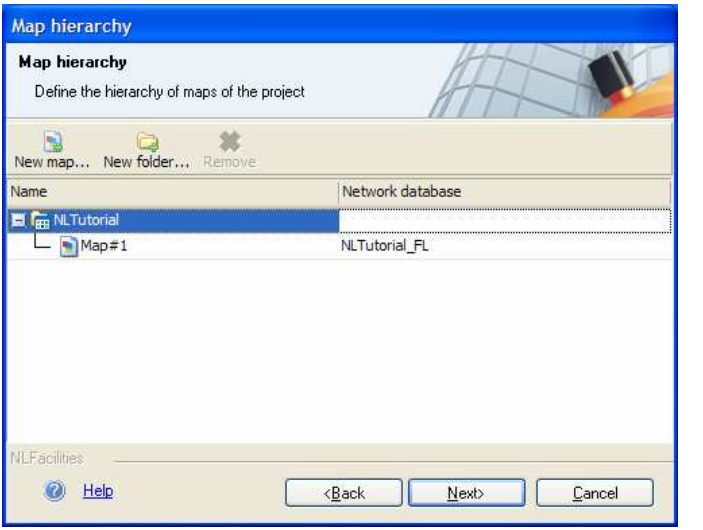
11. Click on **New map...** to create a map in the project



Picture 27 New project : New map

12. Give **Map#1** as name for the new map.

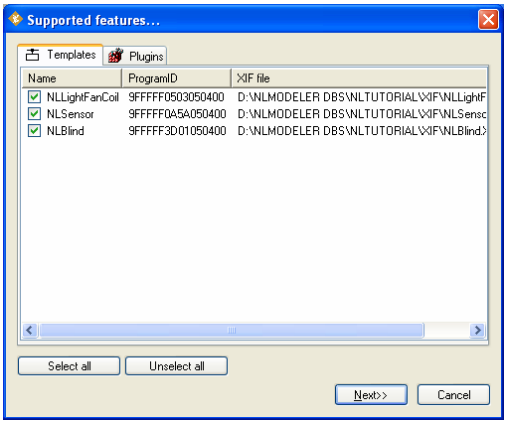
13. Click on the **"..."** button to explore the disk to select the correct background image to use for the new map.
14. Go in the **C:\Program Files\Newron System\NLFacilities*Tutorial*** folder and select the **Map.wmf** file.
15. Click on OK to create the map



Picture 28 New project : Map hierarchy

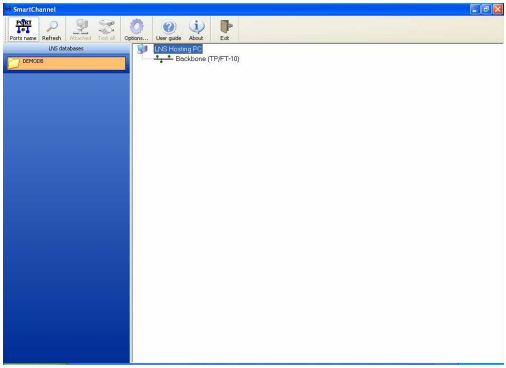
16. Click on **Next>>**

17. The project is created
18. A dialog is displayed to indicate that the XIF files used by the modeler database will be automatically imported in the LNS database. Leave the dialog as it is and press **OK** to continue. The device templates are automatically created in the LNS database



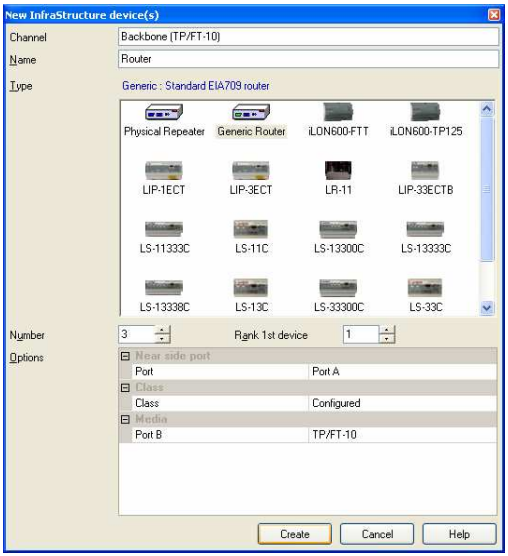
Picture 29 Supported features list

19. The application then launches the infrastructure tool called ***SmartChannel*** that will help you to easily define the infrastructure of the LNS database. See that the **Backbone** channel is present in the list of available channels in the LNS database.
    a. On the left view of ***SmartChannel*** you see the list of available LNS database.
    b. On the right view of ***SmartChannel*** you see the Infrastructure of the LNS database



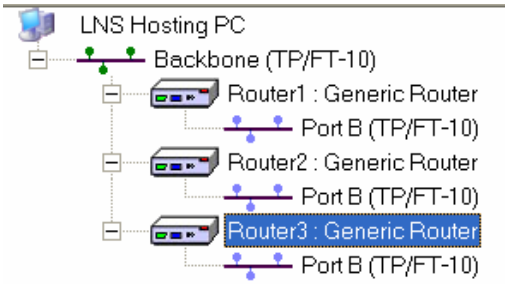
Picture 30 ***SmartChannel***

20. We will create some new standard channels with normal routers. Select the **Backbone** in the right view select the **New infrastructure device…** option. Set the Number to 3 and press **Create.**



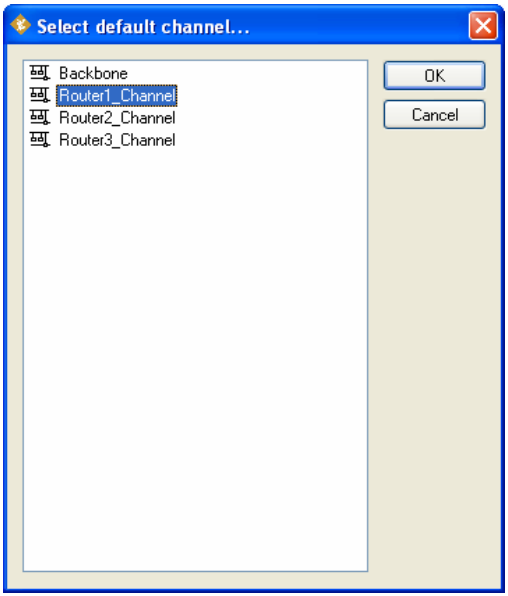
Picture 31 New infrastructure device

21. The application will automatically create the routers and the channels behind the **Backbone.**



Picture 32 Created infrastructure

22. Press **Exit** to come back in the zoning application. You can select the default channel for a map: select **Router1_Channel** in the list to indicate that the devices created in the map will be automatically put in the **Router1_Channel** channel. Press **OK** to validate



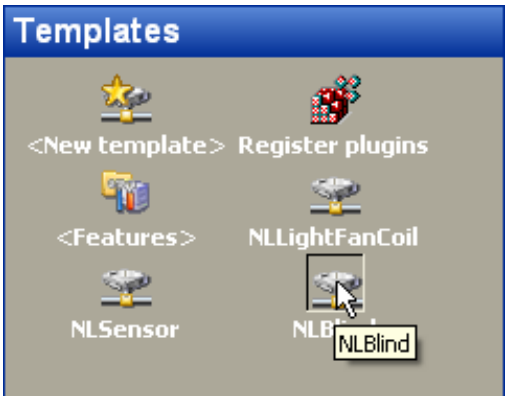
Picture 33 Selection of default channel

23. The map is now opened created and fully ready to be used. Devices set on the map will be located in the corresponding channel. You can of course change manually channels per device.

Step 2 : Network objects

2.1 Place device and network objects on map

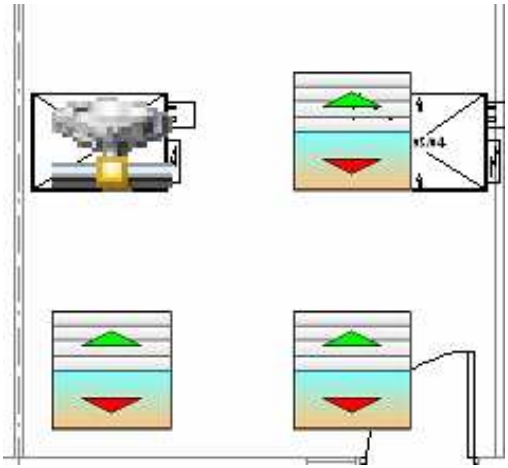
1. Select in the list of available device templates the Device template **NLBlind**.



Picture 34 Select template

2. Move the Mouse over the graphical map. The mouse pointer is now the device image. Move over the placement you want to create the device and just left click at the placement.

3. A dialog is opened to ask how many objects you want to put next to the device that will be create. Set number of **Blind prf 1** to **3** and select the **Place objects around the device** option. Press **Continue. The device is created with 3 objects around it.**



Picture 35 device with objects

4. Do the same operation several times to drop all the objects available in **NLBlind**, **NLLightFanCoil**, **NLSensor** on the map.

NOTE : The first time a type of object is dropped on the view the size is 32*32. In this case size the network object to the size you want. Then, other dropped network objects of this type will have the size you have previously set.

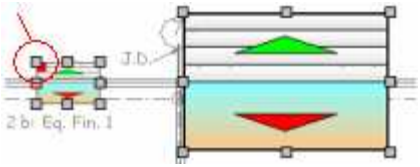
2.2 Size network objects on map

Presentation

To size a single object just select it and move its edges.

Sizing on multiple selection

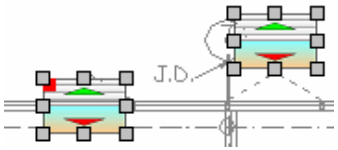
1. Select the objects that needs to be sized.



Picture 36 Sizing on multiple selection : before

NOTE : The network objects used as reference for the size is the one with the red square on the top left of the object.

2. Click the **Same size** icon ( ) in the toolbar.



Picture 37 Sizing on multiple selection : after

NOTE: The object uses as reference for any sizing operation on multiple selection is the one with the red square on top left.

- Other same sizing position icons

Action	Icon
Same height	
Same width	

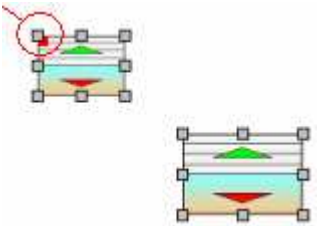
2.3 Move network objects on map

Presentation

To move a single object just select it and move it on the map.

Moving multiple selection

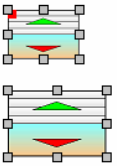
1. Select the objects that needs to be moved.



Picture 38 Moving multiple selection : before

NOTE : The network objects used as reference for the set of position is the one with the red square on the top left of the object.

2. Use the **Same Left position** icon ( ) in the toolbar.



Picture 39 Moving multiple selection : after

NOTE: The object uses as reference for any moving operation on multiple selection is the one with the red square on top left.

- Other positions icons

Action	Icon
Same right position	
Same vertical center	
Same top position	
Same horizontal center	

Same bottom position	

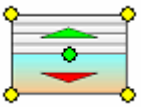
2.4 Rotate network objects

Presentation

On a map, you can rotate any kind of graphical objects.

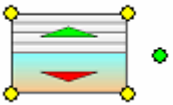
Rotation on single selection

1. Activate the rotation mode ( )
2. Select the object to rotate in the view:
    a. Yellow marks appear at the edges of the object.
    b. A green mark appear at the center of the object. This is the center used to make the rotation.



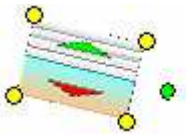
Picture 40 Rotation : before

3. Move the green mark to set the center of the rotation.



Picture 41 Rotation : move rotation center

4. Place the cursor over a yellow mark, click and move it, the object will rotate around the Green mark.

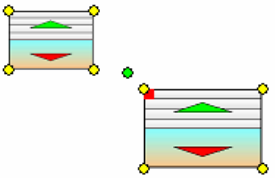


Picture 42 Rotation : after

Rotation on multiple selection

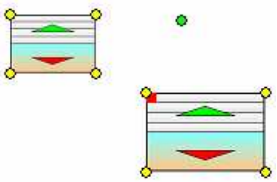
Rotate a set of objects around the same center

1. Activate the rotation mode ( )
2. Select the objects to rotate in the view:
    a. Yellow marks appear at the edges of the objects.
    b. A green mark appear at the center of the objects.This is the center used to make the rotation.



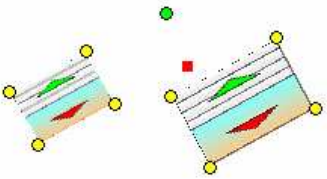
Picture 43 Rotate multiple object : before

3. Move the green mark to set the center of the rotation.



Picture 44 Rotate multiple object : move center of rotation

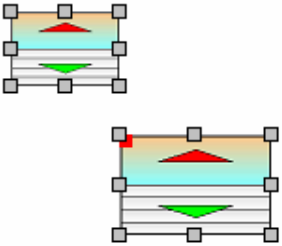
4. Place the cursor over a yellow mark, click and move it, the objects will rotate around the Green mark.



Picture 45 Rotate multiple object : after

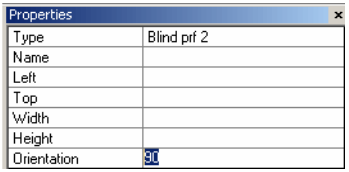
Set the same rotation for a selection of objects

1. Select all the objects that needs to be rotated.



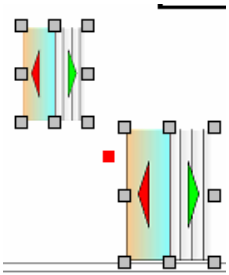
Picture 46 Same rotation for multiple object

2. In the **Object properties** view, enter in the **Orientation** line the orientation you want in degrees.



Picture 47 Same rotation for multiple object : object properties

3. Select another line of the **Object properties view** to validate the orientation.



Picture 48 Same rotation for multiple object : after

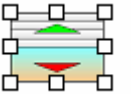
Step 4 : Network objects appearances

Presentation

An object can have several appearances. The appearances does not change the way of running of a network object in a zone as opposite to the object profile.

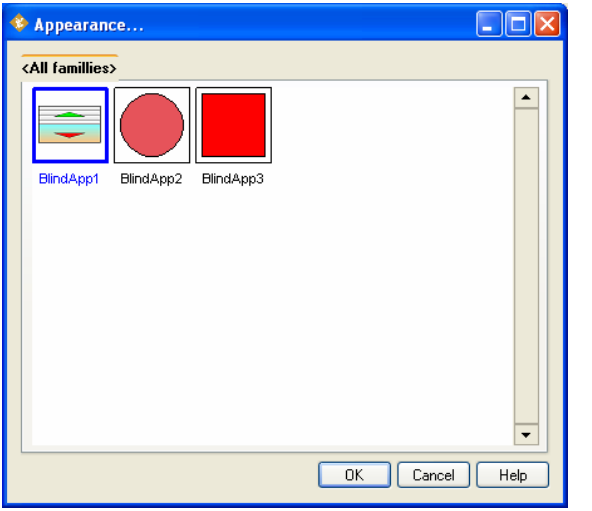
Change appearance

1. Select the **VOBJBlind1** object in the graphical view.



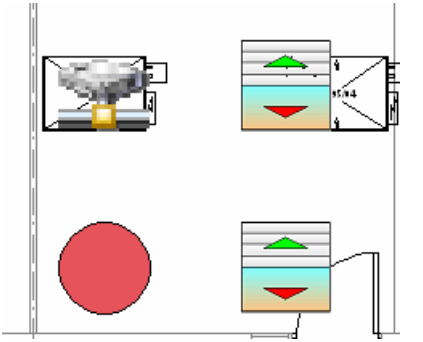
Picture 49 Change appearance : before

2. Right click and select the **Change appearance** option in the contextual menu.



Picture 50 Change appearance : select appearance

3. Select the new appearance in the window.
4. Press Enter to validate the new appearance.



Picture 51 Change appearance : after

NOTE : You can also change the appearance of a set of objects. Just select the objects you want to change. And select the **Change appearance…** option in the contextual menu.

Step 5 : Walls

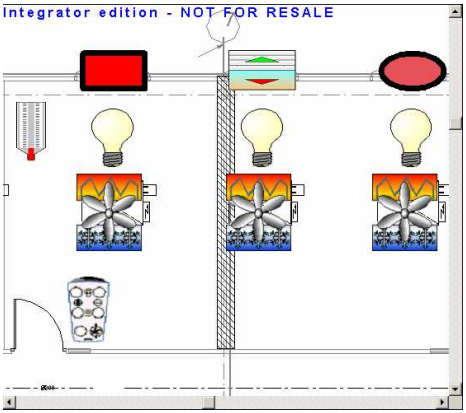
Presentation

Walls can be put on maps to Show/Hide certain part of a image background.

For instance, this can be used to Show/Hide spans that are drawn on the background.

Place walls

1. On tools toolbar, click on the icon to change the edition mode in drawing wall on map.
2. Place the wall directly other the drawn walls the map.



Picture 52 Place walls

NOTE: A wall is considered as any graphical objects available on a map. As a consequence, you can use the **size, move, rotate** features explained previously for the **Network objects** to place the walls.

Step 5 : Network objects assignment

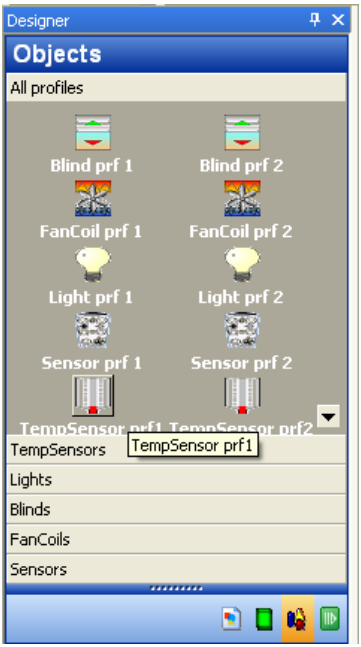
Presentation

We saw a way to place network objects on the map by creating the device (see Step 3)

Now we will see another way to create network objects in adding a new network object and then link them to a device.

Place new objects

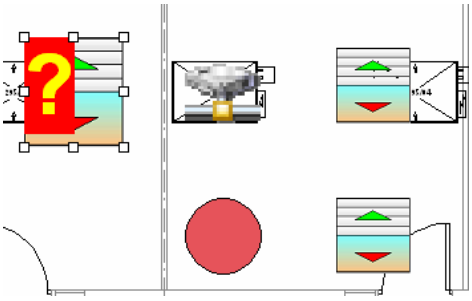
1. Select the “Objects” panel of the Designer bar



Picture 53 Objects panel of Designer bar

2. Double click on the **Blind prf 1 item** in the list. It will open the Appearance dialog. Select the appearance you want to use.

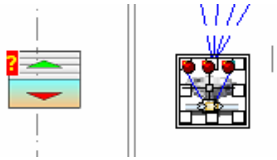
3. Move the mouse over the graphical view and left click where you want to create the object. An object is created on the map with a question mark on the top left. The question mark indicates that the object is unassigned and not linked to any device for the moment.



Picture 54 New unassigned object

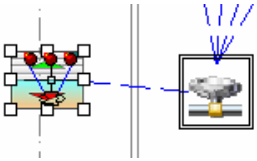
4. Select the **Assignation mode** tool in the toolbars to start the assignation mode and be able to link the unassigned object to a device.

5. Move the mouse over the graphical view and select first the device to which the unassigned object will be linked.



Picture 55 Select device for assignment

6. Then select the unassigned object to link



Picture 56 Select unassigned object for assignment

7. The question mark disappear and the object is now linked to the device.

8. Press **Escape** to quit the Assignation mode

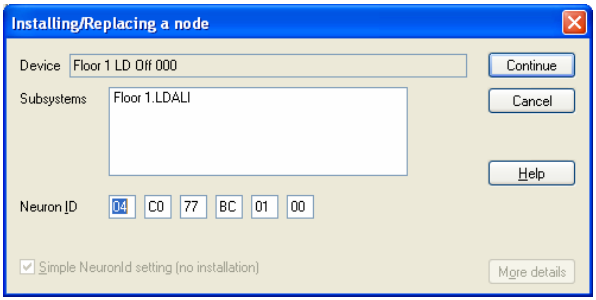
NOTE: You can assign several objects one after the other using this method.

If you want to change the output number of the assigned object, just right click on it and select the **Change output number…** option in the menu.

Step 6 : Install devices

From the graphical view

1. Before being able to install a device on the Network. Be sure that the **Attach to network** icon ( ) is checked. (This can be done only if a Network interface has been used to open the **LNS** database).
2. Right click on the device you want to install in the graphical view. Select the **Install…** option in the menu.
3. Enter manually the NeuronID of the device to install OR Press Service button of the device to install.



Picture 57 Install device

NOTE: You can select several devices, the Install… command will then ask NeuronID for each selected device.

Macro installation

Presentation

The application allows you to install several devices one after the other.

You can for instance Install… all the devices of a subsystem or channel.

Installation on devices of a subsystem

1. Select the **Objects** view and in the **Objects** view select the **Network** page. You will see the complete hierarchy of the LNS database of the map sorted by subsystems.
2. Right click on the **Map#1** subsystem. Select the option **Nodes\Network\Install/Replace\Install uninstalled devices**

3. This command will explore each device present in the subsystem and ask for each device its NeuronID.

NOTE: By checking/unchecking the option **Nodes/Recursive commands on subsystem** you will indicate if the command is launched only on the selected subsystem or also on its children.

NOTE Bis: From the subsystem menu you can notice that many functions are available as macro functions, like Test, Reset, Repair,…

TUTORIAL : OPERATING

Presentation

The tutorial operating will explain how to manage a site once it has been totally designed in Designer mode.

Backup of tutorials

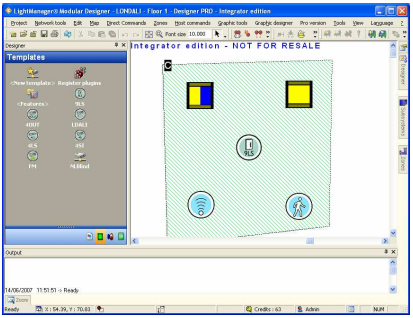
You will find a backup file for each step describe in the tutorial in the folder :

- **C:\NLFacPrj\Backups**

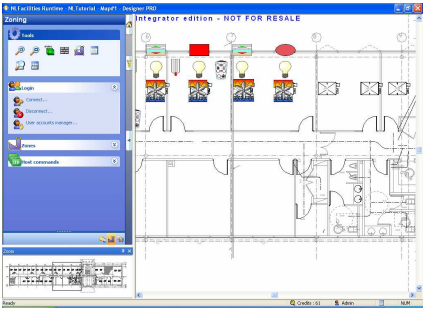
Steps	Backup files
Step 1 : Create a zone	**NLTUTORIAL_OP_step01.gz**
Step 2 : Apply zone updates on the network	**NLTUTORIAL_OP_step02.gz**
Step 3 : Switch profile of a network object	**NLTUTORIAL_OP_step03.gz**
Step 4 : Modify a zone	**NLTUTORIAL_OP_step04.gz**
Step 5 : Objects feature	**NLTUTORIAL_OP_step05.gz**
Step 6 : Zones features	**NLTUTORIAL_OP_step06.gz**

Step 1 : Switch to Runtime mode

Select the icon in the toolbar, the application will switch in **Runtime** mode.



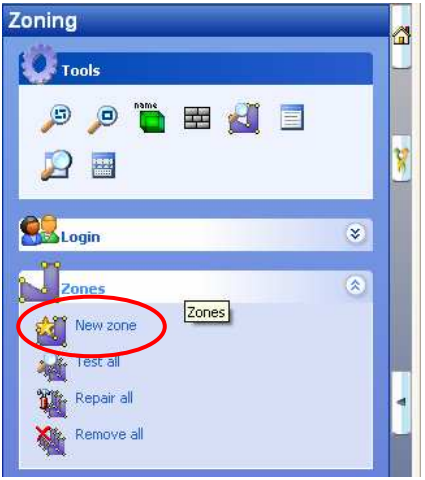
Picture 58 NLFacilities Designer



Picture 59 NLFacilities Runtime

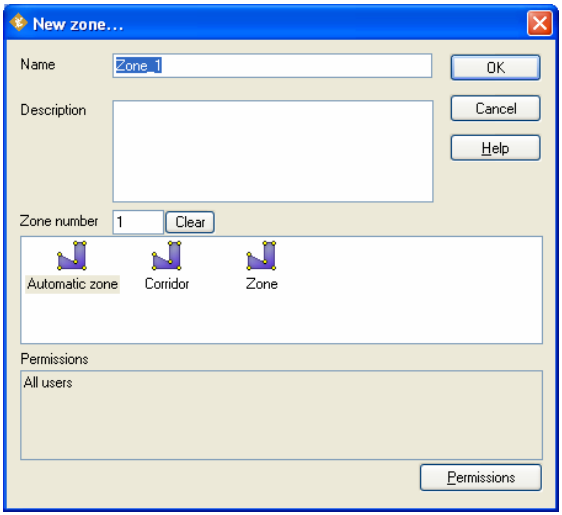
Step 2 : Create a zone

1. Select the **New zone...** option in the **Zones** group of the left panel



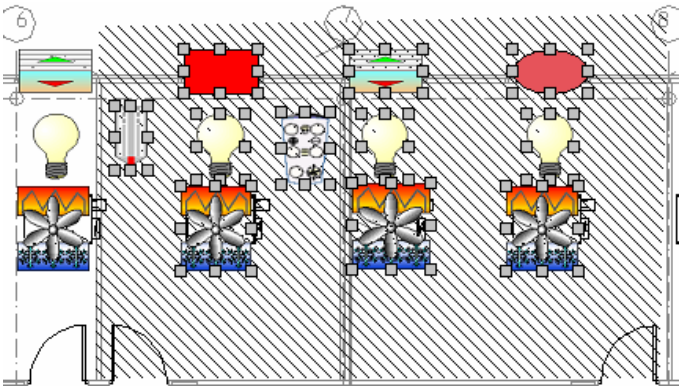
Picture 60 “New zone...” option

2. Set the name to **NewZone** and leave the description blank.



Picture 61 New zone…

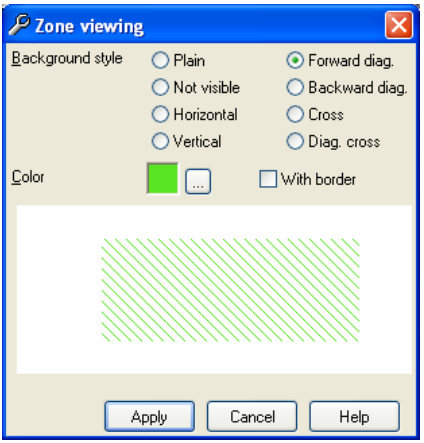
3. The map enters in zone creation mode.
4. Click at each edge of the zone you want to create.
5. Double click when the last point has been created.



Picture 62 New zone : objects selection

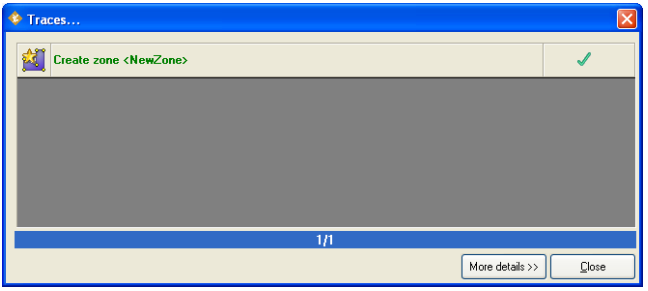
6. The zone is closed and created, the application enters in the mode to select the objects available in the zone.
7. To select extra network objects to be added in the zone, press SHIFT and click on the network objects to add.
8. To deselect unwanted network objects from the zone, press SHIFT and click on the selected network objects that you want to unselect.

9. To finalize the selection of the network objects of the zone, press ENTER.
10. The zone graphical properties dialog is displayed.



Picture 63 New zone : graphical settings

11. Press Enter to finalize the zone.
12. The updates are automatically sent to the network, the bindings and configuration properties are set by the application.

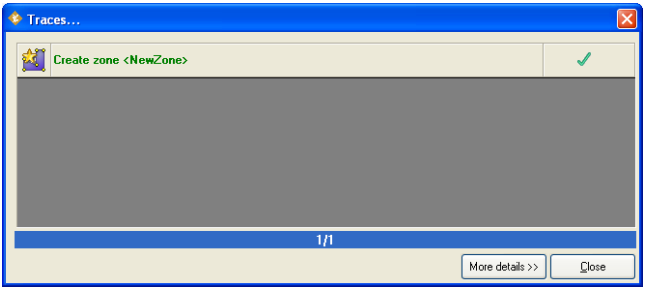


Picture 64 Send updates

Step 3 : Apply zone updates on the network

When network updates are available on a map. The **Apply updates on network** icon ( )is flashing.

Press the **Apply updates on network** icon ( ) to send the updates.



Picture 65 Apply updates

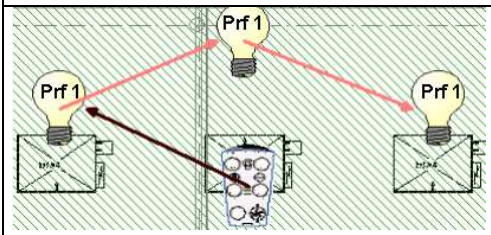
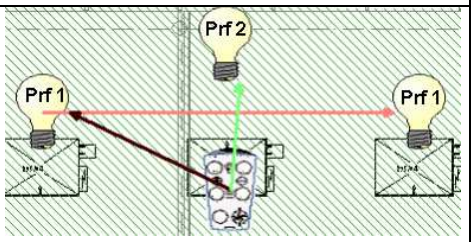
Step 4 : Switch profile of a network object

Presentation

Switching the profile of a network object will change the way it will be bound or configured when it will be inserted in a zone.

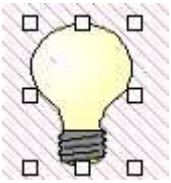
See the presentation of the Modeler objects for more explanation on the available profiles of objects.

For example, changing the profile of the network object **Light 1** from **Light prf 1** to **Light prf 2**, will imply that the connections of the zone **NewZone** previously created will pass from **zone connection 1** to **zone connection 2** (See below)

Zone connection 1	Zone connection 2
	

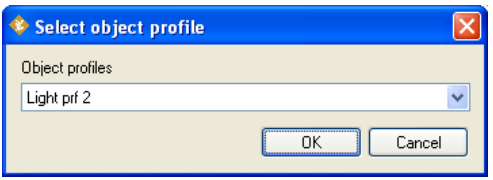
Switch profile of object Light 3

1. Select the object **Light 3** in the graphical view.



Picture 66 Switch profile : before

2. Select the **Switch object profile** icon ( ) in the floating toolbar.
3. Select the profile **Light prf 2** in the drop down list of available profiles for the network object.



Picture 67 Switch profile : selection of new profile

4. The profile of the object is changed and the zone to what it belongs, is marked as updated.
5. The updates are sent and the connections are the one shown as **Zone connection 2**

Step 5 : Modify a zone

5.1 : Show/Hide walls

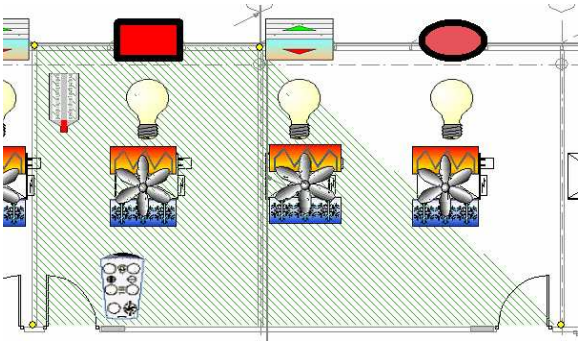
1. Press the **Show/Hide walls** icon ( ) to activate the **Runtime walls** mode.
2. The walls that can be shown or hidden appears with a blue frame.
3. Click on the wall on the center of the zone, to activate it.
4. Press the Escape button to quit the **Runtime walls**
5. The center wall is now visible on the map.

5.2 : Modify the shape of the zone

1. Select the zone **NewZone** on the map.
2. Select the Modify icon ( ) in the floating toolbar.
   a. Yellow marks appears at the edges of the zone.
   b. When the cursor is over the frame of the office you can act 2 ways.

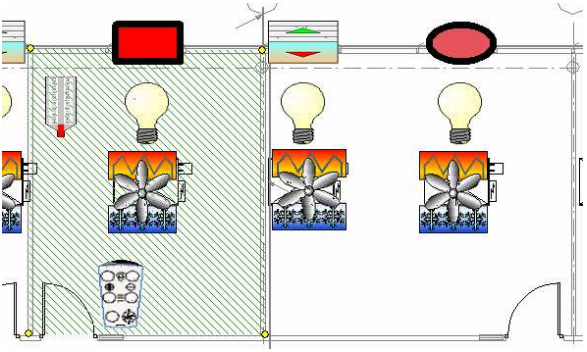
Cursor	Description
	Add a new point for edges of the zone.
	Move an existing edge of the zone.

3. Click on the top left yellow mark of the zone and drag it at the previous shown wall level.



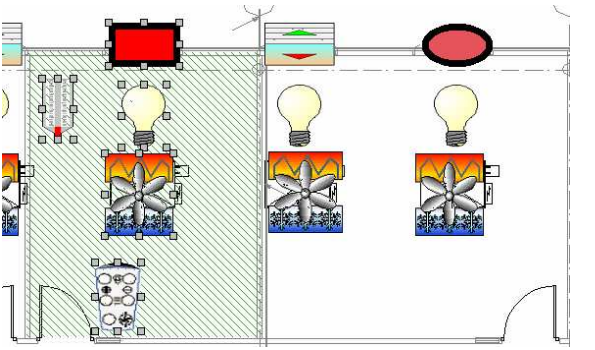
Picture 68 Modify zone : change zone shape (1)

4. Click on the bottom left yellow mark of the zone and drag it at the previous shown wall level.



Picture 69 Modify zone : change zone shape (2)

5. Press Enter to validate the new shape of the zone.
    a. The application then enters in the mode for selection of the network objects of the zone.
    b. The network objects that are no more over the zone are automatically deselected.



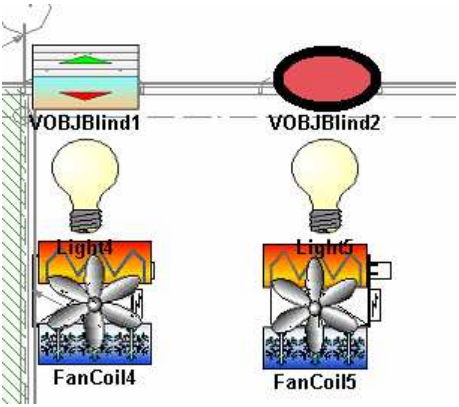
Picture 70 Modify zone : objects selection

6. Leave the new selection as it is.
7. Press Enter to validate the modification of the zone.
8. The updates are automatically sent to the network

Step 6 : Objects feature

6.1 Show names

1. Press the **Show names** icon ( ) to display names of the network objects directly on the map.
2. To modify the size of the font used for the network objects names :
    a. Right click on the **NLTutorial** item in the **Project hierarchy view**, select the **Properties** option in the contextual menu.
    b. Select the **Graphical settings** page.
    c. Set the **Objects font size** to 2 and press **Enter.**

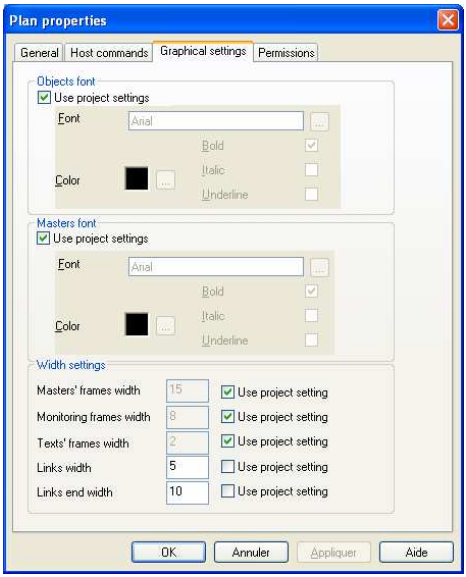


Picture 71 Objects names

Step 7 : Zones features

7.1 : Display connections

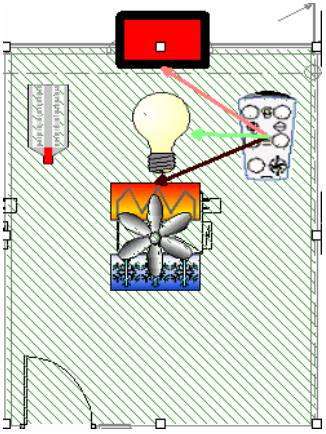
1. Click on the zone and select the **Display connections…** icon ( ) in the floating toolbar.
2. The connections of the zone are graphically displayed on the map.
3. To change the depth of the lines :
    a. Right click on the NLTutorial item in the **Project hierarchy** view and select the **Properties** option from the contextual menu.
    b. Select the **Graphical settings** page.
    c. Set the **Links width** to 5.
    d. Set the **Links end width** to 10.
    e. Press **OK** to validate



Picture 72 Graphical settings

4. Right click on the zone **NewZone.**

5. Click on the zone and select the **Display connections…** icon ( ) in the floating toolbar to hide the connections.
6. Click on the zone and select the **Display connections…** icon ( ) in the floating toolbar to finally display the connections.

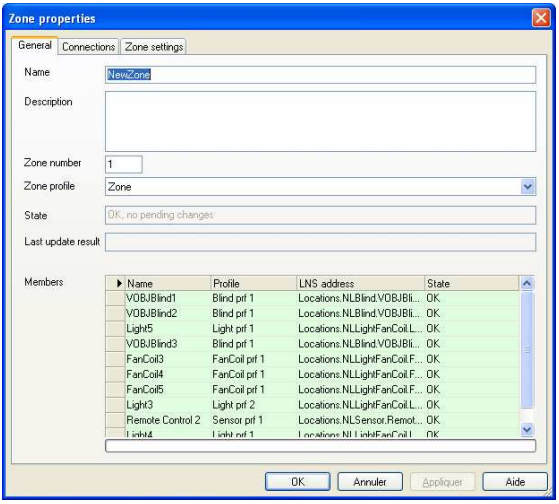


Picture 73 Display connections

7. Right click on a graphical connection to see its properties window automatically appeared.

7.2 : Display properties of a zone

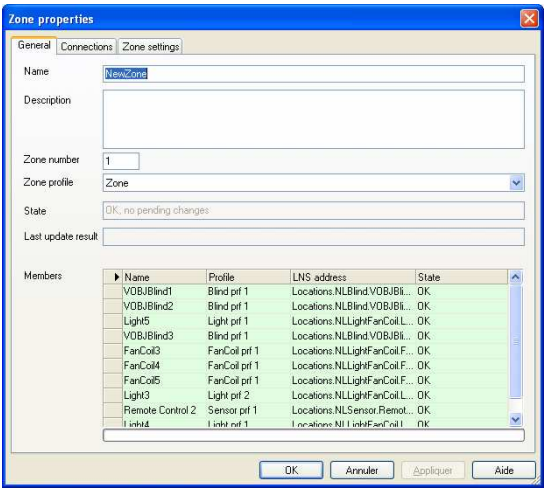
1. Select the zone **NewZone** in the graphical view and select the **Properties** icon ( ) in the floating toolbar.
2. The **General** page gives access to general settings like **Name, Description**,…
    a. The spreadsheet indicates if the network objects member of the zone are correctly found in the **LNS** database.



Picture 74 Zone properties : General

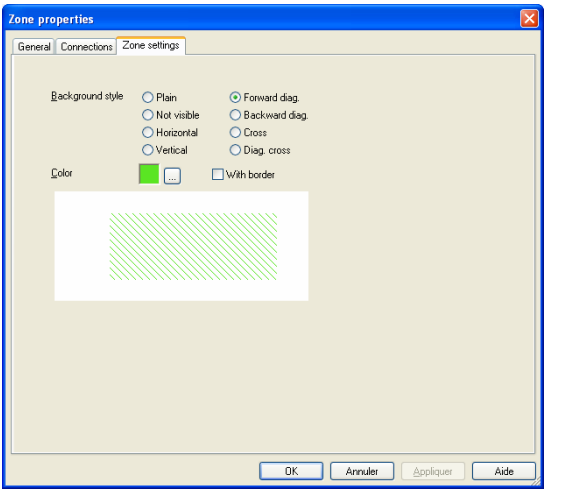
3. The **Connections** page list all the connections that should be in the zone, and gives their current state.

    a. NOTE: If extra connections are present, they won't appear there.



Picture 75 Zone properties : Connections

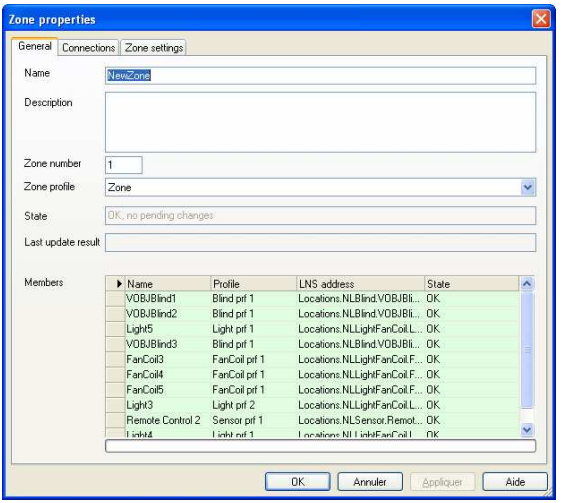
4. The **Zone settings** page will display the graphical settings of the zone.



Picture 76 Zone properties : Zone settings

7.3 : Rename a zone

1. Select the zone **NewZone** in the graphical view and select the **Properties** icon ( ) in the floating toolbar.
2. Enter **NewName**



Picture 77 Rename zone

3. Press Enter to validate the change of the zone name.

7.4 : Switch profile of a zone

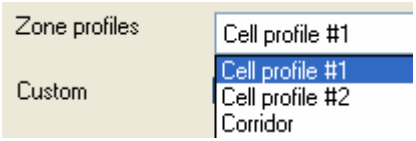
Presentation

NLFacilities allows to change the profile of a zone from one to another.

The profile of zones available for switch are automatically processed from the type of objects that are available in the zone.

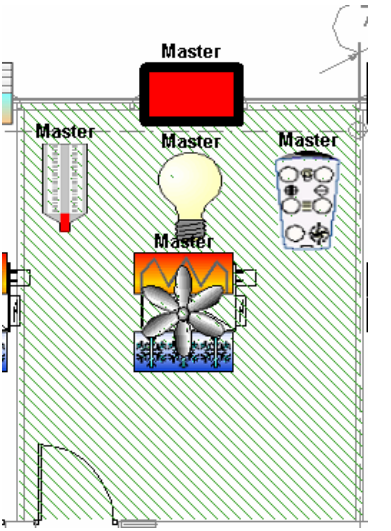
Switch the profile of a zone

1. Select the zone **NewName** in the graphical view and select the **Switch profile** icon ( ) in the floating toolbar.
2. Select in the **Zone profile** list the profile that must be applied to the zone.
    a. **NOTE:**In the Tutorial only one profile of zone is available).



7.5 : Display master network objects of a zone

1. Select the zone **NewName** in the graphical view and select the Display masters icon ( ) in the floating toolbar.
2. The term **Master** appears above each Master of the zone.
3. To change the font size:
    b. Right click on the **NLTutorial** item in the **Project hierarchy** view. Select the **Properties** option in the contextual menu.
    c. Select the **Graphical settings** page.
    d. Set the Masters font size to 2.
    e. Press Enter.



Picture 78 Display masters

TUTORIAL : ADVANCED

Objects commands

Presentation

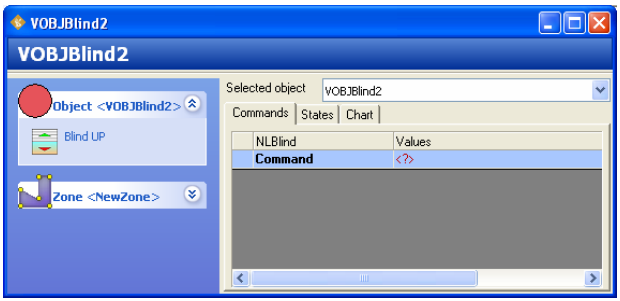
In **NLModeler** you have the possibility to define commands that can be launched on a network object(s).

An object command is a set of value that will be written on the network on the network variable or configuration properties of a network object.

Commands can be configured to be accessed from **Commands** window or directly from a second floating toolbar.

Send on a single object

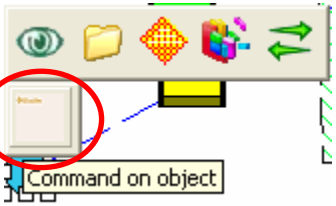
1. Select the **VOBJBlind2** object in the map. Double click on it or select the **Commands…** icon ( ) in the floating toolbar.
    a. The list of available commands on the object are displayed.



Picture 79 Object commands

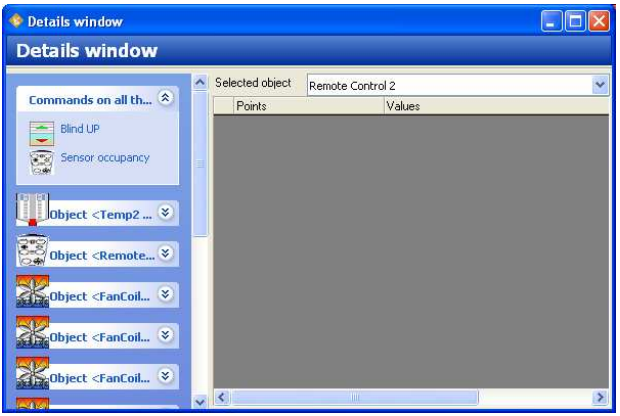
2. Click on the command **Blind UP** to send the command on the network.
3. The right part of the view contain an object browser. Select the object you want to browse in the **Selected object** list, you will then see the detail of the object.

NOTE : If the modeler is designed for, it is possible that the command icon is directly accessible from a second floating toolbar.



Send on a multiple objects

1. Select all the objects in the map.
2. Select the **Commands…** icon ( ) in the floating toolbar.
3. The list of all available commands on the selected objects are displayed.
4. Click on the command **Blind UP** to send the command on the network.
    a. The command will be sent only on the objects to which the command Blind UP can be sent. That is to say, **VOBJBlind1, VOBJBlind2, VOBJBlindX**



Picture 80 Objects commands

Zone commands

Presentation

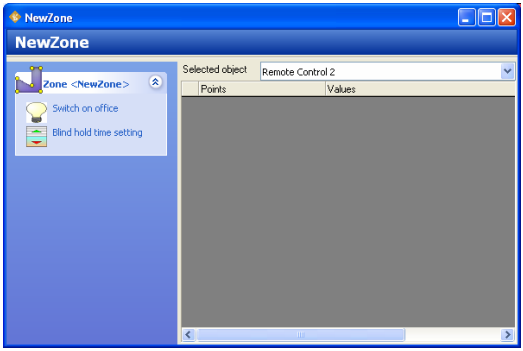
In **NLModeler** you have the possibility to define commands that can be launched on a zone.

A zone command is a set of value that will be written on the different objects available in the zone.

Commands can be configured to be accessed from **Commands** window or directly from a second floating toolbar.

Send command on Zone

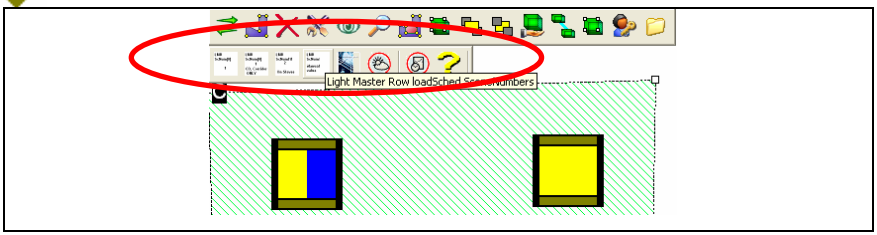
1. Select the **NewName** zone in the map. Double click on it or select the **Commands…** icon ( ) in the floating toolbar.
2. The list of available commands on the object are displayed.
3. Click on the command **Switch on office** to send the command on the network.



Picture 81 Zone commands

4. The right part of the view contain an object browser. Select the object you want to browse in the **Selected object** list, you will then see the detail of the object.

NOTE : If the modeler is designed for, it is possible that the command icon is directly accessible from a second floating toolbar.



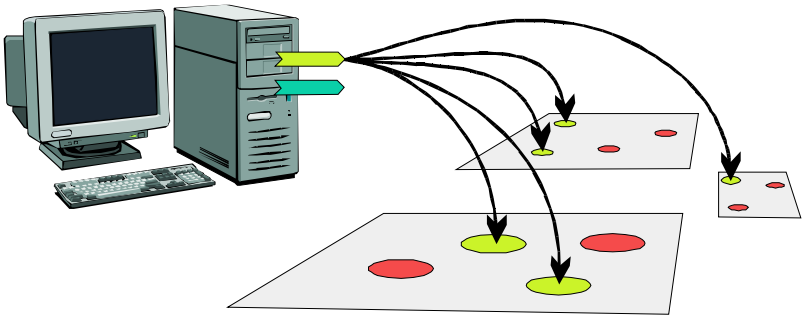
Host commands

Presentation

The **Host command** is used to send a global commands from the Host PC to the network objects that are present in the zones.

In **NLModeler** a Host command profile has been set to be able to Send a Host command to set the Occupancy of the zone of Profile **Zone**.

It connects the network variable nviOcc to the Host.



Picture 82 Host commands

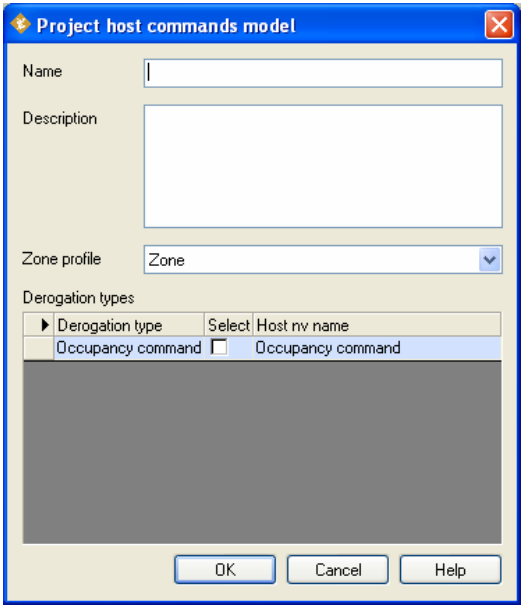
Backup files of tutorial

A backup file exists for each step in the use of the host command.

Steps	File
Step 1 : Create a host command	**NLTUTORIAL_HostCmd_step01.gz**
Step 2 : Set host commands to zones	**NLTUTORIAL_HostCmd_step02.gz**
Step 3 : Send host commands	**NLTUTORIAL_HostCmd_step03.gz**

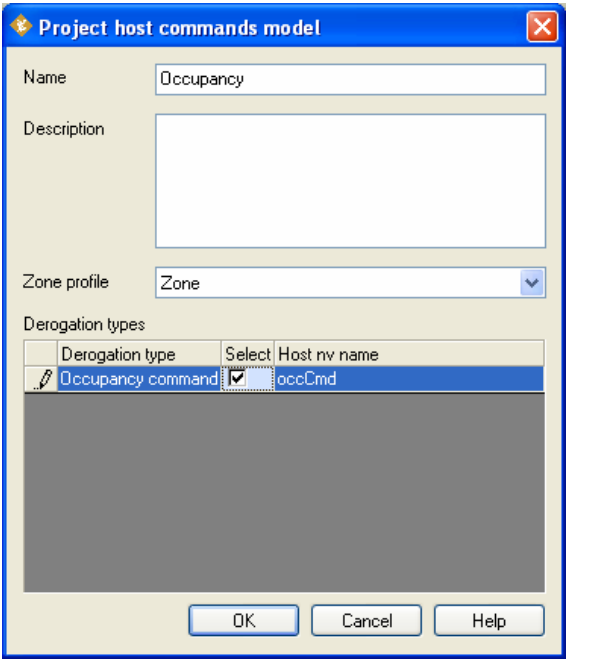
Step 1 : Create a host command

1. Be sure to be in **Designer** mode.
2. Select the **New host command model…** ( ) option



Picture 83 Create host command

3. Give the name **Occupancy** to the Host command model to create.
4. Check the **Select** column for the line Occupancy command in the spreadsheet.
5. Select the **Host nv name** cell. Press **F2** and give the name **OccCmd**.
    a. **OccCmd** is the name of the network variable that will be created on the Host PC card for the Host command.
    b. **OccCmd** is the variable to what the network objects of zones will be bound.

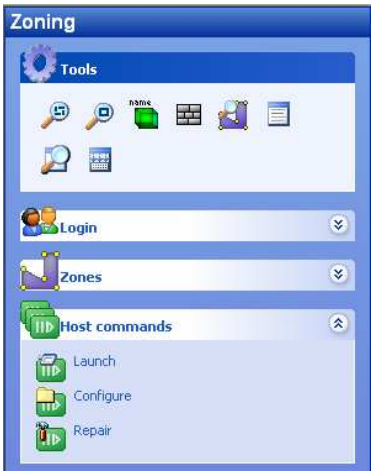


Picture 84 Create host command filled

6. Press Enter to create the Host command model.

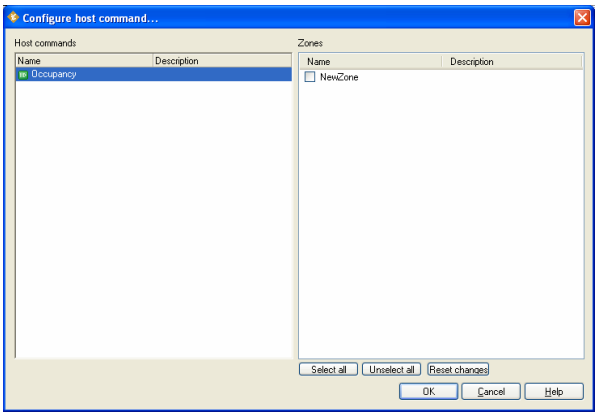
Step 2 : Set host commands to zones

1. Switch ***NLFacilities*** in **Runtime** mode.
2. Select the **Configure** option in the Host commands options group



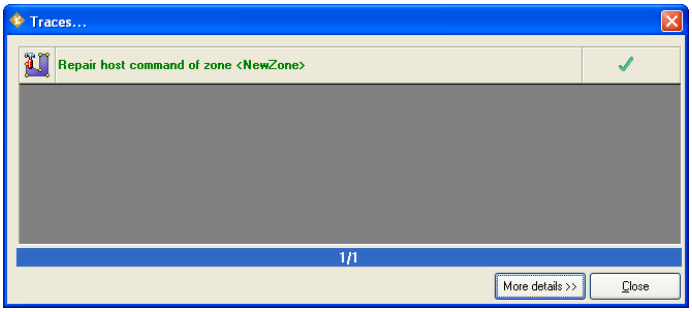
Picture 85 Host commands options group

3. Check the zone **NewName** in the list to link it to the host command.



Picture 86 Configure host command

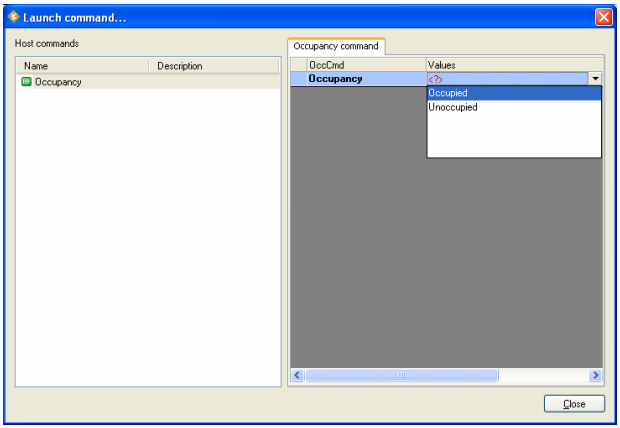
4. Press **OK** to validate the configuration of the Host commands.
5. The updates are sent and the zone is now linked to the Host PC through the network variables **nviOcc** of the **RemoteControl** objects of the zone.



Picture 87 Set host commands to zones : apply updates

Step 3 : Send host command on the network

1. Select the **Launch** option in the Host commands options group
1. In the line **Occupancy** select the **Occupied** value.
    a. The value is sent on the Network through the **OccCmd** network variable that has been created on the Host PC at the creation of the Host command model.



Picture 88 Send host command

Schedulers

You can now, with NLFacilities, create schedulers to send values on defined dates to some devices on the network. The aim of this chapter is to show how to create and affect those schedulers in NLFacilities.

Nota : Values are sent by « Automation devices ». They can be physical devices (iLon100, L-OPC, …) or softwares (NLOPC-TE server on scada pc).If no physical device is present, NLOPC-TE will manage send of values.

Step 1 : Create the scheduler

To define the scheduler, go to **Scheduler** menu in NLFacilities.

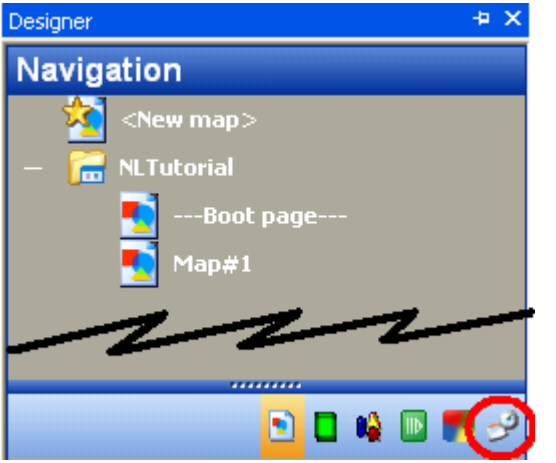


Figure 1 Scheduler menu

Click on New Scheduler to define the scheduler. You first need to define a name and a description for the scheduler. The first step is then to choose the scheduling model defined in NLModeler (this model defines which type of variable will be written, …).

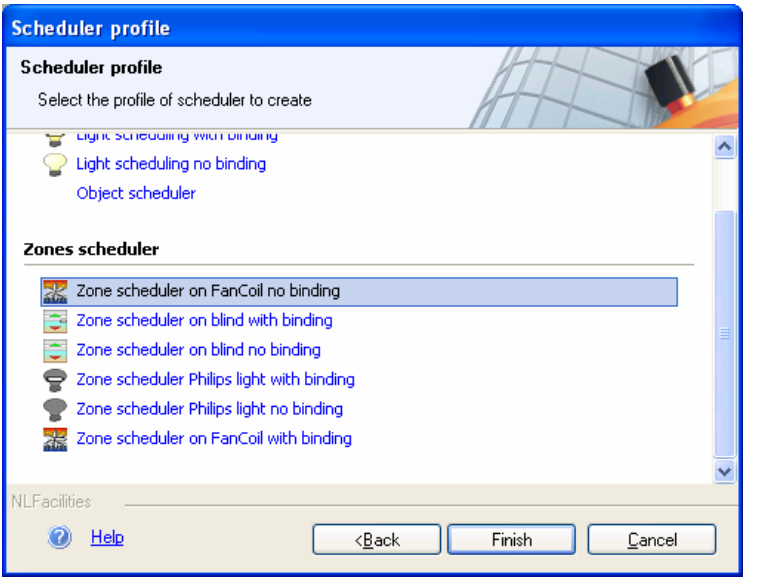


Figure 2 Choosing the scheduling model

Step 2 : Define the scheduler

Once the model chosen, the scheduler is created in the list of available schedulers. You may right click on the scheduler, and choose **Edit** to determine which values will be written, at which date and time. The **Calendar** menu allows to define exceptions in the weekly schedule (for holidays, …).

You may define general information on the scheduler in the **General** tab (default value to send, dates on which the scheduler applies, …). In the **Week** tab, you may define which value is sent on which day and which hour of the week.

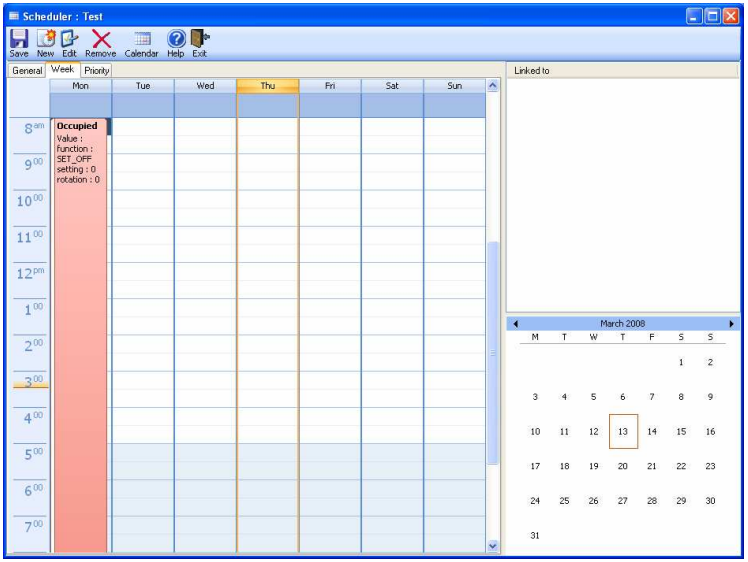


Figure 3 Define scheduler value

Step 3 : Affect schedulers

To affect the scheduler to a zone (or an object), click on the icon of the defined scheduler, and you'll switch to affectation mode ; click then on the zones (or objects) you want to affect. Once this is done, a clock-shaped icon will appear on the upper right of the zone (or the object).

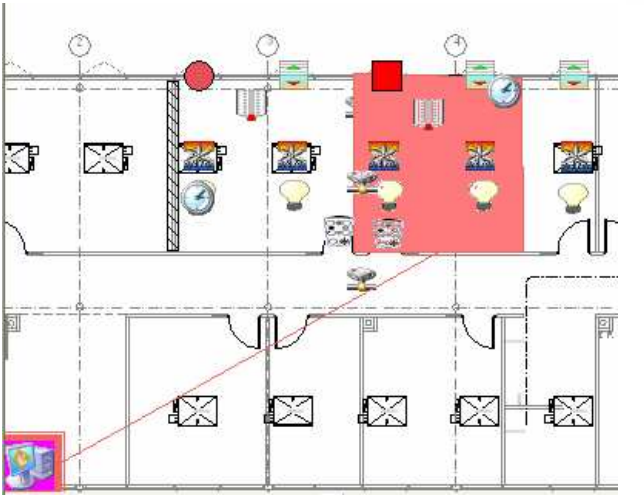


Figure 4 Scheduler affectation mode

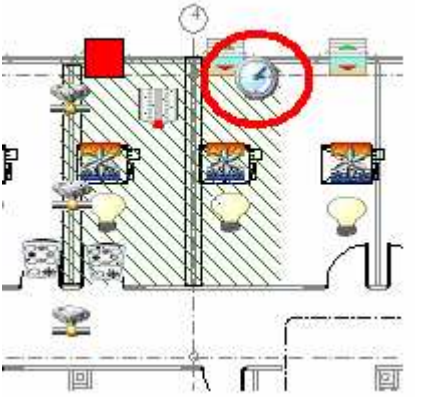


Figure 5 Zone with scheduler defined

ANNEX

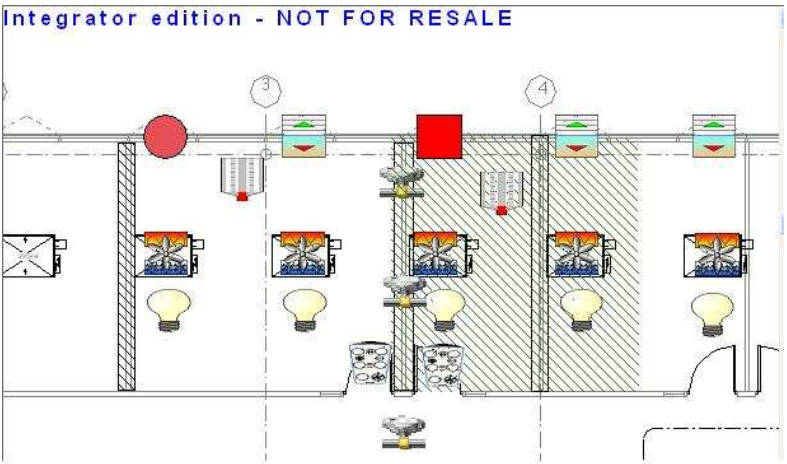
Details of NLFacilities views

Graphical View

The ***NLFacilities*** or graphical view, is the only view that can't be hidden. It is used to display the map that is opened in a project.

The view can contain:

- Graphical objects.
- Network object.
- Walls.
- Zones



Picture 89 Graphical view

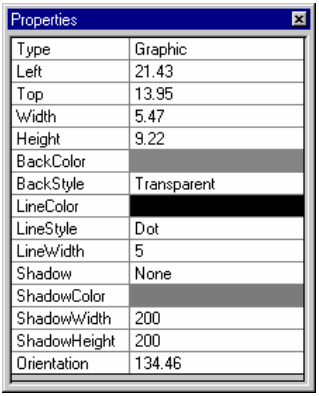
By right clicking on a network object, a zone, the user can use its popup menu.

Object properties view

This view provides information only when ***NLFacilities*** is in runtime mode.

It displays the properties of the objects selected on the currently opened map.

The number of properties available and their functionalities depend on the graphical type of the selected object(s).



Picture 90 Object properties view

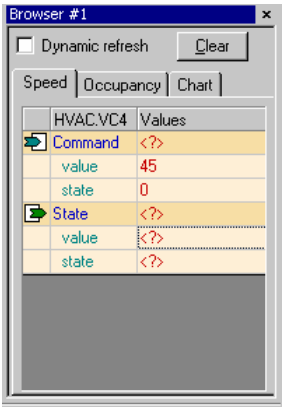
Name	Read / Write	Description
Type	R	Type of the selected object (Graphic, Name of a category, Wall,..)
Left	R/W	Left position on object.
Top	R/W	Top position on object.
Width	R/W	Width on object.
Height	R/W	Height on object.
BackColor	R/W	Back Color on object.
BackStyle	R/W	Indicate if the back of object is transparent or opaque.
Shadow	R/W	Set shadow on object.
ShadowColor	R/W	Set shadow color on object.
ShadowWidth	R/W	Set width of shadow on object.
ShadowHeight	R/W	Set height shadow on object.
LineColor	R/W	Set the color of the line.
LineWidth	R/W	Set the width of the pen used to draw the line.
LineStyle	R/W	Set the style used to draw the line (None, Solid, Dash, Dot, ...).
Orientation	R/W	Orientation of the line.
FillColor	R/W	Set the color of fill.

FillStyle	R/W	Set the style of fill (Solid, transparent, horizontal,...)
Picture	R/W	Set name of picture file.
FontBold	R/W	Indicate if the bold of text is enabling.
FontItalic	R/W	Indicate if the bold of text is enabling.
Fontunderline	R/W	Indicate if the underline of text is enabling.
FontName	R/W	Indicate font name of text.
FontSize	R/W	Indicate the size of text.
FontStrike	R/W	Indicate if the strike of text is enabling.
FontWidth	R/W	Indicate if the width of text.
Target	R/W	Map linked to the shortcut in Runtime.
S.BackColor	R/W	Back Color for a shortcut when mouse is over in Runtime.
S.BackStyle	R/W	Indicate if the back is transparent or opaque for a shortcut when mouse is over in Runtime.
S.FillColor	R/W	Set the color of fill for a shortcut when mouse is over in Runtime.
S.FillStyle	R/W	Set the style of fill (Solid, transparent, horizontal,...) for a shortcut when mouse is over in Runtime.
S.LineColor	R/W	Set the color of the frame for a shortcut when mouse is over in Runtime.
S.LineStyle	R/W	Set the style of the frame for a shortcut when mouse is over in Runtime.
S.LineWidth	R/W	Set the width of the frame for a shortcut when mouse is over in Runtime.

Net points browser view

NLFacilities provides 2 browsers views. Each of these views can browse network variables values from the network. The browser works with profile files. These profile files is created from the ***NLFacilities*** modeler. Each profile file can be set to an object, a group of objects, a node or a LonMark object.

If in the browser view, a tab called Chart is visible, it means that values can be viewed on a graph with all their modifications in the time.



Picture 91 Browser view

Dynamic refresh Check this option if you want to set the Browser view to dynamically displayed the browsed value of the objects selected on the map.

To clear the browser and stop the browsing of the view.

Project hierarchy view

This view displays and allows management of the hierarchy of maps and folders of a project.

It has two ways of running: **Runtime / Designer**

Picture 92 Project hierarchy view

Different icons are available in this view.

Icons	Representation
	Project

	Folder
	Map
	Map with updates in queue

Templates view

This view will allow you to select what type of device you want to create in the map.

Picture 93 Templates view

Available options

Icons	Description
	Create a new device template in the LNS database
	Register new LNS plugins in the LNS database
	Display the list of available features (Device templates/LNS plugins) configured from the modeler database
or any other	Available type of device that can be created in the map.

Object view

This view allow to select the profile of object that you want to create in the graphical view.

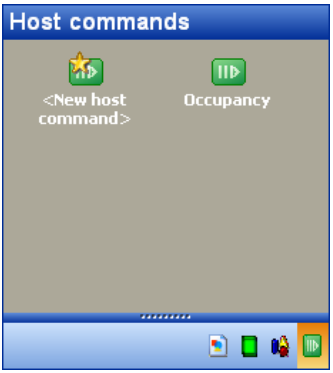
The content is fully dependant of the modeler database used.

Picture 94 Objects view

NOTE : double clicking on a profile of object allows to select the appearance that you want to use.

Host commands view

This view will allow you to manage the host commands available for the map.



Picture 95 Host commands view

Available options

Icons	Description
	Create a new host command model in the project
	Give access to the menu of the host command

Runtime navigation view

This views allows to navigate from one map to another in a project.

Picture 96 Runtime navigation view

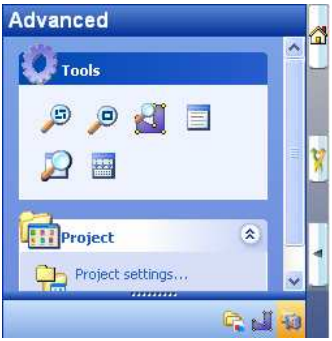
Runtime Zoning view

This views gives access to zoning / user accounts and Host commands functions

Picture 97 Runtime zoning view

Runtime Advanced view

This views gives access to Project / Maps and general options

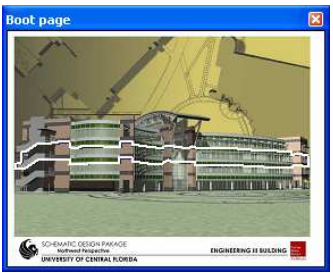


Picture 98 Runtime advanced view

Boot page

This view is a small navigation page accessible from the “Boot page” button in Runtime mode.

This view will display the Boot page map and if any graphical shortcuts are available, moving over them will give the ability to swap from one map to another.



Picture 99 Boot page sample

Objects browser view

This view contains the different available hierarchies of objects available in ***NLFacilities***.

The Number of available hierarchies offers by ***NLFacilities*** depends on the mode and sub-mode that is active in ***NLFacilities***.

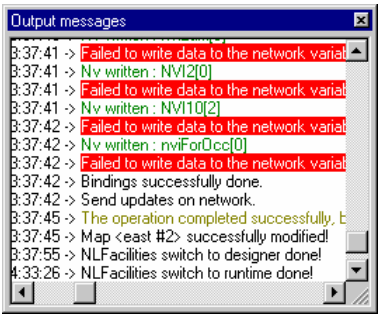
The list of available hierarchies through the available modes are :

- **Network** : hierarchy of the LNS database, from what you can assigned network objects on maps.

- **Objects** : hierarchy of network objects already available in the opened map.
- **Zones** : hierarchy of zones and Host commands available in the opened map.
- **DeviceTemplates** : list of available device templates in the opened LNS database.
- **Channels** : list of available channels in the opened LNS database.
- **Routers** : list of routers available in the opened LNS database.

Output traces view

This view displays all the traces generated by ***NLFacilities***. The traces displayed are configured in designer mode with the Traces tab in project settings.



Picture 100 Output trace view

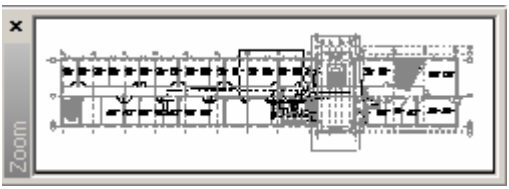
Color details:

- Error traces are in red.
- Warning traces are in brown.
- Information traces are in black.

Zoom map view

The zoom view represents a small view of the opened map.

The square drawn on the zoom view corresponds to the part of the map that is visible in the ***NLFacilities*** graphical view.



Picture 101 Zoom view

When you move the square in zoom view, the graphical view change automatically. If you draw a new square, you set a zoom property for graphical view.

Zones advanced

Check consistency of a zone

Presentation

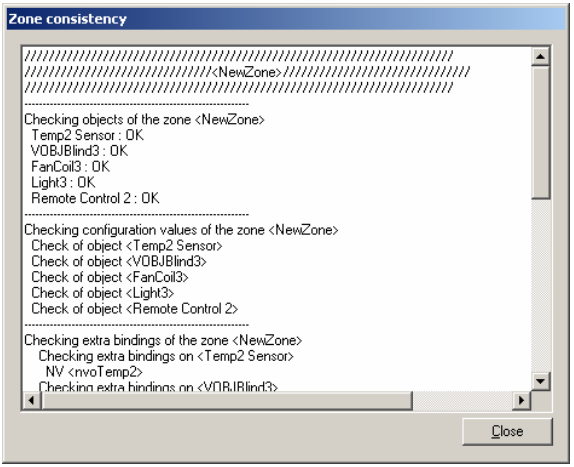
This feature help to find out if other tools have remove ***NLFacilities*** bindings or add extra bindings or Change configuration properties set by ***NLFacilities***.

Checking the consistency of a zone helps to know if :

- The configuration properties of the network objects of a zone are correct.
- The connections created for the zone are still in the **LNS** database.
- No extra connections are available in the **LNS** database.

Check the consistencies of a zone

1. Select the **NewName** zone in the map. Double click on it or select the **Check zone consistency…** icon ( ) in the floating toolbar.
    a. The check consistency process is launched.



Picture 102 Check zone consistencies

2. The text lines in red indicate an inconsistency of the zone.