

HPE NFV Director

Resource Modeler User Guide Release 4.2 First Edition



Notices

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About this guide

This document explains the procedure to install and setup the Resource Modeler tool. This document also explains the process to use the tool and to create resource model and NFV Director template.

Audience

This document is for any stakeholder requiring to design the NFV Director Template and Instance offline, and upload them to NFV Director later. Pre requisite is to have knowledge of NFV Director concepts, and an understanding of NFV Director resource model.

Document history

Table 1: Document history

Edition	Date	Description
1.0	15 Feb 2017	First edition.

Chapter 1 Installing the Resource Modeler

1.1 Installation Process

Download the Resource Modeler from the NFV Director ISO to a Windows system, and unzip the package in the desired directory.

Launch the Resource Modeler GUI by running the nfvdesigner.exe

Chapter 2 Creation and edition of a NFV diagram

2.1 Creating a new file

The editor stores each NFV diagram in an xml file with "nfvd" extension.

The first step when working with the editor is creating a new empty file.

In the menu, select: File / New

The wizard for creation of new files appears.

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Select a wizard				
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Figure 1: Create new nfvd file

Select NFV Diagram and Click on Next >.

The destination file page appears.

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Figure 2: Create new NFV Diagram

Click on ... and select the folder where the new file will be created.

Replace the suggested name with your preferred name. (Maintaining the .nfvd extension).

Click On **Finish**.

A new empty diagram appears on the editor.

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Figure 3: Empty NFV Diagram

2.2 Adding artifacts

In the Artifacts Palette on the left panel, expand the group containing the desired artifact, and select the desired artifact.

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Figure 4: Artifact Palette

Next, add the artifact to the editor area. This can be done in two ways:

- Click on the artifact name in the Artifacts Palette, and then click on any point of the editor area.
- Drag and drop from the Artifacts Palette to the editor area.

A new figure appears in the editor.



Figure 5: Drag and Drop artifact from Artifact Palette

2.2.1 Palette filters

You can choose which elements are shown in the Artifacts Palette, if you expand the pull-down at the top of the palette and select **All**, **Physical** or **Not Physical**. All is selected by default.

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Figure 6: Palette Filter

2.3 Adding relationships between artifacts

You can add a Relationship between two Artifacts (supposing that there exists a Relationship Definition corresponding to these two Artifacts as child and parent).

Click on the Relationships button 🔁. The editor enters in Relationship Creation mode.

Next, connect two artifacts. This can be done in two ways:

- Click on the artifact that will be the parent, and then click on the artifact that will be the child.
- Drag and drop from the artifact that will be the parent to the artifact that will be the child.



Figure 7: Adding relationship between artifacts

A new connection appears in the diagram joining the Artifacts.



Figure 8: New connection

You can continue adding more Relationships, or exit the Relationship Creation mode at any time by Clicking on **ESC** key, or by clicking the button to get back to Selection mode.

2.4 Moving and resizing artifacts

The artifacts can be moved to any location of the editor by drag and drop.



Figure 9: Moving artifacts

The artifacts can be resized by pointing to one of its sizing handles, and dragging the handle.



Figure 10: Resizing artifacts

2.5 Selecting artifacts or relationships

If the Selection Mode is active (button is active), you can select one or more Artifacts or Relationship. There exist multiple possible ways to do it:

• Click on an Artifact or Relationship to select it.



Figure 11: Selecting artifact or relationship

 Hold CTRL key and click on more Artifacts or Relationships to add them to the current selection, or to remove an Artifact or Relationship from the current selection.



Figure 12: Add artifact or relationship to current selection

 You can also select by dragging a rectangle from any empty point of the diagram. This way, the selection will include all the enclosed elements.



Figure 13: Dragging rectangle to select artifact or relationship

 Alternatively, you can click on Select All in the Toolbar, or Edit / Select All in the menu, to select all the Artifacts and Relationships of the diagram.

2.6 Deleting artifacts or relationships

To delete the currently selected Artifact/s or Relationship/s, Click on **DEL** key, or click in the Toolbar, or **Edit / Delete** in the Menu.

2.7 Editing the properties of an artifact or relationship

The properties of the last selected Artifact or Relationship appear on the Properties panel on the right. (The Properties panel can be resized or dragged to another position).

The panel is divided on two main groups, the general section and the categories section.

The general section offers a button for show / hide advanced properties.

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Figure 14: Editing properties of artifact or relationship

The categories section allows to expand categories in order to show the attributes table.

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Figure 15: Category section

The elements that contain an empty required value are marked with (*) before the property key.

Some columns in attributes table show special buttons for custom actions when clicked over them, like restrictions column. The following example explain how to manage restrictions.

First push the manage button on restrictions column.



Figure 16: Manage restrictions

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Second push the add button in restriction column of the opened dialog.

Figure 17: Push add button in restriction column

Third fill the new restriction dialog.

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Figure 18: Fill the restriction dialog

Finally the new restriction appear in list. Push the edit or delete button on edit / delete column in order to manage the new restriction.

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Figure 19: Manage the new restriction

2.8 Changing the color of an artifact or relationship

The color of the currently selected Artifact/s and Relationship/s can be changed by **right click** / **Change color**...



Figure 20: Change color of an artifact or relationship

2.9 Moving artifacts up or down in the diagram

The stack order of Artifacts in the diagram can be changed by clicking on the **Order** buttons in the Menu, or the corresponding buttons in the Toolbar.

↑ ■ Bring to top	
↑ Move up	
↓ ■ Move down	
$\downarrow \equiv$ Push to back	

Figure 21: Moving artifacts up or down

In the example below, we selected INTERFACE:GENERIC and moved it down.





2.10 Changing the zoom in the editor

The Zoom in the editor can be changed with the Zoom drop-down in the Toolbar.



Figure 23: Changing zoom

Another way to zoom-in or zoom-out is by holding CTRL key and scrolling the mouse wheel.

2.11 Allowing root artifacts automatic changes

This option can be enabled on the toolbar, it ask for permission to change the root artifacts name and description and replace them with the group name and description.

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Figure 24: Enable automatic changes in root artifacts

2.12 UUID regeneration

Push the toolbar button for the UUID regeneration, the action will ask for permission. Keep in mind that all the artifacts and components UUIDs will be regenerated.

Regenerate UUIDs

Figure 25: Regenerate UUID

2.13 Artifacts filter

Window -> Filters give access to the filters dialog, the dialog offers simple text filters for artifacts and relationships. With the use of the special character "\$" we can concatenate filters and apply them.

	X
Use \$ character	to concatenate filters
Artifact FQDN	vnf\$action
Relationship type	uses
Clear filters	
	OK Cancel

Figure 26: Filter artifacts and relationships

You can also access the filters dialog with the filters action of the artifacts editor toolbar.

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Figure 27: Filter action

Chapter 3 Trees/Groups

3.1 Creating, editing or deleting a group

Click on the **Groups** tab on the panel on the right of the editor. (The Groups panel can be resized or dragged to another position).



Figure 28: Groups tab

To add new groups, click Add group... and complete the attributes of the group.

First, fill the basic attributes, Id, Group name, type and optionally the description and color.

Second, optionally fills the component source attribute, and the group source template attribute, also you can add custom component scopes to the list.

Third, optionally you can select the Artifacts from the diagram that will be set as root Artifacts of the group, the selected ones will be added to the group if they were not already included.

Click OK to confirm.

Id	bb7bbae5-d2ef-44bd-8178-36fa34927f44
Group name:	VNF1
Туре	VNF
Description	VNF Parent
Group color:	
Source	test_source1
Source Template	test_source2
Scopes	
Scope	
vnf_user	
vnf_manager	
Root Artifacts (Selected ar	ifacts will be added to group)
Vnf1 VNF:GENERIC	
vnf2 VNF:GENERIC	
Automatically include relation	nships
	OK Cancel

Figure 29: Add new groups

To edit a group, select its name and click **Edit group...** Click **OK** to confirm the changes.

To remove a group, select its name and click **Remove group**.

There exists a special non-editable group, named Others, that will always contain the elements that are not included in any other group.

3.2 Adding or removing artifacts or relationships to/from a group

To add the currently selected Artifact/s or Relationship/s to a group, Click On **right click** on the mouse and click on **Groups** in the context menu that appears. (Note: for the option to appear, there must exist at least one group).



Figure 30: Add artifacts or relationships to a group

A submenu with the existing groups will show up, each one with a **checkbox** you can check to add the item/s to it, or uncheck to remove the item/s from it.



Figure 31: checkbox to add or remove items from group

Any Artifact or Relationship can be added to one or more groups.

When an artifact is contained on a group, a small box with the corresponding color will appear on the figure.



Figure 32: Color indicating artifact contained in a group

3.3 Adding group root artifacts

To add the currently selected Artifact/s to a group as root Artifacts, Click On **right click** on the mouse and click on **Check/Uncheck Root** in the context menu that appears.



Figure 33: Adding artifacts to group as root

A submenu with the groups that contain the Artifacts will show up, each one with a **checkbox** you can check to set the item/s as roots, or uncheck to unset the item/s as roots.



Figure 34: Check/Uncheck root artifact from a group

Any Artifact can be set as root in more than one group.

When an artifact is the group root artifact, an icon will be show on the editor.



Figure 35: Icon indicating group root artifact

3.4 Showing or hiding groups

In the Groups selection dialog, use the checkbox next to each group name to control which elements are shown or hidden in the diagram.

- Checking a group will make visible all the contained Artifacts and Relationships.
- Unchecking a group will hide the Artifacts and Relationships that are not contained in any other visible group.

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(*) IPADDRESS:GENERIC (*) INTERFACE:GENERIC	Show / hide groups:
	Add group Edit group Remove group

Figure 36: Showing or hiding groups

Unchecking Example group hides IPADDRESS:GENERIC

	🗖 🔲 Properties 📑 Groups 🔀 📃 🗖
(*) INTERFACE:GENERIC	Show / hide groups: Others (elements: 0) Example group (elements: 2) 2 (elements: 1) 3 (elements: 1) Add group Edit group Remove group

Figure 37: unchecking group hides artifact

INTERFACE:GENERIC will hide if we uncheck the 3 groups it belongs to.

- 8	Properties 🗖 Groups 🔀 📃 🗖
	Show / hide groups: Others (elements: 0) Example group (elements: 2) 2 (elements: 1) 3 (elements: 1)
	Add group Edit group Remove group

Figure 38: Hiding artifacts belonging to multiple groups

Chapter 4 Components

4.1 Overview

A component is the visual representation of a group. They have their own editor, in order to access it, you can simply switch between the artifacts and components tab at the bottom of the application, right above the status bar.

All	~
C ACTION	^
CHARTER CONTRACTER	
> AUTHENTICATION	
> AVAILABILITY_ZONE	
BANDWIDTH	
🔁 CARD	
COMPUTE	
🔁 CORE	
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CREDENTIALS	
C DATACENTER	
➢ DESCRIPTOR	
🔁 DISK	
ENCLOSURE	
EXECUTION_TASK	
C> EXECUTION_TASK_LIST	
	~
Artifacts Components	
Offline	

Figure 39: Components tab

4.2 Adding relationships between components

You can add a Relationship between two Components, but keep in mind one restriction. If the target component is child (target) of another component, checkout that following the targets direction you cannot reach the father (source) component that you try to connect with.

Click on the Relationships button 🔁. The editor enters in Relationship Creation mode.

Next, connect two components. This can be done in two ways:

- Click on the component that will be the parent, and then click on the component that will be the child.
- Drag and drop from the component that will be the parent to the component that will be the child.

File Edit Window Help	
	VNF1
	VNF2 VNF



A new connection appears in the diagram joining the Components.

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ø.		🔚 Se	elect All	📘 🛃	4 🖒	×	100%	*		
	*name.	nfvd 🖾								



|--|

Figure 41: New connection joining the components

You can continue adding more Relationships, or exit the Relationship Creation mode at any time by Clicking on **ESC** key, or by clicking the button to get back to Selection mode.

4.3 Changing the color of a component or relationship

The color of the currently selected Component/s and Relationship/s can be changed by **right click** / **Change color**...



Figure 42: Changing color of a component

4.4 Moving and resizing components

The components can be moved to any location of the editor by drag and drop.



Figure 43: moving a component

The components can be resized by pointing to one of its sizing handles, and dragging the handle.



Figure 44: resizing a component

4.5 Selecting components or relationships

If the Selection Mode is active (button is active), you can select one or more Components or Relationship. There exist multiple possible ways to do it:

• Click on a Component or Relationship to select it.



Figure 45: Select a component or relationship

• Hold **CTRL** key and click on more Components or Relationships to add them to the current selection, or to remove a Component or Relationship from the current selection.



Figure 46: Selecting multiple components and relationship

• You can also select by dragging a rectangle from any empty point of the diagram. This way, the selection will include all the enclosed elements.



Figure 47: Dragging rectangle from empty point to select components and relationships

• Alternatively, you can click on **Select All** in the Toolbar, or **Edit** / **Select All** in the menu, to select all the Components and Relationships of the diagram.

4.6 Deleting relationships

To delete the currently selected Relationship/s, Click on **DEL** key, or click in the Toolbar, or **Edit** / **Delete** in the Menu.

4.7 Changing the zoom in the editor

The Zoom in the editor can be changed with the Zoom drop-down in the Toolbar.



Figure 48: changing zoom in editor

Another way to zoom-in or zoom-out is by holding CTRL key and scrolling the mouse wheel.

4.8 Predefined components management

There are cases where you may want to reuse groups between diagrams, for example if you want to create a common palette of components. To do this, simply create a new diagram with a group or groups with artifacts and relationships that you want to share.

Next save the diagram and copy it to the resources / components folder on the editor installation folder, then the contents will be available in the components view palette.

You can also use File -> Save as predefined component, the diagram will be saved to the resources / components folder directly.
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type filter text	
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	^
ENDPOINT 🐡	
CG-0 NET	
VAPP-VMDK-2 NET-VAPP	
CATALOG	
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🔁 QUOTA	
≥ VM	
C DATACENTER	
ESOURCE_POOL	
▷ TENANT	
	~
Artifacts	

Figure 49: Saving as predefined component

Just drag the component from the palette to the board and the component will be created along with his member artifacts and relationships.

The editor reads the components from the .nfvd files on the resources / components folder, but if you do not need all the components loaded or want to focus only on a few of them, Click On the "Components" button on the toolbar and check / uncheck the desired components on the dialog.

Components 37



Figure 50: Drag components to editor

4.9 Components properties

Some artifact properties can also be edited from the components view. If you select a component and switch to the properties view, a list with all the member artifacts will appear. Expand the desired artifact to see their categories, the categories that have any attribute with a restriction with the field "type" not empty, will appear expanded by default

If the restriction type is "user-input", then the value is editable, if the restriction type is "display", the value is read-only. When the restriction type is "user-input", and the restriction have values on it, then the value on the properties section will change from open text to combo box.

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		\bigtriangledown
Artifac	ts	
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- 7		
• 1		
	label value restrictions	
	Amo 1024 💉 (1)	
	STATUS	
· -		
▶ I	INTEGRATION	
► VIRT	TUAL_MACHINE: ¥APP-¥MDK-2 ¥MDK ¥	MDK

- VIRTUAL_CORE: vcore base
- VIRTUAL_DISK: vdisk base
- VIRTUAL_PORT: vport base

Figure 51: Component properties

Chapter 5 Connectors

5.1 Overview

Connectors stablish the Artifacts that will be entry points between groups with the allowed relationship to connect them.

5.2 Creating, editing or deleting a connector

First go to the components tab, select the component that will hold the connector and then click on the **Connectors** tab on the panel on the right of the editor. (The Connectors panel can be resized or dragged to another position).

🗖 Groups	🗖 Connecto	ors 🖾	🗄 OL	utline			
							_
Add con	nector	Edit co	nnector		Remove co	onnecto	or

Figure 52: connector tab

To add new connectors, click Add connector... and complete the attributes of the connector.

First, select from the list one of the Artifacts included in the group, this will filter the list to the same type of Artifacts, then you can select more Artifacts of the same type to include to the connector if you want.

Second, set if the Artifacts will take the Parent or Child role in the relationship.

Third, fill the relationship attributes, each combo box will update dependent on the selected value on the previous ones.

Finally, you can add any optional inclusion or exclusion to the connector.

Click OK to confirm.

Connector name:	action1	
Туре	action1	
Id		Туре
Name of the	Action-8718d21e-2c13-41d5-9923-4854bba071b1	ACTION:GENERIC
•• •	000000	
Relation Options	uac	
Destination	ACTION_PARAMETER:GENERIC	
Status	ENABLED 💌	
Inclusions		
action-inclusion	2	Add Remove
Inclusions		^
action-inclusion1		<u>~</u>
Exclusions		
action-exclusion	n2	Add Remove
Exclusions		^
action-exclusion	1	×
		DK Cancel

Figure 53: Add connector

To edit a connector, select its name and click Edit connector... Click OK to confirm the changes.

To remove a connector, select its name and click **Remove connector**.

If a component contains any connector, an icon will be show on the editor.



Figure 54: Remove connector

5.3 Creating virtual relation between connectors

These relation types, really connects the artifacts pointed by the connectors based on the connectors information. In order to establish the relation Click On the connectors connection icon on the components editor toolbar.

.

Figure 55: connection icon

Once the connection tool is active you need to select the source component and the source connector.

	-		
	Select cor	nnector	
	Туре	Name	
	🗹 test	test	
/ test	test2	test2	
hest			
			OK Cancel
		\sim	
VAPP-VMDK-2 VMDK		YAPP-VMDK-2 VMDK V.	

Figure 56: Select connector

Then, select the target component and the target connector, the type of the source and target connectors must be the same. Also if the relation is successful, a new relationship between the source group and the target group will be created, if the relation cannot be established between the groups, the target group will not be highlighted discarding the relationship between connectors.

	a (×
🛅 💥 Regen	Select connector	
	Type Name	
	OK Cancel]
tes	st test2 st test2	

Figure 57: Select target connector and component

If the relation can be established with no errors, a confirmation message will show up. The tool also validates the connector information, the incompatible artifacts will not be connected, and also it will try to not duplicate the relationships.



Figure 58: Connection established successfully

Chapter 6 Group relations

6.1 Overview

When a group has child or parent relationship with another group, you may want to define also relations between their member artifacts. This relations help to define the group relationship context or meaning. The relationship information will be stored on the parent group, that is, the relation will be a member of the parent group.

6.2 Creating, editing or deleting a relation

First go to the components tab, select the group relationship that will hold the relation and then click on the **Relations** tab on the panel on the right of the editor. (The Relations panel can be resized or dragged to another position).

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🗆 Testinhal 🔅	🚍 Groups 🚍 Conn 🚍 Relati 🖾 🎥 Cutline 🧮 🗖
2 Artfadte 5 Companymente	
offine	

Figure 59: Relationship editor

To add new relations, click Add relation... and complete the attributes of the relation.

First, select from the list one of the parent group Artifacts and their role in the relationship (Child or Parent).

Second, select from the list one of the child group Artifacts and their role in the relationship (Child or Parent).

Third, fill the relationship attributes, each combo box will update dependent on the selected value on the previous ones.

Click **OK** to confirm.

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CK Canad	Artitades 🖟 Components			Add relation. Edit relation Remove relation
	Office	OK	Cancel	1

Figure 60: Add relationship

The new relation will appear on the Artifacts tab.

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1-5 OTLONETTR			
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bescriptor.			
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📂 EGRESSACI. 💌			
📄 Artilfades 📄 Componentes			
Office			

Figure 61: New relationship

To edit a relation, select it from the list and click **Edit relation...** Click **OK** to confirm the changes.

To remove a relation, select it from the list and click **Remove relation**.

7.1 Exporting a diagram to V2 or other XML

To export a diagram:

Click File / Export... in the Menu bar.

😹 Export				<u>_ 🗆 ×</u>
Select				-7-
				Ľſ
Coloct an overart doctionati				
type filter text	011.			
Export NEV diagram	to xml			
	< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel

Figure 62: Export NFV Diagram to XML

Select Export NFV Diagram to xml and Click on Next >.

At this point, if it exists any Artifact or Relationship with any mandatory value empty, there will appear a Warning window reminding that we should complete these values. Nevertheless, we can continue the export anyway.

😹 Validation errors	<u>_ </u>
Some mandatory data is missing. You can conti anyway, or cancel it and fix the problems.	inue the wizard to export
	OK CK
Validation errors Identifier of artifact 3fd7fbba-dd9d-42c6-97b0-93e8c- Status of artifact 3fd7fbba-dd9d-42c6-97b0-93e8c4c9 Attribute Source of category STATUS of artifact 3fd7ff Identifier of artifact e72d0991-0cab-4bce-94bb-1603f Status of artifact e72d0991-0cab-4bce-94bb-1603f94 Attribute Source of category STATUS of artifact e72d0 Identifier of artifact 89039331-0c6e-49d3-841c-43ccb6 Status of artifact 89039331-0c6e-49d3-841c-43ccb66 Attribute Source of category STATUS of artifact 89039	4c93a08 is mandatory 93a08 is mandatory bba-dd9d-42c6-97b0-93e8c4c93a 94e8bfd is mandatory e8bfd is mandatory 0991-0cab-4bce-94bb-1603f94e8 0692943 is mandatory 92943 is mandatory 9331-0c6e-49d3-841c-43ccb0692
•	

Figure 63: Validation error while exporting NFV Diagram to XML

The destination file page appears.

Export NFV Diagram			
Export NFV Diagram to xml file			
Select the file:			
C:\Documents and Settings\nam	ne.×ml		
Diagram type:			
 Instance 			
◯ Template			
The components information will n	ot be exported on th	ie instance mode	
Include:			
⊙ Select items	Groups	Artifacts	Relationships
🔘 Visible items			
🔿 All items			
(< <u>B</u> ack	jext > Einist	n Cancel

Figure 64: Provide XML name to export to

Click on ... and select the folder where the new file will be created.

Replace the suggested name with your preferred name. (Maintaining the .xml extension).

Select the diagram type (Instance or Template).

Select the export option:

- Select items, items filter by the groups, artifacts and relations.
- Visible items, only items marked as visible on the editor
- All items, export all.

Select items is the default option with all the items selected by default.

Click On Finish.

The diagram will be exported and a confirmation window will appear.



Figure 65: Successful export to XML

7.2 Importing a diagram from a V2 or other XML file

To import an existing xml file:

Click File / Import... in the Menu bar. The import wizard appears.

🛃 Import	
Select Import a NFV file from the local file system	Ľ
Select an import source:	
type filter text	
< <u>B</u> ack <u>N</u> ext >	Einish Cancel

Figure 66: Import NFV Diagram

Select Import NFV Diagram and Click on Next >.

The file selection page appears.

📲 File Import Wizard	
Import NFV Diagram	
Import NFV Diagram from xml file	
Select the file:	
C:\Documents and Settings\export.xml	
Select the destination file	
C:\Documents and Settings\name nfvd	
Format:	
⊙ Others	
○ V2	
< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

Figure 67: Select XML file to import

Click On the ... button next to the first field and select the file to import.

Click On the ... button next to the second field and select the folder where the new file will be created.

Replace the suggested name with your preferred name. (Maintaining the .nfvd extension).

Select the xml format (V2 or Others).

Click On Finish.

The diagram will be imported and opened in the editor.

Chapter 8 Diagram Definitions

It's possible to add new Definition Sources to the editor, and to edit or remove any of them.

The editor has always an active Definition Source. It ships with an initial Default Definition Source as the active one, and the user can change the active Definition Source to any other.

The active Definition Source determines the available Artifacts in the Palette, and the internal details of each one (categories, available status, possible types of Relationships, etc.).

8.1 Adding a Definition Source

To add a new Definition source click on Window / Preferences, and select NFV Preferences.

🚪 Preferences					⊐ ×
····· NFV Preferences	NFV Preferences			$\leftarrow \; \tau \; \Rightarrow \; \tau$	•
	Active Definitions Source				
	Туре	Name	Creation date	Internal Id	_
	Plugin	NFV Default Definitions		com.hp.nfv.edi	
	I				
	New Definitions Source				
				OK Cancel	

Figure 68: NFV preferences

Click on New Definitions Source.

Rew Definitions Source	<u>- 🗆 ×</u>
A unique name must be provided for the new provi	ew source
Name	
Definitions files	
Add files Remove files	
OK	Cancel

Figure 69: New definitions source

Fill-in the **name**.

Click on Add files, and select the xml file with the definition you want to add. You can add one or more Definition files.

Mew Definitions Source	
(i) New Definitions Source	
Name Definition 2	
Definitions files	
K:\branches_designer_java\com.hp.nfv.edi	tor.defir
K:\branches designer java\com.hp.nfv.edi	tor.defi
Add files Remove files	
ОК	Cancel

Figure 70: Adding definition files to new definition source

When it's complete, click On **OK**.

The new Definition Source has been added to the editor.

Active Definitions Source			
Туре	Name	Creation date	Internal Id
Plugin	NFV Default Definitions		com.hp.nfv.edi
User Defined	Definition 2	3/07/15	3719f8c7-d2f0
1			

Figure 71: Successful addition of new definition source

8.2 Selecting the active diagram definition

To select the active Definition source, click on Window / Preferences, and select NFV Preferences.

reterences				
NFV Preferences	NFV Preferences			÷ -
	Active Definitions Source			
	Туре	Name	Creation date	Internal Id
	Plugin	NFV Default Definitions		com.hp.nfv.edi
	User Defined	Definition 2	3/07/15	3719f8c7-d2f0
	New Definitions Source			

- 1 -l D - f: - : + : ~ Use the checkb

Figure 72: Setting active diagram definition

Click on **OK** to confirm.

8.3 Editing an existing diagram definition

Click on Window / Preferences, and select NFV Preferences.

8.3.1 Adding new definitions to a definition source

Right-click on the Definition Source you want to remove, and select Add new definitions.

Active Definitions Source	
Туре	Name
Plugin	NFV Default Definitions
User Defined	Add new definitions Delete definitions Modify definitions

Figure 73: Editing existing diagram definition

Click on the button to select the new definitions file.

Add definitions	
😣 \land definitions file must be	provided
Please select definitions file	Please select definitions file
Addition mode	
Modify current source	
C Create new source	
[OK. Cancel

Figure 74: Select definition file

If you select Modify current source, the new definition will be added to the selected Definition Source.

Add definitions	
(i) Add definitions	
test2.xml	Please select definitions file
Addition mode Modify current source C Create new source	
[OK Cancel

Figure 75: Select modify option

If you select **Create new source**, a new Definition Source will be created based on the selected one, and including this change.

😹 Add definitions	
(i) Add definitions	
test2.xml	Please select definitions file
Addition mode	
Create new source	
New source name Definitio	n 4
[OK Cancel

Figure 76: Select create option

III V Preferences			
Active Definitions Source	1		[
Туре	Name	Creation date	Internal Id
Plugin	NFV Default Definitions		com.hp.nfv.edi
User Defined	Definition 2	3/07/15	3719f8c7-d2f0
User Defined	Definition 3	3/07/15	fdf8a6a3-f500
User Defined	Definition 4	3/07/15	bbeeeb64-8cb9
1			
New Definitions Source			
Herr Bernindonis Bodiree			

Figure 77: New definition created

Click on **OK** to confirm.

8.3.2 Deleting definitions from a definition source

Right-click on the Definition Source you want to remove, and select Delete definitions.

NFV Preferences			
Active Definitions Source			
Туре		Name	
Plugin		NFV Default D	e
User Defined	Add new de Delete defir Modify defir	finitions nitions nitions	

Figure 78: Delete definition

A window showing the tree of elements (Artifacts and Relationships) of the selected definition will appear.

Select the element you want to delete.

😹 Delete Definitions	
(i) Delete Definitions	
Artifacts EXECUTION_TASK_LIST:GENERIC VIRTUAL_PORT:INTERNAL VIF_COMPONENT:SITESCOPE E: Relationships DISK:GENERIC-VIRTUAL_DISK:GENERIC	
Addition mode	
C Create annual control	
ОК	Cancel

Figure 79: Select definitions to delete

If you select **Modify current source**, the selected element will be removed from the selected Definition Source.

If you select **Create new source**, a new Definition Source will be created based on the selected one, and including this change.

😹 Delete Definitions	
(i) Delete Definitions	
Artifacts EXECUTION_TASK_LIST:GENERIC VIRTUAL_PORT:INTERNAL VIRTUAL_PORT:INTERNAL	
Addition mode	
C Modify current source	
Create new source	
New source name Definition 5	
	OK Cancel

Figure 80: Modify or create definition

NFV Preferences			(÷ •
Active Definitions Source			
Туре	Name	Creation date	Internal Id
Plugin	NFV Default Definitions		com.hp.nfv.edi
User Defined	Definition 2	3/07/15	3719f8c7-d2f0
User Defined	Definition 3	3/07/15	fdf8a6a3-f500
User Defined	Definition 4	3/07/15	bbeeeb64-8cb9.
User Defined	Definition 5	3/07/15	cb1fff8f-0a31
New Definitions Source			

Figure 81: New definition added

Click on OK to confirm.

8.3.3 Modifying definitions from a Definition Source

Right-click on the Definition Source you want to remove, and select Modify definitions.

NF	V Preferences			
A	ctive Definitions Source			
	Туре	N	ame	
	Plugin	NFV Default Definitions		
	User Defined	D	efinition 7	
	User Defined	D	Add new definitions	
			Delete definitions	
			Modify definitions	

Figure 82: Modify definition

A window showing the tree of elements (Artifacts and Relationships) of the selected definition will appear.

Double click on the element you want to delete.

😹 Modify definitions	<u>_ 🗆 ×</u>
(i) Modify definitions	
Artifacts EXECUTION_TASK_LIST:GENERIC VIRTUAL_PORT:INTERNAL Relationships	
Modify current source	
C Create new source	
OK	Cancel

Type the changes in the xml.



Figure 84: Edit definition XML

Click on **OK** to confirm the changes.

If you select **Modify current source**, the selected Definition Source will be updated with the modification.

If you select **Create new source**, a new Definition Source will be created based on the selected one, and including this modification.

😹 Modify definitions	
(i) Modify definitions	
C. Artifacta	
Artifacts EXECUTION_TASK_LIST:GENERIC VIRTUAL_PORT:INTERNAL VIRTUAL_PORT:INTERNAL Relationships	
Addition mode	
O Modify current source	
Create new source	
New source name Definition 6	
ОК	Cancel

Figure 85: Create or modify definition

Active Definitions Source			
Туре	Name	Creation date	Internal Id
Plugin	NFV Default Definitions		com.hp.nfv.edi
User Defined	Definition 2	3/07/15	3719f8c7-d2f0
User Defined	Definition 3	3/07/15	fdf8a6a3-f500
User Defined	Definition 4	3/07/15	bbeeeb64-8cb9
User Defined	Definition 5	3/07/15	cb1fff8f-0a31
User Defined	Definition 6	3/07/15	9bab24e9-8ce2
· · · · · · · · · · · · · · · · · · ·			

Figure 86: New definition added

Click on **OK** to confirm.

8.4 Removing an existing diagram definition

Click on Window / Preferences, and select NFV Preferences.

Right-click on the Definition Source you want to remove, and select Delete.

NFV Preferences	;		
Active Definitions So	urce		
Туре		Nan	ne
Plugin		NFV	Default De
User Defined	- 1 -	Dof	nition 2
	Delete		
	Add new definitions	:	
	Delete definitions		
	Modify definitions		
· · · · · ·			1

Figure 87: Select definition to delete

(NOTE: you can't remove the Default or the Active Definition Source).

Click on **OK** to confirm.

Chapter 9 Definitions editor

Plus the definitions edition capabilities on the preferences page, you can use the more visual friendly definitions editor for your edition tasks. To access the editor just follow Window -> Definitions Editor.

9.1 Modify definitions

First select a definition source from the list and wait definitions to load. Once the definitions are loaded on the list, select the definition type on the combo box, the options are Artifact or Relationship, after that, you can search the definition on the list or use the textbox filters allowed for that definition type.

To modify the selected definition just change values on the properties or categories table and save the definition as a normal file. Keep in mind that you cannot modify the default editor definitions, if you want to modify it, use "Save As" instead of "Save", this will create a new definitions source.

🚪 NFV Visual Designer							▋₽₽
Eile Window Help							
NFV Definitions Editor						Definition Sources	
						Select / UnSelect definition sources:	
Artifacts	FQDN	Parent		Child		NFV Default Definitions - Plugin	
New definition Edit Delete					Clear		
WNF_GROUP:GENERIC HYPERVISOR:GENERIC	Definition properties				Ë		
VNF:NFVD NETWORKING:OPENSTACK:DCN	enabled		physical				
QUOTA:SR-IOV	true		true		com.hp.nfvd.CategoryDefinitions@		
KEY_PAIR:OPENSTACK							
MONITOR_ARGUMENTS:CYPHER							
VNF:FW							
AVAILABILITT_ZONE:OPENSTACK							
ENCLOSU DE CENEDIC	<						
L3DOMAIN-TEMPLATE-DCN							
SUBNETWORK:GENERIC							
VIRTUAL MACHINE:VMWARE		- "					
OUOTA:FLOATING IP	Definition categories	All 🚩					
BANDWIDTH:GENERIC							
IMAGE_STORAGE:OPENSTACK							
POLICY:VALUE_VALIDATION	category	label	order	mandatory	defaultValue		
VNF_COMPONENT:GENERIC	GENERAL	Name	1	true	Tenant Name		
NETWORK:OPENSTACK:PRIVATE	GENERAL	Туре	2	false	Туре		
LUN:GENERIC	GENERAL	Description	3	false	Description		
VIRTUAL_LUN:GENERIC	GENERAL	Id	4	false	Description		
VNF_COMPONENT:UOC	STATUS	Operational_Status	1	false			
INGRESSADVFORWARDENTRY:TEMPLAT	STATUS	Operational Status Date	2	false			
VNF_COMPONENT:SOSA	STATUS	Source	3	false			
SHARED_NETRESOURCE:DCN	STATUS	LifeCycle State	4	false			
IMAGE:OPENSTACK	STATUS	LifeCycle State Date	5	false			
NE:ROUTER	STATUS	additionalText	6	false			
POLICY: AFFINITY	INTEGRATION	ExternalProcess	1	false	~		
< >	<				>	Import definitions Export definitions	Demove definitio

Figure 88: Definitions editor

9.2 Create definitions

Push "New definition" button and select the definition type on the wizard dialog.

Select the new definition type	
< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

Figure 89: Selecting definition type

Next, fill the definition properties and status in the next page.

a 🖀 🖉 🖉 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓 🖓	
😣 Empty or invalid value on Family	
Family	
Category	_
Group	_
Туре	
Subtype	
Version	
Enabled	
Physical 📃	
InternalId	
Uri	
New status Edit Remove	
Label Visible label Enabled	
< Back Next > Finish	Cancel

Figure 90: Fill definition properties

Finally, create the definition categories and attributes, Click On finish to add the new definition to the definitions source.

ciii					
New category	Edit Remo	ve			
Label Order					
					_
					_
New attribute	Edit	ve			
Label Order	Mandatory	Default value	Description	Type Unit	
	< <u>B</u> ack	<u>N</u> ext >	Einis	h Ca	incel

Figure 91: Create definition category

9.3 Edit definitions

In order to edit definitions, select one definition from the list and push the "Edit" button. The edition wizard is the same as the "New definitions" wizard, just follow it and edit the desired values.

dill.					
- 1					
Family	VNF_	GROUP			_
Category	GENE	RIC			
Group					
Туре					
Subtype					
Version	_				_
Enabled					
Physical	~				
InternalId					
Uri					
.					
INEW SCAC	us				
Label		Visible label	Enabled		
ENABLED		ENABLED	Yes		
DISABLED)	DISABLED	Yes		
CHECKED	·	CHECKED	Yes		
DESIGNEL) D	DESIGNED	Yes Vec		
PROVISIO	ONED	PROVISIONED	Yes		
ACTIVE		ACTIVE	Yes		
ERROR		ERROR	Yes		
TERMINA	TED	TERMINATED	Yes		
	IATED		Yes Ves		
COURCE		LOUNED			
		- A Darah	Next		Canad
		< <u>B</u> ack	<u>M</u> ext :	 Einisi	

Figure 92: Edit definition

							×
New categ	ory Ed	it Remove					
Label	Ord	ler					
GENERAL	1						
STATUS	3						
INTEGRATI	ON 4						
							_
New attrib	ute Edi	it Remove					
New attribu	ute Edi	it Remove					
New attrib	ute Edi	it Remove	Defaulturatur	Deswistion	Turce	l Incite	
New attrib Label	ute Edi Order	it Remove	Default value	Description	Туре	Unit	
New attrib Label Name Type	ute Edi Order 1 2	it Remove Mandatory Yes No	Default value Tenant Name Type	Description	Type TEXT TEXT	Unit TEXT TEXT	
New attribu Label Name Type Description	ute Edi Order 1 2 3	it Remove Mandatory Yes No No	Default value Tenant Name Type Description	Description	Type TEXT TEXT TEXT	Unit TEXT TEXT TEXT	
New attribu Label Name Type Description Id	ute Edi Order 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT TEXT	
New attrib Label Name Type Description Id	Ute Edi Order 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	
New attrib Label Name Type Description Id	Ute Edi Order 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	
New attribu Label Name Type Description Id	Urder Order 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	
New attrib Label Name Type Description Id	Ute Edi Order 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	
New attribu Label Name Type Description Id	Urder 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	
New attrib Label Name Type Description Id	Ute Edi Order 1 2 3 4	it Remove Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	
New attrib	Ute Edi Order 1 2 3 4	Mandatory Yes No No No	Default value Tenant Name Type Description Description	Description	Type TEXT TEXT TEXT TEXT	Unit TEXT TEXT TEXT TEXT	

Figure 93: Edit, add or remove attributes

9.4 Delete definitions

Select the definition from the list and push "Delete" button to delete it from the definitions source.

9.5 Import definitions source

Push the Import definitions button, then the add files button and select the desired .xml definition files.

😹 New Definitions Source 📃 🗖 🔀				
A upique name must be provided for the new source				
Name				
Definitions files				
Add files Remove files				
OK Cancel				

Figure 94: New definitions source

Click On the "Ok" button, a new definitions source will be added into the list.

9.6 Export definitions source

Push Export definitions button, select the output folder and the export type, "Splitted" for one file per definition and "One single file" to merge all definitions in one single file.

Export NFV Definitions	
Export NFV Definitions to xml	
Select the file:	
C:\definitions.zip	
Export type	
💽 One single file	
○ Splitted	
	<u>Finish</u> Cancel

Figure 95: Export definitions source

9.7 Delete definitions source

To delete a definitions source, select one of the list and push the "Remove definitions" button. You cannot delete the default definitions source. Also if the definitions source are active you must switch to another source in order to delete it.

10.1 General section

To open the editor preferences just go to Window -> Preferences and select the NFV Preferences to see the general section settings. To access other sections just expand NFV Preferences and select them.

📲 Preferences		
type filter text - Help - Install/Update - NFV Preferences	NFV Preferences General settings for NFV Visual Designer Show artifact images on editor Show component images on editor Enable Undo/Redo User Domain User Name User Password	
		OK Cancel

Figure 96: General NFV preferences

The actual available preferences are:

Show artifact images on editor: when enabled, the artifact identifier text gets replaced by the configured artifact image.

Show component images on editor: when enabled, configured component image is shown.

Enable Undo/Redo: improve performance on large diagrams when enabled.

User Domain: domain on which the user has access rights.

User Name: the user name.

User Password: the user password.

You can restore the default values or push **OK** to perform changes.
10.2 Artifacts images

In this section you can configure the Artifacts images. Expands a family and selects from disk the image that will apply for the desired category, you can also set up the family category NFV_DEFAULT, that image will apply for all the categories without image.

🚜 Preferences			_ 🗆 🗙		_ d 🗙
type filter text	Artifacts images		¢ • ⇔ • •		
type filter text Help Artifacts images Official Artifacts images Servers management	Artifacts images DATACENTER GENERIC NFY_DEFAULT CARD PROPAGATION_RULE MIMAGE FW_ENDPOINT CATALOG MINTERFACE STORAGE DESCRIPTOR SYSTEM_INVENTORY SHARED_RESOURCE EGRESACLENTRY ESTAA_SPECS FLOATING_JP EXTRA_SPECS FLOATING_JP ENCOURE REGION ACTION_PARAMETER HOSTAGGREGATES MONITOR_ARGUMENTS CONDITION	DATACENTER:SEENERIC.ond DATACENTER:png Abrir Buscar en: Documentos recientes Escritorio Mis documentos	V C) V V	Properties 22 Groups 🔂 Outline Properties are not available.	▽ □ □
	CONTON FORWARDING_GRAPH DOMAIN AVAILABILITY_ZONE MONITOR SWIFT VIAN	Mi PC Mis sitios de red	Nombre: Tip <u>o</u> : *.png	▼ ▼	<u>A</u> brir Cancelar
		ОК	Cancel		

Figure 97: Configure artifacts images

You can restore the default values or push **OK** to perform changes.

10.3 Components images

In this section you can configure images for the groups loaded in the editor, just selects from disk the image that will apply for the desired group.

A Preferences			
type filter text	Components images	← → →	•
Help Install/Update NFV Preferences Artifacts images	test2 test2 test test.png		Properties are not available.
Definitions Servers management		Abrir Buscaren: C NFV	2 X • Ø Ø 🖬 •
		Documentos recientes	ли -
		E scritorio	
		Mis documentos	
		MiPC	
		Mis sitios de red	× ≜brir *.png × Cancelar
		OK Cance	

Figure 98: Manage component images

You can restore the default values or push **OK** to perform changes.

10.4 Definitions

Go to section 9 of this manual to read more about how to handle definitions on this preferences section.

10.5 Servers management

In this section you can add, edit or delete server URLs for posterior selection.

🛃 Preferenc	es		
type filter text Help Install/Upd NFV Prefer Artifac Compo Definiti Server	ate ences ts images nents images ons s management	Servers management Servers: Name Default server Add server Delete	C→ マ マ マ URL http://localhost:8080
	Mame: URL:	Add	Cancel
			OK Cancel

Figure 99: Servers management

You can restore the default values or push $\ensuremath{\mathsf{OK}}$ to perform changes.

To change to online mode on the editor and selects one of the servers previously added on the preferences section just click the connect icon on editor toolbar.

Figure 100: connect icon

\$.

Then select the server from the list and Click on **OK**.

dill	
Select server:	
Default server (URL: http://localhost:8080)	
ОК	Cancel

Figure 101: Server selection

11.1 Definitions documentation

Go to Help -> Definitions Documentation, a dialog will show up with two options, view and export.

Definitions documentation (i) View or export definitions documentation							
Active Definitio	Active Definitions Source						
Туре	Name	Internal Id					
Plugin	NFV Default Definitions	com.hp.nfv.editor.definitions.definitions.default					
View Export							

Figure 102: Definitions documentation

The view option opens the documentation in the editor.

Definitions Help	
	Definitions
ACTION ACTION PARAMETER	VNF_GROUP:GENERIC
AUTHENTICATION AVAILABILITY ZONE	HYPERVISOR:GENERIC
BANDWIDTH CARD	VNF:NFVD
CATALOG CATALOG_ITEM	NETWORKING:OPENSTACK:DCN
CEILOMETER CINDER	
COMPUTE CONDITION	
CORE CPU	• KET_PAIR: OPENSTACK
CREDENTIALS	MONITOR ARGUMENTS:CYPHER

Figure 103: Documentation editor

The export option allow to save the documentation as html on disk.

Export							? 🔀
Guar <u>d</u> ar en:	C NFV		*	6	1 🖻	•	
Documentos recientes Escritorio	Configural	cion e					
Mis documentos							
Mi PC							
	<u>N</u> ombre:	definitionsDoc				~	<u>G</u> uardar
Mis sitios de red	Tip <u>o</u> :	*.html				~	Cancelar

Figure 104: Export documentation

Chapter 12 Validations

12.1 Introduction

Whenever an Artifact or a Relationship has any of its mandatory fields empty, the editor shows a "(*)" mark next to its label in the editor.

If we select an Artifact or Relationship with validation errors, we can see the particular field that requires completion, with another "(*)" mark next to the name of the field.

When an export is being performed, a validation will be done, and if there is any Artifact or Relationship with any mandatory value empty, there will appear a Warning window reminding that we should complete these values. Nevertheless, we can continue the export anyway.

12.1.1 Text on the cover

The cover page contains the document title, subtitle and release / part number / edition information fields. Modify or delete these entries as required. These fields use the built-in title, subtitle and cover release/edition fields respectively. Do not use these styles for other purpose.

12.1.2 Graphics on the cover

The template comes with the standard cover page. Choose the appropriate cover page with the image matching the PDF documentation set or your needs from the HPE cover page gallery of the template.

- 1. Select the current cover page.
- 2. Go to the Insert tab of the Ribbon.
- 3. Open the Cover Page drop-down list and scroll down to the HPE section at the bottom.
- 4. Choose the appropriate cover page. This replaces the current cover page with the chosen cover page. If the replacement does not happen, any additional cover pages can be deleted manually.