NOVASCALE

NovaScale Master 5.2-x Server Add-ons

Installation and Administrator's Guide

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Installation and Administrator's Guide

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BULL CEDOC
357 AVENUE PATTON
B.P.20845
49008 ANGERS CEDEX 01
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Trademarks and Acknowledgements

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Preface

Scope and Audience of this Manual

NovaScale Master Server Add-ons are Bull products, which provide extension to NovaScale Master for managing Bull Intel platforms specific devices or tools. Administration environments can include different platforms from the NovaScale Universal or Intensive Series, Express 5800 Series or EvolutiveLine Blade Series servers.

In order to monitor a specific item, NovaScale Master Server Add-ons configuration must be customized. This manual explains also how, as an Administrator you can perform configuration tasks for these Add-ons.

☞ **Note:**
Configuration tasks may only be performed by Administrators.

Using this Manual

For a conceptual approach to NovaScale Master Server Add-ons, read **Chapter 1**.

Chapter 2 describes how to install and configure NovaScale Master Server Add-ons.

Chapter 3 describes for each Server Add-on how to configure its elements on the Management server. It provides detailed information about all resource properties as well as concrete examples to help customization of the configuration (Modifying Service Parameters, …).
This chapter also contains reference information about categories and services of the monitoring server provided by these NovaScale Master Server Add-ons.

Appendix A contains reference information about the check Nagios commands used by NovaScale Master Server Add-ons monitoring services.

Related Information

- *NovaScale Master Installation Guide* (Ref. 86 A2 48EG).
- *NovaScale Master User's Guide* (Ref. 86 A2 49EG). The NovaScale Master GUI (Graphical User Interface)and the way to use are described in this guide.
- *NovaScale Master Administrator's Guide* (Ref. 86 A2 50EG).
- Restrictions and well-known problems are described in the associated *Release Notes* document.
- *Dynamic Domains for Applications User's Guide* (Ref 86 A2 63ER).

Highlighting

The following highlighting conventions are used in this book:

Bold	Identifies commands, keywords, files, structures, directories and other items whose names are predefined by the system. Also identifies graphical objects such as buttons, labels and icons that the user selects.
Italics	Identifies chapters, sections, paragraphs and book names to which the reader must refer for details.
`Monospace`	Identifies examples of specific data values, examples of text similar to displayed messages from the system, or information you should actually type.

☞ **Note:**
Important information.

Chapter 1. NovaScale Master Server Add-ons Concepts

1.1 NovaScale Master

1.1.1 Overview

NovaScale Master monitoring ensures the following tasks:

- Monitoring NovaScale machines: NovaScale Master checks if these hosts are accessible, using the **ping** command from the System Manager. The machines to be monitored are either explicitly specified by the administrator or selected by a discovery mechanism.
- Monitoring specific elements of the hardware, operating system, services and Internet such as Power Status, **CPU load, memory usage, disk usage, number of users, processes** and **service execution, http and ftp services**.
  The administrator can define status thresholds (OK, WARNING, CRITICAL, UNKNOWN) for each monitoring element. When an anomaly occurs or when normal status is recovered, **alerts** (in a log file) and **notifications** (by e-mail, by Bull autocall and/or by SNMP trap) are generated.

☞ **Note:**
Hardware and OS monitoring for Bull Intel-Based platforms are provided by the NovaScale Master Server package, not by the Add-ons packages.

NovaScale Master Server Add-ons extend the NovaScale Master monitoring with more specific links to third-party management tools for specific devices or/and specific system functionalities.

☞ **Note:**
These Server Add-ons packages extend generally the management server independently of the platform or/and OS type (storage, network, virtualization, framework, ...).

NovaScale Master, a tool for monitoring and managing Bull NovaScale and Express 5800 systems, consists of three main components that can be deployed on Windows and Linux systems:

- Management Server and Server Add-ons
- Management Console
- Management Agent.

Management Server and Server Add-ons

Provides the infrastructure and services in charge of collecting and operating management data. Management Server must be installed on the server dedicated to management.

Management Console

Provides third-party management tools for the end-user station running the NovaScale Master console WEB GUI.

Management Agent

Provides instrumentation and administration tools for monitored servers. Management Agent must be installed on each server to monitor.

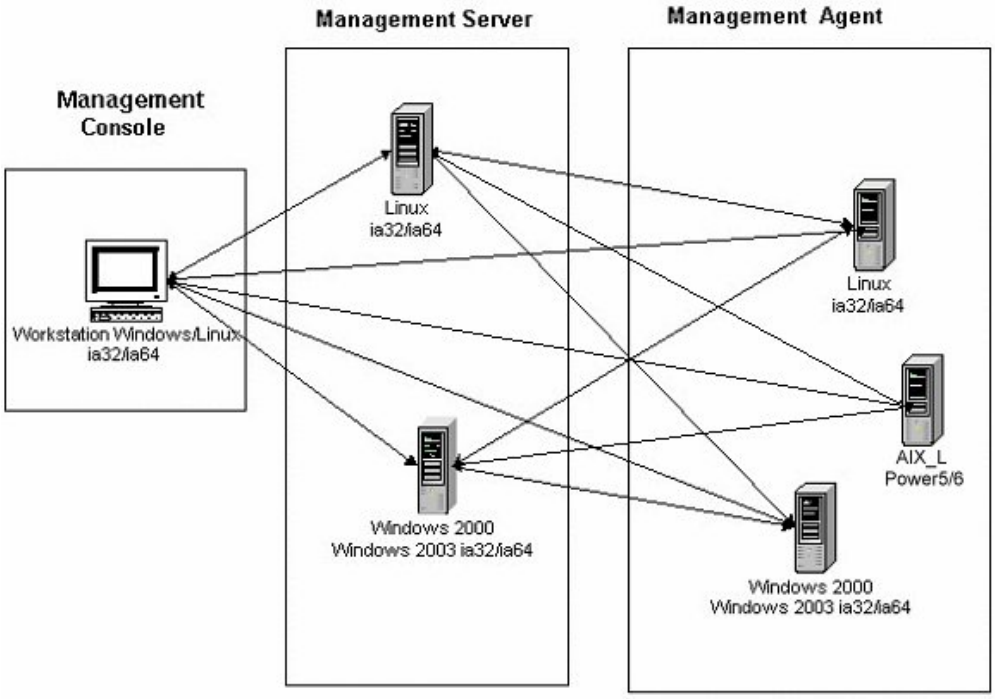


Figure 1-1. NovaScale Master Architecture

Note:
NovaScale Master for Windows and Linux are distributed on the same CD-ROM.

1.1.2 Monitoring

A **Service** (or monitoring service) defines how specific host elements are monitored. A service can be defined for all hosts or for a list of hosts, depending on the OS (Windows, Linux or both) and/or on the model. Notification properties are defined for each service.

Services are organized into monitoring **categories**. For instance, the **SystemLoad** category includes the **CPU** and **Memory** services for a Windows host.

1.1.3 Event Reception

NovaScale Master can receive **SNMP traps** from any SNMP agent. SNMP traps enable an agent to notify the NovaScale Master Server of significant events via an unsolicited SNMP message. SNMP Traps must be defined in a **MIB** (Management Information Base).

1.1.4 Hardware Manager

A **Hardware Manager** manages hardware for one or a set of servers.

1.1.5 Storage Manager

A **Storage Manager** manages storage for one or a set of servers or/and bays.

1.1.6 Virtualization Manager

A **Virtualization Manager** manages a set of virtual machines, viewed as Virtualization Platform.

1.2 NovaScale Master Server Add-ons

NovaScale Master Server Add-ons deliver optional management packages to extend NovaScale Master Server.

A NovaScale Master Server Add-on provides functional links (monitoring, GUI call, reporting ...) between a NovaScale Master Server and a third-party management tool.

Some free Server Add-ons are distributed on the NovaScale Master Add-ons CD-ROM.

Note:
There is a difference between the Server Add-on and the third-party management tool. Even if the third-party management tool may be dedicated to an OS or/and a platform type, its NovaScale Master Server Add-on will be able to be installed on a NovaScale Master Server machine. (Thus, on Linux and on Windows, on IA32 and on IA64 ...).

This release provides several NovaScale Master Server Add-ons. Some of them are free and delivered on the NovaScale Master CD-ROM. The others must be purchased.

System Domains	Server Add-ons
Internal Storage (free)	LSI GAMTT Mgt Package
	LSI CIM Mgt Package
	LSI MegaRaid SAS Mgt Package
External Storage (not free)	StoreWay FDA Mgt Package
Bull Tools Management (not free)	Dynamic Domains Mgt Package
	Bull Video Service Mgt Package
	JOnAS framework Mgt Package
Virtualization Management (not free)	Vmware ESX Mgt Package
	Xen HyperNova Master Mgt Package
	(IVM) VIOS LPAR Mgt Package

Each Server Add-on is described in the following chapters.

Chapter 2. NovaScale Master Server Add-ons Installation and Configuration

2.1 General Installation Requirements

Before installing NovaScale Master, check that the environment meets the software and hardware requirements described below.

2.1.1 Supported Operating Systems

NovaScale Master Server Add-ons operate on Linux and Windows operating systems.

The principal Requirements are the NovaScale Master Server pre-installation and its own requirements. See *NovaScale Master Installation Guide* for details.

2.1.2 Required Disk Space

In general, each Server Add-on needs between 1 and 2 MB.

2.1.3 Required Memory

The following table indicates the required memory for the Management Server.

NovaScale Master	Memory
Management Server	512MB

Table 2-1. NovaScale Master - Required Memory

2.1.4 Installation Requirements

Server Add-ons	Component
*	NSMasterServer5.2-x

Table 2-2. Management Server Add-ons Installation Requirements

2.1.5 Operational Requirements

Server Add-ons	Target Tools
NSMasterGAMTT	Linux GAM version 6.02.31 or higher. Windows GAM version 6.02-32 or higher. **Important:** Contact <www.lsilogic.com> web site to download the above versions. If not on-line, contact the Bull support team. **Note:** For **IA32** machines the following previous versions are supported: Linux GAM version 6.02-21 or higher Windows GAM version 6.02-22 or higher.
NSMasterLSICIM	LSI CIM provider version 3.06 or higher. **Important:** Contact <www.lsilogic.com> web site to download the above versions. If not on-line, contact the Bull support team. **Note:** Not supported on Linux IA64 system.
NSMasterMegaRaidSAS	LSI MegaRaid SAS (IR) SNMP agent version 3.09 or higher. Contact <www.lsilogic.com> web site to download the above versions. If not on-line, contact the Bull support team.
NSMasterStoreWayFDA	StoreWay FDA embedded SNMP Agent.
NSMasterDD4A	DDFA version 2.6.3 and higher
NSMasterBVS	BVS version 4.0 and higher
NSMasterJOnAS	JOnAS version 4.8 and higher
NSMasterVMwareESX	VMware ESX 3.0 and higher
NSMaster	IVM VIOS for Power5 and Power6

Table 2-3. Management Server Add-ons Operational Requirements

2.1.6 Restrictions

Windows

N/A

Linux

N/A

2.2 Installing NovaScale Master Server Add-ons for Windows

2.2.1 Prerequisites

To install NovaScale Master Server Add-ons on Windows:

- The user must be a member of an Administrators group. The default administrator login is Administrator.
- The installation program requires the Internet Explorer WEB browser. Other browsers, such as Netscape or Mozilla, cannot be used to install NovaScale Master on Windows.
- Management Server Add-ons are to be installed on the server dedicated to management.
- Acrobat Reader is required to view PDF versions of the NovaScale Master documentation.
- The free Server Add-ons are present on the NovaScale Master CD-ROM, the others must be supplied by your Bull contact.

2.2.2 Installing Free Management Server Add-ons from the CD-ROM

Management Server Add-ons, to be installed on the server dedicated to management, require the components indicated in 2.1.4 *Installation Requirements*, and must be installed from the CD-ROM.

To install **Management Server**:

1. From the dedicated server, launch the installation program.
2. Log on as **Administrator**.
3. Insert the NovaScale Master or NovaScale Master Add-ons CD-ROM in the drive. The installation program is launched automatically and opens the **Welcome** page.

☞ **Note:**
If the installation does not start automatically, double-click **<CD-ROM drive> / setup.exe.**

Figure 2-1. Windows Installation - NovaScale Master Welcome Page

4. Click **Install Now** to open the **Install** page, which allows the selection of the required NovaScale Master component:

   – Management Server Add-ons

   and provides the following information:

   – What to install?

   – What to do now?

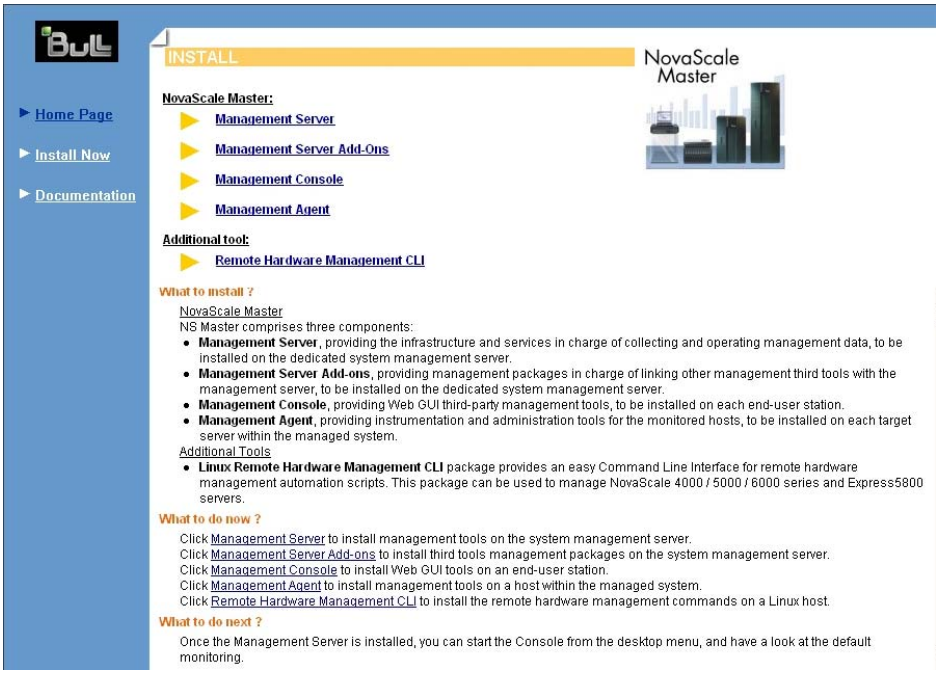


Figure 2-2. Windows Installation - NovaScale Master Install Page

5. Select **Management Server Add-ons**, then **Windows 32 bits** or **Windows 64 bits** operating system according to server type.

6. Click the selected Add-ons **Install Now** link to install the **Server Add-ons** package. The wizard prompts for a destination folder.

The default value can be changed if required. At the end of the installation process, Management Server Add-ons components are automatically operational.

2.2.3 Installing Payable Management Server Add-ons Packages

These are auto-extractible packages. To install a package, just launch it from any logical device:

```
NSMaster<tierceTool>-5.2-x.exe
```

2.2.4 Uninstalling NovaScale Master Server Add-ons Components

Uninstallation operations must be launched locally. Launching the uninstallation program removes all files and folders.

To uninstall NovaScale Master Add-ons components:

1. From the Control Panel, launch **Add/Remove Programs**.

2. Select the required NovaScale Master Server Add-ons components and click **Remove**.

☞ **Note:**
After uninstallation operations, customized categories in previous version can remain in configuration. These elements must be removed using the NSMaster Configuration GUI.

2.2.5 Upgrading to a New NovaScale Master Server Add-ons Version

When upgrading to a new NovaScale Master Server Add-ons version, the existing NovaScale Master Server Add-ons environment that may have been customized is maintained.

NovaScale MasterServer Add-ons are upgraded via the standard installation program.

☞ **Note:**
When you upgrade the NovaScale Master Management Server, you MUST upgrade previous release installed server add-ons to benefit from new improvements.

See the Release Notes for more details about specific add-on migration, where applicable.

2.3 Installing NovaScale Master Server Add-ons for Linux

2.3.1 Prerequisites

To install NovaScale Master Server Add-ons on Linux:

- The user must be logged as root.
- The installation program requires the Mozilla WEB browser (Version >1.4.3 or Firefox):
  If Mozilla is not installed, launch another WEB browser and open file:
  <CD-ROM Mount point>/product /index.html
  It is advised to uninstall the previous version of Mozilla before installing a new version. This operation will not delete bookmarks, histories, cookies and other information stored in the profile directory.
  The Mozilla directory must be set in the root PATH environment variable. If a previous version of Mozilla has not been uninstalled, the Mozilla directory must be set at the beginning of the PATH variable.
- Management Server Add-ons are to be installed on the server dedicated to management.
- Acrobat Reader is required to view PDF versions of the NovaScale Master documentation.
- The free Server Add-ons are present on the NovaScale Master CD-ROM, the others must be supplied by your Bull contact.

2.3.2 Installing Free Management Server Add-ons from the CD-ROM

Management Server Add-ons, to be installed on the server dedicated to management, require the components indicated in 2.1.4 *Installation Requirements*, and must be installed from the CD-ROM.

To install **Management Server Add-ons** from the CD-ROM:

1. From the dedicated server, launch the installation program.
2. Log on as **root**.
3. Insert the NovaScale Master CD-ROM in the drive.
   The CD-ROM filesystem is automatically mounted to one of the following directories:
   /mnt/cdrom or **/mnt/dvd** (Red Hat and Advanced Server distributions)
   /media/cdrom or **/media/dvd** (SuSE distribution).
4. Launch the following commands:
   ```
   cd <CD-ROM mount point>
   ./install.sh
   ```

The **install.sh** script automatically launches the Mozilla or Mozilla Firefox browser and opens the **Welcome** page.

Figure 2-3. Linux Installation - NovaScale Master Welcome Page

5. Click **Install Now** to open the **Install** page, which allows the selection of the required NovaScale Master component:

   – Management Server Add-ons

   and provides the following information:

   – What to install?

   – What to do now?

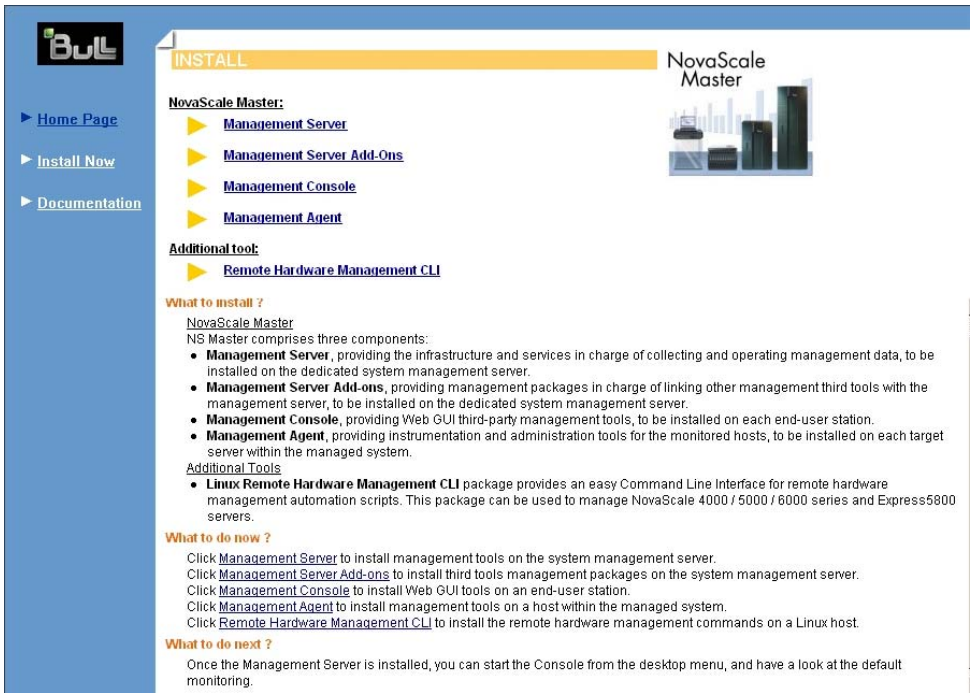


Figure 2-4. Linux Installation - Selecting NovaScale Master Components

6. Select Install Management Server Add-ons.

7. Select the **Linux 32 bits** or **Linux 64 bits** operating system according to server type.

8. Install the selected **NovaScale Master Server Add-ons** packages as described below.

```
cd <CD-ROM mount point>/product/mgtpack/NSMaster<toolname>/linux
rpm –Uhv NSMaster<toolname>-5.1-x.noarch.rpm
```

2.3.3 Installing Payable Management Server Add-ons Packages

These are RPM packages. To install a package just launch it from any logical device:

```
rpm -Uhv NSMaster<tiercetool>-5.2-x.noarch.rpm
```

2.3.4 Uninstalling NovaScale Master Server Add-on Components

1. Log on as **root**.

2. Launch the command:

```
rpm -e NSMaster<tiercetool>-5.2-x.noarch.rpm
```

2.3.5 Upgrading to a new NovaScale Master Server Add-ons Version

When upgrading to a new NovaScale Master Server Add-ons version, the existing NovaScale Master Add-ons environment that may have been customized is maintained.

NovaScale Master Add-ons are upgraded via the standard rpm installation command:

```
rpm –Uhv NSMaster<toolname>-5.2-x.noarch.rpm
```

☞ **Note:**
When you upgrade the NovaScale Master Management Server, you MUST upgrade previous release installed server add-ons to benefit from new improvements.

See the *Release Notes* for more details about specific add-on migration, where applicable.

2.4 Monitoring Configuration

Configuring NovaScale Master Monitoring consists mainly in specifying the parameters required for monitoring tasks. Most configuration tasks are performed via the NovaScale Master Configuration GUI (Graphical User Interface).

NovaScale Master Server Add-ons extend the Monitoring configuration default rules the Administrator can customize. New monitoring categories and services are provided.

2.4.1 Configuration GUI

NovaScale Master provides a GUI to perform the main configuration tasks.

Starting the Configuration GUI

To start the Configuration GUI, either:

- From the NovaScale Master Console, click the  icon representing the Configuration GUI in the Administration zone (top right)
- Or click the **Configuration** link on the NovaScale Master Home Page, URL: **http://<NovaScale Master server name>/NSMaster**
- Or, from a WEB browser, go to the following URL: **http://<NovaScale Master server name>/NSMaster/config/**

2.4.2 Categories and Services

NovaScale Master Server Add-ons delivers more default monitoring categories and services. These categories and services depend on the Operating System running on the host:

- services for Windows hosts will be applied to all hosts with a Windows operating system,
- services for Linux hosts will be applied to all hosts with a Linux operating system,
- services for hosts, independently of the Operating System, will be applied to all hosts.

The administrator can change the default-monitoring configuration by:

- **customizing services**, to define specific thresholds and monitoring properties or to modify the list of monitored hosts. A service can be customized to create one or more occurrences of this service with the same name. Each occurrence can have a different host list and different monitoring properties. For instance, if you do not want to monitor file systems in the same way on all Linux hosts, customize the **All** service in the **FileSystems** category.

☞ **Note:**
The Administrator CANNOT modify the OS and/or model type of these monitoring services and categories, as internal tool semantic checks may reject such modifications.

- **cloning services**, to define new monitored elements. One or more services are created, with different names from the original names. All properties can be edited except the check command. For instance, to monitor a specific logical drive on a Windows system, clone the C service and modify the check command parameters,
- **customizing categories**, to restrict monitoring a whole category to a list of hosts,
- **creating a category**, to assign a set of cloned services to this category.

See the *NovaScale Master Administrator's Guide* for more details about configuration.

Chapter 3. NovaScale Master Server Add-ons Description

NovaScale Master Server Add-ons provides different functional items for each Management Package.

3.1 Internal Storage (Free)

3.1.1 NSMasterGAMTT for LSI MegaRAID 320-2x Management

GAMTT (or **GAM**) is the LSI tool used to survey, configure and control RAID provided by LSI MegaRAID Ultra320 SCSI cards.

See http://www.lsilogic.com/products/megaraid/index.html for more information or to download the GAMTT install package.

☞ **Note:**
This tool runs on NovaScale machines under Linux or Windows.

The corresponding NovaScale Master Add-on creates monitoring links between NovaScale Master and the **GAM** SNMP agent.

The following figure shows the different monitoring components:

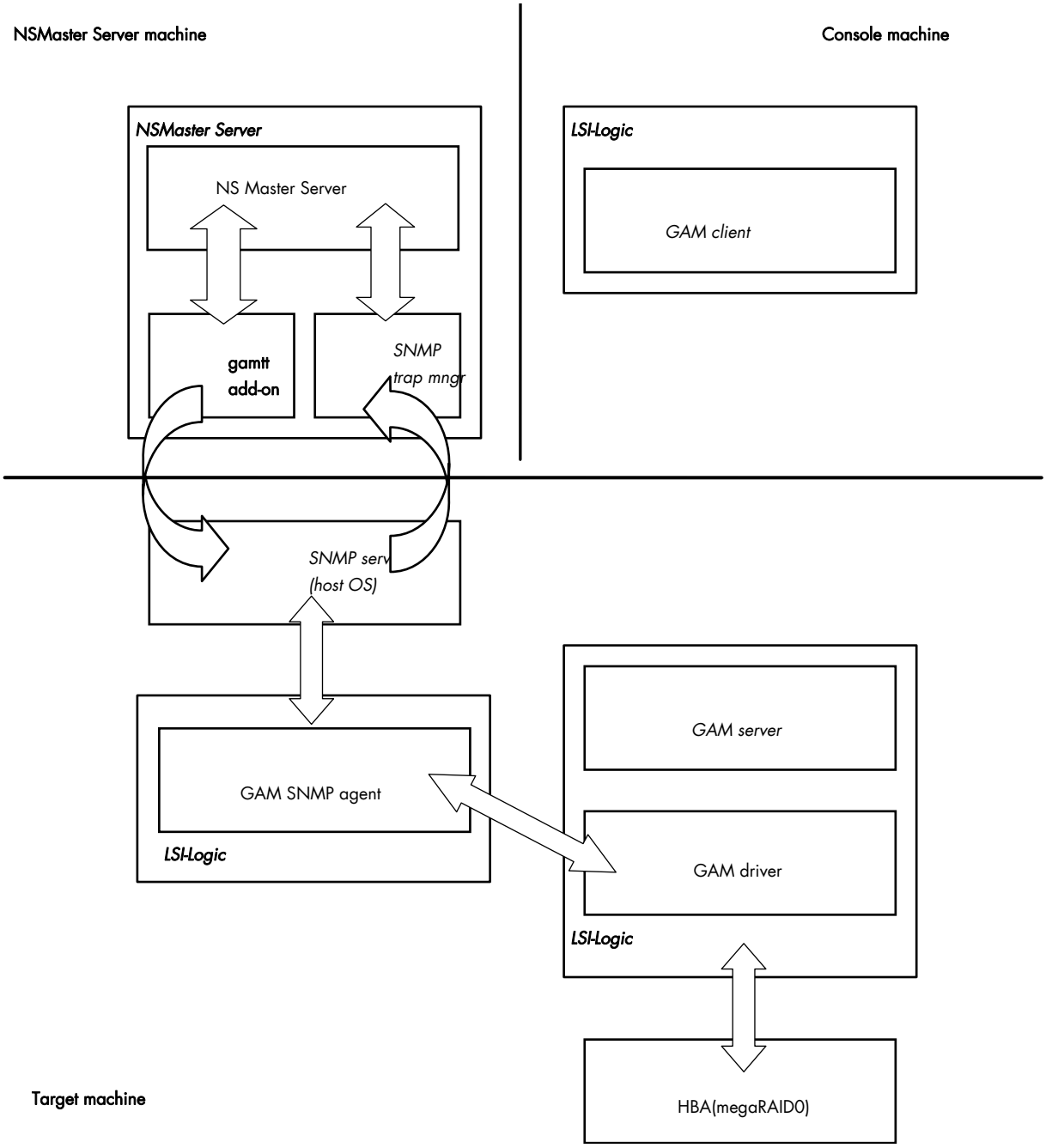


Figure 3-1. GAM Monitoring Components

3.1.1.1 Default Categories & Services (independent of OS type)

Targeted OS	Model	Category	Service	Check command
Any	any	GAMTTraid	Status	Check_gamttRAID
			Alerts	No check (SNMP trap receiver)

Table 3-1. GAMTT monitoring services

Notes:

- This category is based on the GAMTT management product from LSI. This tool and especially its SNMP interface is a requirement for the following GAMTTraid monitoring services. Check that this tool works on the targeted OS, if you want to monitor with it in NOVASCALE Master.
- The previous " MegaRAID" category (NOVASCALE Master release 4.0) is based on PowerConsolePlus management product from LSI. These two management products are functionally redundant but not compatible. So you need to replace the "MegaRAID" category and its services by "GAMTTraid" category and services, if you replace PowerConsolePlus by GAMTT.

3.1.1.2 GAMTTraid Category

Status — For NovaScale and Express5800 hosts with an LSI (or Mylex) SCSI RAID card managed by GAMTT (or GAM) management tool. This service checks the Host RAID status reported by the associated GAMTT SNMP agent.

Alerts — For NovaScale and Express5800 hosts. When an alert is sent from the GAMTT SNMP agent, it is processed by the NovaScale Master server. **Note:** The **mlxraid.mib** mib is integrated in the NovaScale Master application.

Note:

Do not forget to configure the agent to send SNMP traps to the NovaScale Master server by adding the NovaScale Master server host address to the SNMP managers list of this agent.

3.1.1.3 check_gamttRAID (any OS) Nagios command

The configurable NovaScale Master service check command syntax is:

```
check_gamttRAID!<community>!<port>!<timeout>!{ [-A {ALL|<Ct>}] |
[-P {ALL|<Ct>.<Ch>.<Tg>}] | [-L {ALL|<Ct>.<Ldn>}] }
```

Input

<community>	SNMP community string (defaults to "public")
<port>	SNMP port (defaults to 161)
<timeout>	Seconds before timing out (defaults to Nagios timeout value)

-A, –adapter ALL | <Ct>	Controller board
-P, –physical ALL | <Ct>.<Ch>.<Tg>	Physical device addr
-L, –logical ALL | <Ct>.<Ldn>	Logical drive addr

Output

See the output of the **check_gamttRAID** command in Appendix A.

Default syntax for "GAMTTraid.Status"

```
check_gamttRAID!public!161!60!-A ALL
```

3.1.2 NSMasterLSICIM for LSI 22320 Chip Management

LSI CIM is the LSI tool used to survey, configure and control RAID provided by LSI MegaRAID 22320 SCSI cards.

See http://www.lsilogic.com/products/megaraid/index.html for more information or to download the LSI CIM install package.

☞ **Note:**
This tool runs on NovaScale machines under Linux or Windows.

The corresponding NovaScale Master Add-on creates monitoring links between NovaScale Master and the **LSI CIM** provider.

The following figure shows the different monitoring components:

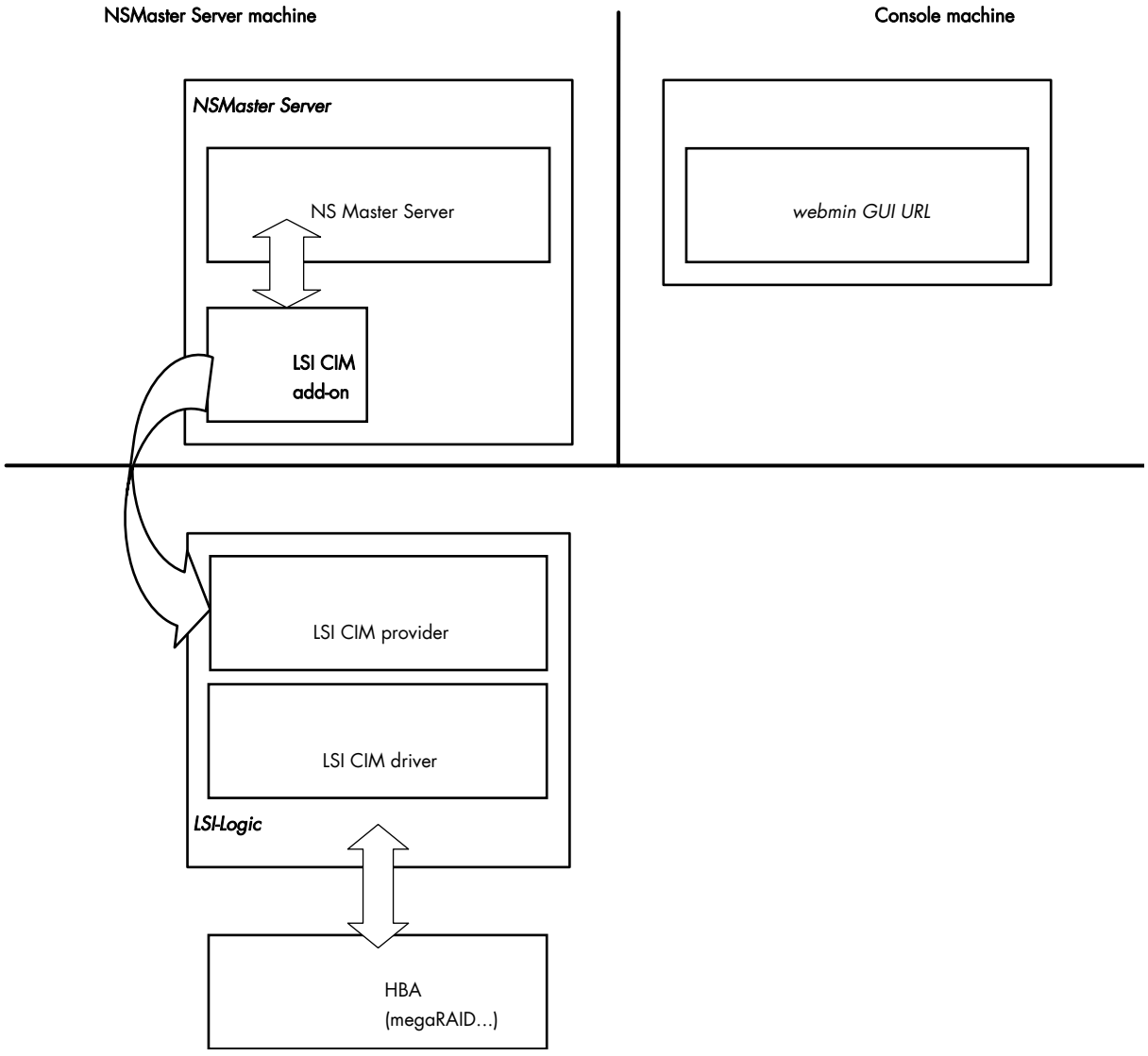


Figure 3-2. LSI CIM Monitoring Components

3.1.2.1 Default Categories & Services (independent of OS type)

Targeted OS	Model	Category	Service	Check command
Any	Any	LsiCIM	RAIDStatus	check_LSICIM
			CTRLstatus	check_LSICIM_ctrl

Table 3-2. LSI CIM monitoring services

☞ Note:
This category is based on the LSI CIM management product. This tool is a requirement for the following LsiCIM monitoring services. Check that this tool works on the targeted OS, if you want to monitor with it in NovaScale Master.

LsiCIM Category

RAIDstatus For NovaScale and Express5800 hosts with an LSI SCSI RAID card managed by the LSI CIM management tool. This service checks the Host RAID status reported by the associated LSI CIM provider.

CTRLstatus For NovaScale and Express5800 hosts with an LSI SCSI RAID card managed by the LSI CIM management tool. This service checks the status of a specific RAID SCSI controller reported by the associated LSI CIM provider.

3.1.2.2 check_LSICIM (any OS) Nagios command

The configurable NovaScale Master service check command syntax is:

```
check_LSICIM
```

Input
N/A

Output

See the output of the **check_LSICIM** shell command in Appendix A.

Default syntax for "LsiCIM.CTRLstatus"

```
check_LSICIM
```

3.1.2.3 check_LSICIM_ctrl (any OS) Nagios command

The configurable NovaScale Master service check command syntax is:

```
check_LSICIM_ctrl![<ctrlname>]
```

Input

<ctrlname> Name of the controller to check

☞ **Note:**
The name of the controller must be protected with a quote if the name contains blank characters.

Output

See the output of the **check_LSICIM** shell command in Appendix A.

Default syntax for "LsiCIM.CTRLstatus" is inactive:

```
check_LSICIM!'ctrlname'
```

3.1.3 NSMasterMegaRaidSAS (LSI MegaRAID SAS (IR) Management)

The corresponding NovaScale Master Add-on creates monitoring links between NovaScale Master and the LSI MegaRAID SAS(IR) SNMP agent.

It supports the adapters from MegaRAID SAS/SATA Value and Feature Line and the LSI SAS ICs 1064, 1068 and 1078.

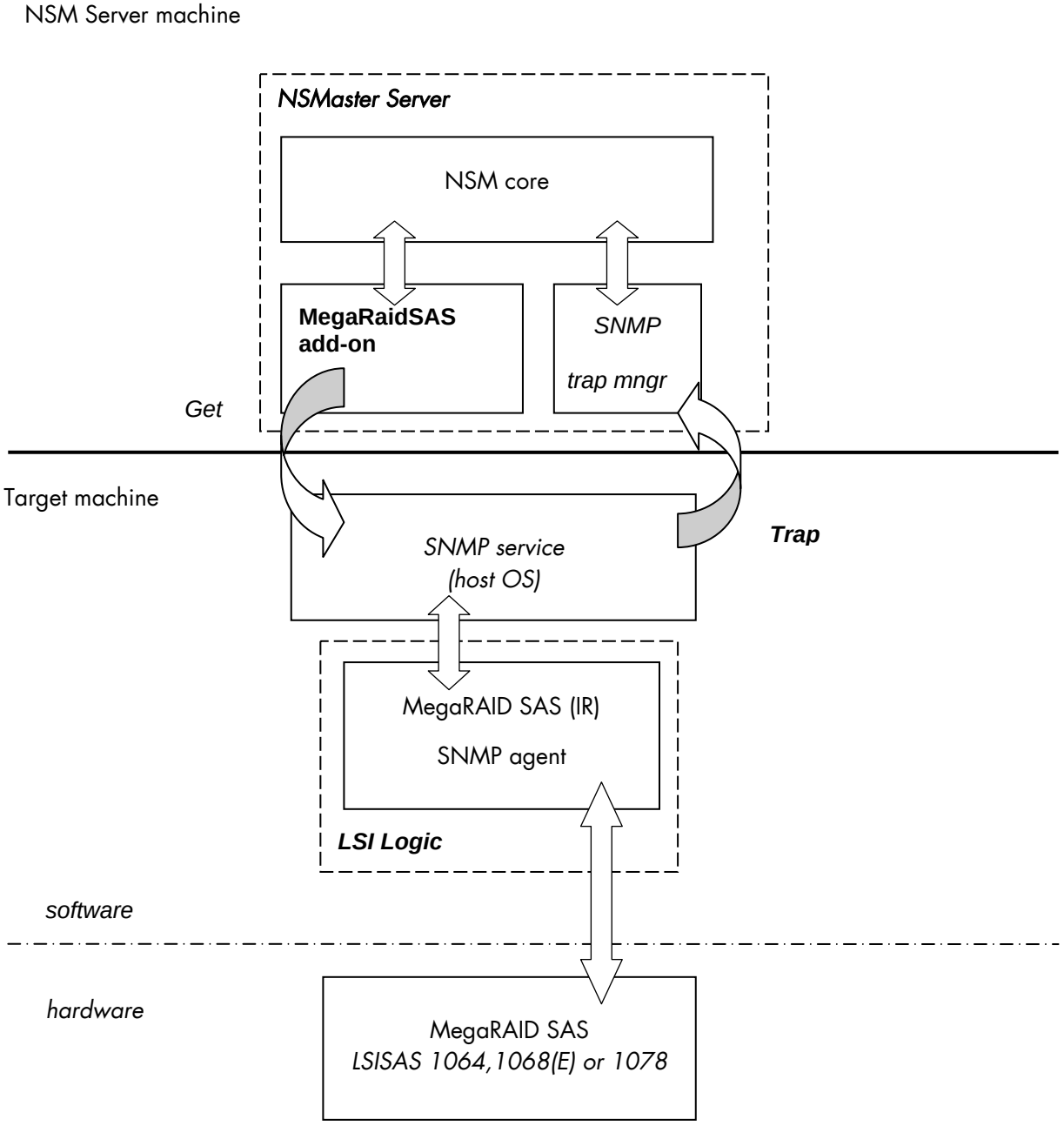


Figure 3-3. MegaRAID SAS Monitoring Components

3.1.3.1 Default Categories & Services (independent of OS type)

Targeted OS	Model	Category	Service	Check command
Any	Any	MegaRaidSAS	Status	check_MegaRAIDSAS
			Alerts	No check (SNMP trap receiver)
Any	Any	MegaRaidSAS_IR	Status	check_MegaRAIDSAS_IR
			Alerts	No check (SNMP trap receiver)

Table 3-3. MegaRaid SAS (IR) monitoring services

☞ Note:
This category is based on the MegaRAID SAS (IR) SNMP agent. This SNMP interface is a requirement for the following MegaRaidSAS(-IR) monitoring services.

3.1.3.2 MegaRaidSAS(_IR) Category

Status For NovaScale hosts with a MegaRAID SAS card or an integrated LSI SAS chip managed by MegaRAID Storage Management tool. This service checks the MegaRAID SAS (IR) status reported by the MegaRAID SAS (IR) SNMP agent.

Alerts For NovaScale hosts with a MegaRAID SAS card or an integrated LSI SAS chip. When an alert is sent from the MegaRAID SAS (IR) SNMP agent, it is processed by the NovaScale Master Server.

☞ Note:
The lsi-adaptersas(ir).mib mib is integrated in the NovaScale Master application.

☞ Note:
Do not forget to configure the MegaRAID SAS (IR) SNMP agent to send SNMP traps to the NovaScale Master Server by adding the NovaScale Master Server host address to the agent's SNMP managers list.

3.1.3.3 check_MegaRaidSAS(_IR) (any OS) Nagios command

The configurable NovaScale Master service check command syntax is:

```
check_MegaRaidSAS(_IR)!<community>!<port>!<timeout>
```

See the **check_** `MegaRaidSAS(_IR)` command in Appendix A for parameters details.

Default syntax for "MegaRaidSAS(_IR).Status" is:

```
check_ MegaRaidSAS(_IR)!public!161!60
```

3.2 External Storage Server Add-ons

3.2.1 NSMasterStoreWayFDA (StoreWay FDA Management)

The corresponding NovaScale Master Add-on creates monitoring links between NovaScale Master and the StoreWay FDA SNMP agent and WEB GUI.

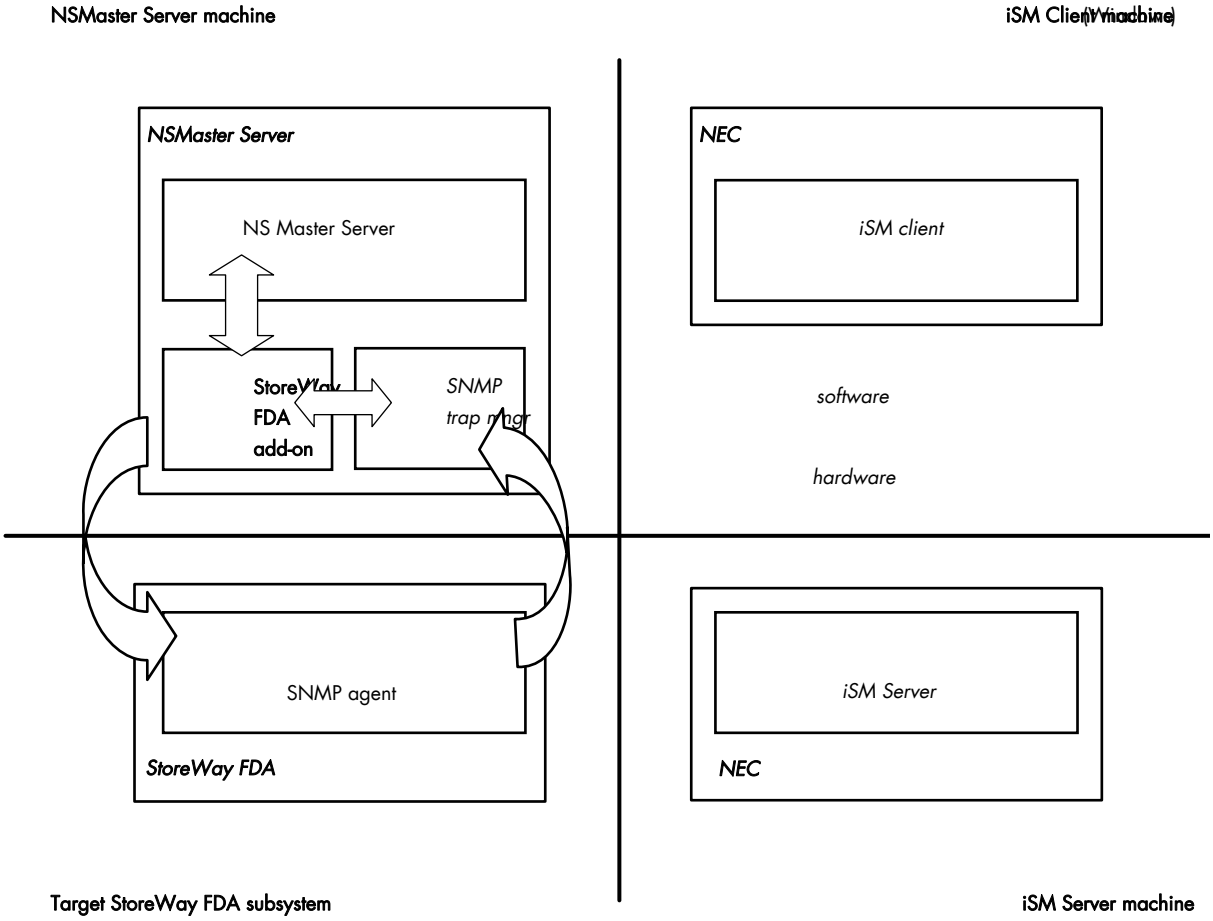


Figure 3-4. StoreWay FDA Monitoring Components

3.2.1.1 Default Categories & Services (independent of OS type)

Targeted OS	Model	Category	Service	Check command
Any	BayStoreWay FDA	StoreWayFDA	Status	check_NECFDA
			Alerts	No check (SNMP trap receiver)

Table 3-4. StoreWay FDA monitoring services

☞ Note:
This category is based on the StoreWay FDA SNMP agent. This SNMP interface is a requirement for the following StoreWayFDA monitoring services.

3.2.1.2 StoreWayFDA Category

Status For StoreWay FDA hosts managed via its SNMP agent. This service checks the StoreWay FDA status reported by the SNMP agent.

Alerts For StoreWay FDA hosts. When an alert is sent from the StoreWay FDA SNMP agent, it is processed by the NovaScale Master Server.

☞ Note:
The **Armg2_4.mib** mib is integrated in the NovaScale Master application.

☞ Note:
Do not forget to configure the StoreWay FDA agent to send SNMP traps to the NovaScale Master Server by adding the NovaScale Master Server host address to the agent's SNMP managers list.

3.2.1.3 check_NECFDA (any OS) Nagios command

The configurable NovaScale Master service check command syntax is:

```
check_storewayfda!<community>!<port>!<timeout>
```

See the **check_NECFDA** command in Appendix A for parameters details.

Default syntax for "StoreWayFDA.Status" is:

```
check_necfda!public!161!60
```

3.2.1.4 NovaScale Master Configuration

StoreWayFDA configuration for NovaScale Master is available from the configuration GUI by selecting **Topology** → **StoreWay** → **StoreWayFDAs**.

To edit a StoreWay FDA, select **Edit**.

To define a new StoreWay FDA in the NovaScale Master configuration database, click the **New StoreWay FDA** button and initialize the following attributes:

StoreWay FDA name	name of the StoreWay FDA
description	description
network name	bay netname
snmp port number	SNMP port number
snmp community	SNMP community

3.3 Virtualization Server Add-ons

3.3.1 Overview

The NovaScale Master Server Virtualization Add-ons deliver an optional management package to manage virtual machines. A virtualization Add-on can provide:

- Supervision features to detect abnormalities and notify them to defined entities,
- Administration features to perform actions on elements.

3.3.1.1 Definitions

Virtualization Add-ons use specific topology elements:

- **Native Operating System** (Native OS):
  the virtualization layer installed on a physical machine that hosts virtual machines. It is represented by a NovaScale Master host with a specific OS (specified by the Add-on).
- **Virtual Machine** (VM):
  a machine that is hosted by a native OS. It is represented by a NovaScale Master host with a specific model (specified by the Add-on).
- **Virtual Platform**:
  the set of virtual machines and native OS deployed on a physical machine.
- **Virtual Manager**:
  the interface used to manage the virtual elements.

3.3.1.2 Topology Representation

The elements of a virtual platform are displayed in the NovaScale Master Console views.

To load a specific view, select **File** → **Load** → **SystemMgt** → ***view name***

Or, if already loaded, switch from one view to another by selecting **Views** → **view name**

- From the **Hosts** view, only the native OS and VM hosts are displayed. VM hosts are represented with the specific icon  .
- From the **Virtual Managers** view, the virtual platform is displayed as shown in the following figure:

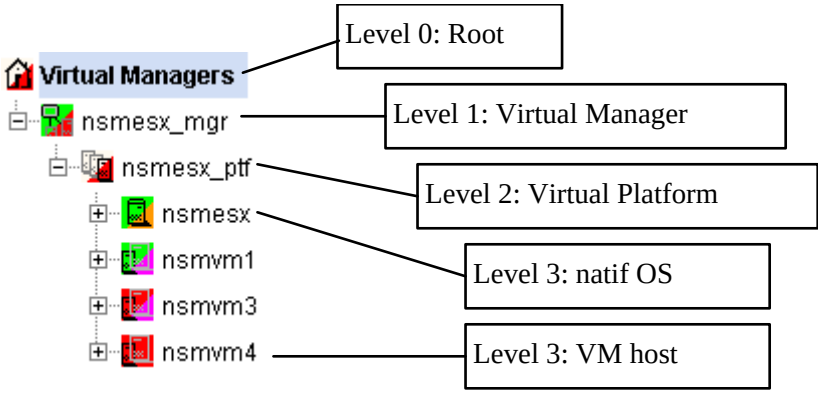


Figure 3-5. Virtual Managers view

Under the root node, the first node is the Virtual Manager that administrates the Virtual Platform. The Virtual Platform contains the native host and the VM hosts.
When you select a node, information about the elements are displayed in the Application pane.

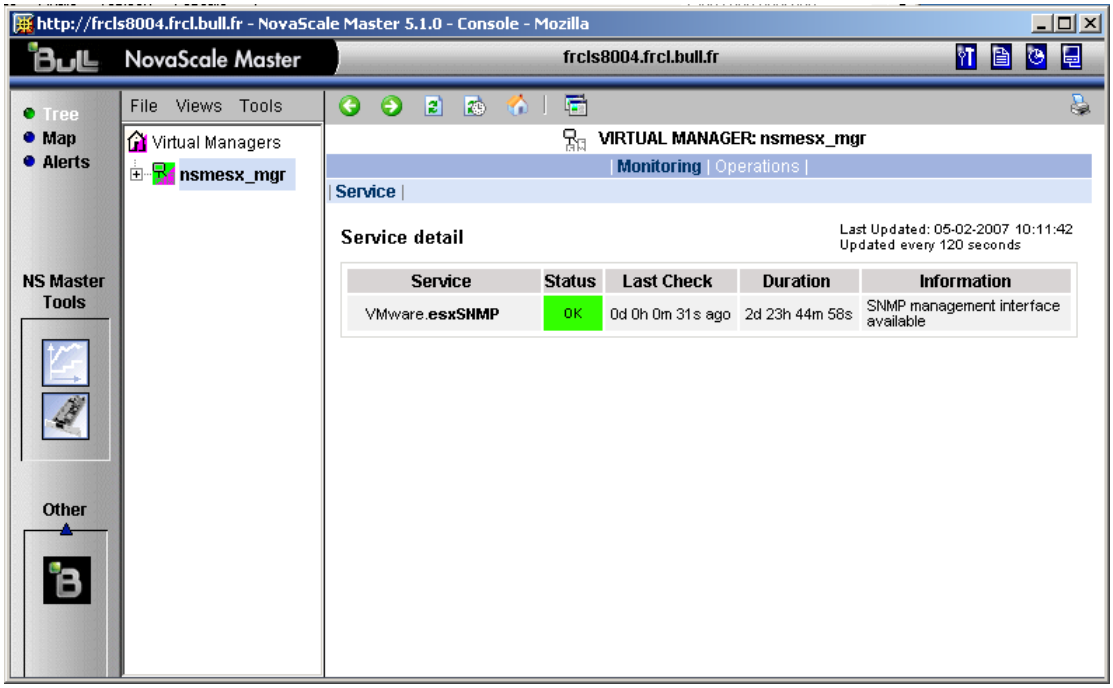


Figure 3-6. Virtual Manager information pane

3.3.2 NSMasterVMwareESX for "VMware ESX" Management

3.3.2.1 Overview

The **VMware ESX** server is a virtualization layer that abstracts processor, memory, storage and networking resources into multiple virtual machines.
The VMwareESX Add-on provides functional links to manage the virtual machines hosted by the ESX server.

Note: The link is functional only with the version 3 of the ESX server.

The VMwareESX Add-on retrieves VM and native OS monitoring information via the VMware Service Console SNMP interface and allows the Web Virtual Interface to be launched from the NovaScale Master Console.

The following figure shows the link between each component:

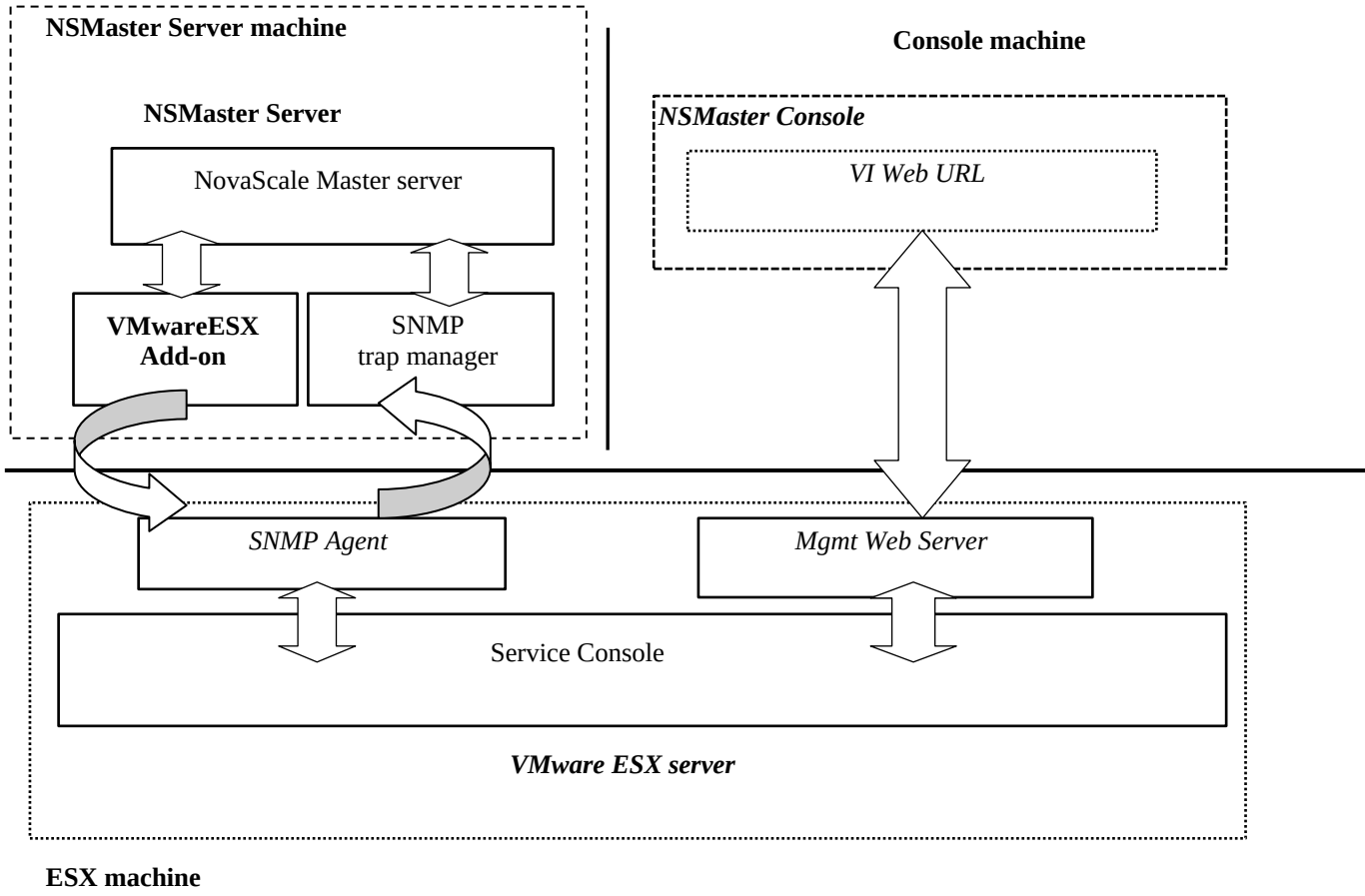


Figure 3-7. VMwareESX Add-on components

Note:
The SNMP agent of the ESX server must be configured to receive SNMP requests from and to send traps to the NovaScale Master Server. Web access requires specific configuration of the Web client. For detailed information about these procedures, see the VMware Infrastructure documentations available at **http://www.vmware.com/support/pubs/vi_pubs.html**.

3.3.2.2 NovaScale Master Configuration

To configure the monitoring elements for the VMwareESX Add-on, you have to define an ESX Virtual Platform from the NovaScale Master Configuration GUI. Native OS, VMs, related monitoring services and reporting indicators are defined in one easy step.
The native OS is represented by a NSMaster host with the OS: **ESX**.
VMs are represented by a NSMaster host with the model: **VMware**.

3.3.2.2.1 ESX Virtual Platform

To configure an ESX Virtual Platform, click the **VMware ESX** link in the Virtualization part of the Topology domain. The list of all configured platforms appears, as in the following example:

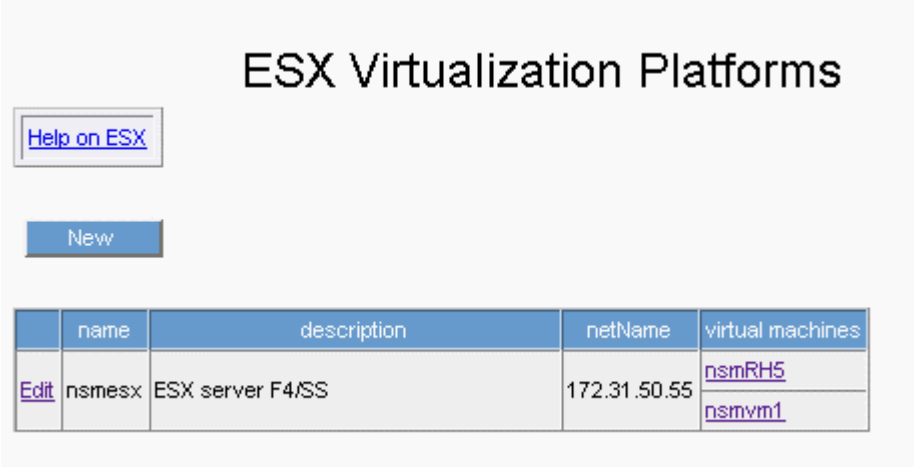


Figure 3-8. ESX Virtual Platforms page

It is possible:

- To create a new ESX Virtual Platform using the **New** button
- To edit or delete a resource using the **Edit** link
- To edit a virtual machine using the **<hostname>** link.

When you click the **New** button, the following display appears with all resource properties:

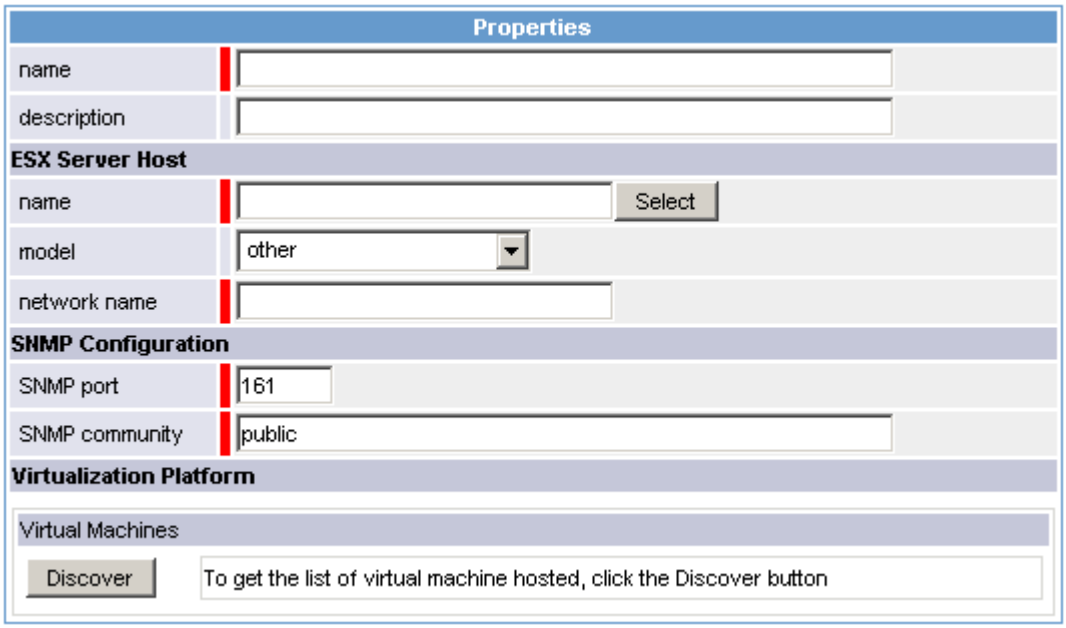


Figure 3-9. ESX Platform Properties

Besides the characteristics (name and description) of the main object, the properties of an ESX virtual platform are divided into three-parts:

- **ESX Server Host**: used to define the physical machine and the native OS.

- **SNMP Configuration**: used to configure SNMP interface data.
- **Virtualization Platform**: used to describe the Vmware ESX platform virtual machine.

ESX Server Host Properties

name	ESX host short name. This name is displayed in the NovaScale Master Console views. Click **Select** to choose a defined host from the NSMaster host list.
model	Host model (see the *NovaScale Master Administrator's Guide* for values).
network name	ESX host network name (hostname or IP address).

SNMP Configuration Properties

SNMP port	SNMP agent port.
SNMP configuration	SNMP agent community.

Virtualization Platform Properties

Virtual Machines	List of the VMs established by selecting the VMs obtained by requests to the ESX server SNMP agent. The request is performed by clicking the **Discover** button (or-**Re-discover** if in edition mode). See below the complete description of the procedure.

Virtual Machines Discovery

The result of the discovery is displayed as a table composed of three parts:

- the left column allows you to select the VMs to be associated to the platform
- the center part displays Virtual Machine Configuration as defined on the VMware ESX server
- the right part allows you to edit the main properties (name, network name and OS) of the corresponding NSMaster host. The host can be edited only if the corresponding VM is selected. You can select an already defined host by clicking the **Select** button or you can create a host by completing the corresponding fields.

☞ **Note:**
When you select an already defined host, you cannot change its network name and OS. But the Select contains a Default Option corresponding to the VM name, that can be edited. If the VM name contains space(s), they are replaced by underscore(s) in the host label.

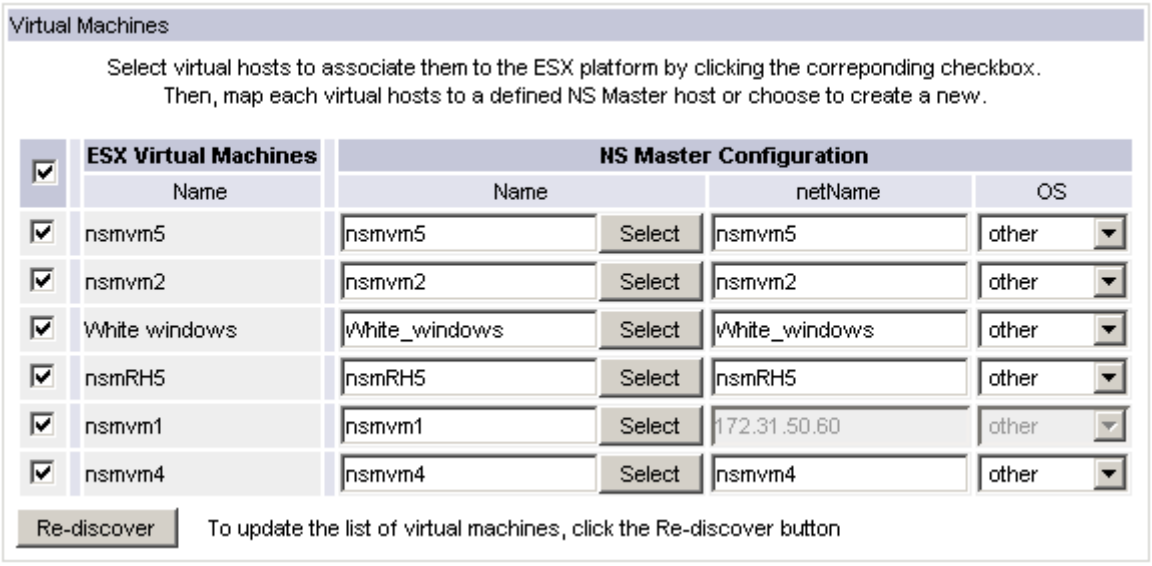


Figure 3-10. ESX Virtual Machines pane

Virtual Machines Re-Discovery

Re-Discovery is required to check that the current NSMaster configuration still matches the VMware ESX configuration in order to:

- Add virtual machine not yet registered in the VMware ESX Virtualization Platform
- Remove virtual machine no more defined in the VMware ESX configuration.

During the Re-discovery step, if the current configuration is not compatible with VMware ESX configuration, the invalid VMs are displayed in red and the VMs not referenced in the current NSMaster configuration are displayed in green.

VMs no longer defined in Vmware ESX are automatically unchecked and will be removed from the platform on form validation. New VMs must be explicitly checked for being added in the platform to be linked to the platform on form validation.

☞ **Note:**
How to Add, Delete or Modify Virtual Machine is detailed in 3.3.2.2.2 *Virtual Machine Edition*, on page 31.

After edition:

- Click the **OK** button to validate your edition
- Or click **Cancel** to return to Virtual Platforms pages without changes
- Or click **Delete** to remove the Virtual Platform and maintain the hosts corresponding to the VMs and the VMware ESX server
- Or click **DeleteAll** to remove the Virtual Platform and the hosts corresponding to the VMs and the VMwareESX server.

☞ **Note:**
Edition with a **Topology modification** requires confirmation: a page listing all modifications to be applied to the Topology configuration is displayed, as shown in the following figure.

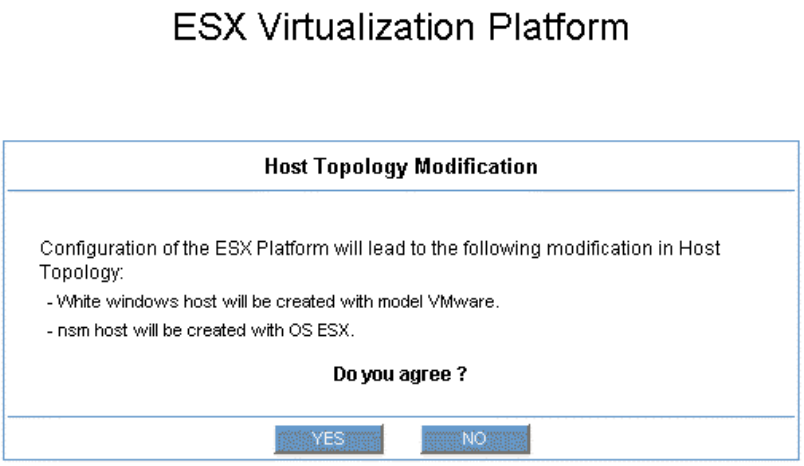


Figure 3-11. Host Topology modification confirmation

If you do not agree, click the **NO** button to return to the platform edition page, otherwise click the **YES** button to create the virtual platform.

Related ESX Virtualization platform Objects

When an ESX Virtualization platform is defined, related objects are automatically generated to configure the specific Supervision linked to this type of NovaScale server. The following table describes the objects generated during the creation of the platform.

Type	Description
host VMware	As defined in the Virtual Machine configuration part of the edition page.
host ESX	Host corresponding to the virtualization layer, as defined in the ESX server Host configuration part.
hostgroup	hostgroup representing the physical platform, named <platformName>.
manager	Virtualization manager representing the management interface, named < platformName>_mgr.
categories and services	The VMwareESX category and related services are instantiated for the ESX host. The VirtualMachine category and related services are instantiated for each VMware host.

3.3.2.2.2 Virtual Machine Edition

A virtual machine is represented by a host linked to the VMware ESX Virtualization platform. It has properties linked to the platform and properties of a host object.

Add, remove or modification of properties linked to the platform must be done from the VMware Virtualization platform edition page.

Modification of host properties must be done from the Host edition page.

Add a virtual machine to a platform

Adding a virtual machine is performed by checking the corresponding line in Virtual Machines part of the platform edition form and setting the host characteristics in NSMaster Configuration table zone (by filling in the corresponding fields or by selecting an already defined host).

☞ Note:
When you edit a Virtualization platform, only the Virtual Machines defined as part of the NovaScale Master platform are displayed. To add a virtual machine, you must perform a Re-discovery to get the list of all machines defined on the Virtualization Server.

Remove a virtual machine from a platform

Removing a virtual machine is performed by unchecking the corresponding line in the Virtual Machines part of the platform.

☞ Note:
The corresponding host remains in the NovaScale Master definition with model set to 'other'. To delete it, click the **Other Hosts** link to get the list of all Other Hosts configured, edit the corresponding host and click the **Delete** button.

Modify a virtual machine defined in a platform

To modify the name of the NSMaster host corresponding to a virtual machine, enter the new name in the corresponding field or choose it in the list of already defined hosts in NovaScale Master by clicking the **Select** button.

To modify other characteristics as netName or OS, the Host edition form must be used.

☞ Note:
To get the Host edition form corresponding to the virtual machine, click the **Hostname** link displayed in the global platforms page.

Delete all virtual machines and corresponding hosts.

To delete all virtual machines and corresponding hosts, use the **DeleteAll** button of the Virtualization Platform Edition form. Beware: the virtualization server and the platform will be also deleted from the NovaScale Master configuration.

3.3.2.2.3 Virtualization Supervision

As specified above, services are instantiated for each host defined in the Virtualization Platform. You can disable virtualization supervision by editing the hostgroup or manager properties or by editing each service (refer to the *NovaScale Administration Guide* for details).

Monitoring Services

Monitoring services defined for the native OS are associated with the **VMwareESX** category.

Services Applied to the Native OS

Service	Description	Check_command
Status	Checks ESX server status	check_esx_server
SNMP	Checks the ESX SNMP interface	check_esx_snmp
Memory	Checks ESX memory avaibility	check_esx_mem
Alerts	Processes alerts received from the ESX SNMP agent	none (SNMP Trap receiver)

Monitoring services defined for VM hosts are associated with the **VirtualMachine** category.

Services Applied to the VM Host

Service	Description	Check_command
Status	Checks VM status	check_esx_vm
CPU	Checks VM CPU usage	check_esx_vm_cpu
Memory	Checks VM memory avaibility	check_esx_vm_mem

Monitoring services related to Virtual Platform elements are automatically created during the edition of the ESX Virtual Platform. Theses services can be displayed and edited from the Services page in the Supervision domain, but only attributes related to monitoring or notification can be edited.

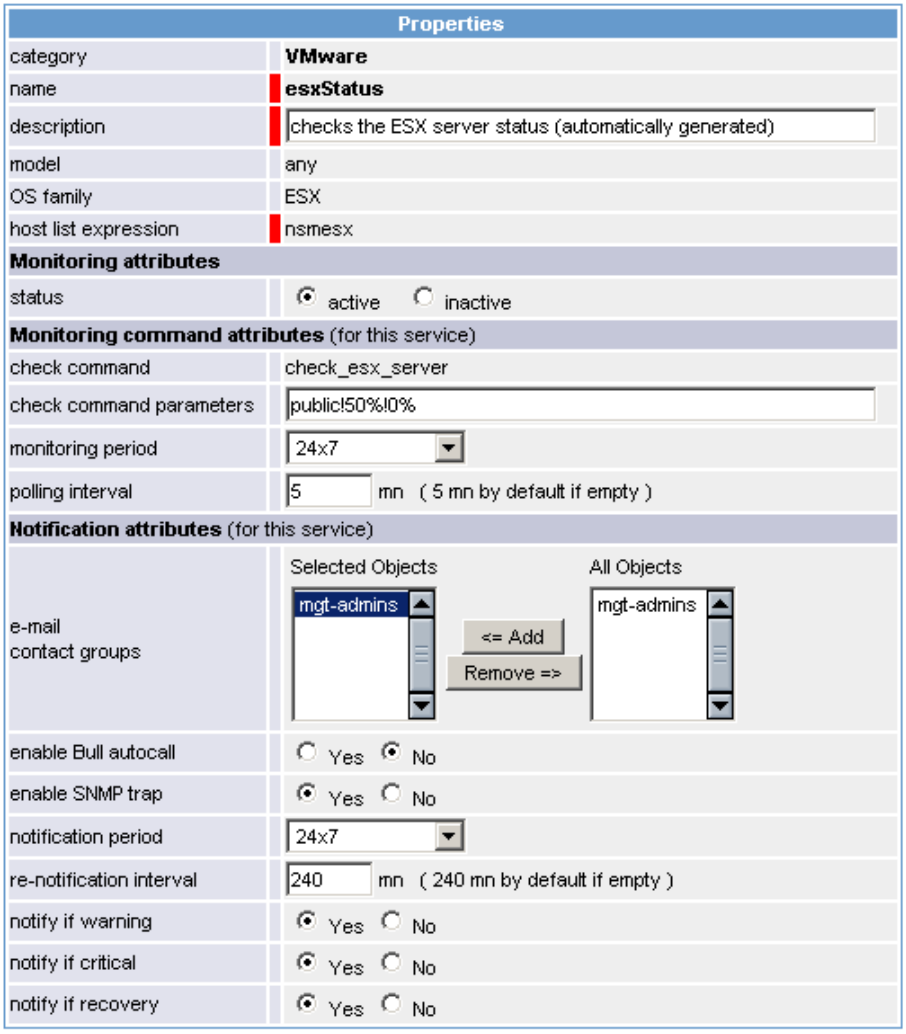


Figure 3-12. VMware category properties pane

Note:
During ESX Platform definition, all services are defined and activated for the ESX server and for each VM. To deactivate the monitoring of one service, set **status** (Monitoring attributes part) to inactive.

3.3.2.3 Nagios Check Commands

check_esx_server

The configurable NovaScale Master service check command syntax is:

`check_esx_server!<snmp_community>!<wThres>%!<cThres>%`

See the **check_esx3** command in Appendix A for parameters details.

check_esx_snmp

The configurable NovaScale Master service check command syntax is:

```
check_esx_snmp!<snmp_community>
```

See the **check_esx3** command in Appendix A for parameters details.

check_esx_mem

The configurable NovaScale Master service check command syntax is:

```
check_esx_mem!<snmp_community>!<wThres>!<cThres>
```

See the **check_esx3** command in Appendix A for parameters details.

check_esx_vm

The configurable NovaScale Master service check command syntax is:

```
check_esx_vm!<esx_server>!<snmp_community>!<vmname>
```

See the **check_esx3** command in Appendix A for parameters details.

check_esx_vm_memory

The configurable NovaScale Master service check command syntax is:

```
check_esx_vm!<esx_server>!<snmp_community>!<vmname><wThres>!<cThres>
```

See the **check_esx3** command in Appendix A for parameters details.

check_esx_vm_cpu

The configurable NovaScale Master service check command syntax is:

```
check_esx_cpu!<esx_server>!<snmp_community>!<vmname><wThres>!<cThres>
```

See the **check_esx3** command in Appendix A for parameters details.

3.3.2.4 Reporting Indicators

Reporting indicators are defined for VM hosts and for native OS. They get values from the corresponding monitoring services.

Indicators Applied to the Native OS

Indicator	Corresponding Service
<esx_server>_esxMemory	esxMemory

Indicators Applied to the VM Host

Indicator	Corresponding Service
<vm_host>_vmCPU	vmCPU
<vm_host>_vmMemory	vmMemory

Note:
During ESX Platform definition, all indicators are defined and activated for the ESX server and for each VM. To deactivate the reporting of one indicator, set to inactive. Beware, **if you deactivate the corresponding service, the indicator will no longer be collected**.

3.3.2.5 NovaScale Master Console

VMwareESX Operation

From the Virtual Manager or from any element of the Virtual Platform, you can launch the **Virtual Infrastructure Web Interface** by selecting the following cascading menu:

Operation → Application → VMware VI Web

VMwareESX Monitoring

From the platform or host elements, you can access monitoring information.
From the hosts element, you can display information related to associated services by selecting **Monitoring** menus.
From the platform element, you can display monitoring information related to all elements by selecting **Monitoring** menus. For instance, you can view all services of the hosts in the platform, as show in the following figure:

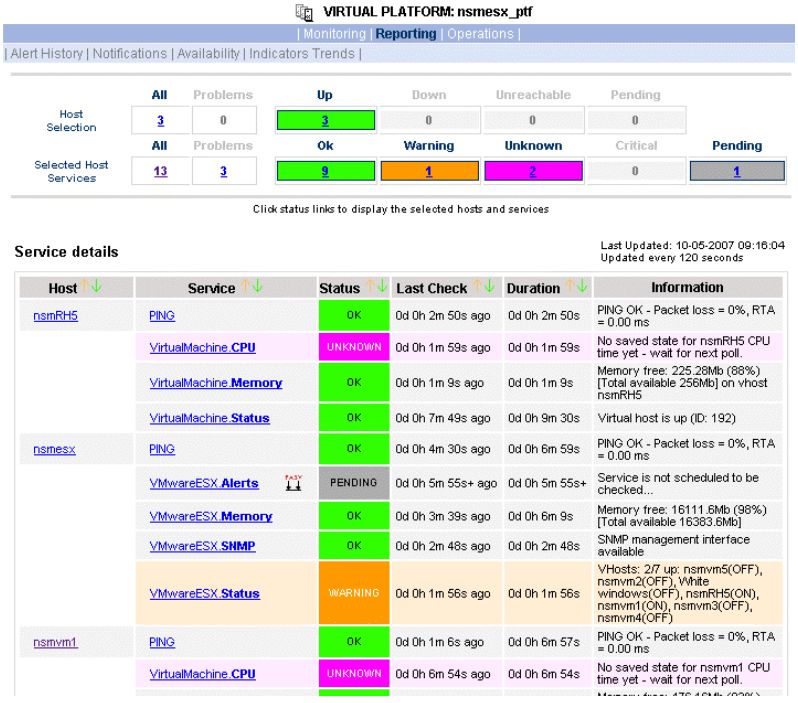


Figure 3-13. VMwareESX monitoring information

VMwareESX Reporting

From the platform or host elements, you can access reporting information by selecting **Indicators Trends** from the **Reporting** menu.

From the host element, you can display indicators related to this host as shown in the following figure:

Figure 3-14. VMwareESX reporting information

From the platform element, you can display indicators related to all platform elements.

3.3.3 NSMasterHyperNova for "HyperNova" Management

3.3.3.1 Overview

The HyperNova server is a virtualization layer that abstracts processor, memory, storage and networking resources into multiple virtual machines.
The HyperNova Add-on provides functional links to manage the virtual machines hosted by the HyperNova server, by requesting the administration tool, HyperNova Master (HN Master).

The following figure shows the link between each component:

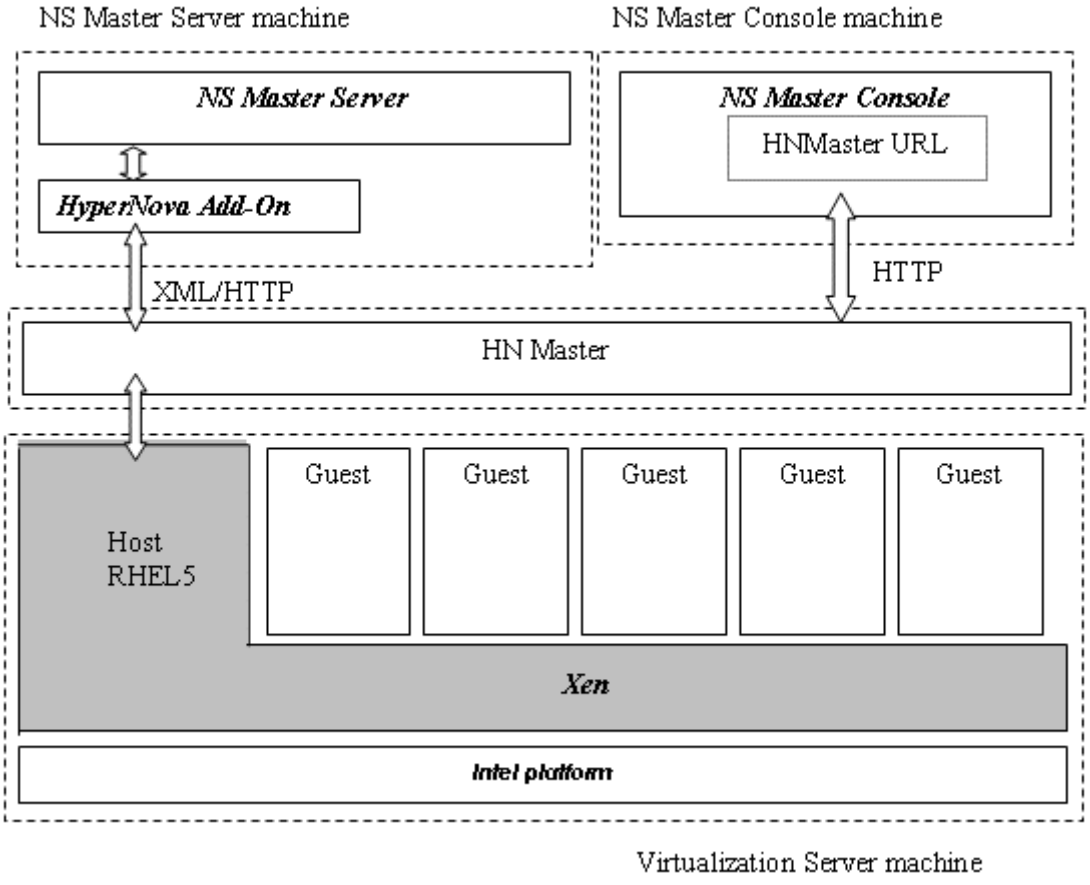


Figure 3-15. HyperNova Add-on components

3.3.3.2 NovaScale Master Configuration

To configure the monitoring elements for the HyperNova Add-on, you have to define an HyperNova Virtualization Platform from the NovaScale Master Configuration GUI. Native OS, VMs and related monitoring services are defined in one easy step.

The native OS is represented by a NSMaster host with the OS: **Xen**.

VMs are represented by a NSMaster host with the model: **HyperNova**.

3.3.3.2.1 HyperNova Virtualization Platform

To configure a HyperNova Virtualization Platform, click the **HyperNova** link in the Virtualization part of the Topology domain. The list of all configured platforms appears, as in the following example:

Figure 3-16. HyperNova Virtualization Platforms page

It is possible:

- To create a new HyperNova Virtualization Platform using the **New** button
- To edit or delete a resource using the **Edit** link
- To edit a virtual host using the **<hostname>** link.

When you click the **New** button, the following display appears with all resource properties:

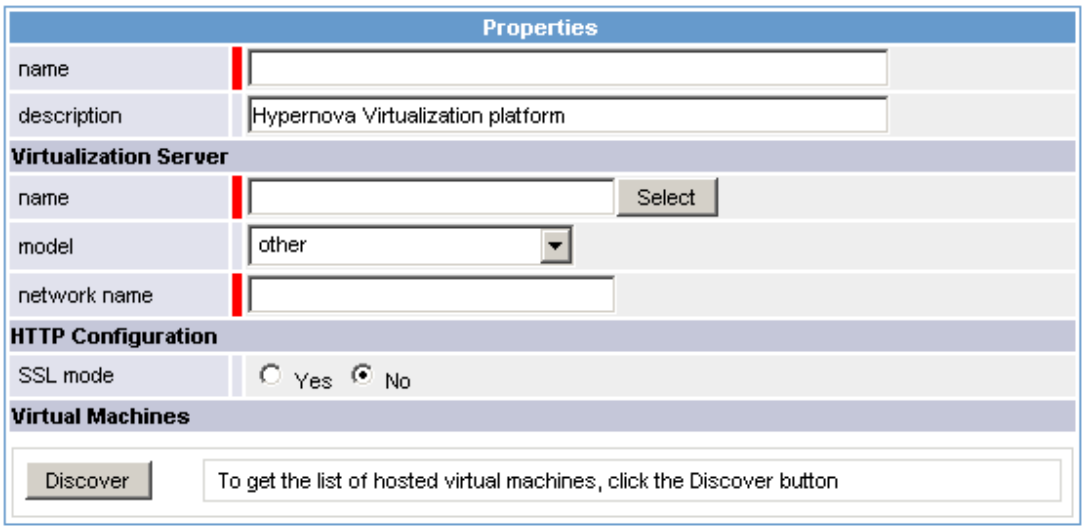


Figure 3-17. HyperNova Platform Properties

Besides the characteristics (name and description) of the main object, the properties of an HyperNova virtual platform are divided into two-parts:

- **Virtualization Server**: used to define the physical machine and the native OS.
- **HTTP Configuration**: used to set the HTTP mode access.
- **Virtual Machines**: used to describe the HyperNova platform virtual machine.

Virtualization Server Properties

name — Server host short name.
This name is displayed in the NovaScale Master Console views.
Click **Select** to choose a defined host from the NSMaster host list.

model — Host model (see the *NovaScale Master Administrator's Guide* for values).

network name — Server network name (hostname or IP address).

HTTP Configuration

SSL mode — To enable or disable SSL mode for HTTP

Default value: no

Note:
SSL option in not available on Windows platform. If the HNMaster access is securized, contact the HNMaster administrator to authorized non secure access for the NovaScale Master server.

Virtual Machines Properties

Virtual Machines — List of the VMs established by selecting the VMs obtained by XML/HTTP requests to HN Master.
The request is performed by clicking the **Discover** button (or-**Re-discover** if in edition mode).

See below the complete description of the procedure.

Virtual Machines Discovery

The result of the discovery is displayed as a table composed of three parts:

- the left column allows you to select the VMs to be associated to the platform
- the center part displays Virtual Machine Configuration as defined on the virtualization server
- the right part allows you to edit the main properties (name, network name and OS) of the corresponding NSMaster host. The host can be edited only if the corresponding VM is selected. You can select an already defined host by clicking the select button or you can create a host by completing the corresponding fields.

	HyperNova Virtual Machines		NS Master Configuration			
	Name	Type	Name		netName	OS
☑	Rhel5Para	Para	Rhel5Para	Select	Rhel5Para	other
☑	Rhel5VT	Full	Rhel5VT	Select	Rhel5VT	other
☑	win2003	Full	win2003	Select	win2003	other
☑	Win2003s	Full	Win2003s	Select	Win2003s	other

Re-discover To update the list of virtual machines, click the Re-discover button

Figure 3-18. Virtual Machines display after Discover step

☞ Notes:

- When you select an already defined host, you cannot change its network name and OS. But, The Select contains a Default Option that correspond to the VM name, that can be edited.
- If the VM name contains space(s), they are replaced by underscore(s) in the host label.

Virtual Machines Re-Discovery

Re-Discovery is required to check that the current NSMaster configuration still matches the HyperNova configuration in order to:

- Add virtual machine not yet registered in the HyperNova Virtualization Platform
- Remove virtual machine no more defined in the HyperNova configuration.

During the Re-discovery step, if the current configuration is not compatible with HyperNova configuration the invalid VMs are displayed in red and the VMs not referenced in the current NSMaster configuration are displayed in green, as shown in the following figure:

	HyperNova Virtual Machines		NS Master Configuration			
	Name	Type	Name		netName	OS
☑	testHNXXA02	Para	testHNXXA02	Select	10.10.10.10	other
☑	testHNXXA04	Full	testHNXXA04	Select	10.10.10.10	other
☑	testHNXXA05	Full	testHNXXA05	Select	10.10.10.10	other
☐	testVMrm	Full	testVMrm	Select	10.10.10.10	other
☑	VM1	Para	VM1	Select	172.31.35.170	other
☑	VM2	Para	VM2	Select	172.31.35.171	other
☑	VM3	Para	VM3	Select	172.31.35.172	other
☑	VM4	Para	VM4	Select	172.31.35.173	other
☑	VMA	Para	VMA	Select	172.31.35.174	other
☐	shared_para_RHEL5	Para	shared_para_RHEL5	Select	10.10.10.10	other
☐	testHNXX03	Full	testHNXX03	Select	10.10.10.10	other
☐	testVMfullvide	Full	testVMfullvide	Select	10.10.10.10	other
☐	testVMparasansOS	Para	testVMparasansOS	Select	10.10.10.10	other
☐	VMA_BIS	Para	VMA_BIS	Select	VMA_BIS	other
☐	VMA_CR17	Para	VMA_CR17	Select	VMA_CR17	other

Figure 3-19. Virtual Machines display after Re-iscover step

VMs no longer defined in HNmaster are automatically unchecked and will be removed from the platform on form validation. New VMs must be explicitly checked for being added in the platform to be linked to the platform on form validation.

☞ Note:
How to Add, Delete or Modify Virtual Machine is detailed in 3.3.3.2.2 *Virtual Machine Edition*, on page 43.

After edition:

- Click the **OK** button to validate your edition
- Or click **Cancel** to return to Virtual Platforms pages without changes
- Or click **Delete** to remove the Virtual Platform and maintain the hosts corresponding to the VMs and the Virtualization server
- Or click **DeleteAll** to remove the Virtual Platform and the hosts corresponding to the VMs and the Virtualization server.

☞ Note:
Edition with a **Topology modification** requires confirmation: a page listing all modifications to be applied to the Topology configuration is displayed, as shown in the following figure.

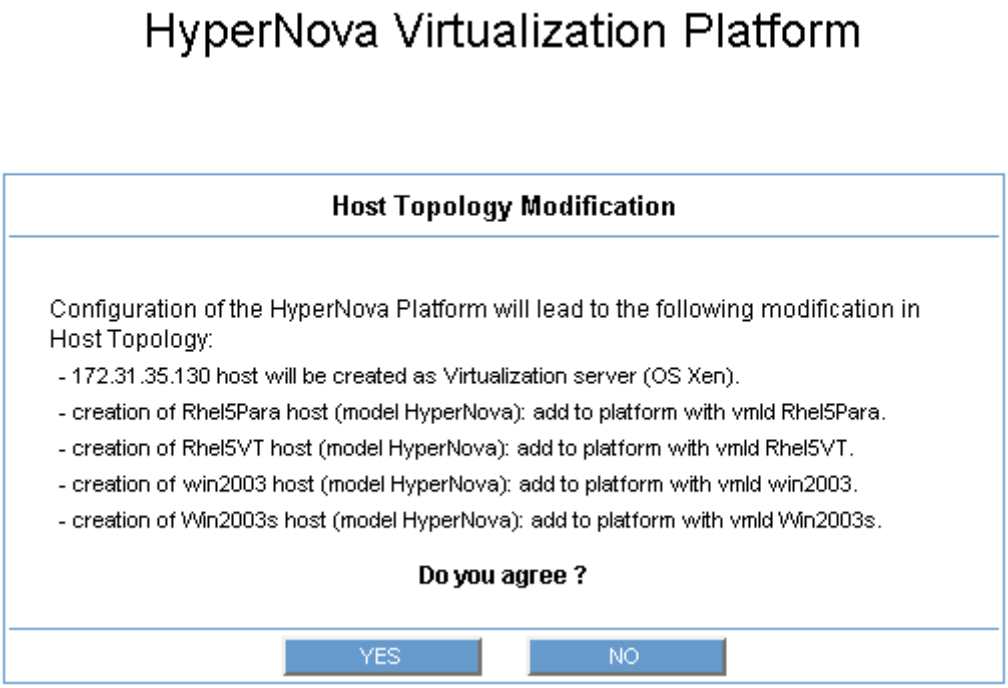


Figure 3-20. Host Topology modification confirmation

If you do not agree, click the **NO** button to return to the platform edition page, otherwise click the **YES** button to create the virtual platform.

Related HyperNova Virtualization platform Objects

When an HyperNova Virtualization platform is defined, related objects are automatically generated to configure the specific Supervision linked to this type of NovaScale server. The following table describes the objects generated during the creation the platform.

Type	Description
host HyperNova	As defined in the Virtual Machine configuration part of the edition page.

host HNMaster	Host corresponding to the virtualization layer and hosting the HNMaster application, as defined in the Virtualization Server configuration part.
hostgroup	hostgroup representing the physical platform, named <platformName>.
manager	Virtualization manager representing the management interface, named < platformName>_HNMaster
categories and services	The HyperNova category and related services are instantiated for the HNMaster host. The VirtualMachine category and related services are instantiated for each HyperNova host.

☞ Note:
A hostgroup representing the virtual platform, a virtualization manager and instances of services for the virtualization server (**HyperNova** category) and for the hosts representing the virtual machine (**VirtualMachine** category) are also created

3.3.3.2.2 Virtual Machine Edition

A virtual machine is represented by a host linked to the HyperNova Virtualization platform. It has properties linked to the platform and properties of a host object.

Add, remove or modification of properties linked to the platform must be done from the HyperNova Virtualization platform edition page.

Modification of host properties must be done from the Host edition page.

Add a virtual machine to a platform

Adding a virtual machine is performed by checking the corresponding line in Virtual Machines part of the platform edition form and setting the host characteristics in NSMaster Configuration table zone (by filling in the corresponding fields or by selecting an already defined host).

☞ Note:
When you edit a Virtualization platform, only the Virtual Machines defined as part of the NovaScale Master platform are displayed. To add virtual machine, you must performs a Re-discovery to get the list of all machines defined on the Virtualization Server.

Remove a virtual machine from a platform

Removing a virtual machine is performed by unchecking the corresponding line in the Virtual Machines part of the platform.

☞ Note:
The corresponding host remains in the NovaScale Master definition with model set to other. To delete it, click the 'Other Hosts' link to get the list of all Other Hosts configured, edit the corresponding host and click on Delete button.

Modify a virtual machine defined in a platform

To modify the name of the NSMaster host corresponding to a virtual machine, enter the new name in the corresponding field or choose it in the list of already defined hosts in NovaScale Master by clicking the Select button.

To modify other characteristics as netName or OS, Host edition form must be used.

☞ **Note:**
To get the Host edition form corresponding to the virtual machine, click the Hostname link displayed in the global platforms page.

Delete all virtual machines and corresponding hosts.

To delete all virtual machines and corresponding hosts, use the **DeleteAll** button of the Virtualization Platform Edition form. Beware: the virtualization server and the platform will be also deleted from the NovaScale Master configuration.

3.3.3.2.3 Virtualization Supervision

As specified above, services are instantiated for each host defined in the Virtualization Platform. You can disable virtualization supervision by editing the hostgroup or manager properties or by editing each service (refer to the *NovaScale Administration Guide* for details).

Monitoring Services

Monitoring services defined for the native OS are associated with the **HyperNova** category.

Services Applied to the Native OS

Service	Description	Check_command
Status	Checks global status	check_hn_server_status

Monitoring services defined for VM hosts are associated with the **VirtualMachine** category.

Services Applied to the VM Host

Service	Description	Check_command
Status	Checks VM status	check_hn_vm_status

Monitoring services related to Virtual Platform elements are automatically created during the edition of the HyperNova Virtualization Platform. Theses services can be displayed and edited from the Services page in the Supervision domain, but only the attributes related to monitoring or notification can be edited.

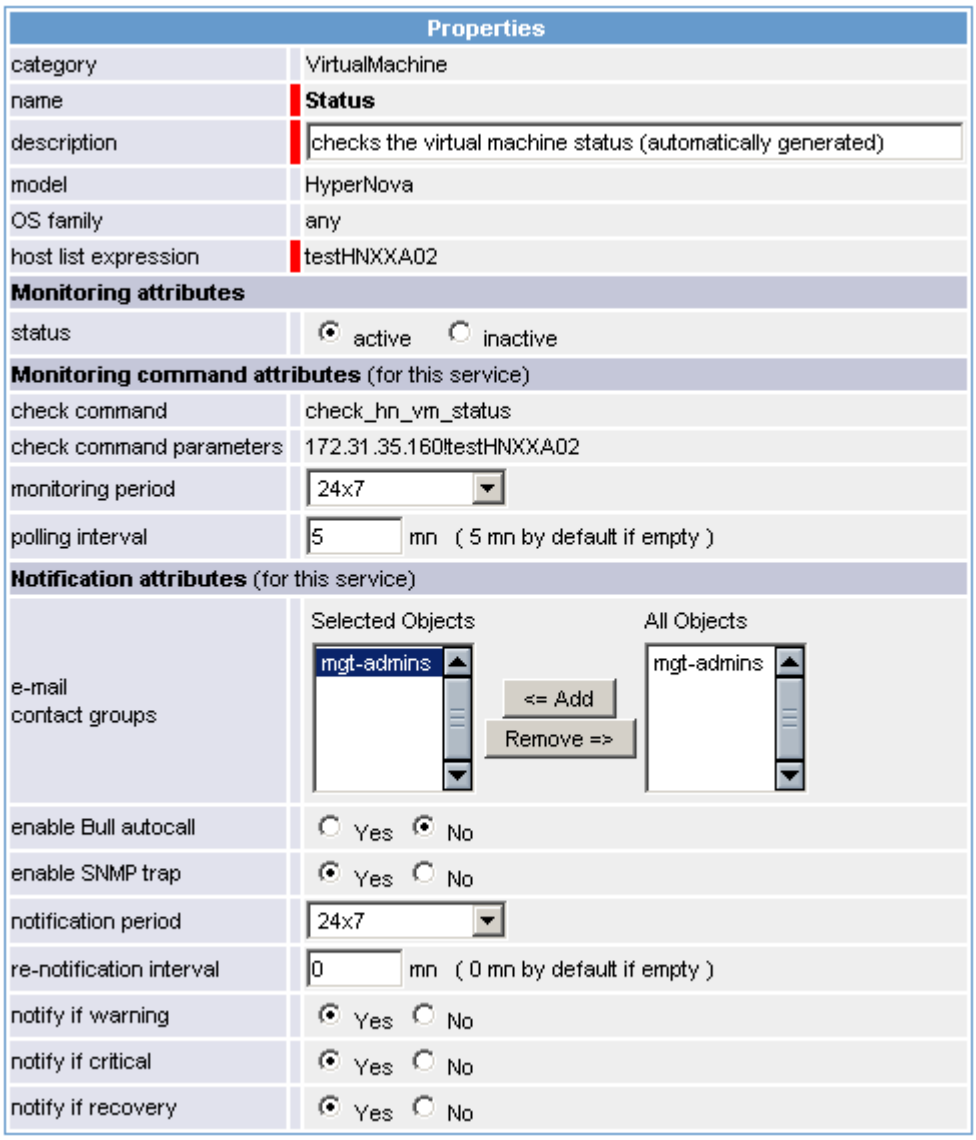


Figure 3-21. Virtual Machine Properties pane

☞ Note:

During HyperNova Platform definition, all services are defined and activated for the server and for each VM. To deactivate the monitoring of one service, set **status** (Monitoring attributes part) to inactive.

3.3.3.2.4 Domain0 Supervision

The monitoring functions to control the resources of the **domain0** are not automatically setup at the platform definition. To enable them, you have to activate the corresponding categories and services.

HyperNova Add-on delivers the following monitoring definitions:

Category	Service
Dom0SystemLoad	CPU(*)
	Memory(*)
	Processes(*)
	Users
	Swap(*)
	Zombies
Dom0FileSystems	All(*)
	/usr
Dom0LinuxServices	syslogd(*)
Dom0Syslog	AuthentFailures
	RootAccess(*)

(*) indicates services that are automatically activated when the corresponding category is instantiated.

Examples

To activate the de **Dom0SystemLoad** related services, do as follows:

1. Click the Categories/Services link in the Supervision tab.

2. Apply a filter (by HOST(s) or by OS) to select only the hosts corresponding to **domain0** of an HyperNova system, as in the following example:

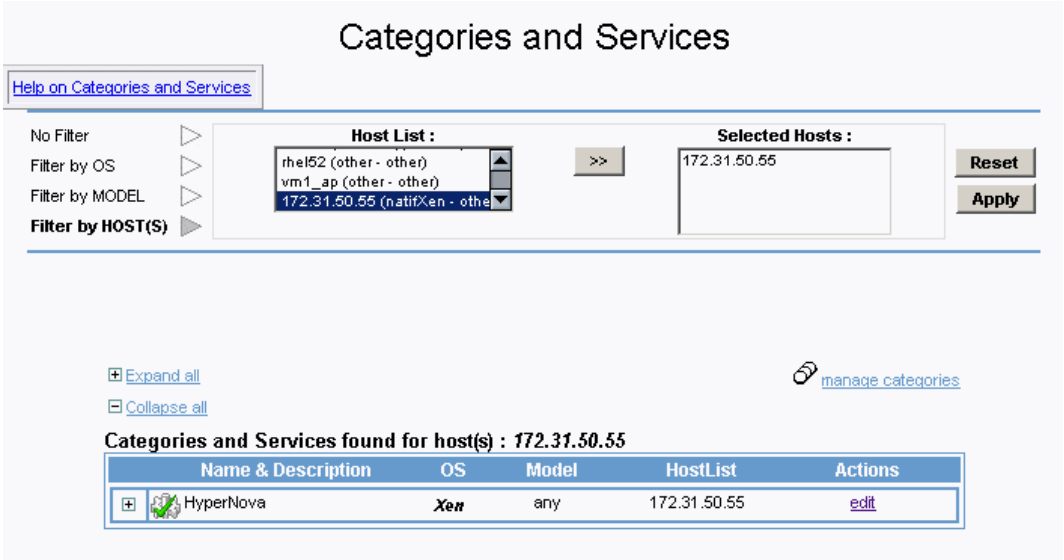


Figure 3-22. Categories filter for domain0 Host

3. Click the **manage categories** link and choose the **Add from an unused category template (user or predefined)** option to display the categories available for the corresponding hosts.

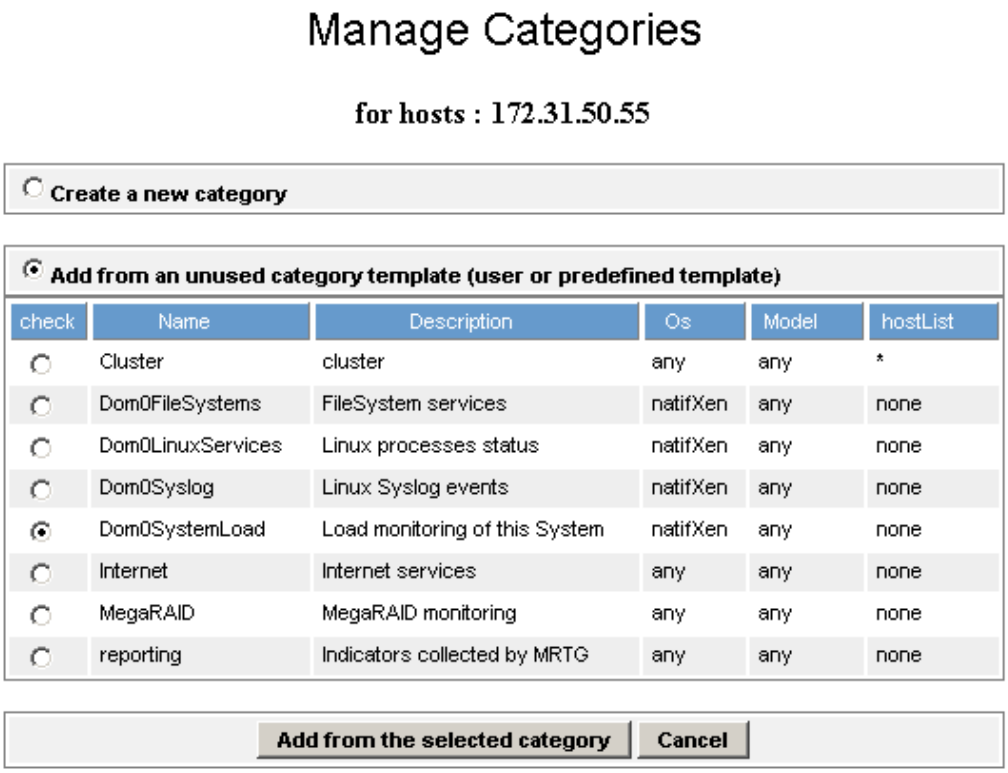


Figure 3-23. Available categories for domain0 Host

4. Select the **Dom0SystemLoad** category and click **Add from the selected category**.

5. The edition form for the corresponding category is displayed with all fields filled in. Click the **Ok** button.

6. The Categories and Services page now displays **Dom0SystemLoad** category in the list of used categories for the selected hosts. Expand the category to display the list of the used services.

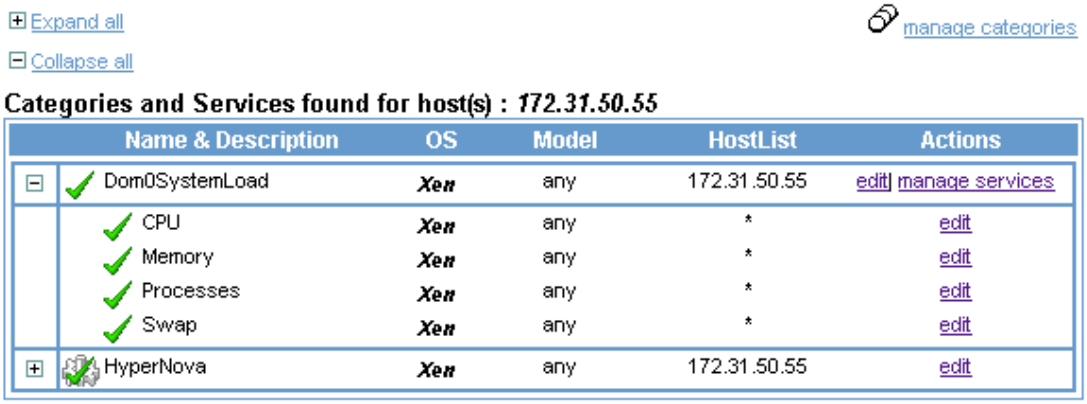


Figure 3-24. Used services for domain0 Host

Note:
The Zombies and Users services are not present. To activate them, you have to explicitly associate them to the hosts (see below).

To activate the Users service, do as follows:

1. Click the **manage services** link of the **Dom0SystemLoad** category and choose the option **Add from a service template (user or predefined)** to display the available services.

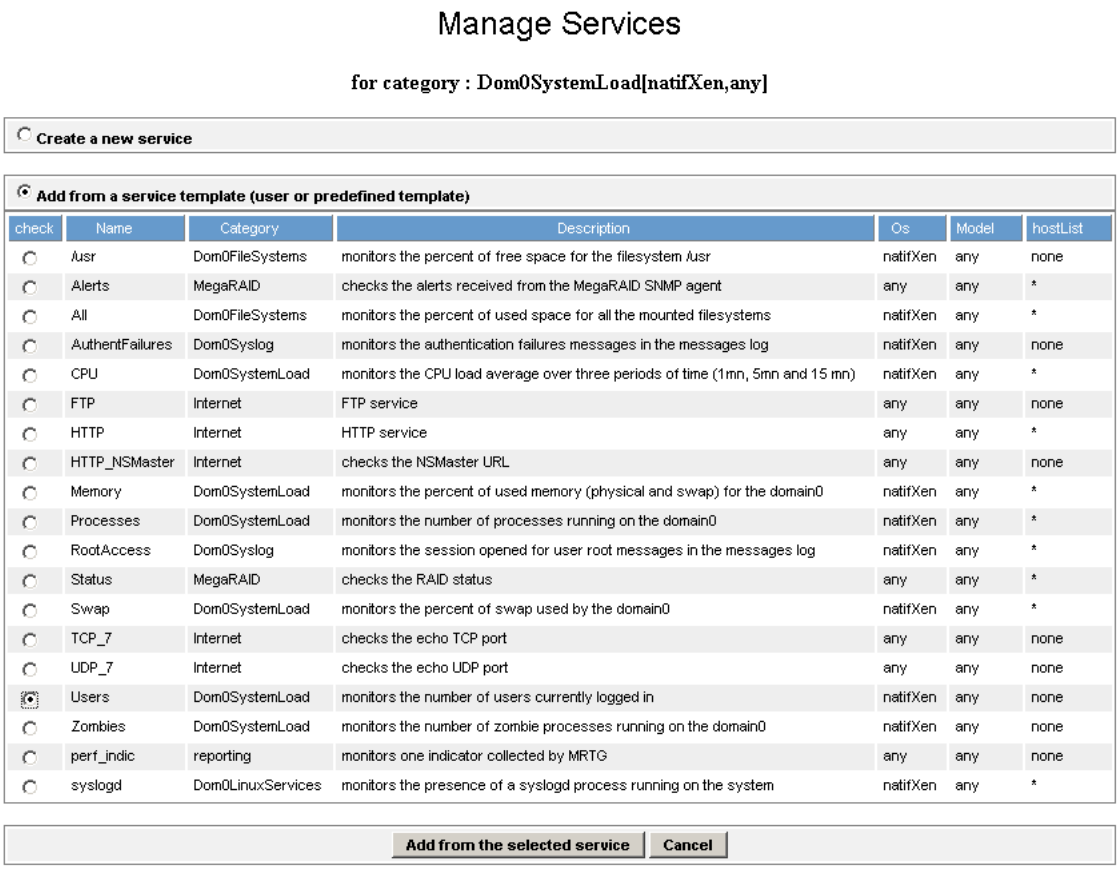


Figure 3-25. Available services for Dom0SystemLoad category

2. Select the Users service and click **Add from the selected services**. The edition form for the corresponding service is displayed with all fields filled in. Click the **Ok** button.

3. The Categories and Services page now displays the **Users** service in the list of the used **Dom0SystemLoad** services.

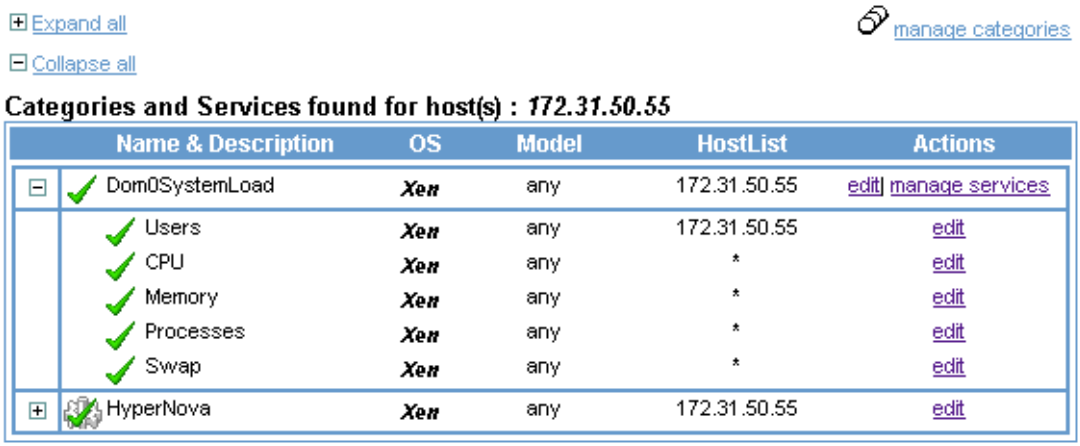


Figure 3-26. Users service for domain0 Host

To get detailed information about the Categories and Services configuration, refer to the *NovaScale Master Administrator's Guide*.

3.3.3.3 Nagios Check Commands

check_hn_server_status

The configurable NovaScale Master service check command syntax is:

```
check_hn_server_status
```

See the **check_NSM_hypernova_xen** command in Appendix A for parameters details.

check_hn_vm_status

The configurable NovaScale Master service check command syntax is:

```
check_hn_vm_status!<hypernova_server>!<vmname>
```

See the **check_NSM_hypernova_xen** command in Appendix A for parameters details.

domain0 supervision related commands

The commands used for **domain0** supervision services are those used for Linux supervision. To get detailed information about them, refer to the *NovaScale Master Administrator's Guide*.

The following table lists the commands used by the services.

Category.Service	Command
Dom0SystemLoad.CPU	check_cpuload
Dom0SystemLoad.Memory	check_memory
Dom0SystemLoad.Processes	check_procs
Dom0SystemLoad.Users	check_procs
Dom0SystemLoad.Zombies	
Dom0SystemLoad.Swap	check_swap
Dom0FileSystems.All	check_disks.pl
Dom0FileSystems./usr	
Dom0LinuxServices.syslogd	check_procs
Dom0Syslog.AuthentFailures	check_log2.pl
Dom0Syslog.RootAccess	

3.3.3.4 NovaScale Master Console

Operation

From the Virtual Manager or from any element of the Virtual Platform, you can launch the **HN Master Web Interface** by selecting the following cascading menu:

Operation → **Application** → **HN Master**

3.3.3.5 HyperNova Monitoring

From the platform or host elements, you can access monitoring information.
From the hosts element, you can display information related to associated services by selecting **Monitoring** menus.
From the platform element, you can display monitoring information related to all elements by selecting **Monitoring** menus. For instance, you can view all services of the hosts in the platform, as shown in the following figure:

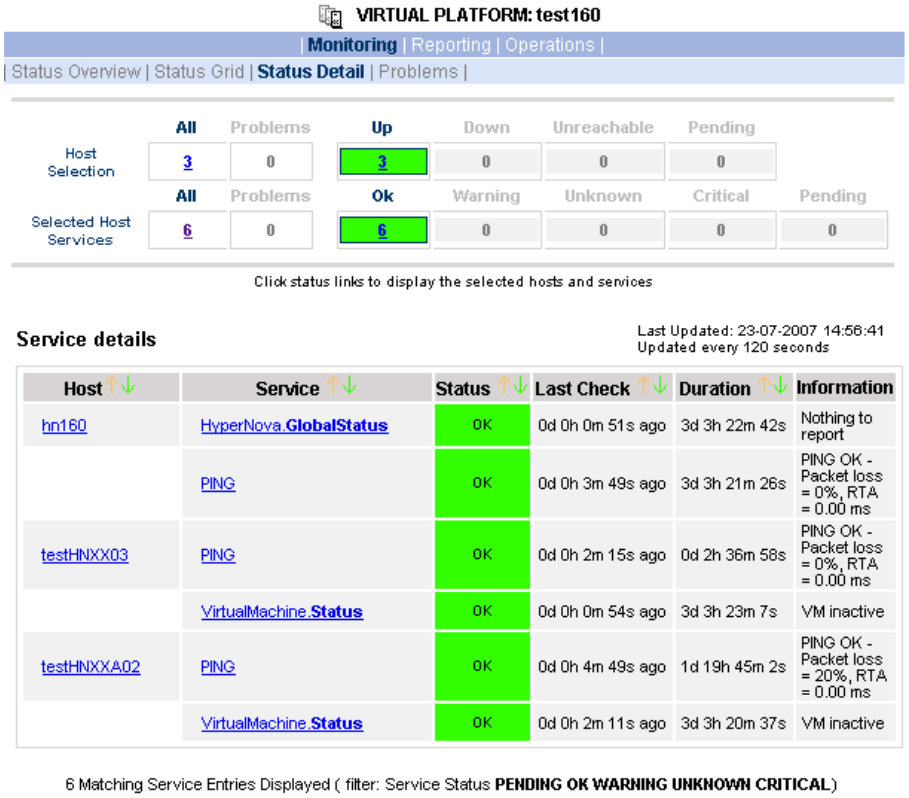


Figure 3-27. Virtual Platform monitoring

3.3.4 NSMasterViosLPAR "ViosLPAR" Management

3.3.4.1 Overview

Dynamic logical partitioning (LPAR) is a system architecture delivered on IBM systems that allows the division of a single server into several completely independent virtual servers or logical partitions. The Virtual I/O Server is a special purpose partition that provides virtual I/O resources to other partitions and offers the Integrated Virtualization Manager (IVM) to manage virtual devices and partitions

The **ViosLPAR** Add-on provides functional links to supervise the logical partitions by requesting the IVM component.

The following figure shows the link between each component:

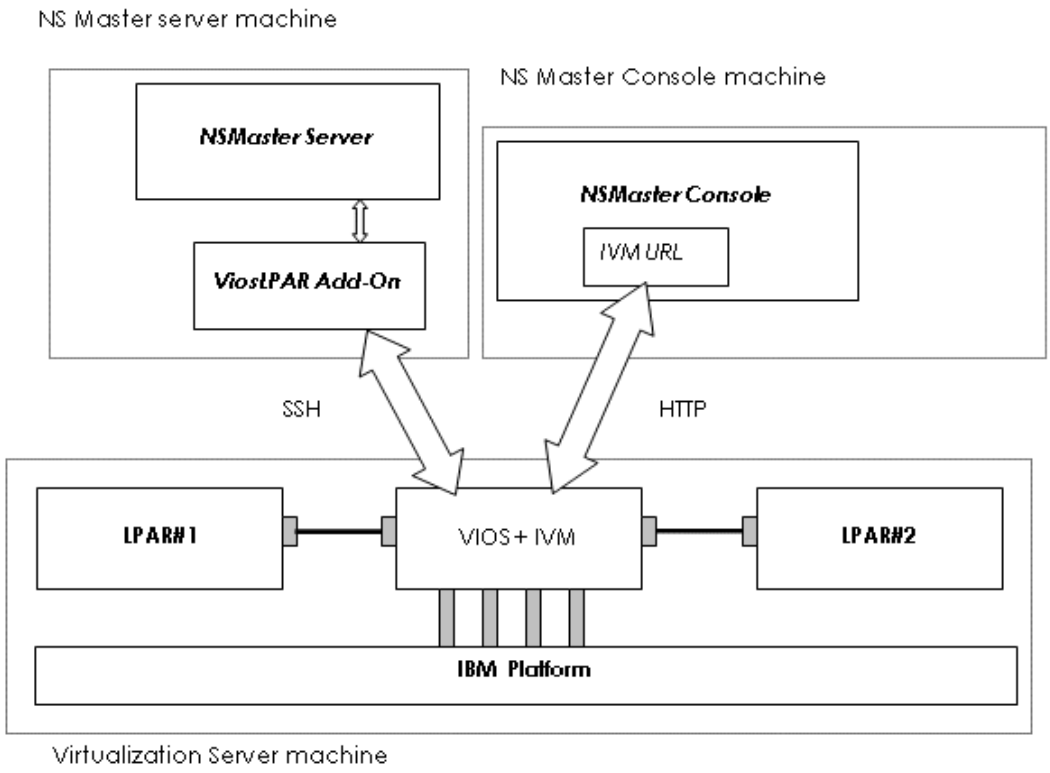


Figure 3-28. ViosLPAR Add-on components

3.3.4.2 NovaScale Master Configuration

To configure the monitoring elements for the ViosLPAR Add-on, you have to define an IBM VIOS Virtualization Platform from the NovaScale Master Configuration GUI. Native OS, LPARs and related monitoring services are defined in one easy step.

The native OS is represented by a NSMaster host with the OS: **Vios**.

LPARs are represented by a NSMaster host with the model: **IBM Lpar**.

3.3.4.2.1 VIOS Virtualization Platform

To configure a VIOS Virtualization Platform, click the **IBM VIOS** link in the Virtualization part of the Topology domain. The list of all configured platforms appears, as in the following example:

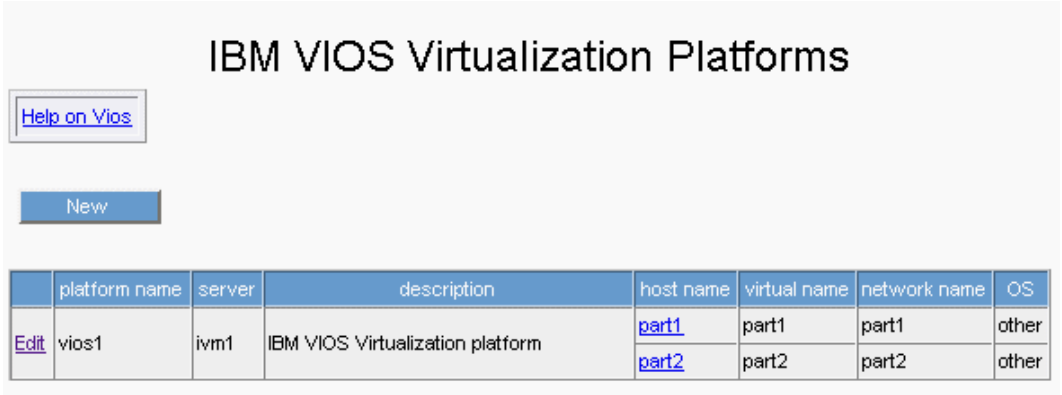


Figure 3-29. IBM VIOS Virtualization Platforms page

It is possible:

- To create a new VIOS Virtualization Platform using the **New** button
- To edit or delete a resource using the **Edit** link
- To edit a virtual host using the **<hostname>** link.

When you click the **New** button, the following display appears with all resource properties:

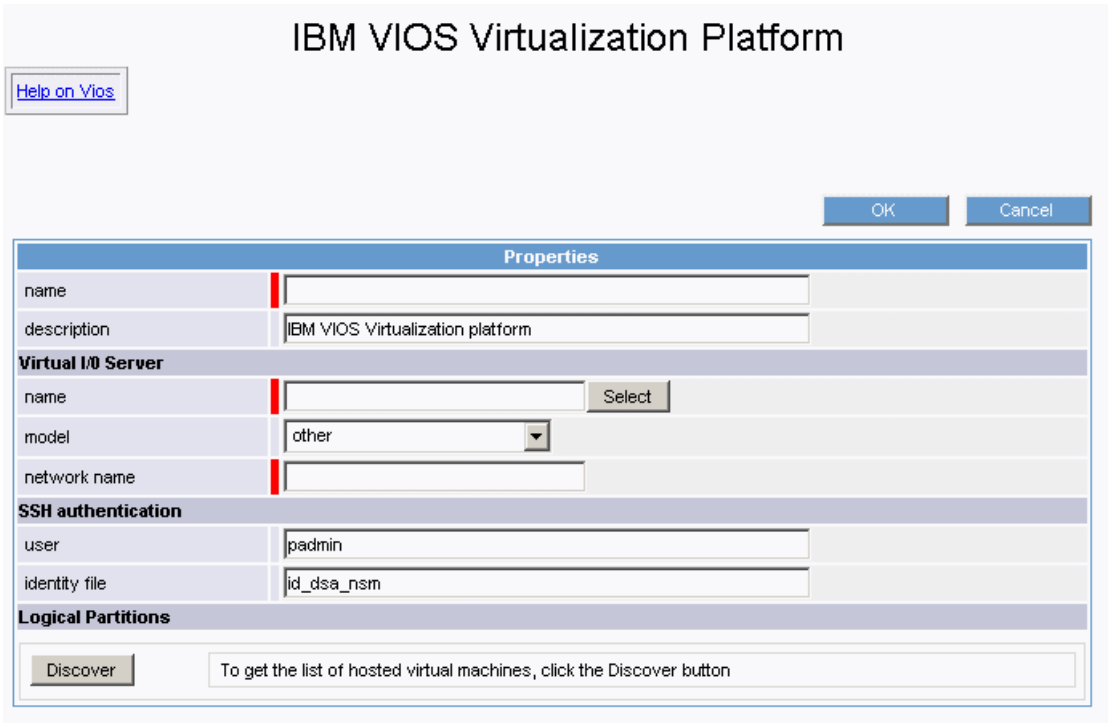


Figure 3-30. IBM VIOS Virtualization platform Properties

Besides the characteristics (name and description) of the main object, the properties of a VIOS virtual platform are divided into three parts:

- **Virtual I/O Server**: used to define the physical machine and the native OS.
- **SSH authentication**: used to define properties related to SSH authentication.
- **Logical partitions**: used to describe the VIOS Virtualization platform logical partitions.

Virtual I/O Server Properties

name
Server host short name.
This name is displayed in the NovaScale Master Console views.
Click **Select** to choose a defined host from the NSMaster host list.

model
Host model. Allowed values are *EL Blade* and *other*.
Default value: *other*

network name
Server network name (hostname or IP address).

SSH authentication Properties

user
Remote user to login
Default value: *padmin*

identity file
identifier of the file from which the identity (private key) for RSA or DSA authentication is read, used to perform non-prompted remote connection via ssh
The filename used is built with this identifier, suffixed according to the user performing the ssh. For Nagios, the file will be **id_dsa.nsm** (used in service definition, for instance).
All the files must be localized into the directory <NSMaster Installation Directory>/engine/etc/ssh

☞ **Note**:

This value cannot be changed. Identity files are generated at NSMaster installation, with specific rights. Refer to *NovaScale Administrator's Guide* to get detailed information.

To use it as authentication file for VIOS platform, you have to install the corresponding public key (id_dsa.pub) on the VIO server. Refer to the IBM documentation to know how to install the DSA key.

Logical Partitions Properties

List of the partitions established by selecting the partitions obtained by remote command on VIO server.
The request is performed by clicking the **Discover** button (or-**Re-discover** if you are in edition mode).
See below the complete description of the procedure.

Logical Partitions Discovery

The result of the discovery is displayed as a table composed of three parts:

- the left column allows you to select the partitions to be associated to the platform

- the center part displays Partitions properties as defined on the VIO server.
- the right part allows you to edit the main properties (name, network name and OS) of the corresponding NSMaster host. The host can be edited only if the corresponding partition is selected. You can select an already defined host by clicking the select button or you can create a host by completing the corresponding fields.

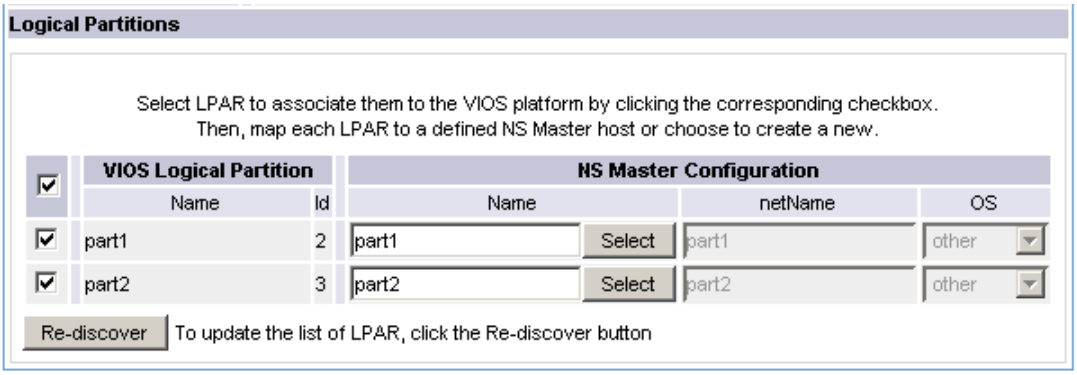


Figure 3-31. Logical Partitions display after Discover step

☞ Notes:

- When you select an already defined host, you cannot change its network name and OS. But, the **Select** option contains a Default option corresponding to the partition name, which can be edited.
- Only Linux and Aix OS are supported by logical partitions.
- If the partition name contains space(s), they are replaced by underscore(s) in the host label.
- If the remote access is not available, you can edit manually the VIOS Logical Partition as shown in the following figure. Beware, if the remote access is not available, the supervision process will be failed.
- In case of discovery failure, pay attention to the following messages:
  - `Permission denied (publickey,password,keyboard-interactive)`
    This message indicates an authentication problem. Verify that the public key is installed on the Vio Server or that the rights on the private key are correctly set.
  - `ssh: connect to host 192.168.207.50 port 22: Connection refused`
    This message means that ssh is not installed on the Vio Server.
  - `ssh:<host>: no address associated with name`
    This message indicates that the netName of the Vio Server is unknown.
  - `Discovery failed: Warning: Identity file .. not accessible`
    This message means that the identity file is not found. Check the content of the **<NSMaster Installation Directory>/engine/etc/ssh** directory.

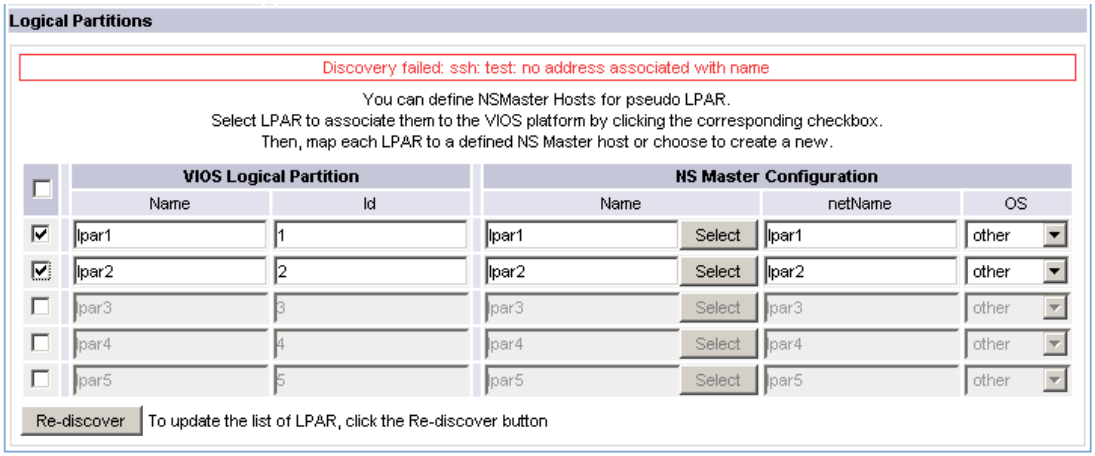


Figure 3-32. Logical Partitions display after Discovery failure

Logical Partitions Re-Discovery

Re-Discovery is required to check that the current NSMaster configuration still matches the Vios configuration in order to:

- add logical partition not yet registered in the VIOS Virtualization platform
- remove logical partitions no more defined in the Vios configuration.r

During the Re-discovery step, if the current configuration is not compatible with Vios configuration the invalid partitions are displayed in red and the partitions not referenced in the current NSMaster configuration are displayed in green, as shown in the following figure:

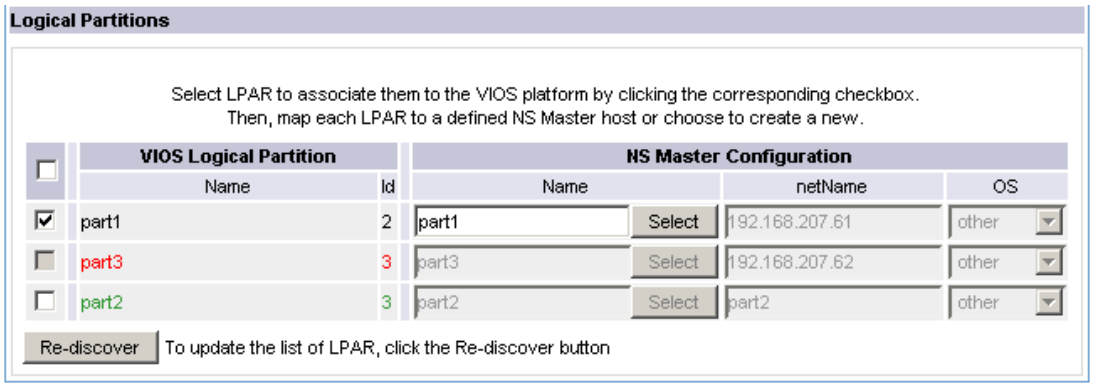


Figure 3-33. Logical partition display after Re-discover step

Partitions no longer defined in Vios (in the example above, `part3`) are automatically unchecked and will be removed from the platform on form validation.

New partitions (in the example above, `part2`) must be explicitly checked for being added in the platform to be linked to the platform on form validation.

Note:
How to Add, Delete or Modify Logical partitions is detailed in 3.3.4.2.2 *Logical Partition Edition* , on page 58.

After edition:

- Click the **OK** button to validate your edition
- Or click **Cancel** to return to Virtual Platforms pages without changes
- Or click **Delete** to remove the Virtual Platform and maintain the hosts corresponding to the VMs and the Virtualization server
- Or click **DeleteAll** to remove the Virtual Platform and the hosts corresponding to the VMs and the Virtualization server.

☞ Note:

Edition with a **Topology modification** requires confirmation: a page listing all modifications to be applied to the Topology configuration is displayed, as shown in the following figure.

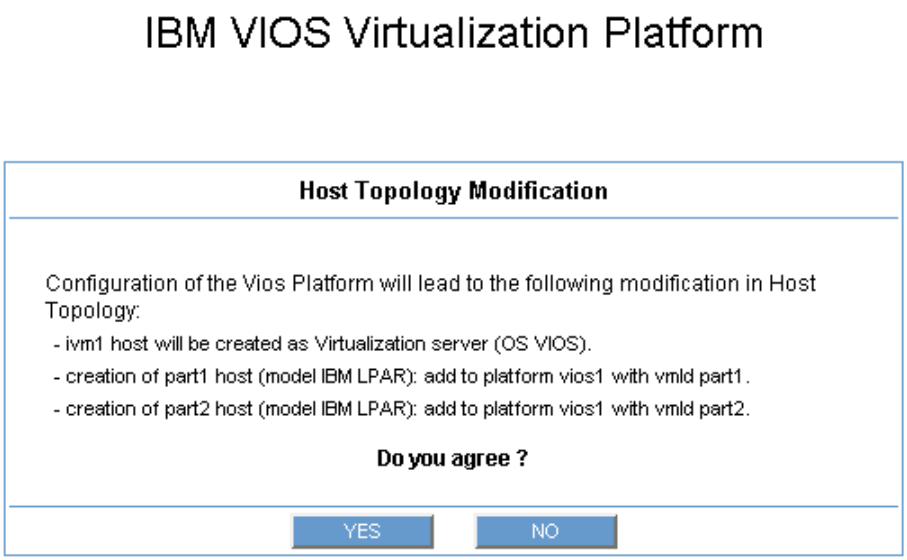


Figure 3-34. Host Topology modification confirmation for VIOS Virtualization platform

If you do not agree, click the **NO** button to return to the platform edition page, otherwise click the **YES** button to create the virtual platform.

Related VIOS Virtualization platform Objects

When a VIOS Virtualization platform is defined, related objects are automatically generated to configure the specific Supervision linked to this type of NovaScale server. The following table describes the objects generated during the creation of the platform.

Type	Description
host LPAR	As defined in the Logical Partition configuration part of the edition page.
host Vios	Host corresponding to the Virtual I/O Server as defined in the Virtual I/O Server configuration part.
hostgroup	hostgroup representing the physical platform, named <platformName>.
manager	Virtualization manager representing the management interface, named < platformName>_IVM

categories and services	The VIOS category and related services are instantiated for the Vios host. The **VirtualMachine** category and related services are instantiated for each LPAR host.
performance indicators	An indicator representing the percentage of processing pool utilization is defined for the Vios host. An indicator representing the percentage of CPU usage is defined for each LPAR host.

3.3.4.2.2 Logical Partition Edition

A logical partition is represented by a host linked to the VIOS Virtualization platform. It has properties linked to the platform and properties of a host object.

Add, remove or modification of properties linked to the platform must be done from the VIOS Virtualization platform edition page.

Modification of host properties must be done from the Host edition page.

Add a logical partition to a platform

Adding a logical partition is performed by checking the corresponding line in the Logical Partitions part of the platform edition form and setting the host characteristics in the NSMaster Configuration table zone (by filling in the corresponding fields or by selecting an already defined host).

☞ **Note:**
When you edit a VIOS Virtualization platform, only the Logical Partitions defined as part of the NovaScale Master platform are displayed. To add partitions, you must performs a Re-discovery to get the list of all machines defined on the VIO server.

Remove a logical partition from a platform

Removing a logical partition is performed by unchecking the corresponding line in the Logical Partitions part of the platform.

☞ **Note:**
The corresponding host remains in the NovaScale Master definition with model set to ‘other’. To delete it, click the 'Other Hosts' link to get the list of all Other Hosts configured, edit the corresponding host and click the **Delete** button.

Modify a logical partition defined in a platform

To modify the name of the NSMaster host corresponding to a logical partition, enter the new name in the corresponding field or choose it in the list of already defined hosts in NovaScale Master by clicking the **Select** button.

To modify other characteristics as netName or OS, you must use the Host edition form.

☞ Note:
To get the Host edition form corresponding to the logical partition, click the **Hostname** link displayed in the global platforms page.

Delete all logical partitions and corresponding hosts.

To delete all logical partitions and corresponding hosts, use the **DeleteAll** button of the VIOS Virtualization platform Edition form. Beware: the Vios server and the platform will be also deleted from the NovaScale Master configuration.

3.3.4.2.3 Virtualization Supervision

As specified above, services are instantiated for each host defined in the VIOS Virtualization platform. You can disable virtualization supervision by editing the hostgroup or manager properties or by editing each service (refer to the *NovaScale Administration Guide* for details).

Monitoring Services

Monitoring services defined for the native OS are associated with the **VIOS** category.

Services Applied to the Native OS

Service	Description	Check_command
Status	Checks the status of the Virtual I/O server	check_vios_status
UsedPool	Checks the utilization of the processing pool on the Virtual I/O server	check_vios_pool

Monitoring services defined for LPAR hosts are associated with the **VirtualMachine** category.

Services Applied to the LPAR Host

Service	Description	Check_command
Status	Checks LPAR status	check_vios_lpar _status
UsedCPU	Checks the utilization of the entitled CPU by the partition	check_vios_lpar_used_cpu

Monitoring services related to Virtual Platform elements are automatically created during the edition of the VIOS Virtualization Platform. Theses services can be displayed and edited from the **Services** page in the Supervision domain, but only the attributes related to monitoring or notification can be edited.

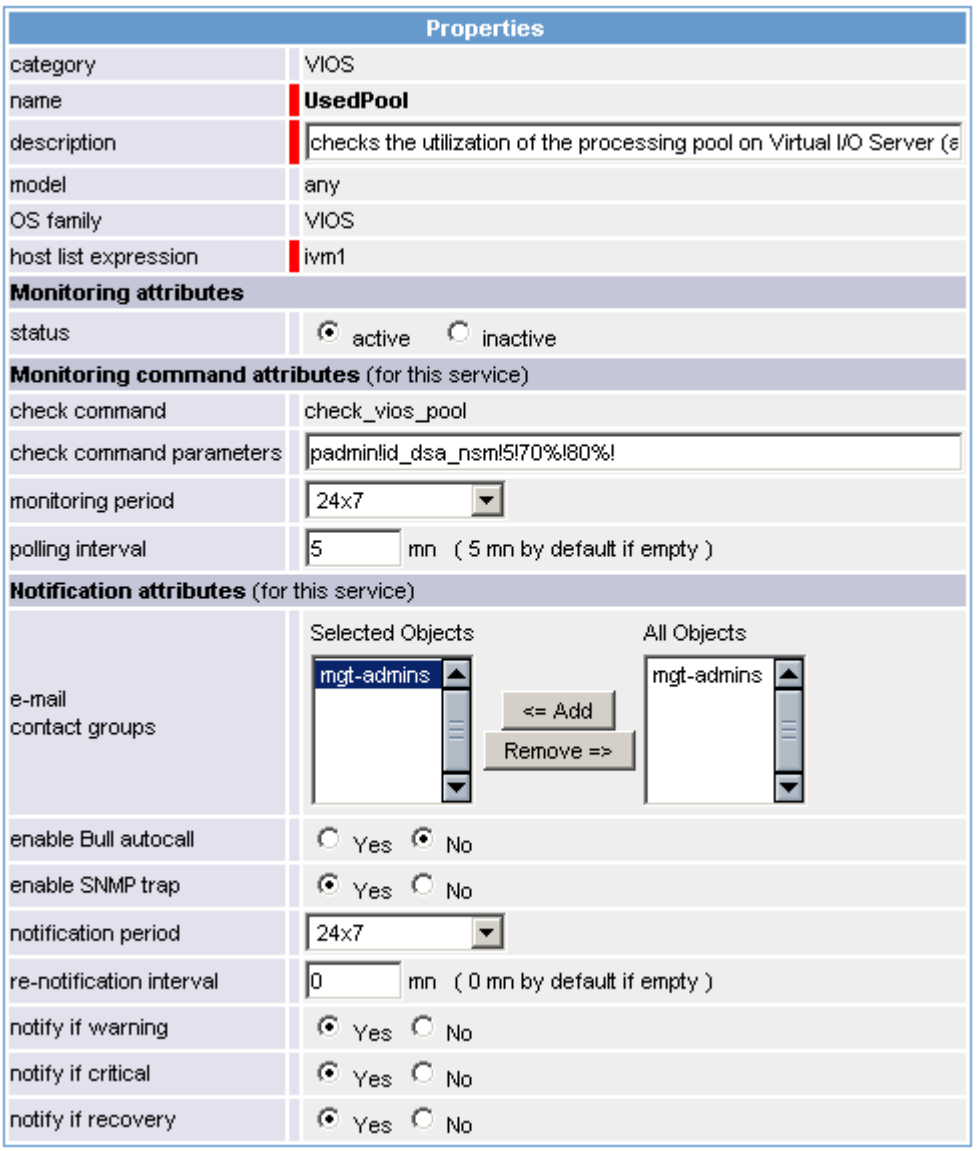


Figure 3-35. VIOS.UsedPool Service Properties pane

Note:

During VIOS Platform definition, all services are defined and activated for the server and for each LPAR. To deactivate the monitoring of one service, edit it and set its **status** (Monitoring attributes part) to **inactive**.

Reporting indicators

A performance indicator is defined for the Vios host to describe the utilization of the processing pool. This indicator is identified as **<vios_host>_UsedPool**.

A reporting indicator is defined for each LPAR to describe the utilization of the entitled CPU of a given LPAR. This indicator is identified as **<lpar_host>_UsedCPU**.

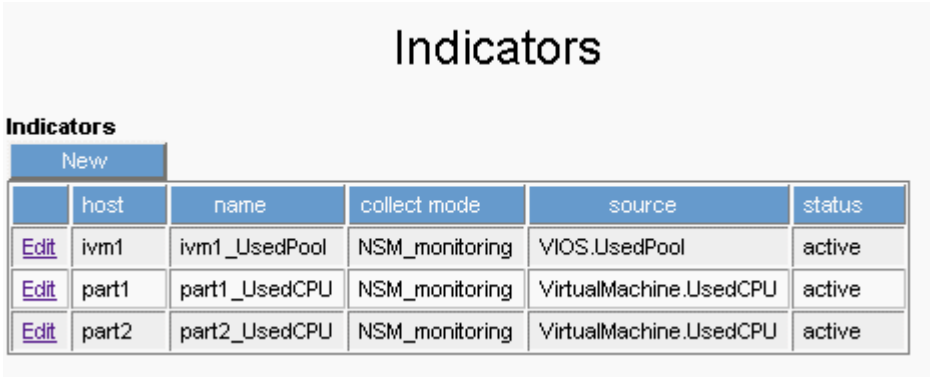


Figure 3-36. VIOS indicators

☞ Note:
The collections of all these indicators is activated during the VIOS Platform definition. To deactivate some of them, edit the indicator and set its **status** to **inactive**.

3.3.4.3 Nagios Check Commands

check_vios _status

The configurable NovaScale Master service check command syntax is:

```
check_vios_status!<ssh_user>!<identity_file>
```

See the **check_NSM_vios_ivm** command in Appendix A for parameters details.

check_vios _pool

The configurable NovaScale Master service check command syntax is:

```
check_vios_pool!<ssh_user>!<identity_file>!<sample_time>!
<warning_threshold>!<critical_threshold>
```

See the **check_NSM_vios_ivm** command in Appendix A for parameters details.

check_vios_lpar_status

The configurable NovaScale Master service check command syntax is:

```
check_vios_lpar_status!<vios_netName>!<ssh_user>!<identity_file>!
<lpar_name><vios_name>
```

See the **check_NSM_ vios_ivm** command in Appendix A for parameters details.

check_vios_lpar_used_cpu

The configurable NovaScale Master service check command syntax is:

```
check_vios_lpar_used_cpu!<vios_netName>!<ssh_user>!
<identity_file>!<lpar_name>!<vios_name>>!<sample_time>!
<warning_threshold>!<critical_threshold>
```

See the **check_NSM_ vios_ivm** command in Appendix A for parameters details.

3.3.4.4 NovaScale Master Console

3.3.4.4.1 Operation

From the Virtual Manager or from any element of the Virtual Platform, you can launch the **IVM Web Interface** by selecting the following cascading menu:

Operation → Virtualization → IVM

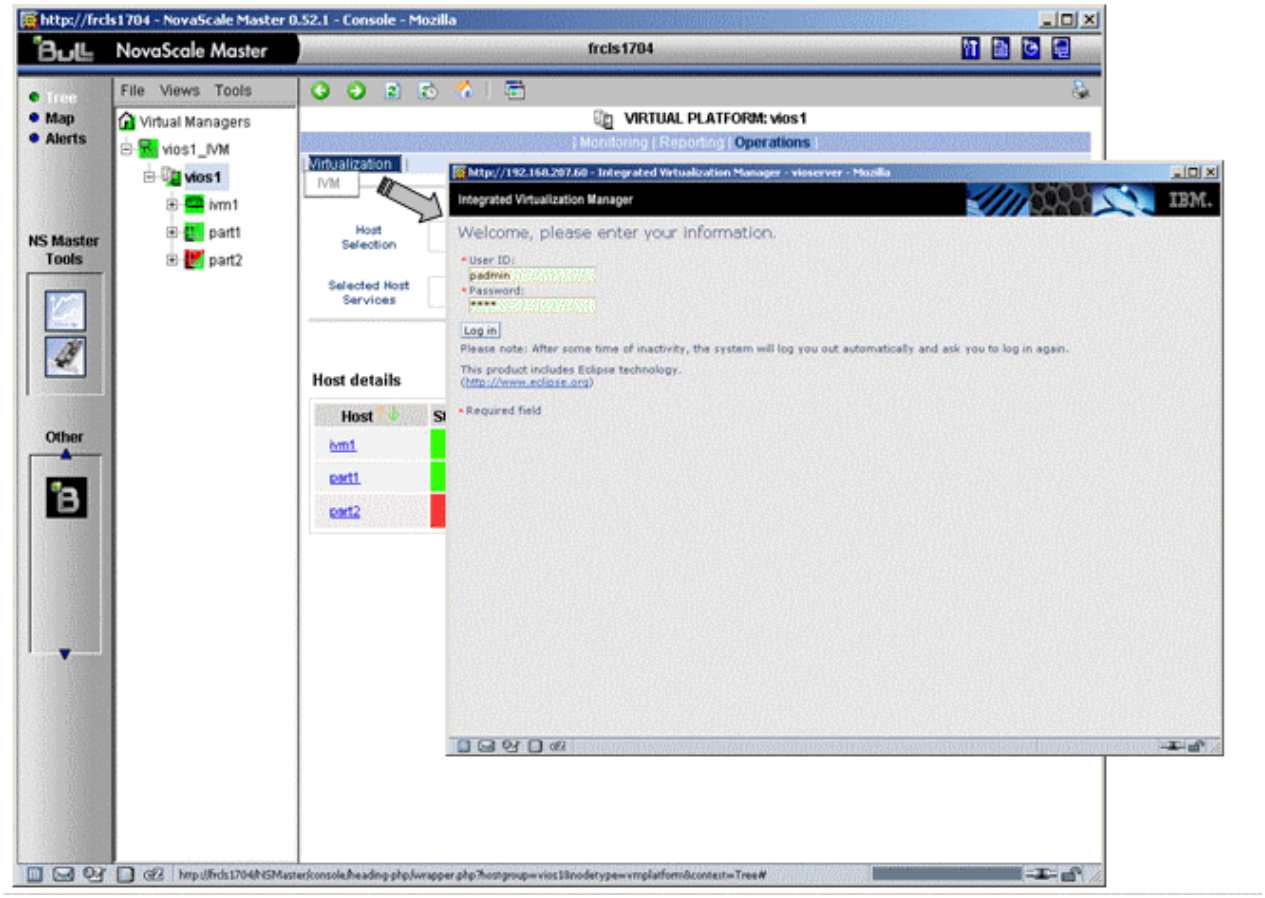


Figure 3-37. IVM activation from NovaScale Master Console

3.3.4.4.2 VIOS Monitoring

From the platform or host elements, you can access monitoring information.

From the hosts element, you can display information related to associated services by selecting **Monitoring** menus.

From the platform element, you can display monitoring information related to all elements by selecting **Monitoring** menus. For instance, you can view all services of the hosts in the platform, as shown in the following figure:

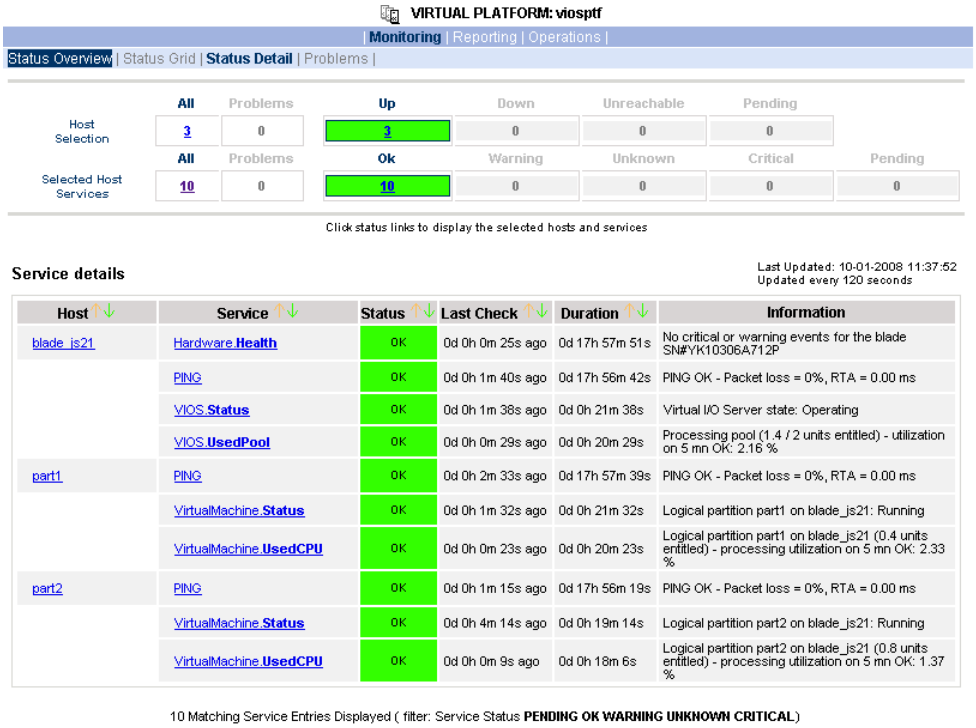


Figure 3-38. VIOS monitoring

3.3.4.4.3 VIOS Reporting

From the Vios host , you can display reporting indicators to get evolution of the processing pool utilization.

From any LPAR host, you can display reporting indicators to get evolution of the utilization of the CPU entitled to the partition.

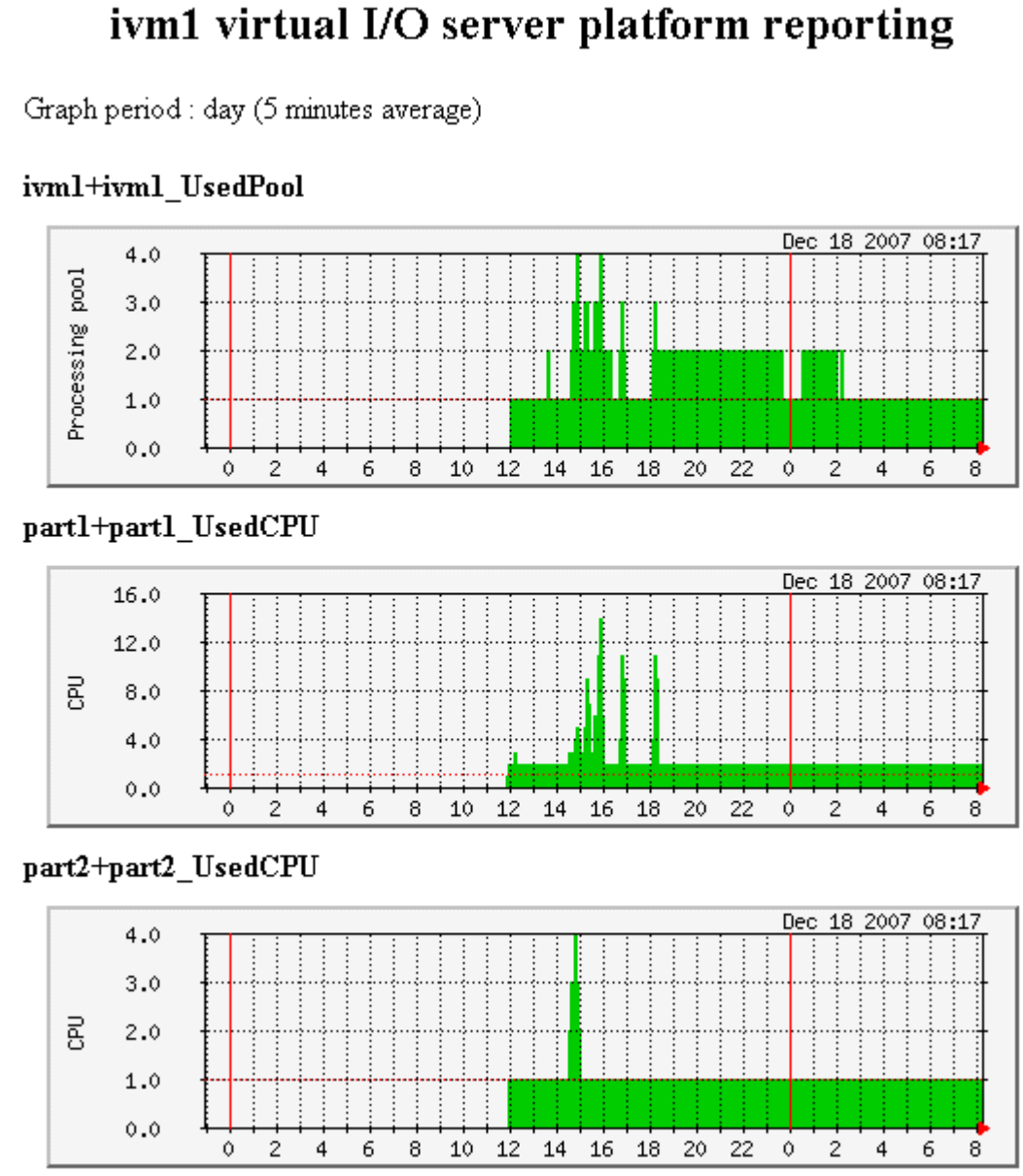


Figure 3-39. VIOS reporting

3.4 Bull Products Server Add-ons

3.4.1 NSMasterDD4A for Bull "Dynamic Domains For Applications" Management

The **Dynamic Domains For Applications** (DDFA) software is a tool that can be used on the Linux operating system for simulating the partitioning of a multi-CPU machine at application level. Dynamic Domains for Applications can be used with standard Linux distributions and can be managed using the Webmin standard administration tool.
See the *Dynamic Domains for Applications User's Guide* (ref 86 A2 63ER) for more information.
You can install DDFA from the *Bull Extension Pack for RedHat* CD.

☞ Note:
DDFA runs only on Linux machines and uses a Webmin module for its management. You can download the prerequisite Webmin package from the web site: **http:/www.webmin.com**

This Add-on creates monitoring links between NovaScale Master and the **DDFA** management webmin module.

The following figure shows the different components used for monitoring:

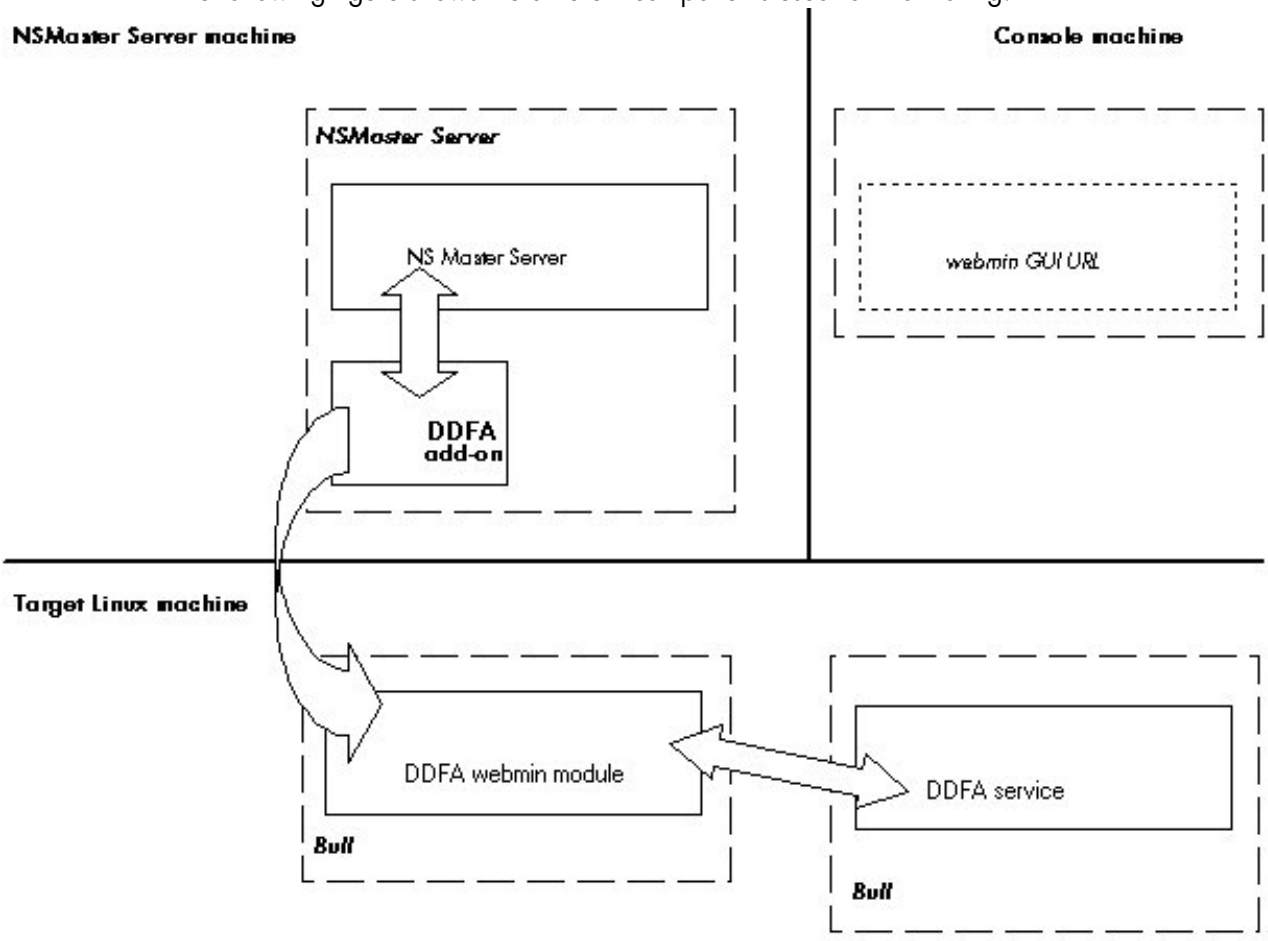


Figure 3-40. DDFA Monitoring Components

NovaScale Master Server Add-ons provides the default Bull product categories by Management Package described below.

3.4.1.1 Default Categories & Services Proposed for Linux Hosts

Targeted OS	Model	Category	Service	Check command
Linux	Any	DynamicDomains	All	check_dd4a
			Default	

Table 3-5. DDF4 categories and services

3.4.1.2 DynamicDomains Category

All Service

For NovaScale and Express5800 Linux hosts with the Dynamic Domains management tool. This service dynamically checks global status reported by the associated webmin module for all defined Dynamic Domains.

☞ **Note:**
There is no need to reconfigure the tool to survey new defined Dynamic Domains.

default Service

For NovaScale and Express5800 Linux hosts with the Dynamic Domains management tool. This service checks the status of the default Dynamic Domain.

☞ **Note:**
When creating a new Dynamic Domain, statically clone the default monitoring service to survey the new dynamic domain.

3.4.1.3 check_DynamicDomains (Linux OS) Nagios Command

The configurable NovaScale Master service check command syntax is:

```
check_DynamicDomains!<{ALL|<DomainName>}
```

Default syntax for **DynamicDomains.All**:

```
check_DynamicDomains!ALL
```

Default syntax for **DynamicDomains.default**:

```
check_DynamicDomains!default
```

3.4.2 NSMasterBVS for Bull Video Services Management

Bull Video Services (BVS) software is a tool that can be used with standard Linux distributions and Windows and can be managed using Web server.

See the *Bull Video Services User's Guide* for more information.

You can install BVS from the Bull Video Services CD (ref 36673900-xxx).

Note:
BVS 4.1 runs on Linux and Windows machines and uses an integrated Web server for management.

This Add-on creates monitoring links between NovaScale Master and the **BVS** management Web server module.

The following figure shows the different monitoring components:

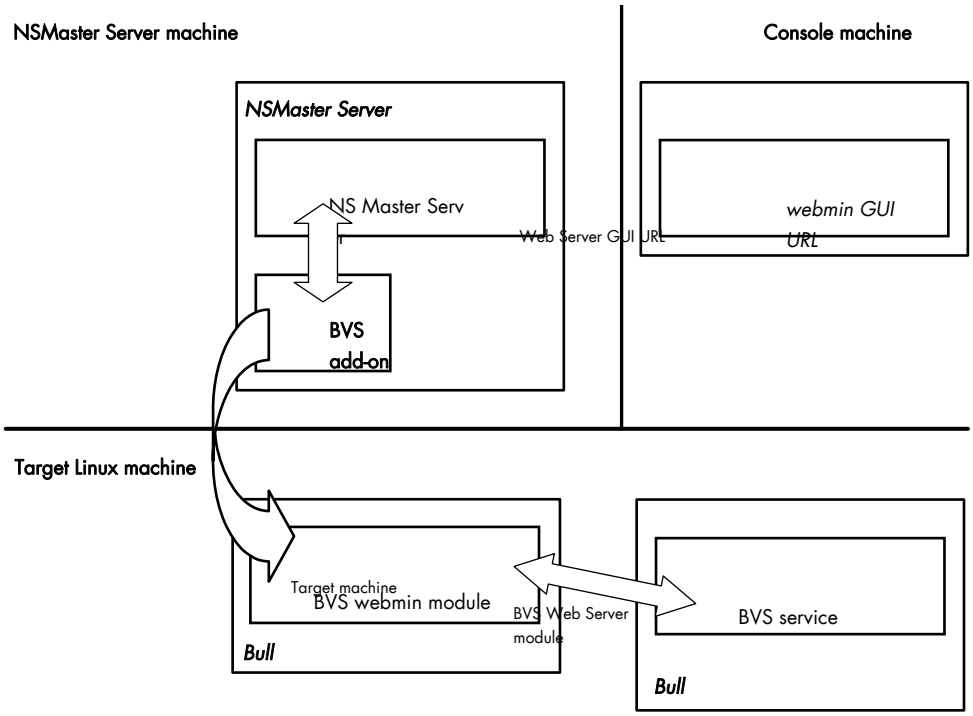


Figure 3-41. BVS Web Server Monitoring Components

Targeted OS	Model	Category	Services	Check command
Linux Windows	any	BullVideoServices	Streaming Recording Datagrams	check_BullVideoServices

Table 3-6. Bull Video Services categories and services

3.4.2.1 BullVideoServices Category

Streaming	For NovaScale hosts acting as Bull video server. This service checks the status of the video streaming service.
Recording	For NovaScale hosts acting as Bull video server. This service checks the status of the video recording service.
Datagrams	For NovaScale hosts acting as Bull video server. This service checks the status of the video datagram errors.

3.4.2.2 check_BVS Nagios Command

The configurable NovaScale Master service check command syntax is:

```
check_BVS!<serviceName>
```

See the **check_BVS** command, in Appendix A for parameters details.

For instance, Default syntax for **BullVideoService.Streaming** is:

```
check_BVS!Streaming
```

3.4.3 NSMasterJOnAS for JOnAS Management

3.4.3.1 JOnAS Overview

JOnAS is a pure Java, open source, application server. Its high modularity allows to it to be used as:

- A J2EE server, for deploying and running EAR applications (i.e. applications composed of both web and ejb components)
- An EJB container, for deploying and running EJB components (e.g. for applications without web interfaces or when using JSP/Servlet engines that are not integrated as a JOnAS container)
- A WEB container, for deploying and running JSPs and Servlets (e.g. for applications without EJB components).

The JOnAS architecture is illustrated in the following figure, showing WEB and EJB containers relying on JOnAS services.

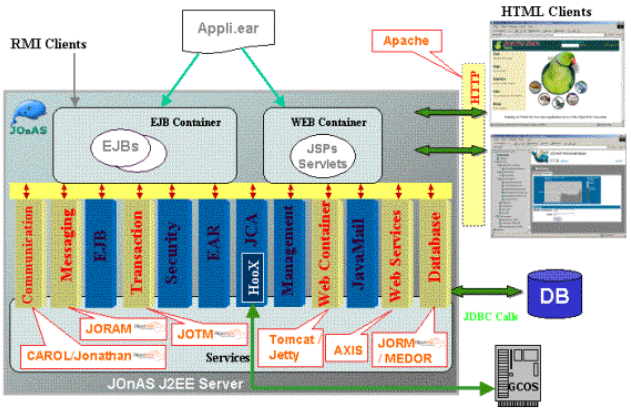


Figure 3-42. JOnAS Architecture

See http://jonas.objectweb.org/doc/index.html for more information.

3.4.3.2 JOnAS Domain Topology

A JOnAS management domain is composed of a set of JOnAS servers that are running under the same management authority. All the servers in the domain must have a distinct **server name** and a common **domain name**.

The servers in a domain can be administered by a management application running on a server playing the role of **administrator** or **master**. The managed servers play the role of **slaves**.

A default domain configuration is provided in $JONAS_ROOT/conf/domain.xml. This configuration corresponds to a domain named **jonas** managed by a server also named **jonas**.

JOnAS administrators are responsible for the configuration and administration of JOnAS servers running within a management domain.

3.4.3.3 JOnAS Monitoring Information

NovaScale Master retrieves domain and server monitoring information from JOnAS (administrator or master) server via the WEB services.

Note:
WEB services are operational only if the "**conf/server.xml**" file on JOnAS (administrator or master) server is correctly configured as:
The **localhost** value must be replaced by the **DNS host name.**

3.4.3.4 NovaScale Master Configuration

JOnAS configuration for NovaScale Master is available from the configuration GUI by selecting **Third-Party Application** → **JOnAS**.

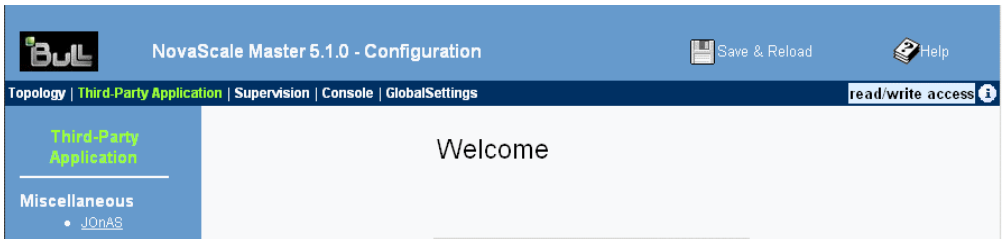


Figure 3-43. JOnAS configuration

JOnAS Domain Definition

To display the JOnAS domains already defined, click **Third-Party Application** → **JOnAS**.

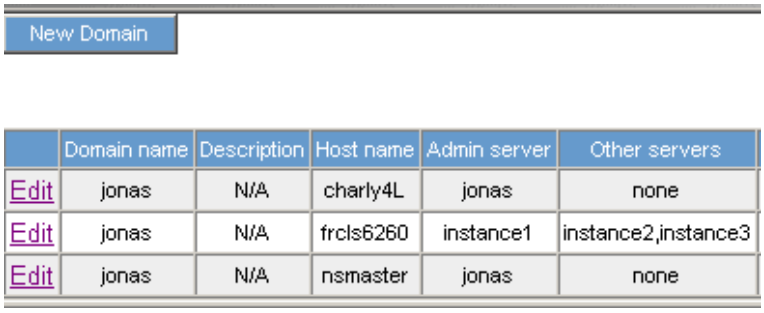


Figure 3-44. JOnAS domains

To edit a domain, click **Edit**.

To define a new JOnAS domain in the NovaScale Master configuration database, click the **New Domain** button and initialize the following attributes:

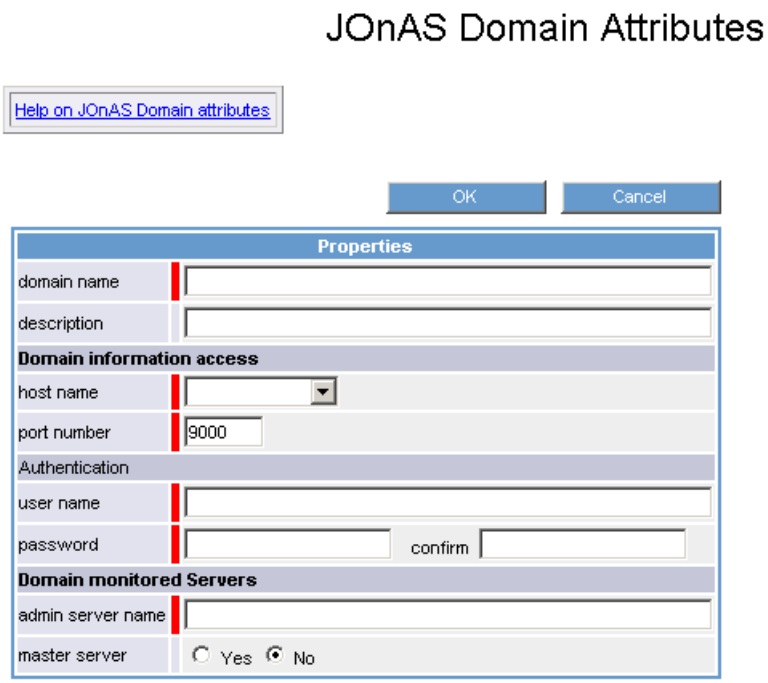


Figure 3-45. JOnAS properties

domain name name of JOnAS domain

description description of the domain

Domain information access

host name name of the host

port number port number

user name name of the user

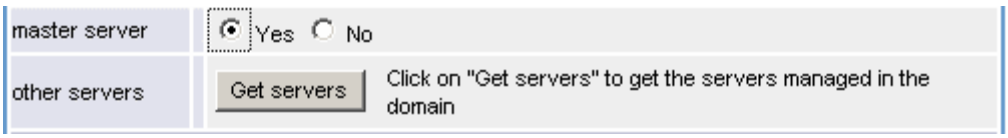
password password

Domain monitored Servers

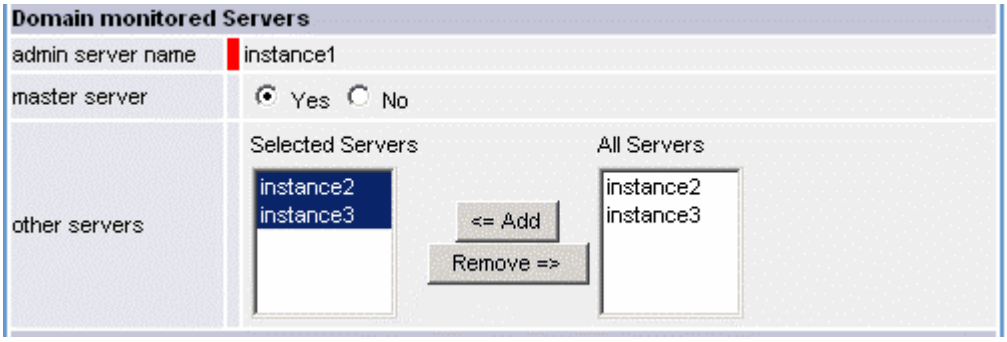
admin server name name of JOnAS administator or master server

master server master server flag

If the master server flag is set to **Yes**, the **Get Servers** button is displayed:



Click the **Get Servers** button to list all the servers belonging to the specified domain:



other servers the selected servers will be monitored by NovaScale Master.

3.4.3.5 JOnAS Category and Service

The definition of a domain creates or updates a **JOnAS** category and creates one service by JOnAS server identified by the JOnAS server name.

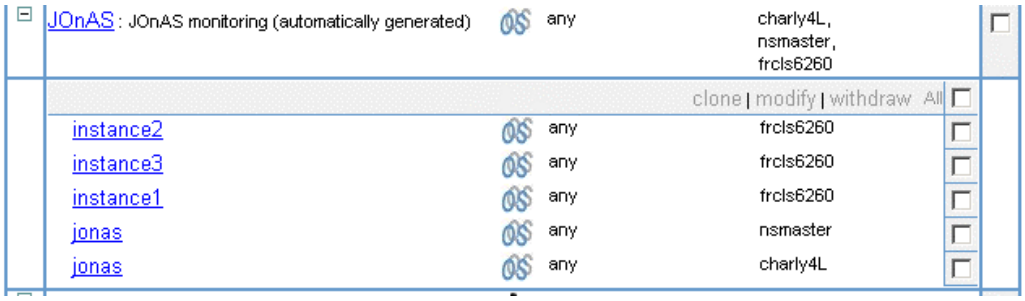


Figure 3-46. JOnAS category and services

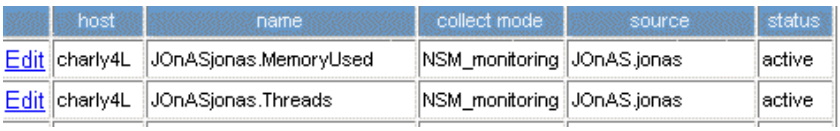
The **check_NSM_JOnAS** command defined for the service, returns the state of the server (**RUNNING, STOPPED, FAILED, UNREACHABLE**). If the server is running, the following attributes are returned:

- Threads count
- Memory allocated and used
- HTTP requests count
- Committed transactions count

3.4.3.6 JOnAS Reporting Indicators

Threads and **MemoryUsed** indicators are created for each JOnAS service.

- The **Threads** indicator returns the current threads count.
- The **MemoryUsed** indicator returns the current memory used.



	host	name	collect mode	source	status
Edit	charly4L	JOnASjonas.MemoryUsed	NSM_monitoring	JOnAS.jonas	active
Edit	charly4L	JOnASjonas.Threads	NSM_monitoring	JOnAS.jonas	active

Figure 3-47. JOnAS indicators

3.4.3.7 NovaScale Master Console

JOnAS Monitoring Representation

The JOnAS category groups services monitoring for all the servers in the domain.

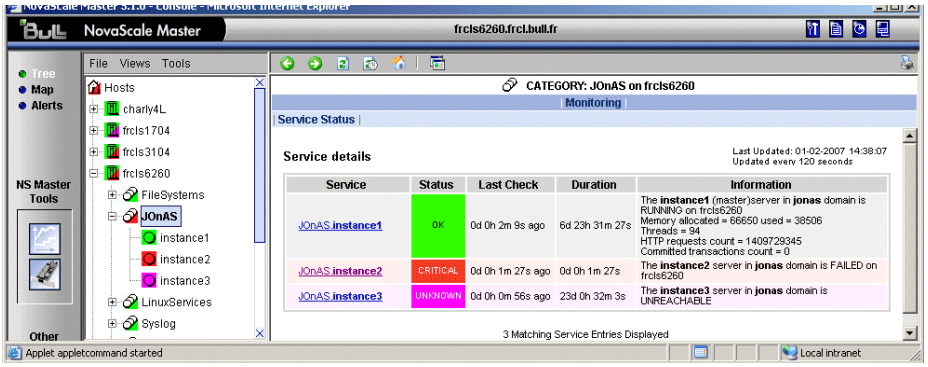


Figure 3-48. JOnAS category view

Launching the jonasAdmin Application

The JOnAS administration tool, **jonasAdmin**, can be contextually launched from a host node on the NovaScale Master console by clicking:
Operations → Application → jonasAdmin

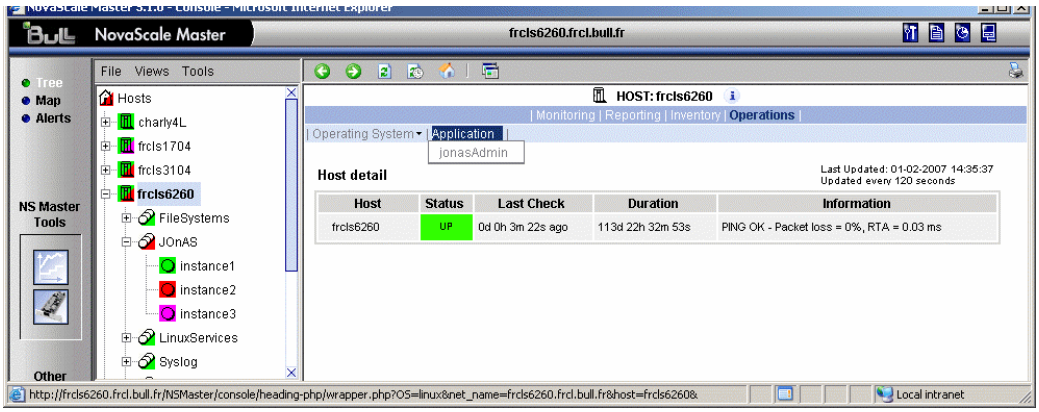


Figure 3-49. jonasAdmin launching

Appendix A. Check Commands for Customizable Services of Add_ons

This chapter describes the usage of the check commands by customizable services. These commands are Linux commands. They run only under CYGWIN on Windows.

Internal Storage Management

NSMasterGAMTT

check_gamttRAID

check_gamttRAID uses the following shell (PERL) command:

Usage

```
check_gamttraid -H <host> [-C <community>] [-p <port>] [-t <timeout>]
{ [-A {ALL|<Ct>}] | [-P {ALL|<Ct>.<Ch>.<Tg>}] | [-L {ALL|<Ct>.<Ldn>}] }
[-v <vl>] [-f <f>]
```

-H, –hostname <host>	Hostname or IP address of target to check
-C, –community <community>	SNMP community string (defaults to "public")
-p, –port <port>	SNMP port (defaults to 161)
-t, –timeout <timeout>	Seconds before timing out (defaults to Nagios timeout value)
-A, –adapter ALL | <Ct>	Controller board
-P, –physical ALL | <Ct>.<Ch>.<Tg>	Physical device addr
-L, –logical ALL | <Ct>.<Ldn>	Logical drive addr
-v, —verbosity <vl>	Verbosity level: "0" None "1" Adds the <CtrlModel> and the status of all controller boards filtered
-f, –format <f>	"0" Carriage Return in ASCII mode (\n) "1" Carriage Return in HTML mode ( )

Return code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

- OK:
  All "logical drives" and all "physical devices" run normally.

- WARNING:
  At least one "logical drive" or one "physical device" is in a WARNING state.
- CRITICAL:
  At least one "logical drive" or one "physical device" is in a CRITICAL state.
- UNKNOWN
  All other types of processing errors (bad parameter, no response, and so on…).

Note:
In the case of multiple errors, the global state will be the worst one; CRITICAL > WARNING > OK.

Output

A string composed with a global state descriptor followed, if they exist, by error states of concerned component (controller, Logical Device, Physical Device).

global state descriptor:

The first line shows the global state. The syntax is:

```
GAMTT RAID [CT |PD |LD ]<GlobalStatus>
"CT "  if "-A".
"PD "  if "-P".
"LD "  if "-L".
```

state descriptor by controller

They may be present after the global state descriptor if an error exists.

The syntax is:

```
[ CT(Ct<Ct>) <CtrlModel> <CtrlStatus>
[{LD(Ct<Ct> Nu<Ldn>) <LDType> <LDStatus>[, ] …}]
[{PD(Ct<Ct> Ch<Ch> Tg<Tg>) <PDType> <PDStatus>[, ] …}]
…]
```

<GlobalStatus>	worst detected status
<CtrlModel>	controller model
<CtrlStatus>	worst state detected for an element of this controller (LD and PD)
<Ct>	controller number
<Ldn>	"logical drive" number
<LDType>	"logical drive" type: "RAIDx" or "JBOD"
<LDStatus>	"logical drive" status
<Ct>	controller number
<Ch>	"channel" number
<Tg>	target number
<PDType>	"physical device" type: "Disk", "Processor", "Ctrl Channel", □
<PDStatus>	"physical device" status

Examples:

- If global state is OK:

```
> check_gamttraid -H <host>
GAMTT RAID OK
>
> check_gamttraid -H <host> -P 0.0.1
GAMTT RAID PD OK
>
> check_gamttraid -H <host> -L 0.0
GAMTT RAID LD OK
>
> check_gamttraid -H <host> –v 1
GAMTT RAID OK
CT(Ct0) MegaRAID Ultra320-2x OK
CT(Ct1) DAC960FFX2 OK
CT(Ct2) MegaRAID Ultra320-2x OK
>
> check_gamttraid -H <host> -A 1 –v 1
GAMTT RAID CT OK
CT(Ct1) DAC960FFX2 OK
>
```

- If global state is CRITICAL or WARNING, only concerned elements are displayed:

```
> check_gamttraid -H <host>
GAMTT RAID CRITICAL
CT(Ct0) MegaRAID Ultra320-2x CRITICAL
PD(Ct0 Ch0 Tg1) Disk Dead
>
> check_gamttraid -H <host> -L 0.1
GAMTT RAID LD CRITICAL
CT(Ct0) MegaRAID Ultra320-2x CRITICAL
LD(Ct0 Nu1) RAID5 Critical
>
```

- If return code is UNKNOWN:

```
> check_gamttraid -H <host>
GAMTT RAID UNKNOWN - snmp query timed out
>
```

NSMasterLSICIM

check_LSICIM

check_LSICIM uses the following shell (PERL) command:

Usage

```
check_LSICIM –H <host> [-C <ctrlname>]
```

-H, –hostname <host>	Hostname or IP address of target to check
-C, –ctrlname <ctrlname>	Name of the controller to check

Note:
The name of the controller must be protected with a quote if the name contains blank characters.

Return code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

- OK:
  All "Controllers" run normally.
- WARNING:
  At least one " Controllers" is in a WARNING state.
- CRITICAL:
  At least one "Controllers" is in a CRITICAL state.
- UNKNOWN
  All other types of processing errors (bad parameter, no response, etc…).

Note:
In the case of multiple errors, the global state will be the worst one; CRITICAL > WARNING > OK.

Output

A string indicates the state of mirroring followed, where applicable, by concerned component error states (controller, Logical Device, Physical Device).

If the GlobalStatus determined by the worst status of components is not OK, the state of the component is reported with the following format:

```
[CT(Ct<Ct>) <CtrlName> <CtrlStatus>
[{> LD(Ct<Ct> Nu<Ldn>) <LDType> <LDStatus>[, ] …}]
[{  - PD(Ct<Ct> Ch<Ch> Tg<Tg>) <PDManufacturer> <PDModel> <PDStatus>[,
[{> PD(Ct<Ct> Ch<Ch> Tg<Tg>) <PDManufacturer> <PDModel> <PDStatus>[, ] …}]
```

<Ct>	controller number
<CtrlModel>	controller model

<CtrlStatus>	worst state detected for an element of this controller (LD and PD)
<Ldn>	"logical drive" number
<LDType>	"logical drive" type: IM
<LDStatus>	"logical drive" status as reported by the LSI CIM provider
<Ch>	"channel" number
<Tg>	target number
<PDManufacturer>	"physical device" manufacturer
<PDModel>	"physical device" model
<PDStatus>	"physical device" status as reported by the LSI CIM provider

Examples:

```
$ ./check_LSICIM -H 172.31.50.71
: LSI SCSI storage - Integrated Mirroring not available –

LSI SCSI storage - Integrated Mirrored available -
CT(0) LSI 53C1030 CRITICAL
> LD(Ct0 Ch2 Tg0) IMVolume: Degraded Redundancy
  - PD(Ct0 Ch3 Tg0) SEAGATE ST373454LC: Error

$ ./check_LSICIM –H 172.31.50.71 -C 'LSI SCSI1030 – 0'

> CT(0) LSI 53C1030 OK

$ ./check_LSICIM -H 172.31.50.71 -C 'LSI SCSI1030 - 0'
> CT(0) LSI 53C1030 CRITICAL
  - PD(Ct0 Ch0 Tg0) MAXTOR ATLAS10K4_36SCA CRITICAL
```

NSMasterMegaRaidSAS

check_MegaRaidSAS(_IR)

check_MegaRaidSAS(_IR) uses the following shell (PERL) command:

Usage

```
check_MegaRaidSAS(_IR) -H <host> [-C <community>] [-p <port>]
[-t <timeout>] { [-A {ALL|<Ct>}] | [-P {ALL|<Ct.Pdn>}] |
[-L {ALL|<Ct.Ldn>}] } [-f <f>]
```

-H, –hostname <host>	Hostname or IP address of target to check
-C, –community <community>	SNMP community string (defaults to ”public”)
-p, –port <port>	SNMP port (defaults to 161)
-t, –timeout <timeout>	Seconds before timing out (defaults to Nagios timeout value)
-A, –adapter ALL | <Ct>	Controller board
-P, –physical ALL | <Ct.Pdn>	Physical device identifier
-L, –logical ALL | <Ct.Ldn>	Virtual drive identifier
-f, –format <f>	”0” Carriage Return in HTML mode ( ) ”1” Carriage Return in ASCII mode (\n)

Return code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

- OK:
  All ”logical drives” and all ”physical devices” run normally.
- WARNING:
  At least one ”logical drive” or one ”physical device” is in a WARNING state.
- CRITICAL:
  At least one ”logical drive” or one ”physical device” is in a CRITICAL state.
- UNKNOWN
  All other types of processing errors (bad parameter, no response, and so on…).

☞ **Note:**
In the case of multiple errors, the global state will be the worst one; CRITICAL > WARNING > OK.

Output

A string composed with a global state descriptor followed, if they exist, by error states of concerned component (controller, Logical Device, Physical Device).

global state descriptor

The first line shows the global state. The syntax is:

```
MegaRAID SAS [CT |PD |LD ]<GlobalStatus>
```

"CT " if "-A".

"PD " if "-P".

"VD " if "-L".

state descriptor by controller

They may be present after the global state descriptor if an error exists.

The syntax is:

```
[ CT(Ct<Ct>) <CtrlModel> <CtrlStatus>
[PD(CT<id> DEV<id> ENC<id> SLOT<id> SN<number>) <PDType>
<PDStatus> …]
[VD(CT<id> DEV<id>) <RAIDLevel> <VDStatus> …]
…]
```

<CtrlModel>	controller model
<CtrlStatus>	worst state detected for an element of this controller
<id>	controller or Drive or Logical drive index
<RAIDLevel>	RAID level (0,1,5,10,50,60)
<VDStatus>	"logical drive" status
<PDType>	"physical device" type: "Disk", "Processor", "Ctrl Channel",
<PDStatus>	"physical device" status
<SN>	serial number of physical drive

Examples:

- If global state is OK:

```
> check_MegaRaidSAS -H <hostname>
MegaRAID SAS CT OK
CT0 MegaRAID SAS 8408E OK
PD: 4
VD: 2 ( RAID0, 1 RAID1)
>

> check_MegaRaidSAS -H < hostname > -A ALL
MegaRAID SAS CT OK
CT0 MegaRAID SAS 8408E OK
PD: 4
VD: 2 ( RAID0, 1 RAID1)
>

> check_MegaRaidSAS-H < hostname > -L ALL
MegaRAID SAS VD OK
>

> check_MegaRaidSAS-H < hostname > -P  ALL
MegaRAID SAS PD OK
>
```

```
> check_MegaRaidSAS-H < hostname > -P 0.2
MegaRAID SAS PD OK
>

> check_MegaRaidSAS-H < hostname > -L 0.1
MegaRAID SAS VD OK
>
```

- If global state is CRITICAL or WARNING, only concerned elements are displayed:

```
> check_MegaRaidSAS -H <hostname> -L ALL
MegaRAID SAS VD WARNING
VD(CT0 DEV0) RAID1 degraded
VD(CT0 DEV2) RAID1 degraded>
>

> check_MegaRaidSAS -H <hostname>
MegaRAID SAS CT CRITICAL
CT0 MegaRAID SAS 8408E CRITICAL
PD: 4
VD: 2 ( RAID0, 1 RAID1)
PD(CT0 DEV0 ENC1 SLOT0 SN50010b90000972e2) DISK offline>
VD(CT0 DEV0) RAID1 degraded
VD(CT0 DEV1) RAID0 offline>
>
```

- If return code is UNKNOWN:

```
> check_MegaRaidSAS-H <hostname>
MegaRAID SAS UNKNOWN - no MegaRAID SAS Adapter present
>
```

External Storage Management

NSMasterStoreWayFDA

check_NECFDA

check_NECFDA uses the following shell (PERL) command:

Usage

```
check_necfda -H <host> [-C <community>] [-p <port>] [-t <timeout>]
[-f <f>]
```

-H, –hostname <host>	Hostname or IP address of the target to check
-C, –community <community>	SNMP community string (defaults to ”public”)
-p, –port <port>	SNMP port (defaults to 161)
-t, –timeout <timeout>	Seconds before timing out (defaults to Nagios timeout value)
-f, –format <f>	”0” Carriage Return in ASCII mode (\n) ”1” Carriage Return in HTML mode ( )

```
check_necfda –help
```

-h, –help	Display help

```
check_necfda –version
```

-V, –version	Display version

Return code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

Output

The first line shows the global state with the following format:

```
necfda <GlobalStatus>
```

<GlobalStatus>	Most severe state detected on a controller.

Examples:

- If the global state is « OK »

```
> check_necfda -H <host>
necfda OK
>
```

- If the global state is CRITICAL or WARNING, only errors are displayed :
- When the return code is UNKNOWN:

```
> check_necfda -H <host>
necfda CRITICAL
>
> check_necfda -H <host>
necfda WARNING
>
> check_necfda -H <host>
necfda UNKNOWN - snmp query timed out
>
> check_necfda -H <host>
necfda UNKNOWN - no data received
>
```

Virtualization Management

NSMasterVMwareESX

check_esx3

The Nagios check commands used by NMasterVMwareESX Add-on uses the shell (PERL) command **check_esx3**.

Usage

```
check_esx3  -H esxname [-N|-M|-B] [-C community] [-v virtualhost]
            [-l thing [-w warn -c crit]] [-t timeout]
```

-H <esxname>	Hostname or IP address of the ESX server to check
-N,-M,-B	set context for check execution -N for Nagios mode, -M for MRTG mode, -B for NSMaster mode.
-C <community>	SNMP community string (defaults to "public")
-v <virtualhost>	name of the virtual host to check
-l <thing>	what to check Available thing are: CPU, MEM, SNMP, STATE, LIST, LISTNET.
-w <warnThreshold>	warning threshold
-c <criticalThreshold>	critical threshold.
-h, –help	Display help

Return code

OK(0), WARNING(1), CRITICAL(2), UNKNOWN(3).

Output

The output depend on the calling Nagios command. See detailed cases below.

check_esx_server case

The check_esx3 shell is called with the following syntax:

```
check_esx3   -B -H <esxname> -C <community> -l LIST
             -w <warn>% -c <crit>%
```

Output:

```
VHosts: <nb-up>/<nb-all> up: <VMname> (<status>),  .
```

Example:

```
check_esx3   –H esx -C public –w 50% -c 0%

VHosts: 2/4 up: nsmvm5(OFF), nsmvm1(ON), nsmvm3(ON), nsmvm4(OFF)
```

Status is set to WARNING if more than 50% of VMs are down.
Status is set to CRITICAL if all VMs are down.

☞ Note:
The list of VMs used to establish ESX server status corresponds to all the VMs declared on the ESX server and not only to those declared on the NovaScale Master ESX platform. The VMname is that declared on the VMware ESX server (this name can be different from the NSMaster hostname).

check_esx_snmp case

The check_esx3 shell is called with the following syntax:

```
check_esx3   -B -H <esxname> -C <community> -l SNMP
```

Output:

OK	SNMP management interface available
CRITICAL	SNMP management interface not available

check_esx_mem case

The check_esx3 shell is called with the following syntax:

```
check_esx3   -B -H <esxname> -C <community> -l MEM -w <warn>% -c
             <crit>%
```

Output:

```
Memory free: <free>Mb (<percent_free>) [Total available <total>Mb]
```

Example:

```
check_esx3 –H esx -C public -l MEM –w 20% -c 10%

Memory free: 16111.6Mb (98%) [Total available 16383.6Mb]
```

Status is set to WARNING if less than 20% of memory is available.
Status is set to CRITICAL if less than 10% of memory is available.

check_esx_vm

The check_esx3 shell is called with the following syntax:

```
check_esx3   -B -H <esxname> -C <community> -v <virtualHost>
             -l STATE
```

Output:

OK	`VHost <VMname>is up (ID: <id>)`
CRITICAL	`VHost <VMname>is down (ID: <id>)`

Example:

```
check_esx_vm –H esx -C public –v nsmvm1 –l STATE

VHost nsmvm1 is up (ID: 48)
```

Status is set to OK if the VM is up.
Status is set to CRITICAL if the VMs are down.

☞ **Note:**
The VMname is that declared on the ESX server (this name can be different from the NSMaster hostname).

check_esx_vm_memory

The check_esx3 shell is called with the following syntax:

```
check_esx3   -B -H <esxname> -C <community> -v <virtualHost>
             -l MEM -w <warn>% -c <crit>%
```

Output:

```
Memory free: <free>Mb (<percent_free>) [Total available <total>Mb] on
vhost <VMname>
```

Example:

```
check_esx_vm_mem –B –H esx –C public –v nsmvm1 –w 20% -c 10%

Memory free: 460.8Mb (90%) [Total available 512Mb] on vhost smvm1
```

Status is set to **WARNING** if less than 20% of memory is available.
Status is set to **CRITICAL** if if less than 10% of memory is available.

☞ **Note:**
The VMname is that declared on the ESX server (this name can be different from the NSMaster hostname).

check_esx_vm_cpu

The check_esx3 shell is called with the following syntax:

```
check_esx3   -B -H <esxname> -C <community> -v <virtualHost>
             -l CPU -w <warn>% -c <crit>%
```

Output:

```
CPU usage is <percent_used> on <VMname> nsmvm1 (<time>average)
```

Example:

```
check_esx_vm_cpu –B –H esx –C public –v nsmvm1 –w 80% -c 90%

CPU usage is 3% on nsmvm1 (301s average)
```

Status is set to WARNING if more than 80% of CPU is used.
Status is set to CRITICAL if if more than 90% of CPU is used.

Note:

The VMname is those declared on the ESX server (this name can be different from the NSMaster hostname).

NSMasterHyperNova

check_NSM_hypernova_xen

The Nagios check commands used by NMasterHyperNova Add-ons uses the shell (PERL) command check_NSM_hypernova_xen.

Usage

```
check_NSM_hypernova_xen -H <hnname> [-m <virtualhost>][-t timeout]
```

-H <hnname>	Hostname or IP address of the HyperNova server to check
-v <virtualhost>	name of the virtual host to check
-h, –help	Display help

Return code

OK(0), WARNING(1), CRITICAL(2), UNKNOWN(3).

Output

The output is the StatusText as setting by HNMaster. For the list of values, refer to the HyperNova documentation

Examples:

Check_hn_server_status

The check_NSN_hypernova_xen shell is called with the following syntax:

```
check_NSN_hypernova_xen –H <hnserver>
```

Output:

StatusText as returned by HNMaster

Example:

```
check_NSN_hypernova_xen –H hnserver

Nothing to report
```

Status is set to OK.

Check_hn_vm_status

The check_NSN_hypernova_xen shell is called with the following syntax:

```
check_NSN_hypernova_xen –H <hnserver> -m <virtualhost>
```

Output:

<virtualHost>: StatusText as returned by HNMaster

Example:

```
check_NSN_hypernova_xen –H hnserver –m VM1

VM1: VM inactive
```

Status is set to WARNING.

Note:

The VMname is those declared on the HyperNova Server (this name can be different from the NSMaster hostname).

NSMasterViosLpar

check_NSM_vios_ivm

The Nagios check commands used by NMasterViosLPAR Add-on uses the shell (PERL) command check_NSM_vios_ivm.

Usage

```
check_NSM_vios_ivm -H <vios_netname> -U <remote_user>
-I <identity_file> [-l <lpar_name>] [-i <STATUS|CPU|POOL>]
[-e sample_time] [-w <warn>%] [-c <crit>%] [–N <vios_name>]
[-t timeout]
```

-H <vios_name>	Hostname or IP address of the Vios server to check
-U <remote_user>	User for remote connection
-I <identity_file>	Name of the file from which the identity (private key) for RSA or DSA authentication is read. The file must be localized into the directory <NSMaster Installation Directory>/engine/etc/ssh. To use it as authentication file for Vios platform, you have to install the corresponding public key on the VIO server.
-N <vios_name>	Name of the Vios host (used in output of the plugin related to a given logical partition).
-l <lpar_name>	Name of the logical partition to check
-i <check information>	Available values are: STATUS (to check the status of the VIO server or of a logical partition), POOL (to check the utilization of the processing pool), or CPU (to check the utilization of the CPU entitled to a partition). Default value is STATUS

-e <sample time>	Sample time in minutes used to perform calculation on utilization. Default value is 5.
-w <warnThreshold>	Warning threshold
-c <criticalThreshold>	Critical threshold.
-h, –help	Display help

Return code

OK(0), WARNING(1), CRITICAL(2), UNKNOWN(3).

Output

The output depends on the type of check performed. See below to get detailed information.

check_vios _status case

The check_NSM_vios_ivm shell is called with the following syntax:

```
check_NSM_vios_ivm –H <vios_netName> -U <user> -I <identity_file>
```

Output:

Only two states are possible for Vios status: OK or UNKNOWN:

- for OK state, the output is "Virtual I/O Server state: Operating"
- for UNKNOWN state, the output is "Unable to determine Virtual I/O Server state", following the reason.

Note:
The check_vios_status command is based on the state given by the **lssyscfg IVM** command to obtain the state of the Vios system.

Example:

```
check_NSM_vios_ivm –H ivm1 –U padmin –I id_dsa_nsm
```

Output: `Virtual I/O Server state: Operating`
Return code: `OK`.

check_vios_lpar_status case

The check_NSM_vios_ivm shell is called with the following syntax:

```
check_NSM_vios_ivm –H <vios_netName> -U <user> -I <identity_file>
-l <lpar_name> -N <vios_name>
```

Output:

```
Logical partition <lpar_name> on <vios_name>: <lpar_status>
```

Note:
The check_vios_lpar_status command is based on Lpar state obtained by the **lssyscfg IVM** command.

Examples:

1. `check_NSM_vios_ivm –H 192.168.207.60 –U padmin –I id_dsa_nsm –N ivm1 l part1`

   Output: `Logical partition part1 on ivm1: Running`

   Return code: OK.

2. `check_NSM_vios_ivm –H 192.168.207.60 –U padmin –I id_dsa_nsm –N ivm1 l part2`

   Output: `Logical partition part2 on ivm1: Not Available`

   Return code: CRITICAL.

check_vios_used_pool case

The check_NSM_vios_ivm shell is called with the following syntax:

```
check_NSM_vios_ivm –H <vios_netName> -U <user> -I <identity_file>
-i POOL -e <sample_time> -w <warn>% -c <crit>%
```

Output:

```
Processing pool (nbCPU / CPUTotal units entitled) - utilization on
<sampleTime> mn <check_status>: <utilization percent>%
```

Note:
The check_vios_used_pool command is based on pool_cycle metrics (total_pool_cycle, utilized_pool_cycle) obtained by the **lslparutil IVM** command.

Example:

```
check_NSM_vios_ivm –H 192.168.207.60 –U padmin –I id_dsa_nsm
-i POOL –e 5 –w 70% –c 80%
```

Output :

```
Processing pool (1.4 / 2 units entitled) - utilization on 5 mn OK:
2.16 %
```

Return code: OK

check_vios_lpar_used_cpu case

The check_NSM_vios_ivm shell is called with the following syntax:

```
check_NSM_vios_ivm –H <vios_netName> -U <user> -I <identity_file>
-N <vios_name> -l <lpar_name> -i CPU -e <sample_time> -w <warn>% -
c <crit>%
```

Output :

```
Logical partition <lpar_name> on <vios_name> (<nbCPU> units
entitled) - processing utilization on <sample_time>mn
<check_status>: <utilization percent>%
```

Note:
The check_vios_lpar_used_CPU command is based on cycles metrics (entitled_cycles,capped_cycles,uncapped_cycles) obtained by the **lslparutil IVM** command.

Examples:

```
check_NSM_vios_ivm –H 192.168.207.60 –U padmin –I id_dsa_nsm
-N ivm1 –l part1 -I CPU–e 5 –w 10% –c 20%
```

Output :

```
Logical partition part1 on blade_js21 (0.4 units entitled) -
processing utilization on 5 mn WARNING: 17.77 %
```

Return code: `WARNING`

Bull Products Management

NSMasterDD4A

check_DynamicDomains

check_DynamicDomains uses the check_DD4A shell (PERL) command:

Usage

```
check_DD4A -H <host> [-w ] [-D <domainName>]
```

-H, --hostname <host>	Hostname or IP address of target to check
-D, --domain ALL | <domainName>	ALL domains or a specific one: <domainName>
-w, –-web	WEB HTML output format

Return code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

- OK:
  All "Dynamic Domains" run normally.
- WARNING:
  At least one "Dynamic Domain" is in a WARNING state.
- CRITICAL:
  At least one " Dynamic Domain " is in a CRITICAL state.
- UNKNOWN
  All other types of processing errors (bad parameter, no response, etc…).

☞ Note:
In the case of multiple errors, the global state will be the worst one;
CRITICAL > WARNING > OK.

Output

A string with a global state descriptor followed, if they exist, by error states of the concerned component (controller, Logical Device, Physical Device).

If `-D ALL` or without `-D` parameter is used, the first line displays the defined Dynamic Domains number. Then, only Dynamic Domains with issues are displayed with their status, their number of used CPUs, their CPU load (and the associated threshold) and their number of tasks.

☞ Note:
The global state is not displayed textually, only the command return code contains this status information.

If `-D <domainName>` is used, the command output displays the defined Dynamic Domain name with its number of used CPUs, its CPU load (and the associated threshold) and its number of tasks.

Examples:

- `check_DD4A -H <host>`
- `check_DD4A -H <host> -D ALL`

```
4 Dyn.Domains.
- domain2 : WARNING
CPUs: 4 / 4, tasks: 70
load: 80% ( > 75% )
- domain3 : CRITICAL
CPUs: 4 / 4, tasks: 110
load: 100% ( > 75% )
```

- `check_DD4A -H <host> -D default`

```
default : OK
CPUs: 7 / 8, tasks: 37
load: 0.56% ( < 75% )
```

NSMasterBVS

check_BVS

check_BullVideoServices uses the check_BVS shell (PERL) command:

Usage

```
check_BVS -H <host> -S {Streaming|Recording|Datagrams}
[{–p <period>} | { -l <begin> -t <end> }] [-w]
```

-H, –hostname <host> Hostname or IP address of target to check

-S, –service Streaming|Recording|Datagrams

-p, –period <period> | -l <begin> -t <end>
indicates to the Bull Video Server the period in seconds to calculate the average values

-w, –web WEB HTML output format

Return code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

- OK:
  "Bull Video Server" runs normally.
- WARNING:
  "Bull Video Server" is in WARNING state.
- CRITICAL:
  "Bull Video Server" is in CRITICAL state.
- UNKNOWN
  All other type of processing errors (bad parameter, and so on…).

The BVS state "UNREACHABLE" (*Bull Video Server* is in " UNREACHABLE " state (daemon not started, communication timeout, …)).will be transformed to Nagios "UNKNOWN" status.

The status values (OK, WARNING, CRITICAL) are fixed by the video server itself according to criteria's indicated by a Bull Video Server administrator.

Output

The following information is displayed. Average values are calculated using the value specified by the 'polling interval' textbox from the service configuration screen. The default value is 1 min. A modification of this value will be automatically taken into account by the check_BVS plugin.

'Streaming' service

Status	global status of 'Streaming' service
Channels	number of channels used for streaming (average)
Rate	average rate in MB/s
Load	percentage of disk rate in relation to a value declared on BVS server

Example:

```
check_BVS -H <host> -S Streaming
    Status: OK
    channels: 17.00,
    rate (MB/s): 38.84,
    load: 12.69 %
```

'Recording' service

Status	global status of 'Recording' service
Channels	number of channels used for recording (average)
Rate	average rate in MB/s
Load	percentage of disk rate in relation to a value declared on BVS server.

Example:

```
check_BVS -H <host> -S Recording
    Status: OK
    channels: 7.00,
    rate (MB/s): 3.84,
    load: 7.69 %
```

'Datagrams' service

Status	global status of 'Datagram' service
Nb of late dg	number of UDP datagram's sent late per second (average)
Avg late value	average delay value in ms. A delay value between 0 and 10 ms is considered as a normal value.
Nb of deleted dg	number of deleted UDP datagrams per second (average).

Example:

```
check_BVS -H <host> -S Datagrams
    Status: OK
    nb of late dg: 128.67,
    avg late value: 1.03 ms,
    nb of deleted dg: 3.08
```

Service Inaccessible

In case of inaccessible service only the RC will be displayed.

Example:

```
check_BVS -H <host> -S <service>
   Status: UNREACHABLE
```

NSMasterJOnAS

Check_JOnAS

Check_JOnAS uses the following shell (PERL) command:

Usage

```
check_JOnAS -H <host> -N <network name> -a <jonas master>
-d <domain> -s <server>  -p <port number> [-u <user> -p <password> ]
[ -m] -w
```

-H host	host name
-N network name	network name
-a <jonas master>	JOnAS server name Administrator or master
-d <domain>	domain name
-s <server>	target server name
-p <port number>	port number
-u <user name>	user name(mandatory if called outside NSMaster)
-p <password>	password (mandatory if called outside NSMaster)
-m	set if JOnAS server is master
-w	command output in HTML

Return Code

OK (0), WARNING (1), CRITICAL (2), UNKNOWN (3)

- OK:
  JOnAS server runs normally.
- WARNING:
  JonAS server is in "STOPPED" state.
- CRITICAL:
  JOnAS server is in "FAILED" state.

  UNKNOWN:
  JOnAS server is in "UNREACHABLE" state.

Example:

```
check_JOnAS -H nasmaster –N nsmaster.frcl.bull.fr -a jonas -d
jonas -s jonas  -p 9000
```

```
The jonas server in jonas domain is RUNNING on
nsmaster.frcl.bull.fr
Memory allocated = 57700 used = 39949
Threads = 95
HTTP requests count = 0
Committed transactions count = 0
check_JOnAS -H frcls6260 –N frcls6260.frcl.bull.fr -a
instance1 -d jonas -s instance1  -p 9000 -m
The instance1 (master)server in jonas domain is RUNNING on
frcls6260
Memory allocated = 64315 used = 36359
Threads = 98
HTTP requests count = 478157905
Committed transactions count = 0
```

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Reference:	86 A2 95ER 03	**Date:**	February 2008

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