HPSA Extension Pack

Snmp Tool User Reference

Release v.5.1

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Document id:

Table of Contents

Support

Support for the HP Service Activator Extended Pack product is available on the following mailing list:

hpsa-support@hp.com

In This Guide

[Explain what can be found in this document]

Audience

The audience for this guide is the Solutions Integrator (SI). The SI has a combination of some or all of the following capabilities:

Understands and has a solid working knowledge of:

- UNIX® commands
- Windows® system administration

Understands networking concepts and language

Is able to program in Java™ and XML

Understands security issues

Understands the customer's problem domain

References

Manual Organization

This guide contains the following chapters:

Chapter 1, "Introducction",

Chapter 2, "General description",

Conventions

The following typographical conventions are used in this guide.

Font	What the Font Represents	Example
Italic	Book or manual titles, and man page names	Refer to the *HP Service Activator — Workflows and the Workflow Manager* and the *Javadocs* man page for more information.
	Provides emphasis	You *must* follow these steps.
	Specifies a variable that you must supply when entering a command	Run the command: `InventoryBuilder` *<sourceFiles>*
	Parameters to a method	The *assigned_criteria* parameter returns an ACSE response.
Bold	New terms	The **distinguishing attribute** of this class...
`Computer`	Text and items on the computer screen	The system replies: `Press Enter`
	Command names	Use the `InventoryBuilder` command ...
	Method names	The `get_all_replies()` method does the following...
	File and directory names	Edit the file `$ACTIVATOR_ETC/config/mwfm.xml`
	Process names	Check to see if `mwfm` is running.
	Window/dialog box names	In the `Test and Track` dialog...
	XML tag references	Use the `<DBTable>` tag to...
`Computer Bold`	Text that you must type	At the prompt, type: **`ls -l`**
Keycap	Keyboard keys	Press **Return**.
[Button]	Buttons on the user interface	Click `[Delete]`. Click the `[Apply]` button.
Menu Items	A menu name followed by a colon (:) means that you select the menu, then the item. When the item is followed by an arrow (->), a cascading menu follows	Select Locate:Objects->by Comment.

Install Location Descriptors

The following names are used throughout this guide to define install locations.

Descriptor	What the Descriptor Represents
$ACTIVATOR_OPT	The install base location of Service Activator. The UNIX location is /opt/OV/ServiceActivator The Windows location is <drive>:\HP\OpenView\ServiceActivator\
$ACTIVATOR_ETC	The install location of specific Service Activator configuration files. The UNIX location is /etc/opt/OV/ServiceActivator The Windows location is <drive>:\HP\OpenView\ServiceActivator\etc\
$ACTIVATOR_VAR	The install location of specific Service Activator logging files. The UNIX location is /var/opt/OV/ServiceActivator The Windows location is <drive>:\HP\OpenView\ServiceActivator\var\
$ACTIVATOR_BIN	The install location of specific Service Activator binary files. The UNIX location is /opt/OV/ServiceActivator/bin The Windows location is <drive>:\HP\OpenView\ServiceActivator\bin\
$ACTIVATOR_THIRD_PARTY	The location for new Java components such as workflow nodes and modules. Third-party libraries can also be placed in this directory. The UNIX location is /opt/OV/ServiceActivator/3rd-party The Windows location is <drive>:\HP\OpenView\ServiceActivator\3rd-party\ Customized inventory files are stored in the following locations: UNIX: $ACTIVATOR_THIRD_PARTY/inventory Windows: $ACTIVATOR_THIRD_PARTY\inventory
$JBOSS_HOME	HOME The install location for JBoss. The UNIX location is /opt/HP/jboss The Windows location is <drive>:\HP\jboss
$JBOSS_DEPLOY	The install location of the Service Activator J2EE components. The UNIX location is /opt/HP/jboss/server/default/deploy

	The Windows location is `<drive>:\HP\jboss\server\default\deploy`
`$ACTIVATOR_DB_USER`	The database user name you define. Suggestion: `ovactivator`
`$ACTIVATOR_SSH_USER`	The Secure Shell user name you define. Suggestion: `ovactusr`
`$SOSA_HOME`	The install base location of SOSA. The default UNIX location is `/opt/OV/Sosa` The default Windows location is <drive>:\HP\OpenView\Sosa\
`$SOSA_BIN`	The install location of specific SOSA binary files. The default UNIX location is `/opt/OV/Sosa/bin` The default Windows location is `<drive>:\HP\OpenView\Sosa\bin\`
`$SOSA_ETC`	The install location of specific SOSA configuration files. The default UNIX location is `/opt/OV/Sosa/config` The default Windows location is <drive>:\HP\OpenView\Sosa\config\
`$ECP_HOME`	The install base location of Equipment Connections Pool. The default UNIX location is `/opt/OV/ECP` The default Windows location is <drive>:\HP\OpenView\ECP\
`$ECP_BIN`	The install location of specific Equipment Connections Pool binary files. The default UNIX location is `/opt/OV/ECP/bin` The default Windows location is <drive>:\HP\OpenView\ECP\bin\
`$ECP_ETC`	The install location of specific Equipment Connections Pool configuration files. The default UNIX location is `/opt/OV/ECP/conf` The default Windows location is <drive>:\HP\OpenView\ECP\conf\

1 Introduction

1.1 Purpose

[This document is a manual …]

1.2 Document Scope

1.3 Definitions

1.3.1 Acronims

MWFM: Micro Work Flow Manager

HPSA: HP Service Activator

EP: Extension Pack

2 General Description

SnmpTool(*) is an application that manages Snmp requests to Network Elements. It consists of a web interface which is used to manage the MIB files and turns them into easily accessible and useful properties (allowing the user to create sets of favourites), and HPSA nodes and plugins to manage the network elements via SNMP.

* This application uses the library Westhawk's SNMP stack.

2.1 SNMP and MIB background

SNMP (Simple Network Management Protocol) is a protocol built for network management technology. SNMP defines a universal way that management information can be easily defined for any object and then exchanged between that object and a device designed to facilitate network management. Each device that participates in network management using SNMP runs a piece of software, generically called an *SNMP entity*.

The SNMP entity is responsible for implementing all of the various functions of the SNMP protocol. It comprises of two main parts, the SNMP Agent, which is a software program that implements the protocol, and sends and receives requests

Secondly, the SNMP Management Information Base (MIB) which defines the types of information stored about the node that can be collected and used to control the managed node. Information exchanged using SNMP takes the form of objects from the MIB. The MIB is written using SMI. Each managed device contains a set of variables that are used to manage it. These variables represent information about the operation of the device. The MIB is the full set of these variables that describe the management characteristics of a particular type of device.

2.1.1 SNMP Version

There are several different SNMP versions that have appeared as the standard has evolved. The first two are basically similar, the difference being mostly in the use of resources, v2 being much more efficient. SNMP version 3 addresses the problem of security. The previous versions sent the requests in clear text, and having as only protection against unauthorized usage a community name, shared between all clients, that has to match the request, and gives read or read-write permissions to the client.

Version 3 is built with security issues in mind. It provides support for authentication and privacy, using any number of encryption standards. This Tool is programmed to use authentication if needed, which can be used with SHA1 or MD5 encryption algorithms and can also use privacy.

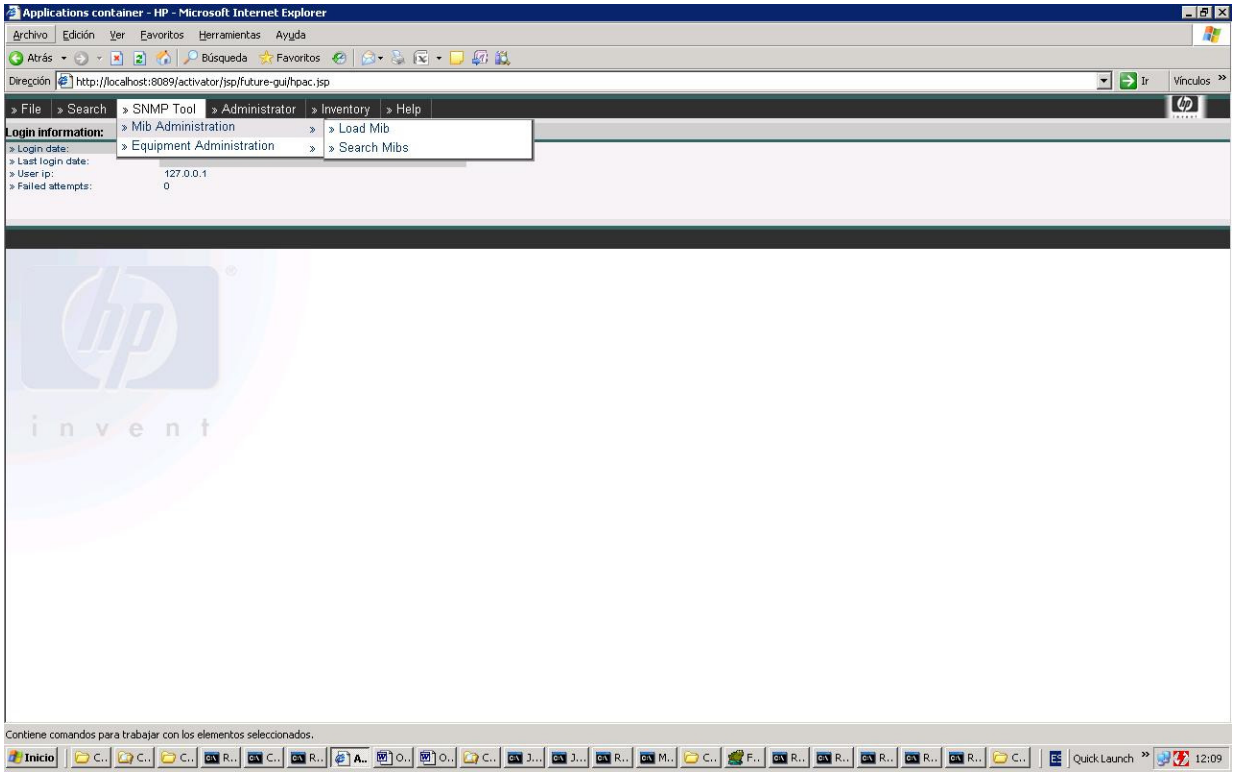
Bear in mind that the target of the request has to be configured with the proper values to the requests, and read/write permissions have to be allocated to the users.

3 Future GUI SNMP Tool

This module of the SnmpTool is a FUTUREGUI application. It provides a tool for administrating the MIB files, compiling them and lets the user create smaller subsets with the individual properties of the original MIB files. It also uses the TMN Inventory project to select pieces of equipment and send Snmp requests of these subsets (Favourites).

The application is divided into two main menus, Mib Administration and Equipment Administration. The first step to manage the Mibs is to load a MIB file. The Mib Administration Menu provides two options, one to load a particular MIB from a file into the tool, which in turn creates an entry on the DB if the MIB did not exist. Another is to search for the existing MIBs in the DB.

On the other hand, if we want to send an SNMP request against a device first we must select a Network Element. The menu provides a search option, to find the correct device in a TMN Inventory DB. Next image shows a screen capture of the main menu:



The following sections explain these two main operations.

3.1 MIB administration

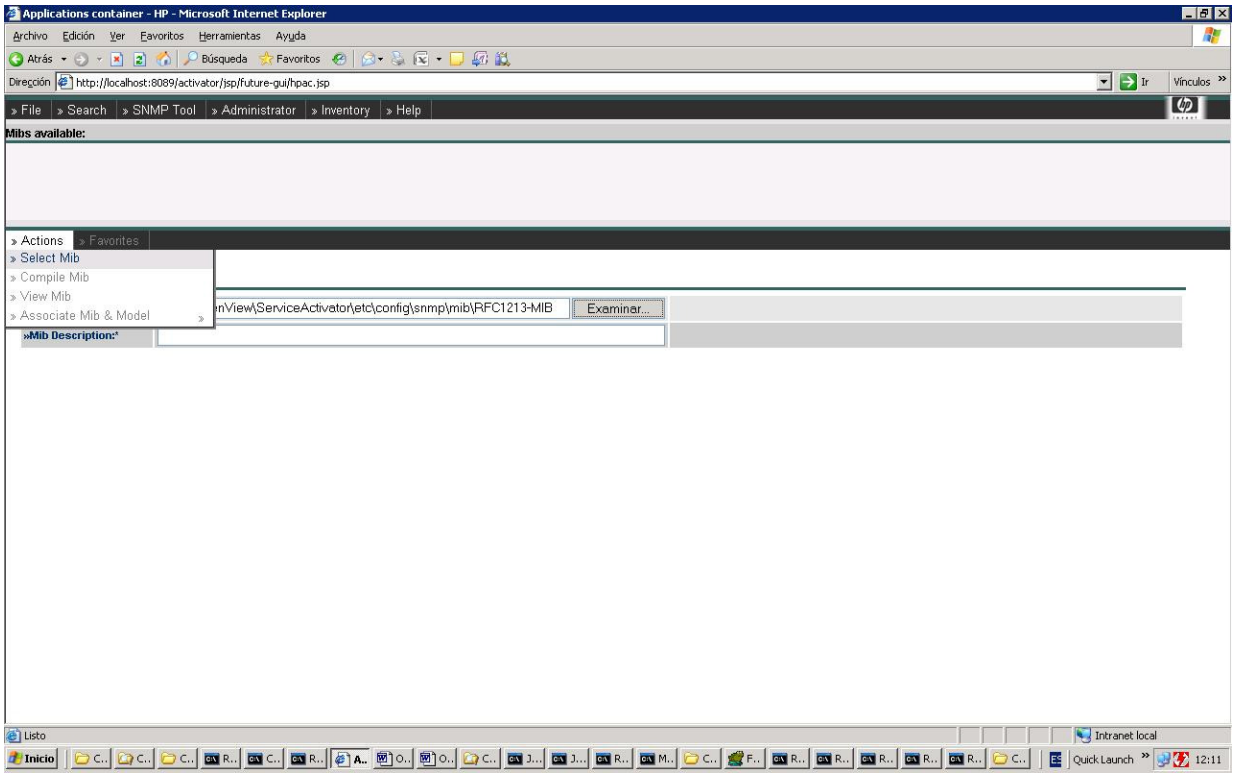
The Mib Administration menus are used to manage the MIB files and transform them into user defined entities called Favourites. These favourites are a subset of the SNMP properties that belong to a particular MIB.

3.1.1 MIB Management Menu Structure

The following section describes each menu and its function, in the most straightforward use of the tool.

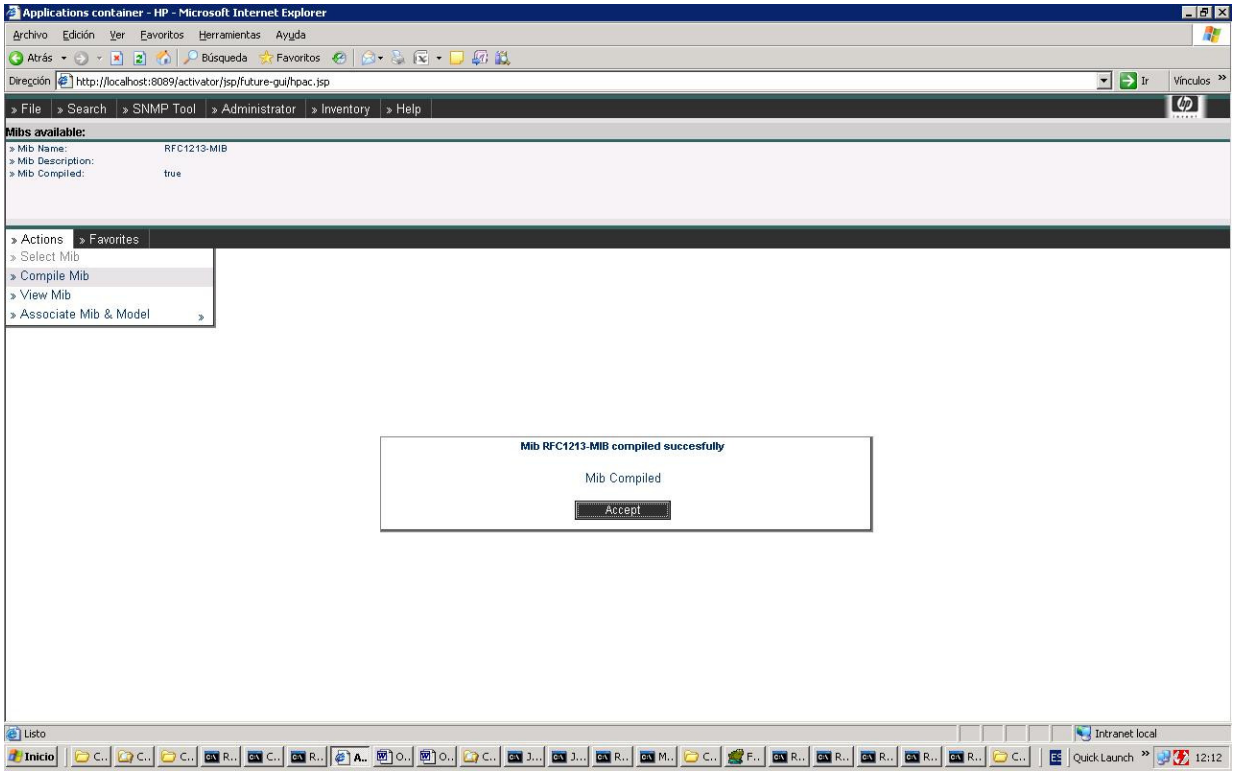
3.1.1.1 Load MIB

The first action when using the Mib Administration menu is to select the MIB file on which the operations are going to be performed. Therefore the first menu is the Mib Load menu, which creates an entry in the Database if it did not exist already. Note that the directory where the MIB files are read has match the value set in the '*mib_path*' property of the RemoteSnmpTool configured in the mwfm.xml.



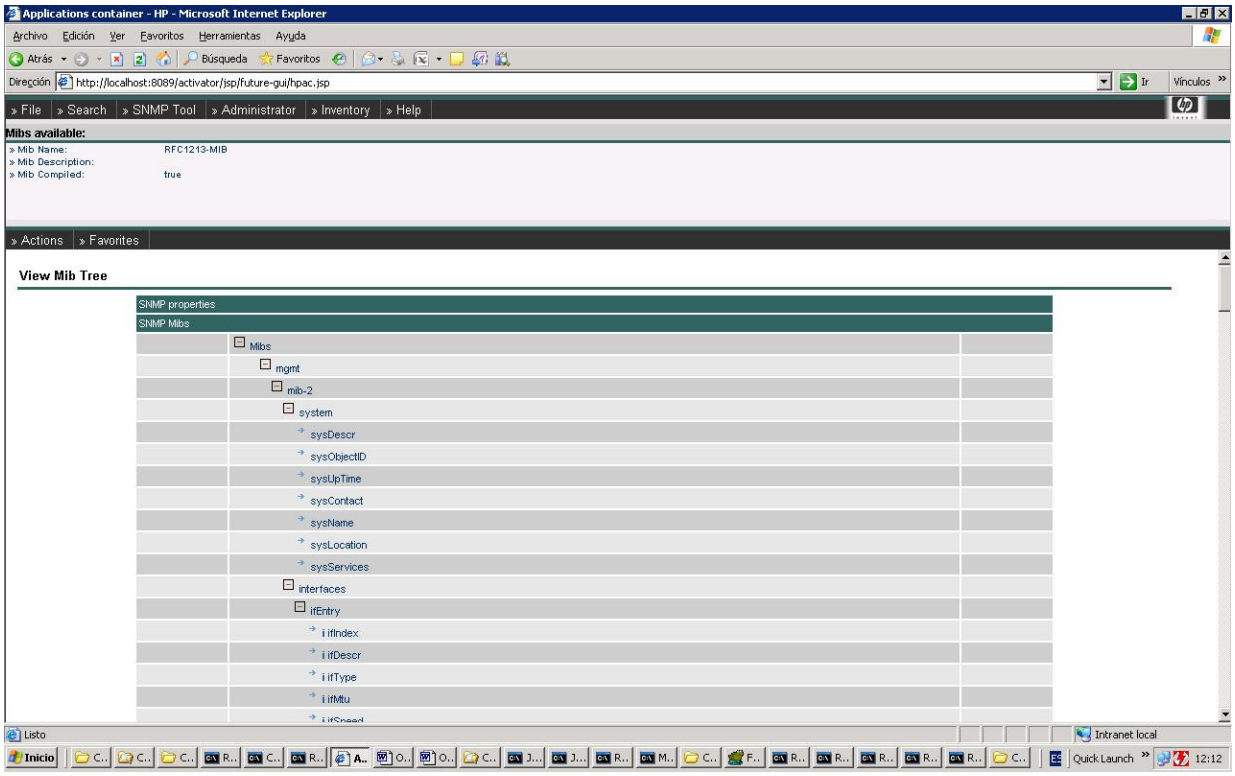
3.1.1.2 Compilation

MIB's have to be compiled before the tool can use them. To compile a MIB means parsing the MIB file and creating several XML files that contain all the MIB's properties and attributes. Therefore the MIB is transformed into an XML tree structure which is then used by the application.



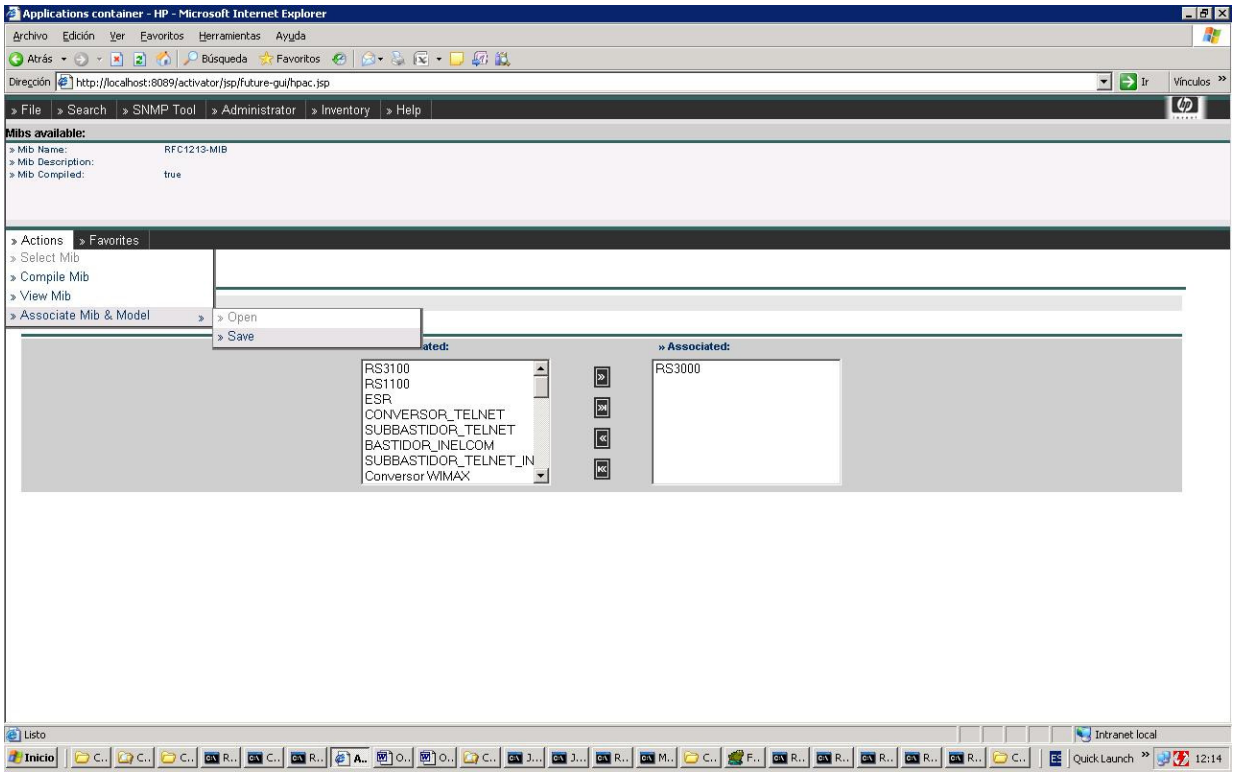
3.1.1.3 View Tree

The compiled MIB can be viewed as tree like structure of properties using this menu.



3.1.1.4 MIB & Model Association

This menu associates equipment models to MIBs. The equipment models are read from the DB and any number of them can be associated to the selected MIB. Beware that this relation should be correctly assigned, a switch made by Riverstone will not have the same SNMP properties than a router made by Cisco; usually the equipment manufacturer will provide the MIB files for their model.



3.1.1.5 Synchronize servers

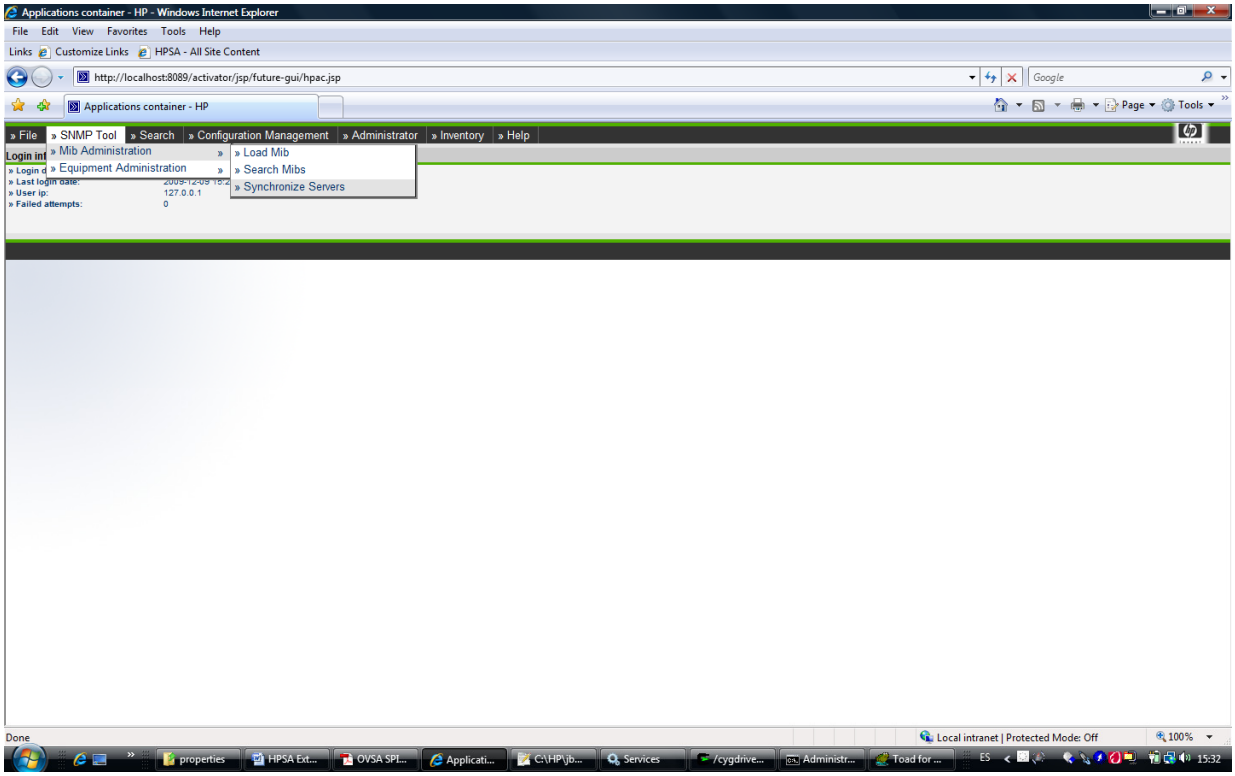
The information of the MIBs and associated favorites is stored in files on the server where the Application runs. Depending on the scenario, we can have multiple instances of the HPSA and we want every one of them can use the MIBs and favorites defined.

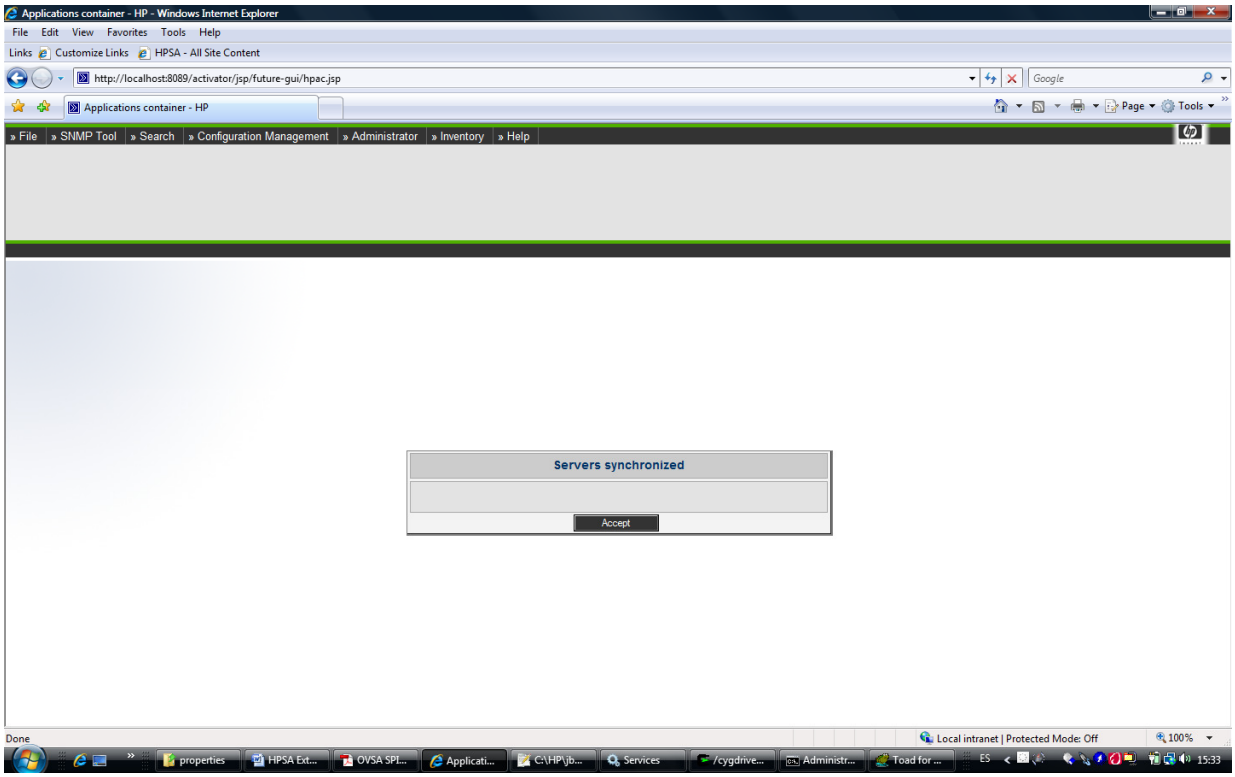
The properties file snmp.properties (of the jboss instance) contains the servers to be synchronized:

```
# Main module
snmp_module_url = //localhost:2000/snmp_tool

# External modules to be synchronized
snmp_module_url_sync0 = //172.16.2.131:2000/snmp_tool
snmp_module_url_sync1 = //172.16.2.132:2000/snmp_tool
```

When clicking on the option 'SNMP Tool -> Mib Administration -> Synchronize Servers', the application automatically uploads, if necessary, all files in each of the selected servers.


Applications container - HP - Windows Internet Explorer
File Edit View Favorites Tools Help
Links Customize Links HPSA - All Site Content
http://localhost:8089/activator/jsp/future-gui/hpac.jsp
Applications container - HP
» File » SNMP Tool » Search » Configuration Management » Administrator » Inventory » Help
» Mib Administration
» Equipment Administration
» Load Mib
» Search Mibs
» Synchronize Servers
Done
Local intranet | Protected Mode: Off
100%

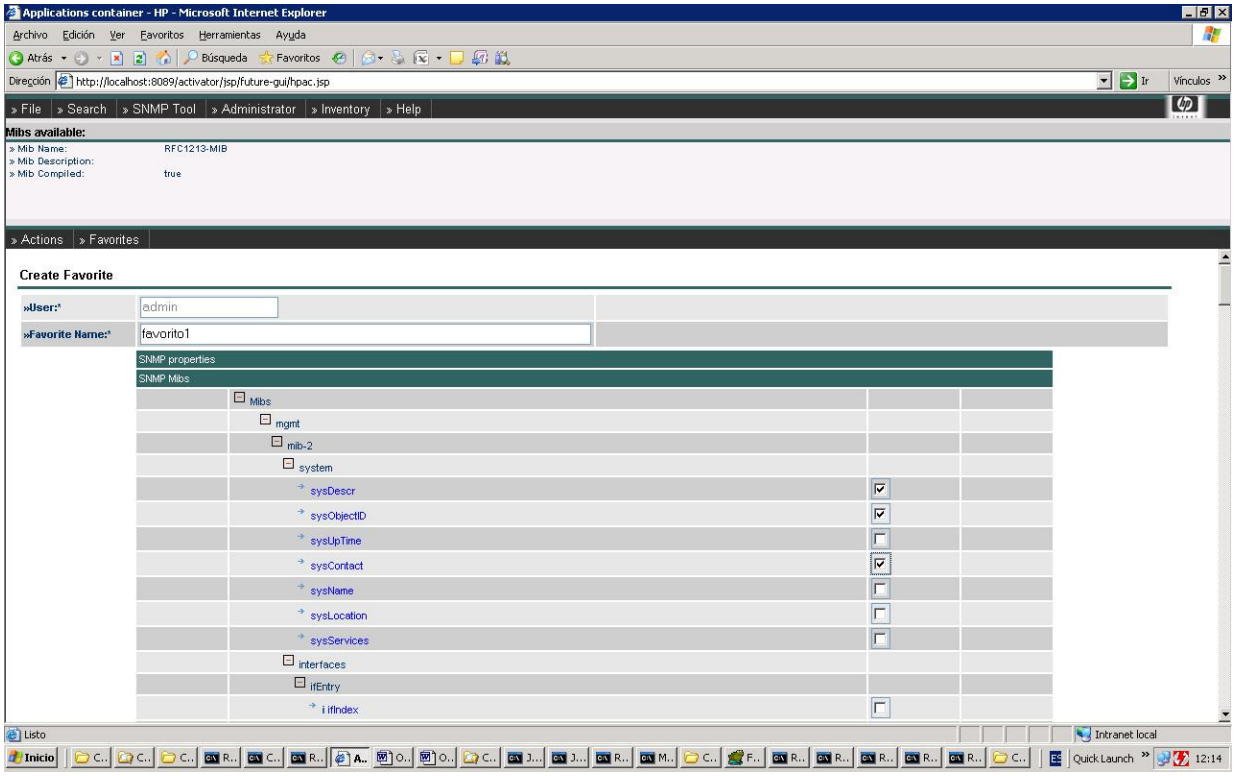

Applications container - HP - Windows Internet Explorer
File Edit View Favorites Tools Help
Links Customize Links HPSA - All Site Content
http://localhost:8089/activator/jsp/future-gui/hpac.jsp
Applications container - HP
» File » SNMP Tool » Search » Configuration Management » Administrator » Inventory » Help
Servers synchronized
Accept
Done
Local intranet | Protected Mode: Off
100%

3.1.2 Favourite Management Menu Structure

Favourites are central to the SnmpTool operation. A favourite can be seen as a subset of the useful properties of the MIB file. For example, a user might only be interested in the routing tables of a particular device, whilst another might need to know the performance parameters of the same device. A Favourite allows choosing a smaller set of useful parameters in order to avoid having to sift through the whole of the MIB's parameters.

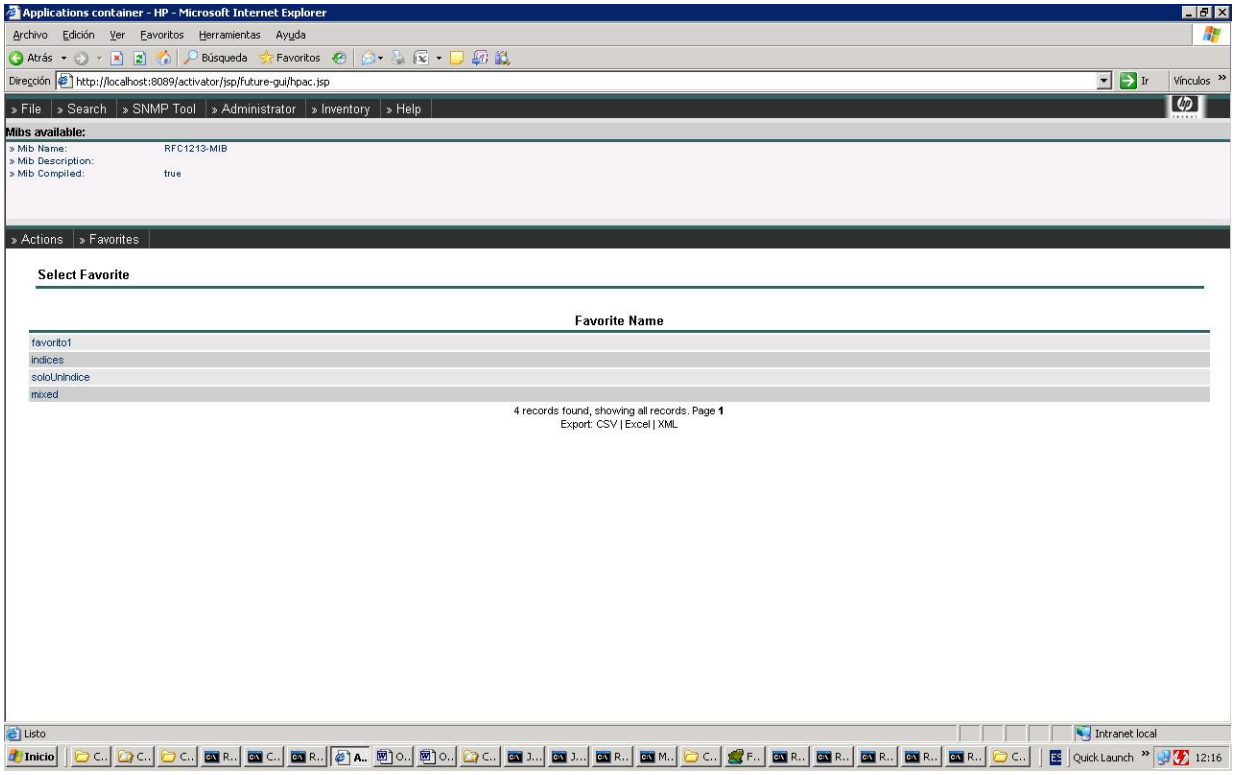
3.1.2.1 New Favourite

This option creates a Favourite. Each Favourite is a subset of the compiled properties of a MIB. The user identifies the new Favourite with a name and only afterwards can choose the individual properties that will make up the Favourite. A favourite can contain only one property, or can contain every single property belonging to the MIB. A Favourite is always related to one MIB, that is, it cannot mix properties from different Mibs.



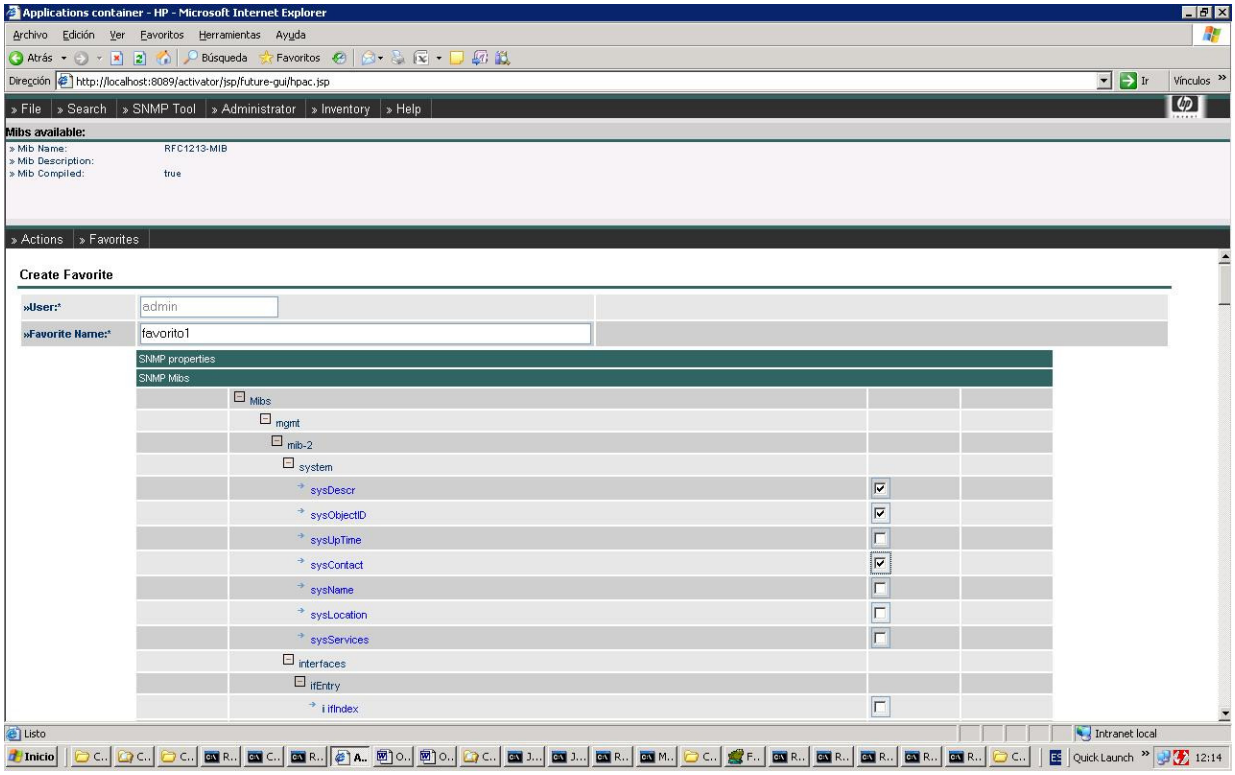
3.1.2.2 List Favourites

The next screen shows a list of all the available favourites for the MIB selected. The favourite we select can be modified or deleted.



3.1.2.3 Modify Favourite.

An existing favourite can be updated and its properties enhanced or reduced. To confirm the changes to the favourite, the user has finished updating the favourite, has finished we should click on Save.



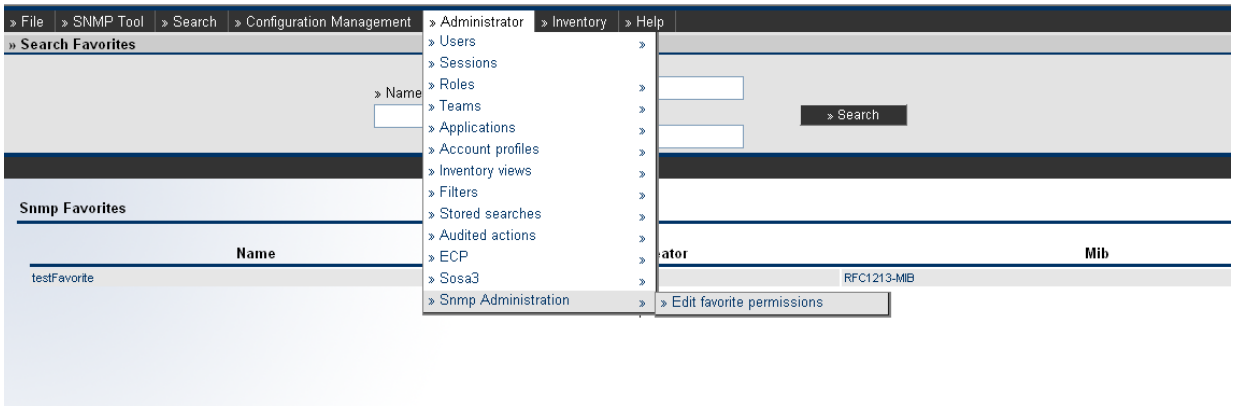
3.1.2.4 Delete Favourite

A no longer needed Favourite can be thus deleted.

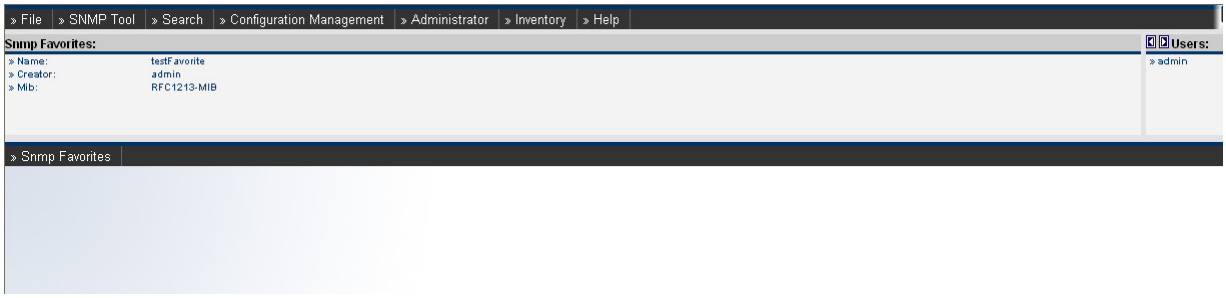
3.1.3 Favourite Permissions Management

The superuser can associate any favourite to any team and to any user, at the same time the team administrators can associate any favourite belonging to their team to any user from the same team. The users will have access only to the favourites associated to them.

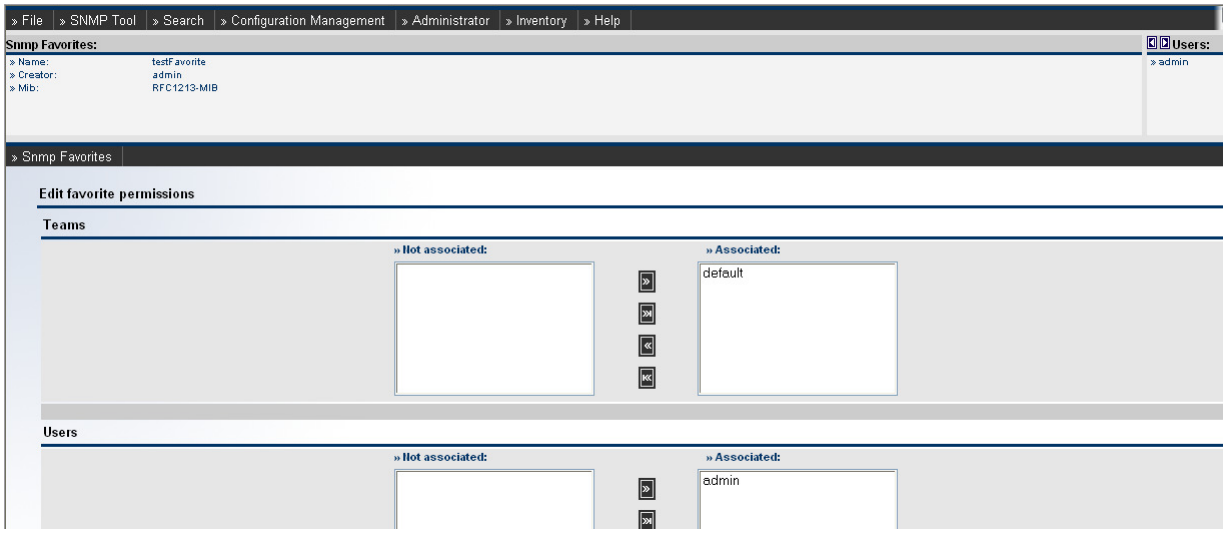
In order to edit the permissions associated to a favourite element is necessary to click in the menu "Administrator->Snmp Administration->Edit favourite permissions". A list with all the accessible favourites will be shown in the screen:



To change the permissions associated to one of these elements the user has to click on it, the detail view will be shown:



Then, by selecting the menu "Snmp Favourites->Edit favourite permissions" the edition screen will be shown:



3.2 Equipment Administration

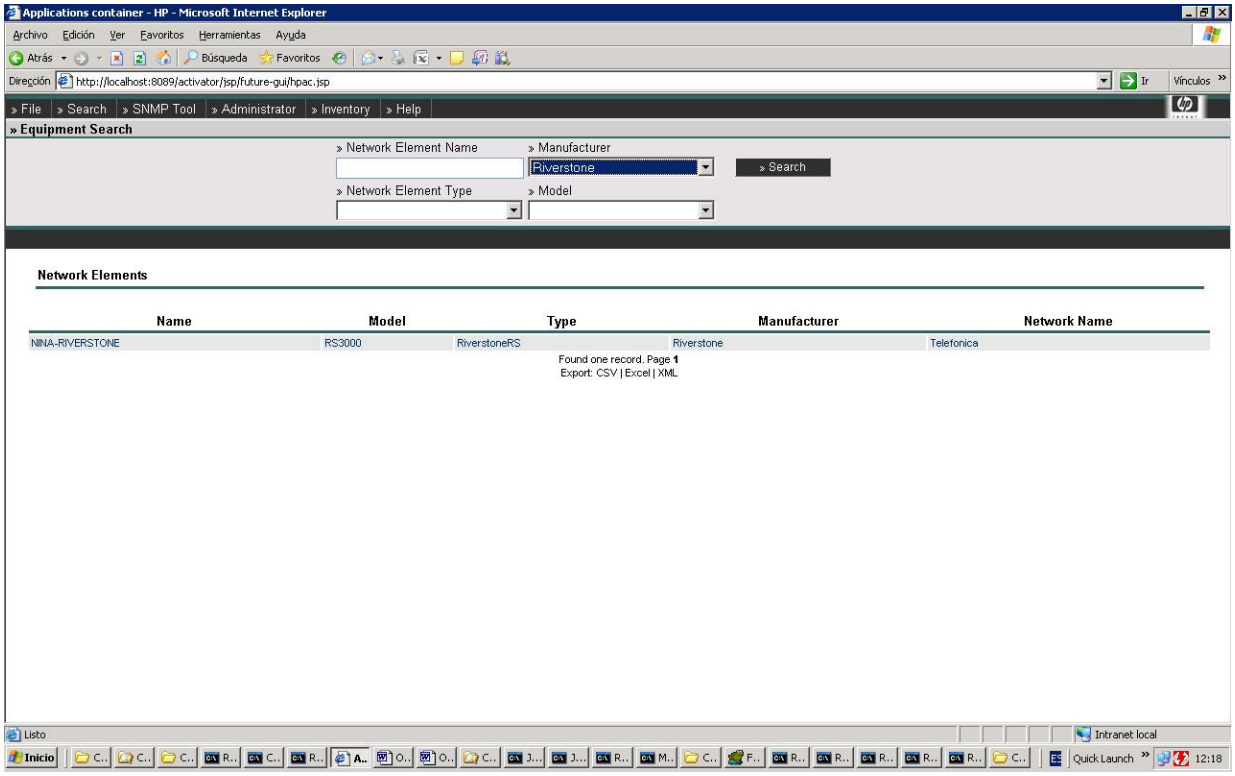
This menu is used to send SNMP requests to Network Elements. The requests are sent in groups known as Favourites. Each menu is explained below, following the most straightforward operation.

3.2.1 Menu Structure

3.2.1.1 Search Equipment

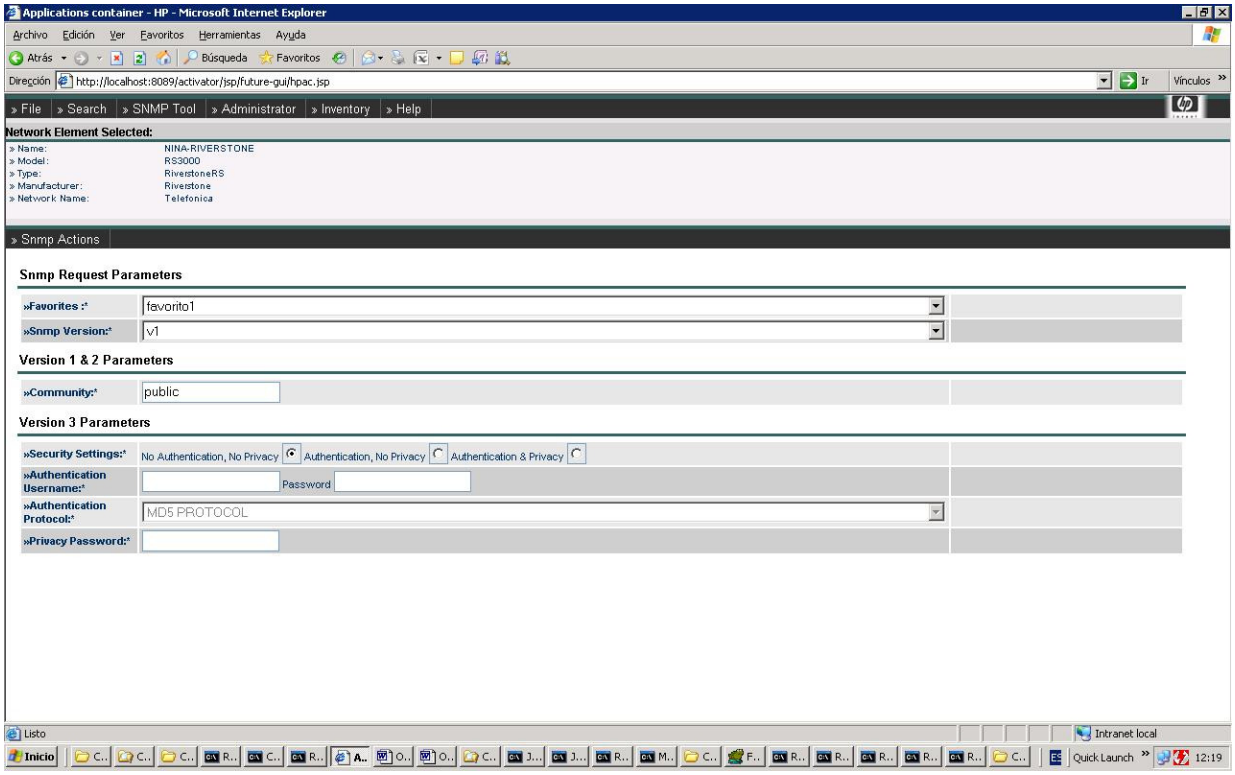
This is used to find the Network element that we want to configure or diagnose. This uses the project TMN Inventory, which is a project for organizing networks of components. Therefore the SNMP Request is executed against a Network Element bean from the TMN Inventory.

To find the Network Element we can search using the following criteria: by the equipment's name, by its Element Type, by its manufacturer or by its type of Equipment Model. Once the particular piece of equipment is found we should select it by clicking on it. This takes us to the following Menu.



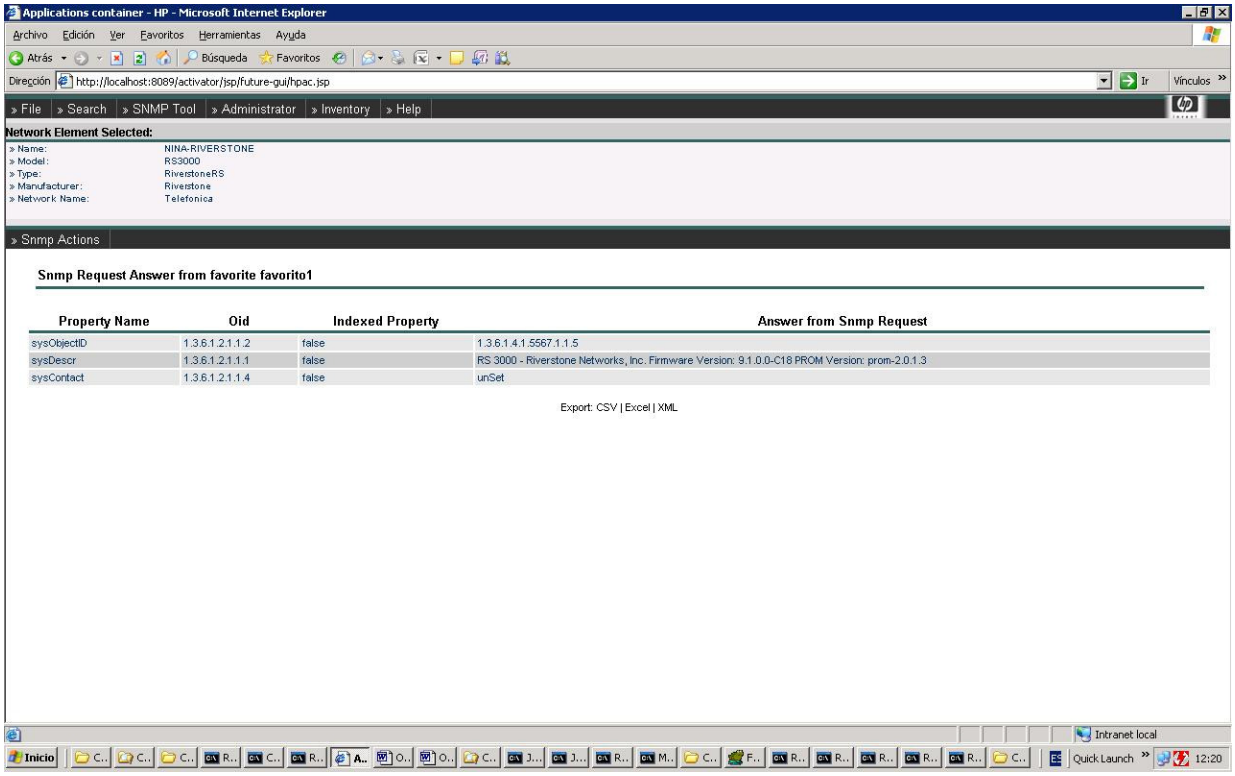
3.2.1.2 Request Parameters

This menu is used to select the favourite whose properties are going to be read/written, the SNMP version to use for the request and the parameters for the request. Beware that for most models the writing of values usually requires a different set of parameters. To get to the next screen we must choose whether we want to read the values of the favourite or to change them.



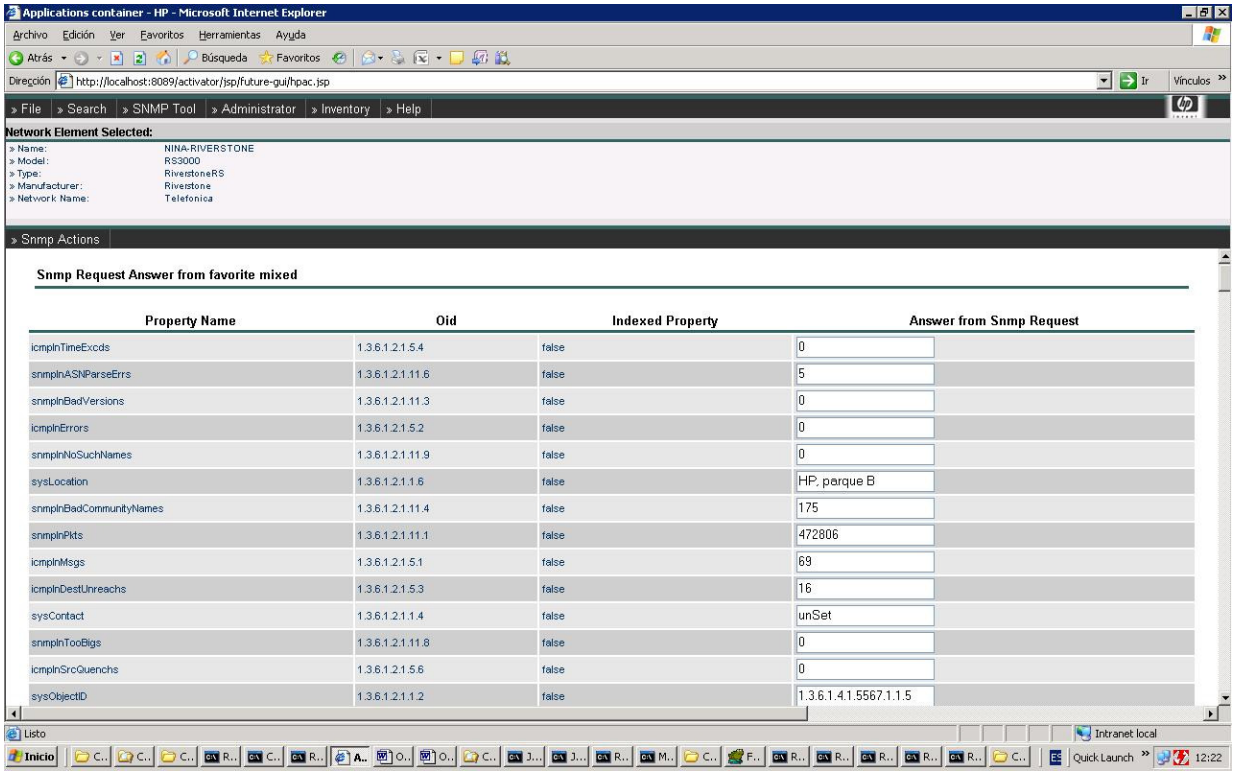
3.2.1.3 Get Parameters

This screen shows the parameters organized in two parts, first of all the single properties, each having only one value, and next, if there are any, the indexed properties, which are properties that contain a number of values, similar to a table.



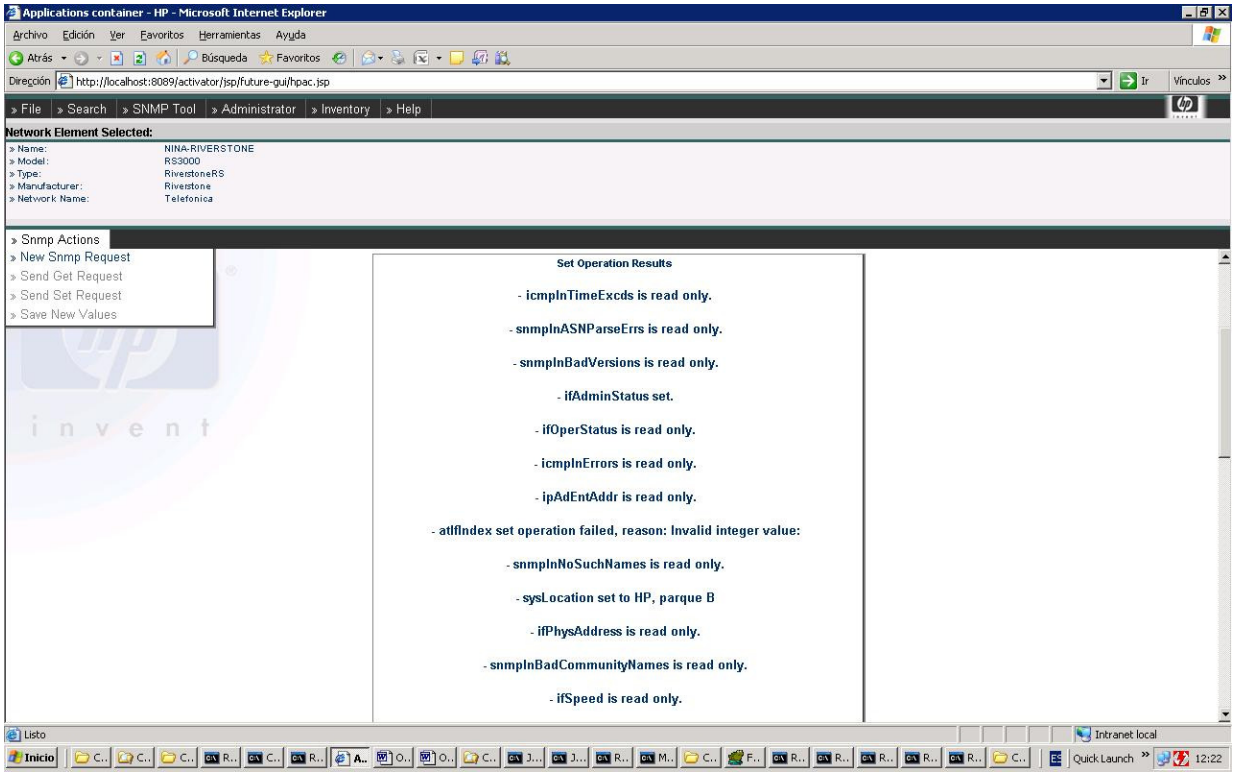
3.2.1.4 Set Parameters

This option performs a Get Operation on the values to be set, and allows the user to change them, if and only if, the MIB specifies that the property is read-write. Otherwise the value is shown, though it cannot be edited. To set these values to the Equipment the user must select the option called Save.



3.2.1.5 Save

This option appears only for Set operations, and shows how the set operation went for each property. Some properties are read-write and cannot be changed. Other might have been set with invalid values. In order for the whole set operation not to be compromised, if one property change fails, the rest can be changed successfully.


Applications container - HP - Microsoft Internet Explorer
Archivo Edición Ver Favoritos Herramientas Ayuda
Atrás Búsqueda Favoritos
Dirección http://localhost:8089/activator/jsp/future-gui/hpac.jsp
Ir Vínculos
» File » Search » SNMP Tool » Administrator » Inventory » Help
Network Element Selected:
» Name: NINA-RIVERSTONE
» Model: RS3000
» Type: RiverstoneRS
» Manufacturer: Riverstone
» Network Name: Telefonica
» Snmp Actions
» New Snmp Request
» Send Get Request
» Send Set Request
» Save New Values
Set Operation Results
- icmpInTimeExcds is read only.
- snmpInASNParseErrs is read only.
- snmpInBadVersions is read only.
- ifAdminStatus set.
- ifOperStatus is read only.
- icmpInErrors is read only.
- ipAdEntAddr is read only.
- atIfIndex set operation failed, reason: Invalid integer value:
- snmpInNoSuchNames is read only.
- sysLocation set to HP, parque B
- ifPhysAddress is read only.
- snmpInBadCommunityNames is read only.
- ifSpeed is read only.
Listo
Intranet local
Inicio
Quick Launch
12:22