

A line graph with four data series is overlaid on a semi-transparent globe. The series are colored orange, white, light grey, and dark blue. The orange line shows the most significant upward trend, while the other lines show more moderate fluctuations. The globe is centered on the Atlantic Ocean, showing parts of North and South America.

Integrating Newtest into Nagios supervision

Newtest plug-in for Nagios

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1 PURPOSE

The purpose of this document is to supply enough necessary information to integrate Newtest into Nagios supervision. This integration relies on two Nagios plug-ins which are provided to supervise Newtest robot and scenario objects. All Newtest↔ Nagios interface modules are Windows- and Unix-compatible.

2 CONCEPT

The main concept centers on integrating the supervision of Newtest robots and scenarios, using two plug-ins and a pooler to collect data and status from these two types of Newtest object.

This integration solution is built on two modules:

- The first is the pooler whose role is to retrieve data concerning all robots and scenarios present on the NMC server, via web services requests.
- The second consists of two Nagios plug-ins whose role is to transmit data to Nagios in a format that is comprehensible to Nagios.

Thus an overview of the solution includes:

- Pooler: status requests for all robots and scenarios, as well as the values of the latest execution of all scenarios and robots present within the configuration of the NMC server. Scheduling of pooler execution on the server that houses the Nagios supervision mode.
- Call to the robot plug-in (one call per robot) via Nagios: analysis of the pooler's result file for the status of the target robot
- Active check: call to the scenario plug-in (one call per scenario) via Nagios : analysis of the pooler's result file for the target scenario

OR

- Passive check: triggers passive check of all scenarios on a robot when active check of the robot is activated

2.1 Architecture of the integration solution

The solution comprises six files:

Newtest_pooler.pl: module which collects statuses and measurements from scenarios and robots via web services requests to NMC.

Newtestlib.pm: Newtest library used by the Newtest_pooler.pl script and the Newtest_plugin_rbt.pl script in addition to Newtest_plugin_rbt_sce.pl.

Newtest_plugin_rbt.pl: Nagios plug-in for robot statuses.

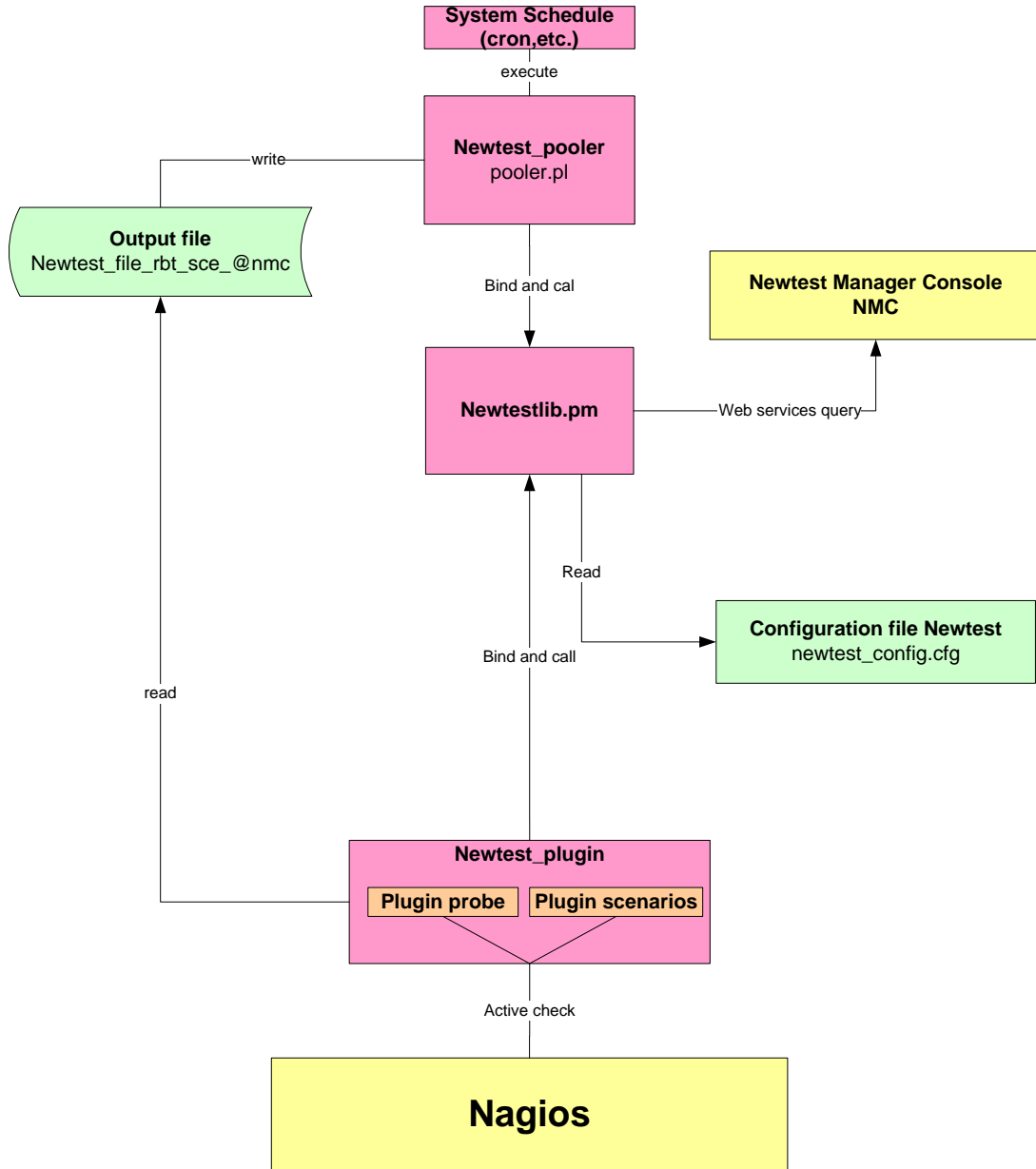
Newtest_plugin_rbt_sce.pl: Nagios plug-in for scenario statuses.

newtest_config.cfg: configuration file for the plug-ins and pooler.

Newtest_file_rbt_sce_@NMC: file resulting from pooler execution, containing all data on statuses collected by web services requests, for robot and scenario objects.

Note: " @NMC" represents the IP address of the remote Newtest server. For example: 192.168.1.2 (without http://).

The architecture of Newtest integration into Nagios is shown below:



General outline of operation of the plugin

2.1.1 The script Newtest_pooler.pl

The purpose of the pooler is to harvest all data concerning the robots and scenarios associated with NMC by using web services requests, and to deliver the data in a specific format in an output file: Newtest_file_rbt_sce_@nmc.

The steps of pooler execution are as follows:

- Retrieval of the values of the entry parameters (in the command line):
 - **First parameter:** name of the configuration file (with the exact path, for example: c:\newtest_config.cfg or /tmp/newtest_config.cfg) which contains all data concerning web services, NMC, and the location of result data.
 - **Second parameter: debug** mode (if the value given is “1”, debug mode is enabled and the progress of the pooler is displayed on the screen; otherwise (either the value given is other than “1”, or no value is given) no information will be displayed about the pooler’s progress.

Examples: perl Newtest_pooler.pl /tmp/ 1
Perl Newtest_pooler.pl /tmp/

- Connection to the Newtestlib.pm library which supplies it with all the parameters which appear in the configuration file.
- Creation of a trace file whose name is “Newtest_trace_pooler_l’adresse du NMC” and which contains all the traces pertaining to the requests sent and the responses received.
- Call to the Newtestlib.pm library:
 - access to web services so that the file Newtest_pooler.pl can recover the result of this request and adds it to its trace file
 - path and filename where the data pertaining to the robots and scenarios will be stored
 - list of existing robots and the data pertaining to them
- Processing loop on the number of robots, calling the library Newtestlib.pm to retrieve information about them (robot status+status of associated scenarios), then adds the results to the trace file.
- Writing to the trace file, named “trace_Newtest_pooler.txt”, of all the request responses as well as information about the pooler’s progress.

The diagram below illustrates how the pooler operates:

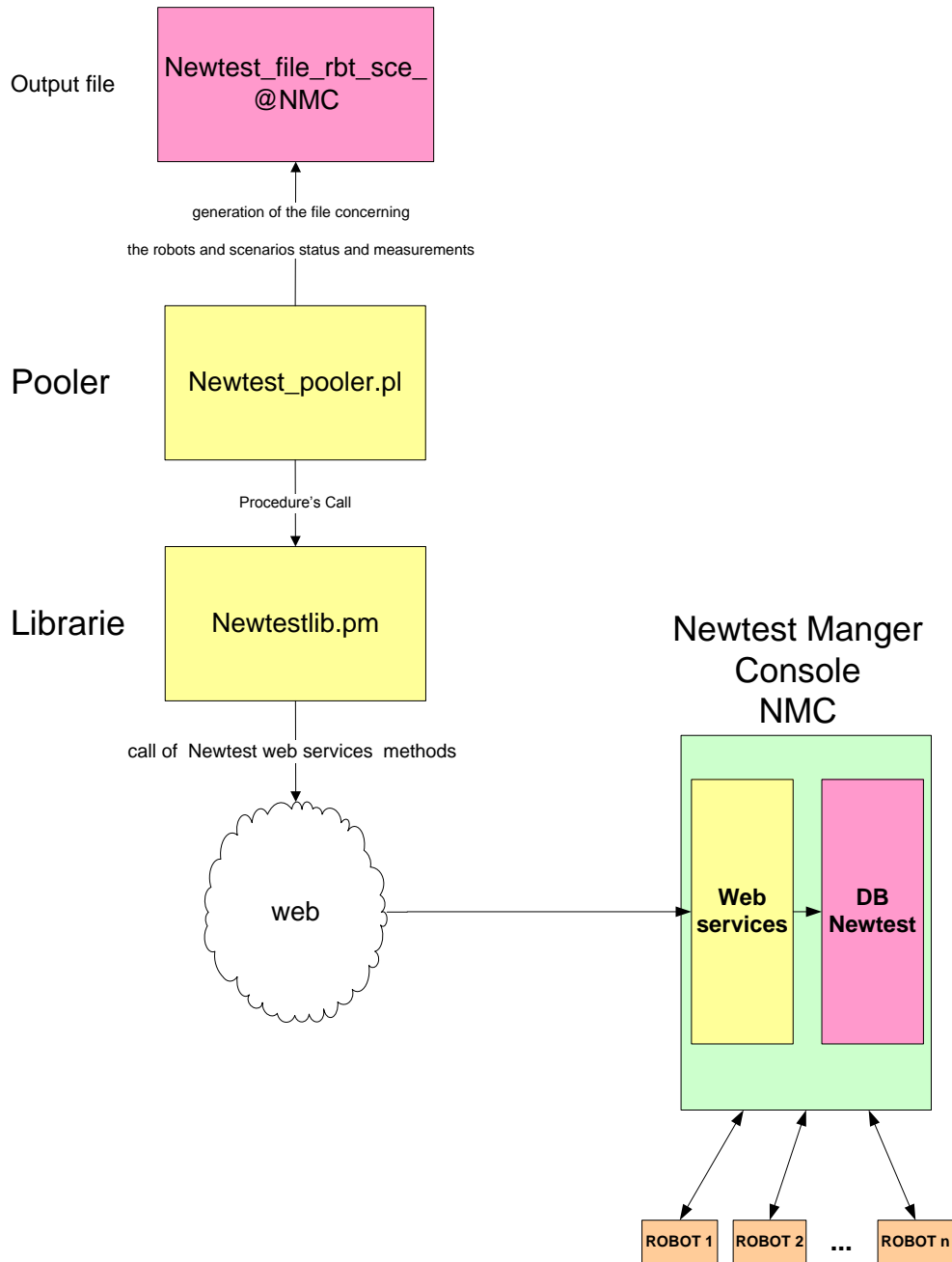


Diagram of operation of the pooler

2.1.2 The library Newtestlib.pm

The library Newtestlib.pm is the library used by all the scripts and plug-ins. It contains the entire range of functions which enable the plug-ins to function properly.

- Retrieves the configuration file path newtest_config.cfg.
- Retrieves the parameters in the file newtest_config.cfg.
- Connects to web services.
- Sends requests to web services followed by response analysis.
- Adds information pertaining to the robots to the file Newtest_file_rbt_sce_@NMC (pooler result file).
- Adds scenario names to the file Newtest_file_rbt_sce_@NMC (pooler result file).

Note: a blank line is added between the robot part and the scenario part in order to distinguish between them.

- Adds to the file Newtest_file_rbt_sce_@NMC (pooler result file) names, values and the threshold of child measurements associated with each scenario .
- Conversion table of NMC statuses to Nagios statuses.

The following tables set forth the conversion of NMC robot statuses to Nagios:

ROBOT STATUS	NAGIOS VALUE	PERFORMANCE (PERF)	NAGIOS RESULT VALUE
OK	OK	10	0
SUSPENDED	WARNING	5	1
STOPPED	WARNING	5	1
UNKNOWN	CRITICAL	0	2
UNINSTALLED	CRITICAL	0	2
INOPERATIVE	CRITICAL	0	2
RESUME	WARNING	5	1

SCENARIO STATUS	NAGIOS VALUE	NAGIOS RESULT VALUE
Available	OK	0
Warning	WARNING	1
Failed	CRITICAL	2
Canceled	CRITICAL	2
Unknown	UNKNOWN	3
OutOfRange	UNKNOWN	3

2.1.3 The plug-in Newtest_plugin_rbt.pl

This script interacts with the Nagios plug-in executor actively in order to retrieve data pertaining to robots.

The file Newtest_plugin_rbt.pl uses the following elements as parameters (in addition to those in the file newtest_config.cfg):

- First parameter: path and filename of the Newtest configuration (newtest_config.cfg).

Examples:

C:\newtest_config.cfg → for Windows

/tmp/newtest_config.cfg → for Linux

- Second parameter: activation / deactivation of passive pooling of scenario statuses.
 - **Passive check of scenarios enabled:** to run the file Newtest_plugin_rbt.pl in active mode with execution of the file Newtest_plugin_rbt_sce.pl in passive mode in order to retrieve data pertaining to the robot in active mode and the scenarios in passive mode, the first parameter is the letter “p”.
 - **Passive check of scenarios disabled:** to retrieve only the data pertaining to the robot in active mode, the first parameter is any value other than the letter “p”.
- Third parameter: the IP address or hostname of the server housing the NMC application (without “http://”).
- Fourth parameter: the Newtest name of the robot on which the search will be run.
- Fifth parameter: the Nagios name of the host supporting the Nagios service testing the Newtest robot

Note: if you wish to use the file Newtest_plugin_rbt.pl only to retrieve information pertaining to the robot in the parameter (active mode only), the fifth parameter is of no use and is therefore not necessary.

Example:

On Nagios, the host host_berlin supports the active check service of the robot named under Newtest berlin.

Perl Newtest_plugin_rbt.pl c:\newtest_config.cfg p 192.168.1.2 berlin host_berlin → passive-mode execution

Perl Newtest_plugin_rbt.pl c:\newtest_config.cfg a 192.168.1.2 berlin → active-mode execution

The script Newtest_plugin_rbt.pl performs the following steps:

- Call to the library Newtestlib.pm to retrieve the parameters contained in the configuration file newtest_config.cfg.
- Read-only opening of the pooler output file Newtest_file_rbt_sce_@ nmc.
- Passive-mode execution of the scenarios plug-in Newtest_plugin_rbt_sce.pl if the value of the second parameter is equal to “p”.
- Filtering (lines starting with “RBT”) of the file Newtest_file_rbt_sce_@nmc to isolate the status of the robot under examination.
- Conversion of the Newtest robot status to Nagios standards (e.g. if the robot’s status is OK, the value on the Nagios side will be OK).
- Writing to a trace file, Newtest_trace_plugin_rbt.txt, of all the tasks performed by each robot, as well as the result which should be displayed on the Nagios interface.

Example:

Line retrieved at the level of the Newtest pooler file prior to removal of separators:

```
RBT| |BERLIN| |OK| |2009-07-03T11:46:21
```

Format returned to Nagios in print form, plus exit code complying with the Nagios standard:

```
OK:probe newtest is running, last message date is at 2009-07-03T11:46:21|Status=10;;;;
```

The structure of the robot data record in the pooler output file is as follows:

Prefix informing the type of robot data RBT|| Newtest robot name|| Newtest robot status|| date time of the latest message|| performance data (status label, value 0 failed, 5 warning, 10 ok)

2.1.4 The script Newtest_plugin_rbt_sce.pl

This script corresponds to the plug-in which retrieves data about robot/scenario pairs. The plug-in operates in two modes: active check or passive check.

2.1.4.1 Active mode

The Nagios service which provides for supervision of a scenario on a robot runs the script Newtest_plugin_rbt_sce.pl in active mode. The entrance parameters of the script are:

- **First parameter:** the path and name of the Newtest configuration file (newtest_config.cfg).

(The same one used for the file Newtest_plugin_rbt.pl).

- **Second parameter:** plug-in mode of operation (active or passive)
 - "p" for passive check
 - any other value for an active check ("a", for instance) for active-mode execution

Note: any value other than "p" expresses active mode.

- **Third parameter:** the NMC address (without "http://")
- **Fourth parameter:** the name of the robot on which the search will be run
- **Fifth parameter:** the name of the scenario associated with the robot

The principle is the same as for the file Newtest_plugin_rbt.pl. Filtering of the search is carried out on the lines starting with "SCE" instead of "RBT" in the file Newtest_file_rbt_sce_@nmc, with respect to two parameters: robot name and scenario name.

Comments:

The first, third and fourth parameters are the same for the files Newtest_plugin_rbt.pl and Newtest_plugin_rbt_sce.pl whatever the execution mode. The fifth parameter becomes optional if you opted for the passive check method. In effect, in passive mode all scenario statuses for a given robot are fed back via the write mechanism of the Nagios command file.

Example:

Command line:

```
perl Newtest_plugin_rbt_sce.pl /tmp/newtest_config.cfg a 192.168.1.2 berlin mailtest
```

Result displayed on Nagios:

OK:newtest state is Available for mailtest which send last message at 2009-07-03T11:45:14
 |pop_test=0.00000;1280.00000;;; pop1_dns=0.00000;-1;;; pop2_connect=0.00000;-1;;; pop3_auth=0.00000;-1;;; pop4_waitmail=0.00000;-1;;; pop5_receivetime=0.00000;-1;;; pop6_receiverate=0.00000;-1;;;
 smtp_test=0.00000;14740.00000;;; smtp1_dns=0.00000;-1;;; smtp2_connect=0.00000;-1;;;
 smtp3_auth=0.00000;-1;;; smtp4_sendtime=0.00000;-1;;; smtp5_sendrate=0.00000;-1;;;

Summary diagram of active mode for the two scripts, Newtest_plugin_rbt.pl and Newtest_plugin_rbt_sce.cgi:

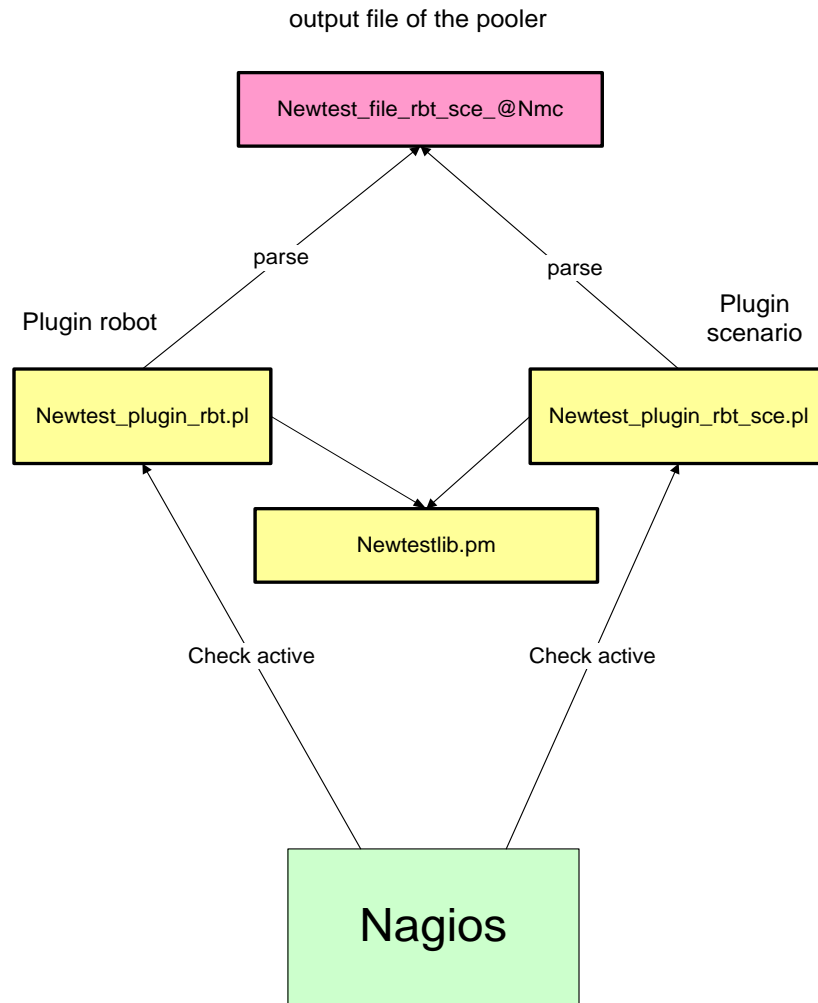


Diagram of operation of the plugin in active mode

2.1.4.2 Passive mode

Operation of scenario status pooling in passive mode is justifiable in contexts which involve a large number of robots. The purpose of passive mode is to free up Nagios scheduling slots.

In the case of passive mode, the parameters are the same as those supplied to the script `Newtest_plugin_rbt.pl`. In passive mode, unlike active mode, Nagios will not execute the plug-in `Newtest_plugin_rbt_sce.pl`. However the plug-in will run transparently during the execution of the robot status plug-in. The data collected (all the statuses and measurements for all the scenarios of a given robot) is propagated to the Nagios command file in its specific file format. Nagios reads this command file and then associates the values it finds there with the corresponding service.

The format of data sent to the Nagios command file is as follows:

```
[<timestamp>] PROCESS_SERVICE_CHECK_RESULT;<host_name>;<description>;<return_code>;<plugin_output>
```

Where:

- **timestamp**: the time in format `time_t` (seconds elapsed since the UNIX reference date) at which the service check was carried out (or sent). Please note that a space is required after the closing bracket.
- **host_name**: short name of the Nagios host associated with the service in the service definition
- **description**: description of the service as specified in the Nagios service definition
- **return_code**: the code returned by the check (0=OK, 1=WARNING, 2=CRITICAL, 3=UNKNOWN)
- **plugin_output**: the text displayed by the check (i.e. the plug-in output display)

Comments:

- **PROCESS_SERVICE_CHECK_RESULT** is a Nagios reserved word for passive mode.
- The name of Nagios services associated with the Newtest scenario test plug-in must conform to the following naming format:
ROBOTNAME_SCENARIONAME all in **capitals (upper case)**. Imposing the naming of a service makes it possible, in passive mode, to deduce the name of the services. However, if only active mode is being used it is not necessary to conform to this format.
- A trace file associated with the plug-in `Newtest_plugin_rbt_sce.pl`, and whose name is "trace_`Newtest_plugin_rbt_sce.txt`" contains all the values sent to Nagios for active and passive mode and for each robot.
- A file named "passif", stored in the same location as the rest of the trace files, contains errors encountered during passive-mode execution of the plug-in `Newtest_plugin_rbt_sce.pl` by the file `Newtest_plugin_rbt.pl`.
- A trace file named "trace_`Newtest_plugin_rbt_sce_@nmc.log`" contains data concerning the execution of the plug-in `Newtest_plugin_rbt_sce.pl`.

Summary diagram of passive mode:

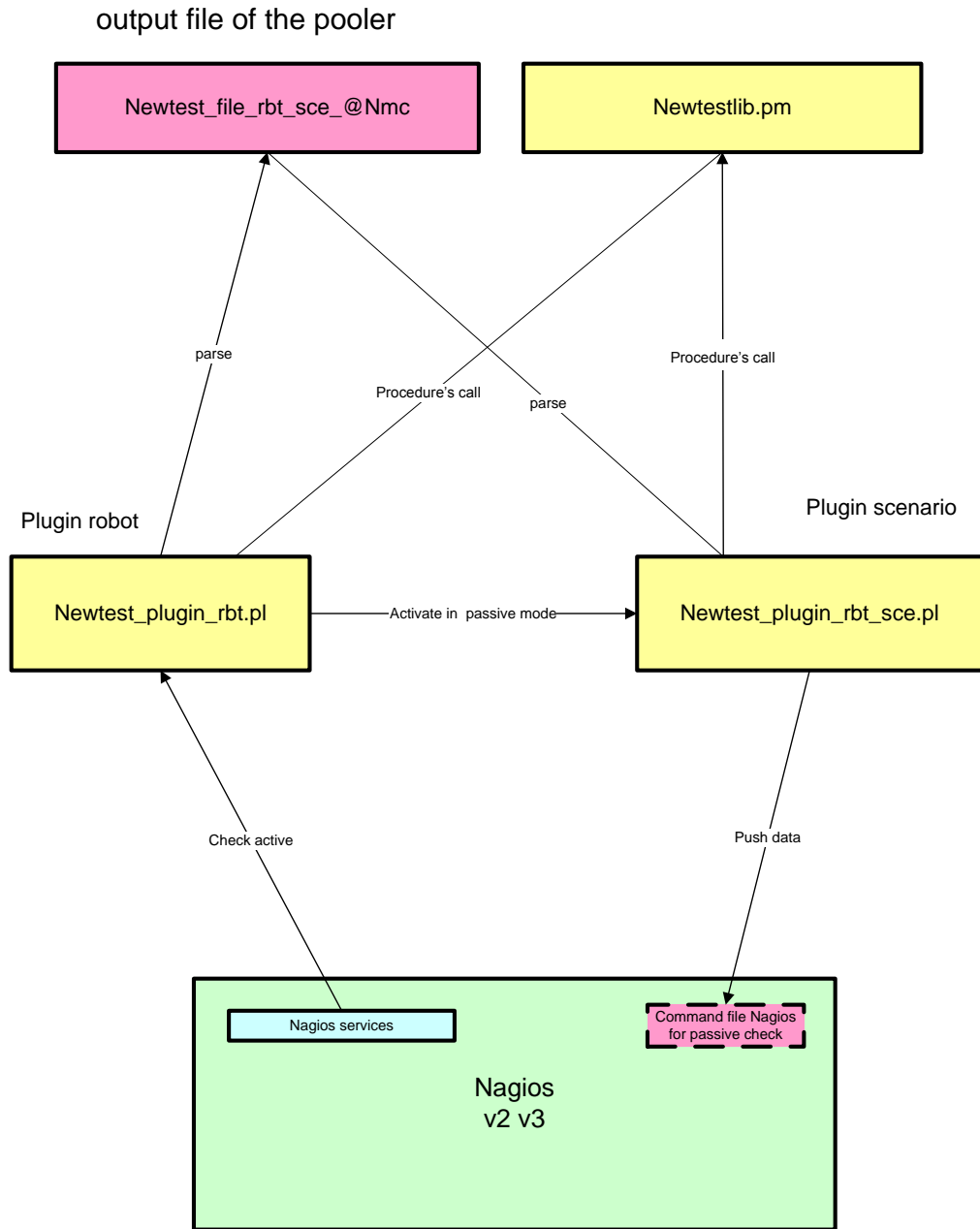


Diagram of operation of the plugin in passive mode

2.1.5 The file Newtest_file_rbt_@NMC

This file is the output of pooler execution (using the library Newtestlib.pm) and is used by the plug-ins Newtest_plugin_rbt.pl and Newtest_plugin_rbt_sce.pl.

The file named file_rbt_sce_hostname (@NMC) contains the data collected by web services requests from robots and scenarios (parent and child measurements) written in the following format:

Robots whose structure in the file is:

- Line prefix "RBT": first element (header) followed by the separator " || ".
- Robot name: second element followed by the separator " || ".
- Newtest robot status: third element followed by the separator " || ".
- Last message sent by the robot (Last message): fourth element followed by the separator.

Example:

```
RBT || PARIS || OK || 2009-05-05T17:28:22
```

Scenarios (parent measurement) whose structure in the file is:

- Prefix "SCE": first element (header) followed by the separator " || ".
- Robot name: second element followed by the separator " || ".
- Name of the scenario on the robot: third element followed by the separator " = ".
- Scenario web services ID: fourth element followed by the separator " || ".
- Newtest scenario status: fifth element followed by the separator " || ".
- Last message sent by the scenario: sixth element followed by the separator " || ".

Example:

```
SCE || MADRID || AGENCIES_ACCESS=194412048 || OUTOFRANGE || 2009-05-05T17:26:12 ||
```

Child measurements whose record structure is:

- Separator " ! ! " differentiates parent scenarios from child scenarios.
- Child measurement name followed by the separator " = ".
- Value of the child measurement followed by the separator " || ".
- Threshold (if any, other than -1).

Comment: This principle is repeated (on the same line) for all of the scenario's child measurements.

- At the end, the separator " || " is added to finish the line.

Example:

```
SCE || MADRID || CORPORATE_MAIN=194412049 || OUTOFRANGE || 2009-05-05T17:26:12 !!port_test=0.00000,70.00000!!port1_dns=1.00000,-1!!port2_connect=4.00000,-1 ||
```

Comment:

If a scenario returns nothing (no value in the xml result), the corresponding line is structured as follows:

```
SCE || robot name || scenario name
```

Example:

```
SCE || BERLIN || CARGO
```

Full example (Newtest_file_rbt_sce_192.168.1.2):

```
RBT| |BEJING| |OK| |2009-07-02T08:21:24
RBT| |BERLIN| |OK| |2009-07-02T08:21:06
RBT| |HKONG| |INOPERATIVE| |2009-06-25T16:12:01.03
RBT| |MADRID| |OK| |2009-07-02T08:19:58
RBT| |NANTES| |INOPERATIVE| |2009-07-02T00:08:00.75
RBT| |NEWYORK| |OK| |2009-07-02T02:20:16
RBT| |NONO| |INOPERATIVE| |2009-02-27T11:58:01.107
RBT| |PARIS| |OK| |2009-07-02T08:21:02
RBT| |QUEBEC| |INOPERATIVE| |2009-07-01T04:32:00.373
RBT| |RD1| |INOPERATIVE| |2009-06-19T16:48:00.75
RBT| |ROME| |OK| |2009-07-02T08:20:12
RBT| |SANFRAN| |INOPERATIVE| |2009-06-25T01:12:01.03
RBT| |SIDNEY| |OK| |2009-07-02T16:21:35
RBT| |TOKYO| |INOPERATIVE| |2009-06-25T17:12:01.03

SCE| |BEJING| |DNS_TEST=222518476| |Available| |2009-07-02T08:19:15| | | |
SCE| |BEJING| |FLYING_AGENDA=222518173| |Warning| |2009-07-
02T08:16:12| |connect=2220.00000;2000.00000!!disp_agenda=5170.00000;5000.00000
!!login=4230.00000;5000.00000!!page1=5370.00000;5000.00000!!page2=3950.00000;
5000.00000!!validation=3220.00000;5000.00000!! | |
SCE| |BEJING| |INTERNET=222518475| |Available| |2009-07-02T08:18:28| | | |
SCE| |BEJING| |INTRANET=222518478| |Available| |2009-07-02T08:18:59| | | |
SCE| |BEJING| |MAILATTACH=222518146| |Failed| |2009-07-
02T08:15:37| |pop_test=0.00000;5880.00000!!pop1_dns=0.00000;-
1!!pop2_connect=0.00000;-1!!pop3_auth=0.00000;-1!!pop4_waitmail=0.00000;-
1!!pop5_receivetime=0.00000;-1!!pop6_receiverate=0.00000;-
1!!smtp_test=0.00000;270.00000!!smtp1_dns=0.00000;-1!!smtp2_connect=0.00000;-
1!!smtp3_auth=0.00000;-1!!smtp4_sendtime=0.00000;-1!!smtp5_sendrate=0.00000;-
1!! | |
SCE| |BEJING| |MAILTEST=222518174| |Failed| |2009-07-
02T08:16:14| |pop_test=0.00000;1280.00000!!pop1_dns=0.00000;-
1!!pop2_connect=0.00000;-1!!pop3_auth=0.00000;-1!!pop4_waitmail=0.00000;-
1!!pop5_receivetime=0.00000;-1!!pop6_receiverate=0.00000;-
1!!smtp_test=0.00000;14740.00000!!smtp1_dns=0.00000;-
1!!smtp2_connect=0.00000;-1!!smtp3_auth=0.00000;-1!!smtp4_sendtime=0.00000;-
1!!smtp5_sendrate=0.00000;-1!! | |
SCE| |BEJING| |MILESPROGRAM=222518506| |Available| |2009-07-02T08:19:23| | | |
SCE| |BEJING| |RESERVATION=222518507| |Available| |2009-07-02T08:19:47| | | |
SCE| |BERLIN| |AGENCIES_ACCESS=222518497| |Failed| |2009-07-
02T08:19:17| |port_test=0.00000;60.00000!!port1_dns=0.00000;-
1!!port2_connect=0.00000;-1!! | |
SCE| |BERLIN| |CARGO=222518471| |Available| |2009-07-02T08:18:32| | | |
SCE| |BERLIN| |CORPORATE_MAIN=222518499| |Failed| |2009-07-
02T08:19:34| |port_test=0.00000;50.00000!!port1_dns=0.00000;-
1!!port2_connect=0.00000;-1!! | |
SCE| |BERLIN| |DEM_APP=222518522| |Available| |2009-07-
02T08:20:32| |openbase=4000.00000;3000.00000!!resources=2990.00000;4000.00000!
!setup=4060.00000;40000.00000!! | |
SCE| |BERLIN| |DEM_IE=222518523| |Failed| |2009-07-
02T08:20:52| |form_inputdb=2990.00000;3000.00000!!cgi_inputdb=0.00000;1000.000
00!!homepage=2990.00000;4000.00000!! | |
SCE| |BERLIN| |DEM_TLN=222518500| |Warning| |2009-07-
02T08:19:52| |login=5040.00000;5000.00000!!load=3990.00000;5000.00000!!connect
=7000.00000;6000.00000!! | |
```

SCE||BERLIN||DEM_X11=222518521||Available||2009-07-02T08:20:18||page=5010.00000;4000.00000!!fileformats=7040.00000;10000.00000!!exec=2000.00000;4000.00000!!connect=5030.00000;4000.00000!!!|
SCE||BERLIN||DNS_TEST=222518495||Available||2009-07-02T08:19:34|||
SCE||BERLIN||FLYING_AGENDA=222518470||Warning||2009-07-02T08:18:01||connect=2240.00000;2000.00000!!disp_agenda=5280.00000;5000.00000!!login=3610.00000;5000.00000!!page1=5110.00000;5000.00000!!page2=2830.00000;5000.00000!!validation=2980.00000;5000.00000!!!|
SCE||BERLIN||INTERNET=222518496||Available||2009-07-02T08:19:02|||
SCE||BERLIN||MILESPROGRAM=222518164||Available||2009-07-02T08:20:52|||
SCE||HKONG||AGENCIES_ACCESS
SCE||HKONG||CARGO
SCE||HKONG||CORPORATE_MAIN
SCE||HKONG||DEM_APP
SCE||HKONG||DEM_IE
SCE||HKONG||DEM_TLN
SCE||HKONG||DEM_X11
SCE||MADRID||AGENCIES_ACCESS=222518504||Failed||2009-07-02T08:18:42||port_test=0.00000;60.00000!!port1_dns=0.00000;-1!!port2_connect=0.00000;-1!!!|
SCE||MADRID||CARGO=222518395||Available||2009-07-02T08:16:11|||
SCE||MADRID||CORPORATE_MAIN=222518112||Failed||2009-07-02T08:18:59||port_test=0.00000;50.00000!!port1_dns=0.00000;-1!!port2_connect=0.00000;-1!!!|
SCE||MADRID||DEM_APP=222518396||Available||2009-07-02T08:19:30||openbase=3990.00000;3000.00000!!resources=2990.00000;4000.00000!!setup=3990.00000;40000.00000!!!|
SCE||MADRID||DEM_IE=222518397||Warning||2009-07-02T08:19:30||form_inputdb=4030.00000;3000.00000!!cgi_inputdb=3000.00000;1000.00000!!homepage=3990.00000;4000.00000!!!|
SCE||MADRID||DEM_TLN=222518472||Warning||2009-07-02T08:16:55||login=7180.00000;5000.00000!!load=3990.00000;5000.00000!!connect=5000.00000;6000.00000!!!|
SCE||MADRID||DEM_X11=222518473||Available||2009-07-02T08:17:21||page=4000.00000;4000.00000!!fileformats=7000.00000;10000.00000!!exec=2000.00000;4000.00000!!connect=4990.00000;4000.00000!!!|
SCE||NEWYORK||AGENCIES_ACCESS=223561748||Available||2009-07-03T05:43:02||port_test=60.00000;60.00000!!port1_dns=34.00000;-1!!port2_connect=62.00000;-1!!!|
SCE||NEWYORK||CARGO=223561687||Available||2009-07-03T05:43:33|||
SCE||NEWYORK||CORPORATE_MAIN=223561749||Available||2009-07-03T05:43:05||port_test=60.00000;50.00000!!port1_dns=0.00000;-1!!port2_connect=65.00000;-1!!!|
SCE||NEWYORK||DEM_APP
SCE||NEWYORK||DEM_IE
SCE||NEWYORK||DEM_TLN
SCE||NEWYORK||DEM_X11
SCE||NEWYORK||DNS_TEST=223561750||Available||2009-07-03T05:43:07||dns_test=70.00000;140.00000!!dns1_dns=0.00000;-1!!dns2_server=71.00000;-1!!!|
SCE||NEWYORK||FLYING_AGENDA=223561751||Warning||2009-07-03T05:43:21||connect=2310.00000;2000.00000!!disp_agenda=3730.00000;5000.00000!!login=3420.00000;5000.00000!!page1=4300.00000;5000.00000!!page2=3350.00000;5000.00000!!validation=3030.00000;5000.00000!!!|
SCE||NEWYORK||INTERNET=223561688||Available||2009-07-03T05:43:45|||
SCE||NEWYORK||INTRANET=223561689||Available||2009-07-03T05:43:56|||
SCE||NEWYORK||MAILATTACH=223561537||Failed||2009-07-03T05:40:07||pop_test=0.00000;5880.00000!!pop1_dns=0.00000;-1!!pop2_connect=0.00000;-1!!pop3_auth=0.00000;-1!!pop4_waitmail=0.00000;-1!!pop5_receivevtime=0.00000;-1!!pop6_receiverate=0.00000;-1!!smtp_test=0.00000;270.00000!!smtp1_dns=0.00000!!!|

2.1.6 The file newtest_config.cfg

This file is the plug-in and pooler configuration file. It is read by the library Newtestlib.pm which retrieves the values of execution context variables from it. This file, as well as the data within it, is essential for the proper operation of the plug-ins and pooler.

The configuration file is the file where all the files attached to the plug-in seek the data required for their operation.

The configuration file, “**newtest_config.cfg**”, contains the following data:

- The NMC address to which all web services requests will be made. The format is as follows: **nmc**=address of your NMC, without the preceding “http”; this corresponds to the IP address of your NMC.
- The path or location where the output files will be placed (Newtest_file_rbt_sce_@NMC and the trace files of the pooler and plug-ins). The format is as follows: **newtest_output_folder**=your path.
- The name of the Nagios command file destination for data collected in passive mode: **passive_file**= your path.
- The URL corresponding to the Newtest NMC web service destination for collection requests. The format is as follows: **url**=your URL.
- The HTTP port destination of web services requests. The format is as follows: **port**=the port number.

Example:

```
port=80
url=/nws_211/managementconsole.service.asmx
newtest_output_folder=/tmp/
nmc=192.168.8.121
passive_file=/usr/local/nagios/var/rw/nagios.cmd
```

The configuration file is the reference file for all programs. It is the critical element of the configuration.

Comments:

- The name of the Nagios command file (to which data is sent in passive mode) should be the same as the one in the file nagios.cfg.
- In the file newtest_config.cfg, each row starting with “#” is considered as a comments line and therefore is not taken into account.
- The order of the lines is not important, but it is vital to provide the correct syntax.
- The contents of the file newtest_config.cfg are in lower case only.
- To maintain a simple syntax for the configuration file, the following examples would not be tolerated and would cause problems:

Port=80#your comments

In this case the port value retrieved would be “80#your comments”. This would cause a problem because such a value is meaningless.

Port= 80 would not be accepted because of the space preceding the value 80.

All the cases covered in these comments are applicable to all the lines of the file newtest_config.cfg.

2.2 Summary table

TYPE OF EXECUTION	PARAMETERS	EXAMPLE	COMMENTS
Pooler execution	[Newtest configuration filepath] [debug mode]	perl Newtest_pooler.pl /tmp/newtest_config.cfg 1	The path to the config file - For debug mode: 1: debug mode enabled 0: debug mode disabled
Robot plug-in, active mode	[Newtest configuration filepath] [a] [@NMC] [robotname]	perl Newtest_plugin_rbt.pl c:\newtest_config.cfg a 192.68.1.2 berlin	In this case only, the data pertaining to the robot will be retrieved.
Robot plug-in, passive mode	[Newtest configuration filepath] [p] [@NMC] [robotname] [robot hostname on Nagios]	perl Newtest_plugin_rbt.pl c:\newtest_config.cfg p 192.68.1.2 berlin host_berlin	In this case the data pertaining to the robot will be retrieved in active mode by Nagios, and the data pertaining to the scenarios associated with the robot will be sent to Nagios in passive mode (via the Nagios command file)
Scenario plug-in, active mode	[Newtest configuration filepath] [a] [@NMC] [robotname] [scenarioname]	perl Newtest_plugin_rbt_sce.pl c:\newtest_config.cfg a 192.68.1.2 berlin dns_test	The data pertaining to the scenarios associated with the robot will be retrieved by Nagios in active mode
Scenario plug-in, passive mode	[Newtest configuration filepath] [p] [@NMC] [robotname] [robot hostname on Nagios]	perl Newtest_plugin_rbt_sce.pl c:\newtest_config.cfg p 192.68.1.2 berlin host_berlin	The data pertaining to all the scenarios associated with the robot will be sent to Nagios in passive mode

3 ADVICE ON INTEGRATION

To integrate the plug-in smoothly, please follow the recommendations below:

The files should be stored in the same place and preferably at the same level of the Nagios libexec directory. For example: "/usr/local/nagios/libexec/" on Linux or "c:\usr\local\nagios\libexec\" on Windows.

Newtest_pooler.pl, Newtestlib.pm, Newtest_plugin_rbt.pl, Newtest_plugin_rbt_sce.pl.

- The services that want to retrieve the data sent by the file Newtest_plugin_rbt_sce.pl in passive mode must be passive services only (i.e. the active checks must be deactivated). Furthermore they must be written in **capital (upper case) letters** in line with the following syntax: **ROBOTNAME_SCENARIOName**.

Example: **BERLIN_CARGO**

- Schedule Newtest_pooler.pl for every x minutes so that the data in the file Newtest_file_rbt_sce_@NMC is meaningful. It is advisable to use the crontab (on Linux) with the following commands:

```
crontab -u nagios -e
*/x * * * * /usr/bin/perl /usr/local/nagios/libexec/Newtest_pooler.pl 2>&1
```

Comments:

The value of x must be equal to or greater than 5 so that the pooler will run at least every 5 minutes. If you enter a value less than 5, errors may appear if the pooler processing time is greater than the lapse of time between two scheduled pooler processes (this is the case when the number of robots is greater than 70 with more than 15 scenarios per robot).

- Make sure all the files pertaining to the plug-in can be executed by Nagios (check permissions and/or groups and users). You can edit permissions with the following command:

```
chown nagios :nagios filename
```

Example: **chown nagios :nagios Newtest_file_rbt_sce_192.168.1.2**

- The data concerning Nagios and the Nagios command file, among other things, is located in the file **/usr/local/nagios/etc/Nagios.cfg**.
- Robot or scenario names supplied as parameter values can be in upper or lower case.

4 INTEGRATION WITH NAGIOS V2

4.1 Adding the Newtest configuration filepath

Add a \$USER\$ variable to the file **/usr/local/nagios/etc/resource.cfg** and assign to it the path for accessing the configuration file.

Example: \$USER5\$=/tmp/newtest_config.cfg

4.2 Adding a host

For each robot, add one host (which will be a robot name, for instance) to the file **/usr/local/nagios/etc/hosts.cfg**.

Example:

```
define host {
    host_name          berlin
    alias              berlin_newtest
    address             192.168.5.70
    use                 generic-host
}
```

4.3 Adding two commands for the two Newtest_plugin files

Add commands for the two files, **Newtest_plugin_rbt.pl** and **Newtest_plugin_rbt_sce.pl**, to the file **/usr/local/nagios/etc/check_commands.cfg**, conforming to the following syntax:

```
define command {
    command_name      plugin_rbt
    command_line      perl $USER1$/Newtest_plugin_rbt.pl $USER5$ $ARG1$
                      $ARG2$ $ARG3$ $HOSTNAME$
}

define command {
    command_name      plugin_rbt_sce
    command_line      perl $USER1$/Newtest_plugin_rbt_sce.pl $USER5$
                      $ARG1$ $ARG2$ $ARG3$ $ARG4$
}
```

4.4 Adding a service

Add a service to the file **/usr/local/nagios/etc/services.cfg** and check or edit the template used so that it will accept active checks if it is a service associated with the command for the file **Newtest_plugin_rbt.pl**, and that it will accept only passive checks if it is for the command associated with the file **Newtest_plugin_rbt_sce.pl**.

Example for the service pertaining to the command associated with Newtest_plugin_rbt.pl (to retrieve data about robots):

```
define service {
    service_description    paris
    use                    generic-service
    host_name              newtest_paris
    normal_check_interval  1
    check_command           plugin_rbt!p!192.168.8.121!paris
}
```

Example for the service pertaining to the command associated with Newtest_plugin_rbt_sce.pl (to retrieve data about scenarios):

The following pertains only to active-mode execution of the file **Newtest_plugin_rbt_sce.pl**

```
define service {
    service_description    BERLIN_RESERVATION
    use                    generic-service
    host_name              berlin
    active_checks_enabled  0
    check_command           plugin_rbt_sce!/tmp/newtest_config.cfg!p!192.168.1.2!berlin
}
```

Comments:

- For the services associated with the plug-in for scenarios running in passive mode, no value is supplied to the parameters because this file runs with the same arguments as those given for the file `Newtest_plugin_rbt.pl`.
- If you wish to use your own template for the host and/or services, you can add it to the file `/usr/local/nagios/etc/objects/templates.cfg`

5 INTEGRATION WITH NAGIOS V3

5.1 Adding the Newtest configuration filepath

Add a `$USER$` variable to the file `/usr/local/nagios/etc/resource.cfg` and assign to it the path for accessing the configuration file.

Example: `$USER5$=/tmp/newtest_config.cfg`

5.2 Adding two commands for the two Newtest_plugin files

Commands for both are added to the same file `/usr/local/nagios/etc/objects/commands.cfg` as follows:

```
define command {
    command_name      plugin_rbt
    command_line      perl $USER1$/Newtest_plugin_rbt.pl $USER5$ $ARG1$
                      $ARG2$ $ARG3$ $HOSTNAME$
}

define command {
    command_name      plugin_rbt_sce
    command_line      perl $USER1$/Newtest_plugin_rbt_sce.pl $USER5$
                      $ARG1$ $ARG2$ $ARG3$ $ARG4$
}
```

5.3 Adding hosts and services

Hosts and services are added to the file `/usr/local/nagios/etc/objects/windows.cfg`

Comment: it is advisable to add one host per robot.

Example of adding a host:

```
define host {
    use                generic-host
    host_name          berlin
    alias              berlin_newtest
    address            192.168.5.70
}
}
```

Examples of adding a service:

Adding a service to retrieve data about robots (Newtest_plugin_rbt.pl)

```
define service {
    use                generic-service
    service_description paris
    host_name          newtest_paris
    normal_check_interval 1
    check_command      plugin_rbt!p!192.168.8.121!paris
}
```

Adding a service to retrieve data about scenarios (Newtest_plugin_rbt_sce.pl)

The following pertains only to active-mode execution of the file Newtest_plugin_rbt_sce.pl

```
define service {
    use                generic-service
    service_description BERLIN_RESERVATION
    host_name          berlin
    active_checks_enabled 0
    check_command      plugin_rbt_sce!/tmp/newtest_config.cfg!p!192.168.1.2!berlin
}
```

Comments:

- For the services associated with the plug-in for scenarios running in passive mode, no value is supplied to the parameters because this file runs with the same arguments as those given for the file Newtest_plugin_rbt.pl.
- If you wish to use your own template for the host and/or services, you can add it to the file /usr/local/nagios/etc/objects/templates.cfg.