

SLA Challenger 3.0

for **hp** OpenView
Performance Insight

Release Notes



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Introduction

PerVigil's SLA Challenger provides enhanced service level visibility through comprehensive analysis and reporting of availability, response time, and packet loss for devices and interfaces. By combining this new information with IT infrastructure performance metrics that are normally closely watched by the operations team, a more comprehensive view of the end-user experience and delivered service levels can be achieved.

The PerVigil SLA Challenger is fully integrated with HP's OpenView Performance Insight (OVPI). OVPI is a comprehensive Service Level Reporting Solution (SLR Solution) that enables Service Providers and Enterprise companies to analyze and report on extremely large and complex IT environments. OVPI's open architecture, scalability, flexibility, and comprehensive Web-Based reporting features have enabled it to become the leader of strategic SLR Solutions.

SLA Challenger is highly automated in terms of setup, configuration, and maintenance. Information typically stored in the OVPI database is used to automatically setup and maintain SLA test policies which are executed by SLA Probes to test each target using the appropriate testing parameters.

The SLA Challenger Probe, or SLA Probe, transmits ICMP echo requests to IP addresses and resolvable hostnames in order to determine availability, response time, and packet loss for those targets. Results are summarized to higher levels to provide Market level, Market-to-Market level, and Global level analysis and reporting. By default, tests are executed every five minutes against each target. During each test cycle, five tests are executed against each target.

The SLA Probe collects the following from each target per poll:

- ICMP Packets sent
- ICMP Packets received
- Success Rate ICMP Packets received/ICMP Packets sent
- Minimum round trip time
- Maximum round trip time
- Average round trip time

This information is further analyzed to determine the following:

- Availability (real-time, hourly, daily, and monthly)
- Month To Date (MTD) Availability (On track to meet commitment this month?)
- Latency (real-time, hourly, daily, and monthly)
- Packet Loss vs. Successful Delivery (real-time, hourly, daily, and monthly)
- MTD Availability thresholds for warning, minor, major, critical (SLA violations)
- Success rate based on availability and average response time
- Success rate based on availability and maximum response time
- Latency exception counts per test cycle, hour, day, and month
- Packet Loss exception counts per test cycle, hour, day, and month

When the SLA Challenger test results indicate that a target is unavailable, Month-To-Date Availability (MTD Availability) for that element is decreased. If a MTD Availability threshold has been crossed, an SNMP trap is sent to a management station (NNM or other trap receptor).

Four levels of notification are provided with increasing levels of severity to enable appropriate escalation of situations before an SLA violation occurs:

- Warning
- Minor
- Major
- Critical

Each level of notification is based on thresholds that represent a percentage of "SLA Tolerance" consumed. The SLA commitment level and notification thresholds can be set for each target to ensure proper notification and reporting for the type of service purchased by the end-user.

Supported Environment

SLA Challenger's distributed architecture ensures that SLA reporting accurately reflects the end-user experience. SLA Probes can be distributed to the Service Provider's or Enterprise user's service aggregation points, POPs, data centers, or even the customer premise. As a result, SLA metrics are analyzed and reported accurately through the service delivery path from the end-user to one or multiple service access points (Internet access points, Peering points, server farm access points...).

A typical deployment includes:

- Test Targets such as IP Addressed interfaces and resolvable hostnames.
- Multiple SLA Probes, possibly one at each service aggregation point.

SLA Probes are deployed to the appropriate service aggregation points or data centers. Each SLA Probe executes tests against targets within their respective locations and between locations.

- SLA Central – core module managing test policies, rollups, and reports.

SLA Central is the corner stone of SLA Challenger. SLA Central appears to be an OVPI Report Pack on the surface but is much more sophisticated than a standard Report Pack.

In a typical deployment, the SLA Central module is deployed on one or more OVPI servers and SLA Probes are installed on servers in strategic locations in the network.

SLA Probe Support Requirements:

The SLA Probe is a light-weight application that can be run on many different platforms. The Probe is a background application that requires no graphical display and requires little in terms of server CPU, memory, and disk resources.

The number of SLA Test Policies executed by the Probe determines the resources required for the probe to operate. In a relatively small environment with a single OVPI server and a single SLA Probe, the SLA Probe can be installed on the OVPI Server. The load represented by the Probe should not be significant in this scenario. However, if the OVPI server is already under heavy load, the SLA Probe should be installed on a separate server to avoid placing any additional load on a server that may already be operating at or beyond reasonable capacity limits.

SLA Challenger LE is limited to a single Probe and 25 Test Policies. Minimal server resources are required by the SLA Probe when operating in LE mode.

The SLA Probe uses disk space to store test policies retrieved from SLA Central and test results until they have been inserted into the SLA Central database. If the Probe is unable to connect to the SLA Central database, test results are stored on disk until the connection can be established and test results can be inserted into the database. The disk space required by the Probe depends on the following:

Number of Test Policies executed by the Probe.

Interval of those Test Policies.

Length of time that the Probe may be required to store test results locally before they are inserted into the database.

The Probe would normally store test results on disk briefly unless there has been a significant failure in the network between the Probe and SLA Central or the server hosting SLA Central experiences a failure.

The SLA Probe is supported on the following operating systems:

Linux: Suse 9.2, 10.2. Red Hat REL 4
HPUX 11.11 on PA RISC
HPUX 11.21 on Itanium
Solaris 9, 10
Windows 2000
Windows 2003
Windows XP

SLA Central Support Requirements:

SLA Central is the corner stone of SLA Challenger. SLA Central appears to be an OVPI Report Pack on the surface but is much more sophisticated than a standard Report Pack. SLA Central performs the following functions:

- Maintains test policies for all deployed SLA Probes
- Responds to requests for test policies from SLA Probes
- Receives test results from SLA Probes
- Analyzes test results to identify exceptions that require notification
- Generates SNMP traps as needed to notify of approaching SLA violation
- Analyzes and reports both real-time and historical SLA results

SLA Central platform support corresponds to OVPI platform support as follows:

- OVPI 5.1 SP 5 with available hotfixes.
- OVPI 5.1 SP 7 with available hotfixes.
- OVPI 5.1 SP 8 with available hotfixes.
- OVPI 5.1.2 with known limitations.
- OVPI 5.1.3 with known limitations.

SLA Central database support corresponds to OVPI database support as follows:

- Sybase 11.9.2.5
- Oracle 9.2.0.x

The following OVPI modules must be installed, configured, and operational before SLA Challenger can be installed:

- HP's Interface Reporting Report Pack, version 5.1
- HP's Common Property Tables Module, version 3.0 or later

PerVigil's PVL Asset Report Pack, version 4.2 or later

SLA Challenger's automated Test Policy setup and maintenance processing relies on the modules listed above. The information provided by those modules is used to ensure that the appropriate Test Policies are defined and that each is associated with the correct customer and location.

HP's Common Property Tables Module should be used to associate each device in OVPI with the appropriate customer and location. That information is propagated to the other installed modules such as Interface Reporting, PVL Asset, and SLA Challenger.

HP's Interface Reporting Report Pack contains information about each interface that is required by PVL Asset and SLA Challenger. Normally customer and location assignments at the interface level match that of the device where the interface resides. However, interfaces can be assigned to customers and locations independent of the device level assignment. For this reason, PVL Asset, and SLA Challenger reference the Interface Reporting module to determine customer and location assignments for interfaces.

PerVigil's PVL Asset Report Pack creates and maintains profiles for devices and interfaces. SLA Challenger's automated Test Policy setup and maintenance processing relies on those profiles to determine parameters for a Test Policies.

If SLA Challenger automated Test Policy setup and maintenance processing is not be used, Test Policies must be created and maintained using the TP Bulk Load utility or manually using the OVPI forms provided. See the SLA Challenger User Guide for more information on Test Policy maintenance.

Trap Generation

SLA Challenger relies on HP's Thresholds module for OVPI to generate traps. If the Thresholds module is not present, SLA Challenger will install with out an error relating to this dependency. However, errors will be generated when the SLA Challenger trap generation process is initiated, which is every 15 minutes by default.

If the trap generation feature of SLA Challenger is required, install the Thresholds module.

If the trap generation feature of SLA Challenger is not required, comment out the following line in trendtimer.sched:

```
15 - - {DPIPE_HOME}/bin/trend_proc -f {DPIPE_HOME}/scripts/PVLthreshold_SLA_NRT.pro
```

Server Resource Estimates

SLA Central Server Requirements

To a lesser degree, the number of SLA Probes, customers, and locations also affect the server resources required to support the SLA Central module.

In most cases, SLA Challenger does not add significantly to the CPU and memory requirements of the OVPI server and database. SLA Challenger LE is limited to a single SLA Probe and 25 Test Policies. The load added by SLA Challenger LE is negligible.

SLA Challenger EE can support a large number of SLA Probes and thousands of Test Policies. In a very large SLA Challenger EE deployment, the load placed on the OVPI server and database can be significant. If the OVPI server or database server is already struggling under an excessive load, those issues should be addressed before installing SLA Challenger.

The load placed on the OVPI server and database by SLA Challenger can be correlated directly to the following factors:

- Number of Test Policies

- Interval of Test Policy execution

- Retention period for test results and summarized data in the database

Use the SLA Challenger sizing spreadsheet provided by PerVigil to estimate the database space required by SLA Challenger for your environment.

SLA Probe Server Requirements

The SLA Probe is supported on a number of platforms as described earlier in the document. The SLA Probe is relatively light in terms of the server resources it consumes. Server resources available to the Probe should be sufficient to enable the Probe to complete a test cycle before the next iteration of that test interval is initiated. As the number of test policies increases or the interval decreases, additional server resources are required to complete each test cycle within the interval.

The following can be used as a guideline for estimating the server resources required by the SLA Probe for normal operation:

Disk Space Requirements for SLA Probe:

	SLA Probe Disk Space (MB)	Java Disk Space (MB)
HP-UX Itanium	7.00	214.00
HP-UX PA-RISC	6.00	122.00
Solaris	6.00	90.00
Linux	6.00	86.00
Windows	7.00	68.00

Memory Consumed by SLA Probe per Test Interval:

Based on 1500 Test Policy Example	Memory (MB)
HP-UX Itanium	48.00
HP-UX PA-RISC	66.00
Solaris	29.00
Linux	25.00
Windows	20.00

The Probe has the ability to cache test results. The length of time that test results can be cached is determined by the disk space allocated to the Probe for this purpose. The following can be used as a guideline for estimating the space required to cache test results:

Test Policy Count	Test Interval	Cache Time in Hours	Disk Space Required (MB)
1500	15 minutes	24	30

Known Issues

1. OVPI 5.1.2 and 5.1.3: On HPUX 11.23 (Itanium), there is a known issue with this release of OVPI that may affect the certain SLA Challenger features. The issue in some cases prevents ee_collect from successfully importing flat files. The following SLA Challenger features may be affected:

Probe Registry Import

Test Policy Bulk Load

2. OVPI 5.1.2 and 5.1.3: The OVPI Thresholds module executes with errors on HPUX 11.23 (Itanium). As a result SLA Challenger is not able to generate traps on this version of OVPI on HPUX 11.23. An error similar to the following may be returned:

```
$ /opt/OVPI/bin/perl /opt/OVPI/scripts/thresholds.pl -f /opt/OVPI/lib/PVLthreshold_SLApolicy.xml
```

```
/usr/lib/hpux32/dld.so: Unsatisfied code symbol 'XML_ParserCreate_MM' in load module  
'/opt/OV/nonOV/perl/a/lib/site_perl/5.6.1/IA64.ARCHREV_0/auto/XML/Parser/Expat/Expat.so'.  
Killed
```

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SLA Challenger Datasheet

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About PerVigil

PerVigil delivers integrated and automated IT Service Management (ITSM) solutions that give our clients the insight and control needed to maximize service levels experienced by their end users. With a clear focus on ITSM solutions and client-focused excellence, PerVigil has established a reputation for delivering cost-effective solutions that provide immediate value and long-term sustainability.

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