
HP Universal SLA Manager

Version 4.2



Release Notes

Edition: 1.0

for Linux and Microsoft Windows Operating Systems

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Preface

This document consists of the release notes for the HP Universal SLA Manager software kit.

The software kit name is **USLAM 4.2-MR**.

The following installation kits are available for the current version:

- HP_USLAM_Services.bin – *on Linux Only*
- HP_USLAM_ETL.bin – *on Linux Only*
- HP_USLAM_BOE.tar – *on Windows Only*
- HP_USLAM_Reporting.biar – *on Windows Only*
- HP_USLAM_Report_Publisher.exe – *on Windows Only*
- HP_USLAM_MyUSLAMPortal.bin/exe – *on Linux and Windows*

USLAM V4.2 MR is the second official minor release of USLAM V4. It is backward compatible with USLAM V4.0 but – as for the major release – it is not backward compatible with USLAM V3.0.

To install it, you must stop any prior version and either de-install it or install USLAM V4.2 MR in a new directory.

In case of upgrade from V4.0 to V4.2 or V4.1 to V4.2, the administrator must execute a migration procedure.

For more details about a V4.0/V4.1 to V4.2 migration or for an installation from scratch, please consult the *HP USLAM Installation and Configuration Guide*.

The V4.2 MR Installation kits include all the Universal SLA Manager components:

- Calculation Engines
 - BIF Engine
 - KPI Engine
 - KQI Engine
 - SLA Engine
 - Ticket Engine
- Data Collection framework for Data Records, Performance Metrics, Tickets and Exclusions
- Action Executor framework including standard SNMP and SMTP Action Executors
- Repository manager / Dataload
- Web UI
- ETL (powered by SAP Business Objects Data Services)
- Universe (powered by SAP Business Objects Data Services)
- Reports (powered by SAP Business Objects Enterprise)
- Pre-defined reports
- End-user SLA Intelligence Portal
- Model examples
- MyUSLAM Portal (powered by Liferay Portal)
- MyUSLAM Portlets

It is highly recommended to read this document before installing USLAM.

The *HP USLAM Installation and Configuration Guide* provides the prerequisites and other relevant information about installing USLAM.

Intended Audience

This document is for Solution Architects, USLAM Solution deployment teams and USLAM Solution administrators.

Software Versions

We use the term Windows as a generic reference to the operating system, unless otherwise specified. The software versions referred to in this document are as follows:

Table 1 List of Software Version

Software	Version
HP Universal SLA Manager	V4.2
Red Hat Linux 6.5 64-bit	6.5 (*)
Oracle client for Linux 64-bit	11g Release 2 (11.2.0.4) (*)
Oracle client for Windows 32-bit	11g Release 2 (11.2.0.4) (*)
Oracle Server	11g Release 2 (11.2.0.4) (*)
Enterprise DB - Postgres Plus Advanced Server (PPAS)	9.3 (*)
Windows	Windows Server 2008
Internet Explorer	9.0 or upper
Firefox	27.0 or upper
Google Chrome	32.0 or upper
SAP Business Objects Enterprise	BO XI 3.1 SP5 (12.5.0.1190)
SAP Business Objects Data Service	BO DS 4.2 SP2 (14.2.2.446)
Liferay Portal	6.1.1 CE GA2

(*) Specified servers versions have been successfully tested by Hewlett-Packard. Incremental releases of the specified versions defined by the last number in the server name will be supported as they are made available, but may not have been tested by Hewlett-Packard. Exceptions in support will be documented.

Associated Documents

The following documents contain useful reference information:

- HP Universal SLA Manager, Installation and Configuration Guide.
- HP Universal SLA Manager, User guide.
- HP Universal SLA Manager, Administration guide.
- HP Universal SLA Manager, Support Matrix.
- HP Universal SLA Manager, Modeling and Integration guide: this guide is available on demand, please contact USLAM-Product-Management@hp.com

Typographical Conventions

Courier font is used for:

- Source code and examples of file contents
- Commands that you enter on the screen
- Path names
- Keyboard key names.

Italic text is used for:

- Filenames, programs, and parameters
- The names of other documents referenced in this manual.

Bold text is used for:

- New terms
- Important words.

Terms and Acronyms

Table 2 List of Terms and Acronyms

Term	Description
USLAM	Universal Service Level Agreement Manager
SLA	Service Level Agreement
ETL	Extract Transform Load
SM	Service Manager
UI	User Interface
Web UI	Web User Interface

Support

Please visit our HP Software Support Online Web site at <https://softwaresupport.hp.com/> for contact information, and details about HP Software products, services, and support.

The Software support area of the Software Web site includes the following:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information.

Chapter 1 Introduction

1.1 Product Goals

HP Universal SLA Manager offers a complete and scalable SLA Management solution including:

- Services and SLAs design and repository
- Generic service models, service metrics and SLA clauses design and store capability.
- Automates creation, administration and reporting for high numbers of SLAs.
- Allows integration into existing environment / workflow for automated, secured and efficient dataload and synchronization
- High volume SLAs compliance calculation and reporting
- Business impact for Service Operation for easy and reliable cost management
- Manage financial risks through proactive penalty prediction.
- Data Collection framework for Data Records, Performance Metrics, Tickets and Exclusions
- Telco grade engines to compute real time SLA compliance status.
- Customer portal for end-user reports against contractual agreements and management analytics reports.
- Near real time monitoring of SLA clauses compliance with trending information.
- Root cause analysis available in web UI and Reporting, from SLA to individual downtimes and incidents.
- Support Service Improvement Plan process with SLA history related data and reports.
- Open and easy-to-use Business Objects Universe for developing any reports based on USLAM data model.
- A new end user community portal called 'MyUSLAM'. This highly customizable portal embeds several USLAM portlets used to build private or public business dashboards, extending business metrics visibility to business managers, end customers and partners.

1.2 Product Content

The USLAM product delivers four software kits:

USLAM Services

The USLAM Services package contains different modules that the administrator can install either together or separately on different hosts (Linux only):

- **Data Collection framework**
 - A framework that can host and run any number of data collectors from the supported types. USLAM V4.2 supports data collectors for data records, performance records, tickets and exclusions
- **Calculation Engines**
 - The core USLAM engines for real time SLA calculation, compliance assessment and SLA business impact calculation
- **Repository Manager** (incl. dataload tools)
 - The USLAM single and central repository that stores all objects like templates, definitions, services, customers and SLAs.
- **Web UI**
 - Comprehensive Web User Interface allowing the management and monitoring of SLAs, from an operational and business impact standpoint. It also manages USLAM users and monitors the result of the dataload tools.

Note: In this version, the Web UI is deployed on the same system as the *Repository Manager*.
- **Action Executors**
 - A framework that can host any number of action executors. USLAM provides standard SNMP and SMTP Action Executors.

USLAM ETL

The USLAM ETL package is used to build and regularly update the datamart that stores and organizes the historical data of the SLAs.

It is powered by SAP Business Objects Data Services (embedded in the USLAM ETL package) and is available on Linux only.

USLAM Reporting

The USLAM Reporting packages offer a complete Reporting solution, including a predefined end-user SLA Intelligence Portal and a set of predefined standard reports (Operational, Contractual, Audit...). It provides an open and easy-to-use BO universe design to ease the production of customized reports. The package also includes a tool that you can schedule for automatic publishing of contractual reports.

It is powered by SAP Business Objects Enterprise (embedded in the *USLAM Reporting software*) and is available on Windows only.

The USLAM Reporting solution consists in three packages:

- [HP USLAM Reporting Software](#) (powered by Business Objects Enterprise).
Note: This package must not be installed if you already have a Business Object Enterprise server installed
- [HP USLAM Universe and Standard Reports](#)
- [HP USLAM Report Publisher](#)

MyUSLAM Portal

The MyUSLAM package offers a new end user community portal powered by Liferay Portal 6.1.1. This highly customizable portal embeds several USLAM portlets usable to build private or public business dashboards, extending business metrics visibility to business managers, end customers and partners.

Chapter 2 Software Prerequisites

2.1 Software Prerequisites

Table 3 Software Prerequisites

Product	Version	Note
Windows Server	2008 32bit or 64 bits	For: - HP USLAM Reporting - HP USLAM Reports publisher - (optionally) MyUSLAM portal
Red Hat Linux 6.5 64-bit	6.5 (*)	For: - HP USLAM Services - HP USLAM ETL - (optionally) MyUSLAM portal
Oracle Server	11g Rel 2 (11.2.0.4) (*)	Only if selected DB vendor is not Enterprise DB – Postgres Plus Advanced Server (PPAS)
Oracle Client for Linux 64-bit	11g Rel 2 (11.2.0.4) (*)	
Oracle Client for Windows 32-bit	11g Rel 2 (11.2.0.4) (*)	
Enterprise DB - Postgres Plus Advanced Server (PPAS)	9.3 (*)	Only if selected DB vendor is not Oracle
Internet Explorer	9.0 or upper	
or Firefox	27.0 or upper	
or Google Chrome	32.0 or upper	

(*) Hewlett-Packard successfully tested specified servers versions. Hewlett-Packard supports Incremental releases of the specified versions defined by the last number in the server name when they are available, but Hewlett-Packard may not have tested them. Hewlett-Packard will document exceptions in support.

Chapter 3 Installation and Upgrade

3.1 Kit

The installation kits bundled with HP USLAM 4.2-MR software are:

Setup File Name	Usage
HP_USLAM_Services.bin	Use this setup to install USLAM Services (Linux)
HP_USLAM_ETL.bin	Use this setup to install USLAM ETL (Linux)
HP_USLAM_BOE.tar	Untar this archive to install USLAM Reporting software (Windows) <u>Note:</u> Once untar-ed, the setup executable is under Disk1/InstData/VM/HP_USLAM_BOE.exe
HP_USLAM_Reporting.biar	Import this file into Business Objects to install the HP USLAM Universe and Standard Reports
HP_USLAM_Report_Publisher.exe	Use this setup to install USLAM Reports Publisher (Windows)
HP_USLAM_MyUSLAMPortal.bin	Use this setup to install MyUSLAM Portal (Linux)
HP_USLAM_MyUSLAMPortal.exe	Use this setup to install MyUSLAM Portal (Windows)

3.2 Code Signing

Below mentioned procedure* allows you to assess the integrity of the delivered Product before installing it, by verifying the signature of the software packages.

Pick the signature (.sig) file shipped along with the product and use following GPG command

```
gpg --verify <product.sig> <product>
```

Example: gpg --verify VPNSVP-X51-3A.zip.sig VPNSVP-X51-3A.zip

Note: Look for the comments shown below in the command output

Good signature from "Hewlett-Packard Company (HP Code signing Service)"

Note: If you are not familiar with signature verification using GPG and intended to verify HP Product signature, follow the steps given below.

1. Check whether gnupg gpg is installed on the system. If no, install gnupg gpg
2. Configure GPG for accepting HP signature. The steps are the following:
 - a. Log as root on your system
 - b. Get the hpPublicKey from following location:
<https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning> and save it as hpPublicKey.pub
Note that the hpPublicKey file will be located in the root's home directory.
 - c. Follow the instruction found at above URL in the "Verification using GPG" section.

**HP strongly recommends using signature verification on its products, but there is no obligation. Customers will have the choice of running this verification or not as per their IT Policies.*

3.3 Installation

3.3.1 HP USLAM Services

Please refer to the *HP USLAM Installation and Configuration Guide* for detailed information about the installation requirements and the installation procedures.

3.3.2 USLAM License

After installation, USLAM Product will automatically activate a trial license for 90 days (InstantOnLicense). After expiration of this date, you will need a commercial license to continue using the product.

3.3.2.1 Obtaining a USLAM License

A license key password is required to use HP Universal Service Level Agreement Manager (USLAM).

To get a license, please access the following web site:
<https://webware.hp.com>

3.3.2.2 Installing a USLAM License

If the USLAM license expires, it will not be possible to restart the USLAM services after a stop. To update the USLAM license, you will be required to perform the following steps:

1. Get a new license file for USLAM.
2. Stop USLAM services.
3. Edit and copy / paste the license key to the license file available under `<INSTALL_DIR>/license.txt`, then save the modified file.
4. Test the license using the license tool `<INSTALL_DIR>/bin/uslam_license`. This tool will list all installed

licenses and perform a validity check. See the HP USLAM Administration Guide for more details about this tool.

5. Restart USLAM services.

For more information about obtaining a license, stopping or starting USLAM services, please refer to the *HP USLAM Installation and Configuration Guide*.

3.3.3 Starting USLAM

After the installation and configuration of USLAM Services (and before starting USLAM Services):

1. If you need to manage a high volume of SLA (ex: 250K), you must configure some of the USLAM parameters before starting USLAM. Please refer to the *HP USLAM Support Matrix* document.
2. In case the platform integrates with the HP SM7 database configured in a specific time zone, you must configure some of the USLAM parameters before starting USLAM. Please refer to the *Installation and Configuration Guide*.
3. Go to `<InstallDir>/bin` and type `uslam_start.sh` to start USLAM. Then, execute the following command to check if USLAM started correctly.

```
<InstallDir>/jboss/bin/twiddle.sh get "jboss.system:type=Server"  
Started
```

When this command returns: "`Started=true`", it means that USLAM is started.

Starting from this point, you can:

1. Launch the USLAM Web UI at <http://<yourserver>:8080/sla-repository>
2. Run the USLAM dataload tool located at `<InstallDir>/bin/uslam_load.sh`

3.3.4 HP USLAM ETL

Please refer to the *HP USLAM Installation and Configuration Guide* for detailed information about the installation requirements and the installation procedures.

3.3.5 HP USLAM Reporting

Please refer to the *HP USLAM Installation and Configuration Guide* for detailed information about the installation requirements and the installation procedures.

3.3.6 HP MyUSLAM Portal

Please refer to the *HP USLAM Installation and Configuration Guide* for detailed information about the installation requirements and the installation procedures.

Chapter 4 Enhancements and CR Fixes

4.1 Enhancements

4.1.1 Compared to previous version

Compared to **HP USLAM V4.1**, this **USLAM V4.2 Manufacturing Release** supports the following new features:

4.1.1.1 Dynamic objectives

In the Service Offering, the contract designer specifies the SLA Clause Objectives and Service Level Objectives. In some cases, objective values depend on some attributes of the Service Component to which the clause applies.

With previous USLAM versions, the “Conditional Objectives” feature allows the contract designer to implement such requirements when he knows in advance the number of different objectives (groovy scripts do the objective selection).

However, when the contract designer does not know in advance the objectives, then the “Conditional Objectives” feature does not help.

With USLAM V4.2, it is possible to define an objective value as being the value of an attribute of the Service Component to which the clause applies.

Example of use: Measure Sites availability where the value of the availability objective is different for each Site. In this case, you can define the objective value as one of the Site attributes and use the “dynamic objectives” feature in your Service Offering.

4.1.1.2 Reporting periods

USLAM reports SLA Clauses values and statuses on the base of the Reference Period defined in the Service Offering. This can be Quarterly, Monthly or Weekly.

With USLAM V4.2, it is now possible to report and monitor SLA Clause values and statuses with a finer grain, still in the scope of a reference period.

This new concept, called ‘Reporting Periods’, can be defined per SLA Clause in the Service Offering.

If the Reference Period is Quarterly, the Reporting Period can be Monthly or Daily.

If the Reference Period is Monthly or Weekly, the Reporting Period can only be Daily.

Objectives defined for the Reporting Periods can be different from the ones defined for the Reference Period. Reporting Periods can also be objectiveless (i.e. informational).

Example of use: Site availability must greater than 95% over the month and must be greater than 90% on a per-day basis.

In MyUSLAM, the “SLA Clause Status” portlet optionally shows daily values in a bar (or line) chart.

4.1.1.3 Manual raw data correction

USLAM calculates SLA Clause values from raw data collected from an external source (Tickets, Data Records or Performance Metrics). In previous USLAM versions, apart from the “*Exclusions*” mechanism, the only way to trigger a recalculation is to change the source system so that USLAM can collect updated data.

With USLAM V4.2, the classic Web UI allows to bypass the standard collection mechanism for Tickets and Data Records in order to affect the calculation of a given SLA Clause.

Supported operations are:

- Exclude collected Ticket or Data Record
- Update collected Ticket or Data Record
- Create new Ticket or Data Record
- Cancel one of the operations above and resynchronize with the collected information

With this feature, no operation at all is required on the data source system.

4.1.1.4 Improved sub-ticket management

In most Trouble Ticketing systems, tickets and sub-tickets (i.e. Suspend/Resume operations) are stored in separate tables.

In previous USLAM versions, ticket collectors have a unique field mapping definition. In some cases, this constraint forced the integration teams to build complex DB views in order to have both tickets and sub-tickets information available from a single location.

With USLAM V4.2, the collection framework supports two different types of tickets collectors (one for standard tickets and another one dedicated to sub-tickets) that can feed the USLAM calculation engines.

Integrating USLAM with Trouble Ticketing systems becomes much simpler, robust, maintainable and efficient.

4.1.1.5 Improved display for durations

When an SLA Clauses computes a value containing a duration (ex: *Time to Repair...*), previous USLAM versions displayed the delivered value and the objectives as a number of minutes. Consequently, when numbers are big, it was sometimes difficult to do the conversion from a number of minutes to a real duration (ex: 2000 minutes → 1 day 9 hours 20 minutes).

USLAM V4.2 now displays duration in a user-friendly format (both in Web UIs and in Reports) for the following objects:

- SLA Clause delivered values
- KPI values (example: individual Ticket TTR)

- SLA Clause Objectives and Service Level Objectives (including the “edition” mode in the Service Offering Manager screen)
- “Maximum duration“ for exclusion reasons

4.2 CR Fixes

This USLAM V4.2 Manufacturing Release fixes the following list of defects present in the USLAM V4.1 MR:

#	Component	Description
2257	Reporting	'SLA contractual details report on current or last period' fails to open (if BIF model does not contain BIF at sla level)
2451	Install / Config	Calling uslam_start.sh a second time without stopping it the first instance should not be allowed
2559	Universe	Universe does not detail to which service component the exclusion period apply. Universe only associates exclusion periods to SLA Items (Services).
2881	ETL	Error message of ETL running script is not correct when DB is down. The following is displayed: log4j:WARN No appenders could be found for logger (com.hp.sqm.slam.etlcmd.util.DatabaseTool). log4j:WARN Please initialize the log4j system properly. In addition, after all jobs are completed, it shows "Finished processing all ETL jobs successfully." but it is not the case.
2981	Reports	If you terminate a SLA in the past, the SLA details report of the current reference period still shows clause details, and collected data, as if you did not terminate the SLA.
3084	ETL	Updates of raw data (same ID, different values) cause an error in the job jb_fct_event_prepare (duplicate key violation error).
3089	Web UI	The Service Offering editor does not allow to view or edit the Service Level Objectives for clauses based on KPIs.

Chapter 5 Problems & Limitations

5.1 Known Limitations

#	Component	Description
CR#1223	Data Collector	The Data Record collector cannot read raw data having different date pattern <u>Workaround:</u> Make sure that all dates in your raw data are using the same date pattern
CR#1407	Data Collector	Deploying a new Collector datasource file (xxxx-ds.xml) requires the administrator to stop USLAM. <u>Workaround:</u> After loading a DB-based collector, always stop and restart USLAM
CR#2056	Install/Config	You cannot use the USLAM Configuration tools when Oracle configuration is in RAC. <u>Workaround:</u> On the USLAM Service system, during post-installation, modify the connection-url in <InstallDir>/jboss/server/default/deploy/uslam-ds.xml
CR#2237	Repository Manager	When a DB access problem occurs in the middle of a dataload operation, all entities after the DB failure will be in failure, even if the DB access problem is fixed. <u>Workaround:</u> Reload the XML file

5.2 Known Issues

This section includes issues and defects we known in USLAM.

Temporary workarounds for some issues are also included in this section.

CR ID	Component	Summary
1821	Data loader	Worst or Best aggregation rule for an SLO of type Incident should be rejected as an invalid model by the Data Loader. Workaround: Fix the model in XML files
2245	Repository Manager	uslam_export of Service Offerings produces wrong output for Service Offering containing 'unselected' clauses Workaround: Modify the generated XML manually
2531	Universe	Universe does not indicate if the BIF parameter for a clause is global or specific to the clause. Workaround: None
2751	Engines	There are 2 use cases where the DR KQI Engine display the ERROR message "Cannot find any model" when it should not. Case 1: a Data Record is consumed which impacts a monitored resource which was removed from an Service Instance version to another Case 2: USLAM consumes a Data Record but clauses impacted by this data record are marked as 'Unselected' in the Service Offering. You can safely ignore this message. Workaround: None
2972	Engines	In case of conditional SLOs, using the same Objective Identifiers in two different SLIs definition causes wrong KQI calculation Workaround: In the SLR definition, make sure that all Objective IDs are different (regardless of the SLI they belong to) when you define the conditional SLOs of your SLIs
3001	MyUSLAM Portlets	The Agreement Status Snapshot portlet shows bad performances in case of High number of SLAs. From 15s to 30s (depending on the search criteria) for 50K SLAs. Workaround: None
3007	Engines	Engines generate too much BIF Alerts (with same information) in case of recalculation, potentially leading to the generation of duplicate emails by the SMTP Action Executor. Workaround: None
3071	ETL	With specific Ticket KQI custom rules using non-standard tables, JB_Fct_Ticket_Event can fail. Workaround: Make sure that all tables used by your custom ticket KQI rules (in the USLAM Services schema) are also available in the datamart schema.
3101	Repository Manager	Error message is not clear ("Internal error") when loading a Service Offering XML file containing a dynamic objective that references an attribute that does not exist. Workaround: None

Chapter 6 Troubleshooting

This section includes the different operations that you can perform to trace different errors during several stages of the USLAM lifecycle.

More details are available in the *HP USLAM Administration guide*.

6.1 Tracing

For debug and investigation purpose, you might need to activate some additional traces on specific components.

To do that:

For USLAM Services (Engines + UI):

Please edit the file `jboss-log4j.xml` located at `<installDir>/jboss/server/default/conf` and find the section named “Limit categories”.

Then, for each USLAM component, you can change the priority value of the relevant component to INFO or DEBUG.

It is not required to stop or restart the USLAM Services to change the debug level.

For MyUSLAM portlets:

Follow instructions in the *HP USLAM Administration guide*

6.2 Viewing Logs

For USLAM Services (Engines + UI), log files are located at `<installDir>/jboss/server/default/log`.

For MyUSLAM portlets, log files are located at `<installDir>/jboss/standalone/log`.

Chapter 7 Documentation

We ship guides and manuals for USLAM 4.2-MR as PDF files.

The set of documentation includes the following:

- *HP Universal SLA Manager Installation and Configuration Guide*
- *HP Universal SLA Manager Administration Guide*
- *HP Universal SLA Manager Support Matrix*
- *HP Universal SLA Manager User Guide*
- *HP Universal SLA Manager Modeling and Integration guide*: this guide is available on demand, please contact USLAM-Product-Management@hp.com