



DOCUMENTATION
SQL-IMS Module SLA

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1 Introduction

Purpose of this document is to provide overview of functions, not a description of technical relations between SQL-IMS and PRTG!

SQL-IMS as a total unit has the ability to use multi-mandante/client approach, which means, that hosted system can administer customers. Integrated coding of essential fields does not enable to DB administrator reasonable viewing the data.

Concept of access rights analogue to Windows (rights->group->user) enables differentiated acceptance of dialogue.

The system works with MSDE 2005 and requires no MS-SQL license, whereas we recommend to use the standard edition, if possible.

2 Functional description

SLA module evaluates - based on either previous version of PRTG (IPCheck) or up-to-date version - fitted sensors through data compression according to scalable data and data apprehensible by dialogue:

- Definition of SLA agreements and their time validity and intervals
- Assignment of server (respectively defined unit within network) to SLA as relation between n and m, with a.o. following information:
 - Lower threshold value before SLA input, may arise times p.a.
 - Minimum availability
 - Validity, which may be defined in relation to weekday/time interval

At the same time, SLA module serves for long term storage of compressed sensor data and a.o. as a base for

- Performance analysis
- Customer's reference/certificate

See our Flyer (Description of the residual module), eventually operation manual for the comprehensive context.



3 Menu / Overview

A screenshot of a software menu structure for 'SQL-IMS'. The menu is organized into several main categories, each with a folder icon and a plus sign. The categories are: (1)SQL-INFO, (2)Backup-Control (SQL), (3)Migration-Control (SQL), (4)SQL-IMS Improvement suggestions, (5)Excel export, dynamic reports, (6)Workflow/Project Management, and (7)SLA. The (7)SLA category is expanded, showing sub-items: (1)Basic definitions (with sub-items: IP-Check Sensortypes, Preferences, Reasons), (2)Configuration (with sub-items: Export Availability, Export Downtimes, Server, Server(Report), SLA Agreement, SLA Agreement Timeplan, SLA Server Assigning, Status, Status (System)), (3)DWH (with sub-item: Sensor-Data), and (4)Info (with sub-items: Downtimes, Errorlog). At the bottom of the menu is 'Hilfe/Help'. A blue speech bubble callout points to the (6)Workflow/Project Management folder, containing the text 'Additional modules SQL-IMS'.



SQL-IMS is a web application and may be hosted on customer's order.

3.1 Master data

3.1.1 Types of sensor

The screenshot shows the SQL-IMS web application interface. On the left is a navigation tree with categories like (1)SQL-INFO, (2)Backup-Control (SQL), (3)Migration-Control (SQL), (4)SQL-IMS Improvement suggestions, (5)Excel export, dynamic reports, (6)Workflow/Project Management, and (7)SLA. Under (7)SLA, there is a sub-menu for (1)Basic definitions, which includes IP-Check Sensortypes, Preferences, and Reasons. Under (2)Configuration, there are options for Export Availability, Export Downtimes, Server, Server(Report), and SLA Agreement.

The main content area has a red header "Search IPCheck Sensor Type" with two input fields: "Property" and "P-String". Below these are "Clear" and "Search" buttons.

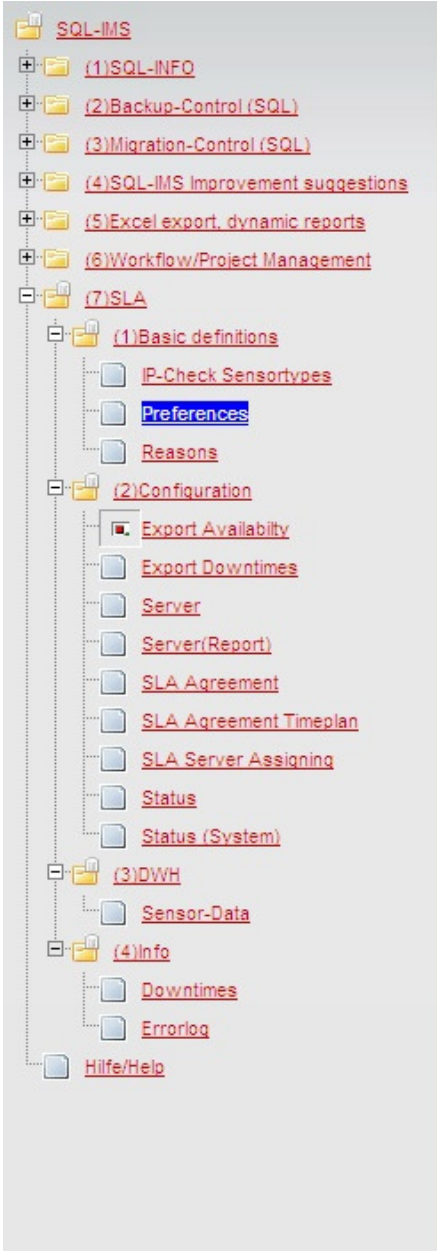
Below the search form is a table titled "List of IPCheck Sensor Type".

ID	Sensortype	Property	P-String	P-Integer	P-Float	Description	Interval	Company	Department
1	1	pingsize				Ping Sensor	1	IBM_Austria	B.I.T. SQL Team
2	19	objname	MSSQL%			MS SQL Server Service	1	IBM_Austria	B.I.T. SQL Team
3	28	listvalue	MSSQLSERVER			MS SQL Server Service	1	IBM_Austria	B.I.T. SQL Team
4	28	listvalue	MSSQLS%			MS SQL Server Service	1	IBM_Austria	B.I.T. SQL Team
5	28	listvalue	SQL Server (MSSQLSERVER)			MS SQL Server Service	1	IBM_Austria	B.I.T. SQL Team
7	28	listvalue	SQL Server (SQLEXPRESS)			MS SQL Server Service	1	IBM_Austria	B.I.T. SQL Team

At the bottom of the table area, there is an "SQL-IMS" logo and an "Add New" link.

Any desired number of sensor types may be defined. Sensor types enable to filter desired information from monitor data. In this case the SLA is just an example.

3.1.2 Preferences



- SQL-IMS
 - (1)SQL-INFO
 - (2)Backup-Control (SQL)
 - (3)Migration-Control (SQL)
 - (4)SQL-IMS Improvement suggestions
 - (5)Excel export, dynamic reports
 - (6)Workflow/Project Management
 - (7)SLA
 - (1)Basic definitions
 - IP-Check Sensortypes
 - Preferences**
 - Reasons
 - (2)Configuration
 - Export Availability
 - Export Downtimes
 - Server
 - Server(Report)
 - SLA Agreement
 - SLA Agreement Timeplan
 - SLA Server Assigning
 - Status
 - Status (System)
 - (3)DWH
 - Sensor-Data
 - (4)Info
 - Downtimes
 - Errorlog
 - Hilfe/Help

Search Preference

Preference

Clear

ID	Preference	Ticket type
4	DTSXPackage_ExportAvailability	MSDB\SQLIM
6	DTSXPackage_ExportDowntimes	MSDB\SQLIM
7	ExportPath	F:\DBA\SLA\
8	FileName_ExportAvailability	VIG_DWDBA,
10	FileName_ExportDowntimes	VIG_DWDBA,
2	IPCheck_Linked_Server	IPCHECK
1	IPCheck_Login	thomas.waec
20	Mail_Attachment	F:\dba\SLA\W
17	Mail_Footer	Bitte prüfen S Backup an: dwh.services
13	Mail_Header	Sehr geehrte die SLA Ausw SLA Ist Erwa
15	Mail_Profile	Blue-IT
14	Mail_Recipient	mrdbasql@cl
11	Mail_Subject	SLA Auswer



Based on inputs, the results of SLA may be exported (to defined directories) in various types of file, or sent by e-mail with correspondent enclosure.

3.1.3 SLA statement of reasons

The screenshot shows a web application interface. On the left is a file tree with the following structure:

- SQL-IMS
 - (1)SQL-INFO
 - (2)Backup-Control (SQL)
 - (3)Migration-Control (SQL)
 - (4)SQL-IMS Improvement suggestions
 - (5)Excel export, dynamic reports
 - (6)Workflow/Project Management
 - (7)SLA
 - (1)Basic definitions
 - IP-Check Sensortypes
 - Preferences
 - Reasons
 - (2)Configuration
 - Export Availability

On the right, there is a 'Search Reason' section with a 'Ticket type' input field, 'Clear', and 'Search' buttons. Below it is a 'List of Reason' table:

ID	Ticket type	Description	Default Reason	Company	Department
3	C	Customer Responsibility	No	IBM_Austria	B.I.T. SQL Team
1	P	Planned	No	IBM_Austria	B.I.T. SQL Team
2	U	Unplanned	Yes	IBM_Austria	B.I.T. SQL Team

Below the table is an 'Add New' button with an SQL-IMS logo.

There are various reasons for SLA violation. Only the items with status Def.Reason=YES are real outages!



3.2 Configuration

In configuration part is administered SLA, assigned server and it is possible to configure and view DWH raw data.

3.2.1 SLA agreement

The screenshot shows the SQL-IMS configuration interface. On the left is a tree view with categories like (1)SQL-INFO, (2)Backup-Control (SQL), (3)Migration-Control (SQL), (4)SQL-IMS Improvement suggestions, (5)Excel export, dynamic reports, (6)Workflow/Project Management, (7)SLA, (1)Basic definitions, (2)Configuration, and (3)DWH. The (2)Configuration section is expanded, showing sub-items like Export Availability, Export Downtimes, Server, Server Report, SLA Agreement (highlighted), SLA Agreement Timeplan, SLA Server Assigning, Status, and Status (System).

The main content area has a 'Search SLA Agreement' form with fields for 'Agreement Name' and 'Operation', and buttons for 'Clear' and 'Search'. Below the search form is a 'List of SLA Agreement' table.

ID	Agreement Name	Company	Department	Operation	Availability [%]	Expected[%]	Minimum[%]	Day of week	Valid Hour
1	SLASMS024	IBM_Austria	B.I.T. SQL Team	BETR	NHVF	98	96		
2	SLASMS025	IBM_Austria	B.I.T. SQL Team	UNBETR	NHVF	96	95		
3	SLASMS029	IBM_Austria	B.I.T. SQL Team	BETR	NHVF	98	96		
5	SLASMS030	IBM_Austria	B.I.T. SQL Team	UNBETR	NHVF	97	95		
9	SLASMS083	IBM_Austria	B.I.T. SQL Team	BETR	HVF	0	0		
4	SLASMS088	IBM_Austria	B.I.T. SQL Team	BETR	HVF	99	99		
6	SLASMS089	IBM_Austria	B.I.T. SQL Team	UNBETR	HVF	99	97		
7	SLASMS098_obsolete	IBM_Austria	B.I.T. SQL Team	UNBETR	HVF	97	95		

At the bottom of the table area, there is an 'SQL-IMS' logo and an 'Add New' button.

Explanation:

Operation: BETR (supervised) or UNBETR (not supervised)

Availability: NHVF (no high availability) or HVF (high availability)

Weekday: Bit pattern Mo-Su

Valid hours: Bit pattern (0-24hrs., 1hr. period)



3.2.2 SLA agreement Timeplan

- SQL-IMS
- (1)SQL-INFO
- (2)Backup-Control (SQL)
- (3)Migration-Control (SQL)
- (4)SQL-IMS Improvement suggestions
- (5)Excel export, dynamic reports
- (6)Workflow/Project Management
- (7)SLA
 - (1)Basic definitions
 - (2)Configuration
 - Export Availability
 - Export Downtimes
 - Server
 - Server(Report)
 - SLA Agreement
 - SLA Agreement Timeplan**
 - SLA Server Assigning
 - Status
 - Status (System)
 - (3)DWH
 - Sensor-Data
 - (4)Info

Search SLA Agreement Timeplan

res:SLA ▼

Clear
Search

List of SLA Agreement Timeplan

SLA TimePlan	Agreement Name	Day	Hour	Company	Department
1	SLASMS024			IBM_Austria	B.I.T. SQL Team
2	SLASMS025			IBM_Austria	B.I.T. SQL Team
3	SLASMS025			IBM_Austria	B.I.T. SQL Team
4	SLASMS029			IBM_Austria	B.I.T. SQL Team
8	SLASMS030			IBM_Austria	B.I.T. SQL Team
10	SLASMS030			IBM_Austria	B.I.T. SQL Team
7	SLASMS083			IBM_Austria	B.I.T. SQL Team
5	SLASMS088			IBM_Austria	B.I.T. SQL Team
11	SLASMS089			IBM_Austria	B.I.T. SQL Team
12	SLASMS089			IBM_Austria	B.I.T. SQL Team
9	SLASMS098_obsolete			IBM_Austria	B.I.T. SQL Team
6	SLASMS098_obsolete			IBM_Austria	B.I.T. SQL Team

Add New

The days, when SLA must be sent or generated.



3.2.3 System Status

The screenshot shows the SQL-IMS web interface. On the left is a navigation tree with the following structure:

- SQL-IMS
 - (1)SQL-INFO
 - (2)Backup-Control (SQL)
 - (3)Migration-Control (SQL)
 - (4)SQL-IMS Improvement suggestions
 - (5)Excel export, dynamic reports
 - (6)Workflow/Project Management
 - (7)SLA
 - (1)Basic definitions
 - (2)Configuration
 - Export Availability
 - Export Downtimes
 - Server
 - Server(Report)
 - SLA Agreement
 - SLA Agreement Timeplan
 - SLA Server Assigning
 - Status
 - Status (System)

On the right, there is a search bar for 'System State' with a 'Clear' button. Below it is a table titled 'List of System State':

ID	System State	Description
1	PROD	
2	DEV	
3	NA	
4	QUAS	
5	SND	
6	TEST	

At the bottom right, there is an 'Add New' button with an SQL-IMS logo.

It is possible to define any desired status.



3.2.4 Assignment of server to SLA

The screenshot shows the SQL-IMS web interface. On the left is a navigation tree with categories like (1)SQL-INFO, (2)Backup-Control (SQL), (3)Migration-Control (SQL), (4)SQL-IMS Improvement suggestions, (5)Excel export, dynamic reports, (6)Workflow/Project Management, and (7)SLA. The (7)SLA category is expanded, showing sub-items like IP-Check, Sensor types, Preferences, Reasons, (2)Configuration, Export Availability, Export Downtimes, Server, and Server(Report).

The main content area is divided into two sections:

- Search Server:** A form with fields for 'Server' (text input), 'SLA' (dropdown menu with 'SLASMS024' selected), and 'System State' (dropdown menu with 'Select Value' selected). There are 'Clear' and 'Search' buttons.
- List of Server:** A table with the following columns: Server, Server, Last Update, Last Data, IP-Check, Agreement Name, Export, Company, Department, Deleted, System State. The table contains four rows of data, all with 'SLASMS024' as the Agreement Name and 'PROD' as the System State.

Below the table is an 'Add New' button with the SQL-IMS logo.

Server	Server	Last Update	Last Data	IP-Check	Agreement Name	Export	Company	Department	Deleted	System State
537		9/29/2010		Yes	SLASMS024	Yes	IBM_Austria	B.I.T. SQL Team	No	PROD
538		9/29/2010	9/28/2010	Yes	SLASMS024	Yes	IBM_Austria	B.I.T. SQL Team	No	PROD
541		9/29/2010	9/28/2010	Yes	SLASMS024	Yes	IBM_Austria	B.I.T. SQL Team	No	PROD
545		9/29/2010	9/28/2010	Yes	SLASMS024	Yes	IBM_Austria	B.I.T. SQL Team	No	PROD

Various states will be distinguished (see Chap. System Status). Even if SLA is not valid any more, the states remain untouched - they are deleted "logically" (Deleted=Yes). "Export" defines, that the data will be exported automatically.

Origin of data is defined in field "IP-Check". If it contains value "NO", PRTG will be accessed. Both of them can be active simultaneously.



3.2.5 Sensor Status

- SQL-IMS
- + (1)SQL-INFO
- + (2)Backup-Control (SQL)
- + (3)Migration-Control (SQL)
- + (4)SQL-IMS Improvement suggestions
- + (5)Excel export, dynamic reports
- + (6)Workflow/Project Management
- (7)SLA
 - + (1)Basic definitions
 - (2)Configuration
 - Export Availability
 - Export Downtimes
 - Server
 - Server(Report)
 - SLA Agreement
 - SLA Agreement Timeplan
 - SLA Server Assigning
 - Status

Search State

[Clear](#)

List of State

ID	State	Description	Downtime	Company	Department
2	Failed		1	IBM_Austria	B.I.T. SQL Team
5	No Connection		0	IBM_Austria	B.I.T. SQL Team
0	OK		0	IBM_Austria	B.I.T. SQL Team
1	Slow	Sesor is slow	0	IBM_Austria	B.I.T. SQL Team
3	Unused		0	IBM_Austria	B.I.T. SQL Team
4	Value Changed		0	IBM_Austria	B.I.T. SQL Team
6	value undefined		1	IBM_Austria	B.I.T. SQL Team

[Add New](#)

It corresponds with known sensor states defined in IPCheck, respectively PRTG. The value in Downtime defines (if > 0), if the specific status should be evaluated as Outage.



3.2.6 Export Availability

- SQL-IMS
- (1)SQL-INFO
- (2)Backup-Control (SQL)
- (3)Migration-Control (SQL)
- (4)SQL-IMS improvement suggestions
- (5)Excel export, dynamic reports
- (6)Workflow/Project Management
- (7)SLA
 - (1)Basic definitions
 - P.Check Sensortypes
 - Preferences
 - Reasons
 - (2)Configuration
 - Export Availability**
 - Export Downtimes
 - Server
 - Server Report
 - SLA Agreement

Search Export Availability

System State
System Name
Application

Clear
Search

List of Export Availability

ID	Company	Department	User	Log Date	Report Month	Report Year	SLA U IDEU	System State	System Name	Application	High Availability	Support	Availability [%]	Evidence Co
3681	IBM_Austria	B.I.T. SQL Team	Wittmer	2009-08-03 18:09:57	7	2009	SLASIMS024	PROD			NHVF	BETR	100	
3683	IBM_Austria	B.I.T. SQL Team	Wittmer	2009-08-03 18:09:57	7	2009	SLASIMS024	PROD			NHVF	BETR	100	
3689	IBM_Austria	B.I.T. SQL Team	Wittmer	2009-08-03 18:09:57	7	2009	SLASIMS024	PROD			NHVF	BETR	100	
3697	IBM_Austria	B.I.T. SQL Team	Wittmer	2009-08-03 18:09:57	7	2009	SLASIMS024	PROD			NHVF	BETR	100	

Contains history of all SLA exports from the system.



3.2.7 SLA Export Downtimes

The screenshot shows the 'Search Downtime' form with the following fields: Server (dropdown), Ticket Nb. (text input), and Reason (dropdown). Below the form is a 'List of Downtime' table with the following data:

ID	Server	Start time	End Time	Ticket Nb.	Ticket type	Comment	Duration	Company	Department
25812	[REDACTED]	9/30/2010	9/30/2010		U		193	IBM_Austria	B.I.T. SQL Team
25810	[REDACTED]	9/29/2010	9/29/2010		U		13	IBM_Austria	B.I.T. SQL Team
25811	[REDACTED]	9/29/2010	9/29/2010		U		1	IBM_Austria	B.I.T. SQL Team

Contains all Downtimes (Duration in [s]).

3.3 Data Warehouse Sensor data

The screenshot shows the 'Search Sensor Data' form with the following fields: Server (dropdown), State (dropdown), Hour (text input), Day (text input), Month (text input), and Year (text input). Below the form is a 'List of Sensor Data' table with the following data:

ID	Server	Year	Month	Day	Hour	Duration	Description	State	Company	Department
154184	[REDACTED]	2009	7	9	17	1	MS SQL Server Service	Failed	IBM_Austria	B.I.T. SQL Team

The data can be searched and exported based on various criteria.



3.4 General information

3.4.1 Info concerning the Downtimes

- SQL-IMS
- (1)SQL-INFO
- (2)Backup-Control (SQL)
- (3)Migration-Control (SQL)
- (4)SQL-IMS Improvement suggestions
- (5)Excel export, dynamic reports
- (6)Workflow/Project Management
- (7)SLA
 - (1)Basic definitions
 - (2)Configuration
 - (3)DWH
 - (4)Info
 - Downtimes
 - Errorlog
 - Hilfe/Help

Search Downtime

Server:

Ticket Nb.:

Reason:

List of Downtime Search

ID	Server	Start time	End Time	Ticket Nb.	Ticket type	Comment	Duration	Company	Department
25575	[Redacted]	9/13/2010	9/13/2010	U			6	IBM_Austria	B.I.T. SQL Team
25506	[Redacted]	9/9/2010	9/9/2010	U			1	IBM_Austria	B.I.T. SQL Team
25439	[Redacted]	9/3/2010	9/3/2010	U			5	IBM_Austria	B.I.T. SQL Team
25199	[Redacted]	8/7/2010	8/7/2010	U			1	IBM_Austria	B.I.T. SQL Team
25059	[Redacted]	7/26/2010	7/26/2010	U			7	IBM_Austria	B.I.T. SQL Team
24973	[Redacted]	7/18/2010	7/18/2010	U			5	IBM_Austria	B.I.T. SQL Team
24593	[Redacted]	7/1/2010	7/1/2010	U			2	IBM_Austria	B.I.T. SQL Team
24505	[Redacted]	6/23/2010	6/23/2010	U			1	IBM_Austria	B.I.T. SQL Team
24377	[Redacted]	6/11/2010	6/11/2010	U			1	IBM_Austria	B.I.T. SQL Team
24311	[Redacted]	6/4/2010	6/4/2010	U			1	IBM_Austria	B.I.T. SQL Team
24242	[Redacted]	5/31/2010	5/31/2010	U			3	IBM_Austria	B.I.T. SQL Team
24043	[Redacted]	5/14/2010	5/14/2010	U			1	IBM_Austria	B.I.T. SQL Team
23927	[Redacted]	4/30/2010	4/30/2010	U			1	IBM_Austria	B.I.T. SQL Team
23851	[Redacted]	4/18/2010	4/18/2010	U			5	IBM_Austria	B.I.T. SQL Team
23830	[Redacted]	4/15/2010	4/15/2010	U			1	IBM_Austria	B.I.T. SQL Team
23797	[Redacted]	4/9/2010	4/9/2010	U			3	IBM_Austria	B.I.T. SQL Team
23736	[Redacted]	4/5/2010	4/5/2010	U			5	IBM_Austria	B.I.T. SQL Team
23735	[Redacted]	4/5/2010	4/5/2010	U			5	IBM_Austria	B.I.T. SQL Team
23690	[Redacted]	4/2/2010	4/2/2010	U			5	IBM_Austria	B.I.T. SQL Team
23615	[Redacted]	3/28/2010	3/28/2010	U			11	IBM_Austria	B.I.T. SQL Team

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Search function enables targeted restriction.



3.4.2 ErrorLog SQL-IMS/SLA

- SQL-IMS
 - (1)SQL-INFO
 - (2)Backup-Control (SQL)
 - (3)Migration-Control (SQL)
 - (4)SQL-IMS Improvement suggestions
 - (5)Excel export, dynamic reports
 - (6)Workflow/Project Management
 - (7)SLA
 - (1)Basic definitions
 - (2)Configuration
 - (3)DWH
 - (4)Info
 - Downtimes
 - Errorlog**

Search ERRORLOG

Error Text

Module

Severity

Error Code

[Clear](#)

List of ERRORLOG

ID	Severity	Error Code	Module	Timestamp
5615	3	99999	IPCheck_GetServerID	10/1/2010
5614	2	99999	IPCheck_GetLog	9/30/2010
5613	2	99999	IPCheck_GetLog	9/30/2010

Defect with Severity 1 will be usually monitored and must be reported to us. Defects with Severity 2 and 3 have no impact on performance.