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# SQL Informational Management System

Aplication overview



# Introduction

## How does SQL-IMS Work

SQL Informational Management System is a web based tool used for remote SQL Server instances management and administration. SQL-IMS integrates and consolidates in a single management console, easy to use, information from multiple SQL Server instances across your enterprise network.

This software was developed because of the lack of similar applications and also because of the workload required from the database administrator. Unlike other available applications, SQL-IMS embeds in a single product all the resources required by a database administrator, to successfully fulfill his tasks.

The SQL-IMS fulfills database administrative tasks like:

- It analyzes the informational system in order to achieve a centralized database for all the departments in the company
- Ensures the accuracy of data structure, technical fixes, rectifications, updates and database modeling
- Tracks data structure accuracy
- Ensures database integrity and security
- Maintains a permanent contact with the heads of departments in order to fill in, delete and update the database structure, and fix any logical problems that can arise
- Performs database alterations according to arising changes of the input data.

SQL-IMS is a web based management system running on top of Microsoft Internet Information Services and Microsoft SQL Server 2005 or later.

By using the web based console, you can easily register and manage any SQL Server Instance in your enterprise. The following SQL Server versions are supported: 2000, 2005, 2008 and 2012.

SQL-IMS centralizes locally information from remote SQL Server instances, making this data available for reporting purposes even long after the data has been erased from the remote SQL Server instances.

# Fast View Over Your Instances

Once a SQL Server Instance is registered, by using SQL-IMS you will be able to:

- Retrieve actual and store historical SQL Server instance and database level information.
- Monitor your database system against predefined monitoring profiles.
- Perform security audits and security health checks.
- Run User ID revalidation operations.
- Conduct database performance health checks.
- Define and schedule advanced database backup strategies.
- Perform database capacity planning.
- Extract reports on: database growth, backup and restore information, available storage space, applications connecting to your databases and much more.

# How can SQL-IMS Help Me

SQL-IMS helps you to better manage and control your SQL Server environment:

- Offers a consolidated overview of database systems at the enterprise level being also able to lookup additional servers that have been installed in your network.
- Central point of management, administration and monitoring.
- Advanced reporting functionality:
  - database growth and capacity planning.
  - backup and restore inventory.
  - SQL Server Agent Jobs.
- Helps in keeping your database environment secure: security audits, patch management, user id revalidations.
- Backup Management and Control.
- Performance Tuning & Best Practices.
- Helps to Standardize your SQL Server environment and future deployments.
- Decreases DBA workload by automating manual tasks.

# Modules

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1. Application Inventory
  2. Backup Control
  3. Info
  4. Monitoring
  5. Security
  6. SQL Server Agent
  7. Scheduler
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## Application Inventory

The purpose of SQL-IMS Application Inventory is to offer a central repository of applications connecting to your SQL Server instances and also to allow the possibility to centrally manage the application related information.

The module offers the possibility to automatically scan for SQL Server instances registered to SQL-IMS and lookup the applications that are connecting to each database server.

This module was developed to help the database administrators to quickly retrieve the list of applications connecting to the SQL Server databases.

SQL-IMS Application Inventory allows the possibility to define a list of application owners that can be associated to each application retrieved by the module. This information can be very handy during critical situations in order to be able to point to and quickly contact the application owner for your databases.

# Backup Control

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This module ensures automated SQL Server database backups by implementing a management system that once configured will run indefinitely and will ensure proper backups in accordance to the defined configurations and strategies.

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Backup Control is powerful database backup scheduling utility which at the same time offers centralized backup and restore reporting functionality.

The module gives the possibility to define global backup strategies which can then be applied and used for running scheduled database backups against any registered SQL Server instance. Whenever required, Backup Control can be used for launching on demand database backups.

The Backup Control module can provide detailed backup reports and also a quick overview of the actual database backup status across the enterprise.

## Features

There are several features that make the backup control an advanced database backup and backup reporting utility:

- Offers the possibility to create backup strategies that can be used for one or more SQL Server instances.
- Offers the possibility to specify databases exclusion lists to save up on storage.
- Automatically searches the backup paths for local to disk backups and, if the path does not exist, Backup Control will create it. Each database backed up to the local disk is saved into its own folder.

Local to disk backups have retention policies for each backup type: FULL/DIFFFULL/LOG.

- The databases with a SIMPLE recovery model will automatically have the LOG backup skipped to avoid backup errors.
- Supports and can easily manage remote MSDE or SQL Server Express editions.
- Designed to retrieve the databases information before a backup occurs hence, in case the databases do not have FULL, DIFFFULL or LOG backups, they will be initially replaced by an EMERGENCY FULL backup type.
- By design, Backup Control automatically avoids DIFF and LOG backups for the system databases and completely skips the tempdb database.
- Once a FULL database backup failed, the backup will be automatically rescheduled to run. A next and a second attempt will be performed in order to decrease the database backup failure rates.
- Offers advanced scheduling and execution ERRORLOGGING.
- Offers the possibility to search and retrieve the backup media used by TDP or local to disk backups.

## Info

SQL-IMS Info is a powerful reporting module that provides SQL Server instance and database level information.

The module can retrieve instance level details such as: SQL Server Version, Edition, Platform, Installation Date, Windows Operating System version, CPU Type, installed OS memory, etc. or database level details as: database name, status, recovery model, total, used and available size.

At the same time, SQL-IMS info can also return information about the available storage on disk, running SQL Server level processes, processes blocking and SQL Server ERRORLOG information.

The data captured by this module is archived and stored for later retrieval in order to facilitate operations such as capacity planning, performance troubleshooting, change management.

# Monitoring

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The Performance and Availability Monitoring offers a consolidated view on the actual and historical SQL Server performance, allowing the DBAs to easily spot systems peak times and observe workload trends that otherwise would not be available.

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## Features

This module offers in depth database and instance level monitoring capabilities through the use of monitoring resource models and alerts such as: Storage Space Usage, Processor Usage, Memory Usage, SQL Server fatal errors, Instance and Database availability, missing database backups, process blocking, Sensors Alerts, SQL Server Counters.

At the same time SQL-IMS provides powerful current and past performance statistics on CPU, Memory and Disk IO which allows the DBA to easily spot and relate to past performance bottleneck events.

The module also provides different other statistics such as system's uptimes, availability rates, the list of currently reachable or unreachable systems, etc.

# Security

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This module was developed following the security standards in the IT industry regarding SQL Servers and offers the possibility to define security policies at company level, which can be used for security audits on each instance registered to the SQL-IMS application.

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## Easy to Spot Security Gaps

Because databases contain valuable information about the company, the clients and the financial activity they represent a critical factor in the organizational structure and require increased security, confidentiality, integrity and data access.

The risks that may arise can be both from external (viruses, hackers, competitors, and others) and internal environment (theft, devious workers, errors and omissions of the working personnel, and others).

SQL-IMS Security offers the possibility to perform enterprise level security audits by scanning remote SQL Server instance against predefined policies and templates.

The module returns a quick high level overview of the current SQL Server versions and builds useful for patch management.

SQL-IMS Security can be used to perform user id revalidations by scanning remote systems and retrieving instance and database level security information.

# Server Agent

SQL Server Agent is a Microsoft Windows service that executes scheduled administrative tasks, which are called jobs. SQL Server Agent uses SQL Server to store job information. Jobs contain one or more job steps. Each step contains its own task, for example, backing up a database.

SQL Server Agent can run a job on a schedule, in response to a specific event, or on demand. For example, if you want to back up all the company servers every weekday after hours, you can automate this task. Schedule the backup to run after 22:00 Monday through Friday; if the backup encounters a problem, SQL Server Agent can record the event and notify you.

## How Does it Work

A job is a specified series of actions that SQL Server Agent performs. Use jobs to define an administrative task that can be run one or more times and monitored for success or failure. A job can run on one local server or on multiple remote servers.

A schedule specifies when a job runs. More than one job can run on the same schedule, and more than one schedule can apply to the same job.

Using the Server Agent module of SQL-IMS, the users can scan all the instances that are registered to the application to keep track of all the jobs running on those instances.

# Scheduler

The Scheduler ensures automated SQL Server scheduling capability by implementing a management system that once configured will run indefinitely and will ensure jobs are executed in accordance to the define configurations and strategies. This module provides operations scheduling capabilities at the SQL-IMS Application level.

By using the scheduler, a user can define and configure various execution plans for every report or maintenance operation available within all the other SQL-IMS modules.

The DBA can customize the SQL-IMS planned executions according to each environment's operational needs. For example, if under normal circumstances the Discovery module would run on weekly basis, for large environments with dynamic SQL Server installations or uninstallations, an administrator might choose to run on daily basis. In a similar way the SQL-IMS Info reports can be scheduled to run less or more often.

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