SQL DIAGNOSTIC MANAGER FOR THE HYBRID CLOUD
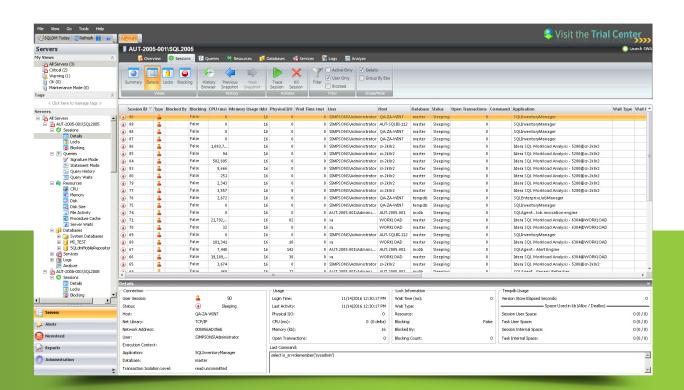
SQL DM FOR THE HYBRID CLOUD

As organizations migrate their databases to the cloud, database administrators need to consistently manage databases on-premise and in the cloud with existing staff and tools. While it is relatively straightforward to provision and manage databases on virtual machines in the cloud, cloud databases (that is, database as a service) require careful planning. Cloud databases are deceptively simple since cloud providers remove much of the complexity of configuring and managing on-premise databases. However, from the perspective of database administrators, is that a good thing or a bad thing?

Typical concerns with migration to the cloud are moving data to the cloud without impacting application performance, determining the best database-specific settings, ensuring that databases are being correctly maintained without access to the full database infrastructure, configuring for high availability and disaster recovery, balancing performance and cost, and managing databases in the cloud and on-premise without learning multiple tools.
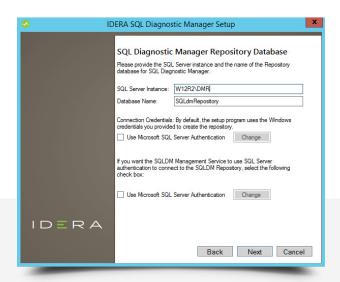
There is no need to fear the cloud when managing the performance and availability of cloud and traditional databases with a single tool. By eliminating the steep learning curve associated with new tools for cloud databases, free up time for new organizational needs, adopt databases in the cloud confidently, and avoid making critical errors with new cloud databases.

With IDERA SQL Diagnostic Manager, monitor the performance of Microsoft SQL Server for physical, virtual, and cloud environments. SQL Diagnostic Manager runs on cloud virtual machines with Microsoft Windows. It can access mapped cloud drives. It supports monitoring of SQL Server instances on cloud virtual machines, and the SQL Server cloud databases Amazon Relational Database Service (RDS) for SQL Server and Microsoft Azure SQL Database.

Monitor the availability, health, and performance of SQL Server with SQL Diagnostic Manager.
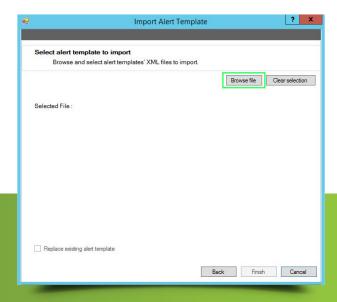
INSTALL ON CLOUD VIRTUAL MACHINES

SQL Diagnostic Manager supports running on cloud virtual machines with Windows – such as Amazon Elastic Compute Cloud (EC2) and Azure Virtual Machines. Refer also to the product documentation "Supported installation scenarios" and "SQL Diagnostic Manager requirements".

Install SQL Diagnostic Manager to meet the unique needs of any SQL Server environment.

ACCESS MAPPED CLOUD DRIVES

SQL Diagnostic Manager can access cloud storage that third-party software map as network drives or removable drives on Windows. Examples of such third-party software include CloudBerry Drive and Mountain Duck for Amazon Simple Storage Service (S3) and Azure Blob Storage.
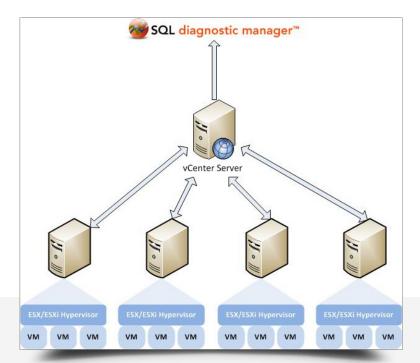
Access cloud drives as network drives or removable drives.

MONITOR SQL SERVER ON CLOUD VIRTUAL MACHINES

SQL Diagnostic Manager supports monitoring instances of SQL Server running on cloud virtual machines with virtualization software that is compatible with VMWare and Microsoft Hyper-V – such as Amazon EC2 and Azure Virtual Machines.

Associate the monitored virtual instances of SQL Server with the virtualization host server that manages the virtual machines and the virtual machine on which the monitored instance of SQL Server is running with the "VM Configuration" window.

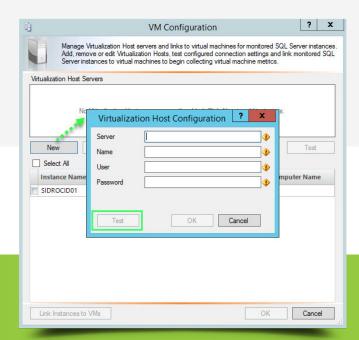Typical setup with SQL Diagnostic Manager monitoring a virtualized environment with VMware.

Add Host Server

To add a new host server:

1. In the desktop console, from the main top menu, select "Tools ➜ VM Configuration" **Or**
   In the "Manage Servers" window, select the "VM Configuration" button **Or**
   In Server Properties window, from the "Virtualization" tab, select the "VM Configuration" button.

2. In the "VM Configuration" window, select the "New" button.

3. In the "Virtualization Host Configuration" window:
   A. Enter the access information for the server.
   B. Select the "Test" button to verify connectivity.
   C. After a successful test, select the "OK" button.

Refer also to the product documentation "[Configure your virtual machine connections](#)".

In the "Virtualization Host Configuration" window, enter "Server", "Name", "User", and "Password".

Setup Hyper-V

In virtualized environments with Hyper-V, the process of how SQL Diagnostic Manager collects and presents metrics is slightly different from that of a VMware setup. To successfully collect metrics for the host server and the virtual machine for Hyper-V, provide the Windows Management Instrumentation (WMI) credentials for the host server and the virtual machine, respectively.

To provide the WMI credentials for the Hyper-V host server:

1. In the desktop console, from the main top menu, select "Tools ➜ VM Configuration ➜ New" or "Tools ➜ VM Configuration ➜ View / Edit".
2. In the "Virtualization Host Configuration" window, enter the WMI credentials.

To provide the WMI credentials for the Hyper-V virtual machine:

1. In the desktop console, right-click on the name of the monitored instance and select "Properties".
2. In the "Monitored SQL Server Properties" window, in the "OS Metrics" tab, enter the WMI credentials for the virtual machine.

Refer also to the product documentation "How SQL Diagnostic Manager works with a virtual environment" and specifically "Hyper-V user requirements".

Typical setup with SQL Diagnostic Manager monitoring a virtualized environment with Hyper-V.

Associate Monitored SQL Server Instance to Virtual Machine

After adding SQL Server instances to SQL Diagnostic Manager for monitoring, associate them with their host server and virtual machine:

1. In the desktop console, verify that the instance to associate to the host appears in the list.

2. Select the "Virtualization" column for the appropriate virtual instance, and then select the associated host server from the drop-down list.

3. Select the "Virtual Machine" column, and then select the name of the virtual machine where this instance resides. SQL Diagnostic Manager populates this drop-down list based on the servers on the selected host server.

4. Select the "Link Instances to VMs" button.

5. Select the "OK" button to save the changes and close this window.

Refer also to the product documentation "Configure your virtual machine connections".

Configure how SQL Diagnostic Manager monitors instances of SQL Server in the "Monitored SQL Server Properties" window.

MONITOR SQL SERVER CLOUD DATABASES

SQL Diagnostic Manager supports monitoring of the SQL Server cloud databases Azure SQL Database and Amazon RDS for SQL Server.

Select Cloud Provider While Adding Server

Add the SQL Server instances to monitor, configure all of the common options for SQL Server collection settings and alerts, and apply alert templates with the "Add Servers" wizard.

To add a new cloud server:

1. In the desktop console, from the main top menu, select "File ➜ Manage Servers".

2. In the "Manage Servers" window, select the "Add" button.

3. Navigate the "Configure Authentication" window and the "Select Servers to Monitor" window of the "Add Servers" wizard.

4. In the "Add Servers" wizard, in the "Select cloud providers for the added servers" window, select a cloud provider for the monitored SQL Server instances hosted in the cloud.

5. Navigate the "Configure SQL Diagnostic Manager Collection" window, the "Configure OS Metric Collection" window, and the "Select Alert Template and Tags" window of the "Ad Servers" wizard.

Refer also to the product documentation "Add your SQL Server instances" and specifically "Select cloud providers".

Collected Metrics

View a wide range of information collected when monitoring the SQL Server cloud databases
Amazon RDS for SQL Server **(ARSS)** and Microsoft Azure SQL Database **(MASD)**
However, some information is not available yet.

AREA	METRIC	ARSS	MASD
Sessions ➜ Summary	Response Time	●	●
	Sessions	●	●
	Blocked Sessions	●	●
	Lock Statistics ➜ Average Wait Time	●	
	Lock Statistics ➜ Deadlocks	●	

Collected Metrics Continued

AREA	METRIC	ARSS	MASD
Sessions ➜ Summary	Lock Statistics ➜ Requests	●	
	Lock Statistics ➜ Timeouts	●	
	Lock Statistics ➜ Waits	●	
	Lock Statistics ➜ Wait Time	●	
Sessions ➜ Details	Blocked by		
	Connection		●
	User Session	●	●
	Status	●	●
	Host	●	●
	Net Library	●	
	Network Address	●	
	User	●	●
	Execution Context		●
	Application	●	●
	Database	●	●
	Transaction Isolation Level	●	●
	Usage		●
	Login Time	●	●
	Last Activity	●	●
	Physical I/O	●	●
	CPU (ms)	●	●

Collected Metrics Continued

AREA	METRIC	ARSS	MASD
Sessions ➜ Details	Memory (kb)	●	●
	Lock Information		●
	Open Transactions	●	
	Wait Time (ms)	●	
	Resource		●
	Blocking	●	●
	Blocking Count	●	●
	Tempdb Usage		●
	Version Store Elapsed Seconds	●	●
	Space Used in kb (Alloc / Dealloc)	●	●
	Session User Space	●	●
	Task User Space	●	●
	Session Internal Space	●	●
	Task Internal Space	●	●
Overview ➜ Details	Available Memory		
	Batches	●	
	Batches Per Second	●	
	Blocked Sessions	●	
	Buffer Cache Hit Ratio	●	
	Buffer Cache Size	●	
	Checkpoint Writes	●	

Collected Metrics Continued

AREA	METRIC	ARSS	MASD
Overview → Details	Checkpoint Writes Per Second	●	
	Client Computers	●	
	Connections	●	
	Connections Per Second	●	
	Data File Count	●	
	Data File Space Allocated	●	
	Data File Space used		
	Database Count		
	Disk Queue Length		
	Disk Time (Percent)		
	Full Scans	●	
	Full Scans Per Second	●	
	Lazy Writer Writes	●	
	Lazy Writer Writes Per Second	●	
	Lead Blockers	●	
	Lock Waits	●	
	Lock Waits Per Second	●	
	Log File Count	●	
	Log File Space Allocated	●	
	Log File Space Used	●	
	Log Flushes	●	

Collected Metrics Continued

AREA	METRIC	ARSS	MASD
Overview ➜ Details	Log Flushes Per Second	●	
	Maintenance Mode	●	
	OLE Automation Status	●	
	Open Transactions	●	
	OS CPU Privileged Activity		
	OS CPU User Time		
	OS Metrics Availability	●	
	OS Total Processor Activity		
	Packet Errors	●	
	Packet Errors Per Second	●	
	Packets Received	●	
	Packets Received Per Second	●	
	Packets Sent	●	
	Packets Sent Per Second	●	
	Page Life Expectancy	●	
	Page Lookups Per Second	●	
	Page Lookups Per Second	●	
	Page Reads	●	
	Page Reads Per Second	●	
	Page Splits	●	
	Page Splits Per Second	●	

Collected Metrics Continued

AREA	METRIC	ARSS	MASD
Overview → Details	Page Writes	🟢	
	Page Writes Per Second	🟢	
	Pages Per Second		
	Physical Memory		
	Procedure Cache Hit ratio	🟢	
	Procedure Cache Size		
	Processor Queue Length		
	Read Ahead Pages	🟢	
	Read Ahead Pages Per Second	🟢	
	Read Write Errors	🟢	
	Response Time	🟢	
	Running Since	🟢	
	Server Version	🟢	
	SQL Compilations	🟢	
	SQL Compilations Per Second	🟢	
	SQL CPU Activity	🟢	
	SQL Memory Allocated	🟢	
	SQL Memory Used	🟢	
	SQL Memory Used Percent		

Refer also to the product documentation "Metric availability for instances hosted on the cloud".

SUMMARY

With SQL Diagnostic Manager, monitor the performance of SQL Server for physical, virtual, and cloud environments. Monitor queries and query plans to find the causes of blocks and deadlocks, plan for future capacity, monitor high availability groups, monitor the tempdb system database, view expert recommendations to optimize performance, alert predictively while avoiding false alerts, view a summary of top issues and alerts, and much more. Install and deploy SQL Diagnostic Manager to meet the unique needs of any SQL Server environment.

Monitor, analyze, and plan for your SQL Server with **SQL Diagnostic Manager.**

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