IDERA® | Cloud Database Solution Brief

SQL DOCTOR FOR THE HYBRID CLOUD

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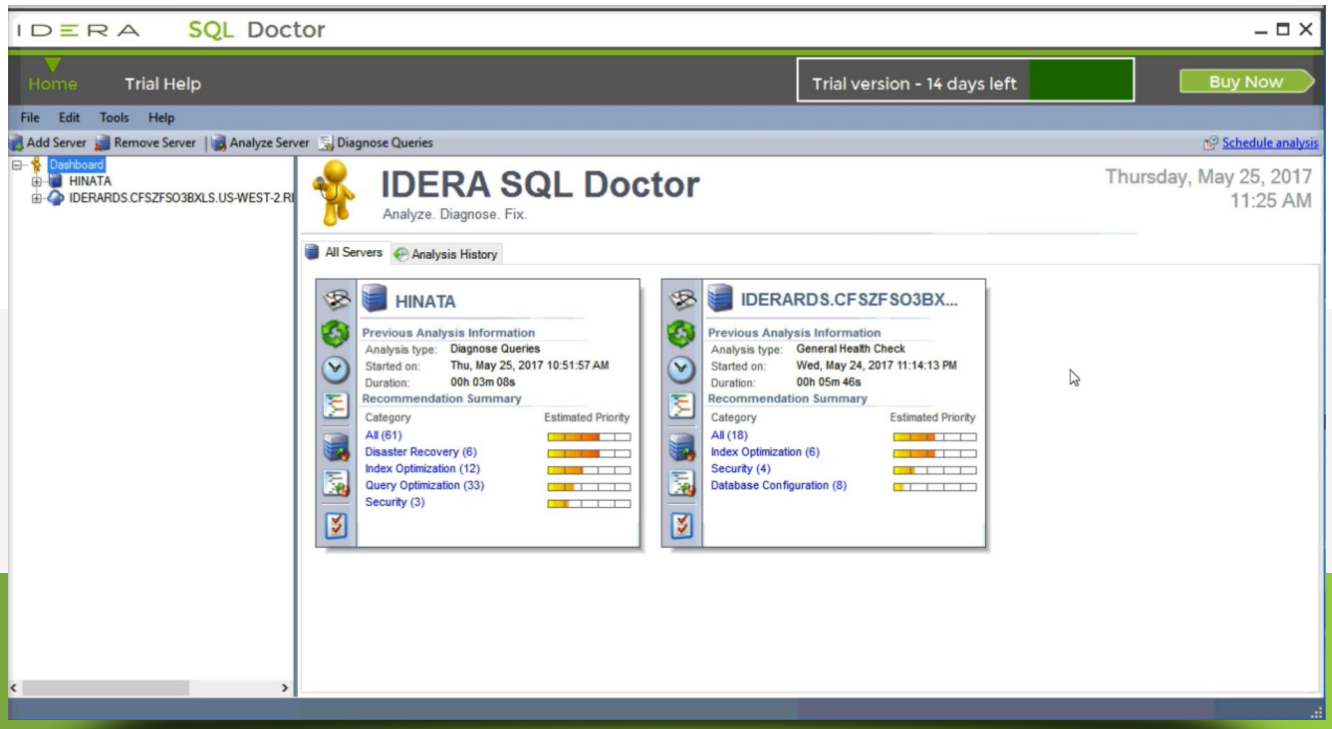
As organizations migrate their databases to the cloud, database administrators need to consistently manage databases on-premise and in the cloud with existing staff and tools. While it is relatively straightforward to provision and manage databases on virtual machines in the cloud, cloud databases (that 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.

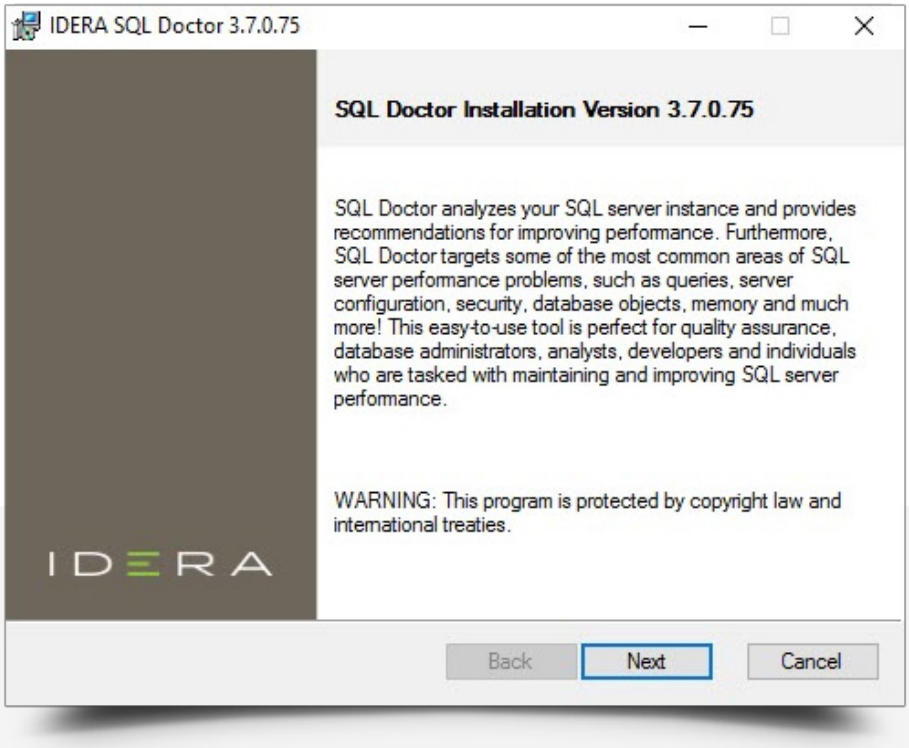
With IDERA SQL Doctor, tune the health, performance, and security of Microsoft SQL Server for physical, virtual, and cloud environments. SQL Doctor runs on cloud virtual machines with Microsoft Windows. It can access mapped cloud drives. It supports tuning of instances of SQL Server on cloud virtual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



Tune the health, performance, and security of SQL Server with SQL Doctor.

INSTALL ON CLOUD VIRTUAL MACHINES

SQL Doctor 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 "Product requirements".



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

ACCESS MAPPED CLOUD DRIVES

SQL Doctor 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.

TUNE SQL SERVER ON CLOUD VIRTUAL MACHINES

SQL Doctor supports tuning instances of SQL Server running on cloud virtual machines – such as Amazon EC2 and Azure Virtual Machines. Refer also to the product documentation "Product requirements".

TUNE SQL SERVER CLOUD DATABASES

SQL Doctor supports tuning of the SQL Server cloud databases Azure SQL Database and Amazon RDS for SQL Server.

For Amazon RDS for SQL Server, SQL Doctor supports the following regions:

REGION NAME	REGION	
Asia Pacific (Mumbai)	ap-south-1	
Asia Pacific (Osaka-Local)	ap-northeast-3	
Asia Pacific (Seoul)	ap-northeast-2	●
Asia Pacific (Singapore)	ap-southeast-1	●
Asia Pacific (Sydney)	ap-southeast-2	●
Asia Pacific (Tokyo)	ap-northeast-1	●
Canada (Central)	ca-central-1	
China (Beijing)	cn-north-1	●
China (Ningxia)	cn-northwest-1	
EU (Frankfurt)	eu-central-1	●
EU (Ireland)	eu-west-1	●
EU (London)	eu-west-2	
EU (Paris)	eu-west-3	
GovCloud (US)	us-govcloud-west-1	●
South America (Sao Paulo)	sa-east-1	●
US East (N. Virginia)	us-east-1	●
US East (Ohio)	us-east-2	●
US West (N. California)	us-west-1	●
US West (Oregon)	us-west-2	●

Refer also to the product documentation "Product requirements", and the AWS documentation "Regions and Availability Zones" and "AWS GovCloud (US) Endpoints".

Add Cloud Databases

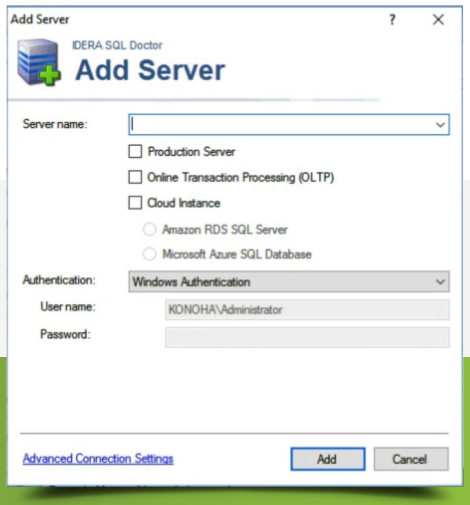
When adding an instance of SQL Server, choose a cloud provider for the monitored instances of SQL Server that are hosted on the cloud with Amazon RDS for SQL Server and Microsoft Azure SQL Database.

To add an instance of SQL Server to SQL Doctor:

1. On the main top toolbar, select the “Add Server” button.
2. In the “Add Server” window; in the “Server name” text box, select “<Browse for more...>” to select the instance of SQL Server to add.
3. In the “Browse for SQL Server” window:
   A. Select a local instance of SQL Server or an instance of SQL Server on the network. Or...
   B. In the “Server name” text box, enter the name of the instance of SQL Server.
4. If the instance is a production server, select the “Production Server” checkbox.
5. If the instance has online transaction processing (OLTP) enabled, select the “Online Transaction Processing (OLTP)” checkbox.
6. If the instance of SQL Server is a cloud database:
   A. Select the “Cloud Instance” checkbox.
   B. Select which service the instance is hosted on, either Amazon RDS for SQL Server or Microsoft Azure SQL Database.
7. Choose the type of authentication that the instance of SQL Server requires.
8. Specify the appropriate Windows user account or the SQL Server authentication credentials with the required system administrator level permissions.
9. Select the “Advanced Connection Settings” button to configure how to collect performance counters from the instance of SQL Server.
10. Select the “Add” button.

When analyzing a cloud instance hosted by Amazon RDS for SQL Server, an Access Key and a Secret Key are required. The Access Key and the Secret Key are needed to access Amazon application performance interfaces (APIs) to obtain various platform-specific information including operating system metrics via the REST protocol. The Access Key and Secret Key are generated and managed using the Amazon AWS console by the Amazon account administrator.

Refer to the product documentation “Configure your deployment”, specifically “Add a server to analyze”.



Add an instance of SQL Server for Amazon RDS for SQL Server and Microsoft Azure SQL Database.

Select Analysis Options for Cloud Databases

Configure the basic settings for the selected instance of SQL Server with different settings for each registered instance of SQL Server in the “General Settings” tab of the “Server Settings” window.

To access the “General Settings” tab of the “Server Settings” window,
select from the main top menu “Edit ➔ General Settings”.

When performing an analysis, SQL Doctor takes into account whether the instance is a production server, it has online transaction processing (OLTP) enabled, or it is a cloud instance. For a cloud instance, select Amazon RDS SQL Server or Microsoft Azure SQL Database.

Refer to the product documentation “Configure your deployment”, specifically “Change general settings”.

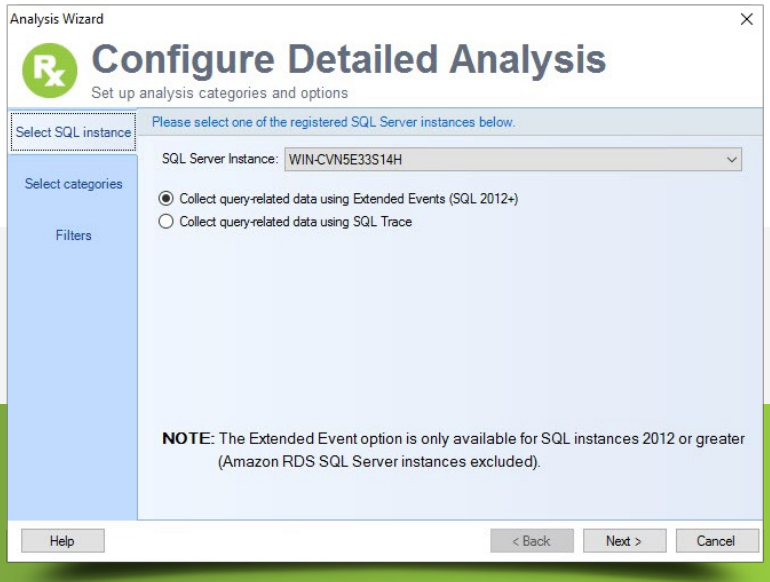
Analyze Cloud Databases

SQL Query Collection Methods

When analyzing a target instance of SQL Server, for the collection of data related to SQL queries:

- For Amazon RDS for SQL Server, the collection method is limited to SQL Trace.
- For Microsoft Azure SQL Database, the collection method is Extended Events by default with SQL Trace as an alternative option.

Select the collection method on the “Select SQL instance” tab of the “Analysis Wizard” window by selecting the “Analyze Server” button from the main top toolbar. Refer to the product documentation “Analyze your instance of SQL Server”

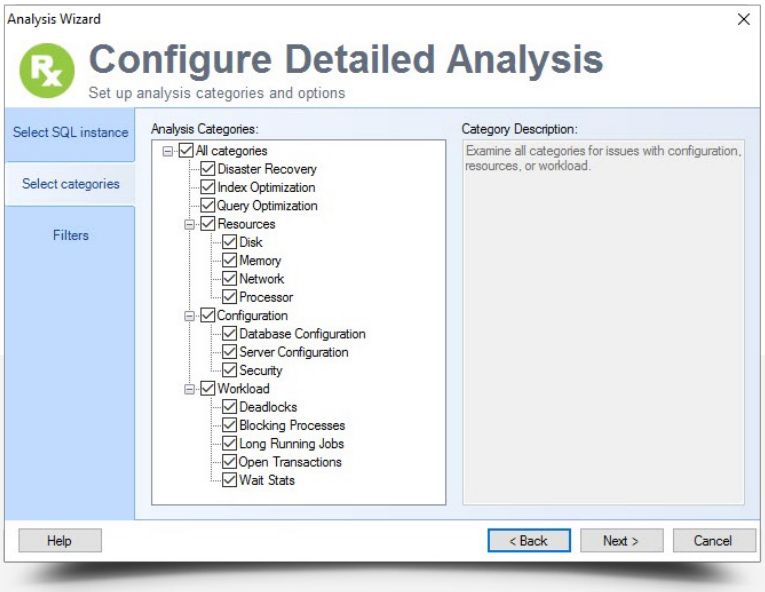


Collect data related to SQL queries using Extended Events or SQL Trace.

Cloud-specific Recommendations

Access enhanced and new expert recommendations that are unique to the SQL Server cloud databases Azure SQL Database and Amazon RDS for SQL Server.

Altogether, SQL Doctor includes 19 recommendations for Azure SQL Database, 59 for Amazon RDS SQL Server, and 92 for both platforms.



Select from analysis categories and options with SQL Doctor.

The added new recommendations that are specific to the SQL Server cloud databases are:

For Azure SQL Database:

1. Query Store defaults changed
2. Database is at 90% of storage capacity
3. Database is at 90% of DTU capacity
4. Database is at 90% of user sessions
5. Database is at 90% of worker threads
6. Configure geo-replication for HA/DR
7. Geo-replicated secondary is in SUSPENDED mode
8. Geo-replicated secondary is more than 300 seconds behind
9. Database service tier has been reduced
10. Review your Azure SQL Database for public network access
11. Access from all Azure IPs has been enabled on your Azure SQL Database

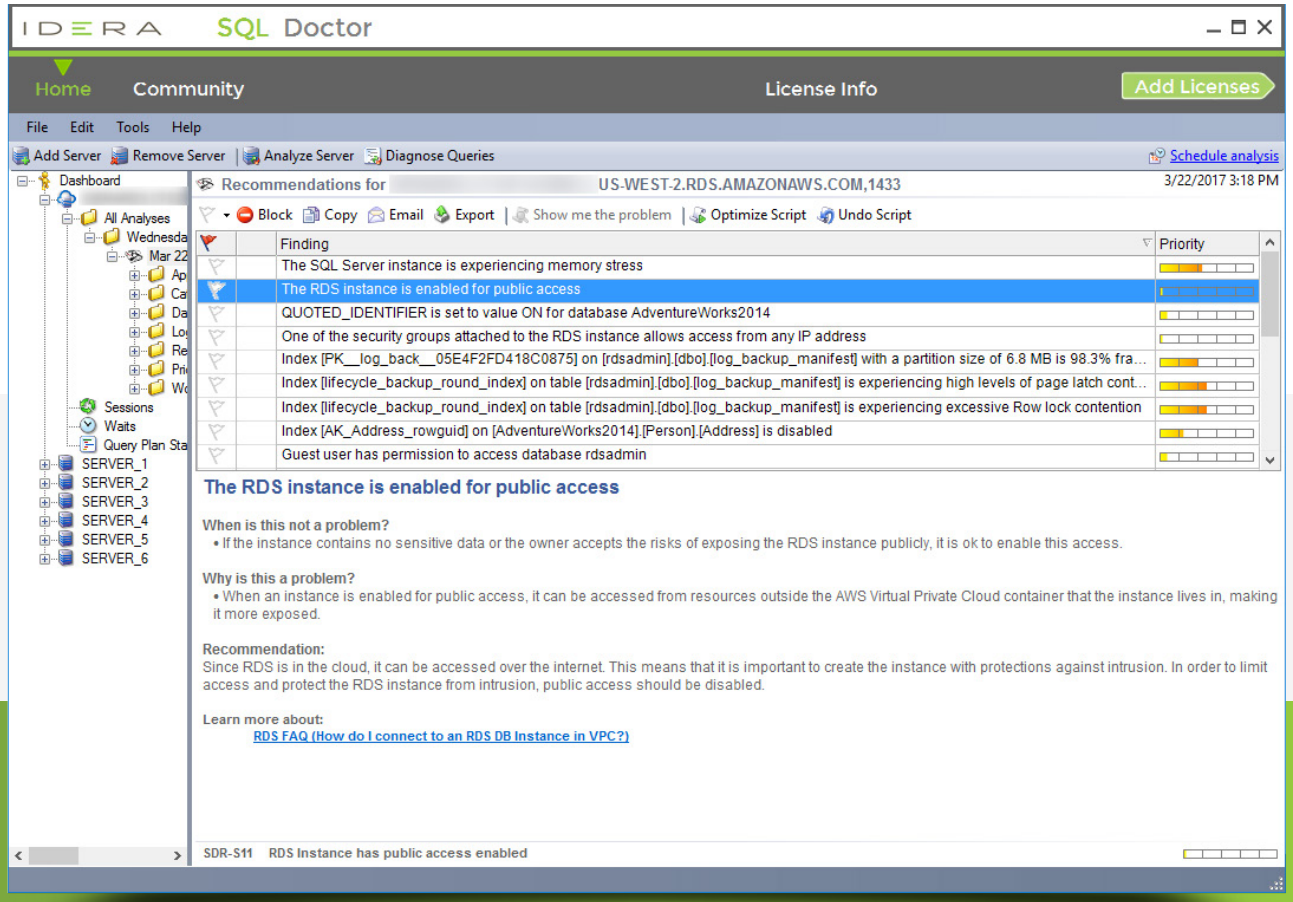
For Amazon RDS for SQL Server:

1. RDS instance is at 90% of CPU utilization
2. RDS instance disk latencies are too high
3. RDS instance has less than 10% storage free
4. RDS instance size has changed
5. RDS instance does not have automatic backups configured
6. RDS instance has public access enabled
7. RDS instance is not enabled for Multi-Availability Zone failover
8. RDS instance has an access rule that allows access from any IP address

For both Azure SQL Database and Amazon RDS for SQL Server

1. Instance uses Enterprise Edition, but database uses no Enterprise Edition features

Refer to the product documentation "Select performance categories".



View a prioritized list of findings and recommendations for SQL Server cloud databases with SQL Doctor.

SUMMARY

With SQL Doctor, tune the health, performance, and security of SQL Server for physical, virtual, and cloud environments. Instantly locate problems in real time, run analyses on an as-needed basis, schedule analyses, view prioritized rankings of issues, view expert recommendations, generate executable scripts to fix issues, view trends from the history of analysis recommendations, diagnose SQL queries, explore SQL query plan statistics, and much more. Install and deploy SQL Doctor to meet the unique needs of any SQL Server environment.

Tune the health, performance, and security of SQL Server **with SQL Doctor.**

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