

TUNE THE PERFORMANCE OF SQL SERVER, AZURE SQL DATABASE AND AMAZON RDS WITH **SQL DOCTOR**

SQL DOCTOR DIAGNOSES AND PROVIDES THE CURE FOR WHAT AILS SQL SERVER ON-PREMISES, IN THE CLOUD, AND AS A MANAGED CLOUD DATABASE.

Collect performance information, analyze it, and determine the resolution in minutes rather than hours. Leverage proven industry best practices endorsed by Most Valuable Professionals (MVPs) to analyze the performance and to provide recommendations. Target some of the most common areas of performance problems, such as queries, server configuration, security, database objects, memory, wait statistics, query plans, and much more.



Quickly see the overall health of all registered servers, based on the last analysis run. Access quick links to the shared tasks for a server such as updating SQL Doctor settings, reviewing wait stats, and analyzing a query.

The screenshot shows the IDERA SQL Doctor application window. The left sidebar lists servers: SERVER_1, SERVER_2, SERVER_3, SERVER_4, SERVER_5, and SERVER_6. SERVER_1 is expanded, showing categories like All Analyses, Sessions, Wats, and Query Plan Stats, along with specific items such as Applications, Categories, Databases, Logins, Recommendation, Prioritized Recommendation, Workstations, and a timestamp of Mar 21, 2017 3:06:03 PM. The main pane displays 'Recommendations for SERVER_1' for the Northwind database. A table lists findings with priority levels (High, Medium, Low). The top finding is 'The integrity of database [Northwind] has not been checked in 56.2 days'. Below this, there's a detailed description, a recommendation to run DBCC CHECKDB, and a note about the database being Northwind. At the bottom, a progress bar indicates 'Analyzing SERVER_4'.

Finding	Priority
The integrity of database [Northwind] has not been checked in 56.2 days	High
A Search predicate contains a column expression in a function	Medium
Duplicate index found on [Northwind].[dbo].[Orders]	Low
Duplicate index found on [Northwind].[dbo].[Order Details]	Low
Duplicate index found on [Northwind].[dbo].[Products]	Low
SQL Server password policy is vulnerable for login sa	Low
Deadlock information is not being captured	Low
The use of SELECT * has been found	Low
Inconsistent execution times for mc_GetServerStatusDatabase	Low
Inconsistent execution times for procedure	Low
Query hint abuse has been detected	Low

View a list of performance recommendations based on a full analysis based on selected criteria. The performance gain that was received from making the suggested change, how relevant it is for the parameters that were specified when configuring the analysis, and the confidence SQL Doctor has in the recommendation determines the priority of the recommendation. Narrow the recommendations by targeted applications, selected performance categories, databases on the server, logins at the server or database level, frequency of specific recommendations, prioritized recommendations, and workstations associated with the server.

The screenshot shows the IDERA SQL Doctor application window. The title bar reads "IDERA SQL Doctor". The menu bar includes "File", "Edit", "Tools", "Help", "Add Server", "Remove Server", "Analyze Server", "Diagnose Queries", and "Schedule analysis". The "License Info" button is in the top right, and there's a "Add Licenses" button with a green arrow.

The main area has tabs "Home" and "Community". The "Home" tab is selected. On the left is a tree view with nodes like "Dashboard", "All Analyses", "Wednesday Mar 22", "Sessions", "Waits", "Query Plan Stats", and "SERVER_1" through "SERVER_6".

The central pane displays "Recommendations for US-WEST-2.RDS.AMAZONAWS.COM,1433" dated "3/22/2017 3:18 PM". A list of findings is shown:

Finding	Priority
The SQL Server instance is experiencing memory stress	Yellow
The RDS instance is enabled for public access	Red
QUOTED_IDENTIFIER is set to value ON for database AdventureWorks2014	Yellow
One of the security groups attached to the RDS instance allows access from any IP address	Yellow
Index [PK_log_backup_05E4F2FD418C0875] on table [rdsadmin].[dbo].[log_backup_manifest] with a partition size of 6.8 MB is 98.3% fra...	Yellow
Index [lifecycle_backup_round_index] on table [rdsadmin].[dbo].[log_backup_manifest] is experiencing high levels of page latch cont...	Yellow
Index [lifecycle_backup_round_index] on table [rdsadmin].[dbo].[log_backup_manifest] is experiencing excessive Row lock contention	Yellow
Index [AK_Address_rowguid] on [AdventureWorks2014].[Person].[Address] is disabled	Yellow
Guest user has permission to access database rdsadmin	Yellow

A specific finding is highlighted: "The RDS instance is enabled for public access". Below it, a section titled "The RDS instance is enabled for public access" provides details:

When is this not a problem?

- If the instance contains no sensitive data or the owner accepts the risks of exposing the RDS instance publicly, it is ok to enable this access.

Why is this a problem?

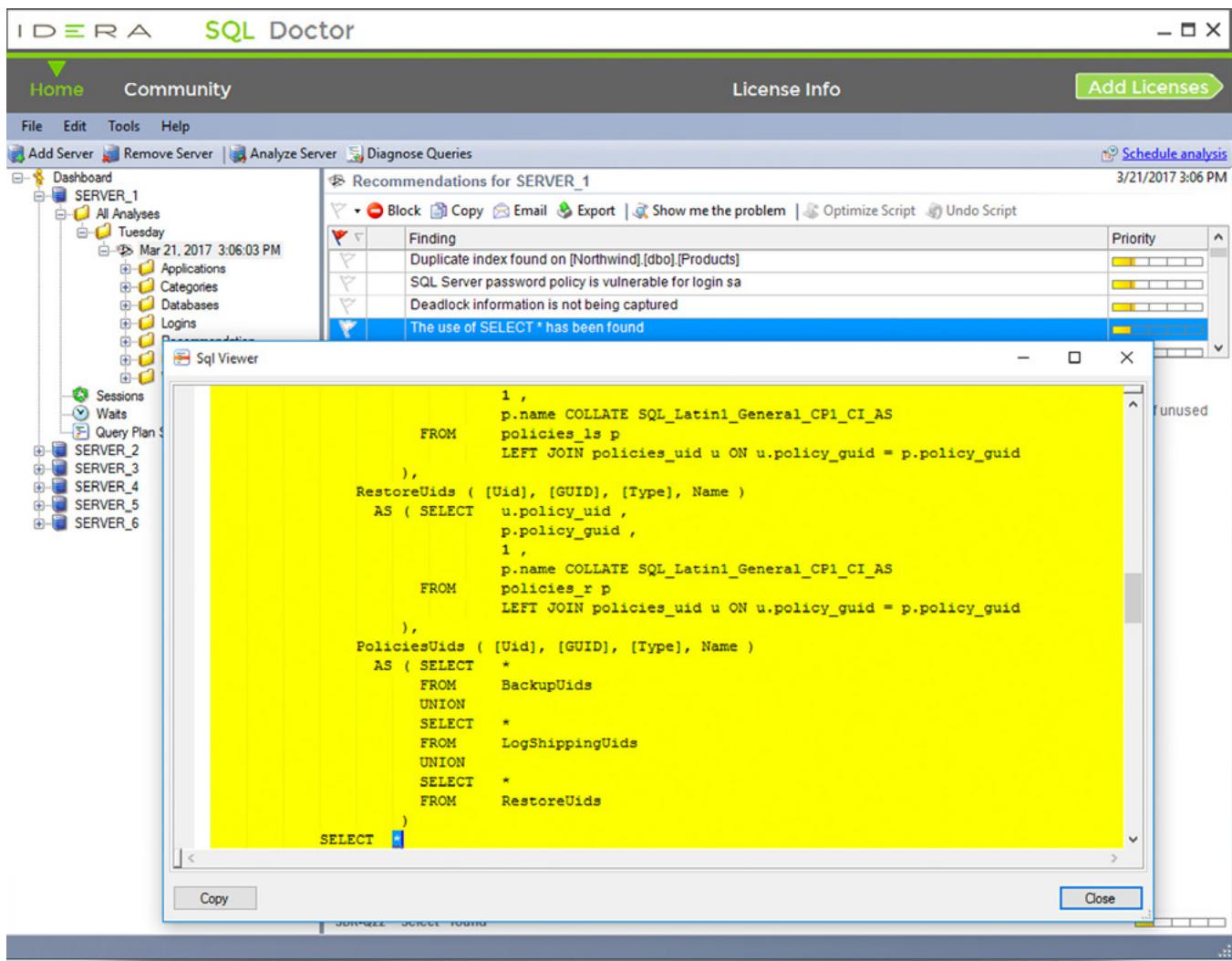
- When an instance is enabled for public access, it can be accessed from resources outside the AWS Virtual Private Cloud container that the instance lives in, making it more exposed.

Recommendation:
Since RDS is in the cloud, it can be accessed over the internet. This means that it is important to create the instance with protections against intrusion. In order to limit access and protect the RDS instance from intrusion, public access should be disabled.

Learn more about: [RDS FAQ \(How do I connect to an RDS DB Instance in VPC?\)](#)

At the bottom, a status bar says "SDR-S11 RDS Instance has public access enabled".

View detailed information about each recommendation. In many cases, this includes the actual metrics, databases, tables, and applications involved. Perform these actions: Flag, block, copy, email, and export, show me the problem, optimize script, and undo script. This example lists the details for a cloud recommendation for Amazon Relational Database Service (RDS). SQL Doctor also supports Microsoft Azure SQL Database.



View the SQL text for a selected recommendation. Copy the SQL text to the clipboard to see it in a text editor or SQL Server Management Studio.

Optimize Now

```
-- ****
-- This SQL Doctor optimization script was created
-- based on the recommendations you selected from
-- the following analysis:
--
--SQL Doctor version: 3.6.0.163
-- Date: Tuesday, March 21, 2017
-- Time: 3:06:03 PM
-- SQL Server Instance: SERVER_1
-- Analysis Type: General Health Check, Database Object Analysis
-- ****

-- Deadlock information is not being captured
USE master
GO
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
-- first set the server to show advanced options
EXEC sp_configure 'show advanced option', '1';
RECONFIGURE
-- then set the scan for startup procs to 1
-- EXEC sp_configure 'scan for startup procs', 1;
-- GO
```

< >

Copy Run Cancel

Display the script used to enact the recommended change. Alternatively, copy the script to Windows Notepad or another text editor to examine the code and research other options further before making the change.

The screenshot shows the IDERA SQL Doctor application interface. The top navigation bar includes 'IDERA' and 'SQL Doctor' with standard window controls. The main menu bar has 'File', 'Edit', 'Tools', and 'Help'. Below the menu is a toolbar with icons for 'Add Server', 'Remove Server', 'Analyze Server', and 'Diagnose Queries', along with a 'Schedule analysis' button.

The left sidebar displays a tree view of registered servers: SERVER_1, SERVER_2, SERVER_3, SERVER_4, SERVER_5, and SERVER_6. SERVER_1 is expanded, showing 'All Analyses' (with a 'Tuesday' folder containing 'Mar 21, 2017 3:06:03 PM' and sub-folders for Applications, Categories, Databases, Logins, Recommendation, Prioritized Recommendation, and Workstations), Sessions, Waits, and Query Plan Stats.

The central content area is titled 'Overview for SERVER_1' and provides details about the Microsoft SQL Server version (12.0.4232.0 Enterprise Edition) and the last analysis (3/21/2017 at 3:04 PM). It includes sections for 'SQL Doctor Analysis (0 warnings)', 'Performance Metrics (0 warnings)', 'Drives / Storage (0 warnings)', 'Disaster Recovery (1 warning)', 'SQL Agent Jobs (0 warnings)', and 'Quick Findings' (with a 'more...' link).

On the right side, there are two expandable panes: 'Processes' (listing processes like Idle, ReportingServicesService, System, smss, csrss, wininit, csrss#1, services, lsass, winlogon, svchost, svchost#1, and svchost#2) and 'Network Interface...' (listing Intel(R) 82579LM Gigabit Network Conn).

Quickly see the overall health of each registered server, as of the last refresh. See a server health checklist that highlights where performance issues may be happening in real-time. Review real-time, key performance metrics for each major area of the server. Display quick findings based on the values of the key metrics to start troubleshooting performance problems immediately.

The screenshot shows the IDERA SQL Doctor application window. The left sidebar lists servers: SERVER_1, SERVER_2, SERVER_3, SERVER_4, SERVER_5, and SERVER_6. SERVER_1 is selected, displaying its analysis results. The main pane shows the following sections:

- Overview for SERVER_1**: Microsoft SQL Server 12.0.4232.0 Enterprise Edition (64-bit) on Windows NT x64 Version 6.3 (10240). Last analysis performed on 3/21/2017 at 3:04 PM.
- SQL Doctor Analysis (0 warnings)**:
 - ✓ Most Recent Analysis: Last analysis performed on 3/21/2017. Current Threshold: 0.
 - ✓ Recommendations: Last analysis produced 100 recommendations. Current Threshold: 0.
 - ✓ Priority: Last analysis did produce 0 priority recommendations.
- Performance Metrics (0 warnings)**:
 - ✓ CPU Usage: Current CPU usage: 57 %. Current threshold: 0.
 - ✓ Memory Available: Current memory available: 2131 MB. Current threshold: 0.
 - ✓ Blocking Processes: Current blocking processes: 0. Current threshold: 0.
 - ✓ Network Retransmits: Current network retransmits: 0 %. Current threshold: 0.
- Drives / Storage (0 warnings)**:
 - ✓ Disk Space: 0 disks drives are running low on space. Current threshold: 0.
- Disaster Recovery (1 warning)**:
 - ✓ Recent Full Backups: 23 databases have not had a full backup in 0 days.
- Quick Findings**: more...
 - Finding:
The SQL Server user right "Lock Pages in Memory" is not being used.
Single use Ad-hoc plans are using 22 MB of procedure cache.
Disallow results from triggers is OFF.
The Common Language Runtime (CLR) option is enabled.
Authentication set to Mixed Mode.
SQL Server password policy is vulnerable for login sa.
New cardinality estimator is not being used.

A sidebar titled "Processes" lists current processes with their ProcessID and Name:

ProcessId	Name
0	Idle
2828	ReportingServicesServic
9924	SQLDoctor
4	System
496	smss
648	csrss
760	wininit
772	csrss#1
844	services
852	lsass
936	winlogon
1020	svchost
592	svchost#1
572	svchost#2

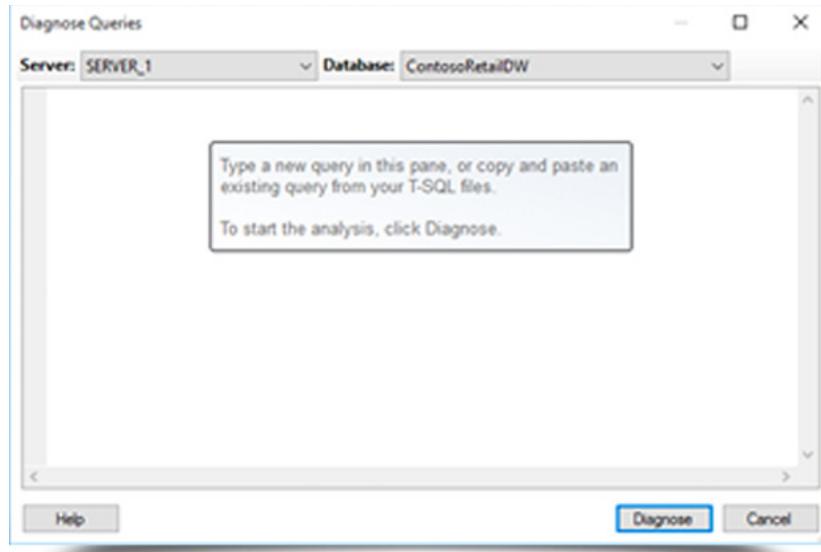
A fast and therefore limited look at critical real-time performance metrics (including queries, sessions, wait stats, and query plans) determines the quick findings. They point in the correct direction and give crucial troubleshooting information when it is needed most. However, for a thorough review of server performance, refer to recommendations generated by a full analysis.

The screenshot shows the IDERA SQL Doctor application window. At the top, there's a navigation bar with 'Home' and 'Community' tabs, 'License Info', and a 'Add Licenses' button. Below the navigation bar is a toolbar with buttons for 'Add Server', 'Remove Server', 'Analyze Server', 'Diagnose Queries', and 'Schedule analysis'. On the left, a sidebar lists servers: SERVER_1, SERVER_2, SERVER_3, SERVER_4, SERVER_5, and SERVER_6. The main content area features a title 'IDERA SQL Doctor' with the tagline 'Analyze. Diagnose. Fix.' Below this is a table titled 'Analysis History' with the following data:

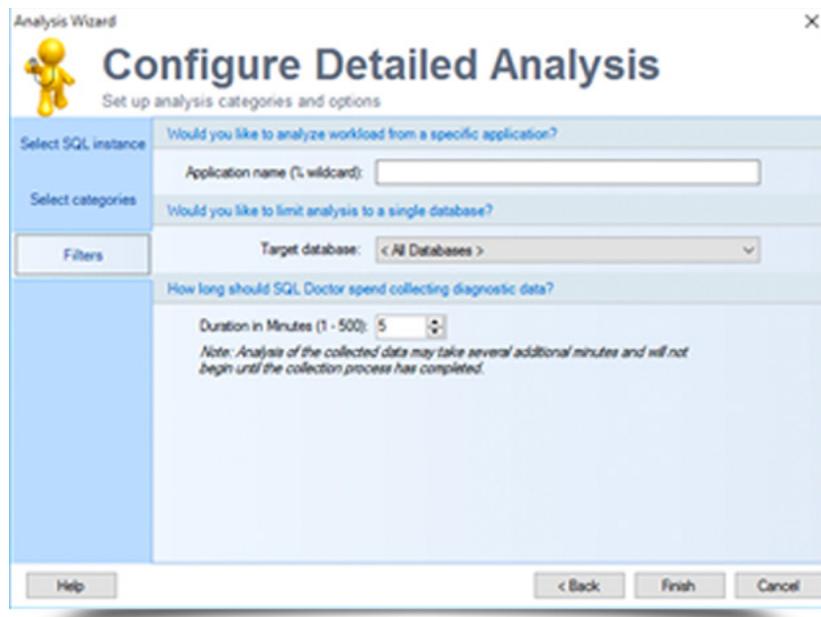
Server	Started	Duration	TaskType	Recommendations	Priority
SERVER_4	3/22/2017 3:03:31 PM	4:07	Analysis	0	[Empty Priority Bar]
SERVER_3	3/21/2017 3:55:26 PM	2:49	Analysis	32	[Yellow Priority Bar]
SERVER_2	3/21/2017 3:50:35 PM	3:21	Analysis	190	[Yellow Priority Bar]
SERVER_1	3/21/2017 3:06:03 PM	2:22	Analysis	190	[Yellow Priority Bar]
SERVER_6	3/21/2017 2:54:47 PM	5:27	Analysis	205	[Yellow Priority Bar]

At the bottom of the main content area, there are buttons for 'Keep history for 30 days' and 'Delete'.

Access the results of every analysis stored by SQL Doctor for each registered SQL Server instances. Summaries include the name of the analyzed server, start time, total time duration, type of analysis performed, total number of recommendations, and highest priority recommendation. For each historical analysis, view recommendations, and delete and schedule analysis.



Analyze relevant queries without having to wait for a full analysis to complete to help save time. When SQL Doctor diagnoses a query, receive performance recommendations without actually executing it. When clicking the “Diagnose” button, it parses the T-SQL script and bases the analysis and resultant recommendations on the estimated execution plans for the selected database.



When configuring the analysis, choose which database or application workload to include in the analysis. Fine-tune the analysis results further by picking a database or application. Maximize the likelihood that the recommendations accurately identify and resolve critical issues by adjusting the amount of time duration for collecting data.

With **SQL Doctor**, we reduced our workload for tuning our systems. It identifies problems so that we can fix them faster and more efficiently.

Genet Asegid
Database Administrator, Government Employees Insurance Company
(large enterprise, insurance, USA)



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.

Start for FREE

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

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