



Top 5 Challenges when Managing Cross Platform Database Environment

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Quest

Agenda

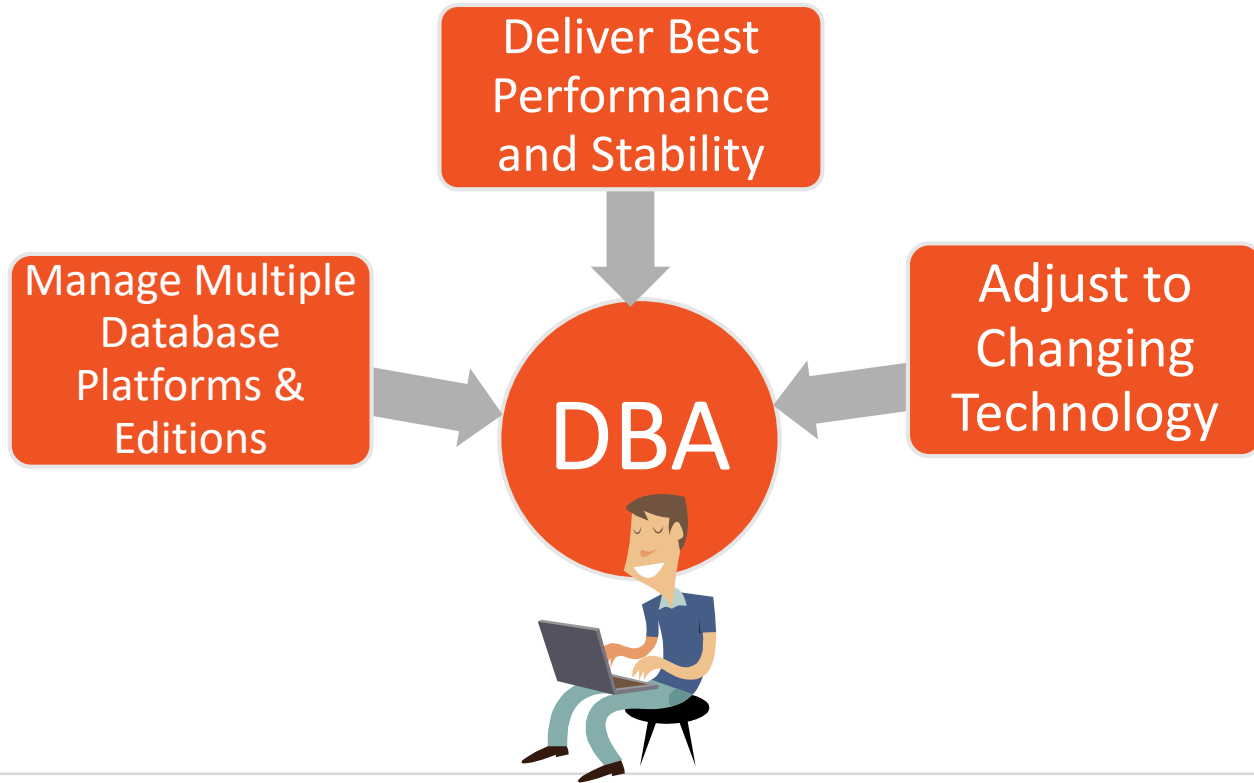
- Who is the modern DBA?
- Top 5 Challenges when managing cross-platform database environments
 - Different types of databases
 - Various database editions (e.g. Enterprise, Standard)
 - Large database environments
 - Different locations (both on-premise and cloud)
 - Monitor with no overhead on performance
- Q&A

Who is the Modern DBA?

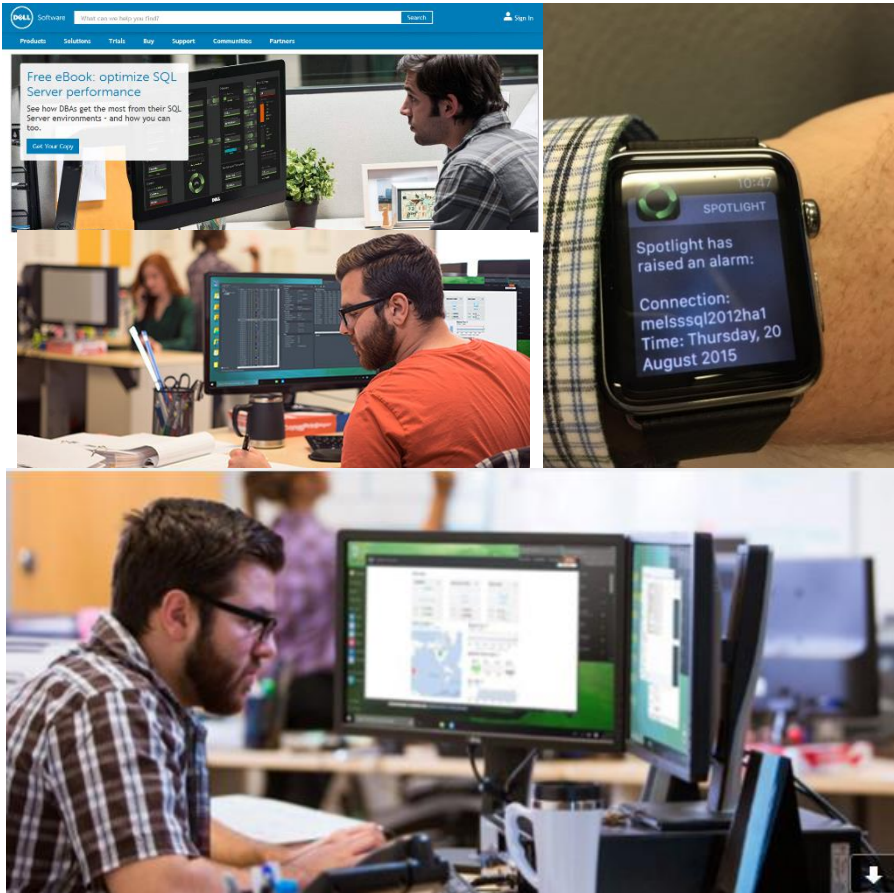
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Modern DBAs Under Pressure



Who? Today's DBA



- 72% of DBAs replied that the number of databases they are responsible for is **increasing**
- 70% of DBAs consider **performance** their most important responsibility
- 65% see **cloud** as having a major impact on their role

Challenge #1 – Managing Multiple Platforms

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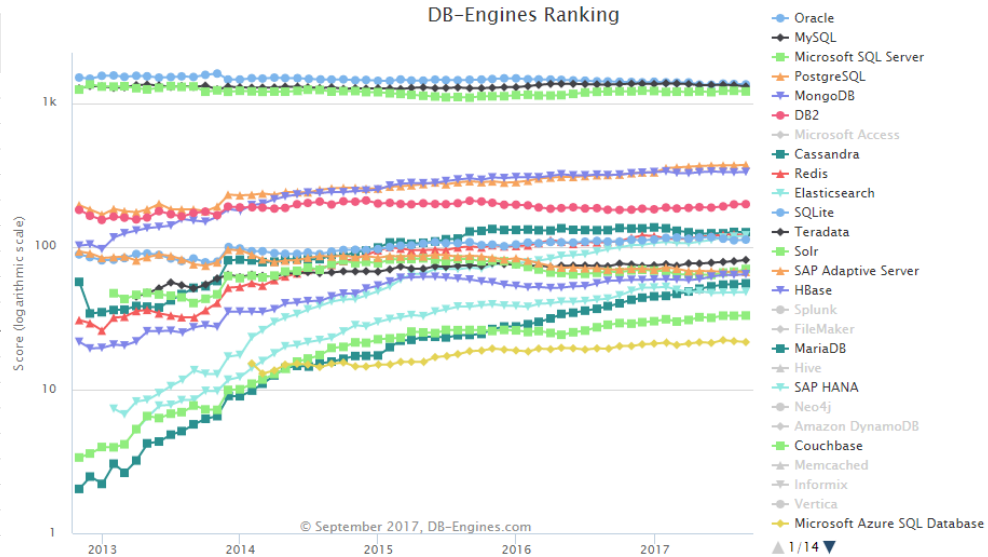
Challenge #1: Managing Multiple Database Platforms

- Not only are **companies** bringing in multiple database platforms, DBA's are being asked to manage them.
- Some organizations have platform specific DBA's, others are asking DBA's to cross-train.

Database Popularity

334 systems in ranking, September 2017

Rank			DBMS	Database Model	Score		
Sep 2017	Aug 2017	Sep 2016			Sep 2017	Aug 2017	Sep 2016
1.	1.	1.	Oracle 🏆	Relational DBMS	1359.09	-8.78	-66.47
2.	2.	2.	MySQL 🏆	Relational DBMS	1312.61	-27.69	-41.41
3.	3.	3.	Microsoft SQL Server 🏆	Relational DBMS	1212.54	-12.93	+0.99
4.	4.	4.	PostgreSQL 🏆	Relational DBMS	372.36	+2.60	+56.01
5.	5.	5.	MongoDB 🏆	Document store	332.73	+2.24	+16.74
6.	6.	6.	DB2 🏆	Relational DBMS	198.34	+0.87	+17.15
7.	7.	8.	Microsoft Access	Relational DBMS	128.81	+1.78	+5.50
8.	8.	7.	Cassandra 🏆	Wide column store	126.20	-0.52	-4.29
9.	9.	10.	Redis 🏆	Key-value store	120.41	-1.49	+12.61
10.	10.	11.	Elasticsearch 🏆	Search engine	120.00	+2.35	+23.52
11.	11.	9.	SQLite	Relational DBMS	112.04	+1.19	+3.41
12.	12.	12.	Teradata	Relational DBMS	80.91	+1.67	+7.84
13.	13.	14.	Solr	Search engine	69.91	+2.95	+2.95
14.	14.	13.	SAP Adaptive Server	Relational DBMS	66.75	-0.16	-2.41
15.	15.	15.	HBase	Wide column store	64.34	+0.82	+6.53
16.	16.	17.	Splunk	Search engine	62.57	+1.11	+11.28
17.	17.	16.	FileMaker	Relational DBMS	61.00	+1.35	+5.64
18.	18.	20.	MariaDB 🏆	Relational DBMS	55.47	+0.78	+16.94
19.	20.	18.	Hive 🏆	Relational DBMS	48.62	+1.31	-0.21
20.	19.	19.	SAP HANA 🏆	Relational DBMS	48.33	+0.36	+4.91



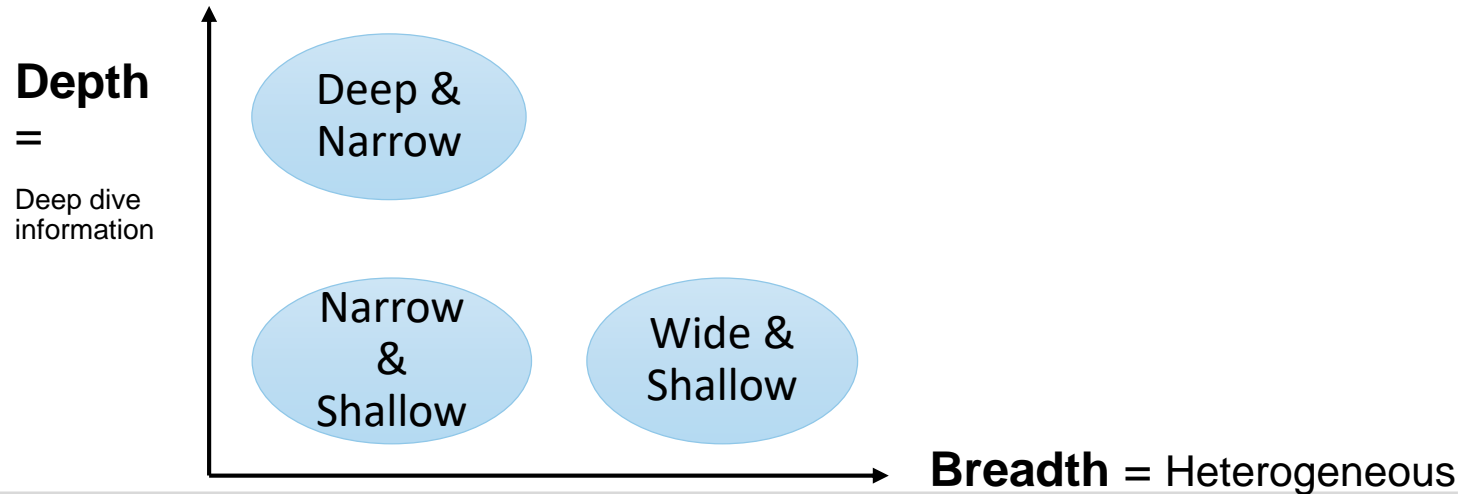
- Source: https://db-engines.com/en/ranking_trend

Why Is This Hard?

- Most of us would consider one platform “primary”, others “secondary”
- We try to manage our “secondary” platforms like our “primary”
- There are gaps...
 - Knowledge/Training
 - Experience
 - Tools

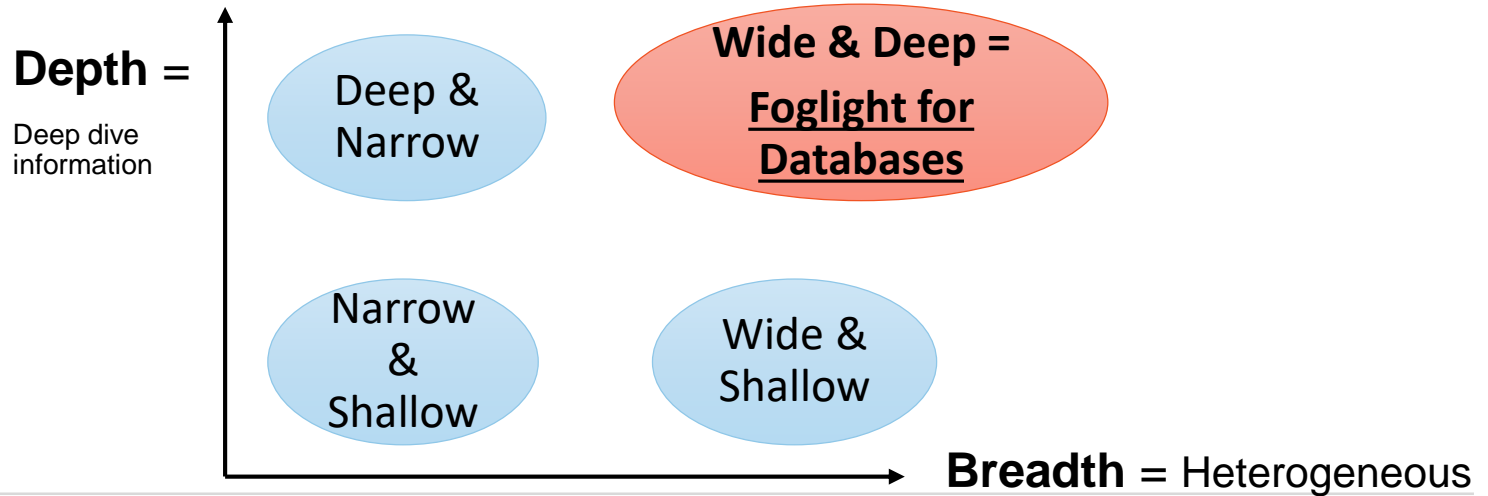
Database Monitoring Tools Landscape

Most DB monitoring tools offer coverage that is either **wide** (heterogeneous) OR **deep** (advanced workload analytics)



Why Compromise? Use Foglight for Databases!

Cross-Platform coverage **without** sacrificing **depth** of data



Which DB Platforms Does Foglight Support?

Traditional Relational

ORACLE
DATABASE

Microsoft
SQL Server

IBM
DB2

SAP ASE

SAP HANA

NoSQL

 mongoDB

 Cassandra

Open Source Relational

 PostgreSQL

Powered by
MySQL

 MariaDB

 **PERCONA**
Server for MySQL

EDB
ENTERPRISEDB

Cloud Databases

 **amazon**
RDS

 Amazon Redshift

 **Amazon**
Aurora

 Microsoft Azure

Foglight for Databases: Cross Platform Visibility

Databases Monday, September 18, 2017 11:59:37 AM - Now 60 minutes Reports

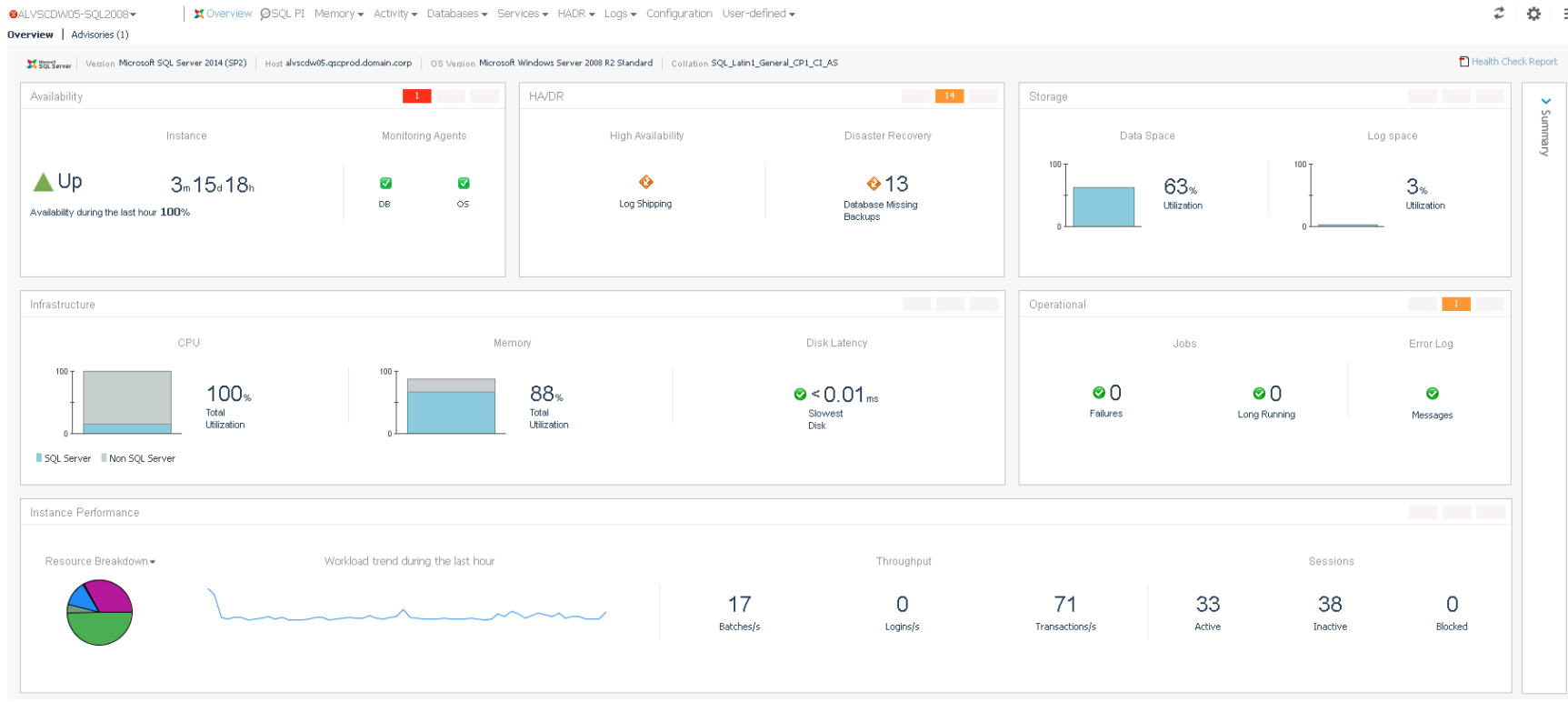
All Fatal (8) Critical (3) Warning (2) Normal (9) Unknown (0)

22 All Instances | 6 SQL Server | 5 SQL Server BI | 5 Oracle | 1 SYBASE | 2 Sybase | 1 DB2 | 1 MySQL | 1 PostgreSQL | 1 MongoDB | 0 Cassandra

All > All Instances

Sev	Name	Instance	Version	Up Since	Workload	DB Alarms	Host	System Utilization	Memory (%)	Disk (% Busy)	Monitoring	OS
🔴	ALVSCDW05-SQL2008	SQL Server	12.0.5000.0	06/04/17 18:44	3.75	1 15	alvscdw05.qscprod.domain.corp	68%	87%	64%	🟢	SQL PH
🟡	alvscdw18-ORAPROD	ORACLE INSTANCE	11.2.0.1.0	—	3.67	12 9	alvscdw18.qscprod.domain.corp	100%	65%	53%	🟢	SQL PH
🟢	ALVSCDW76-SQL2016	SQL Server	13.0.1601.5	06/04/17 18:46	2.00	—	alvscdw76.qscprod.domain.corp	1%	53%	20%	🟢	SQL PH
🟡	Sybase_MDA@alvscdw94.qscprod.domain.corp	Sybase	ASE 15.5 EBF 18157 SMP ESD#2	06/04/17 18:43	2.00	2	alvscdw94	—	—	0%	🟢	SQL PH
🟡	ALVSCDW07-SQL2008	SQL Server	12.0.5000.0	09/16/17 19:15	0.03	1	alvscdw07.qscprod.domain.corp	54%	31%	78%	🟢	SQL PH
🟢	STCHYPSQLW1201	SQL Server	13.0.1601.5	02/06/17 11:10	0.02	—	stchypsqlw1201	52%	94%	4%	🟢	SQL PH
🟢	ALVSCDW08-SQLPROD1	SQL Server	11.0.2100.60	09/16/17 03:21	0.01	—	alvscdw08.qscprod.domain.corp	1%	81%	45%	🟢	SQL PH
🟡	alvscdw93-DB2	DB2	10.5.500.107	06/04/17 18:47	0.00	4	alvscdw93.qscprod.domain.corp	1%	49%	0%	🟢	SQL PH
🔴	PostgreSQLAgent@alvscpgsqlw01.qscprod.domain.corp	PostgreSQL	9.5.3	06/04/17 18:48	0.00	27 6	alvscpgsqlw01.qscprod.domain.corp	1%	5%	63%	🟢	SQL PH
🔴	MySQLAgent@stchypmysql01	MySQL	5.7.15	09/08/16 15:38	0.00	1 2 1	stchypmysql01	8%	35%	41%	🟢	SQL PH
🟢	alvscmgdbw01.qscprod.domain.corp	MongoDB	3.4.2	06/04/17 18:52	0.00	—	alvscmgdbw01.qscprod.domain.corp	3%	7%	27%	🟢	SQL PH
🔴	RAC-rac11vm-RAC11GA	ORACLE RAC	11.1.0.6.0	07/19/17 08:10	0.00	3	rac	4%	74%	5%	🟢	SQL PH
🟢	alvscdw25-o12102	ORACLE INSTANCE	12.1.0.2.0	06/04/17 18:47	0.00	6	alvscdw25.qscprod.domain.corp	1%	44%	2%	🟢	SQL PH
🔴	alvscdw24-ORAPROD12CDB	ORACLE INSTANCE	12.1.0.2.0	06/04/17 18:47	0.00	4	alvscdw24.qscprod.domain.corp	1%	78%	3%	🟢	SQL PH
🟢	alvscdw24-ORAPROD12C	ORACLE INSTANCE	12.1.0.2.0	06/04/17 18:47	0.00	—	alvscdw24.qscprod.domain.corp	1%	78%	3%	🟢	SQL PH
🟢	ALVSCDW09-SQLPROD2	SQL Server	11.0.2100.60	09/16/17 03:18	0.00	—	alvscdw09.qscprod.domain.corp	1%	59%	0%	🟢	SQL PH
🔴	ALVSCDW07-SQL2008	Analysis Services	12.0.5000.0	Instance Down	—	1	alvscdw07.qscprod.domain.corp	70%	18%	78%	🟢	SQL PH
🟢	ALVSCDW07-SQL2008-SSI5DB	Integration Services	12.0.5000.0	09/16/17 19:15	—	—	alvscdw07.qscprod.domain.corp	70%	18%	78%	🟢	SQL PH
🔴	ALVSCDW08-SQLPROD1-ReportServer\$SQLPROD1	Reporting Services	11.0.2100.60	—	—	6	alvscdw08.qscprod.domain.corp	3%	33%	45%	🟢	SQL PH
🟢	ALVSCDW05-SQL2008-ReportServer\$SQL2008	Reporting Services	12.0.5000.0	06/27/17 10:19	—	—	alvscdw05.qscprod.domain.corp	99%	57%	64%	🟢	SQL PH
🔴	ALVSCDW07-SQL2008-ReportServer\$SQL2008	Reporting Services	12.0.5000.0	08/18/17 16:28	—	578	alvscdw07.qscprod.domain.corp	70%	18%	78%	🟢	SQL PH

Foglight for Databases: Consistent Workflows



Foglight for Databases: Consistent Workflows

ALVSCDW07-SQL2008 | Overview | SQL PI Memory | Activity | Databases | Services | HADR | Logs | Configuration | User-defined

Workload | CPU | I/O | Memory | Network | Lock | Latch | Log | CLR | Remote Provider | XTP | Other

Performance Tree | Tops: 25 | History | Advanced Analytics

Instance View

- SQL Statements
 - UPDATE AdventureWorks.Production.TransactionHistory
 - select * from [Production].[TransactionHistory
 - FETCH getsumamount INTO @CUSTMNE, @ORDERNBR,
 - SELECT LAST_NAME, STREET INTO #tmp_sales FROM EN
 - DELETE FROM ORDER_LINE WHERE AMOUNT =
 - DELETE FROM ORDERS WHERE ORDER_ID NOT IN(SELE
 - OPEN getsumamount;
 - xp_readererrorlog
 - INSERT INTO #GETSUMAMOUNT(CUSTOMER_NAME, OF
 - ROLLBACK TRAN;
 - SELECT /* TUNING */ e.LAST_NAME, d.DEPARTMENT_DE
 - SELECT LTRIM(RTRIM(LAST_NAME)) + ', ' + LTRIM(RTRI
 - Encrypted
 - WHILE @@FETCH_STATUS =
 - select top (@P1) t2.session_id, t2.login_time, t1.reqes
 - SET @holder = (SELECT MIN(UnitPrice) FROM Sales.Sale
 - UPDATE [dbo].[ORDER_LINE] set [AMOUNT] = [AMOUNT
 - SELECT db_name(DBName, t.request_session_id), wt.blc
 - SELECT COUNT(*) FROM Sales.SalesOrderDetail WHERE
 - xp_sfsFastCompression
 - WAITFOR
 - Encrypted
 - ROLLBACK TRAN
 - insert into @ExecutionsSummary(folder_name, project_r
 - SELECT * FROM dbo.ORDER_LIN
- TSQL Batches
- Databases
- Programs
- Users
- Client Machines

Dimension Filter: Instance View

Resource Consumption

Baseline | Breakdown

Resource Breakdown

Top Wait Events

Overview | Blocking History | Activity Highlights

The Instance consumed 130,616 seconds of db-time. **51.18%** of its time spent using CPU

Highlights	Resource Breakdown	Top Wait Event
SQL Statement UPDATE AdventureWorks.Production.TransactionH... consumed 34.47% of the instance total db-time. 95.76% of its time is associated with CPU Wait	45,028.96	SOS_SCHEDULER_YIELD 5.9%
SQL Statement select * from [Production].[TransactionHistory consumed 28.51% of the instance total db-time. 93.33% of its time is associated with Lock Wait	37,237.82	LCK_M_IS 93%
TSQL Batch DECLARE @counter INT = 1 WHILE @counter < 100... consumed 34.48% of the instance total db-time. 95.76% of its time is associated with CPU Wait	45,029.94	SOS_SCHEDULER_YIELD 5.9%
TSQL Batch select * from [Production].[TransactionHistor... consumed 28.51% of the instance total db-time. 93.33% of its time is associated with Lock Wait	37,237.82	LCK_M_IS 93%
Database AdventureWorks consumed 64.55% of the instance total db-time. 53.74% of its time is associated with CPU Wait	84,318.37	LCK_M_IS 41%
Database sales consumed 25.80% of the instance total db-time. 62.48% of its time is associated with CPU Wait	33,698.85	PAGEIOLATCH_EX 11%
Program SQLAgent - TSQL JobStep (Job 0x:E1B89806FD5901... consumed 34.55% of the instance total db-time. 95.67% of its time is associated with CPU Wait	45,123.51	SOS_SCHEDULER_YIELD 5.8%
Program Microsoft SQL Server consumed 28.52% of the instance total db-time. 93.29% of its time is associated with Lock Wait	37,255.01	LCK_M_IS 93%
User QSCPROD\sqlsvc consumed 54.48% of the instance total db-time. 49.78% of its time is associated with Lock Wait	71,086.44	LCK_M_IS 49%
User SleepyUSR consumed 35.42% of the instance total db-time. 95.76% of its time is associated with CPU Wait	46,265.55	SOS_SCHEDULER_YIELD 6.3%

Challenge #2 - Various database editions

Quest



Challenge #2: Various database editions

- Many companies use less expensive database editions to reduce costs
- These editions may have limited performance diagnostics capabilities
- Example : Oracle Diagnostics pack
 - Includes very powerful capabilities (AWR, ADDM, ASH)
 - Problem - extra cost on top of the Enterprise Edition
- DBAs can be frustrated when having limited performance diagnostics capabilities

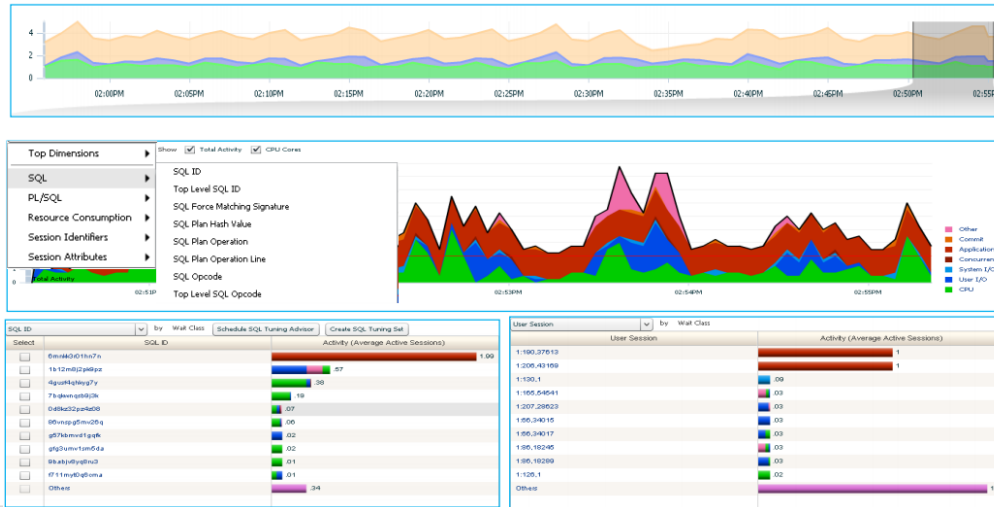
Challenge #2: Various database editions (cont'd)

- Foglight Performance Investigator was designed to address this challenge
- Foglight doesn't license tables/views/procedures/APIs
- Get all the performance diagnostics you need without spending a fortune
- Let's see how...

Challenge #2: Real World Scenarios

- Scenario #1

- DBA would like to have deep visibility into database workload activity
- Oracle's Diagnostics pack provides ASH (Active Session history) Analytics



Challenge #2 Real World Scenarios

- How DBAs can use Foglight to address this challenge?

The screenshot displays the Foglight Performance Tree and Resource Consumption views for an Oracle instance. The Performance Tree on the left shows a list of SQL statements and database objects. The Resource Consumption view on the right features a 'Baseline | Breakdown' chart showing CPU usage over time, a 'Resource Breakdown' pie chart, and a table of highlights and resource breakdowns.

Resource Breakdown

Resource	Percentage
CPU Usage	43.84%
I/O Wait	15.11%
CPU Wait	10.20%
Lock Wait	1.46%

Summary: The instance consumed 5,482 seconds of db-time, with 43.84% of its time spent using CPU.

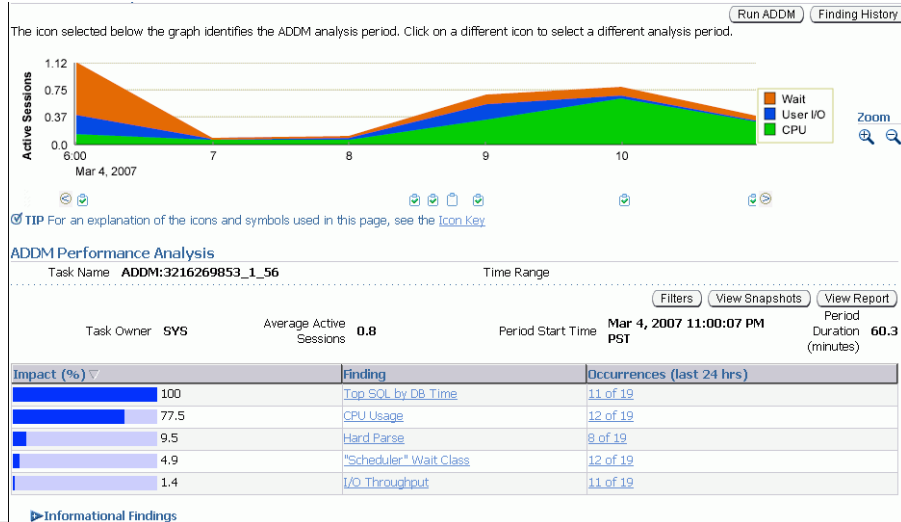
Highlights

SQL Statement / Object	Consumed Time (s)	Percentage of Instance Total db-time	Percentage of Time Associated with Resource
SQL Statement: update LogShippingHistory set ReplicateID = @...	3,120.01	56.91%	79.60%
SQL Statement: insert into spotlight_playback_data (pb_times...	1,078.12	19.67%	89.03%
TSQL Batch (@P1 uniqueIdentifier)update LogShippingHisto...	3,120.01	56.91%	79.60%
TSQL Batch (@P0 datetime2,@P1 nvarchar(4000),@P2 nvarcha...	1,078.12	19.67%	89.03%
Database LiteSpeedLocal	3,634.63	66.30%	76.35%
Database SpotlightPlaybackDatabase	1,471.64	26.85%	88.49%
Program ActivityManager	3,394.57	61.92%	79.31%
Program Spotlight Diagnostic Server (Playback WRITE)	1,470.53	26.82%	88.49%
User qcq	5,466.49	99.72%	54.60%
Object I/O SpotlightPlaybackDatabase.dbo.spotlight_playb...	900.08	16.42%	100.00%

Challenge #2: Real World Scenarios

- Scenario #2

- DBA would like to get advisories that will help him improve performance
- Oracle's Diagnostics pack provides ADDM (Automatic Database Diagnostic Monitor)



Challenge #2: Real World Scenarios

- How DBAs can use Foglight to address this challenge?

Workload Deviation

Name
Overall workload consumption exceeds the baseline

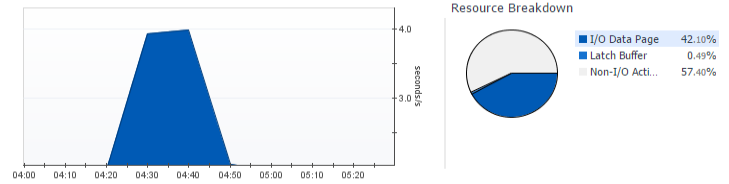
Description
Overall, the total workload exceeded the baseline range by 11.60%. Although this deviation does not necessarily indicate a performance problem, the performance history should be reviewed. Unexpected performance changes to the system should be analyzed to determine whether the deviation detected is problematic.
Figure 1 illustrates the total activity (workload) for the monitored Oracle instance as compared to the typical range (baseline) for the timeframe. This image provides an indication of the database system's performance during the specified timeframe, relative to a calculated baseline. Deviations outside the baseline range suggest abnormal or unexpected activity and should be investigated to determine whether they suggest a performance problem.

Additional information
Figure 2 illustrates how each resource category contributed to the overall workload. Focusing performance tuning efforts on the largest portions of the workload should yield the most significant gains.

Resource Breakdown

- Application ... 78.15%
- CPU Usage 18.10%
- User IO Wait 3.74%
- System IO ... 0.01%

Metrics
Table 1 displays how certain key performance metric deviated during the timeframe selected. Analyzing this metric allows for a more thorough understanding of the Oracle instance's behavior:



Use the following information to determine the root cause of the I/O contention observed during the analysis period.

Table 1: Top SQL Statements producing I/O Contention

SQL Statements	Number of Executions	Average Active Time (seconds)	% of Active Time	I/O Wait (%)	I/O Data Page Wait (%)
insert into #Quest_fragmented_indexes select si . name as IndexN... = @1 and si . type < @2 order by AverageFragmentation desc	-	0.00	39.87	81.02	80.36
insert into #Del_fragmented_indexes select si . name as IndexNa... = @1 and si . type < @2 order by AverageFragmentation desc	-	0.00	12.86	18.81	18.41

Click on a SQL Statement to find out more about the operation of the specific statement.
Press "Analyze Plan" to see information about the execution plan of the statement.
Press "Tune" to launch SQL Tuning for the statement, maintaining database context (if it is installed).

Table2: Top missing indexes

Each SQL Server maintains a list of the indexes considered to be missing from each database. The list is updated whenever a query is executed. The table below lists indexes identified in the analyzed timeframe, which are ranked based on the relative improvement they would yield if they existed. The relative impact of each index is based on <average cost of the query(s)> * <average cost-improvement of the query(s)> * <Number of seeks+scans that could have utilized the index> .

Database	Schema	Object name	Relative Impact	Avg User Impact (%)	Avg Cost	User Seeks	User Scans	Noticed Missing	Statement
SpotlightPlaybackDatabase_batchen	dbo	spotlight_playback_alarms	88,268.17	15.04	167.68	35.00	0.00	2/9/17 2:20 AM	CREATE INDEX missi...
SpotlightPlaybackDatabase_batchen	dbo	spotlight_playback_alarms	87,798.66	14.96	167.68	35.00	0.00	2/9/17 2:20 AM	CREATE INDEX missi...

Click on the statement to get the full command for creating the index.
Note: Adding indexes adds overhead of maintaining that index. Before creating an index, ensure the overhead is negligible compared to the improvement. You can use the Database Tuning Advisor (DTA) for that.

Challenge #3 – Managing Large Environments

Quest



Challenge #3: Managing Large Environments

- The necessity of data management at every company has caused a huge increase in the number of instances that an organization has.
- With these large, and sprawling environments, the way that customers manage those environments needs to evolve.

DBTA Survey

Figure 6: Approximately how many database instances does each DBA manage?

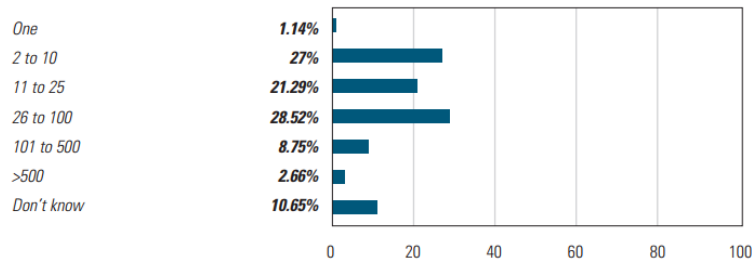
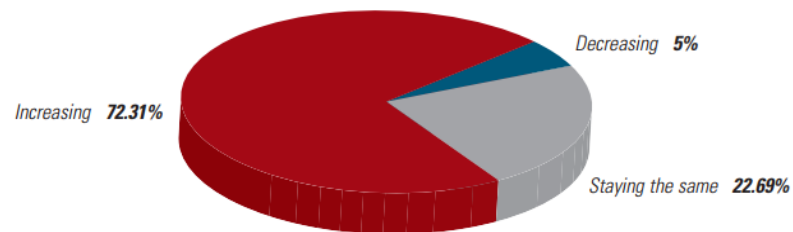


Figure 7: Is the number of databases for which each DBA is responsible increasing, decreasing, or staying the same?



Challenges With Large Environments

- If you manage a small number of instances, you can focus in on details specific to each instance.
- When your manage a large environment, there may be instances you don't get "hands on" with for months at a time.
- Challenges faced with large environments, typically include:
 - Inventory Management
 - Installs, upgrades, patching, asset management, etc...
 - Capacity Management
 - Finding over/under utilized systems, consolidation, scaling, etc...
 - Automation
 - Backup strategies, restore testing, database maintenance, etc...

Multi-Platform Large Environments

- These environments are complex enough with a single platform...
- When multiple platforms are involved, it's a huge task for a DBA team

Suggestions

- Standardize as much as you can:
 - Standardized reports you can run against any database server
 - Common alert templates that notify you about similar problems
 - Run consistent maintenance jobs when possible so that each server is maintained similarly
 - Create/maintain a “CMDB” where you can quickly look up details about a particular instance
 - Have routine environment “health checks” where the team gets together and looks for “tuning” opportunities
 - Consolidation
 - Decommissioning
 - Etc...

How Foglight for Databases Can Help

- Out of the box dashboards and reports, provide enterprise level information
- Dashboards can be securely viewed inside of the browser
- Reports can be scheduled and automatically sent to all stakeholders

Report Examples: Enterprise Inventory and Availability

Enterprise Instance Inventory



Summary

Total	SQL Server	Oracle	DB2
12	6 (50.00%)	5 (41.67%)	1 (8.33%)

SQL Server

Name	Edition	SQL Product Version	Collation	Total Allocated (MB)		Configuration	# Databases
				Data	Log		
ALVSCDW05-SQL2008	Enterprise Edition (64-bit)	Microsoft SQL Server 2014 (SP2)	SQL_Latin1_General_CP1_CI_AS	52,129.00	5,990.00	Log Shipping	24
ALVSCDW07-SQL2008	Enterprise Edition (64-bit)	Microsoft SQL Server 2014 (SP2)	SQL_Latin1_General_CP1_CI_AS	48,548.00	13,364.00	Log Shipping, Replication	28
ALVSCDW08-SQLPROD1	Enterprise Edition (64-bit)	Microsoft SQL Server 2012 - 11.0.2100.60 (X64)	SQL_Latin1_General_CP1_CI_AS	10,949.00	3,765.00	Always On, Mirror	10
ALVSCDW09-SQLPROD2	Enterprise Edition (64-bit)	Microsoft SQL Server 2012 - 11.0.2100.60 (X64)	SQL_Latin1_General_CP1_CI_AS	194.00	25.00	Always On, Mirror	9
ALVSCDW76-SQL2016	Enterprise Edition (64-bit)	Microsoft SQL Server 2016 (RTM)	SQL_Latin1_General_CP1_CI_AS	43.00	19.00		3
STCHYPSQLW1201	Enterprise Edition (64-bit)	Microsoft SQL Server 2016 (RTM)	SQL_Latin1_General_CP1_CI_AS	98.00	19.00		3

Oracle

Enterprise Availability Summary



Time Range: Sep 18, 2017 12:46 - Sep 18, 2017 13:46 60 min.

Instance Summary

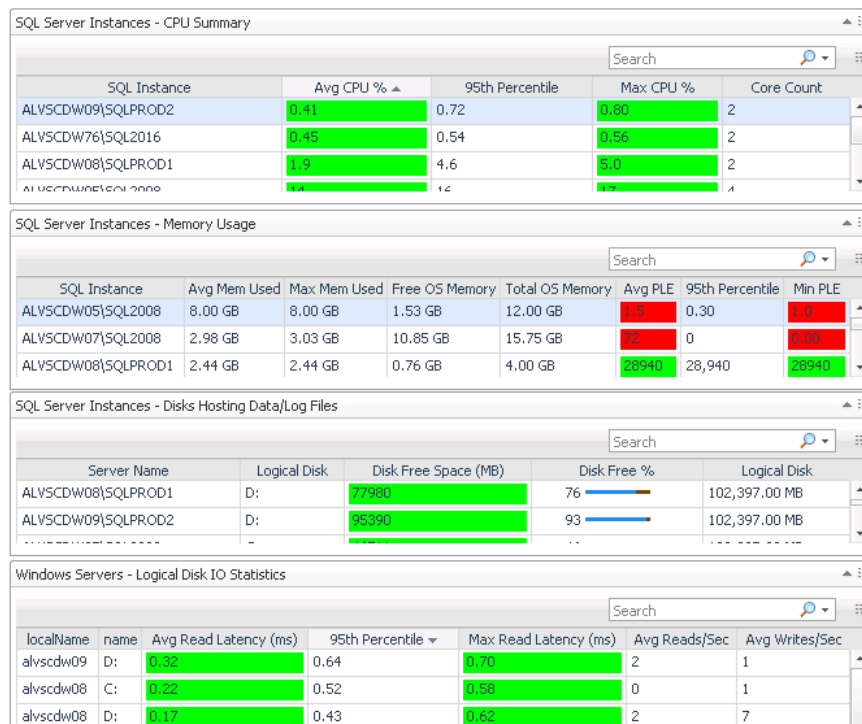
Total	Available	Unavailable	Unknown
12	12 (100.00%)	-	-

SQL Server

Name	Version	Configuration	Start Time	Current Availability	Avg Availability(%)	Avg Connection Time (ms)	Avg Os Availability(%)
ALVSCDW05-SQL2008	12.0.5000.0	Log Shipping	06/04/17 18:44	Up	100	20	100
ALVSCDW07-SQL2008	12.0.5000.0	Log Shipping, Replication	09/16/17 19:15	Up	100	7,819	100
ALVSCDW08-SQLPROD1	11.0.2100.60	Always On, Mirror	09/16/17 03:21	Up	100	16	100
ALVSCDW09-SQLPROD2	11.0.2100.60	Always On, Mirror	09/16/17 03:18	Up	100	17	100
ALVSCDW76-SQL2016	13.0.1601.5	-	06/04/17 18:46	Up	100	12	100
STCHYPSQLW1201	13.0.1601.5	-	02/06/17 11:10	Up	100	27	100

Oracle

Custom Dashboards



Challenge #4 - Different locations

Quest



Challenge #4: Different Database Locations

- The Cloud trend is very strong in today's market
- Based on IDC's latest report, the public cloud
- annual growth rate is **33.8%**
- (compared to 2.6% for the on premise)

Worldwide Relational Database Management Systems Revenue Snapshot



Source: IDC, 2017

Challenge #4: Different Database Locations (cont'd)

- In many companies DBAs are required to manager hybrid environments
 - Traditional On Premise Databases
 - Remote Databases in the Cloud
- **The challenge for the DBAs :**
 - How to monitor all database environments from a single view?
 - How to get performance diagnostics capabilities for your cloud databases?

Challenge #4: Different Database Locations (cont'd)

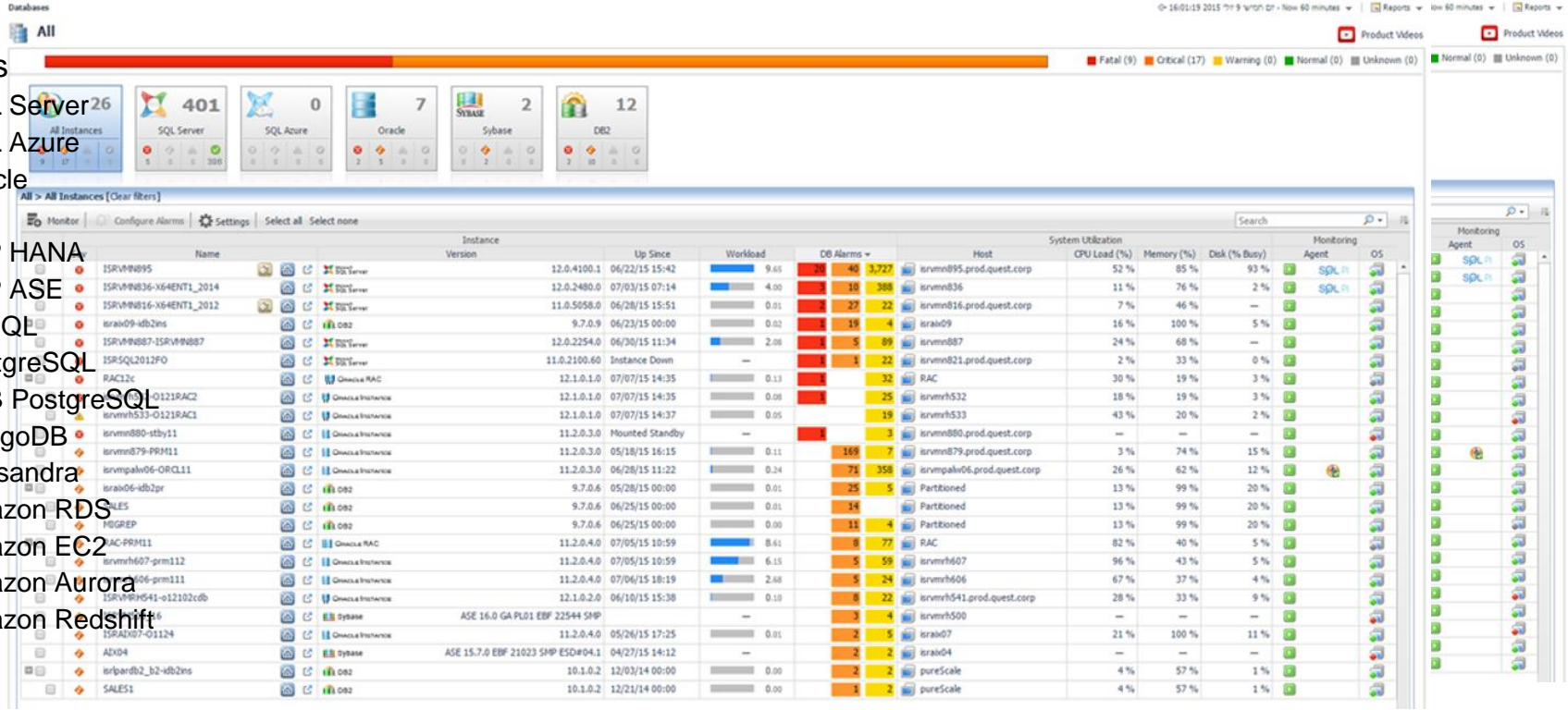
Supports

- SQL Server
- SQL Azure
- Oracle
- DB2
- SAP HANA
- SAP ASE
- MySQL
- PostgreSQL
- EDB PostgreSQL
- MongoDB
- Cassandra
- Amazon RDS
- Amazon EC2
- Amazon Aurora
- Amazon Redshift

24x7

Power

In-Cor



Challenge #5 – Minimal Overhead

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Challenge #5: Managing Performance With Minimal Overhead

- There are many API's available for monitoring and managing performance
- Some database platforms even provide multiple options
 - (i.e. SQL Server: Trace, Extended Events, DMV's, etc...)
- Knowing which API is the most appropriate can be a challenge

Performance Overhead

- Some API's provided by the database vendors themselves can cause high overhead on a production workload
- Last thing any DBA wants is to be what **caused** a problem because of the API and/or product that they used

Solution

- Make sure that before you implement a solution/product designed to monitor for performance that you understand the overhead that it is likely to cause on the server
- Products that store data locally on the database server, and or use “expensive” API’s are likely to cause excessive resource utilization

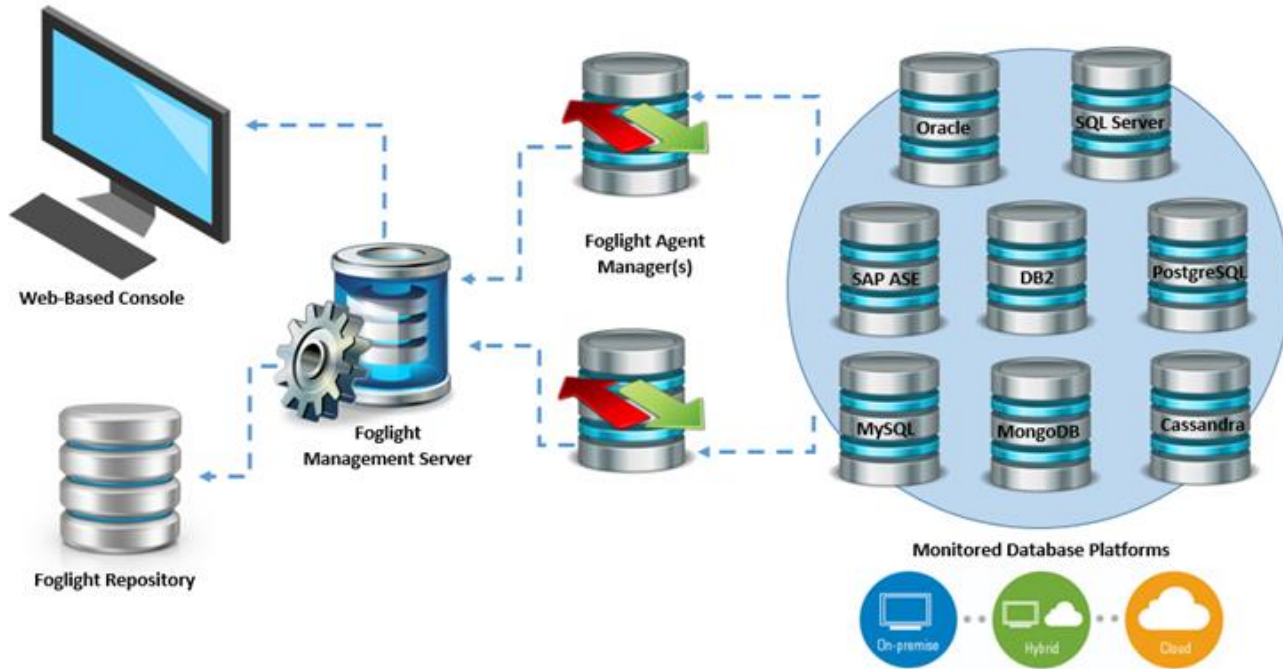
How Foglight for Databases Can Help

- Foglight select's API's for each database platform that ensure a very detailed, yet lightweight data collection.
- Foglight's centralized architecture stores data in a set of central repositories
- For more information:
 - <https://www.quest.com/community/b/en/posts/discussing-the-overhead-of-foglight-for-sql-server-and-oracle#>

Administrative Overhead

- Your job is to manage your companies databases...
- Any amount of time spent installing, configuring, and overall maintaining your monitoring platform, should have a proportional benefit
 - For every hour you spend administering “monitoring”, you should save X hours of manual DBA work
- Products that require local agents to collect data, and/or overly complex architectures can cause more problems than they solve
 - Custom built solutions often fit into this category

Foglight for Databases Architecture



Additional Resources

- Foglight for Databases Web Page, to download a free 30 day trial

<https://www.quest.com/products/foglight-for-cross-platform-databases/>

- Foglight for SQL Server Course – Available on ToadWorld

<https://www.toadworld.com/training/p/web-based-training>

Q&A

Quest

