Foglight 101 Series

Episode 1

Discover the Power of Foglight and Its New Features

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Quest

Where Next Meets Now.

Agenda

Quest

1. Query Insights
2. Alarm Templates
3. Audit Log
4. Swagger UI
5. Replacing Literals
6. MySQL & PostgreSQL PI
7. Foglight Cloud

What is ‘Query Insights’

Quest

Query Insights finds, ranks and sorts the highest impact queries that are causing performance issues.

The most time-consuming queries

The most frequently executed queries

Narrows down the scope of your analysis

Pinpoints specific queries causing issues

Query Insights

Display: Top 50 Queries by Impact

Oracle, SQL Server, S... | Impact | Response Time | Elapsed Time | Executions | Search text | Apply | Reset

Query Impact on target	Impact %	Elapsed Time	Executions	Response Time	Domain	Target
UPDATE [dbo].[BANK] SET [BANK_NAME] = LTRIM(RTRIM(B...	42.35 %	1.63 hr	39	2.51 min	SQL Server	SQLSRV_GCP_Dbaas_19
UPDATE [BB] set [B] = @1	8.55 %	19.79 min	244	4.8 sec	SQL Server	SQLSRV_GCP_Dbaas_19
UPDATE [AA] set [A] = @1	7.32 %	16.93 min	167	6.1 sec	SQL Server	SQLSRV_GCP_Dbaas_19
INSERT INTO [dbo].[ORDL1] SELECT * FROM [dbo].[ORDER_...	6.82 %	17.97 min	62	17.7 sec	SQL Server	SQLSRV_GCP_Dbaas_19
INSERT INTO [dbo].[ORDL2] SELECT * FROM [dbo].[ORDER_...	6.78 %	18.52 min	54	20.4 sec	SQL Server	SQLSRV_GCP_Dbaas_19
INSERT INTO [dbo].[ORDL3] SELECT * FROM [dbo].[ORDER_...	6.36 %	17.48 min	61	17.2 sec	SQL Server	SQLSRV_GCP_Dbaas_19
DELETE FROM [dbo].[ORDL1]	5.74 %	11.99 min	62	11.8 sec	SQL Server	SQLSRV_GCP_Dbaas_19
DELETE FROM [dbo].[ORDL3]	5.72 %	12.15 min	56	12.9 sec	SQL Server	SQLSRV_GCP_Dbaas_19
DELETE FROM [dbo].[ORDL2]	5.31 %	11.18 min	52	12.9 sec	SQL Server	SQLSRV_GCP_Dbaas_19
SELECT [customer_id], Sum(amount), Max(longstring), Max(...	3.07 %	4.36 min	1	1.97 min	SQL Server	SQLSRV_GCP_Dbaas_19
SELECT TOP (@RowLimit) CONVERT(xml, event_data).query(...	0.25 %	15.5 sec	17	919 ms	SQL Server	SQLSRV_GCP_Dbaas_19
SELECT owner, SUM(BYTES)/1024/1024 MB FROM DBA_EXTE...	< 0.01 %	3.67 min	11	19.6 sec	Oracle	Ora_18c_EE_1
SELECT datafile_name, tablespace_name, file_id, auto_exten...	< 0.01 %	3.78 min	6	34.5 sec	Oracle	Ora_18c_EE_1
SELECT * FROM (SELECT t.tablespace_name tablespace_na...	< 0.01 %	2.92 min	3	52.7 sec	Oracle	Ora_18c_EE_1
select /*+ RULE */ version_full "db_version", decode(log_m...	< 0.01 %	1.18 min	18	3.9 sec	Oracle	Ora_18c_EE_1
select /*+ RULE */ version_full "db_version", decode(log_m...	< 0.01 %	22.6 sec	6	3.7 sec	Oracle	Ora_18c_EE_1
SELECT substr(Available_space_name,1,14) tablespace_name, a...	< 0.01 %	23.2 sec	1	23.2 sec	Oracle	Ora_18c_EE_1
SELECT summary.sql_id, event, sql_text, event_time_in_seco...	< 0.01 %	29.8 sec	1	29.8 sec	Oracle	Ora_18c_EE_1

Statement Details

Name: UPDATE [dbo].[BANK] SET [BANK_N...

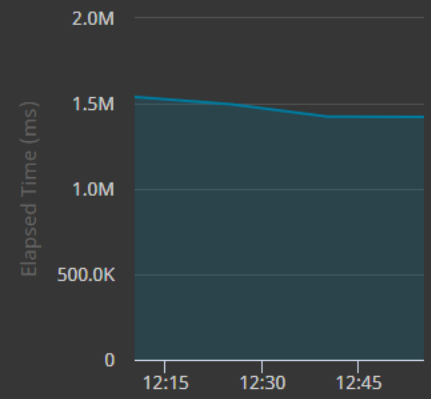
Query ID: 0x0bd0a4d0d5e94049

SQL Text | Copy

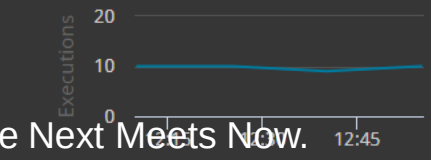
```
UPDATE [dbo].[BANK] SET [BANK_NAME] = LTRIM(RTRIM(BANK_NAME)) FROM BANK WHERE [BANK_CODE] = '00A'
```

Investigate

Elapsed Time



Executions



Quest
Where Next Meets Now.

Foglight by Quest | Virtual Lab 7.1

Search

Databases > Overview > SQL PI

Jun 5, 2024 - Now 30 days | Reports

Ora_18c_EE_1 | Overview | SQL PI | Activity | Pluggable Databases | Storage | Configuration | Alert Log

Workload | CPU | User I/O | System I/O | Administrative | Application | Cluster | Commit | Concurrency | Configuration | Network | Scheduler | Queueing | Other

Powered by SQL PI

Performance Tree Tops: 25

- Instance View
  - SQL Statements
  - PL/SQL Blocks
  - Programs
  - OS Users
  - DB Users
    - C##FOGMON
    - WORKLOAD
    - SYS
  - Machines
    - win-ora-18c
    - WORKGROUP\win-ora-18c
    - fglam
  - Actions
  - Modules
  - Client Info
  - Command Types
  - Services
  - Consumer Groups
  - Databases
  - Sessions
  - Client PIDs
  - Locked Objects
    - -1@0
  - Files
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\WINDOWS.
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
    - C:\USERS\ORACLE\DOWNLOADS\ORADATA\C
  - Disks
  - Objects I/O
    - WORKLOAD.H_LINEITEM
    - WORKLOAD.H_LINEITEM_IDX1
    - 747@0
    - SYS.I_DEFERRED_STG1

History | Advanced Analytics

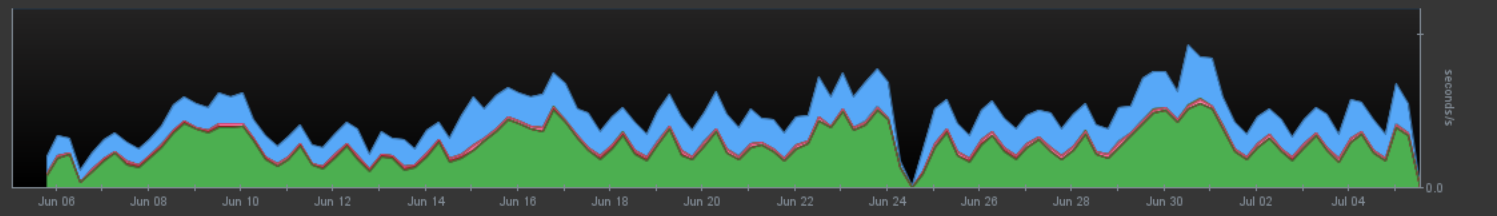
View as PDF

Dimension Filter: Instance View ▸ SQL Statements

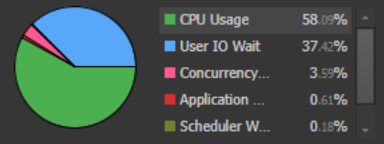
Resource Consumption

Top Wait Events

Baseline | Breakdown



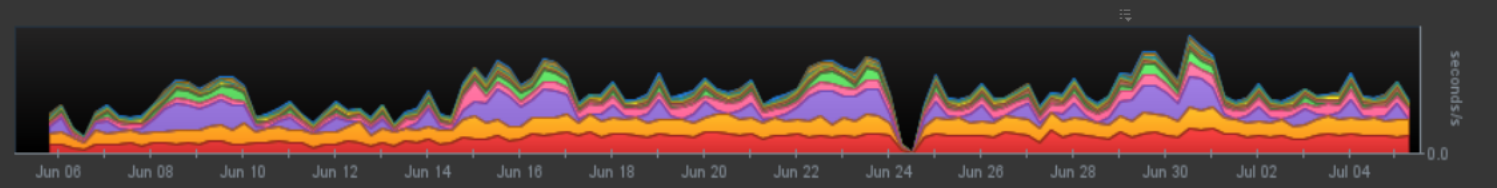
Resource Breakdown



Overview

Active Time

Selected | Top 10



Comparing Top 10 Workload activity over selected timeframe

Top SQL Statements

Select Metric | View SQL Text | Analyze Plan | Tune SQL | Compare | Drill to SQL Statement | Export to CSV | Search

SQL Statements	SQL ID	Active Time	Active Time Percent	Average SQL Response Time	Buffer Gets	CPU Usage	Disk Reads	Direct Writes	Elapsed Time E
SELECT * FROM (SELECT t.tablespace_name tablespace_name, t.BLOCK...EM', ' '), DECODE (:5 , 1, 'SYSAUX', ' ')) AND ROWNUM <= 2000	6j7hh8w95xz4r	104,126.16	17.18	152.60	64,469,632.00	60,309.03	16,149,947.00	0.00	89,119.21
SELECT owner, SUM(BYTES)/1024/1024 MB FROM DBA_EXTENTS group by owner	3h6cp961rydbg	103,794.20	17.13	13.16	359,175,475.00	19,681.98	52,141,979.00	0.00	106,676.30
call dbms_stats.gather_database_stats_job_proc ( )	b6usrg82hwsa3	75,972.18	12.53	32.88	671,985,219.00	75,023.86	89,056,925.00	33,955.00	118,118.42
SELECT datafile_name, tablespace_name, file_id, auto_extensible,... t.file_id, t.con_id, t.tablespace_name) WHERE ROWNUM <= 2000	4g3bca0jwk8x4	49,412.66	8.15	533.16	79,320,359.00	10,327.28	31,092,722.00	0.00	76,241.80
MERGE /*+ dynamic_sampling(ST 4) dynamic_sampling_est_cdn(ST) OP...0.01, NVL(LEAST(100, GREATEST(0.01, (DECODE(BITAND(M.FLAGS	9mvkpzhbg6bz3	23,668.68	3.91	10.23	70,467,651.00	23,227.26	741,632.00	0.00	28,989.76
select /*+ RULE */ version_full "db_version", decode(log_mode,'N... rds_count from sys.all_users where username='RDSADMIN') rds	6ahnjh077hkax	18,947.68	3.13	4.97	8,833,001.00	6,501.38	725.00	0.00	49,355.43
select sum(l_extendedprice) / 7.0 as avg_yearly from H_lineitem,...avg(l_quantity) from H_lineitem where l_partkey = p_partkey)	42hkuxgnq6a1a	16,461.50	2.72	54.92	30,359,713.00	12,850.23	43,278,532.00	12,588,746.00	20,374.47
select /*+ RULE */ version_full "db_version", decode(log_mode,'N... rds_count from sys.all_users where username='RDSADMIN') rds	8j76b391nh012	11,501.80	1.90	5.10	5,286,896.00	4,018.32	238.00	0.00	29,234.35
select /*+ no_parallel_index(t, "H_LINEITEM_IDX1") dbms_stats cu...NUM("WORKLOAD","H_LINEITEM",388123,4,0,"L_ORDERKEY") = :objn)	fuhhhhuf1c7q6	8,974.38	1.48	11.71	2,149,569.00	3,669.22	2,097,209.00	718.00	9,229.74
SELECT substr(A.tablespace_name,1,14) tablespace_name, a.file_na...pace_name=b.tablespace_name(+) ORDER BY A.tablespace_name ASC	0pgnz8chrnn5r	8,731.99	1.44	12.33	11,832,167.00	1,360.44	4,580,481.00	0.00	9,310.78

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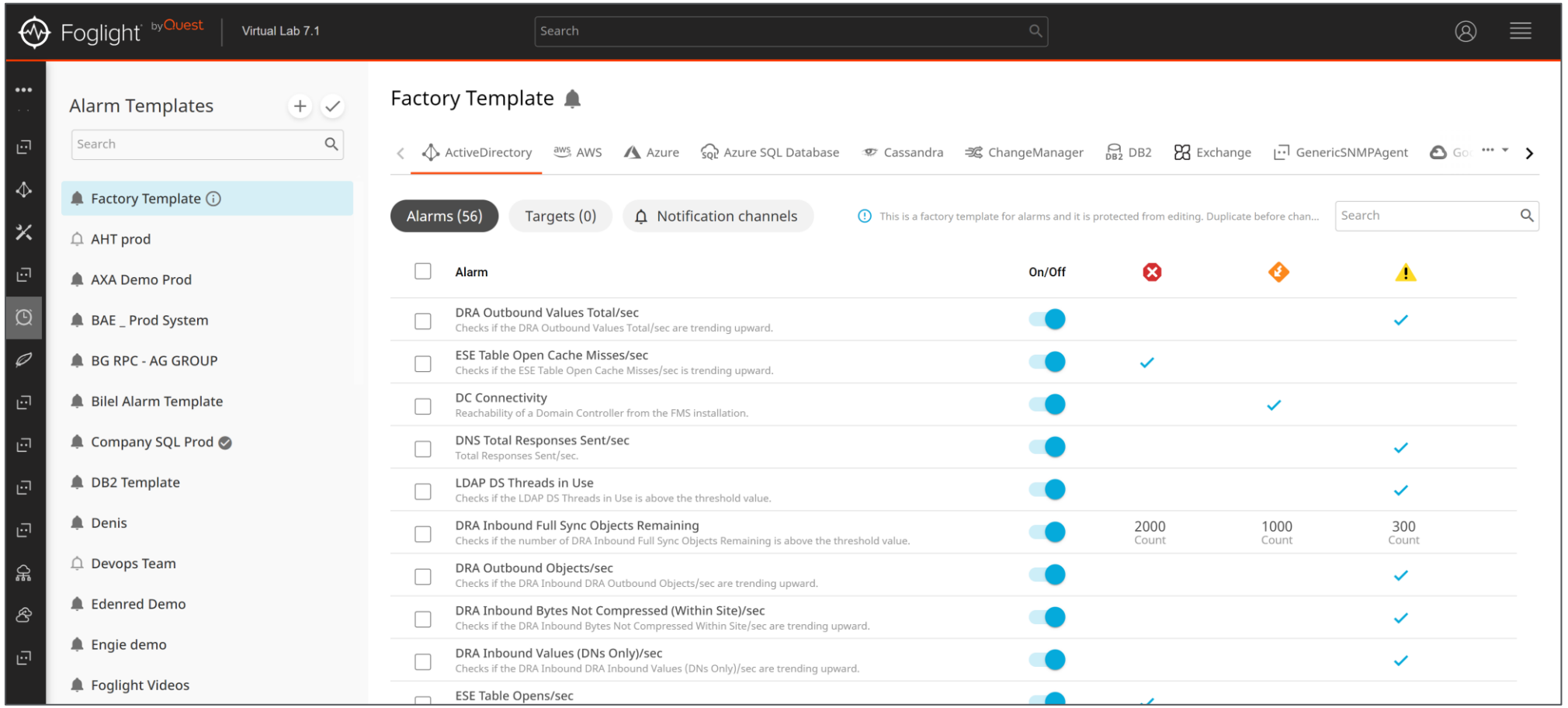
Where Next Meets Now.

Using Alarm Templates

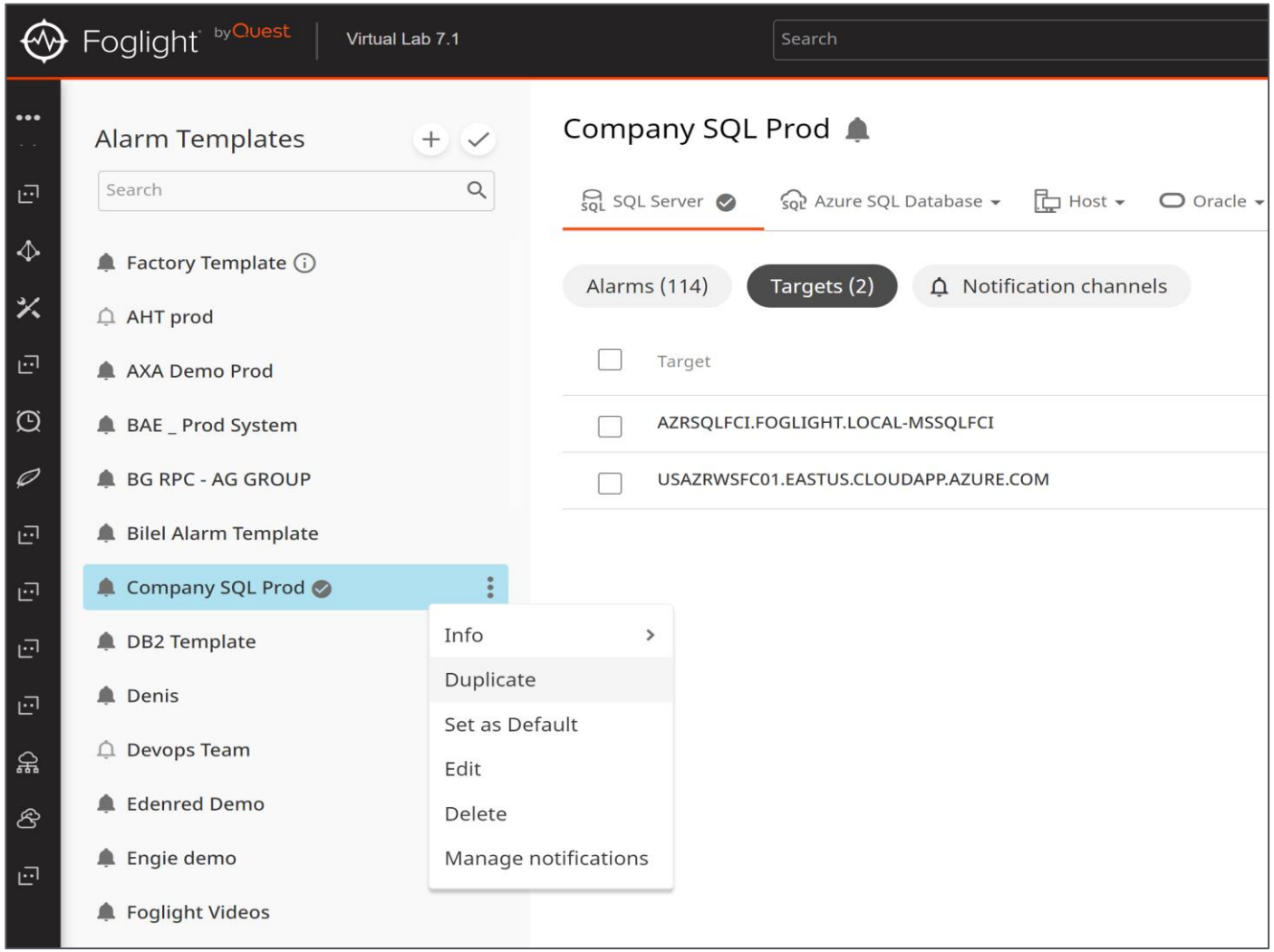
The ‘Alarm Templates’ dashboard displays the default factory template and any duplicated or created templates.

For each template, you can view the configured targets, selected domains, and available alarms for that domain.



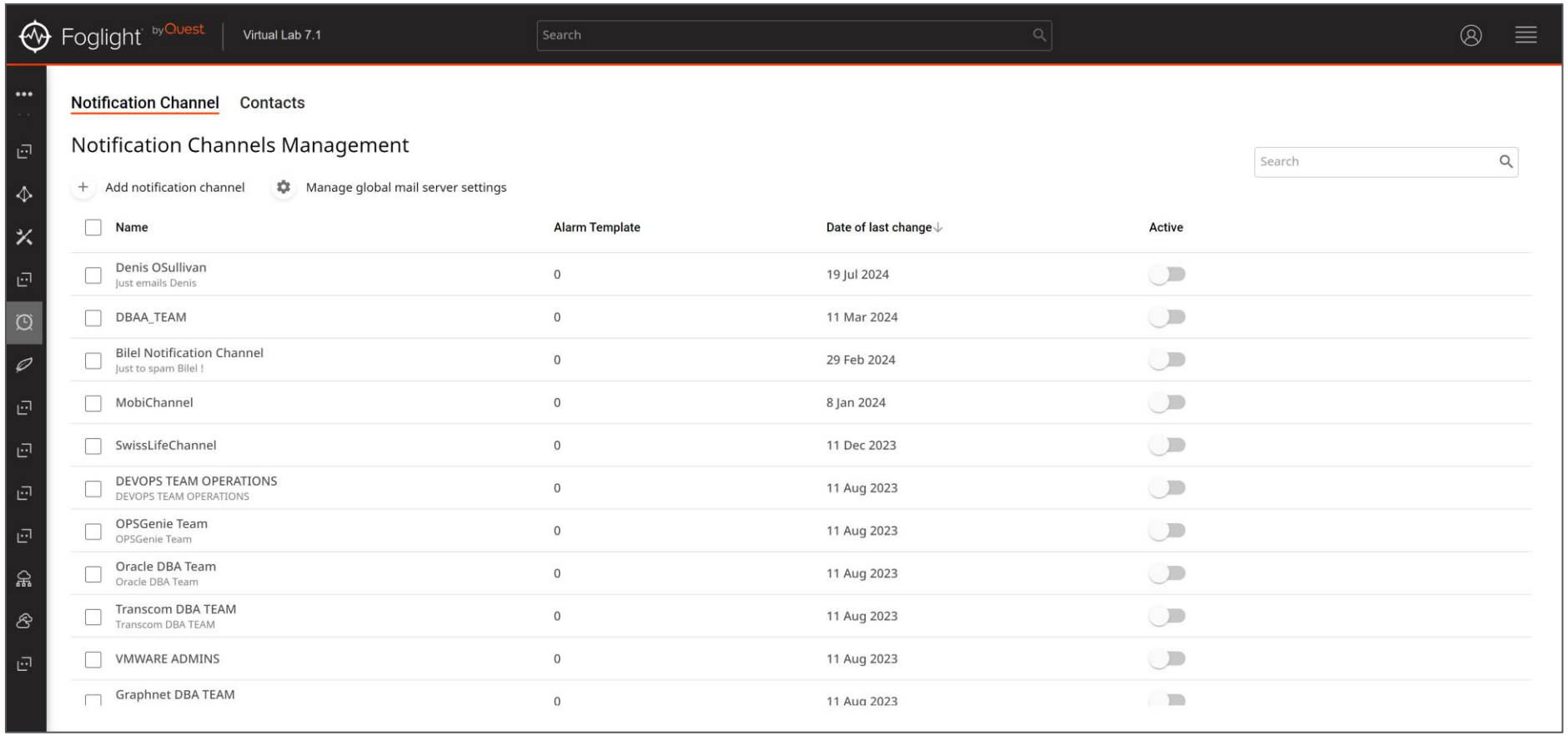
Using Alarm Templates

- Creating a new template
- Duplicating a template
- Setting Default Templates
- Viewing template information
- Editing templates
- Attaching Targets to Templates
- Removing Targets from a template
- Deleting a template



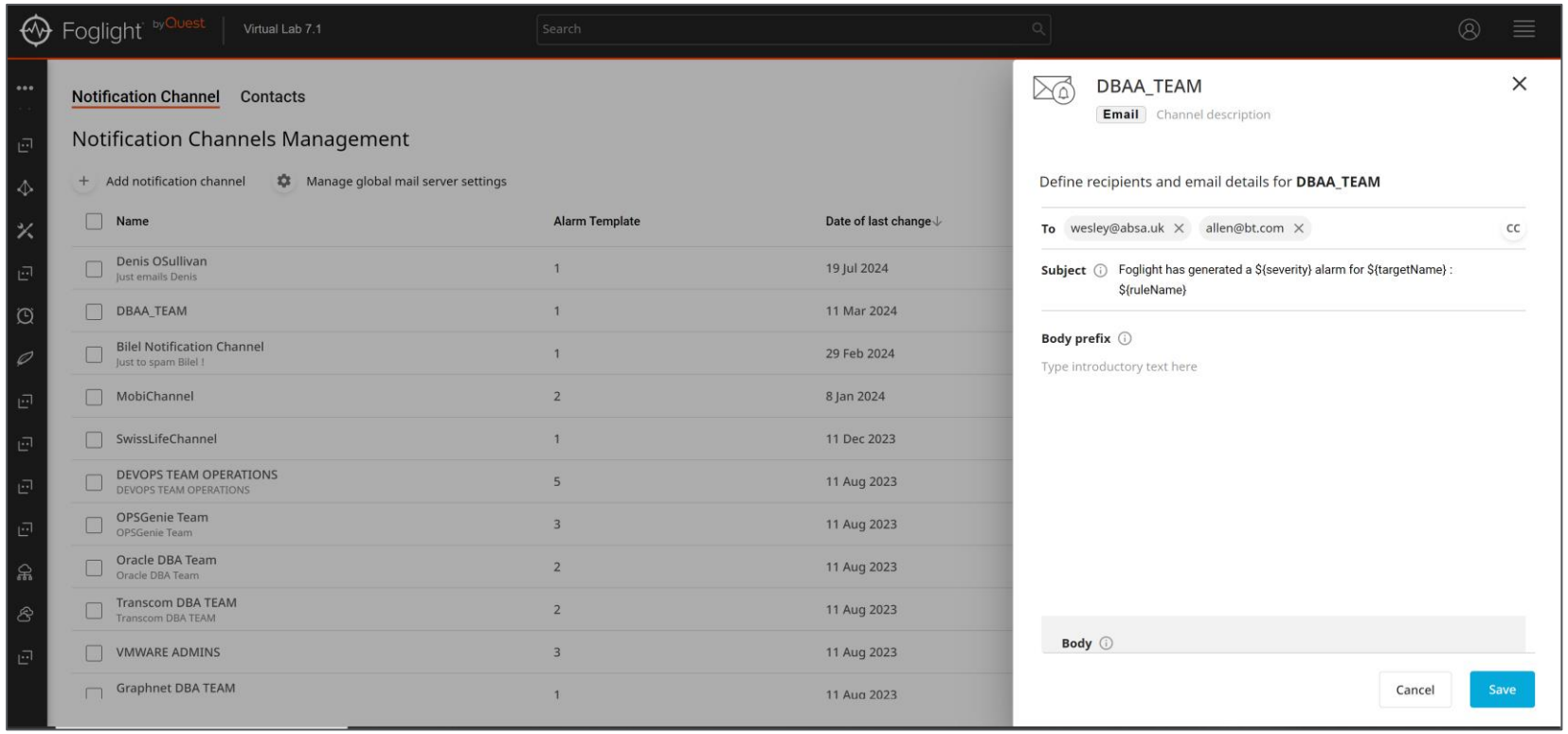
Using Alarm Templates: Notification Channels

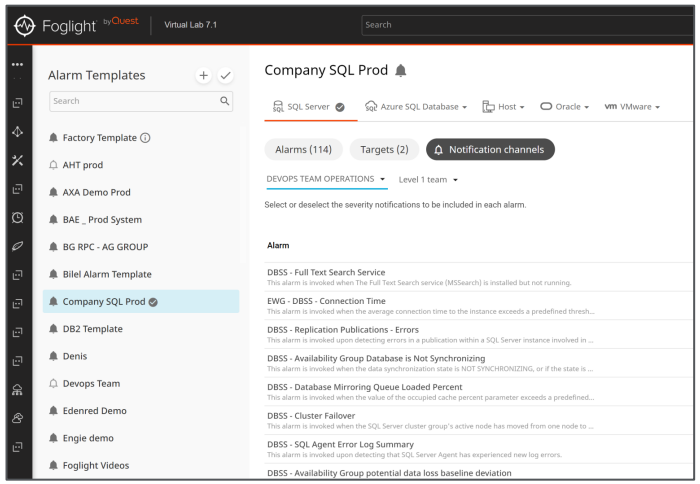
Foglight has a notification system that allows users to receive alerts or notifications about events and issues detected within the monitored environment. These notifications are sent through communication channels, referred as **Notification Channel**



Using Alarm Templates: Notification Channels

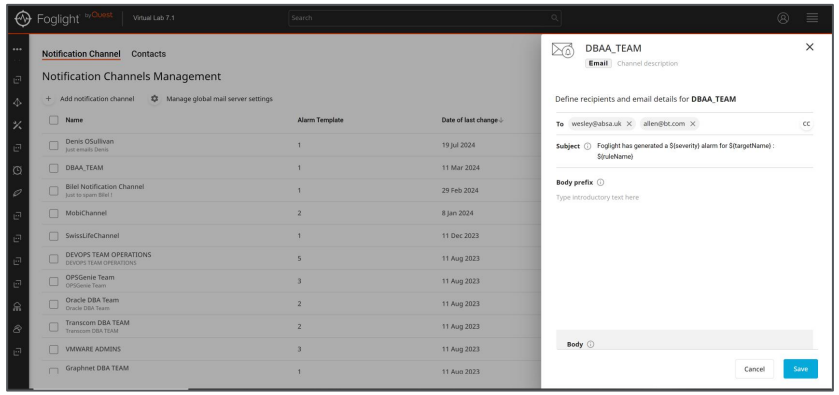
Managing Notification Channels | Managing Contacts | Setting Alarm's Notification

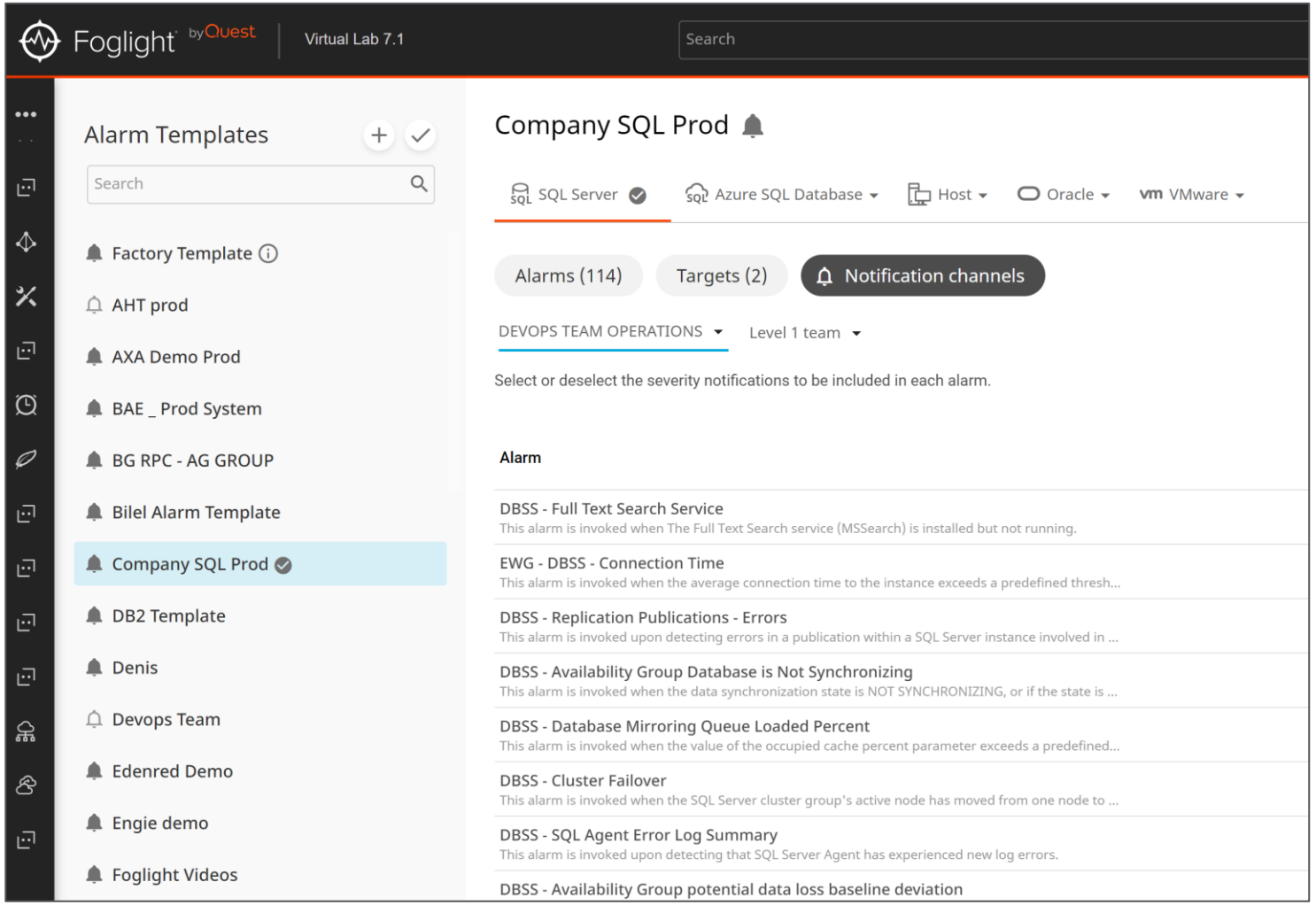




Using Alarm Templates: Notification Channels

Managing Notification Channels | Managing Contacts | Setting Alarm's Notification

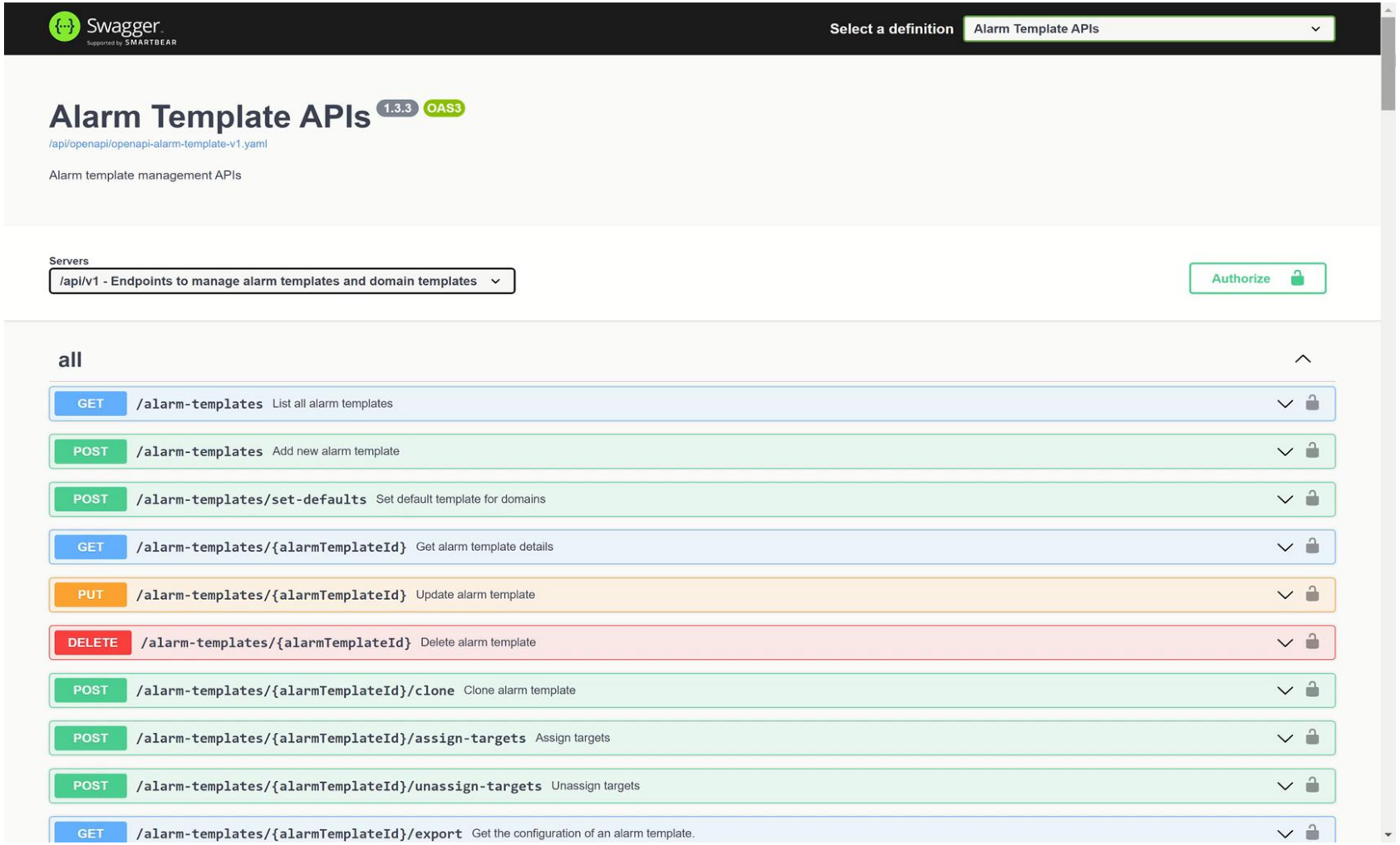




Using Swagger UI

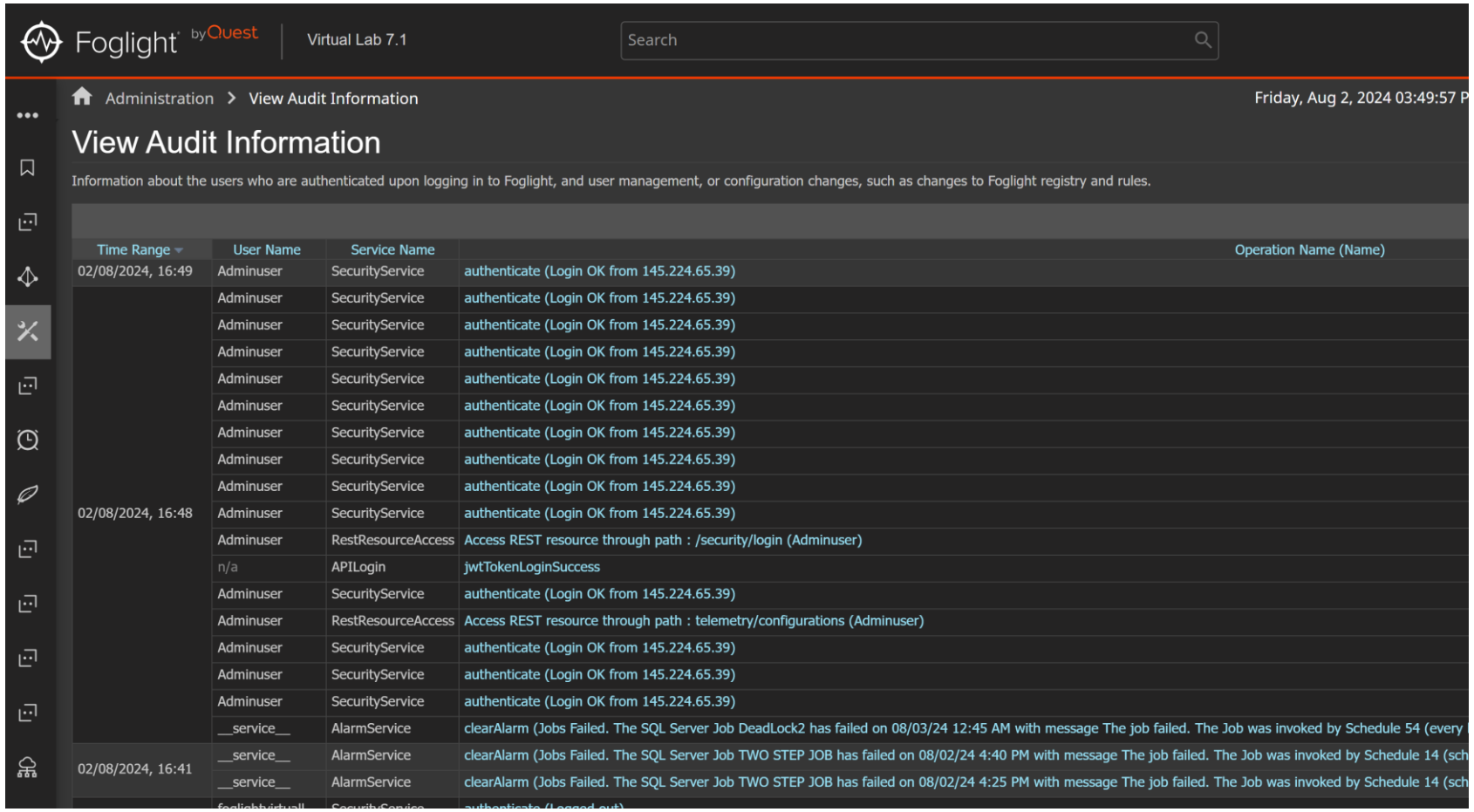
- API's
  - Alarm Templates
  - Audit Log
  - Telemetry

https://hostname/api/openapi/swagger-ui



Audit Log

The View Audit Information dashboard allows you to review these logs and to filter them to show information for a specific time span.



Replacing Literals

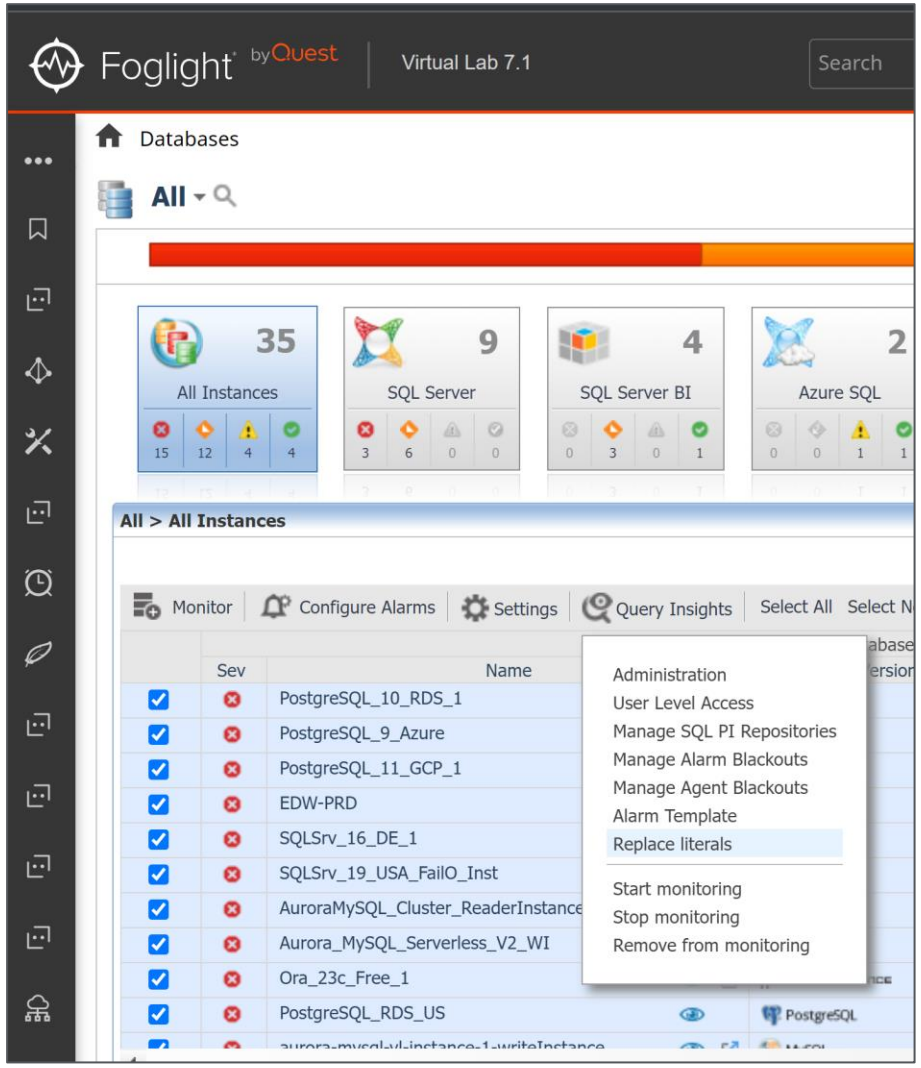
Foglight replaces string and numeric literals in uploaded SQL statements and queries by default as they may contain sensitive or Personally Identifiable Information (PII).

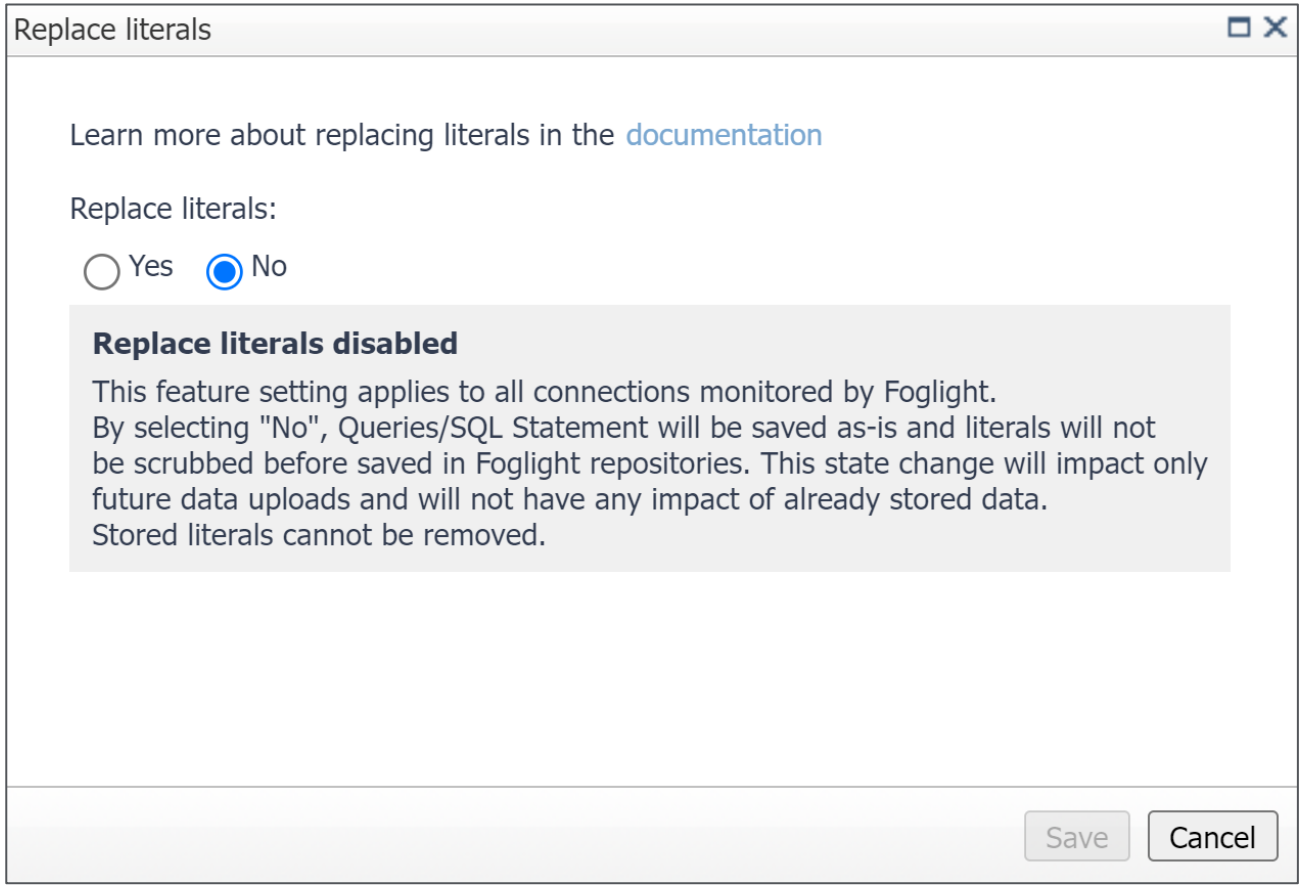
The placeholder data has no reference to the original data, cannot be reversed into the original data, and has no association with the original data.

Before uploading to Foglight	On upload to Foglight string literals are replaced
select @quest	select @quest
select 'quest'	select '** Removed by Foglight **'
select 'quest' and 'TIGER	select '** Removed by Foglight **' and '** Removed by Foglight **
select 'quest' SET QUOTED_IDENTIFIER OFF; select "tiger"	select '** Removed by Foglight **' SET QUOTED_IDENTIFIER OFF; select "** Removed by Foglight **"
select 'quest' SET QUOTED_IDENTIFIER OFF; select "tiger" SET QUOTED_IDENTIFIER ON select "wolf"	select 'quest' SET QUOTED_IDENTIFIER OFF; select "tiger" SET QUOTED_IDENTIFIER ON select "wolf".
select 'quest' /* this is a comment 'Next' line */ 'frog'	select '** Removed by Foglight **' /* this is a comment 'Next' line */ '** Removed by Foglight **'
select payment where ccn = '12345678901234';	select payment where ccn = '** Removed by Foglight **';
'select top(526) from aaa'	'** Removed by Foglight **'
begin – get the data select target_data from sys.dm_xe_sessions s join sys.dm_xe_session_targets t on t.event_session_address = s.address where s.name = N'FoglightWorkloadAnalysis_MEL602102_3843_mel602102_sql2008r2_sqlserver' and t.target_name = N'ring_buffer' – stop session	begin – get the data select target_data from sys.dm_xe_sessions s join sys.dm_xe_session_targets t on t.event_session_address = s.address where s.name = N'** Removed by Foglight **' and t.target_name = N'** Removed by Foglight **' – stop session
select 'quest' 'hare'	select '** Removed by Foglight **' and '** Removed by Foglight **'
select 'quest' – 'hare'	select '** Removed by Foglight **' – 'hare'
select 'quest' – 'hare' –	select '** Removed by Foglight **' – 'hare' –
select 'quest' and "hare"	select '** Removed by Foglight **' and "hare"
select 'quest' and "hare" and 'quest'	select '** Removed by Foglight**' and "hare" and '** Removed by Foglight **'
select 'q''ue' and 'hare' and 'q''ue'	select '** Removed by Foglight***' and '** Removed by Foglight **' and '** Removed by Foglight **'

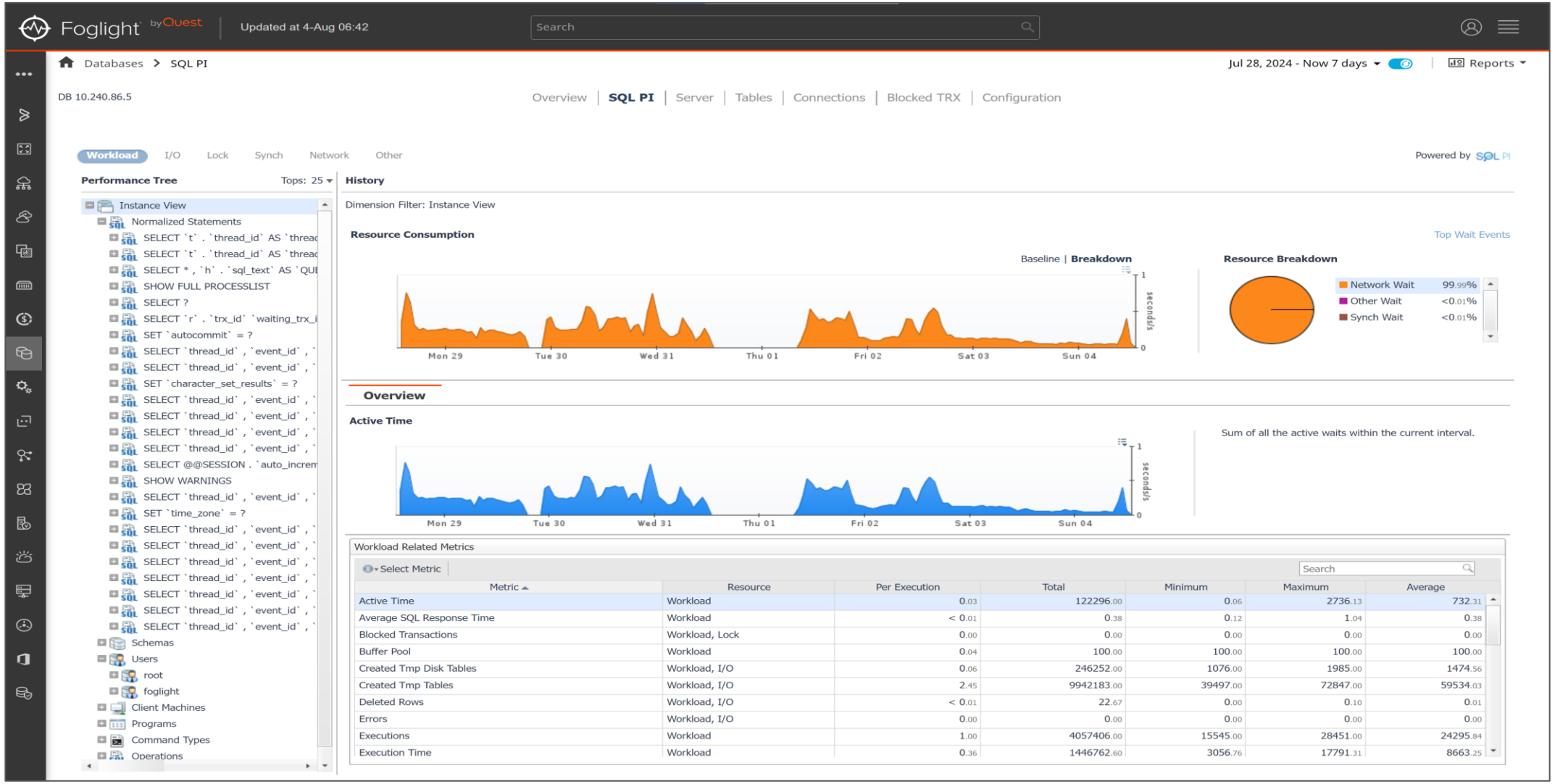
Quest

Replacing Literals





MySQL PI


Foglight by Quest
Updated at 4-Aug 06:42
Search
Databases > SQL PI
Jul 28, 2024 - Now 7 days
Reports
DB 10.240.86.5
Overview | SQL PI | Server | Tables | Connections | Blocked TRX | Configuration
Workload I/O Lock Synch Network Other
Powered by SQL PI
Performance Tree
Tops: 25
Instance View
Normalized Statements
Schemas
Users
root
foglight
Client Machines
Programs
Command Types
Operations
History
Dimension Filter: Instance View
Resource Consumption
Baseline | Breakdown
Mon 29 Tue 30 Wed 31 Thu 01 Fri 02 Sat 03 Sun 04
seconds/s
Top Wait Events
Resource Breakdown
Network Wait 99.99%
Other Wait <0.01%
Synch Wait <0.01%
Overview
Active Time
Sum of all the active waits within the current interval.
Workload Related Metrics
Select Metric
Search
Metric | Resource | Per Execution | Total | Minimum | Maximum | Average
Active Time | Workload | 0.03 | 122296.00 | 0.06 | 2736.13 | 732.31
Average SQL Response Time | Workload | < 0.01 | 0.38 | 0.12 | 1.04 | 0.38
Blocked Transactions | Workload, Lock | 0.00 | 0.00 | 0.00 | 0.00 | 0.00
Buffer Pool | Workload | 0.04 | 100.00 | 100.00 | 100.00 | 100.00
Created Tmp Disk Tables | Workload, I/O | 0.06 | 246252.00 | 1076.00 | 1985.00 | 1474.56
Created Tmp Tables | Workload, I/O | 2.45 | 9942183.00 | 39497.00 | 72847.00 | 59534.03
Deleted Rows | Workload, I/O | < 0.01 | 22.67 | 0.00 | 0.10 | 0.01
Errors | Workload, I/O | 0.00 | 0.00 | 0.00 | 0.00 | 0.00
Executions | Workload | 1.00 | 4057406.00 | 15545.00 | 28451.00 | 24295.84
Execution Time | Workload | 0.36 | 1446762.60 | 3056.76 | 17791.31 | 8663.25

Quick Reminder:

Foglight 101 Series – Episode 2

Why Upgrade

23rd Oct 2024 – 1pm EST

Alex Tarte
Snr. Tech Specialist

QR code

Quest
Where Next Meets Now.

Latest Release – 1st Aug 2024

Security Enhancements

- Updated Java JRE used by Foglight to version 17.0.11
- Updated third-party libraries
- Addressing issues with supporting HTTPS traffic when the FMS is running in FIPS mode

Foglight Agent Manager Enhancements

- Update the SSH library used by agents to provide support for newer encryption and signature algorithms.

User Experience Enhancements

- Fixed date format inconsistency in timeframe selector
- Timeframe reset when zoom-in on a wcf chart and set

Features Enhancements of Foglight for Databases:

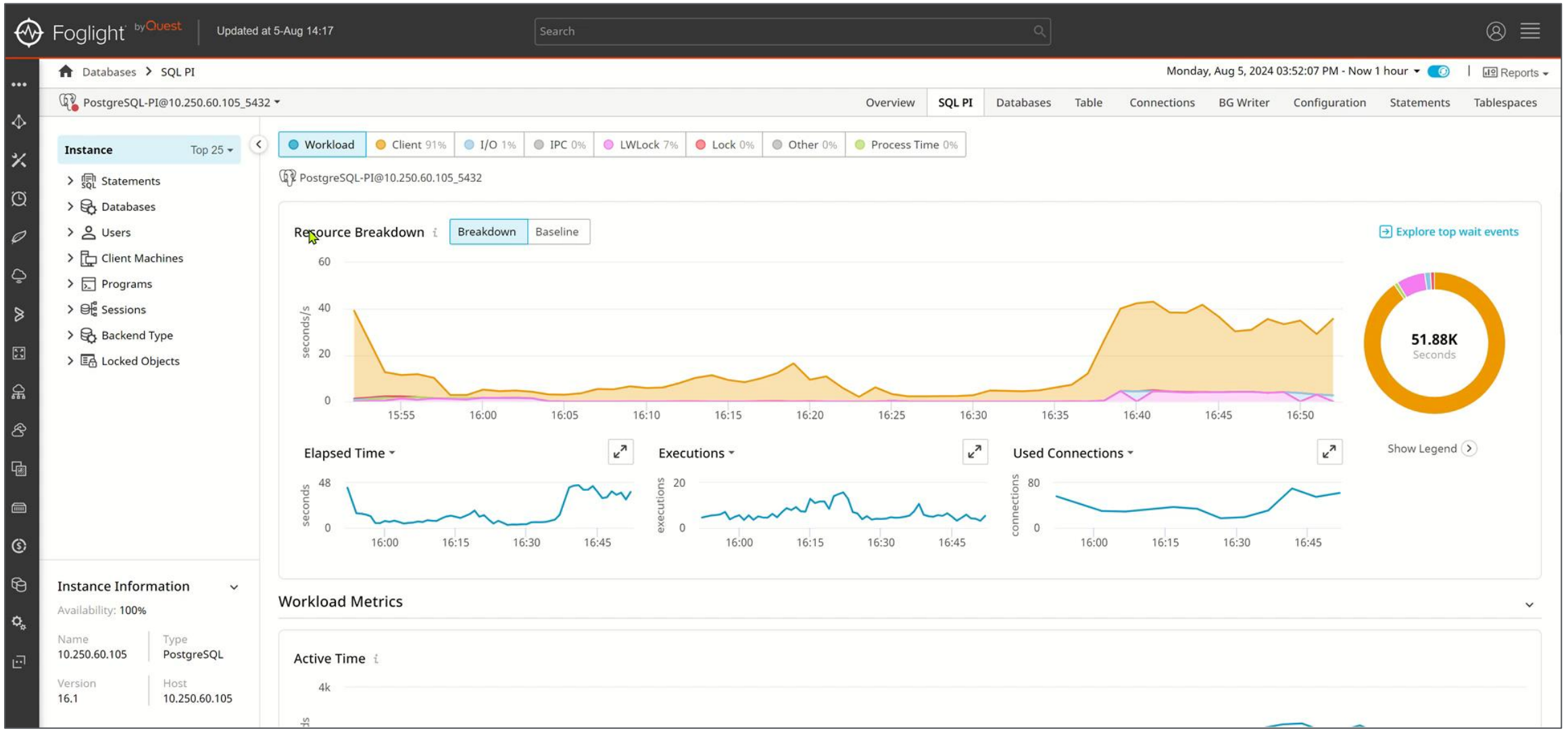
- Add the ability to remove literals from queries collected and supported for the following database cartridges: SQL Server, Oracle, Azure DB, DB2, MySQL, PostgreSQL, SAP Hana, Snowflake, Redis, Redshift, MongoDB, Cassandra
- Easy link to Query Insight dashboard - Query Insight dashboard is now accessible directly from the Database Global view dashboard.
- Add the ability to set PI data storage period to lower then 1 year (minimum 90 days)
- Audit kill sessions - The audit record will be created when a user terminates a database session using the Sessions dashboard on SQL Server and Oracle or in the Current Agent dashboard on DB2.
- Enhance historic blocking analysis in SQL Server PI. Add the ability to view more detailed information about locked resources.
- Configure Long running session alarms in both Oracle and SQL Server

Latest Release – 1st Aug 2024

- SQL Server 7.2.3.12
- Oracle 7.2.3.12
- DB2 7.2.3.10
- Azure SQL DB 7.2.3.12
- MySQL PI 7.2.3.12
- MongoDBAgent 7.2.3.10
- PostgreSQLAgent 7.2.3.10
- MySQL 7.2.3.10
- SnowflakeAgent 7.2.3.10
- RedshiftAgent 7.2.3.10
- SAP ASE 7.2.3.10
- FglAM linux 7.1.5
- FglAM windows 7.1.5

https://support.quest.com/foglight/kb/4376552/foglight-7-1-5-release-notes

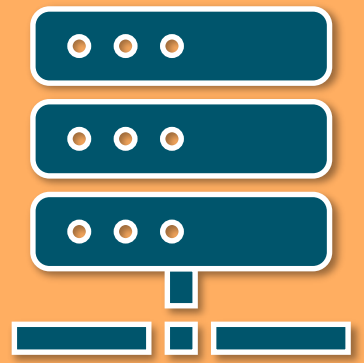
PostgreSQL PI (ETA this QTR Aug/Sep ‘24)



FULLY MANAGED SERVICE

Vs.

SELF MANAGED SERVICE



Foglight by Quest

Foglight Cloud

Foglight Cloud is a managed software that combines many of the capabilities of Foglight for Databases and Foglight Evolve. Foglight Cloud offers extensive diagnostic capabilities and performance monitoring for databases, servers, virtual machines, containers, and cloud services

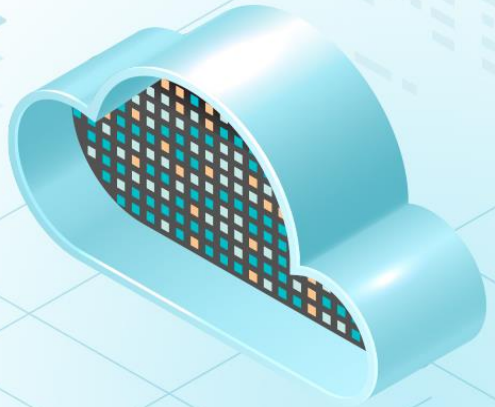
- Time to Value within Hours (TTV)
- Reduces Total Cost of Ownership (TCO)
- Continuous Updates Provide Users with Recent Tech Innovations Faster Than Conventional Systems
- Managed Maintenance of Foglight Cloud Minimizes Downtimes, Boosting Efficiency and User Contentment

Foglight for Databases

- SQL Server & Oracle (all flavors), MySQL, Postgres, Cassandra, MongoDB, Redshift, Redis, Snowflake, SAP HANA), **Azure SQL DB**, Infrastructure (host)

Foglight for Infrastructure

- Infrastructure (host), Hyper-V, VMWare, vCloud, Cloud Providers (Azure, AWS, Google), Containers



Foglight Cloud by Quest | Interactive Demo Lab

Search

Welcome to Foglight Cloud!

Discover more powerful capabilities of Foglight Cloud by monitoring your Databases and Servers.

Learn more

Download agent manager:

For Windows | For Linux

Monitor your Databases and Servers

Database
- Monitor Database
- Query Insights

Hosts
- Monitor Hosts
- Environment Overview

VMware
- Monitor VMware

HyperV
- Monitor HyperV

Cloud
- Monitor Cloud

Container
- Monitor Container

Invite users and manage notifications

User Management
- Invite or manage user

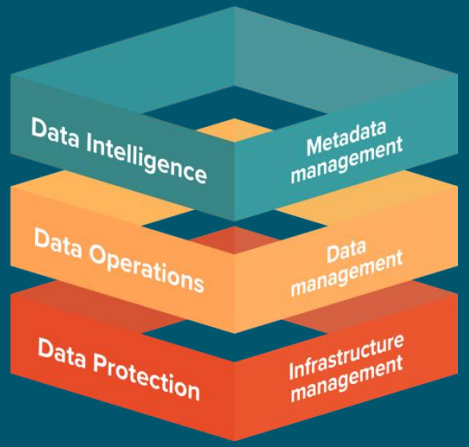
Notification channels
- Manage Contacts
- Manage Notification Channels

Alarms Templates
- Setup your own alarm template

Alarms
- Review outstanding alarms

Quest

Where Next Meets Now.



Thank You

Additional Resources

Sandbox / Interactive Lab
[FREE]

QR code

Looking Forward to Seeing You There

Register Today!

Foglight 101 Series: Episode 2

Why Upgrade

23rd Oct 2024 – 1pm EST

Alex Tarte

Snr. Tech Specialist

Quest
Where Next Meets Now.