

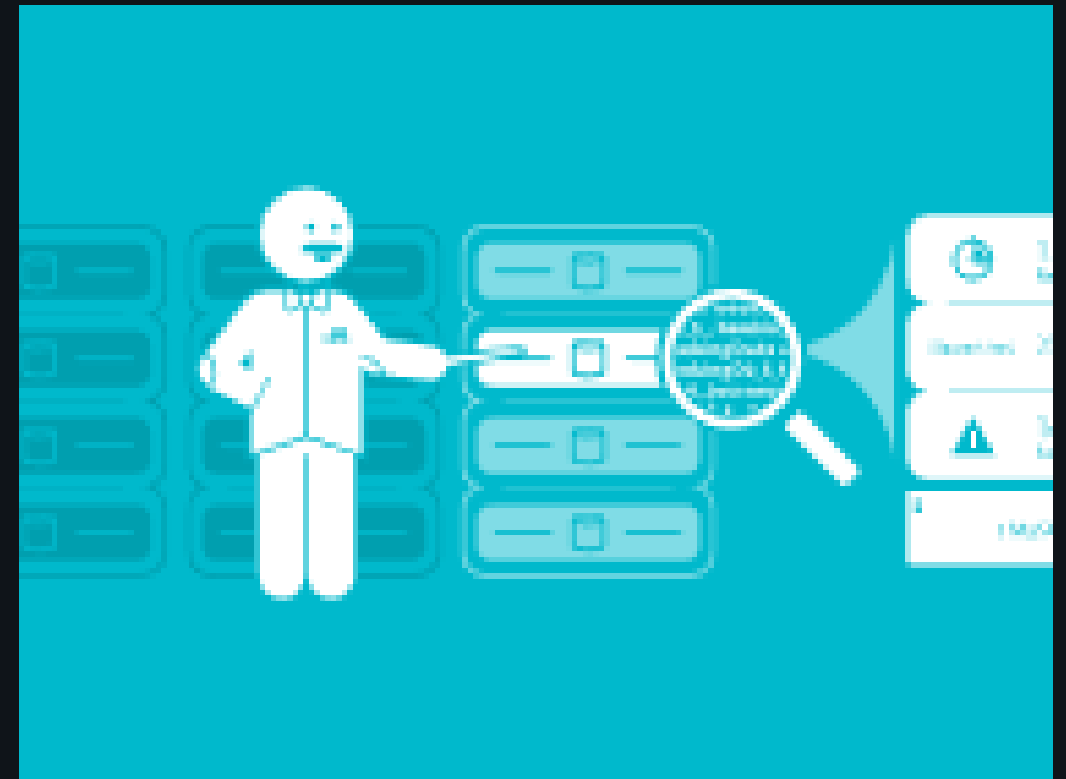
Database Analysis

Dynatrace Training Module



Database Monitoring

- Find expensive statements, for example those that read a lot of data
- Find out which services talk to each database most frequently
- See how much load is placed on your database by individual services
- See which users execute SQL statements
- Understand why some statements are slow
- Be notified of increased SQL statement costs and execution



Database Monitoring

Monitoring Databases ◀

Analysis

Baselining

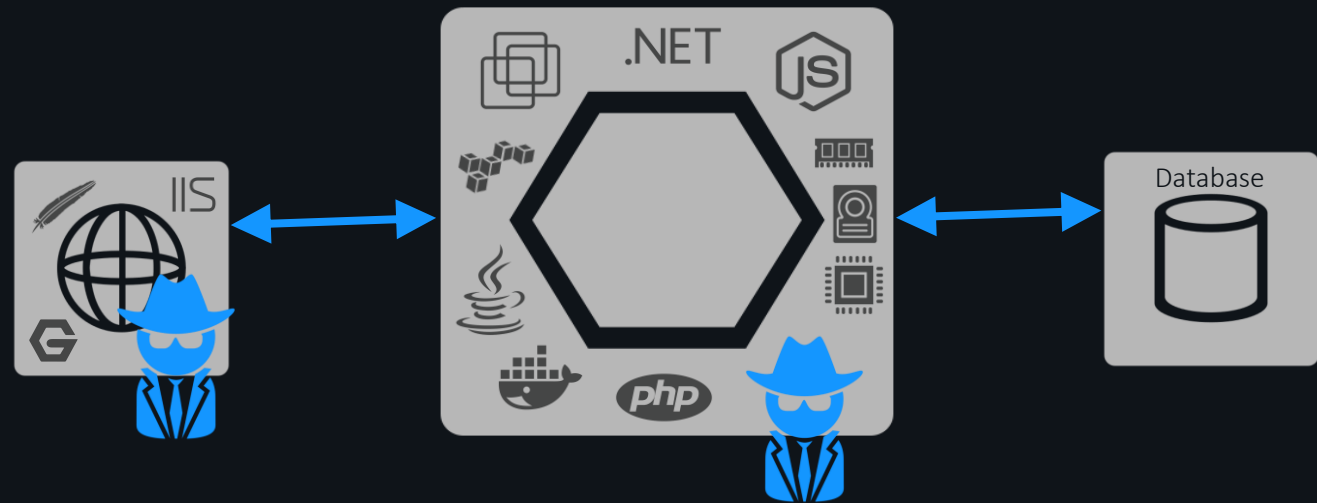
Problems

Failures

OneAgent on the
Database Server

Monitoring Databases

- Dynatrace treats databases as [external services](#)



Database Monitoring

Monitoring Databases ◀

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Monitoring Databases

- Critical to understand overall query performance for FDI
- Critical to understand which single query is causing an issue
- Treated as external service – monitor calls, rather than DB processes themselves
- Individual databases are tracked – able to implement baselines
- To capture the queries, a OneAgent is not required on the database host

Database Monitoring

Analysis

Monitoring Databases

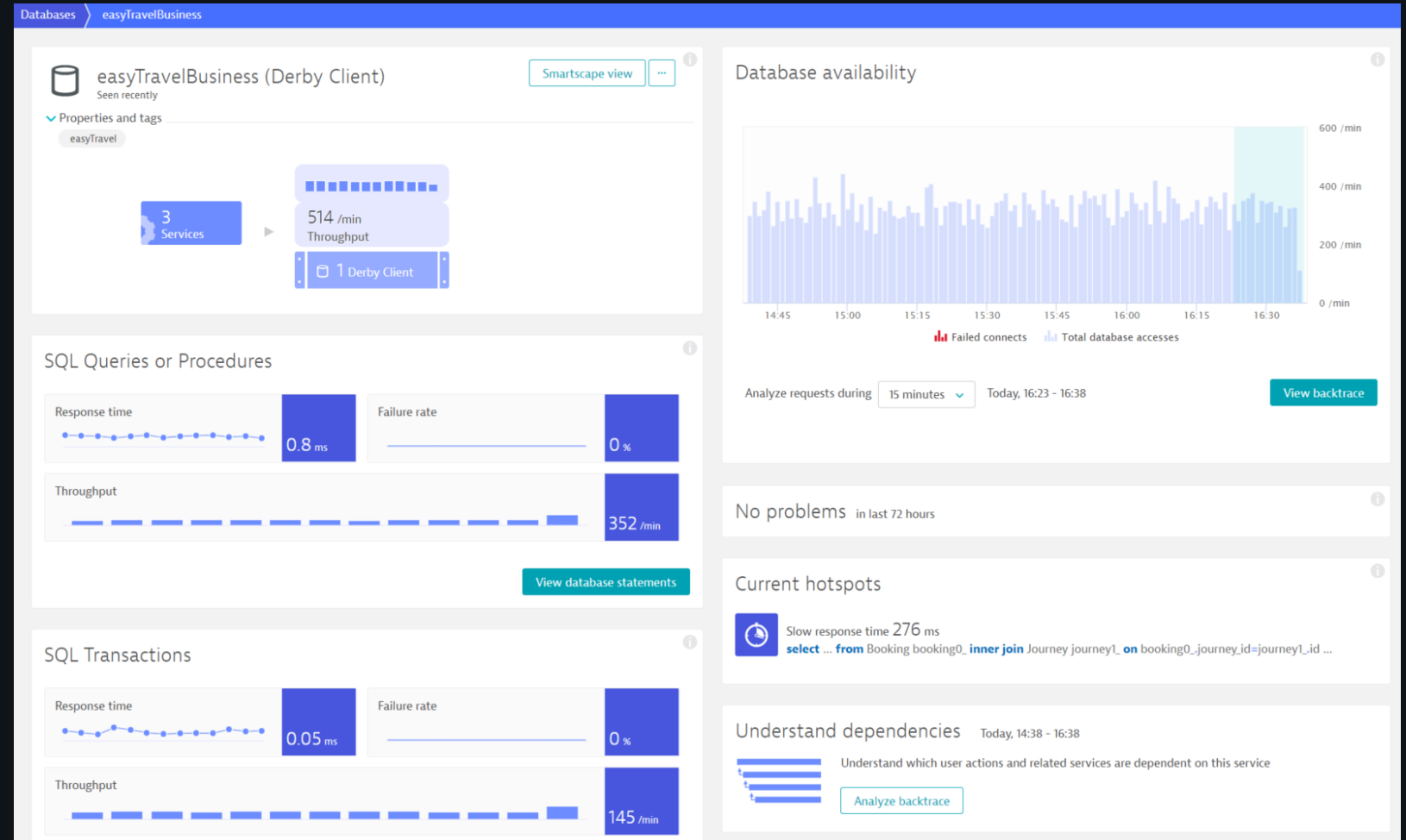
Analysis ◀

Baselining

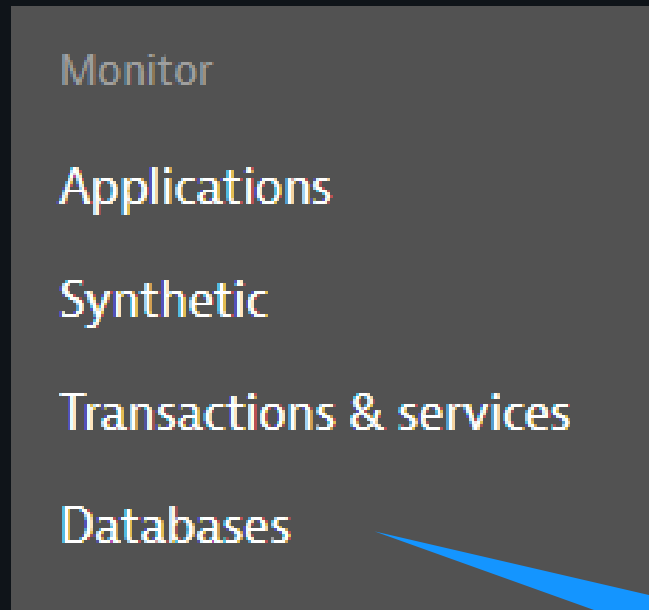
Problems

Failures

OneAgent on the Database Server



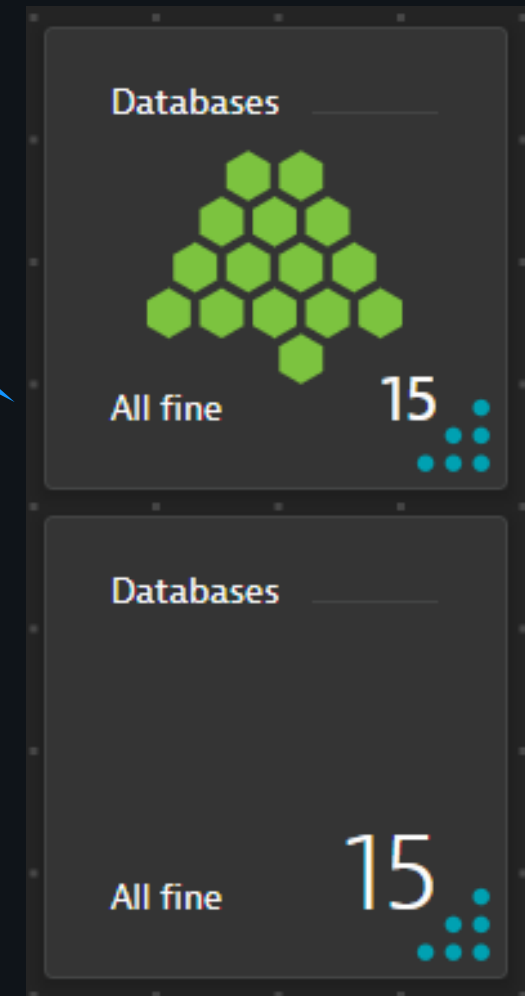
How do I analyze Database Services?



Main menu

As a dashboard tile

OR



Database Monitoring

Monitoring Databases

Analysis

Baselining ◀

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OneAgent on the
Database Server

Baselining

- What we watch for anomalies:
 - Response time of query commands
 - Failure rate of query commands
- We don't baseline every single query
- We baseline the *type* of query – commits, queries, and modifications
- If problem occurs, we do look back at the performance of all the queries for comparison

Database Monitoring

Monitoring Databases

Analysis

Baselining

Problems ◀

Failures

OneAgent on the
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Problems

1 impacted service

344 Requests per minute impacted



easyTravel-Business
Database service

Response time degradation

The current response time (106 ms) within the slowest 10% exceeds the auto-detected baseline (23.1 ms) by 358 %

Affected requests
344 /min

Service method
select ... from Journey journey0_ where !=journey0 ...

Database Monitoring

Failures

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OneAgent on the Database Server

The screenshot displays the Ruxit monitoring interface for the 'easyTravelBusiness' service. The breadcrumb navigation shows: Home > Services > easyTravelBusiness > Details > Method details > Failure analysis. The main heading is 'Failed requests of Modification in easyTravelBusiness from 09:44 to 10:14 were'. A large blue triangle icon with an exclamation mark indicates a failure rate of 27.7 /min. Below this, a section titled 'Reasons for failed requests' explains that the list shows reasons for failed service calls. A table lists the reasons, with the top entry being 'com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException / You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'exec sp_verifyLocation @location=20' at line 1' with a failure rate of 100 % and 27.7 /min. A 'Details' button is next to this entry. The 'Root causes' section states that 100 % of the failures were caused by the same MySQL syntax error. Below this, the 'Exception messages' section shows the full error message: 'You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'exec sp_verifyLocation @location=20' at line 1'. The 'Stacktraces of exceptions' section shows a list of stack frames, including 'sun.reflect.GeneratedConstructorAccessor45.newInstance', 'java.lang.reflect.Constructor.newInstance', 'com.mysql.jdbc.Util.handleNewInstance', 'org.hibernate.engine.query.NativeSQLQueryPlan.performExecuteUpdate', 'com.dynatrace.easytravel.persistence.provider.LocationJpaProvider.verifyLocation', 'sun.reflect.GeneratedMethodAccessor.invoke', 'java.lang.reflect.Method.invoke', 'org.springframework.aop.support.AopUtils.invokeJoinpointUsingReflection', and 'com.sun.proxy.\$Proxy.verifyLocation'.

Failed requests of Modification in
easyTravelBusiness from 09:44 to 10:14 were

27.7 /min
Failed requests

Reasons for failed requests
This list shows the reasons that services calls were marked as failed. Click a specific reason in the list to get exception message and code level details.

Reasons for failed requests	Failed requests /min
com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException / You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'exec sp_verifyLocation @location=20' at line 1	100 %

27.7 /min

Root causes for requests that failed with com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException / You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'exec sp_verifyLocation @location=20' at line 1

100 % were caused by com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException

Details

Exception messages of com.mysql.jdbc.exceptions.jdbc4.MySQLSyntaxErrorException

You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'exec sp_verifyLocation @location=20' at line 1

Stacktraces of exceptions

- sun.reflect.GeneratedConstructorAccessor45.newInstance [+]
- java.lang.reflect.Constructor.newInstance (Constructor.java:526)
- com.mysql.jdbc.Util.handleNewInstance (Util.java:411) [+]
- org.hibernate.engine.query.NativeSQLQueryPlan.performExecuteUpdate (NativeSQLQueryPlan.java:210) [+]
- com.dynatrace.easytravel.persistence.provider.LocationJpaProvider.verifyLocation (LocationJpaProvider.java:75) [+]
- sun.reflect.GeneratedMethodAccessor.invoke [+]
- java.lang.reflect.Method.invoke (Method.java:606)
- org.springframework.aop.support.AopUtils.invokeJoinpointUsingReflection (AopUtils.java:309) [+]
- com.sun.proxy.\$Proxy.verifyLocation

Database Monitoring

Monitoring Databases

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OneAgent on the
Database Server



OneAgent on the Database Server

- Host level information
- Database process treated as a Process
- View log files
- Availability alerting
- Capable of getting process metrics via OOTB plugins

Options for enabling plugins found here

Monitoring

Process detection

Monitored technologies

RUM/Mobile monitoring

Global settings and configuration

Cloud and virtualization

Connect vCenter, AWS, or OpenStack

Service detection

Manage & customize service detection

Log analytics

Customize detection of log-based events

Anomaly detection

Configure detection sensitivity

Integration

Integrate Dynatrace with 3rd party syste...

Tagging











Group components with custom tags

Preferences

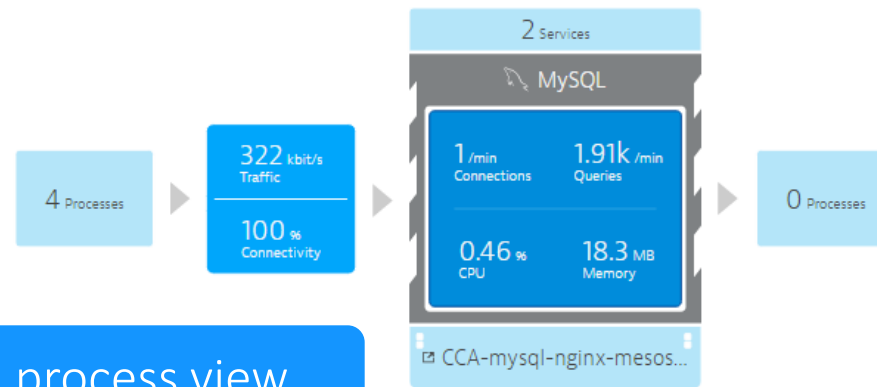
Automatic updates

Supported technologies

Custom plugins

Technology	Type	Monitoring: Off/On	Edit
 Plugin manager	Dynatrace plugin	<input checked="" type="checkbox"/>	
 Configure Couchbase	BETA Dynatrace plugin	<input type="checkbox"/>	▼
 CouchDB	BETA Dynatrace plugin	<input type="checkbox"/>	▼
 Docker containers Requires Dynatrace OneAgent version 1.87 or later	Dynatrace plugin	<input checked="" type="checkbox"/>	▼
 Configure Elastic		<input type="checkbox"/>	▼
 HAProxy Requires Dynatrace OneAgent version 1.85 or later		<input checked="" type="checkbox"/>	▼
 Memcached	BETA Dynatrace plugin	<input checked="" type="checkbox"/>	
 MongoDB Requires Dynatrace OneAgent version 1.89 or later	BETA Dynatrace plugin	<input checked="" type="checkbox"/>	▼
 MSSQL Requires Dynatrace OneAgent version 1.85 or later	BETA Dynatrace plugin	<input checked="" type="checkbox"/>	
 MySQL Requires Dynatrace OneAgent version 1.85 or later	BETA Dynatrace plugin	<input checked="" type="checkbox"/>	▼

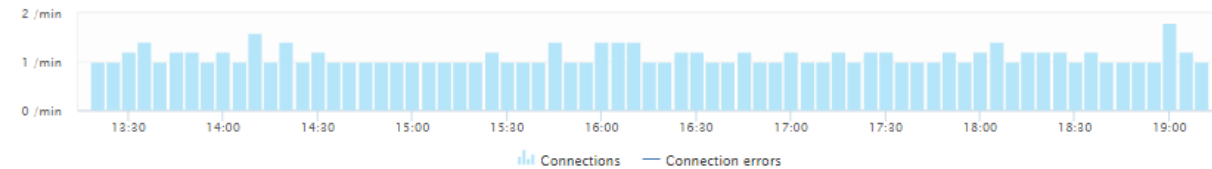
Some technologies need additional configuration to collect metrics



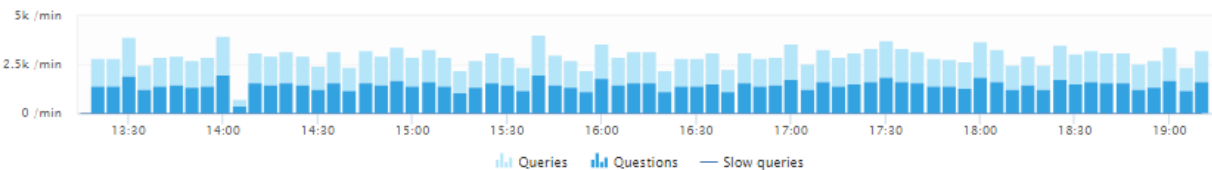
Plugin data populates in process view

System performance MySQL metrics Further details

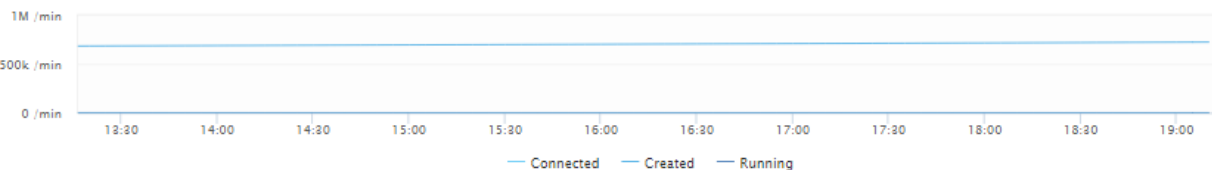
Connections



Throughput



Threads



More metrics from plugin found in 'Further Details'

Questions?



Simply smarter clouds