MSSQL/PI Power Pack

- LightSpeed PM - A Certified Quest Partner

MSSQL/PI Power Pack - Why

- No other solution exists today for extracting data and putting it to use in easy to create dashboards like the MS SQL Power Pack.

- This solution give you access to deep down data that is not readily available from either the Foglight SQL agent or the Performance investigator tools.

- It not only exposes the data, but it also gives you drag and drop simplicity for creating highly advance dashboard

- With this tool, you can eliminate the need for Custom services and Master the creation of advanced dashboards in Foglight for analyzing your SQL performance

- Once implemented we give you the knowledge transfer you require to be successful and begin creating your own views

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MSSQL/PI Power Pack - Solution

- PI
  - NEW! Explorer
  - NEW! Analytics
  - Flexible Views
  - Flexible Drag & Drop Views
  - Flexible Reports

- SQL Server
  - NEW! Cluster Explorer
  - NEW! Health Score
  - NEW! Groups Overview
  - NEW! Analytics
  - NEW! Capacity Planning
  - Flexible Views
  - Flexible Drag & Drop Views.
  - Flexible Reporting
  - Log Monitoring

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MSSQL/PI Power Pack - **PI Explorer**

MSSQL/PI Power Pack - **PI Explorer -** Continued
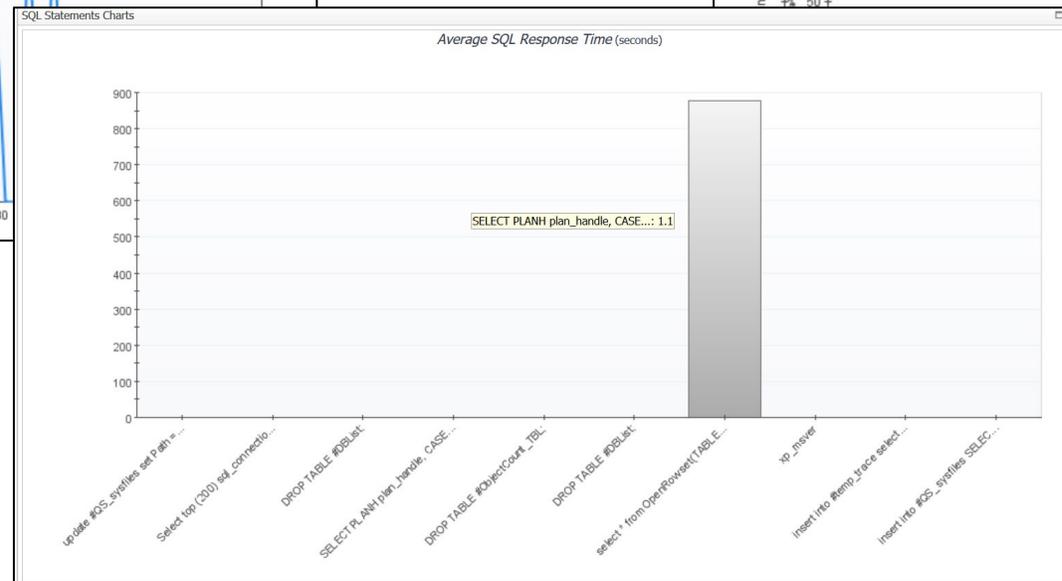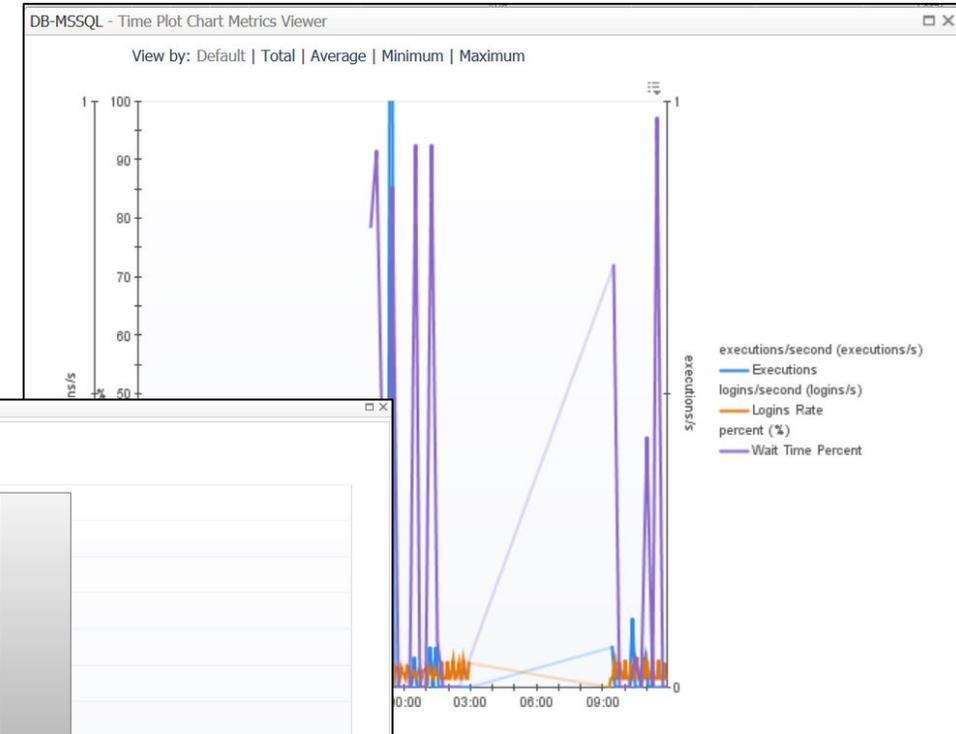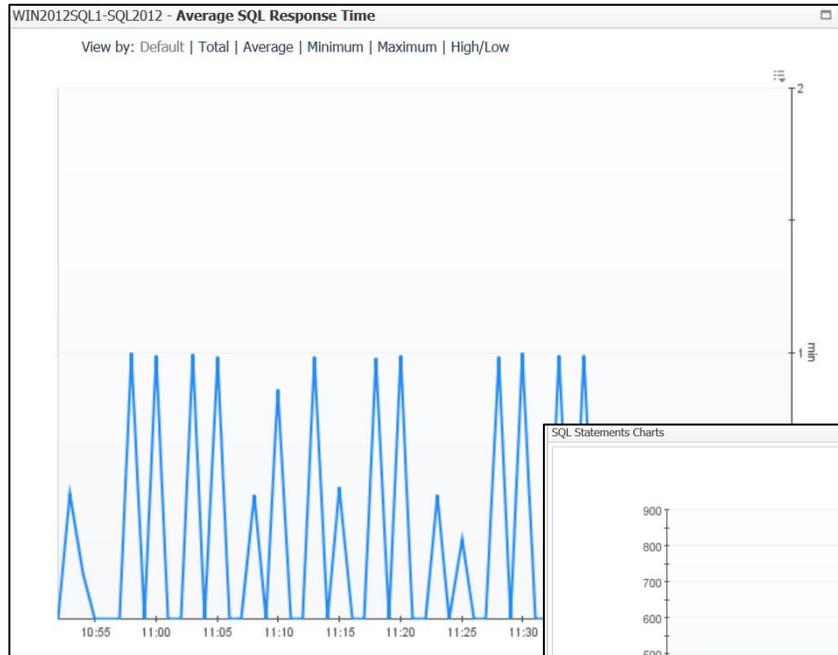
MSSQL/PI Power Pack - **PI Instances**

- View allows to show selected instances and display PI Metrics.
- Same Capabilities as the PI Explorer
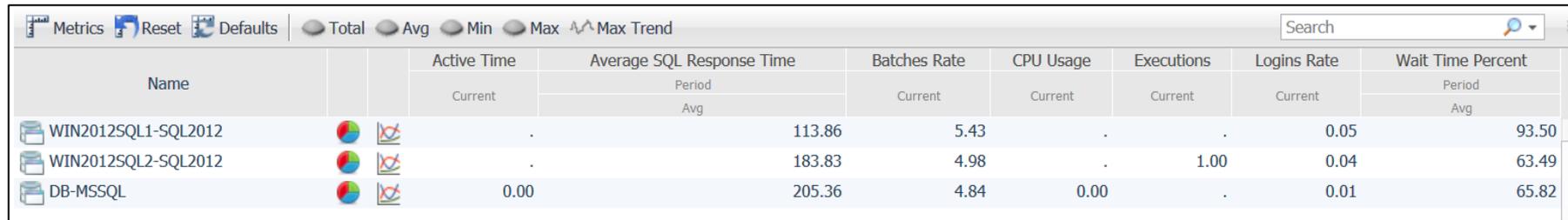
Name			Active Time	Average SQL Response Time	Batches Rate	CPU Usage	Executions	Logins Rate	Wait Time Percent
			Current	Period Avg	Current	Current	Current	Current	Period Avg
WIN2012SQL1-SQL2012			.	113.86	5.43	.	.	0.05	93.50
WIN2012SQL2-SQL2012			.	183.83	4.98	.	1.00	0.04	63.49
DB-MSSQL			0.00	205.36	4.84	0.00	.	0.01	65.82

Metrics Reset Defaults Total Avg Min Max Max Trend   Search

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MSSQL/PI Power Pack - **PI Top X SQL**

- Displays the Top 10 SQL statements for an instance.
  - Active Time Clustered Bar Chart
  - Metrics support same as the PI Explorer
  - Displays the SQL statements Text
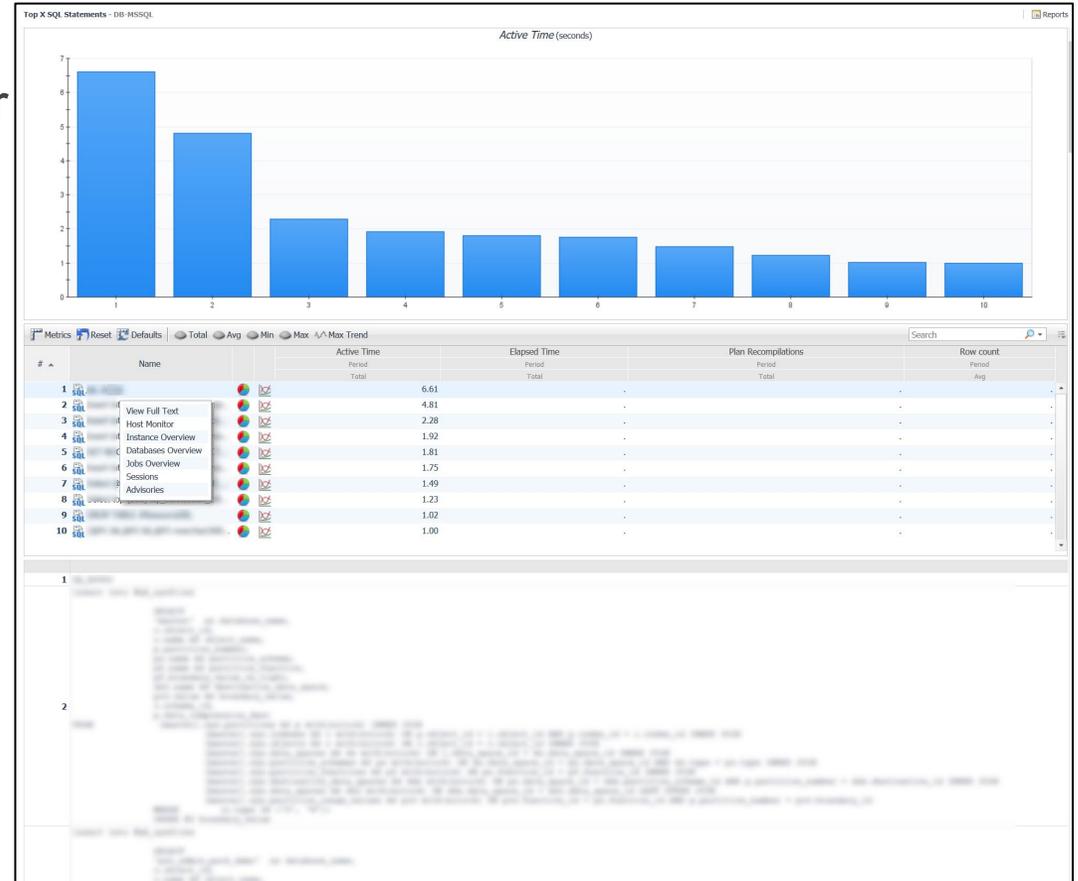
MSSQL/PI Power Pack - **PI Top X SQL Batches**

- Displays the Top 10 SQL Batches for an instance.
  - Active Time Clustered Bar Chart
  - Metrics support same as the PI Explorer
  - Displays the SQL Batches Text
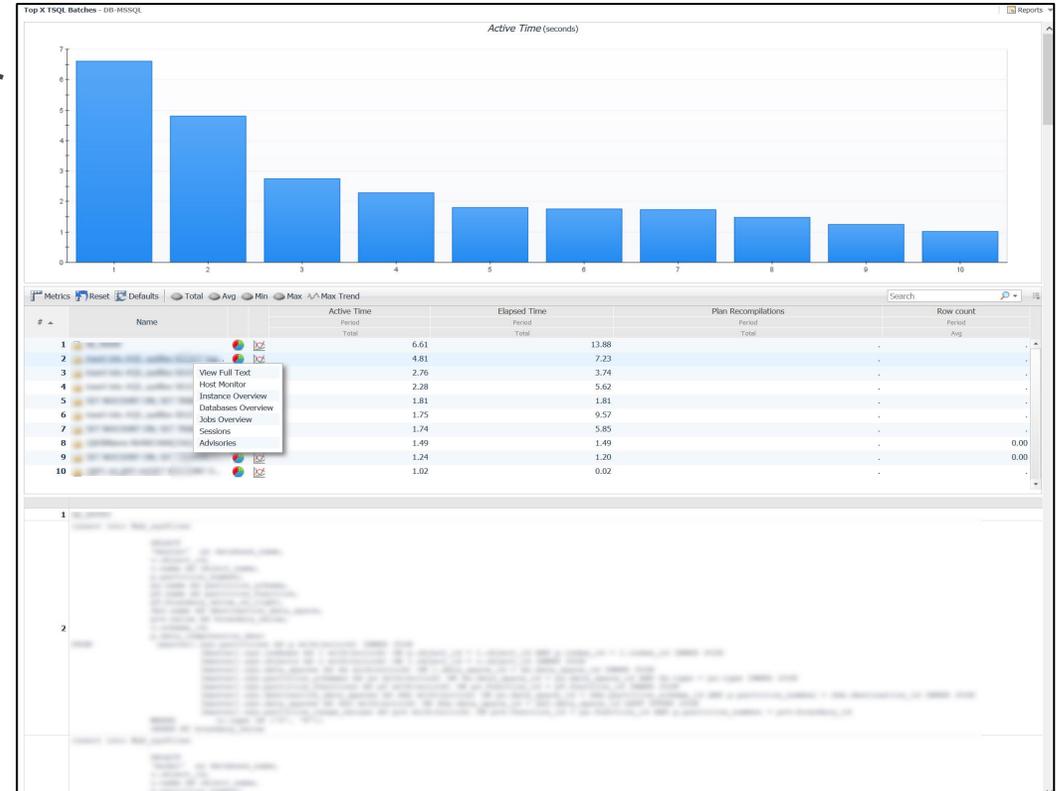
MSSQL/PI Power Pack - **PI Advisories**

- Displays Advisories on selected instances.

MSSQL/PI Power Pack - **PI Change Tracking**

- Displays Changes on selected instances.

MSSQL/PI Power Pack - **PI Analytics**

- ## 24 Hour Window View
  - Get Insight into how a resource is utilized within a 24 hour day based on historical data.

- ## Analyze Data Using
  - Time Plot Charts
  - Time Bar Charts
  - Clustered Bar Charts

- ## Advanced Analytics Using:
  - Bubble Charts
  - Scatter Charts
  - Heat Maps
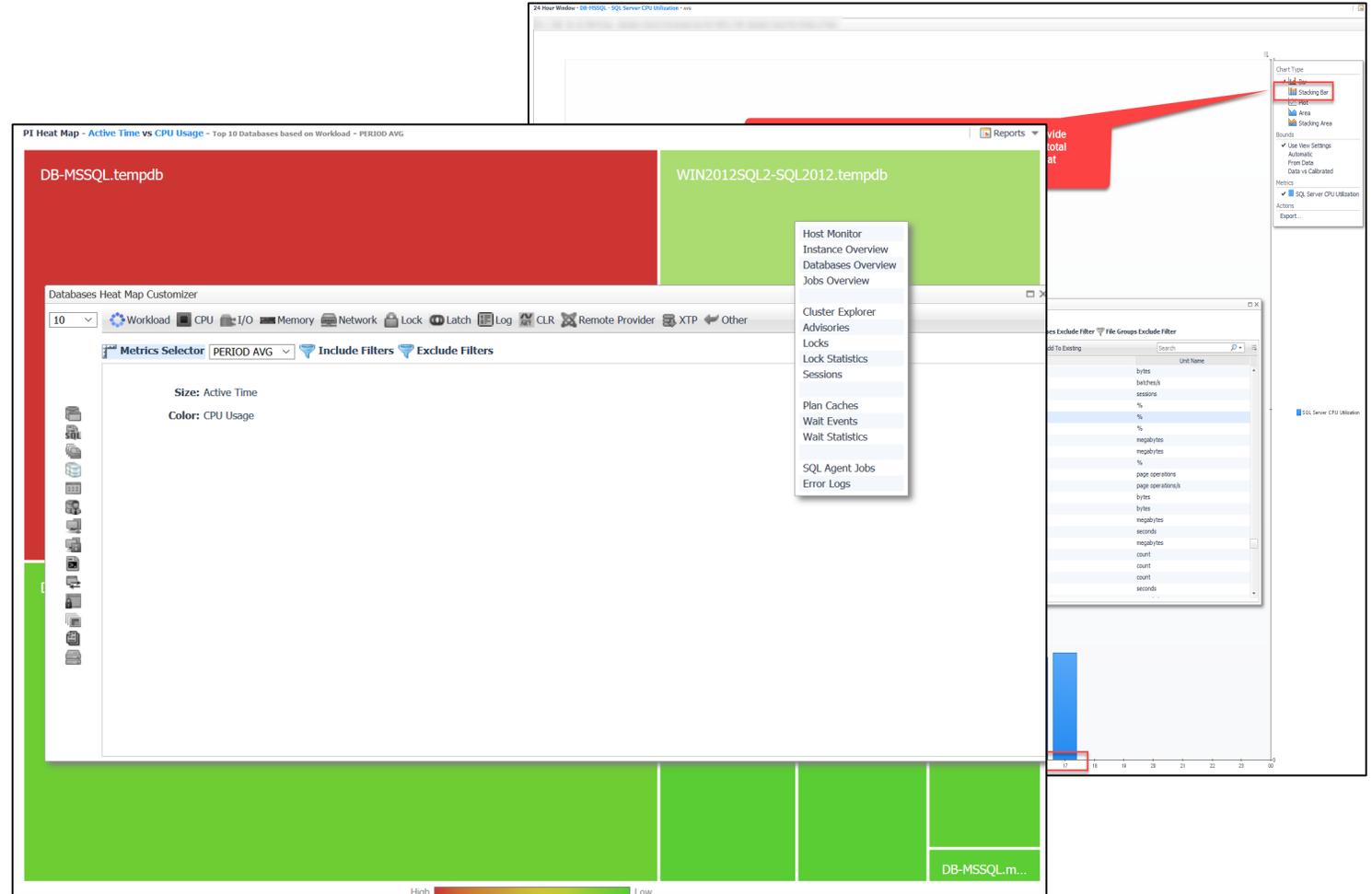
MSSQL/PI Power Pack - **PI Drag & Drop**

- All the views can be dragged:
  - Directly from the Views Tab
  - By dragging one or more instances
  - By dragging a service
  - By dragging a group

- Advanced Customizers to select relevant options:
  - Dimensions
  - Resource
  - Top N
  - Metrics

- Include and Exclude Filters where applicable for filtering based on these Dimensions:
  - Databases
  - Programs
  - Users
  - Client Machines
  - Disks
  - Files

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MSSQL/PI Power Pack - **PI Drag & Drop**
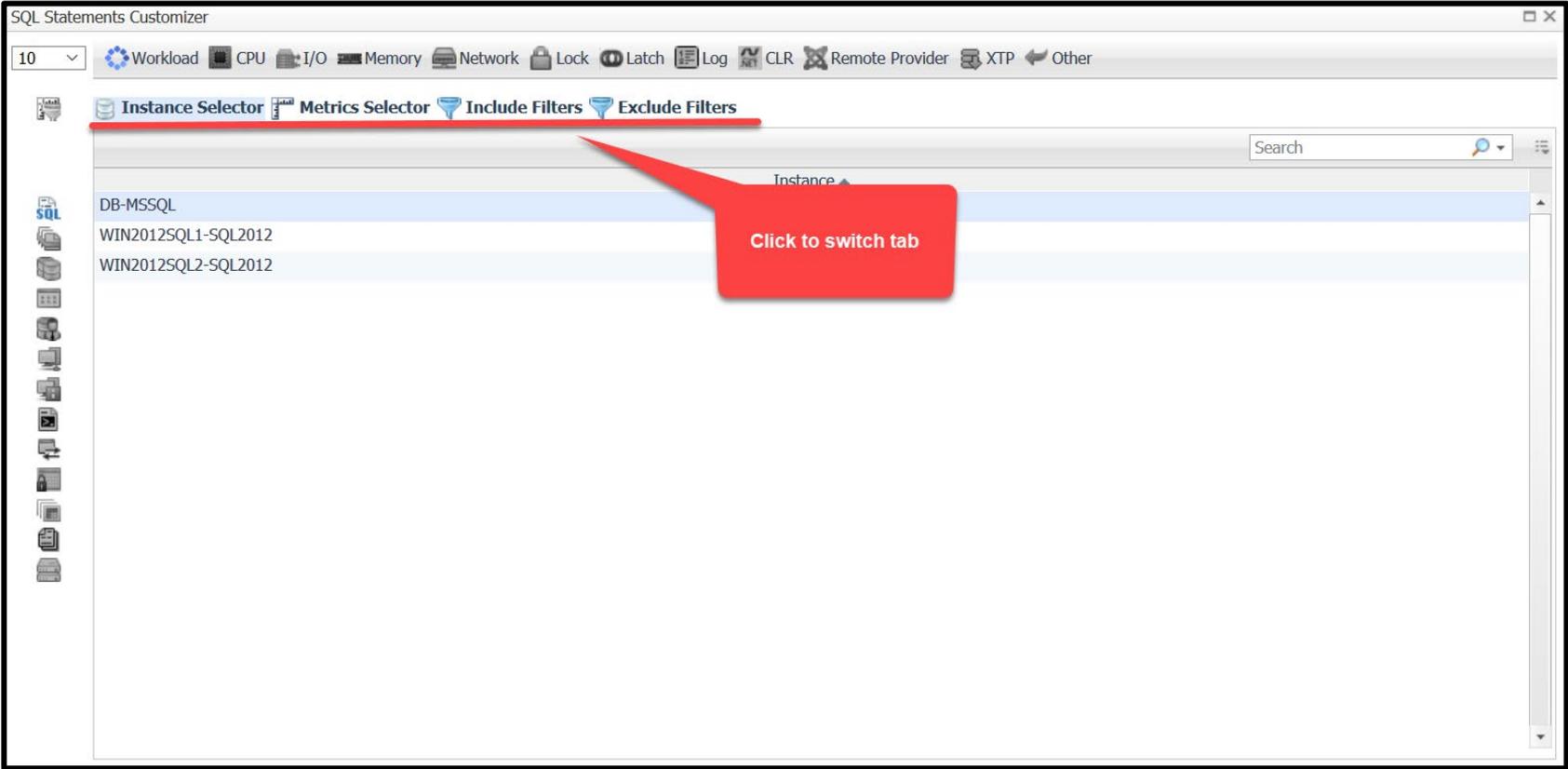
MSSQL/PI Power Pack - **PI Explorer Report**

- Ability to specify all the options available in the Dashboard version

  - Time Range
  - Resource
  - Dimensions
  - Top N
  - Metrics (Filters can be applied)
  - Ability to show the following values for the selected period:
    - Min
    - Max
    - Sum
    - Average
  - Group, Service or/and List of Instances

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MSSQL/PI Power Pack - **PI Instances Report**

- Ability to specify all the options available in the Dashboard version

    - Time Range
    - Resource
    - Metrics to Plot in a clustered bar chart
    - Metrics (Filters can be applied)
    - Ability to show the following values for the selected period:
        - Min
        - Max
        - Sum
        - Average
    - Group, Service or/and List of Instances

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MSSQL/PI Power Pack - **PI Top N Report**

- Top N where the values of the metrics are relative to the instance.

- Ability to specify

    - Time Range
    - Resource
    - Dimensions
    - Top N
    - Include and Exclude Filters allows for filtering Top N results based the Following Dimensions:
        - Databases
        - Programs
        - Users
        - Client Machines
        - Disks
        - Files
    - Metrics to Plot in a clustered bar chart
    - Metrics (Filters can be applied)
    - Ability to show the following values for the selected period:
        - Min
        - Max
        - Sum
        - Average
    - Group, Service or/and List of Instances

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MSSQL/PI Power Pack - **PI Top N SQL Report**

- Top N SQL Statement where the values of the metrics are relative to the instance or a specific dimension and the Full Text of the Statements is included in the report.

- Ability to specify

  - Time Range
  - Resource
  - Top N
  - Include and Exclude Filters allows for filtering Top N results based the Following Dimensions:
    - Databases
    - Programs
    - Users
    - Client Machines
    - Disks
    - Files
  - Metrics to Plot in a clustered bar chart
  - Metrics (Filters can be applied)
  - Ability to show the following values for the selected period:
    - Min
    - Max
    - Sum
    - Average
  - Group, Service or/and List of Instances

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MSSQL/PI Power Pack - **PI Reports - Top N SQL Batches**

- Top N SQL Batches where the values of the metrics are relative to the instance or a specific dimension and the Full Text of the Statements is included in the report.

- Ability to specify

  - Time Range
  - Resource
  - Top N
  - Include and Exclude Filters allows for filtering Top N results based the Following Dimensions:
    - Databases
    - Programs
    - Users
    - Client Machines
    - Disks
    - Files
  - Metrics to Plot in a clustered bar chart
  - Metrics (Filters can be applied)
  - Ability to show the following values for the selected period:
    - Min
    - Max
    - Sum
    - Average
  - Group, Service or/and List of Instances

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MSSQL/PI Power Pack - **SQL Cluster Explorer**

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MSSQL/PI Power Pack - **Cluster Explorer** - Continued

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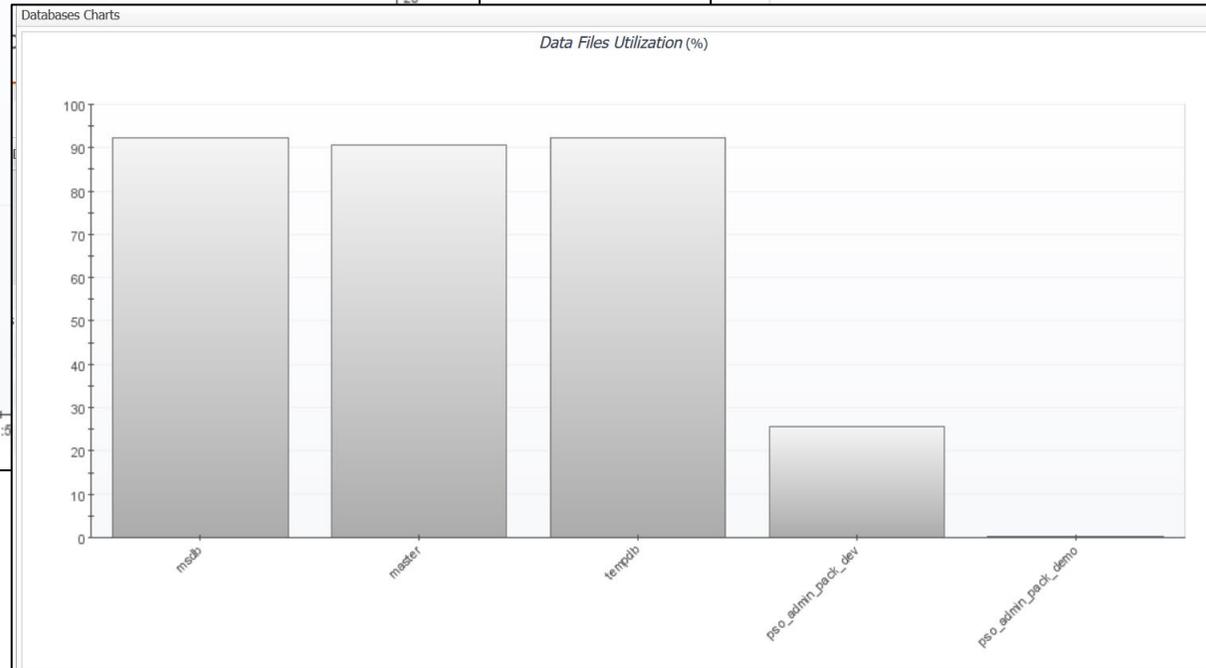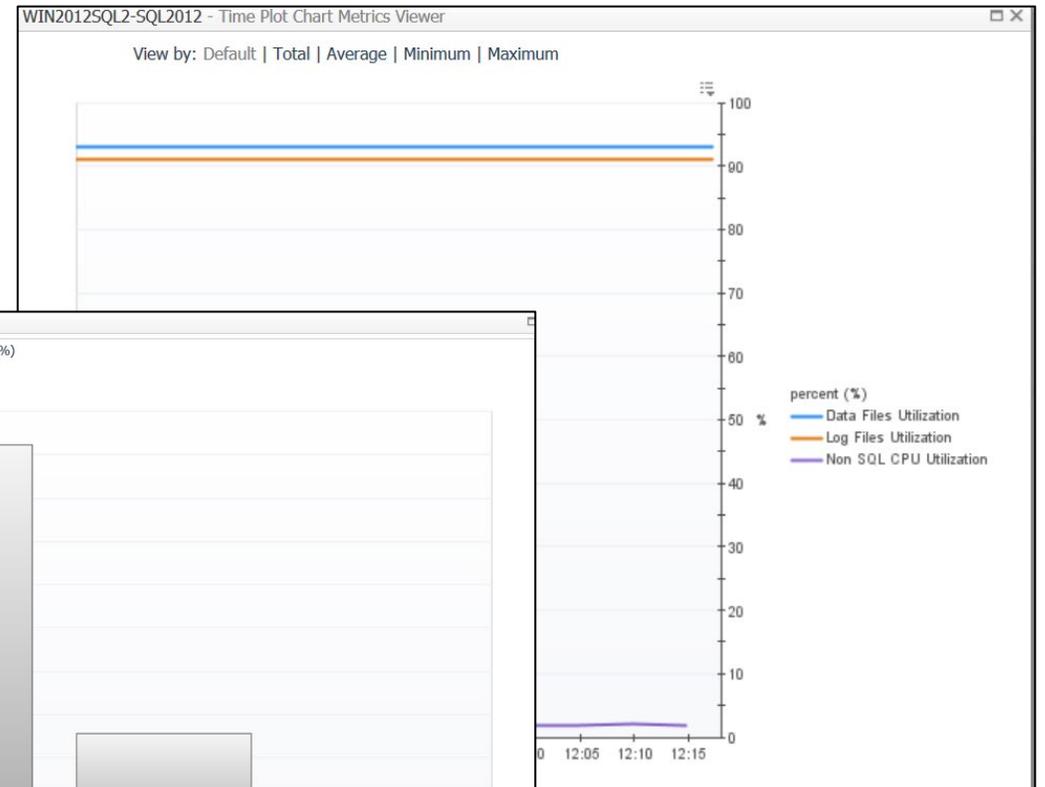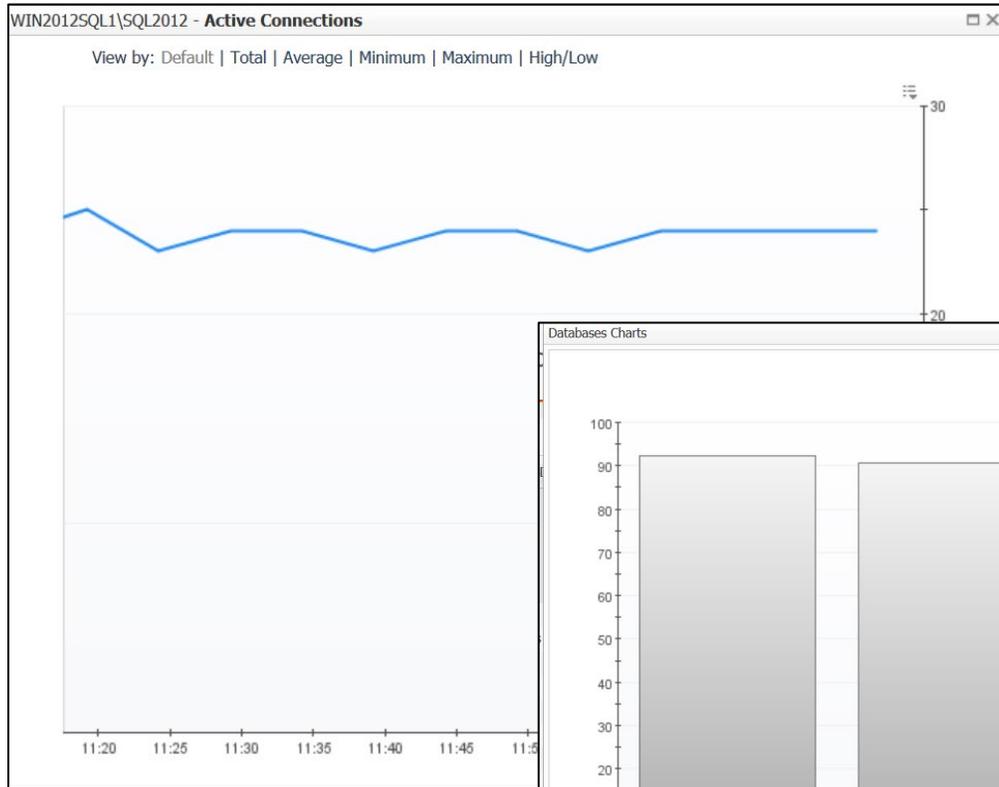
MSSQL/PI Power Pack – **Health Score**

- The Health Score is a concept that allows you to control how to evaluate the health of an instance.

- It provides the following as options to give total control over how it gets calculated:

- Ability to define a health score per instance.

- A combination of customizable:
    - Up to 4 Metrics to be used in the calculation.
    - Each metric has a weight (0 - OFF to 100)
    - Each Metric can have up to 4 thresholds to decide how much impact the weight has:
        - 25% Impact
        - 50% Impact
        - 75% Impact
        - FULL IMPACT

-

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MSSQL/PI Power Pack – **Health Score Settings**

Remote Administration of the solution across servers

MSSQL/PI Power Pack - **Groups Overview**

1. Alarms
2. Health Score
3. Availability
4. CPU Utilization
5. Databases
6. Key Metrics

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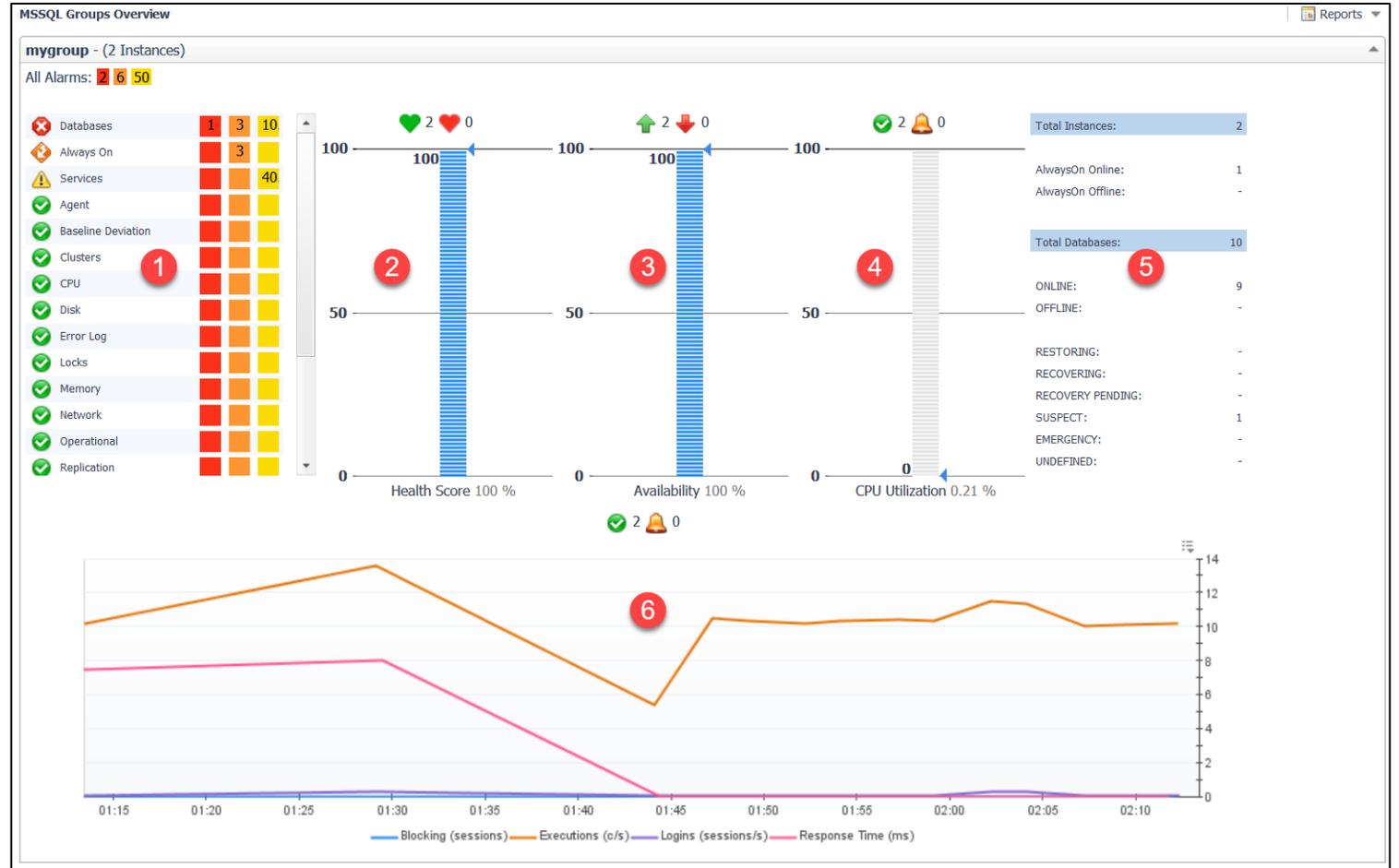
MSSQL/PI Power Pack - **Various Views**

- All the views are built from the ground up to offer a clean and professional Look

- Drill Downs

- Adaptive display

- Many views offer the same feature set as the Cluster Explorer

- Customizers

- Filters

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MSSQL/PI Power Pack - **Availability Overview**

Availability Overview - (2 Instances)

Reports

Search

	Instance	Instance Availability			Health Score		Connection Availability	
		Current	Period	Up Time	Current	Period	Current	Period
❌	WIN2012SQL1-SQL2012	⬆		00h 53m 55s	100.00 %		⬆	
⚠	DB-MSSQL			00h 55m 46s	100.00 %		⬆	

Host Monitor
Instance Overview
Databases Overview
Jobs Overview

SQL PI Explorer
Advisories
Locks
Lock Statistics
Sessions

Plan Caches
Wait Events
Wait Statistics
SQL Agent Jobs
Error Logs

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MSSQL/PI Power Pack – **Backup Jobs / Locations**

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MSSQL/PI Power Pack – **Databases / Backup / Mirroring**

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MSSQL/PI Power Pack – **Deadlock Summary**

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MSSQL/PI Power Pack – **File Groups / Files / Full Text Catalog**

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MSSQL/PI Power Pack – **Index Fragmentation Summary**

MSSQL/PI Power Pack – **Instances / Inventory**

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MSSQL/PI Power Pack – **Locks / Statistics**

MSSQL/PI Power Pack – **Logical Disks / Log Shipping**

Logical Disks Usage - (2 Instances)   Reports ▼

Search 🔍 ▼

	Instance	Drive	Used %				Free Space				Used Space			
			Current	Period			Current	Period			Current	Period		
				Avg	Max			Avg	Max			Avg	Max	
✅	WIN2012SQL1-SQL2012	C:	65.18	65.18	65.18	——→	13.89 GB	13.89 GB	13.89 GB	——→	26.01 GB	26 GB	26.01 GB	—
✅	DB-MSSQL		7.95	47.95	47.95	——→	52.05 GB	52.05 GB	52.05 GB	——→	47.95 GB	47.95 GB	47.95 GB	—

Host Monitor
Instance Overview
Databases Overview
Jobs Overview

SQL PI Explorer
Advisories
Locks
Lock Statistics
Sessions

Plan Caches
Wait Events
Wait Statistics
SQL Agent Jobs
Error Logs

Log Shipping - (3 Instances)   Reports ▼

Search 🔍 ▼

Server	DBName	Outage	Alert Job			Activities		Last Backup		Last Copy		Last Restore		Servers Time		
			Threshold	Threshold Alert	Alert Enabled	Activity Type	Last Activity Time	File	Time	File	Time	File	Time	Source	Taget	Monitor
							There Is No Data To Display									

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MSSQL/PI Power Pack – **Memory Resource Pool**

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MSSQL/PI Power Pack – **Plan Caches / Services Status**

MSSQL/PI Power Pack – **Sessions**

MSSQL/PI Power Pack – **SQL Agent Jobs**

Confidential

MSSQL/PI Power Pack – **Wait Events / Wait Statistics**

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MSSQL/PI Power Pack – **Perfmon / UDC**

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MSSQL/Power Pack - **Analytics**

- **24 Hour Window View**
  - Get Insight into how a resource is utilized within a 24 hour day based on historical data.

- **Analyze Data Using**
  - Time Plot Charts
  - Time Bar Charts
  - Clustered Bar Charts

- **Advanced Analytics Using:**
  - Bubble Charts
  - Scatter Charts
  - Heat Maps
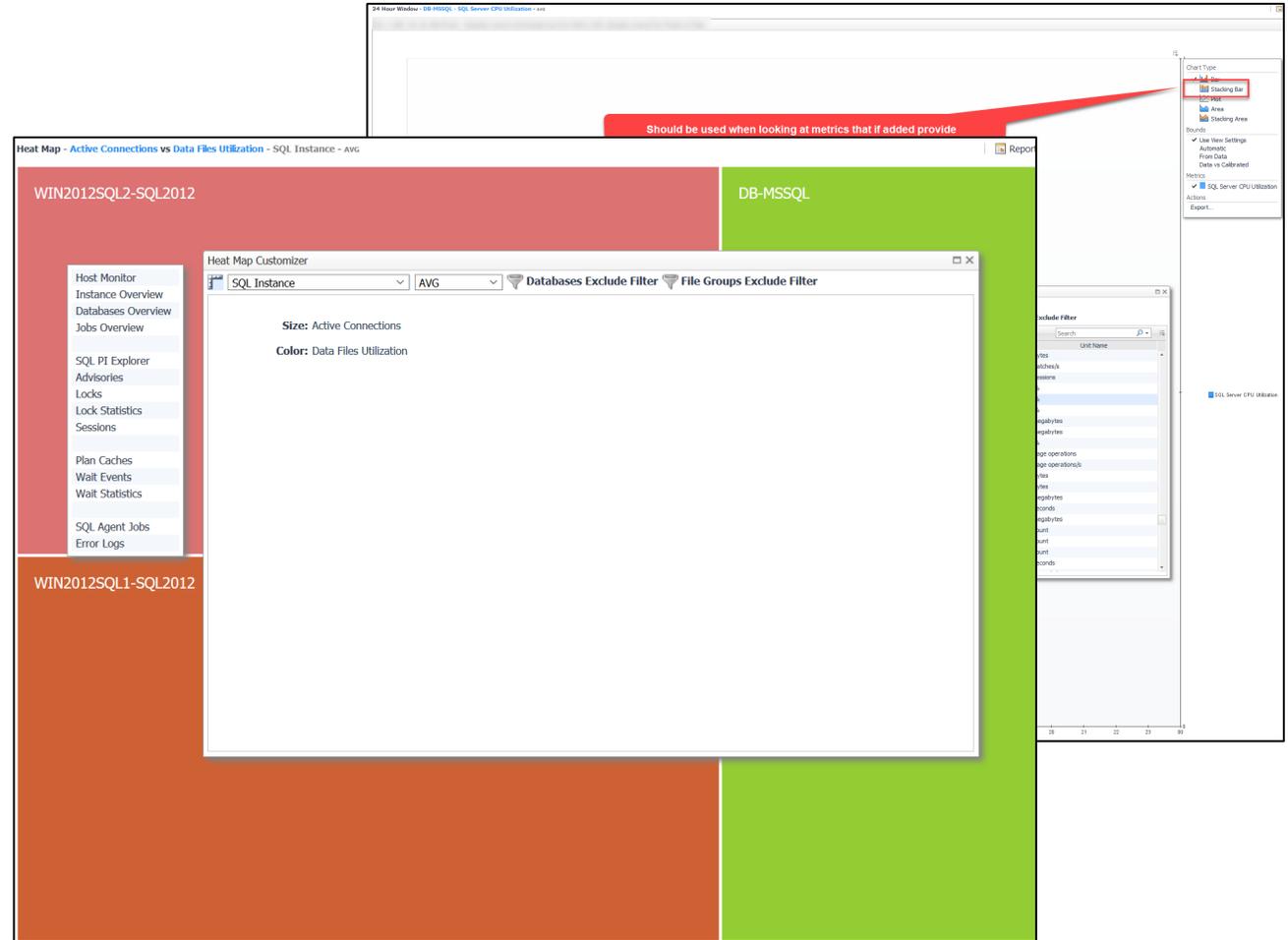
MSSQL/PI Power Pack - **Drag & Drop**

- All the views can be dragged:
    - Directly from the Views Tab
    - By dragging one or more instances
    - By dragging a service
    - By dragging a group

- All the views have advanced customizers to allow for the selection of the instances, groups, services, metrics, to apply filters when applicable.

    - Certain filters have defaults defined in the registry variables but can be overridden using the customizers.

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MSSQL/PI Power Pack - **Drag & Drop**

MSSQL/PI Power Pack - **Report**

- Very flexible report allows to specify which views to print and in which order for maximum flexibility.

- Ability to specify

  - Time Range
  - Views to print (All views available for output – No Analytics)
  - Order in which to print the views
  - Ability to specify which metrics to display per view
  - Exclude Filters for:
    - Databases
    - File Groups
    - Jobs
  - Group, Service or/and List of Instances

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MSSQL/PI Power Pack – **Capacity Planning**

- 3 distinct Capacity Planning Sections:
  - Days to Full
  - Trends
  - Value in N Days

MSSQL/PI Power Pack – **Capacity Planning** – Days To Full

- Days to full is used to indicate the number of days it would take before the resource is exhausted.

- It also offers the ability to view number of days to reach 70%, 80% and 90% capacity. To display the desired information, click on the respective icon the toolbar.

- Views available for:
  - Databases
  - File Groups
  - Files
  - Instances
  - Logical Disks

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MSSQL/PI Power Pack – **Capacity Planning** – Days To Full

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MSSQL/PI Power Pack – **Capacity Planning** – Trends

- Trending is designed to provide a graph that shows past data, future data and the maximum capacity (red dotted line) used.

- It also highlights the section that is closest to the maximum:

  >= 95%   Red
  >= 85%   Orange
  >= 75%   Yellow
  < 75%   Blue

- Views available for:
  - Databases
  - File Groups
  - Files
  - Instances
  - Logical Disks

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MSSQL/PI Power Pack – **Capacity Planning** – Trends

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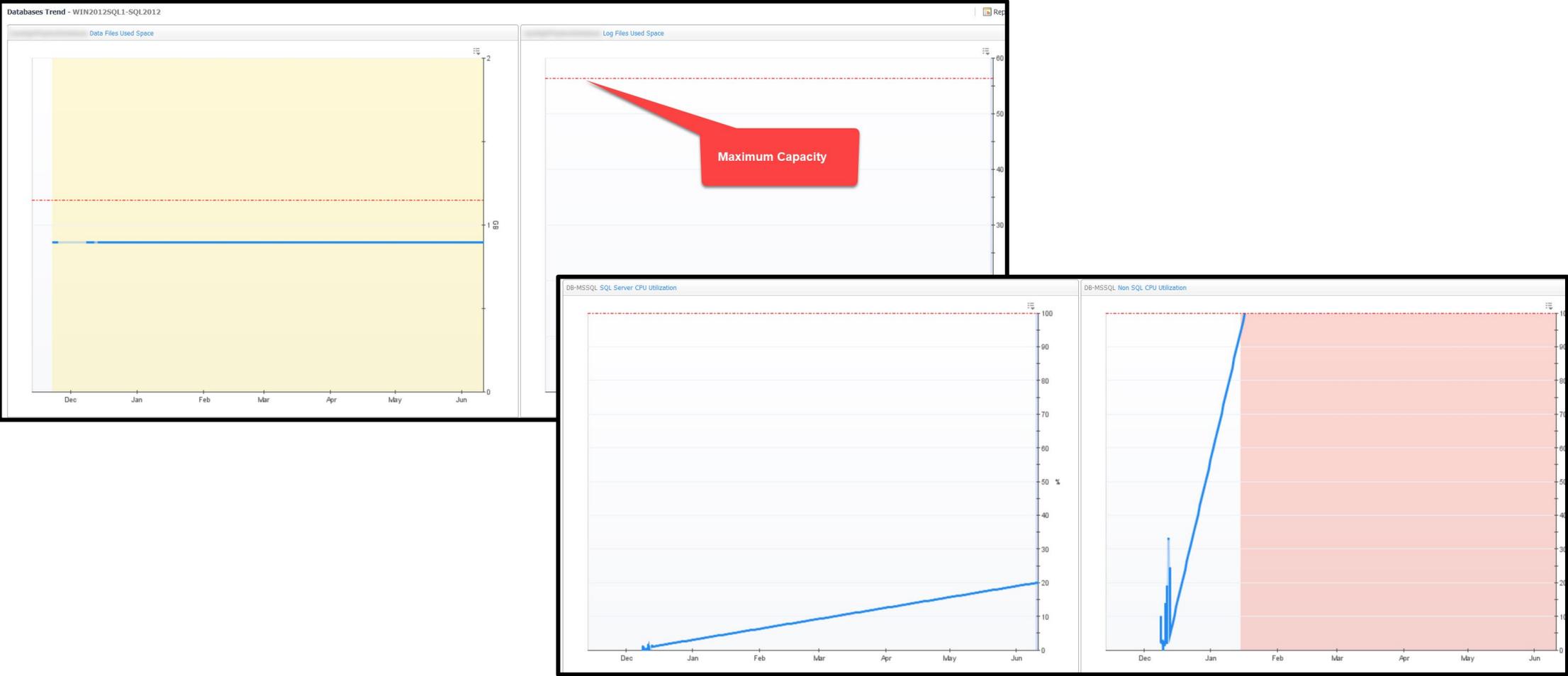
MSSQL/PI Power Pack – **Capacity Planning** – Value in N Days

- Value In N Days is used to provide an estimation of how much a resource is going to be utilized in 7, 30, 60, 90 and 180 Days.

- Views available for:
  - Databases
  - File Groups
  - Files
  - Instances
  - Logical Disks

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MSSQL/PI Power Pack – **Capacity Planning** – Value in N Days

Databases Value In N Days - WIN2012SQL2-SQL2012 | 📊 Reports

●7 Days ○30 Days ○60 Days ●180 Days   Search 🔍▼

	Name	Status	DB ID	Data Files Used Space			Log Files Used Space		
				7	90	180	7	90	180
✅ 🗄	Test_01_Restore_Standby	ONLINE	6	.	.	.	.	.	.
✅ 🗄	Test_01_Restore	ONLINE	5	.	.	.	.	.	.
◆ 🗄	DB	ONLINE	10	.	.	.	1.47	FULL	FULL
◆ 🗄	UtriqueMund	ONLINE	7	9.28	FULL	FULL	51.42	FULL	FULL
◆ 🗄	AdventureWorks2012	ONLINE	8	.	Value: 9.281431889784802 megabytes	.	.	0.38	0.68	FULL
✅ 🗄	AdventureWorks_Rev_1_25_12	ONLINE	9	Max: 10.0625 megabytes	.	.	.	.	.

Value: 9.281431889784802 megabytes
Max: 10.0625 megabytes

Instances Value In N Days - (3 Instances)   📊 Reports ▼

●7 Days ○30 Days ○60 Days ●180 Days   Search 🔍▼ ☰

		Name	Host Memory Utilization			SQL Server Memory Utilization			SQL Server CPU Utilization			Non SQL CPU Utilization			Total CPU Utilization		
			7	90	180	7	90	180	7	90	180	7	90	180	7	90	180
⚠	🚩 ⬆	DB-MSSQL	45.94	FULL	FULL	.	.	.	1.65	10.41	19.92	28.87	FULL	FULL	30.55	FULL	FULL
❌	🚩 ⬆	WIN2012SQL1-SQL2012	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
◆	🚩 ⬆	WIN2012SQL2-SQL2012	.	.	.	.	.	.	0.51	3.06	5.84	.	.	.	.	.	.

Value: 45.938429760713106 %
Max: 100

Logical Disks Value In N Days - (3 Instances)   📊 Reports ▼

●7 Days ○30 Days ○60 Days ●180 Days   Search 🔍▼ ☰

	Instance	Name	Disk Utilization		
			7	90	180
✅	DB-MSSQL	💾 C:	49.57	61.77	75.01
✅	WIN2012SQL1-SQL2012	💾 C:	65.20	65.21	65.21
✅	WIN2012SQL2-SQL2012	💾 C:	.	.	.

Value: 65.20282478461665 %
Max: 100

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MSSQL/PI Power Pack - **Log Alerting**

Repository

FMS Not Registered

.car
.car
.car
.car

FMS 1

FMS 2

FMS 3

FMS 4

REST API

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MSSQL/PI Power Pack - **Log Alerting Flow**

User

Create Definitions

Repeats

Reached Count?

Yes

YES

Rule Triggered

Throttling Defined?

No

Send Alert

EVENT LOG ENGINE

Agents Collect Events

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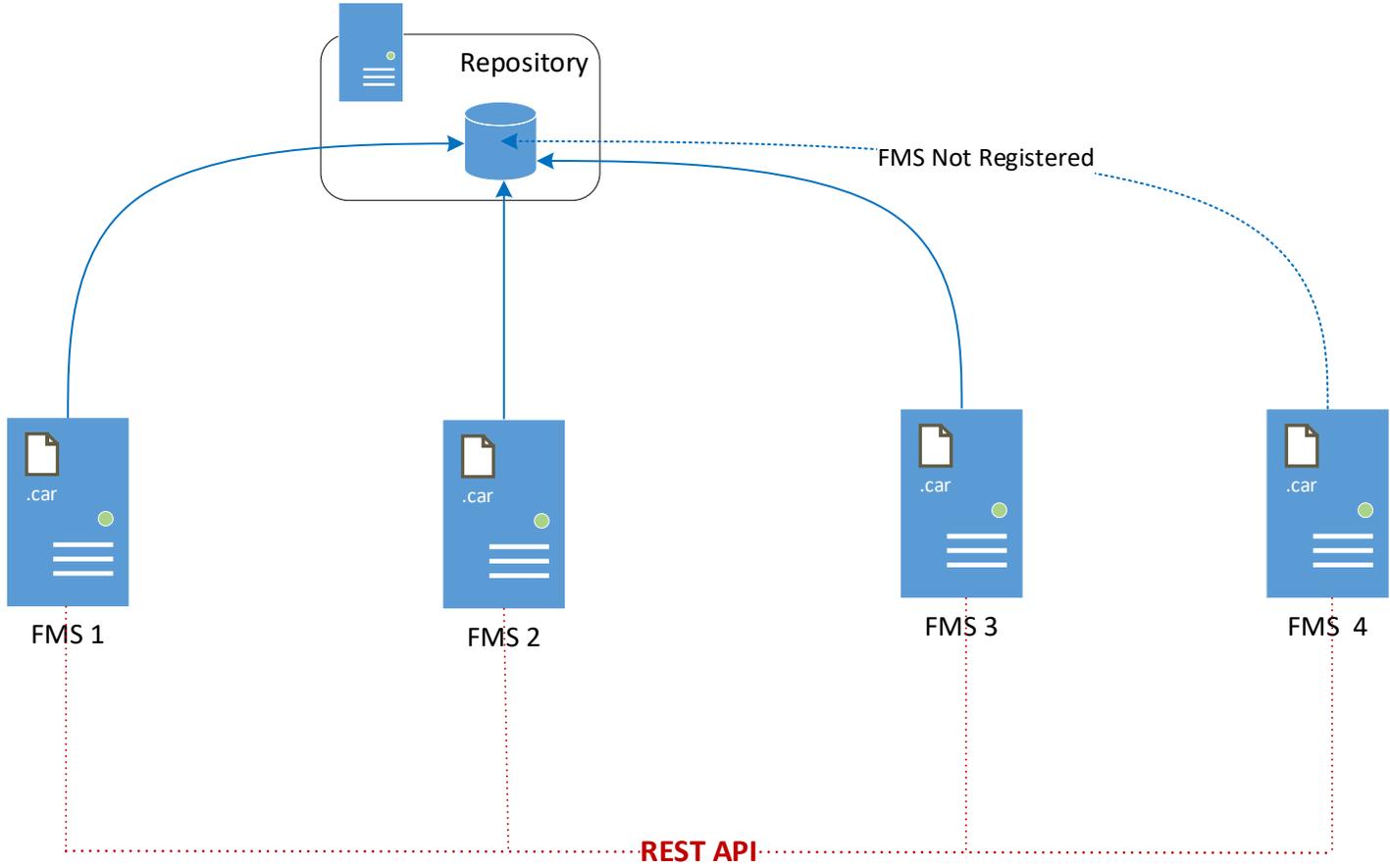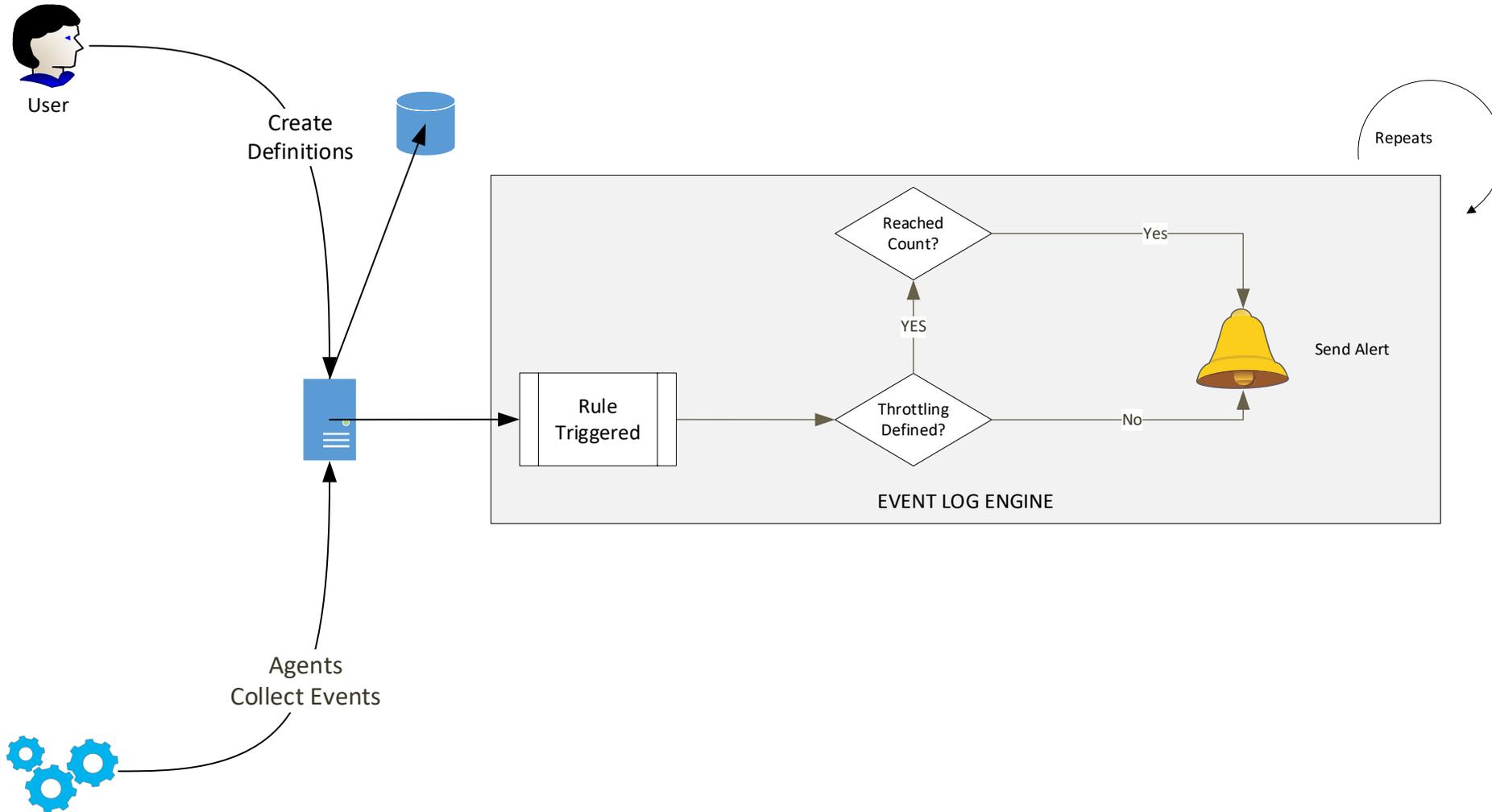
File Event Log – **Throttling Definition**

File Event Log – **Auto Clear Definition**

SQL Server Error Log Auto Clear Definitions | 📊 Reports

🗂Add 💾Save ↩Undo | 🔻Filter | ⊖ Delete 📝 Edit Time   Search 🔍▾

☐	Service Name	Host Name	Instance	Severity ID	Message	Time (Minutes)	▲

There Is No Data To Display

Add Auto Clear Definition   ✕

Service Name: [▾]

Host Name: [.*   ]

Instance: [.*   ]

Severity ID: [.*   ]

Message: [.*   ]

Time (Minutes): [15   ]

                                        [Add] [Cancel]

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MSSQL/PI Power Pack - **Changing Settings**

Remote Administration of the solution across servers

MSSQL/PI Power Pack – **Rule Management**

Remote Administration of the solution across servers

MSSQL/PI Power Pack - **System Requirements**

- **Minimum required FMS version**

    5.9.3

- **Supported Databases**   **Minimum Version**

    Microsoft SQL   2008 (version 10.0.1600 or later)
    Oracle   9i R2
    MySQL   5.1.45
    PostgreSQL   9.4.0

- **Supported Agent**   **Minimum Version**
    SQL Server   5.7.5.30
    SPI   1.4.0

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