



MSSQL/PI Power Pack



- LightSpeed PM - A Certified Quest Partner

Quest™

Updated 08-25-2020

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

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

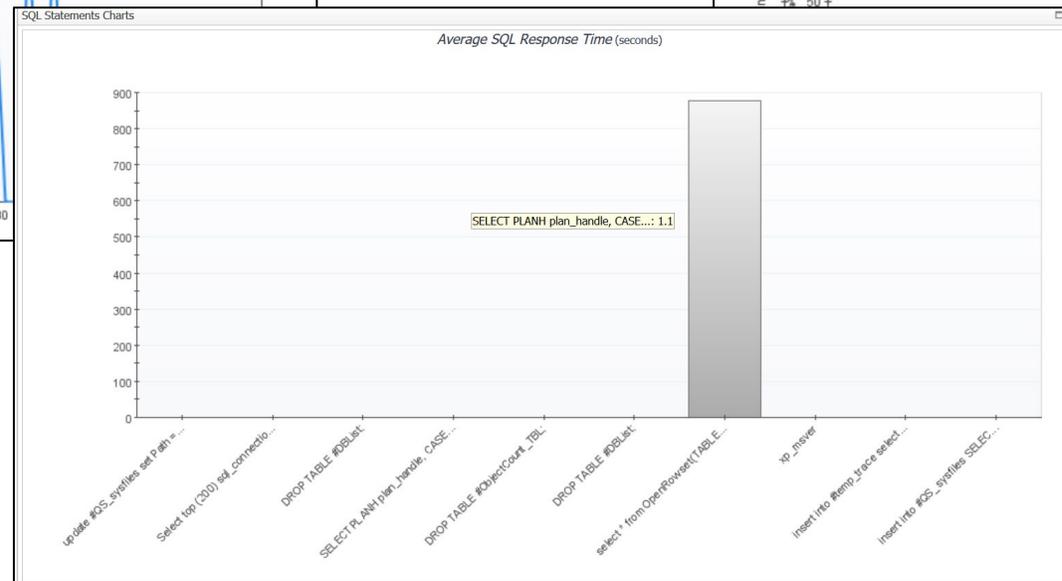
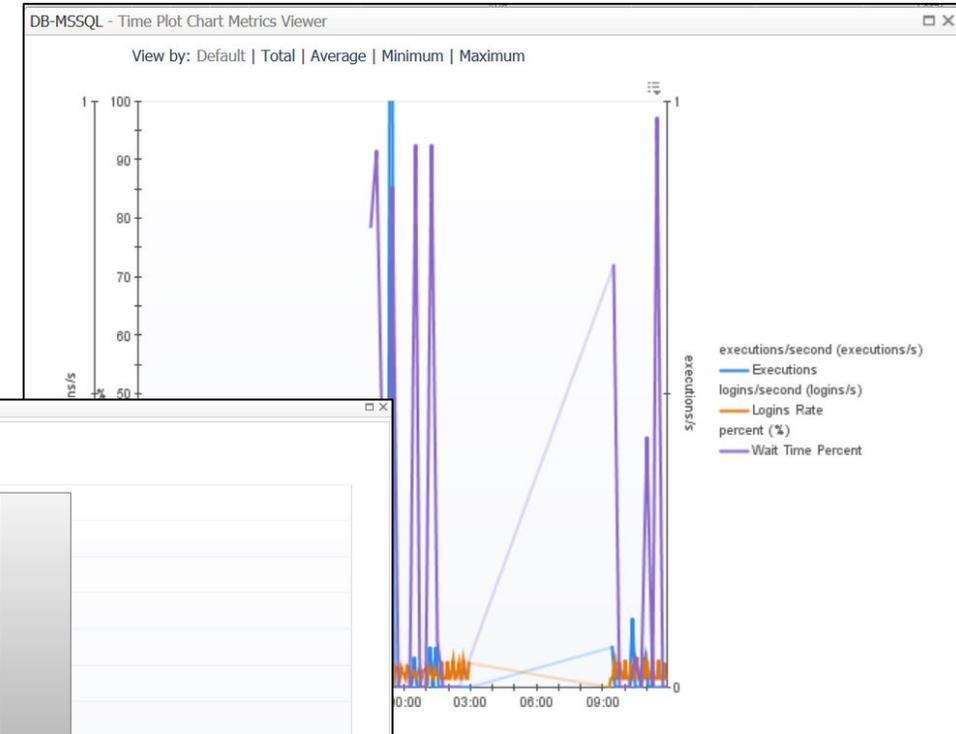
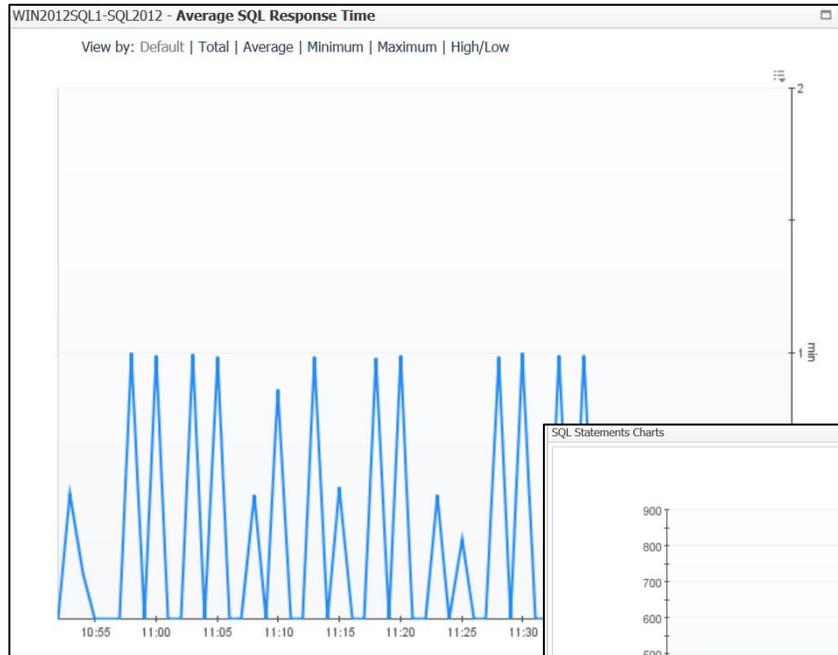
MSSQL/PI Power Pack - PI Explorer

The screenshot displays the MSSQL PI Explorer interface. At the top, a navigation bar includes 'Workload', 'CPU', 'I/O', 'Memory', 'Network', 'Lock', 'Latch', 'Log', 'CLR', 'Remote Provider', 'XTP', and 'Other'. A 'Top N' callout points to the '10' dropdown menu. A 'Resource' callout points to the 'Log' icon in the navigation bar. A 'Metrics Handling' callout points to the 'Metrics' button and the table headers.

The table below shows performance metrics for various SQL Server components. The columns include Name, Active Time, Average SQL Response Time, Batches Rate, CPU Usage, Elapsed Time, Executions, Logins Rate, Plan Recompilations, Row count, and Wait Time Percent. The 'Name' column includes categories like 'Client Machines', 'Command Types', 'Context Infos', 'Databases', 'Disks', 'Files', 'Locked Objects', 'Objects I/O', 'Programs', 'Sessions', 'SQL Statements', 'TSQL Batches', and 'Users'. Specific SQL statements are also listed, such as 'DROP TABLE #DBList;' and 'select * from OpenRows...'. A 'Dimensions' sidebar is visible on the left.

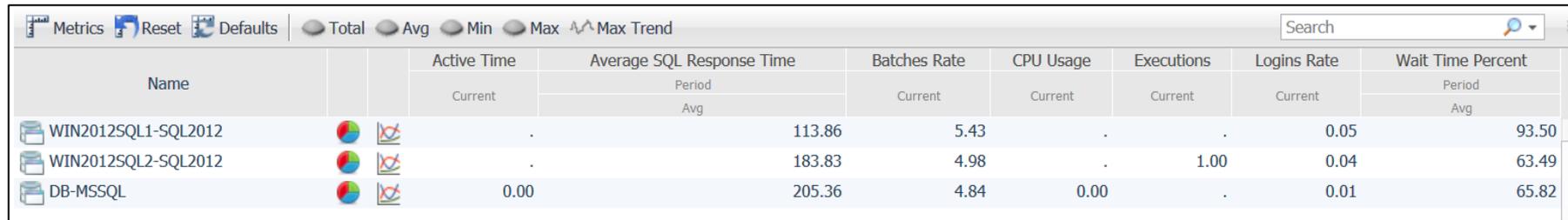
Name	Active Time	Average SQL Response Time		Batches Rate	CPU Usage	Elapsed Time		Executions	Logins Rate	Plan Recompilations		Row count		Wait Time Percent	
		Latest	Period Avg			Period Total	Latest			Period Total	Period Avg	Period Avg	Period Avg		
WIN2012SQL1-SQL2012	.	125.50	5.44	.	.	.	1.00	0.05	.	.	.	.	100.00	.	.
WIN2012SQL2-SQL2012	.	442.81	5.08	.	.	.	1.00	0.04	.	.	.	.	33.28	.	.
DB-MSSQL	.	553.51	4.86	.	.	.	.	0.01	.	.	.	.	53.46	.	.
Client Machines
Command Types
Context Infos
Databases
Disks
Files
Locked Objects
Objects I/O
Programs
Sessions
SQL Statements
DROP TABLE #DBList;	.	0.00	.	.	.	0.00	.	.	.	.	.	.	99.80	.	.
select * from OpenRows...	.	899.09	.	.	.	7,192.71	.	.	.	.	.	.	.	.	.
Select top (200) sql_connectic	.	1.43	.	.	.	2.87	.	.	.	.	.	0.02	21.96	.	.
update #QS_sysfiles set Path	.	0.00	.	.	.	0.01	.	.	.	.	.	0.40	99.21	.	.
TSQL Batches
(@P1 nvarchar(4000))SET NO	.	0.00	.	.	.	0.00	.	.	.	.	.	.	99.80	.	.
(@P1 nvarchar(4000))SET NO	.	0.01	.	.	.	0.01	.	.	.	.	.	0.40	99.21	.	.
SET NOCOUNT ON; SET TRAN	.	1.43	.	.	.	2.87	.	.	.	.	.	0.02	21.96	.	.
sp_trace_getdata	.	899.09	.	.	.	7,192.71	.	.	.	.	.	.	.	.	.
Users

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

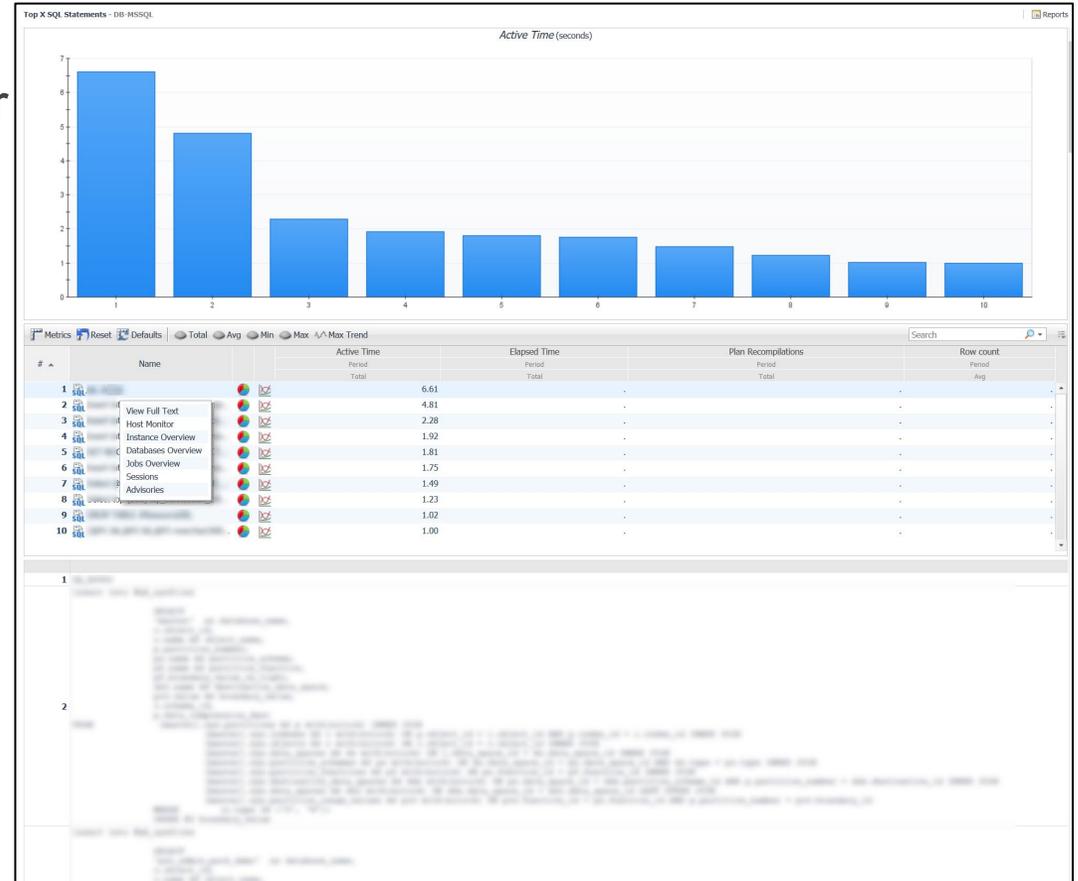


The screenshot displays a software interface for monitoring PI instances. At the top, there are navigation buttons: 'Metrics', 'Reset', and 'Defaults'. Below these are radio buttons for 'Total', 'Avg', 'Min', and 'Max', along with a 'Max Trend' icon. A search bar is located on the right side of the header. The main content is a table with the following columns: 'Name', 'Active Time', 'Average SQL Response Time', 'Batches Rate', 'CPU Usage', 'Executions', 'Logins Rate', and 'Wait Time Percent'. The 'Active Time' and 'Average SQL Response Time' columns have sub-columns for 'Current' and 'Avg'. The 'Batches Rate' column has a 'Current' sub-column. The 'CPU Usage' column has a 'Current' sub-column. The 'Executions' column has a 'Current' sub-column. The 'Logins Rate' column has a 'Current' sub-column. The 'Wait Time Percent' column has sub-columns for 'Period' and 'Avg'. The table lists three instances: 'WIN2012SQL1-SQL2012', 'WIN2012SQL2-SQL2012', and 'DB-MSSQL'. Each instance has a status indicator (a traffic light icon) and a refresh icon. The data values are as follows:

Name	Active Time	Average SQL Response Time		Batches Rate	CPU Usage	Executions	Logins Rate	Wait Time Percent	
		Current	Avg					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		

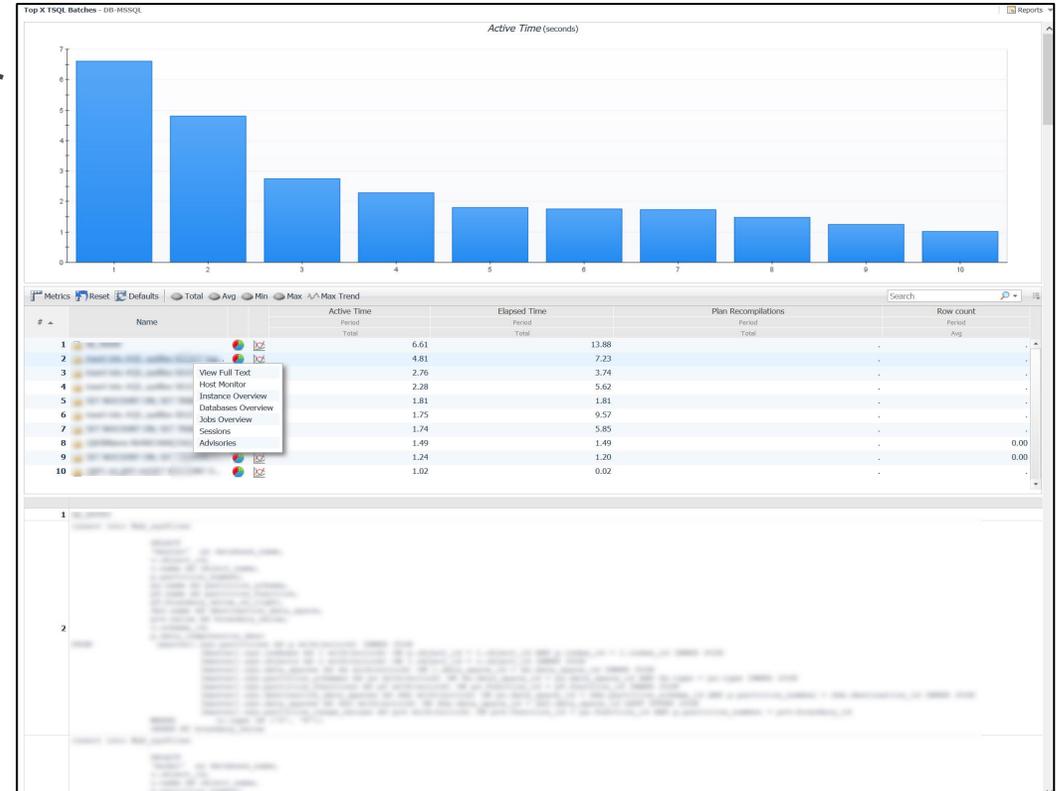
MSSQL/PI Power Pack - PI Top X SQL

- 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.

PI Advisories - (2 Instances)

Instance	Start Time	Advisory	Action Type	Description
DB-MSSQL		CPU Usage Deviation	Review Performance Deviations	Overall CPU usage exceeds the baseline
DB-MSSQL		Excessive I/O Wait	Reduce Read/Write operations	Excessive I/O Wait
WIN201250		CPU Usage Deviation	Review Performance Deviations	Overall CPU usage exceeds the baseline
WIN201250		Excessive Memory Pressure	Address Resource Bottlenecks	Excessive Memory Pressure

Navigation menu:

- SQL PI Explorer
- Advisories
- Locks
- Lock Statistics
- Sessions
- Plan Caches
- Wait Events
- Wait Statistics
- SQL Agent Jobs
- Error Logs

PI Advisories - (2 Instances) > CPU Usage Deviation

CPU Usage Deviation

Name
Overall CPU usage exceeds the baseline

Description
The total instance CPU usage exceeded the baseline range by 20.78%. Although this deviation does not necessarily indicate a performance problem, the performance history should be reviewed. Deviations outside the baseline range suggest abnormal or unexpected activity and should be investigated to determine whether they suggest a performance problem.

Figure 1 illustrates the total CPU Usage for the monitored SQL Server instance as compared to the typical range (baseline) for the timeframe. Essentially, this image provides an indication of the database system's CPU usage during the specified timeframe, relative to a calculated baseline.

Additional information
Figure 2 illustrates how CPU usage and wait for CPU contributed to the overall workload.

Resource Breakdown

CPU Usage	32.20%
CPU Wait	4.72%
Non-CPU Ac...	63.08%

MSSQL/PI Power Pack - PI Change Tracking

- Displays Changes on selected instances.

PI Change Tracking Summary - (3 Instances)

Search

Instance	Total Changes	Change Counts						
		Accounts	Database Configuration	Database Objects	Execution Plan	Master Configuration	System Configuration	User Defined
WIN2012SQL1-SQL2012	33	0	0	33	0	0	0	0
WIN2012SQL2-SQL2012		0	0	0	0	0	2	0
DB-MSSQL		0	0	0	0	0	1	0

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

PI Change Tracking - (3 Instances)

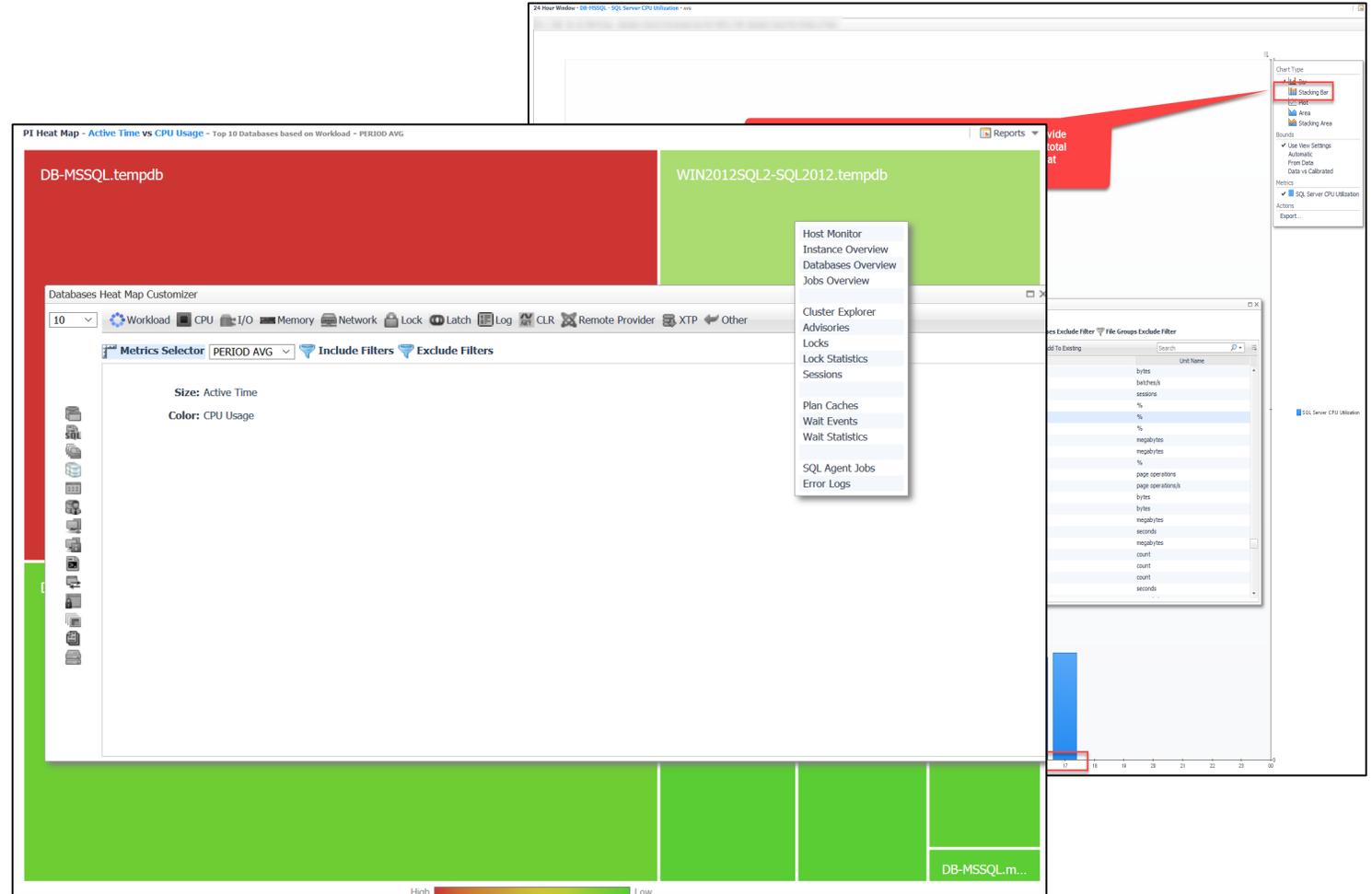
Dec 9, 2018 - Dec 11, 2018 2 days

Search

Instance	Date	Category	User	Change		Description
				Old Value	New Value	
DB-MSSQL		Devices				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Index				
WIN2012SQL1-SQL2012		Index				
WIN2012SQL1-SQL2012		Table				
WIN2012SQL1-SQL2012		Index				
WIN2012SQL1-SQL2012		Index				

MSSQL/PI Power Pack - PI Analytics

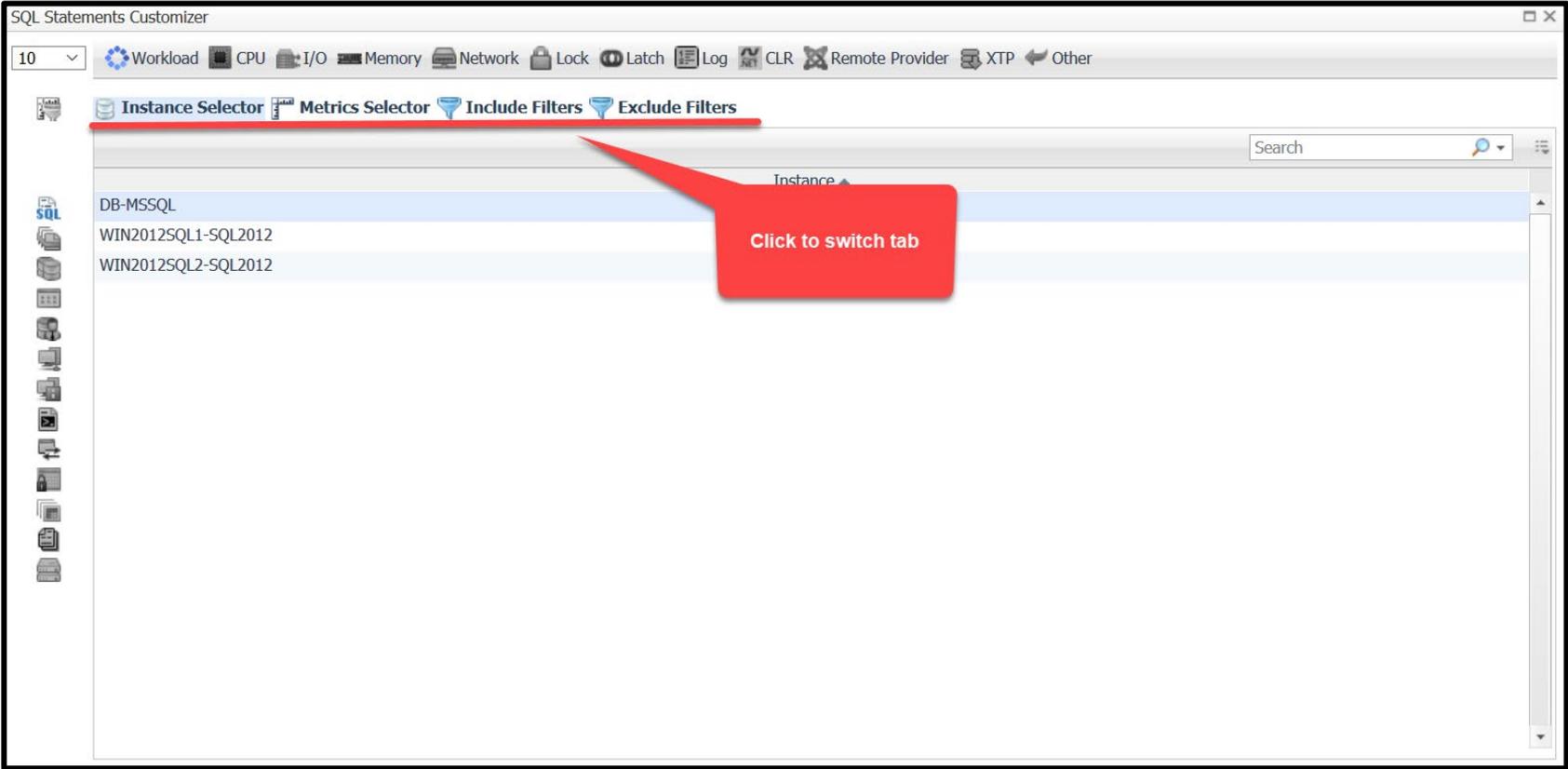
- 24 Hour Window View
 - Get Insight into how a resource is utilized within a 24 hour day based on historical data.
- Analyze Data Using
 - Time Plot Charts
 - Time Bar Charts
 - Clustered Bar Charts
- Advanced Analytics Using:
 - Bubble Charts
 - Scatter Charts
 - Heat Maps



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

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

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

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

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

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

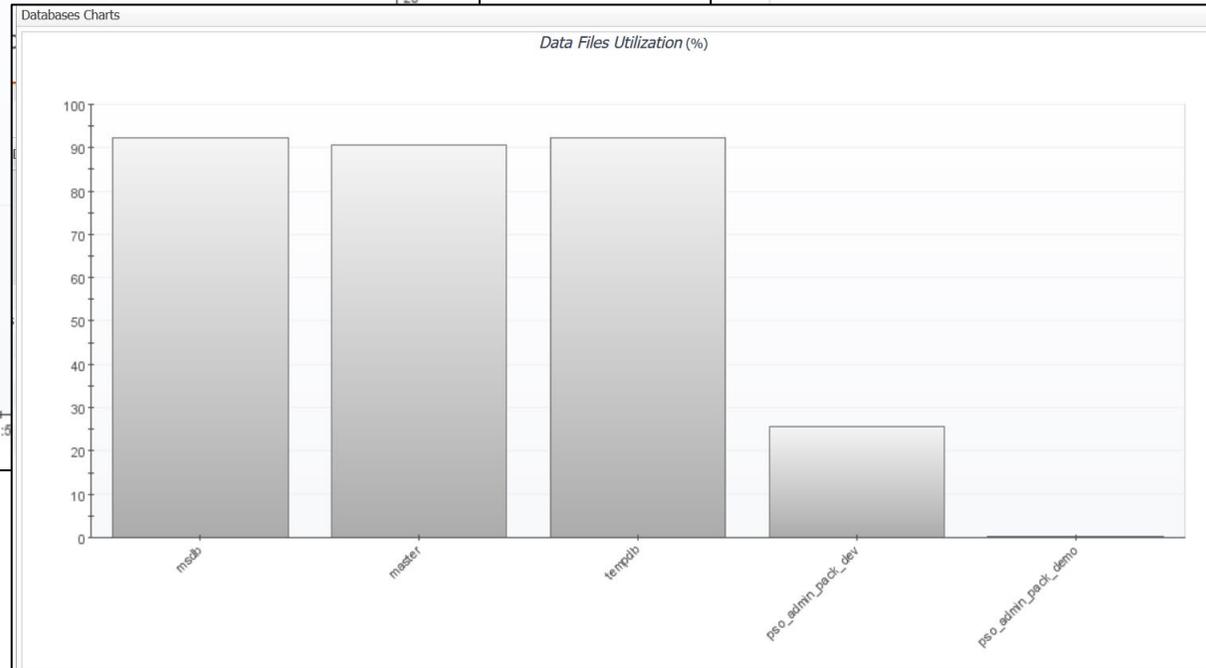
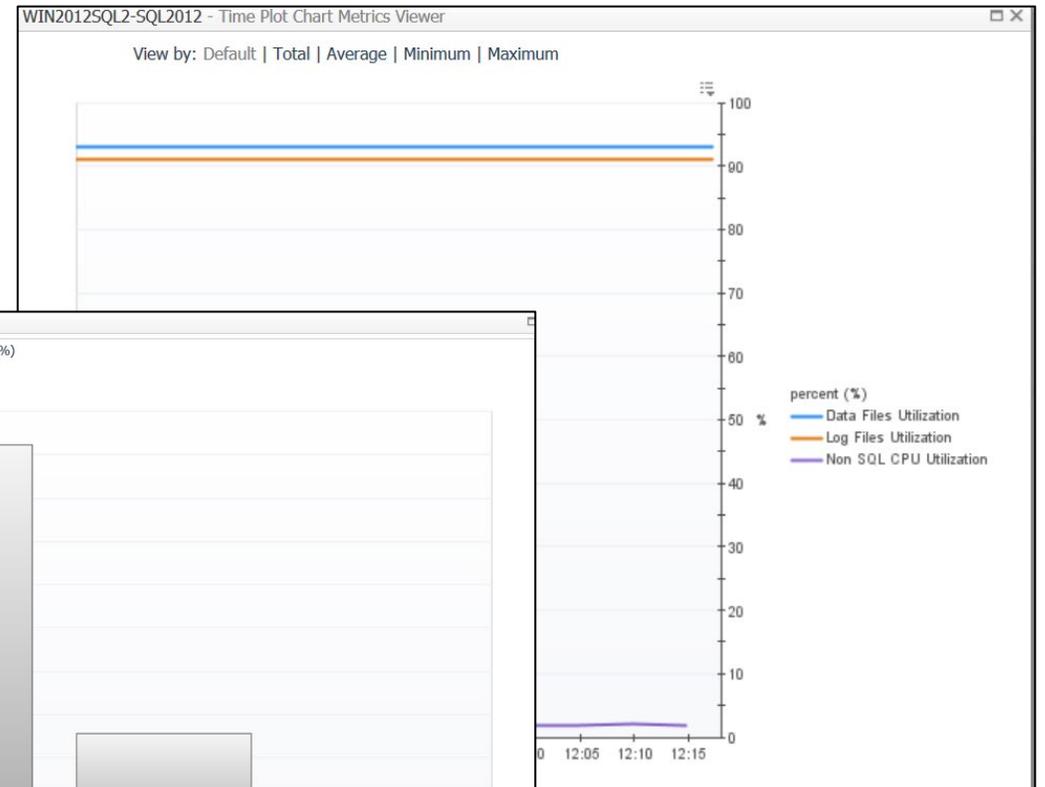
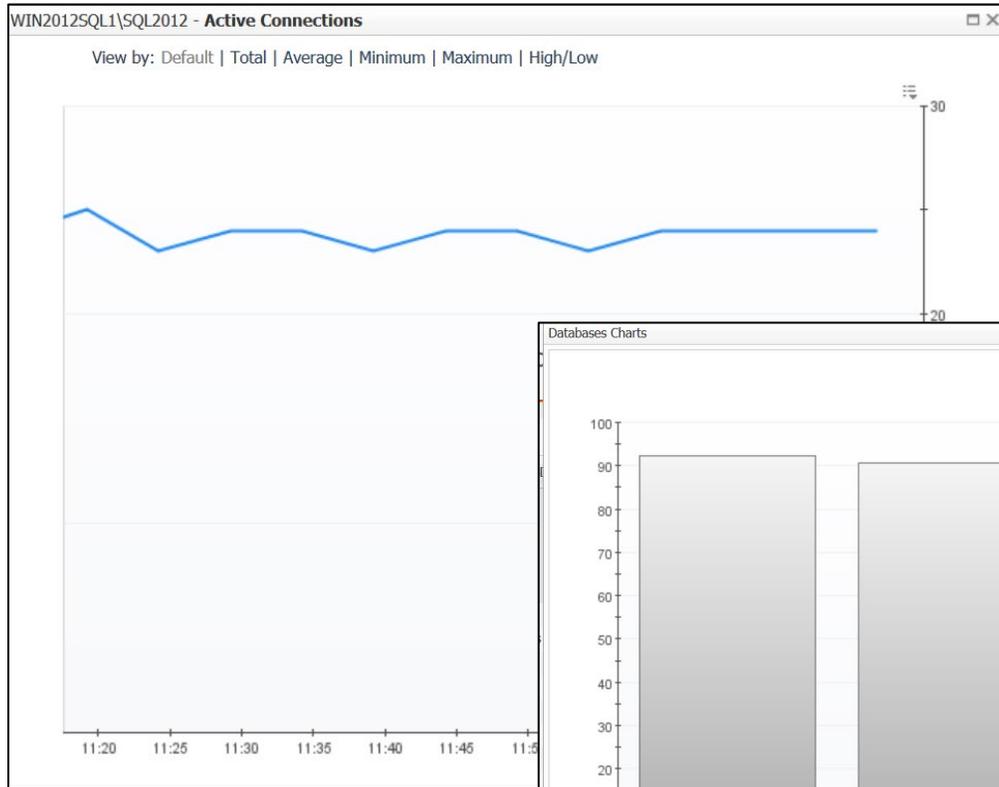
MSSQL/PI Power Pack - SQL Cluster Explorer

MSSQL Cluster Explorer Reports

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Name								Active Connections	Data Files Utilization	Disk Utilization	Free Space (%)	Host Memory Utilization	Index Size	Internal Object Reserved %	Item Count	Log Files Utilization	Logins Rate	Non SQL CPU Utilization	Plan Cache Hit Rate (%)	Plan Cache Objects	Plan Cache Use Rate	SQL Batches Rate	SQL Server CPU Utilization	SQL Server Memory Utilization	Table Count	Table Conn
Always On																										
Availability Groups	-	-																								
WIN2012SQL1\SQL2012	SECONDARY	⚠					24.00	84.00				20.37				3.00	0.05	2.03	96.18	794.00		5.48	0.11	9.53		
WIN2012SQL2\SQL2012	SECONDARY	✅					25.00	93.00				20.22				91.00	0.03	1.93	94.88	670.00		4.82	0.09	9.23		
WIN2012CORE	SECONDARY	✅																								
Instances	-	-																								
WIN2012SQL2-SQL2012	-	⚠					25.00	93.00				20.22				91.00	0.03	1.93	94.88	670.00		4.82	0.09	9.23		
Databases	-	-																								
Logical Disks	-	-																								
Plan Caches	-	-																								
DB-MSSQL	Standalone	⚠					23.00	20.00				20.66				4.00	0.01	7.99	97.93	412.00		4.83	1.49	3.17		
Databases	-	-																								
Logical Disks	-	-																								
C:	-	✅							48.51	51.49																
Plan Caches	-	-																								
Bound Trees	-	✅																	97.41	184.00						
Extended Stored Procedures	-	✅																	99.46	5.00						
Object Plans	-	✅																	92.78	7.00	1.00					
SQL Plans	-	✅																	97.65	215.00	2.08					
Temporary Tables & Table Var	-	✅																	94.12	1.00						

MSSQL/PI Power Pack - Cluster Explorer - Continued



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
-

MSSQL/PI Power Pack – Health Score Settings

Manage settings on other servers

Manage Alarm Settings

Scope Thresholds on specific instances if desired

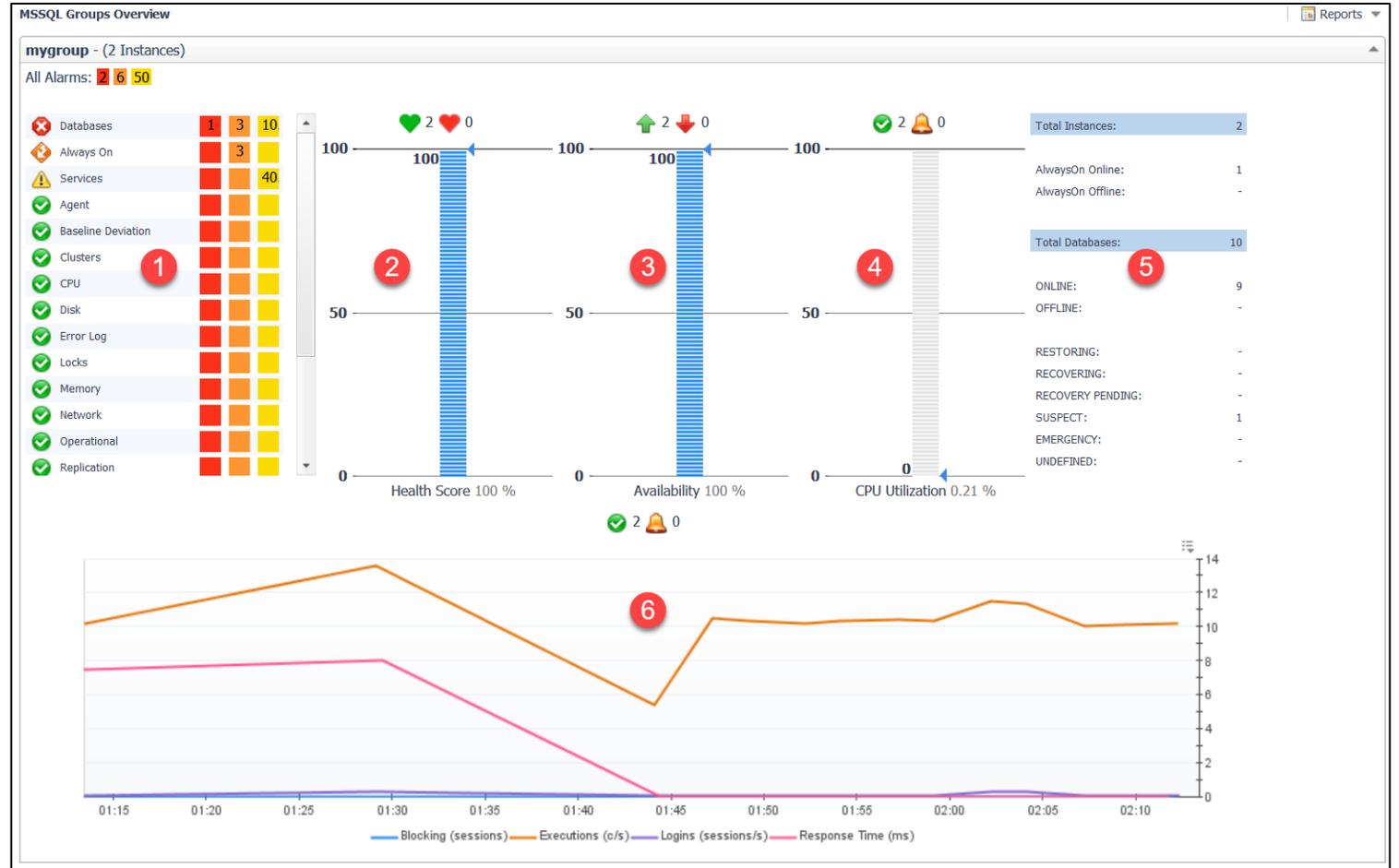
Section	Item	Value	Description
Alarm	PSO.MSSQLPowerPack.HealthScore.Alarm.Threshold.Warning	95.0	What percentage should the Health Score reach before a Warning alarm is generated.
	PSO.MSSQLPowerPack.HealthScore.Alarm.Threshold.Critical	85.0	What percentage should the Health Score reach before a Critical alarm is generated.
	PSO.MSSQLPowerPack.HealthScore.Alarm.Threshold.Fatal	75.0	What percentage should the Health Score reach before a Fatal alarm is generated.
Notification	PSO.MSSQLPowerPack.HealthScore.Email.Recipient.Warning	alan@home.com	Comma separated list of email addresses to which to send emails for the Warning events.
	PSO.MSSQLPowerPack.HealthScore.Email.Recipient.Critical	alan@home.com	Comma separated list of email addresses to which to send emails for the Critical events.
	PSO.MSSQLPowerPack.HealthScore.Email.Recipient.Fatal	alan@home.com	Comma separated list of email addresses to which to send emails for the Fatal events.
Metric 1	PSO.MSSQLPowerPack.HealthScore.Metric1.Name	SQL Server CPU Utilization	The name of a metric that will participate in the Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric1.Weight	25	The weight the metric has on the overall health score. 0 to 100. 0 being no weight at all, as such the metric will be ignored while 100 is all the weight. It is important to understand that this only one of 4 other metrics where the weight of all 4 metrics should be equal 100 for a balanced Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric1.Operator	>=	The operator to use when checking against the values assigned to the impact metrics. Supported operators: =, >, >=, <, <=
Impact Thresholds (Metric 1)	PSO.MSSQLPowerPack.HealthScore.Metric1.FullImpact.Threshold	98.0	The value that will decide if the Weight impact is at Full capacity. If this evaluation is true then 100% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric1.HighImpact.Threshold	96.0	The value that will decide if the Weight impact is at High capacity. If this evaluation is true then 75% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric1.MediumImpact.Threshold	94.0	The value that will decide if the Weight impact is at Medium capacity. If this evaluation is true then 50% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric1.LowImpact.Threshold	92.0	The value that will decide if the Weight impact is at Low capacity. If this evaluation is true then 25% of the weight assigned to the metric will be used.
Metric 2	PSO.MSSQLPowerPack.HealthScore.Metric2.Name	Host Memory	The name of a metric that will participate in the Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric2.Weight	25	The weight the metric has on the overall health score. 0 to 100. 0 being no weight at all, as such the metric will be ignored while 100 is all the weight. It is important to understand that this only one of 4 other metrics where the weight of all 4 metrics should be equal 100 for a balanced Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric2.Operator	>=	The operator to use when checking against the values assigned to the impact metrics. Supported operators: =, >, >=, <, <=
Impact Thresholds (Metric 2)	PSO.MSSQLPowerPack.HealthScore.Metric2.FullImpact.Threshold	98.0	The value that will decide if the Weight impact is at Full capacity. If this evaluation is true then 100% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric2.HighImpact.Threshold	96.0	The value that will decide if the Weight impact is at High capacity. If this evaluation is true then 75% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric2.MediumImpact.Threshold	94.0	The value that will decide if the Weight impact is at Medium capacity. If this evaluation is true then 50% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric2.LowImpact.Threshold	92.0	The value that will decide if the Weight impact is at Low capacity. If this evaluation is true then 25% of the weight assigned to the metric will be used.
Metric 3	PSO.MSSQLPowerPack.HealthScore.Metric3.Name	Buffer Cache Hit Ratio	The name of a metric that will participate in the Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric3.Weight	25	The weight the metric has on the overall health score. 0 to 100. 0 being no weight at all, as such the metric will be ignored while 100 is all the weight. It is important to understand that this only one of 4 other metrics where the weight of all 4 metrics should be equal 100 for a balanced Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric3.Operator	<=	The operator to use when checking against the values assigned to the impact metrics. Supported operators: =, >, >=, <, <=
Impact Thresholds (Metric 3)	PSO.MSSQLPowerPack.HealthScore.Metric3.FullImpact.Threshold	80.0	The value that will decide if the Weight impact is at Full capacity. If this evaluation is true then 100% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric3.HighImpact.Threshold	84.0	The value that will decide if the Weight impact is at High capacity. If this evaluation is true then 75% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric3.MediumImpact.Threshold	86.0	The value that will decide if the Weight impact is at Medium capacity. If this evaluation is true then 50% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric3.LowImpact.Threshold	88.0	The value that will decide if the Weight impact is at Low capacity. If this evaluation is true then 25% of the weight assigned to the metric will be used.
Metric 4	PSO.MSSQLPowerPack.HealthScore.Metric4.Name	SQL Server Agent CPU Utilization	The name of a metric that will participate in the Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric4.Weight	25	The weight the metric has on the overall health score. 0 to 100. 0 being no weight at all, as such the metric will be ignored while 100 is all the weight. It is important to understand that this only one of 4 other metrics where the weight of all 4 metrics should be equal 100 for a balanced Health Score.
	PSO.MSSQLPowerPack.HealthScore.Metric4.Operator	<=	The operator to use when checking against the values assigned to the impact metrics. Supported operators: =, >, >=, <, <=
Impact Thresholds (Metric 4)	PSO.MSSQLPowerPack.HealthScore.Metric4.FullImpact.Threshold	100.0	The value that will decide if the Weight impact is at Full capacity. If this evaluation is true then 100% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric4.HighImpact.Threshold	150.0	The value that will decide if the Weight impact is at High capacity. If this evaluation is true then 75% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric4.MediumImpact.Threshold	200.0	The value that will decide if the Weight impact is at Medium capacity. If this evaluation is true then 50% of the weight assigned to the metric will be used.
	PSO.MSSQLPowerPack.HealthScore.Metric4.LowImpact.Threshold	250.0	The value that will decide if the Weight impact is at Low capacity. If this evaluation is true then 25% of the weight assigned to the metric will be used.

Remote Administration of the solution across servers



MSSQL/PI Power Pack - Groups Overview

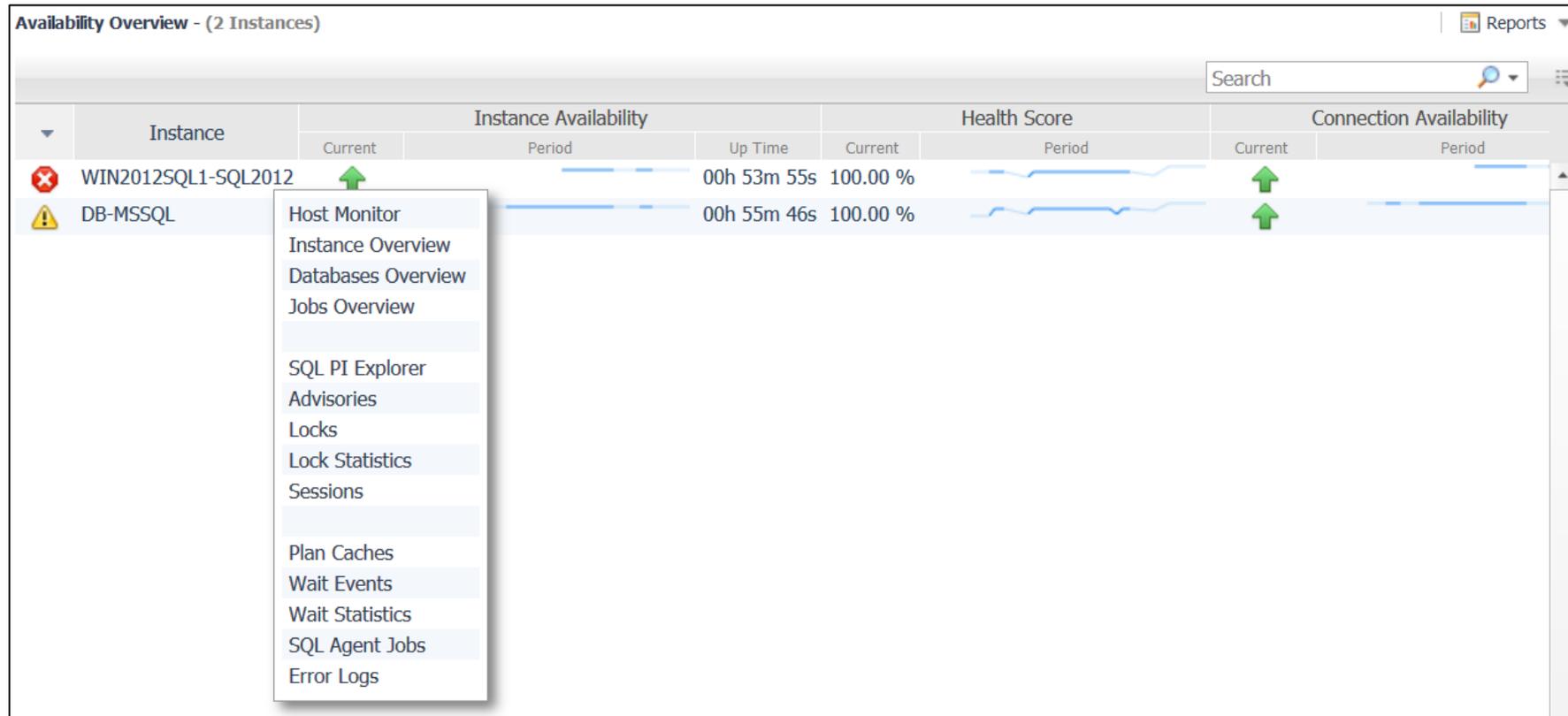
1. Alarms
2. Health Score
3. Availability
4. CPU Utilization
5. Databases
6. Key Metrics



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

MSSQL/PI Power Pack - Availability Overview



MSSQL/PI Power Pack – Backup Jobs / Locations

The image displays two screenshots from the SQL Server Enterprise Manager interface. The top screenshot shows the 'Backup Jobs' view for two instances, with a context menu open over the first instance. The bottom screenshot shows the 'Backup Locations' view for the same two instances, with a context menu open over the first instance.

Backup Jobs - (2 Instances)

Instance	Job Name	Category	Enabled	Current Status	Curr Step #	Outcome	Time	Finish	Duration	Next Run Time	Description
WIN2012SQL1-SQL2012	LiteSpeed Backup Template Fast Compression All DBs (version 1)	[Uncategorized (Local)]	⏻	Completed		Fail	2018-12-07 02:00:05	2018-12-07 02:00:05	00h 00m 05s	2018-12-10 02:00:00	LiteSpeed Backup Template Fast Compression All DBs (version 1)
WIN2012SQL1-SQL2012	LiteSpeed for SQL Server Update Native Backup statistics	[Uncategorized (Local)]	⏻								LiteSpeed for SQL Server Update Native Backup statistics

Backup Locations - (2 Instances)

Total Avg Min Max Max Trend

Instance	Name	Media Free Space
WIN2012SQL1-SQL2012	C:	Current 13.89

MSSQL/PI Power Pack – Databases / Backup / Mirroring

Databases - (2 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend

Instance	Name	Status	DB ID
WIN2012SQL1-SQL2012	LiteSpeedLocal	SUSPECT	6
WIN2012SQL1-SQL2	Host Monitor	ONLINE	9
DB-MSSQL	admin_pack_dev	ONLINE	5
DB-MSSQL	admin_pack_dev	ONLINE	6
WIN2012SQL1-SQL2	ht_5756_ha	ONLINE	7
WIN2012SQL1-SQL2	ht_5756Fed	ONLINE	10
WIN2012SQL1-SQL2	ht_593_fed	ONLINE	
WIN2012SQL1-SQL2	ht_593_ha	ONLINE	
WIN2012SQL1-SQL2	ghtPlaybackDatabase	ONLINE	
WIN2012SQL1-SQL2	ghtStatisticsRepository	ONLINE	

Databases Exclude Filter

Select All Select None Apply

Database Backup - DB-MSSQL

Database Name	dbid	Status	Recovery Model	Last Backup
				Time Full Time Differential Time Log Time
ps0_admin_pack_demo	5	ONLINE	SIMPLE	
ps0_admin...	6	ONLINE	SIMPLE	

Databases Exclude Filter

Select All Select None Apply

Databases Mirroring - (2 Instances)

Instance	Database	DBID	Role	Mirroring			Principal			Mirror	Partner			Witness			
				State	Safety Level	Roundtrip Latency	Instance	Connection Timeout	Commit Acknowledgment Delay		Write Commit	Name	Role Sequence	Name	State	Redo	Send	Roll Forward	Falover
		7	MIRROR	SYNCHRONIZED	FULL	829.06 sec		10	0.00	0.00		1	UNKNOWN	UNLIMITED	0.00	0.00	227700000053493
		6	MIRROR	SYNCHRONIZED	FULL	97.30 sec		10	0.00	0.00		3	UNKNOWN	UNLIMITED	0.00	0.00	43500001453772
		7	PRINCIPAL	SYNCHRONIZED	FULL	41.26 sec		10	4,536	0.15		1	UNKNOWN	UNLIMITED	0.00	0.00	227700000056544
		6	PRINCIPAL	SYNCHRONIZED	FULL	7.11 sec		10	2,353	0.14		3	UNKNOWN	UNLIMITED	0.00	0.00	43500001455061

MSSQL/PI Power Pack – Deadlock Summary

Deadlock Summary By Application - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Instance	Name	Deadlock Chain Count	Deadlock Count	Log Used	Transaction Lost Time	Wait Time
		Current	Current	Current	Current	Current
WIN2012SQL1-SQL2012		.	1.00	0.13	14.99	2.51

- 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

Deadlock Summary By Database - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Instance	Name	Deadlock Chain Count	Deadlock Count	Log Used	Transaction Lost Time	Wait Time
		Current	Current	Current	Current	Current
WIN2012SQL1-SQL2012	pso_admin_pack_dev	.	1.00	0.13	14.99	2.51

- Host Monitor
- Instance Overview
- Databases Overview
- Jobs Overview
- SQL PI Explorer
- Advisories
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- Sessions
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- Wait Events
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- SQL Agent Jobs
- Error Logs

Deadlock Summary By Object - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Instance	Name	Second Object Name	Deadlock Chain Count	Deadlock Count	Log Used	Transaction Lost Time	Wait Time
			Current	Current	Current	Current	Current
WIN2012SQL1-SQL2012		pso_admin_pack_dev.sys.syschobjcs	.	1.00	.	25.79	25.78
WIN2012SQL1-SQL2012		pso_admin_pack_dev.dbo.DeadLockTest	.	1.00	0.13	14.99	2.51

- Host Monitor
- Instance Overview
- Databases Overview
- Jobs Overview
- SQL PI Explorer
- Advisories
- Locks
- Lock Statistics
- Sessions

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

File Groups - DB-MSSQL

Metrics Reset Defaults Total Avg Min Max Max Trend

Database	Name	% Free Latest	% Used Latest	Free Size Latest	Size Latest	Utilization Latest
ps0_admin_pack_demo	<Log>	99.90	0.10	1,022.96	1,024.00	0.00
ps0_admin_pack	PRIMARY					
ps0_admin_pack	<Log>					
ps0_admin_pack	PRIMARY					

Actions: File Groups Customizer, Properties..., Bookmark..., Make this my home page

Databases Exclude Filter File Groups Exclude Filter

Select All Select None Apply

<Log>
 PRIMARY

Files - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend

Instance	Database	File Group	Name	Type	Is Auto Grow	Is Growth By %	Growth Increment	% Free Latest	% Used Latest	Max Size Latest	Size Latest	Used Size Latest
DB-MSSQL	ps0_admin_pack_dev	<Log>	ps0_admin_pack_dev_log	Log	On	10%	1 MB	92.53	7.47	2,097,152.00	1,363.06	101.86
DB-MSSQL	ps0_admin_pack_dev	PRIMARY	ps0_admin_pack_dev	Rows	On			74.50	25.50	-1.00	4,096.00	1,044.56
WIN2012SQL1-SQL2012	ps0_admin_pack_dev	<Log>	ps0_admin_pack_dev_log									
WIN2012SQL1	ps0_admin_pack_dev	PRIMARY	ps0_admin_pack_dev									

Actions: Files Customizer, Properties..., Bookmark..., Make this my home page, Other Actions, New window

Databases Exclude Filter File Groups Exclude Filter

Select All Select None Apply

<Log>
 PRIMARY

Full Text Catalog - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend

Instance	Database	Name	Index Size Period Avg	Item Count Period Avg	Table Count Latest
WIN2012SQL2-SQL2012					

Databases Exclude Filter

Select All Select None Apply

MSSQL/PI Power Pack – Index Fragmentation Summary

The screenshot displays the 'Index Fragmentation Summary - (2 Instances)' window. The main table lists index fragmentation data for two instances. The first instance, WIN2012SQL1-SQL2012, shows a CLUSTERED INDEX with 1 out of 1 partitions, 1 estimated row, 0 reserved MB, 0% average fragmentation, 0 scans, and 4 lookups. The second instance, WIN2012SQL1-SQL2012, is also listed. A context menu is open over the first instance, listing various monitoring and management options. Two dialog boxes are overlaid on the table: 'Index Fragmentation Inputs' with fields for 'Min. Fragmentation %', 'Min. Partition Size In MB', and 'Min. Operations', all set to 0, and a 'Reload Indexes' button; and 'Databases Exclude Filter' with a list of databases and checkboxes for selection.

Instance	Object Name	Index Type	Partition Information					Us	
			#	Out Of	Estimated Rows	Reserved (MB)	Avg. Fragmentation (%)		Scans	Lookup
WIN2012SQL1-SQL2012		CLUSTERED INDEX	1	1	1	0	0	4	
WIN2012SQL1-SQL2012									

MSSQL/PI Power Pack – Instances / Inventory

Instances - (2 Instances)

Metrics | Reset | Defaults | Total | Avg | Min | Max | Max Trend | Search

Name	Host Memory Utilization Current	Non SQL CPU Utilization Current	SQL Server CPU Utilization Current	SQL Server Memory Utilization Current	Total CPU Utilization Current
WIN2012SQL1-SQL2012	20.35	2.38	0.18	10.02	2.56
DB-MSSQL	19.30	4.58	0.32	3.19	4.91

Advisory

- Host Monitor
- Instance Overview
- Databases Overview
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- Wait Statistics
- SQL Agent Jobs
- Error Logs

Instances Inventory - (2 Instances)

Search

Instance	Product	Edition	Service Pack	Operating System	# Processors	Physical Memory	Proc II
WIN2012SQL1-SQL2012							1
DB-MSSQL							1

- Host Monitor
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- Wait Statistics
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- Error Logs

MSSQL/PI Power Pack – Locks / Statistics

Locks - (3 Instances)

Instance	Database Name	spid	Lock Count	Index Name	Object Name	Type	Mode	Status	Login Name
WIN2012SQL1-SQL2012	pso_admin_pack_dev	67	1			DATABASE	S	GRANT	
WIN2012SQL1	Host Monitor	66	1						
WIN2012SQL1	Instance Overview	59	1						
WIN2012SQL1	Databases Overview	58	1						
WIN2012SQL2	Jobs Overview	60	1						

Databases Exclude Filter

Select All Select None Apply

Lock Statistics - DB-MSSQL

Metrics Reset Defaults Total Avg Min Max Max Trend

Name	Deadlocks Rate	Lock Requests Rate	Lock Timeouts Rate	Total Wait Time Rate	Total Waits Rate
	Current	Current	Current	Current	Current
AllocUnit
Applic
Datab	.	3.25	.	.	.
Extent	.	0.07	.	.	.
File	.	0.01	.	.	.
HoBT	.	0.14	.	.	.
Key	.	10.97	.	.	.
Metad	.	5.27	.	.	.
Object	.	6.20	.	.	.
OIB
Page	.	0.12	.	.	.
RID	.	0.05	.	.	.
RowG

MSSQL/PI Power Pack – Logical Disks / Log Shipping

Logical Disks Usage - (2 Instances)

Instance	Drive	Used %						Free Space						Used Space					
		Current	Period		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		47.95	47.95	47.95	52.05 GB	52.05 GB	52.05 GB	47.95 GB	47.95 GB	47.95 GB									

- Host Monitor
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Log Shipping - (3 Instances)

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

MSSQL/PI Power Pack – Memory Resource Pool

Memory Resource Pool - (2 Instances) Reports

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Instance	Name	Max Memory % Current	Memory Utilization Current	Min Memory % Current
WIN2012S	Host Monitor	100.00	4.00	.
WIN2012S	internal	100.00	3.00	.

- Instance Overview
- Databases Overview
- Jobs Overview
- SQL PI Explorer
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- Lock Statistics
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- Wait Statistics
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- Error Logs

MSSQL/PI Power Pack – Plan Caches / Services Status

Plan Caches - DB-MSSQL

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Name	Plan Cache Hit Rate (%)		Plan Cache Objects		Plan Cache Use Rate	
	Current	Current	Current	Current	Current	Current
Bound Trees	97.54		189.00			
Extended Stored Procedures	99.44		5.00			
Object	91.21		8.00		1.00	
SQL P	93.39		234.00		2.00	
Temp	95.74		2.00			

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Services Status - (2 Instances)

Search

Instance	ADH	Browser	DTC	Full Text Search	OLAP	SQL Server Mail	SQL Server Agent	Writer	Integration
DB-MSSQL	Not Installed	Stopped	Running	Not Installed	Not Installed	-	Stopped	Running	Not Installed
WIN2012	Not Installed	Running	Running	Not Installed	Not Installed	-	Running	Running	Not Installed

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MSSQL/PI Power Pack – Sessions

The screenshot displays the SQL Server Enterprise Manager interface for monitoring sessions. A red callout box labeled "Filters" points to the "Sessions" option in the left-hand navigation pane. A "Kill Session" dialog box is open, showing a warning that killing a session requires sysadmin or processadmin privileges. The dialog includes fields for Authentication (set to Windows), User, and Password, and a "Script" section with a "KILL" command. Below the dialog, the "SQL Activity" window is visible, showing a summary of session statistics and a detailed table of active sessions.

Name	Active Connections	User Inactive Connections	SQL Batches Rate	Transactions Rate	Logins Rate	Blocked Connections	Total CPU Utilization
DB-MSSQL	23.00	20.00	5.48	1.23	0.02	.	4.18

SPID	DB User	Database	Status	Current Wait Time	CPU Usage	Memory Usage	Blocked By	Logical Reads	Physical Reads	Writes	Waiting On	Program	Host Name	Last SQL	Last Batch	Context Info	Last Command	Transaction Count	Last Batch Time
56			suspended	1.67	0.01	0.00	0	3.00	0.00	0.00	TRACEWRITE (Idle Time)					DB-MSSQL	SELECT	0	10/12/2018
62			suspended	1.52	0.00	0.00	0	3.00	0.00	0.00	TRACEWRITE (Idle Time)					DB-MSSQL	SELECT	0	10/12/2018
55			running	0.00	0.01	0.00	0	303.00	6.00	0.00						DB-MSSQL-QUERY_CURRENT_SESSIONS	SELECT	0	10/12/2018

MSSQL/PI Power Pack – SQL Agent Jobs

SQL Agent Jobs - (3 Instances)

Instance	Total Jobs	Failed	Cancelled	Job States				
				Retrying	Running	Successful	Never Ran	
WIN2012SQL1-SQL2012	3	2	0	0	0	1	0	
WIN2012SQL2-SQL	3	1	0	0	0	2	0	
DB-MSSQL	1	0	0	0	0	0	1	

Instance	Job Name	Category	Enabled	Current Status	Curr Step #	Last Run			Next Run Time	Description
						Outcome	Time	Finish		
WIN2012SQL1-SQL2012	LiteSpeed Backup Template Fast Compression All DBs (version 1)	[Uncategorized (Local)]	On	Completed	Fail	2018-12-07 02:00:05	2018-12-07 02:00:05	00h 00m 05s	2018-12-10 02:00:00	LiteSpeed Backup Template Fast Compression All DBs (version 1)
WIN2012SQL1-SQL2012	LiteSpeed for SQL Server Update Native Backup statistics	[Uncategorized (Local)]	On	Completed	Fail	2018-12-10 00:15:00	2018-12-10 00:15:00		2018-12-10 00:30:00	LiteSpeed for SQL Server Update Native Backup statistics

MSSQL/PI Power Pack – Wait Events / Wait Statistics

Wait Events - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Name	CLR Wait Rate	CPU Usage Rate	CPU Wait Rate	I/O Wait Rate	Latch Wait Rate	Lock Wait Rate	Memory Wait Rate	Network Wait Rate	Other Wait Rate	Remote Provider Wait Rate	XTP Wait Rate
	Current	Current	Current	Current	Current	Current	Current	Current	Current	Current	Current
WIN2012SQL1-SQL2012
WIN2012SQL2-S
DB-MSSQL	.	0.00

- Host Monitor
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- Error Logs

Wait Statistics - DB-MSSQL

Total Avg Min Max Max Trend Search

Main Category	Sub-Category	Name	Wait Time Latest
✓ CLR Wait	CLR Wait	CLR_AUTO_EVENT	.
✓ CPU Wait	CPU Wait	SOS_SCHEDULER_YIELD	0.05
✓ I/O Wa	I/O Completion	ASYNC_IO_COMPLETION	.
✓ I/O Wa	I/O Completion	IO_COMPLETION	.
✓ I/O Wa	I/O Completion	WRITE_COMPLETION	.
✓ I/O Wa	I/O Data Page	PAGEIOLATCH_EX	0.00
✓ I/O Wa	I/O Data Page	PAGEIOLATCH_SH	0.01
✓ I/O Wa	I/O Data Page	PAGEIOLATCH_UP	.
✓ I/O Wa	I/O Data Page	PREEMPTIVE_OS_CREATEFILE	.
✓ I/O Wa	I/O Data Page	PREEMPTIVE_OS_FILEOPS	.
✓ I/O Wa	Latch Buffer	PAGELATCH_EX	0.07
✓ I/O Wa	Latch Buffer	PAGELATCH_SH	0.00
✓ Latch V	Internal Cache Latch	LATCH_SH	0.00
✓ Lock W	Lock Schema	LCK_M_SCH_M	.
✓ Lock W	Lock Shared	LCK_M_S	.
✓ Log Wa	Log Buffer	LOGBUFFER	.
✓ Log Wa	Log Write	CHKPT	.

- Host Monitor
- Instance Overview
- Databases Overview
- Jobs Overview
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- Wait Statistics
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- Error Logs

MSSQL/PI Power Pack – Perfmon / UDC

Windows Performance Monitor - (3 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Name

There Is No Data To Display

Performance Counters Exclude Filter

Select All Select None Apply Search

Actions

Rebuild Perfmon

Performance Counters Exclude Filter

A red arrow points from the 'Rebuild Perfmon' button to the 'Performance Counters Exclude Filter' dialog box.

User Defined Collections - (2 Instances)

Metrics Reset Defaults Total Avg Min Max Max Trend Search

Instance	Collection	Name	last_clear (UDC)	last_clear_Rate (UDC)
WIN2012SQL1-SQL2012	Test1		Latest	Latest
WIN2012SQL1-SQL2012	Host Monitor			
WIN2012SQL1-SQL2012	Instance Overview			
WIN2012SQL1-SQL2012	Databases Overview			
WIN2012SQL1-SQL2012	Jobs Overview			
WIN2012SQL1-SQL2012	SQL PI Explorer			
WIN2012SQL1-SQL2012	Advisories			
WIN2012SQL1-SQL2012	Locks			
WIN2012SQL1-SQL2012	Lock Statistics			
WIN2012SQL1-SQL2012	Sessions			
WIN2012SQL1-SQL2012	Plan Caches			
WIN2012SQL1-SQL2012	Wait Events			
WIN2012SQL1-SQL2012	Wait Statistics			
WIN2012SQL1-SQL2012	SQL Agent Jobs			
WIN2012SQL1-SQL2012	Error Logs			

UDCs (User Defined Collections) Exclude Filter

Select All Select None Apply Search

Test1

UDCs (User Defined Collections) Exclude Filter

Actions

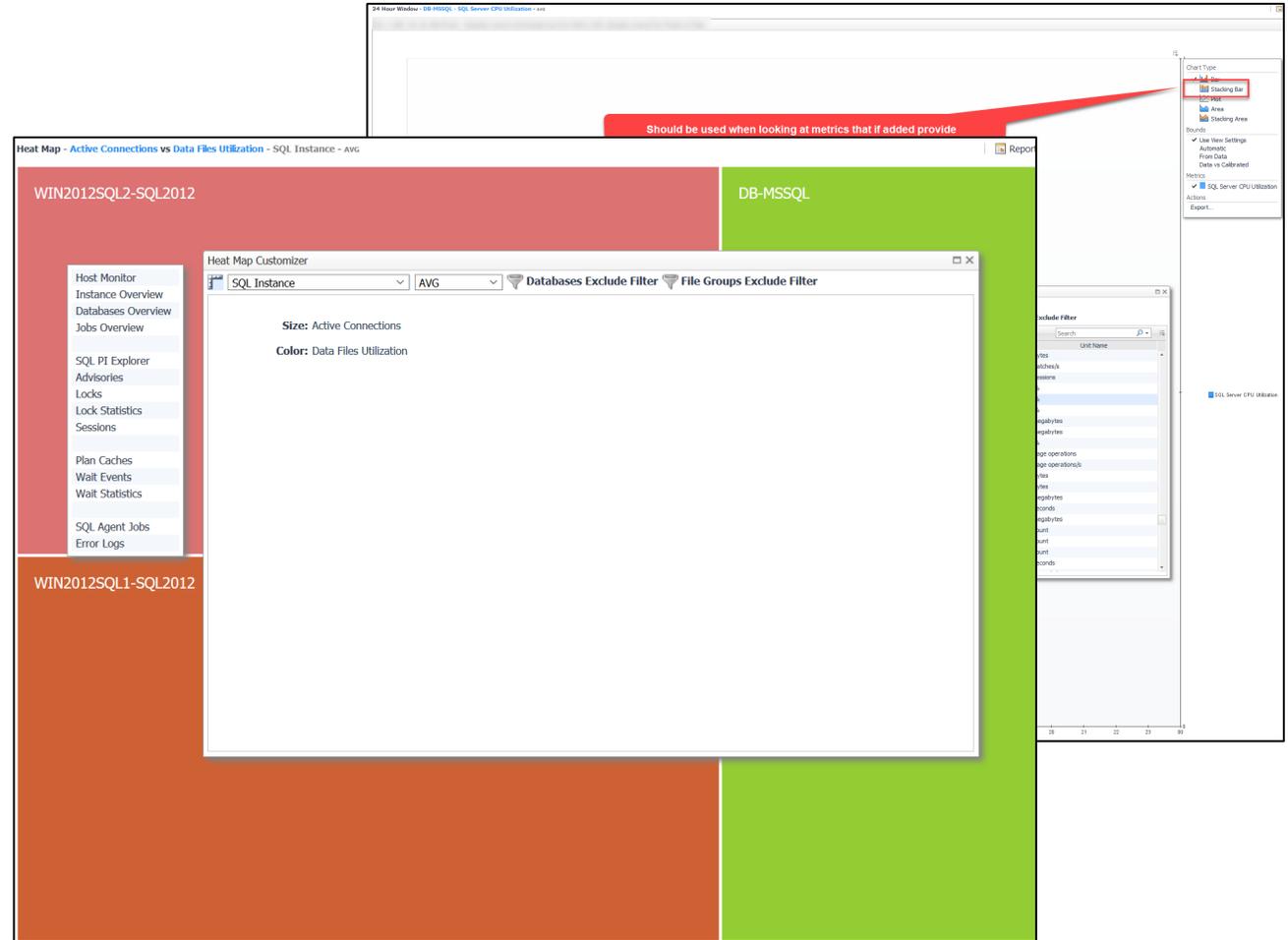
Rebuild UDCs

UDCs (User Defined Collections) Exclude Filter

A red arrow points from the 'Rebuild UDCs' button to the 'UDCs (User Defined Collections) Exclude Filter' dialog box.

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.

MSSQL/PI Power Pack - Drag & Drop

Chart Customizer

Instance Selector: SQL Instance

SQL Instance: DEFAULT

Databases Exclude Filter

File Groups Exclude Filter

Metric Selector

Collection Selector

Metric value to display

Click to switch tab

The screenshot shows the 'Chart Customizer' window. On the left, a list of collections is shown, with 'SQL Instance' selected. A red callout box labeled 'Metric Selector' points to this list. In the center, a dropdown menu is open, showing aggregation options: 'DEFAULT', 'AVG', 'MAX', 'MIN', and 'SUM'. A red callout box labeled 'Metric value to display' points to the 'AVG' option. On the right, a search bar is visible, with a red callout box labeled 'Click to switch tab' pointing to it. Below the collection list, a red callout box labeled 'Collection Selector' points to the list.

Bubble Chart Customizer

File Groups

AVG

Databases Exclude Filter

File Groups Exclude Filter

X Axis Metric: % Free

Y Axis Metric: % Used

Size: Utilization

Metric Selector

Metric value to use

Click to Switch

The screenshot shows the 'Bubble Chart Customizer' window. At the top, 'File Groups' is selected in the 'Instance Selector' dropdown. Below it, a dropdown menu is open, showing aggregation options: 'AVG', 'MAX', 'MIN', 'SUM', 'PERIOD AVG', 'PERIOD MAX', 'PERIOD MIN', and 'PERIOD SUM'. A red callout box labeled 'Metric value to use' points to the 'PERIOD AVG' option. On the left, a red box contains the text: 'X Axis Metric: % Free', 'Y Axis Metric: % Used', and 'Size: Utilization'. A red callout box labeled 'Metric Selector' points to this box. On the right, a red callout box labeled 'Click to Switch' points to the 'File Groups Exclude Filter' button.

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

MSSQL/PI Power Pack – Capacity Planning

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

Mode	Past Days	Forecast Days	Value To Use	
% of Capacity <input type="text" value="10"/>	180 <input type="text"/>	180 <input type="text"/>	MAX <input type="text"/>	<input type="button" value="Apply"/>
Maximum Capacity	30	30	AVG	
% of Capacity	60	60	MAX	
	90	90		
	180	180		

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

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

Databases Days To Full - WIN2012SQL1-SQL2012

70% 80% 90%

Search

	Name	Status	DB ID	Data Files Used Space		Log Files Used Space	
				Full	Full	Full	Full
⚠		ONLINE	5		2+ Years		2+ Years
⚠		ONLINE	9		2+ Years		2+ Years
⚠		ONLINE	11		2+ Years		2+ Years
⚠		ONLINE	12		2+ Years		2+ Years
⚠		ONLINE	10		41		2+ Years
⚠		ONLINE	7		10	Max: 250.0 megabytes	2+ Years
✖		ONLINE	8		FULL		2+ Years

File Groups Days To Full - (2 Instances)

70% 80% 90%

Search

	Instance	Database	Name	Used Size	
				90%	Full
✓	WIN2012SQL2-SQL2012		<Log>	127	141
✓	WIN2012SQL2-SQL2012		PRIMARY	33	37
✓	WIN2012SQL2-SQL2012		<Log>	16	Max: 10.0625 megabytes
			<Log>	7	7
			PRIMARY	FULL	FULL

Files Days To Full - (3 Instances)

70% 80% 90%

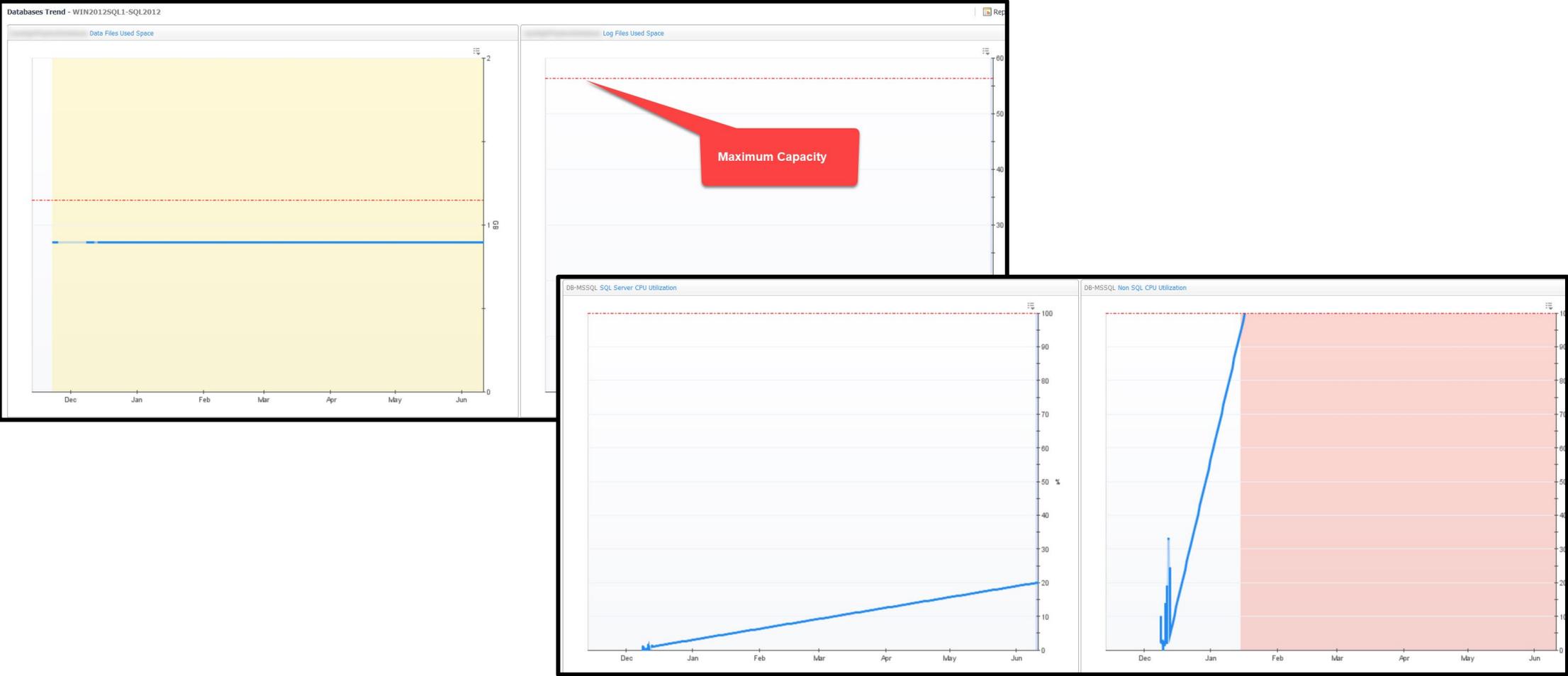
Search

	Instance	Database	File Group	Name	Type	Is Auto Grow	Is Growth By %	Growth Increment	Used Size				
									70%	80%	90%	Full	Full
✓	WIN2012SQL2-SQL2012		<Log>		Log	⏻	⏻	10%	77	88	99	110	
✓	WIN2012SQL2-SQL2012		PRIMARY		Rows	⏻	⏻	1 MB	29	33	37	41	
✓	WIN2012SQL2-SQL2012		<Log>		Log	⏻	⏻	10%	12	14	15	17	
✓	WIN2012SQL2-SQL2012		<Log>		Log	⏻	⏻	10%	6	7	8	9	
✓	WIN2012SQL1-SQL2012		PRIMARY		Rows	⏻	⏻	1 MB	FULL	Max: 52.0 megabytes	FULL	FULL	FULL

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

MSSQL/PI Power Pack – Capacity Planning – Trends



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

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
✓		ONLINE	6	.	.	.	.	.	.
✓		ONLINE	5	.	.	.	.	.	.
⚠		ONLINE	10	.	.	.	1.47	FULL	FULL
⚠		ONLINE	7	9.28	FULL	FULL	51.42	FULL	FULL
⚠		ONLINE	8				0.38	0.68	FULL
✓		ONLINE	9	.	.	.	.	.	.

Note: 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	.	.	.	.	.	.

Note: Value: 45.938429760713106 %, Max: 100

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

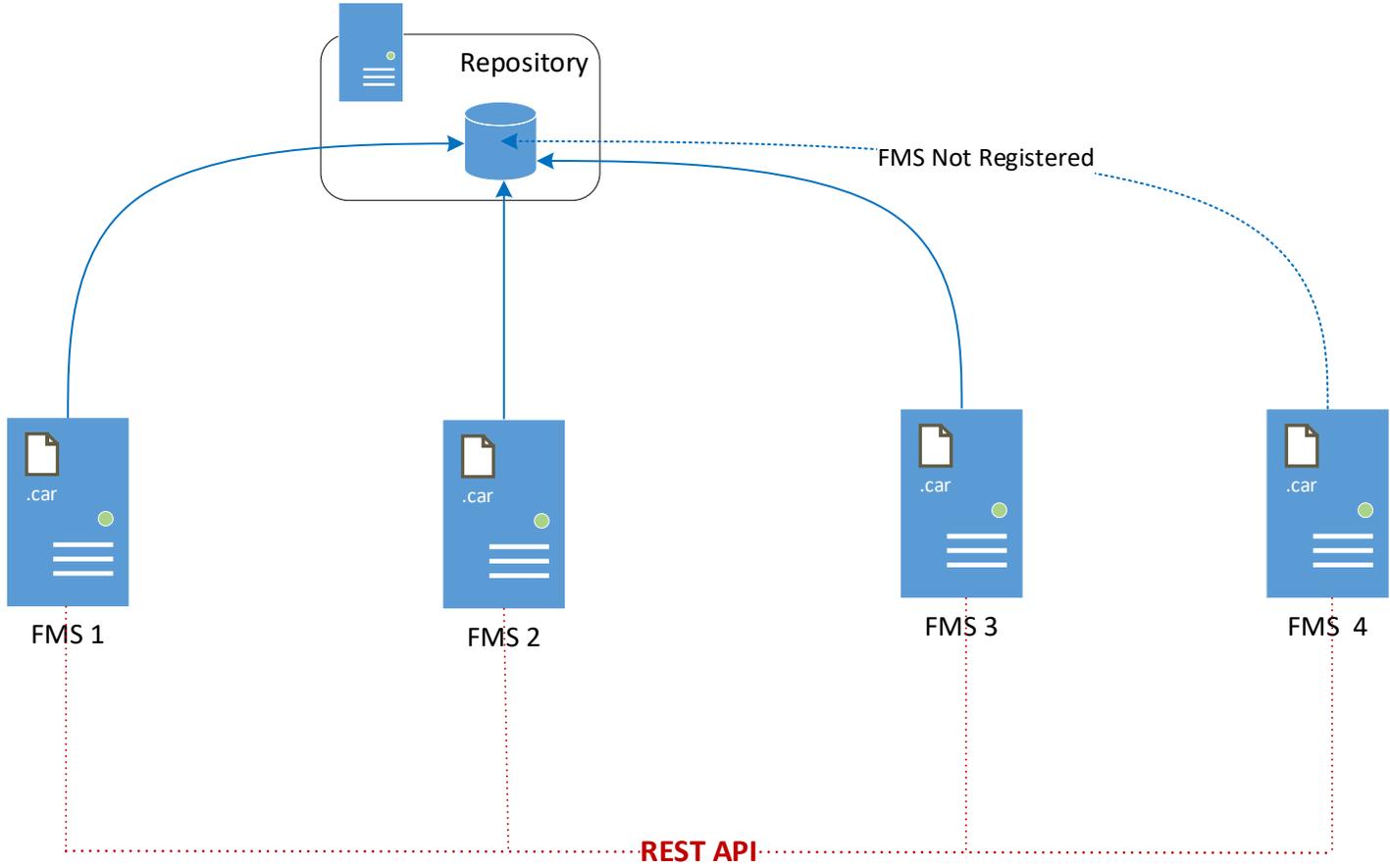
7 Days 30 Days 60 Days 180 Days Search

	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:	.	.	.

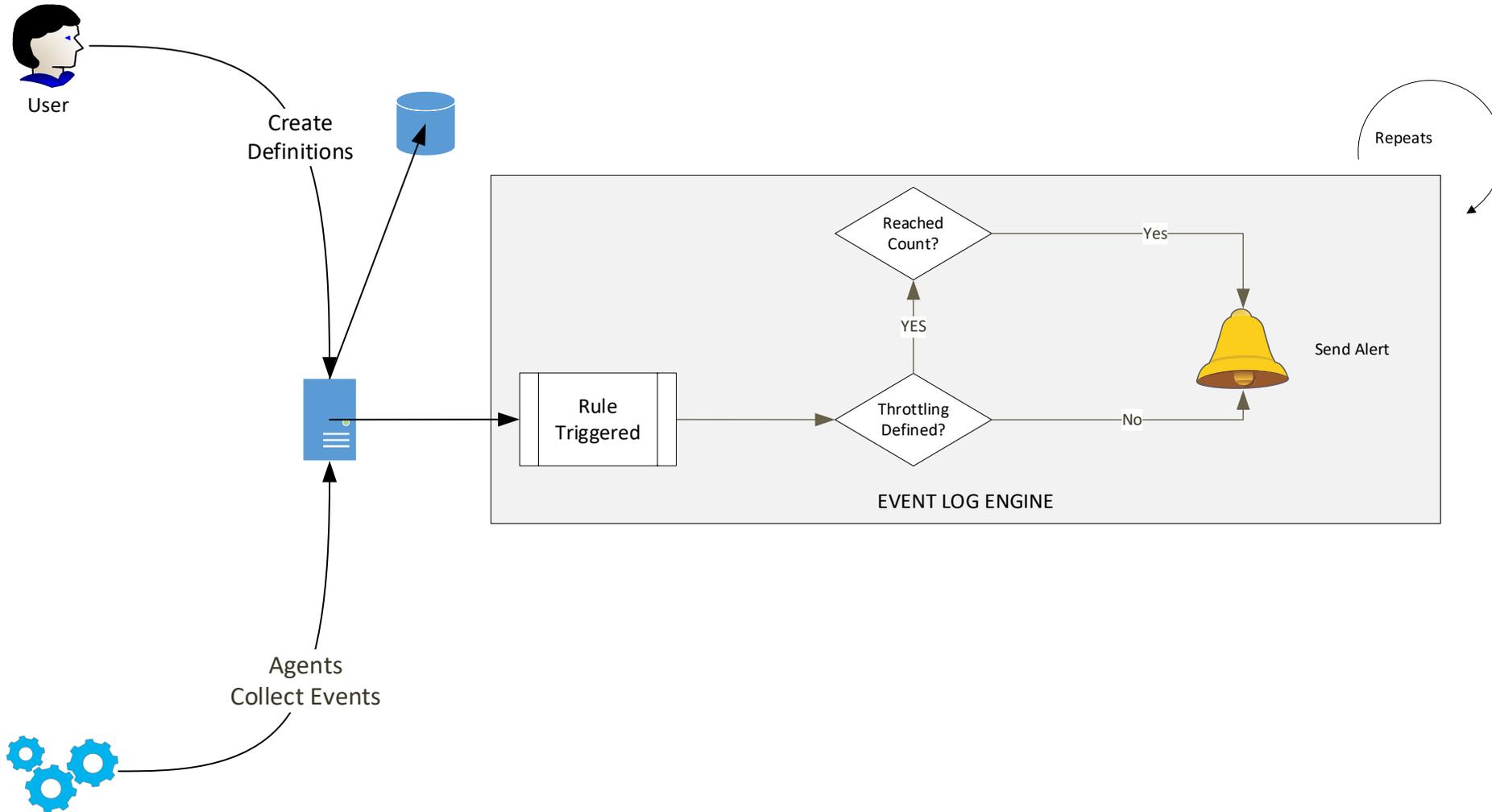
Note: Value: 65.20282478461665 %, Max: 100



MSSQL/PI Power Pack - Log Alerting



MSSQL/PI Power Pack - Log Alerting Flow



File Event Log – Throttling Definition

The screenshot shows the 'SQL Server Error Log Throttle Definitions' window. The main area is a table with the following columns: Service Name, Host Name, Instance, Severity ID, Message, Duration (Seconds), Count in Duration, and Merge. The table is currently empty, displaying the message 'There Is No Data To Display'. An 'Add Throttle Definition' dialog box is open in the foreground. The dialog box contains the following fields and values:

- Service Name: (empty dropdown)
- Host Name: *.*
- Instance: *.*
- Severity ID: *.*
- Message: *.*
- Duration (Seconds): 300
- Count in Duration: 5
- Merge: PER_DEFINITION (selected), PER_HOST, PER_INSTANCE

The dialog box also has 'Add' and 'Cancel' buttons at the bottom right.

File Event Log – Auto Clear Definition

The screenshot shows the 'SQL Server Error Log Auto Clear Definitions' window. The main window has a toolbar with 'Add', 'Save', 'Undo', 'Filter', 'Delete', and 'Edit Time' buttons. A search box is located in the top right. Below the toolbar is a table with columns: Service Name, Host Name, Instance, Severity ID, Message, and Time (Minutes). The table is currently empty, with the text 'There Is No Data To Display' centered below the column headers. An 'Add Auto Clear Definition' dialog box is open in the foreground, containing the following fields:

- Service Name: [Dropdown menu]
- Host Name: [Text box containing '*']
- Instance: [Text box containing '*']
- Severity ID: [Text box containing '*']
- Message: [Text box containing '*']
- Time (Minutes): [Text box containing '15']

At the bottom of the dialog box are 'Add' and 'Cancel' buttons.

MSSQL/PI Power Pack - Changing Settings

MSSQL Power Pack Registry Settings - Local FMS

Save | Undo | Filter

Name	Value	Scoping	
Debug			
PSO.MSSQLPowerPack.Debug	true		Whether or not to enable debug mode in the MSSQL Power Pack solution.
UI			
PSO.MSSQLPowerPack.UI.BackupJobs.Keywords	backup,bckp		Comma separated list of keywords that if found as part of the job's name the job is considered to be
PSO.MSSQLPowerPack.UI.DefaultExcludedDatabases	master,model,tempdb,msdb,mssqlsystemresourc...		Comma separated list of databases to be excluded in the UI and Reports. The database name lookup
PSO.MSSQLPowerPack.UI.DefaultExcludedFileGroups			Comma separated list of file groups to be excluded in the UI and Reports. The file group name lookup
PSO.MSSQLPowerPack.UI.DefaultExcludedUDCs			Comma separated list of User Defined Collections to be excluded in the UI and Reports. The UDC name
PSO.MSSQLPowerPack.UI.DefaultExcludedPerfmon			Comma separated list of Perfmon Collections to be excluded in the UI and Reports. The Perfmon name
Metrics			
PSO.MSSQLPowerPack.Metrics.DefaultForSQLInstance			Comma separated list of Metric Names to use as the defaults when the SQL Instance collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForLockStatistics			Comma separated list of Metric Names to use as the defaults when the Lock Statistics collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForLogicalDisks			Comma separated list of Metric Names to use as the defaults when the Logical Disks collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForMemorySummaryResourcePool			Comma separated list of Metric Names to use as the defaults when the Memory Summary Resource Pool collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForInstanceWaitEvents			Comma separated list of Metric Names to use as the defaults when the Instance Wait Events collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForPlanCache			Comma separated list of Metric Names to use as the defaults when the Plan Cache collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForDatabases			Comma separated list of Metric Names to use as the defaults when the Databases collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForFileGroups			Comma separated list of Metric Names to use as the defaults when the File Groups collection is selected
PSO.MSSQLPowerPack.Metrics.DefaultForFiles			Comma separated list of Metric Names to use as the defaults when the Files collection is selected. The
PSO.MSSQLPowerPack.Metrics.DefaultForTempDB			Comma separated list of Metric Names to use as the defaults when the Temp DB is selected. The Met
Group Overview			
PSO.MSSQLPowerPack.GroupOverview.DefaultExcludedDatabases	master,model,tempdb,msdb,mssqlsystemresourc...		Comma separated list of databases to be excluded in the Group Overview Databases section. The dat
PSO.MSSQLPowerPack.GroupOverview.Rules.Availability	DBSS - Instance Availability		Comma separated list of rule names to be used in the Group Overview view to drive the Availability S
PSO.MSSQLPowerPack.GroupOverview.Rules.Blocking	DBSS - Blockers, Connections, Backlog, D		Comma separated list of rule names to be used in the Group Overview view to drive the Blocking S

Remote Administration of the solution across servers

MSSQL/PI Power Pack – Rule Management

MSSQL Power Pack Rule Management - Local FMS

Select All Select None Disable Enable

Category / Title	Enabled	
Alerting		
<input type="checkbox"/> Error Log Record		Generates alarms for error logs based on the Throttle definitions.
<input type="checkbox"/> Health Score		Generates alarms for when the health of an instance starts degrading.
Clean Up		
<input type="checkbox"/> Auto Clear Alarms		Handles auto clearing of the various generated error log alarms based on the defined auto-clear settings.
FMS		
<input type="checkbox"/> Ping		Handles updating the FMS Ping Time
UI		
<input type="checkbox"/> Performance Counters		Periodically rebuilds the Perfmon Collections and metrics in order to be used with the solution.
<input type="checkbox"/> UDCs (User Defined Collections)		Periodically rebuilds the UDCs and metrics in order to be used with the solution.

Remote Administration of the solution across servers

MSSQL/PI Power Pack - System Requirements

- **Minimum required FMS version**

5.9.3

- **Supported Databases**

Microsoft SQL

Oracle

MySQL

PostgreSQL

Minimum Version

2008 (version 10.0.1600 or later)

9i R2

5.1.45

9.4.0

- **Supported Agent**

SQL Server

SPI

Minimum Version

5.7.5.30

1.4.0