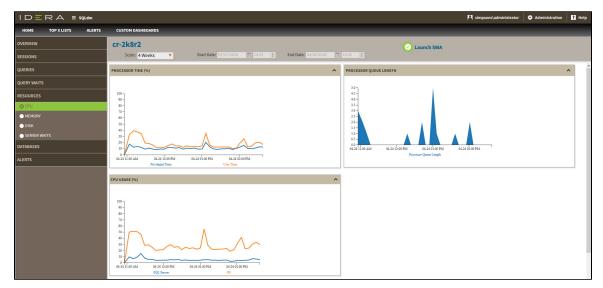
# View your SQL Server resources information

The Resources tab of the single instance dashboard contains several views such as CPU, Memory, Disk, and Server Waits. The Resources tab allows you to monitor the system resources on the computer hosting the SQL Server instance as well as what is used by SQL Server.

Resource bottlenecks are often the cause of SQL Server performance problems. These bottlenecks can result from poor database application design or point to other system processes using valuable resources needed by SQL Server.

## **CPU** view

The Resources > CPU tab contains several charts and a Top sessions by active CPU widget (Click image to view full size).



### Charts

#### **Processor Time (%)**

The Processor Time chart displays the percentage of CPU time used by all processes on the computer hosting the SQL Server instance.

#### **Processor Queue Length**

The Processor Queue Length chart displays the number of ready threads in the processor queue on the computer hosting the SQL Server instance.

### CPU Usage (%)

The CPU Usage (%) chart displays the percentage of processing power in use on the computer that hosts the SQL Server instance over a period of time. You can select that information displays for the last 30 minutes, 1 hour, 4 hours, 8 hours, and 12 hours.

## **Top Sessions by Active CPU**

This widget allows you to view the top sessions of a selected SQL Server instance per CPU usage. You can configure this widget to

display additional entries by clicking the gear icon or you can expand/contract by clicking 🔨 .

TOP SESSIONS BY ACTIVE	م چ			
Session ID	Host	Database	CPU Usage	20.0
66	cr-2k8r2	master	93,958.00	<u>^</u>
57	cr-2k8r2	master	13,131.00	E
60	cr-2k8r2	master	8,124.00	
64	cr-2k8r2	master	873.00	
63	cr-2k8r2	master	484.00	

## **Memory view**

🎮 simpsons\administrator 🛛 🏶 Administration 🛛 🍞 Help cr-2k8r2 📀 Launch SWA Scale: 4 Wee SIONS SQL MEMORY USAGE (MB) MEMORY AREAS (MB 100 1,50 500 -04-24 SOL THE 04-24 02:00 Ph 04-24 11:0 CACHE HIT RATIOS (%) 448,000 447,000 446,000 445,000 444,000 443,000 441,000 441,000 439,000 439,000 437,000 90 -80 -70 -50 -40 -30 -20 -10 -04-24 01:00 PM

The Resources > Memory tab contains the following charts (Click image to view full size).

### Charts

#### SQL Memory Usage (MB)

This chart displays the SQL memory usage (SQL Used) compared to what is allocated (SQL Allocated) and the total used (Total Used).

#### Memory Areas (MB)

This chart displays the memory usage of the Procedure Cache, Connections, Locks, and Database.

### Page Life Expectancy (sec)

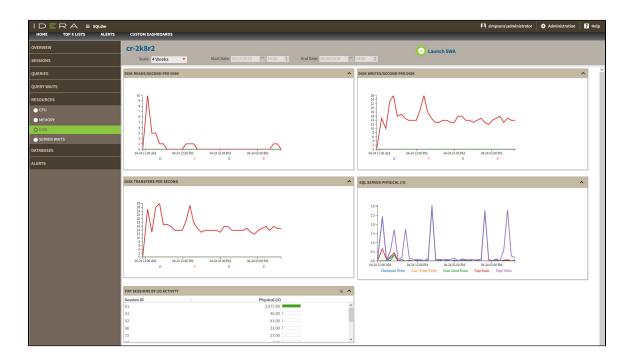
This chart provides the time in seconds that a page remains in the cache or buffer pool.

#### Cache Hit Ratios (%)

This chart displays the hit ratios of the Buffer and Procedure cache.

## **Disk view**

The Resources > Disk tab contains several charts and the Top sessions by I/O activity widget (Click image to view full size).



### Charts

#### **Disk Reads/Second Per Disk**

This chart displays the number of reads per disk per second during a sample interval. You can select intervals of 30 minutes, 1 hour, 4 hours, 8 hours, and 12 hours.

#### **Disk Writes/Second Per Disk**

This chart displays the number of writes per disk per second during a sample interval. You can select intervals of 30 minutes, 1 hour, 4 hours, 8 hours, and 12 hours.

#### **Disk Transfers Per Second**

This chart displays the number of disk transfers per second during a sample interval. You can select intervals of 30 minutes, 1 hour, 4 hours, 8 hours, and 12 hours.

#### **SQL Server Physical I/O**

This chart displays the number of read and write requests sent to the physical disk the SQL Server instance resides in. Read and write requests are classified in Checkpoint Writers, Read-Ahead Reads, Page Writes, Lazy Writer Writes, and Page Reads.

## Top Sessions by I/O Activity

This widget allows you to view the top sessions of a selected SQL Server instance per I/O Activity. You can configure this widget to display

additional entries by clicking the gear icon or you can expand/contract by clicking ^.

TOP SESSIONS BY I/O ACTIVITY	- 👳	
Session ID	Physical I/O	
57	1,637.00	*
51	273.00	=
60 53	101.00	
53	62.00 I	
58	10.00	

## **Server Waits view**

The **Resources > Server Waits** tab contains a chart that display information on all waits occurring on your system and show the time different wait types occurred and the length of time (in milliseconds) it took for the waits to clear. Click image to view full size.

$ID \equiv RA \equiv squaremetricset$						Pl simpso	ons\administrator	Administration	? Help
HOME TOP X LISTS ALERTS	CUSTOM DASHBOARDS								
OVERVIEW	cr-2k8r2					Co Launch SWA			
SESSIONS	Scale: 4 Weeks 🔻	Start Date: 03/27/2018	14:32 🗘	End Date:	04/24/2018 🗂 14:32 💲				
QUERIES	Total Waits 🔻								
QUERY WAITS	ALL WAIT TYPES (ms)								
RESOURCES CPU CPU MEMORY ODSK OSENEE NAMS DATABASES ALERTS	SERVER WAITS	0-31 E00 PM ed 10 Nm40 Pge	04.24 01.00 Lateb	PM Transaction Log	44-34 state PM Minory New York Just A				
	Category	Туре	Wait	Total Wait	Description		Help		
	1/0	IO_COMPLETION	37.28	13619.0	Caused when waiting for I/O operations to complete I/Os. Data page I/O completion waits appear as PAG		ge		
	1/0	PAGEIOLATCH_EX	0.79	288.0	Caused when a task is waiting on a latch for a buffer Exclusive mode. A long wait time may indicate prob				
	I/O	PAGEIOLATCH_SH	0.11	42.0	Caused when a task is waiting on a latch for a buffer Shared mode. A long wait time may indicate proble				
	I/O	PAGEIOLATCH_UP	2.78	1016.0	Caused when a task is waiting on a latch for a buffer Update mode. A long wait time may indicate proble				
	Lock	LCK_M_S	1.07	391.0	Caused when a task is waiting to acquire a Shared lo	ock.	http://msdn. /ms190345.a	microsoft.com/en-us/libra spx	ary
	Lock	LCK_M_SCH_M	0.01	2.0	Caused when a task is waiting to acquire a Schema	Modify lock.	http://msdn. /ms190345.a	microsoft.com/en-us/libra spx	ary
	Lock	LCK_M_SCH_S	0.07	27.0	Caused when a task is waiting to acquire a Schema	Share lock.	http://msdn. /ms190345.a	microsoft.com/en-us/libra spx	ary

### Wait categories in the drop-down menu

#### **Total Waits**

Total waits include all the types of waits collected.

#### **Signal Waits**

Signal waits occur when a resource is now available (after a resource wait) and the task is waiting to run again.

#### **Resource Waits**

Resource waits occur when access to a resource is denied because the resource is in use or not available.

#### **Server Waits panel**

Below the charts, the Server Waits panel includes information on the wait category, wait type, length of time the wait took to clear, total wait time for all the collected wait types, and a definition of the wait type.

#### Available wait types

The SQL Diagnostic Manager web console displays information on the following wait types: I/O, Memory, Non-I/O Page Latch, Non-Page Latch, Transaction Log, and Other categories.

For additional information on Server Waits metrics, see Server Waits Panel.

## Access the Resources tab

SQL Diagnostic Manager provides two paths to access the Resources tab. The first access path is by selecting the Resources tab of the single instance dashboard. You can also click the resources category icon of a specific instance in the thumbnail sub-view.

SQL Diagnostics Manager for SQL Server performance monitoring, alerting, and diagnostics for SQL Server.

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