Performance Dashboard User Manual

December 9, 2011

kCura

Contents

1. Overview

The Performance Dashboard (PDB) application is a diagnostic measurement reporting tool integrated into kCura's Relativity software. It enables Relativity Administrators to evaluate how the environment performs over time by reviewing specific metrics for their workspaces. The Dashboard can generate both a grid and a graphical display within the Relativity environment. Both displays include the ability to filter on dates, workspaces, and key performance indicators.

1.1 System Requirements

Since PDB is an extension of Relativity, no unique system requirements apply.

1.2 Installation

Please refer to the *Relativity Performance Dashboard Deployment Guide* for detailed instructions.

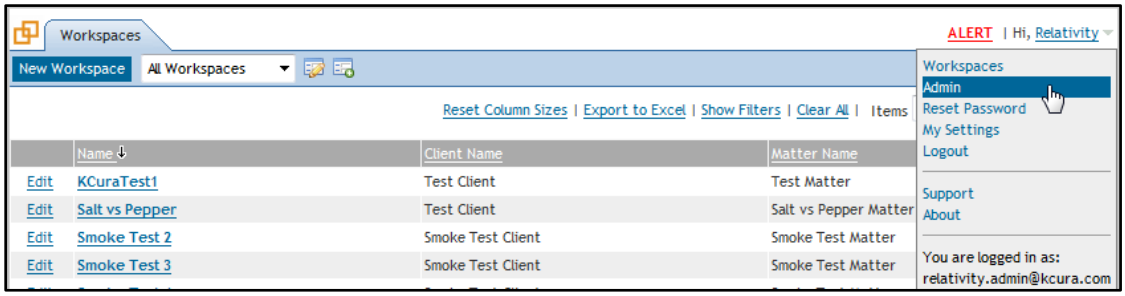
1.3 Configuration

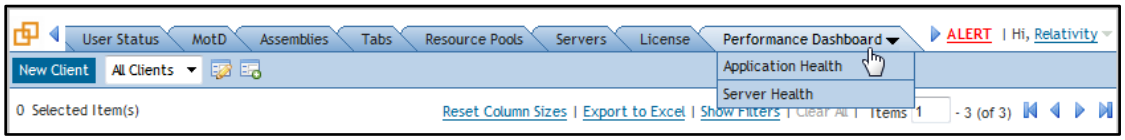
Please refer to the *Relativity Performance Dashboard Configuration Guide* for detailed instructions.

2. Accessing Performance Dashboard

To access the Performance Dashboard:

1. Within Relativity, select the **Admin** mode.
2. Click the **Performance Dashboard** tab and select **Application Health** or **Server Health**.





3. Application Health Page

The Application Health page consists of three primary areas:

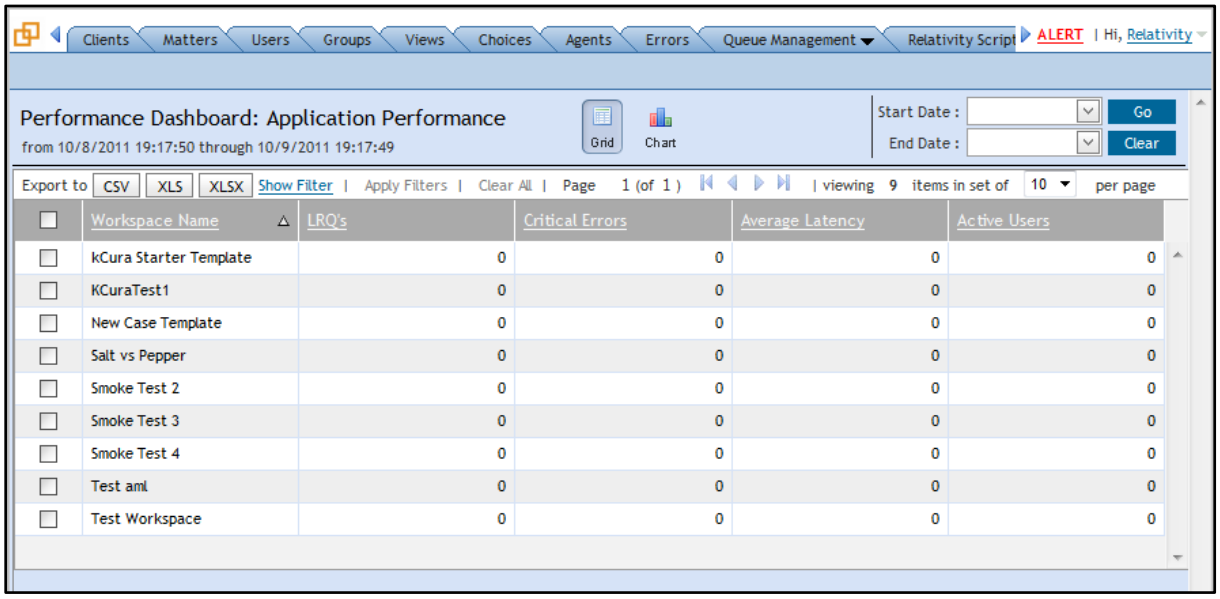
- Page Header
- Data Grid
- Chart

And has two primary data views:

- Hourly View
- Daily View

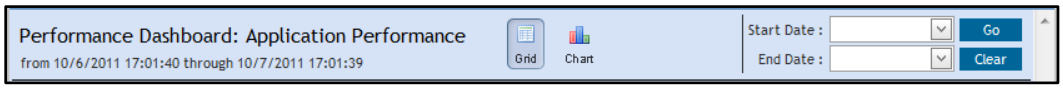
Continue to the following sections for details on these page areas and data views.

By default, the Grid is toggled on and loaded with the performance data from the past 24 hours. The Chart is hidden by default; it can be displayed by clicking the **Chart** toggle button.



3.1 Page Header

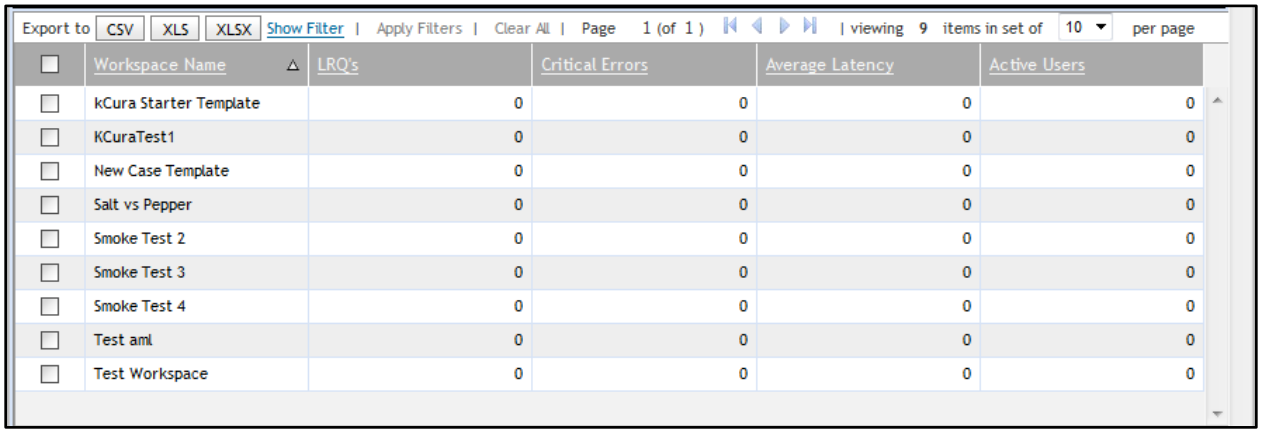
The Page Header contains the name of the page (in the following example, "Performance Dashboard: Application Performance"), a subheading that indicates what timeframe is captured in the dashboard ("from 10/6/2011 17:01:40 through 10/7/2011 17:01:39"), Grid and Chart toggle buttons, and Start Date and End Date pickers.



You can change the Start Date and End Date of the timeframe for which performance data should be displayed. After selecting the desired dates in the date pickers, click **Go** to refresh the Grid and the Chart.

The Grid panel can be toggled on and off by clicking the **Grid** button. The Chart panel can be toggled on and off by clicking the **Chart** button.

3.2 Data Grid



Workspace Name	LRQ's	Critical Errors	Average Latency	Active Users
kCura Starter Template	0	0	0	0
KCuraTest1	0	0	0	0
New Case Template	0	0	0	0
Salt vs Pepper	0	0	0	0
Smoke Test 2	0	0	0	0
Smoke Test 3	0	0	0	0
Smoke Test 4	0	0	0	0
Test aml	0	0	0	0
Test Workspace	0	0	0	0

The Data Grid displays a list of workspaces available in your instance of Relativity, along with the aggregated performance metrics. The metrics that are used to measure Application Performance include the following:

- **Long Running Queries (LRQs)**
  Any document query that takes longer than 2 seconds to complete is recorded here.
- **Critical Errors**
  The following items are polled from the error table in the EDDS database. A hit on any one of these items will result in a tally of the error:
  1. '%Read Failed%'
  2. '%Delete Failed%'
  3. '%Create Failed%'

4. '%Update Failed%'
5. '%object reference not set to an instance of an object%'
6. '%SQL Statement Failed%'
7. '%Unable to connect to the remote server%'
8. 'Native Document Viewer'

- **Average Latency**
  While a user is in Relativity, and while they are actively viewing documents, information about the performance is sent back to be recorded. This happens every five minutes, and the data is stored in the EDDS database in a the WebClientPerformance table. Latency information is stroed in the Latency column of this table. To test latency, the client sends an http request to the Relativity WebAPI. The "latency" is the amoun of time it takes from the time of the request to the time the client receives the response. THis number will increase as a web server experiences greater load. It will also be high if there is a network issue.

- **Active Users**
  As the Performance Dashboard gathers data, it also checks the UserStatus table to see how many users are in the system.

These metrics are collected at intervals specified during configuration. Refer to the *Relativity Performance Dashboard Configuration Guide* for details.

3.2.2 Navigating Grid Data

If the number of workspaces in the environment exceeds the number of records displayed per page (10 by default), you can navigate the record set using the page navigation buttons.

- first page, - 1 page back, - 1 page forward, - last page

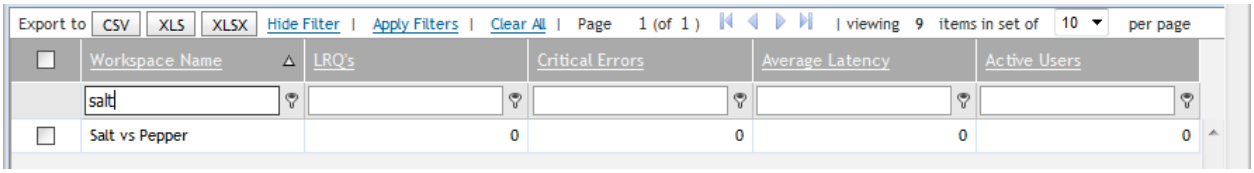
The number of records in a set can be changed using the records-per-page dropdown.

3.2.3 Sorting Grid Data

Records in the grid can be sorted by clicking the name of the column in the column header. Clicking the same column header again reverses the sort order.

3.2.4 Filtering Grid Data

Records in the grid can be filtered by clicking the **Show Filter** link above the grid, specifying the filter criteria in the displayed filter fields, and clicking **Apply Filters**.



The key icon to the right of the filter field can be used to change the type of filtering condition.

Text field conditions include the following:

- Begins with
- Contains
- Doesn't contain
- Ends with
- Equals
- Doesn't equal

Numeric field conditions include the following:

- Equals
- Doesn't equal
- Is less than
- Is less than or equal to
- Is greater than
- Is greater than or equal to

When you click the **Show Filter** link, the link switches to **Hide Filter** and vice versa. Click **Hide Filter** to hide the filter input fields that were displayed after clicking **Show Filter**.

3.2.5 Exporting Grid Data

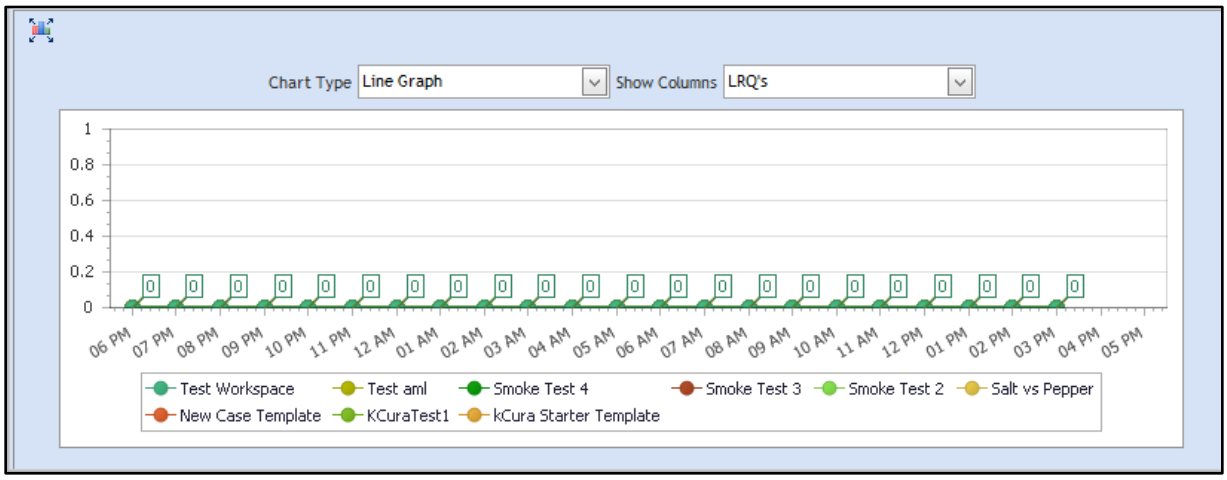
Data loaded in the grid can be exported to one of the following formats by clicking the corresponding button.

- CSV – Comma Separated Values
- XLS – MS Excel 97-2003
- XLSX – MS Excel 2007-2010

3.2.6 Selecting Records for Display on Chart

To display only certain workspaces on the chart, select the check boxes to the left of their names. By default, if no workspaces are checked when the **Chart** button is clicked, the chart will display all workspaces.

3.3 Chart



The Chart panel contains the following elements:

- Fit to Screen button
- Chart Type selector
- Show Columns selector

3.3.1 Fit to Screen

Use this function to resize the chart to fit inside the visible area of the screen.

3.3.3 Chart Type

Use this function to switch between two types of graphs:

- Line Graph
- Bar Graph

3.3.4 Show Columns

Use this function to select which metrics to display on the chart:

- LRQs
- Critical Errors
- Average Latency
- Active Users

4. Server Health Page

The Server Health page consists of three primary areas:

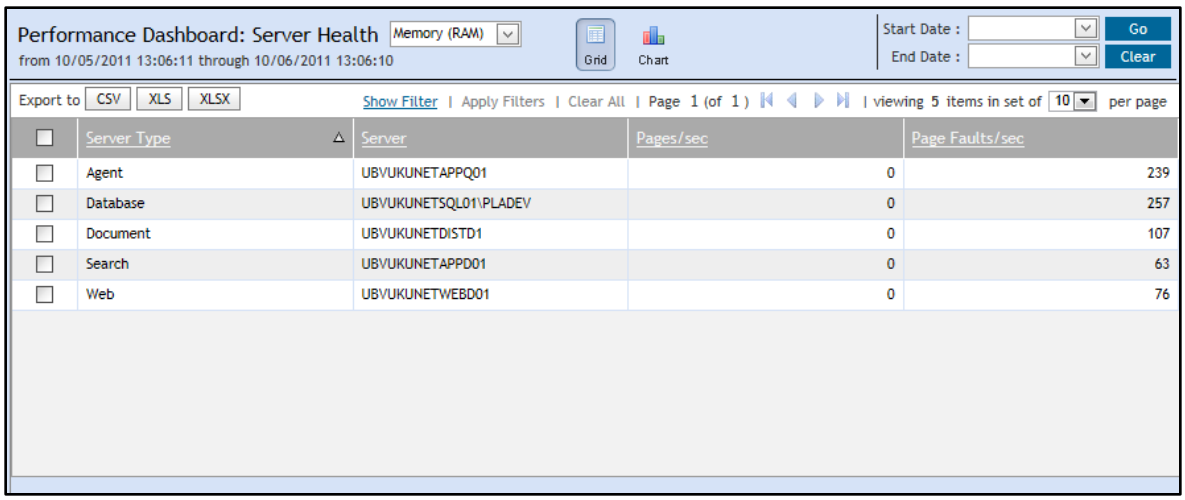
- Page Header
- Data Grid
- Chart

And has two primary data views:

- Hourly View
- Daily View

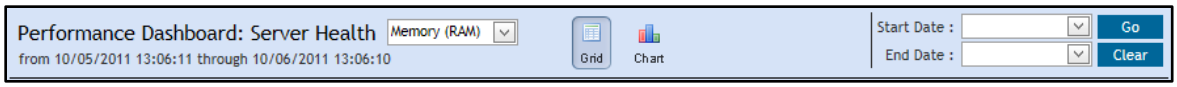
Continue to the following sections for further details on these page areas and data views.

By default, the Grid is toggled on and loaded with the performance data from the past 24 hours. The Chart is hidden by default; it can be displayed by clicking the **Chart** toggle button.



4.1 Page Header

The Page Header contains the title of the page (in the following example, "Performance Dashboard: Server Health"), a drop-down selector for the type of performance metrics, a subheading which indicates what timeframe is captured in the dashboard ("from 10/05/2011 13:06:11 through 10/06/2011 13:06:10"), Grid and Chart toggle buttons, and Start Date and End Date pickers.



You can select which aspect of server performance to examine by selecting one of the options from the drop-down selector to the right of the Page Title:

- Memory (RAM)
- Processor
- Hard Disks
- SQL Server

You can change the Start Date and End Date of the timeframe for which performance data should be displayed. After selecting the desired dates in the date pickers, click **Go** to refresh the Grid and the Chart.

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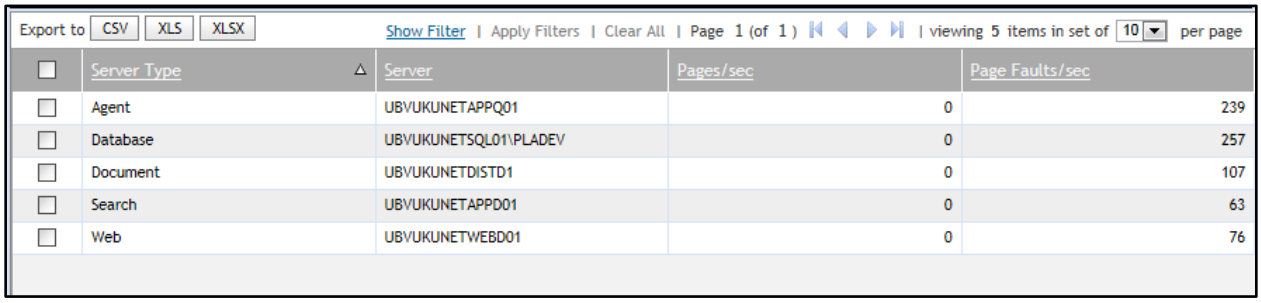
4.2 Data Grid



The Data Grid displays a list of servers available in your Relativity environment, along with the aggregated performance metrics. The metrics that are used to measure Server Health depend on the option selected in the drop-down list next to the page title. These options include:

From TechNet: http://technet.microsoft.com/en-us/library/cc768048.aspx

Memory : Pages/sec. This value is often confused with Page Faults/sec. The Pages/sec counter is a combination of Pages Input/sec and Pages Output/sec counters. This counter, however, is a general indicator of how often the system is using the hard drive to store or retrieve memory associated data.

Page Faults/sec is a combination of hard page faults and soft page faults. A page fault is generated and trapped whenever a program accesses a page that is mapped in the virtual address space, but it is not in physical RAM, that is, the physical cards on the server. Servers and computers utilize a portion of the disk, called the swap file, or page file, for additional storage. In a soft page fault, the page actually is in memory, but is not marked in the memory management unit as being active. These faults do not provoke disk reads, so they are less expensive than hard faults. Hard faults result in a read from disk from the page file.

Processor : % Processor Time. This counter provides a measure of how much time the processor actually spends working on productive threads and how often it was busy servicing requests. This counter actually provides a measurement of how often the system is doing nothing subtracted from 100%. This is a simpler calculation for the processor to make. The processor can never be sitting idle waiting to the next task, unlike our cashier. The CPU must always have something to do. It's like when you turn on the computer, the CPU is a piece of wire that electric

current is always running through, thus it must always be doing something. NT give the CPU something to do when there is nothing else waiting in the queue. This is called the idle thread. The system can easily measure how often the idle thread is running as opposed to having to tally the run time of each of the other process threads. Then , the counter simply subtracts the percentage from 100%.

PhysicalDisk : Avg. Disk sec/Read. The value for this counter is generally the number of seconds it takes to do each read. On less-complex disk subsystems involving controllers that do not have intelligent management of the I/O, this value is a multiple of the disk's rotation per minute. This does not negate the rule that the entire system is being observed. The rotational speed of the hard drive will be the predominant factor in the value with the delays imposed by the controller card and support bus system.

PhysicalDisk : Avg. Disk sec/Write. Same as read but write

These metrics are collected at intervals specified during configuration. Refer to the *Relativity Performance Dashboard Configuration Guide* for details.

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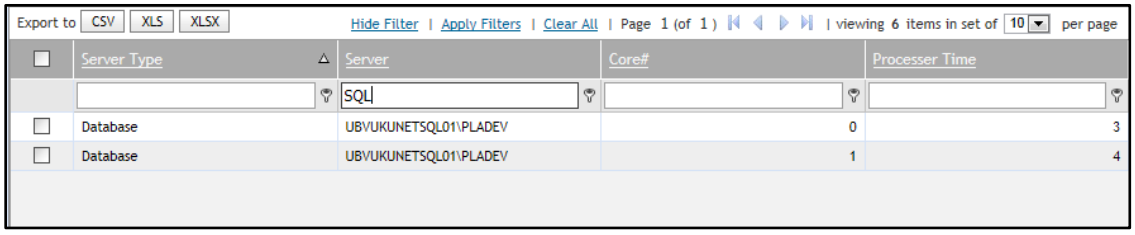

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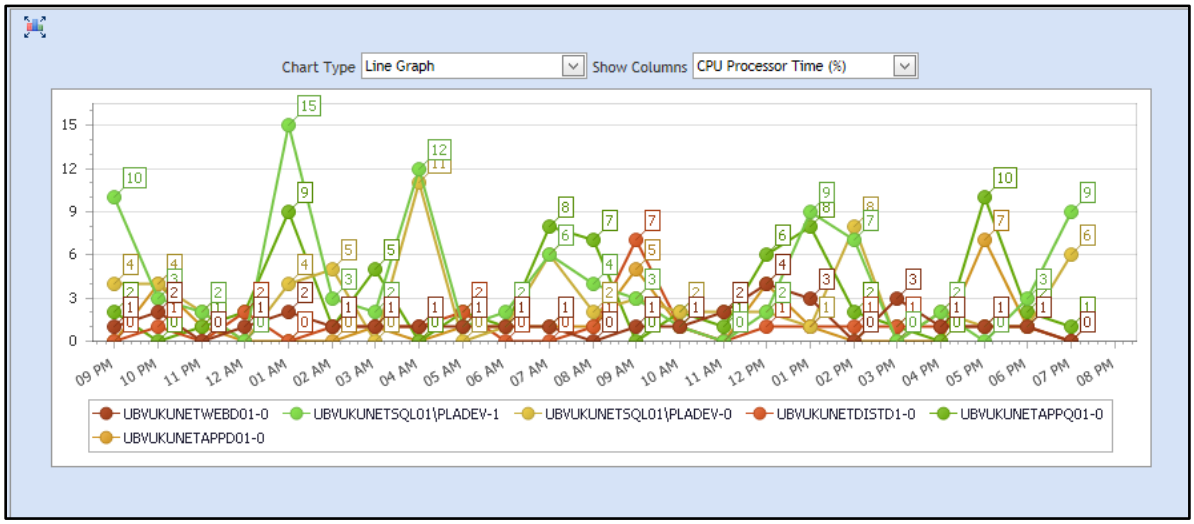

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4.3.4 Show Columns

Use this function to select which metrics to display on the chart (depending on the Server Health option from the drop-down next to the page title):

- Memory (RAM)
  - Pages/Sec
  - Page Faults/Sec
- Processor
  - CPU Processor Time (%)
- Hard Disks
  - Disk Avg Sec/Read
  - Disk Avg Sec/Write
- SQL Server
  - Page Life Expectancy

5. Disclaimer

This documentation is proprietary information of kCura Corporation and may be modified, altered, or repurposed only in accordance with written consent from kCura. The information in this guide is subject to change.