

Key Health Indicators

The Foundation for Maintaining Healthy Lync Servers

For more information on CQM and KHIs, download the *Lync Server Networking Guide* here:



What are Key Health Indicators (KHI)?

Key Health Indicators are performance counters with thresholds aimed at revealing user experience issues. Gathering KHI data is usually the first step to implementing the Call Quality Methodology (CQM), which is focused on ensuring a quality audio experience for Lync users.

KHIs are used in addition to standard Lync Monitoring Solutions (e.g. SCOM, Synthetic Transactions, Monitoring Server) and not instead of those solutions.

Collect the KHI performance counters and populate the accompanying KHI spreadsheet to produce a scorecard that will help you determine the server health of a Lync deployment. Once populated, it guides you in repairing the environment and gives additional insight to other stakeholders. Evaluate KHIs on a monthly basis and incorporate them into any deployment's ongoing operational processes.

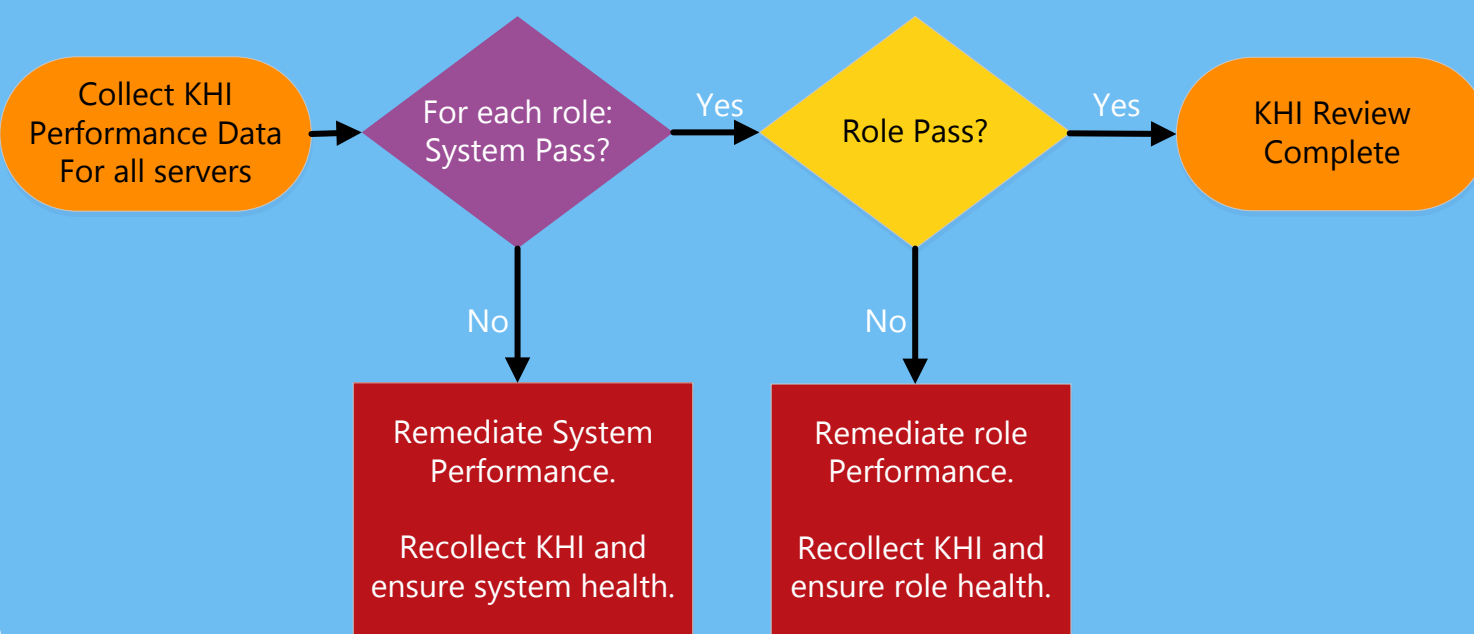
Download the Lync Server Networking Guide to see the full list of KHIs.

To Collect KHI Data

1. Run the KHI script included with the Lync Server Networking Guide on each Lync Server. This will create a Data Collector inside of Performance Monitor and name it KHI. By default, data will be polled every 15 seconds.
2. Before the start of your company's business day, go to each Lync Server and start the KHI Data Collector.
3. At the end of that day, stop the KHI Data Collector and copy the data to a central location.
4. After using Performance Monitor to fill in the KHI spreadsheet included with the Lync Server Networking Guide download, compare the results to the recommended targets.

Remediation Flow for all Server Roles

For each server in your Lync implementation, begin by verifying that the server's component health and system performance is at or above the desired level. Only after that should you look at the indicators relating to the server's role in the overall Lync implementation.



Legend

AS MCU = Application Sharing Multi-point Control Unit
 AV MCU = Audio/Video MCU
 IM MCU = Instant Messaging MCU
 UCWA = Unified Communications Web Api
 AV Edge = Traversal of audio/video via edge
 AV Auth = Audio/Video Authentication
 SIP Stack = Contains Lync's core SIP implementation
 Data Proxy = Used for edge conferencing
 LySS = Lync Storage Service

Lync Server 2013 – Front-end Servers

AS/AV/IM MCU MCU Health State <2		Web Components Distribution List expansion AD timeouts <0 ABWQ failures = 0 LIS failures = 0 Authentication Errors < 1/sec ASP.NET v4 Requests Rejected = 0	
Avg. Incoming Message Processing < 1 sec Incoming Responses Dropped < 1/sec Incoming Requests Dropped < 1/sec Queue Latency < 100 ms Sproc Latency < 100 ms Throttled Requests = 0		SIP Stack Authentication Errors < 1/sec Incoming Messages Timed Out < 2 Avg. Incoming Message Hold < 1 sec Flow Controlled Connections < 2 Avg. Out Queue Delay < 2 sec	
% of space used by Storage Service DB < 80 # of data loss event = 0		LySS # of replica replication failures = 0	
Page life expectancy > 300 Sec.		SQL Batch requests / sec < 2500	
CPU CPU Utilization < 80%	Disk Avg. Disk Write < 10 ms Avg. Disk Read < 10 ms	Memory Available MB >20% System Total	Network Queue Length < 2 Discarded (in / out) = 0

Lync Server 2013 – Backend SQL Servers

Page life expectancy > 300 Sec.		Batch requests / sec < 2500	
CPU CPU Utilization < 80%	Disk Avg. Disk Write < 10 ms Avg. Disk Read < 10 ms	Memory Available MB >20% System Total	Network Queue Length < 2 Discarded (in / out) = 0

Lync Server 2013 – Mediation Servers

Load Call Failure Index = 0 Failed Calls due to Proxy <10 Failed Calls due to Gateway <10		Mediation Server Service Calls (in or out) rejected = 0 Media Candidates missing = 0 Media Connectivity Check Failures = 0	
CPU CPU Utilization < 80%	Disk Avg. Disk Write < 10 ms Avg. Disk Read < 10 ms	Memory Available MB >20% System Total	Network Queue Length < 2 Discarded (in / out) = 0

Lync Server 2013 – Edge Servers

AV Auth Bad Requests < 20/sec	AV Edge Auth. Failures <20/sec Allocation Failures <20/sec Packets Dropped <300/sec	Data Proxy Throttled Server connections < 3 System is Throttling <1	
Connections over limit dropped < 1 Flow Controlled Connections <100 Avg. Message Processing < 3 sec		SIP Stack Sends timed out <10 Incoming requests dropped < 1/sec	
CPU CPU Utilization < 80%	Disk Avg. Disk Write < 10 ms Avg. Disk Read < 10 ms	Memory Available MB >20% System Total	Network Queue Length < 2 Discarded (in / out) = 0