



System Usage

GRIP ON SOL

2024-04-16

Contents

1	Introduction	3
2	System Usage	3
2.1	Agent Job: QGrip-SystemUsage.....	3
2.2	Instance Job: System Usage.....	4
3	System Usage – Reports.....	6

1 Introduction

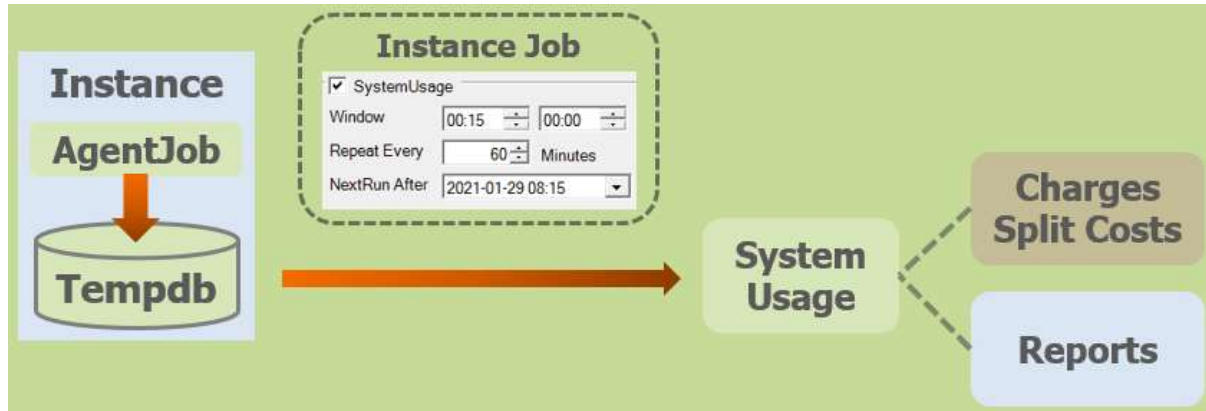
Agent Job: QGrip-SystemUsage

- Runs every 17 Seconds
- Registers Cpu, IO, Connects, Memory
- Approximated (Not 100%)
- Result in tempdb
- Transferred to QGrip with scheduled Instance Job System Usage

- QGrip UI: Report->SystemUsage
- Used in Charges, Split Costs

SystemUsage cannot not be configured for SQL Server Express editions as it misses the SQL Server Agent jobs.

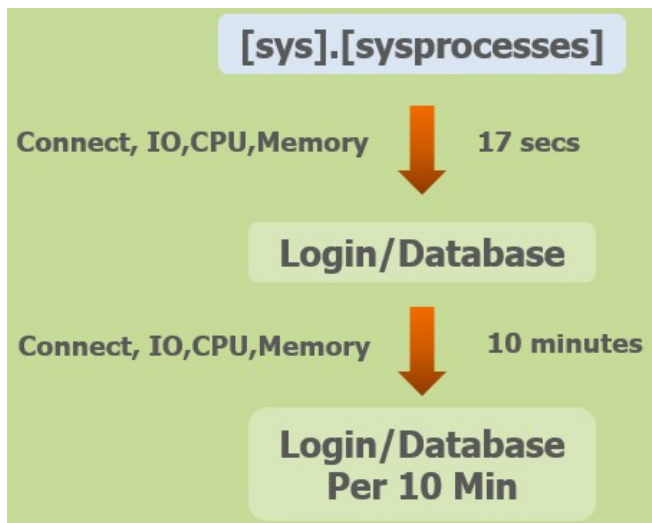
2 System Usage



The global System Usage process. System Usage job cannot be requested (run manually) for an instance.

2.1 Agent Job: QGrip-SystemUsage

When the SystemUsage job has been configured to run on an Instance, the SQL Server Agent job QGrip-SystemUsage will be created if it is not already present.



The job runs every 17 seconds to make sure that it runs on different moments throughout the day. The information in sysprocesses is used to make a snapshot of processes Connects, IO, CPU and Memory usage on the Instance. The information is aggregated in periods of 10 minutes.

The job creates the following objects, in tempdb:

- [dbo].[QGripSystemUsageHistory] (Table)
- [dbo].[QGripSystemUsageNow] (Table)
- [dbo].[QGripSystemUsageOpen] (Table)
- [dbo].[QGripSystemUsagePeriod] (Table)
- [dbo].[QGripSystemUsagePeriodLogin] (Table)
- [dbo].[UspQGripSystemUsage] (Stored Procedure)

2.2 Instance Job: System Usage



The Scheduled Instance Job SystemUsage collects the information on the Instance and aggregates the System Usage per 10 minutes, hour and day.

System Usage job at yy.15?

Why we recommend that the System Usage jobs runs for each instance at xx.15 is explained below.

Per 10Min	Calculated
xx.00-xx.10	xx.20
xx.10-xx.20	xx.30
xx.20-xx.30	xx.40
xx.30-xx.40	xx.50
xx.40-xx.50	yy.00
xx.50-yy.00	yy.10
Per Hour	
xx.00-yy.00	yy.10
Per Day	
00.00-00.00	00.10

Instance Job

SystemUsage

Window: 00:15 - 00:00

Repeat Every: 60 Minutes

NextRun After: 2021-01-29 08:15

The blocks of 10 minutes are aggregated with a delay of 10 minutes. To gen the last hour (and day) in QGrip as soon as possible, the job should run just a little bit later than 10 minutes past every hour.

Login/Database

1. Login in QGrip
-> Use Login App
2. Login not in QGrip
-> Use Database App

When QGrip is processing the System Usage, it is linked to an Application. This is no problem if the remote login or process is also a login on the server. But if the login (or AD-User) has access to the instance via an AD-group, the Application linked to the database is used.

Parameter

Delete Per10Min data after days

Delete PerHour data after days

System Usage

- Per 10 Min
- Per Hour

Delete during Instance Job

When processing System Usage, old records per 10 minutes and per hour are deleted. The config parameter 'Keep System Usage' is used to determine what can be deleted.

3 System Usage – Reports

The screenshot shows the 'SystemUsage Report' window. The 'Instance' section is set to 'Production' and 'VMSQL1201\PRD'. The 'Level' is set to 'Login'. The 'Period' is set to '2021-01-28' with 'Days' set to '1'. The 'Parameters' section has checkboxes for 'Conn', 'Cpu', 'IO', and 'Memory in MB', and a dropdown for 'Per10Min'. The 'PerDay' and 'PerHour' tabs are highlighted with a red box.

PeriodStart	Login	Conn	%Conn	Cpu	%Cpu	IO	%IO	MemMB	%Mem
2021-01-28	AD\Dan_Admin	1.911	3.61	735	23.30	103	1.82	29	3.52
2021-01-28	AD\QGrip_gMSA\$	48.391	91.29	2.058	65.23	50	0.88	756	89.20
2021-01-28	AD\SASQL_VMSQL1201_2PRD	2.705	5.10	362	11.47	5.499	97.29	61	7.28

The tabs 'Per Day' and 'Per Hour' are always present in the report.
The tab 'Per Day' will never contain data for 'today, only for yesterday and earlier.

The screenshot shows the 'SystemUsage Report' window with the 'Per10Min' checkbox checked in the 'Parameters' section. The 'Get Report' button is highlighted with a red box.

PeriodStart	Login	Conn	%Conn	Cpu	%Cpu	IO	%IO	MemMB	%Mem
2021-01-28	AD\Dan_Admin	1.911	3.61	735	23.30	103	1.82	29	3.52
2021-01-28	AD\QGrip_gMSA\$	48.391	91.29	2.058	65.23	50	0.88	756	89.20
2021-01-28	AD\SASQL_VMSQL1201_2PRD	2.705	5.10	362	11.47	5.499	97.29	61	7.28

To add the tab 'Per 10 Minutes', check the checkbox. Hit 'Get Report' is needed to fill the tab with data.

The screenshot shows the 'SystemUsage Report' window with the 'Instance' section highlighted by a red box. The 'Get Report' button is also highlighted with a red box.

PeriodStart	Login	Conn	%Conn	Cpu	%Cpu	IO	%IO	MemMB	%Mem
2021-01-28	AD\Dan_Admin	1.911	3.61	735	23.30	103	1.82	29	3.52
2021-01-28	AD\QGrip_gMSA\$	48.391	91.29	2.058	65.23	50	0.88	756	89.20
2021-01-28	AD\SASQL_VMSQL1201_2PRD	2.705	5.10	362	11.47	5.499	97.29	61	7.28

Instance selection. If System Usage has not been activated for selected instance, no data will be shown.

The screenshot shows the 'SystemUsage Report' window. The 'Level' dropdown menu is highlighted with a red box and set to 'Login'. The 'Get Report' button is also highlighted with a red box. The table below shows system usage data for three logins on 2021-01-28.

PeriodStart	Login	Conn	%Conn	Cpu	%Cpu	IO	%IO	MemMB	%Mem
2021-01-28	AD\Dan_Admin	1.911	3.61	735	23.30	103	1.82	29	3.52
2021-01-28	AD\QGrip_gMSA\$	48.391	91.29	2.058	65.23	50	0.88	756	89.20
2021-01-28	AD\SASQL_VMSQL1201_2PRD	2.705	5.10	362	11.47	5.499	97.29	61	7.28

Level selection. Select either Login, Database, Application or All.
It is also possible to select just one specific Login, Database or Application.

Application	Login	Database
QGrip	AD\Dan_Admin	QGrip
QGrip	AD\QGrip_gMSA\$	QGrip

Level All, all 3 levels are shown.

The screenshot shows the 'SystemUsage Report' window. The 'Period' section is highlighted with a red box, showing 'Start' as 2021-01-28 and 'Compare' as 2021-01-27. The 'Get Report' button is also highlighted with a red box. The table below shows system usage data for three logins on 2021-01-28.

PeriodStart	Login	Conn	%Conn	Cpu	%Cpu	IO	%IO	MemMB	%Mem
2021-01-28	AD\Dan_Admin	1.911	3.61	735	23.30	103	1.82	29	3.52
2021-01-28	AD\QGrip_gMSA\$	48.391	91.29	2.058	65.23	50	0.88	756	89.20
2021-01-28	AD\SASQL_VMSQL1201_2PRD	2.705	5.10	362	11.47	5.499	97.29	61	7.28

Choose the start date or the period and for how many days you want to see the System Usage.
It is also possible to compare the usage with another day.

SystemUsage Report

Instance: Env **Production** Instance **VMSQL1201PRD** Level: **Login** Specific

Period: Start **2021-01-28** Days **1** Compare **2021-01-27**

Parameters: Conn Cpu IO Memory in **MB** Per10Min

PeriodStart	Login	Conn	%Conn	Cpu	%Cpu	IO	%IO	MemMB	%Mem
2021-01-28	AD\Dan_Admin	1.911	3.61	735	23.30	103	1.82	29	3.52
2021-01-28	AD\QGrip_gMSA\$	48.391	91.29	2.058	65.23	50	0.88	756	89.20
2021-01-28	AD\SASQL_VMSQL1201_2PRD	2.705	5.10	362	11.47	5.499	97.29	61	7.28

The parameters just show/hide columns in the already collected report. Switch between different memory units (KB, MB, GB). Conn = Connects.