

SQL Sentry Job Queuing

Last Modified on 22 November 2021

Introduction

Job queuing allows a resource intensive job to delay other jobs from executing until it completes. This allows the resource intensive job to utilize more of the server resources, allowing all jobs to finish faster and more efficiently. Unlike event chains, job queuing applies only to the jobs on an individual SQL Server instance.

Each SQL Agent Job has its own queuing settings. Choose the desired job, and then select the **Settings** tab from the **Conditions and Settings** pane. Configure default queuing settings at both the global and instance levels, and those settings are inherited by any associated jobs.

Settings	
LONDONSQL01.SE.LOCAL (Windows Computer)	
SQL Server	▼
SQL Server Agent Job	▼
Global\SE Demo Site\Production	
- Runtime Thresholds	
Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10
- Behavior When Queuing Other Jobs	
Inherit From Parent (Global)	True
Queue Type	Never queue
Queue Others For Up To	00:30:00
Auto-Start Threshold	04:00:00
- Behavior When This Job is Queued	
Inherit From Parent (Global)	True
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	Use default setting
Runtime Thresholds	
Conditions	Settings

Behavior When Queuing Other Jobs

Inherit From Parent

Select **False** if you want to configure the queuing behavior differently than the **Inherited** settings.

Settings ×

LONDONSQL01.SE.LOCAL (Windows Computer)

SQL Server ▼

SQL Server Agent Job ▼

Global\SE Demo Site\Production

[-] **Runtime Thresholds**

Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10

[-] **Behavior When Queuing Other Jobs**

Inherit From Parent	False	▼
Queue Type	True	
Queue Others For Up To	False	
Auto-Start Threshold	04:00:00	

[-] **Behavior When This Job is Queued**

Inherit From Parent (Global)	True
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	Use default setting

Inherit From Parent
Specifies whether the queuing behavior is inherited from the parent object.

Conditions Settings

Queue Type

Under **Queue Type** there are three options:

Settings ×

LONDONSQL01.SE.LOCAL (Windows Computer)

SQL Server ▼

SQL Server Agent Job ▼

Global\SE Demo Site\Production

Runtime Thresholds	
Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10
Behavior When Queuing Other Jobs	
Inherit From Parent	False
Queue Type	Never queue ▼
Queue Others For Up To	Never queue
Auto-Start Threshold	Queue for specified time
Behavior When This Job is Queued	
Inherit From Parent (Global)	True
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	Use default setting

Queue Type
The behavior when this job queues other jobs.

Conditions Settings

Queue Type	Description
Never queue	This job doesn't queue any other jobs.
Queue for specified time	This job queues other jobs for the specified time.
Queue indefinitely	This job queues other jobs until this job has completed.

Queue Others For Up To

The maximum amount of time this job queues other jobs. This setting isn't available [globally](#), because it could be disastrous if it were accidentally enabled for all jobs on all SQL Servers.

Settings [X]

LONDONSQL01.SE.LOCAL (Windows Computer)

SQL Server [v]

SQL Server Agent Job [v]

Global\SE Demo Site\Production

Runtime Thresholds	
Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10
Behavior When Queuing Other Jobs	
Inherit From Parent	False
Queue Type	Queue for specified time
Queue Others For Up To	00:30:00 [v]
Auto-Start Threshold	30 [v] Minutes [v] OK
Behavior When This Job is Queued	
Inherit From Parent (Global)	True
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	Use default setting

Queue Others For Up To
The maximum length of time this job will queue other jobs.

Conditions Settings

Auto-Start Threshold

Any queued job whose next scheduled run time is beyond the specified threshold starts automatically upon leaving the queue. If a job's next scheduled run time is before the threshold it doesn't auto-start but resumes with its next scheduled run. This setting is extremely valuable for avoiding having to configure the auto-start type for every possible job that can be queued. It effectively provides a safeguard so that jobs that don't run very frequently auto-start and thus don't miss a scheduled run, and those that do run frequently resume their schedules since it usually doesn't matter if they miss a few runs. It also helps to automatically even the load when a queuing job finishes, so that all queued jobs don't auto-start at the same time and cause resource contention issues.

Settings [X]

LONDONSQLO1.SE.LOCAL (Windows Computer)

SQL Server [v]

SQL Server Agent Job [v]

Global\SE Demo Site\Production

Runtime Thresholds	
Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10
Behavior When Queuing Other Jobs	
Inherit From Parent	False
Queue Type	Queue for specified time
Queue Others For Up To	00:30:00
Auto-Start Threshold	04:00:00 [v]
Behavior When This Job is Queued	4 [↑] [↓] Hours [v] OK
Inherit From Parent (Global)	True
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	Use default setting

Auto-Start Threshold
Any job whose next scheduled run time is beyond the specified threshold will be started automatically upon leaving the queue. If a job's next scheduled run time is before the threshold it will not auto-start.

Conditions Settings

Note: The maximum number of jobs that can be queued on a server is specified by the **Maximum Queue Length** setting under [SQL Server Instance](#) settings.

Behavior When This Job is Queued

Inherit From Parent

Select **False** to configure the queuing behavior differently than the **Inherited** settings.

Settings ×

LONDONSQL01.SE.LOCAL (Windows Computer)

SQL Server ▼

SQL Server Agent Job ▼

Global\SE Demo Site\Production

Runtime Thresholds	
Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10
Behavior When Queuing Other Jobs	
Inherit From Parent (Global)	True
Queue Type	Never queue
Queue Others For Up To	00:30:00
Auto-Start Threshold	04:00:00
Behavior When This Job is Queued	
Inherit From Parent	False ▼
Queue Type	True
Queue For Up To	False
Auto-Start Type	Use default setting

Inherit From Parent
Specifies whether the behavior when queued is inherited from the parent object.

Conditions Settings

Queue Type

Under **Queue Type** there are three options:

Settings ×

LONDONSQL01.SE.LOCAL (Windows Computer)

SQL Server ▼

SQL Server Agent Job ▼

Global\SE Demo Site\Production

Runtime Thresholds	
Inherit From Parent (Global)	True
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Maximum Runtime Threshold Percent	250
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Minimum Runtime Threshold Percent	10
Behavior When Queuing Other Jobs	
Inherit From Parent (Global)	True
Queue Type	Never queue
Queue Others For Up To	00:30:00
Auto-Start Threshold	04:00:00
Behavior When This Job is Queued	
Inherit From Parent	False
Queue Type	Queue for specified time ▼
Queue For Up To	Never queue
Auto-Start Type	Queue for specified time
	Queue indefinitely

Queue Type
The behavior when this job is queued.

Conditions Settings

Queue Type	Description
Never queue	This job can't be queued by another job.
Queue for specified time	This job only queues for the specified time.
Queue indefinitely	This job queues indefinitely.

Queue For Up To

The maximum amount of time this job can be queued.

Settings [X]

LONDONSQLO1.SE.LOCAL (Windows Computer)

SQL Server [v]

SQL Server Agent Job [v]

Global\SE Demo Site\Production

Runtime Thresholds	
Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10

Behavior When Queuing Other Jobs	
Inherit From Parent (Global)	True
Queue Type	Never queue
Queue Others For Up To	00:30:00
Auto-Start Threshold	04:00:00

Behavior When This Job is Queued	
Inherit From Parent	False
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	30 [v] Minutes [v] OK

Queue For Up To
The maximum length of time this job can be queued.

Conditions Settings

Auto-Start Type

Controls the auto-start behavior for the job when it leaves the queue.

Settings ×

LONDONSQL01.SE.LOCAL (Windows Computer)

SQL Server ▼

SQL Server Agent Job ▼

Global\SE Demo Site\Production

- Runtime Thresholds**

Inherit From Parent (Global)	True
Maximum Runtime Threshold	00:00:00
Maximum Runtime Threshold Percent	250
Minimum Runtime Threshold	00:00:00
Minimum Runtime Threshold Percent	10
- Behavior When Queuing Other Jobs**

Inherit From Parent (Global)	True
Queue Type	Never queue
Queue Others For Up To	00:30:00
Auto-Start Threshold	04:00:00
- Behavior When This Job is Queued**

Inherit From Parent	False
Queue Type	Queue for specified time
Queue For Up To	00:30:00
Auto-Start Type	Use default setting ▼

Don't auto-start, resume schedule

Auto-start immediately

Use default setting

Auto-Start Type
Controls the auto-start behavior for the job when it leaves the queue. "Use default setting" will cause the queuing job's "Auto-Start Threshold" setting to be used.

Conditions Settings

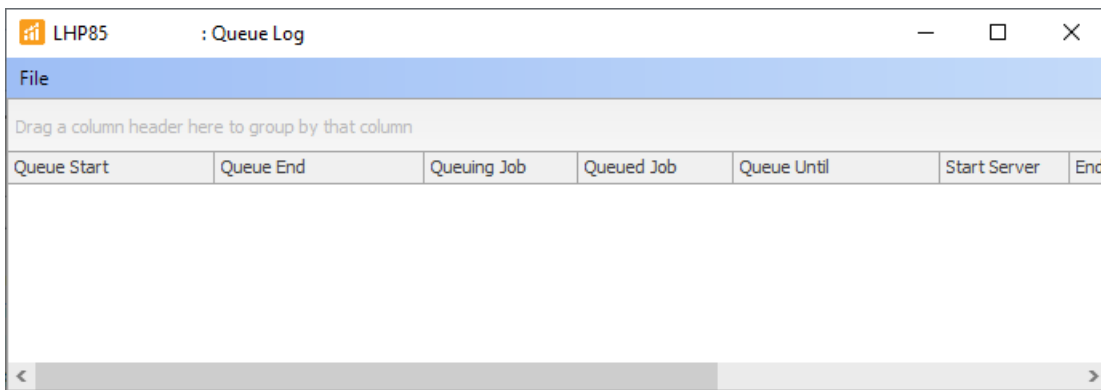
Auto-Start Type	Description
Don't Auto-Start, resume schedule	Skip the job until its next scheduled run.
Auto-start immediately	<p>If this option is checked, the job executes as soon as it leaves the queue. However, sometimes you may not want this behavior for jobs that should only run at a specific time, or for recurring jobs (jobs that run multiple times per day) where a single missed run isn't critical.</p> <p>Note: If this option isn't selected and the job is always queued by another job, such as two jobs with the exact same schedule, it may never run.</p>
Use default setting	The job uses the queuing job's Auto-Start Threshold setting. This is the default setting, and it's recommended for most cases.

Note: Jobs that use shared schedules on SQL Server 2005 and above will not be queued.

Queue Log

The **Queue Log** can be viewed by selecting **Show Queue Log** from the context menu of the **Jobs** node of a

SQL Server or an individual job node. The **Queue Log** provides details about all recent queuing activity that has taken place on the server or for the job.



Queue Start	Queue End	Queuing Job	Queued Job	Queue Until	Start Server	End
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Example Scenario

The primary reason for queuing jobs is to ensure that a high priority, resource intensive job has full access to the server's resources to complete its task without competing with other jobs that can be delayed until the high priority job is done.

Consider a full backup job that runs once a week, every Sunday at 1:00 AM. If this is the only job running, having full use of the server's resources, it can complete in about 45 minutes. However, there are typically other recurring jobs on the same server that can cause contention for resources, resulting in the backup taking almost two hours to complete. This in turn causes delays in many other recurring jobs being able to successfully complete. While it's not plausible to reschedule a five minute recurring job to recur once an hour for the sake of this one weekly backup, it may be acceptable to temporarily queue that job for one hour once a week until the backup is complete.