Jobs & Queues

GRIP ON SQL

2024-04-16

Contents

1 Introduction

This document describes the Queues in QGrip with a brief summary of the jobs that are pushed on each one of them. For a more detailed description of the jobs and their option we refer to the queue specific documents.
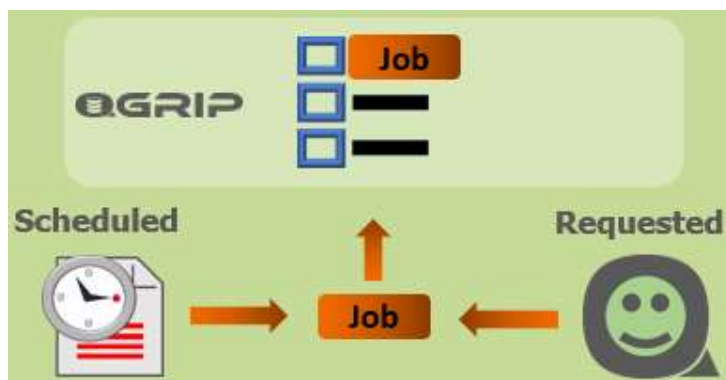
2 Queues & Jobs

All jobs or actions on the Infra (Instances) will be executed via Queues. QGrip has 3 different Queues. Mainly to prevent that different types of jobs block each other but also because they simply require different types of input. The three Queues:

- Backup-Maintenance
- Remote-Job
- Restore-Clone

As you will see further up in this document there is also a fourth queue reserved for future use, the Deploy queue. The Queues and their different jobs are described in different sections of this document.

2.1 Job Trigger

A Job will be triggered, put on the Queue, either from a Schedule or by a Request from a QGrip User. Scheduled jobs will automatically be pushed on the Queue just a few minutes before it is time to execute the Job. When a job is Requested by a QGrip User the authorisation will be checked. If the User does not have Auto-Approval for the job, it will be put on the Queue with status "Awaiting Approval" and an Approval notification will be sent to Users who are authorised to Approve (or Deny) the Request.

Priority
When a Job is pushed on a queue, its priority will be determined. An overview of the priority can be found in the documents describing the different queues.

Accessibility
A job on a Queue will never be picked up if the Accessibility check for the combination QGrip Server/Instance/Backup Share has not been successful.

Extra Authorisation Check
In the QGrip UI, a User will only be able to Request jobs he or she is authorised for. To prevent that a User executes the stored procedure manually using, for instance SSMS (SQL Server Management
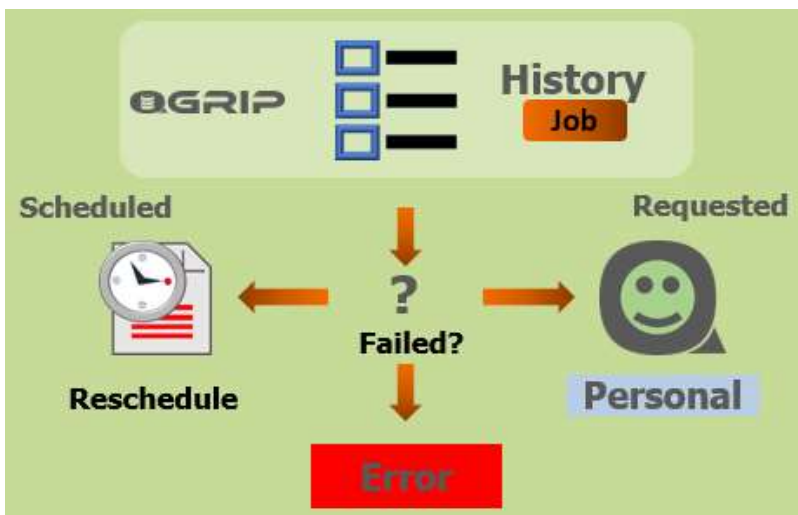
Studio), an extra Authorisation check is done in the stored procedure. This is done in all stored procedures pushing Jobs on queues and Approval of Job requests.

2.2   Job Execute

The processes on the QGrip Servers check the Queues for Jobs that should be executed. If there are more jobs on the Queue, they will be picked up according to their Run After time and Priority. Some jobs are not allowed to run at the same time, something that is also being checked. When a Job is picked up, the run time will be estimated. QGrip keeps track of how long the job took the last time and estimates a run time. If there is no history the estimated time will be -1. The job is executed on the Infra.
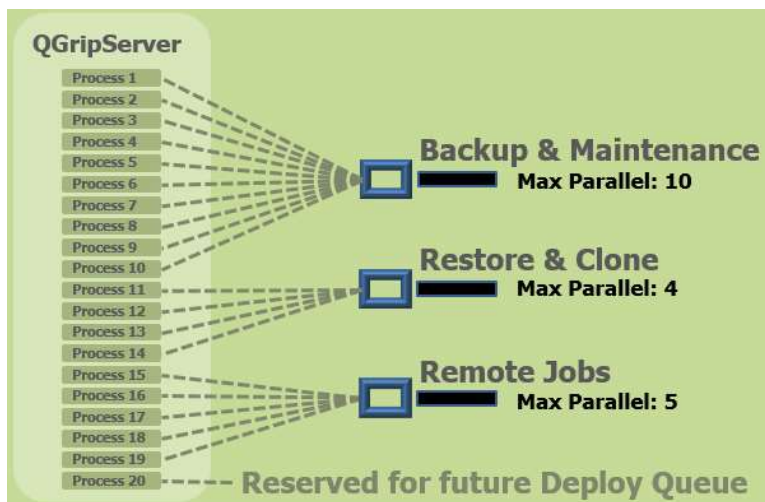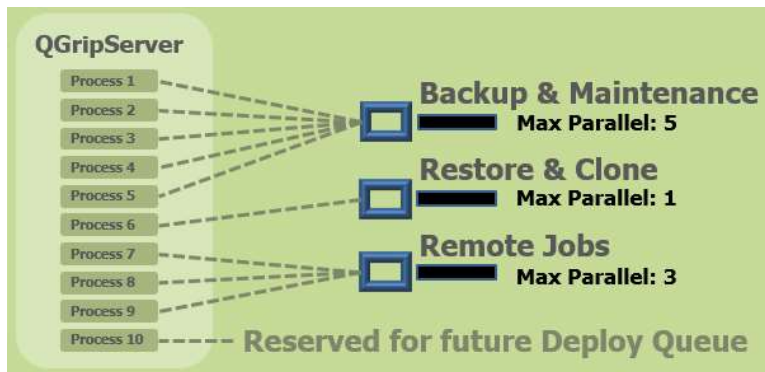
2.3   Job Finished

When the job has finished the Job History table will be filled with the outcome. If the Job was Triggered by a schedule, the job will be rescheduled. When a job has been triggered by a QGrip User a personal message will be issued that the job has finished. If the job fails the QGrip Admin will receive an Error Message.

3 QGrip Server Processes

Each QGrip Server can be configured with either 10 or 20 Start Job Processes. Each Start Job Process is designated to 1 of the 3 queues in the QGrip Database:

- Backup & Maintenance
- Restore & Clone
- Remote Jobs (Miscellaneous)

1 process is reserved for the Deploy Queue that will become active in future releases.

The number of processes configured determines the number of jobs that can run in parallel from one QGrip Server. The process checks its own Queue to see if there is a Job that needs to be executed. These checks are spread evenly over the minute. When 2 or more (max 3) QGrip Servers are used, the Queue checks will still be spread evenly and processes will never check the Queue at the same time to prevent locking issues.

4 Backup & Maintenance (BM) Queue

- **DBBackup**
  - **+Verify DBBackup**
- **LogBackup**
  - **+Verify LogBackup**
- **CheckDB**
- **Optimise**
  - **– Rebuild Index & Update Statistics**

Can be both Scheduled and Requested.

5 Restore & Clone (RC) Queue

- **Restore Database**
- **Clone Database**
- **Import Database**

Only Requested but a Clone job can be repeatable.

6 Remote Jobs (MISC) Queue

The jobs using the Remote Jobs queue have been split in 4 groups.

6.1 Remote Jobs (MISC 1)

- **Discover**
  - **– Instance Job**
- **System Usage**
  - **– Instance Job**
- **Clean-up History**
  - **– QGrip Database Job**
- **Domain Jobs**
  - **– Backup Shares & AD Group Members**

Can be both Scheduled and Requested.

6.2 Remote Jobs (MISC 2)

Application Jobs
- **Create, Drop**
  - Database, Login, Database User
- **Check-on-AD**
  - Support for Create Login (AD)
- **Password**
  - Change
  - Verify

Only Requested.

6.3 Remote Jobs (MISC 3)

QGrip System Jobs
- **Accessibility**
- **Create, Drop**
  - QGrip Logins
- **Drop QGrip AgentJob**
  - Discover, SystemUsage

Requested & Automatically triggered.

6.4 Remote Jobs (MISC 4)

Support Clone/Import Database
- **File-Transfer**
  - Automatically triggered
- **Scan-Import-BackupShare**
  - Requested

Requested & Automatically triggered.