Move QGrip Database
Disaster or Planned

GRIP ON SQL

2024-04-14

Contents

1 Introduction 4
2 QGrip Fallback DBHost 4
2.1 Firewalls: Multiple AD-Domain Configuration 5
3 Authorisation 5
4 QGrip Master Password 5
5 Disaster Move: Within AD-Domain 6
5.1 Find script: DisasterRestore-QGrip.sql 6
5.2 Create + Restore QGrip Database 7
5.2.1 Create Database 7
5.2.2 Restore Database 7
5.3 Start-up QGrip 8
5.3.1 Finalise Disaster Move 9
5.3.2 QGrip Servers: Ini-file + Reboot 10
5.3.3 Discover + Backup 10
5.3.4 QGrip.ini: QGrip-UI Share(s) 10
5.4 Fix missing backups 11
5.4.1 Run DomainJob: Check-BackupShares 11
5.4.2 Check: AlienFiles 12
6 Planned Move 13
6.1 Prepare for Move QGrip Database 13
6.1.1 Step 1: Set MoveTo QGrip Database 14
6.1.2 Step 2: Firewall Rules 14
6.1.3 Step 3: Firewall Checks 14
6.1.4 Step 4: Domain Trust 14
6.1.5 Step 5: QGrip Logins 14
6.1.6 Step 6: QGrip Users 15
6.1.7 Step 7: QGripSQLInstall 16
6.1.8 Step 8: QGrip Servers 16
6.1.9 Step 9: Monitor Hosts 16
6.1.10 Step 10: Passwords 17
6.1.11 Step 11: Migration Script 17
6.1.12 Step 12: Fallback Script 17
6.1.13 Step 13: Start Migration 17
6.2 Execute Move QGrip Database 18

6.3 Fallback Move QGrip Database 18

1 Introduction

This document contains detailed descriptions of how to move the QGrip database to another DBHost. Unfortunately, the QGrip database cannot be cloned using its own clone functionality.

DBHostType, DBHost
To be able to distinguish between databases running on a standard SQL Server Instance and SQL Server Always On cluster, the term DBHost is used. The term DBHostType is either Instance or Listener.
On a standard SQL Server Instance,

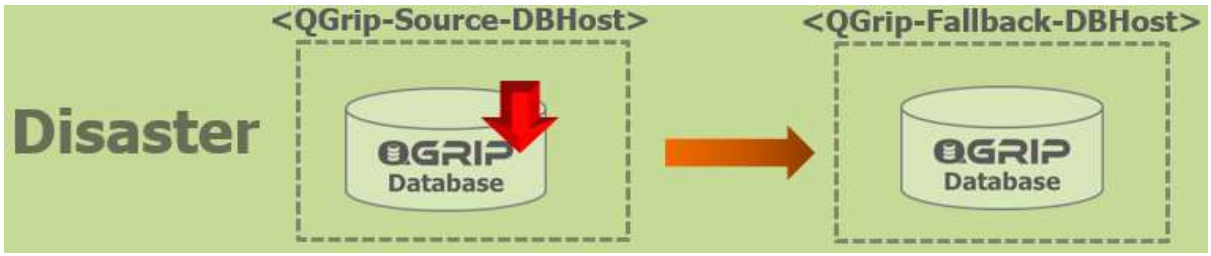
- DBHostType = Instance
- DBHost = Instance Name

On a SQL Server Always On cluster,

- DBHostType = Listener
- DBHost = DNS of the Listener

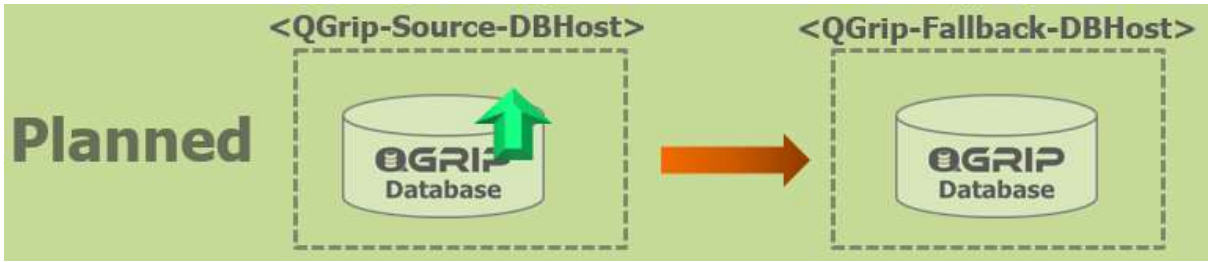
There are two scenarios for moving the QGrip database with different approaches:

- Disaster
- Planned



The QGrip database is not up and running on the “old DBHost” and needs to be restored on a “new DBHost”. The “old DBHost” is probably down.

To minimize downtime you should, in advance, define at least one DBHost to which the QGrip database can be moved after a disaster situation. The DBHost should already be added to QGrip to avoid that there are problems with Accessibility that needs to be solved in case of a Disaster move.



The QGrip database is up-and-running on the “old DBHost” but needs to be moved to a “new DBHost”.

2 QGrip Fallback DBHost

The QGrip Fallback DBHost, <QGrip-Fallback-DBHost>, is the Instance/Listener to which QGrip can be moved. The DBHost where the QGrip database is currently running is referred to as <QGrip-Source-DBHost>.

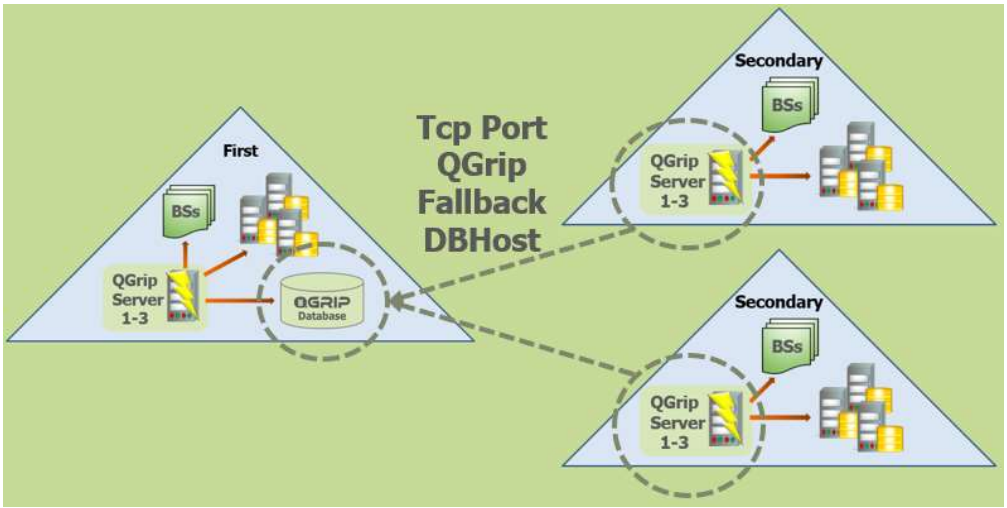
<QGrip-Fallback-DBHost>

Item	Requirement
SQL Server Version	Higher or equal to <QGrip-Source-DBHost>
Disk space	Enough to fit the QGrip database, +/- 5GB.
Authentication	Same as “Old DBHost”
In QGrip	<QGrip-Fallback-DBHost> has been added to QGrip
Production Instance	<QGrip-Fallback-DBHost> is labelled as Production Instance(s) in QGrip
Backup Schedule	<QGrip-Fallback-DBHost> has a DB and Log backup schedule.

The following information will be needed at some point and you should write it down somewhere: <QGrip-Fallback-DBHost>

Item	Your value
DBHost	
PortNumber	

2.1 Firewalls: Multiple AD-Domain Configuration



In a Multiple AD-Domain configuration, firewalls must be open between the QGrip Servers in the Secondary domain and the <QGrip-Fallback-DBHost>.

3 Authorisation

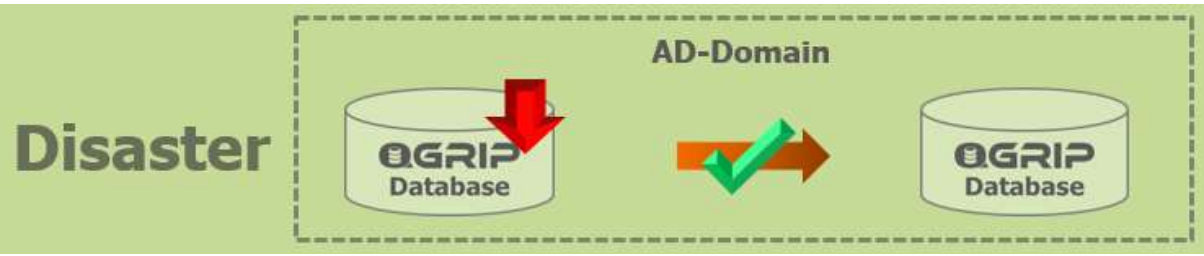
In order to move the QGrip database you need to be

- QGrip-Admin user
- Local Admin on all QGrip Server
- SYSADMIN on <QGrip-Fallback-DBHost> and <QGrip-Source-DBHost>.

4 QGrip Master Password

When moving the QGrip database, you always need the QGrip Master Password that was generated during the initial install of QGrip. This is to prevent theft and misuse of your QGrip database.

5 Disaster Move: Within AD-Domain

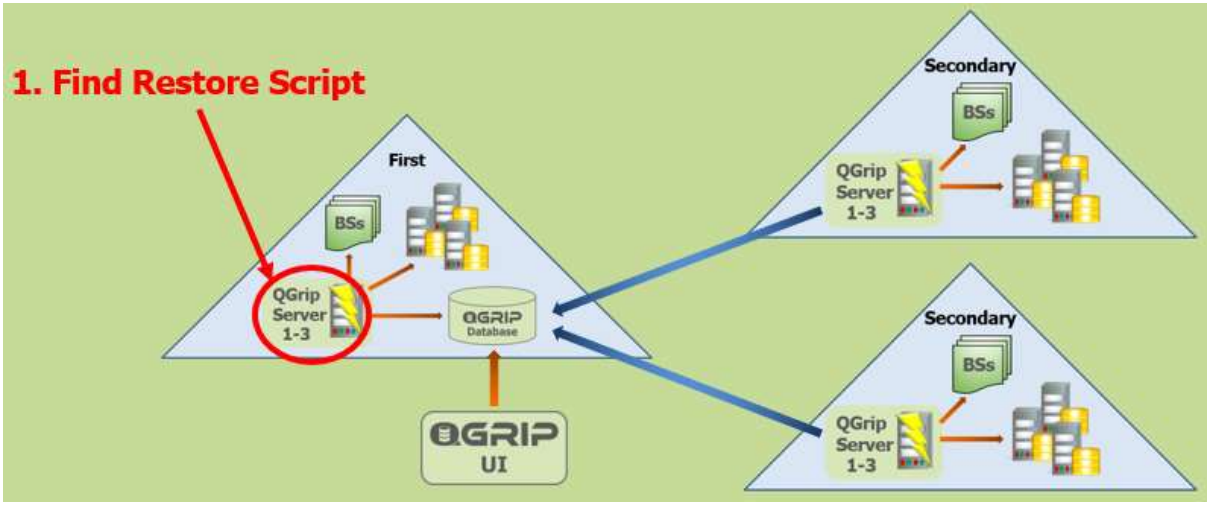


If the QGrip database needs to be moved due to a disaster situation, there will be lost data. How much data that is lost, depends on how often the LogBackup runs on the <QGrip-Source-DBHost> and when it was detected that the QGrip database is no longer available.

A Disaster move is only possible within the SAME AD-Domain!

1. Find Restore script
2. Create + Restore QGrip Database
3. Start-up QGrip
4. Fix missing backups

5.1 Find script: DisasterRestore-QGrip.sql



Login on one of the QGripServer running in the same domain as the QGrip database was running in. In the QGrip directory, go to the DisasterRestore directory and choose the latest file:

- YYYYMMDD_HHMMSS-DisasterRestore-QGrip.sql

Open the script. In the header, you will find a listing of all QGrip Servers used by QGrip.

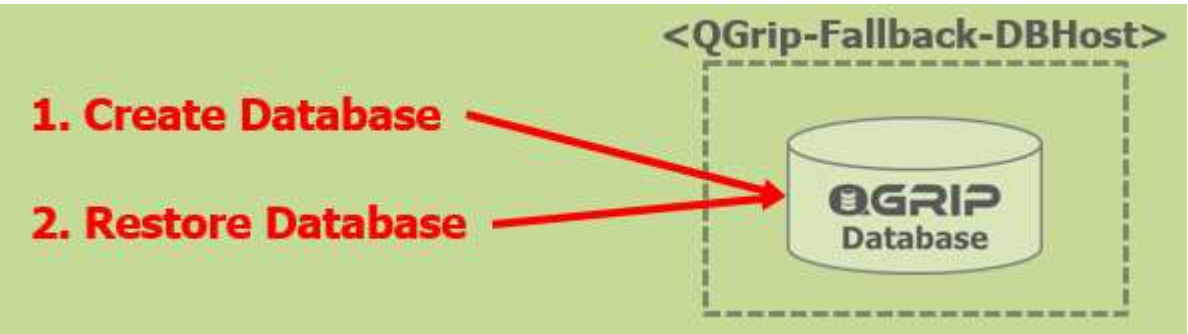
```
* QGripServers:
* Domain [GOS-A]: ATSTQS01
* Domain [GOS-B]: BTSTQS01
*
```

Login on all listed QGrip Servers within the same domain as the QGrip database was running in and look for the latest/most recent script

- YYYYMMDD_HHMMSS-DisasterRestore-QGrip.sql

on all of them. That is the script you should use for as little data loss as possible and is now referred to as <QGrip-DisasterRestore-Script>.

5.2 Create + Restore QGrip Database



The <QGrip-DisasterRestore-Script> contains information for creating the QGrip database and restore statement of the latest available backup file.

5.2.1 Create Database

The header of <QGrip-DisasterRestore-Script> contains information about the QGrip database that you need to create on the <QGrip-Fallback-DBHost>, below is just an example.

```
* Current Database: QGrip_P
* DB Version    : 2022
* Collation     : SQL_Latin1_General_CP1_CI_AS
* RecoveryModel: FULL
* DB Owner      : sa
* Data:
* Size   : 100MB
* Extend: 1.000MB
* Log:
* Size   : 100MB
* Extend: 500MB
*
```

Create the QGrip database on the <QGrip-Fallback-DBHost>.

5.2.2 Restore Database

Before you can use the YYYYMMDD_HHMMSS-DisasterRestore-QGrip.sql script to restore the backup to the new QGrip database and create the QGrip Logins, it needs to be edited.

```
* Important-1
* Before running script below, replace following
* with values valid for Fall-back Instance
* {DATADIR} and {LOGDIR}
*
* Important-2
* Replace {NEWHOSTTYPE} with Listener or Instance
* Replace {NEWHOSTNAME} with ListenerName or InstanceName
*
```

Replace {DATADIR} and {LOGDIR} with values valid for <QGrip-Fallback-DBHost>.
Replace {NEWHOSTTYPE} and {NEWHOSTNAME} with values valid for <QGrip-Fallback-DBHost>.

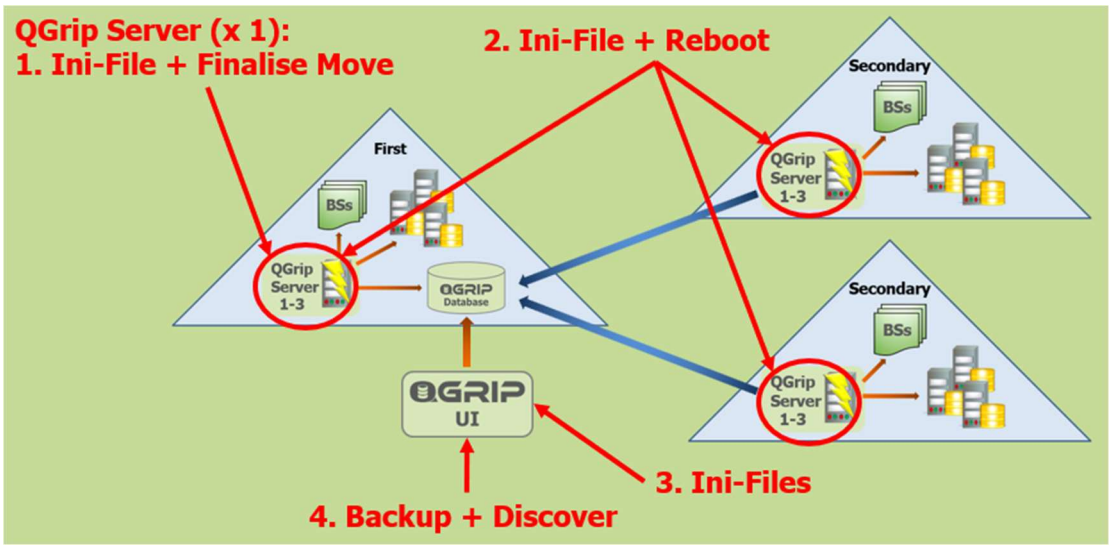
You are advised to run it section by section:

- Restore the database
- Create Logins
- Create/Restore Database Users
- Fill [Config].[DisasterRestoreQGrip]

Important AlwaysOn:
If you are moving the QGrip Database from a Standard SQL Server Instance to SQL Server Always On environment, you will need to practise you DBA skills:

- Create the database on all replicas
- Run the "Restore the database" part on all Replicas but **omit**
  - RESTORE DATABASE [QGrip] WITH RECOVERY
  - ALTER DATABASE [QGrip] SET MULTI_USER
- Run "Create Logins" on all replicas
- On PRIMARY Replica, run the
  - RESTORE DATABASE [QGrip] WITH RECOVERY
  - ALTER DATABASE [QGrip] SET MULTI_USER
- On PRIMARY Replica, manually add database to Availability Group with 'Join Only' (SSMS)
- On PRIMARY Replica, run "Create/Restore Database Users"
- On PRIMARY Replica, run "Fill [Config].[DisasterRestoreQGrip]"

5.3 Start-up QGrip



Steps to start up the QGrip environment against the new/moved QGrip Database.

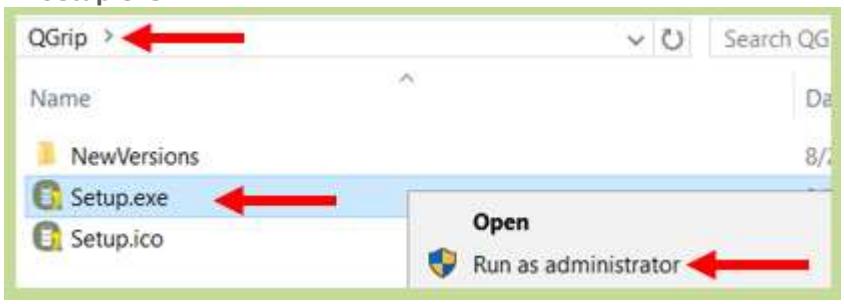
5.3.1 Finalise Disaster Move

This step is only needed on one QGrip Server and it must be in the First AD-Domain (in the AD-Domain where the QGrip Database is running).

1 - QGrip.ini
In the root of the QGrip directory on the QGripServer, the QGrip.ini file can be found.
Open the file and change it so it refers to the QGrip database on the <QGrip-Fallback-DBHost>.
Use the information you wrote down in Section 2.

```
########################################
# QGrip.ini
########################################
DBHostPort=ATSTSQL22L1,1460
Database=QGrip_P
```

2 - Setup.exe



In the root of the QGrip directory, start Setup.exe as Administrator:

When you click on the Accept button, QGrip will ask you if you want to Finalise the move, click OK.

Enter the Master Password generated and saved during the first install.

Exit the setup.

3 - Reboot
Reboot the QGripServer.

5.3.2 QGrip Servers: Ini-file + Reboot

The following actions need to be performed on every QGrip Server, excluding the QGrip Server used for Finalise Disaster Move in the last step.

1 - QGrip.ini
In the root of the QGrip directory on the QGripServer, the QGrip.ini file can be found.
Open the file and change it so it refers to the QGrip database on the <QGrip-Fallback-DBHost>.
Use the information you wrote down in Section 2.

```
########################################
# QGrip.ini
########################################
DBHostPort=ATSTSQL22L1,1460
Database=QGrip_P
```

2 - Reboot
Reboot the QGripServer.

5.3.3 Discover + Backup

On one of the QGrip Servers, in the root of the QGrip directory, start QGrip.exe.

QGrip-UI
Menu: Jobs -> Discover -> Request

- Start Discover of the <QGrip-Fallback-DBHost>

If the <QGrip-Fallback-DBHost> is a Listener you need to Request Discover of all involved Replica Instances.

When the Job has finished…

Menu: Jobs -> Backup-Maintenance -> Request

Request a FULL DBBackup of the QGrip database on <QGrip-Fallback-DBHost>.

If it is not yet visible, you might need to Link the database to the QGrip application using:

Menu: Application -> Link2App

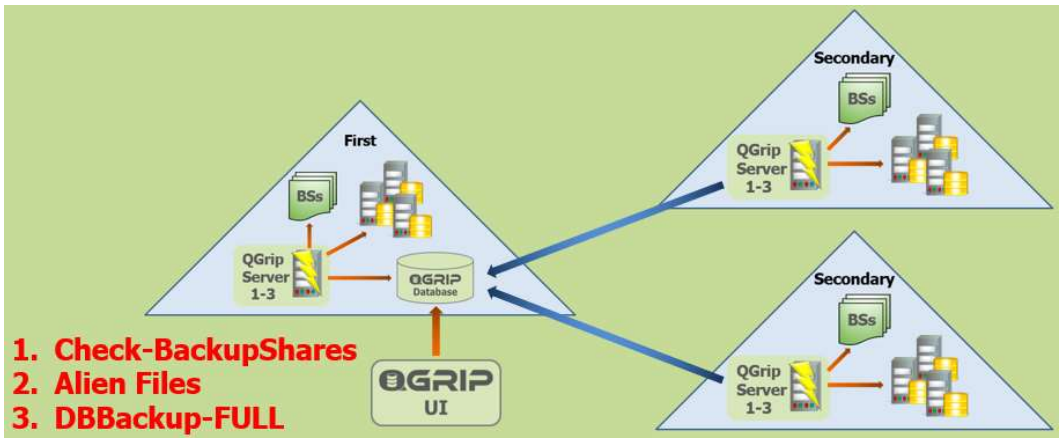
5.3.4 QGrip.ini: QGrip-UI Share(s)

1 - QGrip.ini

All QGrip.ini files distributed with your organisation need to be updated.
Open the file and change it so it refers to the QGrip database on the <QGrip-Fallback-DBHost>.
Use the information you wrote down in Section 2.

```
########################################
# QGrip.ini
########################################
DBHostPort=ATSTSQL22L1,1460
Database=QGrip_P
```

5.4 Fix missing backups

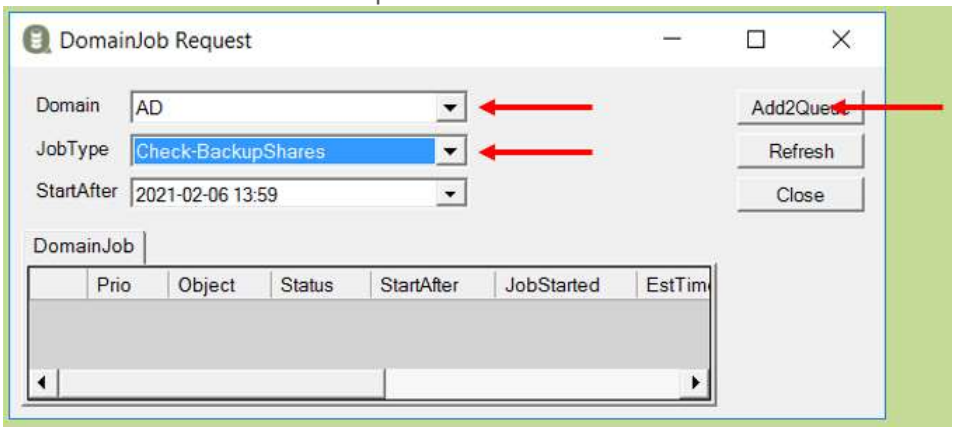


This section describes how you can fix backups that were made in the period that there was data loss. The backup files will then be on the Backup Shares but the backup is not registered in the QGrip database.

QGrip will eventually see that the LSN chains are broken and backup the databases, but not until the next Database/Log backup runs. If you want to be on the safe side, you should continue with this section.

5.4.1 Run DomainJob: Check-BackupShares

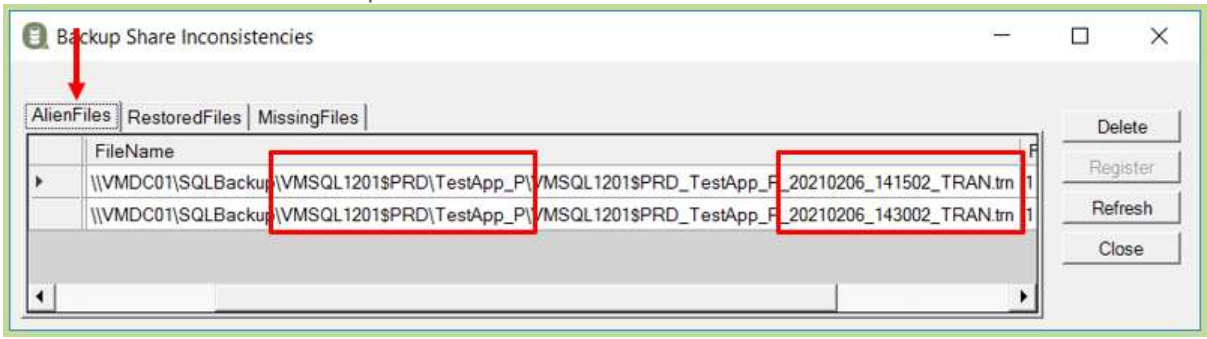
QGrip-UI:
Menu: Job -> DomainJob -> Request



Start the Check-BackupShares job for each AD-Domain. Wait until the jobs have finished.

5.4.2 Check: AlienFiles

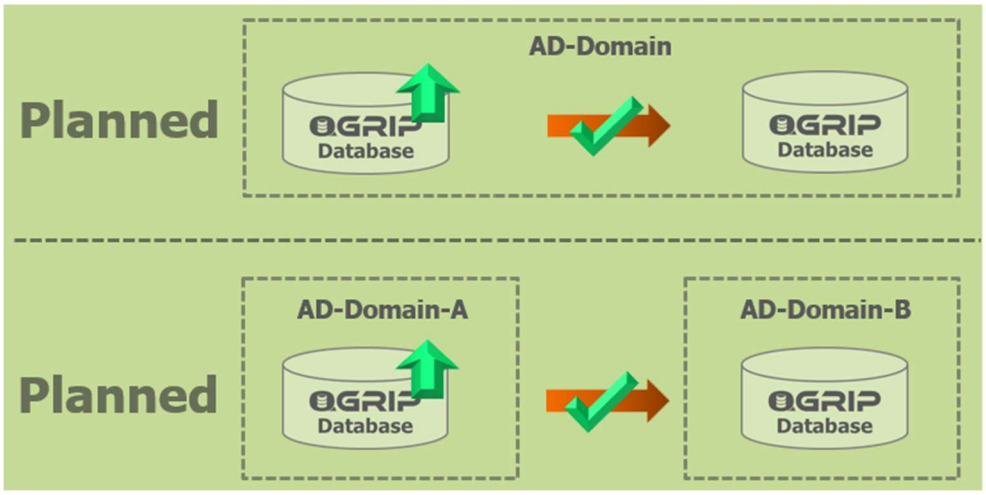
QGrip-UI:
Menu: Admin -> Infra -> BackupShares -> Inconsistencies



If there are Alien Files for databases you must request a FULL (FULL_COPYONLY) backup of the database. QGrip 'misses' the Alien Files in its administration, the restore chain is broken, and the databases will not be able to be restored.

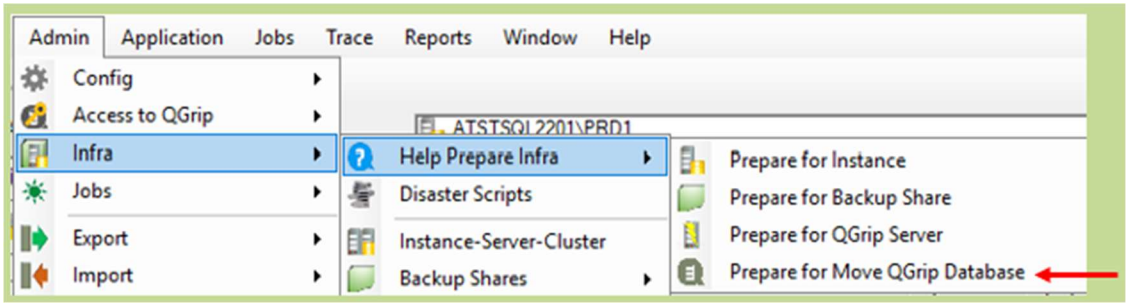
When backups have been requested for all Alien Files, they should be deleted.

6 Planned Move

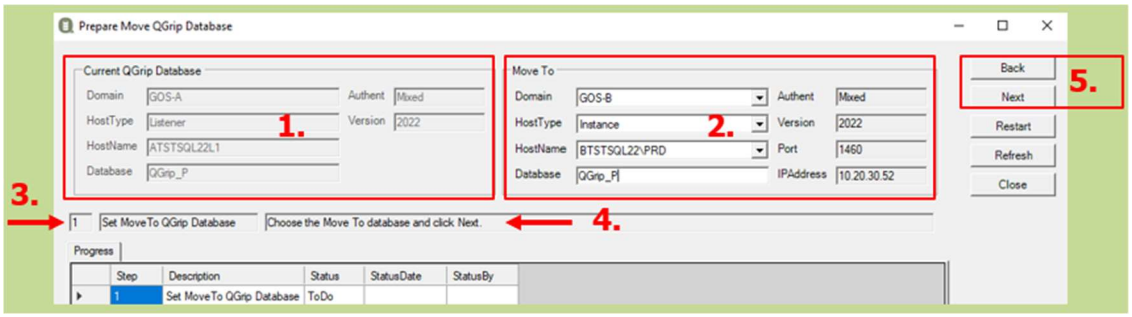


Whenever you are preparing a Planned Move of the QGrip database, use this section to prepare and execute.

6.1 Prepare for Move QGrip Database



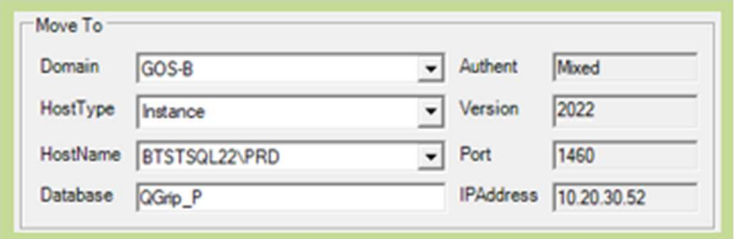
Moving the QGrip Database is tricky. Using the 'Prepare for Move QGrip Database' window in the QGrip-UI removes some complexity.



1. Contains information about the Current QGrip Database
2. Define the new QGrip Database host, where to move to.
3. Current Prepare Step
4. Hint on current Step
5. Use Next to go to next step, Back to go back to the last step.

For every prepare step, a new tab page will be created in the window.
The content of each tab page will be saved in a chosen directory as it might be needed later.

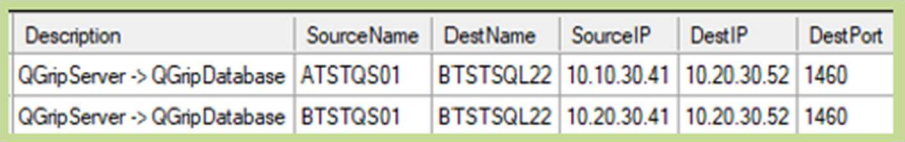
6.1.1 Step 1: Set MoveTo QGrip Database



Choose the Move To database and click Next.

You can only choose hosts that are valid; same or higher SQL Server Version and with the needed Authentication mode for your configuration.

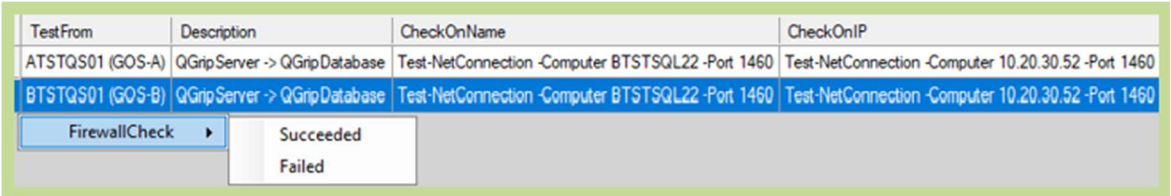
6.1.2 Step 2: Firewall Rules



Description	SourceName	DestName	SourceIP	DestIP	DestPort
QGrip Server -> QGrip Database	ATSTQS01	BTSTSQL22	10.10.30.41	10.20.30.52	1460
QGrip Server -> QGrip Database	BTSTQS01	BTSTSQL22	10.20.30.41	10.20.30.52	1460

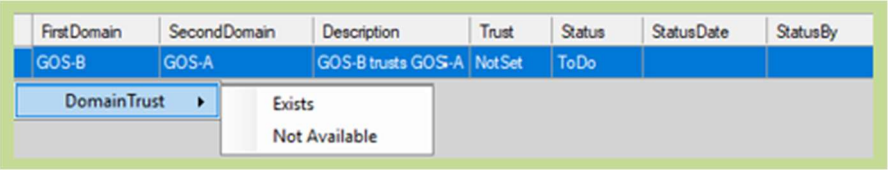
Use the info to apply for firewall changes whenever needed.

6.1.3 Step 3: Firewall Checks



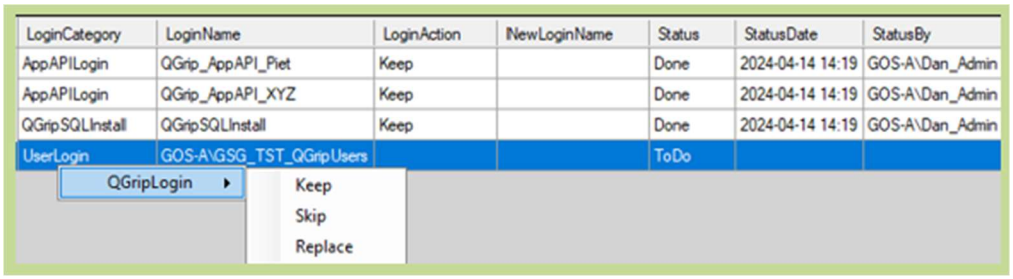
Select rows, right click, and choose outcome of the firewall check.

6.1.4 Step 4: Domain Trust

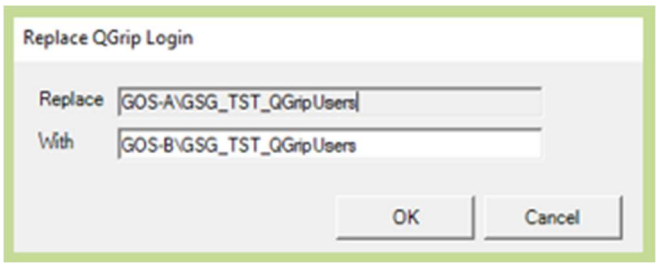


Select rows, right click, and select the values of the domain trust.

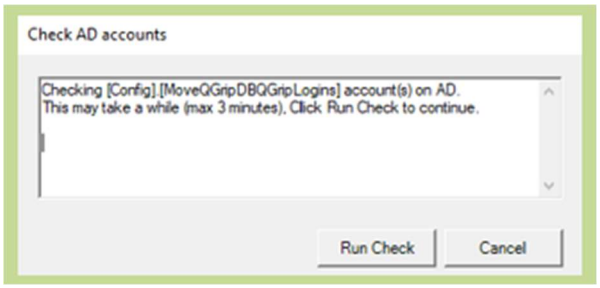
6.1.5 Step 5: QGrip Logins



Select rows, right click, and select action that is needed for the QGrip logins.

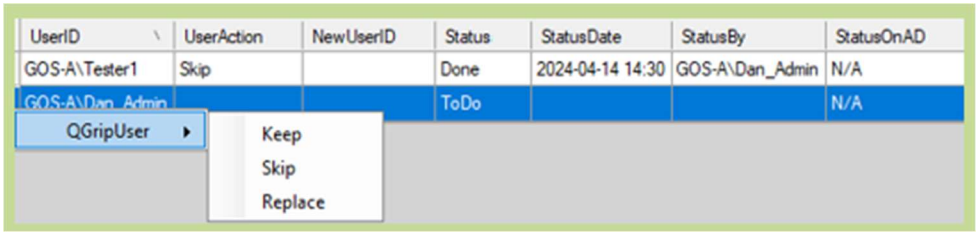


When you choose Replace, a popup will be opened where the new QGrip Login can be defined.

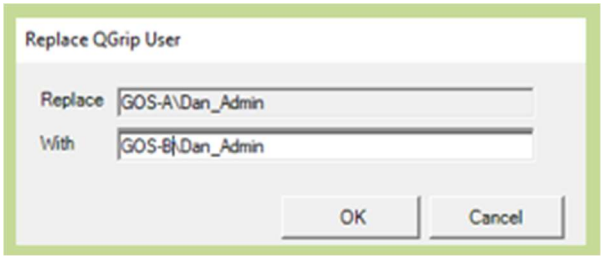


Whenever needed, QGrip will check that new windows accounts exists before continuing to the Next Step.

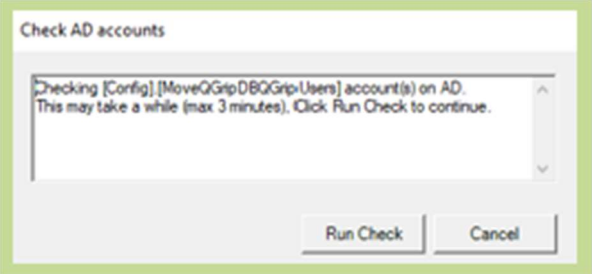
6.1.6 Step 6: QGrip Users



Select rows, right click, and select action that is needed for the QGrip Users.



When you choose Replace, a popup will be opened where the new QGrip User can be defined.



Whenever needed, QGrip will check that new windows accounts exists before continuing to the Next Step.

6.1.7 Step 7: QGripSQLInstall

LoginName	Needed	InMove	Exists	Status	Message
QGripSQLInstall	Yes	Yes	Yes	OK	

Take action on the Message if the status is NOK.

6.1.8 Step 8: QGrip Servers

Domain	ServerName	Processes	QGripServerAction	NextPasswordChange
GOS-A	ATSTQS01	10	QGrip.ini + ReInstall	
GOS-B	BTSTQS01	10	QGrip.ini + ReInstall	2024-04-16 09:35

Informational, no action needed.

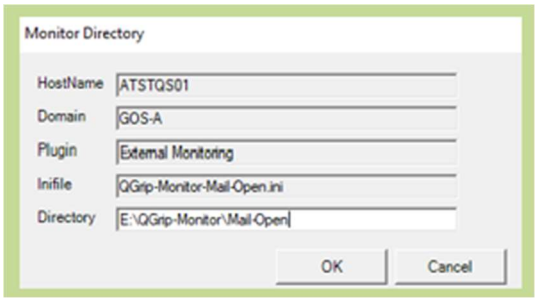
The Migration Scripts will contain the hashed password of the QGrip Login used by a QGrip Server. If the password is changed between generating the Migration Script and the actual migration, the hashed password will no longer be correct.

6.1.9 Step 9: Monitor Hosts

HostName	Domain	Plugin	IniFile	Directory	Status
ATSTQS01	GOS-A	Backup Report	QGrip-Monitor-Mail-BackupReport.ini		ToDo
ATSTQS01	GOS-A	External Monitoring	QGrip-Monitor-Mail-New.ini		ToDo
ATSTQS01	GOS-A	External Monitoring	QGrip-Monitor-Mail-Open.ini		ToDo

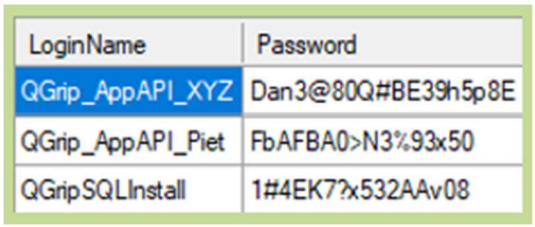
MonitorHost ▸ Keep+Directory / Skip

Select rows, right click, and add the directory on the server where the Ini-file can be found.



When you choose 'Keep+Directory', you will be asked for the Directory. This will save you valuable time during the actual migration as the Migration Script will tell you in which directory the Ini-file needs to be edited.

6.1.10 Step 10: Passwords



LoginName	Password
QGrip_AppAPI_XYZ	Dan3@80Q#BE39h5p8E
QGrip_AppAPI_Piet	FbAFBA0>N3%93x50
QGripSQLInstall	1#4EK7?x532AAv08

Copy and Save the Passwords before proceeding as they might be needed during Migration and Fallback.

Security Note
Make sure that you save the Passwords csv-file in a directory that is not accessible to everyone and don't forget to delete the file when the QGrip database has been moved.

6.1.11 Step 11: Migration Script

In step 11, the Migration Script will be created.
It is a flat file that is a combination of scripts and instructions.

Every step has a header with information where a script should be executed.
Study the script carefully before you trigger the actual migration.

If you have any doubts or questions, please contact Grip on SQL BV.

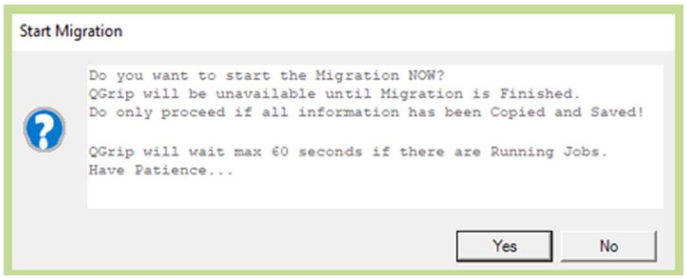
6.1.12 Step 12: Fallback Script

In step 12, the Fallback Script will be created.
It is a flat file that is a combination of scripts and instructions.

Every step has a header with information where a script should be executed.
Study the script carefully before the actual migration.

6.1.13 Step 13: Start Migration

In step 13, the Migration is started. You will first see some instructions and if you hit Next one more time, you will need to confirm that you want to start NOW!



Do only click Yes if you are going to Move the database now.

6.2 Execute Move QGrip Database

Once the Migration has been Started in Step 13 in the Prepare Move QGrip Database window, you can start to execute the steps in the Migration Script.

The generated migration script is custom made specific for your current situation.

Do one section at the time in the suggested Migration Step order.

6.3 Fallback Move QGrip Database

If the Migration fails, use the fallback script to revert back to the original QGrip Database.

The generated fallback script is custom made specific for your current situation.

Do one section at the time in the suggested Fallback Step order.