

vinchin

VINCHIN BACKUP & RECOVERY V7.2

User Guide for SQL Server Database

2023/10

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Supported SQL Server Environments

Supported Deployments:

- Standalone
- Failover Cluster
- Always On availability groups

Supported MS SQL Server Versions:

- MS SQL SERVER 2008 R2
- MS SQL SERVER 2012
- MS SQL SERVER 2016
- MS SQL SERVER 2017
- MS SQL SERVER 2019

Supported Operating Systems:

- Windows server 2008 R2
- Windows Server 2012 R2
- Windows Server 2012 R2
- Windows Server 2016
- Windows Server 2017
- Windows Server 2019

Preparation for SQL Server Backup

Download Agent

Open the web console of Vinchin Backup & Recovery on the target Windows server which you wish to backup, on the login screen, click on **Download Backup Plugin** to show the agent download options.

In the **Type** dropdown list, please select **Physical Backup Agent** option.

In the **OS** dropdown list, please select **Windows**.

Click on **Download** button to download the backup agent for the Windows servers.

The downloaded backup agent installer for Window should be a .exe package. If you've downloaded it on another Windows desktop, please upload it to the Windows server which you wish to backup.

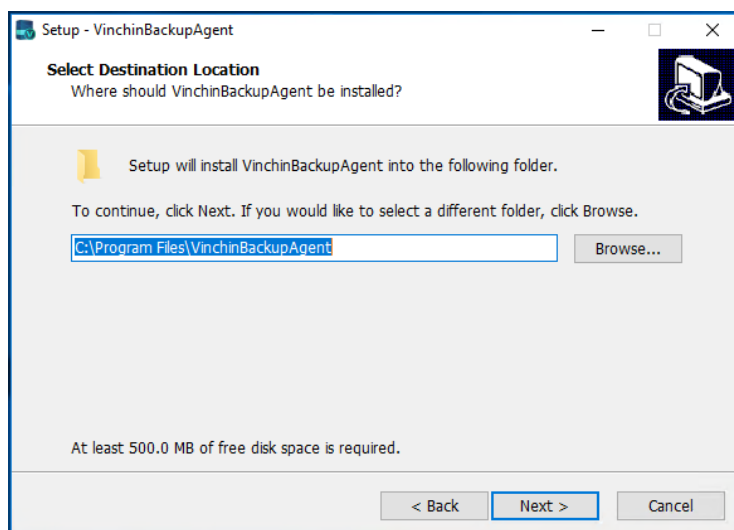
Install Agent

Please follow the installation wizard to complete the database backup agent installation.

Install the backup agent follow the steps below.

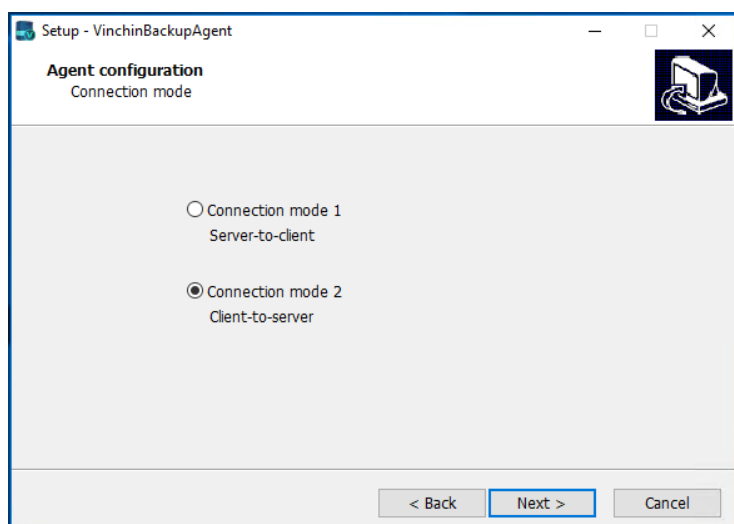
1. Run the backup agent installer with administrator permission by right clicking on the installer and select **Run as administrator**.

2. Specify installation location.



It's recommended to install the backup agent in the default location.

3. Specify connection mode.

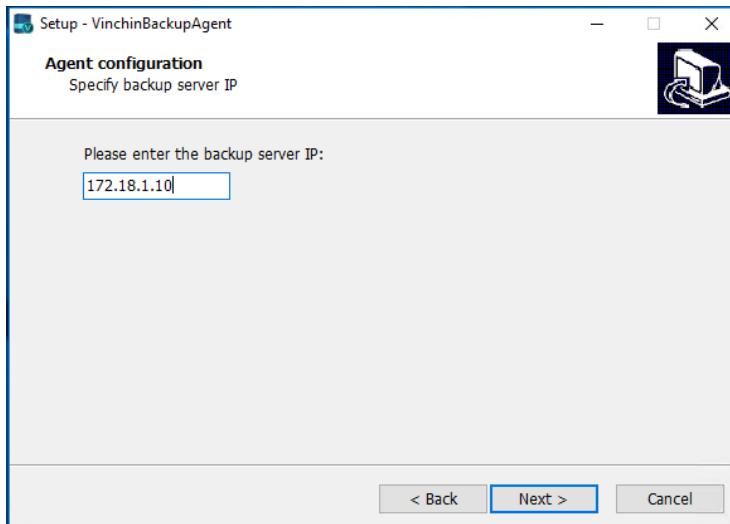


Choose between Connection mode 1 and 2 to determine "Server-to-client" or "Client-to-server" connection mode.

If Connection mode 1, the agent will only be installed and will not connect to server, users will have to add the agent from Vinchin Backup & Recovery web console after the agent installation.

If Connection mode 2, users will be asked to provide the Vinchin backup server IP for the agent being able to automatically connect to after the installation.

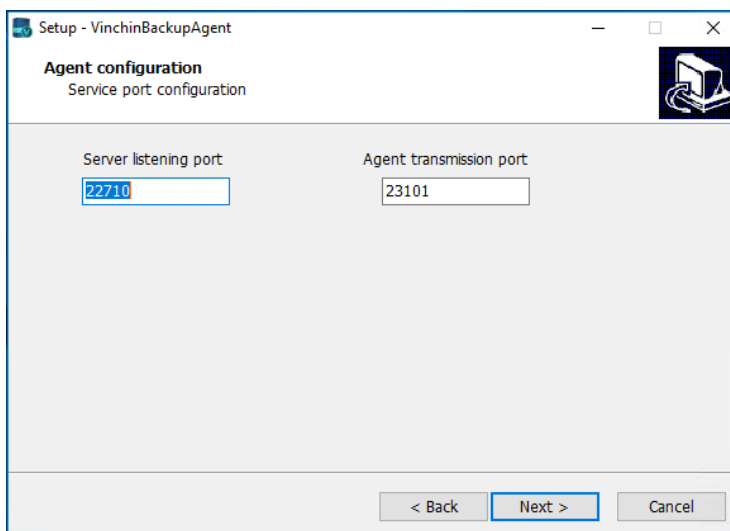
4. Specify backup server IP.



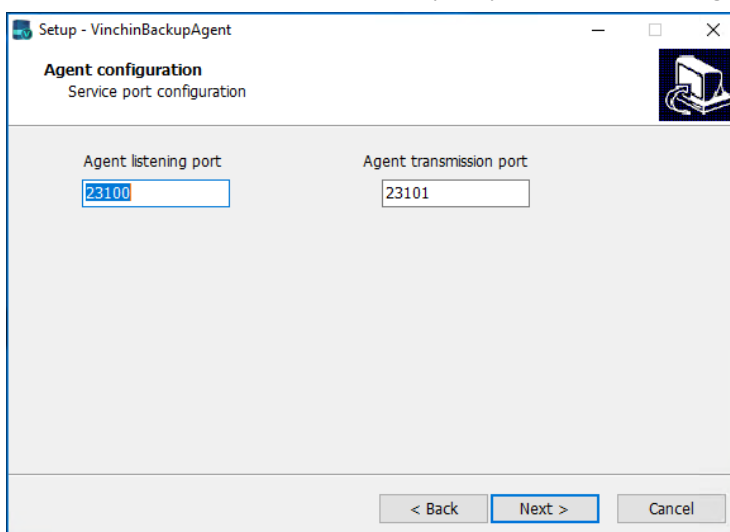
If you had chosen Connection mode 2, please enter the backup server IP address and click on next to continue.

5. Port configurations.

If Connection mode 1, users have to specify the Agent listening port and Agent transmission port.

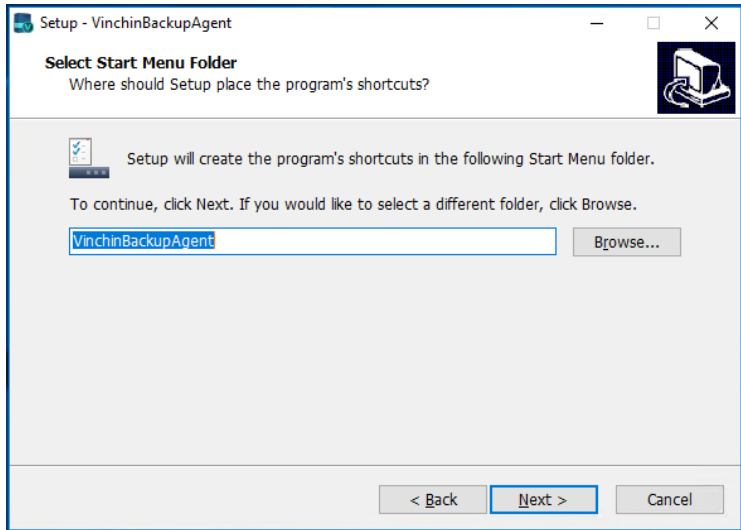


If Connection mode 2, users have to specify the server listening port and agent transmission port.



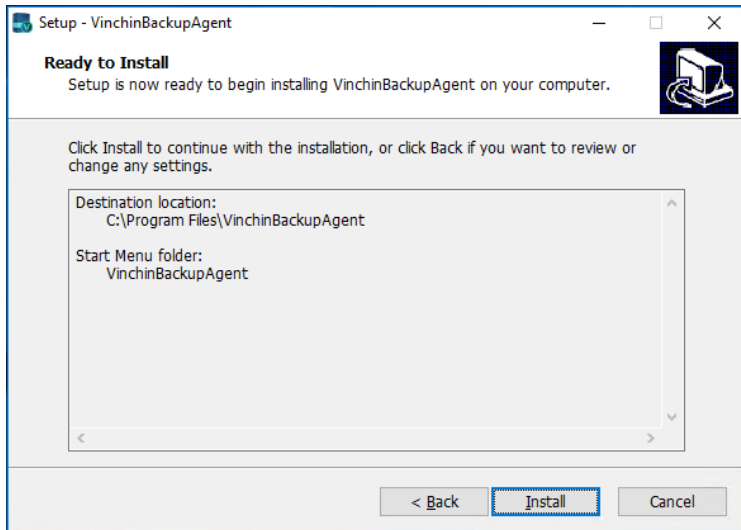
For both scenarios, it's always recommended to use the default port numbers.

6. Specify the start menu folder.



Please use the default folder and click on **Next** to continue.

7. Confirm installation.



If there's no issue with the installation location and the start menu folder, please click on **Install** to confirm the agent installation.

Once the installation is completed, please click on Finish to exit the agent installation wizard. If you had chosen Connection mode 1 (Server-to-client), after the agent installation, please open Vinchin Backup & Recovery web console to add the agent to Vinchin backup server, please refer to [Add Agent](#).

Once the installation completed, there will be two services 'database_backup_service' and 'database_transfer_service' running which could be found in Windows **Services**. Then you have successfully installed the SQL Server backup plugin on the Windows system.

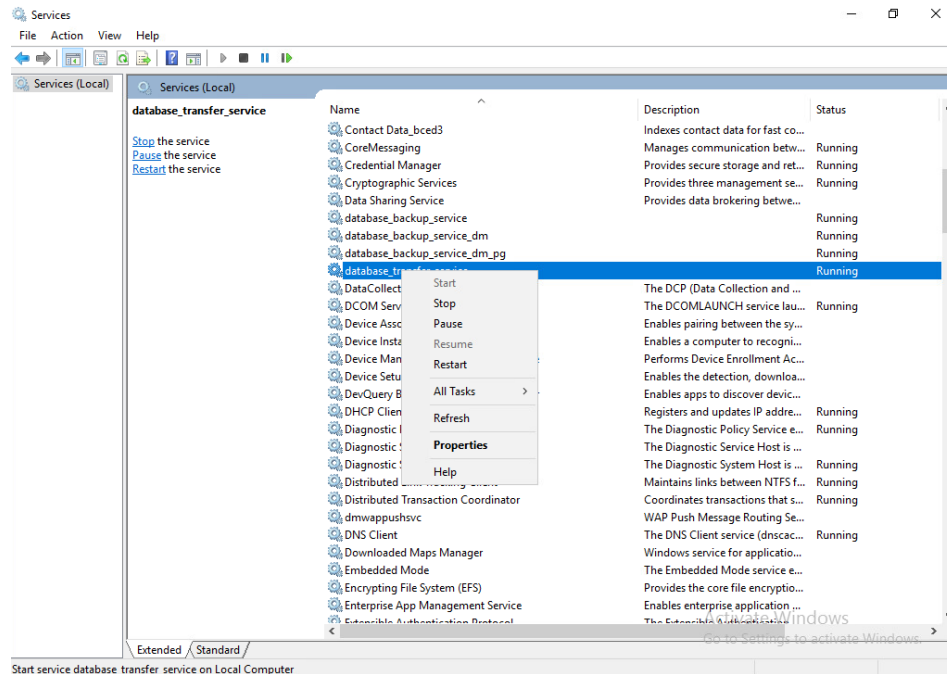
Name	PID	Description	Status	Group
database_backup_service	3172	database_backup_service	Running	
database_transfer_service	5620	database_transfer_service	Running	

There are these ports: 22710, 22711, 23100, 23101, 50000-60000 will be opened on your

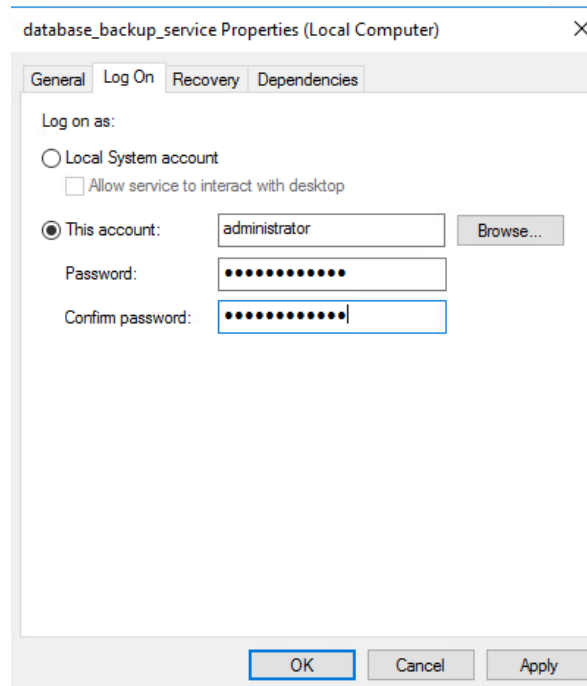
database server while installing the database backup agent.

If you want to use Windows administrator to backup the database, please edit the database backup services to log on as **administrator** from Windows **Services**.

Please first stop 'database_backup_service' and 'database_transfer_service' services by right clicking on them and select **Stop**.



When these 2 services had been stopped, right click on them and select **Properties > Log On**, select log on as **This account**, then fill in the administrator account name and password, click on **Apply** and restart the services.



Add Agent

No matter for Linux or Windows backup agents, if the connection mode is 1 (Server-to-client), after the agent installation, users have to add the agents from Vinchin Backup & Recovery web console from **Resources > Agents** page.

Click on **Add** button to add the agent.

Manual Auto Deploy

Notice

1. Please download and install agent on target server then add the agent.
2. If the agent is installed with Agent-to-server connection mode, agent will connect to server directly, you don't have to add.
3. If the agent is installed with Server-to-agent connection mode, please fill in physical server IP to add agent.

IP Address: 172.18.19.25 ✓

Name: CentOS Server ✓

Agent Signaling Port: 23100

Cancel OK

In the **IP Address** field, please input the IP of the Linux/Windows server which you had installed the agent with Server-to-client connection mode.

In the **Name** field, you can give it a name for identification.

As for the **Agent Signaling Port**, it's not recommended to change it, please leave it as default.

Once done, click **OK** to add the agent.

Agents Agent Groups

Search by hostname or IP Search

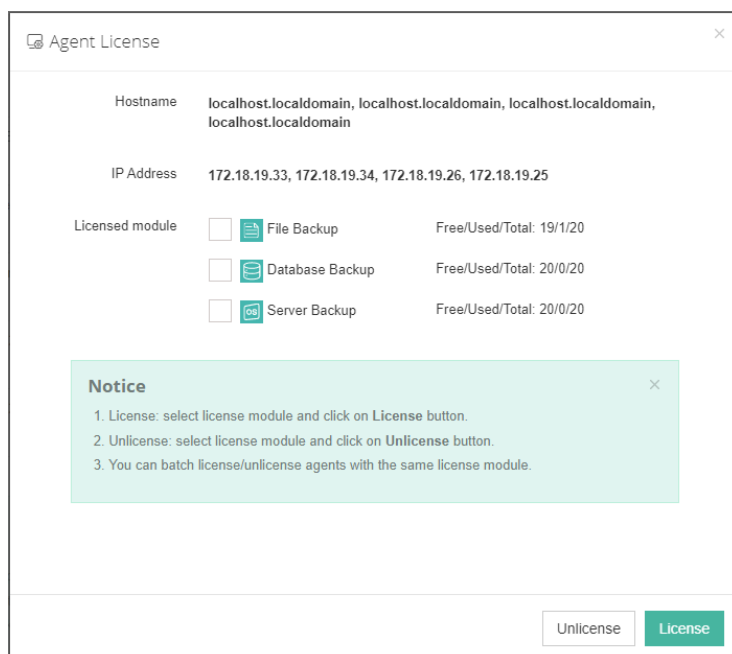
IP Address	Hostname	OS	Licensed module	Application Settings	Add Time	Status	Owner	Operation
172.18.18.9	WIN-VISBH2S190J/Windows Server 2016	Windows Server 2016 Standard	--	--	2023-02-07 17:35:11	Online/Deployed	admin	Options
172.18.19.26	localhost.localdomain/172.18.19.26	CentOS Linux release 7.8.2003 (Core)	--	--	2023-02-03 10:44:19	Online/Deployed	admin	Options
172.18.19.25	localhost.localdomain/172.18.19.25	CentOS Linux release 7.8.2003 (Core)	--	--	2023-02-03 10:44:19	Online/Deployed	admin	Options

All agents connected to Vinchin backup server, no matter with Server-to-client or Client-to-server mode, will be all list on the **Resources > Agents** page.

License Agent

All physical backup agents connected to Vinchin backup server will be listed on the **Resources > Agents** page. Before users can perform file, database or server backup, the agents need to be licensed with corresponding license modules.

Select one or a group of physical backup agents and click on License button, you'll be able to enable backup of those agents.



The physical backup agents can be licensed with File Backup, Database Backup and Server Backup license modules. According to the workloads running on the physical server, please select corresponding module and then click on **License** button to get the agents licensed for backup. To unlicense the agents, please also select the corresponding module and click on **Unlicense** button to get the agents unlicensed.

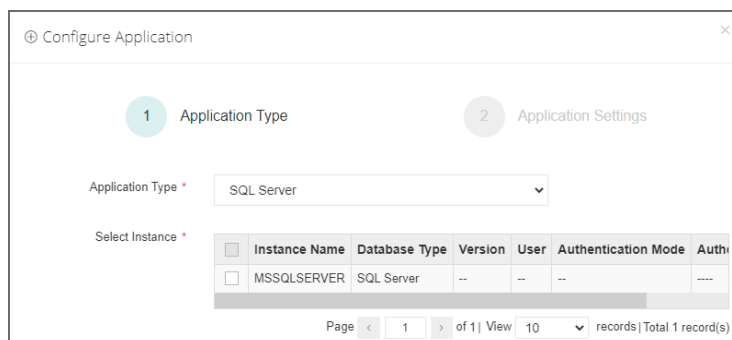
Configure Application

After the installation of Vinchin physical backup agent on SQL Server database server, users have to license the agent with database backup module.

When done installation and licensing, please open Vinchin Backup Server web console and go to **Resources > Agents** page, find the target agent, click on **Options** and then select **Application** to configure application settings for database backup.

Click on **Configure Application** button to configure the application settings.

In the **Application Type** dropdown list, please select **SQL Server**.

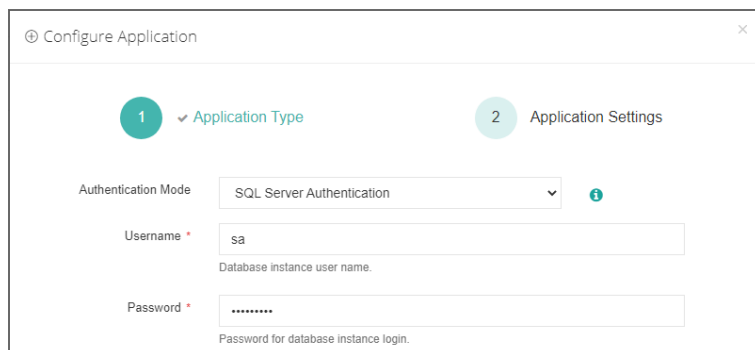


Select the SQL Server instance and click on **Next**.

There are two authentication modes, **Windows Authentication** and **SQL Server Authentication**.

If select **Windows Authentication**, agent will use the user which you logged in to connect the SQL Server database, when running database backup.

If select **SQL Server Authentication**, in the popup dialog, fill the **Username** and **Password** that database you want to use.



Configure Application

1 Application Type 2 Application Settings

Authentication Mode: SQL Server Authentication ⓘ

Username * sa
Database instance user name.

Password *
Password for database instance login.

When SQL Server application is successfully configured, in the agents list, you should see the agent look like below.

<input type="checkbox"/>	172.18.22.11	WIN-18KFA5CULP/sqlserver	Windows Server 2016 Datacenter		MSSQLSERVER(SQL Server)	2023-02-17 15:05:04	OnlineDeployed	admin	Options ▾
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Now you should be able to create backup jobs for the SQL Server database server.

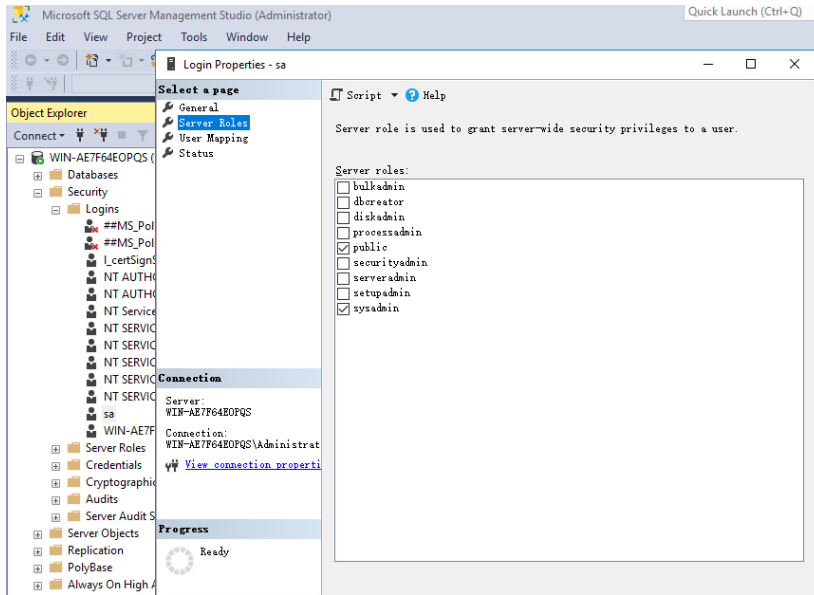
Note

*Whichever authentication mode you select, please ensure that the user must have database **sysadmin** permissions.*

Before Backing Up MS SQL Server

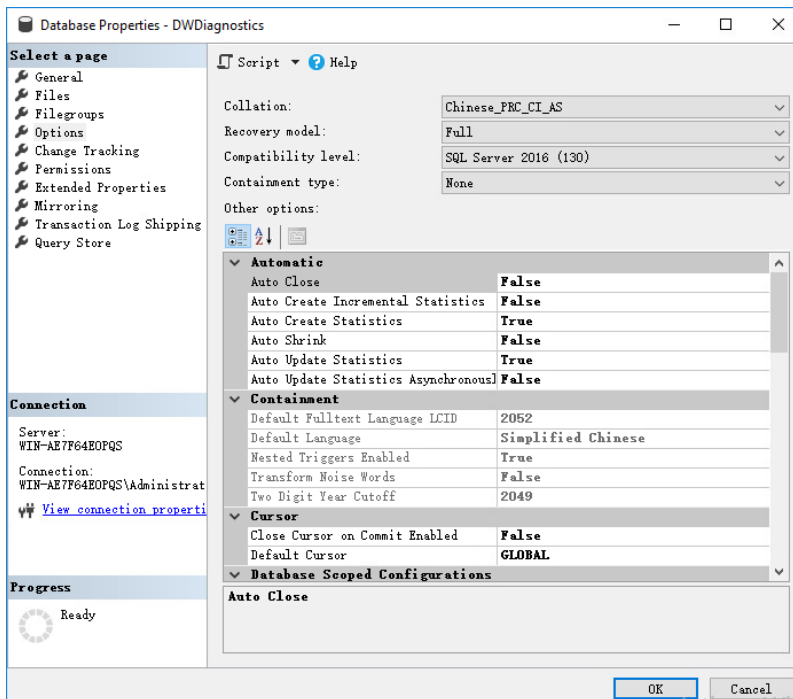
Check Database User Permission

Check the database user permissions which you wish to perform SQL Server database backup, at least ensure the user have **sysadmin** permission, check the details as below.



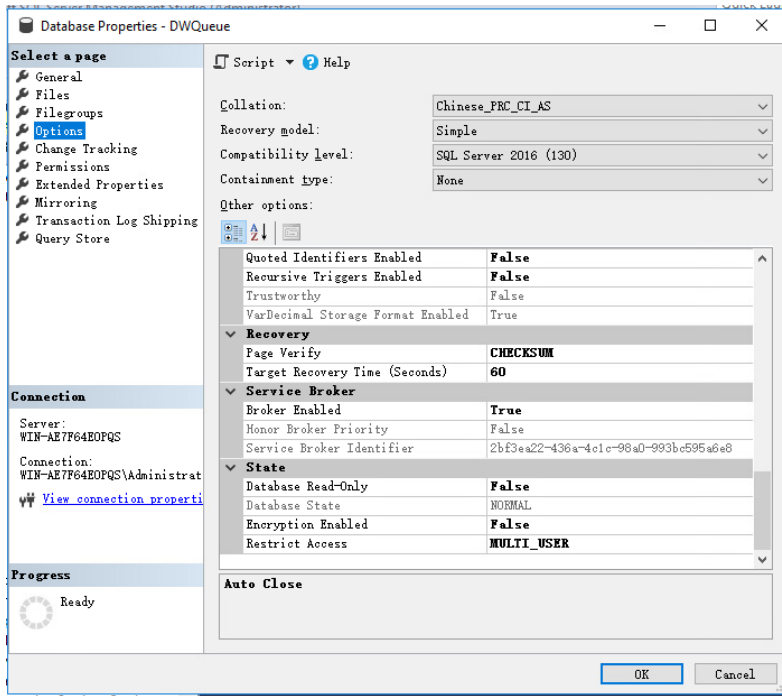
Check Recovery Model

Check the recovery model of database, please ensure the recovery mode is “Full”, otherwise log backup job will fail.



Check Restrict Access

Check the Restrict Access is ‘MULTI_USER’ in database properties so that the database can be multiple access when do backup or restore job.

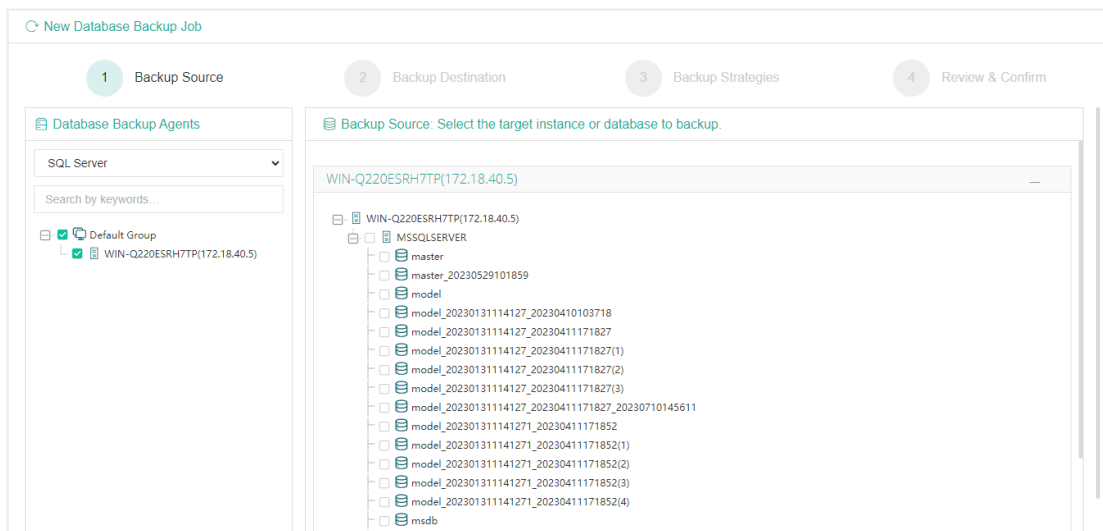


Create Backup Job

To create SQL Server database backup jobs, please go to **Physical Backup > Database Backup > Backup** page. There are 4 steps to create a database backup job.

Step 1: Backup Source

First select database backup agent from left column, then expand SQL Server instance and select the databases which need to be backed up.



Step 2: Backup Destination

A backup destination (backup storage) should be associated with this backup job.

The screenshot shows the 'Backup Destination' step of a four-step wizard. The steps are: 1. Backup Source, 2. Backup Destination (active), 3. Backup Strategies, and 4. Review & Confirm. The 'Target Node' dropdown is set to 'localhost.localdomain(192.168.91.18)'. The 'Target Storage' dropdown is open, showing three options: 'CIFS_NEIL_PC(CIFS Share, Capacity :331.51GB, Free Space:314.84GB)', 'CIFS_NEIL_PC(CIFS Share, Capacity :331.51GB, Free Space:314.84GB)' (highlighted in blue), and 'Local Disk_18(Local Disk, Capacity :49.97GB, Free Space:46.37GB)'. Below the dropdown, there are instructions: '1. Select a backup storage for this backup job.' and '2. Select a storage on the node to save the backup data.'

In the **Target Node** dropdown list, you can select a backup node on which you want the backup data to be processed and stored.

In the **Target Storage** dropdown list, the storages belong to the selected backup node can be selected.

When done selecting the backup storage, please click on **Next** button to continue.

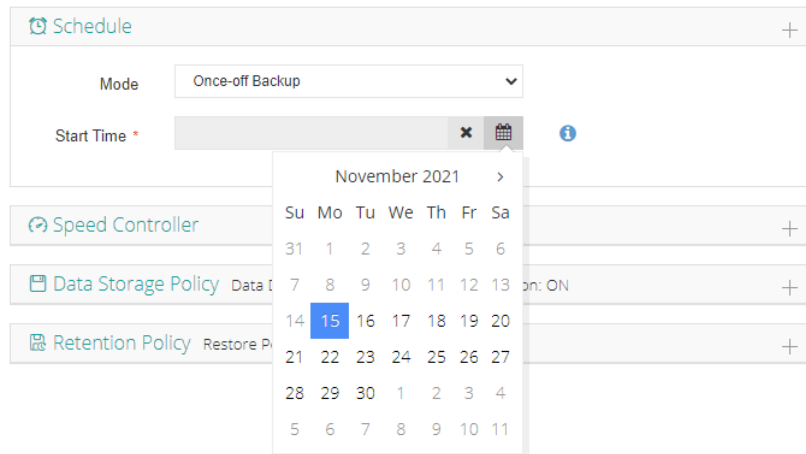
Step 3: Backup Strategies

In the General Strategy it including Schedule, Speed Controller, Data Storage Policy and Retention Policy.

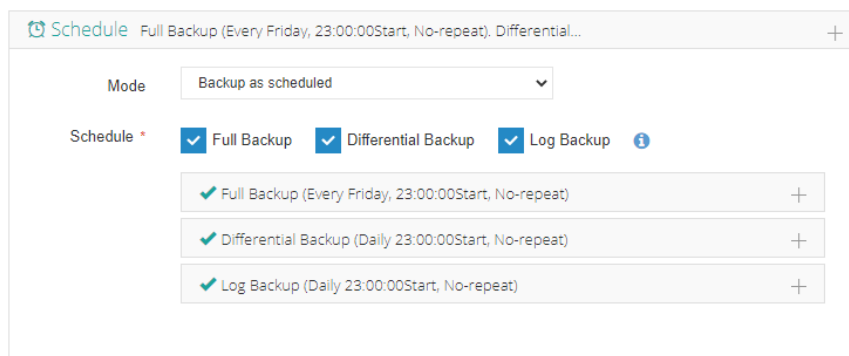
The screenshot shows the 'Backup Strategies' step of a four-step wizard. The steps are: 1. Backup Source, 2. Backup Destination, 3. Backup Strategies (active), and 4. Review & Confirm. The 'General Strategy' tab is selected, with 'Transmission Strategy' and 'Advanced Strategy' also visible. The 'Schedule' section has a 'Mode' dropdown set to 'Backup as scheduled'. Below it, there are three radio buttons: 'Full Backup' (selected), 'Differential Backup', and 'Log Backup'. The 'Speed Controller' section is empty. The 'Data Storage Policy' section shows 'Data Deduplication: OFF' and 'Data Compression: ON'. The 'Retention Policy' section shows 'Restore Point(s): 30'.

In the Schedule field, you can configure the time schedule of the backup job, you can configure the job as a **Backup as Scheduled** job or a **Once-off Backup** job.

For a once-off backup job, the job will only run for once, and only full backup will be performed. You only have to appoint a time of when to start the backup job, in the Time Schedule field.

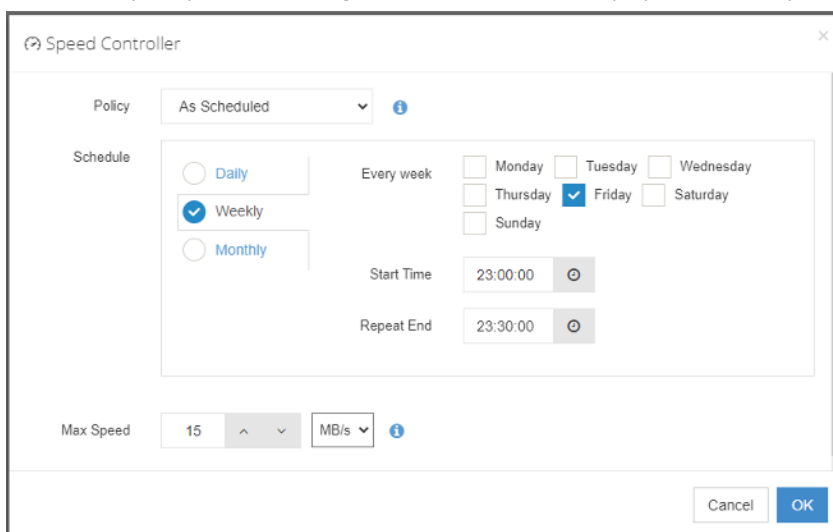


For a backup as scheduled job, you can schedule Full Backup, Differential Backup and Log Backup. Here we take these three Backup as an example. Please set the backup mode and backup schedule as per your actual demands, then please click on **Next** to continue.

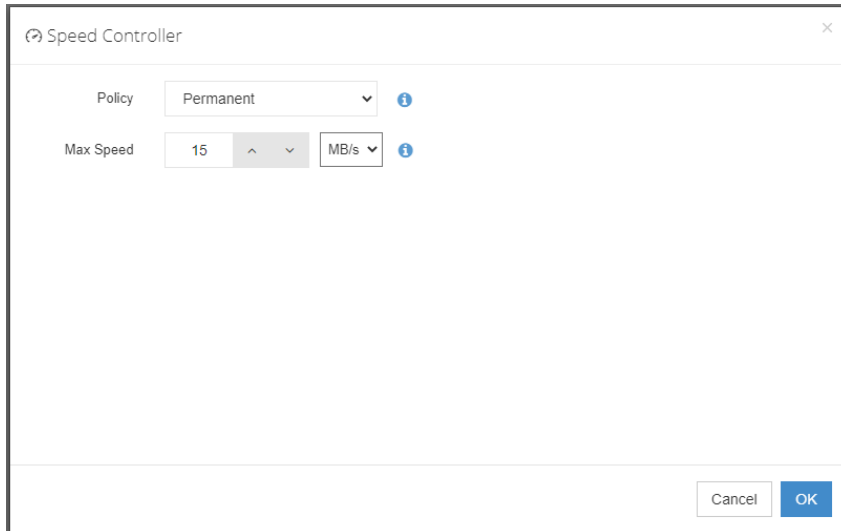


Speed Controller is optional. It can be used to limit the transmission speed during database backup if needed.

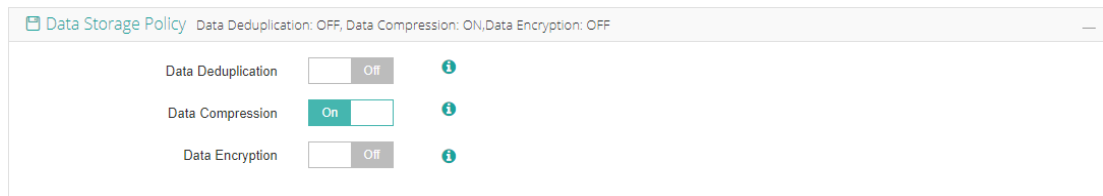
The speed controller policy can be configured as either As Scheduled or Permanent. An As Scheduled policy can be configured to limit the backup speed on Daily, Weekly and Monthly basis.



A Permanent policy will always limit the backup speed within the specified Max Speed.



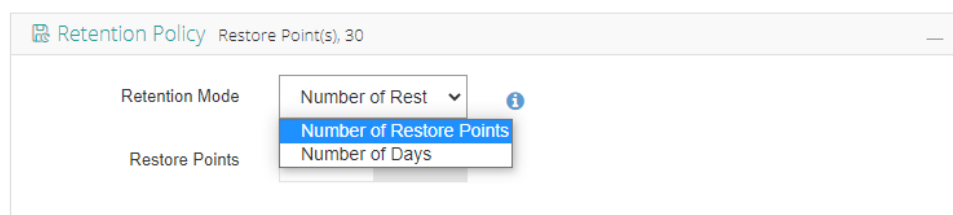
There are 3 options in Data Storage Policy section, Data Deduplication, Data Compression and Data Encryption. By enabling these 3 options, the backup data will be deduplicated, compressed and encrypted before saving into backup storage.



For the retention policy of the database backup, there are 2 retention mode, retain the database backups according to **Number of Restore Points** or **Number of Days**.

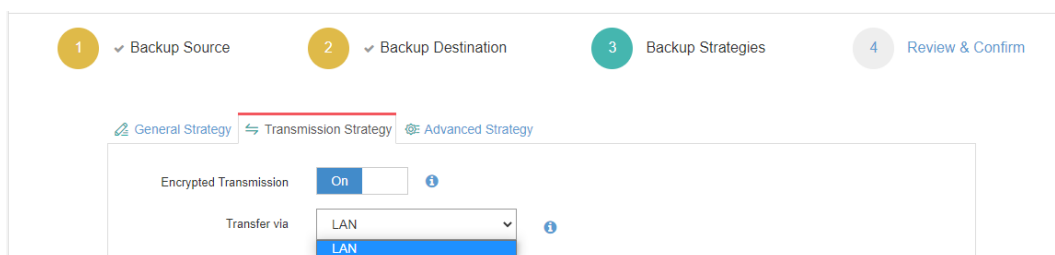
For the retention mode **Number of Restore Points**, the restore points will be counted by full restore points, including the differential backups and log backups dependent on this full backup.

For retention mode **Number of Days**, Vinchin Backup Server will save the restore points within the specified number of days.

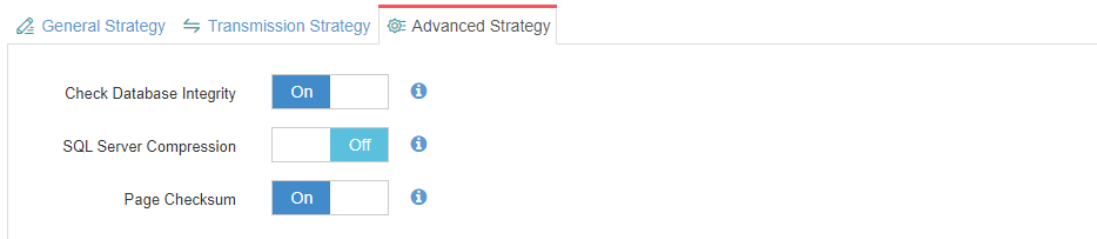


When the retention policy is triggered, the outdated restore points will be purged to comply with the retention policy.

In the transmission Strategy, you can choose to enable **Encrypted Transmission** for data safety. The backup data will be transferred through LAN by default.



Advanced Strategy including Check Database Integrity, SQL Server Compression and Page Checksum.



Check database integrity function is check database integrity and physical errors before the database backup job start.

SQL Server Compression is provided by SQL Server to reduce data transfer, data backup time and saves backup storage.

Page Checksum is used to verify the backup data during the transmission to avoid data damage.

Note

Between General Strategy Compressed Transfer and Advanced Strategy SQL Server Compression prefer only enable Compressed Transfer in general strategy. SQL Server Compression will use more CPU and memories.

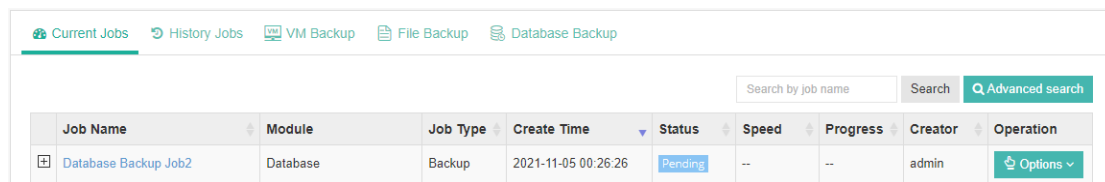
Step 4: Review & Confirm

After completing the above mentioned settings, you are able to review and confirm the settings in one screen.

A job name can be specified for identification of the database backup job, and by clicking on the Submit button to create the backup job.

Managing Backup Job

Once a database backup job had been created, you will be redirected to the **Monitor Center > Jobs** page.



The status of the newly created job will usually be **Pending**, when the time condition matches the schedule, it will automatically run. And the status will change to Running, you can also see the transfer speed here within the job list.

Besides the Current Job list, there's a dedicated tab to show database backup jobs. More detailed information of database backup jobs, including database type, database agent info, backup node, next run time and some more detailed information dedicated for database backup will be given.

Job Name	Job Type	Database Type	Agent	Mount Node	Next Run	Status	Duration	Speed	Transferred Size	Operation
Database Backup Job2	Backup	SQL Server	192.168.123.13	Main123.18(192.168.123.18)	2021-11-18 23:00:00	Pending	---	--	--	Options

By clicking on the job name you can check more detailed information on the **Job Detail** page. For a scheduled backup job, after running one of the schedules, the status will change to Pending again and then wait for the next run. For a once-off backup job, after running the job for once, it will be removed from the Current Job list. And you can find it from the History Job list.

Create Restore Job

To restore databases from database backup restore points, please go to **Database Backup > Restore** page. There are 4 steps to restore databases from the database backup restore points.

Step 1: Restore Point

In the Restore Point dropdown list, select a backup node which stores the desired restore points. Select a target database restore point under your database which you want to restore. You can quickly find the target restore point by searching the job name, database name or the date of the restore point. One restore job can only select one restore point.

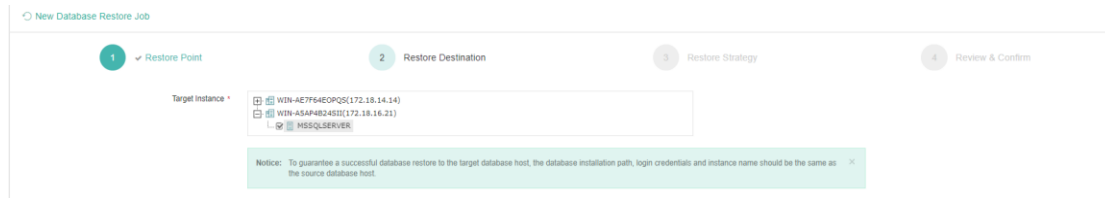
The screenshot shows the 'New Database Restore Job' configuration page. It has four steps: 1. Restore Point, 2. Restore Destination, 3. Restore Strategy, and 4. Review & Confirm. In the 'Restore Point' step, there is a dropdown menu for 'Restore Point' set to 'All nodes'. Below it is a search box 'Search by database name...'. A tree view shows the following structure:

- MySQL
 - Database Backup Job1(Job has been deleted)
- SQL Server
 - SQL Server Backup(Job has been deleted)
 - MSSQLSERVER(192.168.120.24)
 - demo01
 - 2021-12-14 16:20:18 (Full Backup)
 - 2021-12-14 16:21:16 (Differential Backup)
 - 2021-12-14 23:00:00 (Differential Backup)
 - 2021-12-14 23:00:10 (Log Backup) [Selected]
 - 2021-12-15 23:00:01 (Differential Backup)
 - demo02
 - Database Backup Job2(Job has been deleted)
 - MSSQLSERVER(192.168.120.24)
 - demo01
 - 2021-12-16 15:17:25 (Full Backup)
 - demo02
 - 2021-12-16 15:17:28 (Full Backup)

On the right, the 'Selected restore points' list contains one entry: '2021-12-14 23:00:10 (Log Backup) demo01' with a red 'X' icon.

Step 2: Restore Destination

After selecting the desired restore point, please select the target database instance on which you wish to restore. The target instance can be different but the version of your destination should keep consistent with backups.



New Database Restore Job

1 Restore Point 2 Restore Destination 3 Restore Strategy 4 Review & Confirm

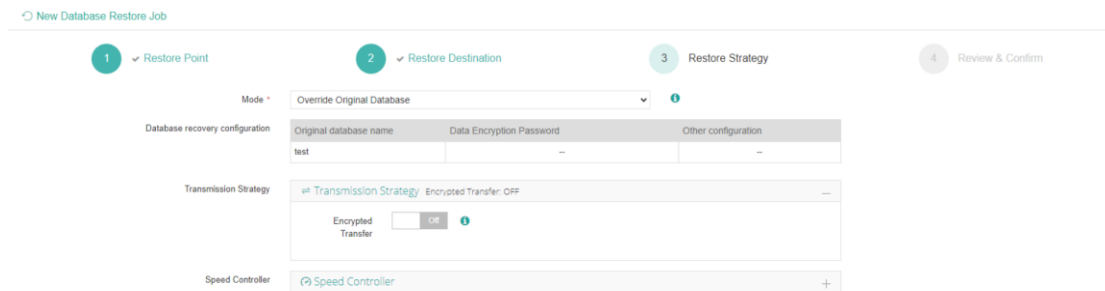
Target instance *

- WIN-AE7F6EOPQS(172.18.14.14)
- WIN-ASAP4824SD(172.18.16.21)

Notice: To guarantee a successful database restore to the target database host, the database installation path, login credentials and instance name should be the same as the source database host.

Step 3: Restore Strategy

There are 2 options for database restore, Override Original Database and Create New Database. If you want to use the Override Original Database restore, please pay attention to this mode, it will directly override the database. It is recommended to use the Create New Database restore to first restore the data to a new path to verify the data then perform override original database restore.



New Database Restore Job

1 Restore Point 2 Restore Destination 3 Restore Strategy 4 Review & Confirm

Mode * Override Original Database

Database recovery configuration

Original database name	Data Encryption Password	Other configuration
test	--	--

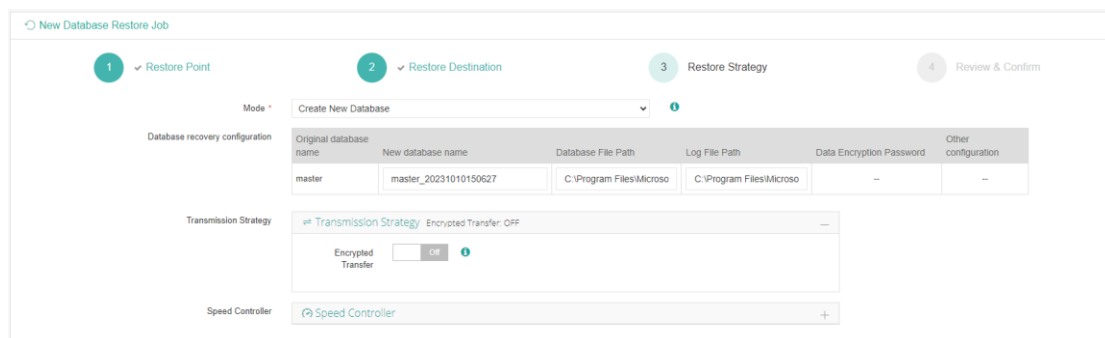
Transmission Strategy

Transmission Strategy Encrypted Transfer: OFF

Encrypted Transfer OFF

Speed Controller Speed Controller

Select Create New Database need to edit database name, database file path, log file path. The path must be correct and have enough free disk space, the path will be automatically created during restore process.



New Database Restore Job

1 Restore Point 2 Restore Destination 3 Restore Strategy 4 Review & Confirm

Mode * Create New Database

Database recovery configuration

Original database name	New database name	Database File Path	Log File Path	Data Encryption Password	Other configuration
master	master_20231010150627	C:\Program Files\Microso	C:\Program Files\Microso	--	--

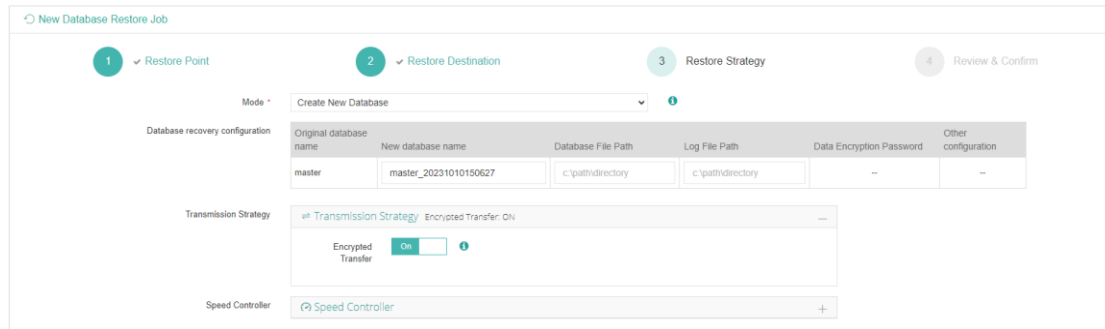
Transmission Strategy

Transmission Strategy Encrypted Transfer: OFF

Encrypted Transfer OFF

Speed Controller Speed Controller

Transmission Strategy: If you enable the Encrypted Transfer, the data transmission channel will be SSL encrypted.



Same as database backup, while restoring databases, you can also configure speed controller to limit the database restore speed accordingly.

Step 4: Review & Confirm

After completing the settings mentioned above, you are able to review and confirm the settings in one screen.

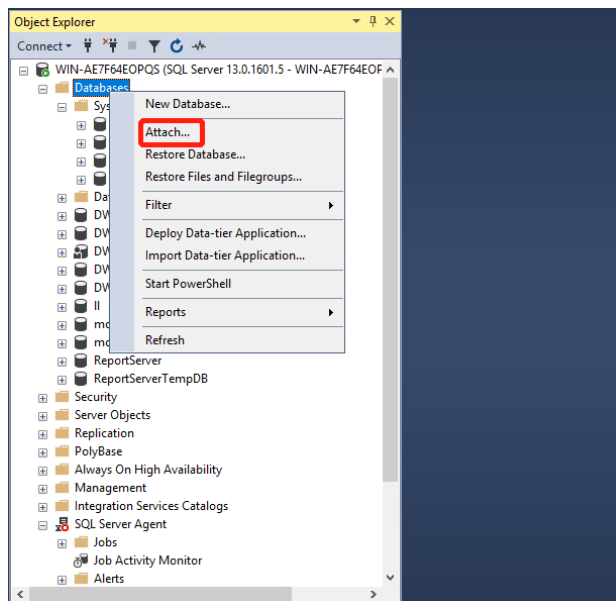
Once the job has been created, you'll be redirected to the **Monitor Center > Jobs** page.

As the database restore job is by default to be executed right after the creation of the job, so it will run automatically, when you see it in the current job list, it should be in running status already, and once completed, the job will be automatically deleted from the current job list.

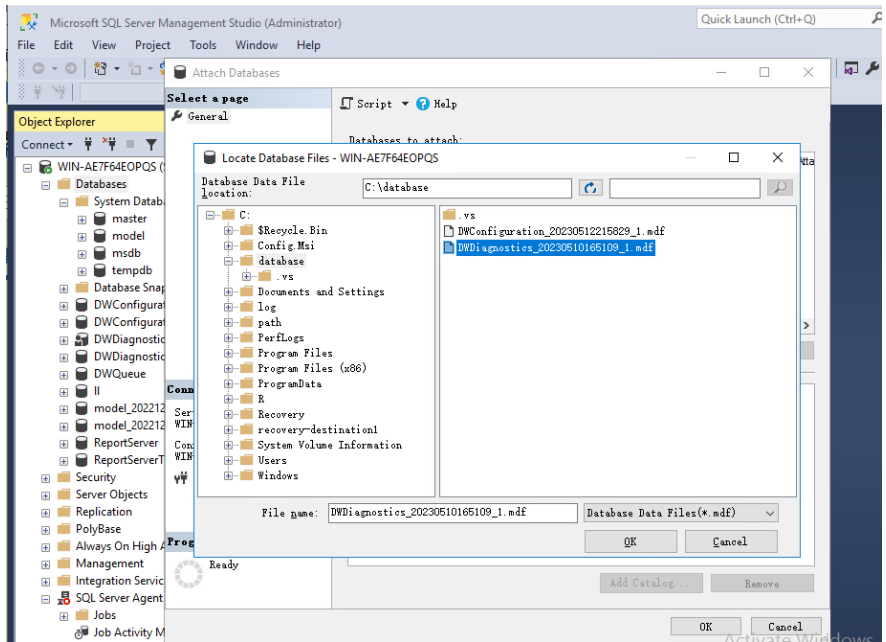
After this you can browse the restored job from History Jobs. Your restored data will be found in the path you configured during creating the restore job.

Attach Restored Backup Data

If you create new database to restore, please login the SQL Server Management Studio (SSMS), select **Attach** option of Databases folder.

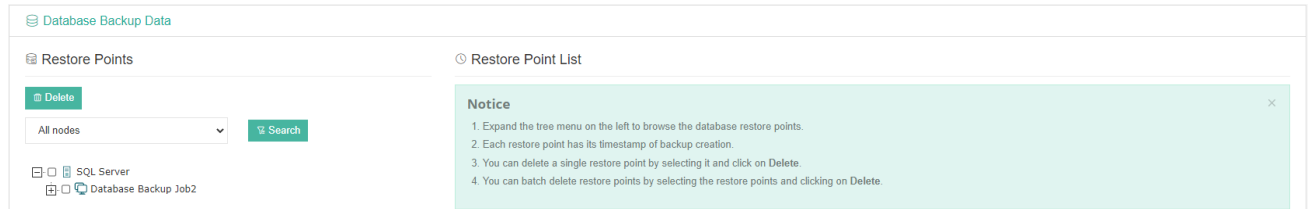


Then located the database file to import while the log file of restored database will be automatically recognized and imported.

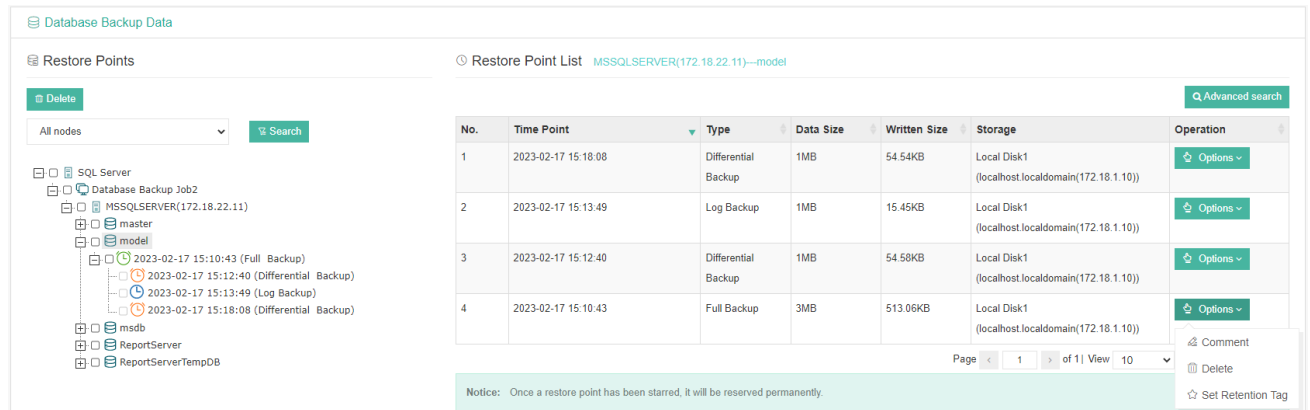


Managing Backup Data

The database backup data can be managed from **Physical Backup > Database Backup > Backup Data** page.



If you want to delete a restore point or multiple restore points, you can first select target restore point(s) from the left tree view, and click on the **Delete** button. The differential backup and log backup cannot be deleted individually, they will be deleted along with the dependent full backup. When deleting backup data, you need to provide your login password to confirm the deletion, once deleted the data will be unrecoverable.



For the restore point list in the right column, you need to select a database in the left tree menu to view all restore points of the selected database. Information like backup type, data size, written backup size and storage will be given.

You can add comments to the full backups, differential backups and the log backups, and set retention tags for the full restore point to keep the full backup and its dependent incremental and log backups to not be deleted by retention policy.

A full restore point can be also deleted from the Restore Point List by clicking on Options and then select Delete, the dependent differential and log backups will be deleted along with the full restore point.