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VINCHIN BACKUP & RECOVERY v7.0

User Guide for Postgres Pro Database

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Table of Contents

Supported Postgres Pro Environments

Supported Deployment: Standalone
Supported Versions: 13, 14
Supported Operating Systems: RHEL 8

Preparation for Postgres Pro Backup

Download Agent

Open the web console of Vinchin Backup & Recovery, 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 the target Linux distribution.
Click on **Download** button to download the backup agent for the Linux servers.
The downloaded backup agent installer for Linux server should be a .tar.gz package. If you've downloaded it on a Windows desktop, please upload it to the Linux server which you wish to backup.

Install Agent

Login to the command line interface (CLI) of the Linux server. Install the backup agent follow the steps below.
1. By using the below command to decompress the .tar.gz package.

```
tar -zvxf vinchin-backup-agent-xxx-x86_64.tar.gz
```

Where the 'xxx' should be the version number and Linux distribution same as the actually downloaded installer.

2. Enter the backup plugin package folder.

```
cd vinchin-backup-agent-xxx-x86_64
```

Where the 'xxx' should be the version number and Linux distribution same as the folder decompressed from the agent installer.

3. Install with the below command.

```
./agent_install
```

Once you execute the agent install command, the installation will begin, and during the installation process, you need to specify the agent connection mode and maybe required to specify the backup server IP based on connection mode you choose.

4. Choose the connection mode.

```
1) Server-to-client
2) Client-to-server
```

```
Please select connection mode [1,2] <default 2>:
```

Choose between 1 and 2 to determine “server to client” or “client to server” connection mode.
If 1 (input 1 and press enter), 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 2 (directly press enter or input 2 and press enter), users will be asked to provide the Vinchin backup server IP for the agent being able to automatically connect to after the installation.

5. Specify backup server IP.
Only if the connection mode is 2, users will be asked to specify the backup server IP.

```
Please select connection mode [1,2] <default 2>:2
Please input backup server IP:172.18.1.10
```

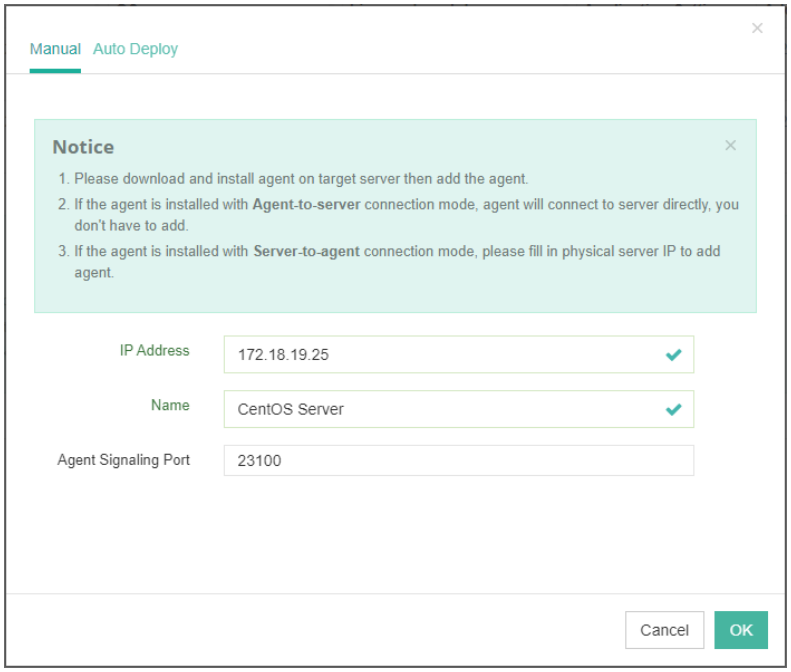
Please enter Vinchin backup server IP then press enter.

6. Specify client/server listening port.
If the connection mode is 1, users will be asked to specify the client listening port. It’s not recommended to change the port number, please press enter to continue.
If the connection mode is 2, users will be asked to specify the server listening port. It’s not recommended to change the port number, please press enter to continue.

7. Specify client transport port.
It’s not recommended to change the client transport port, please press enter to confirm the installation.
Once the users completed the above settings, the installation will be done in a few seconds, 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.

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 added the agents from Vinchin Backup & Recovery web console from **Resources** > **Agents** page.
Click on **Add** button to add the agent.

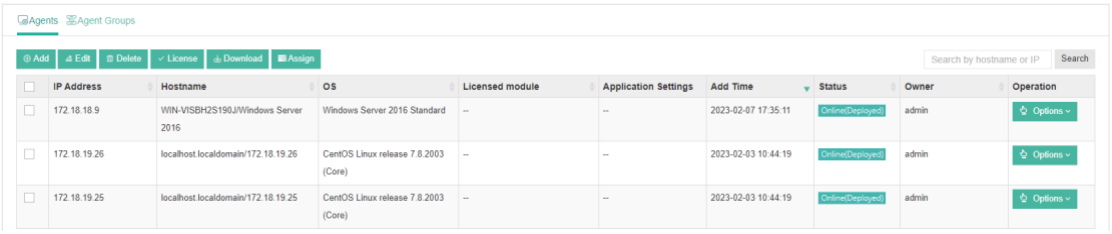


In the **IP Address** field, please input the IP of the Linux/Windows server which you had installed the agent with Server-to-client connection mode.

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.

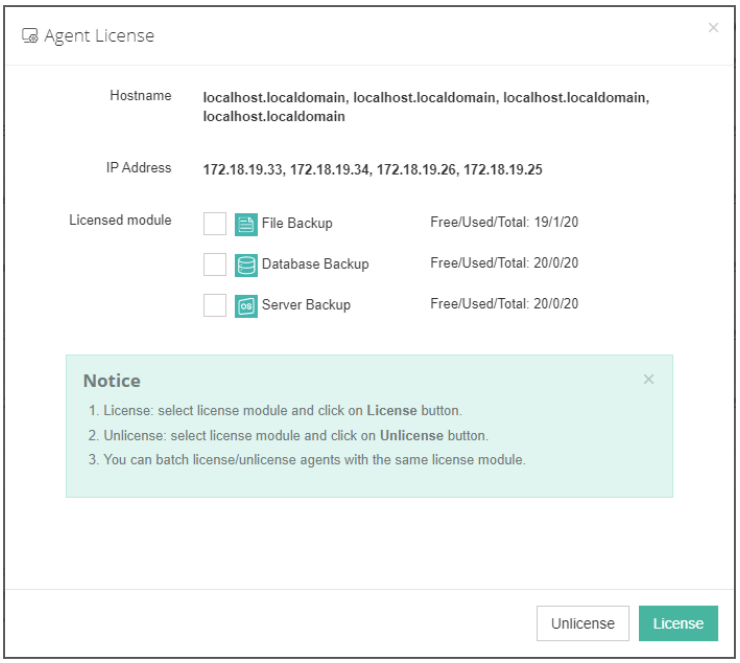


All agents connected to Vinchin backup server, no matter with Server-to-client or Client-to-server mode, will be all list on the **Resources** > **Agents** page.

License Agents

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

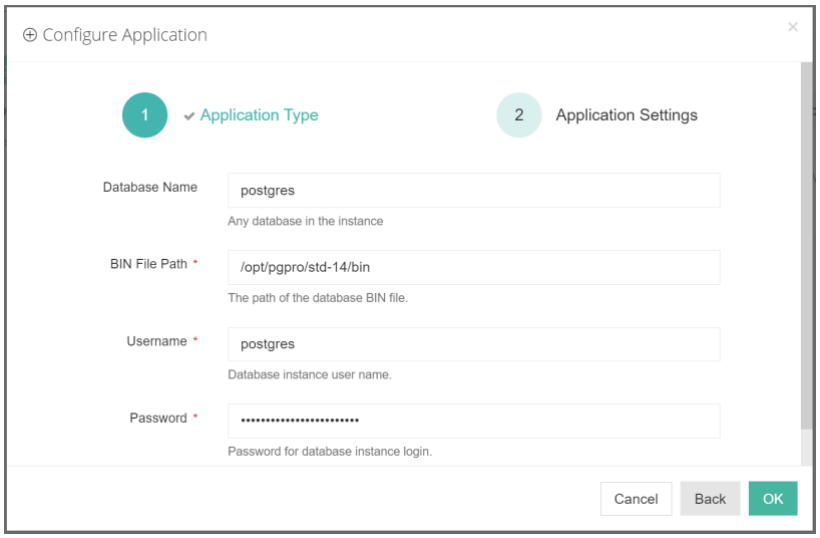
After the installation of Vinchin physical backup agent on Postgres Pro database server, users have to license the agent with database backup module.

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.

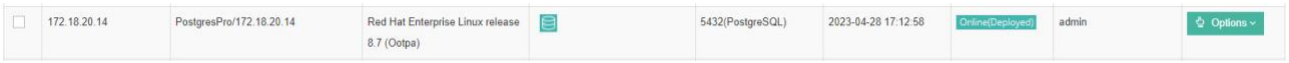
In the **Application Type** dropdown list, please select **Postgres Pro**.

The database instances of Postgres Pro will be listed in the **Select Instance** field. Select the database instance and click on **Next** button to get the instance authenticated for backup.



You need to specify the database bin file path and the database user credentials to get it authenticated.

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



Now you should be able to create backup jobs for the Postgres Pro database server.

Before Backing Up Postgres Pro Database

DBA must check the below prerequisites before taking Postgres Pro database backups.

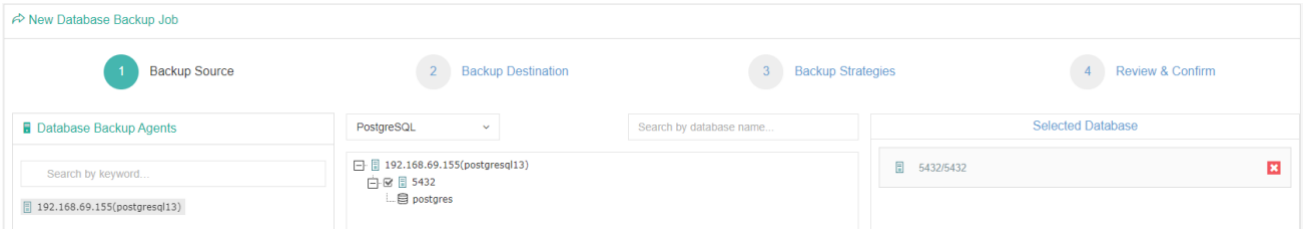
1. The database backup agent needs to use 3 service ports as below. On the database server firewall, these 3 ports need to be opened for Vinchin backup server.
   a) 22710: Persistent connection management listener port.
   b) 22711: Transmit and Control listener port.
   c) 23100: Client management listener port.
2. Archivelog mode needs to be enabled with the database instance before taking backups.
3. The password-based authentication should be “md5” or “scram-sha-256”.

Create Backup Job

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

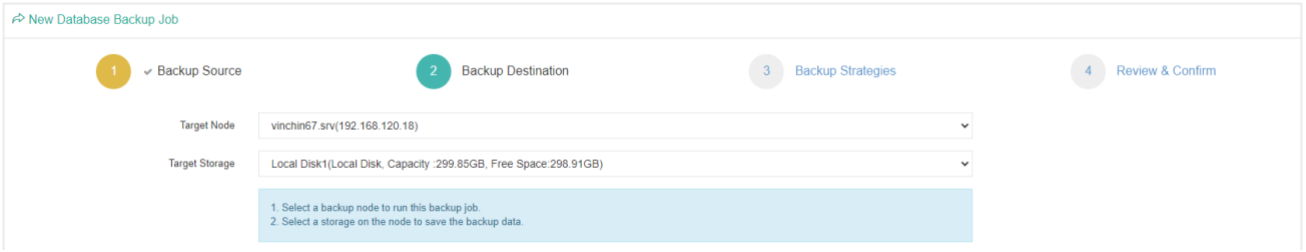
Step 1: Backup Source

First you need to select a target database server from the left column, then select Postgres Pro database instance you wish to backup, in the right column will show the instance you have selected.



Step 2: Backup Destination

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

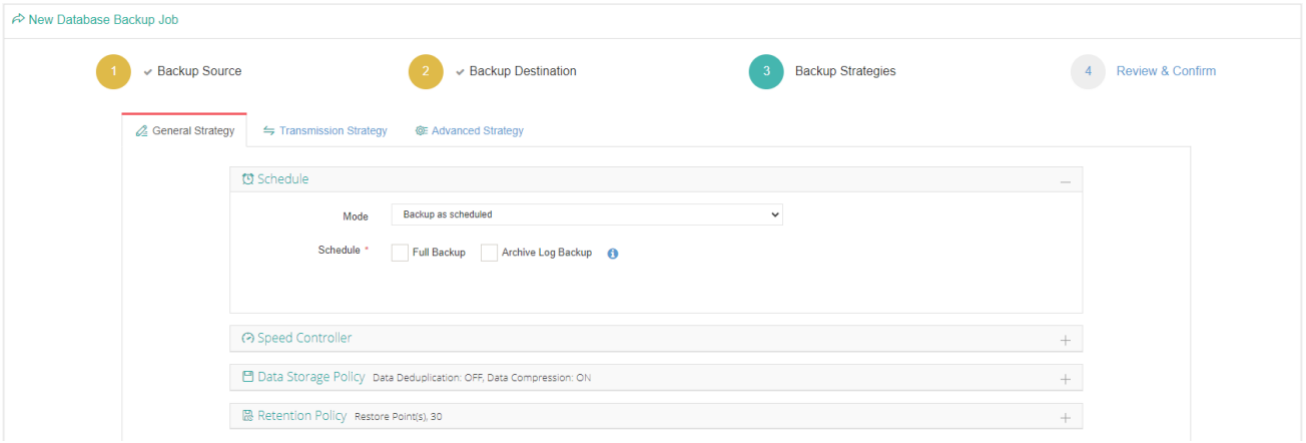


In the **Target Node** dropdown list, you can select a backup node on which you want the backup data to be processed and stored.

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

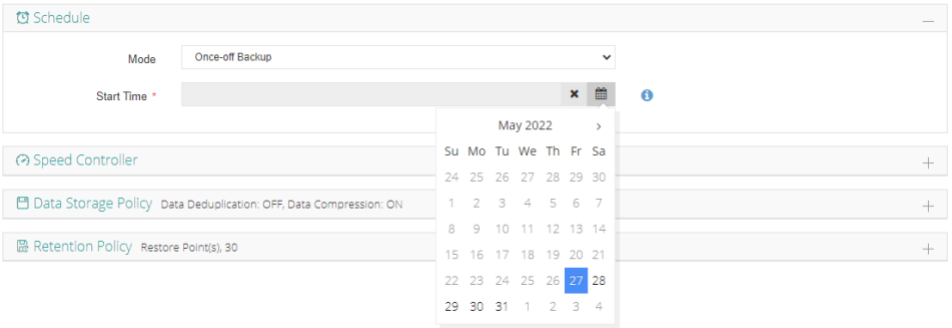
Step 3: Backup Strategies

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



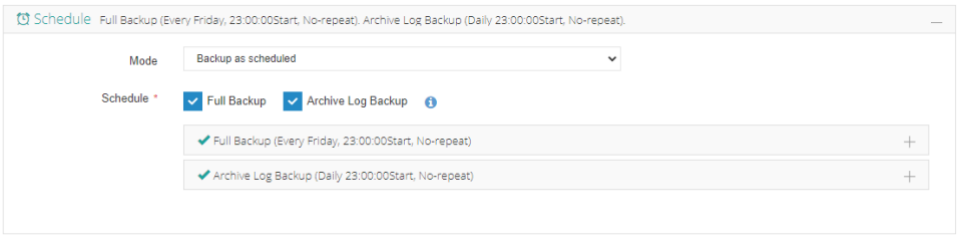
In the Schedule field, you can configure the time schedule of the backup job, you can configure the job as a **Backup as Scheduled** job or a **Once-off Backup** job.

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 Start Time field.



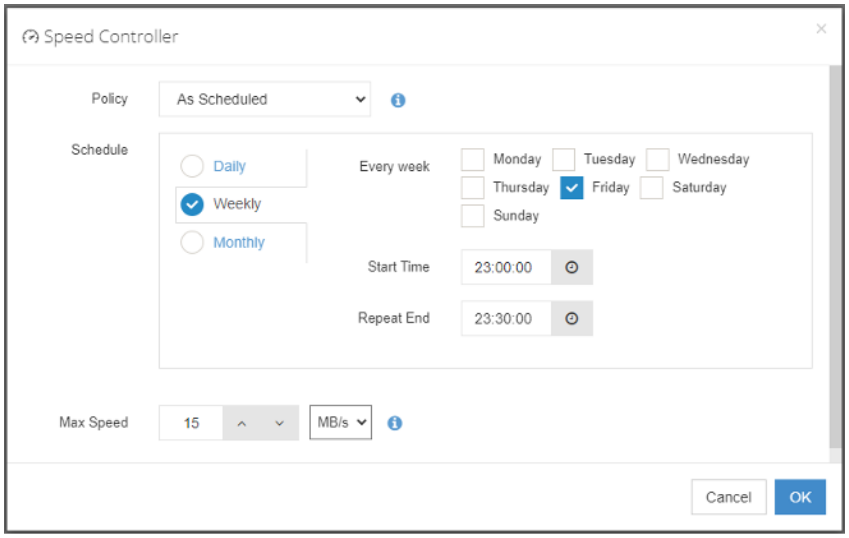
If you want to setup a Backup as Scheduled job, you can schedule Full Backup and Archive Log Backup.

For Postgres Pro database, it is recommended to schedule weekly full backup with daily archive log backup.

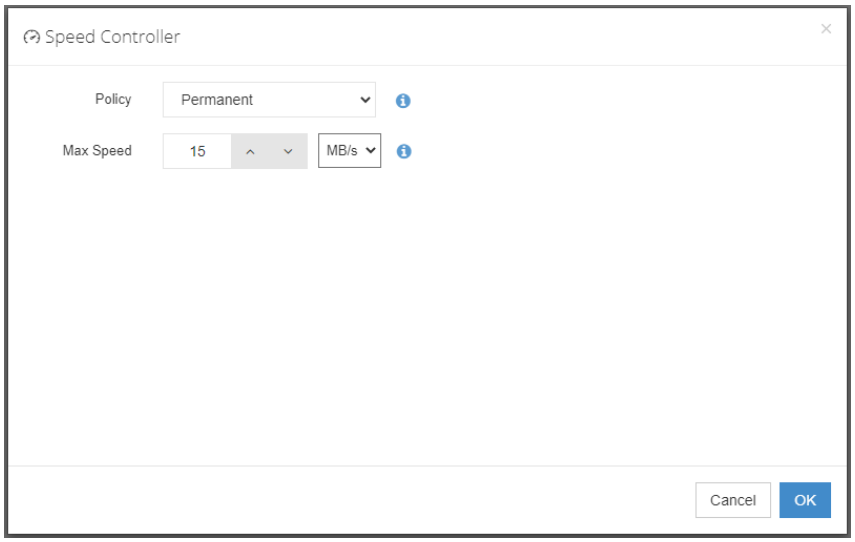


Speed Controller is optional. It can be used to limit the transmission speed during database backup if needed.

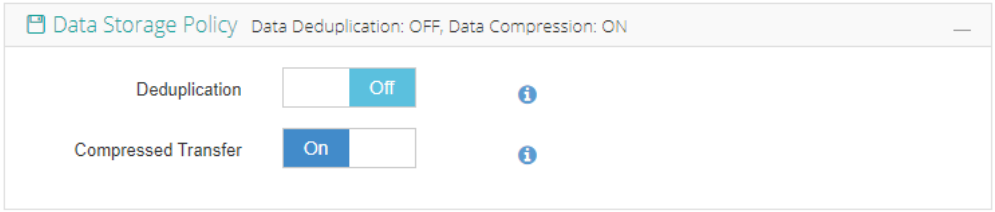
The speed controller policy can be configured as either As Scheduled or Permanent. An As Scheduled policy can be configured to limit the backup speed on Daily, Weekly and Monthly basis.



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



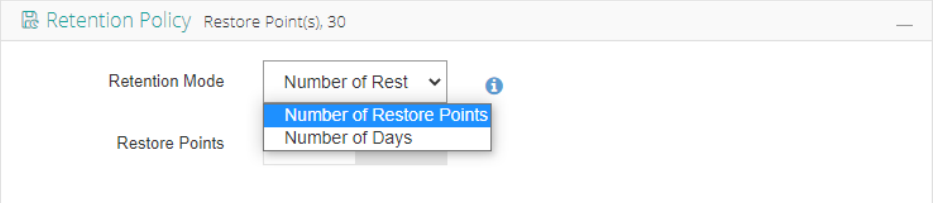
There are 2 options in Data Storage Policy section, Data Deduplication and Data Compression. By enabling these 2 options, the backup data will be deduplicated and compressed before saving into backup storage.



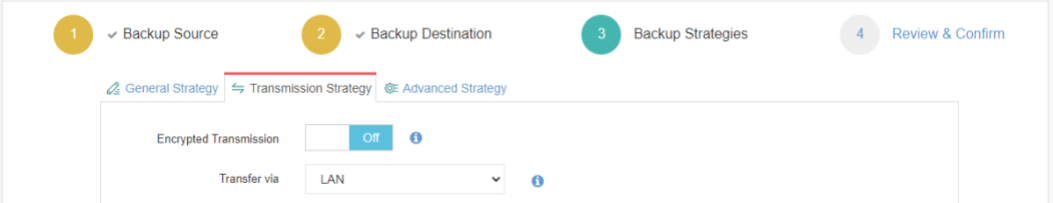
For the retention policy of the database backup, there are 2 retention modes, retain the database backups according to **Number of Restore Points** or **Number of Days**.

For the retention mode **Number of Restore Points**, the restore points will be counted by number of full restore points, including the archive log backups dependent on the corresponding full restore points.

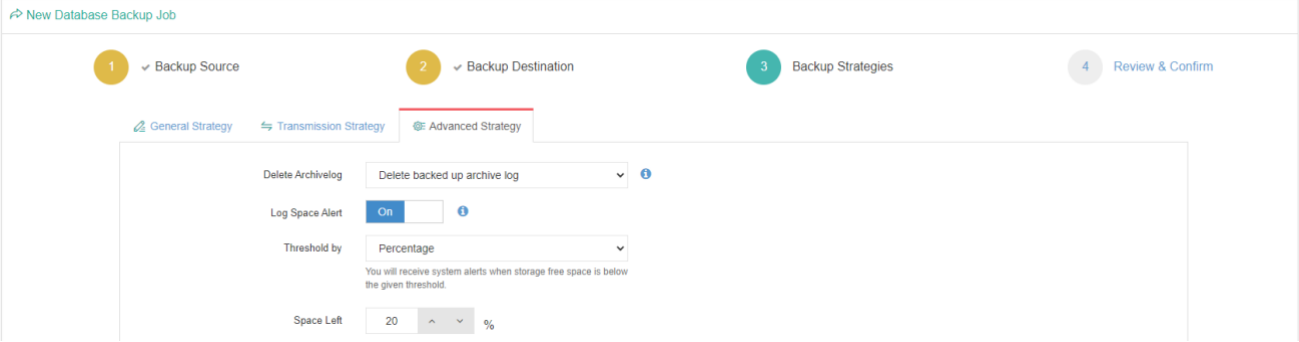
For retention mode **Number of Days**, Vinchin Backup Server will save the restore points within the specified number of days.



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 allows you to configure archive log deletion and log space monitoring options.



Delete Archivelog: there are 3 options **Delete backup up archive log**, **Do not delete** and **Delete all archive log**. It is recommended to use the Delete backed up archive log option to delete the archive log which had been backed up.
Log Space Alert: if enabled, Vinchin backup server will monitoring on the archive log space usage, when exceeded the specified threshold you will receive alerts on the Vinchin web console.

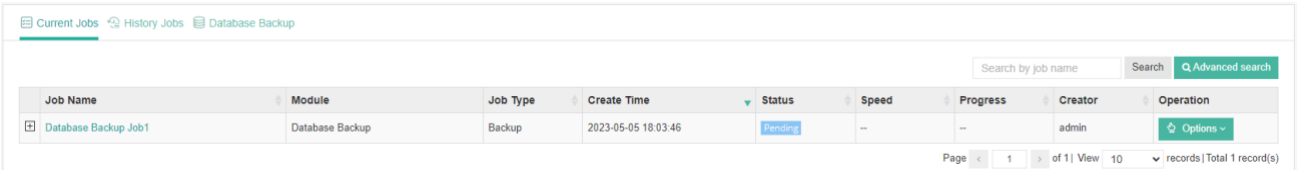
Notice
If Delete Archivelog has been set to Do not delete, DBA must manually delete archivelog files regularly, otherwise, production database crash may occur once space is fulfilling with archive log files. It is recommended to set Delete Archivelog option to Delete backed up archive log.

Step 4: Review & Confirm

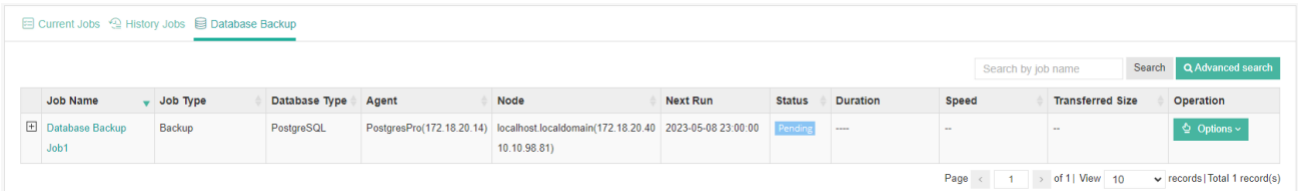
After completing the above-mentioned settings, you are able to review and confirm the settings in one screen.
A job name can be specified for identification of the database backup jobs, and by clicking on the Submit button to confirm the creation of the backup job.

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.



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.

Preparation for Postgres Pro Restore

Vinchin Backup & Recovery supports two recovery mode for Postgres Pro database: **Override Original Database** restore and **Restore to New Path**.

Before starting to restore Postgres Pro database, there are some database configurations need DBA to check. The target recovery database server must have database backup agent installed, and the service ports: 23100 and 23101 need to be opened for Vinchin backup server.

If override original database restore, the preparations are as follows:

1. The target Postgres Pro database instance needs to be shutdown.
2. The path of data directory and archive log directory must be the same as original database server.
3. The free storage space of the database server must be enough to save the full restore point data size.

If restore to new path, the preparations are as follows:

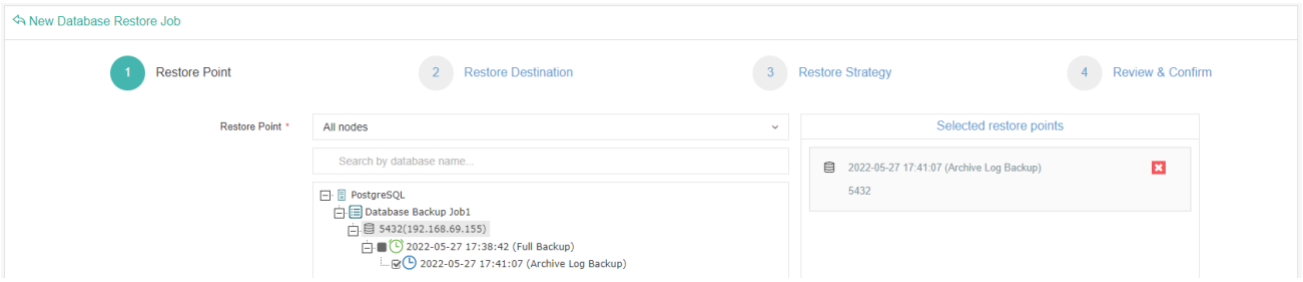
1. Must specify a custom port number to run the database instance.
2. The port number should not be used by any other services on the database server.
3. You need to specify new directories for data and the archive log, these 2 directories should be empty and should not be any directory which is being used by any other services on the database server.
4. The free storage space of database server, it must be 2 times more than the full restore point data size.

Create Restore Job

To create a Postgres Pro database restore job, please go to **Physical Backup** > **Database Backup** -> **Restore** page and follow the steps below.

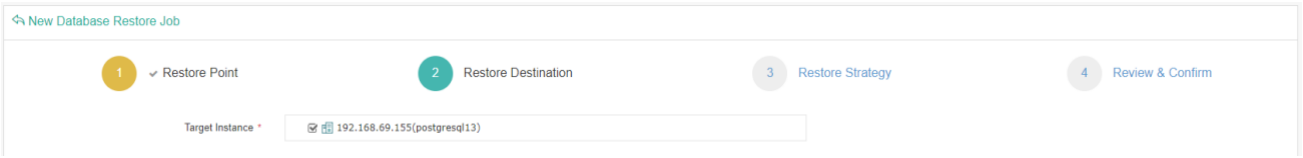
Step 1: Restore Point

If you select a full restore point, you'll be able to directly restore Postgres Pro database to the state of when the backup was taken. If you select an archive log restore point, you are able to roll back the database state to any time point between the first full backup timepoint and the selected archive log backup time point.



Step 2: Restore Destination

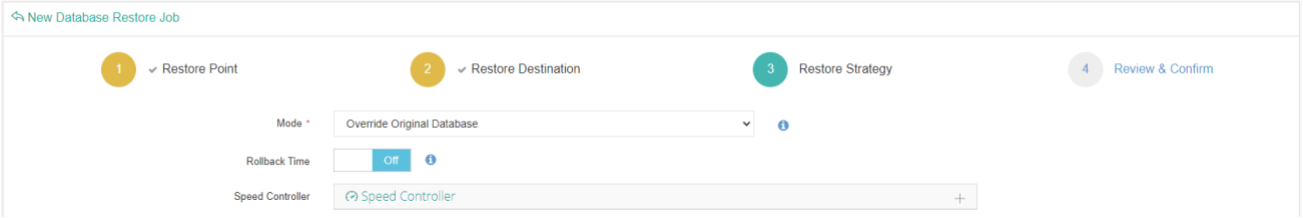
After selecting restore point, select **Target Instance** which you wish to restore.



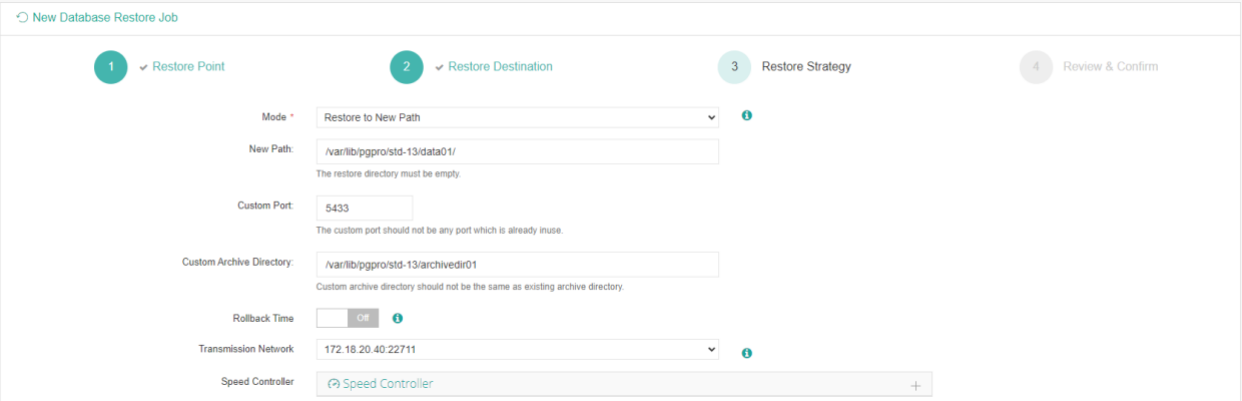
The target database instance can be the original database server or a new database server.

Step 3: Restore Strategy

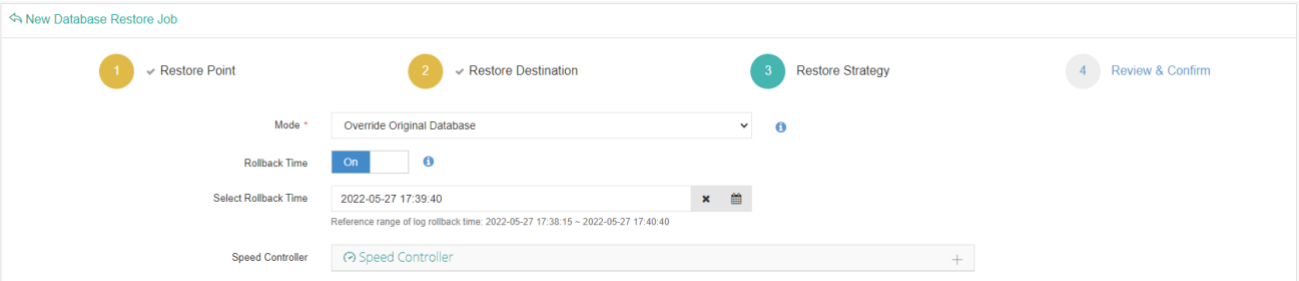
Mode: Override Original Database applies to restore the data to the production database server. Override the data of the original database instance.



Restore to New Path applies to restore data to a new directory. The directory needs to be created by the Postgres Pro database user and has Postgres Pro user permissions.



Rollback Time: if you had selected archive log backup restore point, you are able to rollback Postgres Pro database state within the given time range.



If you disable rollback time it will by default restore to the latest time point of when the backup has been taken.

Speed Controller: 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 above-mentioned settings, you are able to review and confirm the settings in one screen.

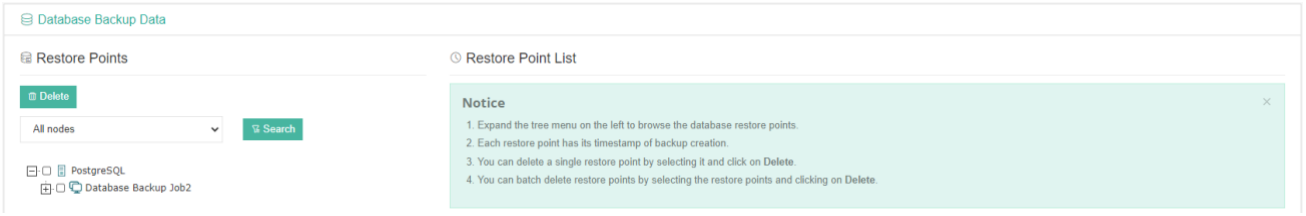
Once the job has been created, you'll be redirected to the **Monitor Center** > **Jobs** page.

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.

During the database restore process, the full data size of the full backup will be transferred from Vinchin backup server to the database server, and the data will be written in to a temporary directory, after transmission is completed then it will perform restore/roll backup restore operations according to the job configurations.

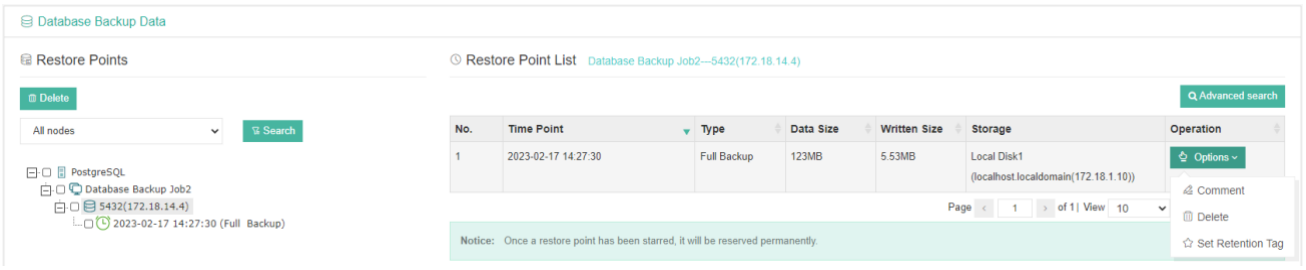
Managing Backup Data

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 archive log backups 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 the backup resides in will be given.

You can add comments to the full backups and the archive log backups, and set retention tags for the full restore point to keep the full backup and its dependent archive 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 archive log will be deleted along with the full restore point.

Note

1. In the restore point list, users are not allowed to delete an individual archive log restore point, when you click on Options button you are only able to add remarks to an archive log restore point.

2. If it's a full restore point, you are allowed to add remarks to it or to delete it, but deleting a full restore point will also delete the archive log restore point dependent on the full restore point.