Bacula Installation Guide

Bacula Systems Documentation

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> Note
>
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CommunityEnterprise The following chapter explains how to install Bacula, covering both the Community and Enterprise editions.

> Note
>
> You can download this article as a PDF

1 Bacula Enterprise Installation

Enterprise

> Bacula Enterprise Only

This solution is **only** available for Bacula Enterprise. For subscription inquiries, please reach out to sales@baculasystems.com.

The following chapter aims at explaining how to install Bacula Enterprise. It is organized by operating systems.

Note

Command line examples are for Bacula Enterprise 8.x and newer, but the installation method is similar for older versions.

Important

The installation is conducted and set up with a PostgreSQL database backend. In general, Bacula Systems recommends using the latest stable version of PostgreSQL server available in your distribution's official repositories.

Choose the operating system where you wish to have Bacula installed:

- Bacula Enterprise Installation on Linux (Director, Storage Daemon and Client)
- Bacula Enterprise Installation on Windows (Client only)
- Bacula Enterprise Installation on MacOS (Client only)

An alternative method of installation:

- Bacula Ansible Collection with Ansible Galaxy
- Bacula Enterprise Installation in Air-Gapped Environment

See also

Go to: testingyoursetupininstallation.

1.1 Bacula Enterprise Installation on Linux

The following chapter presents the ways of possible Bacula Enterprise installation on Linux, and lists the pros of choosing the recommended method. Bacula Enterprise can be installed in many ways, however, **using BIM is strongly recommended**. It automatically installs and sets up BE components in your system.

The program will:

- Detect the current distribution (RHEL, Debian, etc).
- Detect your personalized URL (*Download Area*) from the Customer Portal (*Your subscription* in the menu on the left). The URL has this format: https://www.baculasystems.com/dl/@@customer-id@@
- List the versions that are available for the current system.
- List the plugins that are available for the current version, system, and daemon being installed.
- Configure the package manager repository.

- Install the selected components.
- Configure Bacula daemons with a custom URL provided by the BWeb Registration module.
- Configure daemon services to start automatically.
- Configure firewalls automatically, according to the components installed.

Linux: Installation with BIM

The following article aims at explaining how to install Bacula Enterprise components (Director, File Daemon, Storage Daemon, bconsole), and Bweb with the use of Bacula Installation Manager and Linux OS. Bweb installation here is optional, however, it is recommended.

Bacula Installation Manager (BIM) supports the following platforms:

- RHEL 7, 8 and 9
- Oracle Linux 8 and 9
- Rocky Linux 8 and 9
- Alma Linux 8 and 9
- Debian 9, 10 and 11
- Debian 12, Client/FD only (if you need DIR and SD, install the packages via apt)
- Ubuntu 18.04, 20.04, 22.04 and 24.04

Note

BIM will take care of all aspects for your Bacula Enterprise installation with default advised parameters. If you need to customize it or link Bacula to PostgreSQL running on a different port or different server, use the installation procedure via the packages.

Prerequisites

- One of the above operating systems (OS) successfully installed.
- Access to your network and to the Internet, or more specifically, to https://www.baculasystems.com/ .
- Root or sudo access to install new software on the chosen OS.

See also

See how to verify your root or sudo access.

- OS updated with the latest patches from your OS vendor.
- Python 2.7 or above installed.

See also

See how to check which Python version is installed or install the latest version of Python 3.

Steps

- LinuxDownloadBIM
- LinuxInstallComponents

Linux: Download BIM

1. Go to `/tmp` location.

```
cd /tmp
```

2. Download Bacula Installation Manager.
    - when `curl` is installed, run:

```
curl -o bee_installation_manager https://baculasystems.com/ml/bee_
↪installation_manager?chash=@@customer@@
```

Note

To install `curl`, you can use `sudo apt install curl` (for Ubuntu/Debian), or `sudo dnf install curl` (for RHEL).

or

- when `curl` is not installed, run:

```
wget -O bee_installation_manager https://www.baculasystems.com/ml/bee_
↪installation_manager?chash=@@customer@@
```

Note

To install `wget`, you can use `sudo apt install wget` (for Ubuntu/Debian), or `sudo dnf install wget` (for RHEL).

3. Make BIM executable - run:

```
chmod +x bee_installation_manager
```

Linux: Install Components

The following article aims at presenting the reader with information on how to install specific Bacula Enterprise components.

Important

Now, we are installing Bacula Enterprise, so it is vital to remember that:

- A general command to install Bacula components is `./bee_installation_manager`, which installs File Daemon by default. If you wish to install other components, plugins or modify the command, use `./bee_installation_manager --help` to list all the possible options.

- In order to install other components (File Daemon, Storage Daemon) Bacula environment has to have at least one Director installed.
- With the installation of the Director, by default you install File Daemon, Storage Daemon and bconsole on the same host.
- Bacula plugins can be installed along with the Director, File Daemon and/or Storage Daemon.
- BWeb is considered as a Director plugin, you will be prompted to install it.

Linux: Install Director

The following article aims at presenting the reader with instructions on how to install a Director in a certain host.

Important

It is vital to remember that:

- With the installation of the Director, by default you install File Daemon, Storage Daemon and bconsole on the same host.
- It is recommended to install Bweb plugin along with the installation of the Director. Other plugins can be added later.
- When adding plugins later, Bacula will launch the installation/upgrade process.
- While going through the installation/upgrade steps again, your configuration file will not be overwritten, and when it comes to File Daemon - you will not need to register the Client in Bweb again.

Prerequisites

General Prerequisites apply here.

Steps

1. Run BIM and install the first component - Director:

```
./bee_installation_manager -t DIR
```

2. Confirm the Director and plugins installation with `Y`.

```
================================================
Installation of Director and associated plugins
================================================
Proceed with Installation of Director and associated plugins? [Y/n] Y
```

3. Provide your download area address.

Note

To get your Download Area URL, go to your Customer Portal, click Your Subscription from the left menu, scroll down to the very bottom. You may copy your Download Area from Your

Download Area section.

```
Please enter your Download Area URL. This information can be found in your␣
↪Customer Portal in the "Your Subscription"
menu : https://www.baculasystems.com/dl/@@customer-id@@
```

4. Choose the version to be installed.

```
Available versions found on your Download Area for your current operating␣
↪system [rhel7-64]:
------------------------------------------------------------------------------
↪---------------
  1 : 11.0.6    2 : 12.0.5    3 : 12.2.5    4 : 12.4.4    5 : 12.6.5
  6 : 12.8.4    7 : 14.0.7    8 : 16.0.3
------------------------------------------------------------------------------
↪---------------
Please, select the version of your Bacula Director ('16.0.3' by default) :
```

5. Choose the plugins to be installed (optional).

> **Note**
>
> It is recommended to install BWeb alongside the Director.

```
The following plugins available for the Director can be installed at version␣
↪14.0.3 :
------------------------------------------------------------------------------
↪---------
  1 : bweb            2 : callhome-dir    3 : totp-dir
------------------------------------------------------------------------------
↪---------
Select the number(s) of the plugins you want to install, separated by commas.
Leave empty and just press <Enter> to skip plugin selection : 1
```

6. Proceed with Managing Firewall rules.

> **Note**
>
> Choose the default options proposed for the firewall setting, unless the policies of your company require different rules.

```
=======================
Managing Firewall rules
=======================
Proceed with Managing Firewall rules? [Y/n]

Available Firewalls
-------------------
  1 : iptables        2 : firewall-cmd
```

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```
--------------------
Please, make your selection :  ('firewall-cmd' by default) :
```

7. Confirm the process with `Y`.

```
=========================================
Ready to process the following operations
=========================================
[X] Installation of : Bacula, bweb
[X] Managing Firewall rules

Continue or (r)etry? [Y/n/r]
```

Result

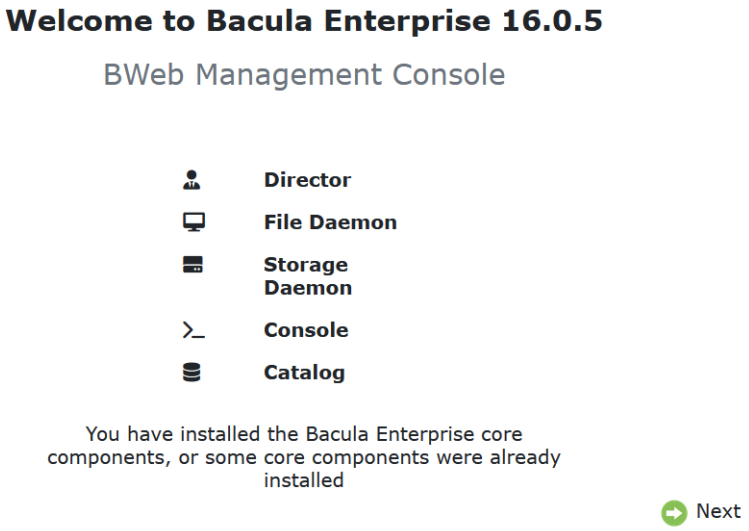
Bacula Director (+ optionally Bweb) is installed.

```
Installation of Director Successfully completed
================================================
If you wish to use the Bacula CLI, please type "sudo -u bacula /opt/bacula/
↪bin/bconsole"
BWeb has been installed. It can be accessed on https://<Bweb's IP or FQDN>
↪:9180/
================================================
Bacula Enterprise Installation Manager. Done.
=========================================
```

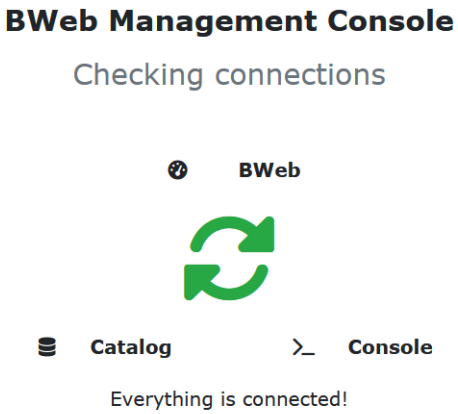
Post-installation Suggestions

If you installed Bweb, open a browser and copy/type the address you have received in the final message from the BIM installation wizard.

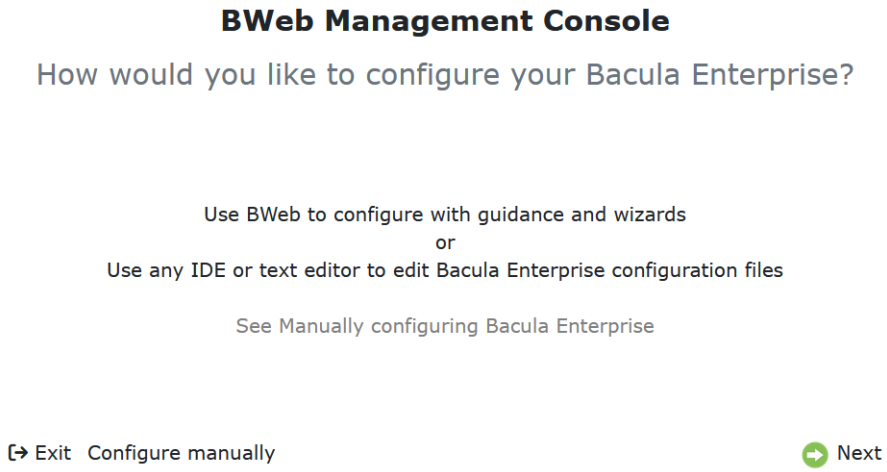
1. When prompted, enter the login and password as was entered in BIM for BWeb, the username being *admin*.
2. On the welcome screen, click “Next”.



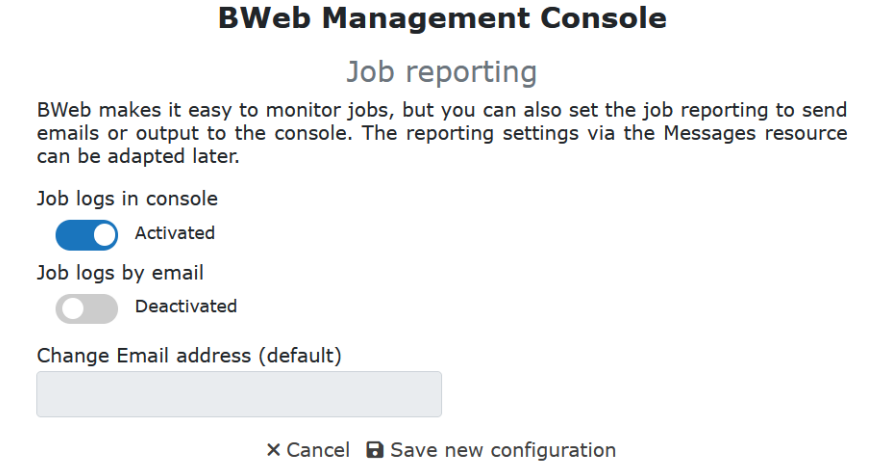
You will be presented with the Checking Connection screen.



After the connection is checked, you will be presented with the following screen:



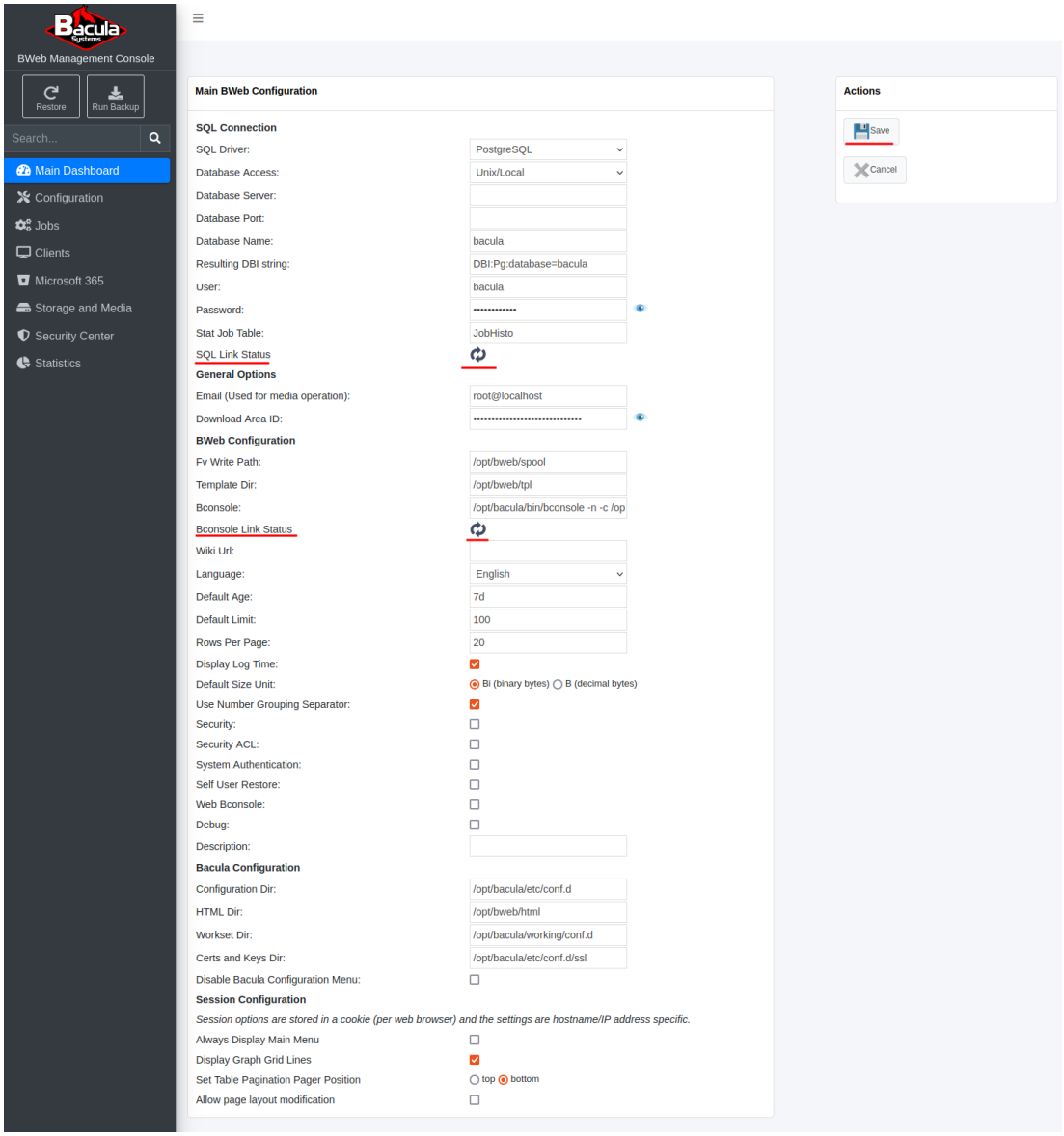
3. Click “Next”.
4. Choose the preferred option.



5. Click “Save new configuration”.

Now, you will be able to verify the connection to the Catalog from Bweb, and the connection to bconsole from Bweb.

6. On the main page of Bweb, navigate to “Configuration” -> “Bweb Configuration” on the left navigational panel.
7. On the right side of the page, click “Edit” on the “Actions” panel.
8. In edit mode, click on the icon “SQL Link Status” to verify the link with the Catalog, and on the second icon “Bconsole Link Status” to verify the link to bconsole.



Once clicked, both should have a green check mark indicator.

Both of these are essential for BWeb. If you have installed BWeb on the same operating system than the DIR, the Catalog and the SD, you have nothing else to do on this page. Finalize your configuration by clicking “Save”.

Linux: Install File Daemon (Client)

The following article aims at presenting the reader with instructions on how to install a File Daemon (Client), how to install chosen FD plugins, and manage firewall rules.

The File Daemon allows backing up any data stored in the system on which it is installed via the Client resource defined in the Director.

Important

If you wish to modify arguments, run: `bee_installation_manager --help`.

Prerequisites

General Prerequisites apply here.

Also:

- Director already installed.

Steps

1. Run BIM:

```
./bee_installation_manager
```

2. Confirm the File Daemon and plugins installation with `Y`.

```
============================================================
Installation of File Daemon (Client) and associated plugins
============================================================
Proceed with Installation of Director and associated plugins? [Y/n] Y
```

3. Provide your download area address.

Note

To get your Download Area URL, go to your Customer Portal, click Your Subscription from the left menu, scroll down to the very bottom. You may copy your Download Area from Your Download Area section.

```
Please enter your Download Area URL. This information can be found in your␣
↪Customer Portal in the "Your Subscription" menu : https://www.baculasystems.
↪com/dl/@@customer-id@@
```

4. Choose the version to be installed.

Important

The version of the File Daemon must not be higher than the version of the Bacula Director.

```
Available versions found on your Download Area for your current operating␣
↪system [rhel7-64]:
------------------------------------------------------------------------------
↪--------------
  1 : 11.0.6    2 : 12.0.5    3 : 12.2.5    4 : 12.4.4    5 : 12.6.5
  6 : 12.8.4    7 : 14.0.7    8 : 16.0.3
------------------------------------------------------------------------------
```

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```
↪---------------
Please, select the version of your Bacula Director ('16.0.3' by default) :
```

5. Choose the plugins to be installed (optional).

```
The following plugins available for the File Daemon can be installed at␣
↪version 16.0.3 :
--------------------------------------------------------------------------------
↪---------
  1 : antivirus          2 : azure-vm           3 : cdp
  4 : db2                5 : delta              6 : docker
  7 : google-workspace   8 : hdfs               9 : inventory
 10 : kubernetes        11 : ldap              12 : m365
 13 : mysql             14 : ndmp              15 : netapp-hfc
 16 : nutanix           17 : openshift         18 : oracle
 19 : postgresql        20 : rhv               21 : s3
 22 : sap-hana          23 : security          24 : snapshot
 25 : sybase            26 : vsphere
--------------------------------------------------------------------------------
↪---------
Select the number(s) of the plugins you want to install, separated by commas.
Leave empty and just press <Enter> to skip plugin selection :
```

6. Confirm the process with Y.

```
===============================================
Registration of File Daemon (Client) via Bweb
===============================================
Proceed with Installation of Director and associated plugins? [Y/n] Y
Please enter the Automatic Configuration URL provided by Bweb :
```

Along with the File Daemon (Client) installation, you must proceed to register the File Daemon via Bweb. You must have the Director and BWeb installed for this. See File Daemon (Client) Creation and Registration.

7. Confirm your Director address.

```
A potential Director address is detected and will be used by default: 10.0.XX.
↪XXX
Press Enter to use 10.0.XX.XXX, or type a new Director address or type * to␣
↪accept any incoming
address [10.0.XX.XXX|dir-addr|*] :
```

8. Confirm the operations with ``Y`.

```
=========================================
Ready to process the following operations
=========================================
[X] Installation of : Bacula
[X] Registration of File Daemon (Client) via BWeb
[X] Managing Firewall rules

Continue or (r)etry? [Y/n/r]
```


9. Proceed with Managing Firewall rules.

> **Note**
>
> Choose the default options proposed for the firewall setting, unless the policies of your company require different rules.

```
=======================
Managing Firewall rules
=======================
Proceed with Managing Firewall rules? [Y/n]

Available Firewalls
--------------------
  1 : iptables        2 : nft             3 : firewall-cmd
--------------------
Please, make your selection :  ('firewall-cmd' by default) :
```

10. Confirm the process with `Y`.

```
========================================
Ready to process the following operations
========================================
[X] Installation of : Bacula
[X] Managing Firewall rules

Continue or (r)etry? [Y/n/r]
```

Result:

Bacula remote File Daemon is installed and registered in the Director.

Post-installation Suggestions

Verify the Access to a Newly Installed Client

1. Go to BWeb.
2. Click “Clients” –> “Client Overview”.
3. Select the newly installed Client and click “Status”.

You should reach the following page:

If you can read the Client name and its Version, then it means you can start backing up and restoring this Client.

> **Note**
>
> The same operation is possible also from bconsole with the use of the command: `status client=ClientName`

Linux: Install Storage Daemon

The following article aims at presenting the reader with instructions on how to install Storage Daemon.

Important

It is vital to remember that:

- It is possible to install plugins along with the installation of the component.
- When adding plugins later, Bacula will launch the installation/upgrade process.
- While going through the installation steps again, your configuration file will not be overwritten.

Prerequisites

General Prerequisites apply here.

Steps

1. Run BIM and install SD:

```
./bee_installation_manager -t SD
```

2. Confirm the Director and plugins installation with `Y`.

```
================================================
Installation of Director and associated plugins
================================================
Proceed with Installation of Director and associated plugins? [Y/n] Y
```

3. Provide your download area address.

Note

To get your Download Area URL, go to your Customer Portal, click Your Subscription from the left menu, scroll down to the very bottom. You may copy your Download Area from Your Download Area section.

```
Please enter your Download Area URL. This information can be found in your␣
↪Customer Portal in the "Your Subscription"
menu : https://www.baculasystems.com/dl/@@customer-id@@
```

4. Choose the version to be installed.

```
Available versions found on your Download Area for your current operating␣
↪system [rhel7-64]:
------------------------------------------------------------------------------
↪---------------
  1 : 11.0.6    2 : 12.0.5    3 : 12.2.5    4 : 12.4.4    5 : 12.6.5
  6 : 12.8.4    7 : 14.0.7    8 : 16.0.3
------------------------------------------------------------------------------
↪---------------
Please, select the version of your Bacula Director ('16.0.3' by default) :
```

5. Choose the plugins to be installed (optional). - Do people need to give some password here? I'm using QA download area, and I'm asked for the password to admin account.

> **Note**
>
> It is recommended to install BWeb alongside the Director.

```
The following plugins available for the Director can be installed at version␣
↪14.0.3 :
--------------------------------------------------------------------------------
↪---------
   1 : aligned          2 : cloud-azure      3 : cloud-glacier
   4 : cloud-google     5 : cloud-oracle     6 : cloud-s3
   7 : cloud-swift      8 : dedup            9 : key-manager
--------------------------------------------------------------------------------
↪---------
Select the number(s) of the plugins you want to install, separated by commas.
Leave empty and just press <Enter> to skip plugin selection :
```

6. Proceed with Managing Firewall rules.

> **Note**
>
> Choose the default options proposed for the firewall setting, unless the policies of your company require different rules.

```
========================
Managing Firewall rules
========================
Proceed with Managing Firewall rules? [Y/n]

Available Firewalls
--------------------
  1 : iptables        2 : firewall-cmd
--------------------
Please, make your selection :  ('firewall-cmd' by default) :
```

7. Confirm the process with `Y`.

```
=========================================
Ready to process the following operations
=========================================
[X] Installation of : Bacula
[X] Managing Firewall rules

Continue or (r)etry? [Y/n/r]
```

Result

Bacula Storage Daemon is installed.

```
Installation of Storage Daemon Successfully completed
=====================================================
```

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```
Bacula Enterprise Installation Manager. Done.
==============================================
```

Check Python Version Installed

To check the Python version installed:

1. Run:

```
python --version
```

or

```
python3 --version
```

Result:

If the Python version installed is 2.7 or above, proceed with the Linux BE installation with BIM.

If there is no Python installed or the version is older than 2.7, install the latest version of Python 3.

Install Python 3

The following article presents how to install Python 3 on Ubuntu/Debian, or RHEL.

Ubuntu/Debian

To install the latest version of Python 3:

1. Run:

```
apt install python3
```

RHEL

1. Run:

```
dnf install python3
```

Verify Root/Sudo Access

To verify your root access:

1. Open a terminal
2. Run:

```
sudo /bin/bash
```

or

```
su -
```

Result:

If you have root/sudo, you will be prompted with a root console denoted by a # sign.

Linux: Bacula Enterprise Installation with Package Manager

The following article aims at explaining how to install Bacula Enterprise components with the use of Package Manager. Remember that the best way to install Bacula Enterprise and its components is using Bacula Installation Manager (BIM) This solution will perform the following procedures in a simple and automated way.

Following this guide, the software below will be installed:

- PostgreSQL (Catalog)
- Bacula Enterprise

> **Note**
>
> PostgreSQL is highly recommended, however, if you intend to use MySQL instead, adapt the commands in this guide and replace 'postgresql' with 'mysql'. We encourage the usage of PostgreSQL for performance reasons as Bacula Enterprise was specially fine-tuned for it.

Look into your download area for any other platform support like Mac OS X, Solaris, FreeBSD and more available.

Linux: Install Components

The following article aims at presenting the reader with information on how to install fundamental Bacula Enterprise components using the package manager.

Install Bacula Enterprise

Installation of Bacula Enterprise is most easily done by creating the repository file suitable for the existing subscription to the Linux package manager for your distribution of choice.

Linux: Installation on Debian and Ubuntu based distributions

Welcome to the guide for installing Bacula Enterprise on Debian and Ubuntu based systems. This documentation ensures you have the necessary steps to get Bacula up and running on your system with ease.

Steps

1. Get the required packages:

```
sudo apt-get update
sudo apt-get install ca-certificates curl gnupg lsb-release
```

2. Import the official Bacula Enterprise GPG key:

```
curl -fsSL https://www.baculasystems.com/dl/@@customer-id@@/
↪BaculaSystems-Public-Signature-08-2017.asc -o /etc/apt/keyrings/
↪BaculaSystems-Public-Signature-08-2017.asc
```

   Replace @@**customer-id**@@ with your customer-specific ID which can be found in your Bacula Systems Customer Portal.

3. Configure the Bacula Enterprise **apt** repository:


```
echo -e "# Bacula Enterprise\nTypes: deb\nURIs: https://www.
↪baculasystems.com/dl/@@customer-id@@/debs/bin/@@bee-version@@/
↪$(lsb_release -cs)-64\nSuites: $(lsb_release -cs)\nComponents:␣
↪main\nSigned-By: /etc/apt/keyrings/BaculaSystems-Public-Signature-
↪08-2017.asc\n" | sudo tee -a /etc/apt/sources.list.d/bacula-
↪enterprise.sources > /dev/null
```

Replace @@**bee-version**@@ and @@**customer-id**@@ with your customer id and the version of Bacula Enterprise you wish to use.

4. Refresh your package list to include the Bacula Enterprise repository:

```
sudo apt-get update
```

5. Install the Bacula Enterprise Director:

```
sudo apt-get install bacula-enterprise-postgresql
```

During installation, you'll be prompted to configure the database for Bacula with *dbconfig-common*. Select "Yes," then set and confirm the database password when asked.

Verify Installation

To ensure that your Bacula installation is functioning correctly, use systemd to check their status:

```
sudo systemctl status bacula-dir.service
sudo systemctl status bacula-sd.service
sudo systemctl status bacula-fd.service
```

Conclusion

Congratulations! You've successfully installed Bacula Enterprise on your system. For further configuration details or troubleshooting, refer to the Bacula Systems Customer Portal or you may contact support.

Linux: Installation on RHEL based distributions

Welcome to the guide for installing Bacula Enterprise on RHEL based systems. This documentation ensures you have the necessary steps to get Bacula up and running on your system with ease.

Steps

1. Import the official Bacula Enterprise key:

```
sudo rpm --import https://www.baculasystems.com/dl/@@customer-id@@/
↪BaculaSystems-Public-Signature-08-2017.asc
```

Replace @@**customer-id**@@ with your customer-specific ID which can be found in your Bacula Systems Customer Portal.

2. Install PostgreSQL using **dnf**:

```
sudo dnf install postgresql-server
```

3. Initialize the PostgreSQL database engine:


```
postgresql-setup initdb
```

4. Start PostgreSQL and enable start at runtime:

```
systemctl start postgresql.service
systemctl enable postgresql.service
```

5. Configure the Bacula Enterprise **yum** repository:

```
RHEL_VER=rhel$(cat /etc/redhat-release | grep -oP '(?<=release )\d+')
echo -e "[bacula-enterprise]\nname=Bacula Enterprise\nbaseurl=https:/
↪/www.baculasystems.com/dl/@@customer-id@@/rpms/bin/@@bee-version@@/
↪$RHEL_VER-64\nenabled=1\nautorefresh=1\ntype=rpm-md\ngpgcheck=1\
↪ngpgkey=https://www.baculasystems.com/dl/@@customer-id@@/
↪BaculaSystems-Public-Signature-08-2017.asc\n" | sudo tee -a /etc/
↪yum.repos.d/bacula-enterprise.repo > /dev/null
```

Replace @@**bee-version**@@ and @@**customer-id**@@ with your customer id and the version of Bacula Enterprise you wish to use.

Warning

RHEL7 uses rpm version 4.11 which does not support GPG with subkeys. Bacula Systems uses subkeys to sign newer distribution packages. In RHEL7, consider disabling gpg check `gpgcheck=0` in order to avoid NOKEY warnings.

6. Refresh your package cache and install the Bacula Enterprise Director using **dnf**:

```
sudo dnf check-update
sudo dnf install bacula-enterprise-postgresql
```

During installation, you'll be prompted to configure the database for Bacula with *dbconfig-common*. Select "Yes," then set and confirm the database password when asked.

7. Create the database and grant ownership:

```
su - postgres
/opt/bacula/scripts/create_postgresql_database
/opt/bacula/scripts/make_postgresql_tables
/opt/bacula/scripts/grant_postgresql_privileges
exit
```

Verify Installation

To ensure that your Bacula installation is functioning correctly, use systemd to check their status:

```
sudo systemctl status bacula-dir.service
sudo systemctl status bacula-sd.service
sudo systemctl status bacula-fd.service
```


Conclusion

Congratulations! You've successfully installed Bacula Enterprise on your system. For further configuration details or troubleshooting, refer to the Bacula Systems Customer Portal or you may contact support.

Linux: Installation on SLES based distributions

Welcome to the guide for installing Bacula Enterprise on SLES. This documentation ensures you have the necessary steps to get Bacula up and running on your system with ease.

Steps

1. Register your host:

   ```
   SUSEConnect --regcode @@registration-code@@
   ```

   Replace @@**registration-code**@@ with your registration code.

2. Import the official Bacula Enterprise key:

   ```
   sudo rpm --import https://www.baculasystems.com/dl/@@customer-id@@/
   ↪BaculaSystems-Public-Signature-08-2017.asc
   ```

   Replace @@**customer-id**@@ with your customer-specific ID which can be found in your Bacula Systems Customer Portal.

3. Install PostgreSQL using **zypper**:

   ```
   sudo zypper install postgresql-server
   ```

4. Start PostgreSQL and enable start at runtime:

   ```
   systemctl start postgresql.service
   systemctl enable postgresql.service
   ```

5. Configure the Bacula Enterprise **zypper** repository:

   ```
   SLES_VER=sles$(rpm -q sles-release | sed -E 's/.*release-([0-9]+\.[0-
   ↪9]+)-.*/\1/' | tr -d '.')
   echo -e "[bacula-enterprise]\nname=Bacula Enterprise\nbaseurl=https:/
   ↪/www.baculasystems.com/dl/@@customer-id@@/rpms/bin/@@bee-version@@/
   ↪$SLES_VER-64\nenabled=1\nautorefresh=1\ngpgcheck=1\ngpgkey=https://
   ↪www.baculasystems.com/dl/@@customer-id@@/BaculaSystems-Public-
   ↪Signature-08-2017.asc\n" | sudo tee -a /etc/zypp/repos.d/bacula-
   ↪enterprise.repo > /dev/null
   ```

   Replace @@**bee-version**@@ and @@**customer-id**@@ with your customer id and the version of Bacula Enterprise you wish to use.

6. Install the Bacula Enterprise Director:

   ```
   sudo zypper install bacula-enterprise-postgresql
   ```

   During installation, you'll be prompted to configure the database for Bacula with *dbconfig-common*. Select "Yes," then set and confirm the database password when asked.

7. Create the database and grant ownership:

```
su - postgres
/opt/bacula/scripts/create_postgresql_database
/opt/bacula/scripts/make_postgresql_tables
/opt/bacula/scripts/grant_postgresql_privileges
exit
```

Verify Installation

To ensure that your Bacula installation is functioning correctly, use systemd to check their status:

```
sudo systemctl status bacula-dir.service
sudo systemctl status bacula-sd.service
sudo systemctl status bacula-fd.service
```

Conclusion

Congratulations! You've successfully installed Bacula Enterprise on your system. For further configuration details or troubleshooting, refer to the Bacula Systems Customer Portal or you may contact support.

Install Bacula Enterprise File Daemon only

Linux: Installation on Debian and Ubuntu based distributions

Welcome to the guide for installing Bacula Enterprise File Daemon on Debian and Ubuntu based systems. This documentation ensures you have the necessary steps to setup a client and establish connectivity between **Director** and **File Daemon**.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **File Daemon** packages:

   ```
   sudo apt-get update
   sudo apt-get install bacula-enterprise-client
   ```

2. Start and enable the daemon:

   ```
   sudo systemctl start bacula-fd
   sudo systemctl enable bacula-fd
   ```

3. Add a **Client** resource in the **Director** host:

   ```
   Client {
       Name = @@fd-name@@
       Address = @@fd-address@@
       ...
   }
   ```

   Be sure to replace @@**fd-name**@@ and @@**fd-address**@@ with the values found in `/opt/bacula/etc/bacula-fd.conf` under **FileDaemon** resource.

4. Add a **Director** resource in `/opt/bacula/etc/bacula-fd.conf`:

```
Director {
    Name = @@dir-name@@
    Password = @@client-password@@
}
```

   Be sure to replace @@**dir-name**@@ with the **Director** name found in the **Director** resource, and @@**client-password**@@ with the one in the **Client** resource.

5. Check your **FileDaemon** configuration:

```
/opt/bacula/bin/bacula-fd -t
```

Check connectivity

Once the basic configuration is done, in order to make the **Director** aware of the changes, you have two options. You can either restart the daemon in the **Director** host by running:

```
systemctl restart bacula-dir
```

Or you can *reload* the **Director** on **bconsole** (suggested):

```
reload
```

and check the status of the **FileDaemon**

```
status client=@@client-name@@
```

where @@**client-name**@@ is the name found in the directive **Name** under the **Client** resource in the **Director** configuration. This command will give useful information about the **Client**, such as the operating system, address, start time, plugins installed, etc.

If you are using BWeb as UI, remember to register the **File Daemon** following the procedure described in this section.

Conclusion

Congratulations! You've successfully deployed **File Daemon** on your system.

Linux: Installation on RHEL based distributions

Welcome to the guide for installing Bacula Enterprise File Daemon on RHEL based systems. This documentation ensures you have the necessary steps to setup a client and establish connectivity between **Director** and **File Daemon**.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **File Daemon** packages with **dnf**:


```
sudo dnf check-update
sudo dnf install bacula-enterprise-client
```

2. Start and enable the daemon:

```
sudo systemctl start bacula-fd
sudo systemctl enable bacula-fd
```

3. Add a **Client** resource in the **Director** host:

```
Client {
    Name = @@fd-name@@
    Address = @@fd-address@@
    ...
}
```

   Be sure to replace @@**fd-name**@@ and @@**fd-address**@@ with the values found in `/opt/bacula/etc/bacula-fd.conf` under **FileDaemon** resource.

4. Add a **Director** resource in `/opt/bacula/etc/bacula-fd.conf`:

```
Director {
    Name = @@dir-name@@
    Password = @@client-password@@
}
```

   Be sure to replace @@**dir-name**@@ with the **Director** name found in the **Director** resource, and @@**client-password**@@ with the one in the **Client** resource.

5. Check your **FileDaemon** configuration:

```
/opt/bacula/bin/bacula-fd -t
```

Check connectivity

Once the basic configuration is done, in order to make the **Director** aware of the changes, you have two options. You can either restart the daemon in the **Director** host by running:

```
systemctl restart bacula-dir
```

Or you can *reload* the **Director** on **bconsole** (suggested):

```
reload
```

and check the status of the **FileDaemon**

```
status client=@@client-name@@
```

where @@**client-name**@@ is the name found in the directive **Name** under the **Client** resource in the **Director** configuration. This command will give useful information about the **Client**, such as the operating system, address, start time, plugins installed, etc.

If you are using BWeb as UI, remember to register the **File Daemon** following the procedure described in this section.

Conclusion

Congratulations! You've successfully deployed **File Daemon** on your system.

Linux: Installation on SLES based distributions

Welcome to the guide for installing Bacula Enterprise File Daemon on SLES based systems. This documentation ensures you have the necessary steps to setup a client and establish connectivity between **Director** and **File Daemon**.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **File Daemon** packages:

   ```
   sudo zypper refresh
   sudo zypper install bacula-enterprise-client
   ```

2. Start and enable the daemon:

   ```
   sudo systemctl start bacula-fd
   sudo systemctl enable bacula-fd
   ```

3. Add a **Client** resource in the **Director** host:

   ```
   Client {
       Name = @@fd-name@@
       Address = @@fd-address@@
       ...
   }
   ```

   Be sure to replace @@**fd-name**@@ and @@**fd-address**@@ with the values found in `/opt/bacula/etc/bacula-fd.conf` under **FileDaemon** resource.

4. Add a **Director** resource in `/opt/bacula/etc/bacula-fd.conf`:

   ```
   Director {
       Name = @@dir-name@@
       Password = @@client-password@@
   }
   ```

   Be sure to replace @@**dir-name**@@ with the **Director** name found in the **Director** resource, and @@**client-password**@@ with the one in the **Client** resource.

5. Check your **FileDaemon** configuration:

   ```
   /opt/bacula/bin/bacula-fd -t
   ```

Check connectivity

Once the basic configuration is done, in order to make the **Director** aware of the changes, you have two options. You can either restart the daemon in the **Director** host by running:

```
systemctl restart bacula-dir
```

Or you can *reload* the **Director** on **bconsole** (suggested):

```
reload
```

and check the status of the **FileDaemon**

```
status client=@@client-name@@
```

where **@@client-name@@** is the name found in the directive **Name** under the **Client** resource in the **Director** configuration. This command will give useful information about the **Client**, such as the operating system, address, start time, plugins installed, etc.

If you are using BWeb as UI, remember to register the **File Daemon** following the procedure described in this section.

Conclusion

Congratulations! You've successfully deployed **File Daemon** on your system.

Install Bacula Enterprise Storage Daemon only

Linux: Installation on Debian and Ubuntu based distributions

Welcome to the guide for installing Bacula Enterprise Storage Daemon on Debian and Ubuntu based systems. This documentation ensures you have the necessary steps to setup a client and establish connectivity between **Director** and **Storage Daemon**.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **Storage Daemon** packages:

```
sudo apt-get update
sudo apt-get install bacula-enterprise-postgresql
```

2. Start and enable the daemon:

```
sudo systemctl start bacula-sd
sudo systemctl enable bacula-sd
```

3. Disable **Director** and **File Daemon** services:

```
sudo systemctl disable bacula-dir
sudo systemctl disable bacula-fd
```

4. Add a **Storage** resource in the **Director** host:


```
Storage {
    Name = @@sd-name@@
    Address = @@sd-address@@
    SDPort = 9103
    Password = @@sd-password@@
    ...
}
```

Be sure to replace @@**sd-name**@@ and @@**sd-address**@@ with the values found in `/opt/bacula/etc/bacula-sd.conf` under **Storage** resource. The password @@**sd-password**@@ has to match the one in the next step.

5. Add a **Director** resource in `/opt/bacula/etc/bacula-sd.conf`:

```
Director {
    Name = @@dir-name@@
    Password = @@sd-password@@
}
```

Be sure to replace @@**dir-name**@@ with the **Director** name found in the **Director** resource, and @@**sd-password**@@ with the one in the **Storage** resource.

6. Check your **Storage** configuration:

```
sudo -u bacula /opt/bacula/bin/bacula-sd -t
```

Conclusion

Congratulations! You've successfully configured **Storage Daemon** on your system.

Linux: Installation on RHEL based distributions

Welcome to the guide for installing Bacula Enterprise File Daemon on RHEL based systems. This documentation ensures you have the necessary steps to setup a client and establish connectivity between **Director** and **Storage Daemon**.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **Storage Daemon** packages with **dnf**:

```
sudo dnf check-update
sudo dnf install bacula-enterprise-postgresql
```

2. Start and enable the daemon:

```
sudo systemctl start bacula-sd
sudo systemctl enable bacula-sd
```

3. Disable **Director** and **File Daemon** services:


```
sudo systemctl disable bacula-dir
sudo systemctl disable bacula-fd
```

4. Add a **Storage** resource in the **Director** host:

```
Storage {
    Name = @@sd-name@@
    Address = @@sd-address@@
    SDPort = 9103
    Password = @@sd-password@@
    ...
}
```

   Be sure to replace @@**sd-name**@@ and @@**sd-address**@@ with the values found in `/opt/bacula/etc/bacula-sd.conf` under **Storage** resource. The password @@**sd-password**@@ has to match the one in the next step.

5. Add a **Director** resource in `/opt/bacula/etc/bacula-sd.conf`:

```
Director {
    Name = @@dir-name@@
    Password = @@sd-password@@
}
```

   Be sure to replace @@**dir-name**@@ with the **Director** name found in the **Director** resource, and @@**sd-password**@@ with the one in the **Storage** resource.

6. Check your **Storage** configuration:

```
sudo -u bacula /opt/bacula/bin/bacula-sd -t
```

Conclusion

Congratulations! You've successfully configured **Storage Daemon** on your system.

Linux: Installation on SLES based distributions

Welcome to the guide for installing Bacula Enterprise File Daemon on SLES based systems. This documentation ensures you have the necessary steps to setup a client and establish connectivity between **Director** and **Storage Daemon**.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **Storage Daemon** packages:

```
sudo zypper refresh
sudo zypper install bacula-enterprise-postgresql
```

2. Start and enable the daemon:


```
sudo systemctl start bacula-sd
sudo systemctl enable bacula-sd
```

3. Disable **Director** and **File Daemon** services:

```
sudo systemctl disable bacula-dir
sudo systemctl disable bacula-fd
```

4. Add a **Storage** resource in the **Director** host:

```
Storage {
    Name = @@sd-name@@
    Address = @@sd-address@@
    SDPort = 9103
    Password = @@sd-password@@
    ...
}
```

   Be sure to replace @@**sd-name**@@ and @@**sd-address**@@ with the values found in `/opt/bacula/etc/bacula-sd.conf` under **Storage** resource. The password @@**sd-password**@@ has to match the one in the next step.

5. Add a **Director** resource in `/opt/bacula/etc/bacula-sd.conf`:

```
Director {
    Name = @@dir-name@@
    Password = @@sd-password@@
}
```

   Be sure to replace @@**dir-name**@@ with the **Director** name found in the **Director** resource, and @@**sd-password**@@ with the one in the **Storage** resource.

6. Check your **Storage** configuration:

```
sudo -u bacula /opt/bacula/bin/bacula-sd -t
```

Conclusion

Congratulations! You've successfully configured **Storage Daemon** on your system.

Install bconsole only

Linux: Installation on Debian and Ubuntu based distributions

Welcome to the guide for installing Bacula Enterprise bconsole on Debian and Ubuntu based systems. This documentation ensures you have the necessary steps to get bconsole up and ready for use.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **bconsole** packages:

```
sudo apt-get update
sudo apt-get install bacula-enterprise-console
```

2. Edit `/opt/bacula/etc/bconsole.conf` configuration file:

```
Director {
    Name = @@dir-name@@
    DIRport = 9101
    Address = @@dir-address@@
    Password = @@dir-password@@
}
```

   Replace @@**dir-name**@@, @@**dir-address**@@, and @@**dir-password**@@ with the correct parameters that you can find in the **Director** configuration under **Director** resource in the server you wish to monitor.

Conclusion

Congratulations! You've successfully installed **bconsole** on your system. Test it by running `/opt/bacula/bin/bconsole`.

Linux: Installation on RHEL based distributions

Welcome to the guide for installing Bacula Enterprise bconsole on RHEL based systems. This documentation ensures you have the necessary steps to get bconsole up and ready for use.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **bconsole** packages with **dnf**:

```
sudo dnf check-update
sudo dnf install bacula-enterprise-console
```

2. Edit `/opt/bacula/etc/bconsole.conf` configuration file:

```
Director {
    Name = @@dir-name@@
    DIRport = 9101
    Address = @@dir-address@@
    Password = @@dir-password@@
}
```

   Replace @@**dir-name**@@, @@**dir-address**@@, and @@**dir-password**@@ with the correct parameters that you can find in the **Director** configuration under **Director** resource in the server you wish to monitor.

Conclusion

Congratulations! You've successfully installed **bconsole** on your system. Test it by running `/opt/bacula/bin/bconsole`.

Linux: Installation on SLES based distributions

Welcome to the guide for installing Bacula Enterprise bconsole on SLES based systems. This documentation ensures you have the necessary steps to get bconsole up and ready for use.

Prerequisites

Be sure to follow steps 1-3 of the general installation page.

Steps

1. Install **bconsole** packages:

```
sudo zypper refresh
sudo zypper install bacula-enterprise-console
```

2. Edit `/opt/bacula/etc/bconsole.conf` configuration file:

```
Director {
    Name = @@dir-name@@
    DIRport = 9101
    Address = @@dir-address@@
    Password = @@dir-password@@
}
```

   Replace @@**dir-name**@@, @@**dir-address**@@, and @@**dir-password**@@ with the correct parameters that you can find in the **Director** configuration under **Director** resource in the server you wish to monitor.

Conclusion

Congratulations! You've successfully installed **bconsole** on your system. Test it by running `/opt/bacula/bin/bconsole`.

Linux: Install Extra Components

The following article aims at presenting the reader with information on how to install specific Bacula Enterprise components using the package manager.

Install Bacula Enterprise BWeb

Installation of Bacula Enterprise BWeb is most easily done by updating the repository file suitable for the existing subscription to the Linux package manager for your distribution of choice.

If you have not already setup one, see how to create a Bacula Enterprise repository file

Linux: Installation on Debian and Ubuntu based distributions

The following article aims at explaining how to install Bweb on Debian and Ubuntu based distributions.

Prerequisites

Before you begin, ensure that your system is prepared with the necessary tools and permissions. You'll need *sudo* privileges to execute installation commands. If you have not already, see how to import a repository key in the first steps.

Steps

1. Configure the Bacula Enterprise **apt** repository:

```
echo -e "# Bacula Enterprise BWeb\nTypes: deb\nURIs: https://www.
↪baculasystems.com/dl/@@customer-id@@/debs/bweb/@@bee-version@@/
↪$(lsb_release -cs)-64\nSuites: $(lsb_release -cs)\nComponents:␣
↪bweb\nSigned-By: /etc/apt/keyrings/BaculaSystems-Public-Signature-
↪08-2017.asc\n" | sudo tee -a /etc/apt/sources.list.d/bacula-
↪enterprise.sources > /dev/null
```

   Replace @@**bee-version**@@ and @@**customer-id**@@ with your customer id and the version of Bacula Enterprise you are using.

2. Update your package cache:

```
sudo apt-get update
```

3. Install the Bacula Enterprise BWeb:

```
sudo apt-get install bacula-enterprise-bweb
```

4. As mentioned in the install output, please run the following script to finalize the installation of BWeb:

```
/opt/bweb/bin/install_bweb.sh
```

Post-installation Configuration

- Start and enable the BWeb system service:

```
systemctl start bweb.service
```

```
systemctl enable bweb.service
```

- Log in to **BWeb** at `https://@@hostname@@:9180/`, be sure to replace @@**hostname**@@ with your host IP or a FQDN.

Conclusion

Congratulations! You've successfully installed Bacula Enterprise BWeb on your Debian or Ubuntu system. For further configuration details or troubleshooting, refer to the Bacula Systems Customer Portal or you may contact support.

Linux: Installation on RHEL based distributions

The following article aims at explaining how to install Bweb on RHEL based distributions.

Prerequisites

Before you begin, ensure that your system is prepared with the necessary tools and permissions. You'll need *sudo* privileges to execute installation commands. If you have not already, see how to import a repository key in the first steps.

Steps

1. Configure the Bacula Enterprise **yum** repository:

```
RHEL_VER=rhel$(cat /etc/redhat-release | grep -oP '(?<=release )\d+')
echo -e "[bacula-enterprise-bweb]\nname=BWeb Management Suite\
↪nbaseurl=https://www.baculasystems.com/dl/@@customer-id@@/rpms/
↪bweb/@@bee-version@@/$RHEL_VER-64\nenabled=1\nautorefresh=1\
↪ngpgcheck=1\ngpgkey=https://www.baculasystems.com/dl/@@customer-
↪id@@/BaculaSystems-Public-Signature-08-2017.asc\n" | sudo tee -a /
↪etc/yum.repos.d/bacula-enterprise.repo > /dev/null
```

```
echo -e "[bacula-enterprise-dag]\nname=Bacula Systems DAG for BWeb\
↪nbaseurl=https://www.baculasystems.com/dl/DAG/$RHEL_VER-64\
↪nenabled=1\nautorefresh=1\ngpgcheck=0" | sudo tee -a /etc/yum.
↪repos.d/bacula-enterprise.repo > /dev/null
```

   Replace @@**bee-version**@@ and @@**customer-id**@@ with your customer id and the version of Bacula Enterprise you are using.

> **Note**
>
> For **Red Hat Enterprise Linux 10** systems, it is necessary to enable CodeReady Linux Builder (CRB) repository, specifically `codeready-builder-for-rhel-10-x86_64-rpms`. In addition, it is also suggested enabling **EPEL** repository to fully provide all the necessary modules for **BWeb** installation.

2. Refresh your package cache and install the Bacula Enterprise BWeb using **dnf**:

```
sudo dnf check-update
sudo dnf install bacula-enterprise-bweb
```

3. As mentioned in the install output, please run the following script to finalize the installation of BWeb:

```
/opt/bweb/bin/install_bweb.sh
```

Post-installation Configuration

- Start and enable the BWeb system service:

```
systemctl start bweb.service
```

```
systemctl enable bweb.service
```

- Log in to **BWeb** at `https://@@hostname@@:9180/`, be sure to replace @@**hostname**@@ with your host IP or a FQDN.

> **Warning**
>
> Remember, your firewall service might prevent you from reaching BWeb. Be sure to have port 9180/tcp open.

Conclusion

Congratulations! You've successfully installed Bacula Enterprise BWeb on your RHEL system. For further configuration details or troubleshooting, refer to the Bacula Systems Customer Portal or you may contact support.

Linux: Installation on SLES based distributions

The following article aims at explaining how to install Bweb on SUSE Linux distributions.

Prerequisites

Before you begin, ensure that your system is prepared with the necessary tools and permissions. You'll need *sudo* privileges to execute installation commands. If you have not already, see how to import a repository key in the first steps.

Steps

1. Configure the Bacula Enterprise **zypper** repository:

```
SLES_VER=sles$(rpm -q sles-release | sed -E 's/.*release-([0-9]+\.[0-
↪9]+)-.*/\1/' | tr -d '.')
echo -e "[bacula-enterprise-bweb]\nname=BWeb Management Suite\
↪nbaseurl=https://www.baculasystems.com/dl/@@customer-id@@/rpms/
↪bweb/@@bee-version@@/$SLES_VER-64\nenabled=1\nautorefresh=1\
↪ngpgcheck=1\ngpgkey=https://www.baculasystems.com/dl/@@customer-
↪id@@/BaculaSystems-Public-Signature-08-2017.asc\n" | sudo tee -a /
↪etc/zypp/repos.d/bacula-enterprise.repo > /dev/null
```

```
echo -e "[bacula-enterprise-dag]\nname=Bacula Systems DAG for BWeb\
↪nbaseurl=https://www.baculasystems.com/dl/DAG/$SLES_VER-64\
↪nenabled=1\nautorefresh=1\ngpgcheck=0" | sudo tee -a /etc/zypp/
↪repos.d/bacula-enterprise.repo > /dev/null
```

   Replace @@**bee-version**@@ and @@**customer-id**@@ with your customer id and the version of Bacula Enterprise you are using.

2. Refresh your package cache and install the Bacula Enterprise BWeb using **zypper**:

```
sudo zypper refresh
sudo zypper install bacula-enterprise-bweb
```


3. As mentioned in the install output, please run the following script to finalize the installation of BWeb:

```
/opt/bweb/bin/install_bweb.sh
```

Post-installation Configuration

- Start and enable the BWeb system service:

```
systemctl start bweb.service
```

```
systemctl enable bweb.service
```

- Log in to **BWeb** at `https://@@hostname@@:9180/`, be sure to replace **@@hostname@@** with your host IP or a FQDN.

> **Warning**
>
> Remember, your firewall service might prevent you from reaching BWeb. Be sure to have port 9180/tcp open.

Conclusion

Congratulations! You've successfully installed Bacula Enterprise BWeb on your SLES system. For further configuration details or troubleshooting, refer to the Bacula Systems Customer Portal or you may contact support.

Install Bacula Enterprise Plugins

Installation of Bacula Enterprise Plugins is most easily done by updating the repository file suitable for the existing subscription to the Linux package manager for your distribution of choice.

If you have not already setup one, see how to create a Bacula Enterprise repository file

Linux: Plugin Installation on Debian and Ubuntu based distributions

Prerequisites

Before you begin, ensure that your system is prepared with the necessary tools and permissions. You'll need *sudo* privileges to execute installation commands. If you have not already, see how to import a repository key in the first steps.

Steps

You'll need sudo privileges to execute installation commands.

1. Run the following script to update your repository file:

```
echo -e "# Bacula Enterprise @@plugin-name@@\nTypes: deb\nURIs: https://www.
↪baculasystems.com/dl/@@customer-id@@/debs/@@plugin-name@@/@@bee-version@@/
↪$(lsb_release -cs)-64\nSuites: $(lsb_release -cs)\nComponents: @@plugin-
↪name@@\nSigned-By: /etc/apt/keyrings/BaculaSystems-Public-Signature-08-2017.
```

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```
↪asc\n" | sudo tee -a /etc/apt/sources.list.d/bacula-enterprise.sources > /
↪dev/null
```

Replace @@**customer-id**@@, @@**bee-version**@@, and @@**plugin-name**@@ with the name of the plugin you wish to install.

2. Then update the package cache and install the plugin:

```
sudo apt-get update
sudo apt-get install @@bacula-enterprise-package-id@@
```

Be sure to replace @@**bacula-enterprise-package-id**@@ with the package name. See the full list here.

Manual installation of the packages, can be done after downloading the package files from the Bacula Systems provided download area, and then using the package manager to install.

Example

Install LDAP plugin on Debian 12 (bookworm) with Bacula Enterprise Edition version 18.0.7.

```
echo -e "# Bacula Enterprise LDAP\nTypes: deb\nURIs: https://www.
↪baculasystems.com/dl/customer-123456/debs/ldap/18.0.7/bookworm-64\nSuites:␣
↪bookworm\nComponents: ldap\nSigned-By: /etc/apt/keyrings/BaculaSystems-
↪Public-Signature-08-2017.asc\n" | sudo tee -a /etc/apt/sources.list.d/
↪bacula-enterprise.sources > /dev/null
```

```
sudo apt-get update
sudo apt-get install bacula-enterprise-ldap-plugin
```

Linux: Plugin Installation on RHEL based distributions

Prerequisites

Before you begin, ensure that your system is prepared with the necessary tools and permissions. You'll need *sudo* privileges to execute installation commands. If you have not already, see how to import a repository key in the first steps.

Steps

You'll need sudo privileges to execute installation commands.

1. Run the following script to update your repository file:

```
RHEL_VER=rhel$(cat /etc/redhat-release | grep -oP '(?<=release )\d+')
echo -e "[bacula-enterprise-@@plugin-name@@]\nname=Bacula Enterprise @@plugin-
↪name@@\nbaseurl=https://www.baculasystems.com/dl/@@customer-id@@/rpms/
↪@@plugin-name@@/@@bee-version@@/$RHEL_VER-64\nenabled=1\nautorefresh=1\
↪ngpgcheck=1\ngpgkey=https://www.baculasystems.com/dl/@@customer-id@@/
↪BaculaSystems-Public-Signature-08-2017.asc\n" | sudo tee -a /etc/yum.repos.
↪d/bacula-enterprise.repo > /dev/null
```

Replace @@**customer-id**@@, @@**bee-version**@@, and @@**plugin-name**@@ with the name of the plugin you wish to install.

2. Then update the package cache and install the plugin using **dnf**:

```
sudo dnf check-update
sudo dnf install @@bacula-enterprise-package-id@@
```

Be sure to replace @@**bacula-enterprise-package-id**@@ with the package name. See the full list here.

Manual installation of the packages, can be done after downloading the package files from the Bacula Systems provided download area, and then using the package manager to install.

Example

Install LDAP plugin on RHEL 9 with Bacula Enterprise Edition version 18.0.7.

```
echo -e "[bacula-enterprise-ldap]\nname=Bacula Enterprise LDAP\
↪nbaseurl=https://www.baculasystems.com/dl/customer-12345/rpms/ldap/18.0.7/
↪rhel9-64\nenabled=1\nautorefresh=1\ngpgcheck=1\ngpgkey=https://www.
↪baculasystems.com/dl/customer-12345/BaculaSystems-Public-Signature-08-2017.
↪asc\n" | sudo tee -a /etc/yum.repos.d/bacula-enterprise.repo > /dev/null
```

```
sudo dnf check-update
sudo dnf install bacula-enterprise-ldap-plugin
```

Linux: Plugin Installation on SLES based distributions

Prerequisites

Before you begin, ensure that your system is prepared with the necessary tools and permissions. You'll need *sudo* privileges to execute installation commands. If you have not already, see how to import a repository key in the first steps.

Steps

You'll need sudo privileges to execute installation commands.

1. Run the following script to update your repository file:

```
SLES_VER=sles$(rpm -q sles-release | sed -E 's/.*release-([0-9]+\.[0-9]+)-.*/\
↪1/' | tr -d '.')
echo -e "[bacula-enterprise-@@plugin-name@@]\nname=Bacula Enterprise @@plugin-
↪name@@\nbaseurl=https://www.baculasystems.com/dl/@@customer-id@@/rpms/
↪@@plugin-name@@/@@bee-version@@/$SLES_VER-64\nenabled=1\nautorefresh=1\
↪ngpgcheck=1\ngpgkey=https://www.baculasystems.com/dl/@@customer-id@@/
↪BaculaSystems-Public-Signature-08-2017.asc\n" | sudo tee -a /etc/zypp/repos.
↪d/bacula-enterprise.repo > /dev/null
```

Replace @@**customer-id**@@, @@**bee-version**@@, and @@**plugin-name**@@ with the name of the plugin you wish to install.

2. Then update the package cache and install the plugin using **zypper**:

```
sudo zypper refresh
sudo zypper install @@bacula-enterprise-package-id@@
```

Be sure to replace @@**bacula-enterprise-package-id**@@ with the package name. See the full list here.

Manual installation of the packages, can be done after downloading the package files from the Bacula Systems provided download area, and then using the package manager to install.

Example

Install Cloud Google plugin on SLES 15.5 with Bacula Enterprise Edition version 18.0.7.

```
echo -e "[bacula-enterprise-cloud-google]\nname=Bacula Enterprise Cloud␣
↪Google\nbaseurl=https://www.baculasystems.com/dl/customer-12345/rpms/cloud-
↪google/18.0.7/sles155-64\nenabled=1\nautorefresh=1\ngpgcheck=1\
↪ngpgkey=https://www.baculasystems.com/dl/customer-12345/BaculaSystems-
↪Public-Signature-08-2017.asc\n" | sudo tee -a /etc/zypp/repos.d/bacula-
↪enterprise.repo > /dev/null
```

```
sudo zypper refresh
sudo zypper install bacula-enterprise-cloud-storage-google
```

List of Bacula Enterprise Plugins

You can find below the full list of plugins with the relative package names used for installation. Remember you can request one or more plugins at any time using the Customer Portal, using the menu on the left **Your subscription > Products subscribed**, and clicking on the **Add plugin** link.

Table 1: Bacula Enteprise Plugins

Plugin	Bacula Enterprise Package ID
BGuardian	`bacula-enterprise-bguardian-dir-plugin`
Amazon EC2	`bacula-enterprise-amazon-ec2-plugin`
Amazon Relational Database Service (RDS)	`bacula-enterprise-amazon-rds-plugin`
Azure VM	`bacula-enterprise-azure-vm-plugin`
IBM Db2	`bacula-enterprise-db2-plugin`
Delta	`bacula-enterprise-delta`
Docker	`bacula-enterprise-docker-plugin`
Exchange Web Services (EWS)	`bacula-enterprise-exchange-ews-plugin`
Google Workspace	`bacula-enterprise-google-workspace-plugin`
Hadoop Distributed File System (HDFS)	`bacula-enterprise-hdfs-plugin`
Kubernetes (K8s)	`bacula-enterprise-kubernetes-plugin`
Red Hat OpenShift	`bacula-enterprise-openshift-plugin`
KVM	`bacula-enterprise-kvm-plugin`
Lightweight Directory Access Protocol (LDAP)	`bacula-enterprise-ldap-plugin`
Microsoft 365	`bacula-enterprise-m365-plugin`
MySQL	`bacula-enterprise-mysql-plugin`
Network Data Management Protocol (NDMP)	`bacula-enterprise-ndmp`
NetappHFC	`bacula-enterprise-netapp-hfc`
Nutanix AHV	`bacula-enterprise-nutanix-ahv-plugin`
Nutanix HFC	`bacula-enterprise-nutanix-hfc-plugin`
Openstack VM	`bacula-enterprise-openstack-vm-plugin`
Oracle	`bacula-enterprise-oracle`
PostgreSQL	`bacula-enterprise-postgresql-plugin`
Proxmox	`bacula-enterprise-proxmox-plugin`
QEMU	`bacula-enterprise-qemu-plugin`
Red Hat Virtualization (RHV)	`bacula-enterprise-rhv-plugin`

continues on next page

Table 1 – continued from previous page

Plugin	Bacula Enterprise Package ID
S3	bacula-enterprise-s3-plugin
SAP HANA	bacula-enterprise-sap-hana-plugin
Snapshot	bacula-enterprise-snapshot
Swift	bacula-enterprise-swift-plugin
Sybase	bacula-enterprise-sybase-plugin
VMware vSphere	bacula-enterprise-vsphere
XenServer	bacula-enterprise-xenserver-plugin
Automated Cartridge System Library Software (ACSLS)	bacula-enterprise-acsls
Aligned	bacula-enterprise-aligned
Cloud Amazon	bacula-enterprise-cloud-storage-common
Cloud Amazon Glacier	bacula-enterprise-cloud-storage-glacier
Cloud Azure	bacula-enterprise-cloud-storage-azure
Cloud Google	bacula-enterprise-cloud-storage-google
Cloud Oracle	bacula-enterprise-cloud-storage-oracle
Cloud Swift	bacula-enterprise-cloud-storage-swift
Global Endpoint Deduplication	bacula-enterprise-dedup-plugin
SAN Shared Storage	bacula-enterprise-shstore
Single Item Restore	bacula-enterprise-single-item-restore

Linux: Installation with Package Manager - Firewall Settings

Dealing with Firewalls

If you have a firewall or a DMZ installed on your computer, you may experience difficulties contacting one or more of the Clients to back them up. This is especially true if you are trying to backup a Client across the Internet.

Technical Details

If you are attempting to do this, the sequence of network events in **Bacula** to do a backup are the following:

```
Console -> DIR:9101
DIR     -> SD:9103
DIR     -> FD:9102
FD      -> SD:9103
```

Where hopefully it is obvious that DIR represents the Director, FD the File daemon or client, and SD the Storage daemon. The numbers that follow those names are the standard ports used by **Bacula**, and the **->** represents the left side making a connection to the right side (i.e. the right side is the "server" or is listening on the specified port), and the left side is the "client" that initiates the conversation.

Note, port 9103 serves both the Director and the File daemon, each having its own independent connection.

Firewall Problems

Either a firewall or a router may decide to timeout and terminate open connections if they are not active for a short time. By Internet standards the period should be two hours, and should be indefinitely extended if KEEPALIVE is set as is the case by **Bacula**. If your firewall or router does not respect these rules, you

may find **Bacula** connections terminated. In that case, the first thing to try is turning on the **Heart Beat Interval** both in the File daemon and the Storage daemon and set an interval of say five minutes.

Also, if you have denial of service rate limiting in your firewall, this too can cause **Bacula** disconnects since **Bacula** can at times use very high access rates. To avoid this, you should implement default accept rules for the **Bacula** ports involved before the rate limiting rules.

Bacula Ports

In order to allow the different elements of your Bacula Enterprise installation to communicate, you need to open the following ports:

- Director: 9101 (TCP)
- Storage Daemon: 9103 (TCP)
- File Daemon: 9102 (TCP)

If your database is located on another server please also open the appropriate ports:

- postgresql: 5432 (TCP and UDP)

Please set up your IPtables or Packet Filters rules to enable this communication.

Also check your SELinux or App Armor security rules to enable the following processes to run and be accessible:

- /opt/bacula/bin/bacula-dir running as user bacula
- /opt/bacula/bin/bacula-sd running as user bacula
- /opt/bacula/bin/bacula-fd running as user root

Linux: Test Infrastructure after Installation

Now that Bacula components are installed, you can use **bconsole** to check that everything is working correctly:

- Run **bconsole**:

  ```
  /opt/bacula/bin/bconsole
  ```

- Check the status of the following components:

  Director

  ```
  status director
  ```

  File Daemon

  ```
  status client=@@client-name@@
  ```

  Storage Daemon

  ```
  status storage=@@storage-name@@
  ```

  Be sure to replace **@@client-name@@** and **@@storage-name@@** with the **Client** and **Storage** respectively, that you find in the **Director** configuration.

Run a Backup Job

You can also run a quick backup and restore using **bconsole**:

- Run **bconsole**:

```
/opt/bacula/bin/bconsole
```

- Start a backup job:

```
run

Follow the instructions in the menu with the numbered options, and confirm.
```

- Use the *status* command to see if the job is running or has terminated successfully:

```
status director
```

- Use the *messages* command to see the **joblog**:

```
messages
```

- Quit **bconsole**:

```
quit
```

Note

If you are experiencing technical difficulties with your Bacula Enterprise infrastructure, feel free to open a ticket in your Customer Portal.

1.2 Bacula Enterprise Installation on Windows

Important

Since it is possible to install only Client on Windows, it is recommended to start with Bacula Enterprise Installation on Linux to install Director and Storage Daemon.

Note

A Windows version of the Bacula Storage daemon is also included in the Windows Installer. Its usage is dedicated to specific use case, please check with the Support Team before using it in production.

The following chapter presents the ways of possible Bacula Enterprise installation on Windows. Bacula Enterprise can be installed in many ways, however, **using Windows Installer is strongly recommended**.

Windows: Bacula Enterprise Installation with Windows Installer

The following article aims at explaining how to install Bacula Enterprise components (File Daemon, Storage Daemon, consoles) with the use of Windows Installer and Windows OS.

Prerequisites

- Windows operating systems (OS) successfully installed.
- Access to your network and to the Internet, or more specifically, to https://www.baculasystems.com/ .
- OS updated with the latest patches from your OS vendor.
- Director installed.

Important

Bacula Director binary can't be installed on a Windows host, it needs to be done on a separate Unix or Linux host

Install Components

Install FD with Windows Installer

The File Daemon will permit you to backup any data stored on the system on which it is installed via the Client resource defined in the Director.

Prerequisites

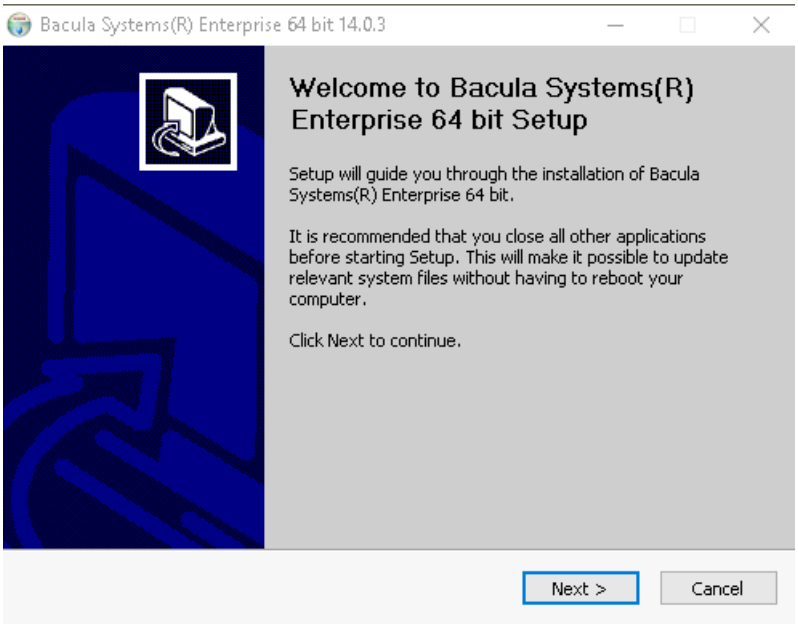
The Bacula Installer on Windows supports Windows server and desktop operating systems.

General Prerequisites apply here.

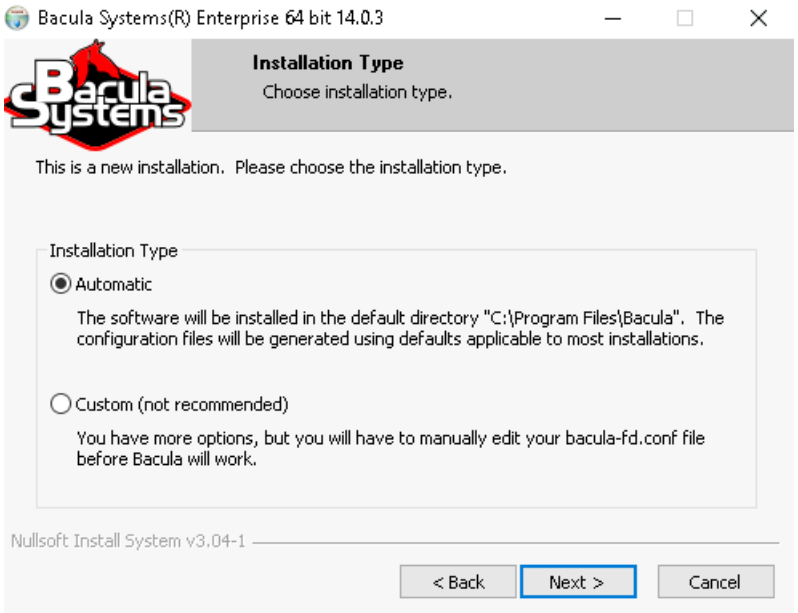
Steps

1. Download the .exe Windows Installer from your download area under Windows/<Bacula version>/win64/.
2. Run the program.

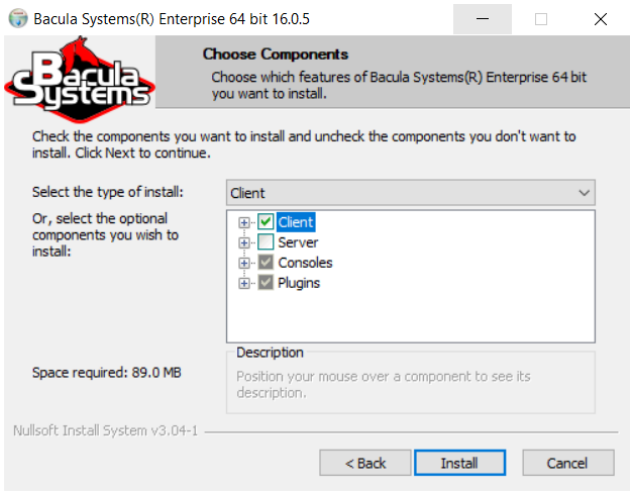
   You will get to the first screen of the Bacula Windows Installer.



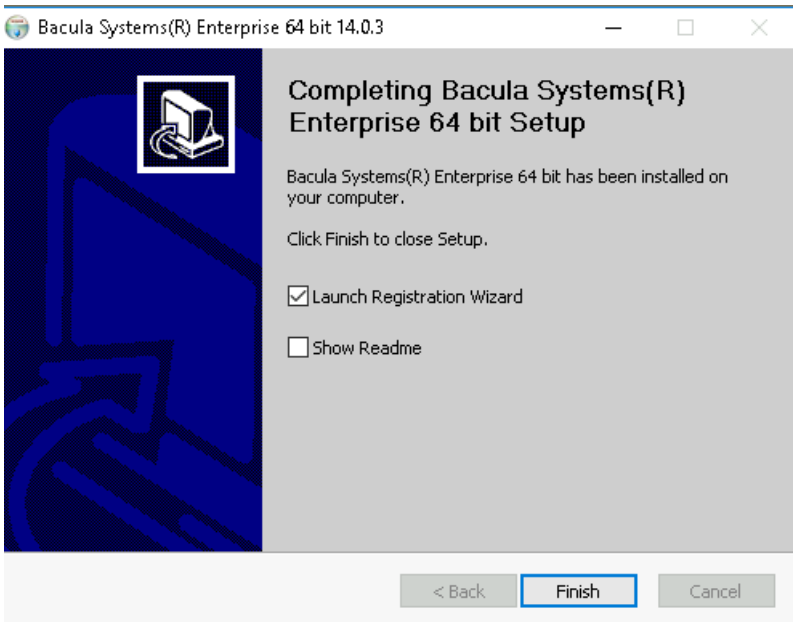
3. Click “Next”.
4. Accept the license agreement.
5. Select the *Automatic* installation type.



6. Click Next.
7. On the *Choose Components* screen, keep the default selections.



8. Click Install.
9. On the next screen, keep *Launch Registration Wizard* selected.
10. Click “Finish”.

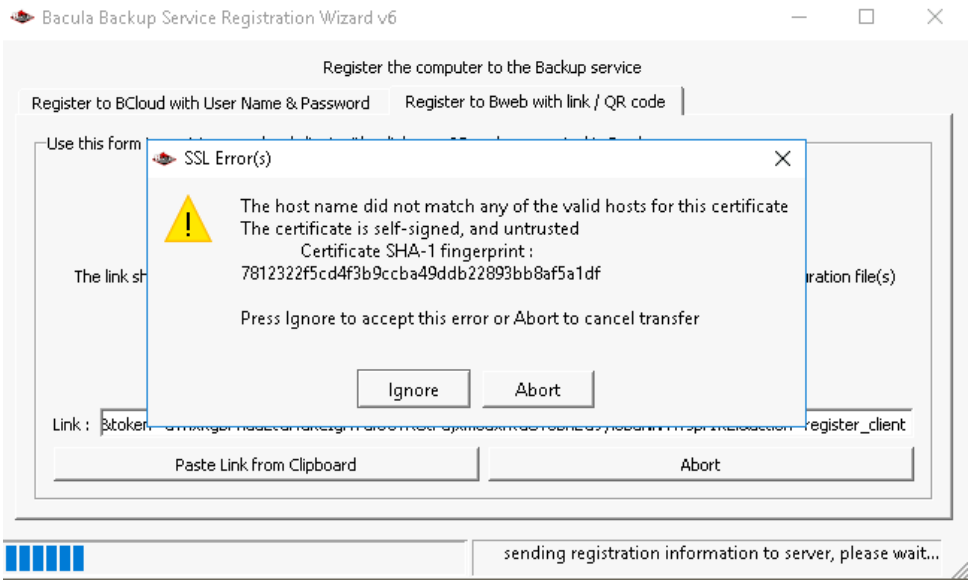


A new window will appear, possibly behind any other open window.

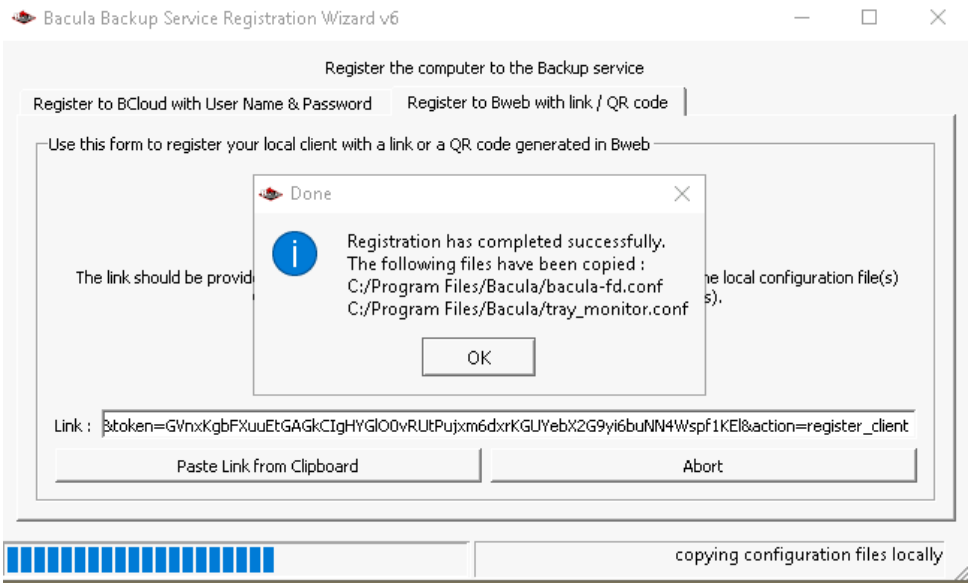
11. Click on the *Register to BWeb with link/QR Code* tab.

12. Continue the registration process in FD Registration - Client to Be Created in BWeb
13. Paste the URL to the *Link* field.
14. Click “Register”.

    If your SSL certificate is self-signed as it is by default with the BWeb installation with BIM, you will see a SSL certificate error that you can *Ignore*.



    The registration is successful.



You may restart the Bacula File Daemon right from the wizard or close it.

Result

File Daemon installed.

Set Firewall Rules

Set Firewall Rules on Windows

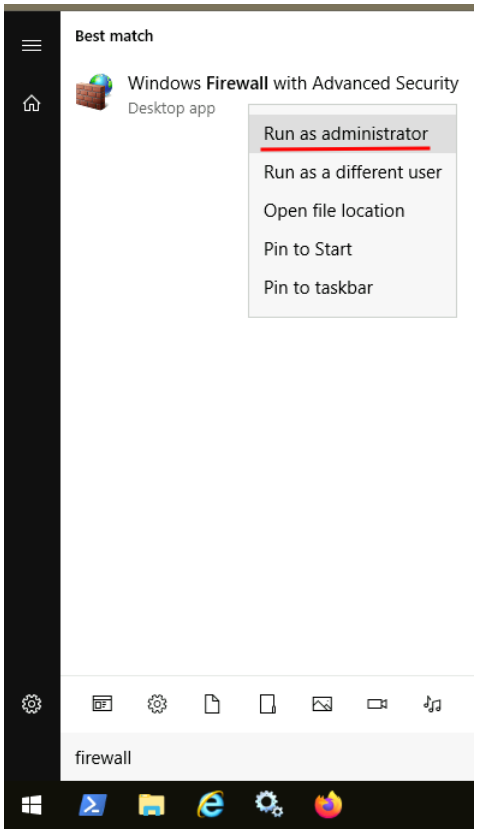
Post-installation Suggestions

After installing **Bacula** and before running it, you should check the contents of the configuration files to ensure that they correspond to your installation. You can get to them by using: the **Start All Programs Bacula** menu item.

Finally, but pulling up the Task Manager (`CTRL-ALT-DEL`), verify that **Bacula** is running as a process (not an Application) with User Name SYSTEM. If this is not the case, you probably have not installed **Bacula** while running as Administrator, and hence it will be unlikely that **Bacula** can access all the system files.

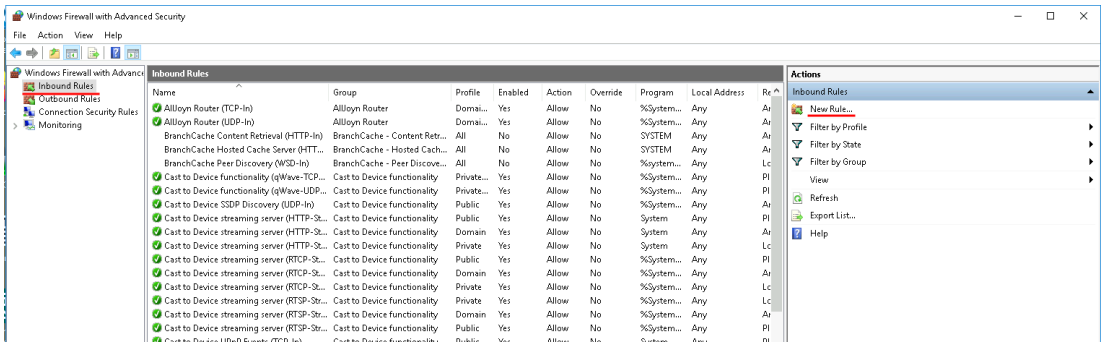
Set Firewall Rules on Windows

1. Run the Firewall as Administrator in order to create the inbound rules to the Bacula File Daemon.



An inbound rule must be created to accept all incoming connection to port TCP 9102. You may add at a later stage once Bacula File Daemon will be installed that this rule should permit inbound connection to port 9102 only to bacula.exe under C:\Program FilesBaculabacula.exe

2. Click on *Inbound Rules* then *New Rule* on the right pane.



3. Choose *Port* as a *Rule Type*.
4. Under *Protocol and Ports*, choose *TCP* and set *Specific local ports* to 9102.
5. Choose *Allow the connection* under *Action*.
6. Choose to apply the rule to the adequate profile, usually *Domain* and *Private*.
7. Set the name to *Bacula-fd* for example. Click on *Finish*.

Install SD with Windows Installer

Prerequisites

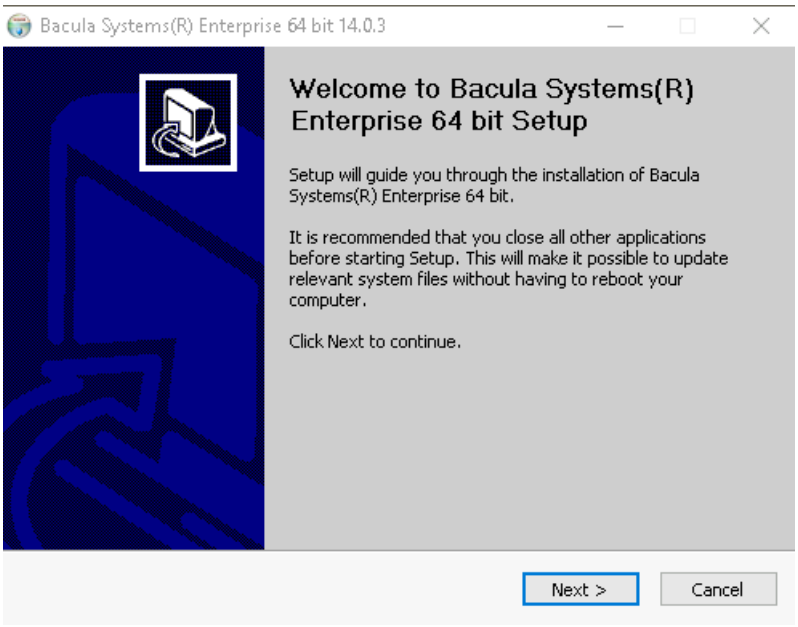
The Bacula Installer on Windows supports Windows server and desktop operating systems.

General Prerequisites apply here.

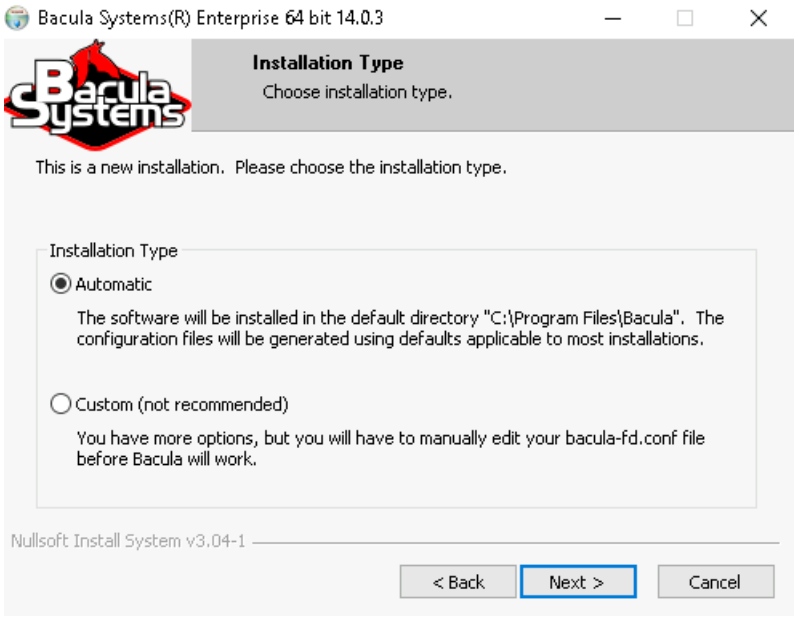
Steps

1. Download the .exe Windows Installer from your download area under Windows/<Bacula version>/win64/.
2. Run the program.

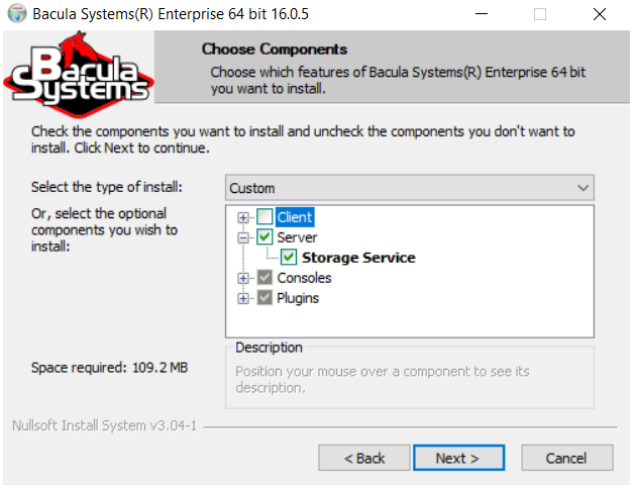
   You will get to the first screen of the Bacula Windows Installer.



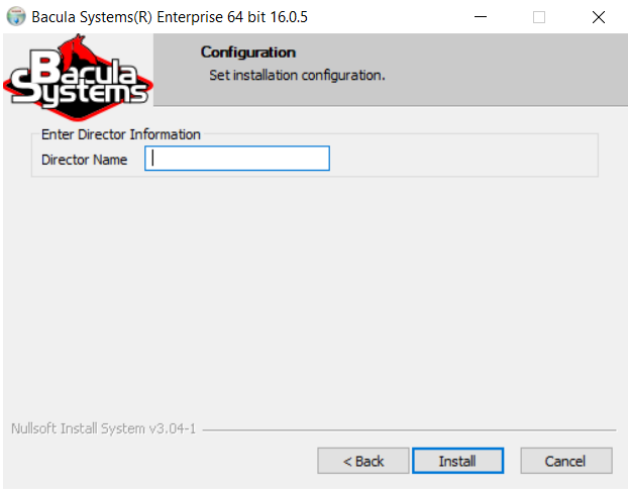
3. Click “Next”.
4. Accept the license agreement.
5. Select the *Automatic* installation type.



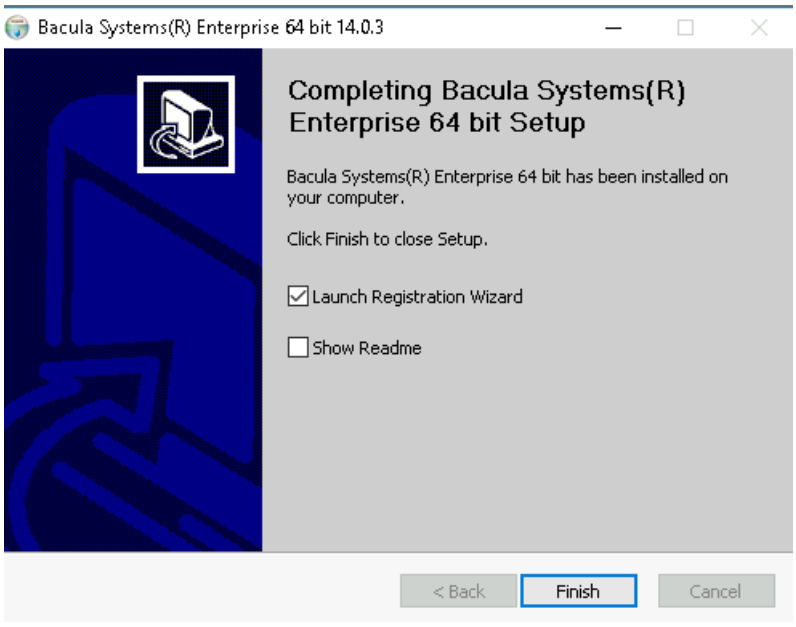
6. Click Next.
7. On the *Choose Components* screen, choose “Server”.



8. Provide the Director name.



9. Click Install.
10. On the next screen, keep *Launch Registration Wizard* selected.
11. Click “Finish”.

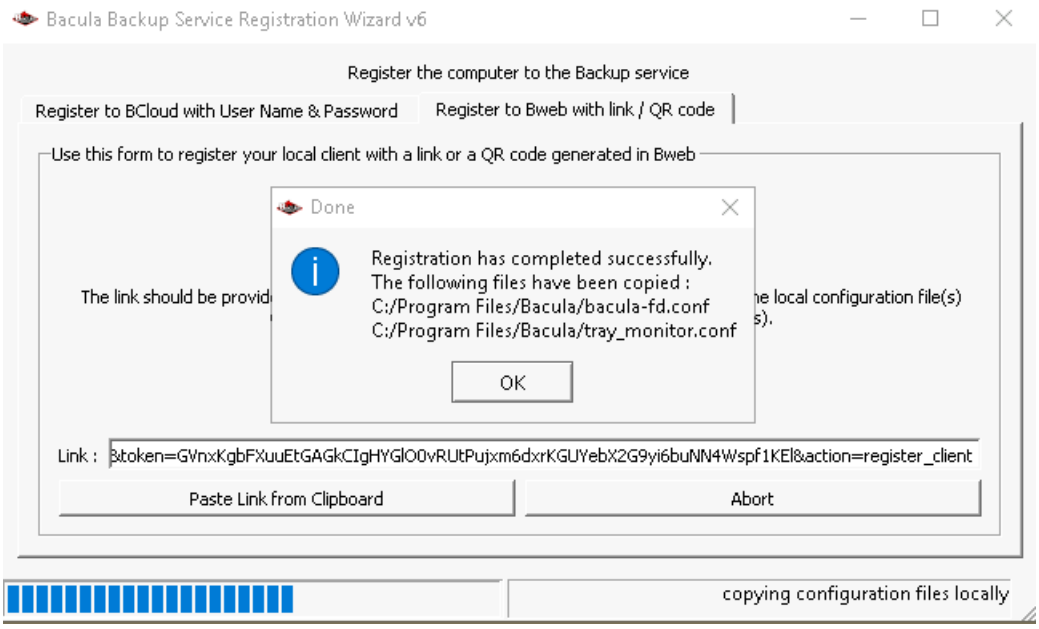


A new window will appear, possibly behind any other open window.

12. Click on the *Register to BWeb with link/QR Code* tab. - Do I do that with SD?

13. Continue the registration process in FD Registration - Client to Be Created in BWeb
14. Paste the URL to the *Link* field.
15. Click “Register”.

    If your SSL certificate is self-signed as it is by default with the BWeb installation with BIM, you will see a SSL certificate error that you can *Ignore*. - Does that happen with installing SD?



You may restart the Bacula File Daemon right from the wizard or close it.

Windows: Bacula Enterprise Installation with BIM

The following article aims at explaining how to install Bacula Enterprise components (Director, File Daemon, Storage Daemon, bconsole) on one host with the use of Bacula Installation Manager and Windows OS. Bweb installation here is optional, however, it is recommended.

Prerequisites

- Access to your network and to the Internet, or more specifically, to https://www.baculasystems.com/

Steps

Windows: Download BIM

1. Download BIM:

   a. In a browser, type:

```
https://www.baculasystems.com/ml/bee_installation_manager.exe
```

   or

   b. In a PowerShell, type:

```
wget https://www.baculasystems.com/ml/bee_installation_manager.exe -
↪Outfile C:\bee_installation_manager.exe
```

Windows: Install Components

The following article aims at presenting the reader with information on how to install specific Bacula Enterprise components.

Important

Now, we are installing Bacula Enterprise, so it is vital to remember that:

- A general command to install Bacula components is `./bee_installation_manager`, which installs File Daemon by default. If you wish to install other components, plugins or modify the command, use `./bee_installation_manager --help` to list all the possible options.

Read more:

Windows: Install File Daemon (Client)

The following article aims at presenting the reader with instructions on how to install a File Daemon (Client), how to install chosen FD plugins, and manage firewall rules.

The File Daemon allows backing up any data stored in the system on which it is installed via the Client resource defined in the Director.

Important

If you wish to modify arguments, run: `bee_installation_manager --help`.

Prerequisites

The Bacula Installation Manager (BIM) can be used on any Windows version starting with 2012 R2.

General Prerequisites apply here.

Also:

- Director already installed.
- Bweb installed on the same host as the Director.

Steps

1. Download BIM.
2. Open `bee_installation_manager.exe` with elevated privileges.

> **Note**
>
> Check your antivirus settings to prevent it from blocking the software download.

3. Confirm the Client and plugins installation with `Y`.

```
============================================================
Installation of File Daemon (Client) and associated plugins
============================================================
Proceed with Installation of Director and associated plugins? [Y/n] Y
```

4. Provide your download area address.

> **Note**
>
> To get your Download Area URL, go to your Customer Portal, click Your Subscription from the left menu, scroll down to the very bottom. You may copy your Download Area from Your Download Area section.

```
Please enter your Download Area URL. This information can be found in your␣
↪Customer Portal in the "Your Subscription"
menu : https://www.baculasystems.com/dl/@@customer-id@@
```

5. Choose the version to be installed.

> **Important**
>
> The version of the File Daemon must not be higher than the version of the Bacula Director.

```
Available versions found on your Download Area for your current operating␣
↪system [nt]:
------------------------------------------------------------------------------
↪---------------
  1 : 11.0.6    2 : 12.0.5    3 : 12.2.5    4 : 12.4.4    5 : 12.6.5
  6 : 12.8.4    7 : 14.0.7    8 : 16.0.3
```

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```
------------------------------------------------------------------------------
↪---------------
Please, select the version of your Bacula Director ('16.0.3' by default) :
```

6. Choose the plugins to be installed (optional).

```
The following plugins available for the File Daemon can be installed at␣
↪version 16.0.3 :
------------------------------------------------------------------------------
↪---------
  1 : DeltaPlugin          2 : HypervPlugin         3 : MSSQLPlugin
  4 : SapPlugin            5 : SharepointPlugin     6 : VssPlugin
------------------------------------------------------------------------------
↪---------
Select the number(s) of the plugins you want to install, separated by commas.
Leave empty and just press <Enter> to skip plugin selection :
```

7. Confirm the process with `Y`.

```
===============================================
Registration of File Daemon (Client) via Bweb
===============================================
Proceed with Installation of Director and associated plugins? [Y/n] Y
Please enter the Automatic Configuration URL provided by Bweb :
```

Along with the File Daemon (Client) installation, you must proceed to register the File Daemon via Bweb. You must have the Director and BWeb installed for this. See File Daemon (Client) Creation and Registration.

8. Proceed with Managing Firewall rules.

> **Note**
>
> Choose the default options proposed for the firewall setting, unless the policies of your company require different rules.

```
=======================
Managing Firewall rules
=======================
Proceed with Managing Firewall rules? [Y/n]

Available Firewalls
--------------------
   1 : netsh
--------------------
Please, make your selection :  ('netsh' by default) :
```

9. Confirm your Director address.

```
A potential Director address is detected and will be used by default: 10.0.XX.
↪XXX
```

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(continued from previous page)

```
Press Enter to use 10.0.XX.XXX, or type a new Director address or type * to␣
↪accept any incoming
address [10.0.XX.XXX|dir-addr|*] :
```

10. Confirm the operations with ``Y`.

```
=========================================
Ready to process the following operations
=========================================
[X] Installation of : Bacula
[X] Registration of File Daemon (Client) via BWeb
[X] Managing Firewall rules

Continue or (r)etry? [Y/n/r]
```

11. Confirm the process with `Y`.

Result:

Bacula remote File Daemon is installed and registered in the Director.

Post-installation Suggestions

After installing **Bacula** and before running it, you should check the contents of the configuration files to ensure that they correspond to your installation. You can get to them by using: the **Start All Programs Bacula** menu item.

Finally, but pulling up the Task Manager (`CTRL-ALT-DEL`), verify that **Bacula** is running as a process (not an Application) with User Name SYSTEM. If this is not the case, you probably have not installed **Bacula** while running as Administrator, and hence it will be unlikely that **Bacula** can access all the system files.

Verify the Access to a Newly Installed Client

1. Go to BWeb.
2. Click “Clients” –> “Client Overview”.
3. Select the newly installed Client and click “Status”.

You should reach the following page:

If you can read the Client name and its Version, then it means you can start backing up and restoring this Client.

Install Storage Daemon

The following article aims at presenting the reader with instructions on how to install Storage Daemon.

Important

It is vital to remember that:

- It is recommended to install plugins along with the installation of the component. You may omit adding a plugin, however, if you wish to add it later, you will have to go though the steps of the installation of the component again as it can also be used for upgrade.

- While going through the installation steps again, your configuration file will not be overwritten.

Prerequisites

General Prerequisites apply here.

Steps

1. From the command line, run BIM and install SD:

```
C:\LocationWhereYouInstalledBIM\bee_installation_manager.exe -t SD
```

2. Confirm the Director and plugins installation with `Y`.

```
=====================================================
Installation of Storage Daemon and associated plugins
=====================================================
Proceed with Installation of Storage Daemon and associated plugins? [Y/n] Y
```

3. Provide your download area address.

> **Note**
>
> To get your Download Area URL, go to your Customer Portal, click Your Subscription from the left menu, scroll down to the very bottom. You may copy your Download Area from Your Download Area section.

```
Please enter your Download Area URL. This information can be found in your␣
↪Customer Portal in the "Your Subscription"
menu : https://www.baculasystems.com/dl/@@customer-id@@
```

4. Choose the version to be installed.

```
Available versions found on your Download Area for your current operating␣
↪system [nt]:
------------------------------------------------------------------------------
↪---------------
  1 : 11.0.6    2 : 12.0.5    3 : 12.2.5    4 : 12.4.4    5 : 12.6.5
  6 : 12.8.4    7 : 14.0.7    8 : 16.0.3
------------------------------------------------------------------------------
↪---------------
Please, select the version of your Bacula Director ('16.0.3' by default) :
```

Result

Bacula Storage Daemon is installed.

```
Installation of Storage Daemon Successfully completed
=====================================================
Bacula Enterprise Installation Manager. Done.
=============================================
```

1.3 Bacula Ansible Collection with Ansible Galaxy

Bacula Enterprise is proud to offer a fully integrated solution with Ansible in order to deploy Bacula Enterprise and very soon Bacula Community components.

Ansible Collections are a new and flexible standard to distribute content like playbooks and roles. This new format helps to easily distribute and automate your environment. These pre-packaged collections can also be modified to meet the needs of your environment, especially by using templates and variables. Our Bacula Enterprise Ansible Collection will help you to easily deploy Directors, Clients, and Storages in your environment.

Since Bacula Enterprise version 12.6.4, a new option was introduced to the BWeb configuration split script to allow the configuration to be "re-split" when deploying new resources with the Bacula Enterprise Ansible Collection playbooks. Our collection will create configuration files that can be integrated to your current BWeb configuration by using the tests/re-split-configuration.yml playbook provided in the collection. This is useful to know and use when BWeb is being used to manage your Bacula Enterprise environment. We strongly recommend to use the BWeb configuration split script if you use Bacula Enterprise Ansible Collection to deploy new Clients and Storages and you use BWeb to manage configuration files, because it will verify that all the resources being added to the current BWeb structure are correctly defined.

Bacula Enterprise plugins can also be deployed using the Ansible Collection. Please adapt the templates provided to take advantage of the specific configuration needs of your environment. More information about Ansible Galaxy Collections may be found in a blog post called "Getting Started With Ansible Content Collections" available on the official Ansible website here: https://www.ansible.com/blog/getting-started-with-ansible-collections

The Bacula Enterprise Ansible Collection is publicly available in Ansible Galaxy (https://galaxy.ansible.com/baculasystems/bacula_enterprise).

1.4 Bacula Enterprise Setup Test

In the following article, the reader is presented with initial actions to take after installation, such as checking the status of Bacula daemons, testing the network, and verifying your configuration using BWeb.

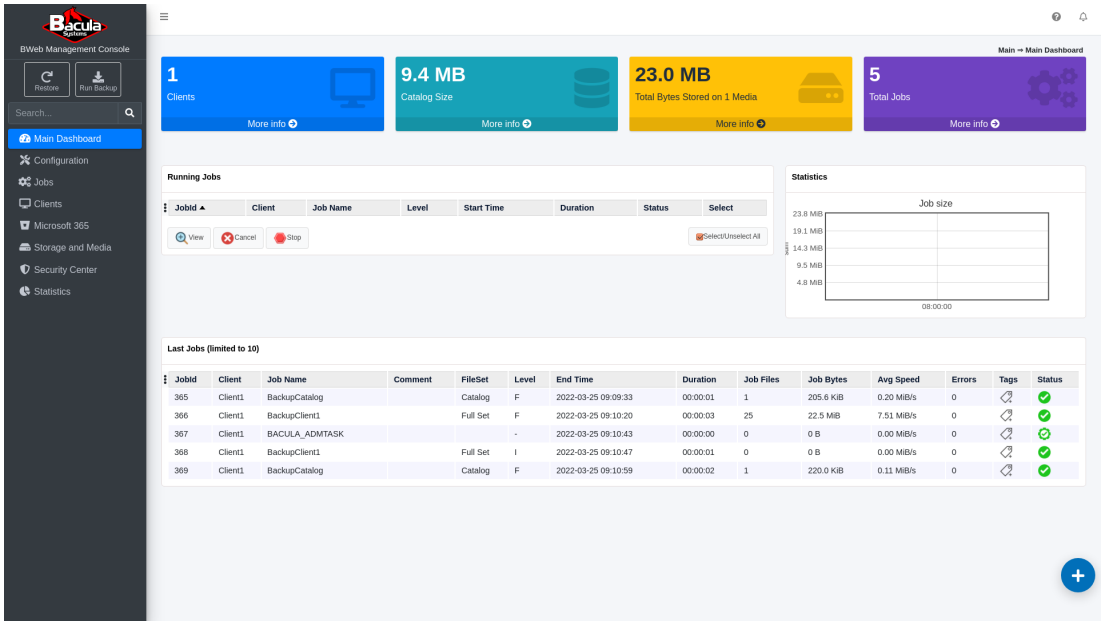
Check the Status of Bacula Daemons

In the following article, the reader is presented with information on where and how to check the status of Bacula daemons: Director, File Daemon (Client), Storage Daemon.

Check Director Status

The following article presents information on where and how to check the status of Bacula Director.

The overall status of the Bacula Director can be seen at any time on the *Main Dashoard* page of BWeb.



This page contains the following information:

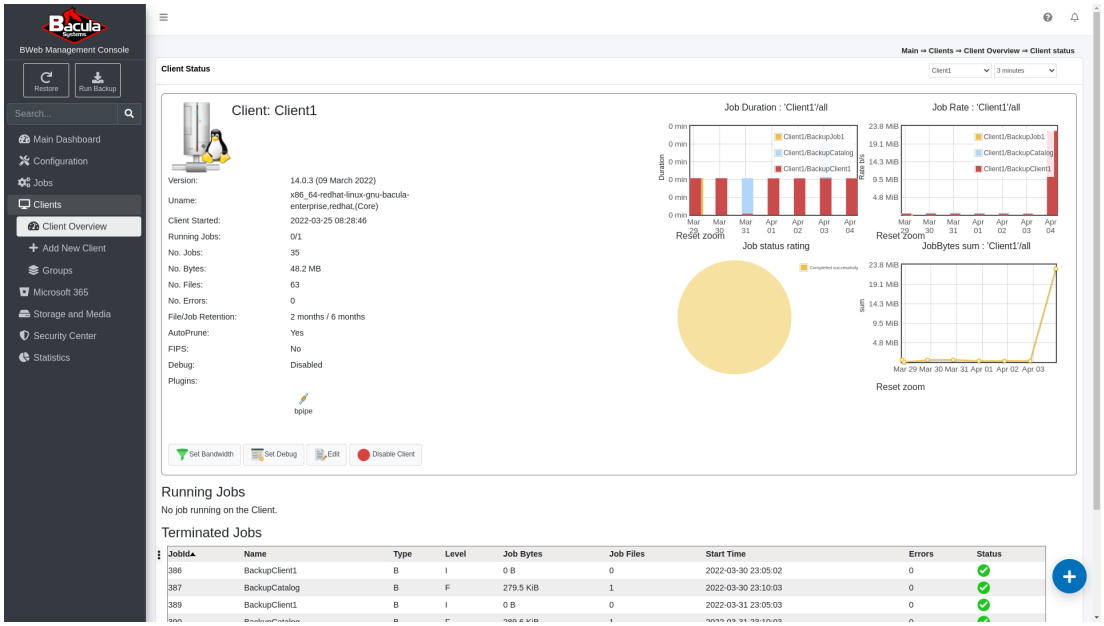
- Number of configured Clients (File Daemons)
- Size of the Catalog database
- Total amount of back up data stored
- Total number of Jobs in the Catalog
- List of currently *Running Jobs*
- *Statistics* of backed up data quantity over time
- List of 10 *Last Jobs* run.

If you can access and see the contents of the *Main Dashboard* page, you can be sure that Bacula Director is running and ready to be managed and configured.

Check File Daemon (Client) Status

The following article presents information on where and how to check the status of Bacula File Daemon (Client).

The status of the Bacula Clients (File Daemons) can be verified by navigating to *Clients* -> *Client Overview*, then selecting the appropriate Client (check the box in the *Select* column) and clicking on the *Status* button.



This page contains the following information:

- The name of the Client followed by information about it retrieved from the Catalog database
- List of Bacula File Daemon *Plugins* installed (bpipe plugin shown in the image)
- Various statistical information graphs that depict *Job Duration*, *Job Rate* and *JobBytes*
- List of currently *Running Jobs* on this Client
- List of last 10 *Terminated Jobs*

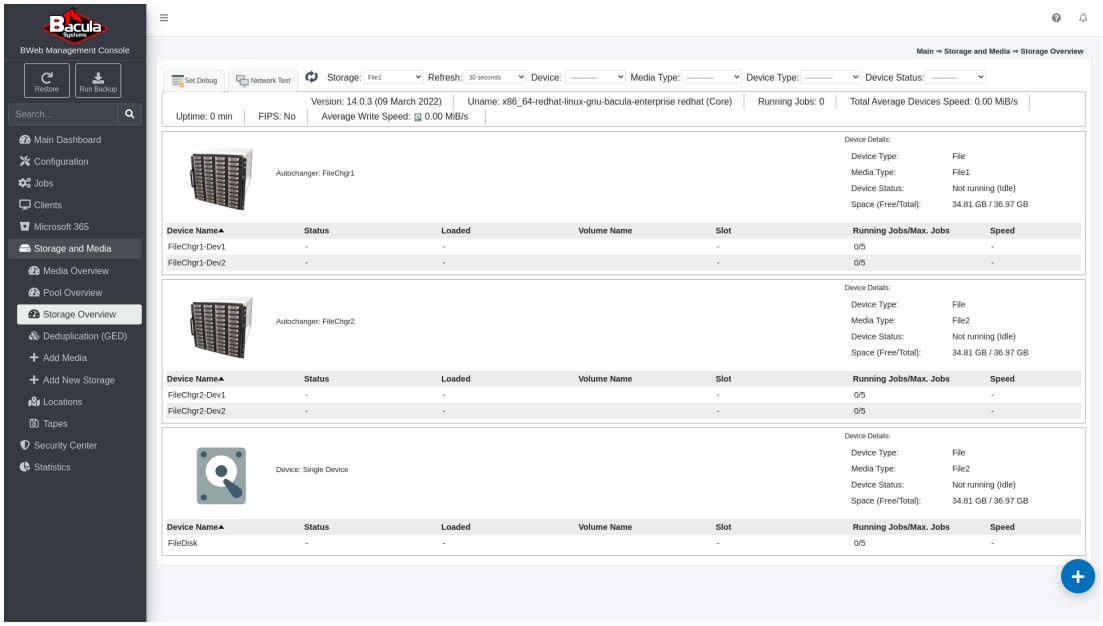
The *Client Status* page will be refreshed automatically. The Client resource and the refresh interval can both be changed using the two drop-down menus in the top right corner of the screen.

You will be able to quickly verify whether or not a Bacula File Daemon is running and is accessible from the Bacula Director if you can access and see the content of the appropriate *Client Status* page.

Check Storage Daemon

The following article presents information on where and how to check the status of Bacula Storage Daemon.

The status of the Bacula Storage (Storage Daemon) can be accessed by navigating to *Storage and Media -> Storage Overview* and then selecting the appropriate Storage from the drop-down list.



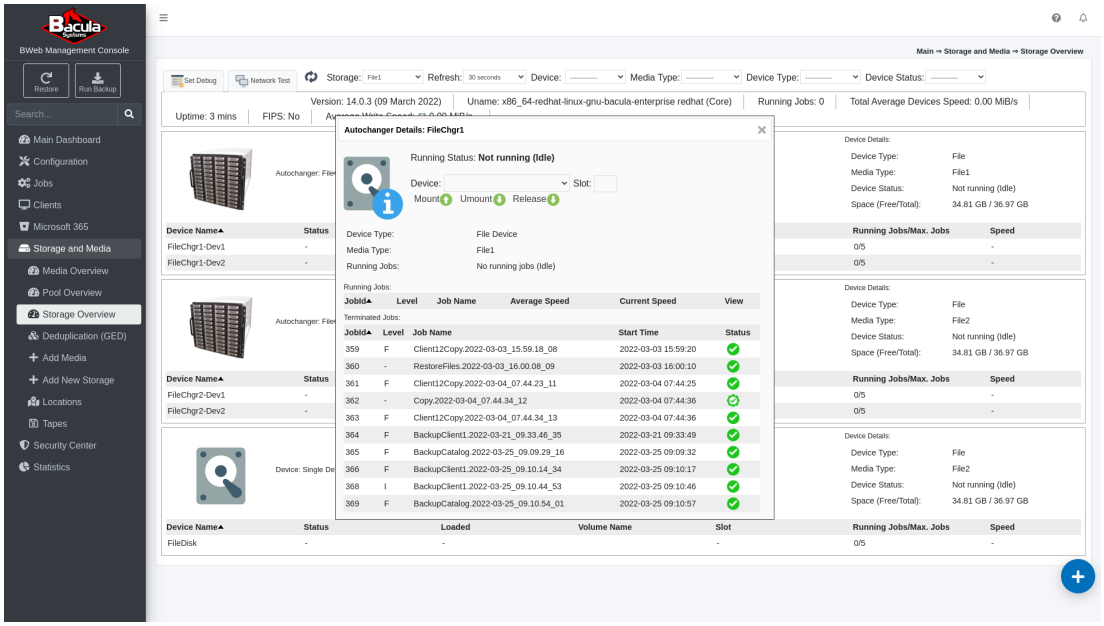
This page contains the following information:

- Basic information and statistical data retrieved from the Catalog database about the Bacula Storage Daemon on which the selected Storage resource resides.
- List of all Storage resources (Autochangers or single Devices) that reside on the Bacula Storage Daemon with list of Device resources belonging to each of them with basic information about each.

The *Storage Overview* page will be refreshed automatically. The Storage resource and the refresh interval can both be changed using the drop-down menus in the header row.

In addition, the header row offers the ability to filter the output shown on the *Storage Overview* page by *Device*, *Media Type*, *Device Type* and *Device Status*.

Also, by clicking on the picture icon that belongs to specific Storage resource (Autochanger or single Device) an additional *Autochanger/Device Details* page will be shown.



This *Autochanger/Device Details* pop-up window contains the following information:

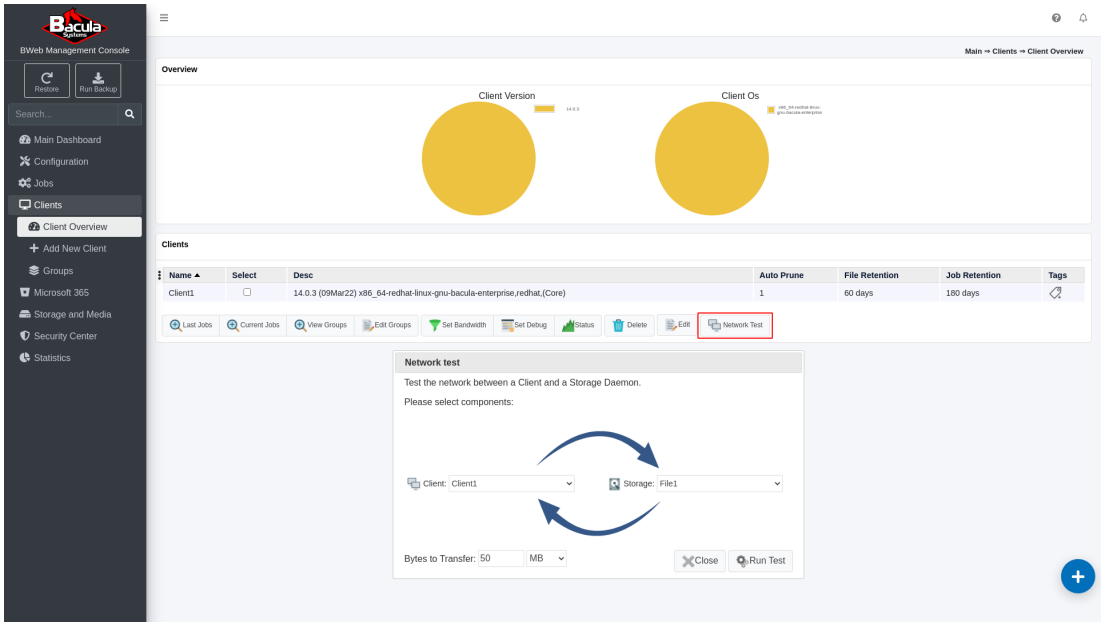
- Basic information about the Autochanger/Device resource
- Autochanger/Device manipulation commands
- List of currently *Running Jobs*
- List of last 10 *Terminated Jobs*.

You will be able to quickly verify whether or not Bacula Storage Daemon is running and is accessible from the Bacula Director if you can access and see the content of the appropriate *Storage Overview* page.

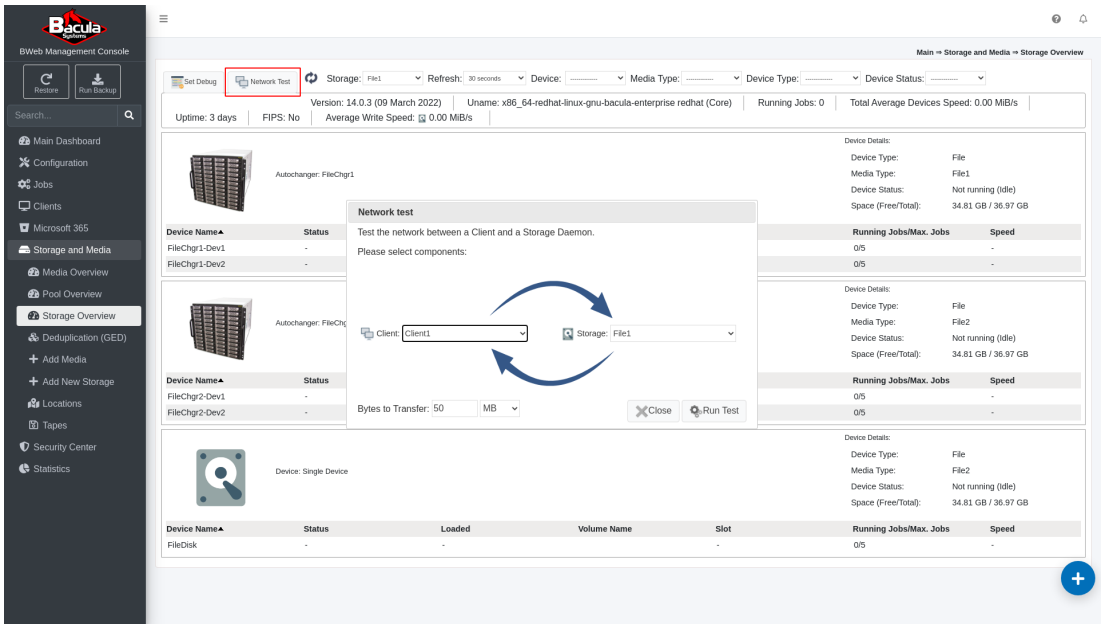
Test the Network

The following article presents information on how to perform the network test.

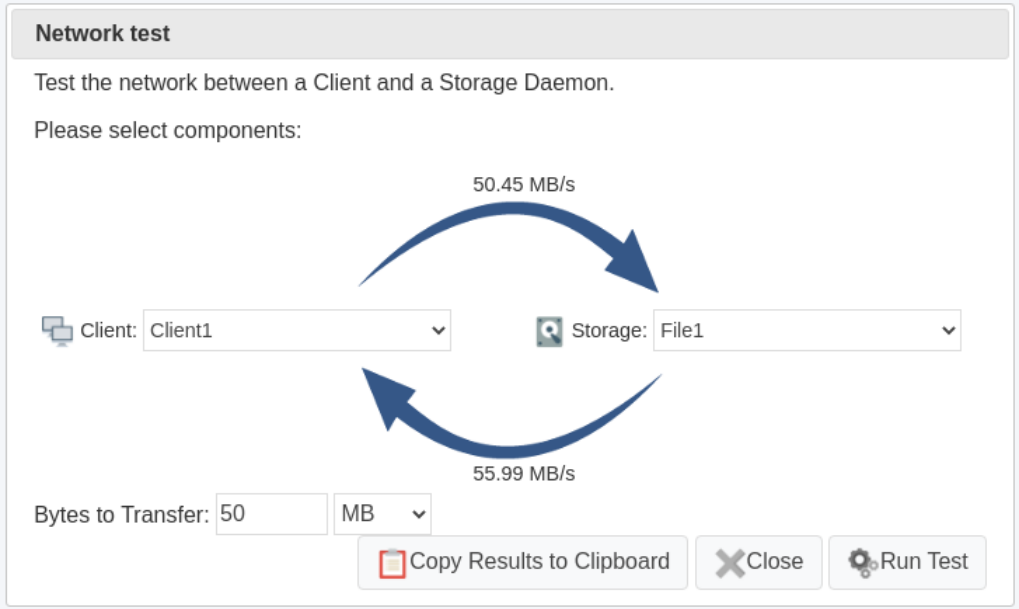
In order to estimate the network throughput during a backup job execution, it is possible to run a network test.



The network test can be initiated from both the *Client Overview* and *Storage Overview* pages by clicking on the *Network Test* button.



The test itself is simple to run. All that it is required is to set the appropriate *Client* and *Storage*, and optionally modify the *Bytes to Transfer*. When all options are set the test is initiated by clicking on the *Run Test* button.



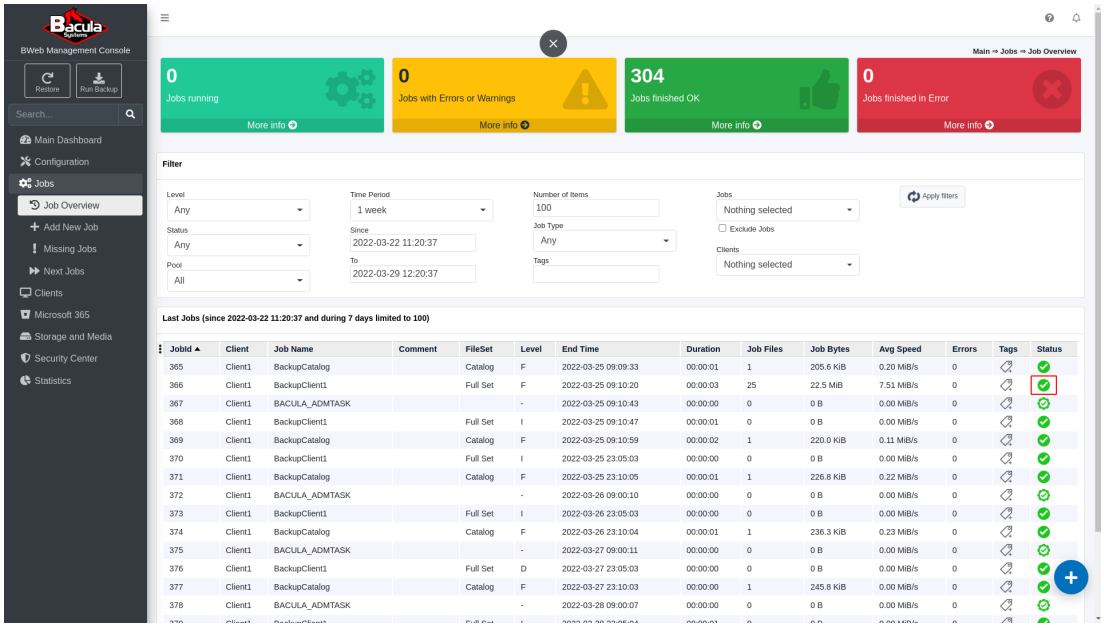
When the test completes, the network throughput measurements for Client to Storage and Storage to Client communication directions will be shown. The network test can be used to verify that the Client and the Storage resources are able to communicate over the network.

Verify Job Status and Configuration

The following article presents verification techniques to verify job execution status, and gives advice on the choice of adequate job-related resource definitions to fulfill the intended use case.

Job Overview

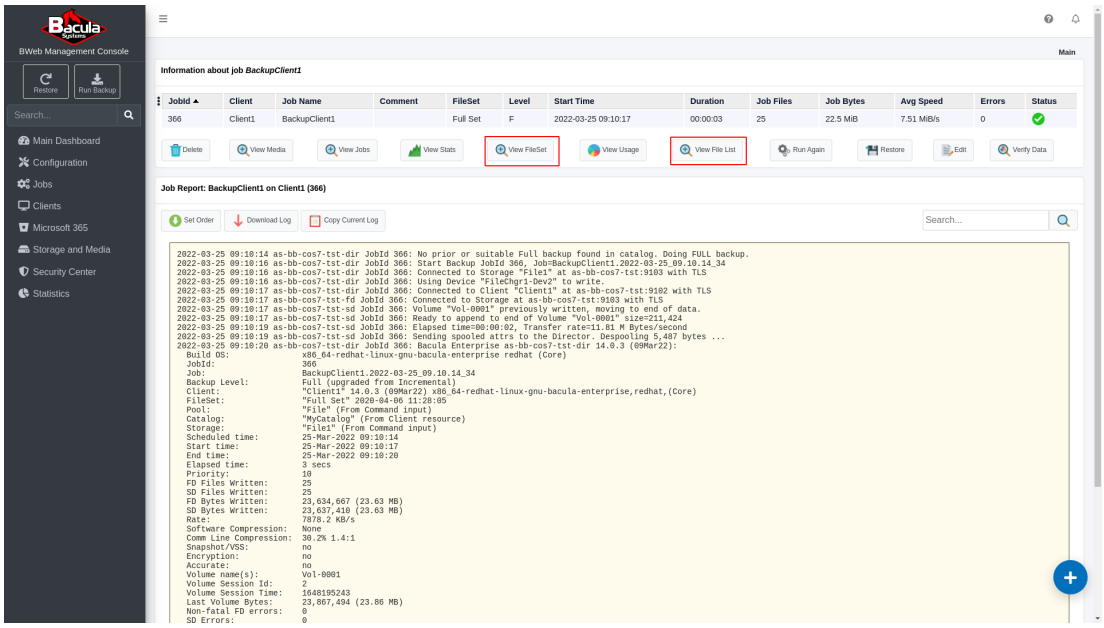
The list of latest jobs run can be accessed by navigating to *Jobs -> Job Overview*.



The list of jobs shown can be filtered based on different criteria and sorted differently by clicking on

different header row fields.

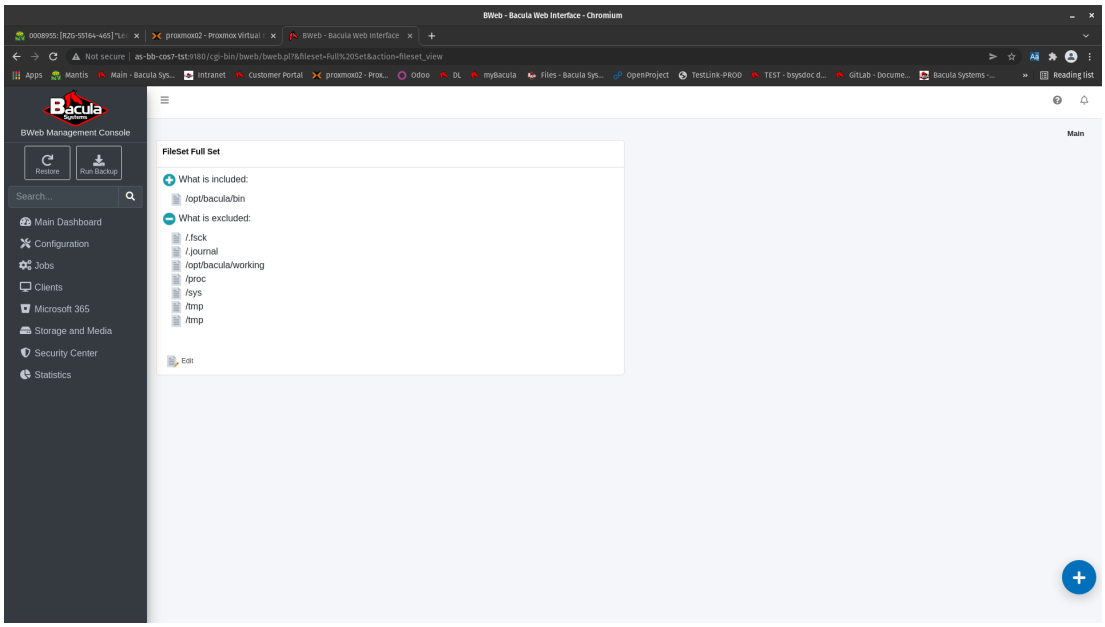
The detailed information about a specific job execution instance can be seen by clicking on the status icon located in the *Status* column inside the specified job's row.



The detailed joblog is shown on the Job Information page. Apart from the joblog, there is a row of buttons that can be used in order to view additional information or execute certain actions.

View Fileset

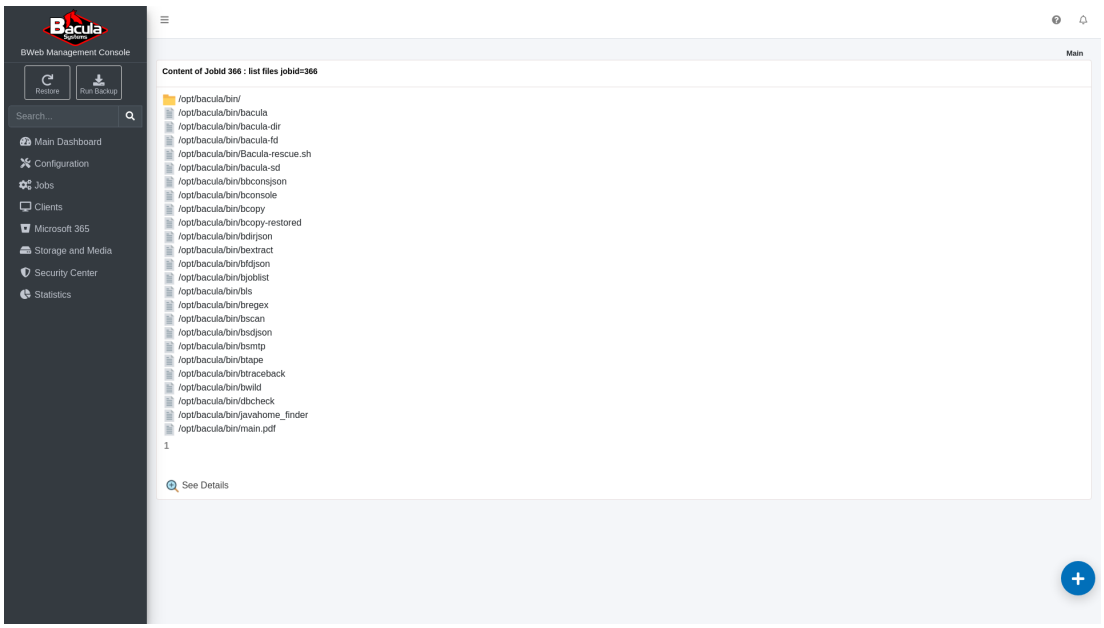
By clicking on the *View Fileset* button, a page is displayed which shows the content of the File Set definition and lists all the included and excluded backup paths.



This page can be used in order to verify the actual configuration introduced by the Fileset resource definition.

View File List

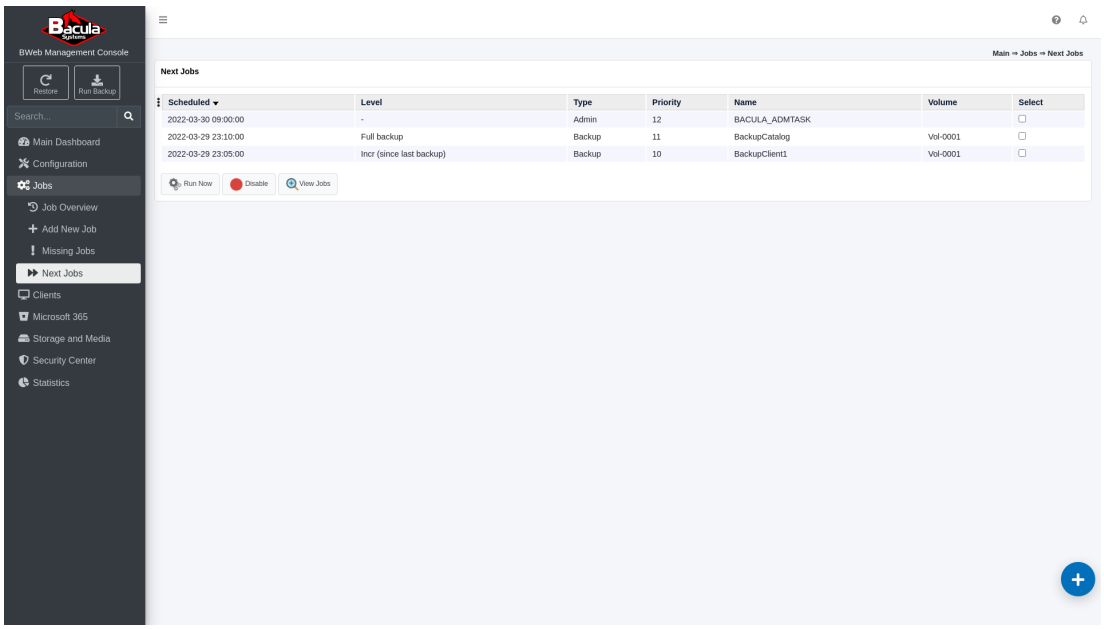
By clicking on the *View File List* button, a page is displayed which shows a list of full file names that have been backed up by the specific job execution.



This page can be used in order to verify the exact content of the backed up data set.

Next Jobs

The list displaying the next scheduled time of execution of every job defined can be accessed by navigating to *Jobs -> Next Jobs*.



This page can be used to verify the Schedule resource definition by presenting the next time and in what backup level the specific Job resource instance is scheduled to be executed in.

1.5 File Daemon (Client) Registration

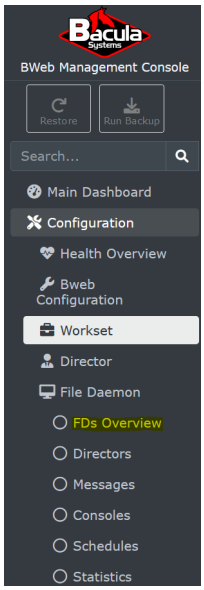
The following article describes how to use BWeb in order to generate an Automatic Configuration URL that is pushed to BIM or to the Windows Registration Wizard in order to register a new Client in BWeb with its configuration files.

This guide applies to Linux and Windows clients.

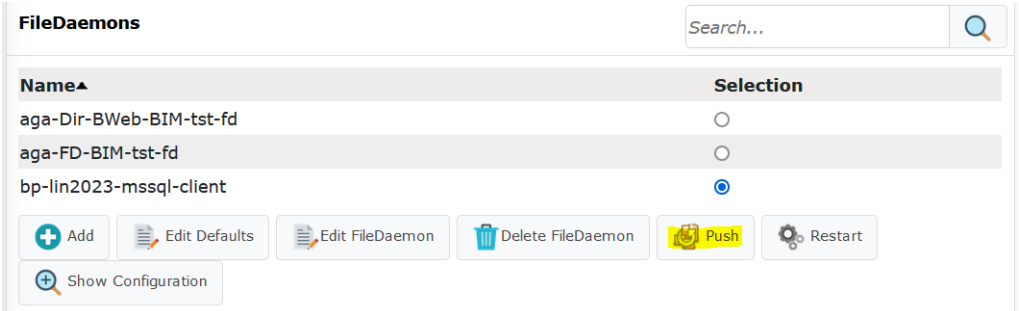
FD Registration - Client Already Created in BWeb

Steps

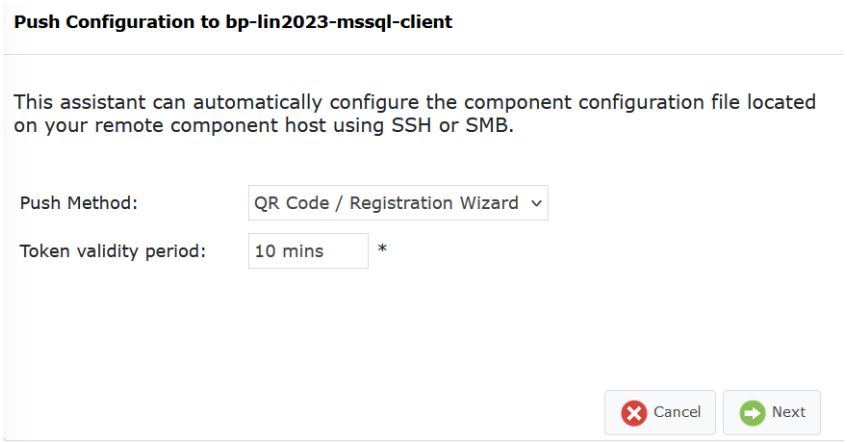
1. From the left menu of BWeb, click “Configuration” –> “Workset” –> “File Daemon” –> “FDs Overview”.



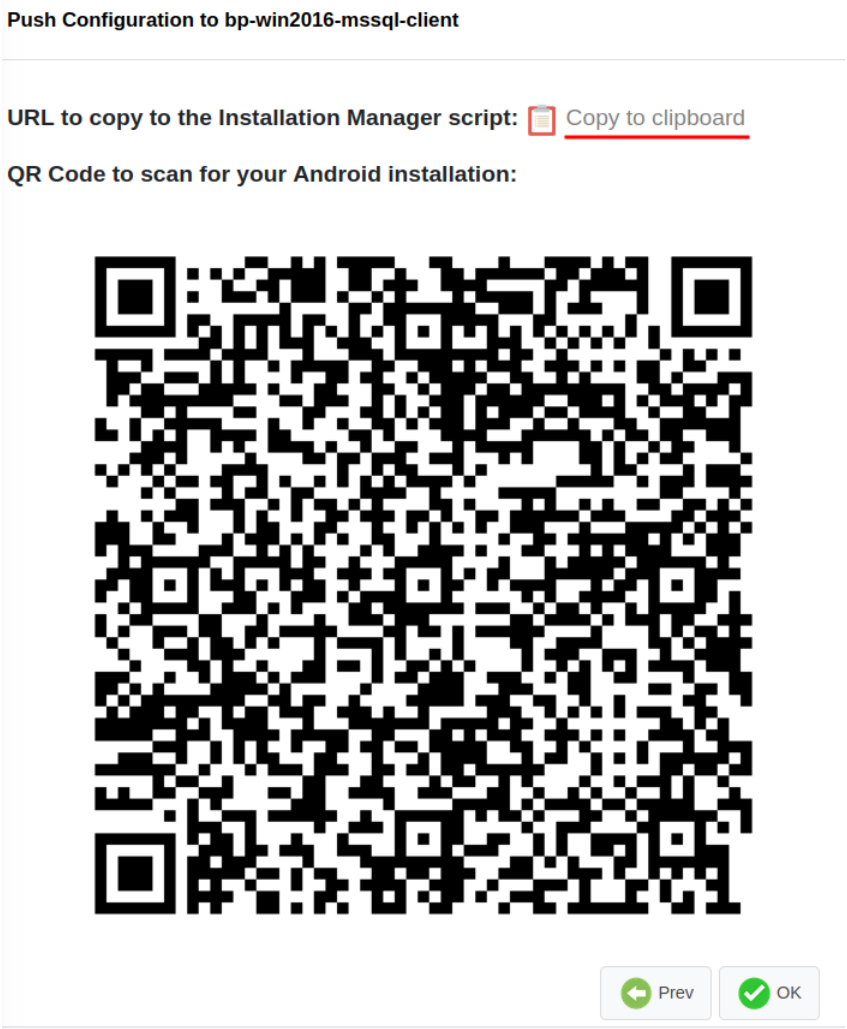
2. Select the Client to register and click “Push”.



3. From the drop list, select the “QR Code/Registration Wizard”.



4. Click “Next”.
5. Scan the QR code or click on “Copy to clipboard” to copy the URL.



6. Paste it into the bee_installation_manager wizard or the Windows installer registration wizard.

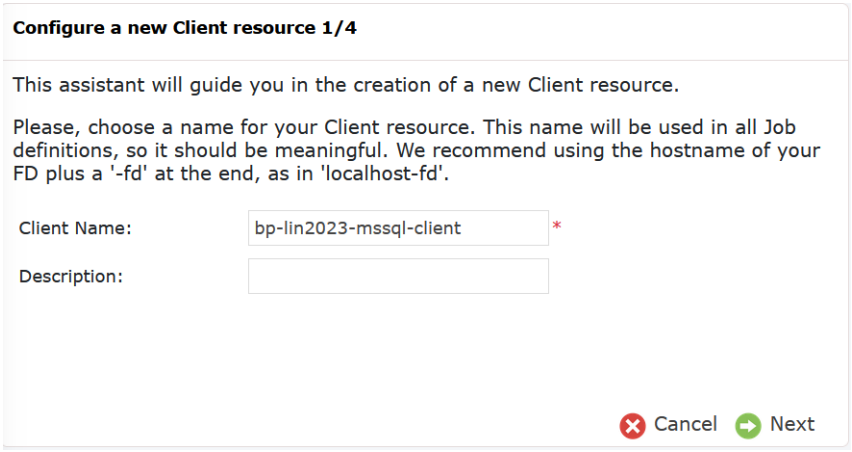
Once copied to the clipboard, go back to WindowsInstallFD or LinuxInstallFileDaemon in order to paste

it in one of these executables.

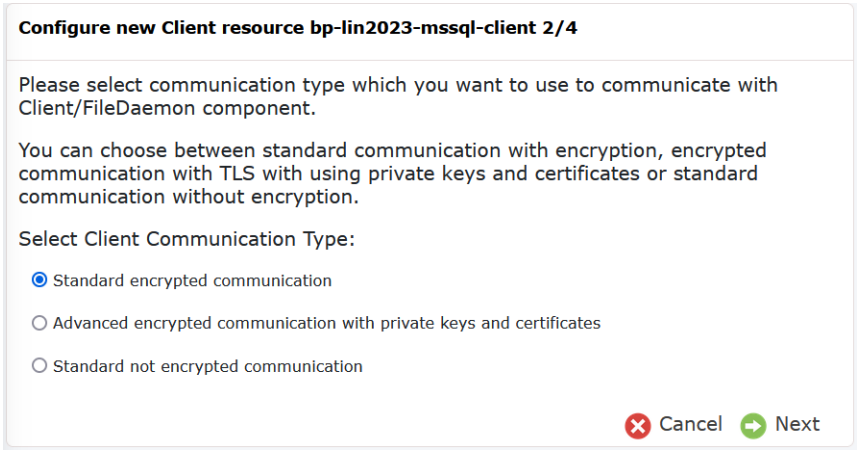
FD Registration - Client to Be Created in BWeb

Steps

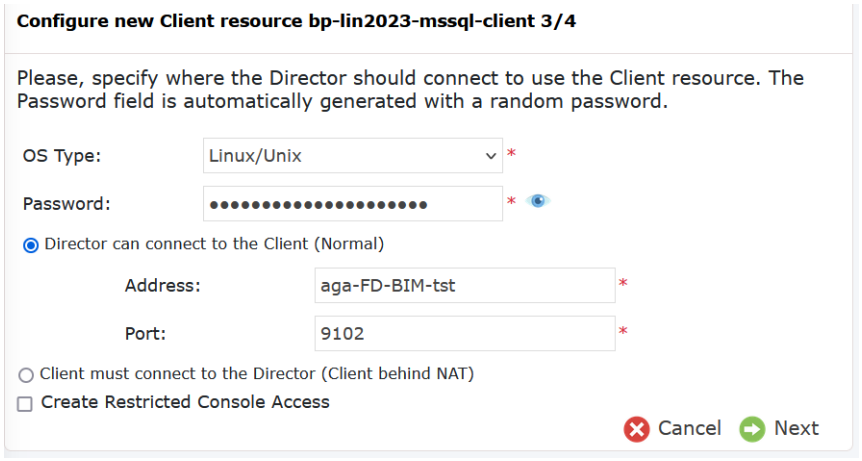
1. Click on the + button in BWeb (bottom right corner) and choose “Add Client”.
2. Set a name, and optionally a description for this new Client.



3. Click “Next”.
4. On the next screen, keep the default communication type: “Standard encrypted communication”.

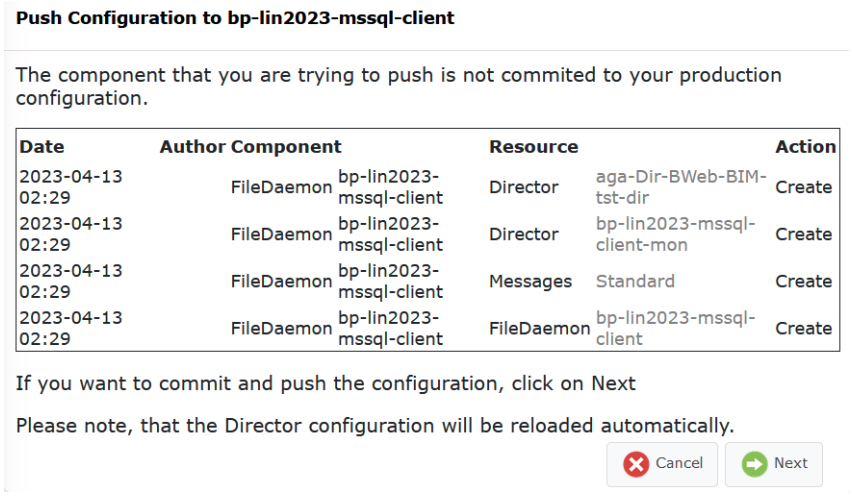


5. Click “Next”.
6. Choose the OS Type (Linux or Windows) according to the operating system of the new client target. The Password can be left as proposed. Fill in the Address with the FQDN, the hostname or the IP address of the new client. The Port should be left as it is.

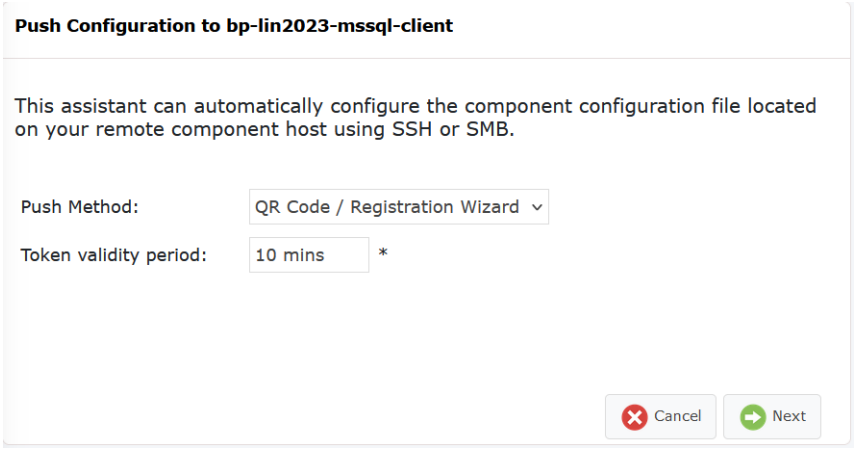


8. Click “Next”.
9. On the next screen, click on `deploy` in order to access the unique identifier to register the File Daemon.

10. If Autocommit is disabled, commit your changes created by the new Client wizard if - click `Next` on the screen.



11. Select QR Code/Registration Wizard, keep the Token validity period to 10 min.



12. Click “Next”.
13. On the next screen, click “Copy to clipboard”.

Once copied to the clipboard, go back to WindowsInstallFD or LinuxInstallFileDaemon in order to paste it in one of these executables.

1.6 Bacula Enterprise Installation in Air-Gapped Environment

Note

The guidance provided in this document offers general recommendations for setting up Bacula Enterprise in air-gapped environments. Due to the wide variability in organizational infrastructure, security policies, and operational goals, exact instructions may not be universally applicable.

In secure environments where network isolation is critical, installing and maintaining software requires a different approach. Air-gapped systems—those disconnected from the internet or external networks—demand careful planning to ensure software availability and integrity.

This guide outlines the recommended methods for installing Bacula Enterprise in an air-gapped environment and includes steps for mirroring repositories and managing dependencies for both RPM- and Debian-based Linux systems.

Overview of Air-Gapped Installation Options

There are two main approaches to installing Bacula Enterprise in an air-gapped environment:

- *Repository Mirroring*:
  - Mirror the Bacula Enterprise repository and any required third-party repositories (e.g., RHEL, EPEL) on an internet-connected system.
  - Either move system to air-gapped network, or transfer the mirrored content to the internal network.
  - Set up an internal web server to host the mirrored repositories.
  - Optional: use internal DNS to facilitate the connection of upstream internal repositories to air-gapped systems.
  - Configure repositories on the air-gapped Bacula system to direct to the internal mirrored repository server.
  - Tools for repository mirroring include:
    - `reposync` (Red Hat-based systems)
    - `apt-mirror` (Debian/Ubuntu)
    - Other tools such as `redhat satellite`, `debmirror`
- *Package Download and Manual Installation*
  - Download all required Bacula Enterprise packages and dependencies on an internet-connected system.
  - Transfer the downloaded packages to the air-gapped system.
  - Manually install the packages using:
    - `dnf install *.rpm` (for RPM-based systems)
    - `dpkg -i *.deb` (for Debian-based systems)

Repository Mirroring

Dependency Mirroring

- For RPM-based systems:

  Shows dependencies:

  ```
  # rpm -q --requires bacula-enterprise-client
  ```

  Downloads all deps as RPM to the `/tmp/packages` folder:

  ```
  # dnf install --downloadonly --downloaddir=/tmp/packages/
  bacula-enterprise-client
  ```

- For Debian-based systems:

  ```
  # apt-rdepends bacula-enterprise-client | grep -oP '^\S+' > deps.txt
  ```

  Downloads all deps:

  ```
  # cat deps.txt | xargs -n1 apt-get download
  ```

APT Repository Mirroring

1. **Installation of apt-mirror:** Install `apt-mirror` to handle the mirroring process.

   ```
   sudo apt-get install apt-mirror
   ```

2. **Configuration of apt-mirror:** Configure `apt-mirror` by editing the `/etc/apt/mirror.list` file to specify which repositories to mirror.

   ```
   # vim /etc/apt/mirror.list
   ```

   Add repository lines such as:

```
set base_path /var/spool/apt-mirror
set nthreads 20
set _tilde 0

deb http://archive.ubuntu.com/ubuntu focal main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu focal-updates main restricted universe␣
↪multiverse
deb http://archive.ubuntu.com/ubuntu focal-security main restricted universe␣
↪multiverse

clean http://archive.ubuntu.com/ubuntu
```

3. **Run apt-mirror:** Start the mirroring process.

   ```
   sudo apt-mirror
   ```

4. **Setting up a Web Server:** Configure a web server to serve the mirrored repository.

   ```
   sudo apt-get install apache2
   sudo ln -s /var/spool/apt-mirror/mirror /var/www/html/ubuntu
   ```

5. **Distribute the GPG Key:** Import the GPG key used to sign the mirrored packages and distribute it to the clients.

```
wget -qO - http://<your_server_ip>/repo_signing_key.gpg | sudo apt-key␣
↪add -
```

RPM Repository Mirroring

1. **Installation of reposync:** Install *reposync* and related tools to handle the RPM mirroring.

```
sudo yum install yum-utils createrepo httpd
```

2. **Sync the Repository:** Use *reposync* to download the packages and metadata from the specified repository.

```
sudo reposync --repoid=<repo-id> --download-path=/var/www/html/rpmrepo --
↪download-metadata
```

3. **Serve the Repository via Web Server:** Ensure that the web server (e.g., Apache) is serving the mirrored repository.

```
sudo ln -s /var/www/html/rpmrepo /var/www/html/myrepo
sudo systemctl start httpd
sudo systemctl enable httpd
```

4. **Distribute the GPG Key:** Import and distribute the GPG key used to sign the original RPM repository to the clients.

```
sudo rpm --import http://<your_server_ip>/repo_signing_key.gpg
```

5. **Client-Side Configuration:** Configure the client machines to use the local RPM mirror.

```
[localrepo]
name=Local RPM Mirror
baseurl=http://<your_server_ip>/myrepo
enabled=1
gpgcheck=1
gpgkey=http://<your_server_ip>/repo_signing_key.gpg
```

Package Download and Manual Installation

In cases where establishing a complete repository mirror is neither desirable nor essential, you may opt to download the required packages along with their dependencies for future use. The commands for both RPM and Debian-based systems are provided below.

RPM-based Systems (Fedora, CentOS)

1. **Download a Package and Its Dependencies:** Use `dnf` or `yum` to download a specific package and all its dependencies without installing them.

```
sudo dnf install --downloadonly --downloaddir=/tmp/packages/ bacula-
↪enterprise-fd
```

2. **List Package Dependencies:** To see what dependencies a package requires, you can query them as follows:


```
rpm -q --requires bacula-enterprise-fd
```

Debian-based Systems (Ubuntu, Debian)

1. **List and Download Dependencies:** Use `apt-rdepends` to list and then download the dependencies for a specific package.

```
sudo apt-get install apt-rdepends
apt-rdepends bacula-enterprise-fd | grep -oP '^\S+' > deps.txt
cat deps.txt | xargs -n1 apt-get download --downloaddir=/tmp/packages/
```

Creating a Portable Archive

Once all required packages are downloaded to a directory, you can create a `tar.gz` archive for easy transportation to another system.

```
cd /tmp
tar -czvf packages.tar.gz packages/
```

This archive (`packages.tar.gz`) can then be transferred to and unpacked on another server where the packages are required. This is particularly useful for systems without an internet connection or those in secure environments.

To unpack the archive on another system:

```
tar -xzvf packages.tar.gz -C /desired/path/
```

1.7 Bacula Enterprise Installation on MacOS

Enterprise

Bacula Enterprise Only

This solution is **only** available for Bacula Enterprise. For subscription inquiries, please reach out to sales@baculasystems.com.

This procedure provides step-by-step instructions to install and configure Bacula File Daemon (`bacula-fd`) on a macOS system.

1. Download and install the Bacula macOS package. You can download the `.dmg installer` for macOS from the Bacula Systems portal or use a custom-built version if available internally.

After downloading:

Mount the `.dmg` file.

Drag and drop the Bacula.app into `/Applications`.

2. Locate the `bacula-fd` binary and configuration. The binary and default configuration paths are located inside the app bundle:

   Binary path: `/Applications/Bacula.app/Contents/Resources/BaculaBin/sbin/bacula-fd`

Default configuration path:

```
~/.bacula/bacula-fd.conf
```

Note

You may need to create this directory and configuration manually.

3. Configure `bacula-fd`. Configuration can be done via the Bacula icon in the macOS menu bar or by manually editing the configuration file.

Important

If configuration is done via the Bacula icon in the menu bar, the `bacula-fd.conf` file will be created in a hidden `.bacula` directory inside the home folder of the user who performed the change, e.g. `/Users/username/.bacula/bacula-fd.conf`.

Alternatively, create or edit the file manually:

```
mkdir -p ~/.bacula
nano ~/.bacula/bacula-fd.conf
```

Sample minimal configuration:

```
Director {
  Name = my-dir
  Password = "mysecret"
}

FileDaemon {
  Name = my-client-fd
  FDport = 9102
  WorkingDirectory = /Users/your_user/bacula/working
  PidDirectory = /Users/your_user/bacula/working
  Maximum Concurrent Jobs = 2
}

Messages {
  Name = Standard
  director = my-dir = all, !skipped, !restored
}
```

Make sure the directories mentioned exist:

```
mkdir -p ~/bacula/working
```

4. Run `bacula-fd` manually.

You can start `bacula-fd` using the full path:

```
/Applications/Bacula.app/Contents/Resources/BaculaBin/sbin/bacula-fd -c ~/.
↪bacula/bacula-fd.conf
```


This will start the daemon in the foreground. You can test the connection from the Director once it's running.

To run it in the background, you can add & at the end:

```
/Applications/Bacula.app/Contents/Resources/BaculaBin/sbin/bacula-fd -c ~/.
↪bacula/bacula-fd.conf &
```

5. Optional: Set up auto-start on login. If needed, create a launchd job to run `bacula-fd` automatically on user login.

```
Director {
  Name = dc-rhel9-dir-bweb-tst-dir
  Password = "cqrmarzrhlq9odeeaglws"
}

#
# Restricted Director, used by tray-monitor to get the
#   status of the file daemon
#
Director {
  Name = rhel9ClientMultiPlugin-fd-mon
  Password = "t8F2x8swmiZPxxbcodZYLSh5W2Ph0W1FH"
  Monitor = yes
}

#
# "Global" File daemon configuration specifications
#
FileDaemon {                          # this is me
  Name = hostname-fd
  FDAddress = 0.0.0.0
  FDport = 9105                  # where we listen for the director
  WorkingDirectory =  /Users/username/.bacula
  Pid Directory =  /Users/username/.bacula
  Maximum Concurrent Jobs = 20
  Plugin Directory = /Applications/Bacula.app/Contents/Resources/BaculaBin/lib
}

# Send all messages except skipped files back to Director
Messages {
  Name = Standard
  director = dc-rhel9-dir-bweb-tst-dir = all, !skipped, !restored, !verified,␣
↪!saved
}
```

Fileset:

```
*show fileset=a-MacOS-FS
Fileset: name=a-MacOS-FS IgnoreFilesetChanges=0
      I /Users/username/Desktop/Screenshot 2025-08-04 at 13.42.15.png
      N
*
```

Steps to Connect to Bacula FD through VPN

1. Identify the VPN IP address on the FD Host.

On the File Daemon (FD) machine, run the following command to locate the active VPN IP address:

```
ifconfig | grep -B3 "inet 10.255"
```

Example output:

```
utun6: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 1500
inet 10.192.4.5 --> 10.192.4.5 netmask 0xffffff00
utun7: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 1500
inet 10.255.0.38 --> 10.255.0.37 netmask 0xfffffffc
```

In this case, the VPN-assigned IP for the FD is 10.255.0.38.

2. Create an SSH Tunnel from the Director to the FD Host on the Director (DIR) host, establish an SSH tunnel to forward traffic to port 9105:

```
ssh -L 9105:localhost:9105 username@10.255.0.38
```

You will be prompted for the remote user password:

```
username@10.255.0.38's password:
```

Example login output:

```
Last login: Mon Aug 4 13:38:13 2025 from 10.0.99.84
/Users/username/.zshrc:source:7: no such file or directory: /Users/username/.
↪oh-my-zsh/oh-my-zsh.sh
```

Once the tunnel is established, the Director can communicate with the FD through `localhost:9105`.

Testing access and communication:

```
*estimate listing
The defined Job resources are:
     1: A-AutoPrune-Pool-DiskBackup365d
     2: BaculaDirectorConfigs
     3: Copy
     4: J-MacMini-MacOS
     5: J-PGSQL
     6: J_amazon-rds_ins-db-pgl
     7: J_gw_jorge_at_baculasystmes.com
     8: J_gw_license_at_baculasystmes.com
     9: J_gw_nbc_at_baculasystmes.com
    10: J_rhel9-mysql8.4-fd_mysql_demo2
    11: LinuxHome
    12: RDS-PGSQL-J
    13: Restore
    14: ServerMysql-J
    15: VSphere-DanielVM-J
    16: dc-rhel9-dir-bweb-tst-dev-null-job
    17: gw-J
    18: gw-bookworm-J
```

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```
Select Job resource (1-18): 4
Using Catalog "BaculaCatalog"
Connecting to Client macmini-fd at 127.0.0.1:9105
-rw-r--r--   1 danielca staff                48823 2025-08-04 13:42:21  /
↪Users/username/Desktop/Screenshot 2025-08-04 at 13.42.15.png
2000 OK estimate files=1 bytes=48,823
```

Backup Job:

```
2025-08-04 22:22:19 dc-rhel9-dir-bweb-tst-dir JobId 1082: No prior or␣
↪suitable Full backup found in catalog. Doing FULL backup.
2025-08-04 22:22:21 dc-rhel9-dir-bweb-tst-dir JobId 1082: Start Backup JobId␣
↪1082, Job=J-MacMini-MacOS.2025-08-04_22.22.19_06
2025-08-04 22:22:21 dc-rhel9-dir-bweb-tst-dir JobId 1082: Connected to␣
↪Storage "DiskAutochanger" at dc-rhel9-dir-bweb-tst:9103 with TLS
2025-08-04 22:22:21 dc-rhel9-dir-bweb-tst-dir JobId 1082: Using Device
↪"DiskAutochanger_Dev0" to write.
2025-08-04 22:22:24 dc-rhel9-dir-bweb-tst-dir JobId 1082: Connected to Client
↪"macmini-fd" at 127.0.0.1:9105 with TLS
2025-08-04 22:22:27 hostname-fd JobId 1082: Connected to Storage at dc-rhel9-
↪dir-bweb-tst:9103 with TLS
2025-08-04 22:22:28 dc-rhel9-dir-bweb-tst-sd JobId 1082: Recycled volume "Vol-
↪0082" on File device "DiskAutochanger_Dev0" (/opt/bacula/archive), all␣
↪previous data lost.
2025-08-04 22:22:30 dc-rhel9-dir-bweb-tst-sd JobId 1082: Elapsed␣
↪time=00:00:02, Transfer rate=24.48 K Bytes/second
2025-08-04 22:22:30 dc-rhel9-dir-bweb-tst-sd JobId 1082: Sending spooled␣
↪attrs to the Director. Despooling 195 bytes ...
2025-08-04 22:22:31 dc-rhel9-dir-bweb-tst-dir JobId 1082: Bacula Enterprise␣
↪dc-rhel9-dir-bweb-tst-dir 18.2.0 (22May25):
  Build OS:               x86_64-redhat-linux-gnu-bacula-enterprise redhat␣
↪(Blue
  JobId:                  1082
  Job:                    J-MacMini-MacOS.2025-08-04_22.22.19_06
  Backup Level:           Full (upgraded from Incremental)
  Client:                 "macmini-fd" 14.0.5 (10Aug22) x86_64-apple-darwin21.
↪5.0,osx,21.5.0
  FileSet:                "a-MacOS-FS" 2025-08-04 21:58:12
  Pool:                   "DiskBackup365d" (From Job resource)
  Catalog:                "BaculaCatalog" (From Client resource)
  Storage:                "DiskAutochanger" (From Job resource)
  Scheduled time:         04-Aug-2025 22:22:16
  Start time:             04-Aug-2025 22:22:27
  End time:               04-Aug-2025 22:22:31
  Elapsed time:           4 secs
  Priority:               10
  FD Files Written:       1
  SD Files Written:       1
  FD Bytes Written:       48,823 (48.82 KB)
  SD Bytes Written:       48,961 (48.96 KB)
  Rate:                   12.2 KB/s
  Software Compression:   None
```

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```
  Comm Line Compression:  None
  Snapshot/VSS:           no
  Encryption:             no
  Accurate:               no
  Volume name(s):         Vol-0082
  Volume Session Id:      35
  Volume Session Time:    1750966840
  Last Volume Bytes:      49,704 (49.70 KB)
  Non-fatal FD errors:    0
  SD Errors:              0
  FD termination status:  OK
  SD termination status:  OK
  Termination:            Backup OK
```

Restore Job:

```
Enter a period to cancel a command.
*r
Automatically selected Catalog: BaculaCatalog
Using Catalog "BaculaCatalog"

First you select one or more JobIds that contain files
to be restored. You will be presented several methods
of specifying the JobIds. Then you will be allowed to
select which files from those JobIds are to be restored.

To select the JobIds, you have the following choices:
     1: List last 20 Jobs run
     2: List Jobs where a given File is saved
     3: Enter list of comma separated JobIds to select
     4: Enter SQL list command
     5: Select the most recent backup for a client
     6: Select backup for a client before a specified time
     7: Enter a list of files to restore
     8: Enter a list of files to restore before a specified time
     9: Find the JobIds of the most recent backup for a client
    10: Find the JobIds for a backup for a client before a specified time
    11: Enter a list of directories to restore for found JobIds
    12: Select full restore to a specified Job date
    13: Select object to restore
    14: Cancel
Select item:  (1-14): 3
Enter JobId(s), comma separated, to restore: 1082
You have selected the following JobId: 1082

Building directory tree for JobId(s) 1082 ...
1 files inserted into the tree.

You are now entering file selection mode where you add (mark) and
remove (unmark) files to be restored. No files are initially added, unless
you used the "all" keyword on the command line.
Enter "done" to leave this mode.
```

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```
cwd is: /
$ add *
1 file marked.
$ done
Bootstrap records written to /opt/bacula/working/dc-rhel9-dir-bweb-tst-dir.
↪restore.2.bsr

The Job will require the following (*=>InChanger):
   Volume(s)                 Storage(s)                SD Device(s)
===========================================================================

    Vol-0082                  DiskAutochanger           DiskAutochanger

Volumes marked with "*" are in the Autochanger.


1 file selected to be restored.

Defined Clients:
     1: GoogleWorkspace-fd
     2: U24PsqlPlugin-fd
     3: bookworm-GW-fd
     4: dc-bookworm-fd-fd
     5: dc-psql-deb12-fd
     6: dc-rhel9-dir-bweb-tst-fd
     7: dc-rhel9-fd-tst-fd
     8: macmini-fd
     9: rescue-fd
    10: rhel9-mysql8.4-fd
    11: rhel9ClientMultiPlugin-fd
Select the Client (1-11): 8
Run Restore job
JobName:         Restore
Bootstrap:       /opt/bacula/working/dc-rhel9-dir-bweb-tst-dir.restore.2.bsr
Where:           /opt/bacula/archive/bacula-restores
Replace:         Always
Fileset:         BaculaConfigs
Backup Client:   macmini-fd
Restore Client:  macmini-fd
Storage:         DiskAutochanger
When:            2025-08-08 15:43:08
Catalog:         BaculaCatalog
Priority:        10
Plugin Options:  *None*
OK to run? (Yes/mod/no): mod
Parameters to modify:
     1: Level
     2: Storage
     3: Job
     4: Fileset
     5: Restore Client
```

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```
     6: When
     7: Priority
     8: Bootstrap
     9: Where
    10: File Relocation
    11: Replace
    12: JobId
    13: Plugin Options
Select parameter to modify (1-13): 9
Please enter the full path prefix for restore (/ for none): /
Run Restore job
JobName:         Restore
Bootstrap:       /opt/bacula/working/dc-rhel9-dir-bweb-tst-dir.restore.2.bsr
Where:
Replace:         Always
Fileset:         BaculaConfigs
Backup Client:   macmini-fd
Restore Client:  macmini-fd
Storage:         DiskAutochanger
When:            2025-08-08 15:43:08
Catalog:         BaculaCatalog
Priority:        10
Plugin Options:  *None*
OK to run? (Yes/mod/no): yes
Job queued. JobId=1087
```

Restore joblog:

```
*list joblog jobid=1087
+----------------------------------------------------------------------------
↪-----------------------+
| logtext                                                                    ␣
↪                          |
+----------------------------------------------------------------------------
↪-----------------------+
| dc-rhel9-dir-bweb-tst-dir JobId 1087: Start Restore Job Restore.2025-08-08_
↪15.43.36_15               |
| dc-rhel9-dir-bweb-tst-dir JobId 1087: Restoring files from JobId(s) 1082   ␣
↪                          |
| dc-rhel9-dir-bweb-tst-dir JobId 1087: Connected to Storage "DiskAutochanger
↪" at dc-rhel9-dir-bweb-tst:9103 with TLS |
| dc-rhel9-dir-bweb-tst-dir JobId 1087: Using Device "DiskAutochanger_Dev0"␣
↪to read.                   |
| dc-rhel9-dir-bweb-tst-dir JobId 1087: Connected to Client "macmini-fd" at␣
↪127.0.0.1:9105 with TLS    |
| hostname-fd JobId 1087: Connected to Storage at dc-rhel9-dir-bweb-tst:9103␣
↪with TLS                   |
| dc-rhel9-dir-bweb-tst-sd JobId 1087: Ready to read from volume "Vol-0082"␣
↪on File device "DiskAutochanger_Dev0" (/opt/bacula/archive). |
| dc-rhel9-dir-bweb-tst-sd JobId 1087: Forward spacing Volume "Vol-0082" to␣
↪addr=277                   |
| dc-rhel9-dir-bweb-tst-sd JobId 1087: Elapsed time=00:00:01, Transfer␣
```

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```
↪rate=48.96 K Bytes/second       |
| dc-rhel9-dir-bweb-tst-dir JobId 1087: Bacula Enterprise dc-rhel9-dir-bweb-
↪tst-dir 18.2.0 (22May25):
  Build OS:               x86_64-redhat-linux-gnu-bacula-enterprise redhat␣
↪(Blue
  JobId:                  1087
  Job:                    Restore.2025-08-08_15.43.36_15
  Restore Client:         "macmini-fd" 14.0.5 (10Aug22) x86_64-apple-darwin21.
↪5.0,osx,21.5.0
  Where:
  Replace:                Always
  Start time:             08-Aug-2025 15:43:38
  End time:               08-Aug-2025 15:43:48
  Elapsed time:           10 secs
  Files Expected:         1
  Files Restored:         1
  Bytes Restored:         48,823 (48.82 KB)
  Rate:                   4.9 KB/s
  FD Errors:              0
  FD termination status:  OK
  SD termination status:  OK
   Termination:            Restore OK |
+-------------------------------------------------------------------------------
↪----------------------+
+-------+---------+---------------------+------+-------+----------+----------
↪+-----------+
| jobid | name    | starttime           | type | level | jobfiles | jobbytes␣
↪| jobstatus |
+-------+---------+---------------------+------+-------+----------+----------
↪+-----------+
| 1,087 | Restore | 2025-08-08 15:43:38 | R    | F     |        1 |   48,823␣
↪| T         |
+-------+---------+---------------------+------+-------+----------+----------
↪+-----------+
*
```

The file was successfully restored to the desktop.

> Note
>
> You can download this article as a PDF

2 Bacula Community Installation

Community This guide explains how to install Bacula Community binaries on Debian, Ubuntu and CentOS/RedHat. The examples given in this manual are for Bacula Community binaries 13.0.1. The installation will be made and setup with a PostgreSQL database backend. These binaries have been graciously prepared for the community by Bacula Sys tems SA. Please note that Bacula Systems builds these binaries, but does not provide support for the Bacula Community version. However if there are problems

installing the binaries, you can get help by using the Contacts form on the Bacula Systems Web site https://www.baculasystems.com/contactus. If you need support, please see https://www.bacula.org/support. If you find a bug in Bacula, please verify that it is a bug on the bacula.org email list then submit an issue report at https://gitlab.bacula.org.

By following this guide the software below will be installed:

- Bacula Community binaries
- PostgreSQL (Catalog)

Note

If you intend to use MySQL instead of PostgreSQL, please adapt the commands in this guide and replace "postgresql" with "mysql".

2.1 Requirements

Community

- An up-to-date Operating System.
- We recommend that you have the basic knowledge of PostgreSQL administration.
- If you have previously installed Bacula either from a distribution site such as Ubuntu or CentOS, or if you have built Bacula and installed it from source, you will most likely need to save your installation, in particular your bacula Director, Client, Storage daemon, and bconsole configuration files (e.g. `bacula-dir.conf`). Then you must uninstall the old Bacula binaries. If you do not do this, you may end up with conflicting binaries or libraries.
- These installation procedures install all the Bacula binary and source files (with the exception of certain system startup scripts) in the directory /opt/bacula. The directory structure of the installation is the standard recommended directory structure documented in the manual. The main directories are `/opt/bacula/bin` (binaries), `/opt/bacula/etc` (configuration files), `/opt/bacula/lib` (shared object libraries), `/opt/bacula/plugins` (plugins such a bpipe), `/opt/bacula/scripts` (helper scripts such as mtx-changer) and /opt/bacula/working (Bacula daemon temporary files).

2.2 Debian: Installation with apt

Community

Additional Package Installation

Community To use Bacula Community repositories, you need to install the following package:

```
apt-get update
apt-get install apt-transport-http
```

Import GPG Key

Community The packages are signed with a GPG key signature that you can find at the Bacula download area: https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-key.asc

You can install this key on your system as follows:


```
cd /tmp
wget https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-
↪key.asc
apt-key add Bacula-4096-Distribution-Verification-key.asc
rm Bacula-4096-Distribution-Verification-key.asc
```

apt Package Manager Configuration

Community Add the following entries to a new file called:

`/etc/apt/sources.list.d/Bacula-Community.list`,

adapting the URL to point to your personal Download Area. Also, please pay careful attention to use the correct Bacula Community version and platform in the URL.

```
#Bacula Community
deb https://www.bacula.org/packages/@access-key@/debs/@bacula-version@␣
↪@debian-version@ main
```

For example for Debian Buster use:

```
#Bacula Community
deb https://www.bacula.org/packages/@access-key@/debs/13.0.1 buster main
```

Where:

- `@access-key@` refers to your personalized access key. This is the trailing path component sent in the registration email. Copying the URI from that email will be one of the simplest ways to set this up correctly.
- `@bacula-version@` should be replaced by the version of Bacula Community you are installing (e.g. 13.0.1)
- `@debian-version@` is the code name of the distribution (such as "jessie", "wheezy", or "squeeze")

Complete example:

```
#Bacula Community
deb https://www.bacula.org/packages/abc123defxxxyyy/debs/13.0.1 buster main
```

Package Installation

Community

Update Package Manager

Run `apt-get update` to update the package system and verify that your Bacula Community repositories are correctly configured.

Install Catalog Database Server

If PostgreSQL is not already installed, please run this command to install it:

```
apt-get install postgresql postgresql-client
```

Install Bacula Community Software

Run this command to install the packages:

```
apt-get install bacula-postgresql
```

`apt-get` will ask if you want to "Configure database for bacula-postgresql with dbconfig-common?" Choose "Yes", then enter a password and confirm it. Please now go to the Security and Permissions Considerations chapter and continue the installation from there. If you run into trouble or have an error mes sage while installing or configuring your Bacula Community binaries, please contact Support.

Install Aligned Plugin

If you want to use the Aligned Plugin for deduplication on systems such as ZFS, you must explicitly load that plugin with something like:

```
apt-get install bacula-aligned
```

Keep in mind that to actually use the plugin, you must configure it and restart the Storage Daemon.

2.3 Ubuntu: Installation with apt

Community

Additional Package Installation

Community To use Bacula Community repositories, you need to install the following package:

```
apt-get update
apt-get install apt-transport-https
```

Import GPG Key

Community The packages are signed with a GPG key signature that you can find at the root of your download area: https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-key.asc

You can install this key on your system as follows:

```
cd /tmp
wget https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-
↪key.asc
apt-key add Bacula-4096-Distribution-Verification-key.asc
rm Bacula-4096-Distribution-Verification-key.asc
```

apt Package Manager Configuration

Community Add the following entries to a new file called `/etc/apt/sources.list.d/Bacula-Community.list`, adapting the URL to point to your Download Area. Also, please pay careful attention to use the correct Bacula Community version and platform in the URL.

```
#Bacula Community
deb [arch=amd64] https://www.bacula.org/packages/@access-key@/debs/@bacula-
↪version@ @ubuntu-version@ main
```


Note

Please, concatenate the last 2 lines into 1 line.

Note

`[arch=amd64]` is mandatory only for a 64 bit system.

Where:

- `@access-key@` refers to your personalized area string. This is the trailing path component sent in the registration email. Copying the URI from that email will be one of the simplest ways to set this up correctly.
- `@bacula-version@` should be replaced by the version of Bacula Community you are using (e.g. 13.0.1).
- `@ubuntu-version@` is the code name of the distribution ("xenial" or "bionic", for example).

Complete example:

```
#Bacula Community
deb [arch=amd64] https://www.bacula.org/packages/abc123defxxxyyy/debs/13.0.1␣
↪xenial main
```

Note

Please, concatenate the last 2 lines into 1 line.

Package Installation

Community

Update Package Manager

Run `apt-get update` to update the package system and verify your Bacula repositories are correctly configured.

Install Database Engine

If PostgreSQL is not already installed, please run this command to install it:

```
apt-get install postgresql postgresql-client
```

Install Bacula Community Software

Run this command to install the packages:

```
apt-get install bacula-postgresql
```

`apt` will ask you if you want to "Configure database for bacula-postgresql with dbconfig-common?" Choose "Yes", then enter a password and confirm it. Please now go to the Security and Permissions Considerations chapter and continue the installation from there.

If you run into trouble or have an error message while installing or configuring your Bacula Community infrastructure, please contact Support.

Install Aligned Plugin

If you want to use the Aligned Plugin for deduplication on systems such as ZFS, you must explicitly load that plugin with something like:

```
apt-get install bacula-aligned
```

Keep in mind that to actually use the plugin, you must configure it and restart the Storage Daemon.

2.4 CentOS/RedHat 7: Installation with yum

Community

Import GPG Key

Community In order to use Bacula Community signed packages, you need to import the GPG key.

```
cd /tmp
wget https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-
↪key.asc
rpm--import Bacula-4096-Distribution-Verification-key.asc
rm Bacula-4096-Distribution-Verification-key.asc
```

yum Package Manager Configuration

Community Add the following entries to your `/etc/yum.repos.d/Bacula.repo` file:

```
[Bacula-Community]
name=CentOS- Bacula- Community
baseurl=https://www.bacula.org/packages/@access-key@/rpms/@bacula-version@/
↪el7/x86_64/
enabled=1
protect=0
gpgcheck=1
gpgkey=https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-
↪key.asc
```

Where:

- `@access-key@` refers to your personalized area string. This is the trailing path component sent in the registration email. Copying the URI from that email will be one of the simplest ways to set this up correctly.
- `@bacula-version@` should be replaced by the version of Bacula you intend to install (for example, 13.0.1).

Complete example:

```
[Bacula-Community]
name=CentOS- Bacula- Community
baseurl=https://www.bacula.org/packages/9812439823589/rpms/13.0.1/el7/x86_64/
enabled=1
protect=0
gpgcheck=1
```


Package Installation

Community

Install Database Engine

If PostgreSQL is not already installed, please run this command to install it:

```
yum install postgresql-server
```

Initialize and set the PostgreSQL database to auto-start at boot:

```
postgresql-setup initdb
systemctl enable postgresql.service
```

Install Bacula Community Software

Run this command to install the packages:

```
yum install bacula-postgresql
```

Final Configuration

Start PostgreSQL database

```
systemctl start postgresql.service
```

Please run the following commands to create the database and grant ownership:

```
su- postgres
/opt/bacula/scripts/create_postgresql_database
/opt/bacula/scripts/make_postgresql_tables
/opt/bacula/scripts/grant_postgresql_privileges
exit
```

Launch the services:

```
systemctl start bacula-fd.service
systemctl start bacula-sd.service
systemctl start bacula-dir.service
```

Please use systemctl to start, stop or restart your Bacula daemons. By default, PostgreSQL uses the IDENT method and will thus recognize and accept the local user "bacula" without further credentials. If you are using tape libraries, you might want to add the bacula user to the "tape" group:

```
gpasswd-a bacula tape
```

Please now go to the Security and Permissions Considerations chapter and continue the installation from there. If you run into trouble or have an error message while installing or configuring your Bacula infrastructure, please contact Support.

Install Aligned Plugin

If you want to use the Aligned Plugin for deduplication on systems such as ZFS, you must explicitly load that plugin with something like:

```
yum install bacula-aligned
```


Keep in mind that to actually use the plugin, you must configure it and restart the Storage Daemon.

2.5 CentOS/RedHat 6: Installation with yum

Community

Import GPG Key

Community In order to use Bacula Community signed packages, you need to import the GPG key.

```
cd /tmp
wget https://www.bacula.org/downloads/Bacula-4096-Distribution-Verification-
↪key.asc
rpm--import Bacula-4096-Distribution-Verification-key.asc
rm Bacula-4096-Distribution-Verification-key.asc
```

yum Package Manager Configuration

Community Add the following entries to your /etc/yum.repos.d/Bacula.repo file:

```
[Bacula-Community]
name=CentOS- Bacula- Community
baseurl=https://www.bacula.org/packages/@access-key@/rpms/@bacula-version@/
↪el6/x86_64/
enabled=1
protect=0
gpgcheck=1
```

Where:

- `@access-key@` refers to your personalized area string. Welcome Package This is the trailing path component sent in the registration email. Copying the URI from that email will be one of the simplest ways to set this up correctly.
- `@bacula-version@` should be replaced by the version of Bacula you intend to install (for example, 13.0.1)

Complete example:

```
[Bacula]
name=CentOS- Bacula- Community
baseurl=https://www.bacula.org/packages/93798457130918/rpms/13.0.1/el6/x86_64/
enabled=1
protect=0
gpgcheck=1
```

Package Installation

Community

Install Database Engine

If PostgreSQL is not already installed, please run this command to install it:

`yum install postgresql-server`

Initialize and set the PostgreSQL database to auto-start at boot:


```
service postgresql initdb
chkconfig postgresql on
```

Install Bacula Software

Run this command to install the packages:

```
yum install bacula-postgresql
```

Final Configuration

Start PostgreSQL database

```
service postgresql start
```

Please run the following commands to create the database and grant ownership:

```
su- postgres
/opt/bacula/scripts/create_postgresql_database
/opt/bacula/scripts/make_postgresql_tables
/opt/bacula/scripts/grant_postgresql_privileges
exit
```

Launch services:

```
/opt/bacula/scripts/bacula start
```

By default, PostgreSQL uses the IDENT method for authentication, and the Bacula director running as the local user "bacula" is allowed to access the database. If you are using tape libraries, you might want to add the bacula user to the "tape" group:

```
gpasswd-a bacula tape
```

Please now go to the Security and Permissions Considerations chapter and continue the installation from there. If you run into trouble or have an error message while installing or configuring your Bacula infrastructure, please contact Support.

Install Aligned Plugin

If you want to use the Aligned Plugin for deduplication on systems such as ZFS, you must explicitly load that plugin with something like:

```
yum install bacula-aligned
```

Keep in mind that to actually use the plugin, you must configure it and restart the Storage Daemon.

2.6 Security and Permissions Considerations

Community In order to allow the different elements of your Bacula to communicate, you need to open the following network ports:

- Director: 9101 (TCP)
- Storage Daemon: 9103 (TCP)
- File Daemon: 9102 (TCP)

If your database is located on another server please also open the appropriate ports:

- postgresql: 5432 (TCP and UDP)

Please set up your IPtables or Packet Filters rules to enable this communication. Also check your SELinux/App Armor security rules to enable the following processes to run and be accessible:

- `/opt/bacula/bin/bacula-dir running as user bacula`
- `/opt/bacula/bin/bacula-sd running as user bacula`
- `/opt/bacula/bin/bacula-fd running as user root`

2.7 Infrastructure Test

Community Now that Bacula components are installed you can run this small test to check if everything is working correctly:

```
sudo -u bacula /opt/bacula/bin/bconsole
```

Then enter the following commands:

```
*run job=BackupCatalog
*messages
*status dir
*quit
```

Example output can be expected to be similar to what we show now.

Output of the bconsole command messages:

```
27-Jun 12:29 cos7-dir JobId 1: shell command: run BeforeJob "/opt/bacula/
↪scripts/[...]
27-Jun 12:29 cos7-dir JobId 1: Start Backup JobId 1, Job=BackupCatalog.2017-
↪06-27[...]
27-Jun 12:29 cos7-dir JobId 1: Created new Volume="Vol-0001", Pool="File",␣
↪MediaT[...]
27-Jun 12:29 cos7-dir JobId 1: Using Device "FileChgr1-Dev1" to write.
27-Jun 12:29 cos7-sd JobId 1: Labeled new Volume "Vol-0001" on file device
↪"FileC[...]
27-Jun 12:29 cos7-sd JobId 1: Wrote label to prelabeled Volume "Vol-0001" on␣
↪file[...]
27-Jun 12:29 cos7-sd JobId 1: Elapsed time=00:00:01, Transfer rate=57.53 K␣
↪Bytes/[...]
27-Jun 12:29 cos7-sd JobId 1: Sending spooled attrs to the Director.␣
↪Despooling 2[...]
27-Jun 12:29 cos7-dir JobId 1: Bacula cos7-dir 8.6.1 (16Jun16):
  Build OS:                x86_64-centos-linux-gnu-bacula centos[...]
  JobId:                   1
  Job:                     BackupCatalog.2017-06-27_12.29.26_03
  Backup Level:            Full
  Client:                  "cos7-fd" 8.6.1 (16Jun16) x86_64-centos-linux-gnu-
↪bacul[...]
  FileSet:                 "Catalog" 2017-06-27 12:29:26
  Pool:                    "File" (From Job resource)
  Catalog:                 "MyCatalog" (From Client resource)
  Storage:                 "File1" (From Job resource)
  Scheduled time:          27-Jun-2017 12:29:23
```

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```
  Start time:               27-Jun-2017 12:29:29
  End time:                 27-Jun-2017 12:29:30
  Elapsed time:             1 sec
  Priority:                 11
  FD Files Written:         1
  SD Files Written:         1
  FD Bytes Written:         57,413 (57.41 KB)
  SD Bytes Written:         57,530 (57.53 KB)
  Rate:                     57.4 KB/s
  Software Compression:     None
  Comm Line Compression:    76.9% 4.3:1
  Snapshot/VSS:             no
  Encryption:               no
  Accurate:                 no
  Volume name(s):           Vol-0001
  Volume Session Id:        1
  Volume Session Time:      1467023339
  Last Volume Bytes:        58,179 (58.17 KB)
  Non-fatal FD errors:      0
  SD Errors:                0
  FD termination status:    OK
  SD termination status:    OK
  Termination:              Backup OK

27-Jun 12:29 cos7-dir JobId 1: Begin pruning Jobs older than 6 months .
27-Jun 12:29 cos7-dir JobId 1: No Jobs found to prune.
27-Jun 12:29 cos7-dir JobId 1: Begin pruning Files.
27-Jun 12:29 cos7-dir JobId 1: No Files found to prune.
27-Jun 12:29 cos7-dir JobId 1: End auto prune.

27-Jun 12:29 cos7-dir JobId 1: shell command: run AfterJob "/opt/bacula/
↪scripts/d[...]
```

Output of bconsole command status dir:

```
cos7-dir Version: 8.6.1 (16 June 2017) x86_64-centos-linux-gnu-bacula- [...]
Daemon started 27-Jun-16 12:28, conf reloaded 27-Jun-2017 12:28:59
 Jobs: run=1, running=0 mode=0,2010
 Heap: heap=241,664 smbytes=97,781 max_bytes=128,045 bufs=295 max_bufs=327
 Res: njobs=3 nclients=1 nstores=2 npools=3 ncats=1 nfsets=2 nscheds=2

Scheduled Jobs:
Level           Type     Pri  Scheduled          Job Name           Volume
===================================================================================
Incremental     Backup    10   27-Jun-16 23:05    BackupClient1      Vol-0001
Full            Backup    11   27-Jun-16 23:10    BackupCatalog      Vol-0001
====

Running Jobs:
Console connected at 27-Jun-16 12:29
No Jobs running.
====
```

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```
Terminated Jobs:
 JobId   Level   Files      Bytes    Status   Finished        Name
====================================================================
    1    Full        1     57.41 K   OK       27-Jun-16 12:29 BackupCatalog
====
```

If you run into trouble or have an error message while installing or configuring your Bacula infrastructure, please contact Support.

2.8 Bacula Fine Tuning

Community

Best Practices

Please refer to the Bacula manuals, available at https://www.bacula.org.

- We recommend a PostgreSQL backend to run Bacula.
- Design a backup strategy in case of disaster recovery (more information is available in the chapter "Critical Items to Implement Before Production" in the Main Manual)
  - For example, backup your catalog and store the `.bsr` (bootstrap) file in a safe location.
  - For example, backup your DIR and SD configuration files (if you are using Baculum, please backup its `conf.d/` folder).

As a best practice, document your backup design to provide a good overview and enhance the understanding of your backup infrastructure. Please test your tape library infrastructure following the instructions in the chapter named "btape" in the Utility Manual

PostgreSQL Catalog

On Debian, to change the catalog password, please run the commands:

```
#su- postgres
$psql
postgres=# alter user bacula with password 'your_new_password';
postgres=# \q
```

Then you must put the new password in `/opt/bacula/etc/bacula-dir.conf` as shown below:

```
  Catalog {
    Name = MyCatalog
    dbname = "bacula"; dbuser = "bacula"; dbpassword = "your_new_password"
  }

Restart the bacula-dir service:
```

```
/etc/init.d/bacula-dir restart
#or, on more recent versions,
#systemctl restart bacula-dir.service
```


2.9 Upgrade

Community Here are some easy, step-by-step instructions to help you upgrade your Bacula infrastructure. Please remember to always have the Director and Storage Daemon(s) at the same version level. You can upgrade the File Daemons of your clients afterwards. On the Director and any Storage Daemon machine(s), the File Daemon version must also match the DIR or SD version on that machine. For other machines the FD version may be less than or equal to the DIR and SD, but not greater.

Configuration Files

Community Please backup your main configuration. file folder (the content of `/opt/bacula/etc`) as well as any other files (script, services) you created or modified. If you are using Bacula plugin(s), please backup the `/opt/bacula/working` directory too. The upgrade will overwrite your service files, startup files, and some scripts, but it will not overwrite any `.conf` files.

Catalog

Community Have a database backup of your Catalog. You can dump it onto temporary media following these instructions:

```
#sudo-u bacula /opt/bacula/scripts/make_catalog_backup.pl MyCatalog
#cp /opt/bacula/working/bacula.sql /tmp
```

Change `/tmp` to any mount point you prefer.

Repository Update

Community You need to modify your `Bacula.repo` or `Bacula.list` file in order to reflect the version released in your Download Area.

Minor Upgrade

Community A minor upgrade is an upgrade of the last version number part, for example from 9.0.5 to 9.0.8. Any other upgrade is considered a major upgrade, thus you should refer to the Major Upgrade section.

Just use your package manager to upgrade the different bacula services and plugins. If you run into trouble or have any error messages while upgrading your Bacula infrastructure, please contact Support.

2.10 Configuring New Client (File Daemon)

Community Adding a Client is very simple in Bacula. You need to define a new Client Resource in the Director configuration and then install and configure the File Daemon to enable communication with the Director.

This chapter assumes that you have a working Director already configured. Examples are given for a basic installation.

Installing File Daemon Service on Client

Community Before configuring, you need to install the client package. You can find them in your Download Area. The process is the same as installing the Director and the Storage Daemon, you configure your package manager then use:

```
#apt-get install bacula-client
```

or


```
#yum install bacula-client
```

On a Windows System, simply launch the `bacula-enterprise-win64-X.Y.Z.exe` installer and follow the instructions. Naturally, for 32-bit systems, you would select the installer indicating 32-bit architecture in its file name.

Defining New Client Resource

Community Edit your `/opt/bacula/etc/bacula-dir.conf` and add a Client Resource like:

```
Client {
  Name = new-client-fd # Client resource name
  Address = new.client.yourdomain # FQDN address of the client
  FDPort = 9102                   # Port used
  Catalog = MyCatalog             # Catalog used
  Password = "4m4z1ngP4ssw0rd"    # password for FileDaemon
  File Retention = 60 days        # Catalog file retention : 60 days
  Job Retention = 6 months        # Catalog Job retention : 6 months
  AutoPrune = yes                 # Prune expired Jobs/Files
}
```

Once added, verify the syntax with:

```
#/opt/bacula/bin/bacula-dir-t-u bacula-g bacula
```

If no errors are reported, you can reload your configuration using bconsole:

```
#sudo-u bacula /opt/bacula/bin/bconsole
*reload
```

Setting Up File Daemon

Community On the Client machine, you need to edit the `bacula-fd.conf` file. On GNU/Linux and Unix it is in `/opt/bacula/etc/bacula-fd.conf` by default. On Windows, the file is in `C:\Program Files\Bacula\`.

In this file, you need to configure the communication with the Director as well as the Message resource and the File Daemon options:

```
Director {
  Name = bacula-dir             # Name of your Director
  Password = "4m4z1ngP4ssw0rd"  # Password set for the Client resource
}
[...]
FileDaemon {
  Name = new-client-fd                      # Client resource name
  FDport = 9102                             # Port used for the File Daemon␣
↪service
  WorkingDirectory = /opt/bacula/working    # Working Directory location
  Pid Directory = /opt/bacula/working       # Pid Directory location
  Maximum Concurrent Jobs = 2               # Number of Maximum Concurrent␣
↪Jobs
  Plugin Directory = /opt/bacula/plugins    # Plugin Directory location
}
[...]
```


Don't forget to edit the Message resource:

```
Messages {
  Name = Standard
  director = bacula-dir = all, !skipped, !restore
}
```

Test your modifications with the following command:

```
# /opt/bacula/bin/bacula-fd-t-u bacula-g bacula
```

On Windows:

```
C:\Program Files\Bacula\bacula-fd.exe-t-c C:\Program Files\Bacula\bacula-fd.
conf
```

If no errors are reported, restart the File Daemon service:

On Linux:

```
#service bacula-fd restart
```

or

```
#systemctl restart bacula-fd
```

On Windows:

Use the Configuration Panel's Services application

or

```
C:\ net start bacula-fd
```

Verify Installation

Community Now that the Client Resource is configured in the Director and the File Daemon is launched, you can see the status of your Client with bconsole:

```
#sudo-u bacula /opt/bacula/bin/bconsole
Connecting to Director cos7:9101
1000 OK: 10002 cos7-dir Version: 8.6.1 (16 June 2017)
Enter a period to cancel a command.

* status client=new-client-fd
Connecting to Client new-client-fd at cos6:9102

new-client-fd Version: 8.6.1 (16 June 2017) x86_64-centos-linux-gnu-bacula␣
↪centos release
Daemon started 27-Jun-16 12:28. Jobs: run=1 running=0.
 Heap: heap=135,168 smbytes=4,636,621 max_bytes=4,846,424 bufs=137 max_
↪bufs=160
 Sizes: boffset_t=8 size_t=8 debug=0 trace=0 mode=0,2010 bwlimit=0kB/s
 Plugin: bpipe-fd.so

Running Jobs:
Director connected at: 27-Jun-16 12:34
No Jobs running.
====
```

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```
Terminated Jobs:
 JobId    Level    Files    Bytes   Status   Finished       Name
====================================================================
     1     Full       37     34 M      OK   26-Jun-16 13:05 BackupClient2
====
```

Note

You can also verify that plugins are installed. In the above example, we can see that the bpipe plugin is installed on this Client.

