NovaStor®

DataCenter 6

Installation Manual

Copyright

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1 Command Server-Installation

Download the installation program now. For each NB DataCenter version there is a dedicated FTP user account on NovaStor FTP server ftp.ham.novastor.com. You can get the credentials from NovaStor support sending a mail to ixtsupport@novastor.com.

The NB DataCenter installer packages are located in the sub-directory /dc_installer/.

The file naming convention for the commandserver installers is:

CmdSrv-DataCenter-version-OperatingSystemType-installer.[exe|run]

Where OperatingSystemType can be one of

OperatingSystemType	Comment
linux	for kernel 2.6 32bit
linux-x64	for kernel 2.6 32bit
windows-x86	for Windows 32bit
windows-x64	for Windows 32bit

The extension *exe* is used for OperatingSystemType == windows, all other OperatingSystemType use the file extension *run*. Example for the Linux 32bit CS installer package name:

CmdSrv-DataCenter-5.00.00-linux-installer.run

All commandserver installers bring a number of components and install it below the NB DataCenter install directory. The components are:

Automation engine   the scheduler

EJB container   the persistency layer for DB accesses

Derby DB   the central management DB

Dispatcher   the commander

Executor   the command executor

The remainder of this section shows the GUI and the commandline installation of a CS on Linux system. The installation look-and-feel as well as the installation procedure is identical for all operating systems.

The result of the installation is written to file installdir/DataCenter-installLog.log in any case.

1.1 Linux pre-install check

Some Linux distributions (Ubuntu) do not contain a proper /bin/sh executable, instead a link to /bin/dash exists. In order to make the installation of the commandserver properly, replace the link by /bin/bash

```
ln –s /bin/bash /bin/sh
```

or use the Debian reconfigure command

```
sudo dpkg-reconfigure dash
```

by answering the question if dash shall be installed as /bin/sh with No.

Otherwise you may get problems in later parts of the installation process (set-up)and the EJB container will not be available.

1.2 Commandserver firewall rules

Firewall rules:

Incoming

Baseport+0 (GUI)

Baseport+1 (Executor)

Outgoing

Baseport+0 (GUI)

Baseport+1 (Executor)

1.3 Installation in graphic mode

Transfer the appropriate installer package into a directory of your proposed commandserver system.

On Windows, you can start the installer right away, yet it is recommended to start the executable in admin mode (right-click the file, choose "run as admin").

On Linux/UNIX, pre-requisite is an appropriate X-display as you can set it with

    export DISPLAY=$MyXDisplay:0.0

. The installation screenshots following are taken from a Linux GUI installation. They are identical on Windows or UNIX.

1. Double-click or commandline-start CmdSrv-DataCenter-5.00.00-linux-x64-installer.run (or CmdSrv-DataCenter-5.00.00-linux-installer.run on a 32bit Linux).
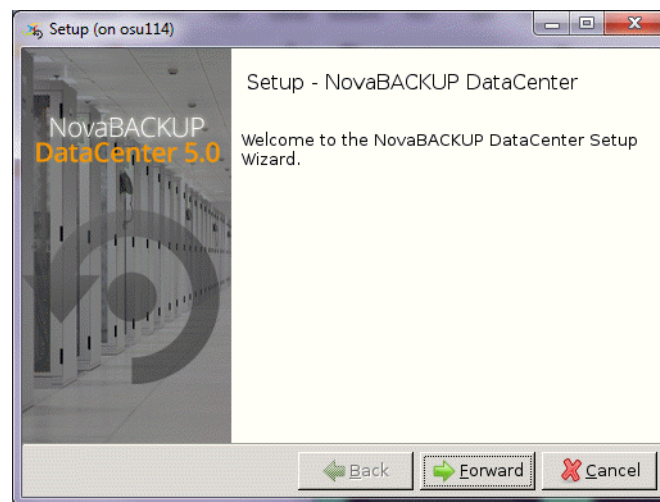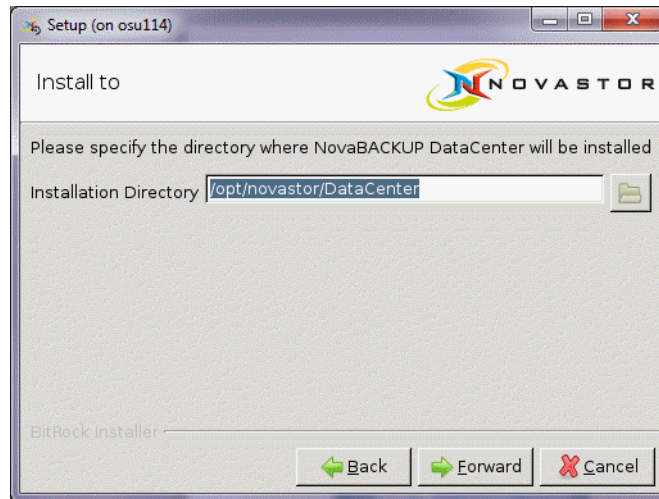
2. Click [Forward].

3. Specify an installation directory and click [Forward].
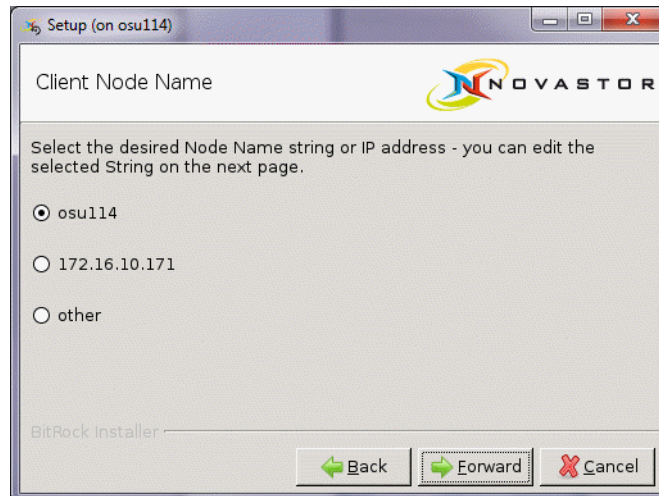
4. The client node name is the system name in the central management data-base. Select a name and click [Forward].
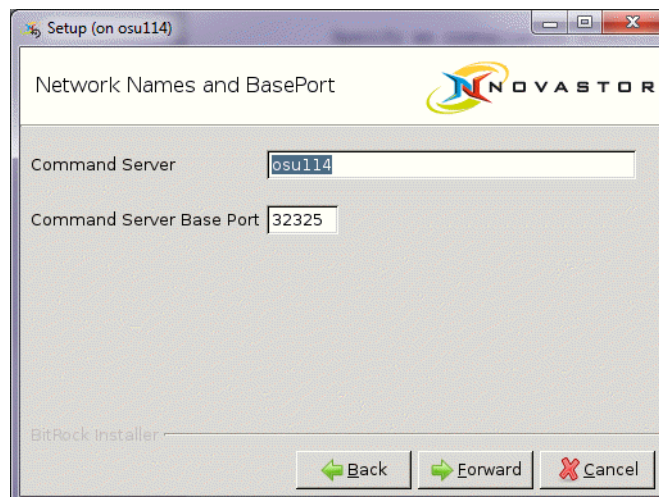
5. Specify either resolvable hostname (FQDN or short) or IP address for [Command Server] and the base network port for [Port]. The base network port defines the start of a range of ports which are used for the central management communication to and from the commandserver.

6. Click [Forward].
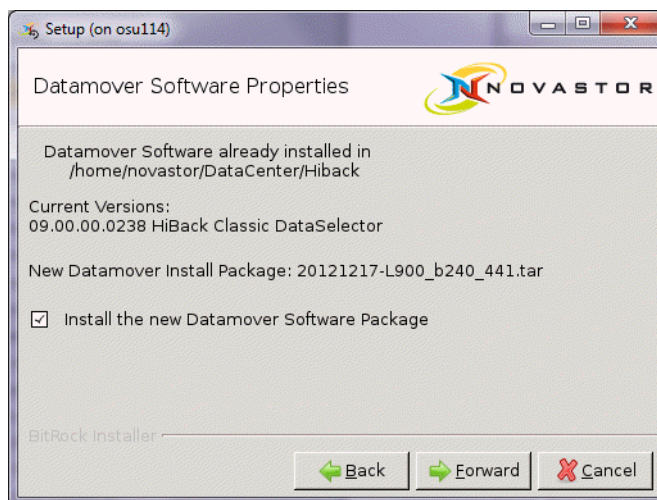
7. Click [Forward].
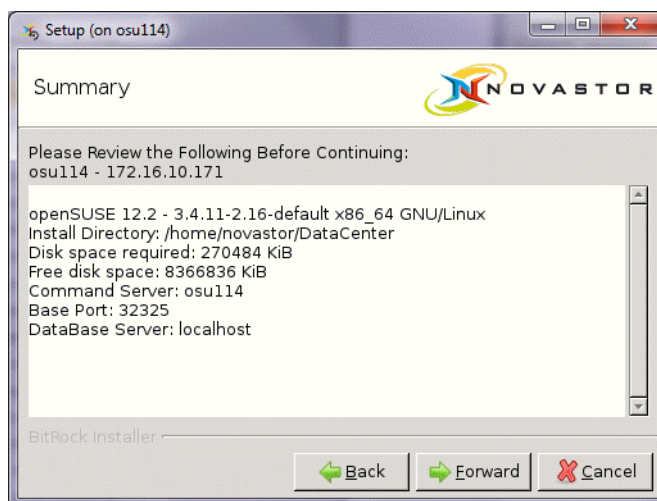
8. Check the settings in the pre-installation summary and correct the settings (navigate [Back] and change the settings) if necessary. Otherwise click [Forward].
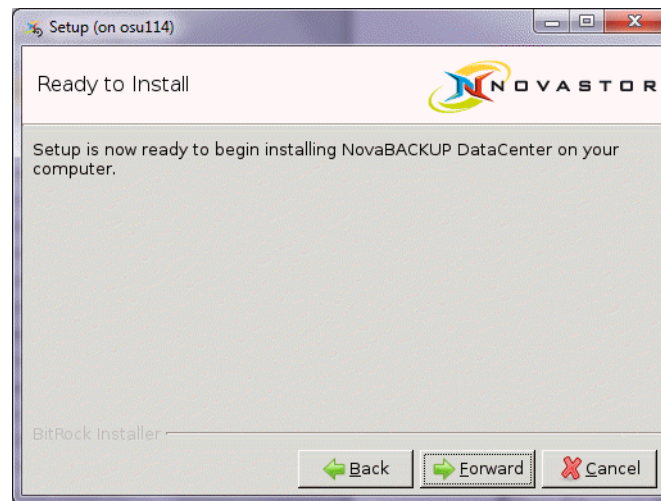
9. Click [Forward].
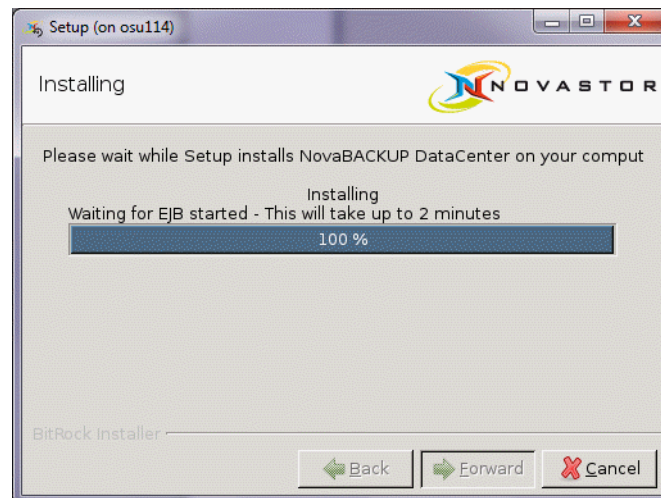
⇨ Intermediately, the above status screen will be shown. It indicates that the startup procedure of the EJB container may take up to 2 minutes. Once the EJB is started, the final installer screen appears:
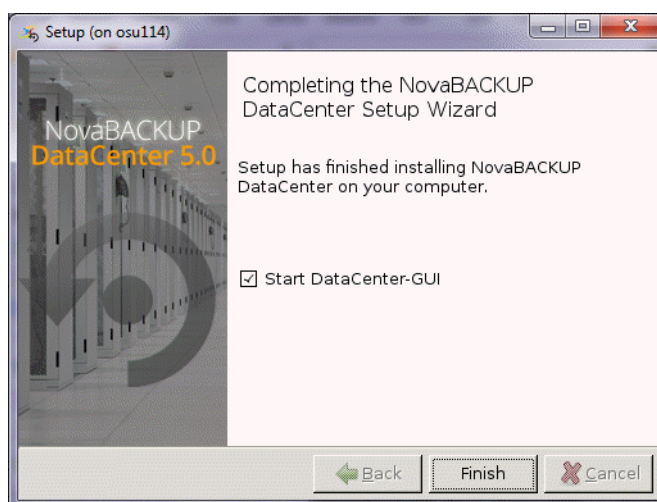
10.   Click [Finish] to start the DataCenter GUI.

1.4 Installation in text mode

The installer executable changes to text mode if a graphical display could not be opened.

```
osu114:/tmp # ./CmdSrv-DataCenter-5.00.00-linux-x64-installer.run

----------------------------------------------------------------------------

Welcome to the NovaBACKUP DataCenter Setup Wizard.

----------------------------------------------------------------------------

Install to

Please specify the directory where NovaBACKUP DataCenter will be installed.

Installation Directory [/opt/novastor/DataCenter]: /home/novastor/DataCenter
```

1. Enter the installation directory or choose the default.

```
--------------------------------------------------------------------------

Client Node Name

Select the desired Node Name string or IP address - you can edit the selected

String on the next page.

Client

[1] osu114

[2] 172.16.10.171

[3] other

Please choose an option [1] : 1
```

2. Enter 1 to choose the hostname of the system (the default).

```
--------------------------------------------------------------------------

Network Names and BasePort

Command Server [osu114]:

Command Server Base Port [32325]:
```

3. Specify either resolvable hostname (FQDN or short) or IP address for [Command Server] and the base network port for [Port]. The base network port defines the start of a range of ports which are used for the central management communication to and from the commandserver.

```
--------------------------------------------------------------------------

Datamover Software Properties

  Datamover Software already installed in

     /home/novastor/DataCenter/Hiback

Current Versions:

09.00.00.0240 HiBack Classic DataSelector

New Datamover Install Package: 20121217-L900_b240_441.tar

Install the new Datamover Software Package [Y/n]: y
```

4. Enter y to install the data mover package.

Summary

Please Review the Following Before Continuing:

osu114 - 172.16.10.171

openSUSE 12.2 - 3.4.11-2.16-default x86_64 GNU/Linux

Install Directory: /home/novastor/DataCenter

Disk space required: 270484 KiB

Free disk space: 8366596 KiB

Command Server: osu114

Base Port: 32325

DataBase Server: localhost

Press [Enter] to continue :

5. Enter to continue.

Setup is now ready to begin installing NovaBACKUP DataCenter on your computer.

Do you want to continue? [Y/n]: y

6. Enter y to perform the install.

Please wait while Setup installs NovaBACKUP DataCenter on your computer.

Installing

0% _____ 50% _____ 100%

##

Setup has finished installing NovaBACKUP DataCenter on your computer.

7. To start the GUI on Linux, define a DISPLAY and start the GUI executable.

```
osu114:/tmp # cd /home/novastor/DataCenter/gui-client/

osu114:/home/novastor/DataCenter/gui-client # export DISPLAY=172.16.0.180:0.0

osu114:/home/novastor/DataCenter/gui-client # ./DataCenter-GUI.run
```

1.5 Commandserver services

The names of the services installed on a commandserver are:

derby	the central management DB
openejb	the DB communication layer
automation-engine	the scheduler
rcmd-dispatcher	the commander
rcmd-executor	the command executor

1.6 Start/stop of UNIX/Linux service

The start/stop/status commands for the services differ depending on which Init Daemon is used (rc/classic, upstart or system).

1.6.1 Classic init

An entry in /etc/inittab for the respective executable is made. The respawn option is used to automatically restart the executable.

Example /etc/inittab entry:

0:2345:respawn:/opt/novastor/DataCenter/rcmd-executor/rcmd-executor run

Special start/stop scripts are shipped which are located in the service respective subdirectories of the installation directory.

Command syntax example:

$installdir/rcmd-executor/rcmd-executor stop

$installdir/rcmd-executor/rcmd-executor start

1.6.2 systemctl

The systemctl config file location is

/etc/systemd/system/{servicename}.service

Command syntax for systemctl:

systemctl start {servicename}.service

systemctl start {servicename}.service

systemctl start {servicename}.service

Example:

systemctl status rcmd-executor.service

1.6.3 upstart

The upstart config file location is

/etc/init/{servicename}.conf

Command syntax for upstart:

start servicename

start servicename

stop servicename

The commands can be called interactively. Nevertheless they are called at each system startup and start the NovaStor Datacenter service executables.

Example:

status rcmd-executor

1.7 Start/stop of Windows services

The service names on Windows are

Display Name	Service Name
NBK DC Derby DB	DerbyDB
NBK DC OpenEJB Server	OpenEJBServer
NBK DC Automation Engine	AutomationEngine
NBK DC Remote Command Dispatcher@Port:port	rcmd-dispatcher@port:port
NBK DC Remote Command Executor@Port:port	rcmd-executor@port:port

Where port is the actual network port number of the service.

The start/stop mechanisms for Windows services are either the sc command or the graphical service manager interface command (Start->services.msc).

Examples the sc command (open a DOS box to run the command):

Stop of DerbyDB

sc stop DerbyDB

Start of OpenEJB Server

sc start OpenEJBServer

2 Client Installation

Download the installation program now. For each NB DataCenter version there is a dedicated FTP user account on NovaStor FTP server ftp.ham.novastor.com. You can get the credentials from NovaStor support sending a mail to ixtsupport@novastor.com.

The NB DataCenter installer packages are located in the sub-directory /dc_installer/.

The file naming convention for the client installers is:

CmdSrv-DataCenter-version-OperatingSystemType-installer.[exe|run]

Where OperatingSystemType can be one of

OperatingSystemType	Comment
linux	for kernel 2.6 32bit
linux-x64	for kernel 2.6 32bit
windows-x86	for Windows 32bit
windows-x64	for Windows 32bit

The extension *exe* is used for OperatingSystemType == windows, all other OperatingSystemType use the file extension *run*. Example for the Linux 32bit CS installer package name:

Client-DataCenter-5.00.00-linux-installer.run

All client installers brings one component and install it below the NB DataCenter install directory. The component is the command executor (rcmd-executor).

The result of the installation is written to file installdir/DataCenter-installLog.log in any case.

2.1 Linux pre-install check

Some Linux distributions (Ubuntu) do not contain a proper /bin/sh executable, instead a link to /bin/dash exists. In order to make the installation of the commandserver properly, replace the link by /bin/bash

```
ln –s /bin/bash /bin/sh
```

or use the Debian reconfigure command

```
sudo dpkg-reconfigure dash
```

by answering the question if dash shall be installed as /bin/sh with No.

Otherwise you may get problems in later parts of the installation process.

2.2 Client firewall rules

Firewall rules:

Incoming

Baseport+1 (Executor)

Outgoing

Baseport+0 (GUI)

Baseport+1 (Executor)

2.3 Installation in graphic mode

Transfer the appropriate installer package into a directory of your proposed commandserver system.

On Windows, you can start the installer right away, yet it is recommended to start the executable in admin mode (right-click the file, choose "run as admin").

On Linux/UNIX, pre-requisite is an appropriate X-display as you can set it with

```
export DISPLAY=$MyXDisplay:0.0
```

. The installation screenshots following are taken from a Linux GUI installation. They are identical on Windows or UNIX.

1. Double-click or commandline-start Client-DataCenter-5.00.00-linux-x64-installer.run (or Client-DataCenter-5.00.00-linux-installer.run on a 32bit Linux).
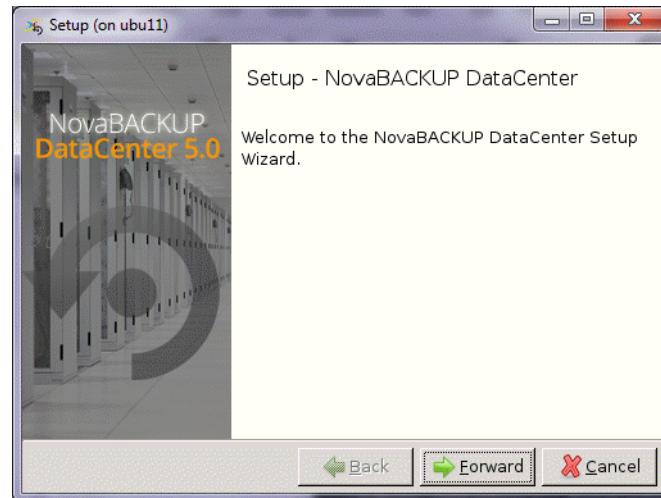
2. Click [Forward].

3. Specify an installation directory and click [Forward].
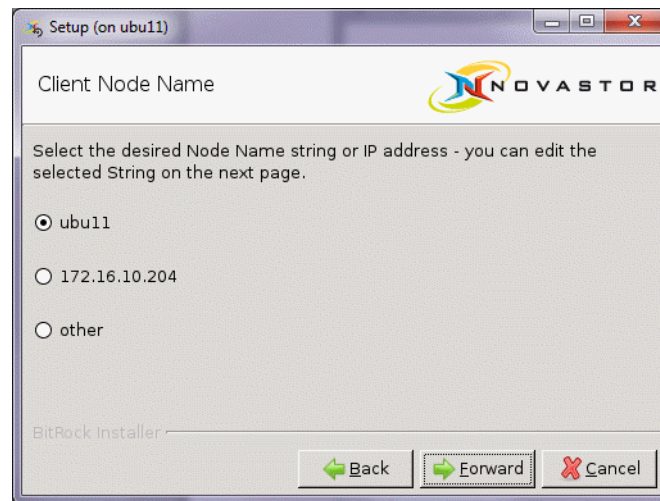
4. The client node name is the system name in the central management data-base. Select a name and click [Forward].
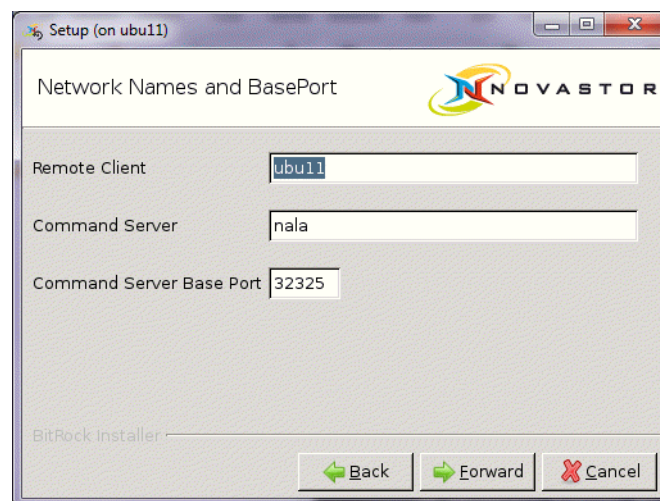
5. Specify either resolvable hostname (FQDN or short) or IP address for [Command Server] and the base network port for [Port]. The base network por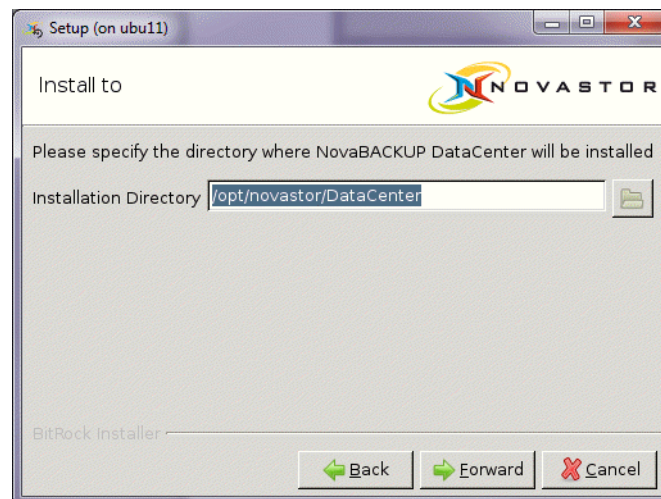t defines the start of a range of ports which are used for the central management communication to and from the commandserver.

All clients working with one commandserver must use the same base port as the commandserver does. The base port determines the target ports used for the connection from the client to the commandserver, from clients to other clients and from commandserver to clients.

On Windows will be opened for the respective ports optionally by the installer.

6. Click [Forward].

Datamover Software Properties

Datamover Software already installed in
/opt/novastor/datacenter/Hiback

Current Versions:
09.00.00.0237 HiBack Classic DataSelector

New Datamover Install Package: 20121217-L900_b240_441.tar

☑ Install the new Datamover Software Package

BitRock Installer

Back   Forward   Cancel

7. Click [Forward].

Summary

Please Review the Following Before Continuing:
ubu11 - 172.16.10.204

Debian 12.04 - 3.2.0-32-generic i386 GNU/Linux
Install Directory: /opt/novastor/DataCenter
Disk space required: 14632 KiB
Free disk space: 12322312 KiB
Command Server: nala
Base Port: 32325

BitRock Installer

Back   Forward   Cancel

8. Click [Forward].

Ready to Install

Setup is now ready to begin installing NovaBACKUP DataCenter on your
computer.

BitRock Installer

Back   Forward   Cancel

9. Click [Forward].

10. The installation is complete. Click [Finish] to quit the installer.

2.4 Installation in text mode

If no graphical environment is available, the installer works in interactive commandline mode.


```
ubu11:/tmp # ./Client-DataCenter-5.00.00-linux-installer.run

----------------------------------------------------------------------------

Welcome to the NovaBACKUP DataCenter Setup Wizard.

----------------------------------------------------------------------------

Install to

Please specify the directory where NovaBACKUP DataCenter will be installed.

Installation Directory [/opt/novastor/DataCenter]:
```

1. Enter the installation directory or choose the default.

```
----------------------------------------------------------------------------

Client Node Name

Select the desired Node Name string or IP address - you can edit the selected

String on the next page.


Client


[1] ubu11

[2] 172.16.10.204

[3] other

Please choose an option [1] : 1
```

2. Enter 1 to choose the hostname of the system (the default).

```
----------------------------------------------------------------------------

Network Names and BasePort


Command Server []: nala


Command Server Base Port [32325]:
```

3. Specify either resolvable hostname (FQDN or short) or IP address for [Command Server] and the base network port for [Port]. The base network port defines the start of a range of ports which are used for the central management communication to and from the commandserver.

```
---------------------------------------------------------------------------

Datamover Software Properties

   Datamover Software already installed in

        /home/novastor/DataCenter/Hiback

Current Versions:

09.00.00.0240 HiBack Classic DataSelector

New Datamover Install Package: 20121217-L900_b240_441.tar

Install the new Datamover Software Package [Y/n]: y
```

4. Enter y to install the data mover package.

```
---------------------------------------------------------------------------

Summary

Please Review the Following Before Continuing:

ubu11 - 172.16.10.204

Debian 12.04 - 3.2.0-32-generic i386 GNU/Linux

Install Directory: /opt/novastor/DataCenter

Disk space required: 14632 KiB

Free disk space: 12321284 KiB

Command Server: nala

Base Port: 32325

Press [Enter] to continue :
```

5. Enter to continue.

```
---------------------------------------------------------------------------

Setup is now ready to begin installing NovaBACKUP DataCenter on your computer.

Do you want to continue? [Y/n]: y
```

6. Enter y to perform the install.

```
------------------------------------------------------------------------

Please wait while Setup installs NovaBACKUP DataCenter on your computer.

Installing

0% _____ 50% _____ 100%

###########################################

------------------------------------------------------------------------
Setup has finished installing NovaBACKUP DataCenter on your computer.
```
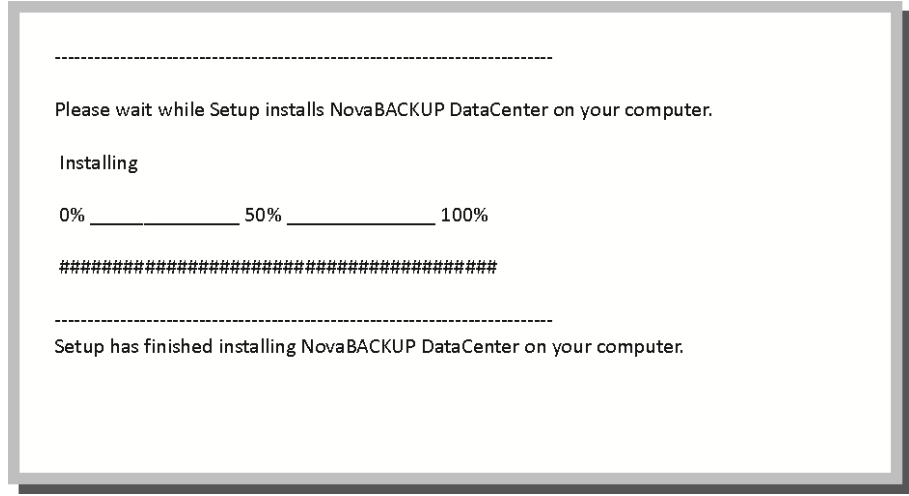
2.5 Client service

The name of the service installed on a client is rcmd-executor (the command executor).

2.6 Start/stop of UNIX/Linux service

The start/stop/status commands for the services differ depending on which Init Daemon is used (classic, upstart or system).

2.6.1 Classic init

An entry in /etc/inittab for the respective executable is made. The respawn option is used to automatically restart the executable.

Example /etc/inittab entry:

0:2345:respawn:/opt/novastor/DataCenter/rcmd-executor/rcmd-executor run

Special start/stop scripts are shipped which are located in the service respective subdirectories of the installation directory.

Command syntax:

$installdir/rcmd-executor/rcmd-executor stop

$installdir/rcmd-executor/rcmd-executor start

2.6.2 systemctl

The systemctl config file location is

/etc/systemd/system/{servicename}.service

Command syntax for systemctl:

systemctl start {servicename}.service

systemctl start {servicename}.service

systemctl start {servicename}.service

Example:

systemctl status rcmd-executor.service

2.6.3 upstart

The upstart config file location is

/etc/init/{servicename}.conf

Command syntax for upstart:

start servicename

start servicename

stop servicename

The commands can be called interactively. Nevertheless they are called at each system startup and start the NovaStor Datacenter service executables.

Example:

status rcmd-executor

2.7 Start/stop of Windows services

The service name on Windows is

Display Name	Service Name
NBK DC Remote Command Executor@Port:port	rcmd-executor@port:port

Where port is the actual network port number of the service.

The start/stop mechanisms for Windows services are either the sc command or the graphical service manager interface command (Start->services.msc).

Examples the sc command (open a DOS box to run the command):

Stop of Command Executor

sc stop rcmd-executor@port:32334

Start of Command Executor

sc start rcmd-executor@port:32334

2.8 Silent install

The NovaStor DataCenter Client silent installation enables to install clients on UNIX, Linux and Windows without GUI intervention.
 Therefore installer is called from the commandline with the main option

--mode unattended

. Additional options to define the object of installation are

--installDir <dirname>

Installation Directory

Default Linux/UNIX: /opt/novastor/DataCenter

Default Windows: C:\Program Files\NovaStor\DataCenter

--RcmdClient <name>

Remote Client name in commandserver DB

Default: Client hostname

--commandServer <address>

Command Server name or address

Default: none

--baseport <portnumber>

Command Server Base Port

Default: 32325

--installHiback [0|1]

Install the new Datamover Software Package

   Default: 1

--rcmdExecutorEnable [Yes|No]

Enable Executor to receive commands from CommandServer through local firewall.

(No) keeps current firewall settings,

(Yes) creates incoming rule for baseport+1.

   Default: No

These options can either be specified in a commandline call of the client installer or they can be put into one option file. The syntax of the option file is

   {optionname}={value}

For example

mode=unattended

installDir=/home/novastor/MyDataCenter

installHiback=1

commandServer=192.168.1.9

baseport=32333

In this example it contains the directives to install an NovaStor DataCenter client in directory /home/novastor/MyDataCenter. This client shall be controlled by commandserver 192.168.1.9 working on base port 32333. Hiback Datamover shall be installed. If Hiback is already installed, the install directory of the existing Hiback installation will be taken, otherwise Hiback will be installed in installDir/Hiback.

The LINUX command line call sequence for a silent install is

./Client-DataCenter-5.00.00-linux-installer.run –-optionfile filename

Where filename has to be substituted by the name of the file containing the options settings.

The Linux command line does not differ from the Windows equivalent except that the installer executable name differs. The result is written to file installDir/DataCenter-installLog.log in any case.