



天翼云备份产品 客户端部署手册

中国电信股份有限公司云计算分公司

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1 安装 Linux NBU8.0 客户端

在 UNIX/LINUX 服务器中，Nebackup Client 的安装步骤基本相同，以 RHEL6 为例说明 Netbackup Client 的安装过程。

安装准备

1. 把主服务器（Master Server）和介质服务器（Media Server）主机名和 IP 地址的对应关系都加入到客户端的/etc/hosts 文件中，并把客户端的主机名和 IP 地址对应关系都分别加入到主服务器（Master Server）/etc/hosts 文件中。
2. 上传 NBU 8.0 客户端所需要的软件包（请在天翼云上下载客户所需的客户端软件包）到客户端指定的路径。如以 RedHat Linux 为例：

```
[root@SH-Oracle-Server ~]# mkdir -p /nbuclient      #新建指定的路径，
把客户端下载到此目录中
[root@SH-Oracle-Server ~]# cd /nbuclient
[root@SH-Oracle-Server nbuclient]#
[root@SH-Oracle-Server nbuclient]# ls
RedHat.Client.tar.gz
[root@SH-Oracle-Server nbuclient]# tar zxvf RedHat.Client.tar.gz  #
解压安装包
NetBackup_8.0_CLIENTS2/Doc/
NetBackup_8.0_CLIENTS2/Doc/NetBackup_Documentation.pdf
NetBackup_8.0_CLIENTS2/install
NetBackup_8.0_CLIENTS2/LICENSE
NetBackup_8.0_CLIENTS2/NBClients/
NetBackup_8.0_CLIENTS2/NBClients/anb/
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/
```

```
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/nbbsdtar  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/VRTSnbclt.rpm  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/cp_to_client  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/VRTSnbpcr.rpm  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/.sizes  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/ftp_to_client  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/VRTSnbjava.rpm  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/nb_init_cfg  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/extract_java  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/VRTSnbjre.rpm  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/install_client  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/ssh_to_client  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/nbj.conf  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/sftp_to_client  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/VRTSspbz.rpm  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/pdinstall  
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/openssl/netbacku  
p/client/Linux/RedHat2.6.18/version
```

```
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/opensv/netbacku
p/client/Linux/RedHat2.6.18/VRTSnbcfg.rpm
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/opensv/netbacku
p/client/Linux/RedHat2.6.18/VRTSpddea.rpm
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/opensv/netbacku
p/client/Linux/RedHat2.6.18/nbcheck
NetBackup_8.0_CLIENTS2/NBClients/anb/Clients/usr/opensv/netbacku
p/client/Linux/RedHat2.6.18/client_config
NetBackup_8.0_CLIENTS2/NBClients/catalog/
NetBackup_8.0_CLIENTS2/NBClients/catalog/anb/
NetBackup_8.0_CLIENTS2/NBClients/catalog/anb/client.inst
NetBackup_8.0_CLIENTS2/VSM_README
[root@SH-Oracle-Server nbuclient]# ls
NetBackup_8.0_CLIENTS2  RedHat.Client.tar.gz
[root@SH-Oracle-Server nbuclient]# cd NetBackup_8.0_CLIENTS2/
[root@SH-Oracle-Server NetBackup_8.0_CLIENTS2]# ls #查看解压后
的目录内容
Doc  install  LICENSE  NBClients  VSM_README
```

3. 确保网络连通并双向开通 TCP 1556、TCP 13724、TCP 13782 端口。

- 客户端与备份服务器通信验证方法

```
[root@SH-Oracle-Server ~]# yum install telnet -y
[root@SH-Oracle-Server ~]# telnet NJ-Master01 1556
[root@SH-Oracle-Server ~]# telnet NJ-Master01 13724
[root@SH-Oracle-Server ~]# telnet NJ-Master01 13782
[root@SH-Oracle-Server ~]# telnet NJ-Media01 1556
[root@SH-Oracle-Server ~]# telnet NJ-Media01 13724
[root@SH-Oracle-Server ~]# telnet NJ-Media01 13782
[root@SH-Oracle-Server ~]# telnet NJ-Media02 1556
[root@SH-Oracle-Server ~]# telnet NJ-Media02 13724
[root@SH-Oracle-Server ~]# telnet NJ-Media02 13782 #通过 telnet
验证网络端口连接是否正常。
```

- 客户端与备份服务器通信验证通过后，请及时通知天翼云备份管理员在备份服务端进行反向验证，反向验证通过后再进行客户端的安装。

安装 NBU 8.0 Client (Linux)

```
[root@SH-Oracle-Server ~]# mkdir -p /nbu/openv  
[root@SH-Oracle-Server ~]# ln -s /nbu/openv /usr/openv
```

1.1.1 配置/etc/hosts 解析

1. 在客户端/etc/hosts 增加对主服务器 (Master Server)、介质服务器 (Media Server) 及备份客户端公网地址的解析。

```
[root@SH-Oracle-Server ~]# vi /etc/hosts  
36.111.194.141    NJ-Master01  
36.111.192.116    NJ-Media01  
36.111.192.172    NJ-Media02  
180.153.52.52     SH-Oracle-Server    #根据客户端的不同，填写不同的公网地址和主机名。  
注意：客户端解析要与客户端主机名一致。
```

2. 请客户给天翼云备份管理员要备份的客户端公网地址和主机名解析的对应信息。如：

```
180.153.52.52     SH-Oracle-Server #根据客户端的不同，填写不同的公网地址和主机名。
```

1.1.2 设置环境变量

以客户端 root 用户登录，在/etc/profile 中最后一行添加如下内容：

```
[root@SH-Oracle-Server ~]# vi /etc/profile  
PATH=$PATH:/usr/openv/netbackup/bin:/usr/openv/netbackup/bin/admincmd:/usr/openv/netbackup/bin/goodies:/usr/openv/volmgr/bin:/usr/openv/db/bin  
export PATH  
[root@SH-Oracle-Server ~]# source /etc/profile    #添加的配置文件立即生效。
```

1.1.3 安装 NBU8.0 Client (Linux)

以客户端 root 用户

```
[root@SH-Oracle-Server ~]# cd /nbuclient/NetBackup_8.0_CLIENTS2/
```

```
[root@SH-Oracle-Server NetBackup_8.0_CLIENTS2]# ls
Doc  install  LICENSE  NBClient  VSM_README
[root@SH-Oracle-Server NetBackup_8.0_CLIENTS2]# ./install #开始安装
```

Veritas Installation Script

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Installing NetBackup Client Software

Please review the VERITAS SOFTWARE LICENSE AGREEMENT located on the installation media before proceeding. The agreement includes details on the NetBackup Product Improvement Program.

For NetBackup installation and upgrade information specific to your platform and to find out if your installed EEBs or hot fixes are contained in this release, check out the Veritas Services and Operations Readiness

Tools (SORT) Installation and Upgrade Checklist and Hot fix and EEB Release Auditor, respectively, at <https://sort.veritas.com/netbackup>.

```
Do you wish to continue? [y,n] (y) y #按 y 继续
```

Checking for required system conditions...

ok be_nb_same_host: inapplicable on linux: skipping

ok unsupported_platform: Passed checks for unsupported platforms.

Checking for recommended system conditions...

ok hotfix_auditor: NetBackup is not installed or there is no hotfix or EEB data present. Skipping HF/EEB Auditor check.

```
Do you want to install the NetBackup client software for this client?  
[y,n] (y) y #按 y 继续
```

This package will install Linux/RedHat2.6.18 client.

This package will install NetBackup client 8.0.

```
Enter the name of the NetBackup master server : NJ-Master01 #填写
```


主服务器的解析名称

Would you like to use "SH-Oracle-Server" as the configured name of the NetBackup client? [y,n] (y) y #按 y 继续

Client binaries are located in /veritas/openssl/NetBackup_8.0_CLIENTS2/NBClient/anb/Clients/usr/openssl/netbackup/client/Linux/RedHat2.6.18.

Starting NetBackup Deduplication installer
testing: /tmp/pdde_pkg_dir_4133

NetBackup Deduplication preinstall check passed

Installing VRTSnbpc ...

Installation of VRTSnbpc was successful. Check /tmp/install_VRTSnbpc.rpm_trace.4119 for details.

Installing VRTSnbpx ...

Installation of VRTSnbpx was successful. Check /tmp/install_VRTSnbpx.rpm_trace.4119 for details.

Installing VRTSnbclt ...

Installation of VRTSnbclt was successful. Check /tmp/install_VRTSnbclt.rpm_trace.4119 for details.

Terminating NetBackup and/or Media Manager processes.

Installing NB-Java.

Installing VRTSnbjre ...

Installation of VRTSnbjre was successful.

More details regarding VRTSnbjre can be found in file /tmp/install_VRTSnbjre.rpm_trace.4589 on SH-Oracle-Server.

Installing VRTSnbjava ...

Installation of VRTSnbjava was successful.

More details regarding VRTSnbjava can be found in file /tmp/install_VRTSnbjava.rpm_trace.4589 on oracle11g-Server.
+ /bin/cp ./nbj.conf /usr/openssl/java

Migrating log files in /usr/openssl/logs #查看日志的路径
Migration of log files complete.

Send a SIGHUP to (x)inetd so the (x)inetd.conf file will be reread.

Reloading configuration: [OK]

Installing VRTSpddea.rpm ...

Installation of VRTSpddea.rpm was successful. Check


```
/tmp/install_VRTSpddea.rpm_trace.4119 for details.  
Installing VRTSnbcfg.rpm ...  
Installation of VRTSnbcfg.rpm was successful. Check  
/tmp/install_VRTSnbcfg.rpm_trace.4119 for details.
```

```
File /usr/opensv/tmp/install_trace.3974 contains a trace of this install.  
That file can be deleted after you are sure the install was successful.
```

#安装成功

1.1.4 检查 Linux 客户端的安装后进程

```
[root@SH-Oracle-Server ~]# bpps -x #查看 NBU 客户端的进程  
NB Processes  
-----  
root          27148          1    0 12:57 ?                00:00:00  
/usr/opensv/netbackup/bin/vnetd -standalone  
root          27154          1    0 12:57 ?                00:00:00  
/usr/opensv/netbackup/bin/bpcd -standalone  
root          27205          1    0 12:57 ?                00:00:00  
/usr/opensv/netbackup/bin/nbdisco  
  
Shared Veritas Processes  
-----  
root          25803          1    0 12:57 ?                00:00:00  
/opt/VRTSspbxb/bin/pbx_exchange
```

1.1.5 Linux 客户端配置参数

编辑 /usr/opensv/netbackup/bp.conf 文件。具体配置如下：

```
[root@SH-Oracle-Server ~]# vi /usr/opensv/netbackup/bp.conf  
[root@SH-Oracle-Server ~]# cat /usr/opensv/netbackup/bp.conf  
SERVER = NJ-Master01 #nbu 主服务器名  
SERVER = NJ-Media01  #nbu 介质服务器名  
SERVER = NJ-Media02  #nbu 介质服务器名  
CLIENT_NAME = SH-Oracle-Server #nbu 客户端服务名  
CONNECT_OPTIONS = localhost 1 0 2
```

1.1.6 Linux 客户端配置完成需要重启服务

重启服务方法有两种：任选其一即可

1. 用 `bp.kill_all` 命令杀死服务，然后再用 `bp.start_all` 启动服务。
2. 用 `service netbackup stop` 关闭服务，然后再用 `service netbackup start` 启动服务。

```
[root@SH-Oracle-Server ~]# service netbackup stop
stopping the NetBackup Discovery Framework
stopping the NetBackup client daemon
stopping the NetBackup network daemon
[root@SH-Oracle-Server ~]# service netbackup start
NetBackup network daemon started.
NetBackup client daemon started.
NetBackup SAN Client Fibre Transport daemon started.
NetBackup Discovery Framework started.
NetBackup Bare Metal Restore Boot Server daemon started.
```

1.1.7 检查客户端的连通情况

```
[root@SH-Oracle-Server ~]# bpcIntcmd -pn
expecting response from server NJ-Master01
SH-Oracle-Server SH-Oracle-Server 180.153.52.52 21796
#如果不能连接成功，请检查防火墙是否关闭或相应端口是否开放。
```

1.1.8 客户端加密功能配置

云备份产品支持客户端加密传输的功能，保证客户的数据安全，加密方式为 AES-128，如有加密需求（可在《客户信息反馈表》中说明），请客户在客户端进行以下操作。

备份客户端需要生成 `client` 的加密密钥口令。

```
[root@SH-Oracle-Server ~]# bpkeyutil
Enter new NetBackup pass phrase: *****
Re-enter new NetBackup pass phrase: *****
```

这个加密口令很重要，要由客户自己保管。一旦口令丢失，将无法恢复数据。

注意：密钥信息保存在客户端的 Agent 中，一旦客户端的 Agent 损

坏或重新安装，都会导致密钥信息的丢失。客户必须保存好密钥口令。可以通过密钥来恢复加密的数据。

1.1.9 确认 Linux 客户端是否已加密

查看 bp.conf 配置文件，如果有一行 CRYPT_KIND = STANDARD 信息，说明客户端进行了数据加密。

```
[root@XA-Oracle-Server ~]# cat /usr/opensv/netbackup/bp.conf
SERVER = NJ-Master01
SERVER = NJ-Media01
SERVER = NJ-Media02
CLIENT_NAME = XA-Oracle-Server
CONNECT_OPTIONS = localhost 1 0 2
CRYPT_KIND = STANDARD
```

输入加密口令后，会在 /usr/opensv/var/ 目录下生成 keyfile.dat 文件。

```
[root@XA-Oracle-Server ~]# ls /usr/opensv/var/keyfile.dat
/usr/opensv/var/keyfile.dat
```

注意：为了保证数据正常备份，客户也可以自行备份 keyfile.dat 的密钥文件，做双重保管。

1.1.10 Linux 文件加密异机恢复

加密文件异机恢复有两种解决方法

- 方法 1：

找到 NBU 客户端 Agent 的安装路径：

默认路径 /usr/opensv/var/ 目录中找到 keyfile.dat 文件。此文件是密钥文件。用户必须对此文件做好备份。

一旦 Agent 有问题或异机恢复，可以把 keyfile.dat 文件恢复到 /usr/opensv/var/ 下。

- 方法 2:

```
[root@XA-Client01 bin]# pwd
/usr/opensv/netbackup/bin
[root@XA-Client01 bin]# ./bpkeyutil
Enter new NetBackup pass phrase: *****
Re-enter new NetBackup pass phrase: *****
```

通过 `bpkeyutil` 命令输入密码，客户一定要妥善保管。

一旦 Agent 有问题或异机恢复时，通过保管的密码，重新生成 `keyfile.dat` 文件。这时就可以正常的文件恢复。

1.1.11 常见故障及解决方案

1. 在出现提示： Would you like to use “SH-Oracle-Server”
as the configured name of theNetBackup client? [y,n] (y)
的时候，确认客户端名称为物理主机名。

2. 安装完毕，检查安装日志，确认安装成功

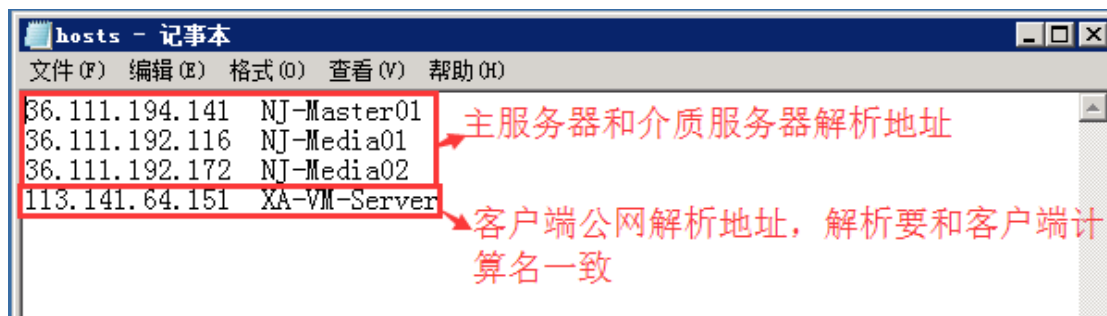
```
[root@SH-Oracle-Server logs]#less /usr/opensv/tmp/install_trace.3974
#在安装过程就能找到这个日志路径
```

2 安装 Windows NBU8.0 客户端

安装准备

1. 把主服务器（Master Server）和介质服务器（Media Server）的 IP 地址和主机名的对应关系都加入到客户端的（包括客户端解析）C:\Windows\System32\drivers\etc\hosts 文件中。

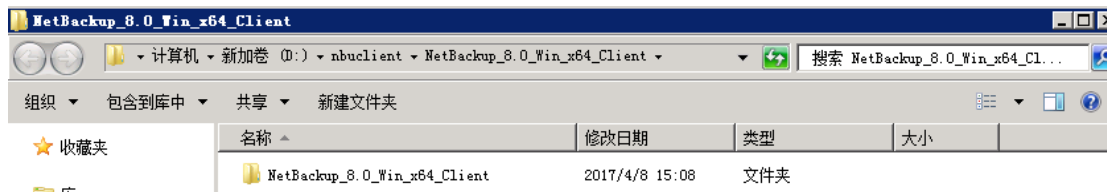
注意：NJ-Master01、NJ-Media01、NJ-Media02 信息添加的要和下图一致。客户端要按客户的实际信息添加。



2. 上传 NBU 8.0 客户端软件包（请在天翼云上下载客户所需的客户端软件包）到客户端指定的路径。如以 NetBackup_8.0_Win_x64_Client 为例：



解压 NetBackup_8.0_Win_x64_Client 客户端



4. 确保网络连通并双向开通 TCP 1556、TCP 13724、TCP 13782 端口。

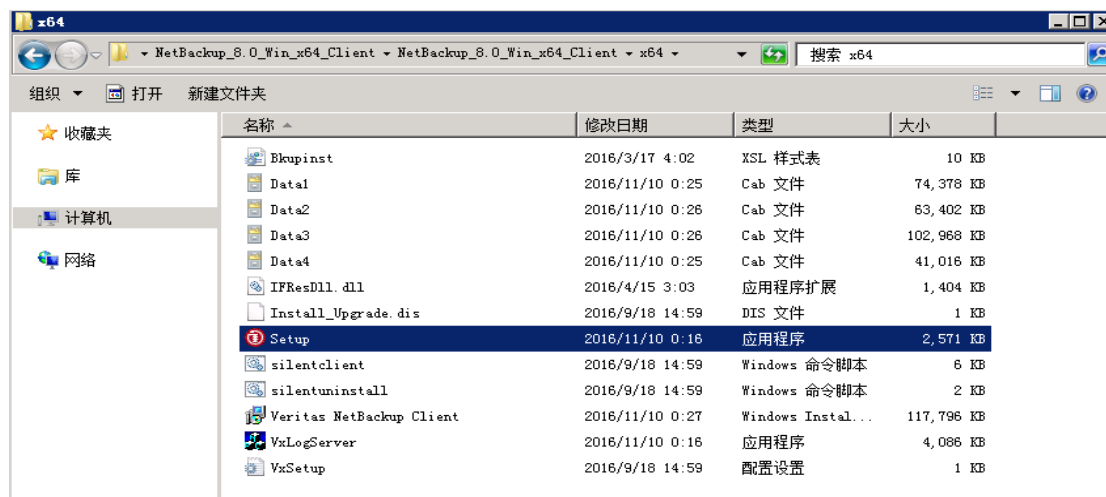
```
D:\>telnet NJ-Master01 1556
D:\>telnet NJ-Media01 1556
D:\>telnet NJ-Media02 1556
D:\>telnet NJ-Master01 13782
D:\>telnet NJ-Media01 13782
D:\>telnet NJ-Media02 13782
D:\>telnet NJ-Master01 13724
D:\>telnet NJ-Media01 13724
D:\>telnet NJ-Media02 13724 #通过 telnet 验证网络端口连接是否正常。
```

在客户端验证通过后，同时要通知天翼云管理员也要在服务端进行验证，验证通过后再进行客户端的安装。

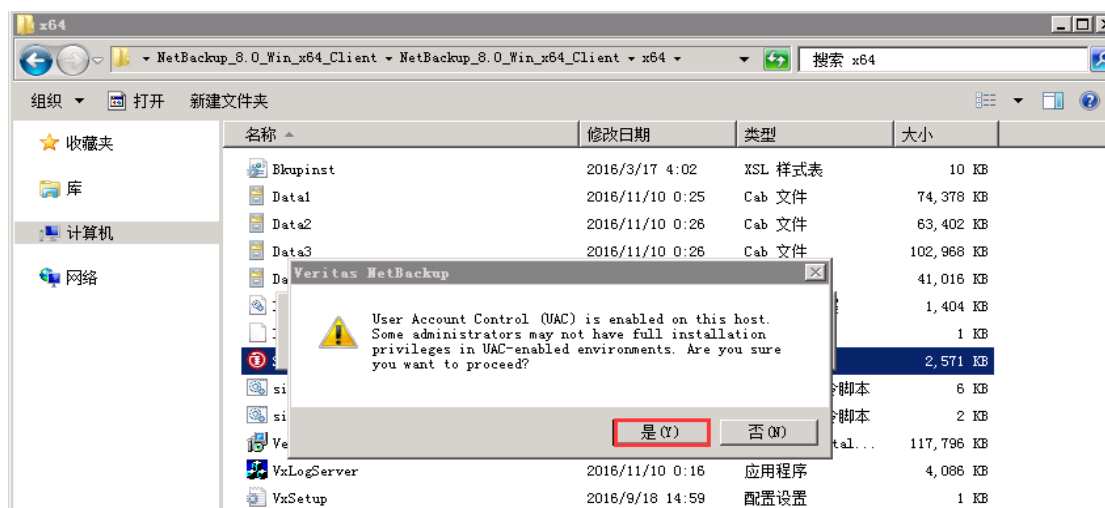
安装 NBU 8.0 Client (Windows)

2.1.1 安装 NBU8.0 Windows Client

1. 解压 NetBackup_8.0_Win_x64_Client 的压缩包。双击 Setup 进行安装



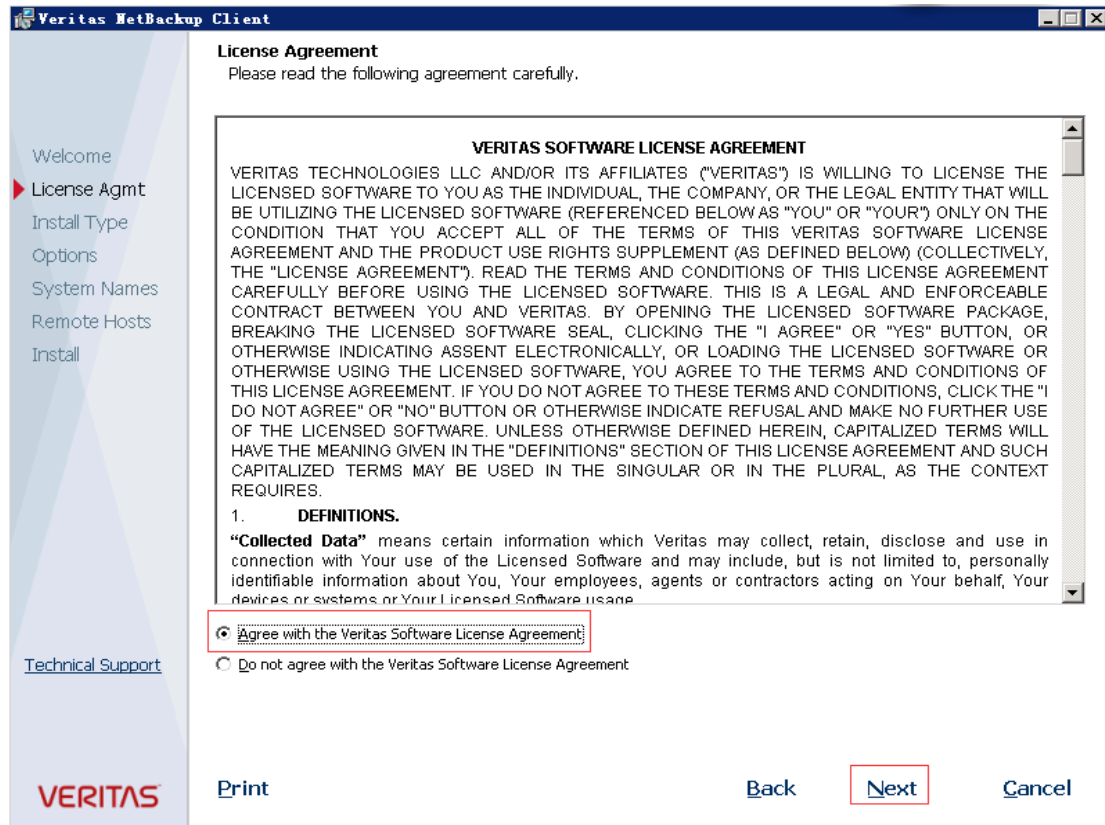
2. 点击【是】，开始安装客户端。



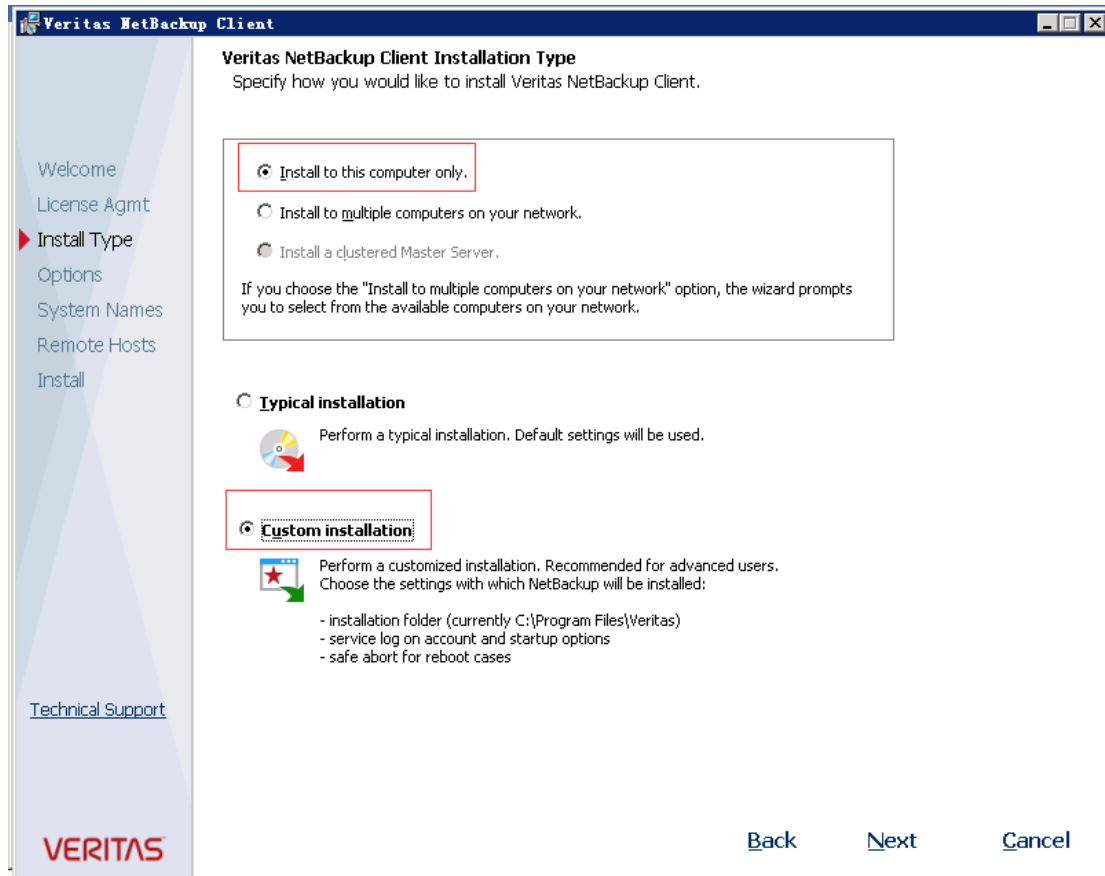
3. 弹出一个菜单，点击【Next】



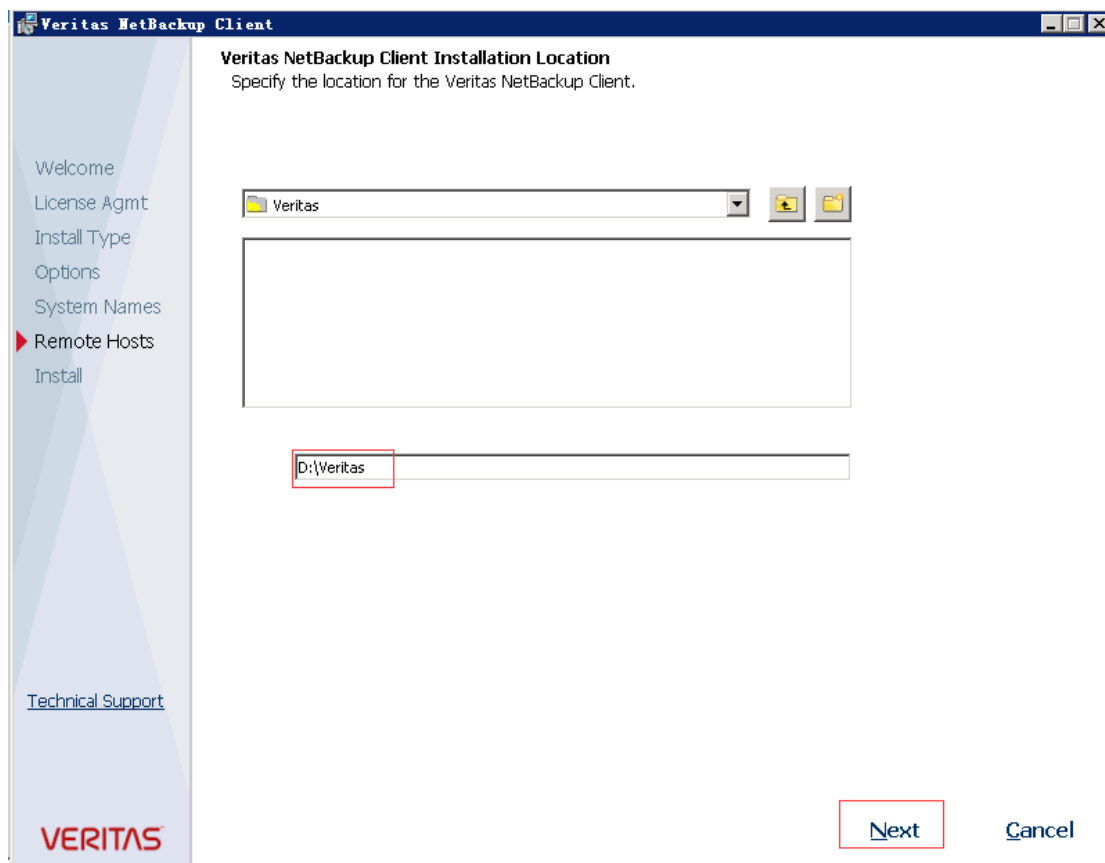
4. 点击复选框【Agree with the Veritas Software License Agreement】。然后【Next】



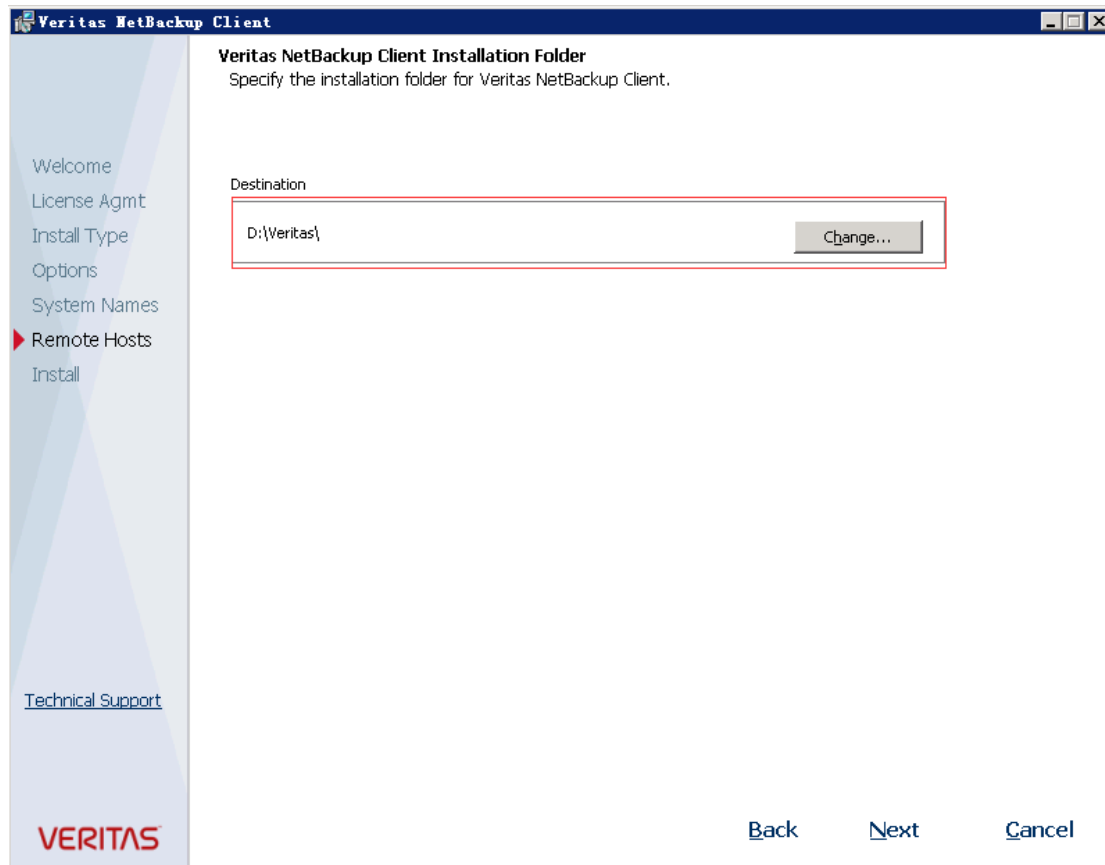
5. 点击复选框【Install to this computer only】，再点击【Custom installNation】，然后【Next】。



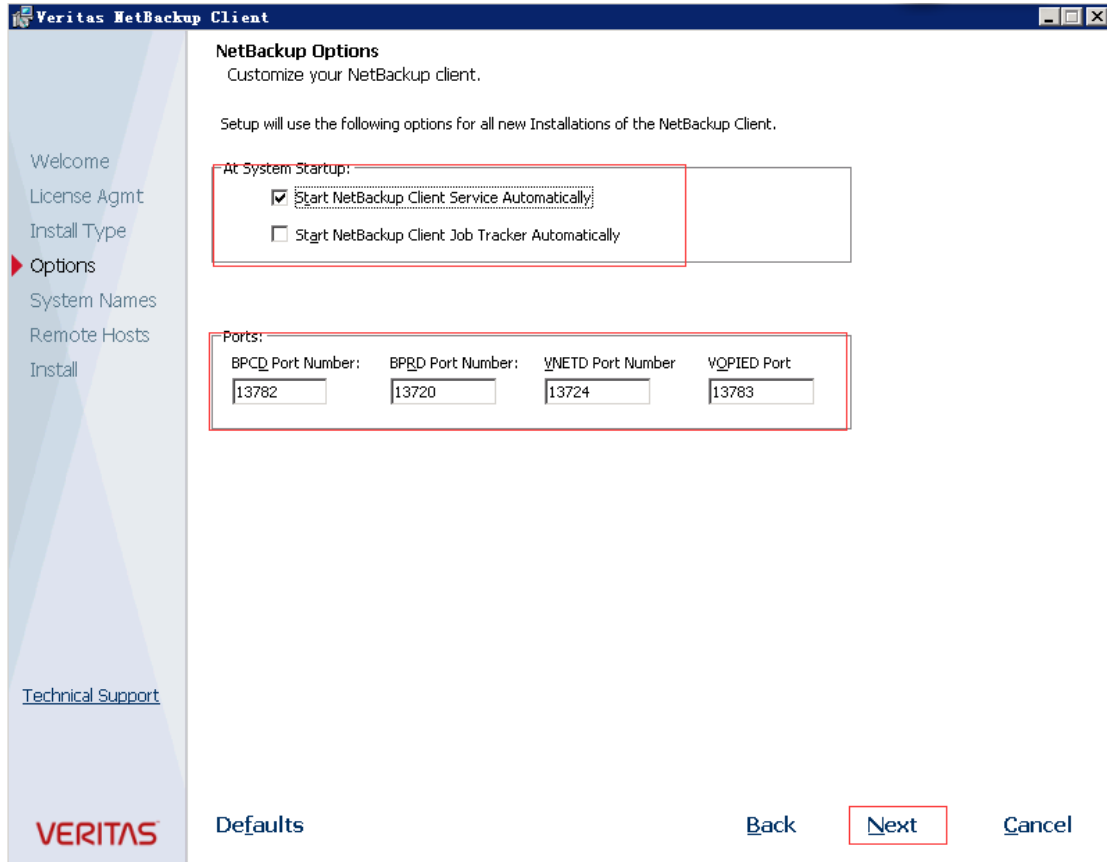
6. 选择定义的目录，如：D:\Veritas



7. 点击【Next】。



8. 点击复选框 **【Start NetBackup Client Service**
Automatically】。继续 **【Next】**



The screenshot shows the 'Veritas NetBackup Client' installation window. On the left is a navigation pane with links: Welcome, License Agmt, Install Type, Options (highlighted with a red arrow), System Names, Remote Hosts, and Install. Below these is a link for 'Technical Support' and the 'VERITAS' logo. The main area is titled 'NetBackup Options' with the subtitle 'Customize your NetBackup client.' and a note: 'Setup will use the following options for all new Installations of the NetBackup Client.' There are two sections highlighted with red boxes. The first, 'At System Startup:', contains two checkboxes: 'Start NetBackup Client Service Automatically' (checked) and 'Start NetBackup Client Job Tracker Automatically' (unchecked). The second, 'Ports:', contains four input fields: 'BPCD Port Number' (13782), 'BPRD Port Number' (13720), 'VNETD Port Number' (13724), and 'VOPIED Port' (13783). At the bottom, there are 'Defaults', 'Back', 'Next' (highlighted with a red box), and 'Cancel' buttons.

Veritas NetBackup Client

NetBackup Options
Customize your NetBackup client.

Setup will use the following options for all new Installations of the NetBackup Client.

At System Startup:

☒ Start NetBackup Client Service Automatically
☐ Start NetBackup Client Job Tracker Automatically

Ports:

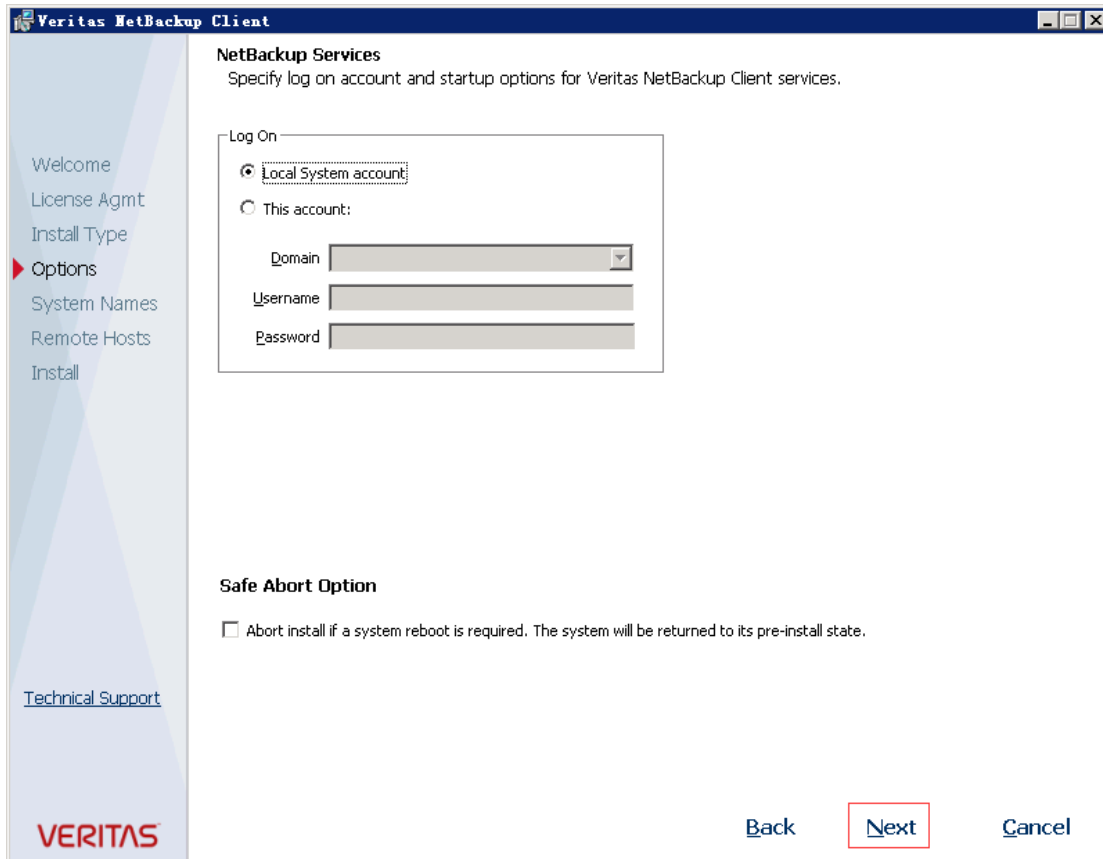
BPCD Port Number:	BPRD Port Number:	VNETD Port Number	VOPIED Port
13782	13720	13724	13783

Technical Support

VERITAS

Defaults Back Next Cancel

9. 点击复选框 **【Local System Account】**。继续 **【Next】**



Veritas NetBackup Client

NetBackup Services
Specify log on account and startup options for Veritas NetBackup Client services.

Log On

☒ Local System account

☐ This account:

Domain

Username

Password

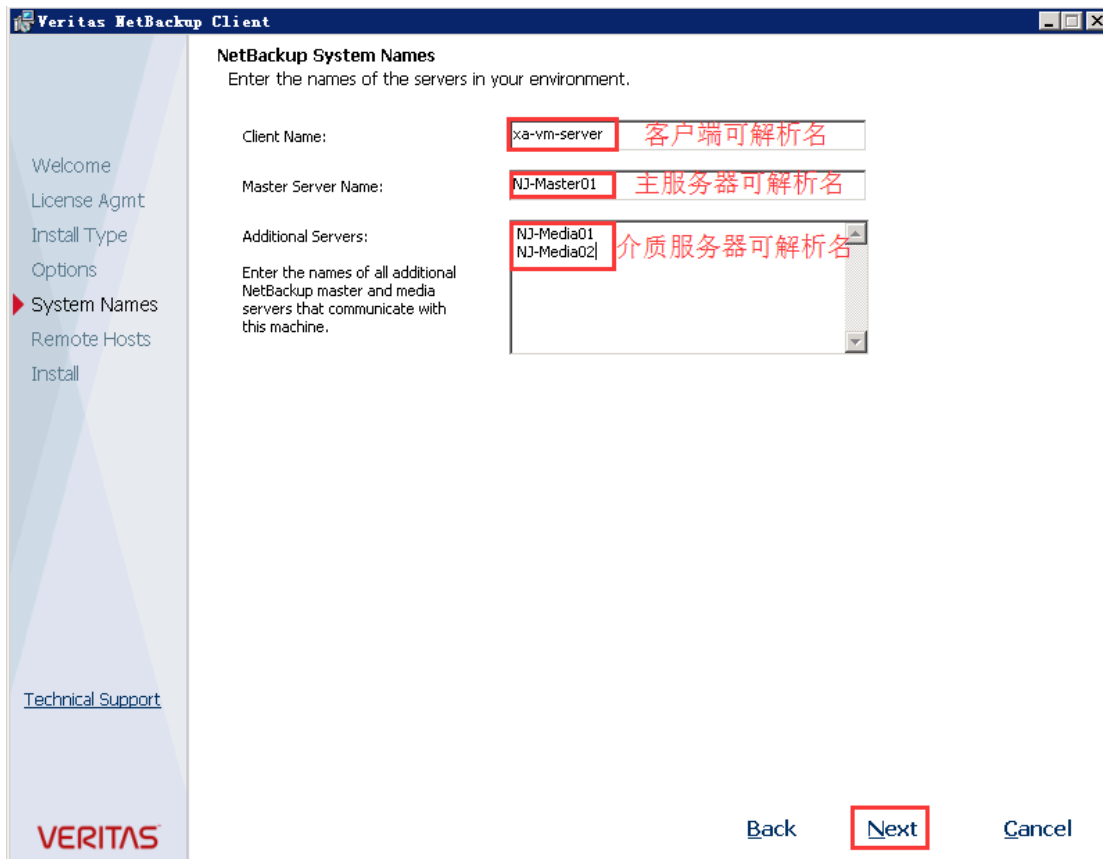
Safe Abort Option

☐ Abort install if a system reboot is required. The system will be returned to its pre-install state.

Back **Next** Cancel

VERITAS

10. 写客户端的名，主服务机名及介质服务机名，继续【Next】。



Veritas NetBackup Client

NetBackup System Names
Enter the names of the servers in your environment.

Client Name: 客户端可解析名

Master Server Name: 主服务器可解析名

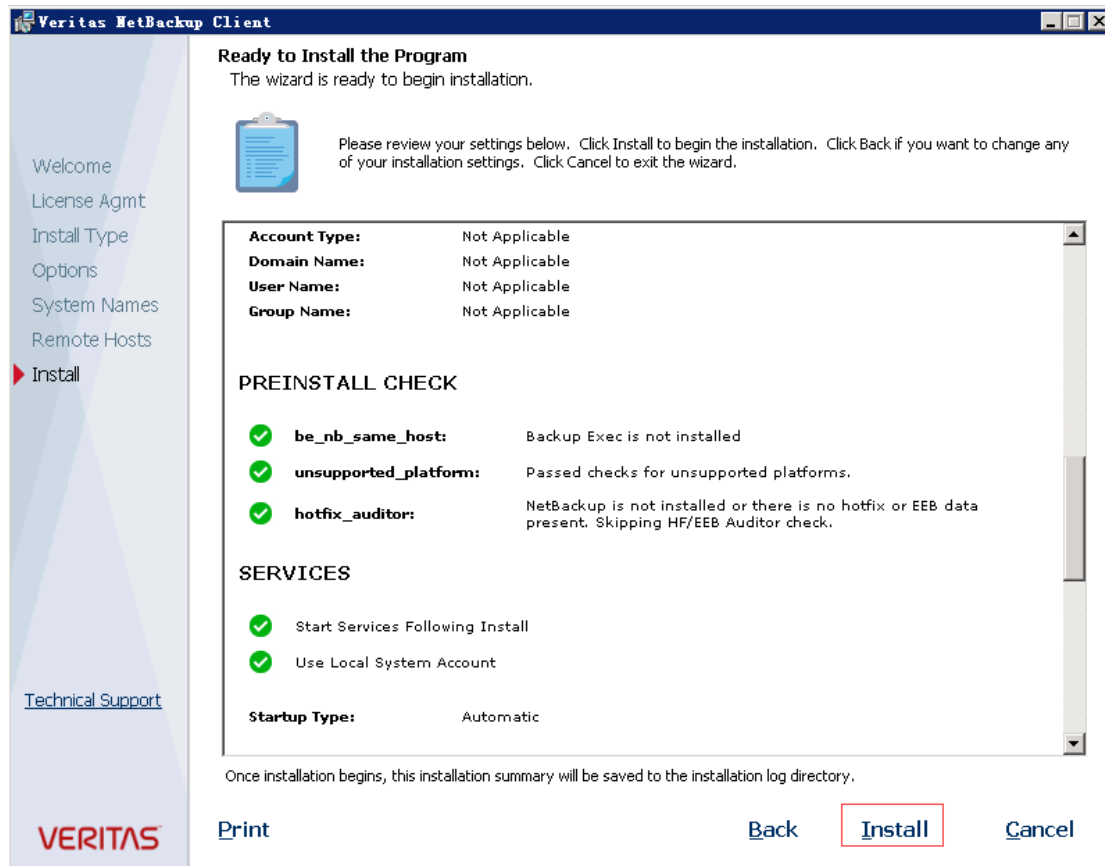
Additional Servers: 介质服务器可解析名

Enter the names of all additional NetBackup master and media servers that communicate with this machine.

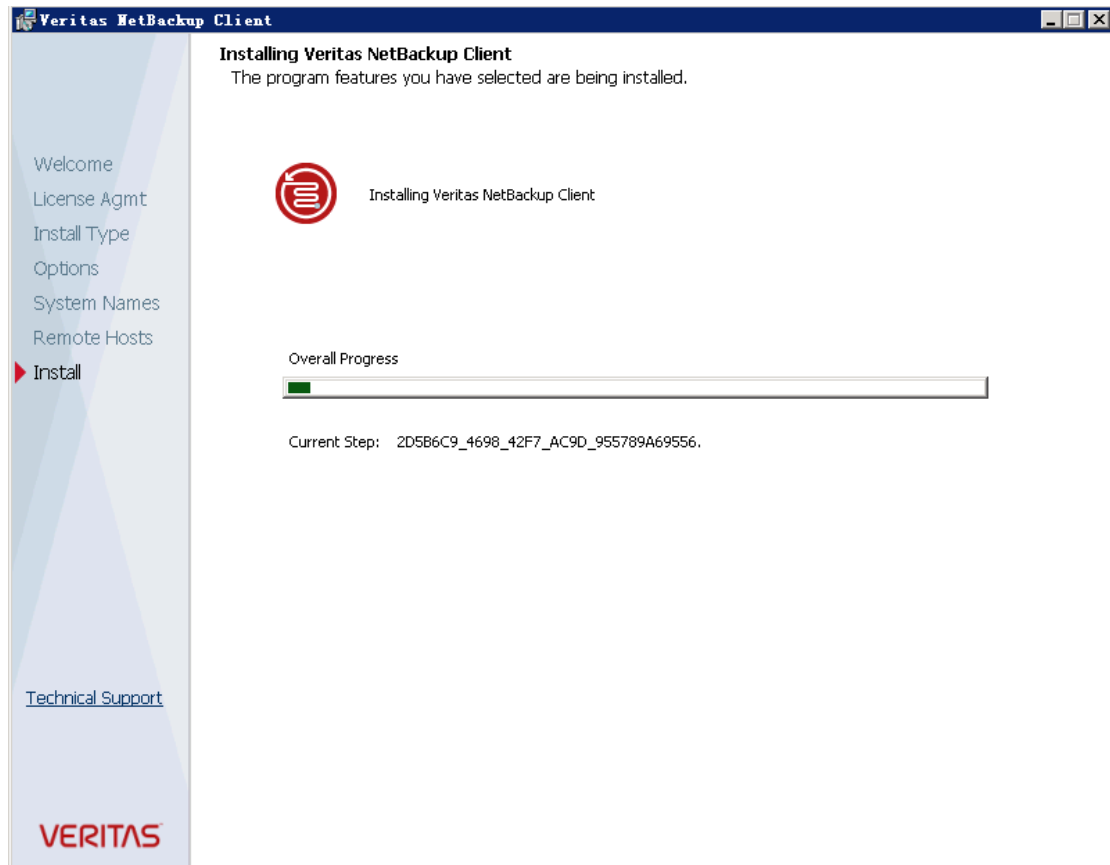
Back **Next** Cancel

VERITAS

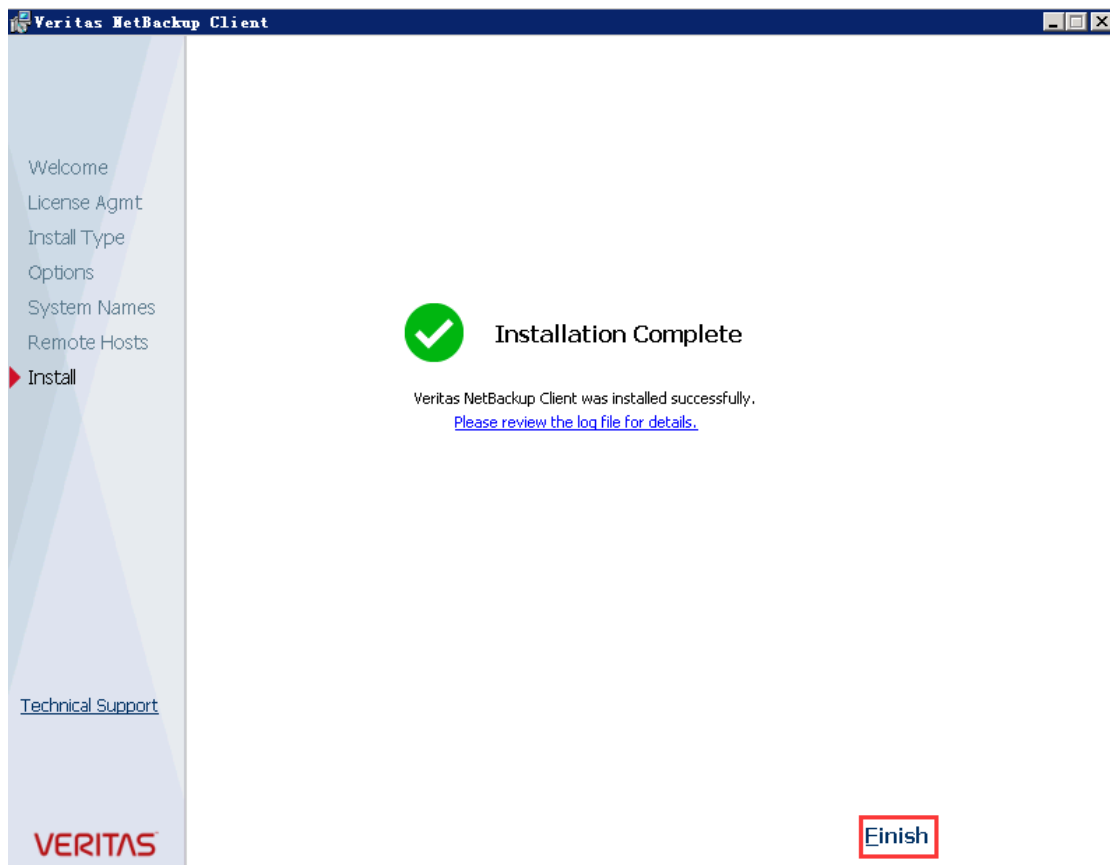
11. 开始安装，点击【Install】。



12. 安装过程



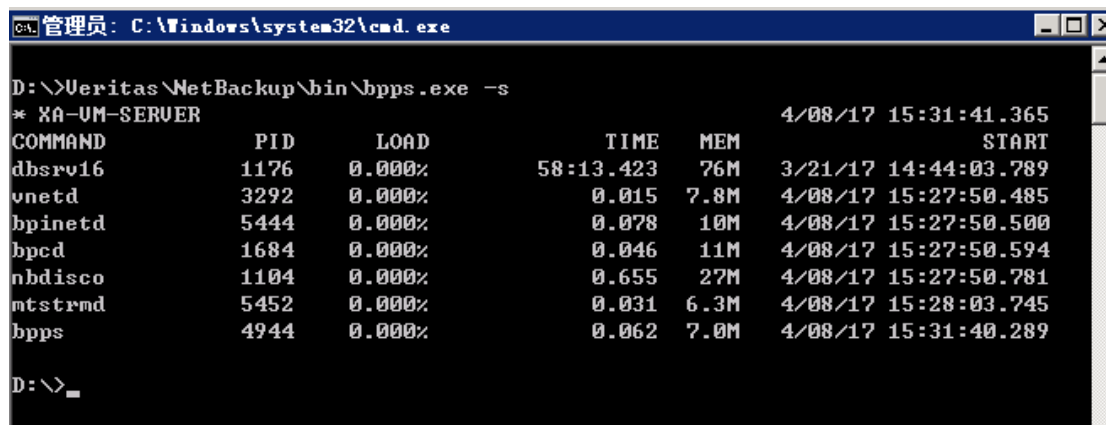
13. 点击【Finish】安装完成。



2.1.2 查看客户端进程

进入安装客户端的目录，如：D:\Veritas\NetBackup\bin\bpps.exe

-s



```

管理员: C:\Windows\system32\cmd.exe

D:\>Veritas\NetBackup\bin\bpps.exe -s
* XA-UM-SERVER
COMMAND          PID      LOAD      TIME     MEM      START
-----
dbsrv16          1176     0.000%    58:13.423  76M      3/21/17 14:44:03.789
vnetd            3292     0.000%     0.015    7.8M      4/08/17 15:27:50.485
bpnetd           5444     0.000%     0.078    10M      4/08/17 15:27:50.500
bpcd             1684     0.000%     0.046    11M      4/08/17 15:27:50.594
nbdisco          1104     0.000%     0.655    27M      4/08/17 15:27:50.781
mtstrnd          5452     0.000%     0.031    6.3M      4/08/17 15:28:03.745
bpps             4944     0.000%     0.062    7.0M      4/08/17 15:31:40.289

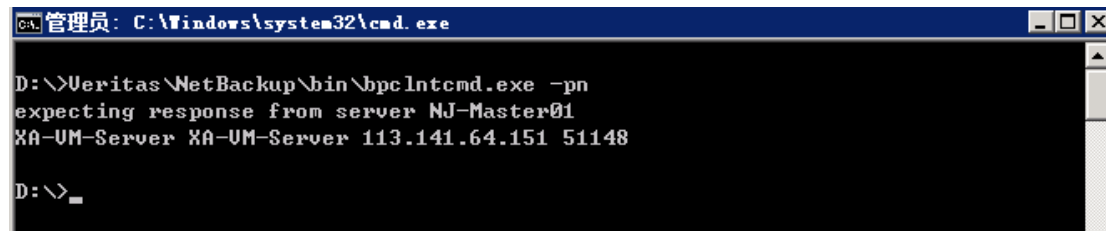
D:\>_

```

2.1.3 检查客户端的连通情况

进入安装客户端的目录，如：

D:\Veritas\NetBackup\bin\bpcIntcmd.exe -pn



```

管理员: C:\Windows\system32\cmd.exe

D:\>Veritas\NetBackup\bin\bpcIntcmd.exe -pn
expecting response from server NJ-Master01
XA-UM-Server XA-UM-Server 113.141.64.151 51148

D:\>_

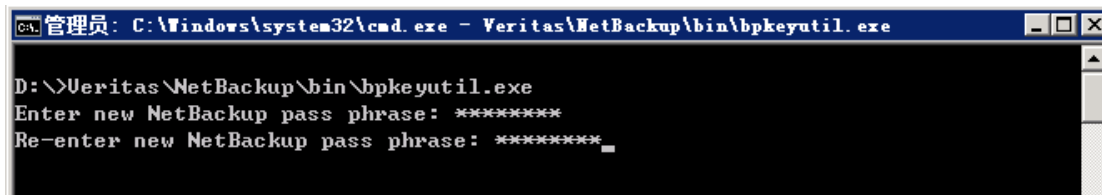
```

说明：如果不能连接成功，请检查防火墙是否关闭或相应端口是否开放。

2.1.4 客户端加密功能配置

云备份产品支持客户端加密传输的功能，保证客户的数据安全，加密方式为 AES-128，如有加密需求（可在《客户信息反馈表》中说明），请客户在客户端进行以下操作。

备份客户端需要生成 client 的加密密钥口令。

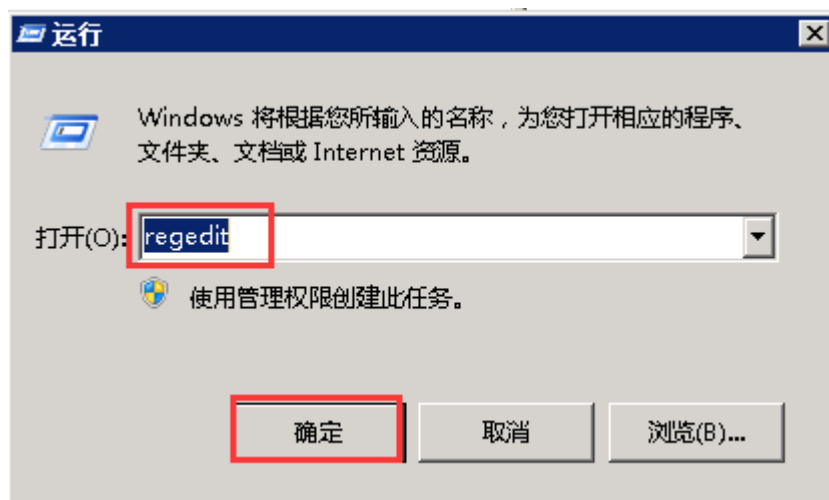


这个加密口令很重要，要由客户自己保管。一旦口令丢失，将无法恢复数据。

注意：密钥信息保存在客户端的 Agent 中，一旦客户端的 Agent 损坏或重新安装，都会导致密钥信息的丢失。客户必须保存好密钥口令。可以通过密钥来恢复加密的数据。

2.1.5 确认 Windows 客户端是否做加密

1. 开始 → 运行 输入 regedit 命令后 确认

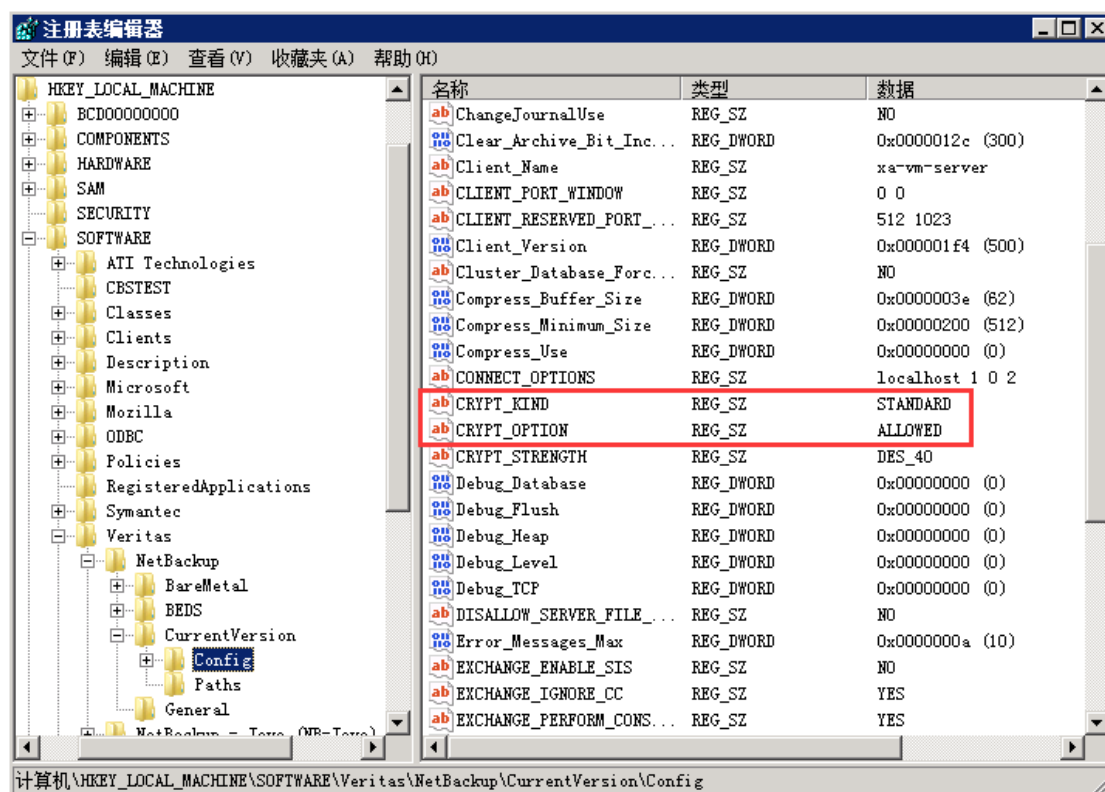


2. HKEY_LOCAL_MACHINE → SOFTWARE → Veritas → NetBackup

→ CurrentVersion → Config 中查看

3. CRYPT_KIND 数据值为 STANDARD，表示已通过了标准的加密数据。CRYPT_OPTION 数据值为 ALLOWED，表示加密选项功能开启。

4. 客户端加密备份后，可以再注册表中看到下面的信息，确认数据已做了加密处理。



2.1.6 Windows 文件加密异机恢复

加密文件异机恢复有两种解决方法

- 方法 1:

找到 NBU 客户端 Agent 的安装路径:

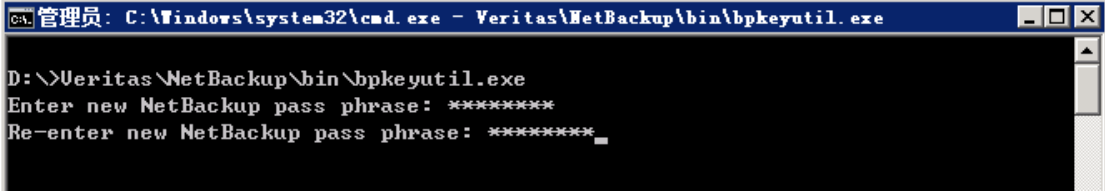
本次客户端 Agent 安装在 D: 盘路径: D:\Veritas\NetBackup\var 目录下, 找到 keyfile.dat 文件。此文件是密钥文件。用户必须对此文件做好备份。

一旦 Agent 有问题或异机恢复, 可以把 keyfile.dat 文件恢复到 D:\Veritas\NetBackup\var 下。

注意: 为了保证数据正常备份, 客户也可以自行备份 keyfile.dat 的

密钥文件，做双重保管。

- 方法 2:



```
管理员: C:\Windows\system32\cmd.exe - Veritas\NetBackup\bin\bpkeyutil.exe
D:\>Veritas\NetBackup\bin\bpkeyutil.exe
Enter new NetBackup pass phrase: *****
Re-enter new NetBackup pass phrase: *****
```

通过 bpkeyutil.exe 命令输入的密码，客户一定要妥善保管。

说明：一旦 Agent 有问题或异机恢复时，通过保管的密码，重新生成 keyfile.dat 文件。这时就可以正常的文件恢复。