CA ARCserve® Backup

Client Agents Guide

r12

CA Product References

This document references the following CA products:

- Advantage™ Ingres®
- BrightStor® ARCserve® Backup for Laptops and Desktops
- BrightStor® CA-1® Tape Management
- BrightStor® CA-Dynam®/B Backup for VM
- BrightStor® CA-Dynam®/TLMS Tape Management
- BrightStor® CA-Vtape™ Virtual Tape System
- BrightStor® Enterprise Backup
- BrightStor® High Availability
- BrightStor® Storage Resource Manager
- BrightStor® VM:Tape®
- CA ARCserve® Backup Agent for Novell Open Enterprise Server for Linux
- CA ARCserve® Backup Agent for Open Files on NetWare
- CA ARCserve® Backup Agent for Open Files on Windows
- CA ARCserve® Backup Client Agent for FreeBSD
- CA ARCserve® Backup Client Agent for Linux
- CA ARCserve® Backup Client Agent for Mainframe Linux
- CA ARCserve® Backup Client Agent for NetWare
- CA ARCserve® Backup Client Agent for UNIX
- CA ARCserve® Backup Client Agent for Windows
- CA ARCserve® Backup Enterprise Option for AS/400
- CA ARCserve® Backup Enterprise Option for Open VMS
- CA ARCserve® Backup for Microsoft Windows Essential Business Server
- CA ARCserve® Backup for Windows
- CA ARCserve® Backup for Windows Agent for IBM Informix
- CA ARCserve® Backup for Windows Agent for Lotus Domino
- CA ARCserve® Backup for Windows Agent for Microsoft Data Protection Manager
- CA ARCserve® Backup for Windows Agent for Microsoft Exchange
- CA ARCserve® Backup for Windows Agent for Microsoft SharePoint

- CA ARCserve® Backup for Windows Agent for Microsoft SQL Server
- CA ARCserve® Backup for Windows Agent for Oracle
- CA ARCserve® Backup for Windows Agent for Sybase
- CA ARCserve® Backup for Windows Agent for VMware
- CA ARCserve® Backup for Windows Disaster Recovery Option
- CA ARCserve® Backup for Windows Disk to Disk to Tape Option
- CA ARCserve® Backup for Windows Enterprise Module
- CA ARCserve® Backup for Windows Enterprise Option for IBM 3494
- CA ARCserve® Backup for Windows Enterprise Option for SAP R/3 for Oracle
- CA ARCserve® Backup for Windows Enterprise Option for StorageTek ACSLS
- CA ARCserve® Backup for Windows Image Option
- CA ARCserve® Backup for Windows Microsoft Volume Shadow Copy Service
- CA ARCserve® Backup for Windows NDMP NAS Option
- CA ARCserve® Backup for Windows Serverless Backup Option
- CA ARCserve® Backup for Windows Storage Area Network (SAN) Option
- CA ARCserve® Backup for Windows Tape Library Option
- CA XOsoft™ Assured Recovery™
- CA XOsoft™
- Common Services™
- eTrust® Antivirus
- eTrust® Firewall
- Unicenter® Network and Systems Management
- Unicenter® Software Delivery
- Unicenter® VM:Operator®

Contact CA

Contact Technical Support

For online technical assistance and a complete list of locations, primary service hours, and telephone numbers, contact Technical Support at http://ca.com/support.

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Chapter 1: Introducing the Client Agents

CA ARCserve Backup is a comprehensive storage solution for applications, databases, distributed servers, and file systems. It provides backup and restore capabilities for databases, business-critical applications, and network clients. Among the compatible agents CA ARCserve Backup offers are a specific set of operating-system-based client agents.

The client agents are separate software packages installed on network computers to supply a network interface between the computer and CA ARCserve Backup. In addition to enabling connectivity, the client agents share data storage tasks with the backup servers in your network. You may need multiple client agents, depending on the number and variety of network machines that require regular data backup and restore functionality.

This guide provides information on installing, configuring, and adding client agents for all workstations and servers in your network storage environment.

This section contains the following topics:

Benifits of Using a Client Agent

CA ARCserve Backup client agents are designed for organizations that need to preserve network resources by offloading tasks onto centralized backup servers and media. Among other functions, the client agents serve to:

- Minimize the load on your communications network
- Increase the efficiency of your CA ARCserve Backup servers by offloading the preprocessing of archive data to the client machine
- Supply detailed file and directory information about the remote client to the CA ARCserve Backup server
- Communicate with the server and let you browse and select backup components

- Assist with monitoring the progress of backup jobs
- Maintain and monitor backup logs with the status of backup and restore activities

Client agents can also augment data protection for all client computers from a single CA ARCserve Backup server in the network.

Supported Client Systems

CA ARCserve Backup offers the following client agents:

- CA ARCserve Backup Client Agent for Windows. This client agent supports the following:
  - Windows Server 2008 (Core operating system only)
  - Windows Vista
  - Windows 2000
  - Windows XP
  - Windows Server 2003
  - Windows Small Business Server (SBS) operating on Windows 2000 and Windows 2003 servers
- CA ARCserve Backup Client Agent for NetWare
- CA ARCserve Backup Client Agent for UNIX. This client agent supports the following:
  - AIX
  - HP-UX
  - Solaris
  - Tru64
  - FreeBSD
- CA ARCserve Backup Client Agent for Linux. This client agent supports the following:
  - Red Hat
  - SuSE
  - Turbo
  - Debian
  - RedFlag
  - Miracle Linux

- CA ARCserve Backup Client Agent for Mainframe Linux. This client agent supports the following:
  - Red Hat Enterprise Server 3, 4 (31-bit and 64-bit) operating on zSeries and S/390
  - SLES 8 and 9 (31-bit and 64-bit) operating on zSeries and S/390
- CA ARCserve Backup Enterprise Option for AS/400
- CA ARCserve Backup Client Agent for Mac OS X
- CA ARCserve Backup Enterprise Option for OpenVMS

See the readme file on the installation CD for additional hardware and software requirements for installing and running client agents. For assistance, contact Technical Support at http://ca.com/support.

How Client Agents Work

CA ARCserve Backup and the client agents are designed to support data storage activities for companies and organizations with networked computers. The client agents allow you to back up and restore mission-critical data on your network. They help to:

- Facilitate backup of applications or file systems
- Facilitate monitoring of the backup progress
- Facilitate monitoring for backup log activities

With client agents installed on your network computers, a single CA ARCserve Backup server can perform data backup and restore operations on multiple computers and operating systems.

Agent Features

This section discusses the features and functionality offered by the various CA ARCserve Backup client agents.

Push Technology

All client agents use push technology, which automates the backup and restore process. The client agent contains separate internal client engines that help reduce the resource-intensive backup processes for the CA ARCserve Backup server. With this feature, the client agent filters and packages its archive data for reception by the server. This data preparation and transmission method provides real-time directory browsing, offloading system resources from the backup server, improves data transfer through use of packet technology, provides network security, and monitors backup and restore jobs.

When the client agents are installed and configured, you can use CA ARCserve Backup to receive data from each workstation in your data network. The client agent browses its targeted directories, prepares the data, and transmits the data across the packet network. The backup server then prepares the data for storage on the designated backup devices. These simultaneous processes between the client workstation and the backup server create an efficient, automated backup environment.

Windows Computer Name Resolution

Computer name resolution allows the local Windows computer to automatically detect the remote Windows machine's IP address when connecting for backup and restore operations.

Both the backup server and the network clients can use this feature. A local CA ARCserve Backup server can use computer name resolution to connect to and back up data on remote machines.

Security Features

The client agents for CA ARCserve Backup offer several security features, including client agent password security, system logon security, intelligent client-to-server data encryption, and integrated virus scanning with repair of infected files. The following sections offer more information about the CA ARCserve Backup data encryption and virus scanning features.

Intelligent Client-to-Server Data Encryption

With the intelligent client-to-server data encryption feature, you can encrypt data packets transported during a backup job with a session password to enhance network security. This feature utilizes AES 256 encryption and ensures that transported or archived data is secure and password protected, and ensures both the privacy of data transmitted over the network and the security of your backup media. Tapes cannot be misused or restored by users who do not have the encryption key.

When you choose this feature, your backup data is encrypted, including data packets that are transported between the client and the server, data that resides on the local server and data that has been moved to backup media.

Integrated Virus Scanning and Repair

CA ARCserve Backup provides the scanning and curing components of eTrust Antivirus, to protect your data.

Important! *CA ARCserve Backup provides only the scanning and curing components. It does not provide a full install of eTrust Antivirus. For the Windows client agent, a full install of eTrust Antivirus is required to receive automatic virus signature updates.*

When virus scanning is enabled, CA ARCserve Backup scans data for viruses during backup and copy operations. This feature ensures that your critical data is protected against all virus threats. The curing component, when selected during configuration, repairs infected files without the need for user intervention. This feature ensures that your critical data is protected against all virus threats.

For more information about eTrust Antivirus integration, see the *Administrator Guide*.

Discovering Client Agents in the Network

For CA ARCserve Backup installed on a Windows server, you can discover all computers in the network that are running client agents for Windows, UNIX, Linux, and Mac OS X. Using the Add, Import, Export Node feature, CA ARCserve Backup can detect all Windows, UNIX, Linux, and Mac OS X computers running their respective client agents and automatically create the required list of computers you designate to receive regular backups.

Multiple Network Interface Cards

The Windows client agent supports multiple network interface cards (NICs). For computers with more than one network card, the client agent checks all enabled NICs to determine which cards are activated and being used for transmission.

Enhanced Network Connectivity

Machines operating the Windows client agent can recover from temporary network failures by using reconnection algorithms (in the case of severe network malfunctions, the Windows client agent may not recover). The CA ARCserve Backup framework further provides the ability to analyze network connectivity.

How the Client Agent for Windows Excludes Database Application Files from Backups

The Client Agent for Windows can exclude database and log files from backups of database applications, such as Microsoft Exchange and Microsoft SQL Server, when performing backups.

During the backup job, the Client Agent for Windows communicates with the database agent to obtain a list of files that the backup job should exclude from the filesystem backup. The Client Agent for Windows then excludes files from the filesystem backup based on the response received from the database agent. If the database agent offline, the Client Agent assumes all files should be backed up and the filesystem backup job proceeds accordingly.

Example:

When you select a Microsoft Exchange Server directory as the backup source and perform file system backup using the Client Agent for Windows, the following exclusion behavior occurs:

- If the Exchange Information Store is online, the Agent for Microsoft Exchange provides a list of the Exchange databases and log files that should be excluded from the backup backup job.

  As a result, CA ARCserve Backup skips the excluded files and completes the filesystem backup.

- If the Exchange Information Store is offline, the Agent for Microsoft Exchange provides an empty list of Exchange databases and log files that should be excluded from the backup backup job.

  As a result, CA ARCserve Backup does not skip the Exchange server files and includes all files during the filesystem backup.

Real-Time Remote Browsing

This feature enables system administrators to view real-time file and directory information about the remote target machine.

Cyclic Redundancy Check Verification

The client agents generate Cyclic Redundancy Check (CRC) codes for all the files sent to the CA ARCserve Backup server. The CRC is used to verify the integrity of the files to be backed up.

Backup Verification Global Options

Client agents support the Scan Backup Media Contents and Compare Backup Media to Disk backup verification global options, which let you, verify that your data was backed up correctly.

If you select the Scan Backup Media Contents option, CA ARCserve Backup checks the header of each file on the backup media. If the header is readable, the data is assumed to be reliable. If the header is not readable, the Activity Log is updated with this information.

Note: If you select the Scan Backup Media Contents backup verification global option and enable the Calculate and Store CRC Value on Backup Media global option, in addition to checking the header of each file on the backup media, CA ARCserve Backup will perform CRC verification by recalculating the CRC value and comparing it with the one stored on media.

If you select the Compare Backup Media to Disk option, CA ARCserve Backup reads blocks of data from the media and compares the data, byte for byte, against the source files on the source machine, ensuring that all data on the media is exactly as it is on the disk. If a mismatch is found, the Activity Log is updated with this information.

For more information on backup verification options, see the online help.

Access Control Lists

Access control lists (ACLs) for Windows, UNIX, Linux, and Mac OS X client agents let you control which CA ARCserve Backup server accesses the workstation through the client agent. The initial configuration setting for these client agents enables all backup servers to back up and restore data through a Windows, UNIX, Linux, or Mac OS X client agent. By creating an ACL, you can restrict data backup and restore operations to a specific group of servers for the particular client agent.

Note: The Agent for FreeBSD in OS version 5.3 and 5.4, will backup and restore ACLs. Both default and access ACLs will be supported. This feature is not supported in FreeBSD version 4.11.

Extended Attributes for Linux and FreeBSD Client Agents

The Client Agent for Linux and FreeBSD versions 5.3 and 5.4 will support backup and restore Extended Attributes. FreeBSD version 4.11 will not support this feature.

File System Specific Flags for Linux and FreeBSD Client Agents

The Client Agent for Linux and FreeBSD agents support backup and restore of file system specific attributes, (called Flags in FreeBSD). FreeBSD versions 4.11, 5.3 and 5.4 will support this feature.

Data Compression

The Windows, UNIX, Linux, and Mac OS X client agents support the compression of data transmitted through the Transmission Control Protocol/Internet Protocol (TCP/IP) network. Compression is the reduction in size of data designed to save space and improve transmission time. When this option is configured, the client agent compresses all data packets before it begins transmission to the backup server.

Multistreaming

If you have more than one drive and more than one volume to be backed up, you can configure that system's client agent to use multistreaming. With multistreaming, you can take advantage of all available tape devices on the system. Multistreaming works by splitting a single backup job into multiple jobs that use all tape drives. As a result, multistreaming increases the overall backup throughput compared with single-stream, sequential processing.

On a Windows server, multistreaming is performed at the volume level for regular file systems (two volumes can run simultaneously on two separate devices). For preferred shared folders, remote database servers, and Windows NT, 2000, or XP agents, multistreaming is performed at the node level. On a UNIX or Linux server, you can configure the multistreaming level.

You can have only as many jobs running simultaneously as the number of local and remote devices or groups on the system. With multistreaming, one master job is created, which triggers slave jobs for as many volumes as necessary. When a job is finished on one device, another job is executed until there are no more jobs to run. For more information on multistreaming, see the *Administration Guide*.

Multiplexing

Multiplexing is a process in which data from multiple sources is written to the same media simultaneously. When a job that has multiple sources is submitted with the multiplexing option enabled, it is broken into child jobs—one for each source. These child jobs write data to the same media simultaneously. For more information on multiplexing, see the *Administration Guide*.

Snapshot and Direct I/O Features for Solaris and HP-UX Systems

You can enhance the performance of certain UNIX file systems (UFS) and Veritas file system (VxFS) volumes by using the Snapshot and Direct I/O (Direct Input/Output) features.

Note: These features are available at the disk volume level only, and only for Solaris and HP-UX systems.

With the Snapshot feature, the client agent allows you to back up your data faster and more efficiently. The CA ARCserve Backup client agent takes a snapshot of a UNIX volume, mounts the snapshot to a temporary directory created in the root volume, and then generates the backup. After the snapshot backup has completed, the file system agent dismounts from the temporary directory and deletes the snapshot. Some network machines can create and mount a snapshot of their backup data to an alternate mount point. Backup applications can then access and back up the data using the alternate mount point.

With the Direct I/O feature, the UNIX client agent remounts the volume using the Direct I/O Mount option. This feature may improve performance during file input/output (I/O) operations and can eliminate double buffering requirements.

Chapter 2: Installing the Client Agents

To perform a backup or restore job, you must install and start the appropriate CA ARCserve Backup client agent software. The client agent provides communication between a workstation and the CA ARCserve Backup server. This chapter describes how to install client agents.

This section contains the following topics:

System Requirements

See the readme file on the installation CD for hardware and software requirements for installing and running client agents. For assistance, contact Technical Support at http://ca.com/support.

Installation Considerations

The following sections include information you should review before installing the client agents.

Client Agent for Windows

Before installing the client agent for Windows, review the following considerations.

- Before you can run the client agent for Windows, your computer must be configured to communicate using one or more of the following network protocols:
  - Transmission Control Protocol/Internet Protocol (TCP/IP)
  - Windows Socket (WinSock) Direct

- There are some limitations when performing a remote setup during a client agent for Windows installation. The limitations are as follows:
  - **Windows XP**—You cannot perform a remote installation on a machine running Windows XP if the computer has been configured with the feature Force Network Logons Using Local Accounts to Authenticate as Guest.
  - **Windows XP (64-bit edition)**—Remote installation is not supported.
  - **Windows 2003 (64-bit edition)**—Remote installation is not supported.

  If you encounter any of these situations, you can install the client agent for Windows directly from the CA ARCserve Backup installation CD.

Client Agent for NetWare

Before installing the client agent for NetWare, review the following considerations.

- The client agent for NetWare can be installed on NetWare servers only. Also, to perform a NetWare installation, your local machine must be equipped with the Novell client for Windows.
- The NetWare server must be configured to communicate using the following network protocol:
  - TCP/IP
- You must have supervisor rights on the eDirectory tree of the NetWare computer on which you are installing this client agent. For details, see your Novell NetWare documentation.
- For optimum performance, use the latest NetWare C library (CLIB) and Systems Management Server (SMS) modules.
- The NetWare Loadable Modules (NLMs) are available from Novell.

Enterprise Option for OpenVMS

Before installing the enterprise option for OpenVMS, review the following considerations.

- A computer running the supported Alpha and VAX operating systems can use either TCP or User Data Protocol (UDP) with any of the following communications software:
  - Compaq UCX 4.2 eco 3 (on Alpha)
  - Compaq UCX 3.3 eco 13 (on VAX)
  - Compaq TCP/IP Versions 5.0 through 5.3
  - Process Software Multinet Version 4.1B (with patches) through Version 4.4
  - Process Software TCPWARE Versions 5.3 and 5.4

  Important! *If necessary, you can install two or more of these communications packages on the same computer; however, you can run only one package at a time. Do not run two or more of these communications packages simultaneously on the same computer.*

  Note: If you change OpenVMS TCP/IP stacks at any time, you must reinstall the OpenVMS Enterprise Option.
- You should back up your OpenVMS system disk before installing the OpenVMS Enterprise Option.
- Ensure that you have at least 10 blocks of free space for setup file**.**

Install the Client Agents

There are two CA ARCserve Backup installation CDs. To install a windows client agent use the CA ARCserve Backup r12 for Windows CD. To install a cross-platform agent, use the CA ARCserve Backup r12 Agent CD.

For more information on installing client agents see the *CA ARCserve Backup Installation Notes*.

Common Agent Automatic Installation

When you install the client agent for UNIX, Linux, or Mac OS X, the CA ARCserve Backup Common Agent is automatically installed.

Common Agent Configuration File for UNIX, Linux, and Mac OS X

The Common Agent (caagentd binary) is a standard component for all UNIX, Linux, and Mac OS X client agents. It is installed automatically during the first installation of UNIX, Linux, or Mac OS X client agent.

The Common Agent resides in the /opt/CA/BABcmagt directory. It keeps track of the client agents that are installed on the system in a configuration file named agent.cfg, which also resides in the /opt/CA/BABcmagt directory. During the installation of a new client agent, the agent.cfg file is updated with the new client agent's information. You will seldom need to modify this configuration file. Manual modification of this file is required only to enable some debugging messages or to change the default TCP/IP port on which the Common Agent runs.

A sample agent.cfg file with a client agent installed is shown next:

```
[0]
#[BABagntux]
NAME      BABagntux
VERSION nn.nn.nn
HOME      /opt/CA/BABuagent
ENV       CA_ENV_DEBUG_LEVEL=4:$CA_ENV_DEBUG_LEVEL
ENV       LD_LIBRARY_PATH=/opt/CA/CAlib:/opt/CA/BABcmagt:$LD_LIBRARY_PATH
ENV       SHLIB_PATH=/opt/CA/CAlib:/opt/CA/BABcmagt:$SHLIB_PATH
ENV       LIBPATH=/opt/CA/CAlib:/opt/CA/BABcmagt:$LIBPATH
BROWSER           cabr
AGENT     uagentd
MERGE     umrgd
VERIFY    umrgd

[36] DISABLED
#[BABcmagt]
#NAME BABcmagt
#HOME /opt/CA/BABcmagt
#TCP_PORT 6051
#UDP_PORT 6051
```

Common Agent Components

The Common Agent runs at all times as a daemon listening for requests on behalf of all the UNIX, Linux, and Mac OS X client agents that are installed on the system. During each client agent's installation, the BROWSER, AGENT, MERGE, and VERIFY components are registered with the Common Agent in a separate section.

Not all client agents have all of these components. For example, in the following sample configuration file, you can see the BROWSER component cabr, the AGENT component uagentd, and the MERGE and VERIFY component umrgd in the section for the UNIX, Linux, or Mac OS X client agent. Similarly, other client agents use other BROWSER and AGENT components.

```
[0]
#[BABagntux]
NAME            BABagntux
VERSION         nn.nn.nn
HOME            /opt/CA/BABuagent
ENV             CA_ENV_DEBUG_LEVEL=4:$CA_ENV_DEBUG_LEVEL
ENV             LD_LIBRARY_PATH=/opt/CA/CAlib:/opt/CA/BABcmagt:$LD_LIBRARY_PATH
ENV             SHLIB_PATH=/opt/CA/CAlib:/opt/CA/BABcmagt:$SHLIB_PATH
ENV             LIBPATH=/opt/CA/CAlib:/opt/CA/BABcmagt:$LIBPATH
BROWSER                 cabr
AGENT           uagentd
MERGE           umrgd
VERIFY          umrgd
```

Common Agent Port Numbers

By default, the Common Agent uses port number 6051 for both TCP and user datagram protocol (UDP). To change the default port, you must modify the BABcmagt section of the agent.cfg file with the new port numbers, and then restart the Common Agent by issuing the caagent stop command, followed by the caagent start command. Do not use the caagent update command after modifying port numbers.

Note: Under normal conditions, **do not use** this method to start or stop the Common Agent. Instead, you should run the Start and Stop scripts of the individual UNIX, Linux, and Mac OS X client agents installed on the system.

The following sample shows the configuration file before and after the script changes are made.

Before the change:

```
[36]
#[BABcmagt]
#NAME                BABcmagt
#HOME                /opt/CA/BABcmagt
#TCP_PORT            6051
#UDP_PORT            6051
```

After the change:

```
[36]
#[BABcmagt]
NAME                 BABcmagt
HOME                 /opt/CA/BABcmagt
TCP_PORT                    9051
UDP_PORT                    9051
```

The port changes take effect only after you restart the Common Agent. If you configure the Common Agent to run on a port other than the default port, you should also configure the CA ARCserve Backup server to access this Common Agent. You can do this by making an entry for the client agent in the port.cfg file. This file is in the config subdirectory under the home directory—$BAB_HOME/config/port.cfg—on the backup server.

By default, the Common Agent uses another UDP port, 0xA234 (41524), to receive CA ARCserve Backup requests for the Auto Discovery of UNIX, Linux, and Mac OS X client agents. This port is not configurable.

Host Equivalence User Credentials

When the Common Agent checks user credentials, it gives preference to host equivalence settings of the system. A UNIX, Linux, or Mac OS X system can be set up to grant access for specific users on specific hosts without requiring the user to provide credentials. You can grant this access by adding the specific user IDs to the /etc/hosts.equiv or .rhosts file. By default, the Common Agent follows these rules, then checks the user's password for authorization. To disable host equivalence checking, define the NO_HOSTS_EQUIV=1 environment variable in the agent.cfg file, as shown in the following example:

```
[36]
#[BABcmagt]
NAME      BABcmagt
HOME      /opt/CA/BABcmagt
ENV       NO_HOSTS_EQUIV=1
```

You can place the Common Agent in No Password mode or Single User mode with a set of access control lists if necessary. For more information about ACLs, see UNIX, Linux, and Mac OS X Access Control Lists in the chapter "Adding and Configuring the Client Agents."

Backup and Restore Access Control List Support for UNIX and Linux

CA ARCserve Backup Client Agent for UNIX, CA ARCserve Backup Client Agent for Linux, and CA ARCserve Backup Client Agent for Mainframe Linux back up and restore the access control list (ACL) for files and directories on a Linux system that have been backed up using the Linux client agent. The extended attributes for Linux are also backed up. ACL gives administrators finer control over files and directory access. The Linux client agent can read and set the ACL for each file and directory.

Verify ACL Libraries

To check that you have the required ACL libraries installed, run the following command:

```
>rpm -qa |grep libacl
```

If the libacl-devel-* or libacl-* packages are not listed, you must install them.

Verify the Linux ACL Library Version

To check the version, go to the directory where libacl.so is installed.

Verify the Linux ACL library version

1. Run ls –l . /libacl.so to display the libacl.so linking target library file.
2. Run file libacl.so<-linking-target-library> using the library file name.

   The result will show whether libacl.so points to a 32-bit or 64-bit version.

Create Link to 32-bit Linux ACL Library

If libacl.so points to a 64-bit library, you must create a link from the 32-bit library to libacl.so. The following example shows how to create the link on a 64-bit Mainframe Linux platform:

```
> cd /lib
> ln -sf libacl.so.1 libacl.so
```

Use the appropriate link command for your 64-bit Linux system.

Chapter 3: Adding and Configuring the Client Agents

After installing CA ARCserve Backup and its various client agents, you must add and configure each client agent machine in your network to the backup server. This chapter discusses the procedures for adding and configuring client agents.

This section contains the following topics:

Adding Client Agents

If you have CA ARCserve Backup installed on a Windows server, you can add client agents from your network using the Add, Import, Export Node feature or you can add client agents manually. The following sections include information on each of these methods.

How to Add, Import, and Export Nodes

Setting up a job in an environment with a lot of nodes and agents can be a time-consuming and tedious task. If you have multiple nodes and agents to be backed up, it may take time to add the nodes to the Backup Manager one at a time. The Add, Import, and Export Nodes feature lets you quickly and easily add multiple nodes and agents using the CA ARCserve Backup user interface, whether or not the nodes and agents will be backed up. You can use the Add, Import, and Export Nodes feature to add multiple nodes and agents into the system in either of the following ways:

Add multiple nodes and agents using the user interface

1. Use the Add/Import/Export Nodes dialog to manually enter the names of all the nodes and agents or select the nodes from the left-pane list of nodes and agents detected by auto-discovery.
2. Specify a user name and password for the nodes.
3. Save the information in the registry.

4. View the nodes and agents in the Backup Manager Source tree.
5. (Optional) Export the current nodes and agents to a .csv file.

   Note: A .csv file is a comma separated value file format

Add multiple nodes and agents using a .csv file

1. Specify the nodes and agents names in a .csv file.
2. Use the Import function on the Add/Import/Export Nodes dialog and specify the name of the .csv file from the user interface.
3. The node and agent names are imported from the .csv file and are added into the system.
4. Specify a user name and password for the nodes and agents.
5. View the nodes and agents in the Backup Manager Source tree.

More information:

Add, Import, and Export Nodes Using the User Interface (see page 30)
Add Multiple Nodes and Agents Using a .csv File (see page 33)
Export Multiple Machines to a Text File (see page 32)

Add, Import, and Export Nodes Using the User Interface

The Add, Import, and Export Nodes feature lets you quickly and easily add multiple nodes and agents using the CA ARCserve Backup user interface, whether or not the nodes and agents will be backed up.

To add, import, and export nodes using the user interface

1. Open the Backup Manager and select the Source tab.
2. Right-click the Windows Systems object in the browser and select Add/Import/Export Nodes from the pop-up menu.

   (Optional) From the Properties frame, click Add/Import/Export Nodes.

   The Add/Import/Export Nodes dialog opens and any existing nodes and agents are added to the list of agents which will be added to the Source tree as viewed in the right-pane.

3. Add the nodes and agents to the list in the right-pane, which will be added to the Source tree on the user interface. This can be done in the following ways:

   - Specify the host name or host name (IP address) of the nodes and agents that you want to add in the text box and click Add.

     The best practice is to specify the host name and the IP address of the target system. This approach ensures that CA ARCserve Backup can accurately detect the target system, based on its IP address, and display the system under the Windows Systems object.

     Note: If you specify only the host name, CA ARCserve Backup sets the IP address value to 0.0.0.0.

   - Select those nodes and agents from the list of nodes and agents detected by auto-discovery in the left-pane and click Add or Add All.

     You can select multiple nodes and agents using the CTRL or Shift key. The nodes and agents are removed from the left-pane list after they have been added to the right-pane list.

   - Click Import to add a list of nodes and agents using a .csv file. For more information, see Add Multiple Nodes and Agents Using a .csv File (see page 33).

   The nodes and agents that will be added to the Backup Manager Source tree are displayed in the right-pane list.

4. (Optional) Click Delete or Delete All if necessary to remove items from the right-pane list.

   The Delete and Delete All buttons are only enabled if you select a node or multiple nodes in the right-pane list. If the node was originally entered in the text box or imported from a .csv file, and you click Delete, the nodes will be removed from the right-pane list. If the node or agent was detected by auto-discovery, and you click Delete, the nodes or agents display in the left-pane list of nodes and agents detected by auto-discovery.

5. Select the nodes and agents in the right-pane list you want to enter a user name and password for and then click Security.

   (Optional) From the list of nodes and agents that will be added to the Source directory tree, double-click the Host name or Address value of the target system.

   The Security dialog opens where you can add the user name and password for multiple nodes and agents at one time. The nodes and agents displayed on the Security dialog are provided from the right-pane list on the Add/Import/Export Nodes dialog.

6. Enter the user name and password and click OK.

   You are returned to the Add/Import/Export Nodes dialog and the user name and password are added to the right-pane list.

7. (Optional) Select a node or agent in the left-pane list and click Properties.

   The Server Properties dialog opens and displays the Domain name, Server name, IP address, Last response time, and Products installed. These properties are detected by the auto-discovery service, so the Properties button will only be enabled when you select a node or agent in the left-pane list and click Properties.

8. Click OK.

   The nodes and agents are added to the Backup Manager Source tree or if an existing node or agent was deleted, it will be removed from the Backup Manager Source tree. If a node or agent name is duplicated, you will see a warning message indicating that this is a duplicate name and the node or agent will not be added to the Backup Manager Source tree. You can however, add multiple host names with the same IP address.

More information:

How to Add, Import, and Export Nodes (see page 29)
Add Multiple Nodes and Agents Using a .csv File (see page 33)
Export Multiple Machines to a Text File (see page 32)

Export Multiple Machines to a Text File

Nodes and agents that are already entered Backup Manager Source tab can be exported to a .csv file to make it easy to import the list of nodes and agents to another CA ARCserve Backup server.

To export multiple nodes and agents to a .csv file

1. Open the Backup Manager and select the Source tab.
2. Right-click Windows Systems in the browser and select Add/Import/Export Nodes from the pop-up menu.

   The Add/Import/Export Nodes dialog opens.

3. Click Export

   The Export dialog opens.

4. Select the nodes and agents you want to export.

   Note: By default, all nodes and agents are selected for you.

5. (Optional) Click Select All or Clear All to select or clear the nodes and agents in the list that you want to export.
6. Click OK.

   The Windows Save As dialog opens.

7. Select a path where the file should be created and saved.

   The selected nodes and agents are exported to a .csv file.

   Note: The user name and password are not exported.

You can now use the newly-created .csv file to import the list of nodes and agents to another CA ARCserve Backup server.

More information:

How to Add, Import, and Export Nodes (see page 29)
Add, Import, and Export Nodes Using the User Interface (see page 30)
Add Multiple Nodes and Agents Using a .csv File (see page 33)

Add Multiple Nodes and Agents Using a .csv File

A .csv files is a file that uses a comma separated value format. The Import function allows you to quickly and easily add multiple nodes and agents using the CA ARCserve Backup user interface by importing them from a .csv file.

To add multiple nodes and agents using a .csv file

1. Open the Backup Manager and select the Source tab.
2. Right-click Windows Systems in the browser.

   A pop-up menu opens.
3. Choose Add/Import/Export Nodes from the pop-up menu.

   The Add/Import/Export Nodes dialog opens.
4. Click the Import button.

   The Windows Open dialog opens.
5. Browse to the .csv file and click Open.

   The nodes and agents are added to the right-pane list on the Add/Import/Export Nodes dialog.
6. Select the nodes and agents in the right-pane list that you want to enter a user name and password for and then click Security.

   The Security dialog opens where you can add the user name and password for nodes and agents at one time. The nodes and agents displayed on the Security dialog are provided from the right-pane list on the Add/Import/Export Nodes dialog.
7. Click OK.

   The nodes and agents are added to the Backup Manager Source tree.

More information:

How to Add, Import, and Export Nodes (see page 29)
Add, Import, and Export Nodes Using the User Interface (see page 30)
Export Multiple Machines to a Text File (see page 32)

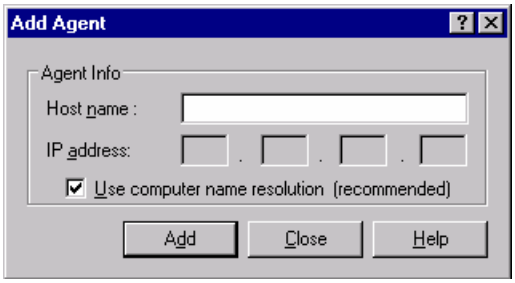
Manually Add Client Agents

If Auto Discovery does not detect all client agents in your network for some reason or if you want to add a particular client agent, you can manually add a client agent to a Windows server or NetWare server using the Windows manager interface. To manually add a client agent, you must add each client agent machine to the Backup Manager.

To manually add client agents

1. Open the Backup Manager and click the Source tab.
2. Right-click the appropriate client agent object, such as Windows Systems.
3. Select Add Machine/Object.

   The Add Agent dialog appears.



4. Enter the name of the computer in the Host Name field.

   Note: If you are adding a NetWare Client Agent, you MUST use the Novell server name as the host name.

5. Select the protocol you want to use to connect to the computer:

   - **TCP/IP—**Select TCP/IP and, if you are adding a Windows client agent, select Use Computer Name Resolution. Computer name resolution lets the local Windows computer automatically detect the remote Windows machine's IP address when connecting for backup and restore operations. This is the recommended method and works even if you do not know the computer's IP address.

     Note: If the target Windows computer has a dynamic IP address, using computer name resolution is preferable.

     If you are not adding a Windows client agent, if computer name resolution fails because of various DNS server or network configuration issues, or the target computer has multiple IP addresses and you want to be certain that a specific address is used, ensure that Use Computer Name Resolution is not selected and enter an IP address.

6. Click Add.

   The client agent is added to the server.

Windows Client Agent Configuration

The following sections discuss the Windows client agent configuration options.

Windows-Related Configuration Notes

General information pertaining to the configuration of the Windows client agent includes:

- **Restoring System State**—The System State supports the Restore to Original Location option.

  Note: The System State also supports restoring to an alternate location, but it will not recreate an operational system since the files are placed in default directories created by the agent at the time of restore.

- **Shares Support**—When the use agent option is selected, the client agent backs up shares selected from the Preferred Shares/Machines object in the Backup Manager by converting the share name to the real path.

  Note: On Windows platforms, the client agent does not restore shares or support shares as a destination except for administrative shares.

- **Restoration of the System Hive**—The KeysNotToRestore feature is designed to protect sensitive system registry keys during a regular restore of the client agent system hive. However, this feature is unavailable when you use the Client Agent Registry session to restore individual system keys.

Security Configuration Options

The Client Agent for Windows security options are defined on the Configuration dialog. Select one of the following types of security:

System Security

Lets you use Windows security to perform backup, compare, and restore operations. The client agent impersonates the active network user; that is, the client agent uses the user name and password to log on. This ID and password should identify a valid user in the local user database or in the domain database if the workstation is a member of a domain.

Password Security

Lets you set individual passwords for security. This setting enables the client agent to run under the local system account. Password Security is disabled by default.

Note: If password security is selected, and DSA-based database agents (for example, Sybase, Informix, and so on) are installed on the machine, whole node backup is not supported. To back up databases only, you must change the security information in the Security and Agent Information dialog, to the system security before submitting the job.

Backup Priority and Restore/Compare Priority Options

The Client Agent for Windows process priority is defined on the Configuration dialog. Select one of the following settings for Backup Priority and Restore/Compare Priority:

High

Foreground processing performs client agent functions before other processes.

Normal

Standard processing performs client agent functions without special status.

Low

Standard processing performs client agent functions when other processes are idle.

Multiple Concurrent Restore or Compare

The Client Agent for Windows simultaneous restore and compare is enabled on the Configuration dialog. Enable the Allow multiple simultaneous restore or compare jobs check box on the Configuration dialog if you want the Windows client agent to accept multiple concurrent restore or compare jobs.

Backup and Restore Execution Options

The Client Agent for Windows execution options are defined on the Configuration dialog. Select the pre-execution programs, post-execution programs, and define the execution delay.

Pre-execution

Enter or select the name of any batch programs (for example, C:\WINAGENT\PRE.CMD) that you want to automatically execute before the backup or restore operation.

Post-execution

Enter or select the name of any batch programs (for example, C:\WINAGENT\POST.CMD) that you want to automatically execute after the backup or restore operation.

Execution Delay

Select the number of seconds that you want the client agent to wait before or after executing the batch job.

Use the Backup Agent Admin to Set Windows Parameters

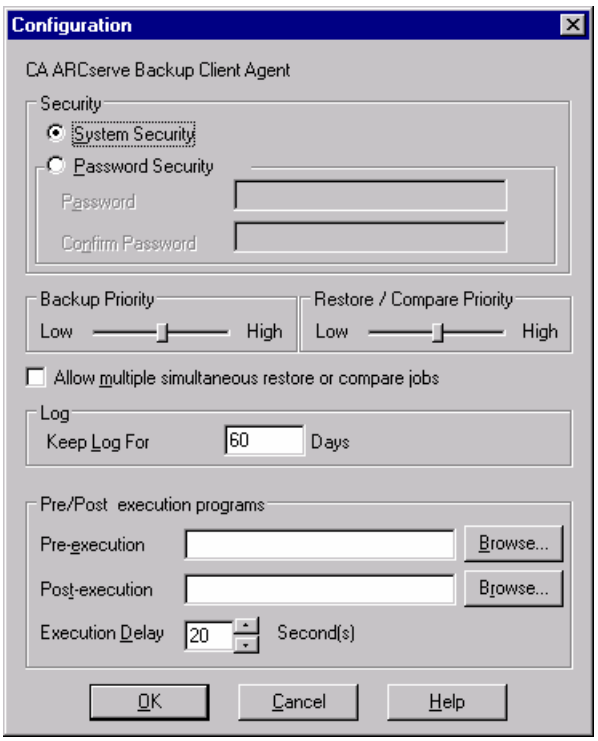
To Windows Client Agent parameters

1. Access the Agent Admin. To access the Agent Admin, click Start, Programs or All Programs, CA, ARCserve Backup Agents, Backup Agent Admin.

   Note: The window contents may differ slightly for each client agent, depending on the specific operating system in use.

2. From the Agent Admin, select the Options tab.

   The Configuration dialog opens.



   You can define the following settings using the Configuration dialog:

   - **Security Type Specification**--Select one of the following types of security:

     System Security--Select this Security option to use Windows security to perform backup, compare, and restore operations. The client agent impersonates the active network user; that is, the client agent uses the user name and password to log on. This ID and password should identify a valid user in the local user database or in the domain database if the workstation is a member of a domain.

     Password Security--Select this Security option to set an individual password for security. This setting enables the client agent to run under the local system account. Password Security is disabled by default.

- **Setting Process Priority**--These settings determine the priority given to the processes needed for the backup, restore, or compare operations. Select one of the following settings for Backup Priority and Restore/Compare Priority:

  High--Foreground processing performs client agent functions before other processes.

  Normal--Standard processing performs client agent functions without special status.

  Low--Standard processing performs client agent functions when other processes are idle.

- **Allow multiple simultaneous restore or compare jobs**--Enable this if you want the Windows client agent to accept multiple concurrent restore or compare jobs.

  Note: By default, this option is disabled to ensure that new backup or restore jobs of the same data set are not accidentally launched during a running restore job. If this does occur, the agent denies the new job's request and reports that the client agent is busy to the CA ARCserve Backup server.

- **Log--**The Log folder is stored in the following directory: c:\Program Files\CA\ARCserve Backup Client Agent for Windows. The log files and index files for every job that runs are stored in this folder.

  Keep Log For--Specifies the number of days (the default is 60 days) to keep the agent log. After the specified number of days has elapsed the log will be deleted when the next agent backup, restore, or compare job runs.

- **Pre-Execution and Post-Execution Programs**--Select the following execution options:

  Pre-execution--Enter or select the name of any batch programs (for example, C:\WINAGENT|PRE.CMD) that you want to automatically execute before the backup operation.

  Post-execution--Enter or select the name of any batch programs (for example, C:\WINAGENT|PRE.CMD) that you want to automatically execute after the backup operation.

  Execution Delay--Select the amount of seconds that you want the client agent to wait before or after the execution of the batch job.

3. Click OK to save your changes and exit the dialog.

Note: To change your configuration later, you must return to the Configuration dialog.

Configure Password Security

The client agent service uses the node (machine) user name and assigned password to log on to the CA ARCserve Backup Backup network.

To set password security for the client agent

1. Start the Backup Manager, and then right-click the machine name. A pop-up menu appears.
2. Choose Security from the pop-up menu to open the Security dialog. The User Name field should already contain the client agent's assigned user name.
3. Enter the password for the client agent.

   Note: The user name and password should identify a valid user in the local machine's database or in the domain database, if the workstation is a member of a domain.

   Also, when you specify the account to use, it may be necessary to distinguish between two accounts that use the same name (such as Administrator) by indicating where Windows can find each account. You can identify the client object's location by using tree name formats when identifying the user name. For example, for a domain named NTDEV containing a workstation named ENGINEER, the respective administrators are:

   NTDEV\Administrator

   ENGINEER\Administrator

View Configuration Selections

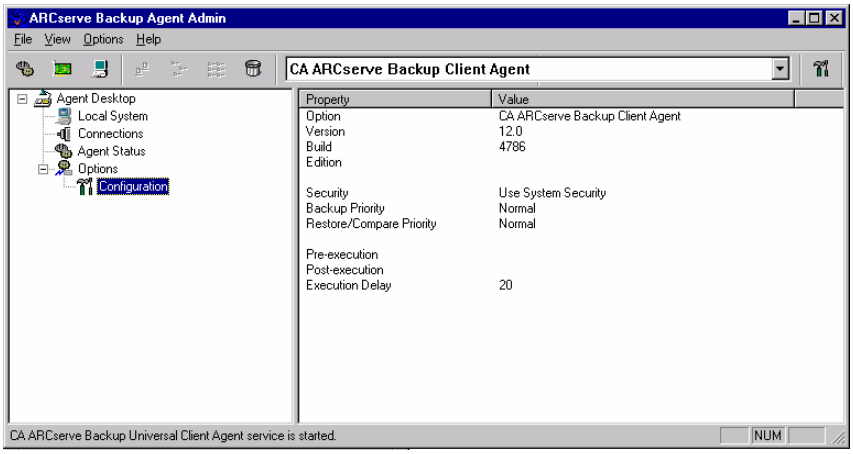
Before making changes to your configuration settings, you should verify your current configuration.

To view your configuration selections

1. Open the Backup Agent Admin.

2. Expand Options and then select Configuration.

   The current settings are displayed.

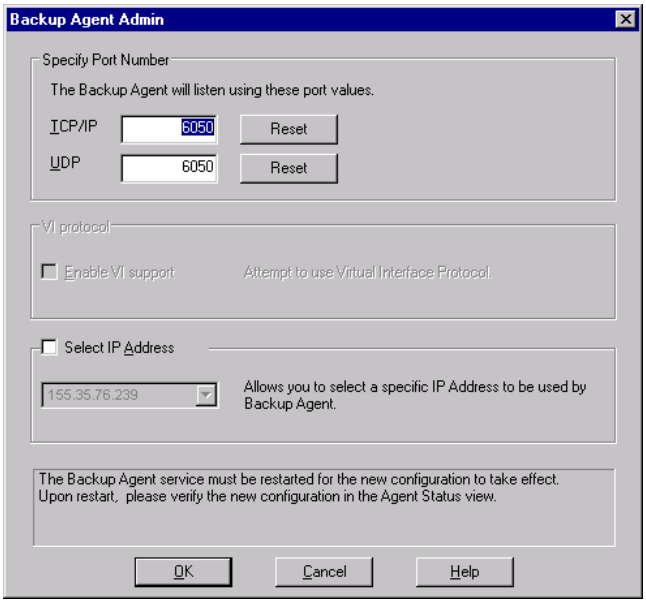


Configure Windows Network Communication

CA ARCserve Backup client agent services are shared across all configured client agents. By default, Windows client agents use TCP/UDP port 6050. You can change this behavior by using the Network Configuration menu in the Backup Agent Admin.

To configure network communication

1. Open the Backup Agent Admin.
2. From the Options menu, select Network Configuration:



3. Using this dialog, set the following network parameters for the client agent:

Specify Port Number

Accept the defaults or enter the port values you want CA ARCserve Backup to use. If you want to use the original default port, click the Reset button. The updated port information will be saved in the local PortsConfig.cfg file located in \Program Files\CA\SharedComponents\ARCserve Backup.

Note: Updated port information must be registered with the CA ARCserve Backup server component. To do this, you must modify the remote server PortsConfig.cfg file. For more information on port configuration, see the *Administration Guide*.

Select IP Address

The Windows client agent supports the use of multiple network interface cards (NICs). For computers with more than one network card, the agent checks all enabled NICs in the machine. You can manually override this selection by choosing the IP address of the NIC that you want to dedicate for backup purposes. When you define this configuration, the client agent will listen using only this interface card. All other NICs are ignored and you will not be able to use their IP addresses to connect to the client agent.

Any updated information also needs to be modified in the Windows CAPortConfig.cfg file and copied to the CA ARCserve Backup home directory. The following example shows a CAPortConfig.cfg file:

```
#Hostname IP address (optional) TCP port  UDP port
#myhost   nnn.nnn.nnn.nnn      6050     6050
mymachine nnn.nnn.nnn.nn       7090     7085
```

Set a Workstation Password

If you selected password security when configuring the Windows client agent from the Backup Agent Admin, you must specify the same password in CA ARCserve Backup.

To set a workstation password

1. From the Backup Manager, right-click the name of the client agent.
2. Choose Security from the pop-up menu.

3. Enter the local Windows user account name or enter the Windows domain account using the tree format.
4. Enter the password and click OK.

   Note: If you use a client agent to perform remote client backups and restores, the password you set for the client agent overrides any shared password set for the workstation. If you do not use client agent software for your backup jobs, you must specify share-level passwords on the Backup Manager window. Make sure that the password on the Backup Manager and the share-level password are the same.

Create Windows Access Control List

You can limit the servers authorized to perform backups on a Windows client agent object by generating an access control list (ACL). This feature is defined through the Backup Manager and the Backup Agent Admin. By creating an access control list and defining its type, you can restrict data backup and restore to a specific group of CA ARCserve Backup servers for the particular client agent. The ACL type can be:

No ACL used

No list is specified; this is the default.

Include list

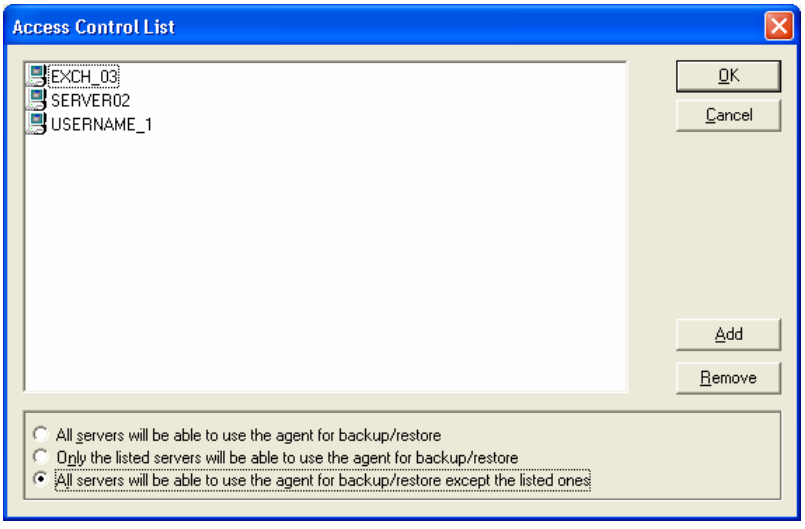
A list of servers allowed to access the client agent machine for backup and restore options.

Exclude list

A list of servers that are not allowed to access the client agent machine for backup and restore options. All other servers in the network can access the client object.

To create a Windows access control list

1. Open the Backup Agent Admin.
2. From the Options menu, select Access Control List.



3. When the Access Control List dialog appears, the default is to **not** use ACL and the setting **All servers will be able to use the agent for backup/restore** is selected. To create an ACL, select **one** of the following choices:
   - Only the listed servers will be able to use the agent for backup/restore
   - All servers will be able to use the agent for backup/restore except the listed ones
4. Click Add to add client agent names to the access control list, including as many names as you need for the ACL. If you want to remove client agents from the list, click Remove for each client agent being removed.
5. Click OK when you are finished adding or removing client agent names.

Enable Virus Scanning

CA Anti-Virus software offers extra protection for your critical data, securing it from virus threats even during backup and restore activities.

Using this option, you can configure the Windows client agent to automatically detect and repair viruses during a backup, copy, count, or restore operation.

To enable virus scanning

1. Open the Backup Manager or the Restore Manager.
2. From the toolbar, click the Options button to display the Global Options dialog.
3. Click the Virus tab.
4. Select Enable Virus Scanning.
5. Click the virus scanning options that you want to apply to the client agent. Available options include:

   Skip

   Do not back up or restore an infected file.

   Rename

   Rename the infected files with the extension x.AVB (for example, 0.AVB, 1.AVB, 2.AVB). If a file with the same name and the extension AVB exists, the system will name the file with a numeric version of that extension, for example, AV0, AV1, AV2.

Delete

Delete the infected file.

Cure

CA Anti-Virus cures the files that have been found to be infected. With the Cure option, infected files are automatically repaired during a backup without user intervention.

6. If you want each archive's component files individually verified, enable Scan Compressed Files.

   Note: This option may reduce backup or restore performance.

Customizable Local Options

When you explicitly select a parent object (in a parent-child database configuration), you can right-click a client agent object to customize local backup options. For more information on explicit job packaging see the *Implementation Guide*, and for more information on how to select sources when customizing local options see the *Administration Guide*.

NetWare Client Agent Configuration

The following sections discuss the configuration of CA ARCserve Backup NetWare client agent.

Note: Your Windows machine must be configured with the Novell client for Windows to install and run NetWare servers in your network.

NetWare-related Configuration Notes

Be aware of the following issues when configuring the NetWare client agent:

- Multiple jobs are not supported. The NetWare client agent can service only one job at a time. Trying to submit jobs to the client agent from multiple CA ARCserve Backup servers at the same time may cause the current job to fail.
- CA ARCserve Backup skips open NetWare files during a backup. When backing up NetWare files using the NetWare client agent, in some cases multiple files are detected as open and are skipped during the backup. Should this happen, select the Retry tab in the Backup Options dialog, and then select the Use Lock Mode if Deny Write Fails option in the File Sharing section, and resubmit the job.

- NetWare has a 255 character path name limit; for example, DIR1\DIR2\…DIRx. This restriction applies only to NetWare and not to other client agents, such as those for Windows, UNIX or Linux systems.

  Note: If a NetWare path name exceeds 255 characters, backup and restore operations work properly but path entries are truncated when they are displayed during browsing. Also, the Restore to Original or Alternate Location options still work for restores to the same client agent types.

Configure NetWare Network Communication

To configure the NetWare client agent for communication, edit the ASCONFIG.INI file to specify the IP address assigned to the client agent by the system administrator. Specifying an IP address is useful in a server with multiple IP addresses. Instead of using only the first bound address, the client agent uses the ASCONFIG.INI file to find the IP address to use.

To edit the ASCONFIG.INI file

1. From a text editor, open the ASCONFIG.INI file located in the client agent home directory.
2. Add the following line to the NetWare Agent section of the file, specifying the IP address that you want the client agent to use:

   IPAddress = nnn.nnn.nnn.nnn

   If a NetWare Agent section does not exist, create one by adding the following line to the end of the ASCONFIG.INI file:

   [NetWare Agent]

3. Save the file and exit from the editor.
4. Unload and restart the client agent.Unloading is required for changes to the ASCONFIG.INI file to take effect. To unload the client agent, use the NetWare client agent's Unload & Exit menu option. Alternatively, you can enter the following command at the server console:

   unload nwagent

5. When the client agent has been unloaded, restart the client agent (that is, reload the agent) at the server prompt by issuing the following command:

   ```
   nwagent
   ```

   A message appears at the server prompt, confirming the use of the IP address specified in the ASCONFIG.INI file:

   ```
   IP Address nnn.nnn.nnn.nnn from ASCONFIG.INI file will be used.
   ```

   A similar message is displayed on the client agent runtime message screen:

   ```
   IP Address nnn.nnn.nnn.nnn is bound for use by NetWare Push Agent.
   ```

The client agent is now ready to service backup and restore jobs using the IP address specified in the ASCONFIG.INI file.

Back Up Novell Directory Services

To properly back up Novell Directory Services (NDS), you must enter the full NDS name in the NDS Login name field. For example:

```
.cn=admin.o=organization_name
```

When restoring any NetWare sessions, you must supply the full NDS name when prompted for security information.

UNIX, Linux, and Mac OS X Client Agent Configuration

The UNIX, Linux, and Mac OS X client agent configuration file, uag.cfg, is located on the remote client workstation in the client agent home directory. This file, which is scanned for entries whenever a job is submitted to the workstation, can be used to set multiple options associated with the client agent.

Important! *Do not change any of the variables in the agent configuration unless instructed to do so by a representative of CA Technical Support.*

UNIX, Linux, and Mac OS X Configuration Considerations

The following list describes issues that you should be aware of when configuring the client agent on the UNIX, Linux, and Mac OS X platforms.

- **Session passwords**—Session passwords cannot be longer than 22 bytes for UNIX, Linux, and Mac OS X sessions.
- **Single character directory names**—You may experience display issues in restore views when restoring single character directory names. The data appears correctly in the database view.
- **Traverse Symbolic Links and Traverse NFS**—The options Traverse Symbolic Links and Traverse Network File System (NFS) are not supported for restore operations.

Note: If a configuration discrepancy exists in the CA ARCserve Backup option definitions for these client agents, the options that were set through the Backup Manager always take precedence over the options manually entered in the uag.cfg configuration file.

Port Address Configuration

The default TCP and UDP ports are 6051. The TCP port is used for communication and data transfer between the backup server (cprocess) and the client agent. The Backup Manager user interface uses the UDP port to browse hosts.

If you want to configure either the TCP port or the UDP port, or both, you must modify the configuration files on both the CA ARCserve Backup server and the client agent so that their values match.

The names of the configuration files are as follows:

- **CAPortConfig.cfg**—for CA ARCserve Backup Windows servers
- **agent.cfg**—for client agents

Note: See UNIX, Linux, and Mac OS X Client Agent Control Files for important information about the UNIX, Linux, and Mac OS X configuration files.

The following example shows the Windows server configuration file (CAPortConfig.cfg):

```
#Hostname  IP address (optional)  TCP port   UDP port
#myhost    xxx.xxx.xxx.xxx       6051       6051
```

The following example shows the syntax for the client agent configuration file (agent.cfg):

```
[36]
NAME        BABcmagt
HOME        /opt/CA/BABcmagt
TCP_PORT    7090
UDP_PORT    7085
```

UNIX, Linux, and Mac OS X Client Agent Control Files

The UNIX, Linux, and Mac OS X client agent control files specify which directories, file systems, or file system types are to be excluded from backup operations on a specific workstation. In particular, the following packages must be installed with the UNIX, Linux, and Mac OS X client agents:

- The Common Agent
- The Universal Agent (uagent)

Note: You must install the Common Agent before you install the uagent.

The control files installed for both packages include:

- Directory Control file

  Use the Directory Control file, uag.cntl, to list all directories or file systems (or both) that you want to exclude from backup operations on a workstation. To specify directories and file systems in this file, enter a slash (/) followed by a one line, complete path name. For example:

  ```
  /opt/account1
  ```

  Note: The Directory Control file is stored on the client agent workstation in the uagent home directory.

- File System Control file

  The File System Control file, fs.cntl lists the file system types on a particular workstation that are to be excluded from backup operations. To exclude a particular file system type, enter the type on a separate line in the fs.cntl file.

  Note: The File System file is stored on the client agent workstation in the uagent home directory.

- Browser Configuration File

  The Browser Configuration file, cabr.cfg, enables raw devices to be viewed with the browser. You must ensure that you have entered the absolute name of the raw device on a separate line in the cabr.cfg file.

- Common Agent Configuration File

  The Common Agent configuration file, agent.cfg, keeps track of each UNIX, Linux, or Mac OS X client agent installed on your system. This script is run automatically after the uagent is installed.

Note: Only a system administrator can edit the Directory and File System control files. However, other users may be able to append the files, depending on the file access rights the system administrator has assigned to the file.

Common Agent Configuration File

The Common Agent configuration file, called agent.cfg, tracks each UNIX, Linux, or Mac OS X client agent or application-specific backup agent installed on your system.

The agent.cfg file is located under the CA ARCserve Backup Common Agent installation directory, /opt/CA/BABcmagt, of each UNIX, Linux, and Mac OS X machine.

The file is populated with the required client agent information during the setup process, when the uagentsetup script is run. This script runs automatically after the uagent is installed.

Common Agent Configuration File Structure

Each section of the agent.cfg file contains groups of fields that directly correspond to an installed client agent on a UNIX, Linux, or Mac OS X device in the backup network. Except for the agent home directory location, all fields in the file are predetermined.

The environment variable field (ENV) contents are also determined during client agent installation and configuration. However, if required, you can enter values for this variable into the file manually. You should modify the agent.cfg only in certain circumstances; for example, if you wanted to associate an additional environment field with a particular database.

Note: Modifications to the agent.cfg file take effect only after the client agent machine is started (or stopped and restarted).

An example of the agent.cfg file is shown in the following table, with a description of each agent field.

File Contents	Field Description
[0]	Object type, a predefined number of a specific client agent in the network for UNIX and Linux
[4]	Object type, a predefined number of a specific client agent in the network for Mac OS X
NAME BABagntux	Name of the client agent
VERSION nn.n	Release and version number of the client agent

File Contents	Field Description
HOME /opt/CA/BABuagent	Default home directory for the client agent
#ENV CA_ENV_DEBUG_LEVEL=4	Environment variable passed to the client agent
#ENV CAAGPERF_ENABLE=1	Enables the features Snapshot and Direct I/O on Solaris and HP. For more information, see the section Configure Snapshot and Direct I/O
ENV LD_LIBRARY_PATH	Shared library search path for Sun, Linux, Tru64, and Mac OS X
ENV SHLIB_PATH	Shared library search path for HP
ENV LIBPATH	Shared library search path for AIX
BROWSER cabr	Browser module for the client agent
AGENT uagentd	Backup module for the client agent daemon
MERGE umrgd	Merge daemon
VERIFY umrgd	Scan daemon

Client Agent Home Directory

The default client agent home directory, BABuagent, is automatically defined during installation and setup. If required, however, you can specify a different home directory.

To locate the name of the home directory, look in the agent.cfg file under the BABagntux section of the file. The name of the client agent home directory is defined by the HOME variable.

How Common Agent Connection Requests Work

To initiate a client agent session, the CA ARCserve Backup server requests a connection for a UNIX, Linux, or Mac OS X client agent to use a specific backup component (such as BROWSER, BACKUP, or RESTORE). When it receives the request, the Common Agent accepts the connection and verifies the user's credentials for the system.

Upon user validation, the Common Agent checks the agent.cfg file for an entry corresponding to that particular client agent and the specified component. Only after it has validated both the client agent and the requested component does the Common Agent activate the client agent and the component. The Common Agent then returns to a state of waiting for additional requests.

Configurable Options

Options are used to optimize and customize the operation of the client agent. However, none of these options are required for the client agent to run. A complete list of options available for use when starting the UNIX, Linux, or Mac OS X client agent is shown in the following table.

Note: These options should be carefully set by administrators having UNIX, Linux, or Mac OS X knowledge. If you do not understand what an option or parameter means, do not set the feature unless instructed to do so by a CA Technical Support representative.

Option	Description
-ALLOW <*network address*> <*host address*>	Use this option with Single User mode, with the -S or -NOPASSWORD option, to define the IP addresses of computers that are authorized to access the client agents without requiring validation.

-ALLOW N:172.16.0.0(255.255.255.0) H:172.31.255.255

In this example, N denotes a network address and H denotes a host IP address. You can set an optional subnet mask.

Option	Description
-b *bufsize*	Defines the disk I/O buffer size in bytes. Options are 16384 to 65536 bytes; the default is 65536 bytes.
-c *n*	Specifies the sleep time while waiting, in milliseconds (ms). Options are zero (0) to 1000 ms; the default is 50 ms.
-CAUSER *USER*	Defines Single User mode. Used with the -S or NOPASSWORD option to set the Allow or Deny list on a per-user basis.

For example:

-CAUSER A: USER1 N: USER2

In this example, A means –ALLOW and N corresponds to -DENY.

Option	Description
-DENY *<network address> <host address>*	Use this option with Single User mode, with the -S or NOPASSWORD option, to define the IP addresses that are not allowed access to the client agents.

For example:

-DENY N:172.16.0.0(255.255.255.0) H:172.31.255.255

In this example, N denotes a network address and H denotes a host's IP address. You can set an optional subnet mask.

Option	Description
-l	Causes the client agent to check for advisory locks. The default is mandatory locks only.
-m *maxbuf*	Sets the number of buffers allocated for I/O. Options are 2 to 1024 buffers; the default is 128.
-NOPASSWORD	Specify this option if you need to use either the -ALLOW, -DENY, or -CAUSER options. This option is the same as the -S option in Single User mode with no password required.
-P *n*	Specifies the default time out, followed by a variable number (*n*), which is user-defined and measured in minutes (0 to 10). The default is 5 minutes.

For example, the option -P 10 assigns a wait time period for the backup or restore pre-script of 10 minutes.

Note: An error occurs if you use the -P option without defining a number *n.*

Option	Description
-Prebackup *filename* -Postbackup *filename* -Prerestore *filename* -Postrestore *filename*	Executes the default pre-scripts and post-scripts associated with the type of backup or restore job being run. The filename is optional and if is not specified, uag_pre_backup will be treated as the filename.
-S	Enables the Single User mode option. In Single User mode, user credentials are not checked against valid user IDs and passwords. Instead, access is granted based on the -ALLOW, -DENY, or -CAUSER options. For more information see the specific option.
-s *async*| *nonblocking*	Sets socket I/O to asynchronous, nonblocking mode.
-s *bufsize*	Specifies the size of the socket buffer. Options are 4096 to 65536. The default is system dependent.
-s *SocketMode*	Specifies to use socket mode for backup operations.
-sparse	Differentiates between sparse file and regular file operations.This option increases the efficiency of sparse file backups and restores. **Note:** Quota files are always treated as sparse files in backup and restore operations, regardless of whether you specify –sparse.
-verbose or -v	Places the system in verbose mode to enable the entry of detailed debugging messages at the console.

Snapshot and Direct I/O Support for UNIX

UNIX client agents support the Snapshot and Direct I/O features. To take advantage of these features, one of the following environments must exist on the machine running the UNIX client agent:

Feature	Platform	Software Requirements
Snapshot	Solaris	UFS file system with the fssnap package installed (Solaris 8 and 9) or the advanced version of VxFS file system.
Snapshot	HP-UX 11.0	Advanced version of VxFS file system or Online Journaling File System (JFS).
Direct I/O	Solaris	UFS file system or VxFS file system.
Direct I/O	HP-UX 11.0	Advanced version of VxFS file system or Online JFS.

Snapshot and Direct I/O Descriptions

With Direct I/O, the client agent takes a snapshot on advanced versions of VxFS, Online JFS (HP-UX), and UFS with fssnap installed on Solaris. The client agent mounts the snapshot to a temporary directory created in the root volume, and then generates the snapshot backup. After the snapshot backup is complete, the client agent dismounts from the temporary directory and deletes the snapshot.

To perform a snapshot backup, you must specify a snapshot buffer. A snapshot buffer is the disk space used to store the original data before it is overwritten in the snapped volume. Remember these considerations when using the snapshot buffer:

- The snapshot buffer needs to be large enough to store all the data that changes in the snapped volume for the duration of the backup. If the snapshot buffer runs out of space, the snapshot becomes invalid and the backup fails.
- The snapped volume and the snapshot buffer should not be on the same file system.
- For better performance, the snapped volume and the snapshot buffer should be on separate physical disks.
- For UFS on the Solaris platform (using fssnap), the snapshot buffer can be a file name, a directory name, or a raw partition.

For a Direct I/O backup or restore, you need to check the client environment and edit the caagperf.cfg configuration file. You can view Snapshot and Direct I/O on the file systems in the caagperf.cfg file by executing the mount command at the command line after submitting the backup or restore job.

For Snapshot, the output that appears after executing the mount command is a new, read-only file system with the mount point starting with the prefix SNAP_HOME_ . A Direct I/O user can observe the changes in the mount options on that particular file system. You can also see the detailed messages in the caagperf.log file if you enabled the logging flag in the caagperf.cfg file.

The following sections describe how to configure a UNIX client agent to use these features.

Configure Snapshot and Direct I/O

To configure the Snapshot and Direct I/O features, follow these steps:

1. Enable the environment variable CAAGPERF_ENABLE by adding the following line in the agent.cfg file:

   ```
   ENV CAAGPERF_ENABLE=1
   ```

   Note: The agent.cfg file is in the /opt/CA/BABcmagt directory.

   After you enable this environment variable, the client agent section of the agent.cfg file looks like this:

   ```
   [0]
   NAME            BABagentux
   VERSION         nn.nn.nn
   HOME            /opt/uagent
   ENV             LD_LIBRARY_PATH=/usr/local/Calib:/opt/CA/BABcmagt
   ENV             CAAGPERF_ENABLE=1
   ```

2. Prepare the configuration file named caagperf.cfg in the /opt/CA/BABcmagt directory. You need to specify the types of operations to be completed on the specified file systems in the caagperf.cfg file. See the next section for detailed descriptions.

Configuration Table Parameters and Values

The format of the configuration file is similar to a Windows .inf file. It has sections and key value pairs. The section names are the names inside the square brackets, and key value pairs are in KEY=VALUE format with one pair on each line. All the entries in the configuration file are case-sensitive.

The key value pairs are under the volumes to which they belong, and the section names are the names of those volumes. Two examples of the syntax of the section name in the caagperf.cfg file are [/] or [/export/home]. If a volume has multiple entries, the behavior of the client agent is undefined.

The key value pairs are used to set parameters for the volume under which they belong. By default, all options are disabled. If no special processing is needed for a volume, that volume should not be in the caagperf.cfg file.

The keys and their values are described in the following table:

Key	Value
DOSNAP	Enables the Snapshot feature on a volume. The value should be BACKUP, meaning that a snapshot should be taken during the backup operation.
SNAPSHOTBUFFER	Specifies the buffer used for storing original data before it is overwritten in the snapped volume. The value should be a file name or partition. The file can be a file or a directory from a different volume. The value of this field depends on the file system type. For the advanced version of VxFS or Online JFS, the value is the name of an empty partition. For UFS, the value is a file name, a directory name, or a partition name.
DOUBIO	Enables the Direct I/O feature on a volume. Values are BACKUP, RESTORE, and BACKUP_RESTORE. The value of this field depends on your backup or restore requirements.

You may find the following configuration file samples useful.

Configuration Files for UNIX Systems

The following are examples of different variations of UNIX systems configuration files.

Example: Solaris 8 or Solaris 9 operating system with a UFS file system with fssnap installed

The first line of the file is a debugging flag. The three sections that follow the debug entry correspond to the /opt, /export/home, and / volumes on the disk.

The sections for /opt and /export/home have Snapshot enabled during backup, and the / section has Direct I/O enabled for backup and restore.

```
##DEBUG
[/opt]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/garbage/snapbufferfile_1

[/export/home]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/garbage/snapbufferfile_2

[/]
DOUBIO=BACKUP_RESTORE
```

Example: Solaris 8 operating system with the advanced version of the VxFS file system installed

The file contains three sections. The first line of the file is a debugging flag. The three sections in the file are /opt, /export/home, and / volume. Sections for /opt and /export/home have Snapshot enabled during backup, and the / volume has Direct I/O enabled for backup and restore.

```
T##DEBUG
[/opt]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/dev/dsk/c0t0d0s4

[/export/home]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/dev/dsk/c0t0d0s4

[/]
DOUBIO=BACKUP_RESTORE
```

Example: HP-UX operating system that can have either an advanced version of the VxFS file system or the online JFS file system installed

The file contains four sections. The first line of the file is a debugging flag. The sections in the file are the /, /var, /usr, and /export volumes. In this file the / volume is enabled for Direct I/O during backup and restore and the other volumes are enabled for Snapshot during backup.

```
##DEBUG
[/]
DOUBIO=BACKUP_RESTORE

[/var]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/dev/vg00/lvol7

[/usr]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/dev/vg00/lvol7

[/export]
DOSNAP=BACKUP
SNAPSHOTBUFFER=/dev/vg00/lvol7
```

Trace Levels for the AS/400 Enterprise Option

Occasionally, based on instructions from CA Technical Support, you may need to change the level of activity that is logged for the AS/400 Enterprise Option. Because tracing levels can affect backup performance, do not change the values unless you receive specific instructions from CA Technical Support.

The following table shows all of the AS/400 Enterprise Option trace levels:

Level	Description
ASO$TRACE	This controls the trace depth of the client agent. Valid values are -1 and 0 to 0xFFFFFFFF. Setting the ASO$TRACE value to –1 logs the most detail.
ASO$TRACE_AST	This is a toggle. If defined, Asynchronous System Traps (ASTs) are traced.
ASO$TRACE_IDENT	This is a formatting parameter. The recommended value is between 0 and 5. The default is 3.
ASO$TRACE_DATA	This controls the number of bytes in each packet that is logged. The range is unlimited and starts at 0. The default is 300.

UNIX, Linux, and Mac OS X Access Control Lists

For UNIX, Linux, and Mac OS X client agents, ACLs are supported in Single User mode only. This is also known as No Password mode. A UNIX, Linux, and Mac OS X client agent—or database backup agent—can be put into Single User mode by specifying a NOPASSWORD entry in its corresponding section in the Common Agent configuration file, agent.cfg, located in /opt/CA/BABcmagt. A UNIX, Linux, and Mac OS X client agent can also be put into Single User mode by specifying the -S or -NOPASSWORD option in the uag.cfg. You can use two types of ACLs with the UNIX, Linux, or Mac OS X client agent:

Example: Allow or Deny Users

An access control list can deny or allow specific users to perform backups or restores. For example, a part of the agent.cfg file is shown in the following sample. You need to make similar changes for other client agent sections if you want to apply ACLs to those client agents too.

```
[0]
NAMEBABagentux
VERSIONnn.n.n
HOME/opt/uagent
NOPASSWORD
CAUSER A:CAUSER1 N:CAUSER2
```

NOPASSWORD enables Single User mode, and CAUSER specifies the users for whom permission is being granted or denied. (A stands for ALLOW and N stands for DENY.) A:CAUSER1 enables CAUSER1 to perform jobs, and N:CAUSER2 denies access to CAUSER2.

Note: For UNIX and Linux client agents, the object type is [0]. For the Mac OS X client agent, the object type is [4].

Example: Access the System with IP Addresses

An access control list can determine whether specific IP addresses can access the system. For example, a part of the agent.cfg file is shown in the following sample. You must make similar changes for other client agent sections of the file if you want to apply ACLs to those client agents too.

```
[0]
NAMEBABagentux
VERSIONnn.n.n
HOME/opt/uagent
NOPASSWORD
ALLOW N:172.16.0.0(255.255.255.0) H:172.31.255.255
DENY N:192.168.0.0(255.255.255.0) H:192.168.255.255
```

NOPASSWORD enables the Single User mode, and ALLOW and DENY specify whether a particular network or IP address is allowed to access the system. N denotes a network address and H denotes a host's IP address.

Note: An optional subnet mask can follow a network address; subnet masks are shown in parentheses.

For UNIX, Linux, and Mac OS X client agents, the specific type of ACL can be specified in uag.cfg, or you can specify them using the -S, -NOPASSWORD, -CAUSER, -ALLOW, and -DENY options. For more information about these options, see the section Configurable Options.

You can apply both types of ACLs concurrently. In each case, DENY takes precedence over ALLOW. In the Single User mode, all operations on the client agent are performed with superuser privileges. The caagentd.log contains information about the users, IP addresses, and network addresses denied during Single User mode.

AS/400 Enterprise Option Configuration

The AS/400 Enterprise Option start and stop preferences are configured using STRASO and ENDASO.

Configure Start Preferences

Library Level Backup preferences can be configured to enhance the AS/400 Enterprise Option.

To configure start preferences

1. From the command line, issue:

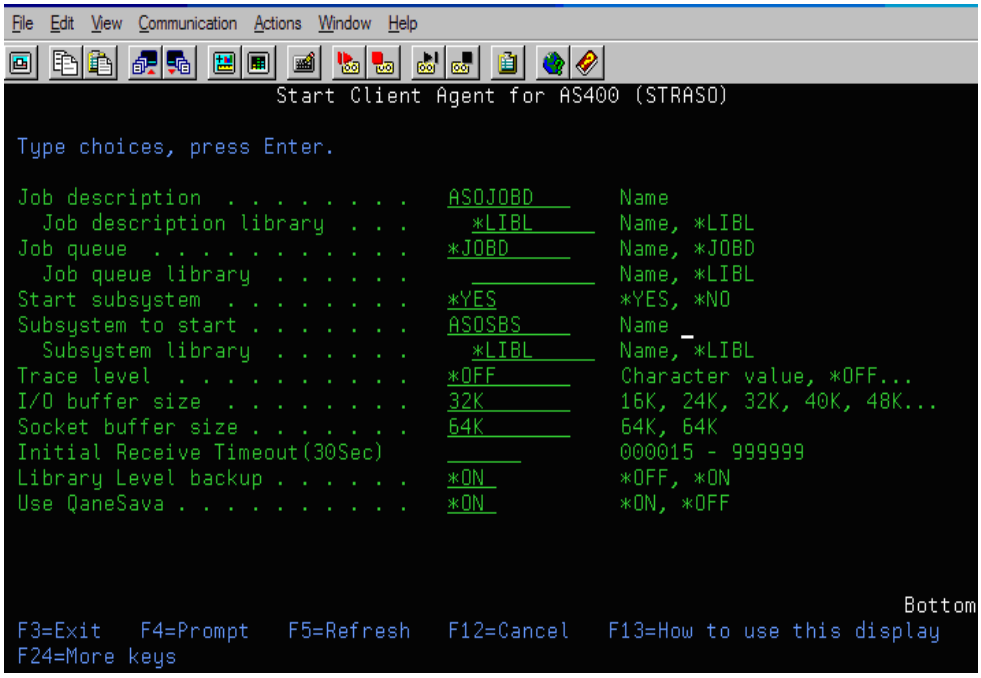
   straso

2. Press F4.

   The available options display.

3. Type your preferences and press Enter.

   Note: You can configure the preferences for Library Level Backup and Use QaneSava. These preferences enhance performance. For more information, see the section Performance Configuration.



Performance Configuration

By default both Use QaneSava and Library Level Backup are set to *ON. These settings increase the performance of the agent for library level back ups.

Use the Use QaneSava flag to toggle between *ON and *OFF. With the Use QaneSava flag set to *ON back ups are executed without creating a temporary SAVF file. By setting the flag to *OFF, back ups are executed and will create a temporary SAVF file.

Use the Library level backup flag to control the back up of libraries. When the Library level backup flag is set to *ON, the SAVLIB command is applied to library objects. The SAVLIB command improves performance because it saves both library information and all files inside a library in one backup. The Library Level Backup feature is especially useful when performing multiple library backups.

By setting the flag to *OFF, the SAVOBJ command is used to back up each file inside a library separately. Use this approach it you are not intending to do Library Level Backups.

Note: The Library Level Backup feature does not support incremental and differential backups.

Configure Stop Preferences

If necessary you can set stop preferences for the AS/400 Enterprise Option.

To configure stop preferences

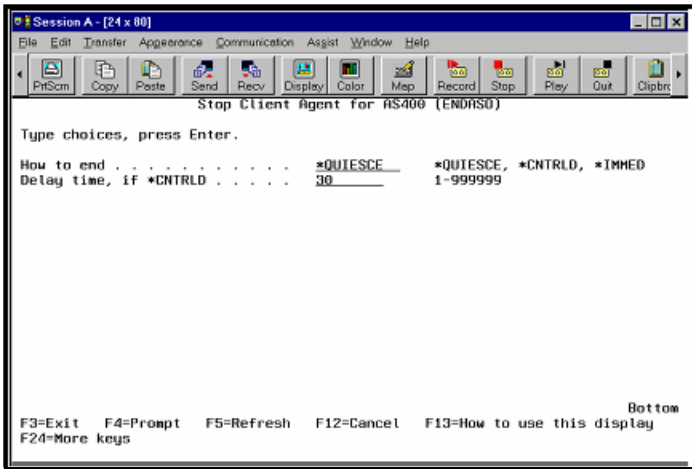
1. From the command line, issue:

   endaso

2. Press F4.

   The options display on the configuration screen.

3. Type your preferences and press Enter.



OpenVMS Enterprise Option Configuration

Other than the port address, the OpenVMS Enterprise Option does not require additional configuration after installation.

Configure Port Address

The default TCP and UDP port addresses are both 6050. The TCP port is used for communication and data transfer between the cprocess and the client agent. CA ARCserve Backup uses the UDP port to browse the hosts.

If you want to configure the TCP port or the UDP port, include the following command in the bab$startup.com file:

DEFINE /SYSTEM ASO$PORT_NUMBER *nnnn*

In this example, nnnn is the port number of the Backup Manager.

Important! *OpenVMS requires that both the UDP and TCP ports be assigned the same port number.*

TCP/IP Stack Optimization

The configuration of the TCP/IP stack can affect client agent performance. Typically, the TCP Send and Receive quotas are set to 4096. Set these values to the largest value allowed by the specific stack installed on the OpenVMS system.

Trace Levels for the OpenVMS Enterprise Option

Occasionally, based on instructions from Computer Associates Technical Support, you may need to change the level of activity that is logged for the OpenVMS Enterprise Option. Because tracing levels can affect backup performance, do not change the values unless you receive specific instructions from CA Technical Support.

Level	Description
ASO$TRACE	This controls the trace depth of the client agent. Valid values are -1 and 0 to 0xFFFFFFFF. Setting the ASO$TRACE value to –1 logs the most detail.
ASO$TRACE_AST	This is a toggle. If defined, Asynchronous System Traps (ASTs) are traced.

ASO$TRACE_IDENT	This is a formatting parameter. The recommended value is between 0 and 5. The default is 3.
ASO$TRACE_DATA	This controls the number of bytes of each packet that is logged. The range is unlimited and starts at 0. The default is 300.

Chapter 4: Using the Client Agents

This chapter describes how to use the client agents in a standard backup environment. It includes:

- Descriptions of the backup and restore statistics that the client agents can obtain and write to online logs, as well as the procedures for accessing this logged data
- Details on how to start and stop the client agents
- Instructions for scheduling and initiating backup and restore jobs and for checking the status of online client agents

This section contains the following topics:

Runtime Statistics

The client agent runtime components for both Windows and NetWare provide real-time statistics and display the progress of backup and restore jobs as they are being processed.

Note: Runtime statistics apply only to Windows and NetWare.

View Runtime Statistics for the Windows Client Agent

To view runtime statistics for the Windows client agent

1. From the Windows Programs (or All Programs, on XP machines) menu, select CA, ARCserve Backup, Backup Agent Admin.
2. Select Connections. The system displays the last ten jobs processed. If the job is still active, you can click the job to display its current runtime statistics. If the job has completed, completed statistics for that job are displayed.

   Note: The statistics are kept in memory; therefore, if you close the Backup Agent Admin dialog and the Universal Agent service, the connection statistics will be lost. You will, however, still be able to view the results of the job in the activity log.

View Runtime Statistics for the NetWare Client Agents

With the NetWare client agent, if the Runtime window is not available, you must switch windows to display it. If you are running Remote Console (RCONSOLE.EXE) to view the server console, press the ALT and F3 keys simultaneously and continue pressing the keys until the Runtime window opens. If you are at the server console, press the ALT and ESC keys simultaneously to switch windows.

Note: You can press the Ctrl and ESC keys simultaneously to display a list of current windows, and then you can choose the Runtime window.

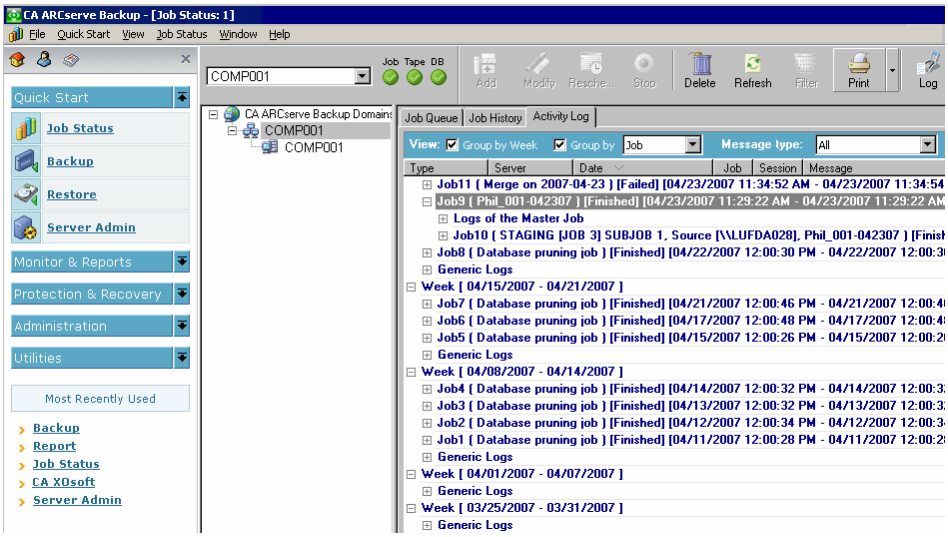
Activity Logs

The server-based CA ARCserve Backup system generates an activity log, which displays information about all the jobs that the client agent processes. The following sections explain how to display the activity log for each client agent from the server side and from the client agent side.

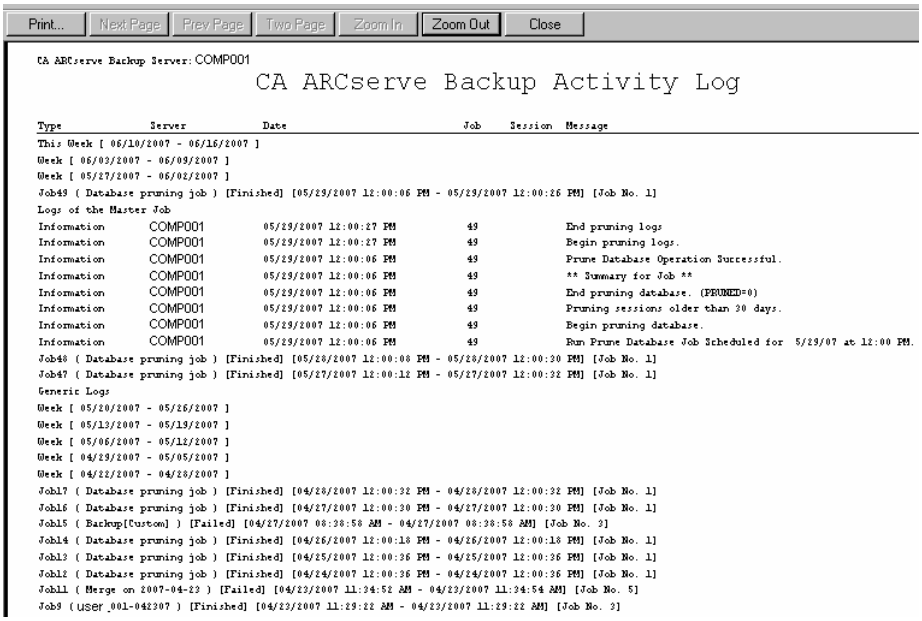
View Activity Logs on a Windows Server

To view the activity log on a Windows CA ARCserve Backup server

1. From the CA ARCserve Backup Home Page, select the Job Status menu to open the Job Status Manager.
2. Click the Activity Log tab to view a list of logs, as shown in the following example:



The printer or print-to-file output of a client agent activity log file looks like the one shown in the following sample:



Print... | Next Page | Prev Page | Two Page | Zoom In | Zoom Out | Close

CA ARCserve Backup Server: COMP001

CA ARCserve Backup Activity Log

Type	Server	Date	Job	Session	Message
This Week [06/10/2007 - 06/16/2007]					
Week [06/03/2007 - 06/09/2007]					
Week [05/27/2007 - 06/02/2007]					
Job49 (Database pruning job) [Finished] [05/29/2007 12:00:06 PM - 05/29/2007 12:00:26 PM] [Job No. 1]					
Logs of the Master Job					
Information	COMP001	05/29/2007 12:00:27 PM	49		End pruning logs
Information	COMP001	05/29/2007 12:00:27 PM	49		Begin pruning logs.
Information	COMP001	05/29/2007 12:00:06 PM	49		Prune Database Operation Successful.
Information	COMP001	05/29/2007 12:00:06 PM	49		** Summary for Job **
Information	COMP001	05/29/2007 12:00:06 PM	49		End pruning database. (PRUNED=0)
Information	COMP001	05/29/2007 12:00:06 PM	49		Pruning sessions older than 30 days.
Information	COMP001	05/29/2007 12:00:06 PM	49		Begin pruning database.
Information	COMP001	05/29/2007 12:00:06 PM	49		Run Prune Database Job Scheduled for 5/29/07 at 12:00 PM.
Job48 (Database pruning job) [Finished] [05/28/2007 12:00:08 PM - 05/28/2007 12:00:30 PM] [Job No. 1]					
Job47 (Database pruning job) [Finished] [05/27/2007 12:00:12 PM - 05/27/2007 12:00:32 PM] [Job No. 1]					
Generic Logs					
Week [05/20/2007 - 05/26/2007]					
Week [05/13/2007 - 05/19/2007]					
Week [05/06/2007 - 05/12/2007]					
Week [04/29/2007 - 05/05/2007]					
Week [04/22/2007 - 04/28/2007]					
Job17 (Database pruning job) [Finished] [04/28/2007 12:00:32 PM - 04/28/2007 12:00:32 PM] [Job No. 1]					
Job16 (Database pruning job) [Finished] [04/27/2007 12:00:30 PM - 04/27/2007 12:00:30 PM] [Job No. 1]					
Job15 (Backup[Custom]) [Failed] [04/27/2007 08:38:58 AM - 04/27/2007 08:38:58 AM] [Job No. 2]					
Job14 (Database pruning job) [Finished] [04/26/2007 12:00:18 PM - 04/26/2007 12:00:18 PM] [Job No. 1]					
Job13 (Database pruning job) [Finished] [04/25/2007 12:00:36 PM - 04/25/2007 12:00:36 PM] [Job No. 1]					
Job12 (Database pruning job) [Finished] [04/24/2007 12:00:36 PM - 04/24/2007 12:00:36 PM] [Job No. 1]					
Job11 (Merge on 2007-04-23) [Failed] [04/23/2007 11:34:52 AM - 04/23/2007 11:34:54 AM] [Job No. 5]					
Job9 (user_001-042307) [Finished] [04/23/2007 11:29:22 AM - 04/23/2007 11:29:22 AM] [Job No. 2]					

View Activity Log on a NetWare Client Agent Machine

The NetWare client agent writes to the nwagent.log, which is created in the client agent home directory. You can view this log using Windows Explorer by opening the file in the client agent home directory. Alternatively, you can view log file contents by selecting View nwagent.log at the console.

View Activity Log on a UNIX, Linux, or Mac OS X Client Agent Machine

As soon as the UNIX, Linux, or Mac OS X client agent begins running, an activity log file called uag.log is created and stored in the logs directory. The logs directory resides under the client agent home directory.

The uag.log file records all activities and errors that occur during machine backup and restore jobs. Each job is identified numerically in sequence, as well as by date and time, in the log display.

On the client agent machine, you can view the contents of these logs using the print *filename* command.

Note: All log messages relating to the Common Agent are located in the /opt/CA/BABcmagt/logs/caagentd.log file.

Activity Logs on Computer Running the AS/400 Enterprise Option

The Enterprise Option for AS/400 creates a log file in the CA ARCserve Backup library. The two file members are:

- AGENT.MBR, which records the activities and errors relating to agent operations
- ASBR.MBR, which records information on CA ARCserve Backup browsing activities

Activity Logs on Computers Running the OpenVMS Enterprise Option

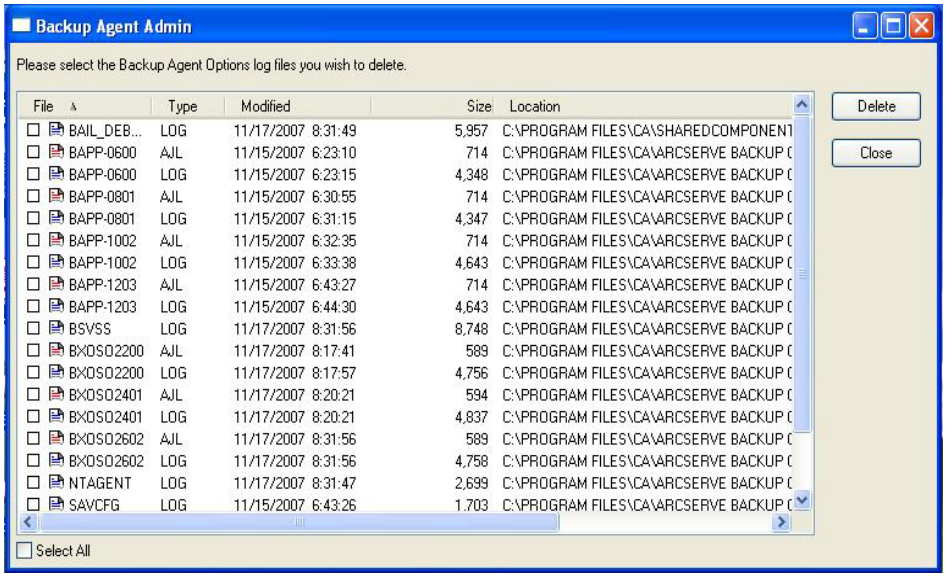
As soon as the agent begins running on the server, CA ARCserve Backup generates an activity log file named aso$agent_<nodename>.log, and stores it in the logs directory. A new log file—identified by sequential job number, date, and time— is created for each job and every subsequent startup of the agent. The content of each log file is determined by the level of tracing enabled on the agent.

Delete Client Agent Log Files

For UNIX, Linux, and Mac OS X client agents, delete log files from the client machine the same way you would delete any file on that machine. For example, run:

```
$>rm uag.log
```

For Windows client agent, use the Backup Agent Admin to delete log files:



Back Up Windows Network Server Data

If you installed a client agent on a Windows server, you can back up the server data through the client agent.

To back up Windows network server data

1. Open the Backup Manager.
2. Click the Source tab.
3. Expand the Network object, and then expand the Windows Systems network object until you locate the client machine.
4. Right-click the client machine. Choose Use Agent from the pop-up menu.
5. Check the Use Agent check box.
6. Select a protocol. Either select TCP/IP and enter the address for the client computer or select Use Computer Name Resolution, to specify that the client agent should determine an IP network address using the Dynamic Host Configuration Protocol.
7. Click OK.

   The client agent is now selected.
8. If you are prompted for security, enter the appropriate security for your environment.

Client Agent Start and Stop Procedures

The following sections describe the procedures for starting and stopping the various client agents.

Note: If the client agent is stopped at any time during a backup or restore job, the job will fail and must be restarted.

Windows Start and Stop Requirement

The Windows client agent uses a common component called the Universal Agent. This component is installed or updated during installation. The Universal Agent is registered as a service that starts automatically and runs under the local system account by default. When the service starts, the Windows client agent is loaded. The Windows client agent is available even when no users are logged into the system.

Use the Backup Agent Admin to start or stop the Windows client agent. The Backup Agent Admin monitors the client agent activity and protects against accidental job failures if the Universal Agent service stops.

NetWare Start and Stop Requirement

The installation process for the NetWare client agent creates a Network Client Facility file called NWAGENT.NCF. Before starting the client agent, ensure that this file was created and stored properly in the SYSTEM directory on the NetWare server's SYS volume.

Start the NetWare Client Agent

To start the Netware client agent, issue the following command at the remote server console prompt:

```
nwagent
```

The NetWare client agent includes a module called CSLOADER.NLM, which performs monitoring functions. When you start the NetWare client agent, CSLOADER.NLM also starts. CSLOADER.NLM displays, and records in log files, the results of this process as a series of informational messages. These messages can be helpful in tracking the source of a problem.

CSLOADER.NLM also works with the Pre-Flight Check (PFC.NLM), which evaluates the environment in which the client agent will be running. If the environment fails to meet its requirements, this checking mechanism signals CSLOADER.NLM to stop the loading sequence.

Stop the NetWare Client Agent

To stop the NetWare client agent, issue the following command at the NetWare server console prompt:

```
unload nwagent
```

UNIX, Linux, and Mac OS X Client Agents Start and Stop Requirement

Before starting the client agent, ensure that it has been configured. If the client agent has not been configured, run the following script:

```
#babuagent/uagentsetup
```

In this example, *babuagent* represents the full path name of the agent home directory. The default path is /opt/CA/BABuagent.

Start the UNIX, Linux, or Mac OS X Client Agent

After installing a UNIX, Linux, or Mac OS X client agent, the agent is started automatically.

To check the status of the agent, issue the following command at the command line:

```
# uagent status
```

To start the agent, issue the following command at the command line:

```
# uagent start
```

If the agent is not enabled, run the configuration script, uagentsetup.

Stop the UNIX, Linux, or Mac OS X Client Agent

To stop the UNIX, Linux, or Mac OS X client agent, log in as root and issue the following command at the command line:

```
# uagent stop
```

Common Agent Start and Stop Status

Whenever a client agent is started or stopped, the UNIX, Linux, or Mac OS X system scripts modify the agent.cfg file by marking the client agent entry in the file as enabled or disabled. The scripts also notify the Common Agent of the change. The Common Agent then determines whether to continue running, depending on the number of entries in the configuration file that are still enabled.

For example, issuing uagent stop for a UNIX client marks the BABagntux section disabled. If BABagntux is the only section of the file (that is, there is only one CA ARCserve Backup client agent installed), the Common Agent stops. You would then need to issue uagent start to enable the BABagntux section of the agent.cfg file.

When you enter the uagent start command, the Common Agent status changes from disabled to enabled. In summary, when a particular client agent is started or stopped, the scripts modify the agent.cfg file accordingly, and notify the Common Agent. At that point, the Common Agent decides whether to continue running, depending on the number of sections in the configuration file that are still enabled.

Check the Status of the UNIX, Linux, and Mac OS X Client Agents

To check the status of a UNIX, Linux, or Mac OS X client agent, log in as root and issue the following command at the command line:

```
# uagent status
```

If this command fails, the client agent may need to be configured. To configure the client agent, run the following script:

```
#babuagent/uagentsetup
```

In this example, *babuagent* represents the full path name of the agent home directory. The default path is /opt/CA/BABuagent.

Enterprise Option for AS/400 Start and Stop Requirement

You must have *JOBCTL (job control) authority to start or stop the client agent.

Start the Client Agent for Enterprise Option for AS/400

To start the agent, log on to AS/400 and issue the following command at the command line:

```
straso
```

Stop the Client Agent for Enterprise Option for AS/400

To stop the agent, log on to AS/400 and issue the following command at the command line:

```
endaso
```

Enterprise Option for OpenVMS Start and Stop Requirement

Ensure that you have the appropriate network credentials to operate the OpenVMS machine on which the client agent resides.

Start the Client Agent for the Enterprise Option for OpenVMS

To start the agent, log in as system and issue the following command at the command line:

```
@sys$startup:bab$startup.com
```

Stop the Client Agent for the Enterprise Option the OpenVMS

To stop the agent, log in as system and issue the following command at the command line:

```
@sys$startup:bab$shutdown.com
```

Check the Status for the Client Agent for the Enterprise Option OpenVMS

To check the status of the client agent, log in and issue the following command at the command line:

```
show sys /proc=aso$*
```

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