

CA ARCserve® Backup for Windows

Agent for IBM Informix Guide

r16



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CA Technologies Product References

This document references the following CA Technologies products:

- BrightStor® Enterprise Backup
- CA Antivirus
- CA ARCserve® Assured Recovery™
- CA ARCserve® Backup Agent for Advantage™ Ingres®
- CA ARCserve® Backup Agent for Novell Open Enterprise Server for Linux
- CA ARCserve® Backup Agent for Open Files on Windows
- CA ARCserve® Backup Client Agent for FreeBSD
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- CA ARCserve® Backup for Windows NDMP NAS Option
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- CA ARCserve® Backup for Windows Tape Library Option
- CA ARCserve® Backup Patch Manager
- CA ARCserve® Backup UNIX and Linux Data Mover
- CA ARCserve® Central Host-Based VM Backup
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- CA ARCserve® Central Reporting
- CA ARCserve® Central Virtual Standby
- CA ARCserve® D2D
- CA ARCserve® D2D On Demand
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Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Rebranded to CA Technologies.
- Updated to include user feedback, enhancements, corrections, and other minor changes to help improve the usability and understanding of the product or the documentation itself.

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Chapter 1: Introducing the Agent for IBM Informix

CA ARCserve Backup is a comprehensive, distributed storage solution for applications, databases, distributed servers, and file systems. It provides backup and restore capabilities for databases, business-critical applications, and network clients.

The CA ARCserve Backup Agent for IBM Informix provides backup and restore capabilities for the IBM Informix Dynamic Server (IDS). The types of data that can be backed up include both critical and non-critical dbspaces (primarily chunks, or specific regions of disk space); blobspaces (binary large object spaces); and logical logs (transaction records).

This section contains the following topics:

[How the Agent for IBM Informix Works](#) (see page 9)

How the Agent for IBM Informix Works

The Agent for IBM Informix works with ON-Bar, which is the backup and recovery utility for IDS. The primary job of the agent is to issue requests for the Informix ON-Bar utility on behalf of the Informix Manager. Options set through the Backup Manager interface are translated into the ON-Bar command-line options, to provide an integrated environment. You can also work from the ON-Bar command line to submit jobs directly to the Backup Manager.

The agent connects CA ARCserve Backup and IDS by communicating between the two applications, enabling data to be passed back and forth. The agent resides on the same system as IDS.

To back up a database, the CA ARCserve Backup Manager converts user entries into one or more requests, and sends the requests to the agent on the IDS system. The agent communicates this request to ON-Bar, which executes backup and restore requests for IDS. The agent retrieves the specified data objects from IDS and sends them to the Backup Manager, which copies the data to your storage media.

You can manage the backup and restore operations better with the following options.

Remote Procedure Call Service

When you enable Remote Procedure Call (RPC), the agent operates as a Windows service. You can configure the agent to start automatically through standard Windows setup or through the Services feature of the Control Panel. This configuration lets you run the agent without logging in.

Agent Parameters

You can customize the agent by modifying settings in the Windows registry, using the Windows REGEDT32 utility. Agent settings are listed in the HKEY_LOCAL_MACHINE window under the following key:

```
SOFTWARE\ComputerAssociates\CA ARCserve Backup\DSAgent\Current  
Version\agent\dbaifmx@ServerName
```

If the agent operates on a 64-bit system, then the following key can be used:

```
SOFTWAREWow6432Node\ComputerAssociates\CA ARCserve Backup\DSAgent\Current  
Version\agent\dbaifmx@ServerName
```

In this example, *ServerName* identifies the IDS instance name

The following optional settings are provided for the agent under the dbaifmx key:

CriticalFileBackupDelay

Specifies the current delay, in minutes, to back up critical IDS files located in the Informix\etc directory.

dll

Specifies the location of the agent files.

debug

Enables debug trace files for the agent. The default value is 0 (FALSE). You should enable this setting (change the default) only when requested to do so by CA Technologies Customer Support.

Note: The agent includes Activity Logs that provide information about backup or restore jobs and their status. These logs are located in the agent home directory, and are named dbaifmx.log, dbabatch.log, and xbsa.log. The home directory may also contain files called trace logs, which are created and updated only when debug is enabled. These logs are called dbaifmx.trc, dbabatch.trc, xbsa.trc, and IFMXwrapper.log. If required during a debug session, you may be asked to check these Job Logs to help determine the cause of the problem.

Full Offline Backups

You should keep at least one recent offline backup of your IDS databases. When performing a full offline backup, you must select the appropriate directories (in particular, the Informix home directory and Informix data files) from the Backup Manager window.

Access Control Lists

Access Control Lists (ACLs) let you to specify the CA ARCserve Backup servers permitted to back up the IDS database.

In a Windows environment, you can create and edit Informix ACLs from the CA\Agent Admin navigation tab.

For more information about ACLs, see the *Client Agents Guide*.

Chapter 2: Installing and Configuring the Agent for IBM Informix

This section describes how you can install and configure the Agent for IBM Informix. The section also explains the post-installation tasks you must perform before performing the first backup and restore operation.

This section contains the following topics:

[Installation Prerequisites](#) (see page 13)

[Preinstallation Tasks](#) (see page 14)

[Install the Agent for IBM Informix](#) (see page 15)

[Post-Installation Tasks](#) (see page 15)

[Uninstall the Agent](#) (see page 19)

Installation Prerequisites

Before installing the CA ARCserve Backup Agent for IBM Informix, verify the following:

- Your system meets the software requirements needed to install the Agent for IBM Informix. For a list of requirements, see the *readme file*.
- You have installed CA ARCserve Backup and it works properly.

Note: You can install the Agent for IBM Informix on the same computer as CA ARCserve Backup (the local computer) or on a separate computer (a remote computer).

- You have installed IBM Informix-Connect and it works properly.
- You have installed Informix Storage Manager (ISM).
- You have administrator privileges or any other equal privileges to install software on the computers where you will be installing the product.

Note: Contact your administrator to obtain the proper rights if you do not have them.

- You know the installation path. (You may use the default installation path.)
- You have completed the modifications to the Windows environment as described in [Preinstallation Tasks](#) (see page 14).

Preinstallation Tasks

Before installing the agent on computers running IDS, modify the Windows environment as described in the following sections.

Modify the Windows Environment for ISM Systems on IDS Versions

You must modify the Windows environment for computers running Informix Storage Manager (ISM) with IDS Versions 11.10, 11.50, and 11.70.

To modify the Windows environment

1. Select System in the Control Panel.
The System Properties dialog opens.
2. Select the Advanced tab, and click Environment Variables.
3. Modify the Path variable to include the location of the ISM directory path, as shown in the following sample:

```
C:\ism\ver#\bin
```

4. Click OK.
5. Click OK to close the Environment Variables dialog.

Note: The remaining steps are performed when you install the agent. If this procedure is skipped, perform the following steps.

6. Locate the sm_versions.std file

Note: The sm_versions.std file is a template for setting up the sm_versions file with information about the Storage Manager.

For more information about the sm_versions file, see the Informix user documentation.

7. Rename the existing sm_versions file to exclude the extension .std, as defined in your IDS release notes and as shown in the following example:

```
Informixdir\etc\sm_versions.std
```

to:

```
Informixdir\etc\sm_versions
```

8. Open the sm_versions file using Notepad to make sure it contains the following string:

```
1|1.0.1|ism|1|
```

If the string is not present, add it at the end of the file and save the file.

9. Close the file.

Install the Agent for IBM Informix

The Agent for IBM Informix follows the standard installation procedure for CA ARCserve Backup system components, agents, and options.

For detailed procedures about how to install CA ARCserve Backup, see the *Implementation Guide*.

Note: After you complete the installation procedure, restart your computer when prompted.

Post-Installation Tasks

After you install the agent, you must complete some tasks before you can begin operating CA ARCserve Backup with the agent. These procedures are described in the following sections.

Set the IDS ONCONFIG File

The installation program updates the ONCONFIG file in the IBM Informixdir\etc directory so that the agent can operate properly.

Note: If you do not update the ONCONFIG file during installation, you must use a text editor to manually enter the changes in the ONCONFIG file before you install and deploy the agent in your network.

Skip this procedure if you modified the ONCONFIG file during installation.

To modify the ONCONFIG file manually

1. Open the ONCONFIG file using Notepad or any text editor.
2. For IDS Versions 11.10, 11.50, and 11.70, insert the following lines in the ONCONFIG file:

```
BAR_MAX_BACKUP 1 # Informix Backup Agent  
BAR_BSALIB_PATH AGENT_HOME\libbsa.dll #Informix Backup Agent XBSA DLL
```

where *AGENT_HOME* is the home directory path of the agent.

If the current IBM Informix version is a 64-bit, then insert the following line:

```
BAR_BSALIB_PATH AGENT_HOME\64\libbsa.dll #Informix Backup Agent XBSA DLL
```

Important! For IDS Versions 11.10, 11.50, and 11.70, if your agent home directory path contains space characters (for example, C:\Program Files\Informix), you must enter the MS-DOS shortened name when you specify the path (for example, C:\progra~1\ Informix). To determine the shortened form of a path name, view the path in an MS-DOS command prompt window.

3. For IDS Versions 11.10, 11.50, and 11.70, replace the following line:

```
LTAPEDEV NULL #Log tape device_path
```

with this line:

```
LTAPEDEV \\TAPE1 #Log tape device_path
```

4. Save the file.
5. Stop and restart all IDS instances to apply the changes to the ONCONFIG file.

Note: An IDS instance means the concurrent operation of shared memory, processors, databases, and physical devices allocated to IDS, all of which can be monitored by the ONSTAT -p (profile) command.

Communication with ON-Bar

CA ARCserve Backup lets you configure batch jobs. Using CA ARCserve Backup, you can configure one IDS instance at a time. You can use the Informix Agent Batch Job Configuration dialog to submit backup and restore jobs using the ON-Bar command line on the IDS. However, if the agent server is hosting multiple instances of IDS, you must reconfigure the batch job configuration for each backup or restore job submitted through the ON-Bar command line.

Note: If you use CA ARCserve Backup and Restore Managers tools as your methods for initiating backup or restore jobs, the batch job configuration process is unnecessary.

You can also use the Informix Agent Configuration dialog to submit backup and restore jobs using the ON-Bar utility.

Prepare the Agent for Operation

After you install and configure the Agent for IBM Informix, perform the following steps before you run backup and restore jobs for IDS.

To prepare the agent for operation

1. On the server where IDS is running, start the Remote Procedure Call (RPC) service from the Services feature of the Control Panel.
2. Log in to Windows with a user account which has administrator privileges for backup. Enter informix (case sensitive) as the user name.
3. Synchronize jobs with other administrative tasks.
4. Verify the configuration of the server where IDS is running, by submitting a test backup job. You can use the ON-Bar command line.

For more information on using the ON-Bar command line, see the Informix ON-Bar documentation.

Uninstall the Agent

You can uninstall the Agent for IBM Informix if you are not using it anymore.

To uninstall the agent

1. Open the Windows Control Panel.
2. Double-click Add or Remove Programs.
The Add or Remove Programs window opens.
3. Select CA ARCserve Backup and then click Remove.
The CA ARCserve Backup Remove Application window opens.
4. Select CA ARCserve Backup Agent for IBM Informix and then click Next.
Warning messages if any appear.
5. Click Next.
6. Select the Click this check box to confirm that you want to remove the specified components from your computer check box and then click Remove.
The agent is uninstalled and the updated list of CA ARCserve Backup components available on your server appears.

Chapter 3: Using the Agent for IBM Informix

You can use the Agent for IBM Informix to back up IDS objects such as dbspaces, blobspaces, and logical logs. Command line options associated with the ON-Bar utility are also available. For more information about using ON-Bar, see the Informix ON-Bar documentation.

This section contains the following topics:

[Recommendations for Backing Up IDS Database](#) (see page 21)

[Back Up an IDS Database](#) (see page 22)

[Unsupported Backup Functions](#) (see page 26)

[Recommendations for Restoring an IDS Database](#) (see page 27)

[Restore an IDS Database](#) (see page 28)

[Media Rotation Precautions](#) (see page 31)

[Unsupported Restore Functions](#) (see page 31)

[Perform Disaster Recovery](#) (see page 32)

[Verify IDS Status](#) (see page 33)

Recommendations for Backing Up IDS Database

When you submit a job from the Backup Manager, CA ARCserve Backup validates the jobs in the queue. The agent then converts the job requests to ON-Bar commands, which appear in the Activity Log for this agent.

To ensure a complete restore operation based on your organization's defined backup schedule, we recommend the following:

- Periodically stop IDS services and perform a full offline backup (regular file backup) of the IDS configuration and data files, without the agent. This ensures that restores will be successful if dbspaces or blobspaces are lost. Before starting the backup job, stop all IDS services using the Services feature of the Control Panel.
- Back up dbspaces or blobspaces immediately after you create them, and maintain a regular backup schedule to ensure smooth recovery in case of dbspace or media failure. CA ARCserve Backup lets you set and maintain a regular schedule of automatic backups.
- IDS reuses logical logs. To conserve disk space, IDS limits log size and quantity. When these logs are full, you must back them up to free them for reuse.

- Before submitting jobs using the Backup Manager, ensure that the following CA ARCserve Backup services are running:
 - Job Engine
 - Tape Engine
 - Database Engine

Back Up an IDS Database

When you submit a backup job, ON-Bar evaluates your backup privileges and IDS status, and submits the job to CA ARCserve Backup. You can view one (or more) job per dbspace, blobspace, or logical log being backed up.

To back up an IDS database

1. Verify that IDS is online.

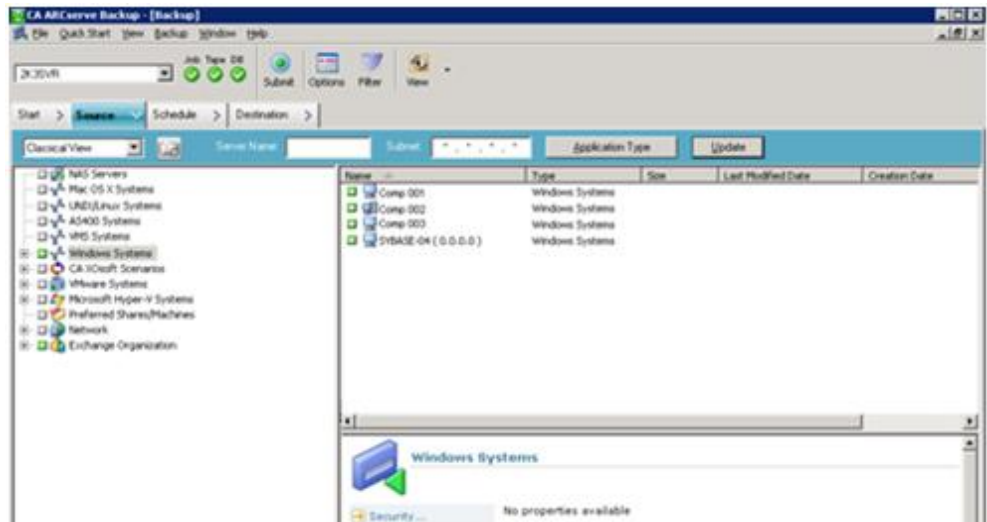
You can back up data using the Agent for IBM Informix only when IDS is online.

Note: Be sure to submit the #LOGFILE# backup with each salvage operation when IDS is offline.

2. Start the Backup Manager.

Important! The agent supports only single, non-concurrent backups and restores. It does not support parallel operations.

3. Click the Source tab if it is not already visible. In the Source view, select the Informix server you want to back up.



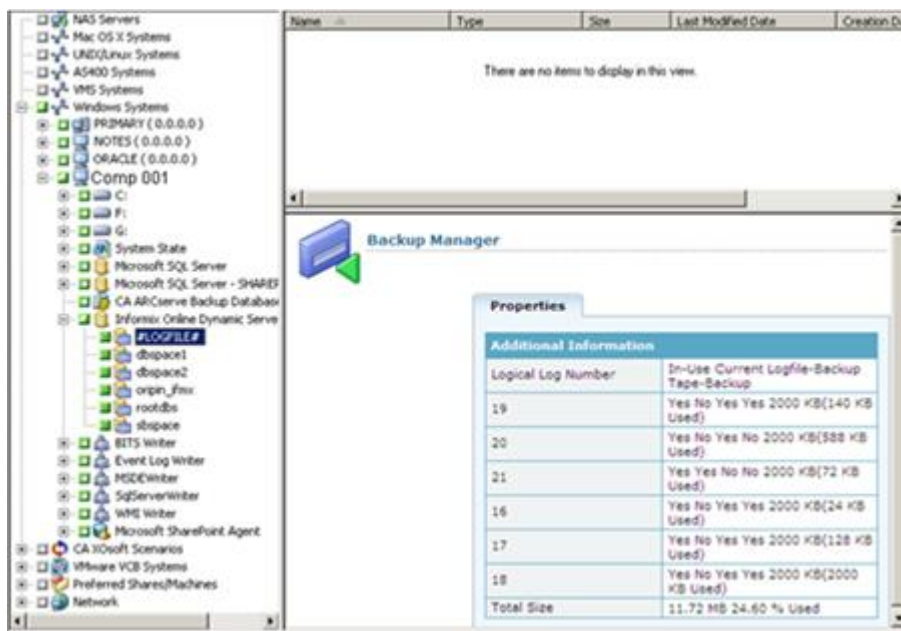
Selecting the server in Backup Manager is equivalent to the following ON-Bar full-backup command (for Informix 11.10, 11.50, or 11.70):

```
onbar_d -b -w
```

Note: When you select a full Informix server backup (that is, one that includes all IDS objects on the server), the system backs up all files located in the \etc directory under the Informix home directory. The \etc directory must contain ONCONFIG, IXBAR, ONCFG, and other critical files. If the \etc directory does not contain these files, modify the Informix environment to ensure that the files are there.

Also, the Agent for IBM Informix backs up the files located in the \TAPEINFO directory under the agent directory to ensure the backup of the XBSATAPE.TBL file. The XBSATAPE.TBL file is critical for an IDS restore.

If you select individual dbspaces or blobspaces, the Informix server is automatically selected. The box to the left of the selection is partially shaded even when all objects are selected.



The box is partially shaded because dbspaces and the logical logs were individually selected. In this case, a full Informix server-level backup does not occur.

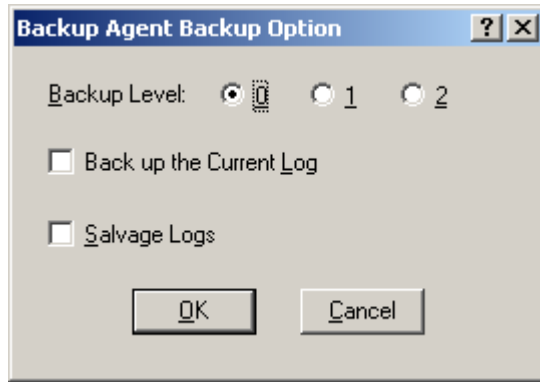
Important! For logical log backup options to work properly, you must select the #LOGFILE# entry.

Selecting the objects in CA ARCserve Backup is equivalent to the following ON-Bar commands for IDS Version 11.10, 11.50, and 11.70:

```
onbar_d -b sbpace rootdbs dbpace1 dbpace2 oripin_ifmx
onbar_d -l
```

4. Right-click the Informix server and choose Backup Agent Backup Options.

The Backup Agent Backup Option dialog opens.



5. Specify the options to complete a backup.

The following describes how backup levels are used:

Level 0

Use this for a Full backup

Level 1

Use this to back up changes since the Level 0 backup

Level 2

Use this to back up changes since the Level 1 backup

CA ARCserve Backup Option: Backup Level 0

ON-Bar Option: -L0

Description: Full backup

IDS Status: Online

CA ARCserve Backup Option: Backup Level 1

ON-Bar Option: -L1

Description: Incremental backup based on the last Level 0 backup

IDS Status: Online

CA ARCserve Backup Option: Backup Level 2

ON-Bar Option: -L2

Description: Incremental backup based on the last Level 1 backup

IDS Status: Online

CA ARCserve Backup Option: Backup Current Log

ON-Bar Option: -c

Description: Backs up the current active logical log and other full logical logs that were not backed up.

IDS Status: Online

CA ARCserve Backup Option: Salvage Logs

ON-Bar Option: -s

Description: Backs up all logical logs that reside on the disk

IDS Status: Offline

Note: By default, the agent performs a Level 0 backup.

Important! A full offline restore always attempts to salvage logical logs before restoring the root dbspace. If the salvage fails, the restore continues; however, transactions that cannot be salvaged are lost. Therefore, it is important that you keep copies of logical log backups until you are sure that you do not need them to complement a restore from a backup.

6. Click the Schedule tab and select the scheduling options.

You can run the backup job at this point or schedule the job to run later.

For more information about scheduling options, see the *Administration Guide*.

7. Select the media Device Group and the media for the backup job from the Destination view.
8. Click the media device for the backup destination.

The name appears in the Media field.

9. Click Submit on the toolbar.

Depending on your selection, the job is either executed immediately or queued for execution.

10. Click Security.

11. Enter your security information and click OK.

When the operation is complete, the message, Backup Operation Successful appears.

Note: The first job submitted for backup is always a test job, with no actual data. It is used to trigger ON-Bar. If the job is successful, the message, Backup Operation Successful appears. This message indicates that ON-Bar was successfully activated. However, the actual backup process is still in progress. You can track the progress of the job using the Job Status option.

If a backup job fails because of a CA ARCserve Backup or agent environment variable (such as a request for unavailable media), then the ON-Bar process may stop responding. Use the Windows Task Manager to determine if ON-Bar is responding. If the ON-Bar process is responding, then run the following command from the agent directory:

```
stopxbsa.exe informix_server_instance_name
```

Unsupported Backup Functions

The Agent for IBM Informix does not support the following file system functions:

- Backing up Informix data using Disk Staging and with a GFS rotation schedule
- Verifying media
- Comparing tape to disk
- Using InoculateIT (eTrust®) options
- Clearing the archive bit on incremental and differential grandfather-father-son (GFS) rotation backups
- Executing *run now* to rerun an Informix child backup job from the Job Status Manager
- Encrypting passwords
- Encrypting data on the agent system
- Encrypting data on the backup server
- Compressing data on the agent system

Recommendations for Restoring an IDS Database

Before restoring IDS logical logs, dbspaces, and blobspaces, you must note the following:

- Restores always consist of the complete backed-up set of data. You cannot restore these objects individually unless they are damaged; to restore damaged dbspaces and blobspaces, you must perform a disaster recovery restore.
- When performing disaster recovery, you may need to restore critical IDS files located in the \etc directory, under the Informix home directory.
Important! Be cautious with this procedure; restoring critical files overwrites the current files. To determine when you should restore the critical boot files, see the [IBM Informix documentation](#).
- If you are executing a full restore, shut down all IDS services before starting the restore operation.
- The Restore by Tree view is the supported format.
- If you are restoring an Informix instance with the Last Logical Log option selected, ensure that you assign a correct value to the restore job and save it in the emergency boot file.
- A restore job will fail if you attempt to restore multiple Informix instances on the same media because CA ARCserve Backup cannot restore the instances sequentially. To restore multiple Informix instances, restore them individually by submitting a new job for each instance, after the previous instance has been successfully restored.

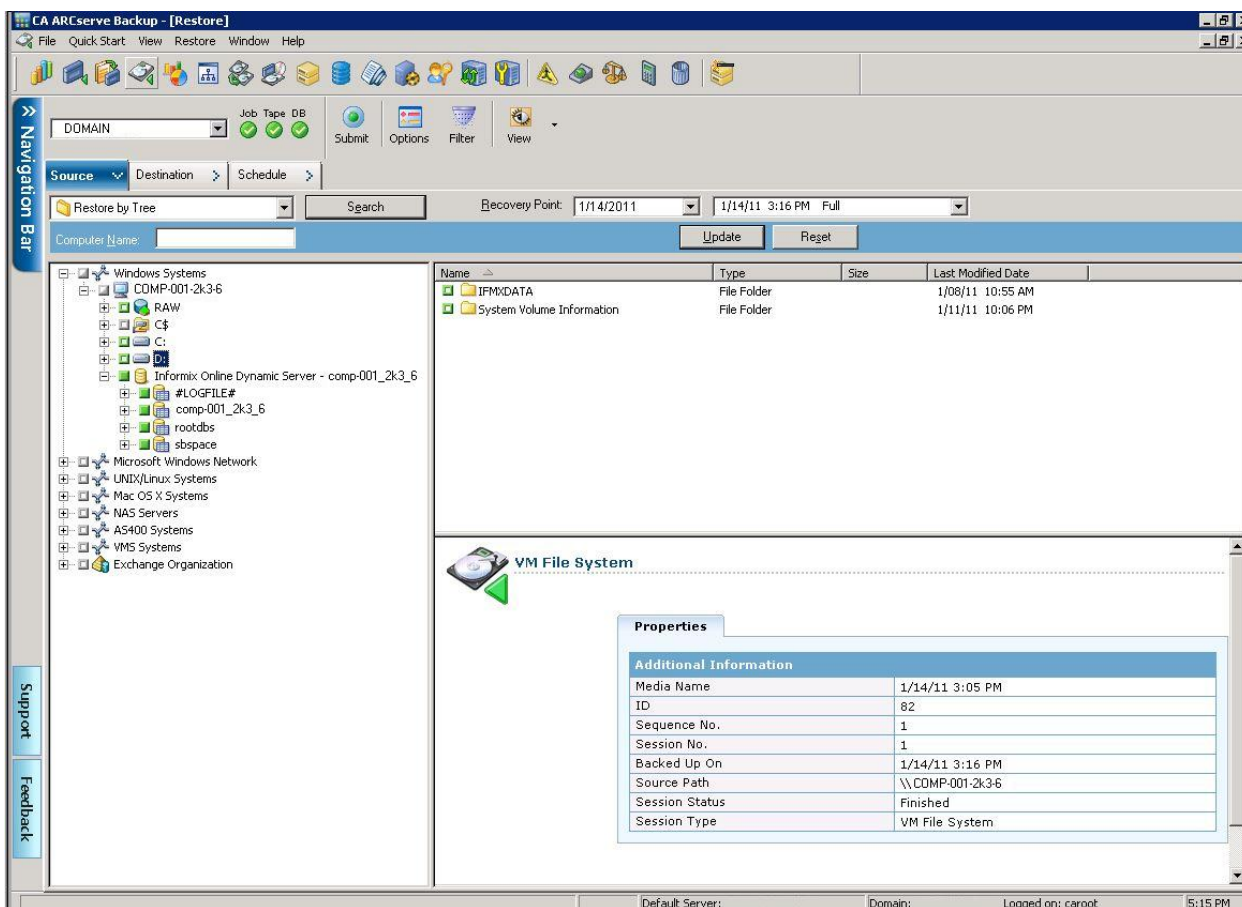
Restore an IDS Database

You can restore an IDS database including logical logs, dbspaces and blobspaces.

To restore an IDS database

1. From the Restore Manager, select the items to be restored. This can be either the entire Informix server, individual dbspaces, or blobspaces.

Note: Only one dbspace can be restored at a time.



Note: Do not restore the #LOGFILE#. The Informix server restores the logical logs automatically when a logical restore is performed.

2. On the Source tab, right-click the Informix server.
The Restore Options dialog opens.

The following table indicates the available restore methods and restore options:

CA ARCserve Backup Option		ON-Bar Option	Description
Restore Methods	Physical and Logical	-r	Restores all dbspaces, blobspaces, and logical logs.
	Physical Only	-p	Restores all dbspaces and blobspaces.
	Logical Only	-l	Restores logs only.
Restore Options	Last Logical	-n log	The number of the last log to be restored. If any logs exist after this one, they are not restored.
	Point in Time	-t time	The point in time at which to stop the restore.

Important! The Point in Time option is for Informix server-level restores and cannot be combined with any individual dbspace or blob space restore job. Do not select the Logical Only restore method and the Point in Time restore option at the same time. If the Logical Only method is combined with any dbspaces or blobspaces, IDS ignores the objects and executes an Informix server-level logical restore.

Note: For information about the different options and requirements available for performing cold restores, warm restores, physical restores, and logical restores, see the *Informix ON-Bar* documentation.

- Click the Destination tab.
- Select the option, Restore Files to their Original Locations. (The destination must be the original location.)

The Security dialog opens.

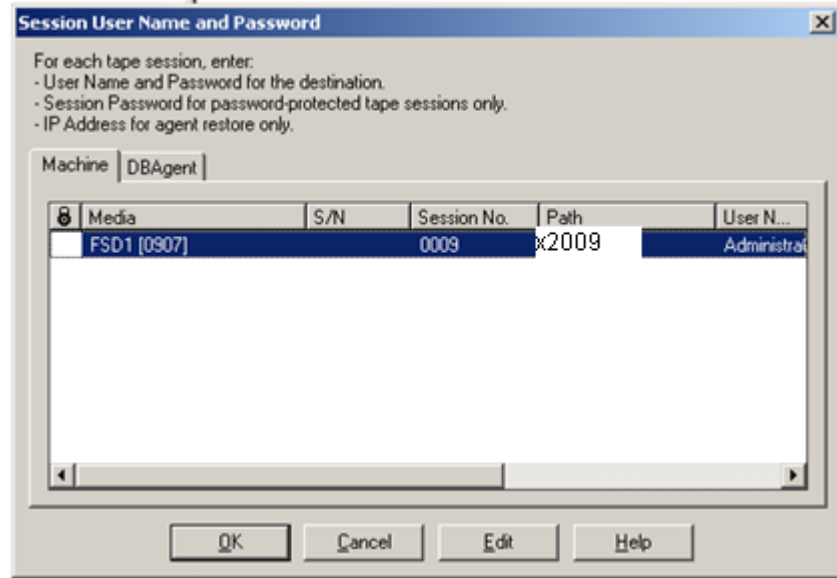
- Enter the Informix server user account details which has restore privileges, and click OK.
- Select the preferred restore method and options. Click OK.

The Session User Name and Password dialog opens.

CA ARCserve Backup restore options are equivalent to the following ON-Bar options:

```
onbar_d -r -t 2003-9-5 13:31:17
```

7. Verify the user name and password for the computer to which the files are being restored. If the restore session needs to access media or any other computer that requires a user name and password different than those used for IDS or CA ARCserve Backup, then enter that user name and password here.



8. Click OK.

The Submit Job dialog displays the job details.

9. Click OK.

The job is submitted to the CA ARCserve Backup queue. You can verify the restore process from the CA ARCserve Backup Job Status window.

When the job is complete, a message appears indicating that the restore was successful. The first restore message results from the creation of the ON-Bar process. Depending on the progress of the restore procedure, other messages from actual (not test) restore jobs will follow.

Note: Do not interrupt the restore procedure by browsing IDS objects from the Backup Manager, or do not attempt to stop the restore operation. Wait until the BAR_INFORMIX SERVER.log shows that the restore is complete.

Media Rotation Precautions

Both CA ARCserve Backup and IDS maintain backup histories of the media used, and other session information associated with dbspaces and blobspaces. However, during a restore operation, ON-Bar uses the IDS backup history, and not the backup history maintained by CA ARCserve Backup.

IDS selects the backup session to restore. Depending on its backup history, ON-Bar may prompt for CA ARCserve Backup media that is no longer in your media rotation scheme. In this case you may experience a failed restore job. We recommend that you keep all the IDS log backup sessions after a full Informix server backup until you complete another Full Backup.

Note: It is extremely important that you plan a practical backup media rotation scheme, based on a realistic IDS restore scenario. See the *Administration Guide* for information regarding media rotation. In general, you can rotate current media after backing up Informix server-related physical files when IDS is offline.

Unsupported Restore Functions

The Agent for IBM Informix does not support the following file system-related functions:

- Restoring data that was backed up using Disk Staging and with a GFS rotation schedule.
- Specifying the following global restore options:
 - Create empty path for the root
 - Pre-execution or post-execution
- Using session or tape view for dbspace or blobspace restores
- Specifying Filter options
- Specifying the following Restore Destination options:
 - Directory structure
 - File conflict resolution
 - Restore to different locations

For more information about restore functions, see the *Administration Guide*.

Perform Disaster Recovery

To recover IDS after a disaster such as a hard disk failure, you must have backup copies of the following:

- The most recent cold (full offline) backup of all Informix files.
- One or more copies of a full Informix server hot backup (an online backup) made since the cold backup.
- The latest copy of the Informix critical boot files and XBSATAPE.TBL file in the agent directory.

To recover IDS

1. Reinstall IDS, if necessary.

Note: If you reinstall IDS, be sure to use the same account name, password, and directory structure used in the IDS installation before the disaster happened.

2. Stop all Informix services:

- a. Click Start, Settings, and Control Panel.

The Control Panel dialog opens.

- b. Click Administrative Tools and Services.

- c. On the Services dialog, locate the Informix services.

- d. Right-click a service and select Stop from the pop-up menu.

3. Restore the cold (offline) backup Informix system and data files from CA ARCserve Backup.

4. Reinstall the Agent for IBM Informix.

Note: You should use the same account name, password, and directory structure used in the IDS installation before the disaster happened.

5. Restore the latest \tapeinfo directory located in the agent home directory, if necessary.

6. Compare the xbsatape.tbl file in the agent home directory under \tapeinfo. If the agent home directory has an old version of the file, copy the xbsatape.tbl from the \tapeinfo directory to the agent home directory (one level up).



7. Compare and carefully restore the critical files under \etc in the Informix home directory from CA ARCserve Backup.
8. Select and restore the full Informix server from CA ARCserve Backup.
Note: ON-Bar takes time to determine the objects to restore. This process should not be interrupted. However, you can check BAR_INFORMIX_SERVER_NAME.LOG to see the ON-Bar restore activity.
ON-Bar handles the restore jobs from this point.

Verify IDS Status

You can verify the status of IDS by using the onstat.exe utility.

To verify the status of IDS

Run onstat.exe with any of the following commands:

-?

Displays the definition of command options.

-l

Displays the current logical log status.

-d

Displays current dbspace or blob space information.

Appendix A: Troubleshooting

The Agent for IBM Informix provides logs for examining backup activities and lets you to modify settings if you encounter any problems.

This section contains the following topics:

[Help on Incomplete Job Information](#) (see page 35)

[Enable Debug Mode](#) (see page 36)

[Verify the Backup File Location](#) (see page 37)

[Problems and Solutions](#) (see page 37)

[Error Messages](#) (see page 40)

Help on Incomplete Job Information

If the CA ARCserve Backup Job Status window displays an incomplete backup or restore job, you can get helpful information in any of the following ways:

Activity Logs

Monitor the activity logs XBSA.LOG, DBAIFMX.LOG, and DBABATCH.LOG for CA ARCserve Backup Agent for IBM Informix activity (located in the agent home directory)

BAR_informix server name.LOG for ON-Bar activity (located in the Informix home directory)

Debug mode

Enable debug mode (only when instructed to do so by a CA Technologies Technical Support representative) to trace all agent activity found in these files:

XBSA.TRC

DBABATCH.TRC

DBAIFMX.TRC

IFMXwrapper.LOG

Backup location

Verify the backup location.

Enable Debug Mode

To receive debug information, you must enable the debug mode. You can set the debug mode in the Windows registry using the Regedt32 editor. By default, the debug mode is disabled.

To enable debug mode

1. Run WINNT\SYSTEM32\REGEDT32.exe.
2. In the HKEY_LOCAL_MACHINE window, open:

```
SOFTWARE\ComputerAssociates\CA ARCserve  
BACKUP\DSAGENT\CURRENTVERSIONAGENT\dbaifmx@ Informix Server
```
3. Double-click Debug.
The DWORD editor opens.
4. Change the debug mode value as follows:
From: REG_DWORD:0 (disable debug, the default mode)
To: REG_DWORD:1 (enable debug)

Important! Be sure to set the key entry back to 0 (disabled) when you have finished troubleshooting to prevent the needless consumption of disk space and CPU time.

Note: If the current Informix is a 64-bit version system, then perform the following steps:

1. Run WINNT/SYSTEM32/REGEDT32.exe
2. In the HKEY_LOCAL_MACHINE window, open:

```
SOFTWARE\Wow6432Node\ComputerAssociates\CA  
ARCserveBACKUP\DSAGENT\CURRENTVERSIONAGENT\dbaifmx@ Informix Server
```
3. Double-click Debug.
The DWORD editor opens.
4. Change the debug mode value from REG_DWORD:0 (disable debug, the default mode) to REG_DWORD:1 (enable debug)
5. Open the following file from the HKEY_LOCAL_MACHINE window:

```
SOFTWAREWow6432Node\ComputerAssociates\CAARCserveBACKUP\DSAGENT\CURRENTVERSI  
ONAGENT
```
6. Right-click Agent and select New, DWORD (32-bit) Value.
7. Enter IfmxDbg for the name.
8. Enter 1 for the data (disable debug, change data back to 0)

Verify the Backup File Location

The DLL that defines the location of the agent files is located in the same key as the debug setting. This location is defined during installation.

Important! Do not change this path manually. Change it only through the agent setup program.

To examine the location

1. Run WINNT\SYSTEM32\REGEDT32.exe.

2. In the HKEY_LOCAL_MACHINE window, open:

```
SOFTWARE\ComputerAssociates\CA ARCserve BACKUP\DSAgent\CurrentVersion\Agent\dbaifmx@  
Informix Server
```

You will see a statement similar to the following:

```
dll:REG_SZ:C:\Program Files\CA\CA ARCserve Backup Agent for Informix\dbaifmx.dll
```

Note: If the agent operates on a 64-bit system, then the following key can be used:

```
SOFTWAREWow6432Node\ComputerAssociates\CA ARCserve Backup\DSAgent\Current  
Version\agent\dbaifmx@Informix Server
```

Problems and Solutions

This section describes a few common problems that you might encounter.

A backup job was reported as successful but nothing happens

A backup job was reported as successful but nothing happens.

Reason:

The Informix server has problems and cannot handle the job.

Action:

Check the BAR_INFORMIX SERVER.LOG in the Informix home directory to see if ON-Bar has returned any error.

Cannot find the Backup Agent home subdirectory \TAPEINFO from the CA ARCserve Backup Restore Manager Tree View

Cannot find the Backup Agent home subdirectory \TAPEINFO from the CA ARCserve Backup Restore Manager Tree View.

Reason:

Your last backup job did not back up the agent home subdirectory \TAPEINFO. Tree View only shows the latest backup objects.

Action:

To restore Informix-related physical files (such as critical boot files, and XBSATAPE.TBL) use the CA ARCserve Backup Restore Manager Session View.

A restore job from CA ARCserve Backup failed but BAR_<INFORMIX SERVER>.LOG on the Informix Server indicated it as successful

A restore job from CA ARCserve Backup failed but BAR_<INFORMIX SERVER>.LOG on the Informix Server indicated it as successful.

Reason:

In rare cases, ON-Bar does not need the entire backup image to accomplish its restore, and terminates the restore process in the middle of its operation. From the agent's perspective, the restore finished before reaching the end of the data.

Action:

Ignore the CA ARCserve Backup failure message. The Informix restore was completed successfully.

A rescheduled backup or restore job stops responding

A rescheduled backup or restore job stops responding.

Reason:

The rescheduled backup or restore job may be from ON-Bar. ON-Bar backup or restore jobs cannot be modified.

Action:

You can verify if an ON-Bar job was submitted by dbabatch. In the Description field of each job in the CA ARCserve Backup Job Status window, check whether the job was submitted by dbabatch.

Submit a new job instead of rescheduling.

A job from the Informix Backup or Restore Utility is in the job queue, but nothing is happening

A job from the Informix Backup or Restore Utility is in the job queue, but nothing is happening.

Reason:

CA ARCserve Backup engine services are not running.

Action:

Using the Server Admin feature, start the CA ARCserve Backup engine services--Database, Tape, and Job Engines. If you start the engines from any other location, be sure to *start the Database Engine first*.

If the Database Engine service is not started first, media information may not merge properly.

During an Informix restore, CA ARCserve Backup prompts for media that no longer exists

During an Informix restore, CA ARCserve Backup prompts for media that no longer exists.

Reason:

The backup history is maintained in Informix in its critical file. During restore, you may be prompted for specific media that may not exist.

Action:

Find a proper restore scenario based upon your available backup media.

A backup and restore job is submitted from the ON-Bar utility of Informix, but nothing happens

A backup and restore job is submitted from the ON-Bar utility of Informix, but nothing happens.

Reason:

The system's environment may not be set properly, or your agent configuration is not set properly.

Action:

Use the Informix Agent Batch Job Configuration utility to set the current CA ARCserve Backup configuration-like media name and user information. Verify that your local CA ARCserve Backup server is running (examine the Admin Job, Database, and Tape Engine).

A backup job is submitted, but the job has stopped running

A backup job is submitted, but the job has stopped running.

Reason:

The previous backup job that was running on the Informix server has not been cleared.

Action:

Execute STOPXBSA.EXE INFORMIX Server from the agent home directory.

If the problem continues, check the value of the LastObject field in the Registry:

```
HKEY_LOCAL_MACHINE\SOFTWARE\COMPUTERASSOCIATES\CA ARCSERVE  
BACKUP\DSAGENT\CURRENTVERSION\AGENT\DBAIFMX@INFORMIX SERVER
```

Clear the remaining strings.

Note: If the agent operates on a 64-bit system, then the following key can be used:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ComputerAssociates\CA  
ARCserveBACKUP\DSAGENT\CURRENTVERSION\AGENT\DBAIFMX@INFORMIXSERVER
```

Error Messages

This section contains a list of error messages generated by the agent, and gives a brief description of each error with a possible solution.

A backup job returned the error (123)

Cannot start onbar utility**Reason:**

The agent could not start ONBAR_D.EXE.

Action:

Check your system environment to see if INFORMIXDIR is defined. Also, verify that the path is valid.

A backup job returned the error (128)

Invalid object name to handle**Reason:**

The agent cannot process the Informix object.

Action:

Verify that you are using CA ARCserve Backup, and if necessary, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A backup job returned the error (129)

Cannot get session ID and tape ID from the client**Reason:**

The agent cannot process the Informix object.

Action:

Verify that you are using CA ARCserve Backup, and if necessary, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A backup or restore job returned the error (130)

Cannot write to XBSA named pipe

Reason:

The agent cannot communicate with the XBSA ON-Bar component.

Action:

Check the BAR_INFORMIX SERVER.LOG to see if ON-Bar has generated an error message.

If necessary, check the XBSA.LOG. Reschedule the job. For assistance, contact CA Support at <http://ca.com/support>.

A backup job returned the error (131)

Cannot handle the tape ID information

Reason:

The agent cannot process the job.

Action:

Verify that you are using CA ARCserve Backup, and if necessary, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A backup job returned the error (132)

Cannot logon as the user requested

Reason:

The agent cannot log on using the information provided by the user.

Action:

Check the current CA ARCserve Backup user, Windows user, and agent user privileges. You can modify user information on your job submission.

A backup job returned the error (133)

Cannot impersonate to the user**Reason:**

The agent cannot impersonate the Informix user.

Action:

Check the current Windows and CA ARCserve Backup user privileges to determine if you can impersonate to the Informix user. If not, you do not have the necessary privileges to submit a backup job. Otherwise, provide all the security information on your job submission and reschedule the job.

A backup job returned the error (134)

Cannot find proper Informix environment. Please check Informix Server**Reason:**

The agent failed to retrieve the Informix environment. The agent requires the same environment as the Informix superuser.

Action:

Open the command prompt and check the current user's environment using the DOS *set* command. If information about INFORMIXDIR, PATH, USERNAME, or INFORMIXSERVER is absent or incorrect, update the information using the Informix utility *setnet32* and the Windows System utility (in Control Panel).

A backup job returned the error (135)

Informix user name is invalid**Reason:**

The agent cannot connect to the Informix server using the user name and password provided by CA ARCserve Backup.

Action:

Verify that you provided the proper Informix user name and password when submitting the job. Typically, Informix backup or restore jobs require a user named *informix*.

A backup job returned the error (136)

Error: no backup/restore option is set

Reason:

Backup and restore options, needed by the agent to execute the process, were not sent from CA ARCserve Backup.

Action:

In CA ARCserve Backup, right-click the Informix server. Provide detailed backup or restore options before submitting your job.

A backup job returned the error (137)

Cannot get dbspace names from Informix Server

Reason:

The agent is unable to receive all the dbspace names from the Informix server.

Action:

Verify if your Informix server is online.

Open the command prompt and check the current user's environment using the `DOS set` command. (See the solution for error message 134.)

A backup job returned the error (138)

Cannot get file names from Informix Server

Reason:

The agent is unable to receive dbspace file names from the Informix server.

Action:

See the solution for error message 137.

A backup job returned the error (139)

Cannot get dbspace size information from Informix Server

Reason:

The agent is unable to receive dbspace size from the Informix server.

Action:

See the solution for error message 137.

A backup job returned the error (140)

Cannot get log information from Informix Server

Reason:

The agent is unable to receive logical log information from the Informix server.

Action:

See the solution for error message 137.

A backup job returned the error (141)

Cannot get current domain name

Reason:

The agent cannot get the local domain name.

Action:

Verify that your machine has its own domain. If the problem continues, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A restore job returned the error (142)

Informix is online. Cannot submit full/rootdbs restore job

Reason:

The Informix server level restore and rootdbs restore requires the Informix server to be offline.

Action:

Shut down your Informix server and resubmit the job.

A restore job returned the error (143)

No restore option is set. Please set proper restore option on Restore Manager. And make sure to use Tree View from the Restore Manager when you submit a job

Reason:

The agent expects to receive restore options but no options are set.

Action:

Resubmit the restore job after setting the DBAgent option in the CA ARCserve Backup Restore Manager.

A backup or restore job returned the error (144)

Invalid Job Type

Reason:

The agent cannot interpret the job type.

Action:

Verify that you are using CA ARCserve Backup, and if necessary, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A restore job returned the error (145)

Cannot restore any specific Informix log. Logs will be automatically restored when you do logical restore on Informix Server level

Reason:

The agent does not let the user submit the #LOGFILE# object with the ON-Bar restore command.

Action:

Informix logs are restored, if necessary, during the Informix logical restore. To specify an additional logical restore, choose the Informix server and select the Logical Only option for your restore job.

A restore job returned the error (146)

Cannot log on to Windows as User Informix

Reason:

The agent failed to log on to the Windows system with the user name provided.

Action:

Verify that you have entered your Windows Informix user name and password correctly.

A restore job returned the error (147)

Restore option from CA ARCserve Backup is invalid

Reason:

The agent cannot process the restore option you selected in CA ARCserve Backup.

Action:

Check your restore option before submitting jobs.

A backup job returned the error (148)

Cannot submit log backup job with salvage log option. Informix Server should be in offline mode

Reason:

The agent detected that Informix is online. Log salvage must be done when the Informix server is offline.

Action:

Shut down your Informix server and resubmit the job.

A backup or restore job returned the error (149)

Informix Server returned error. Connection failed

Reason:

The agent failed to connect with the Informix server.

Action:

Check the client connection environment of your Informix server. If the error persists, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A restore job returned the error (150)

Cannot create thread

Reason:

The agent failed to create a thread.

Action:

Generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A restore job returned the error (151)

Cannot connect to Informix Server

Reason:

The agent failed to connect with the Informix server.

Action:

Check the client connection environment of your Informix server. If the error persists, generate a trace log. For assistance, contact CA Support at <http://ca.com/support>.

A restore job returned the error (152)

Informix Server error. Check Informix log for detail information

Reason:

The agent received an Informix error during its operation.

Action:

Check the BAR_INFORMIX SERVER.LOG to fix the problem.

A restore job returned the error (154)

Cannot get logical log space information

Reason:

The agent was unable to receive the logical log size information.

Action:

Check the BAR_INFORMIX SERVER.LOG to fix the problem.

A backup job returned the error (160)

Cannot submit backup job. Informix Server should be in Online mode

Reason:

The agent was unable to connect with the Informix server for the backup job.

Action:

Load the Informix server or back up your Informix files as regular files.

A restore job returned the error (164)

Previous onbar job was not successful or another job is going on. Please check BAR_<INFORMIX SERVER>.log. If the ON-Bar job was not successful before, you should run STOPXBSA.EXE <INFORMIX SERVER> or kill the ON-Bar job before submitting another ON-Bar job. If there is another ON-Bar job, you should wait until it is finished

Reason:

The message is self-explanatory.

Action:

Follow the instructions in the message.

A restore job returned the error (165)

Restore job has failed due to expiration of named pipe wait time. Please make sure your restore job has not been submitted from dbabatch (onbar)

Reason:

The agent handles two kinds of restore jobs; one from CA ARCserve Backup (user) and another from dbabatch (ON-Bar). Users cannot reschedule dbabatch jobs, even though they appear in the CA ARCserve Backup Job Queue.

Action:

Use the CA ARCserve Backup Restore Manager to submit a new restore job.
Check if any previous ON-Bar jobs have stopped responding.

A backup job returned the error (166)

Backup job has failed due to expiration of named pipe wait time. Please make sure your original backup job had not been created by dbabatch (onbar)

Reason:

The agent handles two kinds of backup jobs; one from CA ARCserve Backup (user) and another from dbabatch (ON-Bar). Users cannot reschedule dbabatch jobs, even though they appear in the CA ARCserve Backup job queue.

Action:

Use the CA ARCserve Backup Manager to submit your backup job.
Check if any previous ON-Bar jobs have stopped responding.

A backup job returned the error (167)

Cannot submit log backup job when Informix Server is down. Use salvage logs option in this case

Reason:

The agent detected that the Informix server is offline during the logical log backup.

Action:

Select the Salvage Log and then submit the backup job.

A backup job returned the error (168)

Cannot handle Tape Name (*). Please choose a proper media from Backup Manager

Reason:

The agent needs a specific media name for Informix backup. The wild card character provided by the current job is not acceptable.

Action:

Select your backup media and submit the backup job again.

A restore job returned the error (169)

Cannot submit point-in-time restore with dbspace name. Point-in-time restore works only with Physical Logical or Physical Only on Informix Server level

Reason:

The message is self-explanatory.

Action:

Select the Physical & Logical or Physical Only restore option. You should restore the entire Informix server, not specific dbspaces or blobspaces, using this option.

A restore job returned the error (170)

Cannot submit Logical Point-in-time Restore Job with dbspace name. Point-in-time Restore works only with Physical & Logical or Physical Only on Informix Server level

Reason:

The message is self-explanatory.

Action:

Select the Physical & Logical or Physical Only option for your restore job. You should restore the entire Informix server, not specific dbspaces or blobspaces, using this option.

A restore job returned the error (171)

**Cannot submit Logical Point-in-time Restore Job on Informix Server level.
Point-in-time Restore option works only with Physical & Logical or Physical only on Informix Server level**

Reason:

The Logical-Only and Point-in-Time restore options cannot be chosen together.

Action:

Select the Physical & Logical or Physical Only option for your restore job. You should restore the entire Informix server, not specific dbspaces or blobspaces, using this option.

To restore the logical log, do not select the Point-in-Time option for your restore job.

Glossary

blob space

A *blob space* is a logical collection of chunks that is used to store TEXT and BYTE data.

db space

A *db space* is a logical collection of one or more chunks. A db space provides a link between logical (such as tables) and physical units (such as chunks) of storage.

ON-Bar

ON-Bar (Online Backup Archive) is the backup and recovery utility for IDS.

table space

A *table space* contains all the disk space allocated to a given table or table fragment (if the table is fragmented).

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