BrightStor® ARCserve® Backup for Windows

Enterprise Option for Advantage™ Ingres® Guide

r11.5

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Chapter 1: Introducing the Option

BrightStor® 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.

An Advantage Ingres instance is a logical database server environment. One Instance is one Ingres Installation. You can create an Advantage Ingres database within an Advantage Ingres instance on your database server.

Among the options that BrightStor ARCserve Backup offers is the BrightStor ARCserve Backup Enterprise Option for Advantage Ingres. This option is a client program that allows BrightStor ARCserve Backup to efficiently back up and restore Advantage Ingres database and support multiple instances of the Advantage Ingres on the same machine. With this option, you can use BrightStor ARCserve Backup to back up, restore, and archive data, and perform disaster recovery. The Enterprise Option for Advantage Ingres is installed on the database server locally or remotely from BrightStor ARCserve Backup. BrightStor ARCserve Backup communicates with the option to prepare and transport the data packets for storage.

The Advantage Ingres Database Server consists of database objects such as data, journal, and configuration files. An Advantage Ingres backup is called a checkpoint of the database. This checkpoint consists of data files, config files, and dump files, which can be handled by the option. The option can perform online dynamic backups of Advantage Ingres databases without locking up the entire database or taking it offline. You can use BrightStor ARCserve Backup and the option to back up complete databases or objects within a database.

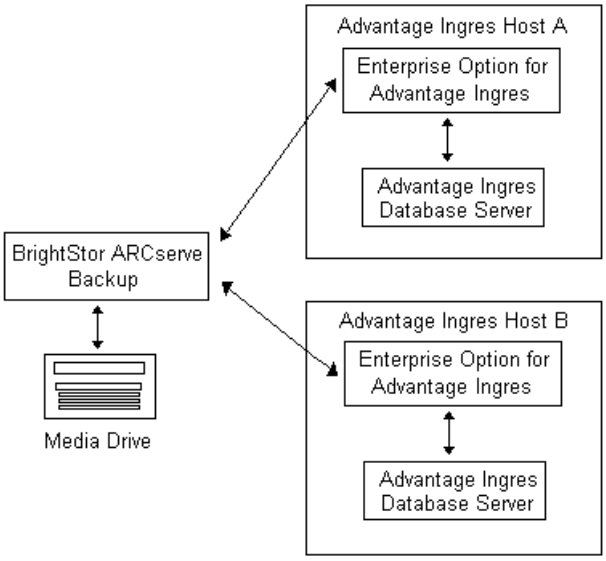
How the Option Works

Using BrightStor ARCserve Backup and the Enterprise Option for Advantage Ingres, you can perform the following tasks:

- Manage backups and restores remotely.
- Back up and restore Advantage Ingres journal and non-journal databases locally or remotely.
- Schedule backups using powerful scheduling features and a graphical interface.
- Back up to a wide array of storage devices.
- Browse, back up, and restore database objects of multiple Advantage Ingres instances on the same machine.

The Enterprise Option for Advantage Ingres handles all communications between BrightStor ARCserve Backup and the Advantage Ingres database server. It also prepares and processes the data packets, which are sent back and forth across the network. When BrightStor ARCserve Backup starts to back up a database object, it sends a request to the option. The option then retrieves the object from the Advantage Ingres database via the database API and relays it back to BrightStor ARCserve Backup. The object is then copied onto a storage device. Similarly, the option prepares and transfers database objects when they are restored from storage devices.

The following diagram illustrates the interface between BrightStor ARCserve Backup and the Advantage Ingres server:



Chapter 2: Installing the Option

This chapter provides the information you need to install and configure the Enterprise Option for Advantage Ingres. The information in this chapter assumes you are familiar with the characteristics and requirements of the specified Windows operating systems in general, and with administrator responsibilities on those operating systems in particular.

Upgrade Information

You can upgrade both the BrightStor ARCserve Backup and the Ingres option from any of the previous versions to r11.5. The backup jobs submitted in the previous versions can work correctly only if there is one Ingres installation.

If there are multiple installations after upgrade, the job may not be executed as expected. BrightStor ARCserve Backup uses the first installation available in the registry to execute a backup. In this case, we recommend that you submit the backup job again to eliminate confusion.

Installation Prerequisites

Before you install the Enterprise Option for Advantage Ingres, you must satisfy the following prerequisites:

- You must have at least one valid installation of an Advantage Ingres Database Server installed on your computer. This installation must contain a user named ingres with administrator privileges.

  For more information about administrator privileges, see your Advantage Ingres documentation. You must have administrator privileges to install the option.

- You must also have BrightStor ARCserve Backup installed and running on the computer where you want to install the option.

- You must satisfy the minimum hardware and software requirements needed to install the option. For a list of requirements, see the Readme file.

Hardware and Software Requirements

Hardware and software requirements for the Enterprise Option for Advantage Ingres can be found in the Readme file for this release.

Network Connection Requirements

When the option and BrightStor ARCserve Backup are operating on separate Windows computers, you must be able to establish a network connection between the two computers. Any firewalls that exist between the computers may prevent the option from making the connection to BrightStor ARCserve Backup.

Installation Procedures

The Enterprise Option for Advantage Ingres follows the standard installation procedure for the system components, agents, and options of BrightStor ARCserve Backup. For a detailed installation procedure, see the *Getting Started* guide.

After you complete the installation procedure, you are prompted to restart your computer.

Advantage Ingres Server Configuration

You do not have to configure the Advantage Ingres server before you perform a backup with BrightStor ARCserve Backup. The option configures the server whenever you execute the backup or restore commands.

If database transactions are under way before the backup, the ckpdb command may wait until the transactions complete. This may create a delay or failure in the backup. During a backup or restore, the option creates a file under the directory "%II_SYSTEM%\ingres\files\", the format of the name of the file is “babtmpl<InstanceName>.def” where <InstanceName> must be substituted by the string of the name of the Advantage Ingres, such as II.

To allow the option to function properly, you must assign the Advantage Ingres user the following user rights:

- Access to the specified computer on the network
- Act as part of the operating system
- Log on as a service
- Replace a process level token

After the user rights are assigned, the user must log off and log on again for the rights to take effect.

Assign User Rights on Windows 2000, Windows Server 2003, and Windows XP Systems

To assign user rights on a Windows 2000 system, a Windows Server 2003, or a Windows XP system, follow these steps:

1. From the Start Menu, click Settings, Control Panel, and then double-click Administrative tools.
2. Double-click Local Security Policy, Domain Security Policy, or Domain Controller Security Policy depending on whether your Windows system is a workgroup member, a primary/secondary domain controller, or domain member, respectively.
3. Open the Local Policies folder, and then open the User Rights Assignment folder if they are not already opened.
4. Double-click the policy, Replace a process level token, the Replace a process level token properties dialog opens.
5. On the Replace a process level token properties dialog, click the Add User or Group button. The Select Users or Groups dialog opens.
6. On the Select Users or Groups dialog, enter the groups to which both Advantage Ingres and the primary BrightStor ARCserve Backup account belong and click OK to return to the Replace a process level token properties dialog.
7. Click OK to exit the dialog.
8. Repeat Steps 4 through 7 and assign the policy, Act as part of the operating system.

Assign User Rights on Windows NT 4.0 Systems

To assign user rights on a Windows NT 4.0 system, follow these steps:

1. From the Start Menu, select Programs, Administrative tools, and then select User Manager or User Manager for Domains, depending on whether you are a domain member.
2. Click the Policies Menu and select the item, User Rights.
3. Verify that the option, Show Advanced User Rights, is selected.
4. Select the item, Replace a process level token, and add the groups of the Advantage Ingres user and the primary BrightStor ARCserve Backup user.
5. Repeat Steps 2 through 4 and assign the policy, Act as part of the operating system.

Option Configuration

You can customize the option by modifying settings in the Windows NT/2000/2003/XP Registry using the Windows REGEDT32 utility. The settings for the option are listed on the HKEY_LOCAL_MACHINE window under the following dbaoping key:

```
SOFTWARE\ComputerAssociates\BrightStor ARCserve Backup\DSAgent\
CurrentVersion\agent\dbaoping<InstanceName>.
```

The default value of debug is 0 (FALSE). To enable debugging when you are requested by Computer Associates Technical Support, set the debug value to 1 (TRUE).

Chapter 3: Using the Option

This chapter provides information you need to back up and restore Advantage Ingres databases and database objects. It also provides the information you need to recover an Advantage Ingres server after a disaster. The Enterprise Option for Advantage Ingres enables you to back up a complete database or individual objects in a database.

Advantage Ingres Database Backup

When you back up a database or a database object, you create a copy of the database or object and place it onto a storage device. Backups of Advantage Ingres databases and database objects are accomplished using the following components:

- BrightStor ARCserve Backup
- Enterprise Option for Advantage Ingres
- Advantage Ingres backup features

When you submit a backup job, the job is placed in a queue and run at a designated time. The Enterprise Option for Advantage Ingres issues backup commands to Advantage Ingres (for example, ckpdb and infodb). Advantage Ingres tells the option which files are required for the backup. Based on the information received from the ckpdb command, the option sends the data to the BrightStor ARCserve Backup host on the network and the data is processed and copied to a storage device.

Note: Checkpoints created by manually issuing the ckpdb command do not call the option to enter checkpoint information in the BrightStor ARCserve Backup catalog. BrightStor ARCserve Backup cannot use these independent checkpoints if a restore is needed. Viable restores are best maintained by using the option to issue all checkpoints through regularly scheduled backups using BrightStor ARCserve Backup.

This section explains how to back up Advantage Ingres databases and database objects on local volumes and remote machines. When you perform a backup job, you must identify a data source (target) where the information will come from and identify an archive device (storage) on which the data will be placed. Depending on the installation of BrightStor ARCserve Backup, the target data can exist on a local volume or on a remote machine.

Note: Before you back up objects from an Advantage Ingres database, verify the integrity of the data in your database with commands such as infodb, verifydb, and sysmod.

For more information about backing up Advantage Ingres databases, see the Advantage Ingres documentation.

Note: The Enterprise Option for Advantage Ingres supports more than one instance of the Advantage Ingres Server on a machine.

Back Up Advantage Ingres Databases Locally

To back up Advantage Ingres database objects locally, follow these steps:

1. Start the Backup Manager.
2. Click the Source tab if it is not already visible.
3. Expand My Computer to locate the specific Advantage Ingres database volume, then expand the Advantage Ingres database volume to view all the Advantage Ingres databases.
4. Select the target databases you want to back up by toggling the marker to a solid green. (A marker that is not solid green indicates a partial selection.)
5. Right-click the database volume you want to back up.

   Note: You should include config and dump files in all backup sessions.

   The Backup Agent Backup Options dialog opens.
6. Select from among the following backup job options and click OK:
   - **Purge Log**—Deletes all previous disk-based journal files.
   - **Purge Checkpoint**—Deletes all previous disk-based checkpoint files.
   - **Verbose Mode**—Instructs Advantage Ingres to provide extended feedback during the checkpoint/rollforward operations. This feedback is logged in *.out files, which are produced by the option and stored in the primary Enterprise Option for Advantage Ingres Directory.

   For more information on backup job schedule options, see the *Administrator Guide*.

   Note: Use the Advantage Ingres infodb command to check the integrity and the sequence of journal files.
7. Click the Submit toolbar button. The Submit dialog opens.

8. On the Submit dialog, schedule and submit the backup job and click OK.

   Note: The backup job fails if open transactions such as Update, Insert, or Delete are not committed.

9. To monitor the progress of the job, click the Job Status button on the Quick Access menu or double-click the job in the job queue. The Job Properties dialog opens.

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

Back Up Remote Client Databases

To back up remote client databases, follow these steps:

1. On the Backup Manager, expand the Network branch in the tree view to locate the database volume.

2. Select the desired database or journals by toggling the markers to a solid green.

3. Continue with the procedures for Backing Up Advantage Ingres Objects Locally in this chapter starting with Step 4.

Note: Make sure to enter the security information for the remote machine and for the Advantage Ingres Server. To submit security information, right-click the machine and select Security.

Back Up Databases Scattered In Several Advantage Ingres Instances

To back up databases scattered in several Advantage Ingres Instances, you must follow the same process that you use to back up databases scattered in an Advantage Ingres Instance.

Back Up Databases With Command Line

You can also back up your database using the “ca_backup” command.

The expression of the command “ca_backup” is

```
ca_backup

–source

[<hostname> [node options]]

-ingres_installation_id <ingres_installation_id>

[-database INGRES [<ingres_dbname...>]]

[-ingres_databaseandjournals <ingres_dbname...>]

[-ingres_journals <ingres_dbname...>]

[dbase options]
```

Command Parameters

-ingres_installation_id <ingres_installation_id>

Specifies the installation ID of the Ingres database server and backs up the whole installation if the database, ingres_databaseandjournals and ingres_journals is not specified.

For example, ca_backup -source -ingres_installation_id ii

-database INGRES <ingres_dbname>

Indicates that you want to backup the listed databases and not their journals. You can enter the database INGRES parameter without indicating any Ingres database names.

For example,

ca_backup -source -ingres_installation_id ii -database icedb

ca_backup -source -ingres_installation_id ii -database icedb abcdb

ca_backup -source -ingres_installation_id ii -database

-ingres_databaseandjournals <ingres_dbname>

Specifies that both the data and journals of the database should be backed up.

For example,

ca_backup -source -ingres_installation_id ii-ingres_databaseandjournals icedb

ca_backup -source -ingres_installation_id ii-ingres_databaseandjournals icedb abcdb

-ingres_journals <ingres_dbname>

Specifies that only journals of the specified database should be backed up.

For example,

ca_backup -source -ingres_installation_id ii-ingres_journals icedb

ca_backup -source -ingres_installation_id ii-ingres_journals icedb abcdb

-ingres_purge_journals

Specifies that the journals that are backed up should be purged afterwards.

For example, ca_backup -source -ingres_installation_id ii-ingres_purge_journals

Option Logs

The Enterprise Option for Advantage Ingres provides an Activity log which allows you to view information about backup or restore jobs and their status. This log is called dbaoping.log and is located in the directory in which the option program files reside. If you encounter any errors in the BrightStor ARCserve Backup job logs, check the Security log for more information.

Two trace log files, called dbaoping.trc and oidbextr<ThreadId>.trc provide information about system errors and are also located in the home directory of the option. These log files are created and updated if the debug option is enabled. For information about enabling this debugging feature, see the Option Configuration section in the chapter “Installing the Option.”

The Enterprise Option for Advantage Ingres logs the feedback generated by the checkpoint and rollforward commands. To view this information, browse the directory in which the option is located and use a text editor to open the *.out files found in that directory. Using the verbose mode option on a backup or restore job provides extended feedback in these log files.

Note: The *.out files are overwritten with every backup and restore operation; therefore, they contain information about the most recent backup or restore job.

GFS Rotation Support

The Enterprise Option for Advantage Ingres supports GFS (Grandfather-Father-Son) rotation when the entire server or all of the database objects are selected.

Note: You must select at least one complete Advantage Ingres Instance for the GFS to be supported.

If an individual database object is selected, GFS is not supported.

If a database is journaled, differential and incremental backups are mapped to the journal backup except for the iidbdb and imadb files that only back up the journal files. If a database is not journaled, the backup is always a full backup and all data, config, and journal files are backed up.

System database iidbdb and imadb backups are always full backup jobs, regardless of the backup method.

Advantage Ingres Database Restore

To *restore* is to load a database or database objects from a backup of that database or objects. A restore overwrites any existing information in the database with the backed up information. Restores are accomplished using BrightStor ARCserve Backup, the Enterprise Option for Advantage Ingres, and the Advantage Ingres restore features.

When you submit a restore job from the BrightStor ARCserve Backup console, the job is placed in a queue and executed at the scheduled time. The restore job then communicates with the option to issue various commands to Advantage Ingres when necessary (for example, rollforwarddb).

Before you restore an Advantage Ingres database, be aware of the following issues:

- When restoring journals, the option does not contact Advantage Ingres and restores only the named files.
- When restoring the config file including the config and dump files), the option does not contact Advantage Ingres and restores only the named files.
- When restoring data, the option contacts the Advantage Ingres rollforwarddb utility and waits to be prompted with the files required for restore and when they are required. The data files are then restored to a disk. After all files are restored, the rollforwarddb utility performs an integrity and consistency check of the database, and applies the journal files, if requested.

Restore Methods

The option provides two methods to use to restore Advantage Ingres database objects:

- Restore by Tree
- Restore by Session

The default method, Restore by Tree, allows you to select the version of the volume you want to restore.

Job Options for Restore Operations

The option provides the following restore job options:

- **Overwrite Journal Option**: Use this option to place the journal file from the archive media back to the database, overwriting the current journal file.
- **Not From Journals Option**: Use this option to ensure that journal files are not applied by the rollforwarddb utility during execution.
- **Verbose Mode Option:** Use this option to receive detailed diagnostic information on all the operations executed during the recovery process, for future reference.
- **Not Overwrite Option**: Use this option to overwrite existing config and dump files while restoring config sessions. The files are restored under a different name.

  Note: This is valid on config and dump restores only.

To select restore options, select a specific restore session and right-click.

Security Information

When you submit a restore job using the Restore Manager, the Restore Manager asks you to enter the following security information to ensure that the job completes successfully and securely:

- **Machine Security Information**—Including the machine user name and password and the session password.
- **Ingres Agent Security Information**—Including the name of the Ingres Database user and its password.

Restore Advantage Ingres Master Databases

Before you restore the Advantage Ingres master database (iidbdb), perform the following steps to ensure that this database is restored properly:

1. Stop Advantage Ingres.
2. Ensure that all programs with a connection to Advantage Ingres are closed (Visual DBA, API applications, Advantage Ingres scripts).
3. Start the Advantage Ingres Name server (ingstart –iigcn).
4. Start the Advantage Ingres recovery server (ingstart –dmfrcp).
5. Start the dbms server (ingstart –iidbms).
6. Load BrightStor ARCserve Backup and restore the iidbdb database.
7. Stop Advantage Ingres and start it again normally.

Note: You can select Master Databases scattered in several Advantagube Ingres Instances at the same time and restore them.

Restore Advantage Ingres Master Databases as the Local System User

If you installed Advantage Ingres using a response file, the Advantage Ingres service was started as Local System user (rather than the Advantage Ingres user), the procedure to restore the Advantage Ingres master database differs from the procedure when the Advantage Ingres service is running under the Advantage Ingres user. Before you restore the Advantage Ingres master database (iidbdb), perform the following steps to ensure that this database is restored properly:

1. Stop Advantage Ingres using the following command:

   ```
   ingstop -service
   ```

2. Ensure that all programs with a connection to Advantage Ingres are closed (Visual DBA, API applications, Advantage Ingres scripts).

3. Execute the following command to start Advantage Ingres as a service:

   ```
   ingstart -service
   ```

4. Stop the following Advantage Ingres servers in the Advantage Ingres Visual Manager:

   - Data access servers
   - Star servers
   - Net servers
   - Remote command

5. Ensure that only the following servers are running:

   - DBMS servers
   - Name server
   - Recovery server
   - Archiver server

6. Load BrightStor ARCserve Backup and restore the iidbdb database.

7. Stop Advantage Ingres and start it again using the following commands:

   ```
   ingstop -service

   ingstart -service
   ```

   Note: You can select Master Databases scattered in several Advantage Ingres Instances at the same time and restore them.

Restore Advantage Ingres Databases

To restore an Advantage Ingres database or journal, follow these steps:

1. Start the Restore Manager.
2. From the Restore Manager, click the Source tab if it is not already visible.
3. Select either the Restore by Tree or the Restore by Session method from the drop-down menu.
4. Select the objects or the session you want to restore.

   Note: For a journaled database, restore the journal session of the database and the configuration file first.
5. If you select the Restore by Tree method, you can select the version of the volume you want to restore. To do so, click the Version History button and select the version on the Version History dialog.
6. To select additional restore options, right-click the database volumes you want to restore. The Backup Agent Restore Options dialog opens.

   If you do not want to select additional restore options, go to step 8.
7. Select the restore options on the dialog and click OK.
8. On the Destination tab, select the option Restore Files to Their Original Location from the drop-down menu.
9. Click Submit. The Session User Name and Password dialog opens.
10. On the Machine tab, select an Advantage Ingres backup session and click Edit. The Enter User Name and Password dialog opens.
11. Enter the machine user name and password and the session password (if necessary) in the fields provided and click OK.
12. Repeat Steps 10 and 11 for each Ingres backup session you are restoring.
13. On the DBAgent tab, select an Advantage Ingres backup session and click Edit. The Enter User Name and Password dialog opens.
14. Enter the name and password of the Advantage Ingres Database user in the fields provided and click OK.
15. Repeat Steps 14 and 15 for each Advantage Ingres backup session you are restoring.

16. Click OK. The Job Summary dialog opens.
17. To view the status of your restore job, click the Job Status button on the Quick Access menu or double-click the job in the Job Queue to view the Job Properties dialog.
18. When the restore operation is complete, the message Restore Operation Successful appears.

Note: You can select Advantage Ingres Databases scattered in several Advantage Ingres Instances at the same time and restore them.

Restore Dropped Advantage Ingres Databases

When you restore a dropped Advantage Ingres database, you must first create an empty database in the same Advantage Ingres instance using the same name and take a checkpoint of that database. You must also have configuration and dump files already backed up. In addition, we recommend that all backups include the .DATA and .~CONFIG components of the target database or the restore operation may not work properly.

To restore a dropped Advantage Ingres database, use the following steps:

1. Create the target database in the same location as the original.
2. Perform a checkpoint with or without BrightStor ARCserve Backup on the newly created database.
3. Shut down Advantage Ingres.
4. Delete all database, checkpoint, dump, and journal files belonging to the new database.
5. Start Advantage Ingres.
6. If applicable, use BrightStor ARCserve Backup to restore the target databases, journal, configuration, and dump files.
7. Copy the configuration file (aaaaaaaa.cnf) into the target database data and dump locations.
8. Use BrightStor ARCserve Backup to restore your databases.

How to Avoid Database Restore Errors

When you restore a database, there are a few issues to keep in mind that can help you avoid errors. When you apply the journal and configuration files that are part of your backup, first restore the Journal and Configuration sessions. You must restore data as a separate session. The restore operation applies the journal and configuration files after the data has been restored. Before you begin the restore operation, we recommend that you shut down all programs accessing the target database. We also recommend that there be no activity on the target database during the restore operation.

Disaster Recovery

Planning your backup methods in advance is critical for protecting your databases against failures and for quick recovery of your Advantage Ingres Server in case of disaster. This section provides more information about backing up and restoring Advantage Ingres Server databases.

Backup and Recovery Strategies

Before you create your database, follow these backup and recovery strategies:

- Ensure that you can recover the database if a disk failure occurs.
- Test your backup and recovery strategies in a test environment before and after you move to a production system to minimize any future problems.
- After creating a database, perform a system-wide backup including the master database iidbdb information (database locations, user privileges and details) and schedule a regular backup interval.
- Remember that the option uses the ckpdb and rollforwarddb commands to perform the backup and restore of Advantage Ingres databases. For more information about these commands, see the Advantage Ingres documentation.

Active Journal File Restore Jobs

When restoring a database with active journal files, be aware of the following issues:

- Advantage Ingres journal files keep track of all changes to a database since the last checkpoint (backup). By default, Advantage Ingres applies the changes contained in the journal files after the data has been restored and does not overwrite existing journal files. If you are performing a point-in-time recovery for a database containing journal files, use either the Overwrite Journal option or the Not from journals option to prevent journal files from being applied.
- If Advantage Ingres has existing journal files and you want to restore and apply journal files contained in your backup, use the Overwrite Journal option.
- To ensure a proper database restore, submit the configuration file and journals for restore prior to submitting the data session.
- By default, when you restore configuration files, existing files are overwritten. To prevent existing files from being overwritten, select the Not overwrite cfg/dmp option.

Efficient Disaster Recovery Planning

For efficient disaster recovery, follow these backup and recovery strategies:

- Maintain at least one full backup. Select all journal files and databases to be backed up. To back up all databases and journals including the iidbdb file, select the Advantage Ingres Server icon.

  The iidbdb contains the main system information for the Advantage Ingres program. It is vital that you include this data file in the regular backup schedule. In a situation where total system failure occurs, you need the information in the iidbdb database to perform a full database restore.
- If there is a major schema change in your database (for example, if you drop checkpoints, create a new one, add journal files, or add users), perform a full backup.
- Perform regular, full, online backups. For example, perform a full, online backup once a week and perform incremental journal backups for the remaining days of the week.

Note: To perform disaster recovery, you must have backed up the config and dump files.

Compatibility Check

Whenever you recover an Advantage Ingres server after a disaster, you first need to check the following components to ensure that the machine you are recovering is configured the same way as the machine that was backed up.

- Software environment (operating system, Advantage Ingres)
- Disk layout
- Ingres installation ID, install path
- All backup files include the .DATA, .~CONFIG(~JOURNAL) components of the database

Recover after Disaster

To recover an Advantage Ingres server after a disaster, follow these steps:

1. Reinstall the Windows operating system on your machine.

   Note: If you are using the BrightStor® ARCserve® Backup Disaster Recovery Option to perform the recovery after a disaster, restore the system using the disaster recovery processes and then uninstall Advantage Ingres.

2. Install Advantage Ingres, ensuring that it is set up in exactly the same manner as it was previously configured.

3. Shut down Advantage Ingres using the run ingstop command.

   If the Advantage Ingres service is running as the Local System user, shut down Advantage Ingres using the ingstop -service command.

   Note: Visual DBA provides an alternative set of system administration tools. It allows you to perform system administrator functions, including configuring, performance monitoring, backup and recovery, and remote database optimization using a graphical user interface (GUI). See the Visual DBA online help for instructions on performing these functions. Command line instructions are also available. For information on Advantage Ingres commands, see the *Command Reference Guide*.

4. Delete all files in %II_SYSTEM%\ingres\dmp\default\iidbdb and %II_SYSTEM%\ingres\jnl\default\iidbdb, making sure that all programs with a connection to Advantage Ingres are closed.

5. Start the Advantage Ingres Name server using the ingstart –iigcn command.

   If the Advantage Ingres service is running as the Local System user, do not perform this step. Instead, start Advantage Ingres as a service using the ingstart –service command.

6. Start the Advantage Ingres Recovery server using the ingstart –dmfrcp command.

   If the Advantage Ingres service is running as the Local System user, do not perform this step. Instead, stop the following Advantage Ingres servers in the Advantage Ingres Visual Manager:

   - Data access servers
   - Star servers
   - Net servers
   - Remote command

7. Start the Advantage Ingres dbms server using the ingstart –iidbms command.

   If the Advantage Ingres service is running as the Local System user, do not start the Advantage Ingres dbms server. Instead, ensure that only the following servers are running:

   - DBMS servers
   - Name server
   - Recovery server
   - Archiver server

8. Install the Enterprise Option for Advantage Ingres on your machine.
9. Restore the .CONFIG and JOURNAL components of the iidbdb database.
10. Place a copy of the aaaaaaaa.cnf file from %II_SYSTEM%\ingres\dmp\default\iidbdb into the directory, %II_SYSTEM%\ingres\data\default\iidbdb.
11. Restore the .DATA component of the iidbdb database.
12. Shut down Advantage Ingres using the ingstop command.

    If the Advantage Ingres service is running as the Local System user, shut down Advantage Ingres using the ingstop -service command.

13. Restart Advantage Ingres using the ingstart command.

    If the Advantage Ingres service is running as the Local System user, restart Advantage Ingres using the ingstart -service command.

14. Run the Visual DBA.
15. Record the information about the locations of the databases. To do so, execute “select * from iilocations” in VDBA, open the alter location dialog for every location, and record its usage type.
16. Record the result of the following two SQL statements which is the location assignment of the databases by executing “select * from iilocation_info,” and then executing “select * from iiextend_info-.”

17. Delete all databases and locations found in the Visual DBA.
18. Create all locations using the original name, area, and usage types.
19. Create all databases in the same locations as the original files.
20. Extend the databases with extended locations to the same locations as the original files.
21. Perform a checkpoint with or without BrightStor ARCserve Backup on all newly created databases.
22. Shut down Advantage Ingres using the ingstop command.

    If the Advantage Ingres service is running as the Local System user, shut down Advantage Ingres using the ingstop -service command.
23. Delete all of the databases, and the checkpoint, dump, and journal files belonging to the newly created database.
24. Restart Advantage Ingres using the ingstart command.

    If the Advantage Ingres service is running as the Local System user, restart Advantage Ingres using the ingstart -service command.
25. Use BrightStor ARCserve Backup to restore the journal, config, and dump files.
26. Place a copy of the configuration file (aaaaaaaa.cnf) in the database and dump locations of each database you want to restore.
27. Use BrightStor ARCserve Backup to restore data to your databases.

Chapter 4: Troubleshooting

This section explains the most common errors for BrightStor ARCserve Backup and the Advantage Ingres Database Server.

Backup or Restore Failed

Reason

There may be a number of reasons for backup or restore to fail.

Action

Check the log and configuration files. The option maintains these supporting files in various directories

Backup of Database Pauses

Reason

There may be a number of reasons for the backup to pause.

Action

Verify that all database transactions are committed and valid.

Backup of Journaled Database Failed

Reason

The journal files may not exist or may not be valid.

Action

Use the infodb command to verify checkpoints and journal files and verify that the database is a journaled database type.

Restore of Database Failed

Reason

There may be a number of reasons for the restore job to fail.

Action

Confirm that the database is online. Validate the integrity and the association of journal files (for example, gaps or sequence). If necessary, restore the journal files first in a separate job.

Advantage Ingres Server Icon does not appear in the Backup Manager

Reasons

- The Remote Procedure Call (RPC) Server Service is not running.
- The Enterprise Option for Advantage Ingres is not installed.
- No option entry exists in the registry. It can be found in the following location:

  Software\ComputerAssociates\BrightStor ARCserve Backup\DSAgent\CurrentVersion\...Agent\dbaoping<InstanceName>

Actions

- Restart the Remote Procedure (RPC) Call Server Service.
- Install the Enterprise Option for Advantage Ingres.
- Reinstall the Enterprise Option for Advantage Ingres.

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