Perform an ICM Database or Microsoft SQL 6.5 Backup

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Introduction

This document provides guidelines for backing up Cisco Intelligent Contact Management (ICM) databases. A *database backup* is defined as a precautionary process in the event that a catastrophic failure occurs in the ICM Loggers, Historical Data Server (HDS), Admin Workstation (AW), or SQL Server. Catastrophic implies the potential rebuilding of a device or the restoration of data.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco ICM configuration
- Microsoft Windows NT Registry Utility
- Microsoft SQL Server
- Database backup

Components Used

The information in this document is based on these software versions:

- Cisco ICM version 4.6.2
- Microsoft SQL Server version 6.5

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Cisco ICM Backup Architecture

Cisco ICM is designed to be fault−tolerant to support mission critical applications. Specifically, the recommended ICM architecture has a goal of eliminating all *single points of failure* for the ICM system as a whole. Implicit in this architecture are redundant Loggers that maintain the same databases.

Backup includes three components:

- Entire database
- Cisco ICM configuration and script data
- Microsoft Windows NT Registry

The following database backup strategies are commonly used:

- Regularly scheduled backups (for example, once a day or once a week)
- Mirrored disk configurations
- Redundant Array of Inexpensive Disks (RAID) configurations

Note: It is important to note that this document does *not* address archive requirements of data elements that are stored and generated by the ICM system, with the potential for access. This is a topic for another discussion and is the customer's responsibility.

Back Up the Entire Database

The backup of the entire database includes historical, ICM configuration, and scripting data. ?The following databases require backup:

- **<cust>_sideA** (Logger A)
- **<cust>_sideB** (Logger B)
- **<cust>_hds** (HDSx or AWx, where x indicates a unique number assigned to the corresponding AW)

Note: <cust> refers to the customer instance and is case sensitive. For example, if the customer instance is "XYZ" for XYZ Company, then the Logger A database should be xyz_sideA.

It is not necessary to back up any other database in Microsoft SQL Server or Windows NT. If applicable, if you are using the SQL Gateway you should backup the SQL Gateway database server.

If your site has standard operating procedures for backing up Windows NT servers, you should include ICM databases in that process. The suggested frequency is daily or weekly, during a time of little or no activity on the server. For example, if seven 35−GB tapes are included per database, labels for the corresponding tapes might be:

- Tape 1 Sunday Day / Month / Year
- Tape 2 Monday Day / Month / Year
- Tape 3 Tuesday Day / Month / Year
- Tape 4 Wednesday Day / Month / Year
- Tape 5 Thursday Day / Month / Year

- Tape 6 Friday Day / Month / Year
- Tape 7 Saturday Day / Month / Year

Cycling the tapes is recommended. You must backup the entire database at each backup interval. The ICM system does not support the use of transaction log dumps as incremental backups. In the example above:

- Each Logger is provisioned with an internal 35−GB DLT tape drive, including DLT 35 tape cartridges (7−pack)
- Each HDS is provisioned with an internal 35−GB DLT tape drive, including DLT 35 tape cartridges (7−pack)

Backing up to tape is a manual process. Backing up over a LAN is an option and requires third−party software such as *Backup Exec* or *Apache* to be loaded on the Logger and HDS. This is not supported by Cisco; it is the customer's responsibility.

SQL Server Steps

ISQL/W

Before starting the backup you should capture and save your SQL Server device topology. Having this backup topology is important in the event a disk fails and you must re−create the database. SQL Server requires identical device topologies for the database being restored and the backed up database.

To retrieve SQL Server device topology, run **ISQL/w**.

The device topology can be read with the following SQL Query statement, typed in the query window:

```
Query select dbid from master..sysdatabases where name ='<cust>_sideA'
```

where **<cust>** is the customer instance and the topology retrieved is for **<cust>_sideA**.

Note: The syntax is case sensitive.

```
Result dbid
------
6

(1 row(s) affected)
```

Print the result and save it with the physical tape, or write it on a label attached to the tape.

```
Query -- select segmap, size from
  master..sysusages where dbid = 6

Result -- segmap size
    -----------   -----------

    3
    204800
    4
    102400
    3
    16563200
    3
    8663040
    (4 row(s) affected
```

SQL Enterprise Manager

Follow these steps for SQL Enterprise Manager:

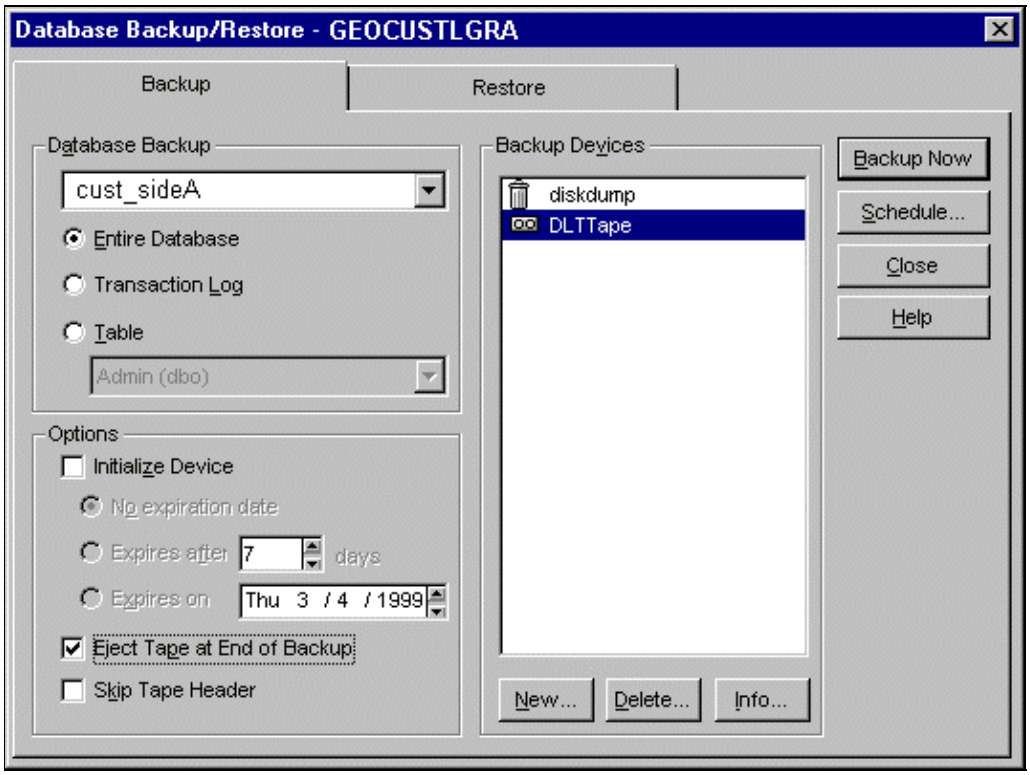
1. Select **Start** > **Programs** > **Microsoft SQL Server** > **SQL Enterprise Manager** to start the SQL Enterprise Manager program.

   The backup is controlled entirely from SQL Enterprise Manager.
2. In the Server Manager window (opens by default), select the server for the database (typically geoXYZlgra or geoXYZlgrb, where XYZ is the customer instance) you want to back up.

   If the server does not appear in the Server Manager list, you must first register the server under **Server** > **Register Server**.
3. From the **Tools** menu, select **Database Backup/Restore**.

   The Database Backup/Restore dialog box appears.
4. Select **New** to create the backup device.You must enter a **Name**. The **Location** field populates automatically.
5. Select **Tape Backup Device**.

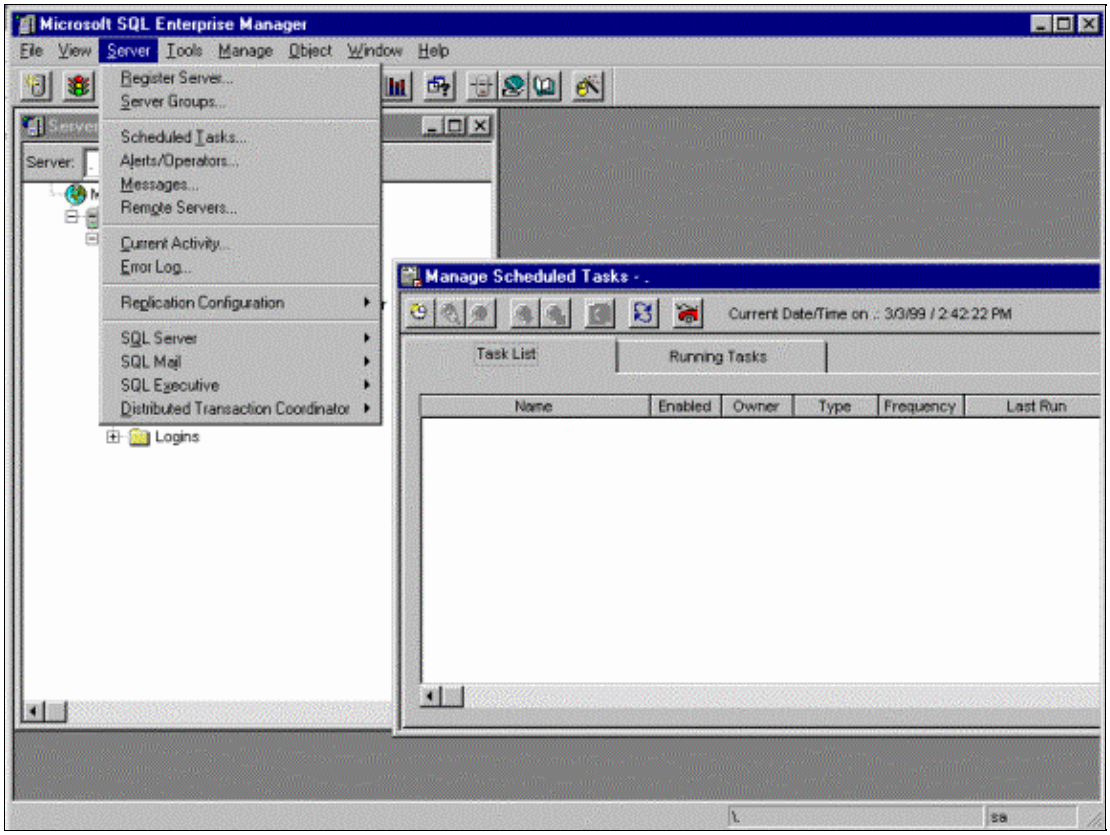
Figure 1 Database Backup/Restore



6. Select **Eject Tape at End of Backup**.

   The tape is not ejected but is rewound after the backup is complete.
7. In **SQL Enterprise Manager**, select **Server** > **Scheduled Tasks**, and view the task.

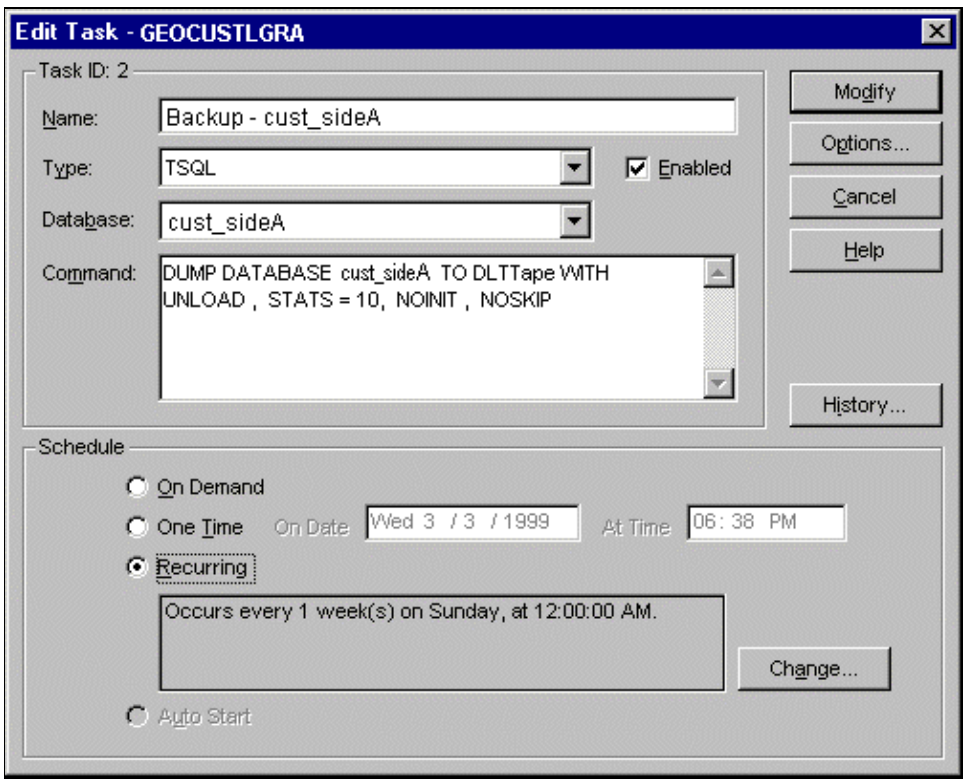
Figure 2 Microsoft SQL Enterprise Manager



Note: Notice the current frequency is set for On Demand.

8. To schedule a recurring backup, under **Schedule**, double−click the task and select **Recurring**.

Figure 3 Edit Task



9. Click **Change**, to modify the date and time of the backup.

10. Click **Modify** when you are finished.

The remaining options and expiration date configurations can be configured like the example, or configured to meet the needs of the particular ICM system installation. These options are described in detail in the *Microsoft SQL Server Administrator's Companion* on pages 345−346 (for Microsoft SQL Server version 6.5).

Test the Backup

Insert the DAT/DLT tape in the drive and double−click the task in **Manage Scheduled Tasks**. Choose **On Demand** to start the backup.

Note: If the size of the database requires multiple DAT/DLT tapes for backup, an operator must be present to swap the DAT tapes in and out of the drive. Back ups that need multiple tapes must not be unattended.

You can view the task in progress in the **Running Tasks** folder under **Manage Scheduled Tasks**.

Scheduled backups may be used as needed, and may be tailored to the installation. The *Microsoft SQL Server Administrator's Companion* describes scheduling options and other choices on pages 347−359.

Backup the ICM Configuration and Script Data

Restoring the entire database from tape can take a long time, depending on the size of the database. If you need a fast recovery, you can backup only ICM configuration and scripting data (no historical data). ICM uses a utility called *Loader* located in the `\icr\install\Loader.bat` directory of a Logger/HDS device.

To use the Loader utility, on each device, create a directory called "Loader" off the root directory on the same drive where ICM is installed. For example, if ICM is installed in `c:\icr`, then the Loader directory should be `c:\Loader`.

Following are examples of batch files which may be placed on the Windows NT Desktop as Shortcuts. For these examples, the following is assumed:

- Cisco ICM is installed to `c:\icr`
- The Loader directory is `c:\Loader`
- The customer instance is "xyz"
- Device names are:
    - GEOXYZLGRA (for Logger A)
    - GEOXYZLGRB (for Logger B)
    - GEOXYZHDS (for the HDS)

Make the appropriate modifications for installation directory, device name, and customer instance before testing these example batch files.

LoggerABackup.bat

```
md c:\loader
!--- use this command to create the Loader directory

cd c:\loader
c:\icr\install\loader geoxyzlgra xyz_sideA out sync
```

LoggerBBackup.bat

```
md c:\loader
!--- use this command to create the Loader directory

cd c:\loader
c:\icr\install\loader geoxyzlgrb xyz_sideB out sync
```

HDSBackup.bat

```
md c:\loader
!--- use this command to create the Loader directory

cd c:\loader
c:\icr\install\loader geoxyzhds xyz_hds out sync
```

Restore the Microsoft Windows NT Registry

Each Cisco ICM node is equipped with a repair disk labeled "Emergency Disk" (a floppy disk). This is the backup of the Windows NT Registry and may need to be restored if Windows NT needs to be reloaded.

Note: The repair disk is *not* a bootable disk. If you need to reload registry data from backup, run the Registry Editor (**regedit.exe**) and use the **Import Registry File** option on the **Registry** menu.

See the General Administration Chapter of the ICM Administrator Guide for additional information.

To create a repair disk:

1. At the command prompt, type **rdisk** and select **Create Repair Disk**.
2. At the prompt to insert a floppy disk, click **OK**.
3. When the Create Repair Disk operation is complete, remove the disk and label it.

Figure 4 Repair Disk Utility

Related Information

- **Cisco ICM Software Administrator Guide**
- **General Administration Chapter of the Cisco ICM Administrator Guide**
- **Technical Support & Documentation − Cisco Systems**