

PCS Axis[®] Database Backup and Restore Best Practices

Introduction

This document explains how to backup and restore a PCS Axis[®] database using Microsoft[®] SQL Server[®] Management Studio (SSMS). The information is intended for your company's Database Administrator (DBA) or IT personnel. Examples in this document refer to the demo database provided with PCS Axis labeled *pcsappdev*.

Backups are an important part of any SQL Server environment. Their purpose is to allow you to recover from a damaged database or hardware failure while minimizing the loss of work and data. Although different backup options are available, this document describes how to create a *Full* backup of the PCS Axis database. A *Full* backup represents the entire database at the time the backup finishes. Topics in this document include those in the following list:

- Making a Full Backup
- Restoring a Database Backup (page 6)
- *Product Support and Training* (page 10)

If you have questions or need assistance, contact <u>PCS Technical Services</u> using the contact information on page 10.

Making a Full Backup

Complete the following steps to make a full backup of the PCS Axis database:

- Start SQL Server Management Studio (SSMS). Click the Windows Start button and then click Microsoft SQL Server 2008 R2 > SQL Server Management Studio.
- 2 When the *Connect To Server* dialog box opens, select the server and provide your login information. Then click **Connect** (Figure 1).

Server type:	Database Engine	
Server name:	MyServerName	•
Authentication:	Windows Authentication	-
User name:	DomainName\John.Smith	
Password		

Figure 1. Connect to Server

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- **3** Double-click the **Databases** folder in *Object Explorer* (Figure 2).
- 4 Right-click the name of the database you want to backup to open a shortcut menu.

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	Refresh		Launch Database Mirroring Monitor				
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-			Generate Scripts				
		_	Extract Data-tier Application				
Ready			Register as Data-tier Application				
			Import Data				
			Export Data				
			Copy Database				
			Manage Database Encryption				

Figure 2. Object Explorer (SQL Server Management Studio)

5 Navigate to **Tasks** and then select **Back Up** in the shortcut menu (Figure 2) to open the *General* page in the *Back Up Database* window (Figure 3).

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Select a page	Script 🔻 📑 Help			
🚰 Options	Source Database: Recovery model: Backup type: Copy-only Backup Backup component: @ Database		PcsAppDev SIMPLE Full Differential	•
Connection	Files and filegroups: Backup set Name: Description: Backup set will expire:	PcsAppDev-Fu	II Database Backup	
Server: \SQLEXPRESS Connection: ServerName\john.smith) Progress Ready	Qn: Destination Back up to:	7/17/2014 Disk	Tage	Add Remove Contents
			ОК	Cancel

Figure 3. General - Back Up Database



- 6 Complete the following steps to set properties in the *General* page (Figure 3, page 2):
 - **a** In the *Source* group box, click the down arrow in the field labeled **Backup type** and select **Full** in the selection list.
 - **b** Verify the option **Database** is selected for the field labeled *Backup component*.
 - c In the *Destination* group box, verify **Disk** is selected.

Note: The option labeled *Tape* in the *Destination* group box will not be supported by Microsoft in future releases of SQL Server Management Studio.

d Click **Add** in the *Destination* group box to open the *Select Backup Destination* dialog box (Figure 4).

IMPORTANT: Database backup files save in the following location by default: C:\Program Files\Microsoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\Backup\. To reduce problems if a hardware failure occurs, save database backup files in a different location than the default folder and in a different location than the SQL Server database files.

e Click the ellipsis button (...) in the *Select Backup Destination* dialog box (Figure 4) to open the *Locate Database File* dialog box (Figure 5, page 4).

Select Backup Destination
Select the file or backup device for the backup destination. You can create backup devices for frequently used files.
Destinations on disk
File name:
/licrosoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\Backup\
O Backup device:
· · · · · · · · · · · · · · · · · · ·
OK Cancel

Figure 4. Select Backup Destination

- **7** Complete the following steps to choose a folder and provide a name for the backup database file (Figure 5, page 4):
 - a Navigate to and then select a folder in the *Locate Database Files* dialog box. Verify **Backup Files (*.bak, *.tm)** is selected in the field *Files of type*.
 - **b** Type a name for the backup file in the **File name** field making sure to include the file extension **.bak**.
 - c Click **OK** to close the *Locate Database File* dialog box. Click **OK** again to close the *Select Backup Destination* dialog box (Figure 4).



Uccate Database Files - MySe	rverName\SQLEXPRESS	٢
Select the file:		
C: SRecycle.Bin AsseDBackups Dell Comments and Setting Comments and Setting Setting Comments and Setting	gg tion	E
Selected path:	C:\AxisDBbackups	
Files of type:	Backup Files(*.bak;*.tm)	•
File name:	pcsappdev17_8oct2014	
	OK Cancel	

Figure 5. Locate Database Files

- 8 Complete the following steps to set properties in the *Options* page of the *Back Up Database* window:
 - **a** Click **Options** in the *Select a page* panel to open the *Options* page (Figure 6, page 4).

间 Back Up Database - PcsAppI	Dev 📃 🔍 💆
Select a page	Soript Help Overwrite media Back up to the existing media set Back up to the existing backup set Overwrite all existing backup set Check media set name and backup set expiration Media set name: Back up to a new media set, and erase all existing backup sets New media set name: New media set description: Reliability Verify backup when finished Patrom chacker up before writing to media
Connection	Continue on error
Server: \SQLEXPRESS Connection: ServerName\john.smith)	Transaction log Truncate the transaction log Back up the tail of the log, and leave the database in the restoring state Trans data
Progress	Unload the tape after backup
Ready	Compression Set backup compression: Use the default server setting
	OK Cancel

Figure 6. Options - Backup Database



- **b** Select one of the following "overwrite" options in the *Overwrite media* group box (Figure 6):
 - *Append to the existing backup set:* Choose this option to add data to an existing backup.
 - *Overwrite all existing backup sets*: Choose this option to replace all data in an existing backup with data in this backup.
- **c** Click the check box **Verify backup when finished** in the *Reliability* group box to place a check mark inside the check box.
- **d** If the check box **Continue on error** is selected, click the check box to remove the check mark.
- e Click **OK** to begin the database backup process.
- **f** When a message displays stating the database backup completed successfully, click **OK** (Figure 7).

The database backup process is now complete.



Figure 7. Database Backup Message



Restoring a Database Backup

Complete the following steps to restore a backup of the PCS Axis database:

- **1** Exit the PCS Axis software (*File > Exit*) if it is running.
- 2 Stop PCS Axis Job Service if it is running. To stop PCS Axis Job Service, follow these steps:
 - a Click the Windows **Start** Subtron and navigate to **Computer**. Right-click **Computer** and select **Manage** to open the *Computer Management* window (Figure 8).
 - **b** Double-click **Services and Applications** in the left panel, then select **Services**.
 - c Right-click **PCS Axis Job Service** in the center panel and select **Stop** in the shortcut menu that opens.
 - **d** Click **File** > **Exit** to exit *Computer Management*.



Figure 8. Computer Management



- **3** If you plan to restore the demo database provided with PCS Axis, copy the backup file from the PCS Axis installation CD to your computer. The backup file is located in the *Test Database* folder on the installation CD.
- 4 Start SQL Server Management Studio (SSMS) if the software is not running. Click **Start** > **Microsoft SQL Server 2008 R2** > **SQL Server Management Studio**.
- **5** Double-click the **Databases** folder and then right-click the database you want to restore to open a shortcut menu.
- 6 Navigate to **Tasks** > **Restore** and then select **Database** in the shortcut menu (Figure 9) to open the *Restore Database* window (Figure 10, page 8).

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PcsAppDev Security	New Database					
Server Objects	New Query					
Replication	Script Database as	•				
Management SQL Server Ag	Tasks	•	Detach			
	Policies	•	Take Offline			
	Facets		Bring Online			
	Start PowerShell		Shrink			
	Reports	•	Back Up			
	Rename		Restore •	Database	N	
	Delete		Mirror	Files and File	egroups ド	
	Refresh		Launch Database Mirroring Monitor	Transaction	Log	
	Properties		Ship Transaction Logs			
			Generate Scripts			
Ready			Extract Data-tier Application			
		-	Register as Data-tier Application			
		Export Data				
			Copy Database			
			Manage Database Encryption			

Figure 9. SQL Server Management Studio



- **7** Select one of the following options in the *Source for restore* group box to identify the location of the database backup set to use in the restore operation (Figure 10):
 - **From database**: Select this option to choose a database to restore from a selection list. The selection list contains only those databases that have previously been backed up.
 - **From device**: Select this option to choose a database backup file that contains a specific backup you want to restore. This restore option allows you to select a database backup file that has previously been saved in a folder on a local computer or network drive.
- 8 Select which database backup set to use in the restore operation. Click the **Restore** check box for a set of backup files available for selection in the field labeled *Select the backup sets to restore*. A check mark inside a check box indicates a selection (Figure 10).

Restore Database - PcsAppD	Dev							
Select a page	🔄 Script 🔻 🖺 Help							
Depuens	Destination for restore							
	Select or type the name of a new or e	xisting databa	se for your restore	operation.				
	To database:	PcsAppDev	1					•
	To a point in time:	Most recent	t possible					
	Source for restore							
	Specify the source and location of ba	ckup sets to r	estore.					
	From database:	PcsAppDev						
	From device:							
	Select the backup sets to restore:							
	Restore Name	e Paelous	Component	Туре	Server	Database Reg/gen/Day	Position	
		еваскор	Dalabase	Full	DRU	PCSAppDev		
Connection								
Server: .\SQLEXPRESS								
Connection: ServerName\john.smith)								
View connection properties								
Progress								
Ready	<							•
							ок	Cancel

Figure 10. Restore Database



- 9 Click **Options** in the Select a page panel to open the Options page (Figure 11).
- **10** Click the check box labeled **Overwrite the existing database (WITH REPLACE)** in the *Restore options* group box.
- **11** Click **OK** to begin the database restore operation.

🔋 Restore Database - PcsAppE	Dev		
Select a page	🖾 Script 🔻 🚺 Help		
Cottons	Restore options Overwrite the existing databas Preserve the replication setting Prompt before restoring each t Restrict access to the restored Restrict access to the restored	e (WITH REPLACE) js (WITH KEEP_REPLIC) packup I database (WITH RESTF	ATION) RICTED_USER)
	Original File Name	File Type	Restore As
	PcsAppDev dat	Rows Data	c:\Program Files\Microsoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\Data\\PcsAppDev_dat.mdf
	PcsAppDev log	Log	c:\Program Files\Microsoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\Data\\PcsAppDev log.ldf
	Recovery state	use by rolling back uncom	mitted transactions. Additional transaction logs cannot be restored (RESTORE WITH RECOVERY)
Connection Server: ServerName\SOLEXPRESS	Leave the database non-operative statements	ational, and do not roll bac	x uncommitted transactions. Additional transaction logs can be restored.(RESTORE WITH NORECOVERY)
Connection: DomainName\john.smith	 Leave the database in read-or STANDBY) 	nly mode. Undo uncommitt	ted transactions, but save the undo actions in a standby file so that recovery effects can be reversed.(RESTORE WITH
View connection properties	Standby file:		
Progress			
C Ready	i The Full-Text Upgrade Option	on server property controls	s whether full text indexes are imported, rebuilt, or reset.
			OK Cancel

Figure 11. Options - Restore Database

12 Click **OK** when a message displays stating the database restore completed successfully (Figure 12).

The database restore operation is now complete.



Figure 12. Database Restore Message



Product Support and Training

If you have a suggestion, question, feature request, or a bug to report-your feedback would be appreciated. Also if you have a training need for your organization or would like to know more about upcoming PCS Axis training classes, please use any of the following contact information to reach PCS Technical Services:

Support E-mail:	pcstechservices@aiworldwide.com
Support Telephone:	1-800-229-3404 (select 1, then press 2)
American Innovations:	http://www.aiworldwide.com