

Microsoft Dynamics CRM 2011 Operating and Maintaining Guide

5.0.0



Copyright

This document is provided "as-is". Information and views expressed in this document, including URL and other Internet Web site references, may change without notice. You bear the risk of using it.

Some examples depicted herein are provided for illustration only and are fictitious. No real association or connection is intended or should be inferred.

This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal, reference purposes.

© 2010 Microsoft Corporation. All rights reserved.

Microsoft, Active Directory, Excel, Hyper-V, Internet Explorer, Microsoft Dynamics, Microsoft Dynamics logo, MSDN, Outlook, Notepad, SharePoint, Silverlight, Visual C++, Windows, Windows Azure, Windows Live, Windows PowerShell, Windows Server, and Windows Vista are trademarks of the Microsoft group of companies.

All other trademarks are property of their respective owners.

Table of Contents

Copyright	2
Overview	3
Operating Microsoft Dynamics CRM	5
Backing Up the Microsoft Dynamics CRM System	7
Backup requirements summary	7
Selecting a backup type	8
Backing up Windows Server	8
Backing up Active Directory	8
Backing up SQL Server, including Reporting Services	9
Backing up Microsoft Dynamics CRM Server 2011	10
Failure Recovery	13
Scenario A: SQL Server failure	13
Scenario-A recovery	13
Scenario B: Microsoft Dynamics CRM Server 2011 failure	14
Scenario-B recovery	14
Scenario C: Exchange Server failure	14
Scenario-C recovery	14
Scenario D: Active Directory failure	15
Scenario-D recovery	15
Microsoft Dynamics CRM for Outlook failure recovery	16

Overview

This guide is part of the Microsoft Dynamics CRM Implementation Guide, which consists of the following three documents:

- **Planning Guide:** Use this guide to determine what you have to plan for Microsoft Dynamics CRM. It includes coverage in the following areas:
 - ▶ **Technical.** These topics focus on supported topologies, system requirements, and technical considerations to address before installation.
 - ▶ **Implementation Methodology.** Learn about the business management, system requirements, and project management aspects that are needed when you deploy a CRM system. In addition, there are several documents that you can use as tools to plan the implementation of Microsoft Dynamics CRM. These tools are available for download at *Planning Tools* (<http://go.microsoft.com/fwlink/?LinkID=189326>).
- **Installing Guide:** Use this guide to learn about how you install Microsoft Dynamics CRM applications. This guide includes step-by-step instructions for running Setup, command-line installation instructions, and guidance about how to remove Microsoft Dynamics CRM.
- **Operating and Maintaining Guide:** You can read this guide to learn how to back up, restore, and perform system recovery for Microsoft Dynamics CRM data. Also, this guide has troubleshooting steps for known issues.

----- **Send Feedback About This Chapter** -----

We appreciate hearing from you. To send your feedback, click the following link and type your comments in the message body.

Note

The subject-line information is used to route your feedback. If you remove or modify the subject line, we may be unable to process your feedback.

Send Feedback (<http://go.microsoft.com/fwlink/?LinkID=191438>)

Operating Microsoft Dynamics CRM

Operating Microsoft Dynamics CRM includes guaranteeing availability by monitoring server status and troubleshooting application issues that may occur.

For more information see *Operating Microsoft Dynamics CRM* (<http://go.microsoft.com/fwlink/?LinkID=207602>).

Backing Up the Microsoft Dynamics CRM System

To recover from any scenario, you must back up all needed information and store a copy off site. A backup plan should be created and rehearsed for all Microsoft Dynamics CRM components and services to make sure that, if a disk or other failure occurs, the maximum amount of data is recoverable.

In This Chapter

Backup requirements summary	7
Selecting a backup type	8
Backing up Windows Server	8
Backing up Active Directory	8
Backing up SQL Server, including Reporting Services.....	9
Backing up Microsoft Dynamics CRM Server 2011.....	10

Backup requirements summary

Backup requirements vary according to the servers involved. The following table is a summary of what to back up for Microsoft Dynamics CRM.

Server	What to back up for Microsoft Dynamics CRM	Comments
Domain controller	Full System State	None.
Exchange Server	Backup not required by Microsoft Dynamics CRM.	Backup may be required for Exchange Server.
SQL Server	MSCRM_CONFIG <i>OrganizationName_MSCRM</i> master msdb <i>ReportServer</i> <i>ReportServertempdb</i>	The <i>OrganizationName_MSCRM</i> and <i>ReportServer</i> databases should have full database backups and transaction log backups. For databases that are rarely updated, such as msdb , you may select only full database backup. Backups of the master and msdb databases are not required by Microsoft Dynamics CRM but should be part of an overall backup strategy.
SharePoint	Backup recommended if SharePoint integration is enabled.	If you have enabled SharePoint integration, we recommend that you back up the SharePoint databases. For more information, see the SharePoint documentation.

Server	What to back up for Microsoft Dynamics CRM	Comments
Microsoft Dynamics CRM Server 2011	web.config (Default location: c:\Program Files\Microsoft Dynamics CRM\CRMWeb) Windows registry: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSCRM	The web.config file is required only if the file has been changed from the default settings. Windows registry subkey.

Selecting a backup type

Windows Server 2008 supports external and internal hard disks, optical media drives, and removable media drives. To perform a scheduled backup, as a best practice, use an external hard disk that supports either USB 2.0 or IEEE 1394.

In Windows Server 2008, you can perform three types of backup:

- System state backup, which includes all the files that are required to recover Active Directory.
- Critical-volumes backup, which includes all the volumes that contain system state files.
- Full server backup, which includes all volumes on the server.

Backing up Windows Server

Windows Server has a backup tool that lets you back up important company data to disk or removable media. The scheduling capability found in the Backup and Restore Wizard provides data backup for the server itself and workstations in the small business network. The data backed up includes security information, file and share permissions, and registry data. For data security, only a member of the Administrators or Backup Operators group can perform a backup. Individual files and directories on the server can be restored by using the Backup and Restore Wizard.

Backing up Active Directory

The Backup and Restore Wizard can back up System State data, which includes Active Directory, system startup files, the Component Services Class Registration database, the registry, and SysVol. Possible backup locations for System State data include floppy disks, hard disks, removable media, recordable compact discs, and tapes.

Although we recommend that you back up Active Directory, the only way to avoid data loss is to have multiple Active Directory domain controllers. Then, if a domain controller fails, the other domain controllers will have a complete copy of the directory. With a backup, you have data only as recent as your last backup.

Active Directory is a transacted database system that uses log files that support roll-back semantics to make sure that transactions are committed to the database. The files associated with Active Directory are as follows:

- **Ntds.dit.** The database.
- **Edbxxxxx.log.** Transaction logs.
- **Edb.chk.** Checkpoint file.
- **Res1.log** and **Res2.log.** Reserved log files.

Ntds.dit grows as the database fills up. However, the logs are of fixed size (10 MB). Any change made to the database is also appended to the current log file, and its disk image is always kept up to date.

Edb.log is the current log file. When a change is made to the database, it is written to the **Edb.log** file. When the **Edb.log** file is full of transactions, it is renamed to **Edbxxxxx.log**. (It starts at 00001 and continues to increment by using hexadecimal notation.) Because Active Directory uses circular logging, old log files are deleted as soon as they have been written to the database. At any point in time, you will have the **Edb.log** file and maybe one or more **Edbxxxxx.log** files.

The **Edb.chk** file stores the database checkpoint, which identifies the point where the database engine has to replay the logs, generally at the time of recovery or initialization.

Res1.log and **Res2.log** are "placeholders," designed to reserve (in this case) the last 20 MB of disk space. This gives the log files sufficient room for a graceful shutdown if all other disk space is consumed.

For more information, see:

- *Backup and Recovery* (<http://go.microsoft.com/fwlink/?LinkID=190832>) (Windows Server 2008)
- *Administering Active Directory Backup and Recovery* (<http://go.microsoft.com/fwlink/?LinkID=190829>) (Windows Server 2008)
- *Backing Up and Restoring Data for Windows Server 2003* (<http://go.microsoft.com/fwlink/?linkid=91943>)
- *Server Clusters: Storage Best Practices for Windows 2000 and Windows Server 2003* (<http://go.microsoft.com/fwlink/?linkid=91944>)
- *How to use the backup feature to back up and restore data in Windows Server 2003* (<http://go.microsoft.com/fwlink/?linkid=91945>)

Backing up SQL Server, including Reporting Services

The Backup and Restore Wizard in Windows Server 2008 uses Volume Shadow Copy Services (VSS) to back up Microsoft SQL Server databases. An alternative solution that can be used while SQL Server runs is the built-in backup. Use Microsoft SQL Server Management Studio to create a backup of the SQL Server databases. Then, you can run a backup job from the Backup and Restore Wizard to include database backups that Reporting Services created. You would schedule the backup routine in Reporting Services to run first, followed by a backup job run in the Backup and Restore Wizard. For more information about SQL Server backups, see SQL Server Books Online.

Microsoft Dynamics CRM creates at least two Microsoft Dynamics CRM-specific databases on SQL Server. In addition, Microsoft Dynamics CRM requires the default master and msdb SQL Server databases for database services and the default report server SQL Server databases for Reporting Services. The databases that make up a Microsoft Dynamics CRM system on SQL Server are as follows:

- *OrganizationName_MSCRM*
- **MSCRM_CONFIG**
- *ReportServer*
- *ReportServertempdb*
- **master**
- **msdb**

Note

Your Microsoft Dynamics CRM deployment may include more than one *OrganizationName_MSCRM* database.

The SQL Server backup plan should address each of these databases to make sure that Microsoft Dynamics CRM could recover if one, or all, databases fail. If your organization already has SQL Server or another database application, your database administrator may have a database backup strategy. However, if this is the first database application in your organization, you can create and maintain scheduled jobs to perform the necessary backups by using the Maintenance Plan Wizard in Microsoft SQL Server Management Studio. To start the Maintenance Plan Wizard, in Reporting Services, expand the server, expand the **Management** folder, right-click the **Maintenance Plans** folder, and then click **Maintenance Plan Wizard**.

Your backup plan for the Microsoft Dynamics CRM databases provides you a backup set that includes a full database backup and some number of transaction log backups, depending on the Microsoft Dynamics CRM installation and the frequency with which you determine whether you must have backups. For more information about backup and restore strategies, see SQL Server Books Online.

For databases that are updated infrequently, such as the msdb database, you might perform only full database backups. The *OrganizationName_MSCRM*, *MSCRM_CONFIG*, and *ReportServer* databases should have both full database and transaction-log backups.

Databases on which transaction log backups will be performed must have the **Full** recovery model database property set. You can set this property through Microsoft SQL Server Management Studio. For more information about how to set database properties, see SQL Server Books Online.

Schedule full database backups frequently enough to reduce the number of restores after a failure. For example, if one day's data loss is acceptable, you can back up the transaction log one time per day, and back up the database one time per week. If only one hour's maximum data loss is acceptable, you can back up the transaction log one time per hour. To reduce the number of restores, back up the database one time per day.

To create a database maintenance plan for scheduled backups, run the Maintenance Plan Wizard from Microsoft SQL Server Management Studio. Select the option to back up the database as part of the maintenance plan for a full database backup. Select the option to back up the transaction log as part of the maintenance plan for a transaction log backup.

Your computer that is running SQL Server should also be designed with a level of fault-tolerance that is correct for a database server. This includes a RAID-5 disk array for your databases and a RAID-1 (mirror) for your transaction logs. With the correct level of hardware fault-tolerance, restoring from backup should be a very uncommon occurrence.

For information about the other options available in these maintenance plans, such as where to store the backups, see the Maintenance Plan Wizard topics in SQL Server Books Online.

For more information about how to back up and restore SQL Server databases, see:

- *SQL Server Books Online* (<http://go.microsoft.com/fwlink/?LinkID=190878>)
- *Backing Up and Restoring Databases in the SQL Server* (<http://go.microsoft.com/fwlink/?linkid=91946>)
- *Optimizing Backup and Restore Performance in SQL Server* (<http://go.microsoft.com/fwlink/?linkid=91947>)

Backing up Microsoft Dynamics CRM Server 2011

Backing up and restoring the Microsoft Dynamics CRM Server 2011 basically involves the following data:

- Microsoft Dynamics CRM Server 2011 database files (explained previously)
- Microsoft Dynamics CRM Server 2011 program files
- Microsoft Dynamics CRM Web site files

Important

- For information about how to back up solutions and customizations that have been implemented outside of the Microsoft Dynamics CRM application, contact your solution vendor.
- We recommend that you keep a record of your current Microsoft Dynamics CRM Update Rollup level. Therefore, if failure recovery is required, the appropriate Update Rollup can be reapplied.

By default, all Microsoft Dynamics CRM program files are located in the following folder:

C:\Program Files\Microsoft CRM\

By default, the Microsoft Dynamics CRM Web site files are located in the following folder:

C:\Program Files\Microsoft CRM\CRMWeb

The Solutions feature can be used to export all unmanaged solution customizations such as modified forms, views, and mappings. The Solutions feature is located in the Customizations area of the Settings area in the Microsoft Dynamics CRM Web application navigation pane. It is a good practice to export your customizations before you make changes so that they may be imported back if there is unexpected behavior. For more information about how to export and import solutions, see the Microsoft Dynamics CRM Help.

----- Send Feedback About This Chapter -----

We appreciate hearing from you. To send your feedback, click the following link and type your comments in the message body.

Note

The subject-line information is used to route your feedback. If you remove or modify the subject line, we may be unable to process your feedback.

Send Feedback (<http://go.microsoft.com/fwlink/?LinkID=191562>)

Failure Recovery

To understand the failure-recovery procedures, you must examine several different scenarios to learn how restoration occurs in each case. For each scenario in this guide, total server failure is assumed. The following four scenarios contain information that shows the steps to ensure successful recovery.

In This Chapter

Scenario A: SQL Server failure	13
Scenario B: Microsoft Dynamics CRM Server 2011 failure	14
Scenario C: Exchange Server failure	14
Scenario D: Active Directory failure.....	15
Microsoft Dynamics CRM for Outlook failure recovery	16

Scenario A: SQL Server failure

If the computer that is running Microsoft SQL Server fails, you must restore the databases from backup, and then reassociate them with the Microsoft Dynamics CRM deployment.

Scenario-A recovery

➤ **To recover from this failure, follow these steps:**

1. Install Windows Server 2008 and make sure that the computer is in the same domain as the Microsoft Dynamics CRM Server 2011. In addition, you should use the same database name and disk structure. If you change either of these, you must take additional steps to correctly restore the SQL Server databases.
2. Install SQL Server.
3. If you have a valid backup of the **master** database, restore that backup. For more information, see *Restoring the master Database* (<http://go.microsoft.com/fwlink/?linkid=100240>) in SQL Server Books Online.
4. Restore the msdb database. For more information, see *Restoring the model and msdb Databases* (<http://go.microsoft.com/fwlink/?linkid=100244>) in SQL Server Books Online.
5. Restore the MSCRM_CONFIG and OrganizationName_MSCRM databases. For more information about how to restore databases, see *Backing Up and Restoring Databases* (<http://go.microsoft.com/fwlink/?linkid=100249>).
6. If Microsoft SQL Server Reporting Services and the Microsoft Dynamics CRM 2011 Connector for Microsoft SQL Server Reporting Services are also installed on the instance of SQL Server, restore the **ReportServer** and **ReportServertempDB** databases. For more information about how to restore databases, see *Backing Up and Restoring Databases* (<http://go.microsoft.com/fwlink/?linkid=100249>).

7. If you restored the MSCRM_CONFIG database, you must run Microsoft Dynamics CRM Server Setup and use the **Connect to existing databases** option on the Specify Deployment Options page. If you did not restore the MSCRM_CONFIG database and the database is functioning correctly, you can reconnect the organization database to the system. To do this, in Deployment Manager right-click the organization and select **Disable**, right-click the organization again, click **Edit Organization**, and then change the **SQL Server** value in the wizard. For more information about how to edit an organization, see the Deployment Manager Help.

This scenario is a worst-case situation, that is, total failure of the computer that is running SQL Server. In other circumstances, such as the failure of a disk, you may only have to restore a single database to recover the environment.

For more information about failure recovery for SQL Server, see *Disaster Recovery Planning (Database Engine)* (<http://go.microsoft.com/fwlink/?linkid=100252>).

Scenario B: Microsoft Dynamics CRM Server 2011 failure

Most of the Microsoft Dynamics CRM configuration information is stored on the computer that is running SQL Server. Therefore, the information can be recovered if all, or part, of Microsoft Dynamics CRM Server 2011 fails. Registry entries on the Microsoft Dynamics CRM Server 2011 are recovered when you run repair or reinstall processes for the Microsoft Dynamics CRM Server 2011 and Microsoft Dynamics CRM 2011 Connector for Microsoft SQL Server Reporting Services.

We recommend that you keep a record of your current Microsoft Dynamics CRM Update Rollup level. Therefore, if failure recovery is required, the appropriate Update Rollup can be reapplied.

Scenario-B recovery

- **If the computer that is running Microsoft Dynamics CRM Server 2011 fails, follow these steps:**
 1. Install the operating system on another server and join the same domain as the computer that is running SQL Server.
 2. Install Microsoft Dynamics CRM Server 2011. During Setup, you must select **Connect to, and if necessary, upgrade an existing deployment** when you are prompted. If Microsoft Dynamics CRM 2011 Connector for Microsoft SQL Server Reporting Services was also installed on the computer that failed, install the Microsoft Dynamics CRM 2011 Connector for Microsoft SQL Server Reporting Services after Microsoft Dynamics CRM Server 2011 is completed.
 3. If the ISV.config and web.config files have been changed from their default settings, restore these files from backup.
 4. Publish all customizations. For information about how to publish customizations, see the Microsoft Dynamics CRM Help.

Scenario C: Exchange Server failure

The process to restore a Microsoft Exchange Server computer that is used by Microsoft Dynamics CRM depends on the other uses of that instance of Exchange Server. Except for the forward mailbox, Microsoft Dynamics CRM does not directly use Exchange Server mailboxes.

Note

Installing the E-mail Router on a computer that is running Exchange Server is not required.

Scenario-C recovery

- **To restore Exchange Server in a Microsoft Dynamics CRM environment, follow these steps:**
 1. Restore Exchange Server.

2. If the E-mail Router was installed on the computer that is running Exchange Server, reinstall the E-mail Router.
3. Restore the Microsoft.Crm.Tools.EmailAgent.xml file. By default, this file is located in the Drive:\Program Files\Microsoft CRM Email\Service folder. If this file is not available, you must reconfigure the profiles, settings, users, queue, and forward-mailbox information by running the E-mail Router Configuration Manager.

For more information about how to restore Exchange Server 2003, see:

- *How to Back Up and Restore an Exchange Computer by Using the Windows Backup Program* (<http://go.microsoft.com/fwlink/?linkid=100257>)
- *Disaster Recovery Includes Metabase Backup and Restore* (<http://go.microsoft.com/fwlink/?linkid=100259>)
- *How to Recover or to Restore a Single Mailbox in Exchange Server 2003* (<http://go.microsoft.com/fwlink/?linkid=100261>)
- *Microsoft Exchange Server 2003 technical library* (<http://go.microsoft.com/fwlink/?linkid=100262>)

For more information about how to restore Exchange Server 2007, see:

- *Single Mailbox Recovery* (<http://go.microsoft.com/fwlink/?linkid=100271>)

For more information about Exchange Server 2010 back up and recovery see:

- *Understanding Backup, Restore and Disaster Recovery* (<http://go.microsoft.com/fwlink/?LinkID=194594>)

Scenario D: Active Directory failure

In most environments, it is highly unlikely that Active Directory will fail on its own, because more than one Active Directory domain controller should be installed.

Scenario-D recovery

➤ To recover from a failed domain controller, follow these steps:

1. Reinstall the Windows Server 2008 operating system.
2. Perform a system state restore.

Make sure that you have a method for recovering from an Active Directory failure. Regardless of the size of your environment, you should consider having multiple domain controllers with regular backups of the system state. If your backups are not current, any data that belongs to Microsoft Dynamics CRM objects in Active Directory will be orphaned in SQL Server and therefore will be unrecoverable. Any changes that are made in Microsoft Dynamics CRM, such as adding new Microsoft Dynamics CRM users or queues, requires that Active Directory is backed up immediately after the change.

One major problem can occur with Active Directory that stops Microsoft Dynamics CRM from functioning. If an administrator unintentionally deletes the organizational unit (OU) that corresponds to a Microsoft Dynamics CRM deployment, it becomes inoperable. Similarly, if any of the OU security groups that are created by Microsoft Dynamics CRM are deleted (such as PrivUserGroup, ReportingGroup, PrivReportingGroup, or SQLAccessGroup), Microsoft Dynamics CRM will no longer function correctly. In either of these events, an authoritative restore of Active Directory restores the deleted OU, and security groups, to their original state.

Important

If you cannot restore an Active Directory backup, you can create new security groups by reinstalling Microsoft Dynamics CRM Server 2011 as a new deployment. After the installation is complete you can import the organization databases.

For more information about Active Directory backup and recovery, see *Steps for Backing Up and Recovering AD DS* (<http://go.microsoft.com/fwlink/?LinkID=192989>).

Microsoft Dynamics CRM for Outlook failure recovery

Microsoft Dynamics CRM for Microsoft Office Outlook with Offline Access includes functionality that uses Microsoft SQL Server Express. This enables Microsoft Dynamics CRM users to work offline with data synchronized to SQL Server when Microsoft Dynamics CRM for Outlook with Offline Access is brought online again.

In some cases, Microsoft Dynamics CRM users may want to back up the local Microsoft SQL Server Express database. This is especially useful when Microsoft Dynamics CRM users are offline for prolonged periods. The following table indicates different methods that can be used for backing up Microsoft Dynamics CRM for Outlook with Offline Access.

Backup Method	What to Back Up for Microsoft Dynamics CRM	Comments
Offline backup	Contents of Microsoft Dynamics CRM data directory. Default location is: <i>SystemDrive:\Program Files\Microsoft Dynamics CRM\LocaleCode\sql\ 5.0</i>	Before you start the backup, make sure that the SQL Server (CRM) service is stopped. Restart the service after the backup is complete.
Online backup using Microsoft tools	MSDE_MSCRMbuildnumber.mdf MSDE_MSCRMbuildnumber_log.LDF	Use SSMSE or sqlcmd.exe (a command-line tool) that is available for download.
Online backup using non-Microsoft tools	MSDE_MSCRMbuildnumber.mdf MSDE_MSCRMbuildnumber_log.LDF	Look for tools that are compatible with Microsoft SQL Server Express.

Microsoft SQL Server Management Studio Express (SSMSE) provides a graphical management tool for Microsoft SQL Server 2008 Express Edition that includes backup and recovery features. You can download SSMSE and sqlcmd.exe at *Microsoft SQL Server 2008 Management Studio Express* (<http://go.microsoft.com/fwlink/?LinkID=190929>).

If there is a problem with Microsoft Dynamics CRM for Outlook with Offline Access before the user can reconnect to the server, the backup can be used to restore Microsoft Dynamics CRM functionality to the client. Outlook should be in offline mode before you restore the backup. When restored, you can then connect to the Microsoft Dynamics CRM Server 2011 (online mode). The data not already on the server will be transferred to the server from the client. Be careful when reconnecting to the server. If you restore from an outdated backup, the existing data on the server may have subsequently changed. However, neither Microsoft SQL Server Express nor SQL Server recognizes this fact. Therefore you run the risk of overwriting current data on the server by using older data from the offline client backup.

----- **Send Feedback About This Chapter** -----

We appreciate hearing from you. To send your feedback, click the following link and type your comments in the message body.

Note

The subject-line information is used to route your feedback. If you remove or modify the subject line, we may be unable to process your feedback.

Send Feedback (<http://go.microsoft.com/fwlink/?LinkID=190879>)