

VMware vCenter Configuration Manager Backup and Disaster Recovery Guide

vCenter Configuration Manager 5.5

This document supports the version of each product listed and supports all subsequent versions until the document is replaced by a new edition. To check for more recent editions of this document, see <http://www.vmware.com/support/pubs>.

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About This Book

The *VCM Backup and Disaster Recovery Guide* describes recommendations to help you prepare and implement a successful backup and disaster recovery plan for VMware vCenter Configuration Manager (VCM). As a SQL database administrator, you are responsible for establishing your corporate backup, recovery, and maintenance plans. This document describes the following suggested procedures:

- Backup
- Recovery
- Database restoration

Read this document and customize the procedures for your own disaster recovery plan according to your environment and corporate policies. The *VCM Backup and Disaster Recovery Guide* is applicable to VCM version 5.3 and later.

Intended Audience

The information presented in this manual is written for experienced Windows administrators, VCM system administrators, and SQL Server database administrators.

To use this information effectively, you must have a basic understanding of how to configure network resources, install software, and administer SQL Server. You also need to fully understand your network's topology and resource naming conventions.

Document Feedback

VMware welcomes your suggestions for improving our documentation. If you have comments, send your feedback to docfeedback@vmware.com.

VMware VCM Documentation

The vCenter Configuration Manager (VCM) documentation consists of the *VCM Installation Guide*, *VCM Administration Guide*, *VCM Foundation Checker User's Guide*, VCM online Help, and other associated documentation.

Technical Support and Education Resources

The following technical support resources are available to you. To access the current version of this book and other books, go to <http://www.vmware.com/support/pubs>.

- Online and Telephone Support** To use online support to submit technical support requests, view your product and contract information, and register your products, go to <http://www.vmware.com/support>. Customers with appropriate support contracts should use telephone support for priority 1 issues. Go to http://www.vmware.com/support/phone_support.html.
- Support Offerings** To find out how VMware support offerings can help meet your business needs, go to <http://www.vmware.com/support/services>.
- VMware Professional Services** VMware Education Services courses offer extensive hands-on labs, case study examples, and course materials designed to be used as on-the-job reference tools. Courses are available onsite, in the classroom, and live online. For onsite pilot programs and implementation best practices, VMware Consulting Services provides offerings to help you assess, plan, build, and manage your virtual environment. To access information about education classes, certification programs, and consulting services, go to <http://www.vmware.com/services>.

Implementing a Disaster Recovery Plan

To identify and create a disaster recovery plan for vCenter Configuration Manager (VCM) in your environment, VMware recommends that you customize these procedures for an active-production, standby-spare recovery model. These procedures are suggested approaches, and are a baseline from which you can configure the proper backup schedules and provide information on how to recover a system using these prepared backups.

Adjust the frequencies and retention values provided to meet your specific service-level agreements and retention requirements. As a SQL Server database administrator, you are responsible for conforming to your own corporate backup, recovery, and maintenance plans.



CAUTION If you are not a SQL Server database administrator, refer to the Microsoft documentation for information about backing up your databases.

Before you implement your own disaster recovery plan, verify that your data and hardware meet the following requirements.

- Historical data is retained. Data will be as current as your last scheduled database backup.
- Duplicate hardware of your production VCM environment is available in an alternate location for recovery tasks. The hardware must support your exact installation configuration. See the *VCM Installation Guide*.
 - In a single-tier server installation, the VCM Database server, Web server, and the VCM Collector components reside on a single Windows Server 2008 R2 machine, which is referred to as the VCM Collector. The installation installs all of the core VCM components, including the databases, VCM Collector application and files, and services. This configuration enables integrated security by default.
 - In a two-tier split installation, the VCM database resides on the Windows Server 2008 R2 database server machine, and the VCM Collector and Web components reside on the second Windows Server 2008 R2 machine.
 - In a three-tier split installation, the VCM databases, the Web applications, and the VCM Collector components reside on three separate Windows Server 2008 R2 machines.
- The recovery machines are prepared with all software prerequisites for a VCM installation that matches the product versions of the production machines.

Backing Up Your Data

Use these procedures as examples to ensure that all required databases are properly backed up in compliance with your corporate policies and standards. As a SQL Server database administrator, you are responsible for conforming to your own corporate backup, recovery, and maintenance plans.

Use the maintenance plan that you create in addition to other database integrity and re-indexing maintenance plans. Although you might choose to combine backup plans and other maintenance tasks into a single SQL Server maintenance plan, creating separate backup plans can assist you in future maintenance plan organization.

The VCM databases are configured in Simple Recovery mode, which means that you can recover the databases to the point of the last backup. In Simple Recovery mode, you cannot restore the databases to a specific point in time or to a point of failure, and you cannot restore transaction log backups. For details about Simple Recovery mode, see the SQL Server documentation.

IMPORTANT The following procedures apply to SQL Server. Apply these backup concepts to any third-party software that you use.

Procedure

1. ["Back Up Your Full Database Regularly" on page 10](#)
Back up your full VCM database regularly to avoid loss of data.
2. ["Create a Differential Database Backup Daily" on page 16](#)
Create a daily differential backup of the databases to avoid loss of data.
3. ["Back Up Your VCM Collector File System Regularly" on page 22](#)
Back up your VCM Collector file system regularly to avoid loss of data using corporate standard tools or simple scripted file copies.
4. ["Back Up Your HTTP Certificates" on page 22](#)
If you use HTTP Agents, verify that your HTTP certificates are available for disaster recovery purposes. Export the certificates once for each new server.

Back Up Your Full Database Regularly

Back up your full VCM database regularly to avoid loss of data.

Follow your own corporate policies and standards for the frequency and schedule to create full backups of your databases. Depending on your corporate policy, you might need to perform a full backup of the databases on a daily basis instead of weekly.



CAUTION The following procedure lists the VCM databases that you must back up. Customize the procedure for your own environment, but make sure that you back up all of the databases listed.

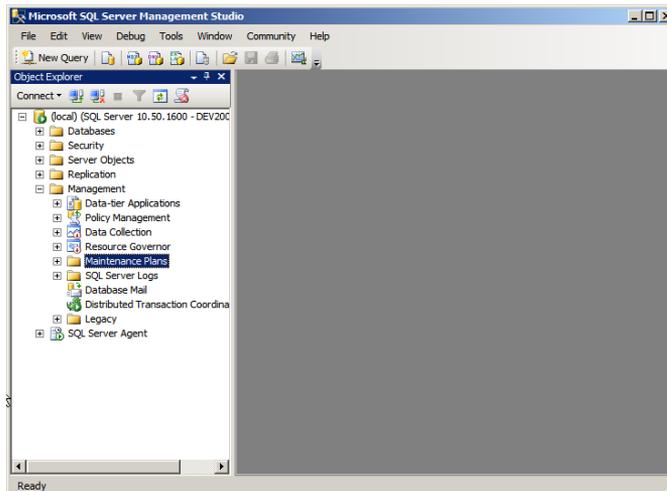
This procedure is an example of performing a weekly full backup of each database. In this example, full backups are retained for 28 days.

Prerequisites

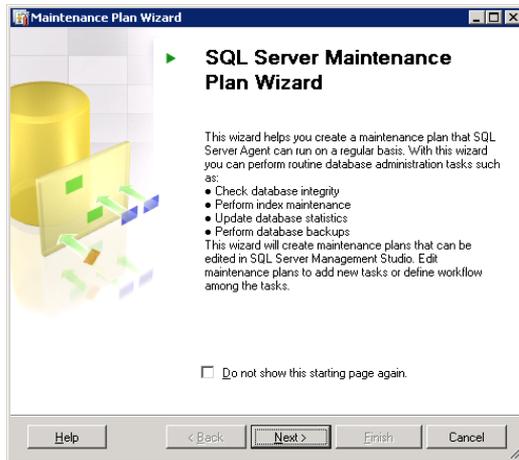
Verify that the required disk space is available for the maximum number of backup sets when you adjust the frequency or retention of your backup schedules.

Procedure

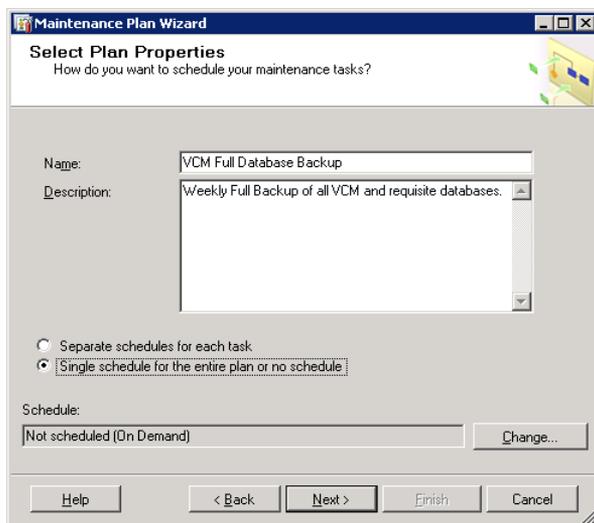
1. Click **Start**.
2. Select **All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio**.
3. Connect to the VCM Database Server using an account with SQL Administrative privileges.
4. In Object Explorer, navigate to the Maintenance Plans node.



5. Right-click **Maintenance Plans**, select **Maintenance Plan Wizard** and click **Next**.

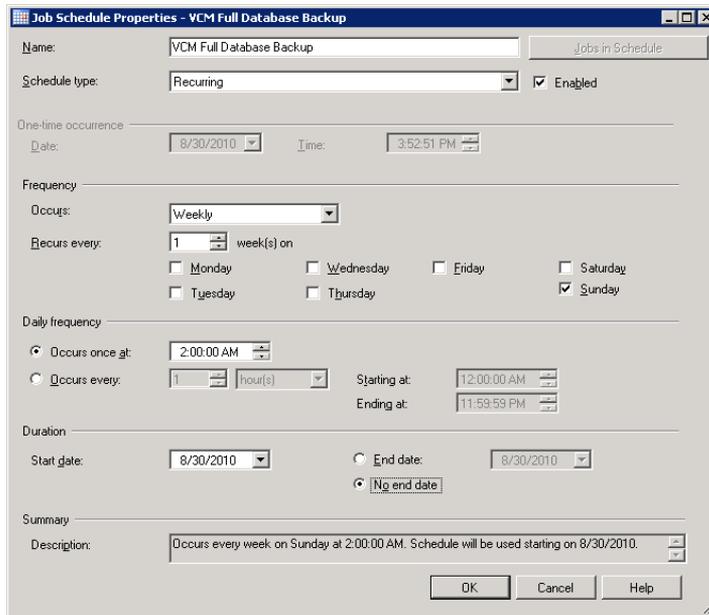


6. Type a name and description for the maintenance plan and click **Change**.

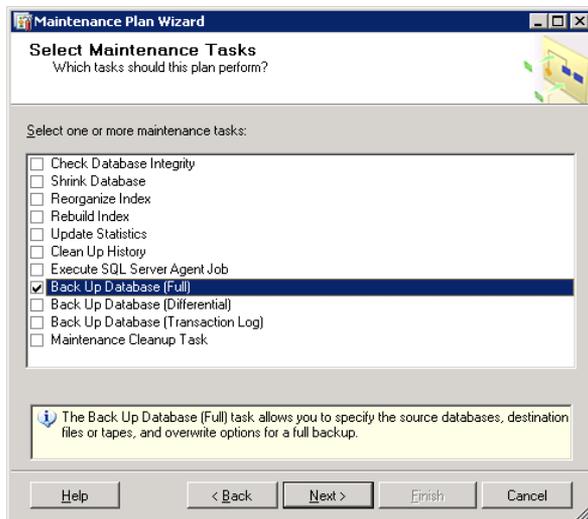


7. To create a schedule for the Full Backup Plan, click the Schedule type drop-down menu and select **Recurring**.

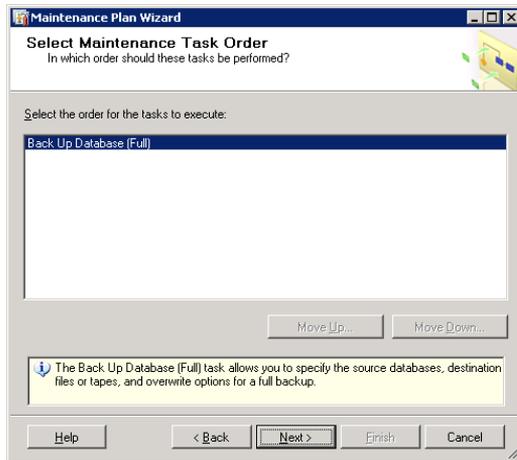
Configure the backup schedule at a time when minimal VCM Collector activity occurs and click **OK**.



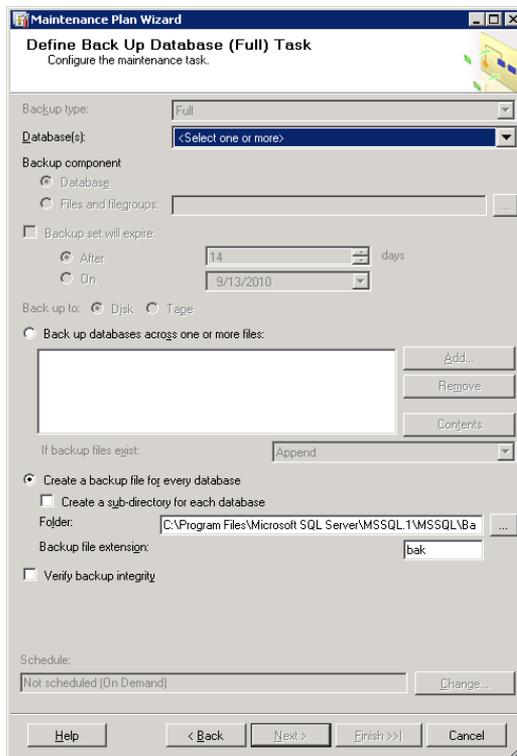
8. On the Select Maintenance Tasks page, select **Back Up Database (Full)** and click **Next**.



9. (Optional) If you are combining this backup task with other tasks, set an appropriate execution order on the Select Maintenance Task Order page and move the backup task to run after all other tasks.



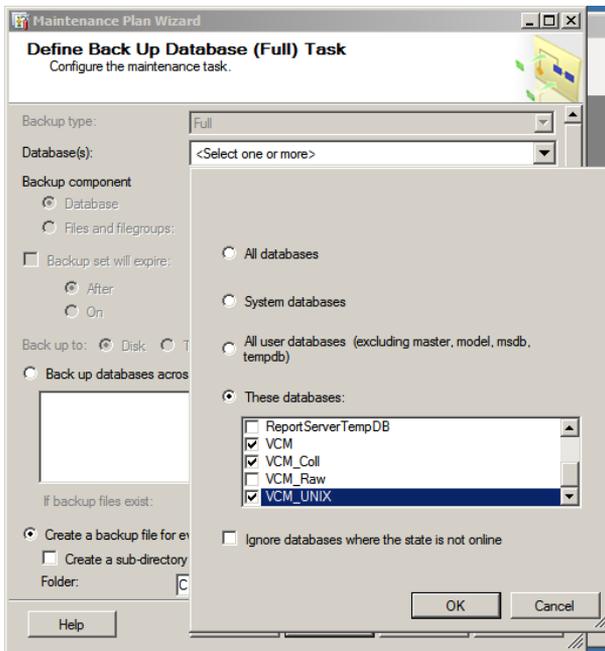
10. On the Define Back Up Database (Full) Task page, click the **Database(s)** drop-down menu.



- Select the following databases to back up and click **OK**.

If the original installation used alternate names, select the corresponding databases.

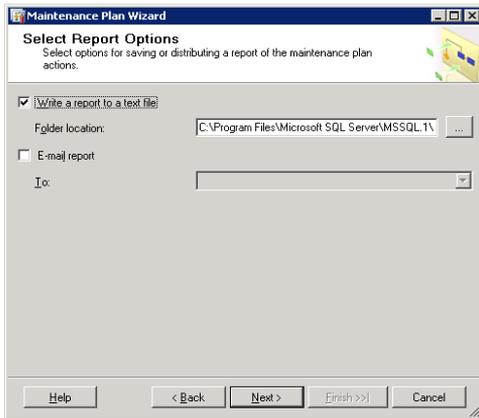
- **master**
- **msdb**
- **ReportServer**
- **VCM**
- **VCM_Coll**
- **VCM_UNIX**



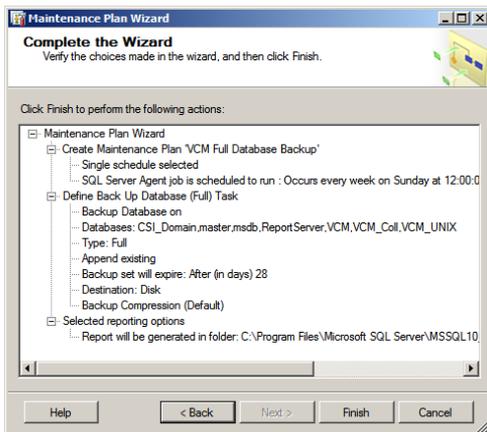
- On the Define Back Up Database (Full) Task, configure the backup settings and click **Next**.

Option	Action
Backup set will expire	Click After and type 28 in the days drop-down menu. Depending on your corporate backup policies and disk space available, you might need to modify this setting to match your policy.
Back up to	Click Disk .
Create a backup file for every database	Select this option.
Create a sub-directory for each database	Select this option and select the folder for the designated backup drive and folder structure.
Backup file extension	Type bak .
Verify backup integrity	Select this option.

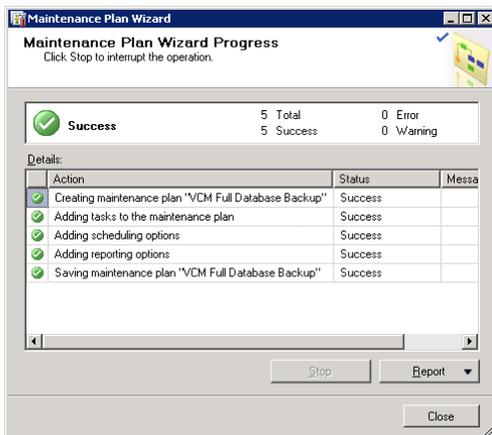
- On the Select Report Options page, select **Write a report to text file**, select a folder location, and click **Next**.



- On the Complete the Wizard page, verify that the options you selected are correct, and click **Finish** to generate the maintenance plan.



- Verify that all tasks finish with a status of Success.



Create a Differential Database Backup Daily

Create a daily differential backup of the databases to avoid loss of data.

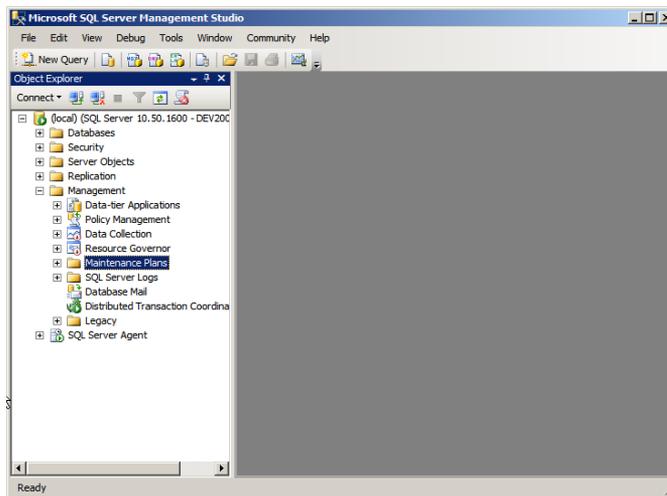
Follow your own corporate policies and standards for the frequency and schedule to create differential backups of your databases. Depending on your corporate policy, you might need to perform a differential backup of the databases on a daily basis instead of weekly.

 **CAUTION** The following procedure lists the VCM databases that you must back up. Customize the procedure for your own environment, but make sure that you back up all of the databases listed.

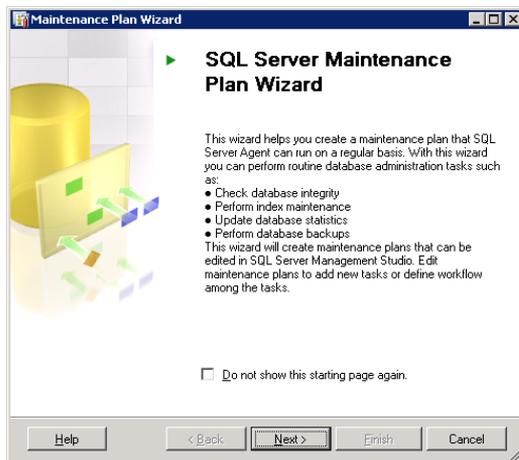
This procedure is an example of performing a differential backup of each database. In this example, differential backups are retained for 7 days.

Procedure

1. Click **Start**.
2. Select **All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio**.
3. Connect to the VCM Database Server using an account with SQL Administrative privileges.
4. In Object Explorer, navigate to the Maintenance Plans node.



5. Right-click **Maintenance Plans**, select **Maintenance Plan Wizard** and click **Next**.



6. Type a name and description for the maintenance plan and click **Change**.

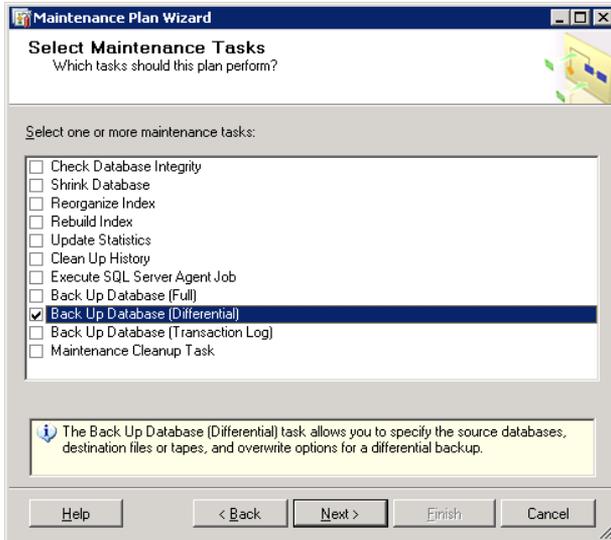
The screenshot shows the 'Maintenance Plan Wizard' dialog box, specifically the 'Select Plan Properties' step. The title bar reads 'Maintenance Plan Wizard' and the subtitle is 'Select Plan Properties'. Below the subtitle is the question 'How do you want to schedule your maintenance tasks?'. The 'Name' field contains 'VCM Differential Database Backup'. The 'Description' field contains 'Daily Differential Backup of all VCM and requisite databases.'. There are two radio button options: 'Separate schedules for each task' (unselected) and 'Single schedule for the entire plan or no schedule' (selected). The 'Schedule' dropdown menu is set to 'Not scheduled (On Demand)'. At the bottom, there are buttons for 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'. A 'Change...' button is located next to the 'Schedule' dropdown.

7. To create a schedule for the Differential Backup Plan, click the Schedule type drop-down menu and select **Recurring**.

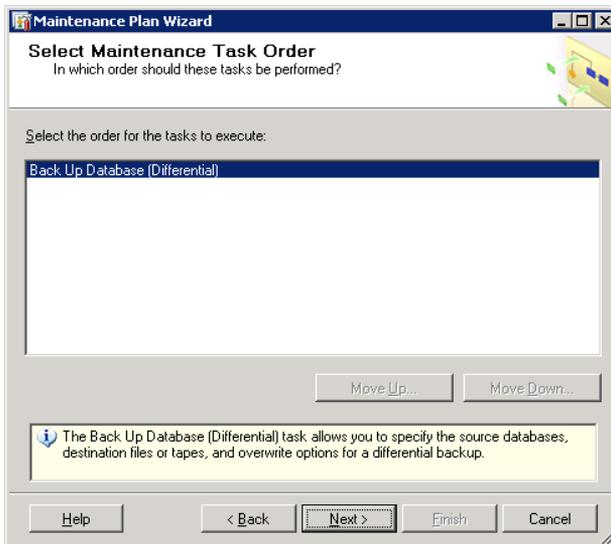
Configure the backup schedule at a time when minimal VCM Collector activity occurs and click **OK**

The screenshot shows the 'Job Schedule Properties - VCM Differential Database Backup' dialog box. The 'Name' field is 'VCM Differential Database Backup'. The 'Schedule type' dropdown is set to 'Recurring'. The 'Enabled' checkbox is checked. Under 'One-time occurrence', the 'Date' is '8/31/2010' and the 'Time' is '3:15:29 PM'. Under 'Frequency', 'Occurs' is set to 'Daily', 'Recur every' is '1 day(s)', and 'Occurs once at' is '3:00:00 AM'. Under 'Duration', 'Start date' is '8/31/2010' and 'No end date' is selected. The 'Summary' field contains the text: 'Occurs every day at 3:00:00 AM. Schedule will be used starting on 8/31/2010.'. At the bottom, there are buttons for 'OK', 'Cancel', and 'Help'.

8. On the Select Maintenance Tasks page, select **Back Up Database (Differential)** and click **Next**.



9. (Optional) If you are combining this backup task with other tasks, set an appropriate execution order on the Select Maintenance Task Order page and move the backup task to run after all other tasks.



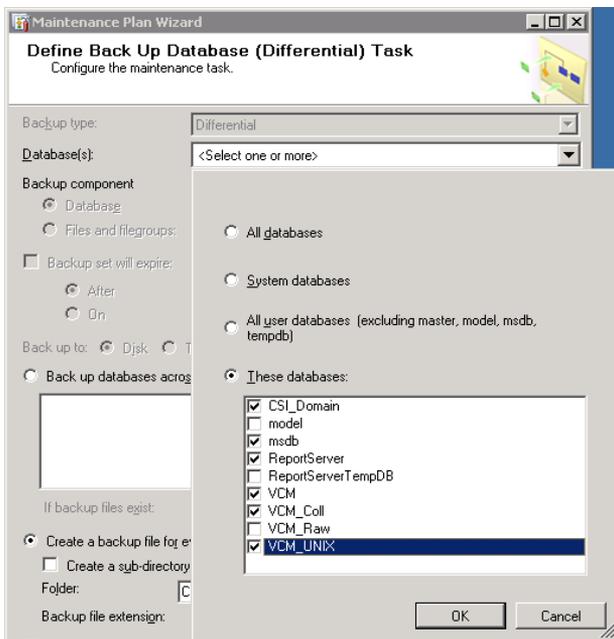
10. On the Define Back Up Database (Differential) Task page, click the **Database(s)** drop-down menu.

The screenshot shows the 'Define Back Up Database (Differential) Task' dialog box. The 'Backup type' is set to 'Differential'. The 'Database(s)' dropdown menu is currently empty, showing '<Select one or more>'. Under 'Backup component', 'Database' is selected. The 'Backup set will expire' section has 'After' selected with a value of '14' days. 'Backup to' is set to 'Disk'. The 'Back up databases across one or more files' section is empty. 'If backup files exist' is set to 'Append'. Under 'Create a backup file for every database', 'Create a backup file for every database' is selected. The 'Folder' is 'C:\Program Files\Microsoft SQL Server\MSSQL1\MSSQL\Ba' and the 'Backup file extension' is 'bak'. The 'Schedule' is 'Not scheduled (On Demand)'. Navigation buttons at the bottom include 'Help', '< Back', 'Next >', 'Finish >>', and 'Cancel'.

11. Select the following databases to back up and click **OK**.

If the original installation used alternate names, select the corresponding databases.

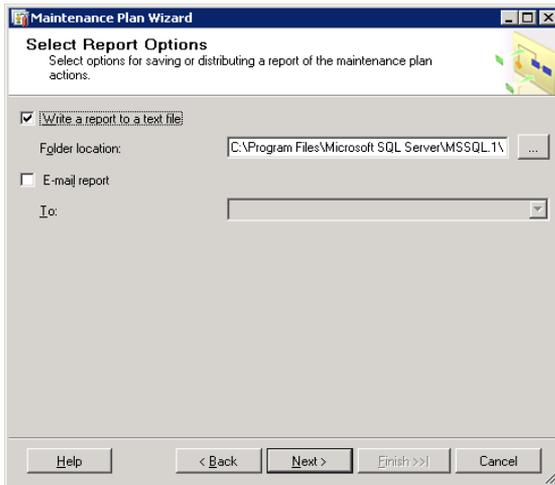
- **msdb**
- **ReportServer**
- **VCM**
- **VCM_Coll**
- **VCM_UNIX**



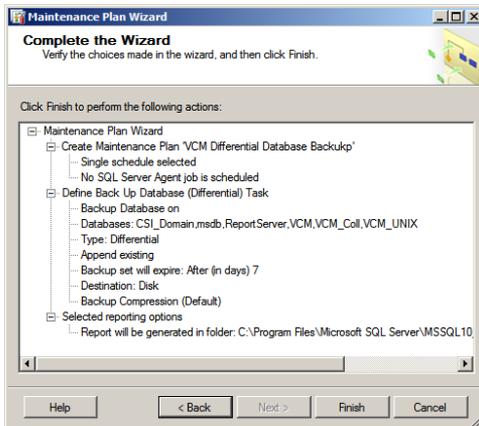
12. On the Define Back Up Database (Differential) Task, configure the backup settings and click **Next**.

Option	Action
Backup set will expire	Click After and type 7 in the days drop-down menu. Depending on your corporate backup policies and disk space available, you might need to modify this setting to match your policy.
Back up to	Click Disk .
Create a backup file for every database	Select this option.
Create a sub-directory for each database	Select this option and select the folder for the designated backup drive and folder structure.
Backup file extension	Type bak.
Verify backup integrity	Select this option.

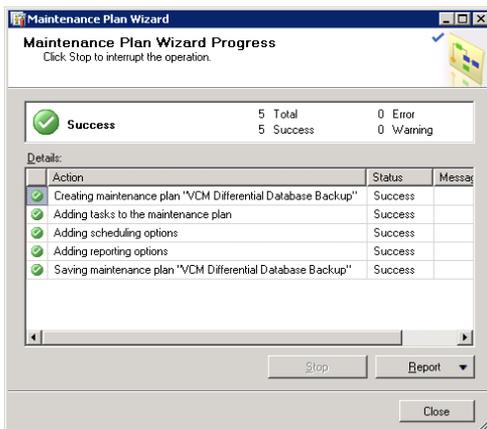
- On the Select Report Options page, select **Write a report to text file**, select a folder location, and click **Next**.



- On the Complete the Wizard page, verify that the options you selected are correct and click **Finish** to generate the maintenance plan.



- Verify that all tasks finish with a status of Success.



Back Up Your VCM Collector File System Regularly

Back up your VCM Collector file system regularly to avoid loss of data using corporate standard tools or simple scripted file copies.

You might not be required to back up the entire file system or the VCM application directory structure. At a minimum, you should create a backup of the entire content of the CMFILES\$ share. The default location is C:\Program Files (x86)\VMware\VCM\WebConsole\L1033\Files.

If your database server, Web server, or VCM Collector includes customizations, or if reports were exported to a non-default location, back up these additional files.

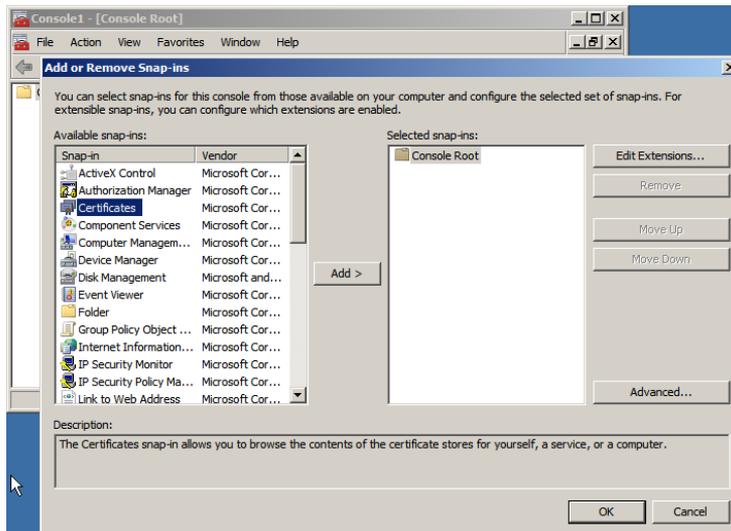
Back Up Your HTTP Certificates

If you use HTTP Agents, verify that your HTTP certificates are available for disaster recovery purposes. Export the certificates once for each new server. Maintain the HTTP certificates in a secure location for disaster recovery purposes.

To back up your certificates, create and export a Personal Information Exchange (PFX) Certificate.

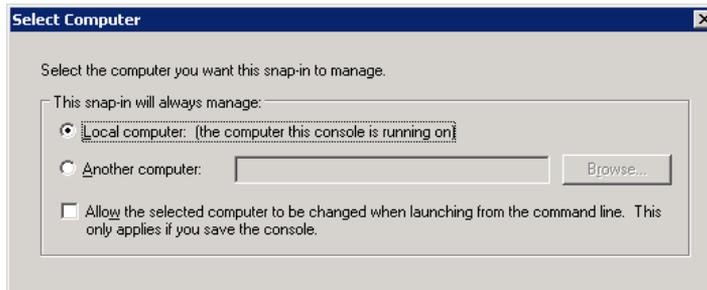
Procedure

1. On the VCM recovery server, click **Start** and select **Run**.
2. Type **mmc** to start the Microsoft Management Console.
3. To add a new snap-in for the certificates, click **File** and select **Add/Remove Snap-in**.
4. In the Available snap-ins list, click **Certificates** and click **Add >**.

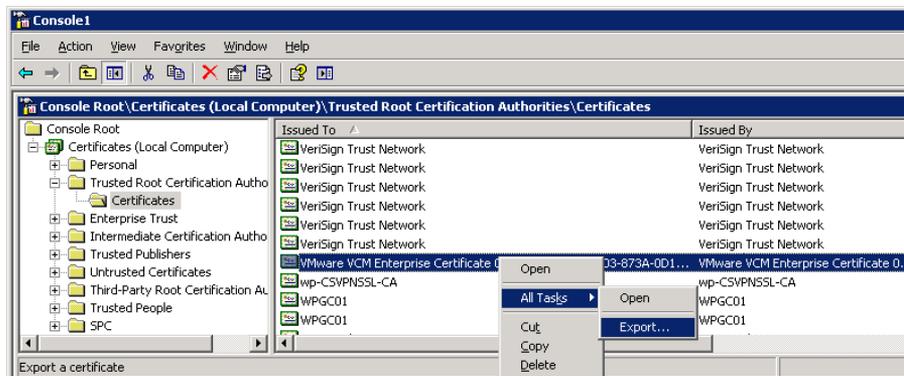


5. In the Certificates snap-in window that appears, to manage certificates for a computer account, select **Computer account** and click **Next**.

- For the snap-in to manage certificates on the local computer, in the Select Computer window, select **Local computer (the computer this console is running on)** and click **Finish**.



- Click **OK** to return to the Console.
- From the Console Root, click **Certificates (Local Computer)** and select **Personal > Trusted Root Certification Authorities > Certificates**.
- Right-click **VMware VCM Enterprise Certificate**, click **All Tasks**, and click **Export**.



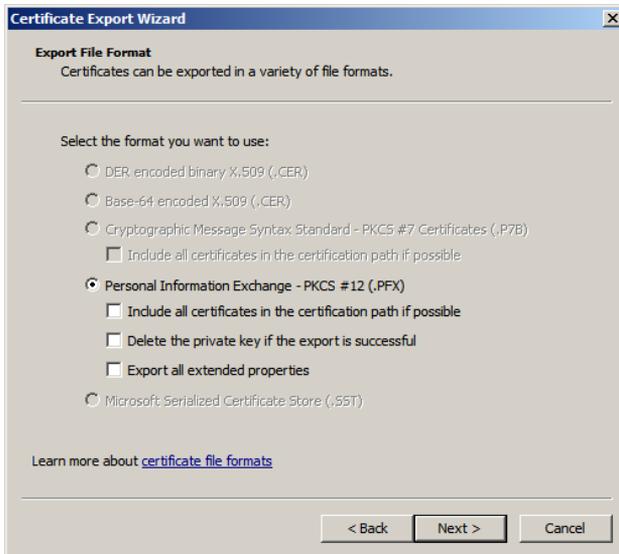
- On the Certificate Export Wizard Welcome page, click **Next**.



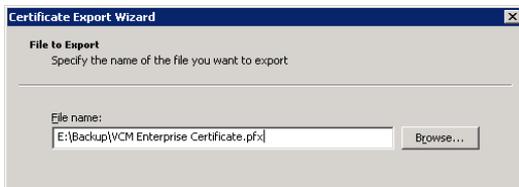
- To export the private key with the certificate, on the Export Private Key page, select **Yes, export the private key** and click **Next**.



- Select **Personal Information Exchange - PKCS #12 (.PFX)** and click **Next**.



- Type a password for the certificate export, type the password again to confirm it, and click **Next**.
- Type a location and name for the VMware VCM Enterprise Certificate or click **Browse** and select the certificate.

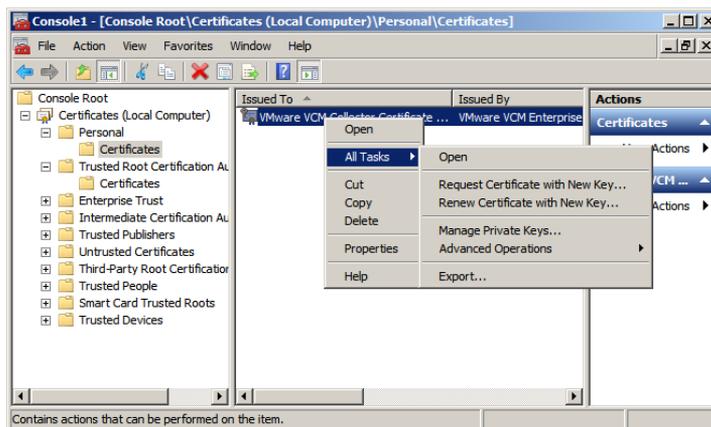


15. Verify your selected options and click **Finish**.



When the Certificate Export Wizard reports that the export was successful, click **OK** to close the Certificate Export Wizard window.

16. To locate your personal certificate, from the Console Root, click **Certificates (Local Computer)** and select **Personal > Certificates**
17. To export the Personal Information Exchange Certificate, right-click the personal Collector certificate, click **All Tasks**, and click **Export**.



Recovering Your Report Server and Importing Certificates

3

Recover your report server in preparation to restore the Report Server database. Verify that the system checks run without error and that the SSRS Report folder is accessible.

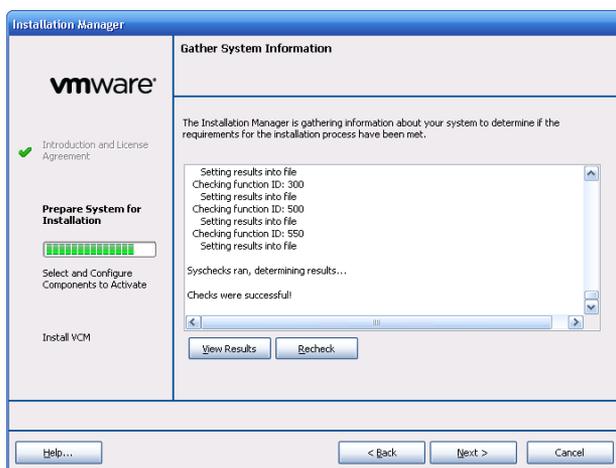
Prerequisites

Use the *VCM Installation Guide* to run the VCM installation and verify the system checks.

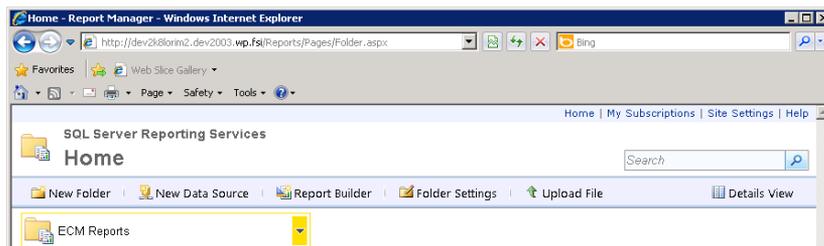
Procedure

1. On the recovery server, begin the VCM installation.
2. Verify that the system checks ran successfully.

If any errors occur, resolve them.



3. Start Internet Explorer and navigate to `http://[SERVER_NAME]/reports`.
SERVER_NAME is the name of your recovery server.
4. Verify that the **ECM Reports** folder appears.

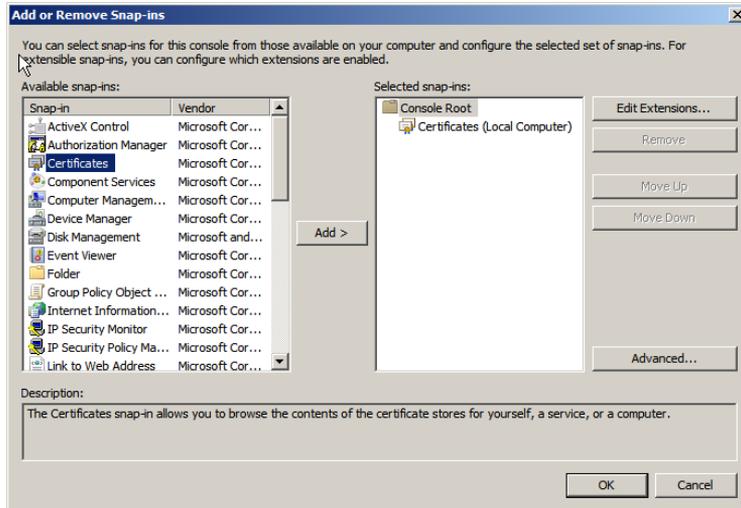


Import HTTP Certificates

Add the Certificate snap-in to the Microsoft Management Console to import your HTTP certificates.

Procedure

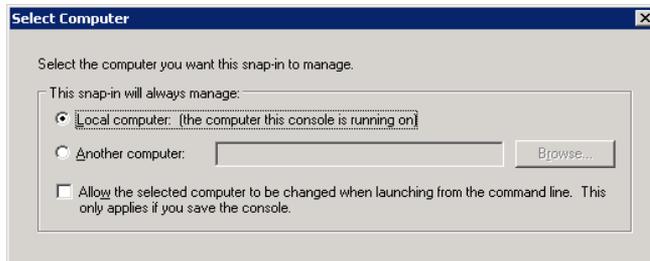
1. On the recovery server, click **Start** and select **Run**.
2. Type **mmc** and click **OK** to start the Microsoft Management Console.
3. To add a new snap-in for the certificates, click **File** and select **Add/Remove Snap-in**.
4. In the Available snap-ins list, click **Certificates** and click **Add >**.



5. In the Certificates snap-in window that appears, to manage certificates for a computer account, select **Computer account** and click **Next**.

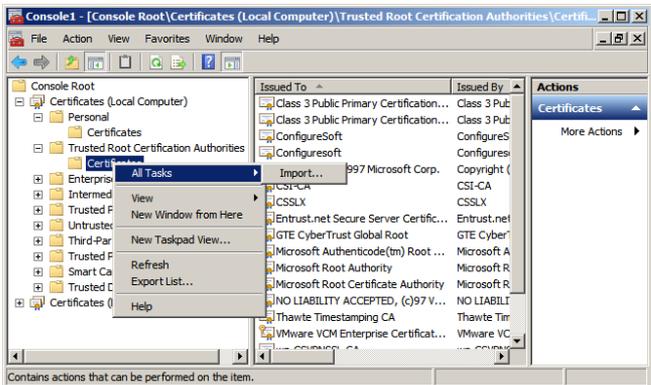


6. For the snap-in to manage certificates on the local computer, in the Select Computer window, select **Local computer (the computer this console is running on)** and click **Finish**.



7. Click **OK** to return to the Console.
8. From the Console Root, click **Certificates (Local Computer)** and select **Trusted Root Certification Authorities > Certificates**.

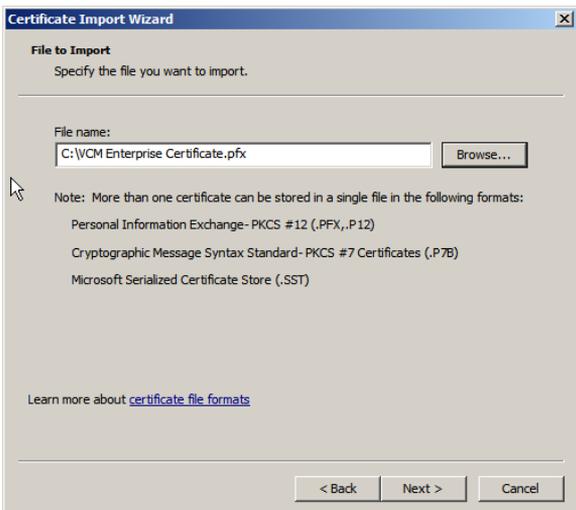
- Right-click **Certificates**, click **All Tasks** and click **Import**.



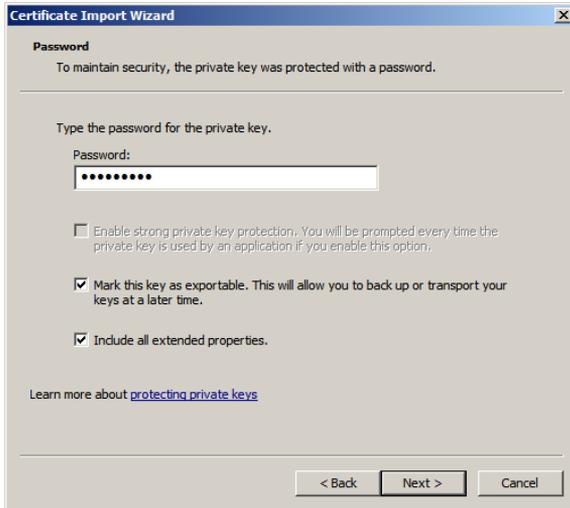
- On the Certificate Import Wizard Welcome page, click **Next**.



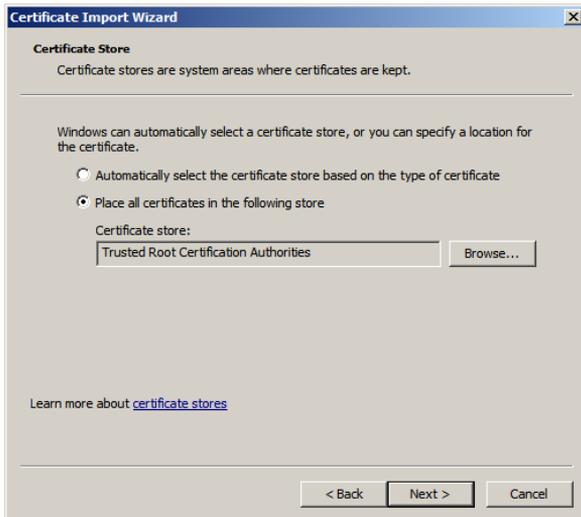
- Type the path and file name of the VCM Enterprise Certificate or click **Browse** to locate the certificate, and click **Next**.



12. Type the password, select the following options, and click **Next**.
 - **Mark this key as exportable. This will allow you to back up or transport your keys at a later time.**
 - **Include all extended properties.**



13. Select **Place all certificates in the following store**, verify that the Certificate store displays Trusted Root Certification Authorities, and click **Next**.

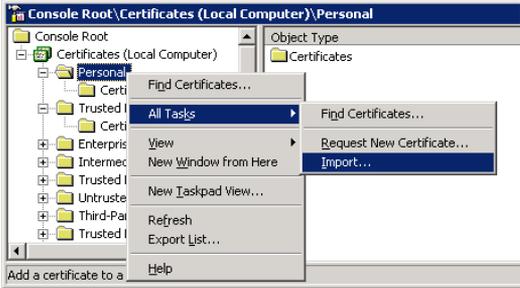


- 14. Verify your selections and click **Finish**.



When the Certificate Import Wizard reports that the import was successful, click **OK** to close the Certificate Import Wizard window.

- 15. To locate your personal certificate, from the Console Root, click **Certificates (Local Computer)** and select **Personal > Certificates**.
- 16. To import the VCM Collector Certificate into the Personal certificate store, right-click **Personal**, click **All Tasks**, and click **Import**.



Restoring the Databases

Restore the system, report server, and VCM databases in three phases: restore the system database to restore proper user access and scheduled jobs; restore the SQL Report Server database to restore SQL Server Reporting Services; and then restore the VCM database.

Procedure

1. ["Restore the System Database" on page 33](#)

To restore the master database, put SQL Server in single-user mode. After you restore the master database, run the command to update the SQL Server name.

2. ["Restore the Report Server Database" on page 35](#)

Restore the SQL Report Server database to recover SQL Reporting Services.

3. ["Restore the VCM Databases" on page 38](#)

As part of the recovery process, restore the VCM databases to restore your collected data and customizations.

Restore the System Database

To restore the master database, put SQL Server in single-user mode. After you restore the master database, run the command to update the SQL Server name.

Prerequisites

Verify that you are an Administrator so that you can start and stop the SQL Server services.

Procedure

1. Click **Start** and select **Administrative Tools > Services**.
2. To put the SQL Server in single-user mode, right-click the **SQL Server (MSSQLSERVER)** service and click **Stop**.

If the process prompts you to stop other services, such as the SQL Server Agent, click **Yes**.



- Open a command window and type the following command to start the SQL Server service in single-user mode.

```
NET START MSSQLSERVER /c /m
```

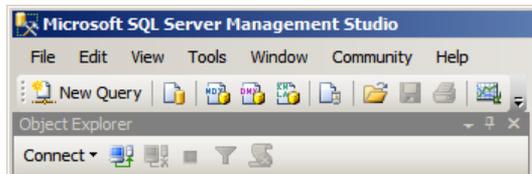
Wait for the service to start successfully.

- Start SQL Server Management Studio and log in with the local SQL account.



To avoid opening the Object Explorer, when SQL Server Management Studio prompts you for login credentials, click **Cancel**.

- Click **New Query** to start a new query definition.



- In the query window, type the following commands to restore the master database from backup.

```
USE MASTER

GO

RESTORE DATABASE [master]

FROM DISK = N'E:\MSSQL\Backup\master\master_backup_201003021337.bak

WITH FILE=1, NOUNLOAD, REPLACE, STATS = 10

GO
```

- Click **Execute** and wait for SQL Server to restart and display the following message.

```
The master database has been successfully restored. Shutting down SQL Server.
SQL Server is terminating this process.
```

- Click **New Query** to reconnect to SQL Server and use Administrative privileges with the local account or use Windows Authentication.

9. Rename the SQL Server @@servername definition with the following commands.

```
USE master
GO
DECLARE @NewServerName varchar(254)
SET @NewServerName = Convert(varchar(254), serverproperty ('ServerName'))
EXEC sp_dropserver @@servername
EXEC sp_addserver @NewServerName,local
GO
```

10. Click **Execute**.
11. Restart the SQL Server Service and reconnect to SQL Server using an account with Administrative privileges.
12. Type the following commands to restore the **msdb** database.

```
RESTORE DATABASE [msdb]
FROM DISK = N'E:\Backup\msdb\msdb_backup_201003021337.bak
WITH FILE=1, NOUNLOAD, REPLACE, STATS = 10
GO
```

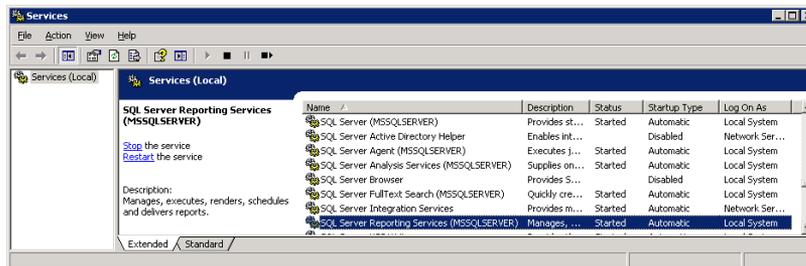
13. Click **Execute**.

Restore the Report Server Database

Restore the SQL Report Server database to recover SQL Reporting Services..

Procedure

1. Click **Start** and select **Administrative Tools > Services**.
2. To stop the SQL Server Reporting Services service, right-click **SQL Server Reporting Services (MSSQLSERVER)** and click **Stop**.



3. Open a command prompt and type `iisreset /stop` to stop Internet Information Services (IIS).
4. Start SQL Server Management Studio and type the following commands to restore the ReportServer database.

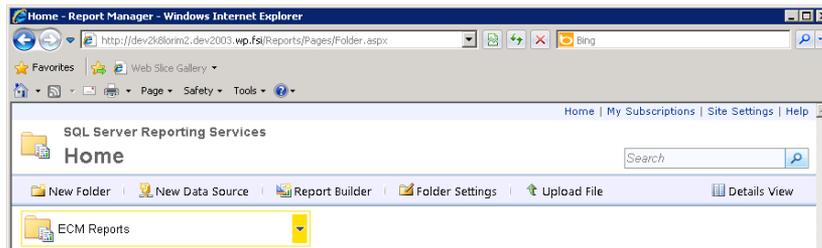
```
RESTORE DATABASE [ReportServer]
FROM DISK = N'E:\Backup\ReportServer\ReportServer_backup_201003021337.bak
WITH FILE=1, NOUNLOAD, REPLACE, STATS = 10
GO
```

5. Click **Execute**.

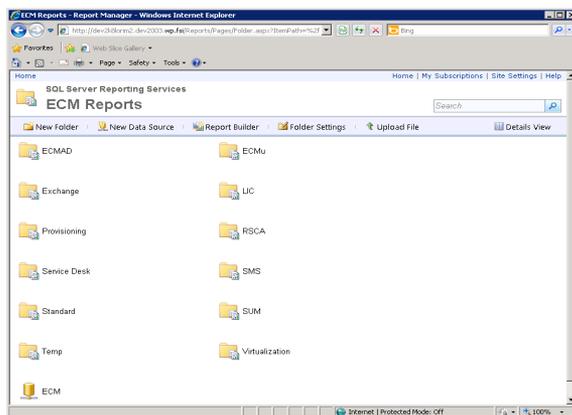
6. Right-click **SQL Server Reporting Services (MSSQLSERVER)** and click **Start**.
7. In the command window, reset the encrypted key store.
 - a. Type `rskeymgmt -d`.
 - b. When the process prompts you to delete all encrypted data from the report server database, type **y**.
8. In the command window, type the following command and verify that it finishes successfully.


```
rsconfig -c -s <SQLSERVERNAME> -d ReportServer -a Windows
```
9. Right-click **SQL Server Reporting Services (MSSQLSERVER)** and click **Start** to restart the SQL Server Reporting Services service.
10. In the command window, type `iisreset /restart` to restart IIS.

Wait for the IIS services to stop and restart successfully.
11. Start Internet Explorer and type `http://[SERVERNAME]/Reports/` to navigate to the Report Server and verify that SSRS is operating properly.
12. In the Report Manager window, click **ECM Reports**.

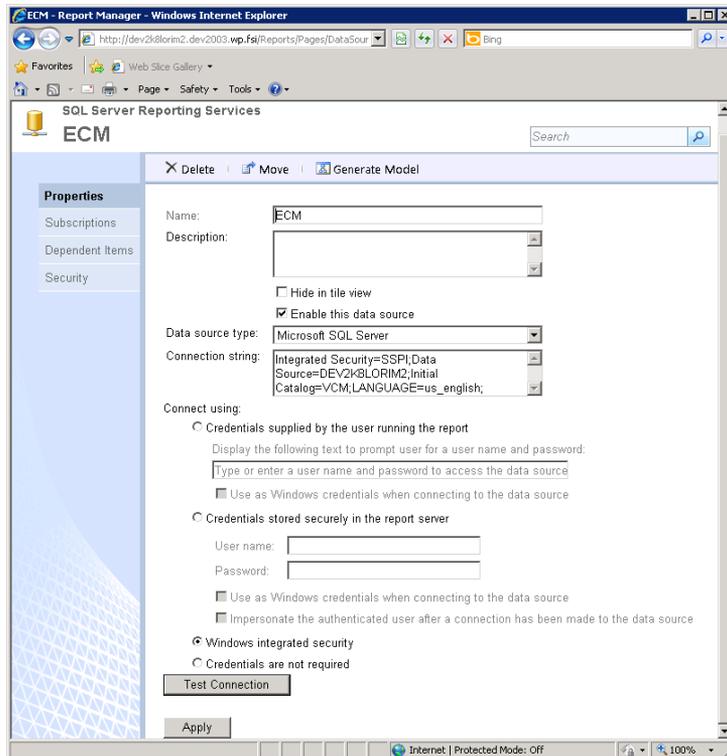


13. Click **ECM** to access and edit the shared connection string.



14. Click the **Properties** tab.

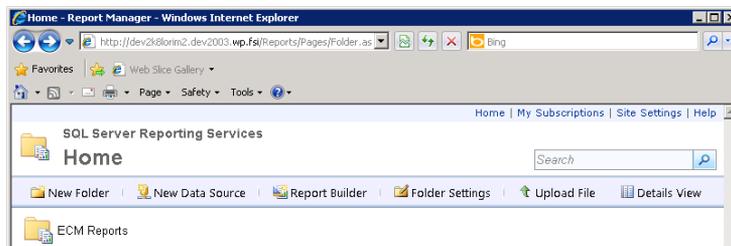
15. Select Windows integrated security.



16. Type the following value in the Connection string text box.

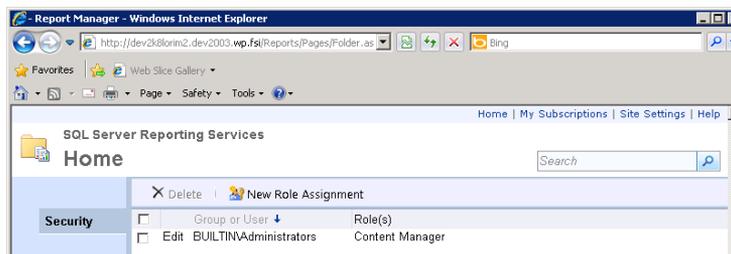
```
Integrated Security=SSPI;Data Source=SERVERNAME;Initial
Catalog=VCM;LANGUAGE=us_english;
```

17. Click **Test Connection** to verify that the connection is created successfully, and click **Apply**.
18. Click **Home** to return to the SSRS home page.



19. Click **Folder Settings** to remove any extra accounts in SSRS.

If any users other than the BUILTIN\Administrators and ECMSRSUser exist, click the check box next to each user account and click **Delete**.



Restore the VCM Databases

As part of the recovery process, restore the VCM databases to restore your collected data and customizations.

Prerequisites

Verify that you have an account with SQL Administrative privileges.

Procedure

1. Click **Start** and select **All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio**.

2. Connect to the VCM database server using an account with SQL Administrative privileges.

3. In the query window, type the following commands to restore the VCM database and click **Execute**:

```
RESTORE DATABASE [VCM]
FROM DISK = N'E:\Backup\VCM\VCM_backup_201003021337.bak
WITH FILE=1, NOUNLOAD, REPLACE, STATS = 10
GO
```

4. Type the following commands to restore the VCM_UNIX database and click **Execute**:

```
RESTORE DATABASE [VCM_UNIX]
FROM DISK = N'E:\Backup\VCM_UNIX\VCM_UNIX_backup_201003021337.bak
WITH FILE=1, NOUNLOAD, REPLACE, STATS = 10
GO
```

5. Type the following commands to restore the VCM_Coll database and click **Execute**:

```
RESTORE DATABASE [VCM_Coll]
FROM DISK = N'E:\Backup\VCM_Coll\VCM_Coll_backup_201003021337.bak
WITH FILE=1, NOUNLOAD, REPLACE, STATS = 10
GO
```

6. Type the following commands to drop the definition of the VCM_Raw database.

```
IF EXISTS (SELECT name FROM sys.databases WHERE name = N'VCM_Raw')
DROP DATABASE [VCM_Raw]
```

The VCM_Raw database is used as a temporary database, and is re-created during VCM installation.

Installing VCM and Restoring Associated Components On the Recovery Machines

5

Install the VCM and associated components on the Windows Server 2008 R2 recovery server. Depending on your installation configuration, the recovery server can be any of the following physical or virtual machines.

- VCM Collector recovery machine: Depending on your installation configuration, this recovery machine includes specific components.
 - In a single-tier installation, the VCM Collector includes the database server, Web server, and the VCM application components.
 - In a two-tier installation, the VCM Collector contains the Web Server components and the VCM application components.
 - In a three-tier installation, the VCM Collector contains only the VCM application components.
- VCM database server recovery machine: In two-tier and three-tier installations, this recovery machine includes the VCM database.
- Web server recovery machine: Depending on your installation configuration, this recovery machine includes specific components.
 - In a two-tier installation, the Web Server includes the is combined with the VCM Collector.
 - In a three-tier installation, the Web Server includes only the Web application components.

During the installation, select the components that apply to your configuration. For details, see the *VCM Installation Guide* and the VCM Installation Manager online Help.

Prerequisites

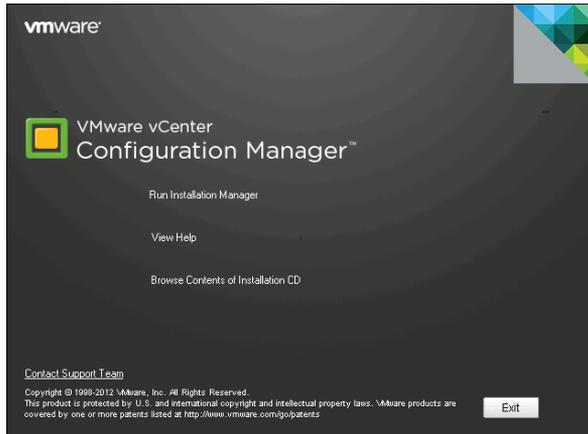
Use the *VCM Installation Guide* to run the VCM installation and select the correct components to install.

Procedure

1. Insert the VCM installation disk into the Windows 2008 R2 recovery server or start the installation from a network location.

If the installation screen does not appear, or if you started the installation from a network location, navigate to the disk root directory or the file share and double-click `setup.exe`

2. Click **Run Installation Manager**.

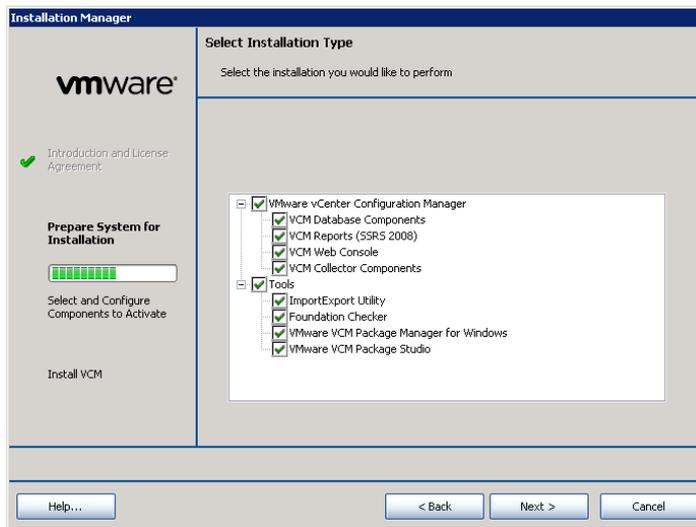


3. Verify that the system checks run successfully.

If errors occur, resolve them.

4. Select only the components to install on the recovery server machine.

Select and install the components on the recovery servers in your configuration and generate certificates.



For details about certificates and mutual authentication, see the *VCM Security Guide*.

5. Continue through the wizard and click **Finish** to finish the installation.

Restoring File System Components

Restore the file system components from the `CMFiles$` share locations and any other corporate standard items.

The default location is C:\Program Files (x86)\VMware\VC\WebConsole\L1033\Files.

If other custom components are installed, see the disaster recovery documentation for each customization.

Run the Script for Exported Reports

Most of the scheduled reports exported from your previous Collector include a hard-coded server name. The scripts for exported reports update the old server name export location with the new name.

The scripts modify the parameters passed and the UI string. Any UI strings greater than 8000 characters must be handled differently. In these cases, the exports will work properly. However, if you edit the scheduled job the report shows the old location.

If you edit one of these exceptions and click **Finish** without first correcting the export location, the connection to the report will break.

Procedure

1. Log in to SQL Server Management Studio as a user with Administrative privileges.
2. In the following script, edit the @oldserver and @newserver variables.

```

Declare @oldserver varchar(32)

Declare @newserver varchar(32)

set @oldserver = 'OLDSERVERNAME'

set @newserver = 'NEWSERVERNAME'

update dbo.ecm_rpt_reports_scheduled

set export_path = '\\\' +

    @newserver +

    substring(export_path,len(@oldserver)+3, len(export_path)-

        (len(@oldserver)+2))

where export_path like '%' + @oldserver + '%'

update dbo.ecm_sysdat_actions_ui_definition_text_xref

set definition_text =

    replace(cast(definition_text as varchar(max)), @oldserver,

        @newserver)

where

    definition_text like '%' + @oldserver + '%'

```

3. Run the script.

Maintaining Operating System Provisioning Servers

6

The maintenance of the OS Provisioning server includes backing up and restoring the repository after a disaster or machine failure.

Back Up the OS Provisioning Repository

The OS Provisioning Server includes a repository that contains your imported OS distributions. To avoid recreating the distributions if the server fails, back up the repository as part of your recovery plan.

This action backs up the `/FSboot` and `/opt/FastScale/var/Repository.db` files to the location you specify.

Prerequisites

- Verify that you have sufficient disk space available on your machine for the backed up files. Use the `du -cs /FSboot` and `du -cs /opt/FastScale/var/Repository.db` commands to check the amount of space used by the OS Provisioning Server files.
- Verify that no OS Provisioning actions, such as importing or provisioning, are in progress. The backup process forces all applications to exit, including the OS Provisioning daemons, FSadmin and FSrepod.

Procedure

1. Log in to the OS Provisioning Server as `root`.
2. Run the `mkdir /<backup directory path>` command.
For example, `mkdir /tmp/OSProv-Backup`.
3. Run the `ospctrl --backup --dirpath=<backup directory path>` command.
For example, `ospctrl --backup --dirpath=/tmp/OSProv-Backup`

Restore the OS Provisioning Repository From Backup

To recover from an OS Provisioning Server machine failure, reinstall the OS Provisioning Server, reconfigure the integration with VCM, and restore the database and repository files that you backed up as part of your recovery plan.

When you run the restoration command, the action stops the OS Provisioning Server services, restores the database and distribution repository, and starts the services after the files are restored. The files are restored to the `/FSboot` and `/opt/FastScale/var/Repository.db`.

Prerequisites

Verify that the OS Provisioning Server is installed and that the integration with the VCM Collector is configured. See the *VCM Administration Guide*.

Procedure

1. Log in to the OS Provisioning Server as root.
2. Run the `ospctrl --restore --dirpath=<backup directory path>` command.

For example, `ospctrl --restore --dirpath=/tmp/OSProv-Backup`

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