

# Content Manager

Software Version 9.4

## Iron Mountain Warehouse Integration



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## Introduction

### About Content Manager Warehouse Integration

Content Manager Warehouse Integration enables you to integrate Content Manager with the electronic systems of a storage provider for physical records. This integration uses a warehouse utility called TRIMIronMountain, which you need to install and configure on a computer on your network.

The Content Manager Warehouse Integration uses the Content Manager Software Development Kit (SDK) to access Content Manager data, where required.

The integration enables you to seamlessly manage requests for records that are stored with the storage vendor from Content Manager, including the initial request, authorization, processing, tracking and delivery information.

The integration is currently set up to work with the systems of storage provider Iron Mountain only.

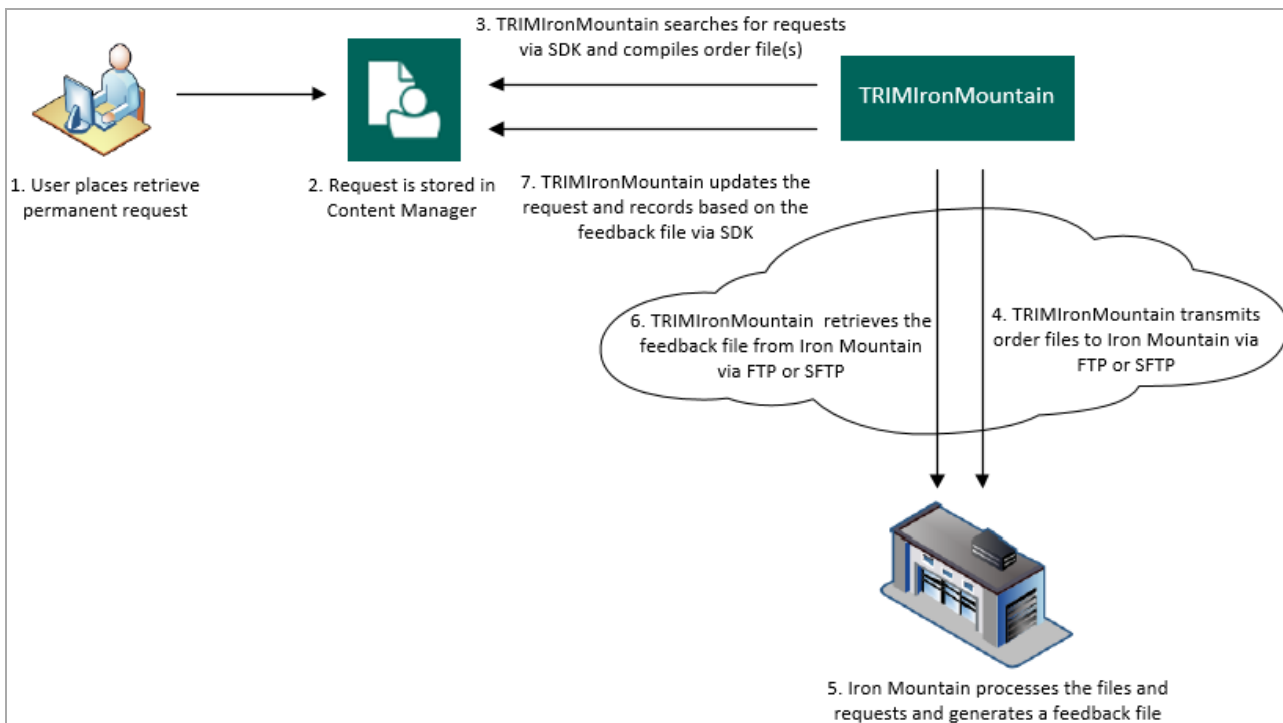
### About this document

This document provides information for you to install and configure your warehouse integration with the Content Manager feature advanced requests, and an external storage provider's FTP or SFTP web site. For information about how to use advanced requests, see the Content Manager Help file (TRIM.chm) in your Content Manager installation folder.

### Warehouse integration prerequisites

For prerequisites, see **CM9.4\_Spec.pdf** in the Content Manager installation folder.

## Overview



The example process describes the interaction between:

- The warehouse integration utility TRIMIronMountain
- Your user placing a request using Content Manager
- The vendor itself and their FTP site, using Iron Mountain as example

## The process

1. User creates Retrieve - Permanent request in Content Manager
2. The Warehouse Integration utility, TRIMIronMountain, uses the Content Manager SDK to search for requests that are due and compiles order files
3. TRIMIronMountain transmits order files to storage vendor using an FTP or SFTP site
4. Storage vendor processes the files and requests, including organizing pickup or delivery, and generates a feedback file
5. TRIMIronMountain retrieves the feedback file from storage vendor using the FTP or SFTP site
6. TRIMIronMountain updates the Content Manager requests and records based on the feedback file using the Content Manager SDK

## **Installation and configuration overview**

### **Install warehouse integration**

The warehouse integration installation file deploys the executable files in the Content Manager installation folder.

### **Configure administration web application in IIS**

To be able to use the web application to administer the Iron Mountain integration, configure it in Microsoft Internet Information Services (IIS).

Alternatively, you need to update the .xml configuration files manually.

### **Configure TRIMIronMountain.xml configuration file**

This configuration file contains most of the important parameters to make your integration work with Content Manager and the storage vendor systems.

You can edit it in the administration web application, or manually.

### **Configure scheduled tasks**

The integration uses the Windows Task Scheduler, which needs to be configured to carry out the required tasks. The user running the tasks needs to have permissions to access and update Content Manager records and requests, so ideally, is a Content Manager administrator, as well as having user rights to run a scheduled task.

### **Configure Demonstration Environment**

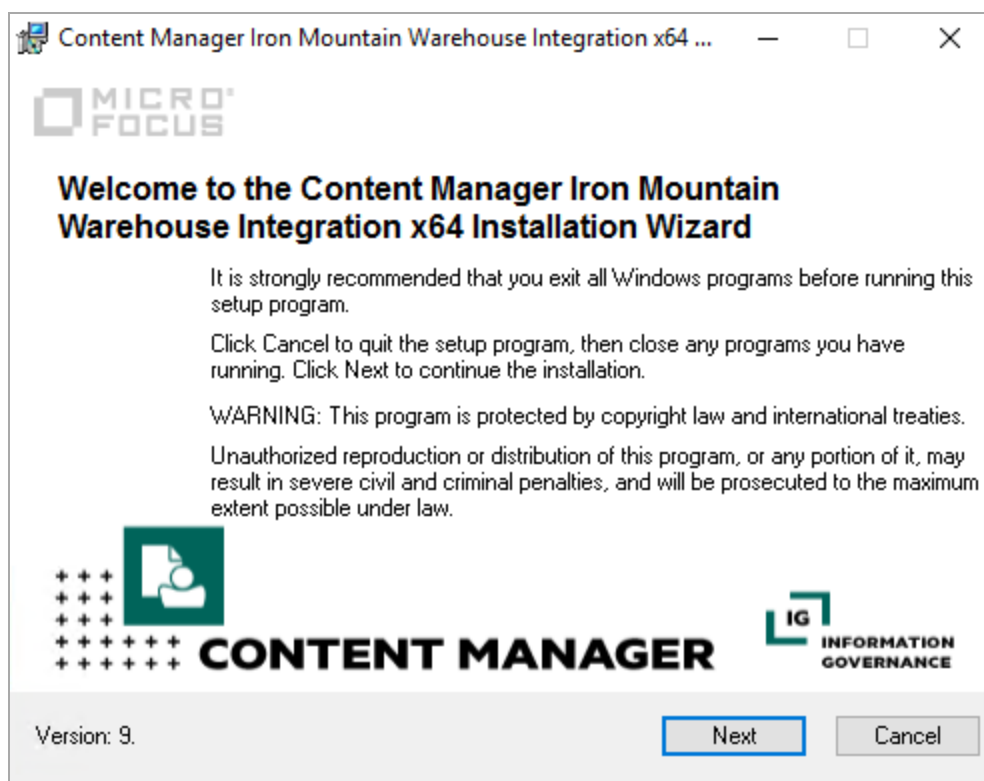
Optionally, to be able to test or demonstrate the warehouse integration, you can configure the TRIMIronMountain.xml file to simulate the processes.

## Installation and configuration

### Installing the Content Manager Iron Mountain Warehouse Integration

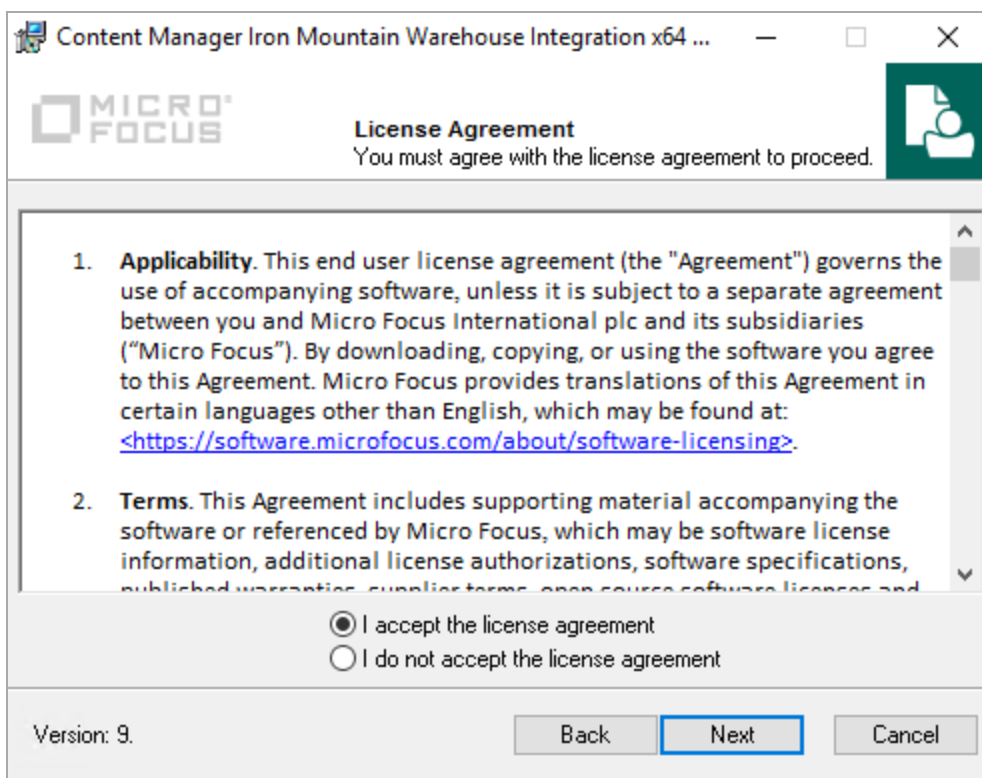
1. With elevated user rights, run the installation file **CM\_IronMtn\_WareHouse\_Integration\_x64.msi**

The **Welcome** dialog appears:

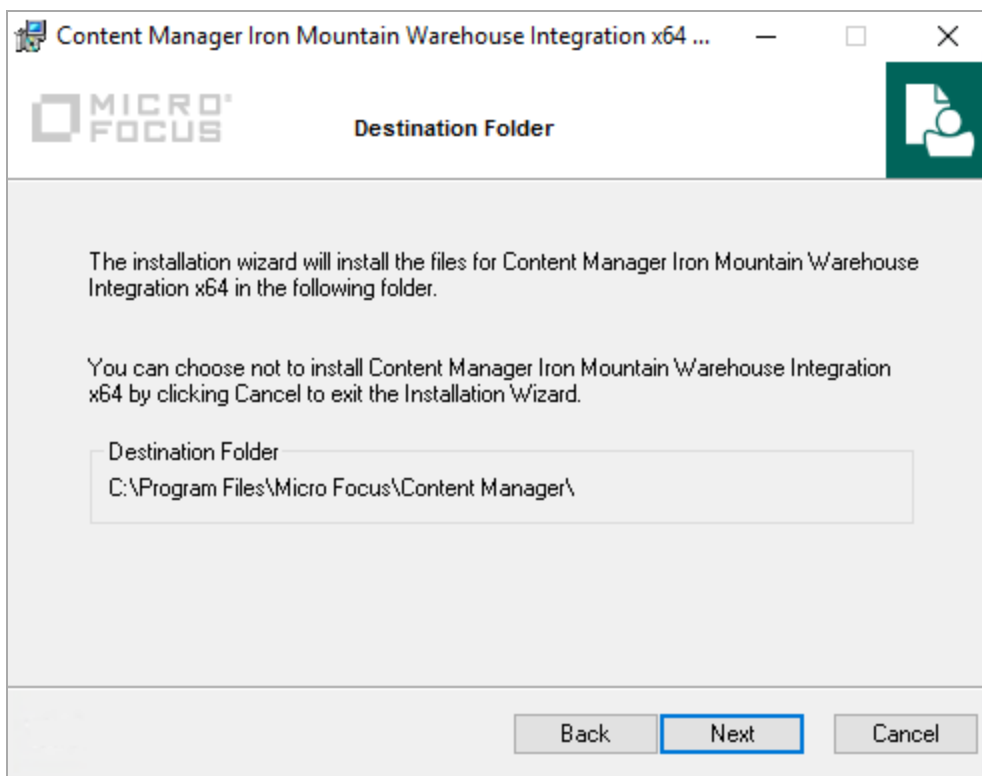


2. Click **Next**.  
The **License Agreement** dialog appears:

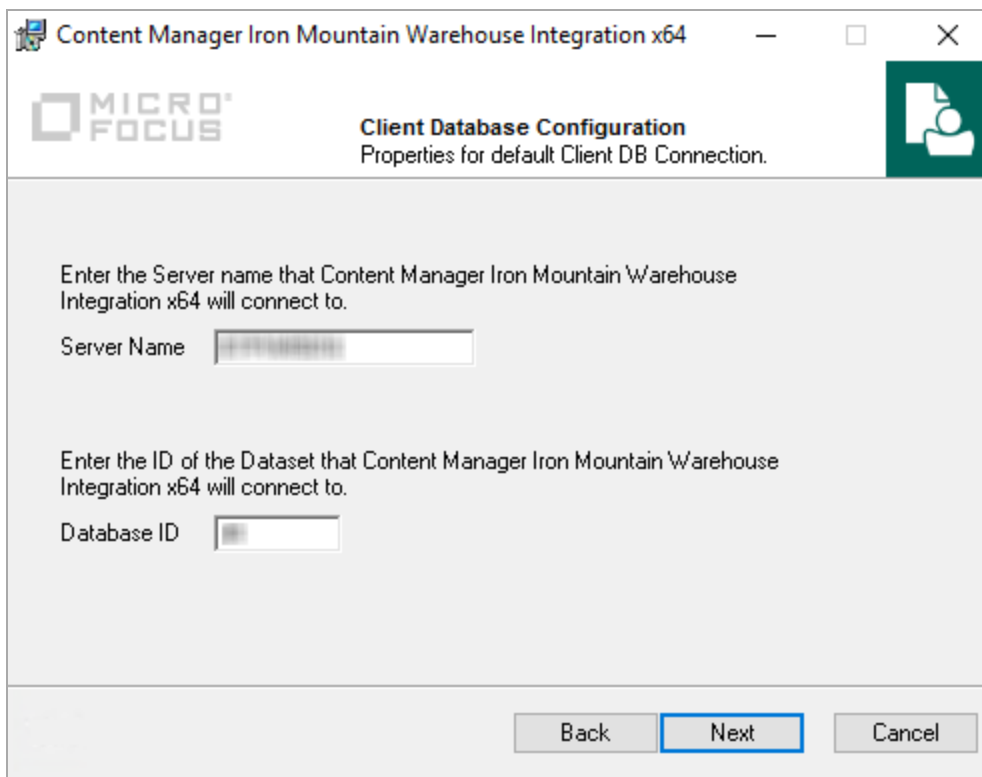




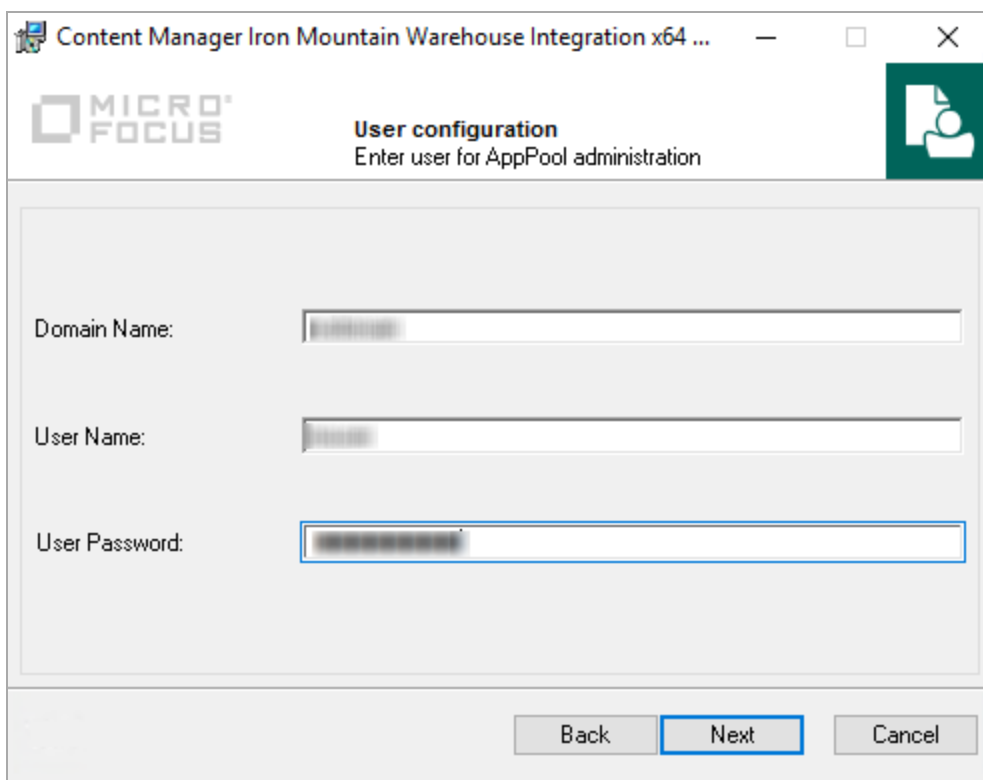
- 3. Select I accept the license agreement and click **Next**. The **Destination Folder** dialog appears:



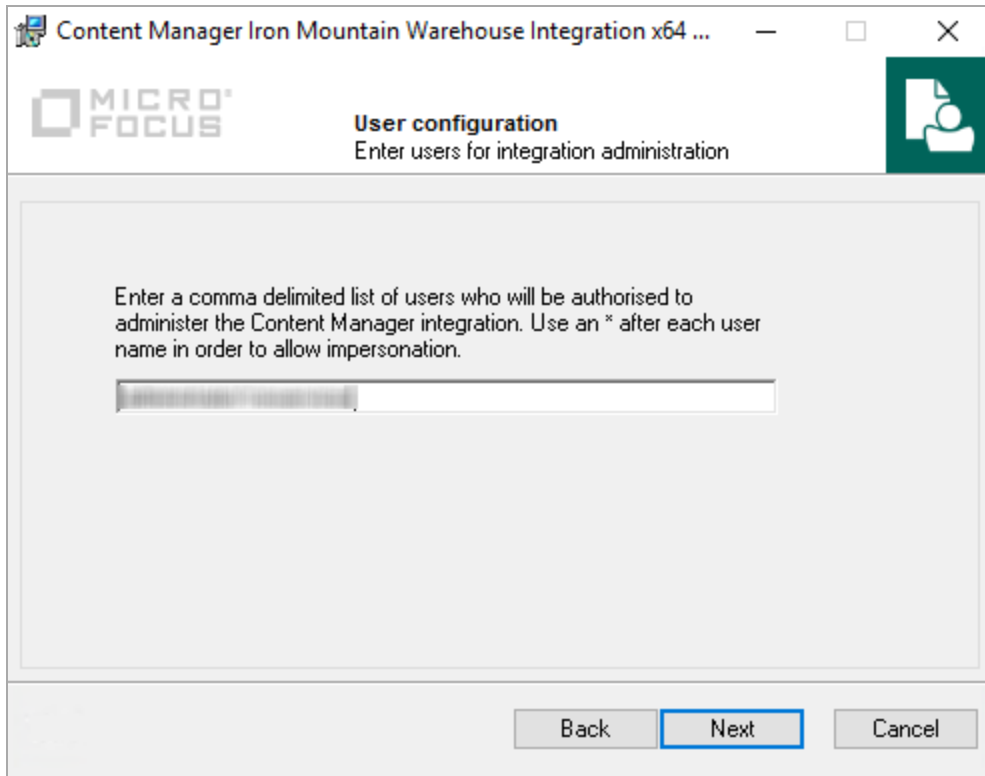
4. Click **Next**.  
The **Client Database Configuration** dialog appears:



- **Server Name** – type the server name that the integration will connect to.
  - **Database ID** – type the Database ID that the integration will connect to.
5. Click **Next**.  
The **User Configuration – Enter user for AppPool administration** dialog appears:

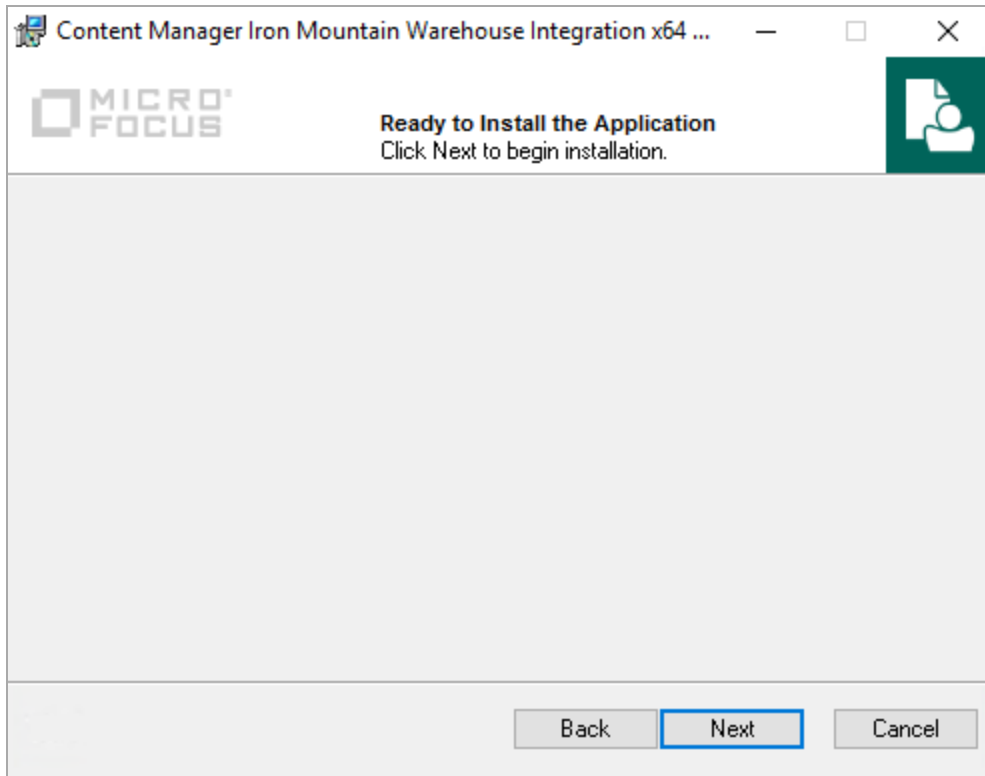


- **Domain Name** – type enter the domain name on which the Content Manager Iron Mountain Warehouse integration AppPool user will be running.
  - **User Name** – type the name of the AppPool user.
  - **User Password** – type the password of the AppPool user.
6. Click **Next**.  
The **User Configuration – Enter users for integration administration** dialog appears:

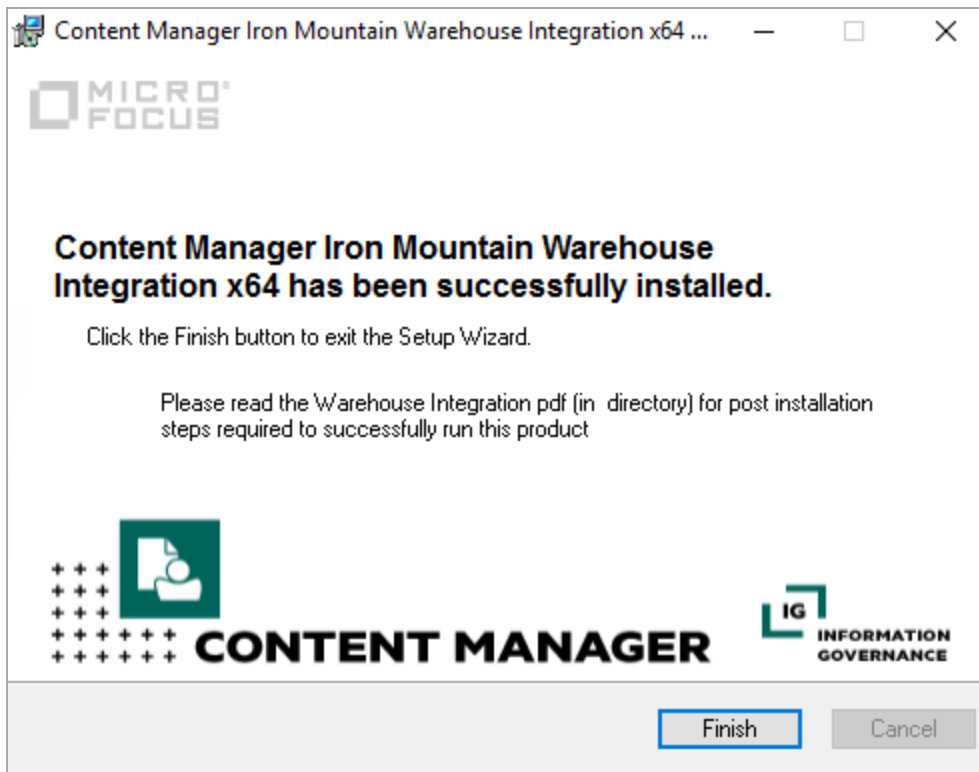


7. Type in the user name of each user authorized to administer the Content Manager Iron Mountain Warehouse Integration. Click **Next**.

The **Ready to Install the Application** dialog appears:



8. Click **Next**.  
The installation confirmation dialog appears:



9. Click **Finish**.

The folder **IronMountain** contains the folders:

- **Bin**
- **css**
- **js**  
as well as a number of files for the administration web application.  
The directory **bin** contains:
  - **TRIMIronMountain.exe**, the warehouse utility, and its supporting files
  - **TRIMIronMountain.xml**, the configuration file, which can be edited manually or by using the administration web application
  - **FEED.xml**, **PICKUP.xml**, **RECALL.xml** and **REQUEST.xml**, which are pre-configured tasks that you can import to Task Scheduler.
    - The FEED task looks for feedback files from the storage provider on the FTP site, and adds the storage provider barcode to the Content Manager record's field Foreign Barcode, if applicable
    - The PICKUP task processes pickup requests by creating .add files on the FTP site
    - The RECALL task processes Retrieve – Permanent requests from Content Manager
    - The REQUEST task processes all requests for temporary retrieval

## Configuring the administration web application in IIS 7

As a part of the installation process, the default Content Manager Iron Mountain integration web site is configured in IIS. If there is a requirement to re-configure this site, the details are as follows:

1. In IIS, create a new web site under **Sites**, or use an existing site to create the application under
2. Under the site you want to use, right-click and click **Add application**
3. Name the application, for example **TRIMIronMountain**, and use the **CMIronMountainAppPool** application pool. The pool should use **.NET Framework Version 4.0** and **Pipeline mode: Integrated**.
4. For **Physical Path**, select the **TRIMIronMountain** directory where the web configuration files are saved.
5. Use **Test Settings** to verify the connection and if successful, click **OK**. The application appears under the site you selected.
6. Select the application and open the feature **Handler Mappings** on the right. You should find your application in the list, which uses a tilde (~) for **Path**. You will need to use the tilde character to browse the administration web pages.
7. Right-click the application on the left and on the **Manage Application** menu, click **Browse**. A web page appears in Internet Explorer, displaying an error.
8. In the address bar, append the tilde character (~) to the end of the website address, for example, <http://localhost/CMIronMountain/~>, press **ENTER** and the utility web page appears with the tabs:

— **Scheduler** – displays the scheduled tasks. From this page, you can see when the tasks were last run; the tasks can also be disabled or enabled on this page, and they can also be run from here.

— **Configuration** – displays the parameters of the **TRIMIronMountain.xml** configuration file in read-only mode. Click Edit at the top to edit the parameters. See below for more detail about **TRIMIronMountain.xml**.

— **Log File** – displays the contents of the log.

— **Warehouses** – displays a list of the configured Warehouses configured to be processed, as well as the FTP directories used to store temporary files for each of them.

— **Setup** – for language and version settings and information about the current user

**NOTE:** If you have a requirement to configure an FTP site using Internet Information Services (IIS) Manager, to ensure the Feedback files are processed correctly, in IIS Manager, from the FTP site Home page, select **FTP Directory Browsing** and set the **Directory Listing Style** option to **UNIX**.

## Editing TRIMIronMountain.xml configuration file

You will need to edit **TRIMIronMountain.xml** to set up the connection with Content Manager and the storage vendor FTP or SFTP site correctly.

Using the administration web site that you created in the previous step, select the tab **Configuration** and click **Edit** to edit the parameters, or use an XML editor of your choice to do so. Some of the

parameters are your choice, some are about your internal systems, and some must be provided by the storage vendor.

The most important parameters and their functions:

- **logfile** – location of log file for warehouse utility
- **loglevel** – level of log verbosity, where 3 represents the most verbose level, debug
- **mailErrorTo** – email address to mail errors to
- **users** – a list of user categories and user names in those categories. Not needed unless you need users to access the administration web application from outside the host computer
  - **report** – the Content Manager Iron Mountain implementation does not use report.
  - **named** – users under **named** can access the utility from any computer.

Users of the computer where **TRIMIronMountain.exe** is installed do not need to be named in these user categories.
- **ftp** – define the FTP server parameters.
  - **proxy** – This attribute can be defined at the top level <ftp> node, or it can be defined on the child <ftp> node under individual <warehouse> nodes.

There are three options for its value:

  - **auto** - cause the integration's FTP client to tunnel through the default proxy as configured by Windows' Internet Options. If the 'proxy' attribute isn't defined, then this is the default behavior.
  - **bypass** - cause the integration's FTP client to bypass any proxy server and attempt a direct outgoing connection to the Iron Mountain FTP site.
  - Any other value will be interpreted as a URI address of an alternate proxy server to use. It must be well formed as <scheme>://<address>:<port>, e.g. 'http://proxy.bigcorp.com:7878'.
- **rmDB** – to set up the connection to the Content Manager dataset that the Iron Mountain integration should query for requests to process
  - **server** – name of computer hosting the Content Manager dataset
  - **dataset** – two-character Content Manager dataset ID
  - **port** – if you do not define the specific port to connect to the dataset on the server in this section, the Iron Mountain integration will use port 1137, the default Content Manager port. To define the port number, insert an additional attribute called **port** and give it the value you want.
- **taskservice** – where Task Scheduler runs so that the web application can find it
  - **host** – name of computer where Task Scheduler runs for the Iron Mountain integration
  - **folder** – the Task Scheduler sub-directory
- **imlink** – to define content of files being submitted to storage provider vendor – depends on your requirements. TRIMIronMountain does have default content set up, which should be sufficient for most sites.
 

About the content syntax:

  - Properties within double quotes (“”) go into the file as they are
  - Properties starting with **@wh** refer to warehouse details, which are defined later in this configuration file
  - Properties starting with **@** followed by parentheses ( () ) insert variable values, like requester or addresses
- **pickup** – number of steps for pickup request to go through
  - steps – 1 or 2.
  - **1** refers to early labeling, where the storage provider sends the labels before you send the request.



– **2** sets late labeling, where you submit the request for adding a new item to storage first, then the storage provider sends a number for the item, and then you need to submit a second request for the item to be picked up.

- **report** – not implemented in Content Manager integration setup
- **warehouse** – to identify different warehouses, which have different entries. Usually provided by the storage vendor
  - **id** – warehouse ID. Can also be found in Content Manager against the storage provider Location, in the field ID Number.
  - **ftp** – connection details for warehouse IM link site. Provided by storage provider vendor.
  - **CustomerId** – the customer's Iron Mountain account code, e.g. CustomerId = "ABC".

**NOTE:** These warehouse attributes have case sensitive names and must be defined in TRIMIronMountain.xml with exact matching case.

To support Secure FTP with a user name and password, add the 'user' and 'password' attributes to the <ftp> node. If no 'user' attribute is supplied, then Content Manager will try to perform an anonymous login, which will fail on a secure FTP site. The integration will mangle the password in the TRIMIronMountain.xml after it executes, but requires that it is first entered as plain text.

To support Secure Anonymous access, IIS requires that you supply the 'user' and 'password' attributes in the TRIMIronMountain.xml. The supplied attributes do not need to be valid, but IIS requires them to be supplied for anonymous access when it's secured with encryption.

**NOTE:** Each Warehouse must be uniquely identified. If there are two or more Warehouses with the same configurations the Content Manager Iron Mountain integration cannot be run. Multiple warehouses can be defined to use any unique combination of Customer Account ID and District code. All warehouses must use a unique location 'id'.

For example:

```
<warehouse ShipToCode="Darwin" district="C" id="101" CustomerId="ABCCorp">
<ftphost="C:\Program Files\Micro Focus\Content Manager\IronMountainFTP"
fromdir="\FromPlus" todir="\ToPlus"/> </warehouse>
<warehouse ShipToCode="Canberra" district="C" id="102" CustomerId="XYZCorp">
<ftphost="C:\Program Files\Micro Focus\Content Manager\IronMountainFTP"
fromdir="\FromPlus" todir="\ToPlus"/>
</warehouse>
```

Save the changes you made to the configuration file.

After making changes to the configuration file, you may need to press **Reload** in the configuration web application to see the changes reflected there.

**NOTE:** For detailed descriptions of the parameters and their functions, on the machine where the Content Manager Warehouse integration is installed and configured, navigate to the Iron Mountain Administration web page, <http://localhost/CMIronMountain/~> (where localhost is the local machine IP or name) and on the **Configuration** tab, click **Help**.

## Configuring Task Scheduler

An essential step to follow after installing the Content Manager Iron Mountain integration is to create the scheduled tasks and ensure that they are being run by a user that has permissions to access and update Content Manager records and requests, so ideally, is a Content Manager administrator, as well as having user rights to run a scheduled task.

To create, or if there is a requirement to re-configure these tasks, the details are as follows:

1. In Windows Task Scheduler, under **Task Scheduler Library**, create a new top level folder, for example, **Content Manager**, and a folder inside it, for example, **CM\_IronMtnInteg**
2. Right-click the folder **CM\_IronMtnInteg** and click **Import Task**
3. Navigate to the folder **IronMountain\bin** that you installed earlier, and select one of the files **FEED**, **PICKUP**, **RECALL** or **REQUEST** and click **Open**.  
The Create Task dialog appears.
4. On the tab **General** under **Security options for each task**, verify that the user account has permissions to access and update Content Manager records and requests, so ideally, is a Content Manager administrator, as well as having user rights to run a scheduled task.
5. On the tab **Triggers**, you can define how often to run the task.
6. On the tab **Actions**, verify that the action is configured correctly by selecting it and clicking **Edit**.
  - a. For **Action**, **Start a program** should be selected.
  - b. The field **Program/script** should display **TRIMIronMountain.exe**
  - c. **Add arguments** should display **/act=feed**
  - d. **Start in** should display the path to **IronMountain\bin** that you installed earlier
7. Optionally, in the tab **Conditions**, under **Power**, clear the option **Start the task only if the computer is on AC power** if you intend to use a mobile computer for demonstrations that may not be on AC power when you demonstrate.
8. Click **OK** to save the task settings. You may need to enter your password to confirm.
9. Use those steps to import the tasks **FEED**, **PICKUP**, **RECALL** and **REQUEST**
10. Right-click a task and click **Run** to run the task and verify in the column **Last Run Result** that the task completed successfully.
11. In the administration web application, in the tab **Scheduler**, you should now be able to see the tasks you created in Task Scheduler.

To edit the user running the tasks:

1. In Windows Task Scheduler, under the relevant task node, e.g., **Task Scheduler Library > Content Manager > CM\_IronMtnInteg**, select a listed task.
2. Right-click on the task and click **Properties**.
3. On the **General** tab, under **Security options**, click **Change User or Group**.

4. On the displayed **Select User or Group** dialog, type in the user name and click **Check Names**. Click **OK**.
5. Select **Run whether user is logged on or not**.
6. Select **Run with highest privileges**.
7. Click **OK**. You may be prompted to enter the password for the new user, if you are, type in the user's password and click **OK**.

Your installation and configuration of Content Manager Warehouse Integration with Content Manager and with an external vendor's FTP or SFTP site is now complete.

Content Manager users can now use Content Manager advanced requests to request physical records from the external storage vendor you defined.

## Configuring test or demonstration environment

You will need access to a working Content Manager dataset from your host computer to demonstrate the Iron Mountain Integration effectively, and your setup must meet the prerequisites.

### Install warehouse integration

Follow the instructions in [Installing the Content Manager Iron Mountain Warehouse Integration](#).

### Configure administration web application

Follow the instructions in [Configuring the administration web application in IIS 7](#)

### Edit TRIMIronMountain.xml

Follow the instructions in [Editing TRIMIronMountain.xml configuration file](#) and [Configuring TRIMIronMountain.xml for Demonstrations and Testing](#), below.

Make sure to include the attributes **demo="yes"** and **interact="yes"** in the root XML node.

### Configure Task Scheduler

Follow the instructions in [Configuring Task Scheduler](#)

## Configure Demonstration environment

For testing or demonstration purposes, you can configure the TRIMIronMountain.xml file to run the integration in demonstration mode, this creates the folder structures required to process requests from Content Manager.

As a prerequisite, you should have created at least one Content Manager Location of type **Storage Provider**. The URI of this Location will be added to the TRIMIronMountain.xml configuration.

## Configuring TRIMIronMountain.xml for Demonstrations and Testing

1. From Windows Explorer, browse to **TRIMIronMountain.xml** and open it with an XML editor. By default, it is installed to C:\Program Files\Micro Focus\Content Manager\IronMountain\bin
2. In the **TRIMIronMountain.xml** configuration file, under the hprmim top level node, add an attribute named demo with a value of yes, e.g. **demo="yes"** and ensure that there is an **interact="yes"** value as well. This will allow the integration to run in demo mode. For example, the level should

read:

```
hprmim logfile="C:\Micro Focus Content
Manager\IronMtnWarehouseInteg\IronMtnWarehouseInteg.log" loglevel="3" demo="yes"
interact="yes">
```

3. In the **TRIMIronMountain.xml** configuration file, under the ftp api node, set the ftp api to file, for example `<ftp api="file"/>`
4. In the **TRIMIronMountain.xml** configuration file, under the Warehouse node, set the **warehouse id** to the URI of the Storage Provider Location created as a prerequisite. For example, `warehouse id="1666"`. Please note, the district and ShipToCode attributes are not relevant for demonstration/testing purposes.
5. In the **TRIMIronMountain.xml** configuration file, under the Warehouse node, set the **ftp host** details to the location where the required folders will be created. As a recommendation, we suggest using `C:\Micro Focus Content Manager\IronMtnWarehouseInteg\FTP`
6. Also in the **ftp host** level, add two additional attributes - `toDir="toPlus"` and `fromDir="fromPlus"`. For example, the ftp host level should read:  
`<ftp host="C:\Micro Focus Content Manager\IronMtnWarehouseInteg\FTP" toDir="toPlus" fromDir="fromPlus"/>`
7. Save the changes.

To create the folder structure defined in the TRIMIronMountain.xml file:

1. From Windows Explorer, browse to **TRIMIronMountain.exe**, right-click on the file and click **Run as administrator**. By default, it is installed to `C:\Program Files\Micro Focus\Content Manager\IronMountain\bin`. The Content Manager Iron Mountain Integration command prompt dialog is displayed.
2. At the command prompt, type in **init** and press Enter on your keyboard. This will create the folder structure as defined in the TRIMIronMountain.xml configuration file.

**NOTE:** If you have the Content Manager Iron Mountain Integration command prompt dialog already open when you make changes to your TRIMIronMountain.xml configuration file, you will need to Quit the application and re-open it for it to pick up the changes to the configuration file. Each Warehouse must be uniquely identified, if there are two or more Warehouses with the same configurations the Content Manager Iron Mountain integration cannot be run.

## Simulating the FTP site processes

1. With the option demo set, the Iron Mountain integration automatically generates the feedback files in the directory fromplus to match the orders, in the same way that the storage provider would submit their feedback files to the FTP site.
2. The storage vendor or provider processes the order file.
3. The **fromPlus** folder now contains a **.dat** text file, which is the storage provider feedback file, which the Iron Mountain integration processes to Content Manager. View the file and you will be able to see the storage provider code for a new document to store and a barcode, among other information.

## Simulating a request process end-to-end

As a prerequisite, you should have created at least one Content Manager Location of type Storage Provider with an ID number.

There are four different request processes set up with Iron Mountain as storage provider vendor, which cover all possible request scenarios. You can see them in an overview of the request function in the Content Manager Help file topic Requests integrated with external storage vendor systems.

For a demonstration, use the request process below, which covers all aspects of off-site storage of documents.

### Having a new record picked up for the warehouse

1. Create a new record in Content Manager.
2. Using the Content Manager advanced requests function, right-click on the record, point to **Requests** and then click **Pickup – New Record** to start the process.
3. The request status changes to **New Request – Not Yet Actioned**, which means that the Iron Mountain integration now picks up the request for processing.
4. From Windows Explorer, browse to **TRIMIronMountain.exe**, right-click on the file and click **Run as administrator**.  
The Iron Mountain Integration command prompt dialog is displayed.
5. At the command prompt, type in **pickup** and press Enter on your keyboard.
6. Check the FTP folder you created earlier, in the **toPlus** folder, you should see two new text files with **.add** and **.ord** extensions. The first one is called an add file as it itemizes boxes to be created. The second is an actual order with pickup information.
7. In Demo mode, the Iron Mountain integration also simulates the response, generating the **.dat** file in the **fromPlus** folder.
8. From Windows Explorer, browse to **TRIMIronMountain.exe**, right-click on the file and click **Run as administrator**.  
The Iron Mountain Integration command prompt dialog is displayed.
9. At the command prompt, type in **feed** and press Enter on your keyboard.
10. In Content Manager, the request status is now **Request Complete** and the record location will be in the Warehouse.  
The end-to-end process demonstration is complete.

## Appendix A

### Content Manager Iron Mountain Console

The Content Manager Iron Mountain Warehouse integration can be run via **TRIMIronMountain.exe**. The console runs as a command prompt dialog.

The following commands can be used with the console:

- **db** – this command will list the host name of the Content Manager Workgroup Server, the Content Manager dataset ID and the network port being used to connect to Content Manager. It also displays the version of the Content Manager Iron Mountain integration.
- **init** – this command is only available in demonstration mode. This will clear out all the temporary files in the FTP directories (.ord and .dat files). It also erases all requests which have their service location set to any of the defined warehouses in the TRIMIronMountain.xml configuration file.
- **ls** – this command lists the files that are currently residing in the SafePlus online directory. These could be .ord, .dat or .mnt files representing item orders, item additions and item maintenance.
- **log** – this command displays the contents of the Content Manager Iron Mountain integration log file.
- **xml** – this command will open the TRIMIronMountain.xml file.
- **feed** – this command searches the files in the SafePlus for status updates on current requests and updates those requests in Content Manager accordingly. In the case of requests being completed, this will update the assignee to the location specified in the request.
- **pickup** – this command will find all the Pickup – New Record and Pickup – Return requests in Content Manager whose Home Location is one of the warehouses defined in the TRIMIronMountain.xml configuration file. It also creates orders for each of these requests and forwards them to the Warehouse via the SafePlus online system.
- **recall** – this command will find all the Retrieve – Permanent requests in Content Manager whose service location is one of the warehouses defined in the TRIMIronMountain.xml configuration file and creates orders for each of the requests and forwards them via the SafePlus online system.
- **request** – this command will find all the Retrieve – Temporary requests in Content Manager whose service location is one of the warehouses defined in the TRIMIronMountain.xml configuration file and creates orders for each of these requests and forwards them to the warehouse via the SafePlus online system.
- **quit** – this command will close the application.

### Command Line Arguments

The console program also accepts some command line arguments. Passing the argument `/act=<action>` will cause the program to run as a batch process and execute the specified action. The action can be **feed**, **pickup** or **request**.

## Appendix B

# Additional Configuration Information

### Imlink node

When generating content for the .ADD and .ORD files, any text enclosed with the delimiters @(...) is evaluated as .NET SDK property references in the context of each Content Manager 'Request' object. This only works for property references, and attempts to call object methods will be ignored. For details of the Content Manager object model and available object properties, please consult the Content Manager SDK documentation. A full list of Content Manager objects and properties can be viewed in Visual Studio by analyzing the HP.HPTRIM.SDK namespace in the Object Browser.

Below are some examples:

@(Record.ExternalReference) - evaluates to the External Reference of the requested record.

@(Requestor.FormattedAddress) - evaluates to the Postal Address(if given) or the Street Address formatted in ISO format.

@(Requestor.FormattedName) - evaluates to the requesting person's full name.

@(Notes) - evaluates to the Notes provided in the request details.

@(ServiceLocation.Name) - evaluates to the name of the warehouse which the request is sent to.

In the same manner, it is also possible to access user defined (Additional) fields on any Content Manager object that supports them. Additional fields are designated by prepending the name of the field with an asterisk. For example, if a requested record has a Location type additional field called Department, you can access the Name of that Location with @ (Record.\*Department.FormattedName). The metadata in these defined fields will be included in the generated order files (.ORD and .ADD files).

You can also use names with spaces or numbers i.e. @(Record.\*Foo Bar1), but names with non alpha-numerical characters do not work.

**NOTE:** Any attempt to access an object property or an additional field that does not exist or does not have a valid name according to the aforementioned rules will evaluate to "???".

Using @ts() will evaluate to a current time stamp. You can also use the @wh(...) syntax to reference properties of the current warehouse as defined in the XML configuration file. For example, @wh (district) evaluates to the district ID for the current warehouse as specified in the XML <warehouse> node.

You can even add many of your own attributes to the warehouse node and insert their values into the .ADD and .ORD files. To do this, define a warehouse node with a custom attribute such as:  
 <warehouse id="12" district="J" ShipToCode="London" MyAttribute1="Hello World!" MyAttribute2="It's me!">