

## Using HCP Data Migrator

## Release 6.1

# Hitachi Content Platform Data Migrator

This book contains the information you need to use Hitachi Content Platform Data Migrator (HCP-DM). This utility lets you copy data between local file systems, HCP namespaces, and default namespaces. HCP-DM also lets you manage objects and files, including deleting them or viewing their contents. HCP-DM has both a graphical user interface and a command-line tool.

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# Preface

This book contains the information you need to use **Hitachi Content Platform Data Migrator (HCP-DM)**. This utility lets you copy data between local file systems, **Hitachi Content Platform (HCP)** namespaces, and **Hitachi Content Archive Platform (HCAP)** archives. HCP-DM also lets you manage objects and files, including deleting them or viewing their contents. HCP-DM has both a graphical user interface and a command-line tool.

## Intended audience

This book is intended for people who are responsible for managing data in HCP. It assumes you:

- Have a basic understanding of HCP concepts
- Are familiar with the file systems, namespaces, and archives in use at your site
- Have experience using command-line interfaces, if you are using the **hcpdm** command

## Product version

This book applies to version 6.1 of HCP-DM, which is available with release 8.0 of HCP.

## Release notes

Read the release notes before installing and using this product. They may contain requirements or restrictions that are not fully described in this document or updates or corrections to this document. Release notes are available on Hitachi Vantara Support Connect:

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## Syntax notation

The table below describes the conventions used for the syntax of commands and expressions in this book.

Notation	Meaning	Example
<b>boldface</b>	Type exactly as it appears in the syntax (if the context is case insensitive, you can vary the case of the letters you type)	This book shows: <b>--hold</b> <i>hold-setting</i> You enter: --hold true
<i>italics</i>	Replace with a value of the indicated type	
	Vertical bar — Choose one of the elements on either side of the bar, but not both	This book shows: ( <b>true false</b> ) You enter: true or: false
[ ]	Square brackets — Include none, one, or more of the elements between the brackets	This book shows: [ <b>--hold true false</b> ] You enter: --hold true or: --hold false or nothing
( )	Parentheses — Include exactly one of the elements between the parentheses	This book shows: ( <b>true false</b> ) You enter: true or: false
<i>-file-spec</i> <i>-object-spec</i>	Replace with the combination of the directory path and name of an object or file	This book shows: <i>item-list-file-spec</i> You enter: /migration/europeToAsia/Employees
<i>-path</i>	Replace with a directory path with no object or file name	This book shows: <i>source-path</i> You enter: /corporate/employees

## Terminology

Throughout this book, the word Unix is used to represent all UNIX®-like operating systems (such as UNIX itself or Linux®), except where Linux is specifically required.

## Related documents

The following documents contain additional information about Hitachi Content Platform:

- *Administering HCP* — This book explains how to use an HCP system to monitor and manage a digital object repository. It discusses the capabilities of the system, as well as its hardware and software components. The book presents both the concepts and instructions you need to configure the system, including creating the tenants that administer access to the repository. It also covers the processes that maintain the integrity and security of the repository contents.
- *Managing a Tenant and Its Namespaces* — This book contains complete information for managing the HCP tenants and namespaces created in an HCP system. It provides instructions for creating namespaces, setting up user accounts, configuring the protocols that allow access to namespaces, managing search and indexing, and downloading installation files for HCP Data Migrator. It also explains how to work with retention classes and the privileged delete functionality.
- *Managing the Default Tenant and Namespace* — This book contains complete information for managing the default tenant and namespace in an HCP system. It provides instructions for changing tenant and namespace settings, configuring the protocols that allow access to the namespace, managing search and indexing, and downloading installation files for HCP Data Migrator. It also explains how to work with retention classes and the privileged delete functionality.
- *Replicating Tenants and Namespaces* — This book covers all aspects of tenant and namespace replication. Replication is the process of keeping selected tenants and namespaces in two or more HCP systems in sync with each other to ensure data availability and enable disaster recovery. The book describes how replication works, contains instructions for working with replication links, and explains how to manage and monitor the replication process.
- *HCP Management API Reference* — This book contains the information you need to use the HCP management API. This RESTful HTTP API enables you to create and manage tenants and namespaces programmatically. The book explains how to use the API to access an HCP system, specify resources, and update and retrieve resource properties.

- *Using a Namespace* — This book describes the properties of objects in HCP namespaces. It provides instructions for accessing namespaces by using the HTTP, WebDAV, CIFS, and NFS protocols for the purpose of storing, retrieving, and deleting objects, as well as changing object metadata such as retention and shred settings. It also explains how to manage namespace content and view namespace information in the Namespace Browser.
- *Using the HCP HS3 API* — This book contains the information you need to use the HCP HS3 API. This S3™-compatible, RESTful, HTTP-based API enables you to work with buckets and objects in HCP. The book introduces the HCP concepts you need to understand in order to use HS3 effectively and contains instructions and examples for each of the bucket and object operations you can perform with HS3.
- *Using the HCP OpenStack Swift API* — This book contains the information you need to use the HCP HSwift API. This OpenStack Swift, RESTful, HTTP-based API enables you to work with containers and objects in HCP. The book introduces the HCP concepts you need to understand in order to use HSwift effectively and contains instructions and examples for each of the container and object operations you can perform with HSwift.
- *Using the Default Namespace* — This book describes the file system HCP uses to present the contents of the default namespace. It provides instructions for accessing the namespace by using the HCP-supported protocols for the purpose of storing, retrieving, and deleting objects, as well as changing object metadata such as retention and shred settings.
- *HCP Metadata Query API Reference* — This book describes the HCP metadata query API. This RESTful HTTP API enables you to query namespaces for objects that satisfy criteria you specify. The book explains how to construct and perform queries and describes query results. It also contains several examples, which you can use as models for your own queries.
- *Searching Namespaces* — This book describes the HCP Search Console (also called the Metadata Query Engine Console). It explains how to use the Console to search namespaces for objects that satisfy criteria

you specify. It also explains how to manage and manipulate queries and search results. The book contains many examples, which you can use as models for your own searches.

- *Installing an HCP System* — This book provides the information you need to install the software for a new HCP system. It explains what you need to know to successfully configure the system and contains step-by-step instructions for the installation procedure.
- *Deploying an HCP-VM System on ESXi* — This book contains all the information you need to install and configure an HCP-VM system. The book also includes requirements and guidelines for configuring the VMWare® environment in which the system is installed.
- *Deploying an HCP-VM System on KVM* — This book contains all the information you need to install and configure an HCP-VM system. The book also includes requirements and guidelines for configuring the KVM environment in which the system is installed.
- *Third-Party Licenses and Copyrights* — This book contains copyright and license information for third-party software distributed with or embedded in HCP.
- *HCP-DM Third-Party Licenses and Copyrights* — This book contains copyright and license information for third-party software distributed with or embedded in HCP Data Migrator.
- *Installing an HCP SAIN System — Final On-site Setup* — This book contains instructions for deploying an assembled and configured single-rack HCP SAIN system at a customer site. It explains how to make the necessary physical connections and reconfigure the system for the customer computing environment. It also contains instructions for configuring Hi-Track® Monitor to monitor the nodes in an HCP system.
- *Installing an HCP RAIN System — Final On-site Setup* — This book contains instructions for deploying an assembled and configured HCP RAIN system at a customer site. It explains how to make the necessary physical connections and reconfigure the system for the customer computing environment. The book also provides instructions for assembling the components of an HCP RAIN system that was ordered without a rack and for configuring Hi-Track Monitor to monitor the nodes in an HCP system.

## Accessing product documentation

Product documentation is available on Hitachi Vantara Support Connect: <https://knowledge.hitachivantara.com/Documents>. Check this site for the most current documentation, including important updates that may have been made after the release of the product.

## Getting help

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**Thank you!**

# Introduction to Hitachi Content Platform

**Hitachi Content Platform (HCP)** is a distributed storage system designed to support large, growing repositories of fixed-content data. An HCP repository is partitioned into namespaces, each of which stores both data and metadata about that data.

This chapter provides a brief overview of some of the HCP concepts you need to understand in order to successfully use HCP Data Migrator.

## About Hitachi Content Platform

Hitachi Content Platform is the distributed, fixed-content, data storage system from Hitachi Vantara. HCP provides a cost-effective, scalable, easy-to-use repository that can accommodate all types of data, from simple text files to medical images to multigigabyte database images.

A **fixed-content storage system** is one in which the data cannot be modified. HCP uses write-once, read-many (WORM) storage technology, internal processes, and various kinds of metadata to ensure the integrity of the stored data. HCP also provides easy access to the repository for adding, retrieving, and, when allowed, deleting data.

## Object-based storage

HCP stores **objects** in the repository. Each object permanently associates data HCP receives (for example, a document, an image, or a movie) with information about that data, called **metadata**.

An object encapsulates:

- **Fixed-content data** — An exact digital reproduction of data as it existed before it was stored. Once it's in the repository, this fixed-content data cannot be modified.
- **System metadata** — System-managed properties that describe the fixed-content data (for example, its size and creation date). System metadata includes settings, such as retention and data protection level, that influence how transactions and internal processes affect the object.
- **Custom metadata** — Optional metadata that a user or application provides to further describe the object. In HCP 6.x and later releases of HCP, custom metadata is specified as one or more **annotations**, where each annotation is a discrete unit of information about the object. Annotations are typically specified in XML format.

You can use custom metadata to create self-describing objects. Future users and applications can use this metadata to understand and repurpose the object content.

- **Access control list (ACL)** — Optional metadata consisting of a set of grants of permissions to perform various operations on the object. Permissions can be granted to individual users or to groups of users.

ACLs are provided by users or applications and are specified in either XML or JSON format.



For more information on metadata, see [Chapter 4, “Managing metadata,”](#) on page 53.

## Namespaces and tenants

An HCP repository is partitioned into namespaces. A **namespace** is a logical grouping of objects such that the objects in one namespace are not visible in any other namespace.

Namespaces provide a mechanism for separating the data stored for different applications. For example, one namespace could be used for accounts receivable while another is used for accounts payable.

Namespaces are owned and managed by administrative entities called **tenants**. A tenant typically corresponds to an organization such as a company or a division or department within a company.

An HCP system can have multiple **HCP namespaces** and one **default namespace**. Access to an HCP namespace can be authenticated or open to all users. Access to the default namespace is always open to all users.




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**Note:** HCP-DM treats HCAP 2.6 archives as namespaces. This manual uses the term *namespace* to refer to HCP namespaces, the default namespace, and HCAP archives.

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HCP namespaces and the default namespace have different characteristics, including the features and metadata they support. The default namespace and HCAP archives have similar characteristics.

New applications are typically written against HCP namespaces. The default namespace is most often used with applications that existed before release 3.0 of HCP.

## Namespace access

HCP namespaces can be configured to require authentication for access. If an HCP namespace requires authentication, all clients, including HCP-DM, must present valid credentials to access the namespace content.

The credentials that a client presents are defined by a **user account**. The account specifies a username and password. It also specifies which HCP namespaces the user or application can access and which operations the user or application can perform in each of those namespaces. To get a user account, see your namespace administrator.

HCP namespaces can also be configured to allow **anonymous access**. Anonymous access means that clients gain access to the namespace without presenting any credentials. Users that access a namespace anonymously are said to be unauthenticated. The namespace configuration determines which operations can be performed by unauthenticated users.

Even if a namespace allows anonymous access, a client can optionally provide credentials to access the namespace as an authenticated user. In this case, the client has the namespace permissions associated with that user account.

The default namespace and HCAP archives allow only anonymous access.

To find out the authentication requirements for the namespace you want to access, see your namespace administrator.

## Data access permissions

In HCP namespaces, all clients, including those that access the namespace anonymously, must have the applicable permissions to perform the actions they want. The table below lists the operations allowed by each permission.

Permission	Operations
Browse	<ul style="list-style-type: none"> <li>List directory contents</li> </ul>
Read	<ul style="list-style-type: none"> <li>Retrieve objects and system metadata</li> <li>Check for and retrieve custom metadata</li> </ul>
Read ACL	<ul style="list-style-type: none"> <li>Check for and retrieve ACLs</li> </ul>
Write	<ul style="list-style-type: none"> <li>Add objects</li> <li>Create directories</li> <li>Modify system metadata</li> <li>Add and replace custom metadata</li> </ul>
Write ACL	<ul style="list-style-type: none"> <li>Add, replace, and delete ACLs</li> </ul>
Delete	<ul style="list-style-type: none"> <li>Delete objects, empty directories, custom metadata, and ACLs</li> </ul>
Purge	<ul style="list-style-type: none"> <li>Delete all versions of an object, including the current version</li> </ul>
Privileged	<ul style="list-style-type: none"> <li>Delete or purge objects regardless of retention</li> <li>Place objects on hold</li> </ul>
Change owner	<ul style="list-style-type: none"> <li>Set object owners</li> </ul>

Some operations require multiple permissions. For example, to place an object on hold, you need to have both the write and privileged permissions. Similarly, to perform a privileged purge, you need delete, privileged, and purge permissions.

Users can be granted permissions for individual objects through access control lists (ACLs). For more information on ACLs, see ["Access control lists"](#) on page 57.

## Object versions

HCP namespaces can be configured to store multiple versions of objects. When a namespace is configured this way, you can store a new version of an object, which then becomes the current version. You can list, open, and copy all versions of an object.

All objects in an HCP namespace, including objects created when versioning is not enabled, have version IDs. Version IDs are integers. Each time a new version of an existing object is created, it is assigned an ID that is greater than the previous version of the object, but the numbers may not be consecutive.

When you delete objects while versioning is enabled, HCP creates a record of the deletion operation for each deleted object. These records do not contain object data.

If versioning is enabled for a namespace, HCP can automatically delete old versions after a specific time. This is called **pruning**. HCP does not prune versions of objects that are on hold. You can also manually delete all versions of an object, including the current version. This operation is called **purging**.

Index, retention, and shred settings and custom metadata apply to individual versions, so you can set different values for this metadata when you store new versions of objects. Hold settings apply to all versions of an object.

Normally, an ACL applies to all versions of an object. For example:

- When you add or replace an ACL for an object, the new ACL applies to all versions of the object.
- If an object has an ACL and you add a new version of the object, the new version inherits the ACL that applies to the previous versions.

However, if, while versioning is enabled, an object with an ACL is deleted then stored again, old versions of the object keep the ACL but the new version does not inherit the ACL. If you add an ACL to the object, that ACL applies to all versions of the object.

Normally, the user that owns an object owns all versions of the object. For example, if a user other than the object owner stores a new version of an object, the new version is also owned by the user that owns the other versions. However, if, while versioning is enabled, an object is deleted then stored again by a user other than the object owner, the old versions and the new version have different owners. If another version of the object is stored, all versions are owned by the user who added the new version.

## HCP nodes

The core hardware for an HCP system consists of servers that are networked together. These servers are called **nodes**.

When you access an HCP system, your point of access is an individual node. To identify the system, however, you can use either the domain name of the system or the IP address of an individual node. When you use the domain name, HCP selects the access node for you. This helps ensure an even distribution of the processing load.

For information on when to use an IP address instead of the domain name, see ["Considerations for using a domain name or IP addresses"](#) on page 42.

# Getting started with HCP Data Migrator

This chapter provides the basic information you need to use **HCP Data Migrator (HCP-DM)**. It includes:

- A description of HCP-DM and its features, including information on profiles and jobs
- A description of the HCP-DM GUI main window
- Instructions for setting the font that HCP-DM uses to display object names, file names, and directory paths
- A quick guide to running the HCP-DM GUI, configuring its behavior, and copying and deleting data

## About HCP Data Migrator

HCP Data Migrator (HCP-DM) is a utility for copying, managing, and deleting data and setting object metadata. When you copy data from one location to another, the source and destination locations can be any combination of:

- A local file system, including remote directories mounted on the local file system
- An HCP or default namespace
- An HCAP archive

Supported operations include copying between two locations in a single namespace (including an HCAP archive) or local file system.

You can also delete data from any of the locations listed above.

## HCP-DM capabilities

With HCP-DM, you can:

- Copy one or more items



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### Notes:

- In this book, the term **item** refers to an object, file, symbolic link or directory.
  - HCP-DM treats Windows<sup>®</sup> shortcuts as files, not symbolic links. As a result the copied shortcuts are meaningful only on the source Windows system.
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- Copy a single version of an object
- Delete one or more items
- Purge all versions of an object
- Perform privileged deletes and purges of objects under retention
- Open objects, including old versions of objects, and files

- Rename files and directories on the local file system
- View item properties
- Create empty directories
- Set metadata for multiple objects
- Add, change, or delete custom metadata for single objects
- Add, change, or delete ACLs for objects

HCP-DM provides two interfaces:

- A graphical user interface (GUI)
- A command-line tool

The HCP-DM GUI lets you use all HCP-DM features. The command line tool supports a subset of those features.

## HCP-DM GUI

With the HCP-DM GUI you can:

- Interactively configure, start, and manage copying or deleting (including purging) single or multiple objects or files, including entire directory trees.
- Interactively configure, start, and manage the setting of metadata on existing objects
- Copy or delete items specified in a file.
- Pause a copy or delete operation and resume it, including after you close and reopen HCP-DM.
- Correct problems and resume copying or deleting if HCP-DM closes abnormally during a copy or delete operation.
- Monitor progress by viewing a real-time display of status information.

- Export the current results of a paused or completed operation to a set of files. These files list all objects or files in a job, the objects or files that were successfully processed, and the objects or files for which HCP-DM encountered errors.

The HCP-DM GUI lets you control the behavior and results of an operation in these ways:

- You can specify metadata for objects created from files copied from the local file system. This includes HCP-specific metadata, POSIX metadata, custom metadata, and ACLs for the objects.
- You can control the load that HCP-DM puts on HCP systems. HCP-DM is multithreaded. You can configure the maximum number of concurrent connections HCP-DM makes to an HCP system and to individual HCP nodes. You can limit the maximum number of concurrent operations on the local file system. You can also schedule a reduced load to run during a specific time of day.
- You can control how often HCP-DM writes success and failure messages to its log files.

For basic information on using the HCP-DM GUI, see [“The HCP Data Migrator GUI main window”](#) on page 28. For more detailed information on using the GUI, see Chapters 4 through 7.

## hcpdm command

The **hcpdm** command lets you use HCP-DM from any system with a command line interface and create scripts that can automate complex operations. The command can run from a Windows command line or a Unix shell.

The **hcpdm** command has options that determine the type of operation to perform. The table below describes these options.

Option	Description
profile	Creates, deletes, and lists namespace profiles
copy	Copies objects or files from a source to a destination; creates any required directories if they do not exist
delete	Deletes one or more items
metadata	Sets metadata for existing objects
job	Lists all HCP-DM jobs or deletes a single job

For information on this command-line tool, see [Chapter 8, “Using the hcpdm command,”](#) on page 119.



## Profiles

Each source or destination for a copy operation or location for a delete or metadata operation is represented by a **profile**. HCP-DM uses two types of profiles:

- A **namespace profile** represents one of:
  - An HCP namespace in an HCP system at release 6.x
  - An HCP namespace in an HCP system at release 5.0
  - An HCP namespace in an HCP system at release 3.x or 4.x
  - A default namespace
  - An archive in an HCAP release 2.6 system

You define namespace profiles in HCP-DM.

- The built-in **Local File System** profile represents the file system of the computer on which HCP-DM is running. This profile provides access to local drives and mounted file systems.

Each namespace profile you define specifies:

- Whether to access the namespace using a domain name or IP address.
- Whether to use SSL for connections to the namespace.
- For HCP namespaces, whether HCP-DM checks custom metadata to make sure it is well-formed XML. If checking is enabled and you try to store custom metadata that is not well-formed XML, HCP-DM rejects the custom metadata.




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**Note:** This setting applies only to HCP-DM. Namespaces can also be configured to check that custom metadata is well-formed XML. To find out whether a namespace requires custom metadata to be well-formed XML, see your namespace administrator.

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- For HCP namespaces, the namespace name and the name of the tenant that owns the namespace.

- For release 5.0 and later HCP namespaces, either the username and password of a user account or an indication to access the namespace anonymously.
- For release 3.x or 4.x HCP namespaces, the username and password of a user account.

The user account specified in an HCP namespace profile is called the **profile user**.

Once you define a namespace profile, you can use it to specify the source or destination for any copy operation or the location for a delete or metadata operation.

## HCP-DM jobs

An HCP-DM **job** is a specific instance of a defined set of copy, delete, or metadata operations. The job consists of configuration and state information about the operations.

You can use the GUI or **hcpdm** command to run and restart jobs. When you use the GUI, you can cancel, pause, resume, and save jobs. You can export job results with both the GUI and **hcpdm**.

The following sections provide general information about jobs. For information on:

- Running and controlling jobs, see [Chapter 6, “Managing jobs in the Job Details window,”](#) on page 93
- Using the HCP-DM GUI to run a previously defined job, see [Chapter 7, “Using saved jobs and job files,”](#) on page 107
- Using the **hcpdm** command, see [Chapter 8, “Using the hcpdm command,”](#) on page 119

## Job flow

At any given time, a job is in one of the states described in the table below.

State	Description
Not Started	The job has not started.
Preparing to Restart	A saved job that failed to copy or delete some items when it last ran is restarting.

*(Continued)*

State	Description
Running	The job is in progress.
Paused	The job is paused.
Completed	The job finished.
Failed	The job stopped unexpectedly. When this happens, HCP-DM displays a window with an error message.

When using the GUI, you can cancel a job before it starts or while it is in progress. You can close a job after it has finished or been saved.

For information on:

- Saved jobs, see [“Saved jobs”](#) below
- HCP-DM workflow, see [“HCP-DM quick start”](#) on page 31
- Closing jobs, see [“Closing a job”](#) on page 101
- Canceling jobs, see [“Canceling a job”](#) on page 101

## Saved jobs

You can save a job before it starts, while it is paused, or after it finishes. When you save a job, HCP-DM stores the job definition and the current state of the job. HCP-DM automatically saves any job that stops unexpectedly.

You can use the GUI or **hcpdm** command to reload a saved job and restart it from where it stopped.

Once a saved job finishes without errors, you cannot rerun it. However, you can rerun a saved job that finished with errors. In this case, HCP-DM tries to copy or delete only those items that failed during the previous run.

For more information on saved jobs, see [“About saved jobs”](#) on page 108.

## Job files

A **job file** lists the paths of all items to copy or delete in a job. You can use a job file as input to a job. Job files have these properties:

- Job files can be used with both the GUI and the **hcpdm** command.

- Job files can contain either absolute paths or paths relative to a specified directory.
- Job files can include directories, in which case the entire directory and all its subdirectories, recursively, are copied or deleted.
- Job files can have any number of entries at any level of the directory tree. When you define a job in the HCP-DM GUI, you can select up to one thousand items from only one directory.

You can create job files by exporting the results of a job that you define in the HCP-DM GUI or CLI, or you can create them outside of HCP-DM.

## Exported job results

You can export job results to a set of one or more files. These files contain lists of the items in the job. You can use these files as job files.

For more information on exported results files, see ["About exported job results files"](#) on page 111.

## The HCP Data Migrator GUI main window

The main window of the HCP-DM GUI contains two navigation panels, a set of controls for each panel, and buttons to transfer items between the panels (that is, from a source to a destination).

### Panel controls

These controls are located above each navigation panel:

- A dropdown list that lets you choose the profile for the panel.



**Note:** When you select a namespace profile, you may be prompted to accept an SSL server certificate. For more information, see ["Accepting the SSL server certificate"](#) on page 43.

- A toolbar that contains these icons for navigating in the panel:



Go to the home directory.



Refresh the panel.



Go to the parent of the current directory.



Open a window that lets you browse the local file system (when the local file system profile is selected).

- A field that displays the current working directory and lets you:
  - Enter a new directory path in the current namespace or local file system. On a Windows client, you can use either / or \ (forward or back slash) as the path delimiter. On a Unix client, you use / (forward slash) as the path delimiter.
  - Select a previously displayed directory from the history list. The list contains the 25 most recently displayed directories and version listings for the namespace. This list is maintained across HCP-DM sessions.




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**Tip:** If a path exceeds the width of the current working directory field, you can display the full path in a tool tip by mousing over the field or any entry in the history list.

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- Open a window that lets you browse the local file system. This option is displayed at the top of the history list when the local file system profile is selected.
- An icon (🔒) that allows you to view the SSL certificate for the HCP system. You can view the certificate only when the selected namespace profile represents an HCP namespace and uses SSL for connection.

### Navigation panels

The HCP-DM main window has two navigation panels. Each panel lets you navigate to, select, and manage items in a namespace or the local file system.

Each migrator panel lists the contents of the current working directory for the panel. The list shows up to one thousand objects, files, symbolic links, and directories. If the namespace supports versioning, the list includes deleted objects or directories. These items are grayed out.




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**Note:** The navigation panels display symbolic links with arrow icons. The same icon is used for a symbolic link to an object and a symbolic link to a directory.

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The information displayed for an item in a navigation panel depends on the item type and location. For example, the panel shows HCP-specific metadata only for objects in HCP namespaces, and not for files in the local file system, default namespaces, or HCAP archives.

In each navigation panel, you can:

- Navigate to a child directory by double-clicking on it.
- Select one or more items to copy or delete or to set metadata for by clicking, Ctrl-clicking, or Shift-clicking on them.
- Double-click on a file in the local file system or an object in any namespace that does not support versioning to open the object.
- Double-click on an object in a namespace that supports versioning to display a directory-style list of versions (even if only one version exists). You can then double-click on a version to open it.

Double-clicking on a symbolic link has no effect.

- Right-click in the panel with no items selected to display a popup menu that lets you:
  1. Refresh the panel display
  2. Create directories
  3. Browse the local file system
- Right-click in the panel with one item selected to display a popup menu that lets you:
  - Open the object or file
  - Delete the item
  - If the panel displays objects in a namespace, set metadata for the object
  - If the panel displays items in the local file system
    - Rename the item
    - Browse the local file system
  - View item properties

- Right-click in the panel with multiple items selected to display a popup menu that lets you:
  - Delete the items
  - If the panel displays objects in a namespace, set metadata for the objects
  - If the panel displays items in the local file system, browse the local file system

### Double-arrow buttons

The area between the panels has two double-arrow buttons. You use these buttons to copy the selected items from the source to the destination. Either panel can be a source or a destination.

## Setting the font for the HCP-DM GUI

The HCP-DM GUI may not correctly display some characters in object names, file names, and directory paths. To have HCP-DM correctly display such characters, you can use the font toolbar to select a font that contains those characters.

To set the font for the HCP-DM GUI:

1. In the menu bar, select **View ► Font Toolbar**.

The font toolbar appears below the menu bar.

2. In the lefthand dropdown list, select a font family.
3. In the righthand dropdown list, select a font size.

## HCP-DM quick start

The following procedure outlines the HCP-DM workflow. This procedure describes how to open the HCP-DM GUI and define and run a copy or delete job interactively. It does not describe how to run a metadata job. This procedure has these steps:

1. Open the HCP-DM GUI.
2. Configure namespace profiles.

3. Select the profiles for a copy operation or the profile for a delete operation.
4. Select the directories for a copy operation or the directory for a delete operation.
5. Select the items you want to copy or delete.
6. Start the copy or delete operation.
7. Monitor the progress of the operation.

## Step 1: Open the HCP-DM GUI

To open the HCP-DM GUI:

- In Windows, run the `install-dir\hcpdm\bin\migrator.bat` file.
- In Unix, run the `install-dir/hcpdm/bin/migrator.sh` script.



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**Tip:** In Windows, consider creating a shortcut to run `migrator.bat`. In the **Properties** window for the shortcut, specify the path to `migrator.bat` in the **Target** field and the `hcpdm\bin` directory in the **Start** field.

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The HCP-DM main window opens.



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**Note:** In Windows, a command window appears briefly before the main window opens.

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The first time HCP-DM starts, both panels show your home directory (for example, `C:\Documents and Settings\myuser`). Thereafter, when HCP-DM starts, each panel shows the most-recently displayed directory, if it still exists. If the directory does not exist, HCP-DM shows the home directory of the most-recently used namespace. If the namespace does not exist, HCP-DM shows the local home directory.

## Step 2: Configure namespace profiles

You need to create a namespace profile for each namespace you want to access. To configure a profile:

1. In the menu bar, select **File ► Namespace Profile Manager**.
2. In the **Namespace Profile Manager** window, click on the **Create** button to open the Namespace Profile Manager wizard.



3. Follow the wizard steps to configure the profile.

For more information, see ["Configuring namespace profiles"](#) on page 38.



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**Note:** The Namespace Profile Manager lets you specify a domain name or one or more IP addresses to connect to a system. If you're not sure which to use, see ["Considerations for using a domain name or IP addresses"](#) on page 42.

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## Step 3: Select the profiles or profile

For a copy operation, select the source and destination profiles. Either panel can be the source or the destination.

For a delete operation, select the profile in either panel.

To select a profile, click on the profile control to display the profile list. Then click on the profile you want.

When all of these are true, HCP-DM displays the **Allow Security Exception** window before displaying the contents of the namespace represented by the profile:

- The namespace profile for the job requires HTTPS.
- The destination HCP system uses a self-signed SSL server certificate.
- You haven't permanently allowed a security exception for the HCP system.

Optionally, select the **Permanently store this exception** option. Then click on the **Confirm Security Exception** button to accept the security certificate and return to the main window. For more information on this, see [step 13](#) of ["Creating a namespace profile"](#) on page 38.

## Step 4: Specify the directories or directory

In each navigation panel you're using, open the applicable directory. For a copy operation, open the directory containing the items to be copied in the navigation panel you're using as the source for the operation, and open the destination directory in the navigation panel you're using as the destination. For a delete operation, open the directory containing the items to be deleted in the navigation panel you're using for the operation.



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**Note:** In Windows, to navigate to a path on a different drive, enter the absolute path in the address box or browse the local file system.

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## Step 5: Select the items

In the source panel or the panel you're using for a delete operation, select the items to be copied or deleted. You can select objects, files, and directories.



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**Note:** For a copy operation, you can drag items directly into the destination panel from any application that supports drag and drop, such as Windows Explorer. Doing this starts the copy operation.

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## Step 6: Start the operation

To start the operation:

1. Do either of these:
  - To copy items, click on the double-arrow button that points to the destination panel.
  - To delete items, right-click anywhere in the panel containing the selected items and select **Delete**.

Alternatively, select **Delete** in the **File** menu.

The **Job Details** window opens.

2. Review the information in the **Job Details** window, make any changes you want, and then click on the **Run** button at the bottom of the window.

For detailed information on using the Job Details window, see [Chapter 6, "Managing jobs in the Job Details window,"](#) on page 93.

## Step 7: Monitor the operation

Monitor the progress of the operation on the **Progress** page in the **Job Details** window and take action as needed.

During an operation, you can monitor information such as the rate of transfer, number of items copied or deleted, and number of errors. A tabbed **Additional Details** section contains lists of items that are currently being processed, were copied or deleted, and failed to be copied or deleted.

You can manage the job while it runs, for example, by pausing or canceling it. The information in the **Additional Details** section is cleared when you pause, rerun, or reopen a job. For detailed information on using the **Job Details** window, see [Chapter 6, “Managing jobs in the Job Details window,”](#) on page 93.



## Configuring HCP-DM in the GUI

This chapter describes how to configure HCP-DM in the GUI by creating profiles for source and destination namespaces and setting job preferences.

You can also use the **hcpdm profile** command to create, delete, list, or print profiles. For more information see [“hcpdm profile”](#) on page 122.

## Configuring namespace profiles

You need to create a profile for each namespace you want to access. After you create a namespace profile, you can modify or delete it.

### Creating a namespace profile

To create a namespace profile:

1. In the HCP-DM main window select **File ► Namespace Profile Manager** to open the **Namespace Profile Manager** window.
2. Click on the **Create** button to open the Namespace Profile Manager.
3. In the **Profile Name** field, type a profile name. The name must be between one and 128 characters long and can include special characters and spaces.

Then click on the **Next** button.

4. On the **Namespace Type** page, select the type of namespace for which you're creating the profile:
  - **HCP namespace — 6.0 or later**
  - **HCP namespace — 5.0**
  - **HCP namespace — 3.x or 4.x**
  - **Default namespace**
  - **HCAP archive — 2.x**

Then click on the **Next** button.

5. On the **Connection** page, select the method HCP-DM will use to connect to the HCP system: **Connect by domain name** (also called a hostname or DNS name) or **Connect by IP address**. For considerations on which method to use, see ["Considerations for using a domain name or IP addresses"](#) on page 42.



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**IMPORTANT:** To connect to an HCP system that has both IPv4 and IPv6 addresses, you need to select **Connect by IP address**. Then, in [step 6](#) below, you need to specify *only* the IPv4 addresses for the HCP system.

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## 6. Take one of these actions:

- If you selected **Connect by domain name**, in the **Domain Name** field, type the fully qualified domain name of the HCP system in which the namespace is defined (for example, `hcp.example.com`). Do not include a tenant or namespace name or `www`. If you don't know the domain name, ask your HCP namespace administrator.
- If you selected **Connect by IP address**:
  1. If you're connecting to an HCP namespace, type the fully qualified domain name of the HCP system you are connecting to in the **Domain Name** field (for example, `hcp.example.com`). Do not include a tenant or namespace name or `www`.
  2. In the **IP addresses** field, type a comma-separated list of the IPv4 addresses to use when connecting to the system. (IPv6 addresses are not supported.)

For considerations for using IP addresses to connect to an HCP system, see ["Using IP addresses"](#) on page 42.

7. If your installation requires secure connections, select **Use SSL for connection**.
8. If you're configuring an HCP 5.0 or later namespace profile and you want to access the namespace anonymously, select **Connect anonymously**.
9. Click on the **Next** button.
  - If you're configuring an HCP namespace, the **Namespace Access Configuration** page appears. Continue with the next step.
  - Otherwise, the **Summary** page appears. Continue with [step 12](#).
10. If you're configuring a profile for an HCP namespace:
  - In the **Tenant** field, type the name of the tenant that owns the namespace.
  - In the **Namespace** field, type the namespace name.
  - For authenticated access, in the **Data Access Username** field, type the user account username. If you selected **Connect anonymously**, this field is grayed.

- For authenticated access, in the **Data Access Password** field, type the user account password. If you selected **Connect anonymously**, this field is grayed.



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**Note:** When configuring a profile for a release 5.0 or later HCP namespace, you should specify a profile user that has change owner permission.

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- To configure HCP-DM to check that the custom metadata you specify is well-formed XML, select **Check custom metadata XML**.

11. Click on the **Next** button to open the **Summary** page. This page shows the namespace configuration information and has a **Test** button.
12. On the **Summary** page, review the profile configuration.

If you need to change any values, use the **Previous** button to return to the page with the setting you want to change. Correct the setting and return to the **Summary** page. You can use the **Last** button to skip intervening pages.

13. Optionally, click on the **Test** button to test the connection. HCP-DM displays a message indicating whether the connection was successful. If the connection was not successful, make any needed changes and retest.



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**Note:** You may be prompted to accept an SSL server certificate. For more information, see [“Accepting the SSL server certificate”](#) on page 43.

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14. Click on the **Finish** button to close the Namespace Profile Manager wizard window.

## Modifying a namespace profile

You can change any of the properties of a namespace profile. For example, you can change the profile name or switch from using a domain name to using IP addresses.

To modify a namespace profile:

1. In the HCP-DM main window, select **File ► Namespace Profile Manager**.
2. In the **Namespace Profile Manager** window, select the namespace profile you want to modify.



3. Click on the **Edit** button to open the Namespace Profile Manager.
4. Step through the wizard pages, making the changes you want. For information on the changes you can make, see ["Creating a namespace profile"](#) on page 38.
5. When you have finished making all changes, navigate to the **Summary** page.
6. Optionally, click on the **Test** button. If you do not connect successfully, make any needed changes and retest.




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**Note:** You may be prompted to accept an SSL server certificate. For more information, see ["Accepting the SSL server certificate"](#) on page 43.

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7. Click on the **Finish** button to close the **Namespace Profile Manager** window.

## Deleting a namespace profile

To delete a namespace profile:

1. In the HCP-DM main window, select **File ► Namespace Profile Manager**.
2. In the **Namespace Profile Manager** window, select the namespace profile you want to delete.
3. Click on the **Delete** button.
4. In response to the confirming prompt, click on the **Yes** button.




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**Note:** If the profile is used by a saved job, HCP-DM returns an error. You cannot delete a namespace profile that is used by a saved job.

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## Considerations for using a domain name or IP addresses

The Namespace Profile Manager lets you choose whether to connect to HCP (or HCAP) by using a domain name or by using node IP addresses. The following sections provide information that can help you decide which method to use.



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**Note:** HCP-DM does not support using a domain name to connect to an HCP system over a network that has both IPv4 and IPv6 addresses. If the network you're using to connect to the HCP system has both IPv4 and IPv6 addresses, you need to connect to that system by IP address, and specify only the IPv4 addresses for that system.

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### Using a domain name

You can configure HCP-DM to connect to the HCP (or HCAP system) using a domain name. The following considerations apply to using a domain name:

- When DNS is in use, the HCP system chooses the access node for each request. The system uses a round-robin technique for selecting the IP addresses to help spread the load among the available HCP nodes. The system does not forward requests to unavailable nodes. HCP maintains a list of available nodes, restoring any unavailable nodes to the list when they become available again.
- If your client uses a `hosts` file to map HCP hostnames to IP addresses, the client has full responsibility for converting any domain names to IP addresses. Therefore, HCP cannot spread the load or prevent attempts to connect to an unavailable node.
- In general, you should use the domain name instead of IP addresses whenever possible.

### Using IP addresses

When you configure HCP-DM to connect using IP addresses, you specify the IP addresses of the HCP system nodes in the Namespace Profile Manager. HCP-DM alternates among the IP addresses when making requests.



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**NOTE:** HCP-DM does not support the use of IPv6 addresses for connecting to an HCP system. If the network you're using to connect to an HCP system has both IPv4 and IPv6 addresses, you need to specify only the IPv4 addresses.

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If a node is unavailable, HCP-DM resends the request to the next IP address but leaves the one it tried first in the list for use with future requests. This behavior effectively handles transient node unavailability.

If you connect using IP addresses and a node will be unavailable for a significant period of time, you can improve performance by removing the node from the IP address list in the namespace profile. If a long job is running, you can use these steps to change the IP address list:

1. Pause the job.
2. Save the job, if it hasn't yet been saved.
3. Close the job.
4. In the Namespace Profile Manager, remove the unavailable IP address from the connection settings.
5. Open and resume the job.

## Accepting the SSL server certificate

When trying to connect to the HCP system, HCP-DM displays the **Allow Security Exception** window if all of these are true:

- The namespace profile uses SSL for connection.
- The security certificate for the HCP system is not trusted by the client.
- You haven't permanently stored a security exception for the certificate.




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**Note:** By default, HCP systems use a self-signed SSL server certificate. This certificate is not automatically trusted by web browsers and other HTTP clients. You may not see the **Allow Security Exception** window if the HCP system is using a certificate from a trusted vendor.

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To accept the certificate:

1. Optionally, select the **Permanently store this exception** option to save the exception information. This prevents you from having to confirm a security exception each time you open a namespace in HCP-DM and ensures that you can run **hcpdm** commands that use this namespace profile.
2. Click on the **Confirm Security Exception** button to accept the security certificate.

3. If you are testing the connection from the Namespace Profile Manager, HCP-DM displays a message indicating whether the connection to the namespace was successful.

Click on the **OK** button.

## Setting preferences

HCP-DM preferences set default values for HCP-DM jobs. When setting preferences, you can:

- Specify the default metadata for objects copied from the local file system to a namespace. For information on metadata preferences and how to set them, see ["Setting metadata preferences"](#) on page 45.



**Note:** Metadata preferences do not affect metadata jobs.

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- Control the load a job places on the local file system or HCP (or HCAP) system and on individual nodes. For information on load preferences and how to set them, see ["Controlling the load"](#) on page 45.
- Specify the frequency at which HCP-DM logs job status information. For information on logging preferences and how to set them, see ["Configuring logging frequency for the success and failure log files"](#) on page 50.

Preferences that you set apply to the current HCP-DM session and future sessions.

To set preferences:

1. Select **Preferences** in the **Edit** menu.

The **Preferences** window opens. This window has five tabbed pages — three for metadata and one each for load and logging settings.

2. On each page, make the changes you want.

While the **Preferences** window is open, the changes you make on each page are maintained. You can click on the **Apply** button to commit the settings on all pages in the window.

3. Click on the **OK** button to commit the settings and close the window. If you click on the **Cancel** button, HCP-DM closes the window without saving any uncommitted settings.

You can override metadata preferences for objects copied from the local file system before you start a job. You can override the load preferences before you start a job and while a job is paused. You cannot override logging preferences.

For information on:

- Overriding metadata and load preferences before a copy operation, see [“Managing jobs”](#) on page 100
- Overriding load preferences during a copy operation, see [“Resetting the load schedule”](#) on page 105
- How HCP-DM sets metadata values, see [“How HCP-DM handles metadata”](#) on page 72

## Setting metadata preferences

The **Preferences** window has three pages that let you specify default metadata for files copied from the local namespace:

- **Policies** (for indexing, shredding, retention, and hold)
- **POSIX Metadata**
- **Owner**

For information on setting these preferences, see [“Setting metadata in the HCP-DM GUI”](#) on page 62

## Controlling the load

HCP-DM is multithreaded. It can create multiple concurrent connections to the HCP or HCAP system and can make multiple concurrent requests to the local file system. As a result, HCP-DM can copy or delete multiple items concurrently.

To prevent overloading the HCP system or its nodes, particularly when copying:

- You can configure the maximum number of concurrent operations that HCP-DM can perform

- You can configure reduced load settings and schedule them to take effect for a specific period each day



---

**Note:** Under normal circumstances, you should use the default load settings. For more information, see [“HCP-DM best practices”](#) on page 169.

---

## Load settings

The **Load Schedule** page in the **Preferences** window lets you configure two types of connection settings:

- **Maximum Operations per System** specifies how many concurrent connections HCP-DM can maintain with an HCP or HCAP system and determines the maximum number of concurrent copy or delete operations that HCP-DM can perform.
- **Maximum Operations per Node** specifies the maximum number of connections HCP-DM can maintain with any single node in an HCP or HCAP system and determines the maximum number of concurrent copy or delete operations that each node can perform.



---

**Note:** The maximum number of operations allowed on the local file system is the smallest of the **Maximum Operations per Node** setting and the **normalLoad.maxThreadsFilesystem** property set in the `hcpdm.properties` file. For information on the `hcpdm.properties` file, see [“Configuring HCP-DM properties”](#) on page 162.

---

## Load schedule

By default, HCP-DM uses the same set of load settings at all times for all jobs. However, you can configure HCP-DM to alternate between settings for a normal load and settings for a reduced load. The reduced load takes effect during the same period each day, including on weekends.

The **Load Schedule** page of the **Preferences** window has a pair of options that let you switch between always using the normal settings and using a schedule that alternates between normal and reduced settings.

### Configuring a normal load schedule

To always use normal load settings:

1. On the **Load Schedule** page, select the **Use normal load schedule at all times** option.

2. In the **Normal Load** section:
  - In the **Maximum Operations per System** field, type the maximum number of operations that HCP-DM can perform concurrently on an HCP or HCAP system. Valid values are integers ranging from twice the number of nodes in the system through 1,000. The default is 200.
  - In the **Maximum Operations per Node** field, type the maximum number of concurrent operations that each node can perform. Valid values are integers in the range of two through the **Maximum Operations per System** setting. The default is 20.
3. Click on the **OK** button.

### Configuring an alternating load schedule

To alternate between a normal load and a reduced load:

1. On the **Load Schedule** page, select the **Use reduced load schedule during specified times and normal load schedule the rest of the time** option.
2. In the **Normal Load** section:
  - In the **Maximum Operations per System** field, type the maximum number of concurrent operations that HCP-DM can perform. Valid values are integers ranging from twice the number of nodes in the system through 1,000. The default is 200.
  - In the **Maximum Operations per Node** field, type the maximum number of concurrent operations that each node can perform. Valid values are integers in the range of two through the **Maximum Operations per System** setting. The default is 20.
3. In the **Reduced Load** section, specify valid values in the **Maximum Operations per System** and **Maximum Operations per Node** fields.
4. In the **Start Time** and **End Time** fields, specify the start and end times for the reduced load period. You can type a time directly in each field, use the up and down arrows, or combine the two techniques. For a value you type, use this format: *hh:mm*. In this format, *hh* is hours on a 24-hour clock. These conditions apply:
  - The arrows increase or decrease the time setting by an hour each time you click on them. For example, you could type a value of 9:30 and then click on the up arrow twice to set the time to 11:30.
  - If you set an end time that's before the start time, HCP-DM treats the end time as being on the following day.
5. Click on the **Apply** button or the **OK** button.

## Configuring and using log files

HCP-DM maintains three sets of log files that contain information about a job. You can use these files to monitor job progress and determine job errors.

### Understanding job log files

HCP-DM stores the following log files in the *install-dir*/hcpdm/log directory:

- `successn.log` files provide information about successful operations.
- `failuren.log` files provide information about failed operations.
- `hcpdmn.log` files list HCP-DM errors and warnings and provide additional information about HCP-DM. These files are intended for use by service personnel.

In each case, *n* is an integer in the range 0 through 9.

HCP-DM always writes information to log files with names that end in 0 (zero), for example `success0.log`. When a log file exceeds 2,000,000 bytes, HCP-DM renames the full file to end with 1 (one) and renames any other files by increasing their numbers by one. When ten files are full, HCP-DM deletes the old file that ended with 9 before renaming the files. This technique ensures that the file ending with 0 (zero) always has the most recent log entries.



**Note:** You can configure the maximum number of files and maximum file size for each file type. For more information, see [“Controlling HCP-DM logging behavior”](#) on page 164.

HCP-DM uses the settings on the **Preferences** window **Logging** page to determine how often it writes to the success and failure logs. These settings apply to all jobs. You cannot use the **Job Details** window to change them. For more information on configuring logging, see [“Configuring logging frequency for the success and failure log files”](#) on page 50.

#### Job start and stop entries

When a job starts running, resumes, reruns, pauses, or stops, HCP-DM logs the following information to both `successn.log` and `failuren.log` files:

- Date and time in the local time zone, in this format:

*mm/dd hh:mm:ss.ms*

*hh* is the hour on a 24-hour clock. *ms* is the number of milliseconds into the current second.



- Whether the job is starting or stopping.
- Job type: copy, delete, or metadata.
- Job name. If you have not explicitly named the job, the name is a timestamp in this format:

*mm/dd/yy hh:mm:ss AM|PM*

*hh* is the hour on a 12-hour clock.

- Source profile name.
- Source directory path.
- Destination profile name (copy jobs only).
- Destination directory path (copy jobs only).
- Job ID. This is an integer value supplied by HCP-DM that is unique for each job.
- If the job has stopped, the total number of items that have been copied or deleted.

Here's a sample log entry written when a copy job stopped:

```
11/26 13:18:09.921 Stopped job{type=Copy, name="8/26/11 11:18 AM",
sourceProfile="Local File System", sourcePath="C:/finance/employees/",
destinationProfile="Europe Finance", destinationPath="/employees/"} with ID 133,
Copied 842 total objects
```

### Object entries

If HCP-DM logs every success or failure, it writes the date and time of each operation and the source path of the object or file. Failure log entries also include the reason for the failure.

Here's a sample log entry for an operation that failed because it tried to write a new version of an object that was under retention:

```
10/09 09:59:11.734 C:/finance/employees/JonBSmith/Profile.xls, 403 - The requested
operation is not allowed while writing /employees/JonBSmith/Profile.xls
```

### Interval entries

If HCP-DM updates the success and failure logs at a specified interval, the entries it writes show the date and time the information is logged, the type of job, and the number of successful or failed operations since the job started or resumed or was rerun.

Here's a sample interval log entry showing successful copy operations:

```
10/09 15:56:32.421 57 Copied 234 total objects
```



---

**Tip:** You can monitor the status of a job outside of HCP-DM by using the **tail** command (in Unix) or another utility to display entries as they're added to a given log file.

---

## Configuring logging frequency for the success and failure log files

You can configure the frequency with which HCP logs information in the `successn.log` and `failuren.log` files only in the **Preferences** window. You cannot configure logging frequency in the **Job Details** window. Changes take effect immediately and apply to all jobs that are currently running or that you start or restart after you make the changes.

You can specify separately how frequently to log successful operations and failed operations. The options are:

- No logging. With this option, HCP-DM does not write to the success and failure logs at all.
- Log a summary. With this option, HCP-DM behaves as follows:
  - It always logs the first operation, independent of the specified interval. The first interval starts immediately after the first operation.
  - If operations complete or fail during an interval, HCP-DM logs the operations when the interval completes.
  - If no operations complete or fail during an interval, HCP-DM does not write to the corresponding log at the end of the interval. Instead, it writes an entry when the next operation completes or fails, even though the operation occurs during a later interval.
- Log every file. With this option, HCP-DM writes a log entry for each object or file. This option can result in a significant I/O load on the client on which HCP-DM is running.

To configure logging frequency:

1. On the **Logging settings** page in the **Preferences** window:
  - In the **Success Logging** field, select one of these to set the logging frequency for the success log file:
    - **No logging.**
    - **Log a summary every *n* seconds (1 to 3600).** If you select this option, type the number of seconds. Valid values are integers in the range of 1 through 3,600. The default is 60 (one minute).
    - **Log every file.**
  - In the **Failure Logging** field, select the logging frequency for the failure log file. The options are the same as for the success log file.
2. Click on the **Apply** button or the **OK** button.



## Managing metadata

This chapter describes the metadata that you can set or modify using HCP-DM. It also:

- Describes how to set metadata values in the HCP-DM GUI
- Discusses how HCP-DM handles metadata when it copies objects and files and how metadata affects whether objects can be deleted

This chapter does not describe how to set metadata values in the **hcpdm** command. For that information, see [Chapter 8, “Using the hcpdm command,”](#) on page 119.

## About HCP metadata

In HCP (and HCAP), objects have system metadata and custom metadata. In releases starting with 5.0, objects in HCP namespaces can also have ACLs. System metadata consists of HCP-specific information such as retention and shred settings and, except for HCP namespaces in 3.x and 4.x releases, POSIX metadata.

HCP lets you specify metadata in these circumstances:

- You can specify several metadata values for objects created when you copy from the local file system to a namespace. You cannot specify metadata values for objects copied between namespaces.
- You can specify, change, or delete custom metadata for objects in a namespace if the namespace is configured to allow such changes.
- You can specify, change, or delete ACLs for objects in a release 5.0 or later HCP namespace if the namespace is configured to support ACLs.
- You can run a job specifically to change system metadata for objects in a namespace.

You can view metadata values for all objects in a namespace and for directories in a default namespace or HCAP archive.

## HCP-specific metadata

The table below describes the HCP-specific metadata that you can specify in HCP-DM for objects copied from the local file system. Objects have additional HCP-specific metadata that you can view in the HCP-DM GUI but cannot set. For descriptions of that metadata, see ["Properties window"](#) on page 86.

Property	Description
Hold	Prevents the object from being deleted, even if the retention setting allows deletion.
Index	<p>Specifies whether the object is marked for indexing. This property is used by the HCP metadata query engine and it can also be used by third-party applications.</p> <p>This property was introduced in HCP 3.0. Earlier releases of HCP do not support it.</p>

*(Continued)*

Property	Description
Owner	<p>Specifies the user that owns the object. Valid values are:</p> <ul style="list-style-type: none"> <li>The username of a user account that's defined in HCP.</li> <li>The username of an Active Directory® user account. This can be either the user principal name or the Security Accounts Manager (SAM) account name for the AD user account.</li> <li>No owner.</li> </ul> <p>This property is supported only for release 5.0 or later HCP namespaces.</p> <p>This is an HCP-specific object property and is not related to the POSIX UID or GID of an object.</p>
Retention	<p>Specifies how long the object must remain in the namespace before it can be deleted. For more information on retention, see <a href="#">"Retention settings"</a> on page 61.</p>
Shred	<p>Specifies whether to shred the object after it is deleted. Shredding means overwriting the place where the object was stored in such a way that none of its data or metadata can be reconstructed.</p>

## POSIX metadata

Objects have different POSIX metadata depending on the type of namespace in which they are stored:

- Objects in release 5.0 or later HCP namespaces can have POSIX ownership metadata (UID and GID), but not permission metadata.
- Objects in release 3.x or 4.x HCP namespaces do not have POSIX metadata.
- Objects in default namespaces, HCAP archives, and Unix file systems have POSIX ownership and permissions metadata.

POSIX ownership does not correspond to the HCP-specific object owner.

POSIX metadata determines what users can do with the object when accessing it on a CIFS or NFS client, but has no effect on access from HTTP or WebDAV clients.

HCP-DM does not manage POSIX metadata in local file systems.

HCP-DM does not display POSIX metadata for objects in HCP namespaces and you cannot specify POSIX metadata for objects when copying to an HCP namespace. However, existing POSIX metadata values may be preserved when copying to an HCP namespace, as follows:

- When HCP-DM copies a file from the local file system to an HCP namespace, UID, GID and POSIX permission metadata are not preserved.
- When HCP-DM copies an object from an HCP namespace, default namespace, or HCAP archive to a release 5.0 or later HCP namespace, UID, and GID metadata is preserved. Permissions are not preserved.
- When HCP-DM copies an object to an HCP namespace prior to release 5.0, POSIX metadata is not preserved.

HCP displays, and you can specify the UID, GID and permissions for objects copied from the local file system to a default namespace or HCAP archive.

For more information on POSIX metadata, see *Using a Namespace* and *Using the Default Namespace*.

## Custom metadata

Custom metadata is user-supplied information about an object. In release 6.x of HCP, objects in HCP namespaces can have multiple custom metadata annotations, including one named default, where each annotation is a discrete unit of custom metadata. In HCP namespaces in HCP releases earlier than 6.0 and in the default namespace in any release, objects can have only one unit of custom metadata.

When HCP-DM copies objects between 6.x namespaces, it copies all annotations with the objects. However, using HCP-DM, you can add, modify, or delete only the default annotation in release 6.x namespaces. In all other namespaces, HCP copies custom metadata with objects and you can add, modify, and delete any custom metadata.



Custom metadata is typically specified as well-formed XML, such as this:

```
<?xml version="1.0" ?>
<weather>
  <location>Massachusetts</location>
  <date>20100130</date>
  <duration_secs>180</duration_secs>
  <temp_F>
    <temp_high>31</temp_high>
    <temp_low>31</temp_low>
  </temp_F>
  <velocity_mph>
    <velocity_high>22</velocity_high>
    <velocity_low>17</velocity_low>
  </velocity_mph>
</weather>
```

You need to specify custom metadata in XML format if either of the following is true:

- HCP-DM checks that custom metadata is well-formed XML. You can enable or disable this option in the namespace profile configuration for HCP namespaces.
- HCP checks that custom metadata is well-formed XML. This is determined by the namespace configuration. To find out if a namespace requires custom metadata to be well-formed XML, see your namespace administrator.

You can specify custom metadata in two ways:

- Have HCP-DM read the metadata from a file when the job runs. This technique lets you use large metadata files but does not let you change the metadata when you add it.
- Enter text in HCP-DM by typing or loading it from a file. This technique supports a maximum of 32,762 bytes of metadata but lets you edit the text before you run the job.

## Access control lists

An access control list (ACL) grants permissions for individual objects to specified users or groups of users. HCP-DM accepts ACLs in XML format only.

An ACL contains up to one thousand **access control entries (ACEs)**. Each ACE specifies one user or one group of users and the permissions granted to that user or group. In the ACL body, an ACE is represented by the **grant** element.

ACLs were introduced in release 5.0 of HCP. Earlier releases of HCP do not support ACLs.

The permissions you grant to other users through an ACL must be equal to or less than the permissions that the profile user has for the object. You cannot use an ACL to grant a permission that the profile user doesn't already have.

You can specify an ACL in two ways:

- Have HCP-DM read the ACL from a file when the job runs. This technique does not let you change the ACL when you add it.
- Enter text in HCP-DM by typing or loading it from a file. This technique lets you edit the ACL before you run the job.

## ACL permissions

The following table lists the permissions you can grant through an ACL along with the operations they let you perform.

Permission	Operations
Read	<ul style="list-style-type: none"> <li>• Retrieve objects and system metadata</li> <li>• Check for and retrieve custom metadata</li> </ul>
Read_ACL	<ul style="list-style-type: none"> <li>• Check for and retrieve ACLs</li> </ul>
Write	<ul style="list-style-type: none"> <li>• Add objects</li> <li>• Create directories</li> <li>• Set and change system and custom metadata</li> </ul>
Write_ACL	<ul style="list-style-type: none"> <li>• Set, change, and delete ACLs</li> </ul>
Delete	<ul style="list-style-type: none"> <li>• Delete objects, empty directories, and custom metadata</li> </ul>

## XML format

The XML for an ACL has the format shown below. The elements at each hierarchical level can occur in any order.

```
<?xml version="1.0" ?>
<accessControlList>
  <grant>
    <grantee>
      <type>(user|group)</type>
      <name>(HCP-username|
        active-directory-username|
        active-directory-group-name|
        all_users|
        authenticated)
      </name>
      If the name element specifies an Active Directory user or
        group, include the domain element
      <domain>active-directory-domain</domain>
    </grantee>
    <permissions>
      Any combination of the following
      <permission>READ</permission>
      <permission>READ_ACL</permission>
      <permission>WRITE</permission>
      <permission>WRITE_ACL</permission>
      <permission>DELETE</permission>
    </permissions>
  </grant>
  Up to 999 additional grant elements
</accessControlList>
```

## XML elements

The XML for an ACL has a single top-level element named **accessControlList**. All ACLs must contain this element. The XML for an ACL also contains the element listed in the table below.

Element	Valid values	Description
grant	N/A	Container for the <b>grantee</b> and <b>permissions</b> elements. Identifies one user or one group of users and the permissions granted to that user or group.  An ACL can contain up to one thousand <b>grant</b> elements.
grantee	N/A	Child of the <b>grant</b> element. Container for the <b>name</b> , <b>type</b> , and <b>domain</b> elements.

*(Continued)*

Element	Valid values	Description
name	<p>One of:</p> <ul style="list-style-type: none"> <li>The username of a user account that's defined in HCP.</li> <li>The username of an Active Directory user account. This can be either the user principal name or the Security Accounts Manager (SAM) account name for the AD user account.</li> <li>The name of an Active Directory group.</li> <li><b>all_users</b>.</li> <li><b>authenticated</b>.</li> </ul>	<p>Specifies the user or group of users to which the ACL grants permissions.</p> <p>HCP has two special groups that you can specify in an ACL:</p> <ul style="list-style-type: none"> <li><b>all_users</b> — Grants permissions to all users</li> <li><b>authenticated</b> — Grants permissions to all authenticated users</li> </ul> <p>To grant permissions to one of these special groups, specify <b>group</b> in the <b>type</b> element and omit the <b>domain</b> element.</p> <p>HCP-DM returns a 400 (Bad Request) error if a given user or group is specified in more than one <b>name</b> element.</p>
type	<p>One of:</p> <ul style="list-style-type: none"> <li><b>user</b> — The <b>name</b> element specifies an HCP or Active Directory user account</li> <li><b>group</b> — The <b>name</b> element specifies an Active Directory group, <b>all_users</b>, or <b>authenticated</b></li> </ul>	<p>Specifies the type of the value specified in the <b>name</b> element.</p> <p>HCP-DM returns a 400 (Bad Request) error if the value of the <b>type</b> element doesn't correspond to the value of the <b>name</b> element.</p>
domain	The name of an Active Directory domain	<p>Specifies the Active Directory domain that contains the user account or group specified in the <b>name</b> element.</p> <p>This element is required if the <b>name</b> element specifies an Active Directory user account or group.</p>
permissions	N/A	Container for any combination of <b>permission</b> elements.

(Continued)

Element	Valid values	Description
permission	One of: <ul style="list-style-type: none"> <li>• <b>READ</b></li> <li>• <b>READ_ACL</b></li> <li>• <b>WRITE</b></li> <li>• <b>WRITE_ACL</b></li> <li>• <b>DELETE</b></li> </ul>	Child of <b>permissions</b> element. Specifies a permissions granted to the user or group specified in the <b>name</b> element.  For more information on these permissions, see <a href="#">"ACL permissions"</a> on page 58.

## Retention settings

Each object has a retention setting that determines how long the object must remain in the namespace. This can range from allowing the object to be deleted at any time to preventing the object from ever being deleted by normal operations. If an object cannot be deleted due to retention, it is said to be **under retention**.

### Default retention settings

The default retention setting for an object specifies the value that HCP sets if you copy files from the local file system to a namespace without explicitly setting a retention value in Data Migrator. HCP namespaces have a single default retention setting for all objects. Default namespaces and archives can have a different default retention setting for each directory.

Objects copied from a namespace to another namespace maintain their original retention settings.

### Retention classes

A **retention class** is a named retention setting. Retention classes facilitate consistent management of object retention. The namespace administrator defines the retention classes that are available in a namespace.

Retention classes were introduced in HCP 3.0. Earlier releases do not support them.

**Retention settings**

The table below describes the retention settings an object can have.

Setting	Description
Special value	<p>One of these:</p> <ul style="list-style-type: none"> <li>• Deletion allowed — The object can be deleted at any time.</li> <li>• Deletion prohibited — The object cannot be deleted through normal operations. HCP namespaces can be configured to allow users with special privileges to delete objects with this retention setting.</li> <li>• Initial unspecified — The object does not yet have an explicit retention setting and cannot be deleted by normal operations until a new value is set.</li> </ul>
Specific date and time	A value that HCP maintains internally as a number of seconds since January 1, 1970, at 00:00:00 UTC. In HCP-DM, you can set this value by specifying a fixed date or a duration that starts from when the object is ingested.
Retention class	A named retention setting that corresponds to a special value or to a duration that starts from when the object is ingested.

For information on how to specify retention settings in HCP-DM, see [“Specifying hold, index, retention, and shred settings”](#) on page 63.

## Setting metadata in the HCP-DM GUI

HCP-DM lets you set metadata values in these ways:

- You can specify these metadata settings to use by default when copying data from the local file system:
  - HCP-specific metadata
  - POSIX metadata

You specify the default metadata values for copy operations on the **Policies** page of the **Preferences** window. For more information on setting default values and the **Preferences** window, see [“Setting preferences”](#) on page 44.

- When you copy objects from the local file system to a namespace, you can override the default metadata values and specify custom metadata and ACLs.

You specify metadata values on the **Copy Job Details** window of a copy job. For more information on copying data using the HCP-DM GUI, see [“Copying items”](#) on page 78.

- With a metadata job, you can change the metadata of one or more existing objects. You can change these types of metadata:
  - HCP-specific metadata
  - POSIX metadata
  - Custom metadata
  - ACLs

You specify the new metadata values on the **Metadata Job Details** window of a metadata job. For more information on setting metadata using the HCP-DM GUI, see [“Setting metadata”](#) on page 82.



**Note:** You cannot set metadata for a version of an object.

---

- You can set custom metadata and ACL values when you view the properties of an object. For more information, see [“Specifying custom metadata in the object Properties window”](#) on page 89 and [“Specifying an ACL in the object Properties window”](#) on page 91.

## Specifying hold, index, retention, and shred settings

For copy and metadata jobs, you can specify explicit settings for hold, index, retention, and shred settings. You do this on the **Policies** page of the **Preferences**, **Copy Job Details**, or **Metadata Job Details** window.

For preferences and copy jobs, you can specify that the copied objects get the destination defaults for all metadata except the hold setting. For metadata jobs, you can tell HCP to leave any value unchanged.

To specify HCP-specific metadata:

- To specify the index setting, in the **Indexing** section, select one of:
  - **True**
  - **False**
  - For preferences and copy jobs, **Use destination namespace setting**
  - For metadata jobs, **Leave value unchanged**

When copying, the index setting applies only to objects that HCP-DM copies to HCP and default namespaces. It is ignored if the destination is an HCAP archive.

- To specify the shred setting, in the **Shredding** section, select one of:
  - **True**
  - **False**
  - For preferences and copy jobs, **Use destination namespace setting**.
  - For metadata jobs, **Leave value unchanged**

- To specify the retention setting:
  1. In the **Retention** section, select **Use destination namespace setting** (for preferences and copy jobs) or **Leave value unchanged** (for metadata jobs) or select a method from the **Retention Method** dropdown list.


If you select **Use destination namespace setting**, HCP-DM does not specify a retention value when copying, and namespace default setting for the destination applies.

If you select a method, one or more method-specific fields appear.

2. If you selected a method in step 1, specify the retention setting in the applicable fields.



The table below describes the possible settings for retention method.

Retention method	Description
Offset	<p>A specific length of time after the object is copied to the destination. Type integers in any combination of the <b>Years</b>, <b>Months</b>, and <b>Days</b> fields. You do not need to specify values in all the fields. HCP-DM treats empty fields as zero values.</p> <p>When you specify an offset, the retention period expires after the specified amount of time and at the time of day when the object was copied.</p>
Fixed Date	<p>A specific date. Either:</p> <ul style="list-style-type: none"> <li>Click on the calendar icon (  ) to the right of the <b>Fixed Date</b> field to display a calendar in which you can select the date.</li> <li>Type a date in this format: <i>mmm dd, yyyy</i>.</li> </ul> <p><i>mmm</i> can be the full name of the month or a three-letter abbreviation. For example:</p> <p style="margin-left: 40px;">Jan 9, 2019 February 27, 2015</p> <p>If you enter the full name, HCP displays the month as a three-character abbreviation.</p> <p>The retention period expires on the specified day, at the time of day when the object was copied.</p>
Special Value	<p>One of these:</p> <ul style="list-style-type: none"> <li><b>Deletion Allowed</b> — The object is not under retention and can be deleted at any time.</li> <li><b>Deletion Prohibited</b> — The object can never be deleted through normal methods.</li> <li><b>Initial Unspecified</b> — Retention is not defined. The object cannot be deleted until this setting is changed.</li> </ul>

*(Continued)*

Retention method	Description
Retention Class	<p>The name of a retention class defined for the destination namespace.</p> <p>HCAP archives do not support retention classes. If you specify a retention class when the destination is an HCAP archive, the copy operations fail. Copy operations also fail if you specify a retention class that is not defined for a destination HCP or default namespace.</p> <p>If you don't know the retention classes defined for your destination namespace, see your namespace administrator.</p>
Advanced	<p>A retention expression. An expression can specify:</p> <ul style="list-style-type: none"> <li>One of these special values: <ul style="list-style-type: none"> <li><b>0</b> — Deletion Allowed</li> <li><b>-1</b> — Deletion Prohibited</li> <li><b>-2</b> — Initial Unspecified</li> </ul> </li> <li>A fixed date and time in ISO 8601 format; for example, 2015-12-31T14:20:00-0500 (for 2:20 PM EST on December 31, 2015). You can also specify a number of seconds since January 1, 1970, at 00:00:00 UTC; for example, 1484604000.</li> <li>An offset from the time the object is copied into the namespace; for example, A+2y.</li> <li>A retention class, specified as the class name preceded by <b>C+</b>; for example, C+HlthReg-107.</li> </ul> <p>For more information on specifying retention settings, including more offset options, see <i>Using a Namespace</i> or <i>Using the Default Namespace</i>.</p>

- To specify the hold setting, in the Retention section, select **True** or **False** or, for metadata jobs, **Leave value unchanged**.

A hold setting of **True** specifies that the object cannot be deleted or have its retention setting changed.

To specify a hold setting of **True** for an object in an HCP namespace, the profile user must have privileged permission. If HCP-DM tries to set a hold setting of **True** for an object and the profile user does not have privileged permission, the copy or metadata operation fails.

## Configuring POSIX metadata

The **POSIX Metadata** page of the **Preferences**, **Copy Job Details**, or **Metadata Job Details** window specifies the POSIX metadata for objects created from files copied from the local file system to a default namespace or HCAP archive. The page does not appear if you are copying to or setting metadata for an HCP namespace.

To specify POSIX metadata settings:

1. For each property for which you want to set a value:
  - a. Select the metadata property. If the property is not selected, the copied object inherits the value from the destination parent directory or, for metadata jobs, the property is not changed.
  - b. Specify a value for the property, as described in the table below.

Property	Description
UID	<p>The POSIX user ID for the object owner. Valid values are integers greater than or equal to zero. If you select <b>UID</b> but do not specify a value, HCP-DM displays an error message.</p> <p>The POSIX user ID is not related to the HCP-specific object owner.</p>
GID	<p>The POSIX ID of owning group. Valid values are integers greater than or equal to zero. If you select <b>GID</b> but do not specify a value, HCP-DM displays an error message.</p> <p>The POSIX group ID is not related to the HCP-specific object owner.</p>

(Continued)

Property	Description
Object permissions	<p>The owner, group, and other permissions for copied objects. The value for each can be any combination of <b>Read</b>, <b>Write</b>, and <b>Execute</b>.</p> <p>You can set these values by selecting individual permissions or by typing a three-digit octal permission value. In either case, HCP-DM synchronizes the individual permission selections and the octal value.</p> <p>If you select <b>Object permissions</b> but do not set a value, HCP sets the value to 0 (zero), which means no permissions.</p>
Directory permissions	<p>The owner, group, and other permissions for any directories that are created when an object is ingested. The value for each can be any combination of <b>Read</b>, <b>Write</b>, and <b>Execute</b>.</p> <p>You can set these values by selecting individual permissions or by typing a three-digit octal permission value. In either case, HCP-DM synchronizes the individual permission selections and the octal value.</p> <p>If you select <b>Directory permissions</b> but do not set a value, HCP sets the value to 0 (zero), which means no permissions.</p>

- Click on the **Apply** button or the **OK** button.

## Configuring object ownership

The **Owner** page of the **Preferences**, **Copy Job Details**, or **Metadata Job Details** window lets you specify the user that owns objects copied from the local file system to a release 5.0 or later HCP namespace. Object ownership is an HCP-specific metadata property and is not related to POSIX UID.



**Note:** If you are accessing the namespace anonymously, HCP-DM does not display the **Owner** page for copy and metadata jobs.

Object ownership applies only to objects copied to release 5.0 or later HCP namespaces. Any owner specification is ignored if the destination is a release 3.x or 4.x HCP namespace, a default namespace, or an HCAP archive.

To specify the object owner, select an owner type from the dropdown list and specify the required information, if any.

The table below describes the options for object ownership.

Owner type	Description
Profile User	The object is owned by the profile user.  If you select this option and the namespace profile is configured for anonymous access, the object has no owner.
No Owner	The object has no owner.
Local User	The object is owned by a user that's defined in HCP.  Type the username of a user account that's defined in HCP.
External User	The object is owned by an Active Directory user.  Type the username of an Active Directory user account and the domain in which the account is defined.  The username can be either the user principal name or the Security Accounts Manager (SAM) account name for the AD user account.

## Specifying custom metadata for an object

The **Custom Metadata** page of the **Copy Job Details** or **Metadata Job Details** window specifies the custom metadata for objects in a copy job or metadata job.



### Notes:

- You cannot view or change custom metadata that is larger than one MB.
- For release 6.x HCP namespaces, HCP-DM works only with the default annotation.

To specify custom metadata for an object, do one of these:

- To leave custom metadata unchanged, select **Do not set custom metadata** (for a copy job) or **Do not change custom metadata** (for a metadata job).

- To get custom metadata from a file:
  1. Select **Read custom metadata from a file when the job runs**.
  2. Do either of these:
    - In the **File** field, type the absolute path to the custom metadata file.
    - Click on the **Choose File** button to display the **Open** window. Then select the custom metadata file and click on the **Open** button.



**Note:** You can delete all custom metadata by specifying an empty file.

---

- To enter custom metadata directly or delete all custom metadata:
  1. Select **Use custom metadata text entered below**.
  2. In the **Custom Metadata** field, type new custom metadata or edit the existing custom metadata. To delete all custom metadata, delete the entire contents of the field.

The custom metadata you type into the **Custom Metadata** field can be at most 32,672 bytes long.



**Note:** If you're deleting all custom metadata, ensure that the field does not contain any white-space characters, including return characters. If the field is not completely empty, HCP-DM displays an error message.

---

When you click on the **Run** button to start the copy or metadata job or click on the **Save** button to save the job, HCP-DM does one of these:

- If custom metadata XML checking is enabled for the namespace profile or the namespace itself and the custom metadata XML is well-formed, HCP-DM sets or replaces the custom metadata.
- If custom metadata XML checking is enabled for the namespace profile or the namespace itself and the custom metadata XML is not well-formed, HCP-DM displays an error message. In this case:
  1. Click on the **OK** button to dismiss the message.

2. Correct the error.
  3. Click on the **Run** or **Save** button again.
- If custom metadata XML checking is not enabled, HCP-DM replaces or sets the custom metadata.
  - If you selected **Use custom metadata text entered below** and the **Custom metadata** field is empty or if you selected **Read custom metadata from a file when the job runs** and the file is empty, HCP-DM does not set (for a copy operation) or deletes (for a metadata operation) the custom metadata.

## Specifying an ACL for an object

The **ACL** page of the **Copy Job Details** or **Metadata Job Details** window specifies the ACL for objects in a copy job or metadata job.



**Note:** You cannot view or change an ACL that is larger than one MB.

---

To specify the ACL for an object, do one of these:

- To leave ACL unchanged, select **Do not set ACL** (for a copy job) or **Do not change ACL** (for a metadata job).
- To get the ACL from a file:
  1. Select **Read ACL from a file when the job runs**.
  2. Do either of these:
    - Type the absolute path to the ACL file in the **File** field.
    - Click on the **Choose File** button to display the **Open** window. Then select the ACL file and click on the **Open** button.



**Note:** You can delete an ACL by specifying an empty file.

---

- To enter an ACL directly or delete an ACL:
  1. select **Use ACL text entered below**.

2. In the **ACL** field, type the new ACL or edit the existing ACL. To delete an ACL, delete the entire contents of the field.

The ACL you type in the **ACL** field can be at most 32,672 bytes long.



---

**Note:** If you're deleting an ACL, ensure that the field does not contain any white-space characters, including return characters. If the field is not completely empty, HCP-DM displays an error message.

---

When you click on the **Run** button to start the copy or metadata job or click on the **Save** button to save the job, HCP-DM does one of these:

- If the ACL XML is well-formed, HCP-DM sets or replaces the ACL.
- If the ACL XML is not well-formed, HCP-DM displays an error message. In this case:
  1. Click on the **OK** button to dismiss the message.
  2. Correct the error.
  3. Click on the **Run** or **Save** button again.
- If you selected **Use ACL text below** and the ACL field is empty or if you selected **Read ACL from a file when the job runs** and the file is empty, HCP-DM does not set (for a copy operation) or deletes (for a metadata operation) the ACL.

## How HCP-DM handles metadata

When HCP-DM copies items from one location to another, the metadata for the copies depends on the destination type, destination configuration, HCP-DM configuration, and source item. Also, the metadata for an object (in addition to the namespace configuration and data access permissions) determines whether HCP-DM can delete the object.

### Copying to the local file system

When HCP-DM copies items to the local file system, the file metadata such as modified time or POSIX **ctime** is set by the destination operating system. HCP-DM does not set metadata for files on the local file system and does not copy any custom metadata or ACLs to the local file system.



## Copying to a namespace

When HCP-DM copies items to a namespace, how metadata is set depends on the source and destination types and the specific property.

### Source-independent rules

For all objects and files copied to a namespace, the ingest time and **ctime**, **atime**, and **mtime** values (if applicable) are set to the time the object or file is added to the destination, not the time the original object or file was added to the source.

### Copying from the local file system to any namespace

When you copy files from the local file system to a namespace, HCP-DM applies the metadata settings specified in the **Job Details** window to all resulting objects. The HCP-DM preferences determine the HCP-specific and POSIX metadata values that appear by default in the **Job Details** window.

In the **Job Details** window, you can specify that the objects get their metadata values from the destination namespace. For HCP namespaces, default metadata values are defined in the namespace configuration. For default namespaces and HCAP archives, default metadata values are defined per directory.

### Copying from the local file system to a release 5.0 or later HCP namespace

When you copy files from the local file system to a release 5.0 or later HCP namespace, the owner of the resulting objects is determined by the owner specified in the **Job Details** window. These considerations apply:

- If you are accessing the namespace as an authenticated user and you specify an owner type of **Local User**, **External User**, or **No Owner**, the profile user must have change owner permission. If you specify one of these owner types and the profile user does not have change owner permission, the namespace rejects the objects, and HCP-DM returns a 403 (Forbidden) error.
- If you are accessing the namespace anonymously, the GUI does not display the **Owner** page and you cannot specify an owner.

### Copying between any two namespaces

These considerations apply when you copy objects between namespaces of any type:

- Except for the ingest time and **ctime**, **atime**, and **mtime** values (if applicable), HCP-DM applies the metadata settings from the source objects to the objects added to the destination.

- If the object being copied has a particular metadata value that is not supported in the destination, the destination accepts the object but HCP-DM does not set that metadata value on the object.

For example, when you copy an object from the default namespace to a release 3.x or 4.x HCP namespace, the resulting object has no POSIX metadata.

- If the object being copied does not have a particular metadata value that is supported in the destination (for example, HCAP 2.6 objects do not have index settings while HCP 6.x objects do), HCP-DM applies the default setting for the destination.
- If the object retention setting is a retention class and the class is defined in the destination, the retention class of the copy is the same as that of the original object. If the retention value of the retention class is an offset, the retention period of the copy starts from the time the object is copied.
- If the object retention setting is a retention class and the class is not defined in the destination, the destination does not accept the object, and HCP-DM returns a 400 (Bad Request) error.
- If the object retention setting is not a retention class, the retention setting of the copy is the same as that of the original object. Therefore, the retention period for the copy ends at the same time as the retention period for the original object.
- If the source namespace and destination namespace support multiple annotations per object, HCP-DM copies all annotations. If the destination namespace does not support multiple annotations, HCP-DM copies only the default annotation, if it exists.
- HCP-DM does not copy ACLs to release 3.x or 4.x HCP namespaces, default namespaces, or HCAP archives.

### **Copying between release 5.0 or later HCP namespaces**

These considerations apply when you copy objects between two release 5.0 or later HCP namespaces:

- If the profile user for the destination has change owner permission, copies retain their original owners.

- If the profile user for the destination does not have change owner permission:
  - If the source and the destination belong to the same tenant and the destination profile user owns objects in the source, the destination accepts only those objects. The destination profile user also owns the copies.
  - The destination rejects objects owned by other users or that have no owner, and HCP-DM returns a 403 (Forbidden) error.




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**Tip:** For full functionality, profile users for release 5.0 or later HCP namespaces should have change owner permission.

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- If the object being copied has an ACL and ACLs are not enabled for the destination, the destination does not accept the object, and HCP-DM returns a 400 (Bad Request) error.
- If the destination profile is configured for anonymous access, the destination accepts only objects that have no owner. The destination rejects objects that have an owner, and HCP-DM returns a 403 (Forbidden) error.

## Deleting and purging objects

The following rules apply to deleting and purging objects:

- If an object is on hold, HCP-DM cannot delete or purge the object.
- If an object in an HCP namespace is under retention or has a retention value of **Initial Unspecified**, HCP-DM must use a privileged delete operation to delete the object, and the profile user must have delete and privileged permissions. Otherwise, HCP-DM cannot delete the object.

For information on privileged delete, see [“Deleting or purging items”](#) on page 80.

- To purge all versions of an object, the delete job must use a purge operation, and the profile user must have delete and purge permissions. Otherwise, HCP-DM cannot purge the object. If the

object is under retention, the delete job must use a privileged purge operation, and the profile user must have delete, purge, and privileged permission.

For information on purging versions, see ["Deleting or purging items"](#) on page 80.

- If an object in a default namespace or HCAP archive is under retention or has a retention setting of **Initial Unspecified** or **Deletion Prohibited**, HCP-DM cannot delete the object.

# Working with items in the HCP-DM GUI

This chapter describes how to use the HCP-DM GUI to interactively manage items in namespaces, archives, and the local file system. The HCP-DM GUI lets you:

- Copy one or more items, including directories and their subdirectories, from one directory to another.
- Copy an old version of an object.
- Delete one or more items, including complete directory trees, from a directory. For HCP namespaces, the operation can be configured to delete objects that are under retention and to purge all versions of objects if the profile user has the required permissions.
- Set the metadata for one or more objects in a namespace.
- List the versions of an object in an HCP namespace.
- Open an object, an old version of an object, or a file.
- Rename an individual file or directory on the local file system.
- View the properties of an item, including an old version of an object.
- Set, change, or delete the custom metadata for an object.



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**Note:** HCP-DM can modify the default annotation only.

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- Set, change, or delete the ACL for an object.

- Create an empty directory.

This chapter describes these procedures. For an introduction to the HCP-DM GUI see [“The HCP Data Migrator GUI main window”](#) on page 28.

## Copying items

You can copy objects, old versions of objects, files, symbolic links, and directories.

These considerations apply when copying items:

- For each object to be copied, the length of the destination directory path plus the length of the object name can be at most 4,095 bytes long. Any attempt to copy an object that does not meet this requirement will fail. If each character in a path requires one byte, the path can be up to 4,095 characters long. If any characters in a path require two or more bytes, the additional bytes reduce the maximum number of characters.
- You can copy a symbolic link only to a release 6.x HCP namespace. You cannot copy symbolic links to the default namespace, releases prior to 6.0, or a Windows file system. You cannot copy a symbolic link from the default namespace or from a release earlier than 6.0.
- You cannot copy to a version listing. For HCP namespaces, a directory history list can include version listings in addition to directories. If you navigate using the history list, make sure you select a directory path, not a version listing.

To copy items:

1. Select the source profile and directory in the source panel. Skip this step if want to drag and drop items from a source such as Windows Explorer or the Konqueror™ file manager.

To copy an old version of an object from an HCP namespace, open the version list for the object by double-clicking on the object name.

2. Select the destination profile and directory in the destination panel.



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**Tip:** Each HCP-DM panel can serve as the source or destination. To limit the chance for errors, consider always using the lefthand panel for the source.

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3. In the source directory, select the items to be copied. You can use the Ctrl and Shift keys to select multiple items and ranges of items.




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**Notes:**

- You cannot display or copy more than one thousand items using the navigation panels. To specify a larger number of items, use a job file.
  - You can select only a single version of an object from a version list. Therefore, a copy operation that copies an old version of an object can copy only that single version and no other versions or objects.
- 

4. To start the operation, do either of these:

- Click on the double-arrow button that points from the source panel to the destination panel.




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**Tip:** If the double-arrow buttons are grayed, check whether a **Job Details** window from a previous job is still open and is hidden under other windows.

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- Drag the selected items from the external application to the destination panel. You cannot drag between panels.

The **Job Details** window appears.

5. Optionally, tell HCP-DM to treat conflict errors (errors with HTTP code 409) as success:
  - a. Click on the **Options** tab.
  - b. On the **Options** page, select, **Treat conflict (409) errors as success**.

For more information on this option, see [“Handling conflict errors”](#) on page 164.

6. Review the job configuration and make any changes you want, for example:
  - You can to specify a custom load setting for the job.
  - If you’re copying from the local file system to a namespace, you can override the HCP-specific metadata and owner preferences.

- If you're copying from the local file system to a namespace, you can specify custom metadata to apply to all objects being copied.
- If you're copying from the local file system to a release 5.0 or later HCP namespace that supports ACLs, you can specify an ACL to apply to all objects being copied.

For information on specifying custom load settings, see ["Controlling the load"](#) on page 45.

For information on setting metadata, including custom metadata, object ownership, and ACLs, see ["Setting metadata in the HCP-DM GUI"](#) on page 62.

7. Click on the **Run** button.

If custom metadata XML checking is enabled for either the namespace profile or the namespace itself, any custom metadata you specified must be well-formed XML. If the custom metadata is not well-formed XML, HCP-DM displays an error message. In this case, fix the metadata and click on the **Run** button again.

If you specified an ACL, HCP-DM checks it to make sure that it is well-formed XML. If the ACL is not well-formed XML, HCP-DM displays an error message. In that case, fix the ACL and click on the **Run** button again.

HCP-DM starts copying the selected items. You can monitor the job as described in ["Monitoring job progress"](#) on page 97.

## Deleting or purging items

You can use either navigation panel to delete one or more items, including directories. In HCP namespaces, after you choose the delete operation, you can convert it to a purge, privileged delete, or privileged purge operation:

- A purge operation deletes all versions of an object, not just the current version.
- A privileged delete operation deletes an object regardless of whether it's under retention.
- A privileged purge operation purges an object regardless of whether it's under retention.



Privileged delete privileged purge operations require the profile user to have privileged permission.

You cannot delete or purge individual old versions of an object or objects that are on hold. Also, namespaces can be configured to prevent deletion or purging of objects under retention, even through privileged operations.

To delete or purge items:

1. In either navigation panel, select the profile you want and the directory containing the items you want to delete or purge.
2. In the navigation panel, select the items to delete or purge.
3. Do either of these:
  - In the navigation panel, right-click to display a popup menu. Then select **Delete**.
  - In the **File** menu, select **Delete**.

The **Job Details** window appears with the **Items** page displayed.

4. Review the items listed on the **Items** page to make sure you selected the items you want.
5. Optionally, change the delete operation to a purge, privileged delete, or privileged purge operation:
  - a. Click on the **Options** tab.
  - b. On the **Options** page, select the type of operation you want.
  - c. If you selected **Privileged Delete** or **Privileged Purge**, type a reason in the **Reason** field. The reason must be from one through 1,024 characters long and can include special characters and spaces.

If you select an operation for which you do not have the required permissions, the operation fails for all objects.




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**Note:** You cannot change the type of operation after you start the delete job, not even while the job is paused.

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6. Click on the **Run** button.

HCP-DM starts deleting the selected items. You can monitor the job as described in ["Monitoring job progress"](#) on page 97.

When you delete or privileged delete objects in an HCP namespace that has versioning enabled, the deleted items in the navigation panel turn gray. In all other cases, HCP-DM removes the deleted items from the list.

## Setting metadata

To set metadata for multiple objects:

1. In either navigation panel, select the objects and directories containing objects for which you want to set metadata. You can use the Ctrl and Shift keys to select multiple items and ranges of items.



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**Note:** You cannot display or set metadata for more than one thousand items using the navigation panels. To specify a larger number of items, use a job file.

---

2. To start the operation, do either of these:
  - In the navigation panel, right-click to display a pop-up menu. Then click **Set Metadata**.
  - In the **File** menu, select **Set Metadata**.

The **Metadata Job Details** window appears.

3. Review the job configuration and change the metadata settings as needed. For information on how to set specific metadata values, see ["Setting metadata in the HCP-DM GUI"](#) on page 62.
4. Optionally, specify a custom load setting for the job. For information on specifying custom load settings, see ["Controlling the load"](#) on page 45.
5. Click on the **Run** button.

If custom metadata XML checking is enabled for either the namespace profile or the namespace itself, any custom metadata you specified must be well-formed XML. If the custom metadata is not well-formed XML, HCP-DM displays an error message. In this case, fix the metadata and click on the **Run** button again.

HCP-DM starts updating the selected items. You can monitor the job as described in ["Monitoring job progress"](#) on page 97.

## Listing object versions

If versioning is enabled for an HCP namespace, you can view a list of the versions of each object. The list of the versions of an object contains both old versions and records of deletion operations.

To list the versions of an object:

1. Select the namespace profile you want and the directory containing the object.
2. Double-click on the object.

The version list appears in the navigation panel.

The version list is similar to a list of objects in a directory, with these differences:

- The entry in the address control has this format:

Versions for: *object-spec*

- The first column of the list contains the version number, not the object name.
- Records of deletion operations are grayed.

In a version list, you can double-click on any version to open that version, but you cannot open a deletion record. You can also right-click on a selected version to get a menu that lets you open the version or display its properties.

## Opening objects, versions, and files

You can open an object, an old version of an object, or a file from either navigation panel. The procedure for opening objects and old versions depends on whether versioning is enabled and, if so, which version you want to open.

### **Opening an object when versioning is not enabled or opening a file**

To open an object in a namespace that does not have versioning enabled or to open a file:

1. Select the profile and the directory that contains the object or file you want.

2. Do one of these:

- Double-click on the item you want to open.
- Select the item and press the Enter key.
- Select the item and right-click to display a popup menu. Then select **Open**.
- Select the item. Then select **Open** in the **File** menu.

**Opening the current version of an object when versioning is enabled**

To open the current version of an object in a namespace that has versioning enabled:

1. Select the profile and the directory that contains the object you want.
2. Select the object.
3. Do either of these:
  - Right-click to display a popup menu. Then select **Open**.
  - In the **File** menu, select **Open**.

**Opening a specific version of an object**

To open a specific version of an object:

1. Select the profile and the directory that contains the object you want.
2. Do either of these:
  - Double-click on the object with the version you want to open.
  - Select the object with the version you want to open and press the Enter key.
3. In the list of versions, do one of these:
  - Double-click on the version you want to open.
  - Select the version you want to open and press the Enter key.
  - Select the version you want to open and right-click to display a popup menu. Then select **Open**.

- Select the version you want to open. Then select **Open** in the **File** menu.

## Renaming files and directories in the local file system

To rename a file or directory in the local file system:

1. Select the local file system and the directory containing the item you want to rename.
2. Select the file or directory you want to rename.
3. Do either of these:
  - Right-click to display a popup menu. Then select **Rename**.
  - In the **File** menu, select **Rename**.
4. In the **Rename File** or **Rename Directory** window, type the new name for the item. Names are subject to the naming conventions of the client platform.
5. Click on the **OK** button.

## Viewing and managing item properties

HCP-DM can display detailed properties for these types of items:

- Objects
- Individual versions of objects
- Files
- Symbolic links
- Directories in the local file system, default namespaces, and archives

You cannot view properties for directories in HCP namespaces.

You view properties in the **Properties** window. For an object or version, this window has two tabbed pages, **System Metadata** and **Custom Metadata**. For an object or version in a release 5.0 or later HCP namespace, this window also has an **ACL** page. For a file or directory, the window has a single page.

The information displayed in the **Properties** window depends on the type of namespace and type of item.

## Viewing properties

To view the properties of an item:

1. Select the profile you want and the directory containing the item you want.
2. If the item you want is an old version of an object, double-click on the object entry to open the version list.
3. Select the item whose properties you want to view.
4. Do either of these:
  - Right-click to display a popup menu. Then select **Properties**.
  - In the **File** menu, select **Properties**.

## Properties window

The table below describes the properties that can appear in the **Properties** window.

Property	Applies to	Description
<i><b>File/directory Properties window and System Metadata page of the object Properties window</b></i>		
Name	All	Object, file, symbolic link, or directory name.
Path	All	The path from the root of the namespace or file system to the object, file, symbolic link, or directory.
Type	All	The item type: <b>Object</b> , <b>File</b> , <b>Symlink</b> , or <b>Directory</b> .
Symlink Target	Symbolic links in HCP release 5.0 and later namespaces and in local file systems that support them	The path of the target of the symbolic link relative to the current directory.  HCP does not display this information for symbolic links in the default namespace.
Size	All objects and files	The object or file size.
Modified Time	Objects and directories in the local file system	The date and time the file or directory was last modified.
Ingested Time	Objects in all namespaces	The date and time the object was ingested or the directory was created.

(Continued)

Property	Applies to	Description
DPL	Objects in all namespaces	The data protection level (DPL) for the object.
Hash Algorithm	Objects in all namespaces	The cryptographic hash algorithm used to calculate the cryptographic hash value for the object.
Hash Value	Objects in all namespaces	The cryptographic hash value for the object.
Index	Objects and directories in HCP and default namespaces	For objects, the index setting for the object: <b>true</b> or <b>false</b> .  For directories in default namespaces, the default index setting for objects added to the directory.
Shred	Objects and directories in all namespaces	For objects, the shred setting for the object: <b>true</b> or <b>false</b> .  For directories in default namespaces and archives, the default shred setting for objects added to the directory.
Retention Value	Objects in all namespaces	The Retention setting for the object.
Retention Class	Objects assigned to a retention class in namespaces	The name of the retention class to which the object is assigned.  This property is not displayed if the object is not assigned to a retention class.
Hold	Objects in all namespaces	The hold setting for the object: <b>true</b> or <b>false</b> .
Changed Time (ctime)	Objects and directories in default namespaces and HCAP archives	The POSIX <b>ctime</b> value for the object or directory.
Modified Time (mtime)	Objects and directories in default namespaces and HCAP archives	The POSIX <b>mtime</b> value for the object or directory.
Accessed Time (atime)	Objects and directories in default namespaces and HCAP archives	The POSIX <b>atime</b> value for the object or directory.
UID	Objects in release 5.0 or later HCP namespaces  Objects and directories in default namespaces and HCAP archives	The POSIX UID for the object or directory.  In release 5.0 or later HCP namespaces, this value is displayed only for certain objects. For more information, see <a href="#">"POSIX metadata"</a> on page 55.

*(Continued)*

Property	Applies to	Description
GID	Objects in release 5.0 or later HCP namespaces  Objects and directories in default namespaces and HCAP archives	The POSIX GID for the object or directory.  In release 5.0 or later HCP namespaces, this value is displayed only for certain objects. For more information, see <a href="#">"POSIX metadata"</a> on page 55.
Permissions	Objects and directories in default namespaces and HCAP archives	The POSIX permissions for the object or directory.
Version	Objects in HCP namespaces	The version ID of the object or object version.
Replicated	Objects in HCP and default namespaces	An Indication of whether the object has been replicated to another HCP system: <b>true</b> or <b>false</b> .
State	Objects and symbolic links in HCP namespaces	The state of the object or object version. Either: <ul style="list-style-type: none"> <li>• <b>created</b> – The object has not been deleted or the version is not a deletion record.</li> <li>• <b>deleted</b> – The object has been deleted or the version is a deletion record.</li> </ul>
Owner	Objects in release 5.0 or later HCP namespaces	The object owner. This value can be one of: <ul style="list-style-type: none"> <li>• The username of a user account that's defined in HCP.</li> <li>• The username of an Active Directory user account. This can be either the user principal name or the Security Accounts Manager (SAM) account name for the AD user account.</li> <li>• If the object was added by an authenticated user before the HCP system was upgraded from a release earlier than 5.0 to release 5.0 or later, <b>nobody</b>. The object effectively has no owner</li> <li>• If the object has an owner that HCP can no longer identify by username, a unique ID.</li> </ul> <p>For example, you would see a unique ID if the owner user account has been deleted.</p> <p>This property is not displayed if the object has no owner.</p>



(Continued)

Property	Applies to	Description
Domain	Objects in release 5.0 or later HCP namespaces	<p>The Active Directory domain in which the user account of the object owner is defined.</p> <p>If the value of the owner field is a unique ID or <b>nobody</b>, the value of the domain field is one of several invalid domains that begin with the percent sign (%). These domain values have meanings internal to the HCP system.</p> <p>This property is not displayed if the object is owned by a user that's defined in HCP or if the object has no owner.</p>
Annotations	Objects in release 6.x HCP namespaces	A list of annotation names. This entry appears only if the object has annotations.
<b>Custom Metadata page of the object Properties window</b>		
N/A	Objects in all namespaces	The Custom metadata for the object, if any. For HCP 6.x, this is the value of the default annotation.
<b>ACL page of the object Properties window</b>		
N/A	Objects in release 5.0 or later HCP namespaces	<p>The ACL XML for the object, if any.</p> <p>If an access control entry specifies a user or group that HCP cannot identify by name, the name entry contains a unique ID. In this case, the value of the domain entry is one of several values beginning with the percent sign (%). These values have meanings internal to the HCP system.</p>

## Specifying custom metadata in the object Properties window

You can use the object **Properties** window to add, edit, or delete custom metadata for an object in a directory list. You cannot change custom metadata using an entry in a version list, even if the entry is the current version.

This technique has the following limitations:

- You can change custom metadata for only one object at a time.
- You cannot view or change custom metadata that is larger than one MB.
- You need to type or copy the metadata directly into the window. You cannot read the metadata from a file

For a technique that lets you change the metadata for multiple objects in one operation and get custom metadata from a file, see [“Setting metadata”](#) on page 82.

To add, modify, or delete custom metadata for an object:

1. Display the object properties, as described in [“Viewing and managing item properties”](#) on page 85.
2. Click on the **Custom Metadata** tab.

The **Custom Metadata** page shows any custom metadata currently associated with the object. For HCP release 6.x, it shows the contents of the default annotation.

3. Type new custom metadata or modify the existing custom metadata. To delete all custom metadata, delete the entire contents of the page.
4. Click on the **Save** button.

HCP-DM displays a confirming message.

5. In the message window, click on the **Yes** button:
  - If custom metadata XML checking is enabled for the namespace profile or the namespace itself and the custom metadata XML is well-formed, HCP-DM replaces the custom metadata.
  - If custom metadata XML checking is enabled for the namespace profile or the namespace itself and the custom metadata XML is not well-formed, HCP-DM displays an error message. In this case:
    1. Click on the **OK** button to dismiss the message.
    2. Correct the error.
    3. Click on the **Save** button again.
  - If custom metadata XML checking is not enabled, HCP-DM replaces the existing custom metadata with the new custom metadata.

- If the page is empty, HCP-DM deletes the custom metadata.



**Note:** If you're deleting all custom metadata, ensure that the page does not still contain any white-space characters, including return characters. If the page is not completely empty, HCP-DM displays an error message.

## Specifying an ACL in the object Properties window

You can add, modify, or delete an ACL for an object in a directory list. You cannot change an ACL using an entry in a version list, even if the entry is the current version.

This technique has the following limitations:

- You can change the ACL for only one object at a time.
- You cannot view or change an ACL that is larger than one MB.
- You need to type ACL text directly into the window. You cannot read the ACL from a file.

For a technique that lets you change the ACL for multiple objects in one operation and get an ACL from a file, see ["Setting metadata"](#) on page 82.

To add, modify, or delete an ACL for an object:

1. Display the object properties, as described in ["Viewing and managing item properties"](#) on page 85.
2. Click on the **ACL** tab.

The **ACL** page shows the ACL currently associated with the object, if any.

3. Type a new ACL or modify the existing ACL. To delete an ACL, delete the entire contents of the page.

For information on specifying ACLs, see ["Access control lists"](#) on page 57.

4. Click on the **Save** button.

HCP-DM displays a confirming message.

5. In the message window, click on the **Yes** button:
  - If the ACL XML is well-formed or the page is empty, HCP-DM replaces or deletes the XML.
  - If the ACL XML is not well-formed, HCP-DM displays an error message. In this case:
    1. Click on the **OK** button to dismiss the message.
    2. Correct the error.
    3. Click on the **Save** button again.



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**Note:** If you are deleting the entire ACL, ensure that the page does not still contain any white space characters, including return characters. If the page is not completely empty, HCP-DM displays an error message.

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## Creating empty directories

To create an empty directory in a namespace or the local file system:

1. Select the profile and the directory in which you want to create the new directory.
2. Ensure that nothing is selected in the navigation panel.
3. In the navigation panel, right-click to display a popup menu. Then select **New Directory**.
4. In the **New Directory** window, type a name for the new directory. Directories in the local file system are subject to the naming conventions of the client platform.
5. Click on the **OK** button.

# Managing jobs in the Job Details window

This chapter describes how to use the HCP-DM **Job Details** window to monitor and manage a job. It also describes the log files that provide information about a job.

## About the Job Details window

The **Job Details** window appears when you request an operation. For example, the window appears when you click on the double-arrow button for a copy job or when you select **Delete** from the **File** or popup menu for a delete job.

The **Job Details** window lets you control copy and delete jobs and view status as a job progresses. The window title includes the type of job (**Copy** or **Delete**). If you've saved the current job, the window title also includes the job name.

### Top section

The top section of the **Job Details** window displays the information listed in the table below.

Field	Description
Source Profile	The name of the profile for the source namespace for a copy job or the namespace from which items are being deleted.
Source Directory	The path to the directory containing the items to be copied or from which items are being deleted.
Destination Profile (copy only)	The name of the profile for the destination namespace.
Destination Directory (copy only)	The path to the directory to which the items are being copied.
State	The state of the job in the operation workflow. The value is one of <b>Not Started</b> , <b>Preparing to Restart</b> , <b>Running</b> , <b>Paused</b> , <b>Completed</b> , or <b>Failed</b> . For more information on job states, see <a href="#">"Job flow"</a> on page 26.
Error	The error message for an error that caused the job to fail. This field appears only if HCP-DM encountered an error that caused it to stop processing the job before the job completed. The field does not appear for errors in individual operations.

## Bottom section

The bottom section of the **Job Details** window has tabbed pages. The available pages and whether you can change the settings on them depend on the type of operation and the job state, as described in the table below.

Page	Applicable operations	Changeable	Description
Progress	All	No	Displays operation progress and detailed information on the status of individual items. For more information on this page, see <a href="#">"Monitoring job progress"</a> on page 97.
Items	All	No	<p>Lists up to one thousand items in the job. However, if you specified more than one thousand items in the job, HCP-DM copies or deletes all the items you specified.</p> <p>If you initially started the job from a job file, the top of this page displays the job file path.</p> <p>If you run a job from a job file and change the file while the job is running, HCP-DM copies or deletes only the items specified in the initial file. The <b>Items</b> page, however, reflects the changed file.</p>
POSIX Metadata	Copy from local file system to a default namespace or archive	Before the job starts	<p>Specifies the POSIX UID, GID, and permission values to apply to the objects created by the copy operation.</p> <p>This page is the same as the <b>POSIX Metadata</b> page in the <b>Preferences</b> window.</p>
Options	Copy	Before the job starts	<b>Treat Conflict (409) Errors as Success:</b> Determines whether to include objects with conflict errors in the failures or successes exported job results file.
	Delete	Before the job starts	<b>Operation:</b> Specifies the type of delete operation: delete, purge, privileged delete, or privileged purge. For privileged operations, the <b>Options</b> page also specifies the reason for the operation.
Policies	Copy from local file system to a namespace	Before the job starts	<p>Specifies the index, shred, retention, and hold settings to apply to objects resulting from the copy operation.</p> <p>This page is the same as the <b>Policies</b> page in the <b>Preferences</b> window.</p>

(Continued)

Page	Applicable operations	Changeable	Description
Owner	Copy from local file system to a release 5.0 or later HCP namespace	Before the job starts	<p>Specifies the user that owns the objects created by the copy operation.</p> <p>To specify an owner other than the profile user, including no owner, the profile user must have change owner permission.</p> <p>This page is the same as the <b>Owner</b> page in the <b>Preferences</b> window.</p> <p>If you are accessing the namespace anonymously, HCP-DM does not display this page.</p>
Custom Metadata	Copy from local file system to a namespace	Before the job starts	Specifies custom metadata to associate with the objects created by the copy operation.
ACL	Copy from local file system to a release 5.0 or later HCP namespace	Before the job starts	Specifies an ACL to associate with the objects created by the copy operation.
Load Schedule	All	Before the job starts, while it is paused, or after it completes or fails	<p>Specifies the number of connections to the source and destination systems.</p> <p>This page is the same as the <b>Load Schedule</b> page in the <b>Preferences</b> window.</p>

For information on:

- Using the **Options** page to specify the type of delete operation for the job, see [“Deleting or purging items”](#) on page 80.
- Specifying metadata, including using the **Properties**, **Owner**, **Custom Metadata**, and **ACL** pages, see [“Setting metadata in the HCP-DM GUI”](#) on page 62
- Setting load values, see [“Controlling the load”](#) on page 45. For information on using the **Load Schedule** page to change the load for a job that’s in progress, see [“Resetting the load schedule”](#) on page 105.



## Monitoring job progress

The **Progress** page is automatically updated as the operation progresses. The table below describes the sections on the **Progress** page.


Section	Description
Metrics	Summary information about the items that have been processed. For more information, see <a href="#">"Metrics section"</a> below.
Progress and Performance	Summary information on the operation progress: <ul style="list-style-type: none"> <li>The average number of items copied, deleted, or updated per second during the last ten seconds.</li> <li>For copy and metadata operations only, the average rate at which data, including custom metadata, was transferred during the last ten seconds.</li> <li>A progress bar that shows the progress of the operation. Until one percent of the job is complete or the first object is copied, if it makes up more than one percent of the job, a small blue bar moves back and forth across the progress bar. Thereafter, the bar indicates the job completion status.</li> </ul>
Additional Details	Three tabbed pages containing the detailed status of items being copied or deleted. For more information on these pages, see <a href="#">"Additional Details section"</a> on page 99.

## Metrics section

The table below describes the fields in the **Metrics** section.

Label	Value
Total objects to copy or Total objects to delete or Total objects to update	For a copy job, the number of objects or files to be copied. This value can be lower than the <b>Objects found</b> entry, which also includes directories.  For a delete job, the number of items, including directories, to delete.  For a metadata job, the number of items for which to set metadata
Total data size to copy	The total size of the objects or files to be copied. This field is not present for a delete or metadata job.
Start or resume time	The time the operation was started or, if it had been paused or closed, resumed.

(Continued)

Label	Value
Run time	<p>The amount of time the operation has been running or, if the job is stopped, took to run. This time includes the time spent processing before the first item is copied, deleted, or updated, but not any time during which the job was paused or closed.</p> <p> <b>Note:</b> When you resume a job that terminated abnormally, this value is initially one second. As the job runs, the value increments normally, but does not reflect the time the job ran before you resumed it.</p>
Objects found	<p>The number of directories and objects or files HCP-DM has found for the job.</p> <p>Before HCP-DM can copy or delete the items in a job it must recursively walk through any directories specified in the job and find all their contents. This process is called <b>discovery</b>.</p> <p>For very large directory trees, discovery can take a significant amount of time. The <b>Objects found</b> value is an approximate count of the items found so far. You can use this value to monitor progress during the early stages of a job.</p>
Objects pending	<p>For a copy job, the number and total size of the objects or files, but not directories, that have been found but haven't yet been copied.</p> <p>For a delete job, the number and total size of the objects or files, but not directories, that have been found but haven't yet been deleted.</p> <p>For a metadata job, the number of objects that have been found but haven't yet been updated.</p>
Objects succeeded	<p>For a copy job, the number and total size of the objects or files that have been copied.</p> <p>For a delete job, the number of items, including directories, that have been deleted.</p> <p>For a metadata job, the number of objects that have been found but have been updated.</p>

*(Continued)*

Label	Value
Objects failed	<p>For a copy job, the number and total size of the objects or files that could not be copied due to errors encountered by HCP-DM.</p> <p>For a delete job, the number of items, including directories, that could not be deleted.</p> <p>For a metadata job, the number of objects that could not have their metadata set.</p>
Directories failed	For a copy job, the number of directories that were not copied due to errors encountered by HCP.

## Additional Details section

Each tabbed page in the **Additional Details** section provides information on individual items in the job. Each page lists the most recent one thousand items in the job that have the applicable status or all items with the status, whichever is smaller.

These are the tabbed pages in the **Additional Details** section:

- **Processing** — Objects or files that are currently being processed. For delete operations, the list also includes directories.

This page can be useful if the **Progress and Performance** section shows zero objects or bytes per second; this is because the **Processing** page shows any large objects or files that are being copied and are not yet reflected in the progress information.

- **Succeeded** — Objects or files that were successfully copied or deleted or had their metadata updated. For delete operations, the list also includes directories.
- **Failed** — Objects or files that could not be copied or deleted or have their metadata updated. For delete operations, the list also includes directories. The detailed information includes the reason for each failure.

When you resume a paused job or load and run a saved job, the lists in the **Additional Details** section show the status since you resumed or loaded the job.

HCP-DM updates the **Processing** page every second. HCP-DM updates the information on the **Succeeded** and **Failed** pages every ten seconds, so they may not fully reflect the current status.

The table below describes the information displayed for each item listed on the **Processing**, **Succeeded**, and **Failed** pages.

Column	Pages	Description
Name	All	The path of the object, file, or directory from the namespace or file-system root. For copy jobs, this is the source object path.
Size	All	The object or file size in KB. This column appears for copy jobs only.
Elapsed time	Succeeded Failed	The time taken in processing the item. Because multiple items can be handled concurrently, the sum of these values can exceed the run time shown in the <b>Metrics</b> section.
Start Time	Failed	The date and time at which HCP-DM started processing the item.
End Time	Failed	The date and time at which HCP-DM stopped processing the item.
Reason	Failed	An HTTP return code and descriptive text that indicates the reason why the item was not copied or deleted.

## Managing jobs

You use the **Job Details** window to manage the current job.

### Running a job

When you create a job, for example, by clicking on the arrow between the two navigation panels or by dragging items from a drag-and-drop-enabled application to the destination panel, HCP-DM does not run the job immediately. Instead, it displays the **Job Details** window. To start the job, click on the **Run** button in the window.

For more information on starting a job, see ["Copying items"](#) on page 78 and ["Deleting or purging items"](#) on page 80.

## Closing a job

After a job has finished or been saved and is not running, you can close the **Job Details** window. To close this window, click on the **Close** button.

When you click on the **Close** button:

- If the job finished with errors and has not been saved, HCP-DM displays a confirming prompt:
  - To save the job and close the **Job Details** window, click on the **Yes** button. For information on saving a job, see [“Saving a job”](#) on page 103.
  - To close the **Job Details** window without saving the job, click on the **No** button.
  - To take no action and leave the **Job Details** window open, click on the **Cancel** button.
- If the job has completed without errors and has not been saved, HCP-DM closes the **Job Details** window and does not save the job.
- If the job has been saved, HCP-DM updates the saved information to reflect the current status and closes the **Job Details** window.

## Canceling a job

To end the current job without completing it or saving it:

1. Click on the **Cancel** button.
2. In response to the confirming prompt, click on the **Yes** button.

After HCP-DM cancels the job, it closes the **Job Details** window.

When you click on the **Cancel** button:

- If you previously saved the job:
  - HCP-DM updates the information in the saved job to reflect the current job status.
  - Any directories that are being read will be reread when you resume the job. This can result in duplicate entries for items in the job definition and can cause failures in copy or delete jobs due to

conflicts when the job is resumed. These failures, however, mean only that HCP-DM tried the same copy or delete operation a second time, not that the item was not copied or deleted.

- For a copy job, any items that are being copied may be only partially copied. In this case, HCP-DM retries copying the object when the job is resumed. In most cases the retried write succeeds because the initial write was not completed successfully. In some cases, however, this situation may result in a failed write operation.

For information on failed writes, see *Using a Namespace* or *Using the Default Namespace*.

- If you haven't yet saved the job, HCP-DM deletes it, and you cannot restart it.



- HCP-DM can take several minutes to cancel a job that has many concurrent operations. During that time, HCP-DM is unresponsive and may place additional load on the client on which it's running.
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## Pausing and resuming a job

You can use the **Job Details** window to pause a job before it finishes and then restart it at a later time.

### Pausing a job

To stop a job before it finishes, click on the **Pause** button in the **Job Details** window.

Pausing a job stops operations that are in process. This action can have these consequences:

- Any directories that are being read will be reread when you resume the job. This can result in duplicate entries for items in the job definition and can cause failures due to conflicts when the job is resumed. These failures, however, mean only that HCP-DM tried the same copy operation a second time, not that the item was not copied.
- Any items that are being copied may be only partially copied. In this case, HCP-DM retries copying the object when the job is resumed. In most cases the retried write succeeds because the initial write was not completed successfully. In some cases, however, this situation may result in a failed write operation.

For information on failed writes, see *Using a Namespace* or *Using the Default Namespace*.

You can pause a job at any time while it's running. While a job is paused, you can:

- Resume the job.
- Save the job if it has not yet been saved. For more information, see ["Saving a job"](#) below.
- Export the current results of the job. For more information, see ["Exporting job results"](#) on page 104.
- Change the job load settings (for example, to reduce the load during a period of heavy demand on the HCP system). For more information, see ["Resetting the load schedule"](#) on page 105.
- Close the job if it has been saved or cancel it if it has not been saved. For more information, see ["Closing a job"](#) on page 101 and ["Canceling a job"](#) on page 101.

### Resuming a job

To restart a paused job, click on the **Resume** button in the **Job Details** window.

You can resume a job if any of these is true:

- The job is currently paused.
- You had previously paused and saved the job (in either order), closed the **Job Details** window or HCP-DM, and then reopened the saved job.
- You reopened a job that was running when HCP-DM shut down unexpectedly. (If you haven't yet saved a running job when HCP-DM stops, the job is automatically saved in the paused state with a job name that is the date and time the job started running.)

## Saving a job

A saved job is a snapshot that fully represents the definition, properties, and status of an HCP-DM job. You can save a job, close HCP-DM, and then restart HCP-DM and reopen the job at a later time. You can save a job only while it is open and not running.

To save a job:

1. Click on the **Save** button in the **Job Details** window.
2. In the **Save Job** window, type a name for the job. The name must be from one through 128 characters long and can include special characters and spaces.
3. Click on the **Save** button.

For information on saved jobs, including running saved jobs, see [Chapter 7, "Using saved jobs and job files,"](#) on page 107.

HCP-DM automatically updates the information about the copy or delete operations of a saved job as the job progresses. If you click on the Save button any time after you first save the job, HCP-DM saves only the load schedule. This lets you update the load schedule for a saved job.

## Exporting job results

You can export the results of a completed or paused job to a set of files. You can save the files to any location in the local file system.

To export job results:

1. In the **Job Details** window, click on the **Export Results** button.
2. In the **Export to Directory** field in the **Export Results** window, do one of these:
  - Type the absolute path to an existing directory in which to save the export files.
  - Click on the **Browse** button and select an existing directory in which to save the export files.
3. Optionally, in the **File Prefix** field, type a prefix with which to start all file names. The prefix can be one through 128 characters long and can consist of any combination of characters that is valid for file names on the client platform.
4. Select any combination of lists to export. The window displays the name of each file that will be written.
5. Click on the **Export** button.

When the export is complete HCP-DM displays a confirming message.

6. In the message window, click on the **OK** button.



You can export job results while a job is paused or after it has completed. If you export results before the job completes, the exported files provide a snapshot of the job at that time and are not updated.

You can export job results multiple times while the job runs. Each time, you can create a new set of files by specifying a new prefix. If you repeat a prefix, the current export operation overwrites the previous files.




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**Note:** If you specify a directory and prefix that you used before and don't export all the lists that you exported previously, HCP-DM doesn't delete the old versions of the lists that you do not export.

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For information on exported job results files, see ["About exported job results files"](#) on page 111. For information on importing and running exported jobs, see ["Running jobs from job files in the GUI"](#) on page 116.

## Resetting the load schedule

You use the **Load Schedule** page of the **Job Details** window to change the number of concurrent operations that HCP can perform. Uses for this feature include:

- Reducing the load HCP-DM is putting on a client system that's used for other purposes
- Balancing the speed of a job against system performance for other HCP or HCAP users

You can change the load schedule for a job before the job runs or while it is paused.

HCP-DM automatically saves the current load schedule for a job when you run, resume, or restart the job. This ensures that the job has the current load schedule, even if you never explicitly save it.

However, HCP-DM does not save the load schedule after you change the schedule or when you pause, cancel, or close the job. If you change the load schedule and want to keep the schedule with the job, click on the **Save** button to update the job with the new schedule.




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**Note:** Unlike the **Load Schedule** page of the **Preferences** window, the page in the **Job Details** window doesn't let you change the **Reduced Load** values while the **Use normal load schedule at all times** option is selected.

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For information on load scheduling and specifying settings on the **Load Scheduling** page, see ["Controlling the load"](#) on page 45



## Using saved jobs and job files

This chapter describes how to use these kinds of jobs and job files:

- Saved jobs
- Job files
- Exported job results files

The chapter provides detailed information about each of these items and describes how to save or create them and how to use them to manage and run jobs.

## About saved jobs and job files

Saved jobs are stored internally by HCP-DM. Job files are stored as text files in the local file system.

A saved job is a full dynamic representation of all job information. A job file is a static representation of the items to copy, delete, or set the metadata for in a job.

### About saved jobs

You can save a job before it starts, while it's paused, or after it has finished. For instructions on saving a job, see ["Saving a job"](#) on page 103.

Saved jobs contain this information:

- The name of the source profile and, for copy jobs, the destination profile
- For a copy operation, the path of the destination directory
- The source paths of the items that are being copied or the paths of the items that are being deleted or having their metadata set
- Any applicable metadata settings; for more information, see ["How HCP-DM handles metadata"](#) on page 72
- Load settings
- Status information about the operation such as job state, which items have been copied or deleted or had their metadata set, and error information



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**Note:** If you cancel a saved job while it is running or HCP-DM closes unexpectedly while the saved job runs, the job information may have duplicate entries for one or more objects or files, and HCP may try to copy, delete, or set the metadata for those objects or files twice.

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After saving a job, you can:

- Run the job.
- Pause the job, close HCP-DM, and resume the job at a later time without losing information about the job. The job resumes where it left off.

- Close the job and reopen it at any time, including after it has finished, to review its status or export its results.
- Correct any problems that caused individual copy, delete, or metadata operations to fail and rerun a job that failed or completed with errors. In this case, HCP-DM tries to operate on only those items that previously failed.

These considerations apply to saved jobs:

- HCP-DM can have a maximum of 50 saved jobs. Once this limit is reached, HCP-DM cannot create a new job until one of the existing saved jobs is deleted.
- HCP-DM keeps the job status, including information on which items have been copied or deleted, up to date in a saved job as the job progresses.
- Because HCP-DM always keeps the status of the current job on disk, the job information is retained if the job fails or HCP-DM closes unexpectedly. You can then restart HCP-DM, if needed, and reload the job. If you did not save the job before the failure, the job name consists of the date and time the job started.
- In the HCP-DM GUI, you must explicitly save a job for HCP-DM to keep the job information. With the **hcpdm** command, jobs that do not run to completion or complete with failures are automatically saved and jobs that successfully complete all operations are not saved.
- You can save a job with only one name. That is, you cannot rename the job or save it another time with a different name.
- HCP-DM saves load settings when you start, resume, or restart a job. HCP-DM does not automatically update the job with changes to load settings. If you change these settings, you can update the job by clicking on the **Save** button.
- You cannot change a saved job that you have already run, except to modify the load settings.
- You can open a saved job that finished without errors, but you cannot rerun it.
- You should delete unneeded saved jobs, such as saved jobs that finished without errors. Saved jobs can take up significant disk space.

For instructions on using saved jobs, see [“Working with saved jobs in the GUI”](#) on page 112.

## About job files

A **job file** is a text file that specifies the paths of the items to copy or delete or for which to set metadata. You can create a job file from scratch, for example, by using a text editor to create a list of items or by using an application that writes a list of files. You can also use exported job results files as job files. For information on exported job results files, see ["About exported job results files"](#) below.

Job files let you:

- Specify more than one thousand items to be copied or deleted or have their metadata set. Jobs that you configure in the GUI can have at most one thousand items (including directories).
- Specify the items to copy or delete or to have their metadata set in advance. For example, an application could generate a job file that you then use in HCP-DM.
- Run an operation multiple times. For example, you could create a job file that specifies the items in a copy operation that you repeat regularly to store versions of files that change over time.

These rules apply to job files:

- Items can be objects, files, symbolic links, or directories. If you specify a directory, HCP-DM operates on everything in the directory and all its subdirectories, recursively.
- Each item must be on a separate line.
- Item paths must be all absolute or all relative to a single directory that you specify when you import the file.
- In Windows, all absolute paths must start with the same drive letter.
- The maximum length for item paths, including separators, is 4,095 bytes. This limit applies to absolute paths and to the concatenation of relative paths with the source or destination directory path you specify when you run the job.

## About exported job results files

When you export job results, you save a static set of information about the state of the items in the job at the time you export the results. You can export job results into any combination of the files described in the table below.

File name	Description
<i>file-prefix</i> JobList.txt	<p>A list containing the absolute paths of all items to copy or delete or for which to set metadata:</p> <ul style="list-style-type: none"> <li>For copy jobs, this is a list of all objects or files HCP-DM tried to copy in the job. If the job definition specified a directory, the list contains the paths of all object or files in the directory and its subdirectories.</li> <li>For delete jobs, this is a list of all objects or files and directories HCP-DM tried to delete in the job.</li> <li>For metadata jobs, this is a list of all objects HCP-DM tried to update in the job. If the job definition specified a directory, the list contains the paths of all object in the directory and its subdirectories.</li> </ul> <p>You should export a complete job list only after HCP-DM has found all objects to be processed in the job and the <b>Total objects to copy</b>, <b>Total objects to delete</b>, or <b>Total objects to update</b> entry on the <b>Progress</b> page of the <b>Job Details</b> window is no longer gray. If you export results prior to this, the job list will be incomplete.</p>
<i>file-prefix</i> Failures.txt	<p>A list containing entries consisting of these values, separated by a comma:</p> <ul style="list-style-type: none"> <li>The absolute path for an object or file that was not processed due to an error encountered by the source or destination system. For delete operations, the list includes directories. Errors listed in this file stopped the job.</li> <li>A description of the error.</li> </ul>
<i>file-prefix</i> Successes.txt	<p>A list containing the absolute paths of the objects or files that were successfully copied or deleted or had their metadata set. For delete operations, the list includes directories.</p>

(Continued)

File name	Description
<i>file-prefix</i> Conflicts.txt	<p>For copy jobs, a list containing the absolute paths of objects or files for which the destination system returned a 409 (Conflict) error. Depending on the job configuration, these files are also listed in either the successes list or the failures list:</p> <ul style="list-style-type: none"> <li>• If the <b>Treat Conflict (409) Errors as Success</b> option is selected, these objects or files are also listed in <i>file-prefix</i>Successes.txt.</li> <li>• If the <b>Treat Conflict (409) Errors as Success</b> option is not selected, these objects or files are also listed in <i>file-prefix</i>Failures.txt along with a description of the error.</li> </ul>

In the preceding table, *file-prefix* is an optional prefix you can specify when you export the job results.

You can use the files containing all items, successfully processed items, and items for which 409 (Conflict) errors occurred as job files. To use the file containing items that failed to be processed as a job file, you need to delete the error information from the file.

For copy and metadata jobs, the exported files list only objects and files. For delete jobs, the exported files list objects, files, and directories. For all jobs, HCP expands the directories for the lists. If, for example, you specify a directory to copy, the exported job results files list the contents of that directory and all its subdirectories, recursively.



**Note:** If you export job results files before HCP-DM finishes expanding the directories, the file containing all items may be incomplete.

For instructions on exporting job results see [“Exporting job results”](#) on page 104. For information on using the results to run jobs see [“Running jobs from job files in the GUI”](#) on page 116.

## Working with saved jobs in the GUI

You can create, run, and delete saved jobs in the HCP-DM GUI. For instructions on saving a job, see [“Saving a job”](#) on page 103.

You use the **Saved Jobs** window to open or delete a saved job. To display this window, select **Saved Jobs** in the **File** menu.



## About the Saved Jobs window

You can use the **Saved Jobs** window to open or delete any saved job. If you open a successfully completed job, you cannot run it, but you can export its results.

The **Saved Jobs** window shows this information for each job:

- Job name
- Job type: copy, delete, or metadata
- State the job will be in if you open it

The table below describes the possible states for saved jobs.

State	Description
Not Started	The job was saved but never run.
Paused	Either: <ul style="list-style-type: none"> <li>• You paused a job after saving it.</li> <li>• HCP-DM closed unexpectedly while the job was running.</li> </ul>
Completed	Either: <ul style="list-style-type: none"> <li>• The job completed all copy, delete, or metadata operations successfully.</li> <li>• The job finished processing, but some operations failed. This can occur, for example, if HCP-DM tries to copy, delete, or set metadata for an object that does not exist or if HCP-DM tries to copy an object over an existing object and the namespace does not support versioning.</li> </ul>
Failed	HCP-DM encountered an error that prevented it from completing processing. For example, a job fails if HCP-DM cannot connect to the source or destination HCP system.

## Running a saved job

To run a saved job:

1. In the **File** menu, select **Saved Jobs**.
2. In the **Saved Jobs** window, select the saved job you want to run.

3. Click on the **Open** button to load the job.
4. In the **Job Details** window, click on the **Run**, **Resume**, or **Rerun** button to start or resume the job or rerun the failed operations in a job.
5. In the **Job Details** window, monitor and manage the job progress, as described in [Chapter 6, "Managing jobs in the Job Details window,"](#) on page 93.

## Deleting saved jobs

To delete one or more saved jobs:

1. In the **File** menu, select **Saved Jobs**.
2. In the **Saved Jobs** window, select the saved jobs you want to delete. You can use the Ctrl and Shift keys to select multiple jobs or a range of jobs.
3. Click on the **Delete** button.
4. In response to the confirming prompt, click on the **OK** button.

## Recovering from failed jobs and HCP-DM failures

If an error causes a job to stop before the job finishes or HCP-DM closes while processing the job, HCP-DM keeps the job information as a saved job, even if you did not explicitly save the job. As a result, you can fix the problem then resume the job.

In this case, the job status may not be completely up to date. This can result in HCP-DM repeating operations it has already completed, but should not result in operations being skipped. For more information, see ["Errors when resuming jobs"](#) on page 168.

To restart the job:

1. Restart HCP-DM, if necessary.
2. In the **File** menu, select **Saved Jobs**.
3. In the **Saved Jobs** window, select the failed job.
4. Click on the **Open** button.
5. In the **Job Details** window, click on the **Run** button.

## Rerunning jobs with failed operations

If a job finishes without copying, deleting, or setting the metadata for all the specified items, the **Progress** page of the **Job Details** window lists the number of items that failed in the **Objects failed** entry in the **Metrics** section.

If you save the job before you close the **Job Details** window, you can correct errors and rerun the job. When you rerun job, HCP-DM tries to copy, delete, or set the metadata for only the items that previously failed.




---

**Tip:** You can create a complete list of failed items in the job with information about each error by exporting a failed job list. This provides a complete record of all failed operations and their associated error messages.

---

For more information, see [“Exporting job results”](#) on page 104.

---

To rerun a job:

1. Before you close the **Job Details** window:
  - Save the job as described in [“Saving a job”](#) on page 103.
  - Check the **Failed** page in the **Additional Details** section to learn the reason for each error.
2. Fix the errors.
3. Rerun the job as described in [“Running a saved job”](#) on page 113.

When the job starts running, it is in the Preparing to Restart state. For large jobs, HCP-DM may remain in this state for a significant amount of time without showing any progress.

Once you open a job to rerun it, the contents of the **Additional Details** section of the **Job Details** window are reset and show only the progress of the current operation. However, the information in the **Metrics** section reflects the status of the complete job.

If you export the job results after rerunning a job:

- The job list includes all items in the initial job, not just the items that HCP-DM reran.

- The succeeded job list includes all items that were copied or deleted in both the initial run and when the job was rerun.
- The failed job list and, for copy operations only, the list of items for which 409 (Conflict) errors occurred include only items that failed to be copied or deleted when the job was rerun, not those that failed during the initial run.

## Running jobs from job files in the GUI

To load and run a job from a job file:

1. In the **File** menu, select **Import Copy Job from File** for a copy job, **Import Delete Job from File** for a delete job, or **Import Metadata Job from File** for a metadata job.
2. In the **Import Copy/Delete/Metadata Job from File** window:
  - In the **Source Profile** field, select the profile for the job.
  - In the **Source Path** field, specify the path that is the root of the paths in the job file you are importing. For example, if the job file contains names of files and directories relative to the `C:\finance\employees\job_status` directory, specify `C:\finance\employees\job_status` in this field.

Use the / character to specify the top level of a namespace. Do not specify `rest`, `data`, or `fcfs_data`.

When you import a job from a Windows client, this field is required. If the file you are importing contains absolute paths, all paths must start with the same drive letter, and you need to enter the drive letter (for example, `C:\`) in this field.

When you import a job from a Unix client, this field is optional. If you do not specify a path in this field, you need to specify absolute paths in the job file.

- For a copy job:
  - In the **Destination Profile** field, select the profile for the destination.

- In the **Destination Path** field, specify the absolute path to the directory into which HCP-DM will copy the items. This field is required in all cases, even if you are copying to the home directory on a Unix client. Use the / character to specify the top level of a namespace.
  - In the **File to Import** section, browse to the directory that contains the file you are importing and select the file. The file name appears in the **File Name** field. You cannot type or copy a file name into the **File Name** field.
3. Click on the **OK** button.
  4. In the **Job Details** window, review the job information and, if needed, change the job settings.
  5. Click on the **Run** button.

HCP-DM reads the job file and ignores any changes made to the file after this time.

6. Monitor and manage the job, as described in [Chapter 6, “Managing jobs in the Job Details window,”](#) on page 93.



## Using the `hcpdm` command

This chapter describes the HCP Data Migrator **`hcpdm`** command. You can execute this command from a Windows command line or a Unix shell. You can also use the command in scripts.

## About the hcpdm command

The **hcpdm** command provides a command-line interface to a substantial subset of the HCP-DM features. To run this command:

- On a Windows client, use **hcpdm.bat**.
- On a Unix client, use **hcpdm.sh**.

The **hcpdm** command is located in the *install-dir/hcpdm/bin* directory.

The **hcpdm** command has these subcommands:

- [profile](#) — Creates and manages namespace profiles
- [copy](#) — Copies items between two locations
- [delete](#) — Deletes one or more items
- [metadata](#) — Sets metadata for one or more objects
- [job](#) — Lists jobs or deletes a job

You cannot run the **hcpdm** command while the HCP-DM GUI is running.

With the **hcpdm** command, if a job fails or finishes with failures, HCP-DM automatically saves the job. The name of the saved job is the value of the **--job-name** parameter, if specified, or the date and time the job started running. You cannot save a successfully completed job that you run using the **hcpdm** command.

## hcpdm command rules

The **hcpdm** command follows these rules:

- Parameter keywords are case sensitive and must be all lowercase.
- You can use either a forward slash (/) or a backslash (\) as the delimiter in Windows paths.
- You can type parameters in any order.
- Parameter keywords consist of either a single letter or one or more words separated by hyphens.



- Each keyword is preceded by a single hyphen (-) if it consists of a single letter or two hyphens (--) if it consists of two or more letters.
- Profile names, paths, and parameter values that contain spaces must be enclosed in double quotation marks (").

To view help text for the **hcpdm** command, enter one of these:

- `hcpdm -h`
- `hcpdm --help`

To view help text for a subcommand, include the subcommand in the help request. For example:

- `hcpdm copy -h`
- `hcpdm copy -help`

## hcpdm command exit status codes

When the **hcpdm** command finishes, it sets a command-line interpreter exit status variable to a code that indicates whether the command was successful and, if it was not, the reason for the error.

The method you use to access this variable depends on the client platform and the command-line interpreter. In Windows, the status is stored in the **errorlevel** environment variable, which you can access with the `echo %errorlevel%` command. In Unix, the exit status variable is typically accessed by the `exit $? or $?` command.

The table below describes the **hcpdm** command exit status codes.

Status code	Description
0	The command finished successfully.
1	The command parameters were not valid. Check the command for typographic or other errors. You can use the command with the <b>--help</b> parameter to view a summary of the command syntax or you can check your command against the syntax described in this book.
2	An error occurred with an SSL server certificate. One possible cause of this problem is that the certificate was self-signed and you did not specify the <b>--insecure</b> parameter. By default, the SSL server certificate used by an HCP system is self-signed.

(Continued)

Status code	Description
3	The specified host is unknown. Make sure that the namespace profile is correct and your network and HCP system are functioning properly. You can also look at the <code>hcpdm0.log</code> log file for possible causes. If you cannot determine the cause, see your namespace administrator.  For information about log files see <a href="#">"Configuring and using log files"</a> on page 48.
4	The job failed. Possible causes include the HCP system being unavailable and internal HCP-DM errors. You can look at the <code>install_dir/hcpdm/log/hcpdm0.log</code> file for possible causes. If you cannot determine the cause, see your namespace administrator.
5	The job finished, but some items were not copied or deleted. Check the <code>install_dir/hcpdm/log/failures0.log</code> file for possible causes.

## hcpdm profile

The **hcpdm profile** command lets you manage namespace profiles. You can create and delete profiles, display the definition of a profile, and list all profiles.

When you list profiles, the output has two columns, the profile name and the profile type.

## Syntax

The **hcpdm profile** command syntax depends on the operation:

- To create a namespace profile:

```
hcpdm. (bat|sh) profile (-c|--create)
    profile-name
    --type (HCP50|HCP|HCP_Default|HCAP2)
    [--tenant tenant-name]
    [--namespace namespace-name]
    [--username username]
    [--password password]
    [--anon]
    [--hostname domain-name]
    [--ips ip-address,...]
    [--ssl]
    [--check-cm]
    [--notest]
```

The parameters you can specify depend on the type of the namespace for which you are creating the profile. For information on the parameters for create operations, see ["Parameter descriptions"](#) below.

- To delete an existing namespace profile:

```
hcpdm. (bat|sh) profile (-d|--delete) profile-name
```

*profile-name* must be the name of an existing namespace profile. If the profile name includes spaces, enclose the entire name in double quotation marks.

- To list the complete definition of a single profile:

```
hcpdm. (bat|sh) profile (-l|--list) profile-name
```

*profile-name* must be the name of an existing namespace profile. If the profile name includes spaces, enclose the entire name in double quotation marks.

- To list the names and types of all namespace profiles, including the local file system:

```
hcpdm. (bat|sh) profile (-l|--list)
```

The profile types are those listed for the `--type` parameter in ["Parameter descriptions"](#) on page 123, plus FILESYSTEM for the local file system.

- To display syntax rules for the **hcpdm profile** command:

```
hcpdm. (bat|sh) profile (-h|--help)
```

## Parameter descriptions

The table below describes the parameters for the **hcpdm profile --create** command. No other **hcpdm profile** operations take parameters.

Parameter	Description
<i>profile-name</i>	Specifies the name of the namespace profile. This name cannot exceed 128 characters. If the name includes spaces, enclose the entire name in double quotation marks.

(Continued)

Parameter	Description
<b>--anon</b>	<p>Tells HCP-DM to access the namespace anonymously. If you specify this parameter, omit the <b>--username</b> and <b>--password</b> parameters.</p> <p>This parameter is supported only for release 5.0 or later HCP namespaces. If you specify this parameter with a default namespace or an HCAP archive, the operation fails.</p> <p>If you specify this parameter with a release 5.0 or later namespace that doesn't support anonymous access, the operation fails.</p>
<b>--check-cm</b>	<p>Tells HCP-DM to check custom metadata to make sure it is well-formed XML.</p> <p>This parameter is supported only by HCP namespaces. If you specify this parameter with a default namespace or an HCAP archive, this parameter is ignored.</p>
<b>--hostname</b> <i>domain-name</i>	<p>Specifies the fully qualified domain name of an HCP or HCAP system, such as hcp.example.com. The name must not include a tenant or namespace name or <code>www</code>. If you do not know the domain name, ask your system manager.</p> <p>This parameter is:</p> <ul style="list-style-type: none"> <li>• Required for HCP namespaces</li> <li>• Required for all other types of namespaces if you do not specify an <b>--ips</b> parameter</li> </ul>
<b>--ips</b> <i>ip-address,...</i>	<p>Specifies a comma-separated list of IP addresses to use to connect to the HCP or HCAP system. The list can contain spaces after the commas. If it does, enclose the entire list in double quotation marks (" ").</p> <p>This parameter is required if you do not specify the <b>--hostname</b> parameter. If you specify both parameters, HCP-DM ignores the <b>--hostname</b> parameter.</p> <p>For more information on using IP addresses to connect to an HCP system, see <a href="#">"Considerations for using a domain name or IP addresses"</a> on page 42.</p>

(Continued)

Parameter	Description
<b>--namespace</b> <i>namespace-name</i>	<p>Specifies the name of the namespace for which this is a profile.</p> <p>This parameter is required for HCP namespaces and is ignored otherwise.</p>
<b>--notest</b>	<p>Tells HCP-DM to create the profile without testing whether it can access the namespace. This parameter is useful if you're creating profiles when you cannot access the HCP or HCAP system.</p> <p>If you omit this parameter, HCP-DM tests whether it can access the specified namespace. If it cannot, it returns an error message and does not save the profile. For HCP namespaces, the test succeeds only if all parameters, including <b>--username</b> and <b>--password</b> (if specified), are valid.</p>
<b>--password</b> <i>password</i>	<p>Specifies the password for the user account to use when accessing the namespace.</p> <p>This parameter is</p> <ul style="list-style-type: none"> <li>• Required for release 5.0 or later HCP namespaces if you do not specify the <b>--anon</b> parameter</li> <li>• Required for release 3.x or 4.x HCP namespaces</li> <li>• Ignored for the default namespace and HCAP archives</li> </ul>
<b>--ssl</b>	<p>Tells HCP-DM to use SSL when connecting to the HCP or HCAP system. If omitted, HCP-DM uses HTTP without SSL.</p>
<b>--tenant</b> <i>tenant-name</i>	<p>Specifies the name of the tenant that owns the namespace for which this is a profile.</p> <p>This parameter is required for HCP namespaces and is ignored otherwise.</p>

(Continued)

Parameter	Description
<b>--type</b> <i>namespace-type</i>	<p>Specifies the type of namespace this profile represents. <i>namespace-type</i> must be one of:</p> <ul style="list-style-type: none"> <li>• <b>HCP60</b> — A release 6.x HCP namespace</li> <li>• <b>HCP50</b> — A release 5.0 HCP namespace</li> <li>• <b>HCP</b> — A release 3.x or 4.x HCP namespace</li> <li>• <b>HCP_DEFAULT</b> — A default namespace</li> <li>• <b>HCAP2</b> — An HCAP 2.x archive</li> </ul> <p>This parameter is required.</p>
<b>--username</b> <i>username</i>	<p>Specifies the username for the user account to use when accessing the namespace.</p> <p>This parameter is:</p> <ul style="list-style-type: none"> <li>• Required for release 5.0 or later HCP namespaces if you do not specify the <b>--anon</b> parameter</li> <li>• Required for release 3.x or 4.x HCP namespaces</li> <li>• Ignored for the default namespace and HCAP archives</li> </ul>

## Usage considerations

These considerations apply to the **hcpdm profile** command:

- Some special characters have meaning to the operating system command line interpreter. If you include such characters in a username or password, be sure to escape those characters in the command line.
- Profiles that you create using the **hcpdm profile** command appear in the Namespace Profile Manager. Similarly, profiles that you create in the Namespace Profile Manager appear in the output of the **hcpdm profile --list** command.

## Example

Here's a sample **hcpdm** command that creates a namespace profile that identifies an HCP namespace in a release 6.x HCP system. The command is shown for Windows. The command is the same for Unix except for the initial command name.

```
hcpdm.bat profile --create "Finance Europe" --type HCP60
--hostname hcp.example.com --tenant europe --namespace finance --ssl
--username lgreen --password p4ssw0rd
```

This command creates a namespace profile named Finance Europe that:

- Identifies the finance namespace owned by the europe tenant defined in the HCP system hcp.example.com
- Uses a domain name and SSL for communicating with the HCP system
- Connects using the user account with the username *lgreen* and password *p4ssw0rd*

## hcpdm copy

The **hcpdm copy** command copies items from one location to another. The locations can be in a local or mounted file system, an HCP or default namespace, or an HCAP 2.6 archive.



---

**Note:** The **hcpdm copy** command cannot copy old versions of objects from HCP namespaces. To copy an old version of an object, use the HCP-DM GUI.

---

## Syntax

The **hcpdm copy** command has this syntax:

```
hcpdm. (bat|sh) copy
  (-h|--help)
  | (--resume [job-name])
  | (--rerun [job-name])
  | ((-d|--destination-profile) (destination-profile-name|LFS)
    (-s|--source-profile) (source-profile-name|LFS)
    --destination-path destination-directory-path
    [--source-path source-directory-path]
    [--index true|false]
    [--retention retention-setting]
    [--hold true|false]
    [--shred true|false]
    [--dir-permissions posix-directory-permissions]
    [--file-permissions posix-file-permissions]
    [--uid posix-uid]
    [--gid posix-gid]
    [--owner (hcp-username|active-directory-username|"")]
    [--domain active-directory-domain]
    [--custom-metadata custom-metadata-file-spec]
    [--acl acl-file-spec]
    [--job-name job-name]
    [--ignore-conflicts])
  [--insecure]
  [--max-sys-ops operation-count]
  [--max-node-ops operation-count]
  [--reduced-max-sys-ops operation-count]
  [--reduced-max-node-ops operation-count]
  [--reduced-start hh:mm]
  [--reduced-end hh:mm]
  [--export-results result-types]
  [--export-results-path directory-path]
  [--export-results-prefix prefix]
  [job-file-spec]
```

*job-file-spec* is required if you are not resuming or rerunning a job. It must be the last entry in the command.

The **--insecure** through **--export-results-prefix** parameters can be used with all commands except **help**.



## Parameter descriptions

The table below describes the parameters for the **hcpdm copy** command.

Parameter	Description
<b>-h --help</b>	Displays syntax rules for the <b>hcpdm copy</b> subcommand. If you specify other parameters with this parameter, they are ignored.
<i>job-file-spec</i>	Specifies the job file containing the list of items to copy. <i>job-file-spec</i> can be an absolute path in the local file system or a path relative to the current working directory.  For information on job files, see <a href="#">"About job files"</a> on page 110.
<b>--acl</b> <i>acl-file-spec</i>	Specifies a file containing an ACL to associate with each resulting object. The file path can be absolute or relative to the <code>current working</code> directory.  This parameter is valid only when copying files from the local file system to a release 5.0 or later HCP namespace that supports ACLs. If you specify this parameter for any other operation, the operation fails.
<b>--custom-metadata</b> <i>custom-metadata-file-spec</i>	Specifies a file containing custom metadata to associate with each resulting object. The file path can be absolute or relative to the <code>current working</code> directory.  This parameter is valid only when copying files from the local file system to a namespace or archive. If you specify this parameter for any other operation, the operation fails.
<b>--destination-path</b> <i>destination-directory-path</i>	Specifies the directory in which to save the copied items. The destination path can be an absolute path or a path relative to the root of the destination namespace or local file system. If any directories in the destination path do not exist, HCP-DM creates them.  If the <b>--destination-profile</b> parameter specifies a namespace, start absolute paths with <code>/</code> , not <code>/rest</code> , <code>/data</code> , or <code>/fcfs_data</code> .  This parameter is required.

(Continued)

Parameter	Description
( <b>-d --destination-profile</b> ) ( <i>destination-profile-name</i>   <b>LFS</b> )	<p>Specifies the destination profile for the copy operation. <i>destination-profile-name</i> must be the name of an existing namespace profile. If the profile name includes spaces, enclose the entire profile name in double quotation marks (" "). <b>LFS</b> specifies the local file system.</p> <p>This parameter is required.</p>
<b>--dir-permissions</b> <i>posix-directory-permissions</i>	<p>Specifies the POSIX permissions for any directories that are created as a result of the <b>hcpdm copy</b> command.</p> <p>This parameter is valid only when copying files from the local file system to a default namespace or an archive. If you specify this parameter for any other operation, the operation fails.</p>
<b>--domain</b> <i>active-directory-domain</i>	<p>Specifies the Active Directory domain that contains the user identified by the <b>--owner</b> parameter.</p> <p>This parameter is required if the <b>--owner</b> parameter specifies an Active Directory user. If you specify this parameter and the <b>--owner</b> parameter specifies an HCP user or no owner, the copy job fails.</p> <p>This parameter is valid only when copying files from the local file system to a release 5.0 or later HCP namespace. If you specify this parameter for any other operation, the operation fails.</p>

(Continued)

Parameter	Description
<b>--export-results</b> <i>result-types</i>	<p>Specifies the types of results to export when the copy job finishes. <i>results-types</i> can be <b>ALL</b> or a comma-separated list of one or more of these:</p> <ul style="list-style-type: none"> <li>• <b>FAILURE</b> — Exports a list of all objects or files that were not copied due to errors.</li> <li>• <b>JOBLIST</b> — Exports a list of all objects or files in the job.</li> <li>• <b>SUCCESS</b> — Exports a list of all objects or files that were successfully copied.</li> <li>• <b>CONFLICT</b> — Exports a list of all objects or files for which the destination system returned a 409 (Conflict) error.</li> </ul> <p>Objects or files in this list are included in other lists depending on whether the <b>--ignore-conflicts</b> parameter is specified in the copy command:</p> <ul style="list-style-type: none"> <li>- If the <b>--ignore-conflicts</b> parameter is specified, objects or files in this list are also listed in the list of objects that were successfully copied.</li> <li>- If the <b>--ignore-conflicts</b> parameter is not specified, objects or files in this list are also listed in the list of objects or files that were not copied due to errors.</li> </ul> <p>The list of result types can contain spaces around the commas. If it does, enclose the entire list in double quotation marks.</p> <p>In this list, the result types you specify are case sensitive.</p> <p>If you specify <b>ALL</b>, HCP-DM exports all four lists. If you omit this parameter, HCP-DM does not export any results.</p> <p>For more information on these lists, see <a href="#">"About exported job results files"</a> on page 111.</p>

(Continued)

Parameter	Description
<b>--export-results-path</b> <i>results-directory-path</i>	<p>Specifies the directory in which to save the exported results files. The path can be absolute or relative to the current directory.</p> <p>If you omit this parameter and specify the <b>--export-results</b> parameter in the command, HCP-DM writes the results to the current working directory.</p>
<b>--export-results-prefix</b> <i>prefix</i>	<p>Specifies the prefix with which to start the name of each exported results file. You can use this prefix to identify the job.</p> <p>The prefix can consist of any combination of characters that is valid for file names on the client platform.</p> <p>If you omit this parameter, no prefix is used.</p>
<b>--file-permissions</b> <i>posix-file-permissions</i>	<p>Specifies the POSIX permissions for the objects created by the copy operation.</p> <p>This parameter is valid only when copying files from the local file system to a default namespace or an archive. If you specify this parameter for any other operation, the operation fails.</p>
<b>--gid</b> <i>posix-gid</i>	<p>Specifies the POSIX group ID to set as the owning group for each resulting object.</p> <p>This parameter is valid only when copying files from the local file system to a default namespace or an archive. If you specify this parameter for any other operation, the operation fails.</p>
<b>--hold</b> (true   false)	<p>Specifies whether to place the resulting objects on hold.</p> <p>If you omit this parameter, the resulting objects get the default hold setting for the destination.</p> <p>This parameter is valid only when copying files from the local file system to a namespace or archive. If you specify this parameter for any other operation, the operation fails.</p>
<b>--ignore-conflicts</b>	<p>A switch that tells HCP-DM to ignore 409 (Conflict) errors.</p> <p>For information on using this option, see <a href="#">"Handling conflict errors"</a> on page 164</p>

(Continued)

Parameter	Description
<b>--index</b> ( <b>true</b>   <b>false</b> )	<p>Specifies whether to mark the resulting objects for indexing.</p> <p>If you omit this parameter, the resulting objects get the default index setting for the destination.</p> <p>This parameter is valid only when copying files from the local file system to an HCP or default namespace. If you specify this parameter for any other operation, the operation fails.</p>
<b>--insecure</b>	<p>If the source or destination namespace profile specifies SSL for the connection, tells HCP-DM to accept the SSL server certificate presented by HCP without checking whether it's signed by a trusted authority.</p> <p>Include this parameter if you know that the certificate used by HCP is valid but is self-signed or has a mismatched address. By default, HCP systems use a self-signed SSL server certificate.</p>
<b>--job-name</b>	<p>Specifies a name for the job. If HCP-DM saves the job because it job encountered errors, this is the name of the saved job.</p> <p>If you omit this parameter and the job encounters errors, the saved job has a name that consists of the date and time the job started.</p> <p>If a job finishes with no errors, HCP-DM does not save the job, even if you specify a name for this parameter.</p>
<b>--max-node-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of copy operations that HCP-DM can perform concurrently on a single node in an HCP or HCAP system. The value must be at least two and no greater than the <b>max-sys-ops</b> setting.</p> <p>If you omit this parameter, the default operation count is 25.</p>

(Continued)

Parameter	Description
<b>--max-sys-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of copy operations that HCP-DM can perform concurrently on an HCP or HCAP system. The operation count must be at least two times the number of nodes in the system and no greater than 1,000.</p> <p>If you omit this parameter, the default operation count is 200.</p> <p>For information on managing system operations, including controlling the load on the local file system, see <a href="#">"Controlling the load"</a> on page 45.</p>
<b>--owner</b> ( <i>hcp-username</i>   <i>active-directory-username</i>   "")	<p>Specifies the user that owns each resulting object. This value can be one of:</p> <ul style="list-style-type: none"> <li>• The username of a user account that's defined in HCP</li> <li>• The username of an Active Directory user account</li> <li>• Two double quotation marks not separated by white space (""), which specifies that the resulting object has no owner.</li> </ul> <p>If you omit this parameter, the profile user owns each resulting object.</p> <p>To specify an owner other than the profile user, the profile user must have change owner permission.</p> <p>If you specify an Active Directory user in this parameter, you need to also specify the <b>--domain</b> parameter.</p> <p>If you specify an invalid owner, the copy job fails.</p> <p>If the namespace profile is configured for anonymous access and you specify this parameter, HCP-DM displays an error message and does not run the job.</p> <p>This parameter is valid only when copying files from the local file system to a release 5.0 or later HCP namespace. If you specify this parameter for any other operation, the operation fails.</p>

(Continued)

Parameter	Description
<b>--reduced-end</b> <i>hh:mm</i>	<p>Specifies the time at which to end the reduced load period each day. <i>hh</i> is the two-digit hour on a 24-hour clock in the local time zone.</p> <p>If you specify reduced operation counts and omit this parameter, the reduced load ends at 8:00 p.m.</p>
<b>--reduced-max-node-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of copy operations that HCP-DM can perform concurrently on a single node during the reduced load period.</p> <p>If you omit this parameter, the default operation count is 4.</p>
<b>--reduced-max-sys-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of copy operations that HCP-DM can perform concurrently on an HCP system during the reduced load period.</p> <p>If you omit this parameter, the default operation count is 50.</p>
<b>--reduced-start</b> <i>hh:mm</i>	<p>Specifies the time at which to start the reduced load period each day. <i>hh</i> is the two-digit hour on a 24-hour clock in the local time zone.</p> <p>If you specify reduced operation counts and omit this parameter, the reduced load starts at 8:00 a.m.</p>
<b>--rerun</b> [ <i>job-name</i> ]	<p>Reruns the specified saved job. If the name of the job includes spaces, enclose the entire job name in double quotation marks (" "). If you omit the <i>job-name</i> attribute, HCP-DM reruns the last saved copy job.</p> <p>You can use this parameter with the <b>--insecure</b> parameter and the parameters that control the job load and export the results. If you specify other parameters, including <i>job-file-spec</i>, the operation fails.</p>

(Continued)

Parameter	Description
<b>--resume</b> [ <i>job-name</i> ]	<p>Resumes a job that was canceled or failed. If you omit the <i>job-name</i> attribute, HCP-DM resumes the last saved copy job.</p> <p>The command returns an error message if you try to resume a completed job, including one that completed with one or more failed operations. To run a job like that, use the <b>--rerun</b> parameter.</p> <p>You can use this parameter only with the <b>--insecure</b> parameter and the parameters that control the job load and export job results. If you specify other parameters, including <i>job-file-spec</i>, the operation fails.</p>
<b>--retention</b> <i>retention-setting</i>	<p>Specifies the retention setting for the resulting objects.</p> <p>If you omit this parameter, the resulting objects get the default retention setting for the destination.</p> <p>This parameter is valid only when copying files from the local file system to a namespace or archive. If you specify this parameter for any other operation, the operation fails.</p> <p>If you specify a retention class name that is not configured in the destination namespace, the operation fails.</p> <p>For information on retention settings, see <a href="#">"Retention settings"</a> on page 61.</p>
<b>--shred</b> ( <b>true</b>   <b>false</b> )	<p>Specifies whether to mark the resulting objects for shredding.</p> <p>If you omit this parameter, the resulting objects get the default shred setting for the destination.</p> <p>This parameter is valid only when copying files from the local file system to a namespace or archive. If you specify this parameter for any other operation, the operation fails.</p>



(Continued)

Parameter	Description
<b>--source-path</b> <i>source-directory-path</i>	<p>Specifies the directory containing the items to be copied. The source path can be an absolute path or a path relative to the root of the source namespace or local file system.</p> <p>If the <b>--source-profile</b> parameter specifies a namespace, start absolute paths with <code>/</code>, not <code>/rest</code>, <code>/data</code>, or <code>/fcfs_data</code>.</p> <p>This parameter is required only if the source is a Windows system. In this case, if the job file contains absolute paths, specify only the drive letter as the source directory (for example, <code>C:</code>).</p>
<b>(-s --source-profile)</b> <i>(source-profile-name   LFS)</i>	<p>Specifies the source profile for the copy operation. <i>source-profile-name</i> must be the name of an existing namespace profile. If the profile name includes spaces, enclose the entire profile name in double quotation marks (" "). <b>LFS</b> specifies the local file system.</p> <p>This parameter is required.</p>
<b>--uid</b> <i>posix-uid</i>	<p>Specifies the POSIX user ID to set as the owner of each resulting object.</p> <p>This parameter is valid only when copying files from the local file system to a default namespace or an archive. If you specify this parameter for any other operation, the operation fails.</p>

## Command output

As a copy job runs, the **hcpdm** command repeats a single line every second that contains the following information:

- Percent complete.
- Number of objects found. For details on how this value is calculated, see the description of the Objects found summary entry, below.
- Total size of the objects or files copied.
- Total size of all objects or files found.
- Number of objects copied.

- Number of items to copy. This value is the number of objects found minus any directories.
- Throughput rate expressed as kilobytes per second.

When the job stops processing, the command displays a summary with the following information:

- **Status** — Job status
- **Objects Found** — The number of items found; the sum of:
  - Number of items in the job file, even if there is no corresponding item in the source path
  - For each directory in *job-file-spec* and each of its subdirectories, recursively, the number of objects or files in the directory
- **Total Objects to Copy** — The **Objects Found** value minus found directories followed by the total size, in KB, of the objects or files to copy.
- **Successful** — Number of objects or files that were copied followed by their the total size, in kilobytes
- **Errors** — Number of items in the **Total objects to Copy** value that were not copied, including items listed in the job file that do not exist in the path, followed by the total size of items that were not copied, in kilobytes
- **Failed Directories** — Number of directories with contents that was not successfully copied
- **I/O Rate** — Average number of copy operations per second
- **Throughput** — Average data transfer rate in kilobytes per second
- **Total Time** — Total processing time in seconds

When you resume a job that ended abnormally, the command output shows the time elapsed since the job resumed, not the time for the whole job.

## Usage considerations

These considerations apply to using the **hcpdm copy** command:

- In Windows, if you specify a drive letter, such as C:\, in the `--source-path` parameter, the entries in the job file can be either absolute paths that include the drive letter or paths relative to the drive. This is the only case where entries in the job file can contain part of the path specified by the `--source-path` parameter.
- Omitting an optional metadata parameter is equivalent to selecting the **Use destination namespace setting** option in the GUI. For example, if you copy a file to an HCP namespace, the index setting for the resulting object will be the default index setting for the namespace. For more information on copying and metadata, see [“How HCP-DM handles metadata”](#) on page 72.
- If you omit any of the load management parameters, **hcpdm** uses the values specified in the HCP-DM GUI. For information on specifying load management values in the HCP-DM GUI, see [“Controlling the load”](#) on page 45.

## Example

Here’s a sample **hcpdm** command that copies a set of files from the local file system to an HCP namespace. The command is shown for both Windows and Unix.

**Windows:** `hcpdm.bat copy -s LFS -d "Finance Europe" --source-path C:\MyDocs\Work --destination-path BusDoc/Mktg --insecure --shred true --retention C+SEC-17a C:\CopyFiles\MoveWork.txt`

**Unix:** `hcpdm.sh copy -s LFS -d "Finance Europe" --source-path /my_docs/work --destination-path BusDocs/Mktg --insecure --shred true --retention C+SEC-17a /copy_files/move_work.txt`

This command tells HCP-DM to:

- Copy files from the local file system.
- Copy files to the namespace specified by the Finance Europe profile.
- Copy files from the `C:\MyDocs\Work` (Windows) or `/my_docs/work` (Unix) directory.
- Copy files to the `BusDoc/Mktg` directory in the destination namespace.

- Copy the files specified in the C:\CopyFiles\MoveWork.txt (Windows) or /copy\_files/move\_work.txt (Unix) file. This file contains paths relative to the C:\MyDocs\Work (Windows) or /my\_docs/work (Unix) directory.
- Allow the use of HTTPS certificates that are not signed by a recognized authority.
- Set the shred setting of the resulting objects to true.
- Set the retention setting of the resulting objects to the SEC-17a retention class.

## hcpdm delete

The **hcpdm delete** command deletes items from a namespace, an archive, or the local file system. If you specify any directories in the list of items to be deleted, **hcpdm delete** recursively deletes the directory and all its contents.

## Syntax

The **hcpdm delete** command has this syntax:

```
hcpdm. (bat|sh) delete
  (-h|--help)
  | (--resume [job-name])
  | (--rerun [job-name])
  | ((-p|--profile) profile-name|LFS)
    [--path directory-path]
    [--operation operation-type]
    [--reason reason-text]
    [--job-name job-name])
  [--insecure]
  [--max-sys-ops operation-count]
  [--max-node-ops operation-count]
  [--reduced-max-sys-ops operation-count]
  [--reduced-max-node-ops operation-count]
  [--reduced-start hh:mm]
  [--reduced-end hh:mm]
  [--export-results results-type-specification]
  [--export-results-path directory-path]
  [job-file-spec]
```

*job-file-spec* is required if you are not resuming or rerunning a job. It must be the last entry in the command.

The `--insecure` through `--export-results-prefix` parameters can be used with all commands except `help`.

## Parameter descriptions

The table below describes the parameters for the **hcpdm delete** command.

Parameter	Description
<code>(-h --help)</code>	Describes syntax rules for the <b>hcpdm delete</b> subcommand. If you specify other parameters, they are ignored.
<code>job-file-spec</code>	<p>Specifies the job file containing the list of items to delete. <i>job-file-spec</i> can be an absolute path in the local file system or a path relative to the current working directory.</p> <p>For information on job files, see <a href="#">"About job files"</a> on page 110.</p>
<code>--export-results</code> <i>result-types</i>	<p>Specifies the types of results to export when the delete job finishes. <i>results-types</i> can be <b>ALL</b> or a comma-separated list of one or more of these:</p> <ul style="list-style-type: none"> <li>• <b>FAILURE</b> — Exports a list of all items that were not copied due to errors.</li> <li>• <b>JOBLIST</b> — Exports a list of all items in the job.</li> <li>• <b>SUCCESS</b> — Exports a list of all items that were successfully deleted.</li> </ul> <p>The list of result types can contain spaces around the commas. If it does, enclose the entire list in double quotation marks.</p> <p>In this list, the result types you specify are case sensitive.</p> <p>If you specify <b>ALL</b>, HCP-DM exports all three lists. If you omit this parameter, HCP-DM does not export any results.</p> <p>For more information on these lists, see <a href="#">"About exported job results files"</a> on page 111.</p>

(Continued)

Parameter	Description
<b>--export-results-path</b> <i>results-directory-path</i>	<p>Specifies the directory in which to save the exported results files. The path can be absolute or relative to the current directory.</p> <p>If you omit this parameter and specify the <b>--export-results</b> parameter in the command, HCP-DM writes the results to the current working directory.</p>
<b>--export-results-prefix</b> <i>prefix</i>	<p>Specifies the prefix with which to start the name of each exported results file. You can use this prefix to identify the job.</p> <p>The prefix can consist of any combination of characters that is valid for file names on the client platform.</p> <p>If you omit this parameter, no prefix is used.</p>
<b>--insecure</b>	<p>If the namespace profile specifies SSL for the connection, tells HCP-DM to accept the SSL server certificate presented by HCP without checking whether it's signed by a trusted authority.</p> <p>Include this parameter if you know that the certificate used by HCP is valid but is self-signed or has a mismatched address. By default, HCP systems use a self-signed SSL server certificate.</p>
<b>--job-name</b>	<p>Specifies a name for the job. If HCP-DM saves the job because the job encountered errors, this is the name of the saved job.</p> <p>If you omit this parameter and the job encounters errors, the saved job has a name that consists of the date and time the job started.</p> <p>If a job finishes with no errors, HCP-DM does not save the job, even if you specify a name for this parameter.</p>
<b>--max-node-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of delete operations that HCP-DM can perform concurrently on a single node in an HCP or HCAP system. The value must be at least two and no greater than the <b>max-sys-ops</b> setting.</p> <p>If you omit this parameter, the default operation count is 25.</p>

*(Continued)*

Parameter	Description
<b>--max-sys-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of delete operations that HCP-DM can perform concurrently on an HCP or HCAP system. The operation count must be at least two times the number of nodes in the system and no greater than 1,000.</p> <p>If you omit this parameter, the default operation count is 200.</p> <p>For information on managing system operations, including controlling the load on the local file system, see <a href="#">"Controlling the load"</a> on page 45.</p>

(Continued)

Parameter	Description
<b>--operation</b> <i>operation-type</i>	<p>For HCP namespaces, specifies the type of operation to perform. Valid values for <i>operation-type</i> are:</p> <ul style="list-style-type: none"> <li>• <b>delete</b> — Performs a regular delete operation.</li> <li>• <b>purge</b> — Deletes all versions of an object.</li> <li>• <b>privileged-delete</b> — Deletes objects even if they are under retention. You can also use this operation to delete objects that are not under retention if you want to provide a reason for deleting them.</li> </ul> <p><b>privileged-delete</b> does not delete objects that are on hold.</p> <ul style="list-style-type: none"> <li>• <b>privileged-purge</b> — Deletes all versions of an object, even if the object is under retention. You can also use this operation to purge objects that are not under retention if you want to provide a reason for purging them.</li> </ul> <p><b>privileged-purge</b> does not purge objects that are on hold.</p> <p>If you omit the <b>--operation</b> parameter, HCP-DM performs a regular delete operation.</p> <p>If you specify this parameter when deleting objects from a default namespace, an HCAP archive, or the local file system, the operation fails. When deleting items from these locations, HCP-DM always performs a regular delete operation.</p> <p>For a delete job to delete objects from an HCP namespace, the profile user must have delete permission. For the job to purge objects, the profile user must have delete and purge permissions. For privileged operations, the profile user must also have privileged permission.</p> <p>For more information on purging and privileged operations, see <i>Using a Namespace</i>.</p>



(Continued)

Parameter	Description
<b>--path</b> <i>directory-path</i>	<p>Specifies the directory containing the items to be deleted. The path can be an absolute path or path relative to the root of the namespace or local file system.</p> <p>If the <b>--profile</b> parameter specifies a namespace, start the path with <code>/</code>, not <code>/rest</code>, <code>/data</code>, or <code>/fcfs_data</code>.</p> <p>This parameter is required if you are deleting items from a Windows system.</p>
<b>(-p   --profile)</b> <i>(profile-name   LFS)</i>	<p>Specifies the source profile for the delete operation. <i>profile-name</i> must be the name of an existing namespace profile. If the profile name includes spaces, enclose the entire profile name in double quotation marks (" "). <b>LFS</b> specifies the local file system.</p> <p>This parameter is required.</p>
<b>--reason</b> <i>reason-text</i>	<p>Specifies the reason for a privileged operation. <i>reason-text</i> must be from one through 1,024 characters long and can contain any valid UTF-8 characters. If <i>reason-text</i> includes white space, you need to enclose the entire reason in double quotation marks (" ")</p> <p>This parameter is required if the <b>--operation</b> parameter value is <b>privileged delete</b> or <b>privileged purge</b>.</p> <p>This parameter is valid only for privileged delete and privileged purge operations. If you specify this parameter for any other operation, the operation fails.</p>
<b>--reduced-end</b> <i>hh:mm</i>	<p>Specifies the time at which to end the reduced load period each day. <i>hh</i> is the two-digit hour on a 24-hour clock in the local time zone.</p> <p>If you specify reduced operation counts and omit this parameter, the reduced load ends at 8:00 p.m.</p>
<b>--reduced-max-node-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of delete operations that HCP-DM can perform concurrently on a single node in an HCP or HCAP system during the reduced load period.</p> <p>If you omit this parameter, the default operation count is 4.</p>

(Continued)

Parameter	Description
<b>--reduced-max-sys-ops</b> <i>operation-count</i>	Specifies the maximum number of delete operations that HCP-DM can perform concurrently on an HCP or HCAP system during the reduced load period.  If you omit this parameter, the default operation count is 50.
<b>--reduced-start</b> <i>hh:mm</i>	Specifies the time at which to start the reduced load period each day. <i>hh</i> is the two-digit hour on a 24-hour clock in the local time zone.  If you specify reduced operation counts and omit this parameter, the reduced load starts at 8:00 a.m.
<b>--rerun</b> [ <i>job-name</i> ]	Reruns the specified saved job. If the name of the job includes spaces, enclose the entire job name in double quotation marks (" "). If you omit the <i>job-name</i> attribute, HCP-DM reruns the last saved copy job.  You can use this parameter with the <b>--insecure</b> parameter and the parameters that control the job load and export the results. If you specify other parameters, including <i>job-file-spec</i> , the operation fails.
<b>--resume</b> [ <i>job-name</i> ]	<b>Resumes</b> a job that was canceled or failed. If you omit the <i>job-name</i> attribute, HCP-DM resumes the last saved copy job.  The command returns an error message if you try to resume a completed job, including one that completed with one or more failed operations. To run a job like that, use the <b>--rerun</b> parameter.  You can use this parameter only with the <b>--insecure</b> parameter and the parameters that control the job load and export job results. If you specify other parameters, including <i>job-file-spec</i> , the operation fails.

## Command output

As a delete job runs, the **hcpdm** command displays the following information on a single line that is updated every second:

- Number of items (called objects), including directories, found that match the entries in the job file.

- Number of items deleted so far and the total number of objects to delete. For details on how this value is calculated, see the description of Total Objects to Delete summary entry, below.

When the job completes, the command displays a job summary with this information:

- **Status** — Job status.
- **Objects Found** — Number of items found that match the entries in the job file. This value includes directories, not just objects.
- **Total Objects to Delete** — The sum of:
  - Number of items in the job file, including items that HCP-DM recognizes as directories
  - Number of items in each recognized directory and each of its subdirectories, recursively
- **Successful** — Number of items that were successfully deleted.
- **Errors** — Number of items that were not deleted due to errors, including items listed in the job file that do not exist in the path.
- **Total Time** — Total processing time in seconds.

When you resume a job that ended abnormally, the command output shows the time elapsed since the job resumed, not the time for the whole job.

## Example

Here's a sample **hcpdm** command that deletes a set of objects from an HCP namespace. The command is shown for both Windows and Unix.

**Windows:** `hcpdm.bat delete --profile "Finance Europe" --path C:\BusDocs\Mktg --insecure C:\DeleteFiles\Deletable.txt`

**Unix:** `hcpdm.sh delete --profile "Finance Europe" --path /bus_docs/mktg --insecure /delete_files/deletable.txt`

This command tells HCP-DM to:

- Delete objects and directories from the HCP namespace identified by the Europe Finance profile.

- Look up the objects to delete in the C:\BusDocs\Mktg (Windows) or the /bus\_docs/mktg (Unix) directory and their subdirectories.
- Allow the use of HTTPS certificates that are not signed by a trusted authority.
- Delete the items specified in the C:\DeleteFiles\Deleteable.txt (Windows) or /delete\_files/deleteable.txt (Unix) file. This file contains paths relative to the directory specified by the **--path** parameter.

## hcpdm metadata

The **hcpdm metadata** command sets metadata for multiple objects in an HCP namespace.

## Syntax

The **hcpdm metadata** command has this syntax:

```
hcpdm. (bat|sh) metadata
  (-h|--help)
  | (--resume [job-name])
  | (--rerun [job-name])
  | ((-p|--profile) profile-name
    --path directory-path
    [--job-name job-name]
    [--index (true|false)]
    [--retention retention-setting]
    [--hold (true|false)]
    [--shred (true|false)]
    [--owner (hcp-username|active-directory-username|"")]
    [--domain active-directory-domain]
    [--custom-metadata custom-metadata-file-spec]
    [--acl acl-file-spec])
  [--insecure]
  [--max-sys-ops operation-count]
  [--max-node-ops operation-count]
  [--reduced-max-sys-ops operation-count]
  [--reduced-max-node-ops operation-count]
  [--reduced-start hh:mm]
  [--reduced-end hh:mm]
  [--export-results result-types]
  [--export-results-path directory-path]
  [--export-results-prefix prefix]
  [job-file-spec]
```

*job-file-spec* is required if you are not resuming or rerunning a job. It must be the last entry in the command.

The `--insecure` through `--export-results-prefix` parameters can be used with all commands except help.

## Parameter descriptions

The table below describes the parameters for the **hcpdm metadata** command.

Parameter	Description
<code>-h --help</code>	Displays syntax rules for the <b>hcpdm metadata</b> subcommand. If you specify other parameters with this parameter, they are ignored.
<i>job-file-spec</i>	Specifies the job file containing the list of items for which to change the metadata. <i>job-file-spec</i> can be an absolute path in the local file system or a path relative to the current working directory.  For information on job files, see <a href="#">"About job files"</a> on page 110.
<code>--acl acl-file-spec</code>	Specifies a file containing an ACL to associate with each object. The file path can be absolute or relative to the current working directory.
<code>--custom-metadata custom-metadata-file-spec</code>	Specifies a file containing custom metadata to associate with each object. The file path can be absolute or relative to the current working directory.
<code>--domain active-directory-domain</code>	Specifies the Active Directory domain that contains the user identified by the <code>--owner</code> parameter.  This parameter is required if the <code>--owner</code> parameter specifies an Active Directory user. If you specify this parameter and the <code>--owner</code> parameter specifies an HCP user or no owner, the metadata job fails.  This parameter is valid only when setting metadata in a release 5.0 or later HCP namespace. If you specify this parameter for any other namespace, the operation fails.

(Continued)

Parameter	Description
<b>--export-results</b> <i>result-types</i>	<p>Specifies the types of results to export when the metadata job finishes. <i>results-types</i> can be <b>ALL</b> or a comma-separated list of one or more of these:</p> <ul style="list-style-type: none"> <li>• <b>FAILURE</b> — Exports a list of all objects or files that did not have their metadata set due to errors.</li> <li>• <b>JOBLIST</b> — Exports a list of all objects or files in the job.</li> <li>• <b>SUCCESS</b> — Exports a list of all objects or files that successfully had their metadata set.</li> </ul> <p>The list of result types can contain spaces around the commas. If it does, enclose the entire list in double quotation marks.</p> <p>In this list, the result types you specify are case sensitive.</p> <p>If you specify <b>ALL</b>, HCP-DM exports all three lists. If you omit this parameter, HCP-DM does not export any results.</p> <p>For more information on these lists, see <a href="#">“About exported job results files”</a> on page 111.</p>
<b>--export-results-path</b> <i>results-directory-path</i>	<p>Specifies the directory in which to save the exported results files. The path can be absolute or relative to the current directory.</p> <p>If you omit this parameter and specify the <b>--export-results</b> parameter in the command, HCP-DM writes the results to the current working directory.</p>
<b>--export-results-prefix</b> <i>prefix</i>	<p>Specifies the prefix with which to start the name of each exported results file. You can use this prefix to identify the job.</p> <p>The prefix can consist of any combination of characters that is valid for file names on the client platform.</p> <p>If you omit this parameter, no prefix is used.</p>
<b>--hold</b> (true   false)	Specifies whether to place each object on hold.
<b>--index</b> (true   false)	Specifies whether to mark each object for indexing.

(Continued)

Parameter	Description
<b>--insecure</b>	<p>If the namespace profile specifies SSL for the connection, tells HCP-DM to accept the SSL server certificate presented by HCP without checking whether it's signed by a trusted authority.</p> <p>Include this parameter if you know that the certificate used by HCP is valid but is self-signed or has a mismatched address. By default, HCP systems use a self-signed SSL server certificate.</p>
<b>--job-name</b> <i>name</i>	<p>Specifies a name for the job. If HCP-DM saves the job because it job encountered errors, this is the name of the saved job.</p> <p>If you omit this parameter and the job encounters errors, the saved job has a name that consists of the date and time the job started.</p> <p>If a job finishes with no errors, HCP-DM does not save the job, even if you specify a name for this parameter.</p>
<b>--max-node-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of metadata change operations that HCP-DM can perform concurrently on a single node in an HCP or HCAP system. The value must be at least two and no greater than the <b>max-sys-ops</b> setting.</p> <p>If you omit this parameter, HCP-DM uses the default operation count of 25.</p>
<b>--max-sys-ops</b> <i>operation-count</i>	<p>Specifies the maximum number of metadata change operations that HCP-DM can perform concurrently on an HCP or HCAP system. The operation count must be at least two times the number of nodes in the system and no greater than 1,000.</p> <p>If you omit this parameter, HCP-DM uses the default operation count of 200.</p> <p>For information on managing system operations, including controlling the load on the local file system, see <a href="#">"Controlling the load"</a> on page 45.</p>

(Continued)

Parameter	Description
<b>--owner</b> ( <i>hcp-username</i>   <i>active-directory-username</i>   "")	<p>Specifies the user that owns each object. This value can be one of:</p> <ul style="list-style-type: none"> <li>The username of a user account that's defined in HCP</li> <li>The username of an Active Directory user account</li> <li>Two double quotation marks not separated by white space (""), which specifies that the object has no owner.</li> </ul> <p>If you omit this parameter, the profile user owns each object.</p> <p>To specify an owner other than the profile user, the profile user must have change owner permission.</p> <p>If you specify an Active Directory user in this parameter, you need to also specify the <b>--domain</b> parameter.</p> <p>If you specify an invalid owner, the metadata job fails.</p> <p>If the namespace profile is configured for anonymous access and you specify this parameter, HCP-DM displays an error message and does not run the job.</p> <p>This parameter is valid only for release 5.0 or later HCP namespaces. If you specify this parameter for the local file system or an earlier namespace, the operation fails.</p>
<b>--path</b> <i>directory-path</i>	<p>Specifies the directory containing the items for which you want to set metadata. The parameter value can be an absolute path or a path relative to the root of the destination namespace or local file system.</p> <p>Start absolute paths with /, not /rest, /data, or /fcfs_data.</p> <p>This parameter is required if you are not rerunning or resuming a job.</p>



(Continued)

Parameter	Description
<b>(-p --profile)</b> <i>profile-name</i>	Specifies the profile for the operation. <i>profile-name</i> must be the name of an existing namespace profile. If the profile name includes spaces, enclose the entire profile name in double quotation marks (").  This parameter is required if you are not rerunning or resuming a job.
<b>--reduced-end</b> <i>hh:mm</i>	Specifies the time at which to end the reduced load period each day. <i>hh</i> is the two-digit hour on a 24-hour clock in the local time zone.  If you specify reduced operation counts and omit this parameter, the reduced load ends at 8:00 p.m.
<b>--reduced-max-node-ops</b> <i>operation-count</i>	Specifies the maximum number of metadata change operations that HCP-DM can perform concurrently on a single node during the reduced load period.  If you omit this parameter, HCP-DM uses the default operation count of 4.
<b>--reduced-max-sys-ops</b> <i>operation-count</i>	Specifies the maximum number of metadata change operations that HCP-DM can perform concurrently on an HCP system during the reduced load period.  If you omit this parameter, HCP-DM uses the default operation count of 50.
<b>--reduced-start</b> <i>hh:mm</i>	Specifies the time at which to start the reduced load period each day. <i>hh</i> is the two-digit hour on a 24-hour clock in the local time zone.  If you specify reduced operation counts and omit this parameter, the reduced load starts at 8:00 a.m.
<b>--rerun</b> [ <i>job-name</i> ]	Reruns the specified saved job. If the name of the job includes spaces, enclose the entire job name in double quotation marks ("). If you omit the <i>job-name</i> attribute, HCP-DM reruns the last saved metadata job.  You can use this parameter only with the <b>--insecure</b> parameter and the parameters that control the job load and export the results. If you specify other parameters, including <i>job-file-spec</i> , the operation fails.

(Continued)

Parameter	Description
<code>--resume [job-name]</code>	<p>Resumes a job that was canceled or failed. If you omit the <i>job-name</i> attribute, HCP-DM resumes the last saved metadata job.</p> <p>The command returns an error message if you try to resume a completed job, including one that completed with one or more failed operations. To run a job like that, use the <code>--rerun</code> parameter.</p> <p>You can use this parameter only with the <code>--insecure</code> parameter and the parameters that control the job load and export job results. If you specify other parameters, including <i>job-file-spec</i>, the operation fails.</p>
<code>--retention retention-setting</code>	<p>Specifies the retention setting for each object.</p> <p>If you specify a retention class name that is not configured in the destination namespace, the operation fails.</p> <p>For information on retention settings, see <a href="#">"Retention settings"</a> on page 61.</p>
<code>--shred (true   false)</code>	Specifies whether to mark each object for shredding.

## Command output

Each second while the metadata job is running, the **hcpdm** command updates a status line that contains the following information:

- Number of items (called objects), including directories, found that match the entries in the job file
- Number of objects updated so far and the total number of objects to change. For details on how the objects to change value is calculated, see the description of Total objects to change, below.

When the job completes, the command displays a job summary with this information:

- **Status** — Job status.
- **Objects Found** — Number of items found that match the entries in the job file. This value includes directories, not just objects.

- **Total Objects to Change** — The sum of:
  - Number of items in the job file, not including items that HCP-DM recognizes as directories
  - Number of objects in each recognized directory and each of its subdirectories, recursively
- **Successful** — Number of objects with successfully set metadata.
- **Errors** — Number of objects for which metadata was not set due to errors, including items listed in the job file that do not exist in the path.
- **Total Time** — Total processing time in seconds.

When you resume a job that ended abnormally, the command output shows the time elapsed since the job resumed, not the time for the whole job.

## Usage considerations

These considerations apply to using the **hcpdm metadata** command:

- In Windows, if you specify a drive letter, such as C:\, in the `--source-path` parameter, the entries in the job file can be either absolute paths that include the drive letter or paths relative to the drive. This is the only case where entries in the job file can contain part of the path specified by the `--source-path` parameter.
- Omitting an optional metadata parameter is equivalent to selecting the **Do not change metadata** option in the GUI. For example, if you change the metadata for an object and do not specify an `--index` parameter, the index setting will not be changed. For more information on changing and metadata, see [“How HCP-DM handles metadata”](#) on page 72.
- If you omit any of the load management parameters, **hcpdm** uses the values specified in the HCP-DM GUI. For information on specifying load management values in the HCP-DM GUI, see [“Controlling the load”](#) on page 45.

## Example

Here's a sample **hcpdm** command that sets the metadata for objects in an HCP namespace. The command is shown for both Windows and Unix.

**Windows:** `hcpdm.bat metadata -p "Finance Europe" --path /BusDoc/Mktg --insecure --shred true --retention C+SEC-17a --custom metadata C:\ChangeFiles\CustomMetadata.htm C:\ChangeFiles\newMetadata.txt`

**Unix:** `hcpdm.sh metadata -p "Finance Europe" --path /BusDoc/Mktg --insecure --shred true --retention C+SEC-17a --custom metadata /ChangeFiles/CustomMetadata.htm /ChangeFiles/newMetadata.txt`

This command tells HCP-DM to:

- Set the metadata for objects in the namespace specified by the Finance Europe profile.
- Set metadata for objects in the `/BusDoc/Mktg` directory in the namespace.
- Change the files specified in the `C:\ChangeFiles\newMetadata.txt` (Windows) or `/ChangeFiles/newMetadata.txt` (Unix) file. This file contains paths relative to the `/BusDoc/Mktg` directory.
- Allow the use of HTTPS certificates that are not signed by a recognized authority.
- Set the shred setting of the resulting objects to true.
- Set the retention setting of the resulting objects to the SEC-17a retention class.
- Set the custom metadata to the contents of the `C:\ChangeFiles\CustomMetadata.htm` (Windows) or `/ChangeFiles.CustomMetadata.htm` (Unix) file.
- Leave all other metadata unchanged.

## hcpdm job

The **hcpdm job** command lists all saved jobs that were run from either the GUI or the command line. You can use the list of saved jobs to see job names and states. You can also use the **hcpdm job** command to delete any unneeded jobs.

When you list jobs, the output has three columns:

- Name — The job name assigned by a user in the HCP-DM GUI or automatically by HCP-DM
- Job type — **Copy**, **Delete**, or **Metadata**
- Job state — **NOT STARTED**, **PAUSED**, **COMPLETED**, or **FAILED**

For more information on saved jobs, see [“About saved jobs”](#) on page 108.

## Syntax

The **hcpdm job** command syntax depends on the operation:

- To list jobs:

```
hcpdm. (bat|sh) job (-l|--list)
```

The resulting list includes all save jobs, including any jobs that you named and saved in the HCP-DM GUI.

- To delete a job:

```
hcpdm. (bat|sh) jobs (-d|--delete) job_name
```

In this command, *job\_name* is any valid job name, as returned by the **hcpdm job --list** command. If the job name has space characters, enclose it in double quotation marks.

- To display syntax rules for the **hcpdm job** command:

```
hcpdm. (bat|sh) job (-h|--help)
```

## Example

Here’s a sample command that deletes a job. This command is shown for Windows. It is the same for Unix except for the initial command name.

```
hcpdm.bat job --delete "9/15/11 4:14:03 PM"
```

This command deletes the job named 9/15/11 4:14:03 PM. The name for this job was generated by HCP-DM when the job was saved.

hcpdm job

## Using HCP-DM effectively

This chapter provides information that can help you make the most effective use of HCP-DM. It contains information on configuring HCP-DM and optimizing HCP-DM performance. It also describes best practices for using HCP-DM and includes additional usage considerations.

## Configuring HCP-DM

The editable files listed in the table below control HCP-DM behavior.

File	Description
<b>Windows:</b> <i>install-dir\hcpdm\bin\setupcmdline.bat</i>  <b>Unix:</b> <i>install-dir/hcpdm/bin/setupcmdline.sh</i>	Starts HCP-DM. Modifying this file lets you control HCP-DM startup characteristics, including memory use.
<i>install-dir\hcpdm\config\hcpdm.properties</i>	Controls HCP-DM behavior.
<i>install-dir\hcpdm\config\hcpdm.logging.properties</i>	Controls the HCP-DM logging mechanism.

The following sections describe entries in these files that you can change to optimize HCP-DM behavior for your environment.

### Using setupcmdline to configure HCP-DM at startup

You can modify the contents of the `setupcmdline.bat` or `setupcmdline.sh` file to control certain HCP-DM characteristics, including:

- Memory usage — Change this setting to increase or decrease the memory used by HCP-DM.
- Unix time zone — Use this setting only if HCP-DM uses the wrong time zone by default on a Unix system. Windows systems do not have this issue.
- NetBIOS name resolution — Change this setting to allow hostname resolution using NetBIOS.

#### Controlling HCP-DM memory usage

You can increase or decrease the amount of memory HCP-DM uses by specifying the size of the Java heap that it uses.

On Windows clients, you control the maximum heap size by setting the **-Xmx** parameter in the `JAVA_CMD` and `JAVAW_CMD` variable specifications in `setupcmdline.bat`. The **-Xmx** parameter should have the same value for both variables.



The lines for the JAVA\_CMD and JAVAW\_CMD variables initially have these values:

```
if not defined JAVA_CMD      set JAVA_CMD=java -version:1.7+ -Xmx512M
if not defined JAVAW_CMD    set JAVAW_CMD=javaw -version:1.7+ -Xmx512M
```

On Unix clients, you use the HCPDM\_MAX\_HEAP and HCPDM\_MIN\_HEAP parameters in `setupcmdline.sh` specify the maximum and minimum heap sizes. For example:

```
HCPDM_MAX_HEAP="512M"
HCPDM_MIN_HEAP="32M"
```

### Setting the time zone on Unix systems

Due to a known issue with Java on Unix systems, HCP-DM may use an incorrect time zone for its datetime values. To correct this behavior, add the following entry to the HCPDM\_JVM\_PROPS variable in `setupcmdline.bat` or `setupcmdline.sh`.

```
-Duser.timezone=time-zone
```

In this command, *time-zone* must be a valid time zone name. For example:

```
-Duser.timezone=America/New_York
```

### Allowing NetBIOS name resolution

For performance reasons, use of NetBIOS to resolve hostnames for connecting to HCP is not recommended. By default, HCP-DM is configured to use the Sun DNS implementation.

If you want to use NetBIOS as the name service provider, remove the following line from `setupcmdline.bat`:

```
set HCPDM_JVM_PROPS=%HCPDM_JVM_PROPS%
"-Dsun.net.spi.nameservice.provider.1=dns,sun"
```

If you enable NetBIOS name resolution, HCP-DM may encounter timeout issues in name resolution that can significantly reduce throughput. For possible additional workarounds, see the person responsible for configuring NetBIOS at your site.

## Configuring HCP-DM properties

You use the `hcpdm.properties` file to manage various HCP-DM properties, including:

- HCP-DM database location
- Default load settings
- Connection timeouts

### Controlling the job database directory location

The `.hds\hcp-dm\database` directory, which contains the HCP-DM job database, can grow quite large. By default, the database directory path is *user-home-directory\hds\hcp-dm\database*, thus giving each user a separate database directory. If the drive that holds the user's home directory does not have enough space, you can change the database directory location to a drive with more free space.

To change the database directory location, set this value in the `hcpdm.properties` file:

```
rootDBDir=database-directory-root-path
```

*database-directory-path-root* must be an absolute directory path. This setting changes the database location to *database-directory-root-path\hds\hcp-dm\database*.

For example, if you set `rootDBDir` to `\myDBDir`, the database path is `\myDBDir\hds\hcp-dm\database`. The location of all other files in the *user-home-dir\hds\hcp-dm* directory tree are unchanged.



**Note:** If you change the database location, make sure the directory you specify exists and that you have full permission to it. If you do not have full permission, you will not be able to access the database, and HCP-DM will start but will not execute any jobs.

---

For more information on the HCP-DM job database, see ["Understanding and managing jobs and the HCP-DM job database"](#) on page 166.

### Controlling load settings

You can use the `hcpdm.properties` entries listed in the table below to specify the maximum load for the local file system and the default values for the HCP-DM load settings.

Property	Description
<code>normalLoad.maxThreadsFilesystem</code>	<p>The maximum number of operations that HCP-DM can perform concurrently on the local file system. The actual maximum number of operations is the smaller of this value and the maximum operations per node.</p> <p>The maximum value for this setting is 512.</p>
<code>normalLoad.maxThreads</code>	<p>The default setting for the load configuration <b>Maximum operations per system</b> setting.</p> <p>The maximum value for this setting is 1000</p>
<code>normalLoad.maxThreadsPerNode</code>	<p>The default setting for the load configuration <b>Maximum operations per node</b> setting.</p> <p>The value for this setting must be at least two and no greater than the <code>normalLoad.maxThreads</code> setting.</p>

For considerations on appropriate maximum operations per node, see [“HCP-DM best practices”](#) on page 169. For more information on controlling the load see [“Load settings”](#) on page 46.

### Controlling connection timeouts

In some cases, HCP may take a long time to respond to an HCP-DM request. For example, this problem might occur if the load is heavy on a node that contains a specific directory or if the network is slow due to heavy traffic. If the time required to connect to HCP or get a response over the connection exceeds the configured timeout value, the operation fails with a socket or connection timeout error. If you get multiple errors of either type, consider increasing the configured timeout values.

These settings in `hcpdm.properties` control the timeouts:

- `http.connection_timeout.millis` — The amount of time that HCP will wait for an HTTP connection to be established, in milliseconds. The default is 30000 (30 seconds).
- `http.socket_timeout.millis` — The amount of time that HCP will wait for data on an existing HTTP connection, in milliseconds. The default is 60000 (one minute).

## Controlling HCP-DM logging behavior

The `hcpdm.logging.properties` file sets HCP-DM logging behavior. The table below describes entries that you can change to control the maximum space used by log files.

Entry	Description
<code>com.archivas.logging.FileHandler.count</code>	The maximum number of <code>hcpdm<math>n</math>.log</code> files
<code>com.archivas.logging.FileHandler.limit</code>	The maximum size of a single <code>hcpdm<math>n</math>.log</code> file, in bytes
<code>com.archivas.clienttools.arcutils.arcmove.impl.jobs.SuccessProgressLogger.numRotateFiles</code>	The maximum number of <code>success<math>n</math>.log</code> files
<code>com.archivas.clienttools.arcutils.arcmove.impl.jobs.SuccessProgressLogger.fileSizeBytes</code>	The maximum size of a single <code>success<math>n</math>.log</code> file, in bytes
<code>com.archivas.clienttools.arcutils.arcmove.impl.jobs.FailureProgressLogger.numRotateFiles</code>	The maximum number of <code>failure<math>n</math>.log</code> files
<code>com.archivas.clienttools.arcutils.arcmove.impl.jobs.FailureProgressLogger.fileSizeBytes</code>	The maximum size of a single <code>failure<math>n</math>.log</code> file, in bytes

For more information on using log files, see [“Configuring and using log files”](#) on page 48.

## Understanding and optimizing HCP-DM behavior

The following sections describe some of the details of HCP-DM behavior and some of the errors that you may encounter when running HCP-DM. It also provides information on ways to limit these errors and optimize HCP-DM behavior.

### Handling conflict errors

One common case in which HCP-DM receives an HTTP 409 (conflict) error response from HCP is:

1. HCP successfully stores the object being copied.
2. HCP-DM does not receive the success response from HCP within a timeout period.

3. HCP-DM retries the copy operation.
4. HCP returns a conflict error response because the object already exists in the destination.

This behavior is typically caused by any of these conditions:

- The network is under heavy load.
- HCP is under heavy load.
- The client machine is running too slowly to fully accommodate HCP-DM activity.

In such situations, if you rerun the job to retry the failed copy operations, you might not want to retry the objects with conflict errors. This way, HCP-DM won't retry the successful copies.

You can use the **Treat conflict (409) errors as success** option on the **Options** page of the **Copy Job Details** window or the **--ignore-conflicts** option in the **hcpdm copy** command to control how HCP-DM treats objects with conflict errors. If you select this option:

- If the job has any other errors and you click on the **Rerun** button on the **Job Details** window or run the **hcpdm copy** command with the **--rerun** option, HCP-DM does not retry copying the objects with conflict errors.
- If the job has no other errors, the **Rerun** button is not active.
- Any saved job treats conflict errors as successes. If you run the saved job, HCP-DM does not retry copying the objects with these errors.
- If you export the job files, any objects for which HCP-DM encountered conflict errors are included in the successes file and not the failures file.

If you don't select this option:

- If you click on the **Rerun** button on the **Job Details** window or run the **hcpdm copy** command with the **--rerun** option, HCP-DM retries copying the objects with conflict errors.
- Any saved job treats conflict errors as failures. If you run the saved job, HCP-DM retries copying the objects with these errors.
- If you export the job files, objects for which HCP-DM encounters conflict errors are included in the failures file.

In either case, HCP-DM also includes such items in the conflicts file, so you can confirm whether the items with conflict errors were successfully copied by checking that the objects listed in the file exist in the target namespace.

HCP-DM can encounter conflict errors for several other reasons:

- It tries to copy an object that already exists in a destination that does not support versioning.
- It tries to store a version of an existing object while another version is being added.
- It tries to store custom metadata or ACLs for the copied objects while many other clients are trying to store custom metadata or ACLs for multiple objects at the same time.

To avoid these errors, ensure that the following are true before you run a copy job with a true **Treat Conflict (409) errors as Success** option:

- Either objects with the same names as the items you want to copy don't already exist in the destination, or the destination namespace supports versioning.
- No other clients are trying to store objects in the same location at the same time.

## Understanding and managing jobs and the HCP-DM job database

HCP-DM uses a database to manage job information. The database stores complete information for the current job and each saved job. Effectively, the current job is always a saved job, but HCP-DM automatically deletes it if the job completes successfully and you do not explicitly save it or if you cancel the job without saving it.

When HCP-DM starts running a new job, it saves the complete state of the job specification, that is, the values of all fields on all tabs of the **Job Details** window. When HCP-DM resumes or starts rerunning a job, it updates the load schedule in the database, as this is the only job configuration information that can change after the job initially starts running.

While a job runs, HCP-DM continues updating the database with information about the job status. However, if you pause and resume a job, HCP-DM may repeat operations that were incomplete and the database may not represent the complete current state.

The way HCP-DM uses the job database has these implications:

- The database can grow very large if multiple large jobs are saved.
- Some HCP-DM error messages can indicate database problems.
- Resumed jobs can have errors.

## Database size management

The job database can take up a significant amount of disk space. For example, the database contents for a job that copies ten million objects requires approximately 2.5 GB of disk space. For this reason, you should limit the number of saved jobs, and particularly large saved jobs. If you need to retain information about such jobs, consider exporting the job results and then deleting or not saving the job.

If you need to maintain large saved jobs and the drive that contains your home directory has limited space, you can change the location of the .hds directory (and therefore the database directory that it contains) to a drive with more space. For information on configuring the .hds directory location, see ["Controlling the job database directory location"](#) on page 162.

## Database performance management

Database queries and updates slow substantially for very large jobs. To improve performance, break jobs with 10 million or more objects or files into smaller jobs.

## Database errors

When an error occurs in the database, the database reports the error to HCP-DM, often with an Apache Derby SQLStates status value. HCP-DM then handles the error in these ways:

- For more common errors, HCP-DM catches the error and displays or logs an HCP-DM-specific error message that explains the cause.

- For less common errors, the HCP-DM error information contains the raw SQLState information. For a complete list of the possible SQLState values and their meanings, see <http://db.apache.org/derby/docs/10.1/ref/rrefexcept71493.html>.



**Tip:** If the HCP-DM GUI or log files show repeated database errors and you're experiencing errors running HCP-DM or specific jobs, shut down HCP-DM and delete the HCP-DM database. The next time you start HCP-DM, it creates a new database automatically.

For information on the database location, see "[Controlling the job database directory location](#)" on page 162.

## Errors when resuming jobs

HCP-DM can encounter errors when you resume jobs. This includes jobs that you pause, jobs that you cancel and save (or save and cancel), and jobs that end unexpectedly.

When a job stops running, HCP-DM may be in the process of finding directories, that is, iterating and reading through directories to find objects or files that they contain. In this case, HCP-DM may already have saved some, but not all, of the directory entries to the job database.

When HCP-DM resumes the job, it rereads the entire directory it had been in the process of reading. This can result in HCP-DM saving duplicate entries for items in the directory that were already in the database. In this case, HCP-DM tries to copy or delete the objects represented by the duplicate entries more than once. This behavior has the following effects:

- For copy operations, if the destination namespace does not support versioning, this behavior can result in 409 (Conflict) errors. If the namespace supports versioning, it can result in the destination having two identical versions of multiple objects.
- For delete operations HCP-DM can return object-not-found errors when it tries to delete the same objects a second time.

When HCP-DM resumes a job that ended unexpectedly or was terminated abnormally by using a Control key combination, an additional consideration applies. While HCP-DM is running, it keeps a cache of objects that it has processed but not recorded in the job database. Unlike with a paused or canceled job, HCP-DM cannot save this cache to the database for a job that stopped unexpectedly. As a result, the job may return additional 409 or



object-not-found errors when it restarts. Also, the displayed metrics for the restarted job will differ from those shown in the **Job Details** window immediately before the job ended.

## Storing custom metadata and ACLs

These considerations apply to copy jobs that store custom metadata or ACLs:

- If the custom metadata XML you are trying to store has a large number of different elements and attributes, the job may fail with a 400 (Bad Request) error.

In this case, try restructuring the XML to have fewer different elements and attributes. For example, try concatenating multiple element values, such as the different parts of an address, to create a new value for a single element.

If you cannot restructure the XML to prevent failures, do one or both of these:

- Disable custom metadata XML checking for the destination namespace profile.
- Ask your namespace administrator about reconfiguring the namespace to prevent HCP from checking that custom metadata XML is well-formed.
- If a number of clients try to store custom metadata or ACLs for multiple objects at the same time, the job may fail with a 409 (Conflict) error.

In this case, limit the number of concurrent requests from clients to the namespace by reducing the load settings.

## HCP-DM best practices

The following best practices can improve HCP-DM performance and help reduce errors:

- Break very large jobs into smaller jobs. For more information, see [“Database performance management”](#) on page 167.
- Delete completed saved jobs. For more information, see [“Database size management”](#) on page 167.

- Do not copy objects to or from a namespace by mounting the namespace with the NFS protocol or configuring it as a CIFS directory and then specifying the local file system as the source or destination. Instead, create a namespace profile and use that. This method is much more efficient.
- Avoid pausing jobs. For more information, see [“Errors when resuming jobs”](#) on page 168.
- Consider increasing the maximum operations per node to greater the default value of 20 if your jobs contain mostly small objects. Under some circumstances, HCP-DM performance with one KB objects is best at about 30 operations per node.

For large files, the performance is generally limited by the network bandwidth, and values between five and 20 operations per node may be appropriate.

For information on configuring the default load settings, see [“Controlling load settings”](#) on page 163. For information on controlling load settings for an individual job, see [“Controlling the load”](#) on page 45. If you need additional information on appropriate settings, see your namespace administrator.

- Avoid running jobs or leaving jobs in an incomplete state (for example, paused) while the HCP or namespace configuration is being changed. This can cause unexpected behaviors. For example, if versioning is disabled while a job is running, HCP-DM will return HTTP 400 (Bad Request) errors for all directories it parses after the change.

## Additional HCP-DM considerations

The following topics describe additional considerations for limiting HCP-DM errors and improving its efficiency. These topics also describe specific behaviors and ways you can respond to them.

### **Copying objects with colons in their names to Windows**

If an object name contains characters that are invalid in Windows file names, HCP-DM does not copy the object to Windows. However, HCP-DM does copy objects with names that contain colons (:), even though the colon character has a special meaning in the Windows NTFS file system.

For objects with names that contain colons, the resulting files that HCP-DM copies to NTFS file systems have non-standard behavior. For example, if HCP-DM copies an object named `x:y` to Windows:

- The resulting file in the NTFS file system is named `x` and is written to an alternate data stream named `y`. As a result, if you enter "`more < x:y`" in a Windows command prompt, Windows displays the full file contents. For information on alternate data streams, see <http://support.microsoft.com/kb/105763>.
- In HCP-DM, the resulting file is displayed as a zero-byte file named `x` in the local file system pane. You cannot open the file in HCP-DM.

### **Failure to copy custom metadata for objects under retention**

If you copy an object that is under retention and has custom metadata and the custom metadata does not get written with the object, HCP-DM treats the copy operation as a failure, even though the object itself was copied. The failure information indicates the cause of the problem.

### **Failure due to DNS errors**

If HCP-DM cannot retrieve host information from the DNS server when running a job, it retries several times. If all attempts fail, HCP-DM stops the job with a state of **FAILED**. In this case, you cannot resume it. After the DNS server errors are resolved, rerun the job. (For this job, the **Job Details** window displays the **Rerun** button, not the **Resume** button.)

### **Directory paths that contain ampersands**

HCP-DM does not support ampersands (&) in directory paths in HCP releases earlier than 4.0. If you try to use HCP-DM to access directories with such paths, HCP-DM displays this error message:

Invalid XML in the response from HCP. One common cause is an ampersand (&) in a directory path. HCP-DM does not support ampersands (&) in directory paths in HCP releases earlier than 4.0.

### **Pausing a job that is preparing to restart**

If you pause a job while it is in the Preparing to Restart state, the job state becomes **FAILED**. This is not a problem; if you rerun the job again, it automatically resumes where it left off.

### **Maximum file and object paths**

The maximum length for file or object paths is 4,095 bytes. This is an HCP limitation and applies to the total path including any source or destination directory specification, not just the contents of the copy job file.

### **Invalid Java runtime version errors**

HCP-DM requires version 7 (also known as 1.7) update 6 or later of the Java Runtime Environment (JRE). If your system uses an earlier version, running HCP-DM results in an error. The exact error message depends on your operating system but typically refers to `java.lang.UnsupportedClassVersionError`.

If you get such an error, check whether the shell or environment in which you're starting HCP-DM uses version 7 or later of the JRE. You can use this command to determine which version of the JRE is running:

```
java -version
```

The response should include a version number that starts with 1.7 or higher. If you do not have version 7 or later on your system, you can download a new JRE from <http://www.java.com/en/download/manual.jsp>.



# Installing HCP Data Migrator

HCP Data Migrator runs on both Windows and Unix clients. This appendix contains instructions for installing the utility in both environments. It also describes the system requirements for running HCP-DM.

## HCP-DM system requirements

HCP-DM runs on any Windows or Unix client that supports Oracle Java Runtime Environment (JRE) version 7 update 6 or later. Before running HCP-DM, ensure that you have a suitable version of the JRE installed on the client.

You can download and install the JRE from:

<http://www.java.com/en/download/manual.jsp>

The computer that runs HCP-DM must meet these minimum requirements:

- 1.6 Ghz processor
- 2 Gb RAM
- 100 Mbps Ethernet card

Windows clients should have the most recent applicable Microsoft® Windows Service Pack installed.

## HCP-DM file locations

The HCP-DM program files are installed in a directory named `hcpdm`, which is created during the installation process.

HCP-DM stores user-specific files, including namespace profiles and saved jobs, in:

- In Windows: `%USERPROFILE%\.hds\hcp-dm`

For example: `C:\Documents and Settings\lgreen\.hds\hcp-dm`

- In Unix: `/user-home-directory/.hds/hcp-dm`

For example: `/lgreen/.hds/hcp-dm`

The `hcp-dm\database` directory, which contains the job definitions, can grow quite large. For example, for a job that copies ten million objects, the database requires approximately 2.5 GB of disk space. For information on changing the location of the `hcp-dm\database` directory, see [“Controlling the job database directory location”](#) on page 162.

## Before installing HCP-DM

Before you install or update HCP-DM:

- Decide where to install the utility. HCP-DM does not have any specific location requirements. However, copy operations entail transferring data from the source to the client and from the client to the target. Therefore, transfer speeds for these operations depend on the connections between the client and the source and target systems.
- If you're reinstalling HCP-DM in the same location as an existing HCP-DM installation, delete the entire existing `hcpdm` directory before performing the installation.
- If you are upgrading HCP-DM from a release 5.x installation that has the job database in a nondefault location and you want to retain your existing job information, make sure you know the location of the job database. This location is specified in the **rootDBDir** entry of the *hcp-installation-directory/config/hcpdm.properties* file.
- If you are upgrading HCP-DM from a version earlier than release 5.0, delete the `.hds/hcp-dm` directory. With a standard HCP-DM installation, deleting this directory deletes namespace profiles and saved jobs. If the job database directory is not in the default location, you need to delete that directory also.
- Obtain and save the HCP-DM installation file from your tenant administrator. The HCP-DM installation file is:
  - For Windows, either `hcpdm.exe` or `hcpdm.zip`
  - For Unix, `hcpdm.tgz`

With the `.exe` or `.tgz` file, you need to save the file in the directory in which you want to install HCP-DM. With the `.zip` file, you can choose the directory you want when you unpack the file.

## Installing HCP-DM on a Windows client

To install HCP-DM on a Windows client, you use either the `.exe` or `.zip` installation file.

## Using the .exe file

To use the `.exe` file to install HCP-DM, do one of these:

- In Windows Explorer, double-click on the installation file.

A **Command Prompt** window opens.

- From the Windows **Start** menu, select **Run**. Then run the installation file from the **Run** window.

A **Command Prompt** window opens.

- In a Windows **Command Prompt** window, enter the name of the installation file.

The installer runs in the **Command Prompt** window and installs HCP-DM. If you started the installer from Windows Explorer or the **Run** window, the **Command Prompt** window closes automatically when the installation is complete.

## Using the .zip file

To use the `.zip` file to install HCP-DM, unpack the installation file into the directory of your choice. Be sure to keep the directory paths that are in the `.zip` file.

## Installing HCP-DM on a Unix client

To install HCP-DM on a Unix client, use this command to unpack the installation file:

```
tar zxf hcpdm-version.tgz
```



## After upgrading HCP-DM from release 5.x

If you upgrade HCP-DM from a release 5.x installation that has the job database in a nondefault location and you want to retain your existing job information, you need to update your HCP properties file with the database location.

To set the job database location, enter the path to your job database directory in the **rootDBDir** entry of the *hcp-installation-directory/config/hcpdm.properties* file. For more information on setting the location of the `hcp-dm\database` directory, see ["Controlling the job database directory location"](#) on page 162.

After upgrading HCP-DM from release 5.x



# Glossary

## A

### **access control entry (ACE)**

In an access control list, a grant of permissions to perform various operations on an object. Each access control entry grants permissions to a specific user or group of users.

### **access control list (ACL)**

Optional metadata consisting of a set of grants of permissions to perform various operations on an object. Permissions can be granted to individual users or to groups of users.

ACLs are provided by users or applications and are specified as XML.

### **ACE**

See [access control entry \(ACE\)](#).

### **ACL**

See [access control list \(ACL\)](#).

### **Active Directory (AD)**

A Microsoft product that, among other features, provides user authentication services.

### **Active Directory domain**

A structural unit within Active Directory that serves as a container for objects such as users and groups.

**AD**

See [Active Directory \(AD\)](#).

**annotation**

A discrete unit of custom metadata. Annotations are typically specified in XML format.

**anonymous access**

A method of access to a namespace wherein the user or application gains access without presenting any credentials. *See also* [authenticated access](#).

**archive**

The body of data stored in an HCAP 2.6 or earlier system, including both fixed-content data and metadata.

**atime**

In POSIX file systems, metadata that specifies the date and time a file was last accessed. In HCP, POSIX metadata that initially specifies the date and time at which an object was ingested. HCP does not automatically change the **atime** value when the object is accessed.

Users and applications can change this metadata, thereby causing it to no longer reflect the actual storage time. Additionally, HCP can be configured to synchronize **atime** values with retention settings.

**authenticated access**

A method of access to a namespace wherein the user or application presents credentials to gain access. *See also* [anonymous access](#).

**authentication**

See [user authentication](#).

**C****CIFS**

Common Internet File System. One of the namespace access protocols supported by HCP. CIFS lets Windows clients access files on a remote computer as if the files were part of the local file system.

**cryptographic hash value**

A system-generated metadata value calculated by a cryptographic hash algorithm from object data. This value is used to verify that the content of an object has not changed.

**custom metadata**

User-supplied information about an HCP object. Custom metadata is specified as one or more annotations, where each annotation is a discrete unit of information about the object. Users and applications can use custom metadata to understand and repurpose object content.

**D****Data Migrator**

See [HCP Data Migrator \(HCP-DM\)](#).

**data protection level (DPL)**

The number of copies of the data for an object HCP must maintain in the repository. The DPL for an object is determined by the service plan that applies to the namespace containing the object.

**default namespace**

A namespace that supports only anonymous access through the HTTP protocol. An HCP system can have at most one default namespace. The default namespace is used mostly with applications that existed before release 3.0 of HCP.

**default tenant**

The tenant that manages the default namespace.

**DNS**

See [domain name system \(DNS\)](#).

**domain**

A group of computers and devices on a network that are administered as a unit.

**domain name system (DNS)**

A network service that resolves domain names into IP addresses for client access.

**DPL**

See [data protection level \(DPL\)](#).

See [HCP S Series Node](#).

**F****fixed-content data**

A digital asset ingested into HCP and preserved in its original form as the core part of an object. Once stored, fixed-content data cannot be modified.

**G****GID**

POSIX group identifier.

**H****hash value**

See [cryptographic hash value](#).

**HCAP**

See [Hitachi Content Archive Platform \(HCAP\)](#).

**HCP**

See [Hitachi Content Platform \(HCP\)](#).

**HCP Data Migrator (HCP-DM)**

An HCP utility that can transfer data from one location to another, delete data from a location, and change object metadata in a namespace. Each location can be a local file system, an HCP namespace, a default namespace, or an HCAP 2.x archive.

**HCP-DM**

See [HCP Data Migrator \(HCP-DM\)](#).

**HCP namespace**

A namespace that supports user authentication for data access through the HTTP, HS3, and CIFS protocols. HCP namespaces also support access control lists (HCP 5.0 and later) and versioning. An HCP system can have multiple HCP namespaces.

**HCP tenant**

A tenant created to manage HCP namespaces.

**Hitachi Content Archive Platform (HCAP)**

The predecessor to Hitachi Content Platform.

**Hitachi Content Platform (HCP)**

A distributed object-based storage system designed to support large, growing repositories of fixed-content data. HCP provides a single scalable environment that can be used for archiving, business continuity, content depots, disaster recovery, e-discovery, and other services. With its support for multitenancy, HCP securely segregates data among various constituents in a shared infrastructure. Clients can use a variety of industry-standard protocols and various HCP-specific interfaces to access and manipulate objects in an HCP repository.

**hold**

A condition that prevents an object from being deleted by any means and from having its metadata modified, regardless of its retention setting, until it is explicitly released.

**HTTP**

HyperText Transfer Protocol. The protocol HCP-DM uses to access namespace content.

**HTTPS**

HTTP with SSL security. See [HTTP](#) and [SSL](#).

**I****index**

An index of the objects in namespaces that is used to support search operations.

**index setting**

The property of an object that determines whether the metadata query engine indexes the custom metadata associated with the object.

**item**

An HCP or HCAP object, a file in a local file system, a symbolic link, or a directory.

**J****job**

A copy, delete, or metadata operation that's in progress or the configuration and status information for any given copy, delete, or metadata operation. Jobs can be saved for later access and use.

**M****metadata**

System-generated and user-supplied information about an object. Metadata is stored as an integral part of the object it describes, thereby making the object self-describing.

**N****namespace**

A logical partition of the objects stored in an HCP system. A namespace consists of a grouping of objects such that the objects in one namespace are not visible in any other namespace. Namespaces are configured independently of each other and, therefore, can have different properties.

HCP-DM treats HCAP 2.x archives and local file systems as namespaces.

**namespace access protocol**

A protocol that can be used to transfer data to and from namespaces in an HCP system.

**namespace profile**

A named set of configuration information that identifies a namespace or archive and associates it with parameters to be used in copy or delete operations.



**NFS**

Network File System. One of the namespace access protocols supported by HCP. NFS lets clients access files on a remote computer as if the files were part of the local file system.

**node**

A server running HCP software and networked with other such servers to form an HCP system.

**O****object**

An exact digital representation of data as it existed before it was ingested into HCP, together with the system and custom metadata that describes that data. Objects can also include ACLs that give users and groups permission to perform certain operations on the object.

An object is handled as a single unit by all transactions and internal processes, including shredding, indexing, versioning, and replication.

**P****permission**

One of these:

- In POSIX permissions, the ability granted to the owner, the members of a group, or other users to access a file, object, directory, or symbolic link. A POSIX permission can be read, write, or execute.
- In a user account, the granted ability to perform a specific type of operation in a given namespace.
- In an ACL associated with an object, the granted ability to perform a specific type of operation on the object.

**policy**

One or more settings that influence how transactions and internal processes work on objects. Such a setting can be a property of an object, such as retention, or a property of a namespace, such as versioning.

**POSIX**

Portable Operating System Interface for UNIX. A set of standards that define an application programming interface (API) for software designed to run under heterogeneous operating systems.

**privileged delete**

A delete operation that works on an object regardless of whether the object is under retention, except if the object is on hold. This operation is available only to users and applications with explicit permission to perform it.

**privileged purge**

A purge operation that works on an object regardless of whether the object is under retention, except if the object is on hold. This operation is available only to users and applications with explicit permission to perform it.

**profile user**

A user account specified in a namespace profile.

**protocol**

See [namespace access protocol](#).

**purge**

The operation that deletes all versions of an object.

**R****replication**

The process of keeping selected HCP tenants and namespaces and selected default-namespace directories in two HCP systems in sync with each other. This entails copying object creations, deletions, and metadata changes from each system to the other or from one system to the other.

**repository**

The aggregate of the namespaces defined for an HCP system.

**retention class**

A named retention setting. The value of a retention class can be a duration, Deletion Allowed, Deletion Prohibited, or Initial Unspecified.

**retention hold**

See [hold](#).

**retention period**

The period of time during which an object cannot be deleted.

**retention setting**

The property that determines the retention period for an object.

**S****shred setting**

The property that determines whether an object will be shredded or simply removed when it's deleted from HCP.

**shredding**

The process of deleting an object and overwriting the locations where all its copies were stored in such a way that none of its data or metadata can be reconstructed. Also called **secure deletion**.

**SSL**

Secure Sockets Layer. A key-based Internet protocol for transmitting documents through an encrypted link.

**system metadata**

System-managed properties that describe the content of an object. System metadata includes policies, such as retention and data protection level, that influence how transactions and internal processes affect the object.

**T****tenant**

An administrative entity created for the purpose of owning and managing namespaces. Tenants typically correspond to customers or business units.

## U

### UID

POSIX user ID.

### user account

A set of credentials that gives a user access to namespace content through HCP Data Migrator.

### user authentication

The process of checking that the combination of a specified username and password is valid when a user tries to access a namespace.

## V

### versioning

An optional namespace feature that enables the creation and management of multiple versions of an object.

## W

### WORM

Write once, read many. A data storage property that protects the stored data from being modified or overwritten.

## X

### XML

Extensible Markup Language. A standard for describing data content using structural tags called elements.

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