IBM Content Manager for
Multiplatforms

IBM

Migrating to Content Manager Version 8

Version 8 Release 2

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Multiplatforms

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> **Note**
> Before using this information and the product it supports, read the information in "Notices" on page 47.

Contents

About this guide

This guide provides the information that you need to plan for and migrate IBM®
Content Manager for Multiplatforms data and applications. The guide provides
guidelines, recommendations, and detailed steps for various migration scenarios.

Who should use this guide

Use this guide if you are responsible for completing any of the tasks required to
migrate from any of the following earlier Content Manager products to Content
Manager Version 8:

- Content Manager Version 6
- Content Manager Version 7

These tasks include migrating the functional components of a previous Content
Manager version, migrating your data, and migrating your applications.

Skills that are required

Depending on the configuration of your existing Content Manager system, you
should be familiar with one or more of the following operating systems: Windows®
and AIX®.

To perform the data migration, you should be familiar with:
- System operation
- Network administration
- Database administration on DB2 Universal Database™
- Database administration on Oracle (if you are using Oracle datasources)

To perform the application migration, you need the following skills and tools:

Skills

- Java™ or C++ programming
- Windows 95, Windows 98, Windows NT, Windows 2000, or AIX 4.3.0 or
  higher programming
- Experience with relational database technology
- Knowledge of compiling and linking programs in the C, C++, and
  Windows environment, or AIX
- Knowledge of online debugging techniques
- DB2® Universal Database
- Database administration on Oracle (if you are using Oracle datasources)

Tools

- Oracle (if you are using Oracle datasources)
- Java or C++ compiler that can generate a 32-bit Windows application
  (for example, Microsoft® Visual C++ Version 6), or the compiler
  provided with AIX

Conventions used in this guide

Unless otherwise stated:

- The term *Windows NT* refers to Windows NT® 4.0 and Windows 2000.
- The phrase *earlier Content Manager* refers to Content Manager for Multiplatforms Version 6 and Content Manager for Multiplatforms Version 7.

Where to find more information

Your product package includes a complete set of information to help you plan for, install, administer, and use your system. Product documentation and support are also available on the Web.

Information included in your product package

The product package contains an information center and each publication in portable document format (.PDF).

The information center

The product package contains an information center that you can install when you install the product. For information about installing the information center see *Planning and Installing Your Content Management System*.

The information center includes the documentation for Content Manager, Enterprise Information Portal, and VideoCharger™. Topic-based information is organized by product and by task (for example, Administration). In addition to the provided navigation mechanism and indexes, a search facility also aids retrievability.

PDF publications

You can view the PDF files online using the Adobe Acrobat Reader for your operating system. If you do not have the Acrobat Reader installed, you can download it from the Adobe Web site at www.adobe.com.

Table 1 shows the Content Manager publications included with IBM Content Manager for Multiplatforms.

Table 1. Content Manager publications

File name	Title	Publication number
install	*Planning and Installing Your Content Management System*[1]	GC27-1332-01
migrate	*Migrating to Content Manager Version 8*	SC27-1343-01
sysadmin	*System Administration Guide*	SC27-1335-01

When you order IBM Content Manager for Multiplatforms, you also receive IBM Enterprise Information Portal for Multiplatforms. Or, you can separately order IBM Enterprise Information Portal for Multiplatforms. Table 2 shows the Enterprise Information Portal publications that are included with the product.

Table 2. Enterprise Information Portal publications

File name	Title	Publication number
apgwork	*Workstation Application Programming Guide*[1]	SC27-1347-01
ecliinst	*Installing, Configuring, and Managing the eClient*	SC27-1350-02

Table 2. Enterprise Information Portal publications (continued)

File name	Title	Publication number
eipinst	*Planning and Installing Information Integrator for Content*	GC27-1345-01
eipmanag	*Managing Information Integrator for Content*	SC27-1346-01
messcode	*Messages and Codes*[2]	SC27-1349-01

Notes:

1. The *Workstation Application Programming Guide* contains information about programming applications for both Content Manager and Enterprise Information Portal.

2. *Messages and Codes* contains the messages and codes for Content Manager and Enterprise Information Portal.

Support available on the Web

Product support is available on the Web. Click **Support** from the product Web sites at:

www.ibm.com/software/data/cm/

www.ibm.com/software/data/eip/

The documentation is included in softcopy with the product. To access product documentation on the Web, click **Library** on the product Web site.

An HTML-based documentation interface, called Enterprise Documentation Online (EDO), is also available from the Web. It currently contains the API reference information. Go to the Enterprise Information Portal Library Web page for information about accessing EDO.

How to send your comments

Your feedback helps IBM to provide quality information. Please send any comments that you have about this publication or other Content Manager or Enterprise Information Portal documentation. You can use either of the following methods to provide comments:

- Send your comments from the Web. Visit the IBM Data Management Online Reader's Comment Form (RCF) page at:

  www.ibm.com/software/data/rcf

  You can use the page to enter and send comments.

- Send your comments by e-mail to comments@vnet.ibm.com. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, include the location of the text (for example, a chapter and section title, a table number, a page number, or a help topic title).

Chapter 1. Overview

This section provides an overview of the differences between earlier Content Manager versions and Content Manager Version 8. It also provides a high-level overview of migration as an end-to-end scenario of the process.

Differences between earlier Content Manager versions and Content Manager Version 8

This section briefly describes the new function and concepts of Content Manager Version 8 and how they map to earlier Content Manager versions.

Improved workflow

Through integrated document routing, Content Manager Version 8 has improved workflow capabilities, including sequential routing, dynamic routing, and collection points.

See the *System Administration Guide* for a complete description of document routing and how to implement it with the system administration client. For information about coding your applications to use document routing, see the *Workstation Application Programming Guide*.

If you install Enterprise Information Portal Version 8, you can optionally install advanced workflow. In Enterprise Information Portal Version 8, you are no longer required to shadow and maintain user definitions in MQSeries® Workflow. In fact, installing, configuring, and maintaining MQSeries or MQSeries Workflow is not required. For information about the differences between document routing and advanced workflow, see *Planning and Installing Your Content Management System*.

Common system administration

You can now use a single system administration client application to access either Content Manager or Enterprise Information Portal (and all of its content servers). Within Content Manager, administrative domains provide a way for you to limit administrative access to subsections of the library server.

For information about the Content Manager system administration client, see the *System Administration Guide*; for information about the Enterprise Information Portal system administration client, see *Managing Information Integrator for Content.*

Resource manager

The resource manager is an extension of the earlier Content Manager object server. As with the object server, applications can use the resource manager to store, retrieve, and manage objects. The new resource manager also supports direct client and third party access to objects from the new Content Manager Version 8 API.

See *Planning and Installing Your Content Management System* for information about how to set up your resource manager or managers. For information about coding your applications to access your resource manager, see the *Workstation Application Programming Guide*.

Integrated text searching

Content Manager Version 8 no longer uses the Text Search Engine for searching text. Instead, text and metadata searches use the DB2 Universal Database Text Information Extender (TIE).

Although Content Manager Version 8 continues to provide text indexing, with the new combination of function, you can:

- Conduct attribute-based text search
- Easily implement complex searches on items and components with better performance than before
- Quickly set up your system for text searching

See the *System Administration Guide* for a complete description of text searching using the Text Information Extender and how to implement it with the system administration client. For information about coding your applications to search text using TIE, see the *Workstation Application Programming Guide*.

Image searching

Image searching is no longer supported in Content Manager Version 8.

One for one migration

Because of changes to the data model, some things cannot be migrated one for one. For example, index classes are migrated to item types. In addition, multi-value attributes do not exist explicitly in Content Manager Version 8. So, if you had them in Content Manager Version 7, they are migrated to Content Manager Version 8 as child components.

Truncation and character substitution in mapping

In Content Manager Version 8, you can associate between both an internal name and a display name to entities such as item types, attributes, and views.

During the migration process, the Content Manager 7.1 associated with these entities are mapped to the display name in Content Manager Version 8. Due to the restrictions on the length and the character set associated with the internal names of Content Manager Version 8, the migration utility performs truncation and character substitution in mapping the Content Manager Version 7.1 names to the internal names of Content Manager Version 8.

Specifically, the internal names can only contain alpha numeric characters. If a Content Manager Version 7.1 name contained characters other than alphanumeric, those characters are changed to an underscore(_). In addition, the internal names are limited to 16 characters. So, Content Manager Version 7 names longer than 16 characters are truncated.

You can view Content Manager Version 7 names, and what they are mapped to in Content Manager Version 8 during the migration process, by looking at the detailed view for item type, attributes, and views in the sysadmin program.

Enhanced data model

Table 3 on page 3 maps the core conceptual terminology used in previous Content Manager versions and products with terminology used in Content Manager Version 8. All of the Content Manager and Enterprise Information Portal terms are defined in the Glossary on page 51.

Table 3. Terminology map, basic terminology

Earlier Content Manager	Content Manager Version 8	Enterprise Information Portal	On Demand	IWP/WAF
key field	attribute	federated attribute	field	keyword field
index class	item type	federated entity	application group	folder type
search criteria		search criteria	search criteria	
		search template	folder	
part	resource item		document	

Content Manager Version 8 includes an enhanced data model. The following concepts have been extended or added:

- Hierarchical item type: Earlier Content Manager index classes are extended as item types in Content Manager Version 8.
- Earlier Content Manager parts are extended as resource items in Content Manager Version 8.
- Versioning is extended in Content Manager in Version 8.
- Links are extended in Content Manager in Version 8.
- References are new in Content Manager Version 8.
- Attribute groups are new to Content Manager in Version 8.

Hierarchical item type

In earlier Content Manager, item types, which were called index classes, consisted of a single level. In Content Manager Version 8, item types are composed of a root component and one or more optional child components. (Think of item types that contain only a root component as the equivalent of index classes in earlier Content Manager versions.)

You can create a hierarchy of child components, any number of levels deep and with multiple child components at each level. Each child component can in turn own other child components, thus forming a composite aggregate relationship, a feature new to Content Manager.

When you remove a root, or other parent component, then the related child components are removed as well.

See the *System Administration Guide* for a complete description of the following concepts: hierarchical item type, item type, root component, and child component. The *System Administration Guide* also describes how to use the system administration client to create and use these elements. For information about coding item types, including hierarchical item types, in your applications, see the *Workstation Application Programming Guide*.

Items

An *item* is an instance of an item type, which follows the template for the hierarchy. Items can be complete or they can point to an object on a resource manager. An item that points to an object on a resource manager is a *resource item.* An *object* is essentially a LOB (large object) such as a *JPEG* image, MP3 audio, *AVI* video, or a text block from a book that a user can store, retrieve, and manipulate as a single unit.

See the *System Administration Guide* for a complete description of the following concepts: item, resource item, and object. The *System Administration Guide* also describes how to use the system administration client to create and use these elements. For information about coding items and objects in your applications, see the *Workstation Application Programming Guide*.

Versioning

In Content Manager Version 7, versioning was available for parts. In Content Manager Version 8, you can define any item to have multiple versions. Versioning involves the whole item hierarchy, starting from the root component. Child components inherit the version of the root. You cannot independently change the version of a child component, but you can define how many versions to maintain. After the limit is exceeded, the oldest version is replaced by the most recent version of the item.

See the *System Administration Guide* for a complete description of the versioning concept and how to create versions with the system administration client. For information about coding versions in your applications, see the *Workstation Application Programming Guide*.

Links

Earlier Content Manager versions had a limited concept of a link between a folder and one or more documents. In Content Manager Version 8, a *link* is a one-to-many association between items at the root component level.

Such linking is also considered to form an aggregate relationship. You can use a link to represent parent-child association, similar to the relationship of documents and folders in earlier Content Manager. However, in Content Manager Version 8, the link allows this relationship to be more general. A root component that is linked with other items does not own those items. Hence, if you delete the root component that is the parent of the link, none of the linked-to child items is deleted.

See the *System Administration Guide* for a complete description of the link concept and how to create links with the system administration client. For information about coding links in your applications, see the *Workstation Application Programming Guide*.

References

A reference is a single direction, one-to-one association between items. You can use references between a root or child component and another root component. A reference is represented as a reference attribute in a component. A component might have several reference attributes, each of which refer to other root components.

Also in contrast to Version 7, references in Content Manager Version 8 are now fully maintained by the system.

See the *System Administration Guide* for a complete description of the reference concept and how to create references with the system administration client. For information about coding references in your applications, see the *Workstation Application Programming Guide*.

Attribute groups

Attributes in Content Manager Version 8 are the same as attributes in earlier Content Manager versions. Content Manager Version 8 introduces the concept of attribute groups.

You can use attribute groups to collect related attributes for convenient use when you are creating item types. Instead of individually locating, selecting, and adding individual attributes, you can select them all by selecting the attribute group. An example of an attribute group is Address, which combines the attributes Street, City, State, Country, and Postal Code.

You can continue to maintain the individual attributes without altering the attribute group.

Attribute groups cannot be nested. Each member of an attribute group cannot itself be a member of another attribute group.

Multi-valued attributes are supported differently in Content Manager Version 8. You create a child component when you need to store multiple values for an attribute.

See the *System Administration Guide* for a complete description of the following concepts: attribute (including multi-valued attribute) and attribute group. The *System Administration Guide* describes how to create attributes and attribute groups with the system administration client. For information about coding attributes and attribute groups in your applications, see the *Workstation Application Programming Guide*.

Workflow-related concepts

Table 4 maps the workflow-related conceptual terminology used in previous Content Manager versions and products with terminology used in Content Manager Version 8 and Enterprise Information Portal Version 8. All of the Content Manager and Enterprise Information Portal terms are defined in the Glossary on page 51.

Table 4. Terminology map, workflow and document routing

EIP Version 7 workflow	Earlier Content Manager workflow	EIP Version 8 advanced workflow	Content Manager Version 8 document routing	IWP/WAF
action list		action list		action list
workflow	workflow	workflow	process	work process
work item		document or folder	document or folder	case or work case
worklist	workbasket	worklist	workbasket [1], step, container, or system-assigned workbasket	workbasket
work packet		folder		work package
work state		work state	work step	
				working set

Notes:

1. Available to administrator only.

End-to-end scenario

Table 5 summarizes a possible migration scenario. In this scenario, you create a test system to validate your migration before you put the migrated system into production.

Use this scenario as a high-level overview of the migration process, which is described in more detail in Chapter 2, "Migrating by configuration", on page 9, Chapter 3, "Migrating your data", on page 23, and Chapter 4, "Migrating your applications", on page 29.

Table 5. End-to-end migration scenario

Step	Earlier Content Manager servers[1]	Content Manager Version 8 servers[2]	Client workstations
1	Back up databases. Back up actual object server objects, if possible.		
2		Install Content Manager Version 8 library server. **Recommendation:** Install the Version 8 library server on a different computer from the old library server for adequate disk space.	
3	On the same computer as each of your earlier Content Manager object servers, install one Content Manager Version 8 resource manager for each object server. If any computer does not meet the Version 8 requirements, you can first: • Upgrade the computer to meet the requirements • Move the earlier object server to a machine that meets the requirements and test it		
4		Optional: Run a test migration of both system setup and actual data. You can do either: **System definition and user data migration (full)** Use the migration wizard[3] **System definition migration only (partial)** Use the migration wizard[3] to migrate system definition data and then import representative documents from the earlier Content Manager system. Either procedure should be an adequate test for supplied client applications.	
5			If you want to continue using existing custom client applications, you must update them to use the Version 8 APIs.

Table 5. End-to-end migration scenario (continued)

Step	Earlier Content Manager servers[1]	Content Manager Version 8 servers[2]	Client workstations
6		Use the system administration client to compare the Version 8 system with the earlier Content Manager system.	Optional: Install the Content Manager Version 8 Client for Windows on at least one workstation and test access to migrated data. • Earlier Content Manager clients continue to access earlier Content Manager servers. • The test Content Manager Version 8 clients now provide access to Version 8 servers.
7			Install the Content Manager Version 8 Client for Windows on all client workstations. **Important:** Notify users to continue to use earlier Content Manager clients and not to use Content Manager Version 8 clients until they are notified.
8	Ensure that all replication is complete, all applicable objects are destaged, and purge the staging area.		
9		Run the migration wizard[3] again to migrate both system definition and user data.	
10	Use the system administration client to compare the earlier Content Manager system setup information with the migrated system setup.	Use the system administration client to compare the Version 8 system with the earlier Content Manager system.	Use the Content Manager Version 8 client to access the migrated data. If you have custom client applications: Test them.
11			Remove the earlier Content Manager clients from all workstations.[4]
12	Remove earlier Content Manager servers.[5]		

Notes:

1. Library server and object servers.

2. Library server and resource managers. In Version 8, an object server is called a resource manager.

3. For information about how to run the migration wizard, see Chapter 3, "Migrating your data", on page 23.

4. Each earlier Content Manager Client for Windows and Content Manager Version 8 Client for Windows coexist on the same workstation. Removing the earlier client does not affect the client that remains.

5. Each earlier Content Manager object server and Content Manager Version 8 resource manager coexist on the same workstation. Removing the earlier object server does not affect the resource manager that remains.

Chapter 2. Migrating by configuration

This section contains steps for migrating from eight possible original configurations to eight possible new configurations. The scenarios below describe migration from Content Manager 6 or Content Manager 7 to Content Manager 8 related to Oracle and DB2 UDB databases. However, cross-database migration is not supported. You can migrate Oracle to Oracle and DB2 UDB to DB2 UDB, but not Oracle to DB2 UDB or vice versa.

Use Table 6 to find the migration scenario that is closest to your situation and use it to understand the steps you need to take for your actual migration. (In this section, *earlier Content Manager* refers to Content Manager Version 6 and Content Manager Version 7; *Windows NT* refers to both Windows NT and Windows 2000.)

Table 6. Summary of migration scenarios

Scenario number	Original configuration	Destination configuration	Follow steps for:
1	Earlier Content Manager library server on Windows NT or AIX, or VisualInfo or Digital Library Version 2.4 library server on OS/2	Version 8 library server on Windows NT or AIX	"Out-of-the box migration" on page 11
	Earlier Content Manager object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX	
	Content Manager Version 6 or Version 7 Client for Windows or Version 2.4 Client for OS/2	Version 8 Client for Windows	
2	Earlier Content Manager library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX	"Content Manager Version 6 or 7 with VideoCharger to Version 8" on page 12
	Earlier Content Manager object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX	
	VideoCharger Version 7 on Windows NT or AIX	VideoCharger Version 8 on Windows NT or AIX	
	Earlier Content Manager Client for Windows	Version 8 Client for Windows	
3	Earlier Content Manager library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX	"Content Manager Version 6 or 7 with VisualInfo/Digital Library Version 2 OS/2 object server to Version 8" on page 14
	VisualInfo™ or Digital Library Version 2 object server on OS/2®	Version 8 resource manager on Windows NT or AIX	
	Earlier Content Manager Client for Windows	Version 8 Client for Windows	

Table 6. Summary of migration scenarios (continued)

Scenario number	Original configuration	Destination configuration	Follow steps for:
4	Earlier Content Manager library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX	"Content Manager Version 6 or 7 with custom folder manager application to Version 8 with custom ICM connector application" on page 15
	Earlier Content Manager object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX	
	Custom folder manager application	Custom ICM connector application	
5	Earlier Content Manager library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX	"Content Manager Version 6 or 7 with custom DL connector application to Version 8 with custom ICM connector application" on page 17
	Earlier Content Manager object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX	
	Custom DL connector application	Custom ICM connector application	
6	Earlier Content Manager library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX	"Content Manager Version 6 or 7 with EIP toolkit and custom EIP application to Version 8 with EIP connector toolkits and custom EIP application" on page 18
	Earlier Content Manager object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX	
	Enterprise Information Portal Version 7 Toolkit	Enterprise Information Portal Version 8 connector toolkits	
	Custom federated application using Enterprise Information Portal Version 7	Custom federated application using Enterprise Information Portal Version 8	
7	Earlier Content Manager library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX	"Content Manager Version 6 or 7 with EIP toolkit and eClient to Version 8 with EIP connector toolkits and eClient" on page 20
	Earlier Content Manager object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX	
	Enterprise Information Portal Version 7 Toolkit	Enterprise Information Portal Version 8 connector toolkits	
	Enterprise Information Portal Version 7 eClient	Enterprise Information Portal Version 8 eClient	

Table 6. Summary of migration scenarios (continued)

Scenario number	Original configuration	Destination configuration	Follow steps for:
8	Content Manager Version 7 library server on Windows NT or AIX	The following, coexisting library servers: • Version 7 library server on Windows NT or AIX • Version 8 library server on Windows NT or AIX	"Content Manager Version 7 to system with both Version 7 and 8" on page 21
	Content Manager Version 7 object server on Windows NT or AIX	The following, coexisting resource managers: • Version 7 object server on Windows NT or AIX • Version 8 resource manager on Windows NT or AIX	
	Content Manager 7 Client for Windows	The following, coexisting clients: • Version 7 Client for Windows • Version 8 Client for Windows • Enterprise Information Portal Version 8 federated application: eClient or custom	

Out-of-the box migration

The migration scenario described in this section applies to the base, or out-of-the-box, editions of earlier Content Manager or VisualInfo/Digital Library Version 2.4 and Content Manager Version 8. Table 7 summarizes the configuration before and after the migration.

Table 7. Summary of migration scenario 1

Original configuration	Destination configuration
Content Manager Version 6 or Version 7 library server on Windows NT or AIX, or VisualInfo or Digital Library Version 2.4 library server on OS/2	Version 8 library server on Windows NT or AIX
Content Manager Version 6 or Version 7 object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX
Content Manager Version 6 or Version 7 Client for Windows, or Version 2.4 Client for OS/2	Version 8 Client for Windows

To perform the migration that is summarized in Table 7, complete the following steps:

1. Back up your system.
2. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.

   • If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:

      – Use a different name for the Version 8 library server database

– Install the Version 8 library server in a different path
- If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

3. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

4. Install the Content Manager Version 8 Client for Windows as described in *Planning and Installing Your Content Management System*.

   Your environment might include many client machines; by installing the new client before migrating your data, it will be available for your users as soon as the migration is complete.

5. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

   If you are testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

   If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

6. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

7. Optional: Remove the earlier version of the Content Manager client.

8. Optional: Remove the earlier Content Manager servers.

Content Manager Version 6 or 7 with VideoCharger to Version 8

Table 8. Summary of migration scenario 2

Original configuration	Destination configuration
Content Manager Version 6 or 7 library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX
Content Manager Version 6 or 7 object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX
VideoCharger Version 7 on Windows NT or AIX	VideoCharger Version 8 on Windows NT or AIX

Table 8. Summary of migration scenario 2 (continued)

Original configuration	Destination configuration
Content Manager Version 6 or 7 Client for Windows	Version 8 Client for Windows

To perform the migration that is summarized in Table 8 on page 12, complete the following steps:

1. Back up your system.

2. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.

   - If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
     - Use a different name for the Version 8 library server database
     - Install the Version 8 library server in a different path
   - If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

3. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

4. Install the Content Manager Version 8 Client for Windows as described in *Planning and Installing Your Content Management System*.

   Your environment might include many client machines; by installing the new client before migrating your data, it will be available for your users as soon as the migration is complete.

5. Install the VideoCharger Version 8, as described in *Planning and Installing VideoCharger*.

   If you are migrating from VideoCharger Version 7 on AIX, then you must complete the following additional steps:

   a. Copy videos that are stored in your VideoCharger Version 7 MMFS (Multimedia File System) to VideoCharger Version 8 GPFS. For information about setting up a GPFS, see the AIX 5L publications: *System Management Concepts: Operating System and Devices* and *System Management Guide: Operating System and Devices.*

b. Run the provided cataloging utility to recatalog the videos that you copied in step 5a on page 13.

6. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

   If you are testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

   If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

7. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

8. Optional: Remove the earlier version of Content Manager Client for Windows.

9. Optional: Remove the earlier Content Manager servers.

Content Manager Version 6 or 7 with VisualInfo/Digital Library Version 2 OS/2 object server to Version 8

Table 9. Summary of migration scenario 3

Original configuration	Destination configuration
Content Manager Version 6 or 7 library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX
VisualInfo or Digital Library Version 2 object server on OS/2	Version 8 resource manager on Windows NT or AIX
Content Manager Version 6 or 7 Client for Windows	Version 8 Client for Windows

To perform the migration that is summarized in Table 9, complete the following steps:

1. Back up your system.

2. Install the Content Manager Version 6 or Version 7 object server on the machine where you plan to install the Content Manager Version 8 resource manager. The procedure is described in *Planning and Installation Guide* Version 6.1 (GC26-9831-00) and *Planning and Installing Content Manager* Version 7.1 (GC27-0864-00).

3. Remotely migrate objects from the VisualInfo or Digital Library Version 2 object server to the Content Manager Version 6 or Version 7 object server. For information about migrating from an earlier release to Content Manager Version 6.1, see *Planning and Installation Guide* Version 6.1 (GC26-9831-00). For information about migrating from an earlier release to Content Manager Version 7.1, see *Planning and Installing Content Manager* Version 7.1 (GC27-0864-00).

4. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.

- If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
  - Use a different name for the Version 8 library server database
  - Install the Version 8 library server in a different path
- If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

  During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

5. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

6. Install the Content Manager Version 8 Client for Windows as described in *Planning and Installing Your Content Management System*.

   Your environment might include many client machines; by installing the new client before migrating your data, it will be available for your users as soon as the migration is complete.

7. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

   If you are testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

   If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

8. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

9. Optional: Remove the earlier version of Content Manager Client for Windows.

10. Optional: Remove the earlier Content Manager servers.

Content Manager Version 6 or 7 with custom folder manager application to Version 8 with custom ICM connector application

Table 10. Summary of migration scenario 4

Original configuration	Destination configuration
Content Manager Version 6 or 7 library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX

Table 10. Summary of migration scenario 4 (continued)

Original configuration	Destination configuration
Content Manager Version 6 or 7 object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX
Custom folder manager application	Custom ICM connector application

To perform the migration that is summarized in Table 10 on page 15, complete the following steps:

1. Back up your system.
2. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.
   - If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
     - Use a different name for the Version 8 library server database
     - Install the Version 8 library server in a different path
   - If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.
3. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.
4. Run the migration wizard to migrate system definition data from your earlier library server to your new library server so that you can access it while you update your custom application. The procedure is described in Chapter 3, "Migrating your data", on page 23.
5. Update the custom application to use the ICM connector APIs. See "API migration tables for Content Manager and Enterprise Information Portal" on page 31 for information about how folder manager APIs map to ICM connector APIs.
6. Install the custom application on client workstations.
7. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

If you are still testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

8. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

9. Optional: Remove the earlier version of your custom application.

10. Optional: Remove the earlier Content Manager servers.

Content Manager Version 6 or 7 with custom DL connector application to Version 8 with custom ICM connector application

Table 11. Summary of migration scenario 5

Original configuration	Destination configuration
Content Manager Version 6 or 7 library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX
Content Manager Version 6 or 7 object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX
Custom DL connector application	Custom ICM connector application

To perform the migration that is summarized in Table 11, complete the following steps:

1. Back up your system.

2. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.

   • If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
     – Use a different name for the Version 8 library server database
     – Install the Version 8 library server in a different path

   • If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

3. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

4. Run the migration wizard to migrate system definition data from your earlier library server to your new library server so that you can access it while you update your custom application. The procedure is described in Chapter 3, "Migrating your data", on page 23.

5. Update the custom application to use the ICM connector APIs. See Chapter 4, "Migrating your applications", on page 29 for information about migrating applications to use the ICM connector APIs.

   Restriction: Image search is not supported by the ICM connector.

6. Install the custom application on client workstations.

7. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

   If you are using the text search feature of Content Manager or Enterprise Information Portal, be aware that the interface for text searching has changed--the DL connector used TextMiner; the ICM connector uses the DB2 Universal Database Text Information Extender. This change requires that all text documents be reindexed, which can take considerable time.

   If you are testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

   If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

8. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

9. Optional: Remove the earlier version of your custom application.

10. Optional: Remove the earlier Content Manager servers.

Content Manager Version 6 or 7 with EIP toolkit and custom EIP application to Version 8 with EIP connector toolkits and custom EIP application

Table 12. Summary of migration scenario 6

Original configuration	Destination configuration
Content Manager Version 6 or 7 library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX
Content Manager Version 6 or 7 object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX
Enterprise Information Portal Version 7 Toolkit	Enterprise Information Portal Version 8 connector toolkits
Custom federated application using Enterprise Information Portal Version 7	Custom federated application using Enterprise Information Portal Version 8

To perform the migration that is summarized in Table 12, complete the following steps:

1. Back up your system.

2. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.

   - If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
     - Use a different name for the Version 8 library server database
     - Install the Version 8 library server in a different path
   - If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

3. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

4. Install Enterprise Information Portal Version 8, as described in *Planning and Installing Your Content Management System.*

5. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

   If you are testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

   If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

6. Follow the procedure in *Planning and Installing Your Content Management System* to migrate your Enterprise Information Portal Version 7 database to your Enterprise Information Portal Version 8 system administration database. The process of migrating the Enterprise Information Portal Version 7 database automatically migrates your Content Manager Version 7 user, entity, and attribute mappings to Content Manager Version 8.

7. If you have any C++ federated applications, recompile them. You are not required to change the custom federated application to use it with Enterprise Information Portal Version 8.

8. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

9. Optional: Remove the earlier Content Manager servers.

Content Manager Version 6 or 7 with EIP toolkit and eClient to Version 8 with EIP connector toolkits and eClient

Table 13. Summary of migration scenario 7

Original configuration	Destination configuration
Content Manager Version 6 or 7 library server on Windows NT or AIX	Version 8 library server on Windows NT or AIX
Content Manager Version 6 or 7 object server on Windows NT or AIX	Version 8 resource manager on Windows NT or AIX
Enterprise Information Portal Version 7 Toolkit	Enterprise Information Portal Version 8 connector toolkits
Enterprise Information Portal Version 7 eClient	Enterprise Information Portal Version 8 eClient

To perform the migration that is summarized in Table 13, complete the following steps:

1. Back up your system.
2. Install the Content Manager Version 8 library server as described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier library server before installing Version 8.

   The Version 8 library server can be on the same or a different machine than the earlier library server.
   - If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
     - Use a different name for the Version 8 library server database
     - Install the Version 8 library server in a different path
   - If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.
3. Install a Content Manager Version 8 resource manager on the same machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*. Note that you do not remove your earlier object servers before installing Version 8 resource managers.

   Requirement: You must have the same number of Version 8 resource managers as you have earlier Content Manager object servers.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.
4. Install Enterprise Information Portal Version 8, as described in *Planning and Installing Your Content Management System*.

5. Install the Enterprise Information Portal Version 8 eClient, as described in *Installing, Configuring, and Managing the eClient*. The eClient installation program automatically migrates the related configuration files from Version 7 to Version 8.

6. Run the migration wizard to migrate system definition and user data from your earlier library server and object server to your new library server and resource manager. The procedure is described in Chapter 3, "Migrating your data", on page 23.

   If you are testing the migration process: You must migrate all user data in a single step. You are not required to migrate all of your system definition data during the same wizard session as all of your user data.

   If you are completing your final, real migration: You must migrate all system definition and user data during one migration session so that your data will be synchronized.

7. Follow the procedure in *Planning and Installing Your Content Management System* to migrate your Enterprise Information Portal Version 7 database to your Enterprise Information Portal Version 8 system administration database. The process of migrating the Enterprise Information Portal Version 7 database automatically migrates your Content Manager Version 7 user, entity, and attribute mappings to Content Manager Version 8.

8. Test your migrated system. Open the system administration client and view your migrated data. Open the Client for Windows and run queries to ensure that your results are as expected.

9. Optional: Remove the earlier Content Manager servers.

Content Manager Version 7 to system with both Version 7 and 8

Table 14. Summary of migration scenario 8

Original configuration	Destination configuration
Content Manager Version 7 library server on Windows NT or AIX	The following, coexisting library servers: • Version 7 library server on Windows NT or AIX • Version 8 library server on Windows NT or AIX
Content Manager Version 7 object server on Windows NT or AIX	The following, coexisting resource managers: • Version 7 object server on Windows NT or AIX • Version 8 resource manager on Windows NT or AIX
Content Manager 7 Client for Windows	The following, coexisting clients: • Version 7 Client for Windows • Version 8 Client for Windows • Enterprise Information Portal Version 8 federated application: eClient or custom

The configuration summarized in Table 14 does not require data migration. With this configuration, you can continue to use your earlier Content Manager system to access and manipulate your existing data, and use Content Manager Version 8 to create new data.

To configure the system that is summarized in Table 14 on page 21, complete the following steps:

1. Back up your system.

2. Install the Content Manager Version 8 library server on the same or different machine as the earlier library server. The procedure is described in *Planning and Installing Your Content Management System*.

   The Version 8 library server can be on the same or a different machine than the earlier library server.

   - If it is on the same machine as the earlier library server, take the following precautions to ensure that you do not overwrite your existing data:
     - Use a different name for the Version 8 library server database
     - Install the Version 8 library server in a different path
   - If you install Version 8 on a different machine, it does not need to be on the same operating system as the earlier library server. For example, if you have a Version 6 library server on Windows NT, you can migrate to a Version 8 library server on AIX.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

3. Install a Content Manager Version 8 resource manager on the same or different machine as each of your earlier object servers. The procedure is described in *Planning and Installing Your Content Management System*.

   During the installation process, be sure to allow the installation wizard to create the necessary Version 8 database. Ignore the warning that you might overwrite earlier data; that warning does not apply in this case because you are installing Version 8 for the first time.

4. Install the Content Manager Version 8 Client for Windows as described in *Planning and Installing Your Content Management System*.

After you configure the system, your users can use the applicable Client for Windows to directly access data that is stored in either earlier versions of Content Manager or Content Manager Version 8. Users can run federated searches across both earlier versions of Content Manager and Content Manager Version 8 simultaneously by using the federated application (either eClient or custom application). However, neither the eClient nor the custom federated application supply the full function of the Client for Windows.

Chapter 3. Migrating your data

What does it mean to migrate your data? When you migrate your data to Content Manager Version 8, you do not migrate your actual data, or objects, but the data in your system that points to those objects and establishes the structure that you use for finding and retrieving those objects. You use the provided migration wizard to migrate your system definition data (for example, user IDs, access control lists, and index class definitions) and your user data (for example, attribute values, relationships between items such as folder relationships, and checkout status information).

You can use the migration wizard to migrate data from Content Manager Version 6.1 or Content Manager Version 7.1. If you want to migrate from an earlier Content Manager release or product, you must first migrate from that earlier release or product to Content Manager Version 6.1 (if you have it) or Content Manager Version 7.1. For information about migrating from an earlier release to Content Manager Version 6.1, see *Planning and Installation Guide* Version 6.1 (GC26-9831). For information about migrating from an earlier release to Content Manager Version 7.1, see *Planning and Installing Content Manager* Version 7.1 (GC27-0864).

Before you begin

Before you begin, you need to know the following information:

- The migration is not compatible with DB2 Universal Database Version 5.2 run-time executable and will give an error indicating a missing library when you execute the `frn2icml` command.

  The migration utility has been built and bound using DB2 Universal Database Version 7.2. If the current version of Content Manager you are running is on DB2 Universal Database Version 5.2, you will first need to upgrade to DB2 Universal Database Version 7.2 to migrate to Content Manager Version 8.

- If Content Manager Version 8 will be running on the same machine as your current version of CM, you must first upgrade your DB2 Universal Database level before you can install Content Manager Version 8 and perform the migration.

- If you will be running Content Manager Version 8 on a different machine, you should install DB2 Universal Database Version 7.2 and CM Version 8 before the migration. Then, do a backup of the Content Manager Version 7 server databases from your DB2 Universal Database Version 5.2 machine and restore these databases on your DB2 Universal Database Version 7.2 machine.

- If you are using Oracle for your database, you must upgrade to Oracle Version 8.1.7.4 (or higher, up to Version 9), or Oracle Version 9.2.0.1 (or later) before you begin the migration process.

Before you can run the migration wizard, you must complete the following steps:

1. Complete the necessary installation steps for your environment as described in Chapter 2, "Migrating by configuration", on page 9.

2. In the `migrate` directory, on the product CD-ROM, there are two subdirectories: DB2 and Oracle. Copy the DB2 or the Oracle directory (for the database you are using) and its contents from the installation CD to a directory on your earlier Content Manager library server. You must have read/write authority for the library server directory.

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Requirements: This library server machine must have:
- Space available for the migration, or it must be attached to a shared drive with enough space. The migration wizard will provide an estimate of the space required.
- A DB2 connection to the earlier Content Manager library server.

3. Ensure that you have the following required pieces of information:
   - Earlier Content Manager:
     – Library server name
     – User ID
     – Password
   - To access the Content Manager Version 8 library server, you need
     – The user ID
     – And the corresponding password

     for the Content Manager Version 7 administrative user that created the Version 7 library server tables (for either DB2 or Oracle).
   - The Content Manager Version 8:
     – Library server name
     – The administrator user ID
     – The administrator user ID password
     – The schema name

4. From your earlier Content Manager system administration client, verify that there are no users logged in to the Content Manager.

5. Ensure data integrity:
   - Complete replication
   - Destage all objects in the staging area
   - Purge the staging area

6. Stop the earlier Content Manager library server, SMS server, and object server to ensure that no users log on during migration and that no objects are migrated outside of the migration that you are beginning.

7. Verify that the database (DB2 Universal Database or Oracle) server is running.

8. Ensure that you have backed up your system.

Running the migration wizard

To run the migration wizard:

1. On the earlier Content Manager library server, at a command line, change to the directory where you copied the contents of the `migrate` directory in "Before you begin" on page 23, step 2.

2. Enter: `frn2icml`

3. In step 2 of the wizard:
   a. Enter the appropriate user names and passwords to connect to your earlier Content Manager library server and library server database.
   b. Enter the appropriate user names and passwords to connect to your Content Manager Version 8 library server and library server database.
   c. Enter the database schema name.
   d. Click **Verify** to connect to your earlier library server and to your Version 8 library server.

If communication fails with the earlier Content Manager library server, you can view the `migrate.err` file or errors.

In addition, Content Manager Version 8 related errors can be found in the `ICM.LOG` or the `ICMSERVER.LOG` files. The `ICM.LOG` can be found in the same directory from which the migration utility was run. The `ICMSERVER.LOG` file will be in a location specified in the server control table. For more information about the message, see *Messages and Codes* Version 7.1 (SC27-0870).

If communication fails with the Content Manager Version 8 library server, the **Communication status** field displays an SQL error message. For more information about the message, see the DB2 Universal Database *Message Reference* (GC09-2978).

If authorization fails, verify that the database user name that you entered exists, has administrative privileges, and that the password you entered is correct.

4. Some earlier Content Manager data is no longer required in Content Manager Version 8. In step 3 of the wizard:

   a. Click **Generate Report** to view a list of the database tables that will not be migrated.

   b. Back up the database tables listed in the report.

   During this step, the wizard might detect existing migration data (for example, if you previously ran this wizard) and prompt you to decide what to do with that data. If the wizard has trouble during the detection of existing data, it prompts you to click **Refresh** so that it can try again. The migration utility will only delete the migration related data from the Content Manager Version 7 library server database. **Important:** If you choose to delete this data, make sure that you also delete any migrated data from your Content Manager Version 8 system.

5. In step 4 of the wizard, identify a location for storing the output of the migration wizard.

6. In step 5 of the wizard, select a default code page and language code.

   • Select the code page used by your client machines. Selecting the correct code page ensures proper display of text notes on your clients.

   • Select the primary language code in which the names for the data modeling objects were defined in your earlier Content Manager system administration client. This language code was used during the creation of your data model, so names and labels are written in this language. Selecting the correct language code ensures proper display of data model names and labels.

7. Content Manager Version 8 includes new features and changes in implementation. In step 6 of the wizard:

   • If you used the item names capability of Content Manager Version 7.1, determine whether you want to migrate the item names by considering the following:

     – Content Manager Version 8 does not include the item name capability, so if you select this check box, the item names are migrated as item attributes.

     – Items in content manager do not contain `itemname` as a system defined attribute. If you choose to migrate `itemnames`, the migration wizard defines an `itemname` as a user-defined attribute in the root component of all item types. The `itemname` value from Content Manager Version 7 is placed in this attribute.

- Select a default grant privilege set for the users that you are migrating. A *grant privilege set* specifies the privileges that users can grant to users that they create. Grant privilege sets are new in Version 8 Release 2. For more information about grant privilege sets, see the *System Administration Guide*.

8. In step 7, map each earlier Content Manager object server with a Content Manager Version 8 resource manager. To map an object server with a resource manager:

   a. Select an object server from the **Object servers** list.

   b. Select a resource manager from the **Resource managers** list.

   c. Click **Map**. If you attempt to map an object server with a resource manager that has a different host name, the wizard prompts you for verification before proceeding. If you choose to migrate your Content Manager Version 7 object server data to a Content Manager Version 8 resource manager that is on a different machine, you need to devise a mechanism by which the Content Manager Version 8 resource manager will be able to access objects on the Content Manager Version 7 object server machine.

   You must have at least as many resource managers as object servers. If you do not, the wizard will inform you to add a resource manager or remove an object server and click **Refresh**.

9. Click **Migrate System Table** to migrate your earlier Content Manager system definition data, which consists of:
   - Language definitions
   - Privileges
   - Object server definitions
   - Collection definitions
   - Users
   - Groups
   - ACLs
   - Attributes
   - Index classes
   - Views
   - Workbasket definitions
   - Workflow definitions

   The migration wizard uses the Content Manager Version 8 stored procedures to create the Version 8 entities. See the Content Manager Version 8 library server log file to see what errors occurred during this step of the migration process. For more information about errors identified in the log file, see *Messages and Codes*.

10. In step 9 of the wizard, prepare your user data for migration. The wizard estimates the amount of time necessary to complete this migration step, which can take a long time to complete, and must be completed in one session. Before clicking **Prepare Data Tables**, verify that you have the necessary time to complete the migration before the Content Manager servers must be back in production.

    At the end of this step, all of the library server files are placed in a single library server directory. All of the object server files (for each object server) are placed in a single object server directory. (There is a separate directory for each object server if there are multiple object servers).

11. In step 10 of the wizard, click **Print Instructions** to print the steps that you must follow to import the migrated data from the identified directory into Content Manager Version 8 Release 2.

12. Click **Exit** to close the wizard.

Importing the wizard output into Content Manager Version 8

The migration wizard produces compressed data files in the JAR format and stores them in the directory you specified in step 3 of the wizard. After running the migration wizard, you have one data file for the library server and one for each object server. To complete the migration, follow these steps:

1. Copy the `migrate` directory and its contents from the installation CD to a directory on your Content Manager Version 8 library server. You must have read/write authority for the library server directory.

2. Copy the `migrate` directory and its contents from the installation CD to a directory on each of your Content Manager Version 8 resource managers. You must have read/write authority for these resource manager directories.

3. Copy each of the *ServerName*.jar files to the appropriate server.

4. On your Content Manager Version 8 library server, change to the directory where you copied the contents of the `migrate` directory in Step 1 of this procedure.

   On Windows: Complete this and subsequent steps from a DB2 command prompt.

   On AIX: Complete this and subsequent steps from a command prompt.

5. To import the data into your Version 8 library server, enter:

   `icmimpl CM8LSNAME CM8ADMINID CM8ADMINPW`

   Where:

   CM8LSNAME
   　　　The name of the Content Manager Version 8 library server database.

   CM8ADMINID
   　　　The database administrator user ID that was used to create the Content Manager Version 8 library server database tables.

   CM8ADMINPW
   　　　The password of the database administrator user ID that was used to create the Content Manager Version 8 library server database tables.

   During the object server database migration, the migration utility creates a table in your Content Manager Version 7 object server database and loads data into this table. An error during the load process might put the tablespace in a locked state and deny access to other tables in that tablespace. For that reason, we recommend that you create this new table in a separate tablespace.

6. On each of the Content Manager Version 8 resource managers, change to the directory where you copied the contents of the `migrate` directory in Step 2 of this procedure.

7. To import the data into your Version 8 resource manager, enter:

   `icmimpo CM7OSNAME CM7OSADMINID CM7OSADMINPW CM7TBLSPACE`
   `CM8RMNAME CM8RMADMINID CM8RMADMINPW`

   Where:

CM7OSNAME
> The name of the Content Manager Version 7 object server .

CM7OSADMINID
> The database administrator user ID that was used to create the Content Manager Version 7 object server database tables.

CM7OSADMINPW
> The password of the database administrator user ID that was used to create the Content Manager Version 7 object server database tables.

CM7TBLSPACE
> The tablespace where the migration related table should be located.

CM8RMNAME
> The name of the Content Manager Version 8 resource manager.

CM8RMADMINID
> The database administrator user ID that was used to create the Content Manager Version 8 resource manager database tables.

CM8RMADMINPW
> The password of the database administrator user ID that was used to create the Content Manager Version 8 resource manager database tables.

Chapter 4. Migrating your applications

IBM Content Manager for Multiplatforms is continually changing and improving to provide more and better function for you.

When you migrate your applications to the new ICM connector, take some extra time to plan and consider the improvements that you can make in your own applications. Your efforts can be very worthwhile:

- To make your applications more efficient (possibly faster) with function that is new in this release.
- To help you add function to your applications that was not possible in earlier releases.

Recommended steps for migrating folder manager (C) applications

You can take a more hierarchical approach when you are converting folder manager APIs to the new ICM connector. For example, you might look at the task of converting or migrating in this manner:

1. Understand the new data model and see how it can be used to map to your own requirements or specifications for your tasks. Create flowcharts or concept diagrams that illustrate the tasks that you are trying to perform.

2. Look at your current applications and redefine them to match your own requirements or specifications. This can help you see areas that you want to set up differently than your current applications:
   - To make them more efficient.
   - To match original specifications that were not possible with earlier versions.
   - To address any new requirements.

3. Concentrate on the sections of your APIs in order of importance or in a hierarchy that you think will benefit you. For example, you might address your changes to your applications in this order:
   a. Setting up administrative tasks, like logon, logoff, and user privileges.
   b. Defining your servers.
   c. Working with your data and how you want to create, retrieve, update, and delete it.
   d. Working with items and objects and how you want to take advantage of links and attributes.
   e. Logging and other overhead tasks.

4. Use Table 15 on page 31 through Table 23 on page 43 to help you rewrite your applications. The tables show:
   - What APIs you can use that are the same or similar to the ones that you used in earlier versions
   - When there is new function that did not exist before
   - Whether a previous function is supported
   - References to sections in the *Workstation Application Programming Guide*, where you can find more details about the particular APIs (or function)

Recommendations for migrating Version 7 (and earlier) DL connector applications

The new Content Manager Version 8 ICM Connector is an extension of the Content Manager Version 7 DL connector and includes a variety of functional enhancements.

ICM Datastore includes all of the supporting classes that are required to connect to a Content Manager Version 8 server. It provides the concepts and enables operations on hierarchical items, versioning, links, references, and query and cursor support, including metadata manipulations. You cannot use applications developed for Version 7 with the ICM Datastore. You must rewrite applications with the new object-oriented APIs to exploit the new features of Content Manager Version 8.

Use Table 15 on page 31 through Table 23 on page 43 to help you rewrite applications. The tables show:
- What APIs you can use that are the same or similar to the ones that you used in earlier versions
- When there is new function that did not exist before
- Whether a previous function is supported
- References to sections in the *Workstation Application Programming Guide*, where you can find more details about the particular APIs (or function)

API migration tables for Content Manager and Enterprise Information Portal

Table 15. Content servers

Task	Folder manager	DL connector[1]	New ICM connector[2]
Log on and log off	SimLibLogon(); SimLibLogoff();	DKDatastoreDL::connect(); DKDatastoreDL::disconnect();	DKDatastoreICM::connect(); DKDatastoreICM::disconnect(); **Related information[3]:** Connecting to content servers
List Data sources	Ip2ListServers();	DKDatastoreDL::listDataSources()	DKDatastoreICM::listDataSources() **Related information[3]:** Connecting to content servers
List object servers and List resource managers	Ip2ListServers();	Not available	DKRMConfigurationMgmtICM:: listResourceMgrs(); **Related information[3]:** Connecting to content servers
Event log	Ip2WriteHistory Event();	Not available	DKEventMgmtICM **Related information[3]:** Planning a Content Manager application
Update password for a session	Ip2ModifyUser();	DKDatastoreDL:: changePassword();	dkDatastore::changePassword(); **Related information[3]:** Connecting to content servers
Register user exits for a session	Ip2SetUserExits();	Not available	Not available
Start a transaction	Ip2Start Transaction();	DKDatastoreDL::startTransaction();	DKDatastoreICM::startTransaction(); **Related information[3]:** Processing transactions
Commit	Ip2End Transaction (OIM_COMMIT);	DKDatastoreDL::commit();	DKDatastoreICM::commit(); **Related information[3]:** Processing transactions
Roll back	Ip2End Transaction(OIM_ ROLLBACK);	DKDatastoreDL::rollback();	DKDatastoreICM::rollback(); **Related information[3]:** Processing transactions

Notes:

1. Content Manager Version 7 and earlier
2. Content Manager Version 8 ICM connector
3. For the related information, see the *Workstation Application Programming Guide*.

Table 16. Parametric search

Task	Folder manager	DL connector[1]	New ICM connector[2]
Search for items that match criteria	SimLibSearch(); SimLibGetItemInfo(); SimLibSetIndexClass View(); SimLibGetItemSnapshot(); SimLibGetAffiliatedTOC(); SimLibGetTOC(); Ip2CloseTOC();	DKDatastoreDL::evaluate(); DKDatastoreDL::execute(); DKDatastoreDL:: executeWithCallBack(); dkResultSetCursor::fetchNext(); dkResultSetCursor::fetchObject();	DKDatastoreICM::evaluate(); DKDatastoreICM::execute(); DKDatastoreICM:: executeWithCallBack(); dkResultSetCursor::fetchNext(); dkResultSetCursor::fetchObject(); **Related information[3]:** • Querying a content server • Using the result set cursor • Querying collections
Notes: 1. Content Manager Version 7 and earlier 2. Content Manager Version 8 ICM connector 3. For the related information, see the *Workstation Application Programming Guide.*			

Table 17. Working with items

Task	Folder manager	DL connector[1]	New ICM connector[2]
Check in items Check out items	Ip2CheckInItem(); Ip2CheckOutItem();	DKDatastoreDL::checkIn(); DKDatastoreDL::checkOut();	DKDatastoreICM::checkIn(); DKDatastoreICM::checkOut(); **Related information[3]:** Processing transactions
Determine if item is checked out	SimLibGet ItemInfo();	DKDatastoreDL::isCheckedOut();	DKDatastoreICM::isCheckedOut(); DKDatastoreExtICM::isCheckedOut();
Create (import) a new item	SimLibCreate Item(); SimLibLoadMedia Object(); SimLibStore NewObjec(); SimLibStore Object(); SimLibCreateItem PartExtSrch(); SimLibInvoke SearchEngine(); SimLibAddFolder Item();	DKDDO::add(); DKDatastoreDL::addObject(ddo);	DKDDO::add(); DKDatastoreICM::addObject(ddo); **Related information[3]:** • Working with DDO • Importing XML Documents

Table 17. Working with items (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Retrieve items	SimLibGetIndex ClassView(); SimLibSetIndex ClassView(); SimLibGetItem Snapshot(); SimLibGet AffiliatedTOC(); SimLibGetTOC(); Ip2CloseTOC(); SimLibReadAttr(); SimLibGetItem Type();	DKDDO::retrieve(); DKDatastoreDL:: retrieveObject(ddo);	DKDDO::retrieve(); DKDatastoreICM::retrieveObject(ddo); **Related information[3]:** • Working with DDOs • Working with XDOs • Using DDOs • Using XDOs
Retrieve a part by name	SimLibOpenBy UniqueName(); SimLibSeek Object(); SimLibRead Object();	DKDatastoreDL:: retrieveFormOverlay();	DKDatastoreICM::createDDO(); DKDDO::retrieve(); **Related information[3]:** Retrieving items
Set or modify attributes in a DDO.	Not Available in Folder Manager	DKDDO::setData();	DKDDO::setData(); **Related information[3]:** Setting and retrieving item attributes
Update items	SimLibDelete ItemPartExtSrch(); SimLibDelete Object(); SimLibInvoke SearchEngine(); SimLibUpdate PartExtSrch(); SimLibCreate ItemPartExtSrch(); SimLibLoadMedia Object(); SimLibStoreNew Objec(); SimLibStore Object(); SimLibOpenItem Attr(); SimLibWriteAttr(); SimLibCloseAttr(); SimLibAddFolder Item(); SimLibRemove FolderItem(); SimLibUpdate Object();	DKDDO::update(); DKDatastoreDL:: updateObject(ddo);	DKDDO::update(); DKDatastoreICM::updateObject(ddo); **Related information[3]:** • Working with DDOs • Working with XDOs • Using DDOs • Using XDOs

Table 17. Working with items (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Delete items	SimLibDeleteItem PartExtSrch(); SimLibDelete Object();	DKDDO::del(); DKDatastoreDL::deleteObject (ddo);	DKDDO::del(); DKDatastoreICM::deleteObject(ddo); **Related information[3]:** • Working with DDOs • Working with XDOs • Using DDOs • Using XDOs
Create parts or resource items (such as notes or annotations)	SimLibLoadMedia Object(); SimLibStoreNew Objec(); SimLibStore Object(); SimLibCreateItem PartExtSrch(); SimLibInvoke SearchEngine();	DKBlobDL::add();	DKLobICM::add(); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Using XDOs
Retrieve parts or resource items	SimLibGetItem AffiliatedTOC(); SimLibQuery Object(); SimLibOpen Object(); Ip2QueryObject Access(); SimLibClose Object();	DKBlobDL::retrieve();	DKLobICM::retrieve(); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Using XDOs
Update parts or resource items	SimLibUpdate PartExtSrch(); SimLibInvoke SearchEngine();	DKBlobDL::update();	DKLobICM::update(); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Using XDOs
Delete parts or resource items	SimLibDeleteItem PartExtSrch(); SimLibDelete Object();	DKBlobDL::del();	DKLobICM::del(); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Using XDOs

Table 17. Working with items (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Import an object from a file	SimLibCatalog Object(); SimLibCreateItem PartExtSrch(); SimLibStore Object(); SimLibStoreNew Object(); SimLibLoadMedia Object();	DKBlobDL::add(fileName);	DKLobICM::add(fileName); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Using XDOs
Export a part into a file	SimLibGetItem AffiliatedTOC(); SimLibOpen Object(); Ip2QueryObject Access(); SimLibClose Object();	DKBlobDL::retrieve(fileName);	DKLobICM::retrieve(fileName); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Using XDOs
Add items into a folder	SimLibAddFolder Item();	DKFolder::addMember(); DKDatastoreDL:: addFolderItem(folder, member);	DKFolder::addMember(); DKDatastoreExtICM:: addToFolder(); **Related information[3]:** Creating custom content server connectors
Remove items from a folder	SimLibRemove FolderItem();	DKFolder::removeMember(); DKDatastoreDL:: removeFolderItem(folder,mbr);	DKFolder::removeMember(); DKDatastoreExtICM:: removeFromFolder(); **Related information[3]:** Creating custom content server connectors
Add parts to an item, or link items to resource items	SimLibLoadMedia Object(); SimLibStoreNew Objec(); SimLibStore Object(); SimLibCreateItem PartExtSrch(); SimLibInvoke SearchEngine();	DKParts::addMember(doc, part);	DKDatastoreExtICM::addLink(link); **Related information[3]:** • Working with XDOs • Creating and using the DKParts attribute • Creating a Content Manager application • Using XDOs
Remove parts from an item, or unlink items from resource items	SimLibDeleteItem PartExtSrch(); SimLibDelete Object();	DKParts::removeMember(doc, part);	DKDatastoreExtICM::removeLink(link); **Related information[3]:** Creating a Content Manager application

Table 17. Working with items (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]

Update SMS information for a part	SimLibChange ObjectSMS();	DKBlobDL::setExtension(); DKBlobDL::changeStorage(); DKStorageManageInfoDL class	DKLobICM::setExtension(); DKLobICM::changeStorage(); DKStorageManagerInfoICM class
			
			Related information[3]:
			    • Working with XDOs
			    • Using XDOs

Prefetch a part	SimLibOpen Object(GET_IT_ PREFETCH);	DKBlobDL::retrieve(); with option GET_IT_PREFETCH	DKLobICM::retrieve(); with option GET_IT_PREFETCH **Related information[3]:** Working with objects
Define links between items	Not available	Not available	DKLinkCollection::addElement(); DKLinkCollection::addMember(); DKDatastoreExtICM::addLink(link); **Related information[3]:** Creating a Content Manager application
Delete links between items	Not available	Not available	DKLinkCollection::removeElement(); DKLinkCollection::removeMember(); DKDatastoreExtICM::removeLink(link); **Related information[3]:** Creating a Content Manager application

Retrieve links	Not available	Not available	DKDDO::retrieve(); with option DKConstant.DK_CM_CONTENT_ LINKS_OUTBOUND + DKConstant.DK_CM_CONTENT_ LINKS_INBOUND
			
			Related information[3]:
			    • Working with DDOs
			    • Using DDOs
			    • Defining links between items

Move objects	SimLibOpenIte Attr(); SimLibChange IndexClass(); SimLibWriteAttr(); SimLibCloseAttr();	DKDatastoreDL::moveObject();	DKDatastoreICM::moveObject(); **Related information[3]:** Creating a Content Manager application
List cross references (XREF) for a given document	SimLibGetItem XREF();	DKDatastoreDL::listRefFolder();	DKLinkCollection::createInbound Iterator(); dkIterator::next();

Table 17. Working with items (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Notes:			

    1. Content Manager Version 7 and earlier

    2. Content Manager Version 8 ICM connector

    3. For the related information, see the *Workstation Application Programming Guide.*

Table 18. Data modeling

Task	Folder manager	DL connector[1]	New ICM connector[2]
Create index class or item type	Ip2CreateClass();	Not available	DKItemTypeDefICM::add(); or DKComponentTypeDefICM::del(); **Related information[3]:** Creating a Content Manager application
List index classes or item types	SimLibList Classes(); SimLibListClass Views();	DKDatastoreDL::listEntities();	DKDatastoreICM::listEntities(); **Related information[3]:** Connecting to content servers
Update index classes or item types	Not available in FM.	Not available	DKItemTypeDefICM::update(); or DKComponentTypeDefICM::update(); **Related information[3]:** Creating a Content Manager application
Delete index classes or item types	Ip2DeleteIndex();	Not available	DKItemTypeDefICM::del(); or DKComponentTypeDefICM::del(); **Related information[3]:** Creating a Content Manager application
Define attributes	Ip2CreateAttr();	Not available	DKAttrDefICM::add(); **Related information[3]:** Creating a Content Manager application
List index class or item type attributes	SimLibGetAttr Info(); lp2ListAttrs();	DKDatastoreDL::listAttrs(); DKDatastoreDL:: listEntityAttrs(entityName);	DKDatastoreICM::listAttrs(); DKDatatsoreICM:: listEntityAttrs(entityName); **Related information[3]:** Connecting to content servers
Update attribute definitions	Ip2ModifyAttr();	Not available	DKAttrDefICM::update(); **Related information[3]:** Creating a Content Manager application
Delete attribute definitions	Ip2DeleteAttr();	Not available	DKAttrDefICM::delete(); **Related information[3]:** Creating a Content Manager application

Table 18. Data modeling (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Add an attribute to an item type.	Not available	Not available	DKItemTypeDef.add(attribute); **Related information[3]:** Creating a Content Manager application
Add index class or item type views	Ip2CreateClass();	Not available	DKItemTypeViewDefICM::add() or DKComponentTypeViewDefICM::add(); **Related information[3]:** Working with items
Update index class or item type views	Not available	Not available	DKItemTypeViewDefICM::update() or DKComponentTypeViewDefICM:: update(); **Related information[3]:** Deleting item type views
Delete index-class or item type views	Ip2DeleteIndex();	Not available	DKItemTypeViewDefICM::del() or DKComponentTypeViewDefICM::del(); **Related information[3]:** Deleting item type views

Notes:

1. Content Manager Version 7 and earlier
2. Content Manager Version 8 ICM connector
3. For the related information, see the *Workstation Application Programming Guide*.

Table 19. User and authorization management

Task	Folder manager	DL connector[1]	New ICM connector[2]
Add user and user group definitions	Ip2AddUser(); Ip2AddGroup();	DKUserMgmtDL::add();	DKUserMgmtICM::add(); **Related information[3]:** Defining users
Update user and user group definitions	Ip2ModifyUser(); Ip2ModifyGroup();	DKUserMgmtDL::update();	DKUserMgmtICM::update(); **Related information[3]:** Defining users
Delete user and user group definitions	Ip2DeleteUser(); Ip2DeleteGroup();	DKUserMgmtDL::del();	DKUserMgmtICM::del(); **Related information[3]:** Defining users
Add association of user to user group	Ip2AddUserTo Group();	Not available	DKUserGroupDefICM::addUser(); **Related information[3]:** Defining users
Remove association of user to user group	Ip2RemoveUser FromGroup();	Not available	DKUserGroupDefICM::removeUser(); **Related information[3]:** Defining users

Table 19. User and authorization management (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Define privilege, set, or group	Ip2CreatePrivSet();	Not available	DKAuthorizationMgmtICM:: createPrivilege(); DKAuthorizationMgmtICM:: createPrivilegeGroup(); DKAuthorizationMgmtICM::add(); **Related information[3]:** Defining privileges
Update privilege, set, or group	Ip2Modify PrivSet();	Not available	DKAuthorizationMgmtICM::update(); **Related information[3]:** Defining privileges
Delete privilege, set, or group	Ip2DeletePrivSet();	Not available	DKAuthorizationMgmtICM::del(); **Related information[3]:** Defining privileges
List privileges of a user	Ip2ListUser();	DKAccessControlDL::listPrivilege();	TBD **Related information[3]:** Defining privileges
Add ACL	Ip2UpdateAccess List();	DKAccessControlDL:: addAccessControlList();	DKAuthorizationMgmtICM::add(); **Related information[3]:** Working with access control lists
Update ACL	Ip2UpdateAccess List();	DKAccessControlDL:: updateAccessControlList();	DKAuthorizationMgmtICM::update(); **Related information[3]:** Working with access control lists
Delete ACL	Ip2UpdateAccess List();	DKAccessControlDL:: deleteAccessControlList();	DKAuthorizationMgmtICM::del(); **Related information[3]:** Working with access control lists

Notes:

1. Content Manager Version 7 and earlier
2. Content Manager Version 8 ICM connector
3. For the related information, see the *Workstation Application Programming Guide*.

Table 20. MIME and configuration management

Task	Folder manager	DL connector[1]	New ICM connector[2]
Define MIME type definition	Ip2AddContent Class2();	DKDatastoreAdminDL:: addContentDef()	DKMimeTypeMgmtICM::add(); **Related information[3]:** Working with objects
Update MIME type definition	Ip2ModifyContent Class2();	DKDatastoreAdminDL:: updateContentDef()	DKMimeTypeMgmtICM::update(); **Related information[3]:** Working with objects
Delete MIME type definition	Ip2DeleteContent Class();	DKDatastoreAdminDL:: deleteContentDef()	DKMimeTypeMgmtICM::delete(); **Related information[3]:** Working with objects

Table 20. MIME and configuration management (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Add SMS collection	Ip2SMSCreate Entity(SMS_ COLLECTION);	Not available	DKRMConfigurationMgmtICM:: addSMSCollection(); **Related information[3]:** Working with objects
Delete SMS collection	Ip2SMSDelete Entity(SMS_ COLLECTION);	Not available	DKRMConfigurationMgmtICM:: delSMSCollection(); **Related information[3]:** Working with objects

Notes:
 	
  1. Content Manager Version 7 and earlier
  2. Content Manager Version 8 ICM connector
  3. For the related information, see the *Workstation Application Programming Guide.*			

Table 21. Workflow

Task	Folder manager	DL connector[1]	New ICM connector[2]
Start a process	Ip2StartWork Flow();	DKWorkFlowServiceDL:: startWorkFlowItem(itemID, itemIDWF, itemIDWB, overload, priority);	DKDocRoutingServiceICM:: startProcess(process_name, itemID, priority); **Related information[3]:** Routing a document through a process
Terminate a process	Ip2CompleteWork Flow();	DKWorkFLowServiceDL:: completeWorkFlowItem(itemID);	DKDocRoutingServiceICM:: terminateProcess(workpacket_pid); **Related information[3]:** Routing a document through a process
Continue a process	Ip2RouteWip Item();	DKWorkFlowServiceDL:: routeWipItem(itemID, itemIDWB, overload, priority);	DKDocRoutingServiceICM:: continueProcess(workpacket_pid, selection); **Related information[3]:** Routing a document through a process
Suspend a process	Ip2SuspendItem();	Not available	DKDocRoutingServiceICM:: suspendProcess(workpackage_pid, suspend_unit, duration, resume_list); **Related information[3]:** Routing a document through a process
Resume a process	Ip2ActivateItem();	Not available	DKDocRoutingServiceICM:: resumeProcess(workpacket_pid); **Related information[3]:** Routing a document through a process

Table 21. Workflow (continued)

Task	Folder manager	DL connector[1]	New ICM connector[2]
Retrieve the next work item (work list)	Ip2GetNextWork BasketItem();	DKWorkBasketDL:: getNextHighPriorityItem();	DKDocRoutingServiceICM:: getNextWorkPackagePidString (worklist); DKDocRoutingServiceICM:: getNextWorkPackage(worklist); **Related information[3]:** Routing a document through a process
List all of the work from a work list	SimLibGetTOC(); Ip2CloseTOC();	DKWorkBasketDL:: listItemIDs(wip_status); DKWorkBasketDL:: listWorkManagementInfos (wip_status);	DKDocRoutingServiceICM:: listWorkPackagePidStrings(worklist); **Related information[3]:** Routing a document through a process
List processes	Ip2ListWork Flows(); Ip2GetWorkFlow Info();	DKWorkFlowServiceDL:: listWorkFlowIDs(); DKWorkFlowServiceDL:: listWorkFlows();	DKDocRoutingServiceMgmtICM:: listProcesstNames(); DKDocRoutingServiceMgmtICM:: listProcesses(); DKProcessICM::retrieve(); **Related information[3]:** Routing a document through a process
List work nodes	Ip2ListWork Baskets(); Ip2GetWork BasketInfo();	DKWorkFlowServiceDL:: listWorkBasketIDs(); DKWorkFlowServiceDL:: listWorkBaskets();	DKDocRoutingServiceMgmtICM:: listWorkNodeNames(); DKDocRoutingServiceMgmtICM:: listWorkNodes(); **Related information[3]:** Routing a document through a process
List work lists	Ip2GetWork BasketInfo();	Not available	DKDocRoutingServiceMgmtICM:: listWorkListNames(); DKDocRoutingServiceMgmtICM:: listWorkLists(); **Related information[3]:** Routing a document through a process
Set work package priority	Ip2SetWork BasketItem Priority();	Not available	DKDocRoutingServiceICM:: setWorkPackagePriority();

Notes:

1. Content Manager Version 7 and earlier

2. Content Manager Version 8 ICM connector

3. For the related information, see the *Workstation Application Programming Guide*.

Table 22. Text search server

Task	Folder manager / Text Search Engine	DL connector[1]	New ICM connector[2]
Connect to a text search server disconnect	Not available	DKDatastoreTS::connect(); DKDatastoreTS::disconnect();	Connection is implicitly and automatically performed by the system.
Perform a text search	Not available	DKDatastoreTS::evaluate(): DKDatastoreTS::execute(); DKDatastoreTS:: executeWithCallBack(); dkResultSetCursor::fetchNext(); dkResultSetCursor::fetchObject();	Integrated with parametric query
Add and index a part or a resource item	SimLibLoadMedia Object(); SimLibStoreNew Objec(); SimLibStore Object(); SimLibCreate ItemPartExtSrch(); SimLibInvoke SearchEngine();	DKBlobDL::add();	DKTextICM::add();
Index an existing (text) part	SimLibIndexPart ExtSrch(); SimLibInvoke SearchEngine();	DKBlobDL::setToBeIndexed();	Use DKDDO::setData(); on TIEFlag attribute: • 1 to turn text search on • 0 to turn text search off Then, perform a DKDDO::update();
Create a text search index	Not available	DKDatastoreTS::createIndex();	Use setTextSearchable (true) in DKAttrDefICM and DKItemTypeDefICM classes. Text index properties are assigned by default, or can be specified through the DKTextIndexDefICM class.
Delete a text search index	Not available	DKDatastoreTS::deleteIndex();	This function is implicitly and automatically performed by the system when an item type is deleted. Or, use setTextSearchable (false) on the attribute and then perform an update.
Clear all indexed terms from a text search index	Not available	DKDatastoreTS::clearIndex();	Use setTextSearchable (false) on the attribute and then perform an update.
Get information on a text search index	Not available	DKDatastoreTS:: getIndexInformation();	Provided by DKTextIndexDefICM class.
Get indexing function status of a text search index	Not available	DKDatastoreTS:: getIndexFunctionStatus();	Not exposed
Set indexing function for a text search index	Not available	DKDatastoreTS:: setIndexFunctionStatus();	Not exposed

Table 22. Text search server (continued)

Task	Folder manager / Text Search Engine	DL connector[1]	New ICM connector[2]
Start the text indexing process	Not available	DKDatastoreTS:: startUpdateIndex();	This process is performed by the system based on update settings in the DKTextIndexDefICM class.

Notes:

1. Content Manager Version 7 and earlier
2. Content Manager Version 8 ICM connector
3. For the related information, see the *Workstation Application Programming Guide*.

Table 23. Combined search

Task	Folder manager	DL connector[1]	New ICM connector[2]
Search for items that match parametric and text criteria	SimLibSetIndex ClassView(); SimLibSearch(); SimGetItemInfo(); SimLibGet AffiliatedTOC(); SimLibGetTOC();	DKDatastoreDL::evaluate(); DKDatastoreDL::execute(); DKDatastoreDL:: executeWithCallBack(); dkResultSetCursor::fetchNext(); dkResultSetCursor::fetchObject(); (The query is a combination of parametric and text query.)	DKDatastoreICM::evaluate(); DKDatastoreICM::execute(); DKDatastoreICM:: executeWithCallBack(); dkResultSetCursor::fetchNext(); dkResultSetCursor::fetchObject(); Content Manager Version 8 supports integrated parametric and text query, in other words, you can mix parametric and text criteria in a single query. **Related information[3]:** • Querying a content server • Using the result set cursor • Querying collections
Search for items that match parametric, text, and image criteria	SimLibSetIndex ClassView(); SimLibSearch(); SimGetItemInfo(); SimLibGet AffiliatedTOC(); SimLibGetTOC();	DKDatastoreDL::evaluate(); DKDatastoreDL::execute(); DKDatastoreDL:: executeWithCallBack(); dkResultSetCursor::fetchNext(); dkResultSetCursor::fetchObject(); (The query is a combination of parametric, text, and image query.)	Not available

Notes:

1. Content Manager Version 7 and earlier
2. Content Manager Version 8 ICM connector
3. For the related information, see the *Workstation Application Programming Guide*.

Appendix. More information about migration

For more information about migration, see the Redbook: *Content Manager Version 8.1 Migration Guide for Multiplatforms*, that can be found at the following website:

http://www.redbooks.ibm.com/

You can find the Redbook by searching for the title, or for its form number:

SG24-6877-00

From the abstract of the Redbook:

- We provide an overview of the migration considerations, migration planning, and overall migration process, followed by a detailed description of the steps involved in installing the new release and performing the data migration of your existing system. For both the Windows and AIX platforms, we explain what each data migration step is doing in the background and what impact it has on your system and data.
- We describe the different aspects of porting an existing customer application to the new APIs, including an overview of the efforts involved, as well as technical information for the programmers.
- This book will be particularly helpful to those who inherit an existing Content Manager system which is ready to be migrated, as well as to those who are considering migration and want to get an idea of the impact and resulting enhancements.

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Glossary

This glossary defines terms and abbreviations specific to this system. Terms shown in *italics* are defined elsewhere in this glossary.

A

abstract class. An object-oriented programming *class* that represents a concept; classes derived from it represent implementations of the concept. You cannot construct an object of an abstract class; that is, it cannot be instantiated.

access control. The process of ensuring that certain functions and stored *objects* can be accessed only by authorized users in authorized ways.

access control list. A list consisting of one or more user IDs or user groups and their associated *privileges.* You use access control lists to control user access to *items* and *objects* in the Content Manager system. You use access control lists to control user access to *search templates* in the Enterprise Information Portal system.

accessory script. A *CGI script* that processes SEARCH, POST, PUT, or DELETE requests. The accessory scripts process requests that are not explicitly mapped to a CGI script named on an EXEC directive.

action list. An approved list of the actions, defined by a system administrator or some other *workflow coordinator,* that a user can perform in a *workflow* or document routing process.

address. The unique code assigned to each device or workstation connected to a network. See also *IP address.*

admission control. The process used by the server to ensure that its bandwidth needs are not compromised by new asset requests.

ADSM. See *Tivoli® Storage Manager.*

aggregate bandwidth. Total throughput, in megabits per second, that moves through a server or server subsystem.

alias. In the *Internet*, a name assigned to a server that makes the server independent of the name of its host machine. The alias must be defined in the *domain name server.*

American National Standard Code for Information Interchange (ASCII). The standard code, using a coded character set consisting of 7-bit coded characters (8 bits including parity check), that is used for information interchange among data processing

systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

analog video. Video in which the information that represents images is in a continuous-scale electrical signal for amplitude and time.

API. See *application programming interface.*

application programming interface (API). A software interface that enables applications to communicate with each other. An API is the set of programming language constructs or statements that can be coded in an application program to obtain the specific functions and services provided by the underlying licensed program.

application server. Software that handles communication with the client requesting an asset and queries of the Content Manager.

archive. Persistent storage used for long-term information retention, typically very inexpensive for each stored unit and slow to access, and often in a different geographic location to protect against equipment failures and natural disasters.

ASCII. See *American National Standard Code for Information Interchange.*

asset. A digital multimedia resource that is stored for later retrieval as requested by an application. An example of such a resource is a digitized video or audio file. An asset is stored as a file in a multimedia file system supported by the *data pump*.

asset group. An organizational grouping within the multimedia file system with similar characteristics. You can use an asset group to allocate resources of a *data pump*. For example, you could establish two asset groups representing distinct departments whose assets should be kept separate for security or billing purposes.

asymmetric video compression. In multimedia applications, the use of a powerful computer to compress a video so that a less powerful system can decompress it.

asynchronous transfer mode (ATM). A transfer mode in which the information is organized into cells; it is asynchronous in the sense that the recurrence of cells containing information from an individual user is not necessarily periodic. ATM is specified in international standards such as ATM Forum UNI 3.1.

attribute. A unit of data that describes a certain characteristic or property (for example, name, address,

age, and so forth) of an item, and which can be used to locate that item. An attribute has a type, which indicates the range of information stored by that attribute, and a value, which is within that range. For example, information about a file in a multimedia file system, such as title, running time, or encoding type (MPEG1, H.263, and so forth). For Enterprise Information Portal, see also *federated attribute* and *native attribute.*

attribute group.   Convenience grouping of one or more *attributes.* For example, Address might include the attributes Street, City, State, and Zip.

audio.   The sound portion of a video signal.

Audio/Video Interleaved (AVI).   A RIFF (*Resource Interchange File Format*) file specification that permits audio and video data to be interleaved in a file. The separate tracks can be accessed in alternate chunks for playback or recording while maintaining sequential access on the file device.

Audio-Video Subsystem (AVS).   File format for files that can contain video and audio data, video-only data, audio-only data, or image data (a single still image). The Audio-Video Subsystem format is supported by the ActionMedia II MMPM/2 Media Control interface.

AVI.   See *Audio/Video Interleaved.*

AVS.   See *Audio-Video Subsystem.*

B

background.   The conditions under which low priority, non-interactive programs are run.

bandwidth.   (1) The difference, expressed in *Hertz*, between the highest and the lowest frequencies of a range of frequencies. (2) In *asynchronous transfer mode* (ATM), the capacity of a virtual channel, expressed in terms of peak cell rate (PCR), sustainable cell rate (SCR), and maximum burst size (MBS). (3) A measure of the capacity of a communication transport medium (such as a TV cable) to convey data.

base attributes.   A set of indexes that is assigned to each *object*. All Content Manager objects have base *attributes*.

baseband.   A frequency band that uses the complete bandwidth of a transmission.

batch.   (1) An accumulation of data to be processed. (2) A group of records or data processing jobs brought together for processing or transmission.

binary large object (BLOB).   A sequence of bytes with a size ranging from 0 bytes to 2 gigabytes. This string does not have an associated code page and character set. Image, audio, and video objects are stored in BLOBs.

bitmap.   (1) A representation of an image by an array of bits. (2) A pix map with a depth of one bit plane.

BLOB.   See *binary large object.*

block.   A string of data elements recorded or transmitted as a unit. The elements can be characters, words, or physical records. Disk device drivers currently use a block size of 32 KB or 256 KB to write to the disk.

broadband.   A frequency band divisible into several narrower bands so that different kinds of transmissions (such as voice, video, and data) can occur at the same time. See *baseband.*

bus.   A facility for transferring data between several devices located between two end points, only one device being able to transmit at a given moment.

C

cache.   A special-purpose buffer, smaller and faster than main storage, used to hold a copy of data that can be accessed frequently. Use of a cache reduces access time, but might increase memory requirements. See also *resource manager cache* and *LAN cache.*

caching proxy server.   A proxy server that can store the documents it retrieves from other servers in a local *cache*. The catching proxy server can then respond to subsequent requests for these documents without retrieving them from other servers, a process that can improve response time.

cardinality.   The number of rows in a database table.

category.   See *item type.*

CGI.   See *Common Gateway Interface.*

CGI script.   A computer program that runs on a Web server and uses the *Common Gateway Interface (CGI)* to perform tasks that are not usually done by a Web server (for example, database access and form processing). A CGI script is a CGI program that is written in a scripting language such as Perl.

child component.   Optional second or lower level of a hierarchical *item type.* Each child component is directly associated with the level above it.

CIF.   See *common interchange file.*

CIU.   See *common interchange unit.*

class.   In object-oriented design or programming, a model or template that can be instantiated to create objects with a common definition and therefore, common properties, operations, and behavior. An object is an instance of a class.

client.   A computer system or process that requests a service of another computer system or process that is typically referred to as a server. Multiple clients can share access to a common server.

client application.   An application written with the Content Manager APIs to customize a user interface. An application written with the object-oriented or Internet APIs to access *content servers* from Enterprise Information Portal.

Client Application for Windows.   A complete object management system provided with Content Manager and written with Content Manager APIs. It supports document and folder creation, storage, and presentation, processing, and access control. You can customize it with user exit routines and partially invoke it with APIs.

client/server.   In communications, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server.

codec.   A processor that can code analog audio or video information in digital form for transmission, and decode digital data back to analog form.

collection.   A group of objects with a similar set of management rules.

combined search.   A query that combines one or more of the following types of searches: *parametric,* text, or image.

Common Gateway Interface (CGI).   A standard for the exchange of information between a Web server and programs that are external to it. The external programs can be written in any programming language that is supported by the operating system on which the Web server is running. See *CGI script.*

common interchange file (CIF).   A file that contains one ImagePlus® Interchange Architecture (IPIA) data stream.

common interchange unit (CIU).   The independent unit of transfer for a common interchange file (CIF). It is the part of the CIF that identifies the relationship to the receiving database. A CIF can contain multiple CIUs.

component.   Generic term for a *root component* or a *child component.*

compressed audio.   A method of digitally encoding and decoding several seconds of voice quality audio per single videodisc frame. This increases the storage capability to several hours of audio per videodisc. Sometimes referred to as still frame audio or sound over still.

compressed video.   A video resulting from the process of digitally encoding and decoding a video image or segment using a variety of computer techniques to reduce the amount of data required to represent the content accurately.

compression.   The process of eliminating gaps, empty fields, redundancies, and unnecessary data to shorten the length of records or blocks.

connection manager.   A Content Manager component that helps maintain connections to the library server, rather than starting a new connection for each query. The connection manager has an application programming interface.

connector class.   Object-oriented programming *class* that provides standard access to APIs that are native to specific *content servers.*

constructor.   In programming languages, a method that has the same name as a class and is used to create and initialize objects of that class.

container.   An element of the user interface that holds objects. In the *folder manager,* an *object* that can contain other folders or documents.

content class.   See *MIME type.*

content server.   A software system that stores multimedia and business data and the related metadata required for users to work with that data. Content Manager and Content Manager ImagePlus for OS/390 are examples of content servers.

controller.   The functional component responsible for resource management (load balancing and admission control). The controller communicates with one or more *data pumps* to initiate and terminate connections to clients.

cursor.   A named control structure used by an application program to point to a specific row within some ordered set of rows. The cursor is used to retrieve rows from the set.

D

data format.   See *MIME type.*

data pump.   The combination of the disks that hold the data and the networking hardware and software required to deliver assets to clients.

data rate.   The rate at which data is transmitted or received from a device. Interactive applications tend to require a high data rate, while batch applications can usually tolerate lower data rates.

datastore. (1) Generic term for a place (such as a database system, file, or directory) where data is stored. (2) In an application program, a virtual representation of a *content server.*

data striping. Storage process in which information is split into blocks (a fixed amount of data) and the blocks are written to (or read from) a series of disks in parallel.

data transfer rate. The average number of bits, characters, or blocks per unit time passing between corresponding equipment in a data transmission system.

Notes:

1. The rate is expressed in bits, characters, or blocks per second, minute, or hour.

2. Corresponding equipment should be indicated; for example, modems, intermediate equipment, or source and sink.

DCA. See *document content architecture.*

DCE. See *Distributed Computing Environment.*

DDO. See *dynamic data object.*

decode. To convert data by reversing the effect of some previous encoding.

decompression. Process of restoring compressed data to its original state, so that it can be used again.

destager. A function of the Content Manager *resource manager* that moves objects from the *staging area* to the first step in the object's *migration policy*.

device driver. Software used to manage a specific device. Other software uses the device driver as the interface to the device for reading, writing, and control functions.

device manager. In a Content Manager system, the interface between the *resource manager* and one or more physical devices.

digital. Pertaining to data in the form of digits.

digital audio. Audio tones represented by machine-readable binary numbers rather than by analog recording techniques.

digital video. Video in which the information (usually including audio) is encoded as a sequence of binary digits. The information is usually compressed. It can be stored and transported just as any other digital information. Viewing digital video involves decompressing the video data, converting it to an analog form, displaying the video on a monitor, and playing the sound through an amplifier and speakers.

digitize. To convert analog video and audio signals into digital format.

digitized image. An image derived from a scanning device or a digitizing card with a camera.

Distributed Computing Environment (DCE). The Open Software Foundation (OSF) specification (or a product derived from this specification) that assists in networking. DCE provides such functions as authentication, directory service (DS), and remote procedure call (RPC).

document. An *item* that can be stored, retrieved, and exchanged among Content Manager systems and users as a separate unit. An item with the document *semantic type* is expected to contain information that forms a document, but does not necessarily imply that it is an implementation of the Content Manager document model.

An item created from a document classified item type (a specific implementation of the Content Manager document model), must contain document parts. You can use document classified item types to create items with either the document or folder semantic type.

Document parts can include varied types of content, including for example, text, images, and spreadsheets.

document content architecture (DCA). An architecture that guarantees information integrity for a document being interchanged in an office system network. DCA provides the rule for specifying form and meaning of a document. It defines revisable form text (changeable) and final form text (unchangeable).

document root directory. The primary directory where a Web server stores accessible documents. When the server receives requests that do not point to a specific directory, it tries to serve the request from this directory.

document routing process. In Content Manager a sequence of *work steps,* and the rules governing those steps, through which a *document* or *folder* travels while it is being processed.

document type definition (DTD). The rules that specify the structure for a particular class of XML documents. The DTD defines the structure with elements, attributes, and notations, and it establishes constraints for how each element, attribute, and notation can be used within the particular class of documents. A DTD is analogous to a database schema in that the DTD completely describes the structure for a particular markup language.

domain. That part of a computer network in which the data processing resources are under common control.

domain name. In the *Internet* suite of *protocols*, a name of a host system. A domain name consists of a sequence of subnames separated by a delimiter character.

domain name server. In the *Internet* suite of *protocols*, a server that responds to queries from clients for name-to-address and address-to-name mappings as well as for other information.

dotted decimal notation. The syntactical representation of an IP address. The 4 bytes of the address are written as four decimal numbers separated by periods (dots), for example, 9.37.83.123.

DTD. See *document type definition.*

dynamic data object (DDO). In an application program, a generic representation of a stored object that is used to move that object in to, and out of, storage.

E

element. An *object* that the *list manager* allocates for an application.

encode. To convert data by using a code in such a manner that reconversion to the original form is possible.

Ethernet. A 10-Mbps baseband local area network that allows multiple stations to access the transmission medium at will without prior coordination, avoids contention by using carrier sense and deference, and resolves contention by using collision detection and transmission.

extended data object (XDO). In an application program, a generic representation of a stored complex multimedia *object* that is used to move that object in to, and out of, storage. XDOs are most often contained within *DDOs.*

Extensible Markup Language (XML). A standard metalanguage for defining markup languages that was derived from, and is a subset of, SGML. XML omits the more complex and less-used parts of SGML and makes it much easier to write applications to handle document types, author and manage structured information, and transmit and share structured information across diverse computing systems. The use of XML does not require the robust applications and processing that is necessary for SGML. XML is being developed under the auspices of the World Wide Web Consortium (W3C).

External Data Representation (XDR). A standard, developed by Sun Microsystems, Incorporated, for representing data in machine-independent format.

F

F-Coupler (frequency coupler). A physical device that merges broadband analog signals with digital data on an IBM Cabling System using shielded twisted-pair wiring. The IBM F-Coupler separates analog signals

and sends them from the IBM Cabling System to the workstation. The F-Coupler allows the IBM Cabling System to accommodate simultaneous analog video with data traffic on a token-ring network.

FDDI. See *Fiber Distributed Data Interface.*

feature. The visual content information that is stored in the image search server. Also, the visual traits that image search applications use to determine matches. The four *QBIC*® features are average color, histogram color, positional color, and texture.

federated attribute. An Enterprise Information Portal metadata category that is mapped to *native attributes* in one or more *content servers.* For example, the federated attribute, `policy number`, can be mapped to an *attribute,* `policy num`, in Content Manager and to an attribute, `policy ID`, in Content Manager ImagePlus for OS/390.

federated collection. A grouping of objects that results from a *federated search.*

federated datastore. Virtual representation of any number of specific *content servers,* such as Content Manager.

federated entity. An Enterprise Information Portal metadata object that is comprised of *federated attributes* and optionally associated with one or more *federated text indexes.*

federated search. A query issued from Enterprise Information Portal that simultaneously searches for data in one or more *content servers,* which can be heterogeneous.

federated text index. An Enterprise Information Portal metadata object that is mapped to one or more *native text indexes* in one or more *content servers.*

Fiber Distributed Data Interface. An American National Standards Institute (ANSI) standard for a 100-Mbps LAN using optical fiber cables.

file name extension. An addition to a file name that identifies the file type (for example, text file or program file).

file system. In AIX, the method of partitioning a hard drive for storage. See also *multimedia file system.*

file system manager. The component that manages the multimedia file system.

File Transfer Protocol (FTP). In the *Internet* suite of *protocols*, an application layer protocol that uses *Transmission Control Protocol (TCP)* and Telnet services to transfer bulk-data files between machines or hosts.

firewall. (1) In communication, a functional unit that protects and controls the connection of one network to other networks. The firewall (a) prevents unwanted or unauthorized communication traffic from entering the

protected network and (b) allows only selected communication traffic to leave the protected network. (2) In equipment, a partition used to control the spread of fire.

folder. An *item* of any *item type,* regardless of classification, with the folder *semantic type.* Any item with the folder semantic type contains specific folder functionality that is provided by Content Manager, in addition to all non-resource item capabilities and any additional fuctionality available from an item type classification, such as *document* or resource item. Folders can contain any number of items of any type, including documents and subfolders. A folder is indexed by *attributes.*

folder manager. The Content Manager model for managing data as online documents and folders. You can use the folder manager APIs as the primary interface between your applications and the Content Manager content servers.

fps. Frames per second. The number of frames displayed per second.

fragment. The smallest unit of file system disk space allocation. A fragment can be 512, 1024, 2048, or 4096 bytes in size. The fragment size is defined when a file system is created.

frequency coupler. See *F-coupler.*

FTP. See *File Transfer Protocol.*

full-motion video. Video reproduction at 30 frames per second (*fps*) for *NTSC* signals or 25 fps for *PAL* signals.

G

gateway. A functional unit that interconnects two computer networks with different network architectures. A gateway connects networks or systems of different architectures. A bridge interconnects networks or systems with the same or similar architectures.

GB. See *gigabyte.*

gigabyte (GB). (1) For processor storage, real and virtual storage, and channel volume, 2^{30}, or 1 073 741 824 bytes. (2) For disk storage capacity and communications volume, 1 000 000 000 bytes.

H

handle. A character string that represents an object, and is used to retrieve the object.

Hertz (Hz). A unit of frequency equal to one cycle per second. In the United States, line frequency is 60 Hz or a change in voltage polarity 120 times per second; in

Europe, line frequency is 50 Hz or a change in voltage polarity 100 times per second.

history log. A file that keeps a record of activities for a *workflow.*

home page. The initial Web page that is returned by a Web site when you enter the address for the Web site in a Web browser. For example, if a user specifies the address for the IBM Web site, which is http://www.ibm.com, the Web page that is returned is the IBM home page. Essentially, the home page is the entry point for accessing the contents of the Web site.

host. A computer, connected to a network, which provides an access point to that network. A host can be a client, a server, or a client and a server simultaneously.

host name. In the *Internet* suite of *protocols*, the name given to a computer. Sometimes, host name refers to the fully qualified domain name; other times, it is used to mean the most specific subname of a fully qualified domain name. For example, if mycomputer.city.company.com is the fully qualified domain name, either of the following might be considered the host name:

* mycomputer.city.company.com
* mycomputer

HTML. See *Hypertext Markup Language.*

HTTP (Hypertext Transfer Protocol). In the *Internet* suite of *protocols*, the protocol that is used to transfer and display hypertext documents

HTTPd. See *HTTP daemon.*

HTTP daemon. A multithreaded Web server that receives incoming *Hypertext Transfer Protocol (HTTP)* requests.

HTTP method. An action used by the *Hypertext Transfer Protocol (HTTP).* HTTP methods include GET, POST, and PUT.

Hypertext Markup Language (HTML). A markup language that conforms to the SGML standard and was designed primarily to support the online display of textual and graphical information that includes hypertext links.

Hz. See *Hertz.*

I

I frame (information frame). In video compression a frame that has been compressed independently of any other frames. Also referred to as a reference frame, intra frame, or still frame.

Image Object Content Architecture (IOCA). A collection of constructs used to interchange and present images.

index. To add or edit the attribute values that identify a specific *item* or *object* so that it can be retrieved later.

index class. See *item type.*

index class subset. In earlier Content Manager, a view of an *index class* that an application uses to store, retrieve, and display folders and objects.

index class view. In earlier Content Manager, the term used in the APIs for *index class subset.*

information mining. The automated process of extracting key information from text (summarization), finding predominant themes in a collection of documents (categorization), and searching for relevant documents using powerful and flexible queries.

inline. In Content Manager, an object that is online and in a drive, but has no active *mounts.* Contrast with *mounted*.

i-node. In the AIX operating system, the internal structure that describes the individual files in the operating system; there is one i-node for each file. An i-node contains the node, type, owner, and location of a file. A table of i-nodes is stored near the beginning of a *file system.*

interactive video. Combining video and computer technology so the user's actions determine the sequence and direction the application takes.

interchange. The capability to import or export an image with its index from one Content Manager ImagePlus for OS/390 system to another ImagePlus system using a *common interchange file* or *common interchange unit.*

Internet. The worldwide collection of interconnected networks that use the Internet suite of *protocols* and permit public access.

Internet Protocol (IP). In the *Internet* suite of *protocols*, a connectionless protocol that routes data through a network or interconnected networks and acts as an intermediary between the higher protocol layers and the physical network.

intranet. A private network that integrates *Internet* standards and applications (such as Web browsers) with an organization's existing computer networking infrastructure.

IOCA. See *Image Object Content Architecture.*

IP. See *Internet Protocol.*

IP address. The unique 32-bit address that specifies the actual location of each device or workstation on the *Internet*. The address field contains two parts: the first part is the network address; the second part is the host number. For example, 9.67.97.103 is an IP address.

IP multicast. Transmission of an *Internet Protocol (IP)* datagram to a set of systems that form a single multicast group. See *multicast.*

ISO-9660. Format used for files on CD-ROM. Used with DOS.

isochronous. A communications capability that delivers a signal at a specified, bounded rate, which is desirable for continuous data such as voice and full-motion video.

item. In Content Manager, generic term for an instance of an *item type.* For example, an item might be a *folder, document,* video, or image. Generic term for the smallest unit of information that Enterprise Information Portal administers. Each item has an identifier. For example, an item might be a *folder* or a *document.*

item type. A template for defining and later locating like *items,* consisting of a *root component,* zero or more *child components,* and a classification.

item type classification. A categorization within an *item type* that further identifies the *items* of that item type. All items of the same item type have the same item type classification.

Content Manager supplies the following item type classifications: *folder, document,* object, video, image, and text; users can also define their own item type classifications.

iterator. A class or construct that you use to step through a collection of objects one at a time.

J

JavaBeans™. A platform-independent, software component technology for building reusable Java components called "beans." After they are built, these beans can be made available for use by other software engineers or can be used in Java applications. Using JavaBeans, software engineers can manipulate and assemble beans in a graphical drag-and-drop development environment.

Joint Photographic Experts Group (JPEG). (1) A group that worked to establish the standard for the compression of digitized continuous-tone images. (2) The standard for still pictures developed by this group.

JPEG. See *Joint Photographic Experts Group.*

K

Kb. See *Kilobit.*

KB. See *Kilobyte.*

Kbps. *Kilobits* per second.

key field. See *attribute.*

kilobit (Kb). (1) For processor storage, real and virtual storage, and channel volume, 210 or 1024 bits. (2) For disk storage capacity and communications volume, 1000 bits.

kilobyte (KB). (1) For processor storage, real and virtual storage, and channel volume, 210 or 1024 bytes. (2) For disk storage capacity and communications volume, 1000 bytes.

L

LAN. See *local area network.*

LAN cache. An area of temporary storage on a local *resource manager* that contains a copy of objects stored on a remote resource manager.

latency. The time interval between the instant at which an instruction control unit initiates a call for data and the instant at which the actual transfer of the data starts.

LBR. See *low bit rate.*

library client. The component of a Content Manager system that provides a low-level programming interface for the library system. The library client includes APIs that are part of the software developer's kit.

library object. See *item.*

library server. The component of a Content Manager system that stores, manages, and handles queries on *items*.

link. A directional relationship between two *items:* the source and the target. You can use a set of links to model one-to-many associations. Contrast with *reference.*

local area network (LAN). A network in which a set of devices are connected to one another for communication and that can be connected to a larger network.

low bit rate (LBR). A generic term for an interleaved H.263/G.723 stream. Low bit rate streams range from 6.4 Kbps up to 384 Kbps.

M

machine-generated data structure (MGDS). (1) An IBM structured data format protocol for passing character data among the various Content Manager ImagePlus for OS/390 programs. (2) Data extracted from an image and put into general data stream (GDS) format.

management class. The term used in the APIs for *migration policy.*

Management Information Base (MIB). A collection of objects that can be accessed by means of a network management *protocol.*

maximum transmission unit (MTU). In *LANs,* the largest possible unit of data that can be sent on a given physical medium in a single frame. For example, the MTU for *Ethernet* is 1500 bytes.

Mb. See *megabit.*

MB. See *megabyte.*

Mbps. *Megabits* per second.

MCA. See *Micro Channel architecture.*

media archiver. A physical device that is used for storing audio and video stream data. The VideoCharger is a type of media archiver.

media server. An AIX-based component of the Content Manager system that is used for storing and accessing video files.

megabit (Mb). (1) For processor storage, real and virtual storage, and channel volume, 220 or 1 048 576 bits. (2) For disk storage capacity and communications volume, 1 000 000 bits.

megabyte (MB). (1) For processor storage, real and virtual storage, and channel volume, 220 or 1 048 576 bytes. (2) For disk storage capacity and communications volume, 1 000 000 bytes.

method. In Java design or programming, the software that implements the behavior specified by an operation. Synonymous with member function in C++.

MGDS. See *machine-generated data structure.*

MIB. See *Management Information Base.*

MIB variable. A managed object that is defined in the *Management Information Base (MIB).* The managed object is defined by a textual name and a corresponding object identifier, a syntax, an access mode, a status, and a description of the semantics of the managed object. The MIB Variable contains pertinent management information that is accessible as defined by the access mode.

Micro Channel Architecture (MCA). The rules that define how subsystems and adapters use the Micro Channel *bus* in a computer. The architecture defines the services that each subsystem can or must provide.

MIDI. See *Musical Instrument Digital Interface.*

migration. (1) The process of moving data and source from one computer system to another computer system without converting the data, such as when moving to a new operating environment. (2) Installation of a new version or release of a program to replace an earlier version or release.

migration policy. A user-defined schedule for moving *objects* from one *storage class* to the next. It describes the retention and class transition characteristics for a group of objects in a storage hierarchy.

migrator. A function of the *resource manager* that checks *migration policies* and moves objects to the next *storage class* when they are scheduled to move.

MIME type. An Internet standard for identifying the type of object being transferred across the Internet. MIME types include several variants of audio, image, and video. Each object has a MIME type.

Mixed Object Document Content Architecture (MO:DCA). An IBM architecture developed to allow the interchange of object data among applications within the interchange environment and among environments.

Mixed Object Document Content Architecture–Presentation (MO:DCA–P). A subset architecture of MO:DCA that is used as an envelope to contain documents that are sent to the Content Manager ImagePlus for OS/390 workstation for displaying or printing.

M-JPEG. See *Motion JPEG.*

MO:DCA. *Mixed Object Document Content Architecture*

MO:DCA–P. *Mixed Object Document Content Architecture—Presentation*

Motion JPEG (M-JPEG) . Used for animation.

mount. To place a data medium in a position to operate.

mounted. In Content Manager, an object that is online and in a drive, with active *mounts*. Contrast with *inline*.

Moving Pictures Expert Group (MPEG). (1) A group that is working to establish a standard for compressing and storing motion video and animation in digital form. (2) The standard under development by this group.

MPEG. See *Moving Pictures Expert Group.*

MTU. See *maximum transmission unit.*

multicast. Transmission of the same data to a selected group of destinations.

multimedia. Combining different media elements (text, graphics, audio, still image, video, animation) for display and control from a computer.

multimedia file system. A *file system* that is optimized for the storage and delivery of video and audio.

Multipurpose Internet Mail Extensions (MIME) . See *MIME type.*

Musical Instrument Digital Interface (MIDI). A *protocol* that allows a synthesizer to send signals to another synthesizer or to a computer, or a computer to a musical instrument, or a computer to another computer.

N

name server. See *domain name server.*

National Television Standard Committee (NTSC). (1) A committee that sets the standard for color television broadcasting and video in the United States (currently in use also in Japan). (2) The standard set by the NTSC committee.

native attribute. A characteristic of an object that is managed on a specific *content server* and that is specific to that content server. For example, the *key field* policy num might be a native attribute in a Content Manager content server, whereas the field policy ID might be a native attribute in an Content Manager OnDemand content server.

native entity. An *object* that is managed on a specific *content server* and that is comprised of *native attributes.* For example, Content Manager *index classes* are native entities comprised of Content Manager *key fields.*

native text index. An index of the text *items* that are managed on a specific *content server.* For example, a single text search index on a Content Manager content server.

network table file. A text file that contains the system-specific configuration information for each node in a Content Manager system. Each node in the system must have a network table file that identifies the node and lists the nodes that it needs to connect to.

The name of a network table is FRNOLINT.TBL.

NTSC. See *National Television Standard Committee.*

O

object. Any digital content that a user can store, retrieve and manipulate as a single unit, for example, *JPEG* images, MP3 audio, *AVI* video, and a text block from a book.

Object Linking and Embedding (OLE). A Microsoft specification for both linking and embedding applications so that they can be activated from within other applications.

object server. See *resource manager.*

object server cache. See *resource manager cache.*

OLE. See *Object Linking and Embedding.*

overlay. A collection of predefined data such as lines, shading, text, boxes, or logos, that can be merged with variable data on a page during printing.

P

package. A collection of related *classes* and interfaces that provides access protection and namespace management.

page pool. The area in the shared memory segment from which buffers are allocated for data that is read from or written to disk. Page pool size is one of the file manager startup configuration parameters.

PAL. See *Phase Alternation Line.*

parametric search. A query for *objects* that is based on the *properties* of the objects.

part. See *object.*

patron. The term used in the Content Manager APIs for *user.*

pattern-matching character. See *wildcard character.*

PCI. See *Peripheral Component Interconnect.*

peak rate. The maximum rate encountered over a given period of time.

performance group. A group of file systems sharing system resources that can affect file system performance.

Peripheral Component Interconnect (PCI). A type of *bus* architecture.

persistent identifier (PID). An identifier that uniquely identifies an *object,* regardless of where it is stored. The PID consists of both an item ID and a location.

Phase Alternation Line (PAL). The television broadcast standard for European video outside of France and the countries of the former Soviet Union.

PID. See *persistent identifier.*

pin. Keeping the program from being paged out after it is loaded into memory.

port. A system or network access point for data entry or exit. In the *Internet* suite of *protocols*, a specific logical connector between the *Transmission Control Protocol (TCP)* or the *User Datagram Protocol (UDP)* and a higher-level protocol or application.

port group. A logical name used to group one or more ports (network devices or interfaces) of the same network type that can be used to reach a given end-user destination. For example, if multiple *ATM* adapters in the VideoCharger Server complex are connected to the same ATM networks, these adapters can be configured under the same port group. The controller selects ports as necessary to balance the load.

presentation formatter. A *CGI* program that defines the forms used to select and present assets to clients.

privilege. The right to access a specific *object* in a specific way. Privileges includes rights such as creating, deleting, and selecting objects stored in the system. Privileges are assigned by the administrator.

privilege set. A collection of *privileges* for working with system components and functions. The administrator assigns privilege sets to users (user IDs) and *user groups.*

property. A characteristic of an *object* that describes the object. A property can be changed or modified. Type style is an example of a property.

protocol. The meanings of, and the sequencing rules for, requests and responses used for managing a network, transferring data, and synchronizing the states of network components.

protocol gateway. A type of *firewall* that protects computers in a business network from access by users outside that network.

proxy server. A server that receives requests intended for another server and that acts on the client's behalf (as the client's proxy) to obtain the requested service. A proxy server is often used when the client and the server are incompatible for direct connection (for example, when the client is unable to meet the security authentication requirements of the server but should be permitted some services).

purger. A function of the *resource manager* that removes *objects* from the system.

Q

QBIC. See *query by image content.*

quality of service (Do's). For *an asynchronous transfer mode (ATM)* virtual channel or a Networking BroadBand Services (NBBS) network connection, a set of communication characteristics such as end-to-end delay, jitter, and packet loss ratio.

query by image content (QBIC). A query technology that enables searches based on visual content, called features, rather than plain text. Using QBIC, you can search for objects based on their visual characteristics, such as color and texture.

query string. A character string that specifies the properties and property values for a query. You can create the query string in an application and pass it to the query.

R

RAID. See *Redundant Array of Independent Disks.*

rank. An integer value that signifies the relevance of a given part to the results of a query. A higher rank signifies a closer match.

README file. A file that should be viewed before the program associated with it is installed or run. A README file typically contains last-minute product information, installation information, or tips for using the product.

real time. The processing of information that returns a result so rapidly that the interaction appears to be instantaneous.

Real-Time Transport Protocol (RTP). A *protocol* that provides end-to-end network transport functions suitable for applications transmitting real-time data, such as audio, video or simulation data, over *multicast* or unicast network services.

rebalance. Restriping and redistributing data across the available hard disks after a disk or disks have been removed from a *file system.*

Redundant Array of Independent Disks (RAID). A collection of two or more disk drives that present the image of a single disk drive to the system. In the event of a single device failure, the data can be read or regenerated from the other disk drives in the array.

reference. Single direction, one-to-one association between a root or *child component* and another *root component.* Contrast with *link.*

release. To remove suspend criteria from an *item.* A suspended item is released when the criteria have been met, or when a user with proper authority overrides the criteria and manually releases it.

Remote Method Invocation (RMI). A set of APIs that enables distributed programming. An object in one Java Virtual Machine (JVM) can invoke methods on objects in other JVMs.

remote procedure call (RPC). (1) A facility that a *client* uses to request the execution of a procedure call from a server. This facility includes a library of procedures and an external data representation. (2) A client request to a service provider located in another node.

render. To take data that is not typically image-oriented and depict or display it as an image. In Content Manager, word-processing documents can be rendered as images for display purposes.

request. The part of a Web address that follows the *protocol* and server *host name.* For example, in the *address* http://www.server.com/rfoul/sched.htm, the request is /rfoul/sched.html.

ReSerVation Protocol (RSVP). A resource reservation setup *protocol* designed for an integrated services *Internet.* The protocol provides receiver-initiated setup of resource reservations for *multicast* and unicast data flows.

Resource Interchange File Format (RIFF) . Used for storing sound or graphics for playback on different types of computer equipment.

resource manager. The component of a Content Manager system that manages *objects.* These objects are referred to by *items* stored on the *library server.*

resource manager cache. The working storage area for the *resource manager.* Also called the *staging area.*

restriping. Redistributing and rebalancing data across all available and defined disks in a *multimedia file system.* This is typically done when a disk is removed from a file system for repair or when a new disk is added to a *file system.*

RIFF. See *Resource Interchange File Format.*

RLE. See *Run-Length Encoding.*

RMI server. A server that implements the Java *Remote Method Invocation (RMI)* distributed object model.

root component. The first or only level of a hierarchical *item type,* consisting of related system- and user-defined *attributes.*

RPC. See *remote procedure call.*

RSVP. See *ReSerVation Protocol.*

RTP. See *Real-Time Transport Protocol.*

Run-Length Encoding (RLE). A type of *compression* that is based on strings of repeated, adjacent characters or symbols, which are called "runs."

S

SCSI. See *small computer system interface.*

search criteria. In Content Manager, *attribute* values that are used to retrieve a stored *item*. In Enterprise Information Portal, specific fields that an administrator defines for a *search template* that limit or further define choices available to the *users*.

search template. A form, consisting of *search criteria* designed by an administrator, for a specific type of federated search. The administrator also identifies the *users* and *user groups* who can access each search template.

semantic type. The usage or rules for an *item.* Base, annotation, and note are semantic types supplied by Content Manager; users can also define their own semantic types.

server. A functional unit that provides services to one or more clients over a network. Examples include a file server, a print server, and a mail server.

server definition. The characteristics of a specific *content server* that uniquely identify it to Enterprise Information Portal.

server inventory. The comprehensive list of *native entities* and *native attributes* from specified *content servers.*

server type definition. The list of characteristics, as identified by the administrator, required to uniquely identify a custom server of a certain type to Enterprise Information Portal.

Simple Network Management Protocol (SNMP). In the *Internet* suite of *protocols*, a network management protocol that is used to monitor routers and attached networks. SNMP is an application layer protocol. Information on devices managed is defined and stored in the application's *Management Information Base (MIB).*

small computer system interface (SCSI). A standard hardware interface that enables a variety of peripheral devices to communicate with one another.

SMIT. See *System Management Interface Tool.*

SMS. See *system-managed storage.*

SNMP. See *Simple Network Management Protocol.*

staging. The process of moving a stored *object* from an offline or low-priority device back to an online or higher priority device, usually on demand of the

system or on request of a user. When a user requests an object stored in permanent storage, a working copy is written to the *staging area*.

staging area. The working storage area for the *resource manager*. Also referred to as *resource manager cache.*

stand-alone system. A preconfigured Content Manager system that installs all of the components of a Content Manager system on a single personal computer.

sticky pool. The part of the *page pool* that is made available to cache the first block of frequently used interactive files. Sticky pool size is one of the file manager startup configuration parameters.

storage class. Identifies the type of media that an object is stored on. It is not directly associated with a physical location; however, it is directly associated with the *device manager*. Types of storage classes include:

DASD

Fixed Disk

Optical

Stream

Tape

TSM

storage group. Associates a storage system to a storage class.

storage system. A generic term for storage in the Content Manager system. See *TSM volume*, *media archiver*, and *volume.*

streamed data. Any data sent over a network connection at a specified rate. A stream can be one data type or a combination of types. Data rates, which are expressed in bits per second, vary for different types of streams and networks.

stripe group. A collection of disks that are grouped together for serving media streams. The *multimedia file system* uses stripe groups to optimize delivery of multimedia *assets*.

stripe width. The size of the block that data is split into for *striping*.

striping. Splitting data to be written into equal blocks and writing blocks simultaneously to separate disk drives. Striping maximizes performance to the disks. Reading the data back is also scheduled in parallel, with a block being read concurrently from each disk then reassembled at the host.

subclass. A *class* that is derived from another class. One or more classes might be between the class and subclass.

superclass. A *class* from which a class is derived. One or more classes might be between the class and superclass.

suspend. To remove an *object* from its *workflow* and define the suspension criteria needed to activate it. Later activating the object enables it to continue processing.

system-managed storage (SMS). The Content Manager approach to storage management. The system determines object placement, and automatically manages object backup, movement, space, and security.

System Management Interface Tool (SMIT). An interface tool of the AIX operating system for installing, maintaining, configuring, and diagnosing tasks.

T

table of contents (TOC). The list of *documents* and *folders* that are contained in a folder or *workbasket*. Search results are displayed as a folder table of contents.

Tagged Image File Format (TIFF). A file format for storing high-quality graphics.

TCP. See *Transmission Control Protocol.*

TCP/IP. See *Transmission Control Protocol/Internet Protocol.*

thin client. A client that has little or no installed software but has access to software that is managed and delivered by network servers that are attached to it. A thin client is an alternative to a full-function client such as a workstation.

throughput. A measure of the amount of information transmitted over a network in a given period of time. For example, a network's data transfer rate is usually measured in bits per second. Throughput is a measure of performance. It is also measured in *Kbps* or *Mbps*.

TIFF. See *Tagged Image File Format.*

Tivoli Storage Manager (TSM). A *client/server* product that provides storage management and data access services in a heterogeneous environment. It supports various communication methods, provides administrative facilities to manage the backup and storage of files, and provides facilities for scheduling backup operations.

TOC. See *table of contents.*

token ring. According to IEEE 802.5, network technology that controls media access by passing a token (special packet or frame) between media-attached stations.

token-ring network. A network that uses a ring topology, in which tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission.

topology. In communications, the physical or logical arrangement of nodes in a network, especially the relationships among nodes and the links between them.

Transmission Control Protocol (TCP). A communications *protocol* used in the *Internet* and in any network that follows the Internet Engineering Task Force (IETF) standards for internetwork protocol. TCP provides a reliable host-to-host protocol between hosts in packet-switched communications networks and in interconnected systems of such networks. It uses the *Internet Protocol (IP)* as the underlying protocol.

Transmission Control Protocol/Internet Protocol (TCP/IP). The suite of transport and application *protocols* that run over the Internet Protocol.

TSM. See *Tivoli Storage Manager.*

TSM volume. A logical area of storage that is managed by *Tivoli Storage Manager.*

U

UDP. See *User Datagram Protocol.*

uniform resource locator (URL). A sequence of characters that represent information resources on a computer or in a network such as the Internet. This sequence of characters includes the abbreviated name of the protocol used to access the information resource and the information used by the protocol to locate the information resource. For example, in the context of the Internet, these are abbreviated names of some protocols used to access various information resources: http, ftp, gopher, telnet, and news.

user. A person who requires the services of Content Manager. This term generally refers to users of client applications, rather than the developers of applications, who use the Content Manager APIs. In Enterprise Information Portal, anyone who is identified in the Enterprise Information Portal administration program.

User Datagram Protocol (UDP). In the *Internet* suite of *protocols*, a protocol that provides unreliable, connectionless datagram service. It enables an application program on one machine or process to send a datagram to an application program on another machine or process. UDP uses the *Internet Protocol (IP)* to deliver datagrams.

user exit. A point in an IBM-supplied program at which a user exit routine can be given control.

user exit routine. A user-written routine that receives control at predefined *user exits*.

user group. A group consisting of one or more defined individual *users,* identified by a single group name.

user mapping. Associating Enterprise Information Portal user IDs and passwords to corresponding user IDs and passwords in one or more content servers. User mapping enables single logon to Enterprise Information Portal and multiple *content servers*.

utility server. A Content Manager component that is used by the database utilities for scheduling purposes. You configure a utility server when you configure a *resource manager* or *library server*. There is one utility server for each resource manager and each library server.

V

video mixing. The process of dynamically inserting or combining multiple *video objects* into a single object for distribution. An example would be the mixing of commercials and broadcast programs for satellite distribution.

video object. The data file containing a program recorded for playback on a computer or television set.

video-on-demand (VOD). A service for providing consumers with movies and other programming almost immediately, per request.

video stream. The path data follows when read from the VideoCharger Server system to the display unit.

VOD. See *Video-on-demand.*

volume. A representation of an actual physical storage device or unit on which the objects in your system are stored.

W

WAIS. See *Wide Area Information Service.*

WAV. A format to store digitally recorded sound.

Web server. A server that is connected to the *Internet* and is dedicated to serving Web pages.

Wide Area Information Service (WAIS). A network information system that enables clients to search documents on the World Wide Web.

wildcard character. A special character such as an asterisk (*) or a question mark (?) that can be used to represent one or more characters. Any character or set of characters can replace a wildcard character.

workbasket. A collection of *documents* or *folders* that are either in process or waiting to be processed. A

workbasket definition includes the rules that govern the presentation, status, and security of its contents.

workflow. In earlier Content Manager, a sequence of *workbaskets* through which a *document* or *folder* travels while it is being processed. In Enterprise Information Portal, a sequence of *work steps,* and the rules governing those steps, through which a *work packet*, *document,* or *folder* travels while it is being processed.

For example, `claims approval` would describe the process that an individual insurance claim must follow for approval.

workflow coordinator. In earlier Content Manager workflow, a user who receives notification that a *work item* in the *workflow* has not been processed in some specified time. The user is selected for a specific *user group* or upon creation of the workflow.

workflow state. The status of an entire *workflow*.

work item. In earlier Content Manager workflow and Enterprise Information Portal advanced workflow, any work activity that is active within a *workflow.*

worklist. A collection of *work items, documents,* or *folders* that are assigned to a user.

work packet. In Enterprise Information Portal Version 7.1, a collection of *documents* that is routed from one location to another. Users access and work with work packets through *worklists.*

work state. The status of an individual *work item*, *document*, or *folder*.

work step. A discrete point in a *workflow* or *document routing process* through which an individual *work item, document,* or *folder* must pass.

World Wide Web (WWW). A network of servers that contain programs and files. Many of the files contain hypertext links to other documents available through the network.

WWW. See *World Wide Web.*

X

XDO. See *extended data object.*

XML. See *Extensible Markup Language.*

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  products   5
workflow
    concept mapped to different
        products   5
    See document routing   1
worklist, concept mapped to different
  products   5

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