

IBM Content
Manager for Multiplatforms



Planning and Installing Information Integrator for Content

Version 8 Release 2

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Note

Before using this information and the product it supports, read the information in "Notices" on page 215 "Notices" on page 443.

Second Edition (March 2003)

This edition applies to Version 8 Release 2 of IBM Enterprise Information Portal for Multiplatforms (product number 5724-B43) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this guide

This guide provides site planning and installation personnel with information about how to prepare for and install IBM® Enterprise Information Portal (EIP). The guide includes an overview of hardware and software requirements and contains specific information for installing and configuring EIP.

Who should use this guide

Use this guide if you plan for, install, or configure Enterprise Information Portal. If you are a systems analyst or systems planner, this guide helps you understand how the product fits into your operation.

Skills required to install Enterprise Information Portal

Installers should know how to:

- Install software on AIX®, Windows® servers, or Sun Solaris.
- Create and administer user ids, passwords, and define user rights in Microsoft Windows NT®, Windows 2000, AIX, or Sun Solaris.
- Use DB2® Control Center, Command Prompt and Command Window interfaces
- Modify.INI and.BAT files to configure environment settings and variables
- Use a command line interface
- Connect distributed components across a network
- Configure DB2 databases for local and remote access and set database authentication and target information using DB2 Client Configuration Assistant and DB2 Satellite Control Center

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 IBM Content Manager 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	<i>Planning and Installing Your Content Management System</i> ¹	GC27-1332-01
migrate	<i>Migrating to Content Manager Version 8</i>	SC27-1343-01
sysadmin	<i>System Administration Guide</i>	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	<i>Workstation Application Programming Guide</i> ¹	SC27-1347-01
ecliinst	<i>Installing, Configuring, and Managing the eClient</i>	SC27-1350-02
eipinst	<i>Planning and Installing Information Integrator for Content</i>	GC27-1345-01
eipmanag	<i>Managing Information Integrator for Content</i>	SC27-1346-01
messcode	<i>Messages and Codes</i> ²	SC27-1349-01

Table 2. Enterprise Information Portal publications (continued)

File name	Title	Publication number
Notes:		
1.	The <i>Workstation Application Programming Guide</i> contains information about programming applications for both Content Manager and Enterprise Information Portal.	
2.	<i>Messages and Codes</i> 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).

What's new in EIP Version 8

Version 8.2: Version 8.2 includes a variety of enhancements. Version 8.2 adds more functionality to system administration workflow and supports the latest in database technology, DB2 Universal Database Version 8.1. These highlights, and other enhancements to the Version 8.2 product, are summarized below:

Enterprise Information Portal name change to IBM Information Integrator for Content

Enterprise Information Portal has been renamed to Information Integrator for Content. Although the names of the books have changed for Version 8.2, the text within the books continues to show the product name Enterprise Information Portal. When searching the Web for more information, you can continue to use Enterprise Information Portal, or EIP, until the transition to the new name is complete.

Support for DB2 UDB V8.1

Enterprise Information Portal V8.2 supports. The connection concentration feature of DB2 V8.1 provides increased scalability for two-tier applications and clients.

Federated folders

eClient now has the ability to organize documents and native folders from multiple repositories into a single federated folder and start that folder on a workflow. Federated folders also allows users to persistently store search results in the EIP federated database where users can retrieve them at any time. Full CRUD (create, retrieve, update, and delete) operations are available against these federated folders without re-indexing.

Advanced workflow collection points

Workflow is now fully supported on AIX and Solaris. The workflow builder, APIs, Collection Points Monitor, and JavaBeans provide improved workflow function and usability.

Microsoft Visual Studio .NET for building applications

The Enterprise Information Portal 8.1 and later APIs now support Microsoft Visual Studio .NET for writing content management applications or to integrate applications built using Microsoft Visual Studio .NET.

Version 8.1: Version 8.1 begins a legacy of integration and versatility. One of the many highlights and improvements from previous Content Manager products is the new data model structure which allows for more document customization. The changes to the Content Manager product in Version 8.1 are summarized below:

Support for Sun Solaris

You can install Java connectors, features, and databases on Solaris systems.

Common system administration

A single client application provides separate access to Content Manager and Enterprise Information Portal administration.

New connectors

- The ICM connector for Content Manager Version 8 Release 1 allows you to take advantage of Content Manager Version 8's powerful document storage features.
- The new C++ Extended Search Version 3.7 connector runs on AIX.

Improved connectors

- Parametric text searches are supported from the federated layer and through a direct Extended Search connection.
- Functional enhancements and performance improvements to the OnDemand connector, including:
 - Modifications to the structure of an OnDemand DDO.
 - Asynchronous search is now supported

IBM Web Crawler

IBM Web Crawler is a feature that allows users to search for and summarize information on the Web and in Lotus Notes® databases.

Workflow enhancements

Workflow is now fully supported on AIX and Solaris. The workflow builder, APIs, and JavaBeans™ provide improved workflow function and usability.

Information center

The browser-based information center includes the documentation for Content Manager, Enterprise Information Portal, and IBM Content Manager 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.

Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features for this product include:

- The ability to operate all features using the keyboard instead of the mouse.
- Support for enhanced display properties.
- Options for video and audio alert cues.

- Compatibility with assistive technologies
- Compatibility with operating system accessibility features
- Accessible documentation formats

Chapter 1. Introducing Enterprise Information Portal

Many paper-intensive enterprises, such as insurance companies and financial institutions, administer large volumes of business-related content. The need for an enterprise solution for managing and accessing business information spans many industries.

A *content server* stores multimedia objects, business forms, documents, and related data. The content server also stores metadata that allows employees to process and work with the content. When there is no way to effectively connect all the information on different content servers, a business can waste time and money by duplicating information or training employees to perform multiple searches.

Enterprise Information Portal provides leading-edge technology to bring all of your enterprise resources to your workstation desktop. EIP can help you maximize the value of your information and multimedia assets by connecting disparate content servers through a single client. With an EIP client, users can quickly and concurrently access information on all connected content servers. Users can also mine information, conduct intelligent searches across content servers (including the Web or an intranet) and perform workflow tasks within your business processes.

With Enterprise Information Portal, you can customize applications for your enterprise by installing the connector toolkit and samples. Application programmers can use the connector toolkit and samples to create desktop and Web-based applications.

The next section provides a scenario about a fictitious insurance company, XYZ Insurance, to demonstrate the product's features and function.

Searching for customer information

XYZ Insurance (XYZ), a large auto insurance company, has a large collection of photographs, claims, policies, adjuster's notes, reports from experts, and other documents. XYZ is a large organization with offices in various locations around the country. XYZ has many employees who need quick access to documents stored across various media and locations: such as the Internet, network, and so forth.

The need

XYZ kept a majority of its information in physical filing cabinets, which involved the time-consuming task of filing documents. They had some

digitized information in a wide variety of media types. Paper files had become unmanageable and any video documentation became lost in storage. This system made finding misfiled documents difficult and led to poor productivity. XYZ wanted a system to manage customer information and gather it quickly from different systems throughout the company. It needed a single Web interface to access client information for all of its employees. XYZ wanted to have a low cost information management system, reduce operation costs, improve customer service, and increase market share.

The solution

XYZ Insurance deploys IBM Content Manager for Windows NT, VideoCharger, EIP, and eClient. They use these products because the components work together to provide solutions uniquely suited to XYZ's business needs. XYZ uses Content Manager to scan insurance applications, enter customer information into databases, and conduct workflow. Any video documentation that they receive, they store on VideoCharger. EIP is used as the middleware to access all of the Content Manager content servers. The eClient allows remote offices to access information over the Web.

With this solution in place, employees can search for information, enter any new information, and respond to customers in a timely manner. Document retrieval is now both simple and accurate and employees can maintain all information with 100% integrity. XYZ can manage more documentation as a result, because it no longer needs to have employees file paper documents or retrieve misplaced documents, thus increasing its market share.

XYZ Insurance deploys Enterprise Information Portal because the comprehensive search technologies allow them to connect and search all of their content servers for the retrieval of data. Now, when an XYZ Call Center representative receives a call, a single federated search retrieves all of the necessary policy holder information.

XYZ Insurance also uses the information mining feature to search for and retrieve information from the company's intranet. They also want to expand their use of workflow processes.

Introducing the Enterprise Information Portal components

This section explains each EIP component and describes the installation options.

See Chapter 3, "EIP hardware and software requirements", on page 21 for information on component prerequisites.

Table 3 lists the components and the compatible operating systems.

Table 3. EIP component operating system compatibility

Component	Windows	AIX	Solaris	Notes
Administration database	yes	yes	yes	Database includes workflow builder functionality
Administration client	yes	no	no	Client can connect to databases installed on Windows, AIX or Solaris operating systems.
Connectors	yes	yes	yes	
Information mining server	yes	yes	yes	
Information mining client	yes	no	no	
IBM Web Crawler	yes	yes	yes	
Text search client	yes	yes	yes	
Image search client	yes	yes	yes	
Connector toolkit and samples	yes	yes	yes	<ul style="list-style-type: none"> • Windows version includes source code to compile sample client. No sample client code installed on AIX. • Workflow samples and APIs are installed with the federated connector sample.

Table 3. EIP component operating system compatibility (continued)

Component	Windows	AIX	Solaris	Notes
Viewer	yes	no	no	Installs OnDemand client and viewer.
Information center	yes	yes	yes	

Administration

The administration component provides the administration database and administration client subcomponents. When you install the administration database, you also install the workflow feature.

Administration database

The administration database is a DB2 database that manages information about EIP users and groups, privilege levels, passwords, user IDs, and other information. The database also provides the workflow and, optionally, the information mining functionality. You can install multiple databases. Each database provides the EIP workflow functionality. If you have a Content Manager Version 8 system, you can share the EIP administration database with the Content Manager Version 8 Library Server database. You can share the database because the Library Server database contains all the information required by EIP.

Administration client

The administration client can be installed only on Windows workstations. You can install multiple clients. If you have a Content Manager Version 8 system as the content server, you can administer EIP Administration database (a heterogeneous / federated data mapping layer) and Content Manager Version 8 backend datastore from the same client.

The client provides the interface that allows the administrator to:

- Define each content server for federated searching.
- Identify native entities and attributes on content servers and map them to federated entities.
- Maintain an inventory for all the content servers defined by the EIP system administrator
- Create search templates.
- Identify and manage users and groups.
- Assign privileges to users and groups.
- Define access to search templates and set conditions on the actions users can take with the information retrieved from a search.
- Design and administer business workflow processes.

Connectors

The connectors provide the communications interface between EIP clients, the content servers, and the administration database. The content server connectors, such as Content Manager Version 7.1 connector, provide the functionality that allows EIP to log in to the server, search for information, and return the information to the administration or end-user clients. The federated connector connects the administration client to the administration database.

EIP provides the following connectors:

- Federated connector connects EIP client to the administration database.
- Relational database connector for DB2 Universal Database 7.2, JDBC driver 1.3 (Java™ only), ODBC 3.0 (C++ only), DataJoiner® 2.1.1.
- Content Manager connector for Content Manager Version 7.1 servers.
- Content Manager connector for Content Manager Version 8.2 servers.
- Content Manager OnDemand connector for Content Manager OnDemand Version 7.1.
- Content Manager for VisualInfo™ for 400® Version 4.3, and Version 5.1.
- Content Manager ImagePlus for OS/390® connector for ImagePlus/390 Folder Application Facility Version 3.1, Image Plus/390 ODM Version 3.1.
- Lotus® Domino.Doc™ connector for Domino.Doc Version 3.0a, Desktop Enabler Version 3.0a.
- Extended Search connector for Version 3.7.
- Information Catalog Manager connector for DB2. Universal Database Visual Warehouse™ Version 5.2, DB2 Universal Database Version 7.2.

Features

EIP has four optional features.

Information mining

Information Mining provides linguistic services to find hidden information in text documents on content servers. During text document processing, metadata is created that can be summarized, categorized, and searched. WebSphere® Application Server 5.0 (standard or advanced edition) is an information mining prerequisite. Further, you can cluster similar documents, extract features from documents, for example person or company names, and determine the language of a document.

Image Search client

Provides the interface required to access and administer Image Search functionality on a Content Manager Version 7 content server.

Text Search client

Provides the interface required to access and administer Text Search functionality on a Text Search server.

IBM Web Crawler

Web Crawler is a Java-based content crawler and miner. Web Crawler can crawl content in an intranet, extranet, or Internet web, Lotus Notes databases, or through Domino, local file systems, and FTP collections.

Web Crawler can mine metadata and text from many types of content. For example, HTML content can be mined for URL, title, body, time of last modification, and metatags such as author, keywords, description, and so forth. Users select from a set of predefined miners for a given type of content. The content and/or mined metadata are saved to local disk.

Content viewer

Installing the OnDemand viewer installs the OnDemand client and other files required to view documents retrieved from an OnDemand server.

Connector toolkits and samples

EIP provides a connector toolkit that includes sample programs you can use to experiment with and test various EIP functions, such as:

- connecting to and disconnecting from content servers
- performing SQL and other sample queries on content servers
- determining content server MIME types, and so forth

Windows connector toolkit

To install the connector toolkit and samples on Windows servers, you must select the Development Workstation machine type. Then select the Connector Toolkit and Samples component. You can install the sample programs for all connectors, or select individual samples to match the connectors you installed.

On Windows servers, connector toolkit sample programs are organized in the following way:

```
c:\CMBROOT\SAMPLES\activex\xx  
c:\CMBROOT\SAMPLES\cpp\xx  
c:\CMBROOT\SAMPLES\java\xx  
c:\CMBROOT\SAMPLES\jsp\xx  
c:\CMBROOT\SAMPLES\server\xx
```

where *xx* is the directory name containing the sample programs for each applicable connector, for example, db2, od, dl, and so forth.

For instructions about how to use sample programs to verify EIP installation and connect to the EIP federated database, see “Verify connections by running low-level connection tests” on page 73.

On AIX servers, the sample programs are organized in the following way:

```
/usr/lpp/cmb/samples/cpp/xx  
/usr/lpp/cmb/samples/java/xx  
/usr/lpp/cmb/samples/jsp/xx  
/usr/lpp/cmb/samples/server/exit
```

where *xx* is the subdirectory name, such as beans, servlets, and so forth.

On Solaris servers, the development toolkit is named Content Manager EIP Version 8.1 Development Toolkit Base. The package name is cmbcomub. Unlike other EIP components on Solaris, the package is installed as a default and is not a selectable option. The development toolkit base is organized on Solaris servers in the following way:

```
/opt/IBMcmb/samples/java/aa  
/opt/IBMcmb/samples/jsp/bb  
/opt/IBMcmb/samples/server/exit
```

where *aa* is the subdirectory name, such as icm, beans, servlets, or servlets.

where *bb* is the subdirectory name, either servlets, or taglib.

The sample programs include documentation that describes the programs, and provides the server settings (environment settings, memory, and so forth) required to work with the sample code.

Information center

The information center component contains the Enterprise Information Portal information center. The information center is a Web-based, searchable version of the Enterprise Information Portal library.

Chapter 2. Planning your Enterprise Information Portal system

The following sections provide information to help plan your Enterprise Information Portal system. Your IBM sales representative can provide more details and work with you during the planning process.

Analyzing your business information requirements

Analyze your need to access, search for, retrieve and work with business information. This analysis helps you to decide on the appropriate Enterprise Information Portal configuration. The list below represents some common considerations to help plan the right system for your business:

- The network topology strategy for your enterprise
- Types and quantity of clients to deploy
- Information useful for existing applications already contained in your content servers
- Business processes that use this information
- Number of potential users, their location, and potential network traffic
- Number and types of file formats to search for and display
- Hardware capabilities
- Quantity, version level, and location of content servers
- Average number of users who will simultaneously access one or more content servers

For example, you might decide to use multiple Enterprise Information Portal servers to balance workload across your network. You might have some clients on Windows 2000 and others on Windows 98. You also might decide that only certain clients can access the workflow processes of your business or perform information mining.

Planning a configuration

EIP offers multiple ways to configure a system. When you plan a configuration, you must understand how you want to configure your clients and your servers. You can install all components on a single server (Windows only) or distribute the components across AIX, Sun or Windows servers, or all three. Enterprise Information Portal supports RMI server configurations; see “Remote Method Invocation (RMI) server” on page 11.

Enterprise Information Portal's architecture gives you the flexibility to design many different system configurations. Ask the following questions to help determine where to install the components:

- Local or remote connectors?
- Content server types?
- Features, such as information mining, workflow, IBM Web Crawler?
- Run-time or a development environment?
- Multiple RMI servers (an RMI server pool) to improve performance?

Choosing a server configuration

When designing the configuration to support your environment, you determine satisfactory response time. Response time depends on:

- The size of the objects you are searching for and viewing
- CPU speed, memory, disk space, network speed
- DB2 Universal Database (UDB) workload

Evaluate and adjust the possible configurations described in this section according to your unique requirements.

You can choose many ways to configure your servers for Enterprise Information Portal, depending on your environment. The following sections describe these possible configurations for your servers:

- Full server
- Administration server and information mining server
- RMI server
- RMI server pool
- Web server
- Workflow server

Full server (Windows only)

The full server configuration consists of one server that includes all prerequisites and all EIP components. The full server is only available on Windows operating systems, because the administration client is only compatible with Windows operating systems. A full server would include:

- IBM DB2 UDB
- WebSphere Application Server
- MQSeries® Server and MQSeries Workflow
- Administration database and client
- Local and remote connectors
- Content viewers
- Connector toolkit and samples

- Information Center
- Information Mining
- IBM Web Crawler

A full server configuration can be used to develop applications, learn the product, or perform a trial run of Enterprise Information Portal. However, consider installing Enterprise Information Portal on a distributed set of workstations to support multiple users with reasonable performance.

Administration server (Windows-only configuration)

You can configure one server to provide administration services by installing only the administration client, database, and federated connector on a single server. The administration server configuration is only compatible with Windows servers because the administration client is a Windows application.

Administration server (multiplatform configuration)

To configure a multiplatform administration server, you install the administration and federated database and connectors on AIX or Solaris, and install the administration client on Windows. An RMI server or DB2 UDB Client Configuration Assistant is required to connect the EIP administration client to the database.

Web server

You can configure a workstation as a Web server to perform federated searches and display the results through a Web browser. A Web server supports the information mining feature. To take advantage of the Information Mining sample Java Server Pages (JSPs) and the Information Structuring Tool (IST), the WebSphere Application Server should be installed on the workstation where you installed the Information Mining feature. If the WebSphere Application Server is on another workstation, you must configure an RMI connection to the Information Mining server.

Workflow server

Each administration database contains the tables required by EIP workflow. You can configure one server to support workflow. This is the recommended configuration. Workflow requires IBM MQSeries Server, IBM MQSeries Workflow, DB2 UDB and an administration database.

Remote Method Invocation (RMI) server

You can configure an RMI server to distribute client requests to components. See Chapter 3, “EIP hardware and software requirements”, on page 21 for the prerequisites to configure RMI servers on AIX, Windows or Solaris platforms.

This section provides some guidelines for planning an RMI server. With RMI, you can create Java applications that communicate and pass objects to other Java applications over a network.

RMI allows multiple EIP clients to search content servers through connectors installed on one RMI server. If you choose a system that includes an RMI server, you do not have to install the remote connectors on each client. The RMI server supports the connectors, and EIP clients access the connectors on the RMI server when performing a search.

If you plan to use RMI to connect clients to content servers, you do not need the remote content server connectors on EIP client machines. You must write all custom client applications in Java to take advantage of RMI.

RMI server pool

You can configure Enterprise Information Portal with multiple RMI servers to distribute client requests. A group of RMI servers is an *RMI server pool*. When a client communicates with an RMI server, this RMI server can delegate the client request to other members of the server pool. In this scenario, this RMI server acts as a master server. The master server itself fulfills client requests when all the server pool members reach their maximum number of connections.

The clients and the Web server connect with an RMI server in an RMI server pool configuration. Because all remote connectors can be shared on the RMI server, the RMI server pool configuration is scalable and easy to maintain.

Choosing a development workstation configuration

A development workstation can support a full system on a single workstation. The development workstation performs client and server functions. Developers can use the sample programs and the connector toolkit to build custom Web or custom client applications that access data and content from individual content servers.

For information about creating custom applications, see the *Workstation Application Programming Guide* and *online API reference*.

Choosing a client configuration

EIP provides an administration client, and also includes code you can compile to create a desktop client. When you install EIP on Windows, the installation program gives you a Client installation option. If you select that option, you can install the connectors and other components that will support an end-user client.

The EIP installation programs on Windows and Sun does not give you the option to install Local or Remote connectors. When you install EIP connectors on AIX, the installation program gives you the choice to install local and/or remote connectors.

You can choose to configure your clients as one or any of the following types:

Client using local connectors

Configure your client with the local connectors if you want your client to connect directly to one or more content servers. A client with local connectors can improve response time, but can require more disk space and a faster processor. This configuration requires you to update all clients when you add or upgrade the content server associated with the appropriate connector.

Client using remote connectors

In this configuration, you install only the client application and remote connectors on a workstation. The client accesses the content servers through an RMI server. This configuration eliminates the need to upgrade remote connectors when systems change, but can worsen response time.

Client using local and remote connectors

Enterprise Information Portal supports client configurations that include both local and remote connectors. Choose this configuration if you want your client to connect directly to some local content servers and connect remotely to others.

Understanding Windows server machine types

When you install EIP on a Windows workstation, the installation program requires you to select a machine type. When you install EIP on AIX and Sun Solaris, you do not select a machine type. This section describes the machine types and has a table showing which components are available with each machine type.

Each machine type provides a specific group of components that support the system configurations described in “Introducing the Enterprise Information Portal components” on page 2. The machine types are EIP Client, EIP Server, and EIP Development Workstation. See Table 4 on page 14 for more information.

It is essential to understand how the components offered by the three machine types fit into your system design. For example, if you select the Client machine type, you could install the components required to support an end-user client, but you could not install an administration database. If you select EIP Server to install the components that would support a full server or distributed server. If you select the Development Workstation machine type, you can install sample code that can help you program custom applications, such as end-user client. The EIP Client machine type provides the components required for client-only configurations.

Table 4 lists the components offered by the three machine types.

Table 4. Components and machine types

Component	Machine Type		
	Client	Server	Development Workstation
Administration	no	yes	yes
Connectors	yes	yes	yes
Features	yes*	yes	yes
Content Viewers	yes	yes	yes
Connector Toolkit and Samples	no	no	yes
Information	no	yes	yes

* If you select the Client machine type, you can install only the Information Mining, Text Search and Image Search clients. If you select either the Server or Development workstation machine types, you have the option to install both the Information Mining client and the Information Mining server.

Planning system administration

You use the administration client to set up and manage your system. System administration tasks include defining federated search templates, managing information mining and workflow features, and managing access control. You can install multiple administration clients on additional Windows workstations.

The following list includes some high-level tasks to complete when planning for system administration:

- Identify the content servers where information is stored
- Identify the users who can access content server data through Enterprise Information Portal
- Determine what level of security access users and user groups should have
- Define user groups who can access certain search templates
- Identify users who can perform information mining
- Define users and user groups who can perform tasks related to the business and workflow processes of your enterprise

See the Enterprise Information Portal online help for details about how to perform these system administration tasks. See *Managing Information Integrator for Content* for information about concepts behind the administration tasks.

Planning Enterprise Information Portal network security

This section lists six topics to consider when planning Enterprise Information Portal network security.

Authorization

- How do you ensure that users are who they claim to be?
- How do different elements in the system locate and determine whether to trust one another?
- How do you enable new employees, customers or business partners to access existing systems without major changes to existing security infrastructure?
- Whose identity should be used to determine authorization: the end user, the server, or some other entity?

Asset Protection

- Can you keep data confidential and private when it's stored and when it's traveling across relatively untrusted networks?
- How can you be sure that the data doesn't change while it's stored or in transit?

Accountability

- How can you tell who did what and when?
- How can you ensure, and prove, that requests and results are not altered, inadvertently or maliciously?

Administration

- Can you define the security policy?
- Can you ensure that policies are consistent across all elements of applications, systems, platforms, and networks?

Assurance

- How will the system keep its security promises?
- How can you ensure that the infrastructure and application resources -- including systems, networks, and data -- are not presently under attack?

Availability

- How do you prevent attacks on elements of the system that cause disruptions in service?
- How do you design for fault tolerance and ensure that applications and data are restored in the event of a serious failure?
- How can you keep the system up and running and also make needed modifications to the application, the systems, and the enterprise network?

Enterprise Information Portal security prevents these three types of security risks:

- Unauthorized network access to Enterprise Information Portal machines, clients, and features
- Unauthorized access to Enterprise Information Portal functionality
- Unauthorized viewing and use of content server information

General planning hints and tips

Enterprise Information Portal supports multiple databases. The databases are independent of each other. Multiple databases provide scalability and increased security. You can install multiple databases on one DB2 system. Enterprise Information Portal provides a utility to create databases after the initial installation.

Check the software version levels of the content servers to which you plan to connect to be sure the levels are compatible with the version level supported by the EIP connectors. For example, if you install the VI/400 connectors, you must select a version number to ensure that you install the compatible connector.

If you install a VisualInfo for AS/400[®] connector on any platform, the installation program prompts you for information that is stored in the AS/400 network table (frnolint):

- Version number
- Server name
- Host name
- Port number

EIP uses the data in the network table to connect to the AS/400 content server. The network table (frnolint.tbl) is installed in cmbroot.

Depending on the operating system where you install the OS/390 connector, the installation program might prompt you for connector parameters, such as IP address and other information. But you must know the information listed below to define a connection to the OS/390 server using the EIP administration client:

- FAF port number
- FAF application ID
- FAF protocol
- FAF IP address
- Object distribution manager CICS
- Object distribution manager IP address

- Object distribution manager port number
- Object distribution manager terminal ID
- Additional parameters (optional, depending on OS/390 server settings)

If you install the Content Manager Version 7 connector, you can also install Text Search and Image Search, two optional features.

To install the text search feature, you must know the following information to correctly configure the text search client settings:

- Text search server User ID
- Text search server name
- Text search server hostname
- Text search server port number
- Global setting

To install the image search feature, you must know the following information to correctly configure the image search client settings:

- Configuration file path information (must match the settings defined on the installation panel path definitions for CMBROOT)
- Image server name
- Image server hostname
- Image server port number
- Database name of the Content Manager Version 7 database associated with the image server.

To access DB2 DataJoiner, make sure the authentication method for Enterprise Information Portal is server for the database defined in DB2 Universal Database.

Before you install Enterprise Information Portal Version 8 Release 2, use the Enterprise Information Portal Version 8.1 Uninstall program (or the AIX/Sun equivalent) to remove earlier versions of Enterprise Information Portal components.

Tip: Do not use Windows Add/Remove programs because it does not remove all EIP components.

If you installed the information mining feature with EIP in an earlier release, the information mining database (information mining database) is deleted when you remove EIP. If you want to keep data in this database, back it up before you uninstall. In a db2cmd command window enter `db2 list db` directory. If IKF appears in the returned list of databases, the information

mining database exists. In the DB2 Command Window, type db2 backup database IKF to <dir> where <dir> is a directory of your choice.

Planning workflow

In Version 8.2 workflow is not a selectable feature.

Workflow samples and APIs are installed when you select the Connector toolkit and samples component and also select the Federated Connector option.

The workflow builder is installed with the administration client and the workflow functionality is administered through the administration client.

Planning information mining installation

The Information Mining server is always located on the workstation where the administration database is located. If you want to access the Information Mining feature, especially if you want to install the Information Structuring Tool on a different workstation, you must install an information mining client and configure an RMI connection.

Planning EIP performance

This section describes some of the important configuration and application design choices when planning an EIP system, focusing on the performance implications of those choices.

Web clients or desktop clients?

- Desktop clients are typically faster than web clients
- Web clients are typically easier to deploy and maintain

For web clients: Direct retrieve or mid-tier conversion?

- Direct retrieve is faster and more scalable
- Direct retrieve may require browser plug-ins or viewer applet

For web clients: Direct Connect or Federated access?

- Federated access is slower than direct connection to Library Server
- Federated access supports search across heterogeneous backend servers

IBM client program or custom client program?

- A custom client program can be tuned to your exact requirements
- The IBM clients already use our latest general-purpose tuning methods

For custom clients: Beans (non-visual, or non-visual + visual), or Java/C++ OOAPI?

- Beans implement only the document model

- Beans support rapid application development with a federated “reach”
- OOAPIs will have the best performance

For Java or C++ OOAPI custom clients: Document model or custom data model?

- The document data model already includes our latest general-purpose tuning methods
- A custom data model can be tuned to your exact requirements

Document routing or advanced workflow (MQSeries workflow)?

- Document routing has better performance and higher scalability
- MQSeries workflow offers advanced workflow function not available with doc routing

Versioning

- Versioning increases the library server database size
- Accessing current version is faster than accessing previous versions

Attribute indexes

- Appropriate indexes improve performance of searches and reduce library server resource usage
- Indexes increase library server database size, and affect store and update times

Server platform choice

- Mid-tier server
 - CM v8 Java OOAPI supported on AIX, Sun, and Windows
 - Some other connectors are Windows-only
 - Java conversion engine is cross-platform
- library server and resource manager
 - Higher scalability on AIX or Solaris than Windows

Locating more information about performance planning

For more information about performance and tuning, see the Performance Tuning Guidelines that are posted on the IBM Support page for Content Manager under the “White pages” category at www.ibm.com/software/data/cm/cmgr/mp/support.html:

Chapter 3. EIP hardware and software requirements

This section describes hardware and software that are required to install and administer an EIP system.

Important

See the README for the latest version requirements of prerequisite software, including related update or fixpack levels.

Windows requirements

Before you install any EIP components for Windows, ensure that your workstation has the correct hardware and software installed. This section lists the required hardware and software to install before you install the EIP Client, Server or Development Workstation.

EIP client, server and development workstation hardware requirements

When you install EIP on Windows, you must first select one of three machine types: Client, Server, and Development Workstation. The machine type you choose determines which components you can install. See Table 4 on page 14 for a list of the components that you can install with each machine type.

Table 5 describes the hardware required by the Server and Development Workstation machine types. Table 6 on page 22 describes the hardware required for the Client machine type.

Table 7 on page 22 describes the software required by the Server and Development Workstation machine types.

Table 5. Required hardware for EIP Server and Development Workstation machine types

Component	Required
Processor	Intel Pentium® 800MHz or equivalent.
RAM	512 MB minimum 1024 MB recommended
Storage	<ul style="list-style-type: none">• 1 GB swap space:• 400 MB install space• 10 MB temporary space
Display and adapter	SVGA (800 × 600 resolution and 256 color mode)

Table 5. Required hardware for EIP Server and Development Workstation machine types (continued)

Component	Required
Other required hardware	<ul style="list-style-type: none"> • Mouse • CD-ROM drive (for installation only) • Network adapter (if components are installed on multiple workstations)

Table 6. Required hardware for EIP client machine type

Component	Specification
Processor	Intel Pentium II 200 MHz minimum Intel Pentium III 400 MHz recommended
RAM	128 MB minimum 256 MB recommended
Storage	<ul style="list-style-type: none"> • 100 MB swap space: • 210 MB install space • 30 MB temporary space
Display and adapter	SVGA (800 x 600 resolution and 256 color mode)
Other required hardware	<ul style="list-style-type: none"> • Mouse • CD-ROM drive (for installation only) • Network adapter (if components are installed on multiple workstations)

EIP server and development workstation software requirements

Table 7. Required software for EIP server and development workstation machine types on Windows

Component	Required
Operating system	Microsoft® Windows NT 4.0 server with service pack 6 or later, Windows 2000 Server, or Windows XP, or >Net Server 2003 (when available)
Network Communication	TCP/IP installed with Windows

Table 7. Required software for EIP server and development workstation machine types on Windows (continued)

Component	Required
<ul style="list-style-type: none"> • Administration database • Connector toolkit and samples 	<ul style="list-style-type: none"> • Microsoft Visual C++ Version 6.0 • IBM DB2 Universal Database (DB2 UDB), Enterprise Edition Version 7.2 or later, or • IBM DB2 UDB Enterprise Extended Edition Version 7.2 or later, with DB2 Application Development Client • (Connector toolkit and samples only) Java Development Kit Standard Edition with the latest fixpack • (Optional) IBM DB2 Universal Database Net Search Extender (NSE), (compatible with DB2 Version 8.1) or IBM DB2 Universal Database Text Information Extender (compatible with DB2 Version 7.2). NSE and TIE are only required if you plan to use the text search feature to search a Content Manager Version 8 server.
Federated connector	<ul style="list-style-type: none"> • IBM DB2 Universal Database (DB2 UDB), Enterprise Edition Version 7.2 or later • Java Development Kit, Version 1.3
Relational Database connector	<ul style="list-style-type: none"> • IBM DB2 Universal Database (DB2 UDB), Enterprise Edition Version 7.2.1 or later • JDBC driver 1.3 (Java only) • ODBC 3.0 (C++ only) • DataJoiner 2.1.1
Information Catalog connector	<ul style="list-style-type: none"> • IBM DB2 Universal Database (DB2 UDB), Enterprise Edition Version 7.2.1 or later • JDBC driver 1.3 (Java only) • ODBC 3.0 (C++ only) • DataJoiner 2.1.1
Advanced workflow	<ul style="list-style-type: none"> • MQSeries Version 5.3.0.2 Server with latest fixpack • MQSeries Workflow Server Version 3.4 or later • Internet Explorer Version 5.0 or later • IBM DB2 Universal Database Version 7.2 or later • For C++, WebSphere MQSeries Version 5.3.0.1 client and MQSeries Workflow V3.4 client are required to run client-side applications. See the MQSeries server and MQSeries workflow documentation for details. <p>Requirement: Install the MQSeries Server and MQSeries Workflow software on the machine where you install the administration database. The MQSeries software is required to activate the workflow builder feature, which is installed automatically with the administration database.</p>

Information mining and Web Crawler software requirements

Table 8. Required software for information mining and Web Crawler on Windows

Component	Required
Operating system	Microsoft Windows NT 4.0 with service pack 6 or later, or Windows 2000 Server or Advanced Server
Network Communication	TCP/IP installed with Windows
Information mining	<ul style="list-style-type: none">• IBM DB2 Universal Database Version 7.2 plus fixpack 2 or later• Java Runtime Environment (JRE), Version 1.3 or later• DB2 Text Information Extender plus fixpack 2 or later• Federated connector• Java Plug-in Version 1.4.1 or later recommended• WebSphere Application Server Version 4.0.3 with the latest fixpack, or later
Web Crawler	Netscape 5.0 or higher
Web samples for information mining	<ul style="list-style-type: none">• WebSphere Application Server (WAS) version 4.0.3 Advanced Edition or Advanced Single Server Edition or later.• Java 2 Software Developer's Kit Standard Edition, Version 1.3, with the latest fixpack.

System administration client hardware requirements

Table 9. Required hardware for the system administration client

Component	Required
Processor	Intel Pentium 800 MHz processor or equivalent
RAM	128 MB
Storage	35 MB for the installed product
Display and adapter	SVGA (1024x768 resolution and 256 color mode)
Other required hardware	<ul style="list-style-type: none">• Mouse• CD-ROM drive (for installation only)• Network adapter (if components are installed on multiple workstations)

System administration client software requirements

Table 10. Required software for system administration client

Component	Required
Operating system	Microsoft Windows NT Server Version 4.0, or Microsoft Windows 2000 or Windows XP

Table 10. Required software for system administration client (continued)

Component	Required
Network Communication	TCP/IP installed with Windows
Toolkits	Java Runtime Environment (JRE) 1.3 (included with the program) DB2 Application Development Client Version 7.2 or Version 8.1 (known as DB2 Software Development Kit, or SDK, in previous versions of DB2)

Information Center hardware requirements

Table 11. Required hardware for the Information Center

Component	Required
Storage	150 MB

Information Center software requirements

Table 12. Required software for the Information Center

Component	Required
Browser	Internet Explorer, Version 5 or higher Netscape, Version 4.5, 4.6, or 4.7 Not compatible: The Information Center is not compatible with Netscape Version 6.0 or later

AIX requirements

Before you install any EIP components for AIX, ensure that your workstation has the correct hardware and software installed. This section lists the required hardware and software for installing and running Content Manager components on AIX.

AIX hardware requirements

Table 13. Required hardware for all AIX components

Component	Required
Server	RS/6000 [®] based processor
RAM	512 MB
Storage	4 GB for the installed product:
Display and adapter	VGA (256 color mode)

Table 13. Required hardware for all AIX components (continued)

Component	Required
Other required hardware	<ul style="list-style-type: none"> • CD-ROM drive (for installation only) • Network adapter (if components are installed on multiple workstations)

AIX server software requirements

Table 14. Required software for EIP servers on AIX

Component	Required
Operating system	<ul style="list-style-type: none"> • AIX 4.3.3 and the latest fix pack (must include TCP/IP and Unicode converter) or AIX 5.1 or later. • Java Developer's Kit/Java Runtime Environment Version 1.3 with fix pack • Java Servlet Developer's Kit Version 2.2, or later • WebSphere 4.0.3, or later
Network communication	TCP/IP (installed with AIX) except standalone topology
Administration database	<ul style="list-style-type: none"> • IBM VisualAge® C++ Version 5 or later • IBM DB2 UDB Extended Enterprise Edition Version 7.2 or later, with the DB2 Application Development Client (known as DB2 Software Development Kit, or SDK, in previous versions of DB2.) • (Optional) IBM DB2 Universal Database Text Information Extender (TIE), Version 7.2 (if you plan to use the text search feature)
Text search client	<ul style="list-style-type: none"> • C/C++ibmcxx Level 3.6.6.1 or later • Text Search Server Release 6 • Content Manager Version 7.1 connector
Image search client	<ul style="list-style-type: none"> • C/C++ibmcxx Level 3.6.6.1 or later • Content Manager Version 7.1 connector
Federated connector	<ul style="list-style-type: none"> • IBM DB2 Universal Database Extended Enterprise Edition Version 7.2 or later, with the Application Development Client for AIX (known as DB2 Software Development Kit, or SDK, in previous versions of DB2.) • Java Software Developer's Kit, Version 1.3

Table 14. Required software for EIP servers on AIX (continued)

Component	Required
Relational database connector	<ul style="list-style-type: none"> • IBM DB2 UDB Extended Enterprise Edition Version 7.2.1 and with the Application Development Client for AIX (known as DB2 Software Development Kit, or SDK, in previous versions of DB2.) Java Database Connect (JDBC) driver Version 1.3 with latest service pack (Java only) • ODBC Version 3.0 (C++ only) • DataJoiner Version 2.1.1
Information catalog connector	IBM DB2 Universal Database Extended Enterprise Edition Version 7.2.1
Administration Workflow	<ul style="list-style-type: none"> • WebSphere MQSeries Server Version 5.3.0.1 Server with latest fixpack. • MQSeries Workflow Version 3.4 or later • IBM DB2 Universal Database Enterprise Edition Version 7.2.1.
LDAP	IBM Directory server 4.1
Information mining	<ul style="list-style-type: none"> • IBM DB2 Universal Database Extended Enterprise Edition Version 7.2 with fixpack 2 or later, and with the Application Development Client for AIX (known as DB2 Software Development Kit, or SDK, in previous versions of DB2.) • DB2 Text Information Extender 7.2 plus fixpack 2 or later • Java Runtime Environment (JRE), Version 1.3 or later • Java Plug-in Version 1.4.1 or later • WebSphere Application Server 4.0.3 with the latest fixpack or later • IBM Visual Age C, C++ compiler, Version 5 • IBM Web Crawler
Web samples for information mining	<ul style="list-style-type: none"> • WebSphere Application Server Advanced Edition or Advanced Single Server Edition 4.0.3 or later, with latest fixpack • Java 2 Software Developer's Kit Standard Edition, Version 1.3, with the latest fixpack.
Information Center browser	Netscape, Version 4.5, 4.6, or 4.7
	Not compatible: The Information Center is not compatible with Netscape, Version 6.0 or later

Table 14. Required software for EIP servers on AIX (continued)

Component	Required
Connector toolkit and samples	<ul style="list-style-type: none">• IBM Visual Age C++ compiler, Version 5 or later for application development using the C++ connector APIs• Java Development Kit, Version 1.3, with latest fixpack

Solaris requirements

Before you install any Content Manager components for Solaris, ensure that your workstation has the correct hardware and software installed. This section lists the required hardware and software for installing and running EIP components on Solaris.

Solaris hardware requirements

Table 15. Required hardware for all Solaris components

Component	Required
Server	Solaris SPARC-based processor
RAM	1 GB
Storage	4 GB for installed product and data storage, depending on workload.
Display and adapter	VGA (256 color mode)
Other required hardware	<ul style="list-style-type: none">• CD-ROM drive (for installation only)• Network adapter (if components are installed on multiple workstations)

Solaris server software requirements

Table 16. Required software for EIP components on Solaris

Component	Required
Operating system	Solaris Version 2.8 with patch level SubOS hostname 5.8 Generic_108528-08, or later
Network communication	TCP/IP
Administration database	<ul style="list-style-type: none">• IBM DB2 UDB Version 7.2 or later with the Application Development Client.• Sun Forte C and C++ compiler Enterprise Edition 6 update 1 or later

Table 16. Required software for EIP components on Solaris (continued)

Component	Required
Federated connector	<ul style="list-style-type: none"> • IBM DB2 UDB Extended Enterprise Edition Version 7.2.1 and with the Application Development Client for Solaris. • Sun Forte C and C++ compiler Enterprise Edition 6 update 1 or later • Java Developer's Kit/Java Runtime Environment, Version 1.3.1.2 (IBM version) • Java Plug-ins Version 1.3.1
Relational database connector	<ul style="list-style-type: none"> • IBM DB2 UDB Extended Enterprise Edition Version 7.2 or later with the Application Development Client. • Java Database Connect (JDBC) driver Version 1.3 (Java only) • ODBC Version 3.0 (C++ only) • DataJoiner Version 2.1.1
Information catalog connector	IBM DB2 UDB Extended Enterprise Edition Version 7.2.1 and with the Application Development Client for Solaris.
Advanced Workflow	<ul style="list-style-type: none"> • WebSphere MQSeries Server Version 5.3.0.1 Server with latest fixpack • MQSeries Workflow Server Version 3.4 or later • IBM DB2 UDB Enterprise Edition Version 7.2.1 or later
Information mining	<ul style="list-style-type: none"> • IBM DB2 UDB Extended Enterprise Edition Version 7.2 or later with the Application Development Client. • DB2 Text Information Extender 7.2 plus latest fixpack • Java 2 Runtime Environment Version 1.3, Standard Edition, local or remote • Federated connector • WebSphere Application Server Version 4.0.3 or later with the latest fixpack. • Sun Forte C and C++ compiler, Enterprise Edition 6 • IBM Web Crawler
Web samples for information mining	<ul style="list-style-type: none"> • WebSphere Application Server (WAS) Advanced Edition, or Advanced Single Server Edition, Version 4.0.3 or later. • Java 2 Software Developer's Kit Standard Edition, Version 1.3, with the latest fixpack.
LDAP	IBM Directory server 4.1
Connector toolkit and samples	Java Developer's Kit/Java Runtime Environment, Version 1.3, with latest fixpack.

Table 16. Required software for EIP components on Solaris (continued)

Component	Required
Text search	<ul style="list-style-type: none"> • Text Search Server Release 6 • Content Manager Version 7.1 connector
Information Center browser	Netscape, Version 4.5, 4.6, or 4.7
	Not compatible: The Information Center is not compatible with Netscape, Version 6.0 or later

RMI server requirements

This section describes the operating system requirements to configure an EIP RMI server.

- Windows NT with Service Pack 6, or later
- Windows 2000
- AIX 4.3.4, or AIX 5.1 or later

Client/Server support matrix

Use the matrix in Table 17 to determine the support criteria for connecting EIP connectors, the system administration client, and the Client for Windowst to EIP databases, Content Manager library servers, or to Content Manager resource manager servers.

This matrix is intended to help you to understand the client to server support possibilities. It is also intended to help you to understand how you can upgrade your Content Manager servers from Version 8.1 to Version 8.2 first and then upgrade your clients over time.

Table 17. Client/Server support matrix

	CM Version 8.1 Servers on DB2 Version 7.2 Server +TIE ¹	CM Version 8.2 Servers on DB2 Version 7.2 Server +TIE ¹	CM Version 8.2 Servers on DB2 Version 8.1 Server +NSE ²	CM Version 8.2 Servers on Oracle +NSE ²
Version 8.1 CM connector or clients using DB2 Version 7.2 client software	SUPPORTED	SUPPORTED	SUPPORTED	not supported

Table 17. Client/Server support matrix (continued)

	CM Version 8.1 Servers on DB2 Version 7.2 Server +TIE ¹	CM Version 8.2 Servers on DB2 Version 7.2 Server +TIE ¹	CM Version 8.2 Servers on DB2 Version 8.1 Server +NSE ²	CM Version 8.2 Servers on Oracle +NSE ²
Version 8.1 CM connector or clients using DB2 Version 8.1 client software	not supported	not supported	not supported	not supported
Version 8.2 CM connector or clients using DB2 Version 7.2 client software	not supported	SUPPORTED	SUPPORTED	not supported
Version 8.2 CM connector or clients using DB2 Version 8.1 client software	not supported	not supported	SUPPORTED	SUPPORTED
<p>Notes:</p> <ol style="list-style-type: none"> 1. Text Information Extender (TIE) - optional for use with Content Manager text search feature with DB2 Version 7.2. 2. Net Search Extender (NSE) - optional for use with Content Manager text search feature with DB2 Version 8.1. 				

Chapter 4. Installing and updating prerequisite programs for Windows

This section has two sub-sections:

1. "Verifying your software prerequisites on Windows" explains how to check the level of a prerequisite that you already have installed on your system.
2. "Installing / Updating Prerequisites" on page 35 has detailed instructions for how to install and configure the prerequisite programs that are needed for your own planned configuration. The prerequisite programs included in this section are:
 - "Microsoft Windows Operating System" on page 35
 - "IBM DB2 Universal Database™" on page 36
 - "IBM DB2 Net Search Extender (NSE) and Text Information Extender (TIE)" on page 38
 - "Microsoft Visual C++ compiler" on page 39
 - "IBM WebSphere Application Server (WAS)" on page 41
 - "Java Development Kit (JDK) Version" on page 42

Verifying your software prerequisites on Windows

Run the following verification checks to determine which of the prerequisites you need to install or update. For those prerequisites that are either not installed or not at the expected level, use the next section ("Installing / Updating Prerequisites" on page 35) to guide you through installing them.

Table 18. Basic prerequisite verification

Prerequisite	How to check	Example value
1. Windows NT SP6	Winver	1. Version 4.0 (Build 1381: Service Pack 6)
2. Windows 2000 Server SP2		2. Version 5.0 (Build 2195: Service Pack 2)

Table 18. Basic prerequisite verification (continued)

Prerequisite	How to check	Example value
Java Development Kit V1.3	java -fullversion	Version needs to read 1.3.1 (for example, if you are using the version from WebSphere Application Server, it will read: java full version " J2RE 1.3.1 IBM Windows 32 build cn131w-20020403 ORB130").
UDB EE v7.2 with fixpack 7 or higher	From the DB2 Command Window: db2level	Level needs to read "SQL07025" or greater with fixpak level of "WR21306" or greater.
DB2 UDB Enterprise Server Edition Version 8.1 with fixpack 1	From the DB2 Command Window: db2level	Level needs to read SQL08010 or read "DB2 v8.1.1.27". The fixpack information needs to read "FixPak "1"" and list the fixpack level. (For example, "s021124" is the fixpack that had been available November 24, 2002.) For Oracle, the fixpack level must be S021110 or later.
DB2 Text Information Extender with fixpack 1	From the DB2 command prompt: db2text start	<ol style="list-style-type: none"> 1. CTE0185 2. CTE0001 Operation completed successfully
Net Search Extender (required if you use DB2 Version 8.1)	From the DB2 Command Window, start the text search program: db2text start Then type: db2textlevel	CTE0350 Instance "DB2" uses DB2 Net Search Extender code release " tx9_81" with level identifier " tx9_26a"
Tivoli® Storage Manager API Client Version 4.2.1	c:\tsm\api\samprun\dapismp	API Library Version = 4.2.1.0

Table 18. Basic prerequisite verification (continued)

Prerequisite	How to check	Example value
Tivoli Storage Manager Server Version 4.2.1	Logon to the TSM Server Administration web page: http://<hostname> :1580 Where <hostname> is the name of the TSM server.	The version appears on the Web page. It should say Version 4, Release2, Level1.0
1. WebSphere Application Server AE 4.0.3 2. WebSphere Application Server AES 4.0.3	Check the product.xml file located in: x:\WebSphere\AppServer\propers\com\ibm\websphere.	<version>4.0.3</version>
Microsoft Visual C++ Compiler Version 6.0	Check Start --> Programs.	1. Microsoft Visual C++ 6.0 2. Microsoft Visual Studio 6.0
Microsoft Visual Studio .NET Professional	At the command line, type: cl	Microsoft 32-bit C/C++ Optimizing Compiler Version 13.00.94966 for 80x86 Copyright (C) Microsoft Corporation 1984-2001. All rights reserved.

Installing / Updating Prerequisites

The following sections guide you through installing each of the prerequisites, including where you can find download trial versions and fixpacks, how to install them, and how to verify them after installation.

The rule of thumb when installing the prereqs is to always apply the fixpacks after your base components are installed. For instance if you are missing the DB2 UDB Application Development Client from your DB2 install, install this component first, then install the fixpak code. Otherwise you will need to install the fixpak code again after adding any new DB2 pieces.

Microsoft Windows Operating System

One of the following Windows operating systems is required for Content Manager Version 8 Release 2:

- Windows NT with service pack 6, or later, including TCP/IP.
- Windows 2000 Server with service pack 1, or later, including TCP/IP.

Where to obtain Windows service packs

You can download the service packs for the Windows operating systems at the following location:

<http://www.microsoft.com/downloads>

How to install the Windows service packs

See instructions that come with Windows NT or Windows 2000 product for instructions for installing the service packs.

How to validate that the service pack is installed correctly

From a command prompt, enter the command:

```
winver
```

You should see one of the following:

- For Windows NT: Version 4.0 (Build 1381: Service Pack 6)
- For Windows 2000: Version 5.0 (Build 2195: Service Pack 2)

IBM DB2 Universal Database™

IBM DB2 Universal Database Enterprise Edition Version 7.2 OR Enterprise Extended Edition Version 7.2.1. (or higher) is required for Content Manager Version 8 Release 2.

Before you begin to install IBM DB2 Universal Database

Before you begin to install IBM DB2 Universal Database:

- 1. Ensure that your server meets all of the prerequisites and conditions needed to install DB2 Universal Database. To learn more about DB2 prerequisites, insert the DB2 installation CD and click Installation Prerequisites from the DB2 Launchpad.
IBM DB2 Universal Database Enterprise Server Edition, Version 8.1 is provided in the package with the Content Manager software.
- 2. Make sure that the user ID that you plan to use to install DB2 is a user ID that is part of the "Administrators" group, has a local domain, and has the following user rights assigned through the Local Security Policy:
 - Act as part of the operating system.
 - Create a token object.
 - Increase quotas.
 - Replace a process level token.

If the domain is not local, the SATCTLDB and DWCTRLDB databases will not be created successfully. If the user does not have the above privileges, the installation will not be able to validate any DB2 usernames.

Refer to Chapter 5, “Performing pre-installation steps on Windows”, on page 47, for more information.

Installing IBM DB2 Universal Database

- ___ 1. Log in to the system with the Administrator account that you have defined for DB2 installation.
- ___ 2. Close all programs so the installation program can update files as required.
- ___ 3. Insert the DB2 installation CD-ROM into the drive. If enabled, the auto-run feature automatically starts the DB2 Setup launchpad.

From the IBM DB2 Setup Launchpad (Welcome) window, you can view installation prerequisites and the release notes. You may want to review the installation prerequisites and release notes for late-breaking information. Click **Install Products** to begin the installation.

When prompted, select Typical as the installation type, to install all DB2 components required to support Content Manager.

- ___ 4. The DB2 Setup wizard determines the system language, and launch the setup program for that language. If you want to run the setup program in a different language, or the setup program fails to auto start, you can start the DB2Setup wizard manually:
 - ___ a. Click **Start** and select the **Run** option.
 - ___ b. In the **Open** field, enter the following command:

```
x:\setup /i language
```

where:

- x: represents your CD-ROM drive
- *language* is the territory identifier for your language (for example, EN for English).

If the /i flag is not specified, the installation program runs in the default language of the operating system.

- ___ c. Click **OK**.
- ___ 5. Once you have initiated the installation, proceed by following the setup program’s prompts. Online help is available to guide you through the remaining steps. To invoke the online help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation. DB2 files will only be copied to your computer once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

For information on errors encountered during installation, see the db2.log file. The db2.log file stores general information and error messages resulting from the install and uninstall activities. By default, the db2.log file is located in the My Documents\DB2LOG\ directory. The location of the My Documents directory will depend on the settings on your computer.

Validating the IBM DB2 Universal Database installation

To validate the DB2 installation:

- __ 1. From a DB2 Command Window, enter `db2level`.
- __ 2. You should see the following:
DB21085I Instance "DB2" uses DB2 code release "SQL07025"
(or higher) with level...identifier ...
and informational tokens and "WR21306" (or higher).

IBM DB2 Net Search Extender (NSE) and Text Information Extender (TIE)

The powerful text search capabilities of the DB2 Version 7 Text Information Extender (TIE) are merged into the Net Search Extender (NSE) Version 8. Notice that if you plan to use the (optional) text search feature of Content Manager Version 8, you must install:

IBM Text Information Extender (TIE), Version 7.2 with IBM DB2 Enterprise Edition Version 7.2 and Enterprise Extended Edition Version 7.2.1

OR

IBM Net Search Extender (NSE), Version 8 with IBM DB2 Enterprise Server Edition, Version 8.1.

If you are using Oracle as your database application with Content Manager, AND you plan to use the (optional) text search feature of Content Manager, you **must** install NSE, not TIE.

IBM Net Search Extender (NSE), Version 8 is provided in the package with Content Manager, Version 8.2.

Installing IBM DB2 Net Search Extender (NSE) on a Windows operating system

Follow these steps to install DB2 NSE on the Windows operating system:

- __ 1. Insert the DB2 Net Search Extender CD into the CD ROM drive
- __ 2. Follow the instructions to install NSE. When you get to the window that asks for the user ID and password for the DB2EXT -service, enter the same user name that you specified for your DB2 -service.

Requirements:

- DB2 NSE must be installed on the same workstation as the library server.
- For every DB2 instance, a Windows service is created. Ensure that the *log on as user for DB2 services* is running as this account and not a system account using your Windows user name.

Steps to perform after installing IBM Net Search Extender (NSE)

Update the NSE server configuration file for use with Information Mining:

- __ 1. Edit the TIE configuration file `db2ext1m.cfg`, in the directory:
`%DB2HOME%\%DB2INSTANCE%\db2ext`
- __ 2. Increase the default value of the parameter *maxIdxPerDb* to "100".

Validating the IBM DB2 NSE installation

To validate the DB2 NSE installation:

1. From a DB2 Command Window, type:

```
db2text start
```

2. You should see information like the following:

```
CTE0185
```

```
or
```

```
CTE0001 operation completed successfully
```

Microsoft Visual C++ compiler

Refer to the following website for information about the availability of this product.

<http://www.microsoft.com>

Installing Microsoft Visual C++

Follow the installation instructions that come with the Microsoft Visual C++ product.

During the installation, look for and make sure that you select **Register environment variables**.

Steps to perform after installing Microsoft Visual C++

Perform the following steps after you install Microsoft Visual C++:

1. Make sure that the Microsoft Visual C++ environment variables are set up correctly:

When Visual C++ is first installed, the environment variables are set up as user variables, not system variables. Therefore, the Visual C++ environment is not automatically available to every user of the library server.

You can change the user environment variables into system environment variables, so that all users have access to the Visual C++ environment.

If you change user variables to system variables, make sure that you place the Visual C++ values after any DB2 or Oracle values.

After you make changes to the environment variables, you must reboot your system to make the variables available to the services.

An example of how to accomplish this task is as follows:

- a. Logon to the system as the user that installed Visual C++.
- b. Click **Start** → **Settings** → **Control Panel**.
- c. Double click the System icon.
- d. For Windows NT, click the **Environment** tab.

For Windows 2000, click the **Advanced** tab, then click the **Environment Variables** button.

(You can see that the System Variables are above the User Variables for the user that is logged on to the system.)

- ___ e. Find the **path** variable in the User Variables section of the window and click on it.

(You see that the variable name **path** is displayed in the **Variable:** field. You see the settings of the **path** variable displayed in the **Value:** field of the window.)

- ___ f. Within this **Value** field, highlight the Microsoft Visual Studio variable, for example:

```
C:\Program Files\Microsoft Visual Studio\Common\Tools\Winnt;
```

- ___ g. Copy this highlighted information to your clipboard (CTRL+C)

- ___ h. Click on **path** in the System **Variables:** section of the window.

(Now, you see that the information displayed in the **Value** field is the value that is associated with the **path** of the System Variable.)

- ___ i. Place your cursor in the **Value** field. Scroll to the end of the information field (or after the DB2 values). For example:

```
C:\Program Files\SQLLIB;
```

- ___ j. Paste (Ctrl+V) the information that you copied to your clipboard from the User Variables to this point in the System Variables. (Make sure that there is a semi-colon (;) separating the two variables.)

- ___ k. Verify that the information is correctly part of the System Variable. If it is correct, then delete the information from the User Variable section. (The C++ variables must be available in the System Variables, and not in the User Variables.)

- ___ l. Repeat steps 1e through 1k on page 40 for both the **lib** variable and the **include** variable.

- ___ m. Reboot your system to make the variables available to the services.

- ___ 2. If you install Microsoft Visual Studio Enterprise Edition, the installation may prompt you as to whether to use a new 6.0 database format or to use an older format which is compatible with version 5.0. This format decision has no impact on Content Manager.

Validating the Microsoft Visual C++ installation

To validate the installation, check the **Start --> Programs** menu for either Microsoft Visual C++ 6.0 or Microsoft Visual Studio 6.0.

IBM WebSphere Application Server (WAS)

IBM WebSphere Application Server, Version 5 is provided in this package with Content Manager, Version 8.2. It includes:

- IBM HTTP Server
- Java Development Kit (JDK)

Installing IBM WebSphere Application Server

Be sure your server is configured to meet all of the specific WebSphere Application Server prerequisites and conditions. The WebSphere Information Center contains the prerequisites and conditions and it is located at:

<http://www.ibm.com/software/webservers/appserv/library.html>

1. Log in to the workstation using the user ID and password that allow you to act as part of the operating system.
2. Insert the WebSphere Application Server CD into the CD drive.
3. Select the language for your locale and click **Next**.
4. Use the LaunchPad to access the product overview, the ReadMe file, and installation guides. Click **Install the product** to launch the installation wizard.
5. The welcome window opens. Click **Next**.
6. The Software License Agreement window opens. Accept the agreement, then click **Next**.
7. When the window opens to Select the type of installation, select **Full** and click **Next**.
8. The window for identifying the directory paths opens. Click **Next** to accept the default destination directories for the WebSphere directory, the IBM HTTP Server directory, and the Embedded Messaging Server and Client directory. Click **Browse** to define a different destination directory for each of the products.
9. In the next window, enter the node name and the host name for this installation. Click **Next**.
10. When the Services window opens, click to check:
 - Run WebSphere Application Server as a service
 - Run IBM HTTP Server as a serviceEnter your user ID and password, then click **Next**.
11. The next window shows you which features have been selected for install. Click **Next**.
12. WebSphere begins copying files to the server.
13. Restart the server after the installation completes.
14. Click **Start** → **Programs** and verify that IBM HTTP Server and WebSphere Application Server AES are listed.

- ___ 15. Open Services and verify that the IBM HTTP Server and WebSphere Application Server AES are listed as Windows NT or Windows 2000 services.

WebSphere Application Server AES opens and closes multiple command-line interface windows after you restart the workstation. This is a normal part of the installation process.

After you restart the server and the installation program finishes configuring the WebSphere Application Server components, WebSphere Application Server AES automatically launches a First Steps application. First Steps gives you the opportunity to take an interactive tutorial that provides experience with configuring and defining sample data to learn more about the product.

Validating the IBM WebSphere Application Server installation

Follow these steps to validate the IBM WebSphere Application Server installation:

- ___ 1. Start the WebSphere Application Server.
- ___ 2. Open **Start->Programs->IBM WebSphere->Application Server V5.0->Administrator's Console**, and view the information panel under **Help->About**. It should read version 5.0 (or higher).

Another way to validate the installation, is to check the product.xml file:
WebSphere\AppServer\properties\com\ibm\websphere

It should contain the following information:

```
<version >5.0/</version>
```

After installing and validating WAS: verify that the JDBC resource in the Application Server is configured properly. To do this, make sure the WebSphere Application Server is started, then open the Administrator's Console from the Start menu.

- ___ 1. In the left panel navigate to **WebSphere Administrative Domain->Resources->JDBC Providers**.
- ___ 2. In the right panel select the **Nodes** tab.
- ___ 3. Make sure the classpath value for your node is set to **C:\Program Files\SQLLIB\java\db2java.zip**.

Java Development Kit (JDK) Version

JDK, Version 1.3 is required *only* for the following products:

- EIP toolkits.
- Information Mining.
- eClient.
- VideoCharger.

- Installation launchpads.

Where to obtain the Java Development Kit (JDK)

You can use the JDK that comes with WebSphere Application Server. It can be found in the following directory:

```
C:\WebSphere\AppServer\java
```

Since the JDK is part of the WebSphere Application Server, no installation is necessary. However, you **must** ensure that the JDK directory (for example: C:\WebSphere\AppServer\java\bin) is added to your system path environment variable.

Verifying the correct level of JDK on your system

You can verify that you have the correct level of the Java Development kit as follows:

1. From a command prompt, type: `java -fullversion`.
2. The level should read: 1.3.1.

If you are using the JDK that comes with WebSphere, it will read:

```
Java full version "J2RE 1.3.0 IBM build cn131w-20020403 ORB130"
```

Installing Workflow for Windows

MQSeries Server has two prerequisites: Active Directory Services Interface (ADSI) 2.0, and Microsoft Management Console 1.1. The MQSeries Server CD includes both products in the Prereqs directory. If you are installing on Windows 2000, ADSI and MMC are part of the operating system.

The MQSeries installation CD has an auto-start feature. If you need to install the prerequisites, click **Cancel** when the For Windows - Language Selection window opens and navigate to the Prereqs directory.

Installing MQSeries Server software on Windows

1. If you installed the prerequisites from the MQSeries Server CD, click `Setups/xx_xx/install.exe` where `xx_xx` is the language for your locale. If your workstation configuration already included ADSI 2.0 and MMIC 1.1, insert the CD-ROM labeled **IBM for Windows NT Server** into your CD-ROM drive.
2. If the installation does not start automatically:
 - a. Click **Start** → **Run** from the Windows taskbar.
 - b. Enter `x:\setup.exe` in the **Open** field, where `x` is the drive letter for your CD-ROM drive.
 - c. Click **OK**.

The for Windows - Language Selection window opens.

3. Select the language that supports your locale and click **OK**. The Setup window opens, then the Welcome window opens.

4. Click **Next**. The Read License Conditions window opens.
5. Click **Yes** to accept the License Agreement terms.
6. To accept the default installation folders, click **Next**. If you do not want to use the defaults, change them and then click **Next**. The Setup Type window opens.
7. Click **Typical** and then click **Next**. The Set Up Default Configuration window opens.
8. Leave the **Set up a default configuration** check box selected and click **Next**. The Select Options window opens.
9. Leave both check boxes selected in the Select Options window and click **Next**. The Join Default Cluster window opens.
10. Click **Yes, make it the repository for the cluster** and then click **Next**. The Repository Location window opens.
11. Click **Next**. The Select Program Folder window opens.
12. Click **Next**. A folder called **IBM** is added to the Windows **Start** menu under **Programs**. The Ready to Copy Files window opens.
13. Click **Next**. The installation program copies program files to the installation directory. This can take ten or more minutes. The Setup Complete window opens when the installation program finishes copying the files.
14. Click **Finish** to complete the MQSeries server installation process. The service will automatically start as a Windows NT service.

Installing MQSeries Workflow on Windows

After you have installed MQSeries server, you must install MQSeries Workflow to use workflow.

1. Ensure that your workstation meets the prerequisites.
2. Ensure that you have installed MQSeries Server Version 5.2h.
3. Create a temporary folder on your workstation for the MQSeries Workflow installation files; for example, `c:\temp\cmbwf`.
4. Insert the CD in the CD drive.
5. Copy the MQSeries Workflow installation and configuration files from the `WFInstall` directory on the CD to the temporary directory.
6. Open a command window and change to the temporary directory that you created in step 3
7. Remove the CD and insert the MQSeries Workflow CD.
8. If the MQSeries Workflow installation begins automatically, click **Cancel** and **Exit Setup**.
9. To start the MQSeries workflow installation, type: `cmbwfinstall <x>
<temp>` where `x` is the name of the CD drive and `temp` is the name of the

temporary directory where you copied the MQSeries Workflow installation and configuration files in step 3 on page 44 For example, `cmbwfinstall g: c:\temp\cmbwf`.

To install from a LAN, use the LAN alias instead of the drive letter.

10. Restart the workstation when you see the message MQSeries Workflow installation completed.

Configuring MQSeries Workflow on Windows

To configure MQSeries Workflow:

1. Open a command window and change to the temporary directory you created in the previous task.
2. Check the bin subdirectory of the MQSeries Workflow installation is in the PATH.
3. Type `cmbwfconfig` and wait until the configuration completes. This step creates the default FMC workflow configuration, workflow runtime database, and EIP workflow data container structures. This manual procedure is a one time configuration task.

Starting EIP workflow on Windows

EIP Advanced workflow uses MQSeries Workflow as the underlying workflow engine to deliver workflow functionality. Therefore, starting EIP workflow includes steps to start the MQSeries Workflow.

1. Open `cmbupes81.bat` in the notepad.
2. Find those two entries which set the EIP administrator user id and password. Modify them according to your custom settings and save the results.

```
@set CMBUPESUSER=icmadmin @set CMBUPESPASS=password
```

The user id and password will be used to start up the EIP collection points monitor (`upes`) via the `cmbupes81.bat`.

3. Type `cmbwfstart` to start the MQSeries Workflow server and the EIP collection points monitor. Three command windows open. Those three command windows are titled:
 - Trigger Monitor
 - MQSeries Workflow Server
 - IBM MQSeries Workflow PE

The collection points monitor will prompt its startup status in the MQSeries Workflow Server command window. If you choose not to set user id and password in the `cmbwfstart.bat`, `upes` will prompt for user id and password when it starts.

Leave those three command windows up while EIP Advanced Workflow is running.

| **Tip:** If you do not require the collection point functionality, enter 'quit' to
| shutdown the UPES server. Shutting down the UPES server does not shut
| down the MQSeries Workflow.

| **Tip:** You need to enable the WorkFlow Service option in the EIP System
| Administration client before you could define EIP Workflow objects (such as
| Workflow processes and actions) via the Administration client. After you
| enable the Workflow Service in the EIP, it is important to keep in mind to
| have the MQSeries Workflow running when you log on the System
| Administration client. This is needed to keep the Workflow objects definitions
| in sync between the EIP Administration database and the MQSeries Workflow
| runtime database.

| **Tip:** The default MQSeries Workflow system administrator (not configuration
| administrator) id is ADMIN with default password as "password". You would
| want to change it later for security reason. To do that, first start the MQSeries
| Workflow and use the fmcautil utility to connect to the Workflow system to
| change the password. After you have done that, be sure to modify the
| cmbwfstart.bat to reflect your changes. Here are the steps:

- | 1. fmcautil ñu admin ñp password
- | 2. Select u, p to change your password and then exit the utility.
- | 3. Update the CMBWFStart.bat. For example: fmcxspea -u=admin
| -p=myPassword -f

| To configure your MQSeries Workflow server as an RMI server, see
| Chapter 17, "Configuring an RMI server", on page 179.

Chapter 5. Performing pre-installation steps on Windows

In addition to installing all the necessary prerequisites, you need to complete the following tasks before installing Content Manager and Enterprise Information Portal:

- “Create user IDs with the proper user rights and privileges”
- “Make sure that you have enough temporary space on your system” on page 49
- “Make sure that your %PATH% is not too long” on page 49

Create user IDs with the proper user rights and privileges

Create user IDs as follows:

- Library server “administration” user ID (such as ICMADMIN) if you are installing a library server on this workstation. This user ID **must** be part of the DB2 Admin group.
- “Database connection” user ID (such as ICMCONCT) if you are installing a library server on this workstation. (This should be a regular user ID with normal privileges, not part of the DB2 Admin group.)

The installation program refers to the IDs by the default names, and you should substitute the names you use if you are not using the default names.

The user ID icmadmin (used for the library server administration) needs to have DB2 Administrative privileges. One simple way to accomplish this is to add icmadmin to the Administrators group. The user ID, icmconct, does not need any special privileges.

In addition, icmadmin needs to have the following four user rights:

- Act as part of the operating system
- Create a token object
- Increase quotas
- Replace a process level token

The steps required for assigning these rights differ between Windows NT and Windows 2000:

For Windows NT Operating System:

- ___ 1. Click **Start -> Programs -> Administrative Tools -> User Manager**.
- ___ 2. Select **User Rights** from the Policies Menu

- __ 3. Enable the **Show Advanced User Rights** checkbox
- __ 4. Select the right you want to assign (for example: **Act as part of the Operating System** from the drop-down list of rights)
- __ 5. Click **Add**
- __ 6. Select the user account to the list
- __ 7. Click **OK** and **OK** again and then close the User Manager
- __ 8. Reboot the server for changes to take effect

For Windows 2000 Operating System:

- __ 1. Click **Start -> Settings -> Control Panel**
- __ 2. Select **Administrative Tools**
- __ 3. Select **Local Security Policy**
- __ 4. From the topology tree, select **Local Policies -> User Rights Assignment**
- __ 5. Double-click on the right you want to assign (for example: **Act As Part of the Operating System**)
- __ 6. Click **Add**
- __ 7. Select user account from the list
- __ 8. Click **OK**
- __ 9. The modified user must logoff and log back on for changes to take effect

You need to remember these user IDs and their passwords for entry during the installation. We remind you about them during the installation (at the time that you need to enter them). You can record their names here:

Table 19. Administration and connection IDs

	Default name / information	Record your value here
Library server database administration ID	ICMADMIN	
Library server database administration ID password		
Database connection ID	ICMCONCT	
Database connection ID password		

Make sure that you have enough temporary space on your system

Before installing Content Manager or Enterprise Information Portal, you need to ensure that you have more than 100MB available in the partition where %TEMP% is located.

The Content Manager and Enterprise Information Portal installations both use the temporary directory specified in the %TEMP% environment variable, (for example: C:\TEMP or C:\WINNT\TEMP), and they both require about 100MB of free space.

Make sure that your %PATH% is not too long

The Content Manager and Enterprise Information Portal installations will append values to your %PATH% environment variable. Microsoft Windows limits the length of your path to approximately 1024 characters.

The Content Manager and Enterprise Information Portal installation programs need to add about 100 characters to your path, depending on what you select for your installation directories. One way to verify your %PATH% is not too long is by copying it into a word processor and running a word count on it.

If your %PATH% is too long, remove duplicate entries first, then you can try to use short names for directories (for example: **Program Files => PROGRA~1**). Use `dir /x` from the command line to look up the short names.

Chapter 6. Installing Enterprise Information Portal components on Windows

This section explains how to install EIP components on Windows servers.

Before you install the administration database

Read this section before you install any administration database, including the information mining database, and the Content Manager Version 8 connector, or if you plan to add EIP tables to Content Manager Version 8 databases.

Sharing a Content Manager Version 8 database

Because EIP Version 8 and Content Manager Version 8 share common code, you can share a Content Manager Version 8 library server database.

Restriction: If you plan to share the library server database, you must be sure that the database was Unicode-enabled during installation and that the code page is 1208. There are two ways to check whether the database meets the requirements.

Use a DB2 command window (Start→Programs→IBM DB2→Command Window)

1. At the prompt, type `db2 get db cfg for <Content Manager Version 8 database>`
2. Check that the Database code page setting is 1208

Use the DB2 Control Center (Start→Programs→IBM DB2→Control Center)

1. Highlight the Content Manager Version 8 database.
2. Right-click Configure. The Environment tab appears.
3. Check that the Database code page value is 1208.

If you plan to share a Content Manager Version 8 library server database, you must know the user IDs that were defined when that specific Content Manager Version 8 database was installed. This is required because the EIP installation program uses the user ID to access the Content Manager Version 8 database, add the EIP tables and save the modified database.

The Content Manager Version 8 database must be on a local drive of the server where you are installing EIP. You cannot add EIP tables to a Content Manager Version 8 database that is accessed through a networked drive.

You must start DB2 on the server that contains the Content Manager Version 8 Library Server database you are sharing with EIP.

Because you are you are modifying an existing DB2 database, you must log on to the server with a user ID and password that allows you to administer DB2 databases.

You must define exactly the same Server name, Schema name, user ID and password that was used when the Content Manager Version 8 database was created.

Are you installing an administration database *and* the Content Manager Version 8 connector?

If you install the Content Manager Version 8 connector, you must know the user IDs and passwords defined when the Content Manager Version 8 database that you want to connect to was installed. You must perform the following steps:

1. On the window labeled Identify Administration Database, you must enter one administration user ID and one DB2 Connect user ID. The administrator and the Connect user ID must be locally defined. **Requirement:** If you are sharing a Content Manager Version 8 library server, you must type the same administrator user ID and the Connect user IDs defined when the Content Manager database you are sharing was created.
2. On the window labeled Configure Federated Server Connection, you must type the password associated with the DB2 Connect user ID.
3. On the Configure Content Manager Version 8 connector window, type the DB2 Connect user ID and password that was defined when the Content Manager Version 8 library server database was installed.

Are you installing an administration database but *not* the Content Manager Version 8 connector?

See steps 1 and 2 in the previous section.

Are you sharing a Content Manager Version 8 database?

You must perform the following steps:

1. If you are sharing a Content Manager Version 8 library server, you must type the same administrator user ID and the Connect user ID defined when the Content Manager database you are sharing was created.
2. On the window labeled Configure Federated Server Connection, type the DB2 Connect user ID and password that was defined when the Content Manager Version 8 Library Server database was installed.

3. On the Configure Content Manager Version 8 connector window, type the DB2 Connect user ID and password that was defined when the Content Manager Version 8 library server database was installed.

Restriction! The Database connection user IDs (and all other values) you define in steps 1, 2 and 3 of this section must be the same in each window.

Removing previous versions of EIP

The uninstall program removes the EIP components from previous versions. The databases are not removed because they are stored in DB2. The EIP uninstall program detects changes to *.INI and *.BAT files and prompts you to decide if you want to make backup copies of these files.

1. Click **Start**→**Programs**→**IBM Enterprise Information Portal for Multiplatforms**→**Uninstall**.
2. Select the language from the **Choose Setup Language** window, click **OK**, then click **Yes** to start the component removal process.
3. To remove modified *.INI or *.BAT files from cmbroot, click **Yes**. If you click **No**, the program prompts you to decide if you want to make backup copies of the *.BAT and *.INI file. If you click **Yes**, the program stores the backup files in cmbroot.
4. Click **Yes** or **No** and click **Finish**.
5. After you restart the workstation, copy backup *.INI or *.BAT files to a temporary directory.
6. Delete the \CMBROOT directory.

EIP Windows installation quick start

1. Insert the EIP Windows installation CD-ROM in the CD-ROM drive. If the program begins automatically, select the appropriate language and click **Next**. If the installation does not start automatically, navigate to the CD-ROM drive, select the appropriate language directory and double-click setup.exe.
2. Click **Accept** to accept the License Agreement. The Select Machine Type Window appears.
3. Click a Machine Type and click **Next**.
 - Client
 - Server
 - Development Workstation
4. Click **Next** to accept the default path and directory name for the EIP product and for the configuration files, or change the path and name information as required.
5. Click the appropriate components and subcomponents and click **Next**.

6. Depending on the components you install, and on your system plan, the program displays various installation windows and prompts you to type configuration information.
7. Click **Finish** and restart the server.

EIP installation windows

Table 20 lists the common EIP installation windows you always see, in the general sequence you see them, no matter which components you select. When you install some components, such as the Information Center or IBM Web Crawler, you see only the common installation windows.

When you install other components, you will see specific windows. Table 21 on page 55 lists the specific windows in alphabetical order. The installation sequence and the windows you see varies, depending on the components you install. For example, you will only see the VisualInfo for AS/400 Network Table Generation window if you select the CM for AS/400 connector.

Table 20. Common EIP installation windows

Common window	Details
License Agreement	See "Software License Agreement" on page 57.
Select Machine Type	See "Select Machine Type" on page 57.
Specify Destination	See "Specify Destination" on page 57.
Component Selection	See "Component Selection" on page 58.
Specify RMI Host Name and Port Number	See "Specify RMI Host Name and Port Number" on page 58.
System Configuration	See "System Configuration" on page 58.
Start Copying Files	See "Start Copying Files" on page 61.
Product Registration	See "Product Registration" on page 61.
Installation Complete	See "Installation Complete" on page 61.

Table 21. Specific EIP installation windows

Specific window	Description	Details
Catalog remote database	The values you define in this panel enable communications between the administration client and a remote EIP database.	For information on how to collect the information required to fill out this window, see “Connecting the administration client to a remote administration database” on page 141.
Configure components for LDAP	You use this window to enable the administration database and/or the administration client to use LDAP information.	See “Configure Components for LDAP” on page 61.
Configure Content Manager V8 Server Connection	Only used when you install the Content Manager Version 8 connector.	See “Configure Content Manager V8 Server Connection” on page 62.
Configure federated server connection	Only used when you install: <ul style="list-style-type: none"> • the administration client and/or • any connector 	See “Configure Federated Server Connection” on page 62.
Configure LDAP Server	Only used when you install: <ul style="list-style-type: none"> • the common configurations on an LDAP server and • the federated connector and • the Content Manager Version 8 connector and • the administration or Information Mining database 	See “Configure LDAP Server” on page 61.
Define LDAP Server	Only used when you install: <ul style="list-style-type: none"> • the common configurations on an LDAP server and • the federated connector and • the Content Manager Version 8 connector and • the administration or Information Mining database 	See “Define LDAP Server” on page 63.

Table 21. Specific EIP installation windows (continued)

Specific window	Description	Details
Destination Path for Content Manager V7 connector C-APIs	Only used when you install the Content Manager Version 7 connector.	See "Destination Path for Content Manager V7 Connector C-APIs" on page 64.
Existing database	Only used when you install: <ul style="list-style-type: none"> The administration database and/or Information Mining feature and You share the EIP tables in a Content Manager Version 8 Library Server database. 	See "Existing Database" on page 64.
Identify Administration Database	Only used when you install an administration or Information Mining database.	See "Identify Administration Database" on page 64.
Image Search Server/Client Configuration	Only used when you select the Image Search feature.	See "Image Search Server/Client Configuration" on page 66
Install OnDemand?	Only used when you install the OnDemand viewer.	See "Install OnDemand?" on page 66.
Network Table Generation	Only used when you install the Content Manager Version 7 connector. This window gives you options to generate the Content Manager Version 7 network table.	See "Network Table Generation (for Content Manager version 7 connector)" on page 66
Network Table Generation	Only used when you install the Content Manager Version 7 connector. The values you type are copied to the Content Manager Version 7 network table (FRNROOT/FRNOLINT.TBL).	See "Network Table Generation (for Content Manager version 7 connector)" on page 67
Select administration database options	Only used when you install a new database or replace an existing database.	See "Select Administration Database Options" on page 68.
Select Version of VisualInfo for AS/400	Only used when you install the VisualInfo for AS/400 connector.	See "Select Version of VisualInfo for AS/400" on page 68

Table 21. Specific EIP installation windows (continued)

Specific window	Description	Details
Server configuration utility	Used to define port number, database name and other information about remote databases.	
Text Search Server/Client Configuration	Only used when you select the Text Search feature.	See "Text Search Server/Client Configuration" on page 68.
Upgrade OnDemand?	Only used when you install the OnDemand viewer <i>and</i> you have an existing OnDemand client on the server.	"Upgrade OnDemand?" on page 69
VisualInfo for AS/400 Network Table Generation	Only used when you install the VisualInfo for AS/400 connector. You type the values that are part of the VisualInfo for AS/400 network table.	

Common installation windows

This section describes the installation windows that you will see when you install any EIP component.

Software License Agreement

Click **Accept** to accept the license agreement. Click **Decline** to end the installation.

Select Machine Type

Click Client, Server or Development Workstation and click **Next**.

Server Configuration Utility

On this window, you enter the database name, server port number and other information required to connect to a remote database.

Specify Destination

On this window, you can change the default installation paths and directory names for the CMBROOT and for CMgmt. CMBROOT contains the EIP program, and CMgmt contains the common configuration files. The information you define in this window is stored in the Windows environment system variables.

Type new information in one or both fields, or click **Next** to accept the default path and file names.

Component Selection

On this window, you select the components to install. You can install all components at the same time, or select individual components.

If you see `Installed` next to a subcomponent, it means that the installation program has detected the subcomponent on the server. If you select a subcomponent that is already installed, the program gives you the option to overwrite or retain the existing subcomponent.

If you see `Installed` next to a subcomponent, it means that the installation program has detected the subcomponent on the server. If you select a subcomponent that is already installed, the program gives you the option to overwrite or retain the existing subcomponent.

Specify RMI Host Name and Port Number

On this window, you define RMI host name and port number for an RMI server and you can also define an RMI host name and port number for a workflow or Information Mining RMI server.

If your system plan includes a master RMI server, type the host name of the master server and the master server port number in the fields in the top half of this window. The default host name is the local server name, and the default port number is 1919. The RMI information is copied to `x:\<CMCOMMON>\cmbclient.ini`. **Tip:** Ask the server administrator if you are required to enter a fully-qualified master RMI server host name.

If your system plan includes a separate RMI server for workflow or Information Mining, type the host name and port number for the workflow or Information Mining RMI server in the fields in the bottom half of this window. This RMI information is copied to `x:\<CMBROOT>\cmbsvclient.ini`

Tip: If your system plans include RMI, you must install and configure the connectors on the RMI server in a separate step before the clients can use the RMI server.

System Configuration

EIP Version 8 offers a new option that allows EIP components to access remote system configuration files across a network or Web server.

For example, you can install the configuration files on a network server in Chicago, install administration databases in the Seattle and San Francisco offices, and an administration client in New York. All users would access their required configuration files in Chicago through a network drive.

The selections you make on the System Configuration window define the location of the system configuration files. The system configuration files are in

a directory named CMgmt. The files in CMgmt contain information used by the administration client, connectors and other EIP components. For example, the administration client needs the information stored in the configuration file named cmbds.ini to connect to the administration database. Another configuration file, cmbicmsrvs.ini, contains data required to catalog, connect to and search a Content Manager Version 8 server. The window also gives you the option to point remote components to a data source file stored on an LDAP server.

Restrictions

- The configuration files do not have to be installed on the network or Web server when you define the path, but the files must be installed before any user can work with EIP. To install the configuration files on a network or Web server, you can use the EIP installation CD-ROM, or, if you have already installed configuration files on another server, you can copy the CMgmt directory to the network or Web server.
- Before remote EIP components can access and use configuration files on a network server, you must configure the following properties:
 - Set up sharing on the configuration file directories and subdirectories. The configuration files that can be accessed across a network are installed in CMgmt, and the subdirectories are admin, doc.
 - Define user IDs and passwords for the remote users on the server where you installed the shared configuration files.
 - Be sure the user IDs and passwords have read/write privileges. Read/write access is required because the clients and other components update shared configuration files, including log files.
- If you install the configuration files on a Web server, see the Web administrator for information on configuring sharing and read/write parameters for remote EIP users.
- If you are installing the Information Center, you must select Local to install the system configuration files. The Information Center files are installed in CMgmt/infectr. Users cannot access the Information Center through a network or Web server.
- If you plan to point remote users to data source configuration information stored on an LDAP server, you must use a utility specific to your LDAP product to install only the data source configuration file. See your LDAP administrator for more information. The data source file is named cmbds.ini.
- The option to point remote users to a data source file stored on an LDAP server is only selectable if:
 - You are installing the Content Manager Version 8 connector and
 - You are installing the federated connector by itself and/or

- You are installing the administration database, the Information Mining database, or the administration client, because the federated connector is always installed with those components.

This section describes the fields on the System Configuration window.

Local Click **Local** to install the configuration files on the local server. The configuration files are installed in <CMgmt>, using the path and directory name you defined in the Specify Destination window.

Remote

Click **Remote** and type the path where you installed, or plan to install, the configuration files on a network server.

Tip: If you have already installed, or plan to install, Content Manager Version 8, EIP can share the Content Manager configuration files across a network. Click **Remote** and type in the path where you installed or plan to install the Content Manager configuration files.

Web Server

Type the URL of the Web server where you installed, or plan to install, the configuration files. The configuration files do not have to be installed on the Web server when you type the URL, but they must be installed before any user can work with EIP. Contact the Web administrator to learn more about how remote EIP users can connect to and update configuration files on a Web server.

Tip: If you have already installed, or plan to install, Content Manager Version 8, EIP can share the Content Manager configuration files. Type the URL where you installed or plan to install the Content Manager Version 8 configuration files.

Use datasource configuration information stored on an LDAP server

Click this box to begin the process of defining and configuring LDAP server information so you can later install the `cmbds.ini` configuration file. You do not have to install an LDAP server to select this option. But you must know specific information about the LDAP server. If you click this box and press **Next**, the installation program displays the **Define LDAP Server** and **Configure LDAP Server** windows. The information you define on those two windows is stored in the `cmbcmenv.properties` file for later use by the administration client and other EIP components. **Tip:** if the installation program detects an existing `cmbcmenv.properties` file, you cannot modify any of the fields in Define LDAP Server and Configure LDAP Server windows

You install the configuration files on the LDAP server in a separate step using an LDAP utility after you install EIP. For more information, see the LDAP server documentation.

You see **Define LDAP Server** and **Configure LDAP Server** only if you:

- Click LDAP server on the System Configuration window and
- Install the Content Manager Version 8 connector and
- Install the federated connector either by itself or as part of an administration of Information Mining database

Start Copying Files

This window shows all components that you selected for installation. Click **Next** to begin installation, or click **Back** to change your component selections. When you click **Next**, EIP displays multiple messages describing the component installation status.

Product Registration

Type the information required to register EIP Version 8.2. Click **Next** to send the registration to IBM, or click **Exit** to send the registration information at a later time.

Installation Complete

Click Yes, I want to restart my computer now or No, I will restart my computer later and click **Finish**.

Specific installation windows

This section describes the windows that are specific to some components, such as the administration database. Depending on system design, you might see some or all of these windows. **Tip:** The windows are described in alphabetical order, because the sequence in which you see the windows depends on the components you are installing.

Configure Components for LDAP

In this window, you can choose to enable the system administration database and the client to use information imported from an LDAP server. Click System administration database to enable the database for LDAP, and click System administration client to enable the client to import users from an LDAP server. You can select one or both options. If your system plan does not include LDAP, click **Next**.

Configure LDAP Server

On this window, you define the LDAP Server Base distinguished name and User authentication attributes. EIP stores the information from this window in `cmbcmenv.properties`. **Tip:** You are not required to install, configure or start any LDAP servers before you define the information required on this window.

Base distinguished name

Select IBM Secureway or Microsoft Active Directory. Type the base distinguished name

Hostname

Type the LDAP server host name.

Port Type the LDAP server port number.

LDAP administration ID

Type the LDAP administration user ID.

Password

Type the LDAP administration password.

Configure Content Manager V8 Server Connection

On this window, you define the information required to connect to the Content Manager Version 8 server. You only see this window if you install the Content Manager Version 8 connector. When the administrator defines and connects to a Content Manager Version 8 server, EIP uses the values you define in this window to connect to the server. By default, EIP copies the information from this window to `cmbicmsrvs.ini` and `cmbicmenv.ini`.

Database name

Type the Content Manager Version 8 database name. If you have cataloged the database, type the alias name in this field.

Schema name

Type the schema name that was assigned to the Content Manager Version 8 database when the database was installed.

Authentication type

If you leave the default setting of Server, then the Content Manager Version 8 database user ID and password is sent to the Content Manager Version 8 server for validation.

If you click Client, no validation is performed by DB2, and the user ID you type to log in to your system allows connection to the Content Manager Version 8 Library Server.

Restriction: when you log in to the client workstation, you must enter a user ID that has DB2 connect privileges.

Database connection ID

You must type the same user ID and password that was defined as the Database connection ID when the Content Manager Version 8 Library Server database was installed.

Enable sign-on

Click True to enable single sign-on, if required by your EIP system plan.

Configure Federated Server Connection

On this window, you define the information required to connect an administration client to the administration database. You see this window if

you choose any connector, or if you install the administration client. EIP copies the information from this window to a configuration file named `cmbds.ini` and `cmbfedenv.ini`.

Database name

Type the administration database name.

Schema name

Type the schema name that was assigned to the administration database when the administration database was installed.

Authentication type

If you leave the default setting of Server, then the administration database user ID and password is sent to the administration database for validation.

If you click Client, no validation is performed by the database, and the user ID you type to log in to your system allows connection to the administration database.

Restriction: When you log in to the client workstation, you must enter a user ID that has DB2 connect privileges.

Database connection ID

Type the user ID and password that was defined when the administration database was installed. The user ID and password must be locally defined on the server.

Single sign-on enabled

Click to enable single sign-on, if required by your EIP system plan.

Catalog remote EIP database

Click if you want to define the remote server specifications that will enable the administration client to connect to a remote database. The remote database must be cataloged before you can connect to it. The remote EIP database catalog option is only available if you install the administration client but no local administration database.

Catalog remote database

For information on how to fill in the fields on this window, see “Connecting the administration client to a remote administration database” on page 141.

Define LDAP Server

On this window, you define the LDAP server type, hostname, port and authentication methods. EIP stores the information you type in this window in `cmbenv.properties`.

Tip: You are not required to install, configure or start any LDAP servers before you define the information required on this window.

LDAP server type

Select IBM Secureway or Microsoft Active Directory

Hostname

Type the LDAP server host name.

Port Type the LDAP server port number.

LDAP administration ID

Type the LDAP administration user ID.

Password

Type the LDAP administration password.

Destination Path for Content Manager V7 Connector C-APIs

On this window you specify the installation location for the APIs required by the Content Manager Version 7 connector. Click **Browse** to change the default path and file name.

Requirement: You must install the Content Manager Connector C-APIs on the same server where you install the administration client.

Existing Database

You see this window only if you have reused the name of an EIP database or you typed the name of a Content Manager Version 8 Library Server.

Replace the existing database?

If you click this option, DB2 drops the existing database and creates an EIP database.

Tip: If you replace the existing database, the program prompts you twice for confirmation.

Identify Administration Database

The installation program uses the information you enter on this window to connect to DB2, list the databases on the server and compare the name you define in the **Database name** field to existing databases on the server.

Tip: If you are sharing a Content Manager Version 8 database and want to verify the Content Manager Version 8 database name, or to avoid duplicating database names if you are installing a new EIP database, use DB2 Command Line Processor to list the databases on the server. Click Start→Programs→**IBM DB2 Command Line Processor** and type LIST DATABASE DIRECTORY at the db2 prompt.

If the program *does* detect a database with the same name, the program gives you the option to overwrite the database. If you are adding EIP tables to a Content Manager Version 8 database, do not overwrite the database. If the program does not detect an existing database with the same name, you are

prompted to create a database. Follow the guidelines below when you define the information that identifies the administration database:

Database name

Type the administration database name. **Tip:** To avoid potential problems, do not use the special characters @, #, and \$ in a database name if you intend to have a client remotely connect to a host database. Also, because these characters are not common to all keyboards, do not use them if you plan to use the database in another country. Unless otherwise specified, all names can include the following characters:

- A through Z. When used in most names, characters A through Z are converted from lowercase to uppercase.
- 0 through 9
- @, #, \$, and _ (underscore)

Unless otherwise specified, all names must begin with one of the following characters:

- A through Z
- @, #, and \$
- If you are installing an administration or Information Mining database, accept the default database name, or type the new name.
- If you are sharing a Content Manager Version 8 Library Server database, type the Content Manager Version 8 Library Server database name that was defined when the Library Server was installed.

Schema name

- If you are installing an administration or Information Mining database, you can accept the default name, which is the same name as the Database administration ID default user ID, or change the default schema name. Type the new database name in the Schema name field. The schema name can contain up to eight letters, can contain numerals, and will appear in capital letters.
- If you are sharing a Content Manager Version 8 database, type the Content Manager Version 8 Library Server database schema name that was defined when the Library Server was installed.

A schema is a collection of named objects. A schema also provides a logical classification of objects in the database. A schema can contain objects such as aliases, tables, views, indexes, triggers, distinct types, functions, and packages. A schema can be implicitly created when an object is created. The schema exists in the database as an object. If a

schema name is not specified, the first eight letters of the authorization name of the creator of the object is used as the default.

Database administration ID

The user ID and password you define in this field is used only for database creation and must be locally defined and must have DB2 administration privileges.

Restriction: You must log in to the server with a user ID that has DB2 administration privileges before you can create the administration database.

Database connection ID

The user ID and password you define in this field allows users to connect to the administration database. The user ID must be locally defined.

Image Search Server/Client Configuration

On this window, you define the Image Search server name, host name, Port number and Library Server name. EIP uses the information to locate and connect to the image search server.

Server name

Type the name of the Image Search server that was defined when the server was installed.

Host Name

Type the host name of the Image Search server. Ask the server administrator if you are required to enter a fully-qualified host name.

Port Number

Type the port number that was defined when the server was installed.

Library Server Name

Type the name of the Content Manager Version 7 Library Server database that is associated with Image Search.

Install OnDemand?

Click **Yes** or **No** when the system prompts you to confirm OnDemand client installation.

Network Table Generation (for Content Manager version 7 connector)

On this window, you click one of three options that specify information about the Content Manager Version 7 network table. When the EIP administrator defines a Content Manager Version 7 server, EIP uses the information in the network table to connect to the Content Manager Version 7 server.

Tip: The Content Manager Version 7 connector network table ($x:\backslash\langle\text{FRNROOT}\rangle.\text{FRNOLINT.TBL}$) and the CM for AS/400 connector network table ($x:\backslash\langle\text{CMBROOT}\rangle.\text{FRNOLINT.TBL}$) are separate files that have identical names.

Generate a new network table

If you click this option and click **Next**, the installation program displays a window where you enter the data required to generate `Frnlint.tbl`. EIP stores the new network table in `x:\<FRNROOT>\Frnlint.tbl`, where `x:\<FRNROOT>` is the path defined in the Destination Path for Content Manager V7 connector C-APIs window.

Copy an existing network table

If you click this option, the EIP installation program assumes that:

- `Frnlint.tbl` is already located in the path specified on the Destination Path for Content Manager V7 connector C-APIs window and
- you want to use the existing `Frnlint.tbl` without regenerating it

Generate a network table later

If you click this option, EIP installation program assumes that you plan to generate a Content Manager Version 7 network table after you install EIP. To generate a network table later, you use the program named `frnlninc.exe`, which is installed in the path specified in the Destination Path for Content Manager V7 Connector C-API's window. EIP stores the new network table in `x:\<FRNROOT>\Frnlint.tbl`.

To use `frnlninc.exe`:

1. Double-click `frnlninc.exe`
2. Type 1 - Add Server Entry.
3. Answer prompts to define server location, server type, operating system information and so forth.

Tip: You can also use `frnlninc.exe` to Delete and Update Content Manager Version 7 server information.

Network Table Generation (for Content Manager version 7 connector)

On this window, you define the stem type, Library Server name, Port number, Host name and TP name associated with the Content Manager Version 7 library server you want to connect to.

Type Click NT, OS/2, AIX or MVS.

Server name

Type the name of the Content Manager Version 7 Library Server.

Port Number

Type the port number that was defined when the Content Manager Version 7 Library Server was installed.

Host name

Type the host name for the server where the Content Manager Version 7 Library Server was installed.

Select Administration Database Options

You see this window only if you are installing an EIP administration database that does not reuse the name of an existing administration database and you are not adding EIP tables to a Content Manager Version 8 database.

Database location

In the database location field, you specify the drive letter where the database will be installed.

Restriction: You cannot install an administration database on a remote network drive.

Enable Unicode

Click Enable Unicode if you are installing Information Mining, or an administration database to which you plan to add Information Mining tables.

Enable User Authentication from an LDAP server

Click this box to enable user authentication from an LDAP server.

Select Version of VisualInfo for AS/400

On this window, you specify the version of the VisualInfo for AS/400 server that you plan to connect to. Click Version 4.3 or Version 5.1.

Text Search Server/Client Configuration

On this window, you define the Text Search Server name, Server host name, Server Port number. When the EIP administrator defines a text search server, EIP uses the information to connect to the server.

User ID

Type the text search user ID.

Server name

Type the name of the text search server.

Server host name

Type the fully-qualified host name of the text search server.

Server port number

Type the port number assigned when the text search server was installed.

Global setting

Click **yes** or **No**.

VisualInfo for AS/400 Network Table Generation

On this window, you define the AS/400 Server name, Hostname and Port number. The information you define is copied to $x:\langle\text{CMBROOT}\rangle\backslash\text{frnolint.tbl}$, where $x:\langle\text{CMBROOT}\rangle$ is the path defined on the Specify Destination window.

Restriction: You must install the AS/400 network table on the same drive where you install the administration client. When the EIP administrator defines an AS/400 server, EIP uses the information in `frnolint.tbl` connect to the AS/400 server.

Server Type the database name that you plan to connect to, for example, FRNLS400.

Hostname

Type the host name or TCP/IP address of the VI/400 server.

Tip: Ask the VI/400 administrator if you are required to enter a fully qualified Hostname.

Port Type the port number that was used to install the server.

Upgrade OnDemand?

If the installation program detects an OnDemand client on the server, EIP prompts you decide if you want to upgrade to upgrade to Version 7.1.0.2 of the OnDemand client. Click **Yes** or **No**.

After you install EIP components on Windows

Refer to “Configuring the components on Windows” on page 141 to configure the EIP components.

Chapter 7. Verifying a successful installation of Enterprise Information Portal on Windows

Use information in this section to verify a successful installation of Enterprise Information Portal on a Windows system. It includes the following procedures:

- “Verify system administration database and system administration client communication”
- “Verify Enterprise Information Portal system administration database” on page 72
- “Verify connections by running low-level connection tests” on page 73
- “Verify the installation by running Enterprise Information Portal First Steps” on page 74

Verify system administration database and system administration client communication

If the administration client and database are installed on the same server, follow the steps in this section. If the administration client and database are installed on the different Windows server, or if the database is installed on AIX or Solaris, refer to “Connecting the administration client to a remote administration database” on page 141.

Start the Enterprise Information Portal Administration Client on the Windows system in one of two ways:

Start -> Programs -> Enterprise Information Portal V8.2 -> Administration

OR

Start -> Programs -> IBM Content Manager for Multiplatforms V8.2 -> System Administration

The System Administration Client logon panel should appear. Make sure that **Enterprise Information Portal** and the correct database are selected from the drop-down lists.

Log in with icmadmin and password.

Successful logon means that your communication between the Enterprise Information Portal system administration database and the system

administration client is working. It also indicates that the Enterprise Information Portal database has been created successfully (if applicable).

If you are sharing the Enterprise Information Portal database with a Content Manager library server, a successful logon means that the shared database has been configured correctly.

Once you are logged into the administration client, there is a drop-down in the upper left part of the window that you can use to switch between the interfaces for Content Manager and Enterprise Information Portal.

Test that you can see the Content Manager interface to ensure that the Content Manager connection to the system administration client is still intact.

Verify Enterprise Information Portal system administration database

Verify that the system administration database is installed correctly as follows:

__ 1. Open a DB2 command window (**Start -> Programs -> DB2 -> Command Window**)

__ 2. Check database connection by typing:

```
db2 connect to <icmnlbdb> user <icmadmin> using <password>
```

You should see output similar to the following:

```
Database Connection Information
```

```
Database server          = DB2/NT 7.2.0
SQL authorization ID     = ICMADMIN
Local database alias     = ICMNLSDB
```

__ 3. Check database tables by typing:

```
db2 list tables
```

You should see several tables listed (around 100); some with names starting with "FA" (29 tables) and some starting with "ICM" (109 tables).

You should see several tables starting with XYZ (6 tables) added by Content Manager First Steps.

If you did not choose to use an existing database during the Enterprise Information Portal installation, you can also check %CMBROOT%\logs\icmcrldb.log and search for the term SQLSTATE= to find error messages. A few of the SQLSTATE messages are normal and you need to read the surrounding text to determine if there may have

been a problem. For example, you should expect to find SQLSTATE=08003 messages in the log after the CONNECT RESET commands.

Verify connections by running low-level connection tests

To verify connectiona, open an Enterprise Information Portal development window:

Start -> Programs -> Enterprise Information Portal for Multiplatforms V8.2

OR

Open a DOS command window and run cmbenv81.bat

___ 1. Test federated connector:

```
cd %CMBROOT%\samples\java\fed
javac TConnectFed.java
java TConnectFed <icmnlbdb> <icmadmin> <password>
```

Expected output:

```
java TConnectFed icmnlbdb icmadmin password
```

```
*** connecting to datastore : icmnlbdb
*** datastore connected ***
user icmadmin dsName icmnlbdb
datastore disconnected
```

___ 2. Test Content Manager v8 connector:

```
cd %CMBROOT%\samples\java\icm
javac SConnectDisconnectICM.java
java SConnectDisconnectICM <icmnlbdb> <icmadmin> <password>
```

Expected output:

```
java SConnectDisconnectICM icmnlbdb icmadmin password
=====
IBM Enterprise Information Portal v8
Sample Program: SConnectDisconnectICM
-----
Database: icmnlbdb
UserName: icmadmin
=====
Connecting to datastore (Database 'icmnlbdb', UserName
'icmadmin')...
Connected to datastore (Database 'icmnlbdb', UserName
'icmadmin').
Disconnecting from datastore & destroying reference...
Disconnected from datastore & destroying reference.
=====
Sample program completed.
=====
```

Verify the installation by running Enterprise Information Portal First Steps

Enterprise Information Portal First Steps allows you to load in sample data into Enterprise Information Portal. You perform the First Steps procedures differently depending whether you have all of the Enterprise Information Portal components on one system or if you have them installed on more than one system.

If you have all of the Enterprise Information Portal components on one system, begin the first steps process in the section: “Running First Steps with Enterprise Information Portal components installed on a single machine”

If you installed the Enterprise Information Portal system administration database on another machine from your system administration client, use the procedures for First Steps in the section: “Running First Steps with Enterprise Information Portal components installed on multiple machines”

Running First Steps with Enterprise Information Portal components installed on a single machine

Start the first steps here if you installed all of the Enterprise Information Portal components on a single Windows operating system machine:

- ___ 1. Click **Start -> Programs -> Enterprise Information Portal V8.2 -> EIP First Steps**
- ___ 2. Click **Load Sample Data**. An input panel appears. The following shows the values you should enter if you selected the default values during the installation:

Database schema:	ICMADMIN
User Id:	icmadmin
Password:	password

Wait several minutes for the sample databases (EIPSAMPL, XYZSAMPL, IBMPRESS) and data to be loaded. A window will pop-up with progress messages. Click **OK** once you see the message saying that the sample database has been successfully created.

- ___ 3. Click on **Work with Sample Data**. This will start the System administration client.
- ___ 4. Continue with “Validating the First Steps” on page 78

Running First Steps with Enterprise Information Portal components installed on multiple machines

Start the first steps procedure here if you installed the Enterprise Information Portal components on more than one machine, even if the components are on different operating systems:

- ___ 1. Ensure that the system administration client is configured to connect to a remote system administration database.

- |
| __ 2. Manually create three *sample* databases on a **remote** database machine
| with a DB2 Admin user ID of icmadmin, and a password of password.
| Create the databases as follows:

| __ a.

| **Command:**

| EIP Database Install Script:

| Click **Start -> Programs -> Enterprise Information Portal**
| **V8.2 -> Database Install**

| OR

| c:\cmbroot\config\dbutil \eipcreate1sdb.bat

| **Database name:**

| EIPSAMPL

| **Replace existing database:**

| Yes

| **Database connection ID:**

| ICMCONCT

| **LS database administrator ID:**

| ICMADMIN

| **Schema name:**

| ICMADMIN

| **Database drive:**

| DB2 default

| **Path into which the library server was installed:**

| C:\Program Files\IBM\CM81

| **Enable Unicode support:**

| Yes

| **Enable text search support:**

| Yes

| **Token duration time in hours:**

| 48

| **Host name:**

| None specified (Specify if database remote)

| **Port number:**

| None specified (Specify if database remote)

| **Node number:**

| None specified (Specify if database remote)

Enable SSO support:

No

Server authentication:

Yes

__ b.

Command:

DB2 Create Database Script:

```
DB2 CREATE DATABASE IBMPRESS
USING CODESET UTF-8 TERRITORY US COLLATE
USING SYSTEM
```

Database name: IBMPRESS

__ c.

Command:

DB2 Create Database Script:

```
DB2 CREATE DATABASE XYZSAMPL USING
CODESET UTF-8 TERRITORY US COLLATE USING
SYSTEM
```

Database name: XYZSAMPL

__ 3. Catalog the remote databases on the local client:

__ a. Run the DB2 Client Configuration Assistant:

db2cca

or

Start -> Programs -> IBM DB2 -> Client Configuration Assistant

__ b. On the Client Configuration window: Click **Add**

__ c. On the Add Database Wizard window: click the **Source** tab, select **Search network**, and click **Next**.

__ d. On the Add Database Wizard window: click the **Database nametab**, then click **Add System**.

__ e. On the Add System window: Select **Protocol** and enter the host name

__ f. On the Add Database Wizard window: click the **Database nametab**, select **database from remote system to catalog** and click **Next**.

__ g. On the Add Database Wizard window: click the **Alias** tab, change the database alias name if needed, then click **Next**.

__ h. On the Add Database Wizard window: click the **ODBC** tab, select **register database for ODBC** and **As a system data source**; Click **Finish**.

__ i. Confirmation -<Database name> panel: Click **Test connection**

__ 7. Continue with “Validating the First Steps”

Validating the First Steps

- __ 1. Log into the System administration client. Select **Enterprise Information Portal and EIPSAMPL**. Enter **icmadmin** and **password**.
- __ 2. First Steps should connect to your EIP sample database (EIPSAMPL) and the samples should be loaded successfully.
- __ 3. Verify that the data was loaded
 - Defined servers (ex. EIPSAMPL, IBMPRESS, XYZSAMPL)
 - Search templates (ex. SearchLongBySource, SearchXYZClaimForms)
 - Federated entities (ex. fed_xyz_claimforms, fed_long_article)

Chapter 8. Installing and updating prerequisite programs for AIX

This section has two sub-sections:

1. “Verifying your software Prerequisites on AIX” explains how to check the level of a prerequisite that you already have installed on your system.
2. “Installing or Updating Prerequisite programs” has detailed instructions for how to install and configure the prerequisite programs that are needed for your own planned configuration. The prerequisite programs included in this section are:
 - “AIX operating system”
 - “IBM VisualAge C++ Professional Batch compiler” on page 80
 - “IBM DB2 Universal Database” on page 81
 - “IBM DB2 Net Search Extender (NSE) and Text Information Extender (TIE)” on page 86
 - “IBM WebSphere Application Server (WAS)” on page 87

Verifying your software Prerequisites on AIX

Installing or Updating Prerequisite programs

This section guides you through installing each of the prerequisite programs for Content Manager.

The rule of thumb when installing the prerequisites is to always apply the fixpacks after your base components are installed. For instance, if you are missing the DB2 UDB Application Development Client from your DB2 install, install this component first, then install the fixpack code. Otherwise, you will need to install the fixpack code again after adding any new DB2 components.

AIX operating system

One of the following AIX operating systems is required for Content Manager, Version 8 Release 2:

- AIX 4.3.3 with maintenance level 9 or later
- AIX 5.1 with maintenance level 1 or later

Your system should already be at AIX 4.3.3 or AIX 5.1.

- To download maintenance level 9 for AIX 4.3.3, go to the following website:
<http://techsupport.services.ibm.com/server/mlfixes/43>

- To download maintenance level 1 for AIX 5.1, go to the following website:
[http://techsupport.services.ibm.com/server/aix.fdc51?
toggle=DNLDML](http://techsupport.services.ibm.com/server/aix.fdc51?toggle=DNLDML)

Follow the Download and Install instructions provided at the AIX download site. Reboot your system after you have installed the updates.

To **validate** that your system is at the correct level, re-run the oslevel command:

```
oslevel -r
```

You should see the following output:

```
4330-09
```

IBM VisualAge C++ Professional Batch compiler

You must have IBM VisualAge C++ Professional Batch compiler, version 5.0.2.0 or later to run the Content Manager, Version 8 Release 2 library server.

Where to obtain the IBM Visual Age C++ compiler program program

Two possible methods for obtaining the IBM Visual Age C++ compiler program are:

- You can work with your IBM sales representative to obtain it
- You can download a trial version of the program

You can download a **60 day try & buy** version of the VisualAge C++ compiler at the following location:

<http://www.ibm.com/software/ad/vacpp/>

- __ 1. Select "VisualAge C++ Professional for AIX5.0, try it for 60 days!"
- __ 2. Complete the registration information

To **download fixes**:

- either to get you to level 5.0.2.0
- or, for the pfts **IY18426** and **IY23677** that are needed or AIX version 5.1

Go to the same vacpp website (repeated here):

<http://www.ibm.com/software/ad/vacpp/>

and complete these steps:

- __ 1. Select **Downloads** in the left panel.
- __ 2. Limit you search by selecting:
 - platform/operating system: **AIX**
 - version: **5.0**
- __ 3. In the Search entry field enter 5.0.2.0 or the ptf names to identify the download packages for the fix you need.

How to install or upgrade IBM Visual Age C++ compiler

To install IBM Visual Age C++, follow the installation instructions that come with the program code.

Use the System Management utility to install IBM VisualAge C++ software, for example, you can use **smitty**:

- Select **Software Installation and Maintenance**
- Select **Install and Update Software**
- Select **Install and Update from LATEST Available Software**
- On the Install window, enter the directory which contains the IBM Visual Age C++ code next to: *** INPUT device/directory for software**
- Check all the options on the "Install" screen and make sure all the values are correct.
- Press **enter** and a confirmation dialog appears to ask you to confirm the installation.

How to validate your IBM Visual Age C++ installation

To validate your IBM Visual Age C++ installation, re-run the `lslpp` command:

```
lslpp -l vacpp.cmp*
```

You should see the following output:

```
vacpp.cmp.C          5.0.2.0  COMMITTED  VisualAge C++ C Compiler
vacpp.cmp.aix43.lib  5.0.2.0  COMMITTED  VisualAge C++ Libraries
                                     for AIX 4.3
vacpp.cmp.batch      5.0.2.0  COMMITTED  VisualAge C++ Batch Compiler
vacpp.cmp.core       5.0.2.0  COMMITTED  VisualAge C++ Compiler
vacpp.cmp.extension  5.0.2.0  COMMITTED  VisualAge C++ Extension Interface
vacpp.cmp.include    5.0.2.0  COMMITTED  VisualAge C++ Compiler
                                     Include Files
vacpp.cmp.incremental 5.0.2.0  COMMITTED  VisualAge C++ Incremental
                                     Compiler
vacpp.cmp.lib        5.0.2.0  COMMITTED  VisualAge C++ Libraries
vacpp.cmp.rte        5.0.2.0  COMMITTED  VisualAge C++ Compiler
                                     Application Runtime
vacpp.cmp.tools      5.0.2.0  COMMITTED  VisualAge C++ Tools
```

IBM DB2 Universal Database

IBM DB2 Universal Database Enterprise Edition Version 7.2 OR Enterprise Extended Edition Version 7.2.1. (or higher) is required for Content Manager Version 8 Release 2 servers when you use DB2 for your server databases. IBM DB2 Universal Database Enterprise Server Edition Version 8.1 (at fixpack 1 code level) is included in the Content Manager package.

Before you begin to install IBM DB2 Universal Database

Before you begin to install IBM DB2 Universal Database, complete the following steps:

- ___ 1. Ensure that your machine has enough memory and disk space for your installation. See the DB2 product documentation on the DB2 Online Support Web site for the requirements at:

www.ibm.com/cgi-bin/db2www/data/db2/udb/winos2unix/support/v8pubs.d2w/en_main

- ___ 2. Make sure that you do not have a previous version of DB2 already installed on the machine. If a previous version of DB2 is installed, you need to migrate servers and instances, depending on the version installed. In this case, do not follow these instructions. Instead, refer to the DB2 product documentation on the DB2 Online Support Web site at:

www.ibm.com/cgi-bin/db2www/data/db2/udb/winos2unix/support/v8pubs.d2w/en_main

- ___ 3. Your DB2 database server will reside on the same machine as WebSphere Application Server. This configuration and the use of the default settings documented in these instructions are appropriate only for development and small production environments. For larger environments where it is preferable to configure the DB2 server on a remote machine, you must install and configure a DB2 client on the same machine on which you install WebSphere Application Server and verify the remote database connectivity. See the IBM Redbook, *WebSphere V3.5 Handbook*, on the IBM Redbooks Web site at:

www.redbooks.ibm.com/redbooks/SG246161.html

for more information about implementing this configuration.

Important: Install DB2 before installing WebSphere Application Server.

- ___ 4. The DB2 CD in the package may contain a compressed image. You may have to untar it before you use it.

Installing IBM DB2 Universal Database

Perform the following steps to install DB2:

- ___ 1. Ensure that you are logged into the machine with super user (root) privileges.
- ___ 2. Ensure that a CD-ROM drive is installed and configured on the machine. If a CD-ROM drive is not installed or configured on the machine, install and configure one according to the instructions provided with the drive.
- ___ 3. Insert the DB2 UDB V8.1 CD-ROM into the CD-ROM drive.

- 4. If necessary, use the `mkdir` command to create a mount point for the CD-ROM. The following command creates a mount point at the directory `/cdrom`; you can mount the CD-ROM at any location on the machine's local file system.

```
# mkdir /cdrom
```

The commands in these steps assume the CD-ROM is mounted at `/cdrom`. If you mount the CD-ROM at a different location, use that location when issuing commands.

- 5. Mount the CD-ROM drive by entering the following command:

```
# mount -o ro -v cdrfs /dev/cdnumber /cdrom
```

In this command, `number` is the CD-ROM number for your system, usually 0 (zero). Note that this command assumes that the CD-ROM is mounted at `/cdrom`.

- 6. Navigate to the `/cdrom` directory.
- 7. Start the DB2 installation by invoking the DB2 Setup Utility (`db2setup`) as follows:

```
# ./db2setup
```

- 8. From the IBM DB2 Setup Launchpad (Welcome) window, you can view installation prerequisites and the release notes. You may want to review the installation prerequisites and release notes for late-breaking information. Click **Install Products** to begin the installation.
- 9. The Setup window opens. Select DB2 UDB Enterprise ServerEdition, then click **Next**.
- 10. Once you have initiated the installation, proceed by following the setup program's prompts.

When prompted, select **Typical** as the installation type, to install all DB2 components required to support Content Manager. You can take most default options (unless you have specific requirements of your own).

Online help is available to guide you through the remaining steps. To invoke the online help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation. DB2 files will only be copied to your computer once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

- 11. Unmount the CD-ROM before removing it from the CD-ROM drive by using the **umount** command, as follows:

```
# umount /cdrom
```

Steps to complete after installing DB2 and before installing Content Manager

After you install DB2 perform the following steps for Content Manager:

- __ 1. Ensure that the user named root is a member of the group set named **db2grp1** by performing the following steps:
 - __ a. Invoke SMIT to change characteristics of a user by entering the following command:


```
# smit chuser
```

The Change/Show Characteristics of a User dialog box opens.
 - __ b. In the **User NAME** field, type root and press **Return**.
 - __ c. In the **GROUP SET** field, ensure that the group db2grp1 is listed. If it is not, append it to the list of groups, and press **Return**.
 - __ d. When the process is complete, exit from SMIT.
- __ 2. Create symbolic links from the home directory of the instance owner to the DB2 installation directory by executing the db2ln script, as follows:


```
# /usr/opt/db2_08_01/cfg/db2ln
```
- __ 3. Configure the user root to run the db2profile or db2cshrc at login:
 - For the Korn shell (ksh), add the following text to the `/.profile` file of root. Note the space between the period (.) and the first slash (/).


```
. /home/db2inst1/sqllib/db2profile
```
 - For the C shell (csh), add the following line to the `/.cshrc` file of root:


```
source /home/db2inst1/sqllib/db2cshrc
```

Log out then log back in for your changes to take effect.

Configuring the database manager to use shared memory

Before starting DB2 on AIX you must configure the database manager to use extended shared memory, as follows:

- __ 1. Log in as the DB2 instance owner, **db2inst1**, by using the **su** command, as follows:


```
# su - db2inst1
```

When you log in as db2inst1, the command prompt changes from the # symbol to a dollar sign (\$) to indicate a change in your login identity.
- __ 2. If this is the first time that you have logged in as the DB2 instance owner, you could be prompted to change the password. Enter a new password and press Return. DB2 requires a password of eight or fewer characters.
- __ 3. When prompted, type the new password again and press **Return**.
- __ 4. Set the EXTSHM environment variable by entering the following commands:

```
| $ EXTSHM=ON
| $ export EXTSHM
| $ db2set DB2ENVLIST=EXTSHM
```

| **Ensure:** that the EXTSHM environment variable is set each time you
| start DB2. Do this by editing /home/db2inst1/sqllib/profile.env and
| add or modify the line:

```
| DB2ENVLIST='EXTSHM'
```

| Also add the following to /home/db2inst1/sqllib/userprofile:
| export EXTSHM=ON

| **Validating the IBM DB2 Universal Database installation**

| To demonstrate that DB2 is functioning correctly, you can create a sample
| database and compile and execute a Java application that accesses it. You can
| see that the environment is set up correctly for DB2 and for IBM Java 2 SDK,
| and that the JDBC provider is accessible from a Java application.

| Perform the following steps to create the sample database and compile and
| run the Java application:

- | __ 1. Ensure that you are logged in as the DB2 instance owner, **db2inst1**.
- | __ 2. Ensure that the DB2 environment has been set up correctly by using the
| echo command to verify the value of the DB2INSTANCE environment
| variable, as follows:

```
| $ echo $DB2INSTANCE
```

| The correct value returned is **db2inst1**.

- | __ 3. Ensure that the home directory of the instance owner, /home/db2inst1,
| has write permissions.
- | __ 4. Create the sample database by executing the db2sampl script, as
| follows:

```
| $ db2sampl
```

| This process can take several minutes to complete.

- | __ 5. Ensure that you are in the instance owner's home directory,
| /home/db2inst1.
- | __ 6. Compile an example Java application by using the javac command, as
| follows:

```
| $ javac -d . sqllib/samples/java/DB2App1.java
```

| The resulting class file is created in the local directory.

- | __ 7. Start DB2 by using the db2start command, as follows:

```
| $ db2start
```

- | __ 8. Run the Java sample by using the java command, as follows:

```
$ java DB2App1
```

Correct output resembles the following:

```
Retrieve some data from the database...
Received results:
empno= 000010 firstname= CHRISTINE
empno= 000020 firstname= MICHAEL
empno= 000030 firstname= SALLY
. . .
Update the database...
Changed 1 row.
```

For a final verification, type the command

```
# db2level
```

You should see data that is similar to the following:

```
DB21085I Instance "db2inst1" uses DB2 code release "SQL08010"
with level identifier "01010106".
Informational tokens are "DB2 v8.1.1.0", "s021023", "" and FixPak "0".
Product is installed at "/usr/opt/db2_08_01".
```

IBM DB2 Net Search Extender (NSE) and Text Information Extender (TIE)

The powerful text search capabilities of the DB2 Version 7 Text Information Extender (TIE) are merged into the Net Search Extender (NSE) Version 8. Notice that if you plan to use the (optional) text search feature of Content Manager, you must install:

- IBM Text Information Extender (TIE), Version 7.2 with IBM DB2 Enterprise Edition Version 7.2 and Enterprise Extended Edition Version 7.2.1

OR

- IBM Net Search Extender (NSE), Version 8 with IBM DB2 Enterprise Server Edition, Version 8.1.

IBM Net Search Extender (NSE), Version 8 is provided in the package with Content Manager, Version 8.2.

Installing IBM DB2 NSE

Refer to the installation instructions on the documentation CD supplied with DB2 Net Search Extender (NSE).

NSE must be installed on the same workstation as the library server.

Validating the DB2 NSE installation

To verify proper NSE installation, make sure DB2 is started and execute the following command to start DB2 NSE:

```
# db2start
# db2text start
```

You should see the following output:
CTE0001 Operation completed successfully.

IBM WebSphere Application Server (WAS)

IBM WebSphere Application Server, Version 5 is provided in this package with Content Manager Version 8.2. It includes:

- IBM HTTP Server
- Java Development Kit (JDK)

Installing IBM WebSphere Application Server

Use this section to install IBM WebSphere Application Server:

1. Go to the WebSphere 5.0 InfoCenter online documentation for your configuration of the Application Server and in your language at:

`http://www.ibm.com/software/webservers/appserv/infocenter.html`
2. Under the section entitled "Version 5 InfoCenters:", select your language in the drop-down box next to **Application Server for distributed operating systems**.
3. Expand **Getting Started -> Installing WebSphere Application Server -> Installing the product** in the left navigation panel of the WebSphere InfoCenter
4. Follow the instructions in the right panel for installing WebSphere as it applies to your operating system.

Validate the installation

To validate the WebSphere installation, use the information under **Getting Started -> Installing WebSphere Application Server -> Using the installation verification steps** in the WebSphere InfoCenter (that you opened during the installation steps above).

Installing MQSeries Workflow for AIX

You can install MQSeries for AIX Version 5.2 on any server that can run AIX Version 4.2.

Installing MQSeries on AIX

Before you can install MQSeries for AIX you must create and mount a /var/mqm file system, or /var/mqm, /var/mqm/log, and /var/mqm/errors file systems.

Allow a minimum of 30 MB of storage for /var/mqm, 2 MB of storage for /var/mqm/errors, and 20 MB of storage for /var/mqm/log if you choose to create separate file systems.

To use SMIT for the installation,

- Log in to SMIT with root authority. From the shell, type: smit

- Select the appropriate device appropriate for your installation using this sequence of windows:
 - Software Installation and Maintenance
 - Install and Update Software
 - Install and Update from LATEST Available Software

You can also use the alternative fast path command:

- `smitty install_latest`

Press **List** to display the Single Select List window.

Select: `/dev/cd0` (CD-ROM Drive) Select **Do** to display the parameters for Install Latest Level.

Press **F4** to obtain a list of components to install.

Press **Enter**.

If you have a previous version of the product on your machine, change the Auto Install prerequisite software to **No** and Overwrite existing version to **Yes**.

Select **Do** to install the software.

Tip: if you want to verify as root, you must add **Root** to the **mqm** group

MQSeries AIX installation verification procedures

This section describes how to verify a local (standalone) installation, involving no communication links to other MQSeries machines.

Follow the steps in this section to install and test a simple configuration of one queue manager and one queue. In this process, you use sample applications to put a message onto the queue and to read the message from the queue.

1. Install MQSeries for AIX on the workstation (include the Base Server component as a minimum).
2. Create a default queue manager (in this example called `venus.queue.manager`):
 - a. At the command prompt in the window type: `crtmqm -q venus.queue.manager`
 - b. Press **Enter**. Messages are displayed telling you that the queue manager has been created, and that the default MQSeries objects have been created.

Tip: In prior releases of MQSeries, it was necessary to run a script file called `amqscoma.tst` to define the MQSeries default objects. This step is not required in this release of the product.

3. Start the default queue manager:

- Type `strmqm` and then press **Enter**:
- A message tells you when the queue manager starts.

4. To enable MQSC commands, type `runmqsc` and press **Enter**.

Tip: MQSC has started when the following message appears: Starting MQSeries Commands. MQSC has no command prompt.

5. Define a local queue (in this example, called `ORANGE.QUEUE`):

- Type `define qlocal (orange.queue)` and press **Enter**. Any text entered in MQSC in lowercase is converted automatically to uppercase unless you enclose it in single quotation marks. This means that if you create a queue with the name `orange.queue`, you must refer to it in any commands outside MQSC as `ORANGE.QUEUE`. The message MQSeries queue created is displayed when the queue is created.

You have now defined a default queue manager called `venus.queue.manager` and a queue called `ORANGE.QUEUE`.

6. To Stop MQSC, press `Ctrl-D`, or type `end` and press **Enter**. The following message appears: Enter.

The following message is displayed:

- One MQSC commands read. No commands have a syntax error. All valid MQSC commands were processed.

The command prompt is displayed again.

To test the queue and queue manager, use the samples `amqsput` (to put a message on the queue) and `amqsget` (to get the message from the queue) as described in the following steps.

1. Change to `/usr/mqm/samp/bin`

2. To put a message on the queue, type `amqsput ORANGE.QUEUE` and press **Enter**.

The following message appears:

```
sample amqsput0 start
target queue is ORANGE.QUEUE
```

3. Type any message text and press **Enter two times**.

The following message appears: Sample amqsput0 end

If required, change to `/usr/mqm/samp/bin`

To get the message from the queue, type `amqsget ORANGE.QUEUE.` and press Enter: The following occurs:

- The sample program starts
- your message is displayed
- the sample ends
- the command prompt is displayed again

The verification is complete.

Installing IBM MQSeries Workflow on AIX

Prerequisites:

1. AIX version 4.3 or higher;
2. IBM WebSphere MQSeries for AIX Version 5.3.0.1 or higher;
3. IBM DB2 Universal Database for AIX Version 7.2 or higher.

Installing on AIX

Creating user ID and groups

1. Log on as root.
2. Enter command `mkgroup fmcgrp`
3. Verify that MQSeries Administrator **mqm** exists.
4. Verify that DB2 database administrator group **db2iadml** exists.
If it does not exist, check to see that you have installed DB2 correctly. If your DB2 Administrator group has a different name, be careful to substitute it whenever the default `db2iadml` is mentioned.
5. Follow these steps to create an MQ Workflow Administration user. Note that the MQ Workflow Administration user ID (for example, `fmc`) must have MQSeries and DB2 administration rights. Use the following command to create the user. The following example assumes the db2 instance is of the `db2iadml` group.

```
mkuser -a pgrp=fmcgrp groups=mqm,db2iadml fmc
```
6. Set the password for user `fmc` with the command: `passwd fmc`,
Alternatively, you can create the `fmc` user and the `fmcgrp` group using SMIT.
7. Modify `fmc`'s login file to include locale information. For example: `export LANG=en_US`. MQSeries Workflow runtime needs that locale information to look up message bundles.
8. Establish the use of db2 environment in `fmc`'s profile. You can achieve this by including in the `fmc`'s profile including the `db2profile` of the db2 instance which owns the MQSeries Workflow runtime database. For

example, include the following in the fmc's profile. The example assumes the db2inst1 is the instance owner and db2inst1 is used for the MQSeries Workflow runtime database.

```
export DB2INSTANCE=db2inst1
if [ -e /home/$DB2INSTANCE/sqllib/db2profile ];
then . /home/$DB2INSTANCE/sqllib/db2profile fi
```

Installing MQSeries Workflow on AIX

The MQSeries Workflow runtime data will use /var/fmc by default. Depend on usage, it would take about 100MB to 400MB of disk space. It is recommended to check to see if the system has sufficient disk space before the installation is attempted.

1. Log in to AIX as root.
2. Insert the MQ Workflow installation disk into the CD-Rom drive.
3. Mount the CD-Rom by entering the command:

```
Mount -oro -v cdrfs /dev/cd0 /cdrom
```
4. Copy all the files in the WFInstall directory from the CD-Rom to a temporary directory (for example, /tmp/WFInstall).
5. Specify the locale for this install as well as the following configuration session. For example: export LANG=en_US.
6. Type: CMBWFAIXInstall.sh /cdrom to start installing the MQSeries Workflow. **Tips:** If you choose smitty to install the MQSeries Workflow, do not choose the fmcdefault (default configuration) package. Instead, always follow the next section to prepare the MQSeries Workflow configuration for the EIP workflow.

Configuring MQSeries Workflow in AIX:

1. While still logged on as root, find the CMBWConfig.AIX.dat file and open it for editing.
2. Update the MQCommunicationAddress entry to replace the localhost with your machine name or IP address. For example:MQCommunicationAddress=hayes.svl.ibm.com
3. If the fmc is not using db2inst1, update the following entries to reflect the proper db2 instance owner.

```
RTDB2Instance, RTDB2LocalInstance, RTDatabaseContainerDirectory
RTDatabaseLocation, RTDatabaseLogLocation
```
4. The default queue manager for the MQ Workflow is listening to port 5010. Check the /etc/services to see if it is being taken. Update the MQPort entry in the file to a different number if it's needed
5. Save the edited CMBWConfig.AIX.dat file.

6. Make sure to allow the `fmc` user to be able to read and run those EIP configuration files as well as write configuration log file into this directory.
7. Make sure there is no errors in the `fmc` user's `.profile` as the configuration script will `su` to `fmc`.
8. Run the `CMBWFAIXConfig.sh` under root. You will be prompted to enter `fmc`'s password. This script will create the MQSeries Workflow FMC configuration, create the MQSeries Workflow runtime database `FMCDB`, create the `FMCQM` queue manager, create the EIP workflow queue, and define the EIP workflow container data structures.

Tips: Find the MQSeries Workflow manual references to these MQSeries Workflow utilities: `fmczkcfg` and `fmczutil` for usage details on how to customize your MQSeries Workflow configuration. Note that the EIP is default to work with only MQSeries Workflow FMC configuration and `FMCQM` queue manager. Do not change these settings in your MQSeries Workflow configuration.

9. Type `dspmqr`. You should be able to see the `FMCQM` queue manager registered on the system. For example:

```
QMNAME(FMCQM)                                STATUS(Ended normally)
```

10. Type `fmczkcfg -o=1`. You should be able to see the MQSeries Workflow FMC configuration registered on the system. For example:

```
- FMC33611I The following configurations are defined: FMC
```

The customization of MQSeries Workflow for the EIP workflow is now completed.

Starting EIP Workflow on AIX: EIP Advanced workflow uses MQSeries Workflow as the underlying workflow engine to deliver workflow functionality. Therefore, starting EIP workflow includes steps to start the MQSeries Workflow.

1. Log on as `fmc`
2. To start the MQSeries Workflow, type: `CMBWFAIXStart.sh`. You will see console messages being reported while the MQSeries Workflow is starting up.
3. You will be prompted to enter the EIP Administrator user id (i.e., `icmadmin`) and password in order to start up the EIP collection points monitor.

The EIP collection points monitor will report its startup status via the console. You could modify the line where the `CMBWFAIXStart.sh` invokes the `cmbupes81.sh` to give it the user id and password, so you will not be prompted for user id and password next time you run the `CMBWFAIXStart.sh` script. Type `cmbupes81.sh fh` to see possible options

| **Tip:** If you do not require the collection point functionality, enter 'quit' to
| shutdown the UPES server. Shutting down the UPES server does not shut
| down the MQSeries Workflow

| **Tip:** You need to enable the WorkFlow Service option in the EIP System
| Administration client before you could define EIP Workflow objects (such as
| Workflow processes and actions) via the Administration client. After you
| enable the Workflow Service in the EIP, it is important to keep in mind to
| have the MQSeries Workflow running when you log on the System
| Administration client. This is needed to keep the Workflow objects definitions
| in sync between the EIP Administration database and the MQSeries Workflow
| runtime database. Because the EIP System Administration client only runs on
| the Windows platform, you would need to start the RMI server for the
| federated connector and the RMI server for the workflow service on the AIX
| system, and also modify the INI files on the Windows machine to enable the
| EIP administration client to administer the EIP Administration database on the
| AIX

| **Tip:** The default MQSeries Workflow system administrator (not configuration
| administrator) id is ADMIN with default password as "password". You would
| want to change it later for security reason. To do that, first start the MQSeries
| Workflow and use the fmcautil utility to connect to the Workflow system to
| change the password. After you have done that, be sure to modify the
| CMBWFAIXStart.sh to reflect your changes. Here are the steps:

- | 1. `fmcautil ñu admin ñp password`
- | 2. Select u, p to change your password and then exit the utility.
- | 3. Update the CMBWFAIXStart.sh. For example:
| `fmcspea -y=$ConfigurationID -u=$RunTimeAdminID -p=myPassword -f &`

Chapter 9. Performing pre-installation steps on AIX

In addition to installing all the necessary prerequisites, you need to complete the following tasks before installing Content Manager and Enterprise Information Portal:

- “Confirm the correct version of Java”
- “Create user IDs”
- “Update the .profiles for the new user IDs” on page 96
- “Update the DB2 instance profile.env file” on page 97
- “Create a userprofile file for Content Manager environment settings” on page 97
- “Establish the database environment” on page 97

If you had a previous installation of the Content Manager V8 software, be sure to uninstall the product(s) and clean up your environment. Some product files such as configuration files and the databases are purposely left behind after uninstalling. This may affect the success of your installation.

Confirm the correct version of Java

To confirm that you have the correct version of Java, execute the command:

```
# java -version
```

Make sure that the java version 1.3.0 or later is used.

```
java version "1.3.0"
```

Create user IDs

You need to create user IDs to use with Enterprise Information Portal, as follows:

- Library server “administration” user ID (such as icmadmin) if you are installing a library server on this workstation. This user ID **must** be part of the DB2 Admin group.
- “Database connection” user ID (such as icmconct) if you are installing a library server on this workstation. (This should be a regular user ID with normal privileges, not part of the DB2 Admin group.)

The icmadmin user ID needs to be part of the DB2 Admin group. Follow these steps to create each user as part of the db2 administration server group named db2iadm1 (that is, the same group used for your db2 instance):

___ 1. Create the user IDs:

```
# mkuser pgrp=db2iadm1 groups=staff,db2iadm1 icmadmin#  
mkuser pgrp=db2iadm1 groups=staff,db2iadm1 radmin#  
mkuser icmconct
```

___ 2. Assign initial passwords. You can set the initial password value to whatever you want (for example: "firststone". The first login will prompt you to change the password).

```
# passwd icmadmin#  
passwd radmin#  
passwd icmconct
```

___ 3. Perform initial login. You are prompted to change the password.

```
# login icmadmin#  
login radmin#  
login icmconct
```

Very important: You need to remember these user IDs and their passwords for entry during the installation. We remind you about them during the installation (at the time that you need to enter them). You can record their names here:

Table 22. Administration and connection IDs

	Default name / information	Record your value here
Library server database administration ID	icmadmin	
Library server database administration ID password		
Database connection ID	icmconct	
Database connection ID password		

Update the .profiles for the new user IDs

Add the following line to /home/icmadmin/ .profile files:

```
. /home/db2inst1/sqllib/db2profile
```

Note the space between the period (.) and the first slash (/). This will establish the DB2 environment associate the users with the db2inst1 DB2 instance.

Update the DB2 instance profile.env file

If the data is not already in the file, add the following lines to the /home/db2inst1/sqllib/profile.env file:

```
DB2ENVLIST='LIBPATH ICMROOT ICDLL ICMCOMP EXTSHM CMCOMMON'  
DB2COMM='tcpip'  
DB2AUTOSTART='TRUE'
```

Create a userprofile file for Content Manager environment settings

Create a file or update the file called:/home/db2inst1/sqllib/userprofile to contain the following data:

```
ICMROOT=/usr/lpp/icm  
ICMDLL=/home/db2fenc1  
ICMCOMP=/usr/vacpp/bin  
CMCOMMON=/usr/lpp/cmb/cmgmt  
EXTSHM=ON  
PATH=$PATH:$ICMROOT/bin/DB2  
LIBPATH=$ICMROOT/lib:$ICMROOT/inso:$LIBPATH  
DB2INSTANCE=db2inst1  
export ICMROOT ICDLL ICMCOMP CMCOMMON EXTSHM PATH LIBPATH DB2INSTANCE
```

Do not modify /home/db2inst1/sqllib/db2profile, since this file can be overwritten by the application of a DB2 fixpack. Instead, put any necessary modifications in **userprofile**. When **db2profile** is invoked, it runs **userprofile**. When it runs **userprofile**, it causes all settings added to it to be set for users in **db2profile**. This action establishes the DB2 environment with **db2profile**.

Establish the database environment

It is **very important** that you establish the DB2 environment. Running db2profile sets the PATH and CLASSPATH and also identifies the DB2 instance that Content Manager will use:

```
./home/db2inst1/sqllib/db2profile
```

DO NOT forget this step; if you do, Content Manager will not install successfully.

Chapter 10. Installing Enterprise Information Portal components on AIX

This section explains how to install EIP components on AIX servers. You can install all of the Enterprise Information Portal components, except for the administration client, on AIX.

You can install the components only through the installation wizard. Installation through `smitty` or through `installp` is not recommended, because installation also requires configuration.

Installing Enterprise Information Portal components on AIX

To install the AIX components:

1. Perform all the tasks described in Chapter 9, “Performing pre-installation steps on AIX”, on page 95.
2. Mount the Enterprise Information Portal installation CD.
3. Change to the CD ROM directory: `cd/ cdrom`
4. Change directory to `release/` and type:
`./frnxsetup.sh`

to launch the installation program.

5. Click **Next** to close the Welcome window.
6. Select the required components and subcomponents. By default, all the components and subcomponents are selected. Type data in the installation windows. See “EIP AIX installation windows” for more information.
7. Follow program prompts to define the settings for the selected components.
8. Click **Finish** when the Installation Completion window is displayed.
9. Configure the environment variables and classpath (see “Exporting classpath, environment variables on AIX” on page 108)

EIP AIX installation windows

This section describes the AIX installation windows in sequential order. **Tip:** You might not see all the windows. For example, if you do not install the Text Search client, you will not see the two windows associated with the Text Search client.

Component Selection

Select the components and subcomponents and click **Next**. You can install all components at the same time, or select individual components or install all components at the same time.

System Configuration

EIP Version 8 offers a new option that allows remote EIP components to access system configuration files across a network or Web server.

The default installation for common configuration files is:

```
CM_COMMON=/usr/lpp/cmb/cmgmt
```

The selections you make on the System Configuration window define the location of the system configuration files. For example, the configuration file `cmbicmsrvs.ini` contains data required to connect to and search a Content Manager Version 8 server. The window also gives you the option to point remote components to a datasource file stored on an LDAP server.

Restrictions

- The configuration files do not have to be installed on the network or Web server when you define the path, but the files must be installed before remote users can work with EIP. To install the configuration files on a network or Web server, you can use the EIP installation CD-ROM, or, if you have already installed configuration files on another server, you can copy the `cmgmt` directory to the network or Web server.
- Before remote EIP components can access and use configuration files on a network server, you must configure the following properties:
 - Set up sharing on the configuration file directories and subdirectories.
 - Define user IDs and passwords for the remote users on the server where you installed the shared configuration files.
 - Be sure the user IDs and passwords have read/write privileges. Read/write access is required because the clients and other components update shared configuration files, including log files.
- If you install the configuration files on a Web server, see the Web administrator for information on configuring sharing and read/write parameters for remote EIP users.
- If you are installing the Information Center, you must select Local to install the system configuration files. The Information Center files are installed in `/usr/lpp/infoctr`. Users cannot access the Information Center through a network or Web server.
- If you plan to point remote users to datasource configuration information stored on an LDAP server, you must use a utility specific to your LDAP

product to install only the datasource configuration file. See your LDAP administrator for more information. The datasource file is named `cmbds.ini`.

- The option to point remote users to a datasource file stored on an LDAP server is only selectable if:
 - You are installing the Content Manager Version 8 connector and
 - You are installing the federated connector by itself and/or
 - You are installing the administration database, or the Information Mining database, because the federated connector is always installed with those components.

This section describes the fields on the System Configuration window.

Local Click Local to install the configuration files on the local server.

Remote

Click Remote and type the path where you installed, or plan to install, the configuration files on a network server.

Tip: If you have already installed, or plan to install, Content Manager Version 8, EIP can share the Content Manager configuration files across a network. Click Remote and type in the path where you installed or plan to install the Content Manager configuration files.

HTTP web server

Type the URL of the Web server where you installed, or plan to install, the configuration files. The configuration files do not have to be installed on the Web server when you type the URL, but they must be installed before remote users can work with EIP. Contact the Web administrator to learn more about how remote EIP users can connect to and update configuration files on a Web server.

Tip: If you have already installed, or plan to install, Content Manager Version 8, EIP can share the Content Manager configuration files. Type the URL where you installed or plan to install the Content Manager Version 8 configuration files.

Use system configuration

Click this box to begin the process of defining and configuring LDAP server information so you can later install the `cmbds.ini` configuration file. If you click this box and press **Next**, the installation program displays the **Define LDAP Server** and **Configure LDAP Server** windows. The information you define those two windows is stored in the `cmbcmenv.properties` file for later use by EIP components. **Tip:** the installation program detects an existing `cmbcmenv.properties` file, you will not be able to modify any of the fields in Define LDAP Server and Configure LDAP Server windows.

You install the configuration files on the LDAP server in a separate step using an LDAP utility after you install EIP. For more information, see the LDAP server documentation.

You see **Define LDAP Server** and **Configure LDAP Server** only if you:

- Click LDAP server on the System Configuration window and
- Install the Content Manager Version 8 connector and
- Install the federated connector either by itself or as part of an administration or Information Mining database

Define LDAP Server

On this window, you define the LDAP server type, host name, port and authentication methods. EIP stores the information you type in this window in `cmbenv.properties`. **Tip:** You are not required to install, configure or start any LDAP servers before you define the information required on this window.

LDAP server type

Select IBM Secureway or Microsoft Active Directory

Host name

Type the LDAP server host name.

Port number

Type the LDAP server port number.

LDAP server administration ID

Type the LDAP administration user ID.

Password

Type the LDAP administration password.

Configure LDAP Server

On this window, you define the LDAP Server Base distinguished name and User authentication attributes, search scope and referral method.

Base distinguished name

Type the base distinguished name of the organization and country.

User authentication attribute

Type the attribute, for example, `uid`

Search scope

Click Subtree or Onelevel.

Referral

Click Ignore or Follow.

Confirm LDAP Server Setup Information

This window displays the values you typed in the Define LDAP Server and Configure LDAP Server windows. Click **Next** to accept the data, or click **Back** to modify the data.

Configure Content Manager V8 Server Connection

On this window, you define the information required to connect to the Content Manager Version 8 server. You only see this window if you install the Content Manager Version 8 connector. When the administrator defines and connects to a Content Manager Version 8 server, EIP uses the values you define in this window to connect to the server. By default, EIP copies the information from this window to `cmbicmsrvs.ini` and `cmbicmenv.ini`.

Database name

Type the Content Manager Version 8 database name. If you have cataloged the database, type the alias name in this field.

Schema name

Type the schema name that was assigned to the Content Manager Version 8 database when the database was installed.

Authentication type

If you leave the default setting of **Server**, then the Content Manager Version 8 database user ID and password is sent to the Content Manager Version 8 server for validation.

If you click **Client**, no validation is performed by DB2, and the user ID you type to log in to your system allows connection to the Content Manager Version 8 Library Server. **Restriction:** when you log in to the client workstation, you must enter a user ID that has DB2 connect privileges.

Database connection ID

You must type the same user ID and password that was defined as the Database connection ID when the Content Manager Version 8 Library Server database was installed.

Enable sign-on

Click **True** to enable single sign-on, if required by your EIP system plan.

Content Manager V8 Connector: Confirm Server Setup Information

This window displays the values you typed to configure the Content Manager Version 8 connectivity information.

Click **Next** to accept the values, or click **Back** to modify the values.

Configure Federated Connection

On this window, you define the information required to connect an administration client to the administration database. You see this window if you choose any connector, or if you install the administration client. EIP copies the information from this window to a configuration file named `cmbds.ini` and `cmbfedenv.ini`.

Database name

Type the administration database name.

Schema name

Type the schema name that was assigned to the administration database when the administration database was installed.

Authentication type

If you leave the default setting of Server, then the administration database user ID and password is sent to the administration database for validation.

If you click Client, no validation is performed by the database, and the user ID you type to log in to your system allows connection to the administration database. **Restriction:** when you log in to the client workstation, you must enter a user ID that has DB2 connect privileges.

Database connection ID

Type the user ID and password that was defined when the administration database was installed. The user ID and password must be locally defined on the server.

Enable single sign-on

Click True to enable single sign-on, if required by your EIP system plan.

FED Connector: Confirm Server Setup Information

This window displays the values you typed to configure the federated connector connectivity information.

Click **Next** to accept the values, or click **Back** to modify the values.

Configure system administration database

The installation program uses the information you enter on this window to connect to DB2, list the databases on the server and compare the name you define in the **Database name** field to existing databases on the server.

Tip: If you are sharing a Content Manager Version 8 database and want to verify the Content Manager Version 8 database name, or to avoid duplicating

database names if you are installing a new EIP database, use DB2 Command Line Processor to list the databases on the server. At the prompt, type LIST DATABASE DIRECTORY at the db2 prompt.

If the program detects a database with the same name, the program gives you the option to overwrite the database. If you are adding EIP tables to a Content Manager Version 8 database, do not overwrite the database. If the program does not detect an existing database with the same name, you are prompted to create a database. Follow the guidelines below when you define the information that identifies the administration database:

Database name

Type the administration database name. **Tip:** To avoid potential problems, do not use the special characters @, #, and \$ in a database name if you intend to have a client remotely connect to a host database. Also, because these characters are not common to all keyboards, do not use them if you plan to use the database in another country. Unless otherwise specified, all names can include the following characters:

- A through Z. When used in most names, characters A through Z are converted from lowercase to uppercase.
- 0 through 9
- @, #, \$, and _ (underscore)

Unless otherwise specified, all names must begin with one of the following characters:

- A through Z
- @, #, and \$
- If you are installing an administration or Information Mining database, accept the default database name, or type the new name.
- If you are sharing a Content Manager Version 8 Library Server database, type the Content Manager Version 8 Library Server database name that was defined when the Library Server was installed.

Schema name

- If you are installing an administration or Information Mining database, you can accept the default name, which is the same name as the Database administration ID default user ID, or change the default schema name. Type the new database name in the Schema name field. The schema name can contain up to eight letters, can contain numerals, and will appear in capital letters.

- If you are sharing a Content Manager Version 8 database, type the Content Manager Version 8 Library Server database schema name that was defined when the Library Server was installed.

A schema is a collection of named objects. A schema also provides a logical classification of objects in the database. A schema can contain objects such as aliases, tables, views, indexes, triggers, distinct types, functions, and packages. A schema can be implicitly created when an object is created. The schema exists in the database as an object. If a schema name is not specified, the first eight letters of the authorization name of the creator of the object is used as the default.

Database administration ID

The user ID and password you define in this field is used only for database creation and must be locally defined and must have DB2 administration privileges. **Restriction:** You must log in to the server with a user ID that has DB2 administration privileges before you can create the administration database.

Database connection ID

The user ID and password you define in this field allows users to connect to the administration database. The user ID must be locally defined.

Database Already Exists

You see this window only if you have reused the name of an EIP database or you typed the name of a Content Manager Version 8 Library Server.

Replace the existing database?

If you click this option, DB2 drops the existing database and creates an EIP database. **Tip:** If you replace the existing database, the program prompts you twice for confirmation.

Select System Administration Server Options

You see this window only if you are installing an administration database that does not reuse the name of an existing administration database and you are not adding EIP tables to a Content Manager Version 8 database.

Enable unicode

Click True if you are installing Information Mining, or an administration database to which you plan to add Information Mining tables.

Enable text search

Click this box to enable text search.

Confirm System Administration Database Setup Information

This window displays the values you typed to define the administration database. Click **Next** to accept the values or **Back** to modify the values.

Image Search: Enter Client Setup Information

On this window, you define values that EIP uses to locate and connect to an image search server.

Image Search user ID

Type the name of the Image Search server that was defined when the server was installed.

Image Search Server name

Type the host name of the Image Search server. Ask the server administrator if you are required to enter a fully-qualified host name.

Host name

Type the host name that was defined when the Image Search server was installed.

Port number

Type the port number that was defined when the server was installed.

Control data path

Type the name of the Control data path for the Image Search client.

Image Search Client: Confirm Setup Information

This window displays the values defined for the Image Search client. Click **Next** to accept the values, click **Back** to modify the values.

Text Search: Enter Client Setup Information

On this window, you define values that EIP uses to locate and connect to a Text Search server.

Text Search Client user ID

Type the user ID required to connect to a text search server.

Text Search server name

Type the name of the Text Search server.

Text Search Host Name

Type the fully-qualified Text Search server host name.

Text Search Port number

Type the port number that was defined when the Text Search server was installed.

Text Search Client: Confirm Setup Information

This window displays the values defined for the Text Search client. Click **Next** to accept the values, click **Back** to modify the values.

Installation Status

This window displays the installation status of the components you selected. Click **Next** when the component installation is complete.

Specify RMI Host Name and Port Number

On this window, you define host name and port number for an RMI server and you can also define an RMI host name and port number for a workflow or Information Mining RMI server.

If your system plan includes a master RMI server, type the host name of the master server and the master server port number in the fields in the top half of this window. The default host name is the local server name, and the default port number is 1919. The RMI information is copied to `cmbclient.ini`.
Tip: Ask the server administrator if you are required to enter a fully-qualified host name.

If your system plan includes a separate RMI server for workflow or Information Mining, type the host name and port number for the workflow or Information Mining RMI server in the fields in the bottom half of this window. This RMI information is copied to `cmbsvclient.ini`.

Tip: If your system plans include RMI, you must install and configure the connectors on the RMI server in a separate step before the clients can use the RMI server.

Installation Complete

Click **Finish** to complete installing EIP components on AIX. **Tip:** You are not required to restart the server.

Exporting classpath, environment variables on AIX

You must use a configuration program that exports classpath, environment variables and other information before you can use EIP.

1. `cd` to `/usr/lpp/cmb/bin`
2. Type `./cmbenv81.sh`

Verifying EIP installation on AIX

See Chapter 11, “Verifying a successful installation of Enterprise Information Portal on AIX”, on page 109.

Chapter 11. Verifying a successful installation of Enterprise Information Portal on AIX

Use information in this section to verify a successful installation of Enterprise Information Portal on an AIX system. It includes the following procedures:

- “Enterprise Information Portal First Steps”
- “Verify Enterprise Information Portal system administration database”
- “Verify system administration database and system administration client communication” on page 110
- “Verify Enterprise Information Portal connection to Content Manager Version 8” on page 112
- “Run low-level connection tests” on page 110

Enterprise Information Portal First Steps

The Enterprise Information Portal First Steps program allows you to load sample data into the Enterprise Information Portal system administration database. You perform the First Steps procedures differently depending whether you have all of your Enterprise Information Portal components installed on one system or if you have them installed on more than one system.

For an AIX installation of the system administration database, you need to run the First Steps program from the Windows system where you installed your system administration client component. See “Running First Steps with Enterprise Information Portal components installed on multiple machines” on page 74.

Verify Enterprise Information Portal system administration database

To verify that the Enterprise Information Portal system administration database is installed correctly:

1. Check database connection by typing:

```
$ db2 connect to icmnlbdb user icmadmin using password
```

You should see output similar to the following:

Database Connection Information

```
Database server          = DB2/6000 7.2.4
SQL authorization ID     = ICMADMIN
Local database alias     = ICMNLSDB
```

- __ 2. Check database tables by typing:

```
$ db2 list tables
```

You should see several tables listed (around 150); some with names starting with "FA" and some starting with "ICM".

Verify system administration database and system administration client communication

Because there is no administration client on AIX, you must configure a connection between the Windows administration client and the AIX databases. There are two ways to connect an administration client to a remote database.

- Connect through an RMI server (see Chapter 17, "Configuring an RMI server", on page 179).
- Define a connection by following the steps in "Connecting the administration client to a remote administration database" on page 141.

Run low-level connection tests

Verify that the Enterprise Information Portal federated connector and the Content Manager Version 8 connector are installed correctly, run the indicated sample programs in this section.

Before you run the tests

Before you run the connection tests:

- __ 1. It is important that any user ID that is used for EIP application development work must be a member of the group that your db2 instance user ID belongs to, for example: **db2iadm1** (the group that db2inst1 belongs to).
- __ 2. Login as **icmadmin**. Perform the following setup to run the EIP sample programs. Copy the java samples to a local directory eipsamps off of your home directory:

```
$ cp -R /usr/lpp/cmb/samples/java $HOME/eipsamps
```

This also changes the ownership of the files to the current user.

- __ 3. Ensure you have the proper Enterprise Information Portal development environment. It is recommended that you add these two lines to the .profile of the users doing EIP application development work. Note the space between the period (.) and the first slash (/):

- __ a. Establish the DB2 environment.

```
$ . /home/db2inst1/sql1ib/db2profile
```

- __ b. Establish the EIP development environment.

```
$ . /usr/lpp/cmb/bin/cmbenv81.sh
```

Running the connection tests

Run the following two tests:

___ 1. Federated connector test:

```
$ cd $HOME/eipsamps/java/fed
$ javac TConnectFed.java
$ java TConnectFed icmnlbdb icmadmin password
```

Expected output:

```
$ java TConnectFed icmnlbdb icmadmin password
*** connecting to datastore : icmnlbdb
*** datastore connected ***
user icmadmin dsName icmnlbdb
datastore disconnected
user icmadmin dsName icmnlbdb
```

___ 2. Content Manager V8 connector test:

```
$ cd $HOME/eipsamps/java/icm
$ javac SConnectDisconnectICM.java
$ java SConnectDisconnectICM icmnlbdb icmadmin password
```

Expected output:

```
$ java SConnectDisconnectICM icmnlbdb icmadmin password
=====
IBM Enterprise Information Portal v8
Sample Program: SConnectDisconnectICM
-----
Database: icmnlbdb
UserName: icmadmin
=====
Connecting to datastore (Database 'icmnlbdb', UserName
'icmadmin')...
Connected to datastore (Database 'icmnlbdb', UserName
'icmadmin').
Disconnecting from datastore & destroying reference...
Disconnected from datastore & destroying reference.
=====
Sample program completed.
=====
```

If you get the following type errors:

```
TConnectFed.java:33: package com.ibm.mm.sdk.common does not
exist
import com.ibm.mm.sdk.common.*;
^
```

You forgot to establish the EIP development environment. Note the space between the period (.) and the first slash (/) in the command.

Execute:

```
$ . /usr/lpp/cmb/bin/cmbenv81.sh
```

Verify Enterprise Information Portal connection to Content Manager Version 8

To verify the connection from Enterprise Information Portal to Content Manager:

- ___ 1. On your Windows system, start the Enterprise Information Portal system administration client, as follows: Administration Client on Windows:
Start -> Programs -> Enterprise Information Portal V8.2 -> Administration
- ___ 2. On the left-hand side of the window, right-click on **Servers** and select **New**.
- ___ 3. From the list, select **Content Manager v8**.
- ___ 4. Enter the connection information:
Server Name: ICMNLSDB
- ___ 5. Click on the **Test Connection** button.
- ___ 6. You should see that the connection is successful.

Chapter 12. Installing and updating prerequisite programs on Solaris

This section has two sub-sections:

- 1. “Verifying your software Prerequisites on Solaris” explains how to check the level of a prerequisite that you already have installed on your system.
- 2. “Installing / Updating Prerequisites” on page 115 has detailed instructions for how to install and configure the prerequisite programs that are needed for your own planned configuration.
 - The steps that you need to perform are determined by the selections that you make while you are using the “Planning Assistant” from the *Start Here CD*.
 - The planning assistant produces output sheets (with checklists) for the programs and components that you need to install for your selected components.

The prerequisite programs included in this section are:

- “Patch for Solaris 8 operating environment” on page 115
- “Sun Forte C++ Compiler Version 6.1” on page 115
- “IBM DB2 Universal Database” on page 115
- “IBM DB2 Net Search Extender (NSE) and Text Information Extender (TIE)” on page 122
- “IBM WebSphere Application Server (WAS)” on page 123

Verifying your software Prerequisites on Solaris

Run the following verification checks to determine which of the prerequisites you need to install or update. For those prerequisites that are either not installed or at the expected level, use the next section to guide you through installing them.

Table 23. Basic prerequisites

Prerequisite	How to check	Expected value
Solaris version 2.8	uname -r	level#: 5.8
Solaris patch 108528	showrev grep version	level#: 108528-08 or higher
Sun Forte C++ compiler	pkginfo -l SPR0vws grep VERSION	level#: 6.1or higher

Table 23. Basic prerequisites (continued)

Prerequisite	How to check	Expected value
DB2 UDB V8.1	pkginfo -l db2engn71 grep VERSION pkginfo -l db2engn81 grep VERSION	level#: 8.1.1.0
DB2 UDB Enterprise Server Edition Version 8.1 with Fixpack 1	From the DB2 Command Window: db2level	Level needs to read SQL08010 or read "DB2 v8.1.1.27". The fixpack information needs to read "FixPak "1" and list the fixpack level, for example, "s021124" is the fixpack that had been available November 24,2002. For Oracle, the fixpack level must be S021110 or later.
DB2 Text Information Extender v7.2	pkginfo -l db2tie72 grep VERSION	level#: 7.2.0.0
Net Search Extender (required if you use DB2 Version 8.1)	From the DB2 Command Window, start the text search program: db2text start Then type: db2text level	CTE0350 Instance "DB2" uses DB2 Net Search Extender code release " tx9_81" with level identifier " tx9_26a"
Tivoli Storage Manager API Client Version 4.2.1	/opt/tivoli/tsm/client/api/samprun Where opt is the install directory	API Library Version = 4.2.1.0
Tivoli Storage Manager Server Version 4.2.1	Logon to the TSM Server Administration Web page: http://<hostname>:1580 Where <hostname> is the name of the TSM server.	The version appears on the Web page. It should say Version 4, Release2, Level1.0
	grep /version /opt/WebSphere/AppServer/properties/com/ibm/websphere/product.xml	<version>4.0.3 </version>

Installing / Updating Prerequisites

The following sections guide you through installing each of the prerequisites including fixpacks, how to install them, and how to verify them after installation.

The rule of thumb when installing the prerequisites is to always apply the fixpacks after your base components are installed. For instance if you are missing the DB2 UDB Application Development Client from your DB2 install, install this component first, then install the fixpack code. Otherwise you will need to install the fixpack code again after adding any new DB2 components.

Patch for Solaris 8 operating environment

You need to have Solaris Version 2.8 installed on your system. Assuming that you do, you can use the SunSolve Online website to download the required patch (108528). Follow the download and installation instructions provided at the SunSolve download site:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access>

To validate the patch installation, rerun the showrev command:

```
showrev | grep version
```

You should see the following output:

```
108528-08 (or later)
```

Sun Forte C++ Compiler Version 6.1

You should have Forte C++ compiler available on the system. You can use the following command to verify that you do:

```
pkginfo -l SPROvws | grep VERSION
```

If Forte C++ compiler is installed, you see the following output:

```
VERSION: 6.1
```

IBM DB2 Universal Database

IBM DB2 Universal Database Enterprise Edition Version 7.2 OR Enterprise Extended Edition Version 7.2.1. (or higher) is required for Content Manager Version 8 Release 2 servers when you use DB2 for your server databases. IBM DB2 Universal Database Enterprise Server Edition Version 8.1 (at fixpack 1 code level) is included in the Content Manager package.

Before you begin to install IBM DB2 Universal Database

Before you begin to install IBM DB2 Universal Database, complete the following steps:

- ___ 1. Ensure that your machine has enough memory and disk space for your installation. See the DB2 product documentation on the DB2 Online Support Web site for the requirements at:

www.ibm.com/cgi-bin/db2www/data/db2/udb/winos2unix/support/v8pubs.d2w/en_main

- ___ 2. Make sure that you do not have a previous version of DB2 already installed on the machine. If a previous version of DB2 is installed, you need to migrate servers and instances, depending on the version installed. In this case, do not follow these instructions. Instead, refer to the DB2 product documentation on the DB2 Online Support Web site at:

www.ibm.com/cgi-bin/db2www/data/db2/udb/winos2unix/support/v8pubs.d2w/en_main

- ___ 3. Your DB2 database server will reside on the same machine as WebSphere Application Server. This configuration and the use of the default settings documented in these instructions are appropriate only for development and small production environments. For larger environments where it is preferable to configure the DB2 server on a remote machine, you must install and configure a DB2 client on the same machine on which you install WebSphere Application Server and verify the remote database connectivity. See the IBM Redbook, *WebSphere V3.5 Handbook*, on the IBM Redbooks Web site at:

www.redbooks.ibm.com/redbooks/SG246161.html

for more information about implementing this configuration.

Important: Install DB2 before installing WebSphere Application Server.

- ___ 4. The DB2 CD in the package may contain a compressed image. You may have to untar it before you use it.

Installing IBM DB2 Universal Database

Perform the following steps to install DB2:

- ___ 1. Ensure that you are logged into the machine with super user (root) privileges.
- ___ 2. Ensure that you have set the following UNIX kernel, shared memory, and semaphore parameters properly:

MSGMAX
MSGMNB
MSGMAP
MSGMNI
MSGSSZ
MSGTQL
MSGSEG
SHMMAX

SHMSEG
SHMMNI
SEMMNI
SEMMAP
SEMMNS
SEMMNU
SEMUME

Refer to the *DB2 Quick Beginnings for UNIX* and related DB2 UDB documentation (to obtain information on the proper values for these parameters) on the DB2 Online Support Web site at:

www.ibm.com/cgi-bin/db2www/data/db2/udb/winos2unix/support/v8pubs.d2w/en_main

It is recommended that you review these settings with your system administrator to ensure that they do not conflict with settings necessary for other software programs on your system. You can use the following sample files to update the settings for these parameters. The files are located in the `/db2/install/samples` directory on the DB2 software CD-ROM or in the `/opt/IBMDB2/V8.1/cfg` directory in the installed DB2 product:

kernel.param.64MB for systems with 64 - 128 MB physical memory
kernel.param.128MB for systems with 128 - 256 MB physical memory
kernel.param.256MB for systems with 256 - 512 MB physical memory
kernel.param.512MB for systems with 512 MB to 1 GB physical memory

- __ a. Choose the file appropriate for your system
- __ b. Append it to the `/etc/system` file
- __ c. Make any changes to the SHMMAX parameter if needed (as outlined in the DB2 product documentation)
- __ d. Enter the command
 # touch /reconfigure
- __ e. Restart your machine.

- __ 3. Insert the DB2 UDB CD-ROM, and if necessary, mount the CD-ROM drive.

Hint: On most Solaris systems, the Volume Management daemon (**vold**) mounts the CD-ROM automatically and immediately, as well as each time the machine is restarted. If the **vold** process is not running on the local machine, see your Solaris system documentation for instructions on how to mount the CD-ROM drive.

The following steps assume that the CD-ROM drive is mounted at `/cdrom`.

- __ 4. Navigate to the correct directory on the DB2 UDB CD-ROM by entering the following command:

```
# cd /cdrom/cdrom0
```

- ___ 5. Enter the following command to start the DB2 installation using the DB Setup Utility:

```
# ./db2setup
```

Important: The DB2 Setup Utility works with only the bash, Bourne, and Korn shells.

- ___ 6. From the IBM DB2 Setup Launchpad (Welcome) window, you can view installation prerequisites and the release notes. You may want to review the installation prerequisites and release notes for late-breaking information. Click **Install Products** to begin the installation.
- ___ 7. The Setup window opens. Select DB2 UDB Enterprise ServerEdition, then click **Next**.
- ___ 8. Once you have initiated the installation, proceed by following the setup program's prompts.

When prompted, select **Typical** as the installation type, to install all DB2 components required to support Content Manager. You can take most default options (unless you have specific requirements of your own).

Online help is available to guide you through the remaining steps. To invoke the online help, click **Help** or press **F1**. You can click **Cancel** at any time to end the installation. DB2 files will only be copied to your computer once you have clicked **Finish** on the last DB2 Setup wizard installation panel.

- ___ 9. Unmount the CD-ROM before removing it from the CD-ROM drive by entering the following command:

```
# umount cdrom/cdrom0
```

Steps to complete after installing DB2 and before installing Content Manager

After you install DB2, perform the following steps for Content Manager:

- ___ 1. Ensure that you are logged into the machine with super user (root) privileges.
- ___ 2. Create home directories for the DB2 Instance, DB2 Fenced User, and DB2 Administration Server. These directory names must match the values for the Home Directory option that you designate when configuring the DB2 Instance, DB2 Fenced User, and DB2 Administration Server in the procedures listed under Steps 7 on page 119, 8 on page 119, and 12 on page 120.
- ___ 3. Navigate to the directory containing the DB2 Setup Utility by entering the following command:

```
# cd /opt/IBMDB2/V8.1/install
```

- ___ 4. Start the DB2 Setup Utility by entering the following command:

```
# ./db2setup
```


- ___ 9. In the DB2 Warehouse Control Database window, highlight the option labeled **Do not set up DB2 Warehouse Control Database** and press **Return**.
- ___ 10. Highlight **OK** and press **Return**.
- ___ 11. In the Create DB2 Services window, highlight the **Create the Administration Server** option and press **Return**.
- ___ 12. In the Administration Server window, perform the following steps, noting the values that you enter or accept for future reference:
 - ___ a. Enter a user name or accept the default value for the **User Name** option.
 - ___ b. Enter a user ID or accept the default user ID by ensuring that the **Use default UID** option has an asterisk (*) beside it.
 - ___ c. Enter a group name or accept the default value for the **Group Name** option.
 - ___ d. Enter a group ID or accept the default group ID by ensuring that the **Use default GID** option has an asterisk (*) beside it.
 - ___ e. Enter a home directory or accept the default value for the **Home Directory** option.
 - ___ f. Type a password for the user in the **Password** and **Verify Password** options. DB2 requires a password of eight or fewer characters.
 - ___ g. Highlight **OK** and press **Return**.
- ___ 13. A notice window informs you of the value being created for the DB2SYSTEM environment variable. Ensure that **OK** is highlighted and press **Return**.
- ___ 14. In the Create DB2 Services window, highlight **OK** and press **Return**.
- ___ 15. The Summary Report window shows the choices you have made so far. When you have determined that the information is correct, ensure that **Continue** is highlighted and press **Return**.
- ___ 16. A warning window opens, giving you the option of canceling the processes. Ensure that **OK** is highlighted and press **Return**.
- ___ 17. A notice window informs you when the processes are completed. Ensure that **OK** is highlighted and press **Return**.
- ___ 18. The Status Report window informs you of process successes and failures. View the Log File for information on how to correct particular failures. To exit from this window, ensure that **OK** is highlighted and press **Return**.
- ___ 19. In the DB2 Setup Utility window, highlight **Close** and press **Return**.
- ___ 20. In the notice window, ensure that **OK** is highlighted and press **Return**.

- ___ 21. Make the root user a member of the administrative group that you accepted or designated for the **Group Name** option during the creation of the Administrative Server by editing the `/etc/group` file.
- ___ 22. If you are developing or running applications and want to avoid specifying the full path to the product libraries and include files, consider creating symbolic links. Create symbolic links for the DB2 files to the `/usr/lib` directory and for the include files to the `/usr/include` directory by entering the following command:


```
# /opt/IBMdb2/V8.1/cfg/db2ln
```
- ___ 23. Configure the root user to run the **db2profile** script at login by adding the following line to the `.profile` or `.dtprofile` file for the user root (assuming that the user root uses the Korn or Bourne shell and that `/export/home/db2inst1` is the home directory of the example instance owner `db2inst1`):


```
. /export/home/db2inst1/sql1lib/db2profile
```

This action is required to install and run WebSphere Application Server. If the user root uses a shell other than the Korn shell or Bourne shell, make appropriate changes to this information.

- ___ 24. Log out and then log back in for your changes to take effect.

Validating the IBM DB2 Universal Database installation

To demonstrate that DB2 is functioning correctly, you can create a sample database and compile and execute a Java application that accesses it. You can see that the environment is set up correctly for DB2 and for IBM Java 2 SDK, and that the JDBC provider is accessible from a Java application.

Perform the following steps to create the sample database and compile and run the Java application:

- ___ 1. Ensure that you are logged in as the DB2 instance owner, **db2inst1**.
- ___ 2. Ensure that the DB2 environment has been set up correctly by using the `echo` command to verify the value of the `DB2INSTANCE` environment variable, as follows:


```
$ echo $DB2INSTANCE
```

The correct value returned is **db2inst1**.
- ___ 3. Ensure that the home directory of the instance owner, `/export/home/db2inst1`, has write permissions.
- ___ 4. Create the sample database by executing the `db2sampl` script, as follows:


```
$ db2sampl
```

This process can take several minutes to complete.

- ___ 5. Ensure that you are in the instance owner's home directory,
/export/home/db2inst1.
- ___ 6. Compile an example Java application by using the javac command, as follows:

```
$ javac -d . sqllib/samples/java/DB2App1.java
```

The resulting class file is created in the local directory.

- ___ 7. Start DB2 by using the db2start command, as follows:

```
$ db2start
```
- ___ 8. Run the Java sample by using the **java** command, as follows:

```
$ java DB2App1
```

Correct output resembles the following:

```
Retrieve some data from the database...
Received results:
empno= 000010 firstname= CHRISTINE
empno= 000020 firstname= MICHAEL
empno= 000030 firstname= SALLY
. . .
Update the database...
Changed 1 row.
```

IBM DB2 Net Search Extender (NSE) and Text Information Extender (TIE)

The powerful text search capabilities of the DB2 Version 7 Text Information Extender (TIE) are merged into the Net Search Extender (NSE) Version 8. Notice that if you plan to use the (optional) text search feature of Content Manager, you must install:

IBM Text Information Extender (TIE), Version 7.2 with IBM DB2 Enterprise Edition Version 7.2 and Enterprise Extended Edition Version 7.2.1

OR

IBM Net Search Extender (NSE), Version 8 with IBM DB2 Enterprise Server Edition, Version 8.1.

IBM Net Search Extender (NSE), Version 8 is provided in the package with Content Manager, Version 8.2.

Installing IBM DB2 NSE

Refer to the installation instructions on the documentation CD supplied with DB2 Net Search Extender (NSE).

NSE must be installed on the same workstation as the library server.

Validating the DB2 NSE installation

To verify proper NSE installation, make sure DB2 is started and execute the following command to start DB2 NSE:

db2text start

You should see the following output:

```
CTE0001 Operation completed successfully.
```

IBM WebSphere Application Server (WAS)

Installing IBM WebSphere Application Server

Use this section to install IBM WebSphere Application Server:

1. Go to the WebSphere 5.0 InfoCenter online documentation for your configuration of the Application Server and in your language at:

`http://www.ibm.com/software/webservers/appserv/infocenter.html`
2. Under the section entitled "Version 5 InfoCenters:", select your language in the drop-down box next to **Application Server for distributed operating systems**.
3. Expand **Getting Started -> Installing WebSphere Application Server -> Installing the product** in the left navigation panel of the WebSphere InfoCenter
4. Follow the instructions in the right panel for installing WebSphere as it applies to your operating system.

Validate the installation

To validate the WebSphere installation, use the information under **Getting Started -> Installing WebSphere Application Server -> Using the installation verification steps** in the WebSphere InfoCenter (that you opened during the installation steps above).

Installing MQSeries Workflow on Solaris

Prerequisites

- Solaris Version 2.8 or later
- IBM WebSphere MQSeries for Solaris Version 5.3.0.1 or higher
- IBM DB2 Universal Database for AIX Version 7.2 or higher.

Creating users and groups

1. Log on as root.
2. Enter command: `groupadd fmcgrp`
3. Verify that MQSeries Administrator group `mqm` exists
4. Verify that DB2 database administrator group `db2iadm1` exists.
If it does not exist, check to see that you have installed DB2 correctly. If your DB2 Administrator group has a different name, be careful to substitute it whenever the default `db2iadm1` is mentioned.
5. Follow these steps to create an MQ Workflow Administration user. Note that the MQ Workflow Administration user ID (for example, `fmc`) must

have MQSeries and DB2 administration rights. Use the following command to create the user. The following example assumes the db2 instance is of the db2iadm1 group.

```
useradd -g fmcgrp -G mqm,db2iadm1 -d /export/home  
/fmc -s /usr/bin/ksh -m fmc
```

6. Set the password for user fmc with the command: `passwd fmc`
7. Modify fmc's login file to include locale information. For example:
`export LANG=en_US`

MQSeries Workflow runtime needs that locale information to look up message bundles.

8. Establish the use of db2 environment in fmc's profile. You can achieve this by in the fmc's profile including the db2profile of the db2 instance which owns the MQSeries Workflow runtime database. For example, include the following in the fmc's profile. The example assumes the db2inst1 is the instance owner and db2inst1 is used for the MQSeries Workflow runtime database.

```
export DB2INSTANCE=db2inst1  
  
if [ -e /home/$DB2INSTANCE/sql1lib/db2profile ];  
then . /home/$DB2INSTANCE/sql1lib/db2profile fi
```

Installing MQ Workflow on Solaris

The MQSeries Workflow runtime data will use `/var/fmc` by default. Depend on usage, it would take about 100MB to 400MB of disk space. It is recommended to check to see if the system has sufficient disk space before the installation is attempted.

1. Log on to the Solaris system as root.
2. Insert the MQ Workflow installation disk into the CD-Rom drive.
3. Copy all the files in the WFInstall directory from the CD-Rom to a temporary directory (for example, `/tmp/WFInstall`).
4. Specify the locale for this install as well as the following configuration session. For example: `export LANG=en_US`
5. Use the `CMBWFSUNInstall.sh` to install the MQSeries Workflow. For example: `CMBWFSUNInstall.sh /cdrom/fmc-3.4.0.pkg` **Restriction:** You can not use `admintool` to install the MQSeries Workflow for Solaris.

Important: The following kernel configuration parameters information is taken from the MQSeries Workflow 3.3 manual. Check the MQSeries Workflow 3.4 to see if there is additional recommendation update that you could use.

Kernel configuration parameters

There are recommended values for the Sun Solaris kernel configuration parameters. This summarizes the requirements from the *IBM DB2 Connect:Quick Beginnings*, and *MQSeries for Sun Solaris: Quick Beginnings* manuals:

- set msgsys:msginfo_msgmax = 65535
- set msgsys:msginfo_msgmnb = 65535
- set msgsys:msginfo_msgmap = 1026
- set msgsys:msginfo_msgmni = 256
- set msgsys:msginfo_msgssz = 16
- set msgsys:msginfo_msgtql = 1024
- set msgsys:msginfo_msgseg = 32767
- set shmsys:shminfo_shmmax = 483183820 (90% of your physical memory)
- set shmsys:shminfo_shmseg = 1024
- et shmsys:shminfo_shmmni = 1024
- set shmsys:shminfo_shmmin = 1
- set semsys:seminfo_semaem = 16384
- set semsys:seminfo_semvmx = 32767
- set semsys:seminfo_semmni = 1024 (semmni < semmns)
- set semsys:seminfo_semmap = 1026 (semmni + 2)
- et semsys:seminfo_semmns = 16384
- set semsys:seminfo_semmsl = 100 set semsys:seminfo_semopm = 100
- set semsys:seminfo_semmnu = 2048
- set semsys:seminfo_semume = 256
- set maxusers = 32 (This is the minimum, best to set it higher)

Note: The default for maxusers is the size of main memory in MB minus 2. For example, if you have 512 MB memory, maxusers defaults to 510. You can omit the set maxusers command from the `/etc/system` file.

Configuring MQWorkflow on Solaris

1. While still log on as root, find the `CMBWFConfig.SUN.dat` file and open it for editing.
2. Update the `MQCommunicationAddress` entry to replace the localhost with your machine name or IP address. For example:
`MQCommunicationAddress=hayes.svl.ibm.com`
3. If the fmc is not using `db2inst1`, update the following entries to reflect the proper db2 instance owner.
`RTDB2Instance, RTDB2LocalInstance, RTDatabaseContainerDirectory,`
`RTDatabaseLocation, RTDatabaseLogLocation`

4. The default queue manager for the MQ Workflow is listening to port 5010. Check the `/etc/services` to see if it is being taken. Update the `MQPort` entry in the file to a different number if it's needed.
5. Save the edited `CMBWFConfig.SUN.dat` file.
6. Make sure to allow the `fmc` user to be able to read and run those EIP configuration files as well as write configuration log file into this directory.
7. Make sure there is no errors in the `fmc` user's `.profile` as the configuration script will `su` to `fmc`.
8. Run the `CMBWFSUNConfig.sh` under root. You will be prompted to enter `fmc`'s password. This script will create the MQSeries Workflow FMC configuration, create the MQSeries Workflow runtime database `FMCDB`, create the `FMCQM` queue manager, create the EIP workflow queue, and define the EIP workflow container data structures.

Tips: Find the MQSeries Workflow manual references to these MQSeries Workflow utilities: `fmczkcfg` and `fmczutil` for usage details on how to customize your MQSeries Workflow configuration. Note that the EIP is default to work with only MQSeries Workflow FMC configuration and `FMCQM` queue manager. Do not change these settings in your MQSeries Workflow configuration.

9. Type `dspmq`. You should be able to see the `FMCQM` queue manager registered on the system. For example:


```
QMNAME(FMCQM)                STATUS(Ended normally)
```
10. Type `fmczkcfg -o=1`. You should be able to see the MQSeries Workflow FMC configuration registered on the system. For example:


```
- FMC33611I The following configurations are defined: FMC
```

The customization of MQSeries Workflow for the EIP workflow is now completed.

Starting EIP workflow on Solaris

EIP Advanced workflow uses MQSeries Workflow as the underlying workflow engine to deliver workflow functionality. Therefore, starting EIP workflow includes steps to start the MQSeries Workflow.

1. Log on as `fmc`.
2. To start the MQSeries Workflow, type: `CMBWFSUNStart.sh`. You will see console messages being reported while the MQSeries Workflow is starting up.
3. You will be prompted to enter the EIP Administrator user id (i.e., `icmadmin`) and password in order to start up the EIP collection points monitor.

| The EIP collection points monitor will report its startup status via the console.
| You could modify the line where the CMBWFSUNStart.sh invokes the
| cmbupes81.sh to give it the user id and password, so you will not be
| prompted for user id and password next time you run the
| CMBWFSUNStart.sh script. Type cmbupes81.sh ñh to see possible options.

| **Tip:** If you do not require the collection point functionality, enter 'quit' to
| shutdown the UPES server. Shutting down the UPES server does not shut
| down the MQSeries Workflow.

| **Tip:** The default MQSeries Workflow system administrator (not configuration
| administrator) id is ADMIN with default password as "password". You would
| want to change it later for security reason. To do that, first start the MQSeries
| Workflow and use the fmcautil utility to connect to the Workflow system to
| change the password. After you have done that, be sure to modify the
| CMBWFSUNStart.sh to reflect your changes. Here are the steps:

- | 1. fmcautil ñu admin ñp password
- | 2. Select u, p to change your password and then exit the utility
- | 3. Update the CMBWFAIXStart.sh. For example:
| fmcxspea -y=\$ConfigurationID -u=\$RunTimeAdminID -p=myPassword -f &

Chapter 13. Performing pre-installation steps on Solaris

In addition to installing all the necessary prerequisites, you need to complete the following tasks before installing Content Manager and Enterprise Information Portal:

- “Confirm the correct version of Java”
- “Create user IDs”
- “Update the .profiles for the new user IDs” on page 130
- “Create a userprofile file for Content Manager environment settings” on page 131
- “Establish the database environment before starting the installation” on page 131

If you had a previous installation of the Content Manager V8 software, be sure to uninstall the product(s) and clean up your environment. Some product files such as configuration files and the databases are purposely left behind after uninstalling. This may affect the success of your installation.

Confirm the correct version of Java

To confirm that you have the correct version of Java, execute the command:

```
# java -version
```

Make sure that the java version 1.3.0 or later is used.

```
java version "1.3.1_02"
```

Create user IDs

You need to create user IDs to use with Enterprise Information Portal, as follows:

- Library server “administration” user ID (such as icmadmin) if you are installing a library server on this workstation. This user ID **must** be part of the DB2 Admin group.
- “Database connection” user ID (such as icmconct) if you are installing a library server on this workstation. (This should be a regular user ID with normal privileges, not part of the DB2 Admin group.)

The icmadmin user ID needs to be part of the DB2 Admin group. Follow these steps to create each user as part of the db2 administration server group named db2iadm1 (that is, the same group used for your db2 instance):

__ 1. Create the user IDs:

```
useradd -g staff -G db2iadm1  
icmadminuseradd -g staff -G db2iadm1
```

__ 2. Assign initial passwords. Set the password value to "password" for simplicity. The first login will not prompt you to change the passwords. You can change passwords later, once logged on as the new user, by issuing the following command. (In order to follow this guide with ease, keep the password value as "password"):

```
passwd icmadmin  
passwd icmconct
```

__ 3. Perform initial login for added users. You are prompted to change the password for the added users.

```
login icmadmin  
login icmconct
```

Very important: You need to remember these user IDs and their passwords for entry during the installation. We remind you about them during the installation (at the time that you need to enter them). You can record their names here:

Table 24. Administration and connection IDs

	Default name / information	Record your value here
Library server database administration ID	icmadmin	
Library server database administration ID password		
Database connection ID	icmconct	
Database connection ID password		

Update the .profiles for the new user IDs

Add the following line to /export/home/icmadmin/.profile and /export/home/rmadmin/.profile files:

```
. /export/home/db2inst1/sqllib/db2profile
```

Note the space between the period (.) and the first slash (/). This establishes the DB2 environment associating the users with the db2inst1 DB2 instance.

Update the DB2 instance profile.env file

If the data is not already in the file, add the following lines to the /export/home/db2inst1/sqllib/profile.env file:

```
DB2ENVLIST='LIBPATH ICMROOT ICMDLL ICMCOMP CMCOMMON'  
DB2COMM='tcPIP'  
DB2AUTOSTART='TRUE'
```

Create a userprofile file for Content Manager environment settings

Create a file or update the file: /export/home/db2inst1/sqllib/userprofile containing the following information:

```
ICMROOT=/opt/IBMi cm  
ICMDLL=/export/home/db2fenc1  
ICMCOMP=/opt/SUNWspro/bin  
CMCOMMON=/opt/IBMcmb/cmgmt  
PATH=$PATH:$ICMROOT/bin/DB2  
LD_LIBRARY_PATH=$ICMROOT/lib:$ICMROOT/inso:$LD_LIBRARY_PATH  
export ICMROOT ICMDLL ICMCOMP CMCOMMON PATHLD_LIBRARY_PATH
```

Do not modify /export/home/db2inst1/sqllib/db2profile, since this file can be overwritten by the application of a DB2 fixpack. Instead:

1. Put any necessary modifications in userprofile.
2. When db2profile is invoked, it runs userprofile.
3. When db2profile runs userprofile, it causes all settings added to the userprofile to be set for users whose profile exporting the db2profile.

Establish the database environment before starting the installation

It is **very important** that you establish the DB2 environment for CM by following the instructions to set up the userprofile in the sqllib directory (refer to page 321). Running db2profile sets the PATH and CLASSPATH and also identifies the DB2 instance that CM will use: Be sure the

```
./export/home/db2inst1/sqllib/db2profile
```

was run as root before you install CM. **DO NOT forget this step; if you do, Content Manager will not install successfully.**

Chapter 14. Installing Enterprise Information Portal components on Solaris

The EIP components are installed on Solaris using a command-line installation program named `cmb_suninst.sh`. The program offers six options:

1. Install and configure
2. Install only
3. Uninstall
4. Configure
5. List installed components
6. Quit

Table 25 provides the EIP component installation package names and descriptions. The Uninstall base package and Development Toolkit Base package are installed with all component packages.

Table 25. EIP installation packages

Package	Description
application cmbcomub	Content Manager EIP Version 8.2 Uninstall Base
application cmbcomdtb	Content Manager EIP Version 8.2 Development Toolkit Base
1: application cmbfedc	Content Manager EIP Version 8.2 Federated connector
2: application cmbrdbc	Content Manager EIP Version 8.2 Relational Database connector
3: application cmbdlc	Content Manager EIP Version 8.2 CM V7 connector
4: application cmbodc	Content Manager EIP Version 8.2 OnDemand connector
5: application cmbip390c	Content Manager EIP Version 8.2 ImagePlus for OS/390 connector
6: application cmbas400c	Content Manager EIP Version 8.2 AS/400 connector
7: application cmbddc	Content Manager EIP Version 8.2 Domino .Doc connector
8: application cmbesc	Content Manager EIP Version 8.2 Extended Search connector
9: application cmbicc	Content Manager EIP Version 8.2 Information Catalog connector
10: application cmbcmc	Content Manager EIP Version 8.2 Content Manager Version 8 connector
11: application cmbgcs	IBM Web Crawler

Table 25. EIP installation packages (continued)

Package	Description
12: application cmbikfsv	Content Manager EIP Version 8.2 Information Mining
13: application cmbic	Content Manager EIP Version 8.2 Information Center
14: application cmbdb	Content Manager EIP Version 8.2 system administration database

Installing EIP component packages

Before you begin to install EIP, be sure to perform all the tasks listed in Chapter 13, “Performing pre-installation steps on Solaris”, on page 129.

To start the installation program, cd to the installation directory and type `./cmbsuninst.sh` at a command prompt. The program checks to see if the `DISPLAY` environmental variable is set. You will be presented with a license agreement GUI interface. Select **ACCEPT** to continue the installation or **DECLINE** to exit. **Requirement:** You must export the display to your local system to install EIP, because the license agreement is a GUI panel.

If the prerequisites are located, the program displays six installation options:

1. Install and configure
2. Install only
3. Uninstall
4. Configure
5. List installed components
6. Quit

Type an installation option number and follow system prompts. The default option is 1. Install and configure.

1. Install and configure

When you type 1. Install and Configure the program prompts you to select the installation and configuration type:

1. Install and configure all components.
2. Install and configure selected components.
3. Restart
4. Quit

Type 1 or 2 to begin installing and configuring EIP component packages.

The program displays the component installation packages in Table 25 on page 133. If you select installation option 2. Install and configure selected components, the program provides an input line to enter the corresponding numbers of the packages to be installed and configured. Use spaces or commas to separate the package numbers.

Follow system prompts to verify and accept all or selected component packages. The program installs packages to the server without user input. The program does prompt you for configuration information.

If all packages are installed and configured without errors, the installation was successful. If the installation fails, the program notifies you, uninstalls selected packages and sends the output to a log file.

The program writes all installation and uninstallation information to a console and also to a log file in `/tmp/cmb/cmbinst.log`

2. Install Only

When you select 2. Install Only the program prompts you to select the installation type:

1. Install all components.
2. Install selected components.
3. Restart
4. Quit

Type 1 or 2 to begin installing EIP component packages. The program displays the component installation packages in Table 25 on page 133. If you selected option 2, the program provides an input line to enter the corresponding numbers of the packages to install. Use spaces or commas to separate the package numbers.

Follow system prompts to verify and accept all or selected component packages. The program adds packages to the server without any user input.

If the packages are installed without errors, the installation was successful. If the installation fails, it will continue to install until all selected components are attempted. and sends the output to a log file. The program writes all installation information to a console and also to a log file in `/tmp/cmb/cmbuninst.log`.

3. Uninstall

When you select option 3, Uninstall, the program prompts you to select the uninstallation type.

1. Uninstall all components
2. Uninstall selected components

3. Restart
4. Quit

Type 1 or 2 to begin uninstalling EIP component packages. If you select option 2, the program provides an input line to enter the corresponding numbers of the packages to uninstall. Use spaces or commas to separate the package numbers.

If uninstallation of any selected components fails, the program continues to uninstall until all selected components are attempted.

4. Configure

When you select option 4, Configure, the program prompts you to select the configuration type:

1. Configure all components.
2. Configure selected components.
3. Restart
4. Quit

Type 1 or 2 to begin configuration of the installed components. The configuration program requires user input.

When configuration is complete, the program displays Configuration Completed and prompts you to check the log file for possible errors:
`/tmp/cmb/cmbinst.log`

5. List installed components

The installation program displays all EIP components and places an asterisk next to the components already installed. The program then exits.

6. Quit

The installation program exits when you select option 6.

Exporting classpath, environment variables on Solaris

You must use a configuration program that exports classpath, environment variables and other information before you can use EIP.

1. `cd to /opt/IBMcmb/bin`
2. Type `./cmbenv81.sh`

Verifying EIP installation

See Chapter 15, "Verifying a successful installation of Enterprise Information Portal on Solaris", on page 137.

Chapter 15. Verifying a successful installation of Enterprise Information Portal on Solaris

Use information in this section to verify a successful installation of Enterprise Information Portal on a Solaris system. It includes the following procedures:

- “Enterprise Information Portal First Steps”
- “Verify Enterprise Information Portal system administration database”
- “Verify system administration database and system administration client communication” on page 138
- “Run low-level connection tests” on page 138
- “Verify Enterprise Information Portal connection to Content Manager Version 8” on page 140

Enterprise Information Portal First Steps

The Enterprise Information Portal First Steps program allows you to load sample data into the Enterprise Information Portal system administration database. You perform the First Steps procedures differently depending whether you have all of your Enterprise Information Portal components installed on one system or if you have them installed on more than one system.

For a Solaris installation of the system administration database, you need to run the First Steps program from the Windows system where you installed your system administration client component. See “Running First Steps with Enterprise Information Portal components installed on multiple machines” on page 74.

Verify Enterprise Information Portal system administration database

To verify that the Enterprise Information Portal system administration database is installed correctly:

1. Check database connection by typing:

```
$ db2 connect to icmnlbdb user icmadmin using password
```

You should see output similar to the following:

Database Connection Information

```
Database server          = DB2/SUN 7.2.4
SQL authorization ID     = ICMADMIN
Local database alias     = ICMNLSDB
```

__ 2. Check database tables by typing:

```
$ db2 list tables
```

You should see several tables listed (around 125); some with names starting with "FA" and some starting with "ICM".

Verify system administration database and system administration client communication

Because there is no administration client on Solaris, you must configure a connection between the Windows administration client and the Solaris databases. There are two ways to connect an administration client to a remote database:

- Connect through an RMI server (see Chapter 17, "Configuring an RMI server", on page 179).
- Define a connection by following the steps in "Connecting the administration client to a remote administration database" on page 141

Run low-level connection tests

Verify that the Enterprise Information Portal federated connector and the Content Manager Version 8 connector are installed correctly, run the indicated sample programs in this section.

Before you run the tests

Before you run the connection tests:

- __ 1. It is important that any user ID that is used for EIP application development work must be a member of the group that your db2 instance user ID belongs to, for example: **db2iadm1** (the group that db2inst1 belongs to).
- __ 2. Login as **icmadmin**. Perform the following setup to run the EIP sample programs. Copy the java samples to a local directory eipsamps off of your home directory:

```
$ cp -R /opt/IBMcmb/samples/java $HOME/eipsamps
```

This also changes the ownership of the files to the current user.

- __ 3. Ensure you have the proper Enterprise Information Portal development environment. It is recommended that you add these two lines to the .profile of the users doing EIP application development work. Note the space between the period (.) and the first slash (/):
 - __ a. Establish the DB2 environment.

```
$ . /export/home/db2inst1/sqllib/db2profile
```
 - __ b. Establish the EIP development environment.

```
$ . /opt/IBMcmb/bin/cmbenv81.sh
```

Running the connection tests

Run the following two tests:

___ 1. Federated connector test:

```
$ cd $HOME/eipsamps/java/fed
$ javac TConnectFed.java
$ java TConnectFed icmnlbdb icmadmin password
```

Expected output:

```
$ java TConnectFed icmnlbdb icmadmin password
*** connecting to datastore : icmnlbdb
*** datastore connected ***
user icmadmin dsName icmnlbdb
datastore disconnected
user icmadmin dsName icmnlbdb
```

___ 2. Content Manager V8 connector test:

```
$ cd $HOME/eipsamps/java/icm
$ javac SConnectDisconnectICM.java
$ java SConnectDisconnectICM icmnlbdb icmadmin password
```

Expected output:

```
$ java SConnectDisconnectICM icmnlbdb icmadmin password
=====
IBM Enterprise Information Portal v8
Sample Program: SConnectDisconnectICM
-----
Database: icmnlbdb
UserName: icmadmin
=====
Connecting to datastore (Database 'icmnlbdb', UserName
'icmadmin')...
Connected to datastore (Database 'icmnlbdb', UserName
'icmadmin').
Disconnecting from datastore & destroying reference...
Disconnected from datastore & destroying reference.
=====
Sample program completed.
=====
```

If you get the following type errors:

```
TConnectFed.java:33: package com.ibm.mm.sdk.common does not
exist
import com.ibm.mm.sdk.common.*;
^
```

You forgot to establish the EIP development environment. Note the space between the period (.) and the first slash (/) in the command.

Execute:

```
$ . /opt/IBMcmb/bin/cmbenv81.sh
```

Verify Enterprise Information Portal connection to Content Manager Version 8

To verify the connection from Enterprise Information Portal to Content Manager:

- ___ 1. On your Windows system, start the Enterprise Information Portal system administration client, as follows: Administration Client on Windows:
Start -> Programs -> Enterprise Information Portal V8.2 -> Administration
- ___ 2. On the left-hand side of the window, right-click on **Servers** and select **New**.
- ___ 3. From the list, select **Content Manager v8**.
- ___ 4. Enter the connection information:
Server Name: ICMNLSDB
- ___ 5. Click on the **Test Connection** button.
- ___ 6. You should see that the connection is successful.

Chapter 16. Configuring Enterprise Information Portal components

This section explains how to configure the EIP components.

Configuring the components on Windows

This section explains how to connect the administration client to a local and a remote administration database, and how to start the services and utilities required to support workflow.

Important: You must know the local and/or remote database connect-only or administrator user ID and password of the database you are connecting to. The default administrator information is ICMADMIN/password. The administrator and connect-only user IDs must be created on the local administration client workstation before you can log on to either a local or remote database.

Connecting the administration client to a local administration database

If you install an administration database on the same server where you install the administration client, the information required to connect the local client and server is already stored in `cmbds.ini`, a file that stores database connection information. You do not have to perform any post-install configuration and can connect immediately using the steps in this section.

Requirement: If you create additional local databases using the EIP Database Install utility, you must manually modify the `cmbds.ini` with the required information before you can connect to the new database.

1. Click **Start-->Programs-->Enterprise Information Portal for Multiplatforms 8.2-->Administration**
2. Select the local database from the drop-down list in the Server field.
3. Type the administrator user ID and password and press OK.
4. The system administration client opens. **Tip:** If you used EIP First Steps, the sample databases are displayed in the left pane of the client.

Connecting the administration client to a remote administration database

There are two ways to connect an EIP administration client to a remote AIX, Windows or Solaris database:

- Connect through an RMI server (see Chapter 17, “Configuring an RMI server”, on page 179).
- Define a connection by cataloging the database using DB2 Configuration Assistant, and then defining server connection parameters using the EIP

Server Configuration Utility. The utility copies information, such as the database schema name, alias name, operating system and so forth, to a file named `cmbds.ini`. When you launch the system administration client, the list of servers that you can log into is taken from the servers defined in `cmbds.ini`.

Requirement: You must catalog each remote database separately. Every remote database must be listed in the `cmbds.ini` file before you can connect to it from the administration client.

Tip: If you are an experienced user, you can skip the Server Configuration Utility steps and modify the `cmbds.ini` in a text editor. The default path to `cmbds.ini` is `C:\Program Files\IBM\CMgmt`.

Important: If the person who installed the product already configured the database catalog values for the remote database you want to connect to, you do not have to perform the DB2 CCA steps for that database. But if the installer did not type the database catalog values or you want to connect to an additional remote database, you must use DB2CCA and modify the `cmbds.ini` file with the connection parameters for the additional database(s).

Step 1 - catalog remote database using DB2 Configuration Assistant

The DB2 Configuration Assistant (CCA) catalogs the remote EIP database in DB2. To catalog the remote database using DB2CCA, you must know the remote server hostname, the database name and database instance port number, and you must define an alias for the remote database.

Steps 1a - 1f explain how to locate the database name, schema name and connection port number. You must know the names and the connection port number to configure the names and port numbers to configure a connection between the administration client and a remote database.

1. Locate the remote database connection information:

- a. Log in to the remote AIX, Windows or Solaris server with a user ID that has DB2 administrative authority.
- b. Type `db2 list db directory`
- c. Select the name of the administration database you want to connect to. Note of the db2 instance that the database is installed on, because different instances can have different connection port numbers.
- d. Type `db2 connect to <database> user <userID> using <password>`
- e. Type `db2 list tables` and make a note of the database schema name (required by the server configuration utility).
- f. Locate the connection port number associated with the remote administration database:

On Windows:

- 1) Open the DB2 Control Center on the remote Windows server.
- 2) Right click one of the available instances for the local machine.
- 3) Select "Setup Communications...".
- 4) Select the "Properties" button to the right of the TCP/IP choice.
The port number will be listed on the window.

On AIX or Solaris

- 1) Type `cd /usr/etc`
 - 2) Type `cat services`
 - 3) Scroll through the list of services until you find the connection port number for the database instance of the remote database.
For example, if the database is installed on `db2inst1`, the connection port might be `50000`.
 - 4)
2. Use the DB2 Configuration Assistant to catalog the remote database.
Consult the DB2CCA help files for more information.
 - a. Log in to the Windows server where the administration client is installed. You must log in with a user ID that has full DB2ADM privileges.
 - b. Navigate to the DB2 Configuration Assistant from the Start-->Programs menu..
 - c. Follow the DB2 Configuration Assistant prompts to catalog and test the connection to the remote database.
 - d. If the DB2 CCA connection test was successful, follow the steps in "Step 2 - use the Server Configuration Utility", or modify the `cmbds.ini` file directly to define the remote database connection parameters stored in `cmbds.ini`

Step 2 - use the Server Configuration Utility

The server configuration utility prompts you for connectivity information (port number, hostname, etc.) about the remote database and stores the data in `cmbds.ini`.

1. Click **Start-->Programs-->IBM Enterprise Information Portal for Multiplatforms-->Server Configuration Utility**.

2. Type the information in the fields (see Table 26).

Table 26. Server configuration utility

Field	Information	Notes
Server	Select database type, either Content Manager or EIP.	Server means the database type, not the name of the server where the database is installed. Tip: You can use the administration client to manage both database types only if your system includes Content Manager and EIP administration clients on the same machine.
Server name	Type the alias name of the database you are connecting to. Requirement: You must use the same alias name defined in DB2CCA.	An alias provides a unique name that identifies the remote database on your workstation. Alias names have an eight-character limit. For example, if the remote database name is ICMNLSDB, an alias could be REMOTE1.
Schema name	Type the schema name assigned when the remote database was created.	ICMADMIN is the default schema name for the EIP and Content Manager databases.
Host name	Type the name of the computer where the remote database was installed.	Type the fully-qualified hostname or type an IP address of the computer where the remote database is installed.
Operating system	Select an operating system from the drop-down box.	Select AIX, Sun Solaris or Windows. The OS/390 option is not functional in EIP 8.2.
Port number	Type the port number assigned to the remote database.	50000 is the default connection port number for EIP and Content Manager databases installed on Windows, AIX and Solaris.
Remote database name	Type the name of the remote database. Use capital letters.	ICMNLSDB is the default name for the EIP and Content Manager databases.

Table 26. Server configuration utility (continued)

Field	Information	Notes
Node name	Type the node name of the remote EIP or Content Manager database.	The node name is a unique name assigned to the remote database, similar to the alias name you create for the remote database. To find the node name of a database installed on a Windows, AIX or Solaris server: <ol style="list-style-type: none"> Open a db2 command line session. At the db2=> prompt, type LIST NODE DIRECTORY DB2 displays node names and other data for all databases installed or defined on the remote server.
Enable single sign-on	Click if single sign-on was enabled during database installation.	The default setting is unchecked (disabled).
Security options	Click client authentication if that option was selected during database creation.	The default setting is Server.

- Click OK.
- Test the connection to the remote database.
 - Click **Start-->Programs-->Enterprise Information Portal for Multiplatforms 8.2-->Administration**.
 - Select the remote database name from the drop-down list in the Server field. The name matches the alias you defined in the Server Configuration Utility.
 - Type the remote database administrator or connect-only user ID and password and click OK.

Step 3 - test the remote database connection

- Log in to the Windows server where the administration client is installed.
- Click **Start-->Programs-->Enterprise Information Portal for Multiplatforms 8.2-->Administration**.
- Select the remote database alias name from the drop-down list in the Server field. The name matches the alias you defined in the Server Configuration Utility and in DB2 Configuration Assistant.
- Type the user ID and password associated with the remote database.

5. Click OK. The administration client opens.

Configuring workflow services and utilities on Windows

Before you can use workflow, you must start workflow services and utilities. The steps you take depend on how you installed MQSeries products.

Restriction: Because the administration database contains the functionality required to use workflow, the administration database must be installed on a server that has DB2 Universal Database, MQSeries Server and MQWorkflow. The administration client, where you administer workflow, can be local or remote.

Configuring MQSeries if you used EIP custom installation

See "Configuring MQSeries Workflow on Windows" on page 45.

Configuring MQSeries Workflow if you did not use EIP custom installation

1. Start the MQSeries server as an NT service.
2. Create default users by importing CMBWAdmin.fdl into the MQSeries Workflow database.
3. Run the following utility from a command prompt:
fmcibie -i CMBWAdmin.fdl -uadmin -ppassword -o
4. At a windows command prompt enter the following command on one line:
@ECHO DEFINE QLOCAL (EIPWFEVENT) DESCR('Local EIP WF queue for events')
| runmqsc FMCQM

Setting the environment variables for the development toolkit

If you installed the connector toolkit and samples, you must set the environment before you can use the samples.

On Windows, click **Start**→Programs →IBM Enterprise Information for Multiplatforms 8.2 Development Window→

You only have to set the environment variables once.

Using a sample program from the connector toolkit

The example below describes how to use the sample java program on Windows servers to test the connection to an OnDemand server:

1. Set the development environment by click Start-->Programs-->Enterprise Information Portal for Multiplatforms 8.2-->Development Window. A command prompt appears that displays C:\CMBROOT.
2. Change to SAMPLES\java\od

3. Compile the sample connection test program by typing `javac TConnect0D.java`
4. Test the sample program by typing `java TConnect0D <libSrv> <userID> <pw> <connect string>`
5. If the connection test is successful, the program displays connection and disconnection status information. If the test is not successful, the program displays an exception message.

You can view all the sample programs in a text editor. The sample programs will list the variables required to operate the program. Each directory that contains samples also includes documentation. The documentation explains the system parameters required to work with the sample programs, and also lists the sample program names and the tasks each program can carry out.

Defining a content server

This section describes how to log in to the administration client and define a content server.

1. Click **Start** → **Programs** → **IBM Enterprise Information for Multiplatforms 8.2** → **Administration**.
2. Select a database.
3. Type the database administrator ID and password you used to catalog or add the database.
4. Click **OK**.
5. The administration client window appears and the database name is displayed in the left pane.

To define and test a connection to a DB2 content server, and create an icon for it, complete the following steps:

1. From the <database name> tree, right-click **Server** and click **New**. The New Server Connection window opens.
2. From the list of content servers, select **DB2**. The New Server: DB2 window opens.
3. Click the **Initialization Parameters** tab.
4. In the **Connect string** field, type `SCHEMA=<schema name defined when server was installed>`.
5. Click **Test Connection**.
6. If EIP cannot log in to the database using the user ID and password you entered when logging in to the client, EIP prompts you for the user ID and password for the administration database.
 - a. In the **User ID** field, type <user ID defined when database was installed>.

- b. In the **Password** field, type <password defined when database was installed>.
- c. Click **OK** to log on and close the window.

The following message displays: The connection to <database name> was successful. Click **OK**.

7. Click **OK** to close the New Server: DB2 window and create the <server name> icon.

Congratulations! You have successfully installed the Enterprise Information Portal server with the DB2 connector.

To access the sample metadata from Enterprise Information Portal, complete the following steps:

1. From the Enterprise Information Portal administration client main window, right-click the <server name> icon and click **Refresh Server Inventory**.
2. If you are not already logged on to the Sample database, the Logon Sample window opens. Log on to the <database name> database:
 - a. In the **User ID** field, <user ID defined when database was installed>.
 - b. In the **Password** field, type <password defined when database was installed>.
 - c. Click **OK** to log on and close the window.

The following message displays: The server inventory has been refreshed. Click **OK** to continue.

3. Click **Tools** → **Server Inventory Viewer**. The Server Inventory Viewer opens, displaying the sample data.
4. Close the Server Inventory Viewer.
5. Close the administration client main window.

Configuring workflow on AIX and Solaris

Before you can use workflow, you must start workflow services and utilities. The steps you take depend on how you installed MQSeries products.

Restriction: Because the administration database contains the functionality required to use workflow, the administration database must be installed on a server that has DB2 Universal Database, MQSeries Server and MQSeries Workflow.

Configuring MQSeries if you used EIP custom installation

1. Verify that MQSeries is running as an NT service.
2. Change to the directory where you installed workflow.
3. Using a command prompt, run `./cmbwfstart.sh`

4. Start the user exit utility. In a command window, run `fmcxspea -u=ADMIN -p=password`. The user exit utility provides workflow batch processing.

Configuring MQSeries if you did not use EIP custom installation

1. Start the MQSeries server.
2. Create default users by importing `CMBWFAdmin.fdl` into the MQSeries Workflow database. Run the following utility from a command prompt:
`fmcibie -u ADMIN -p password -i CMBWFAdmin.fdl`
3. Remove (or comment out) the statement:
`set PATH=C:\progra~1\MQSer~1\bin\MQServer;%PATH%`

in the following files:
 - `cmbenv81.bat`
 - `cmbfestart81.bat`
 - `cmbsvregist81.bat`
4. Start the upes utility:
`./cmbupes81.sh`
5. Start the user exit utility. In a command window, run `fmcxspea -u=ADMIN -p=password`.

Configuring the Web Application Server for the EIP tag library and servlet

This section explains how to configure the tag library and servlets installed with the connector toolkit. The servlets and tags help you write EIP applications.

Before you can configure the servlets and tags, you must install and configure IBM WebSphere Application Server Version 5.0. See the WebSphere documentation for hardware and software requirements.

Building the WebSphere Application Resource (WAR) file

The following must be installed and operating on the server before configuring the tag library and servlet: IBM WebSphere Application Server Version 5.0 (see the WebSphere documentation for hardware and software requirements)

Creating the web module

1. Start the WebSphere Administrator's Console.
2. From the console menu, select **Tools**→**Application Assembly Tool (AAT)**. You see a window displaying different wizards. Click **Cancel**.
3. Create a new web module by selecting **File**→**New**→**Web Module**.
4. Specify `eip` for the display name. Click **Apply**.

5. Select **File**→**Save As** and save the file as
cmbroot\samples\modules\eip.war

Adding the jar files

1. Expand the Files category. You will see Class Files, Jar Files and Resource Files.
2. Right-click Jar Files and select **Add Files**. You will see the Add Files window.
3. Click **Browse**. Select cmbroot as the root directory.
4. Click subdirectory LIB so that LIB appears in the **File** name box.
5. Click **Select**. From the upper right box in the Add Files window, select the files listed below. **Tip:** To select more than one file, hold down the **Ctrl** key and click the file.

cmb81.jar
cmbcm81.jar
cmbsdk81.jar
cmbservelets81.jar
cmbtag81.jar
cmbview81.jar
esclisrv.jar
essrv.jar
log4j.jar
cmblog4j.jar

6. Click **Add**. The files appear in the Selected Files box.
7. Click **OK**. You should see the jar files in the upper right window of the AAT.

Adding the JSP files

1. Right-click Resource Files. Select Add Files. You see the Add Files window.
2. Click **Browse**.
3. Select cmbroot as the root directory.
4. Click the subdirectory samples so that samples appears in the File name box below.
5. Click **Select**. In the upper right window, select jsp.
6. Click **Add**. The files appear in the Selected Files box.
7. Click **OK**. You should see the JSP and HTML files in the upper right window of the AAT.

Adding the tag library

1. Right-click **Resource Files**, and select **Add Files**. You will see the Add Files window.
2. Click **Browse** and select cmbroot as the root directory.
3. Click the subdirectory LIB so that LIB appears in the File Name box below.

4. Click **Select**. In the upper right window, select `tld`.
5. Click **Add**. The file `taglib.tld` will appear in the Selected Files box.
6. Click **OK**. You should see the `taglib.tld` along with the JSP files in the upper right window of the AAT.

Defining an alias for the tag library

1. In the left window of the AAT, right-click **Tag Libraries** and select **New**.
2. Specify `cmb` for the Tag Library file name. Specify `taglib.tld` for the tag library location. Click **OK**.

Defining the controller servlet

1. In the left window of the AAT, right-click Web Components and select **New**.
2. Specify `control` as the Component name. Specify `control servlet` as the Display name. Under Component Type, make sure that the **Servlet** radio button is selected.
3. Click **Browse** button to the right of the Class name field. In the left window, expand `WEB-INF`, expand `lib`, expand `cmb servlets81.jar` to `com`→`ibm`→`mm`→`servlets`.
4. Click the `servlets` subdirectory. In the right window, select `CMBControlServlet.class`.
5. Click **OK**. You should see `com.ibm.mm.servlets.CMBControlServlet` in the Class name field.

Now define the initialization parameter that specifies the location of the properties file. You should see `control servlet` under Web Components in the left window.

6. Expand `control servlet`. Right-click Initialization Parameters, and select **New**.
7. Specify `servletPropertiesURL` as the Parameter name.
8. Specify `/com/ibm/mm/servlets/cmb servlet.properties` as the parameter value.
9. Click **OK**.

Defining the servlet mapping for the controller servlet

1. In the left window of the AAT, right-click Servlet Mapping. Select **New**.
2. Specify `/jsp/servlets/CMBControlServlet` as the URL pattern.
3. Select `control` as the Servlet.
4. Click **OK**.
5. Select **File**→**Save** to save the WAR file.

Building the Enterprise Application Resource file

In this section, you configure the components used to build the Enterprise Application Resource (EAR) file.

Building the EAR file

1. Close the WAR file by selecting **File**→**Close**.
2. Select **File**→**New**→**Application**.
3. Specify `eip.ear` as the Display name, and click **Apply**.
4. Add the WAR file. Right-click the Web Modules category and select **Import**.
5. Select `cmbroot\samples\modules\eip.war`. Specify `/eip` as the Context root. Click **OK**.
6. Select **File**→**Save As**, and specify `cmbroot\modules\eip.ear` as the name.

Installing the application

1. Close the AAT.
2. Start the WebSphere Administration Console.
3. Select **Console**→**Wizards**→**Install Enterprise Application**. Make sure your node is selected in the **Browse for file on node** field.
4. Select **Install Application (*.ear)**.
5. Click the **Browse** button to the right of the Path field.
6. Select `cmbroot\samples\modules\eip.ear`. Click **Open**. You should see `C:\cmbroot\SAMPLES\modules\eip.ear` in the Path field. Specify `eip.ear` as the Application name.
7. Click **Next** several times until you see the Selecting Application Servers page. You can select the Default Server or another if you have another defined.
8. Click **Next**, then click **Finish**.

Running the servlet

This section explains how to run the servlet. **Requirement:** When WAS 5 security is enabled, create a `was.policy` file in the `eip.ear\META-INF` subdirectory before running the servlet.

1. Stop and restart your application server under *Nodes->your node->Application Servers->your server*.
2. Open your browser and point to `http://localhost:9080/eip/jsp/main.html`, and follow the links to either the tag library samples or the servlet actions. You may also access either directly by pointing to `http://localhost:9080/eip/jsp/servlets/actions.html` for the list of available servlet actions or by pointing to `http://localhost:9080/eip/jsp/taglib/index.html` for the list of available tags.

Using the Panagon Image Services (IDMIS) 3.5.0 content server

You need to install the Panagon Image Services (IDMIS) 3.5.0 and the Panagon Image Services Toolkit 3.5.0. See Content Connector For Panagon Image Services Install Guide. You also need to install two fixes:

- SCR 133231 - Fix for wal_sysv.dll and wal_ipc.exe
- SCR 133232 - Fix for wal_sec.dll

These fixes are available from the FileNET Corporation. If you have the proper licenses, you should be authorized to ftp the fixes from the FileNET website, or else you can contact your FileNET sales representative.

You also need to do the following:

1. Add the following jar files to the eip.ear file. Follow the same procedure as in “Building the WebSphere Application Resource (WAR) file” on page 149.
 - cmbfn81.jar
 - cmbfnc81.jar
2. Go to the WebSphere Administration Console. Select your server under Application Servers. On the right side, under the General tab, press the Environment button. You should see the Environment Editor. Press Add. Under Name, add "PATH". Under Value, add `c:\fns\client\bin;c:\fns\client\shobj`. Press Apply. Stop and restart the server.

Tip: This step is not necessary if the information is already in the Path system environment variable.

Using the Domino.Doc content server

You must install the Domino.Doc desktop client.

After applying service

If you apply an EIP service update, you must refresh the jar files in eip.war. Copy the following jar files from cmbroot\lib into `websphere\appserver\installedapps\eip.ear\eip.war\WEB-INF\lib`:

- cmb81.jar
- cmbcm81.jar
- cmbsdk81.jar
- cmbservlets81.jar
- cmbtag81.jar
- cmbview81.jar
- esclisrv.jar
- essrv.jar
- cmblog4j.jar

Then stop and restart the application server.

Configuring and running IBM Web Crawler for the Web

This section describes how to configure and run IBM Web Crawler for the Web. IBM Web Crawler for the Web accesses HTTP, FTP, news or file servers and creates summaries of HTML documents and other objects. Summaries are files, one per document or object, containing metadata and full text.

A basic configuration

This section contains instructions that explain how you can edit an IBM Web Crawler configuration file in XML format. Two sample configurations are provided to help you get started:

- A `config-db2.xml` file to use IBM Web Crawler with DB2 UDB.
 - A `config-sample.xml` file to use IBM Web Crawler without DB2 UDB.
1. Open a command prompt.
 2. Change directory to the run subdirectory where you installed IBM Web Crawler. For example, if you installed IBM Web Crawler on a Windows server, type `cd x:<cmbroot>\gcs\run`. If you installed IBM Web Crawler on AIX, type `cd /usr/lpp/cmb/gcs`.

Tip: It is very important to keep a copy of the original file. An error in the file can break IBM Web Crawler. Be careful while editing.

3. To run IBM Web Crawler with a DB2 UDB database (more scalable, slower), edit the `config-db2.xml` file. For example, type `edit config-db2.xml` in the command prompt.
4. To run IBM Web Crawler without a DB2 UDB database (less scalable, faster), edit the `config-sample.xml` file. For example, type `config-sample.xml` in the command prompt.

To run crawls of n URLs without a database, you need approximately $n/1000$ MB of RAM on the machine to contain crawled URL metadata. For example, to crawl 500,000 URLs you need 512 MB of RAM. To take advantage of this memory, edit `crawlweb.bat` file and increase the value of `JVMXmx`.

Configuring the IBM Web Crawler DB2 option

To configure the DB2 option you must create a database. This requires DB2 administrator authority. You may need to switch to the DB2 administrator account. You can name the database as DB2 allows, but if your database name is not `gcs`, you must update the `dbname` in the Web Crawler configuration file.

If you have database administrator authority, you can run this command in a DB2 command prompt to create the database:

```
db -createdb <user><password>[database_name]
```

If you do not specify a database name, gcs is used. Once the database is created, add IBM Web Crawler tables by issuing the command:

```
db -createtables<user><password >[database_name]
```

IBM Web Crawler database and table creation must be complete to use DB2 with IBM Web Crawler.

The following configuration file settings (in the `urlpool-config` section) are required to use your new database:dbname:

- The name of the database (as created above): Example gcs.
- User name: The user name, for example: db2admin
- Password: The user password, for example: db2admin.

Set the database, username, and password properties to the appropriate values. Do not change the cache size or the driver. Continue editing the file to set the crawl scope for your system.

Setting the crawl scope

These configuration file settings are required to establish the crawl scope regardless of whether you use DB2 or not.

Check the following settings in the `crawler-config` section and set these entries appropriately for your needs.

seed list

One or more starting absolute URLs. The URL must be available. Verify using your browser, for example: `http://www.<mysite>.com/`

content-type-pattern-list

Crawl URL found on pages only if any file extension matches these patterns, for example: `htm*`

include-pattern-list

Crawl URL found on pages only if they match these patterns, for example: `<mysite>.com`

You can also set these entries:

recursion-depth

The maximum distance in links to crawl from any starting point. Use `-1` for unlimited depth.

exclude-pattern-list

Crawl URL found on pages only if they do not match these patterns, for example: `*cgi-bin*`

system properties

To crawl through a firewall from an un-socksified machine you will also need to set the socksProxy values in this file.

Starting IBM Web Crawler

If you edited the .xml configuration file, save it.

To start the IBM Web Crawler, use the crawlweb batch file and a configuration file. Open a command prompt and type:

- For Windows: `crawlweb.bat<CONFIGFILE>`
- For AIX: `crawlweb.sh<CONFIGFILE>`

To run with DB2 UDB, type: `crawlweb config-db2.xml` and press Enter. To run without DB2 UDB, type: `crawlweb config-sample.xml` and press Enter.

Tip: Plan to report crawl/summarize progress on a regular basis. As your targets are crawled, summaries are written to the location configured in summaries-dir. The default summarizers write the original object plus a metadata prologue as .html files in a tree. During or after crawling, you can examine the log-file for additional information.

For more information about using IBM Web Crawler, see *Managing Enterprise Information Portal*.

Installing and configuring Information Mining

This section describes how to install and configure the Information Structuring Tool and the JSP sample using WAS.

Installation scenarios

The Information Structuring Tool and the Information Mining Java Server Page application (JSPs, for details refer to) can be deployed on a single workstation, or on two different workstations. In the following sections, the installation descriptions are written for the Information Structuring Tool. For the JSPs, replace Information Structuring Tool by JSPs.

- For Windows:
 - <CMBROOT> is the value of the corresponding environment variable, for example, `d:\cmbroot`
 - <DB2HOME> is the value of the corresponding environment variable, for example, `d:\sql11ib`
 - <CMCOMMON> is the value of the corresponding environment variable, for example, `c:\Program Files\IBM\CMGMT`
- For AIX:

- | – <DB2HOME> is the directory where DB2 is installed, for example,
| /usr/lpp/db2_07_01 or /usr/opt/db2_08_01
- | <DB2JAVAHOME> is the directory where the Java 1.2 library files are located.
| For DB2 V7, this is <DB2HOME>/java12 and for DB2 V8, <DB2HOME>/java
- | • For Solaris:
 - | – <DB2HOME> is the directory where DB2 is installed, for example,
| /opt/IBMdb2/V7.1 or /opt/IBM/db2/V8.1
 - | <DB2JAVAHOME> is the directory where the Java 1.2 library files are located.
| For DB2 V7, this is <DB2HOME>/java12 and for DB2 V8, <DB2HOME>/java

Single workstation

1. Install the Enterprise Information Portal server with the information mining feature.
2. Install the WAS.
3. Deploy the Information Structuring Tool.

Client-server setup

If the Information Structuring Tool and the information mining feature are deployed on different workstations, carry out the following:

On workstation A:

- Install the Enterprise Information Portal server with the information mining feature.
- Start the RMI server.
- For Windows:
 - Open file c:\Program Files\IBM\CMGMT\cmbsvregist81.bat
 - Locate the line starting with set CLASSPATH=
 - Check that the CLASSPATH contains the following entries:
 <DB2HOME>\java\db2java.zip;<JARDIR>\cmbcm81.jar;
 - Save cmbsvregist81.bat
- For AIX:
 - Open file /usr/lpp/cmb/cmgmt/cmbsvregist81.sh
 - Locate the line starting with export CLASSPATH=
 - Check that the CLASSPATH contains the following entries:
 <DB2HOME>/java/db2java.zip:\$JARDIR/cmbcm81.jar;
 - Save cmbsvregist81.sh
- For Solaris:
 - Open file /opt/IBMcmb/cmgmt/cmbsvregist81.sh
 - Locate the line starting with export CLASSPATH=

- Check that the CLASSPATH contains the following entries:
`<DB2HOME>/java/db2java.zip:$JARDIR/cmbcm81.jar:`
- Save `cmbsvregist81.sh`

On workstation B:

- Install the WAS.
- Install the Enterprise Information Portal client.
- Locate the files `cmbsvclient.ini` and `cmbsvcs.ini` at:
 - For Windows: `<CMCOMMON>`
 - For AIX: `/usr/lpp/cmb/cmgmt`
 - For Solaris: `/opt/IBMcmb/cmgmt`
- In file `cmbsvclient.ini`, `RemoteHost` must be set to the name of **workstation A**.
- In file `cmbsvcs.ini`, `IKF` must be **remote**.
- Copy all three files to the working directory of the application server where the Information Structuring Tool will be deployed:
 - For WAS AEs:
 - For Windows: `<WAS_HOME>\bin`
 - For AIX: `/usr/WebSphere/AppServer/bin`
 - For Solaris: `/opt/WebSphere/AppServer/bin`
 - For WAS AE:
 - Open an administrative console.
 - Select the application server in the tree view.
 - Select the **General** tab. The directory can be found under "Working Directory".
- Deploy the Information Structuring Tool.

Configuring the Web Application Server for the Information Structuring Tool

Before you can install the Information Structuring Tool on the Websphere Application Server Advanced Edition (WAS 4 AE) or Advanced Edition Single Server (WAS 4 AEs), or Websphere Application Server 5 Base or Websphere Application Server 5 Network Deployment (ND), you need the following information:

- `<Node>` is the name of the workstation where the Information Structuring Tool is to be installed
- `<AppServer>` is the Application Server on `<Node>` where the Information Structuring Tool is to be installed, for example, for WAS 4 Default Server or for WAS 5, `server1`
- `<VirtualHost>` is the name of the virtual host the Information Structuring Tool is to run on, for example, `default_host`

- <WebPath> is the path portion of the URL used to access the Information Structuring Tool. This path **must** end with /IST. For example, if the Information Structuring Tool is installed on the server prefix and <WebPath> is /webApps/IST, a possible URL to access the Information Structuring Tool could be http://prefix/webApps/IST/login.html
- <WAS_HOME> is the directory where the WAS is installed on <Node>, for example, d:\WebSphere\AppServer on Windows, /usr/WebSphere/AppServer on AIX and /opt/WebSphere/AppServer on Solaris.
- WAS 5 only: <Cell> is the name of the administrative cell. For WAS 5 Base, this is the same as <Node>. For WAS 5 ND, this is the name of the workstation the deployment manager is running on.

WAS V4

The following section describes the IST deployment procedure in WAS AEs, followed by WAS AE.

WAS AEs: After installing the WAS AEs and Enterprise Information Portal, open the WAS Administrator's Console and carry out the following:

1. From the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>→**Process Definitions**→**JVM Settings**
2. If the WAS and Enterprise Information Portal are on the same workstation, enter the following Classpath information:

- For Windows:

```
<CMBROOT>\ikf\lib
<CMBROOT>\ikf\lib\ikf.jar
<CMBROOT>\lib\cmb81.jar
<CMBROOT>\lib\cmbSdk81.jar
<CMCOMMON>
<CMBROOT>\lib\cmblog4j81.jar
<CMBROOT>\lib\log4j.jar
<DB2HOME>\java\db2java.zip
```

- For AIX:

```
/usr/lpp/cmb/ikf/lib
/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/lib
/usr/lpp/cmb/lib/cmb81.jar
/usr/lpp/cmb/lib/cmbSdk81.jar
/usr/lpp/cmb/cmgt
/usr/lpp/cmb/lib/cmblog4j81.jar
/usr/lpp/cmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip
```

- For Solaris:

```
/opt/IBMcmb/ikf/lib
/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/lib
/opt/IBMcmb/lib/cmb81.jar
/opt/IBMcmb/lib/cmbSdk81.jar
```

```
| /opt/IBMcmb/cmgmt  
| /opt/IBMcmb/lib/cmblog4j81.jar  
| /opt/IBMcmb/lib/log4j.jar  
| <DB2JAVAHOME>/db2java.zip
```

| If the WAS and Enterprise Information Portal are on different
| workstations, the Classpath information is as follows:

- | – For Windows:

```
| <CMBROOT>\ikf\lib\ikf.jar  
| <CMCOMMON>  
| <CMBROOT>\lib\cmb81.jar
```
- | – For AIX:

```
| /usr/lpp/cmb/ikf/lib/ikf.jar  
| /usr/lpp/cmb/lib/cmb81.jar  
| /usr/lpp/cmb/cmgmt
```
- | – For Solaris:

```
| /opt/IBMcmb/ikf/lib/ikf.jar  
| /opt/IBMcmb/lib/cmb81.jar  
| /opt/IBMcmb/cmgmt
```

3. Set "Maximum Heap Size" to 512.
4. Click **OK** at the bottom of the page.
5. Save your configuration settings by clicking **Save** on the top bar of the WAS administrative console.
6. If the WAS and Enterprise Information Portal are on the same workstation:
 - For Windows:

The PATH must be set in the WAS Administrative Console:

 - From the console menu, select **Nodes**→<Node>→<Application Server>→<AppServer>→<Process Definitions
 - Under "Advanced Settings", select "Environment"
 - In "System Properties", select "New"
 - For "property name", enter PATH and for "property value", enter <cmbroot>\ikf\bin, for example, d:\cmbroot\ikf\bin
 - Select **OK**
 - Select **Save** on the top bar of the WAS administrative console
 - For AIX:

The user who starts the Application Server, for example "root", must have the following line in the .profile, namely,

```
. /usr/lpp/cmb/ikf/IST/bin/ISTSingleWorkstationEnv.sh
```
 - For Solaris:

The user who starts the Application Server, for example "root", must have the following line in the .profile, namely,

```
./opt/IBMcmb/ikf/IST/bin/ISTSingleWorkstationEnv
```

7. Click **Exit** on the top bar of the console to exit.
8. Shut down the WAS by:
 - Switching to the directory <WAS_Home>\bin in a command shell
 - Entering:
 - For Windows: stopserver
 - For AIX: ./stopServer.sh
 - For Solaris: ./stopServer.sh
9. In the command shell, enter:
 - For Windows: seappinstall -install <CMROOT>\ikf\IST\IST.war
 - For AIX: ./SEAppInstall.sh -install /usr/lpp/cmb/ikf/IST/IST.war
 - For Solaris: ./SEAppInstall.sh -install /opt/IBMcmb/ikf/IST/IST.war

You are prompted as follows:

- Please specify an application display name: Enter IST
 - Please specify a context root: Enter your <WebPath>, for example, /webApps/IST Ensure that <WebPath> ends in /IST
 - Do you wish to precompile all JSPs in this application: Enter n
 - Do you wish to precompile individual Web Applications: Enter n
 - Please specify a virtual host for the following Web applications, IBM Information Structuring Tool: Enter your <VirtualHost>, for example, default_host
10. IST uses an EIP database named icmnlbdb
If your database name is different:
 - Switch to the directory where the IST is deployed, typically at <WAS_HOME>\installedApps
 - Switch to the directory IST.ear/IST.war/WEB-INF and open the file web.xml
 - Search for icmnlbdb and rename to your EIP database.
 - Save the file.
 11. Restart the WAS in the command shell by entering:
 - For Windows: startserver
 - For AIX: ./startServer.sh
 - For Solaris: ./startServer.sh
 12. Re-generate the Web server plug-in configuration of WAS by:
 - Opening the Administrative Console
 - Selecting **Nodes**→<Node>→**Application Server**→<AppServer>

- Under "Advanced Settings", selecting "Web Server Plugin Configuration"
 - Selecting "Generate"
13. The URL to access the Information Structuring Tool is `http://host_alias/WebPath/login.html` where:
- `host_alias` is one of the aliases specified for `VirtualHost`. To find this value:
 - Open the WAS Administrator's Console
 - From the console menu, select **Virtual Hosts**→<VirtualHost>→**Aliases**
 - Each entry in the list (Host Name and Port) is a valid host alias, for example, prefix:9080
 - <WebPath> you specified during installation, for example, `/webApps/IST`

WAS AE: After installing the WAS AE and Enterprise Information Portal, open the WAS Administrator's Console and carry out the following:

1. From the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>
2. Stop the Application Server, if it is running.
3. Select the tab **JVM Settings** on the right.
4. If the WAS and Enterprise Information Portal are on the same workstation, enter the following Classpath information:

- For Windows:


```
<CMBROOT>\ikf\lib
<CMBROOT>\ikf\lib\ikf.jar
<CMBROOT>\lib\cmbsdk81.jar
<CMBROOT>\lib\cmb81.jar
<CMCOMMON>
<CMBROOT>\lib\cmblog4j81.jar
<CMBROOT>\lib\log4j.jar
<DB2HOME>\java\db2java.zip
```
- For AIX:


```
/usr/lpp/cmb/ikf/lib
/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/lib
/usr/lpp/cmb/lib/cmb81.jar
/usr/lpp/cmb/lib/cmbsdk81.jar
/usr/lpp/cmb/cmgmt
/usr/lpp/cmb/lib/cmblog4j81.jar
/usr/lpp/cmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip
```
- For Solaris:


```
/opt/IBMcmb/ikf/lib
/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/lib
```

```

/opt/IBMcmb/lib/cmb81.jar
/opt/IBMcmb/lib/cmbsdk81.jar
/opt/IBMcmb/cmgmt
/opt/IBMcmb/lib/cmblog4j81.jar
/opt/IBMcmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip

```

If the WAS and Enterprise Information Portal are on different workstations, the Classpath information is as follows:

- For Windows:

```

<CMBROOT>\ikf\lib\ikf.jar
<CMCOMMON>
<CMBROOT>\lib\cmb81.jar

```

- For AIX:

```

/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/lib/cmb81.jar
/usr/lpp/cmb/cmgmt

```

- For Solaris:

```

/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/lib/cmb81.jar
/opt/IBMcmb/cmgmt

```

5. Set "Maximum Heap Size" to 512.

6. Select **Apply** at the bottom of the page.

7. If the WAS and Enterprise Information Portal are on the same workstation:

- For Windows:

The server the IST is deployed in must contain an additional PATH entry:

- From the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>
- In the "General" tab, select "Environment..."
- In the Environment Editor frame, select "Add"
- For "Name", enter PATH and for "Value", enter <cmbroot>\ikf\bin, for example, d:\cmbroot\ikf\bin
- Select **OK**
- Select **Apply**

- For AIX:

The user the Application Server, for example "Default Server", is running must have the following line in the .profile, namely,

```

. /usr/lpp/cmb/ikf/IST/bin/ISTSingleWorkstationEnv.sh

```

- For Solaris:

The user the Application Server, for example "Default Server", is running must have the following line in the .profile, namely,

. /opt/IBMcmb/ikf/IST/bin/ISTSingleWorkstationEnv

8. Deploy the IST via the Administrative Console. The necessary steps are:
 - From the console menu, select **Console**→**Wizards**→**Install Enterprise Application**
 - In the panel that is displayed:
 - Select "Install stand-alone module"
 - Select **Browse** and locate the file IST.war at:
 - For Windows: <cmbrroot>\ikf\IST
 - For AIX: /usr/lpp/cmb/ikf/IST
 - For Solaris: /opt/IBMcmb/ikf/IST
 - For "Application Name", enter IST
 - For "Context Root for Web Module", enter <WebPath>, for example /webApps/IST Ensure that <WebPath> ends in /IST
 - Click **Next**
 - Bypass the following panels by clicking **Next**:
 - "Mapping users to roles"
 - "Mapping EJBRunAs Roles to Users"
 - "Binding Enterprise Beans to JNDI names"
 - "Mapping EJP References to Enterprise Beans"
 - "Mapping Resource References to Resources"
 - "Specifying the Default Datasource for EJB Modules"
 - "Specifying Data Sources for individual CMP beans"
 - In panel "Selecting Virtual Hosts for Webmodules", select the virtual host desired and click **Next**
 - In panel "Selecting Application Servers", select the application server desired and click **Next**
 - In the panel that is displayed, click **Finish**
9. IST uses an EIP database named icm1sdb
If your database name is different:
 - Switch to the directory where the IST is deployed, typically at <WAS_HOME>\installedApps
 - Switch to the directory IST.ear/IST.war/WEB-INF and open the file web.xml
 - Search for icm1sdb and rename to your EIP database.
 - Save the file.
10. Restart the Application Server.
11. Re-generate the Web server plug-in configuration by:

- In the Administrative Console, selecting **Nodes**→<Node>→**Application Server**→<AppServer>
 - Right-clicking on <AppServer> and selecting "Regen Web Server Plugin"
12. The URL to access the Information Structuring Tool is `http://host_alias/WebPath/login.html` where:
- `host_alias` is one of the aliases specified for `VirtualHost`. To find this value:
 - Open the WAS Administrator's Console
 - From the console menu, select **Virtual Hosts**→<VirtualHost>→**Aliases**
 - Each entry in the list (Host Name and Port) is a valid host alias, for example, `prefix:9080`
 - <WebPath> you specified during installation, for example, `/webApps/IST`

WAS V5

These instructions apply to both WAS 5 Base and WAS 5 Network Deployment (ND). For WAS 5 Network Deployment, perform steps 3 and 4 from the workstation where either the information mining feature (single workstation scenario) or the Enterprise Information Portal client (client-server setup) is installed.

After installing the WAS V5 and Enterprise Information Portal, carry out the following:

1. Start the application server
2. WAS 5 ND only: Make sure the deployment manager is started.
3. Set up a shared library in WAS with the necessary environment settings:
 - For Windows:
 - In a command shell, change to the directory <WAS_HOME>\bin
 - Enter `<CMBROOT>\ikf\IST\bin\SetupIMEnv <Cell> <Node> <AppServer>`, for example, for WAS V5 Base `d:\cmbroot\ikf\IST\bin\SetupIMEnv prefix prefix server1`, and for WAS V5 ND `d:\cmbroot\ikf\IST\bin\SetupIMEnv runner prefix server1`
 - For AIX:
 - In a command shell, change to the directory <WAS_HOME>/bin
 - Enter `/usr/lpp/cmb/ikf/IST/bin/SetupIMEnv.sh <Cell> <Node> <AppServer>`
 - For Solaris:
 - In a command shell, change to the directory <WAS_HOME>/bin

- Enter `/opt/IBMcmb/ikf/IST/bin/SetupIMEnv.sh <Cell> <Node>`
`<AppServer>`

-

4. Deploy the IST via the Administrative Console. The necessary steps are:
 - Launch the Administrative Console browser.
 - In the Navigation Bar, select **Applications**→**Install New Application**
 - Under **Path** and browse for file `IST.war`:
 - For Windows at: `<cmbroot>\ikf\IST`
 - For AIX at: `/usr/lpp/cmb/ikf/IST`
 - For Solaris at: `/opt/IBMcmb/ikf/IST`
 - For "Context Root", enter `<WebPath>`, for example `/webApps/IST` Ensure that `<WebPath>` ends in `/IST`
 - Click **Next**
 - Under "Virtual Host", verify that "Default virtual host name for web modules" is checked and set to the desired virtual host
 - Click **Next**
 - Click **Next** to bypass "Install New Application", Step 1
 - In "Install New Application", Step 2:
 - Make sure that the correct virtual host is specified
 - Click **Next**
 - Click **Next** to bypass "Install New Application", Step 3
 - In "Install New Application", Step 4, click **Finish**
 - In the menu bar, click **Save**
 - In the navigation bar, select **Applications**→**Enterprise Applications**
 - Select `IST_war`
 - On the **Configuration** tab, go to "General Properties", and uncheck "Enable Distribution" and "Reload Enabled"
 - Select **Apply**
 - Select "Libraries" under "Additional Properties"
 - Click **Add**
 - Select "InformationMiningEnvironment" from the drop-down list, then **OK**
 - In the menu bar, click **Save** to save your settings
5. Update the Web server plugin configuration:
 - In the navigation bar, select **Environment**→**Update Web Server Plugin**
 - Select **OK**
6. Stop the Application Server

7. After deployment,
 - Open a command shell
 - Switch to the IST source directory at:
 - For Windows: <CMBROOT>\ikf\IST\bin
 - For AIX: /usr/lpp/cmb/ikf/IST/bin
 - For Solaris: /opt/IBMcmb/ikf/IST/bin
 - At the command prompt, enter:
 - For Windows: ISTconfig <WAS_HOME> <Node> and press **Enter**. If WAS_HOME contains spaces, use quotes, for example, ISTConfig "c:\Program Files\WebSphere\AppServer" prefix
In Windows 2000, if you are prompted three times whether files should be replaced, enter y each time
 - For AIX: ./ISTconfig.sh <Node> and press **Enter**
 - For Solaris: ./ISTconfig <Node> and press **Enter**
8. The IST uses an EIP database named icmnlbdb
If your database name is different:
 - Switch to the directory where the IST is deployed, typically at <WAS_HOME>\installedApps\<Node>, for example
d:\WebSphere\Appserver\installedApps\prefix
 - Switch to the directory IST_war.ear/IST.war/WEB-INF and open the file web.xml
 - Search for icmnlbdb and rename to your EIP database.
 - Save the file.
9. Restart the Application Server.
10. The URL to access the Information Structuring Tool is
http://host_alias/WebPath/login.html where:
 - host_alias is one of the aliases specified for VirtualHost. To find this value:
 - Open the WAS Administrator's Console
 - From the navigation panel, select **Environment**→**Virtual Hosts**→<VirtualHost>→**Host Aliases**
Each entry in the list (Host Name and Port) is a valid host alias, for example, prefix:9080
 - <WebPath> you specified during installation, for example, /webApps/IST

Browser settings

Browser language setting

The language used in the Information Structuring Tool GUI is determined by the language settings of the Web browser you are using. To change these settings:

- For the Internet Explorer:
 - Select **Tools**→**Internet Options**→**Languages** from the menu bar
 - Select your preferred language from the list
 - Click **Move Up** to list the language at the top
- For Netscape:
 - Select **Edit**→**Preferences**→**Navigator**→**Languages** from the menu bar
 - Select **Add** to add a language
 - Select your preferred language from the list and move it to the top of the list

Access the Information Structuring Tool in your selected language using the .../IST/login.html page.

Cache settings

The recommended Web browser cache settings are the following:

- For the Internet Explorer:
 - Select **Tools**→**Internet Options**— from the menu bar
 - Under "Temporary Internet Files", select "Settings"
 - Under "Check for newer versions of stored pages", select "Every visit to the page"
- For Netscape:
 - Select **Edit**→**Preferences**→**Advanced**→**Cache** from the menu bar
 - Under "Document in cache is compared to the network", select "Every time"

Cookies and Javascript

To use the Information Structuring Tool, both cookies and Javascript must be enabled in the browser.

Configuring the Web Application Server for the JSP sample

Before you can install the JSPs on the Websphere Application Server Advanced Edition (WAS 4 AE) or Advanced Edition Single Server (WAS 4 AEs), or the Websphere Application Server 5 Base or the Websphere Application Server 5 Network Deployment (ND), you need the following information:

- <Node> is the name of the workstation where the JSPs are to be installed.

- <AppServer> is the Application Server on <Node> where the JSPs are to be installed, for example, Default Server for WAS 4 and server1 for WAS 5.
- <VirtualHost> is the name of the virtual host the JSPs are to run on, for example, default_host
- <WebPath> is the path portion of the URL used to access the JSPs. For example, if the JSPs are installed on the server prefix and <WebPath> is /miningSamples, the URL to access the JSPs is http://prefix:9080/miningSamples/1ogon.html
- <WAS_HOME> is the directory where the WAS is installed on <Node>, for example, d:\WebSphere\AppServer on Windows, /usr/WebSphere/AppServer on AIX and on Solaris, /opt/WebSphere/AppServer.
- WAS 5 only: <Cell> is the name of the administrative cell. For WAS 5 Base, this is the same as <Node>. For WAS 5 ND, this is the name of the workstation the deployment manager is running on.
- For Windows:
 - <CMBROOT> is the value of the corresponding environment variable, for example, d:\cmbroot
 - <DB2HOME> is the value of the corresponding environment variable, for example, d:\sql11b
- For AIX:
 - <DB2HOME> is the directory where DB2 is installed, for example, /usr/lpp/db2_07_01 or /usr/opt/db2_08_01
 - <DB2JAVAHOME> is the directory where the Java 1.2 library files are located. For DB2 V7, this is <DB2HOME>/java12 and for DB2 V8, <DB2HOME>/java
- For Solaris:
 - <DB2HOME> is the directory where DB2 is installed, for example, /opt/IBMDB2/V7.1 or /opt/IBMDB2/V8.1
 - <DB2JAVAHOME> is the directory where the Java 1.2 library files are located. For DB2 V7, this is <DB2HOME>/java12 and for DB2 V8, <DB2HOME>/java

We recommend that you deploy the JSPs on the same application server you deployed the Information Structuring Tool on. If you do, then you can continue deploying the JSPs at step 7 for WAS AEs or WAS AE. If the JSPs are not deployed on the same application server, refer to “Installation scenarios” on page 156 before continuing with the following sections.

WAS V4

The following section describes the IST deployment procedure in WAS 4 AEs, followed by WAS 4 AE.

WAS AEs: After installing the WAS AEs and Enterprise Information Portal, open the WAS Administrator’s Console and carry out the following:

1. From the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>→**Process Definitions**→**JVM Settings**
2. If the WAS and Enterprise Information Portal are on the same workstation, enter the following Classpath information:

- For Windows:


```
<CMBROOT>\ikf\lib
<CMBROOT>\ikf\lib\ikf.jar
<CMBROOT>\lib\cmb81.jar
<CMBROOT>\lib\cmbsdk81.jar
<CMCOMMON>
<CMBROOT>\lib\cmblog4j81.jar
<CMBROOT>\lib\log4j.jar
<DB2HOME>\java\db2java.zip
```
- For AIX:


```
/usr/lpp/cmb/ikf/lib
/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/lib
/usr/lpp/cmb/lib/cmb81.jar
/usr/lpp/cmb/lib/cmbsdk81.jar
/usr/lpp/cmb/cmgmt
/usr/lpp/cmb/lib/cmblog4j81.jar
/usr/lpp/cmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip
```
- For Solaris:


```
/opt/IBMcmb/ikf/lib
/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/lib
/opt/IBMcmb/lib/cmb81.jar
/opt/IBMcmb/lib/cmbsdk81.jar
/opt/IBMcmb/cmgmt
/opt/IBMcmb/lib/cmblog4j81.jar
/opt/IBMcmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip
```

If the WAS and Enterprise Information Portal are on different workstations, the Classpath information is as follows:

- For Windows:


```
<CMBROOT>\ikf\lib\ikf.jar
<CMCOMMON>
<CMBROOT>\lib\cmb81.jar
```
- For AIX:


```
/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/cmgmt
/usr/lpp/cmb/lib/cmb81.jar
```
- For Solaris:


```
/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/lib/cmgmt
/opt/IBMcmb/lib/cmb81.jar
```

3. Select **OK** at the bottom of the page.
4. Save your configuration settings by clicking **Save** on the top bar of the WAS administrative console.
5. If the WAS and Enterprise Information Portal are on the same workstation:
 - For Windows:

The PATH must be set in the WAS Administrative Console:

 - From the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>→**Process Definitions**
 - Under "Advanced Settings", select "Environment"
 - In "System Properties", select "New"
 - For "property name", enter PATH and for "property value", enter <mbroot>\ikf\bin, for example, d:\cmbroot\ikf\bin
 - Select **OK**
 - Select **Save** on the top bar of the WAS administrative console
 - For AIX:

The user who starts the Application Server, for example "root", must have the following line in the .profile, namely,

```
. /usr/lpp/cmb/ikf/IST/bin/ISTSingleWorkstationEnv.sh
```
 - For Solaris:

The user who starts the Application Server, for example "root", must have the following line in the .profile, namely,

```
. /opt/IBMcmb/ikf/IST/bin/ISTSingleWorkstationEnv
```
6. Click **Exit** on the top bar of the console to exit.
7. Shut down the WAS by:
 - Switching to the directory <WAS_Home>\bin in a command shell
 - Entering:
 - For Windows: stopserver
 - For AIX: ./stopServer.sh
 - For Solaris: ./stopServer.sh
8. In the command shell, enter:
 - For Windows: seappinstall -install <CMBROOT>\samples\jsp\infomining\jsp.war
 - For AIX: ./SEAppInstall.sh -install /usr/lpp/cmb/samples/jsp/infomining/jsp.war
 - For Solaris: ./SEAppInstall.sh -install /opt/IBMcmb/samples/jsp/infomining/jsp.war

You are prompted as follows:

- Please specify an application display name: Enter InfoMiningSamples
 - Please specify a context root: Enter your <WebPath>, for example, /webApps/IST Ensure that <WebPath> ends in /IST
 - Do you wish to precompile all JSPs in this application: Enter n
 - Do you wish to precompile individual Web Applications: Enter n
 - Please specify a virtual host for the following Web applications, IBM information mining Samples JSPs: Enter your <VirtualHost>, for example default_host
9. Restart the WAS in the command shell by entering:
 - For Windows: startserver
 - For AIX: ./startServer.sh
 - For Solaris: ./startServer.sh
 10. Re-generate the Web server plug-in configuration of WAS by:
 - Opening the Administrative Console
 - Selecting **Nodes**→<Node>→**Application Server**→<AppServer>
 - Under "Advanced Settings", selecting "Web Server Plugin Configuration"
 - Selecting "Generate"
 11. The URL to access the JSPs is http://host_alias/WebPath/logon.html where:
 - host_alias is one of the aliases specified for VirtualHost. To find this value:
 - Open a WAS Administrator's Console
 - From the console menu, select **Virtual Hosts**→<VirtualHost>→**Aliases**
 - Each entry in the list (Host Name and Port) is a valid host alias, for example, prefix:9080
 - <WebPath> you specified during installation, for example, /webApps/JSPs

WAS AE: After installing the WAS AE and Enterprise Information Portal, open the WAS Administrator's Console and carry out the following:

1. On the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>
2. Stop the Application Server, if it is running.
3. Select the tab **JVM Settings** on the right.
4. If the WAS and Enterprise Information Portal are on the same workstation, enter the following Classpath information:
 - For Windows:

```

<CMBROOT>\ikf\lib
<CMBROOT>\ikf\lib\ikf.jar
<CMBROOT>\lib\cmb81.jar
<CMBROOT>\lib\cmbSDK81.jar
<CMCOMMON>
<CMBROOT>\lib\cmblog4j81.jar
<CMBROOT>\lib\log4j.jar
<DB2HOME>\java\db2java.zip

```

- For AIX:

```

/usr/lpp/cmb/ikf/lib
/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/lib
/usr/lpp/cmb/lib/cmb81.jar
/usr/lpp/cmb/lib/cmbSDK81.jar
/usr/lpp/cmb/cmgmt
/usr/lpp/cmb/lib/cmblog4j81.jar
/usr/lpp/cmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip

```

- For Solaris:

```

/opt/IBMcmb/ikf/lib
/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/lib
/opt/IBMcmb/lib/cmb81.jar
/opt/IBMcmb/lib/cmbSDK81.jar
/opt/IBMcmb/cmgmt
/opt/IBMcmb/lib/cmblog4j81.jar
/opt/IBMcmb/lib/log4j.jar
<DB2JAVAHOME>/db2java.zip

```

If the WAS and Enterprise Information Portal are on different workstations, the Classpath information is as follows:

- For Windows:

```

<CMBROOT>\ikf\lib\ikf.jar
<CMCOMMON>
<CMBROOT>\lib\cmb81.jar

```

- For AIX:

```

/usr/lpp/cmb/ikf/lib/ikf.jar
/usr/lpp/cmb/cmgmt
/usr/lpp/cmb/lib/cmb81.jar

```

- For Solaris:

```

/opt/IBMcmb/ikf/lib/ikf.jar
/opt/IBMcmb/cmgmt
/opt/IBMcmb/lib/cmb81.jar

```

5. Select **Apply** at the bottom of the page.
6. If the WAS and Enterprise Information Portal are on the same workstation:
 - For Windows:

The server the IST is deployed in must contain an additional PATH entry:

- From the console menu, select **Nodes**→<Node>→**Application Server**→<AppServer>
 - In the "General" tab, select "Environment..."
 - In the Environment Editor frame, select "Add"
 - For "Name", enter PATH and for "Value", enter <cmbrout>\ikf\bin, for example, d:\cmbrout\ikf\bin
 - Select **OK**
 - Select **Apply**
 - For AIX:
The user the Application Server, for example "Default Server", is running under must have the following line in the .profile, namely,
. /usr/lpp/cmb/ikf/IST/bin/ISTSingleWorkstationEnv.sh
 - For Solaris:
The user the Application Server, for example "Default Server", is running under must have the following line in the .profile, namely,
. /opt/IBMcmb/ikf/IST/bin/ISTSingleWorkstationEnv
7. Deploy the JSPs via the Administrative Console. The necessary steps are:
- From the console menu, select **Console**→**Wizards**→**Install Enterprise Application**
 - In the panel that is displayed:
 - Select "Install stand-alone module"
 - Select **Browse** and locate the file jsp.war at:
 - For Windows: <cmbrout>\samples\jsp\infomining
 - For AIX: /usr/lpp/cmb/samples/jsp/infomining
 - For Solaris: /opt/IBMcmb/samples/jsp/infomining
 - For "Application Name", enter InfoMiningSamples
 - For "Context Root for Web Module", enter <webPath>, for example /webApps/InfoMiningSamples
 - Click **Next**
 - Bypass the following panels by clicking **Next**:
 - "Mapping users to roles"
 - "Mapping EJBRunAs Roles to Users"
 - "Binding Enterprise Beans to JNDI names"
 - "Mapping EJP References to Enterprise Beans"
 - "Mapping Resource References to Resources"
 - "Specifying the Default Datasource for EJB Modules"

- "Specifying Data Sources for individual CMP beans"
 - In panel "Selecting Virtual Hosts for Webmodules", select the virtual host desired and click **Next**
 - In panel "Selecting Application Servers", select the application server desired and click **Next**
 - In the panel that is displayed, click **Finish**
8. Restart the Application Server in the console.
 9. Re-generate the Web server plug-in configuration by:
 - In the Administrative Console, selecting **Nodes**→<Node>→**Application Server**→<AppServer>
 - Right-clicking on <AppServer> and selecting "Regen Web Server Plugin"
 10. The URL to access the JSPs is `http://host_alias/WebPath/login.html` where:
 - `host_alias` is one of the aliases specified for `VirtualHost`. To find this value:
 - Open the WAS Administrator's console
 - From the console menu, select **Virtual Hosts**→<VirtualHost>→**Aliases**
 - Each entry in the list (Host Name and Port) is a valid host alias, for example, `prefix:9080`
 - <WebPath> you specified during installation, for example, `/miningSamples`

WAS V5

If you deploy the Sample JSPs on the same <Cell> as the Information Structuring Tool, you can skip step 3.

These instructions apply to both WAS 5 Base and WAS 5 Network Deployment (ND). For WAS 5 Network Deployment, perform steps 3 and 4 from the workstation where either the information mining feature (single workstation scenario) or the Enterprise Information Portal client (client-server setup) is installed.

After installing the WAS V5 and Enterprise Information Portal, carry out the following:

1. Start the application server
2. WAS 5 ND only: Make sure the deployment manager is started.
3. Set up a shared library in WAS with the necessary environment settings:
 - For Windows:
 - In a command shell, change to the directory `<WAS_Home>\bin`

- Enter <CMBROOT>\ikf\IST\bin\SetupIMEnv <Cell> <Node> <AppServer>, for example, for WAS V5 Base
d:\cmbroot\ikf\IST\bin\SetupIMEnv prefix prefix server1, and for
WAS V5 ND d:\cmbroot\ikf\IST\bin\SetupIMEnv runner prefix
server1
 - For AIX:
 - In a command shell, change to the directory <WAS_Home>/bin
 - Enter /usr/lpp/cmb/ikf/IST/bin/SetupIMEnv.sh <Cell> <Node> <AppServer>
 - For Solaris:
 - In a command shell, change to the directory <WAS_Home>/bin
 - Enter /opt/IBMcmb/ikf/IST/bin/SetupIMEnv.sh <Cell> <Node> <AppServer>
 -
4. Deploy the JSPs via the Administrative Console. The necessary steps are:
- Launch the Administrative Console browser.
 - In the Navigation Bar, select **Applications**→**Install New Application**
 - Under **Path** and browse for file JSP.war:
 - For Windows at: <cmbroot>\samples\jsp\infomining
 - For AIX at: /usr/lpp/cmb/samples/jsp/infomining
 - For Solaris at: /opt/IBMcmb/samples/jsp/infomining
 - For "Context Root", enter <WebPath>, for example
/webApps/InfoMiningSamples
 - Click **Next**
 - Under "Virtual Host", verify that "Default virtual host name for web modules" is checked and set to the desired virtual host
 - Click **Next**
 - Click **Next** to bypass "Install New Application", Step 1
 - In "Install New Application", Step 2:
 - Make sure that the correct virtual host is specified
 - Click **Next**
 - Click **Next** to bypass "Install New Application", Step 3
 - In "Install New Application", Step 4, click **Finish**
 - In the menu bar, click **Save**
 - In the navigation bar, select **Applications**→**Enterprise Applications**
 - Select jsp.war
 - On the **Configuration** tab, go to "General Properties", and uncheck "Enable Distribution"
 - Select **Apply**

- Select "Libraries" under "Additional Properties"
 - Click **Add**
 - Select "InformationMiningEnvironment" from the drop-down list, then **OK**
 - In the menu bar, click **Save** to save your settings
5. Update the Web server plugin configuration:
 - In the navigation bar, select **Environment**→**Update Web Server Plugin**
 - Select **OK**
 6. Stop the Application Server
 7. Restart the Application Server.
 8. The URL to access the JSPs is `http://host_alias/WebPath/login.html` where:
 - `host_alias` is one of the aliases specified for `VirtualHost`. To find this value:
 - Open the WAS Administrator's Console
 - From the navigation panel, select **Environment**→**Virtual Hosts**→**<VirtualHost>**→**Host Aliases**

Each entry in the list (Host Name and Port) is a valid host alias, for example, `prefix:9080`
 - `<WebPath>` you specified during installation, for example, `/webApps/InfoMiningSamples`

Chapter 17. Configuring an RMI server

The procedures in this section explain how to perform these tasks on an RMI server:

- Configure the server
- Connect a client
- Configure information mining
- Configure workflow

Configuring an RMI server

To configure the RMI server:

1. Open a command prompt and change to the directory to the directory where the `cmbregist81.bat` (or `cmbregist81.sh`) file *and* the policy file are located.

On Windows: Open `cmbregist81.bat` in a text editor.

On AIX: Open `/usr/lpp/cmb/bin/cmbregist81.sh` in a text editor.

On Solaris: Open `/opt/IBMcmb/cmbregist81.sh` in a text editor.

2. You can change the port number in the following line, or accept the default port number, 1919:

```
set remotePort=1919
```

3. Change the following line to match your configuration:

```
%JAVAHOME%\jre\bin\java -cp %CLASSPATH% -ms16M  
Djava.security.policy=.\policyDjava.rmi.server.codebase=http://com.  
ibm.mm.sdk.remote. DKRemoteMainImp%remotePort% 0 13 TS QBIC DL JDBC  
Fed V4 IP DD OD DES DB2 DJ
```

0 Change 0 to a number that represents the maximum number of connections that the RMI server can concurrently process. The default is 0, which indicates that there is no maximum number of connections for this RMI server. This is the suggested setting for a single or master RMI server.

13 Change this number to match the number of server types that follow.

TS QBIC® DL JDBC Fed V4 IP DD OD DES DB2 DJ IC

Server types supported by the RMI server. You can type the RMI server variables in any order, but you must type them exactly as they are listed in Table 27.

Table 27. RMI server variables

RMI server variables	When to set
DES	You are accessing Domino Extended Search servers.
DL	You are accessing Content Manager servers.
Fed	Your Enterprise Information Portal database is installed on the RMI server.
IP	You are accessing Content Manager ImagePlus for OS/390 servers.
JDBC	Your Enterprise Information Portal database is installed on the RMI server.
DD	You are accessing Domino.Doc servers.
OD	You are accessing Content Manager OnDemand servers.
QBIC	You are accessing Content Manager servers that are configured with an image search server.
TS	You are accessing Content Manager servers that are configured with a text search server.
V4	You are accessing Content Manager for AS/400 servers.
DB2	You are accessing DB2 Universal Database servers.
DJ	You are accessing DB2 DataJoiner servers.
IC	You are accessing DB2 UDB Data Warehouse Center Information Catalog Manager using the Information Catalog connector.

4. After you change the variables in the file, ensure that the number that you typed before the list of RMI server variables matches the number of server variables listed.
5. Save `cmbregist81.bat`.
6. Start the RMI server by running the `cmbregist81` command.

On Windows:

```
cmbregist81 hostname
```

where *hostname* is the name of the RMI server on which you are running the command.

On AIX:

```
./cmbregist81.sh hostname
```

where *hostname* is the name of the RMI server on which you are running the command. Make sure you use the period (.) and a blank space before the command name.

7. The RMI server is now ready to use.

Configuring multiple RMI servers

You can configure Enterprise Information Portal with multiple RMI servers to distribute client requests. A group of RMI servers is called a *server pool*.

To set up an RMI server pool, you must designate one server as the master RMI server. The master server is registered with the RMI registry so that clients and other RMI servers in the server pool can connect to it. When a server pool member is registered with the master server, the master server adds the server pool member to a list.

Every client sends requests to the master server. The master server evenly delegates client requests to a member of the server pool. The server pool member fulfills the client request. The master server services a connection only when all of the server pool members have reached their maximum capacity.

For example, you start four RMI servers; one is a master server, and three are server pool members. The master server receives three client requests. The master server sends the first request to the first server, the second request to the second server, and the third request to the third server. The master server sends the fourth request to the first server, and the fifth request to the second server. If there is no limit on the number of connections, the cycle continues for as long as there are requests for servers.

Each member of the server pool and the master server must have at least one connector installed. Installing a connector from the Enterprise Information Portal Version 8.1 CD installs the RMI classes for that connection.

The difference between a master RMI server and a server pool member is how their `cmbregist81.bat` files are set.

To configure additional RMI servers to be part of a server pool:

1. Ensure that you have installed the appropriate content server connectors on the RMI server.
2. Open a command prompt and set the directory to the directory where the `cmbregist81.bat` *and* the policy file are located.
3. On Windows, open `cmbregist81.bat` in a text editor. On AIX and Solaris, open `cmbregist81.sh` in a text editor
4. Locate the following lines at the top of the file:

```
REM Note: To point to a master RMI server do the following  
instead  
REM of the statement below
```

```

REM java -cp %classpath% -xms32M
Djava.rmi.server.hostname=<hostname>Djava.security.policy=.\policy
-Djava.rmi.server.codebase=http://com.ibm.mm.sdk.remote.
DKRemoteMainImp 1919 5 MasterRMIServer<MasterRMIServer host name>
1922 5 DL TS QBIC JDBC Fed

```

5. Copy and paste the following line after the set remotePort=1919 statement:

```

java -cp %classpath% -ms16MD-
java.rmi.server.hostname=<hostname>
-Djava.security.policy=.\policy -Djava.rmi.server.codebase=http://
com.ibm.mm.sdk.remote.DKRemoteMainImp 1919 5
MasterRMIServer <MasterRMIServer hostname> 1922 5
DL TS QBIC JDBC Fed

```

6. In the set remotePort statement:

```
set remotePort=1919
```

Change 1919 to an available port number.

7. Delete the following line:

```

%JAVAHOME%\jre\bin\java -cp %CLASSPATH% -ms16M
-Djava.security.policy=.\policy
-Djava.rmi.server.codebase=http://
com.ibm.mm.sdk.remote.DKRemoteMainImp %remotePort%
0 13 TS QBIC DL JDBC Fed V4 IP DD OD DES DB2 DJ IC ICM

```

8. In the line that you copied and pasted from the top of the file, change the variables to match your configuration:

```

java -cp %classpath% -ms16M -
Djava.rmi.server.hostname=<hostname>
-Djava.security.policy=.\policy -Djava.rmi.server.codebase=http://
com.ibm.mm.sdk.remote.DKRemoteMainImp 1919 5
MasterRMIServer <MasterRMIServer hostname>
1922 5 DL TS QBIC JDBC Fed

```

1919 Change 1919 to the port number that the RMI server pool member is using.

5 Change 5 to a number that represents the maximum number of connections that the RMI server can concurrently process. Note that this number automatically increases if the maximum number is reached. Type 0 to indicate there is no maximum number of connections for this RMI server pool member.

hostname

Change hostname to the host name of the RMI server pool member.

MasterRMIServer hostname

Change MasterRMIServer hostname to the host name of the RMI master server.

- 1922 Change 1922 to the port number that you set for the RMI master server.
- 5 Change this number to match the number of server types that follow.

DL TS QBIC JDBC Fed

Are the server types supported by the RMI pool member. You can type the RMI server variables in any order, but you must type them exactly as they are listed in Table 27 on page 180. The table lists the RMI variables and when to set them.

- 9. Save `cmbregist81.bat`.
- 10. Ensure that the master RMI server is running.
 - Requirement:** The server pool members attempt to connect to the master RMI server when they start, so you must start the master RMI server before starting the server pool members.
- 11. Start the RMI pool member by running the `cmbregist81` command.

On Windows:

```
cmbregist81 hostname
```

where *hostname* is the host name of the RMI server where you are running the command.

On AIX:

```
./cmbregist81.sh hostname
```

where *hostname* is the host name of the RMI server where you are running the command. Make sure you use the period (.) and a blank space before the command name.

Recommendation: If you configure multiple RMI servers, you should install the federated connector on only one RMI server in the server pool.

Tip: If you have a workstation with the resource, you can run multiple RMI servers on the same workstation, but you must copy the `cmbregist81.bat` file and give the copy a different name for one of the RMI servers. For example, run one RMI server by running `cmbregist81.bat` and the second by running `cmbregist812.bat`.

Configuring information mining

After you install information mining, you can configure the server on which information mining is installed as an RMI server, so that other client workstations can access the information mining services.

Configuring information mining on a local RMI server

To configure a local server as an RMI server:

1. Open a command prompt and change to the directory where the `cmbvregist81.bat` (or `cmbregist81.sh`) and the policy file are located.
2. **On Windows:** Open `cmbvregist81.bat` or `cmbvregist81.sh` in a text editor.
3. You can change the port number in the following line, or accept the default port number, 1920:

```
set remotePort=1920
```

4. Change the following line to match your configuration:

```
%JAVAHOME%\jre\bin\java -cp %classpath% -ms16M  
Djava.security.policy=.\policy-  
Djava.rmi.server.codebase=  
http://com.ibm.mm.sdk.remote.DKRemoteServiceMainImp%  
remotePort % 0 1 IKF
```

0 Change 0 to a number that represents the maximum number of connections that the RMI server can concurrently process. The default is 0, which indicates that there is no maximum number of connections for this RMI server. This is the suggested setting.

1 The number of server types that are supported by the RMI server. If you use an RMI server as your information mining server, only one server type is supported: IKF.

IKF Is the server type supported by the RMI server.

5. Save `cmbvregist81.bat` or `cmbvregist81.sh`.
6. To start the RMI server, open a command prompt and change to the `cmbroot` directory. Type `cmbvregist81.bat` or `cmbvregist81.sh`.

Configuring information mining on a remote RMI server

If the Enterprise Information Portal information mining service is located on another workstation with a configured RMI server, you must change the `cmbsvclient.ini` file on the information mining client to connect with the RMI server:

1. Open `cmbsvclient.ini` in a text editor.
2. Delete the number sign (#) next to the key words `RemoteHost` and `RemotePort`. The number sign indicates a comment in the file.
3. Type your RMI server host name and port number as follows:

```
RemoteHost=hostname  
RemotePort=1920
```

Where *hostname* is the RMI server host name and *1920* is the RMI server port number.

4. Save `cmbsvclient.ini`.

Configuring the client to locate the RMI server

The `cmbclient.ini` is a file that is always installed with the administration client and every client that connects with the RMI server. If your configuration includes an RMI server, you can manually set `cmbclient.ini` on the workstation where the administration client is installed. However, at installation time, you are still prompted with the Specify RMI host name and port number window to enter the RMI host name and port number for your RMI server.

To manually set the `cmbclient.ini` file:

1. Open `cmbclient.ini` in a text editor.
2. Delete the number sign (#) next to the key words `RemoteHost` and `RemotePort`. The number sign indicates a comment in the file.
3. Type your RMI server host name and port number as follows:

```
RemoteHost=ccrmi
RemotePort=1919
```

where `ccrmi` is the RMI server host name and `1919` is the RMI server port number.

4. Save `cmbclient.ini`.

Configuring workflow with an RMI server

After you install your workflow server, you can configure the workflow server as an RMI server or to connect the workflow server to the RMI server for remote administration support.

To configure the workflow server as an RMI server:

1. From a command prompt, change to the directory where the `cmbregist81.bat` and the policy file are located.
2. **On Windows:** Open `cmbsvregist81.bat` in a text editor.
3. You can change the port number in the following line, or accept the default port number, `1920`:

```
set remotePort=1920
```

4. Change the following line to match your configuration:

```
%JAVAHOME%\jre\bin\java -cp %classpath%-ms16D-
java.security.policy=.\policy-
Djava.rmi.server.codebase=http://com.ibm.mm.sdk.remote.
DKRemoteServiceMainImp %remotePort% 0 1 MQWF
```

- 0 Change 0 to a number that represents the maximum number of connections that the RMI server can concurrently process. The default is 0, which indicates that there is no maximum number of connections for this RMI server. This is the suggested setting.

- 1 Is the number of server types that are supported by the RMI server. If you use an RMI server as your workflow server, only one server type is supported: MQWF.

MQWF

Is the server type supported by the RMI server.

5. Save `cmbsvregist81.bat`.
6. Start the RMI server by running the `cmbsvregist81.bat` command.

Locating a remote administration database

If the Enterprise Information Portal administration database is located on another server, then you must set the `cmbsvclient.ini` file on the workflow server to connect with the remote administration database:

1. Open `cmbsvclient.ini` in a text editor.
2. Delete the number sign (#) next to the key words `RemoteHost` and `RemotePort`. The number sign indicates a comment in the file.
3. Type your RMI server host name and port number as follows:

```
RemoteHost=yourserver  
RemotePort=yourportnumber
```

where *yourserver* is the RMI server host name and *yourportnumber* is the RMI server port number.

4. Save `cmbsvclient.ini`.

Chapter 18. Generating configuration files

These sections describe the `cmbcmenv.properties` file, a list of the INI files, LDAP data source information, and the Java utilities that can conveniently create and update them.

For Enterprise Information Portal: after installing the system administration client or connectors, you can run `cmbenv81.bat` (Windows) or `cmbenv81.sh` (AIX and Solaris) to automatically set the classpath for the Java utilities.

For Content Manager: after installing the system administration client, you can run `cmbicmenv81.bat` (Windows) to automatically set the classpath for the Java utilities.

This section covers the following topics:

- “`cmbcmenv.properties`” on page 188
- “INI configuration files” on page 191
- “Lightweight Directory Access Protocol (LDAP) data sources” on page 200

cmbcmenv.properties

This properties file tells the connector where the INI files are located. It can also specify an LDAP server that can contain data source information or be used for user authentication.

Attention: Parenthesis contain comments and information, not utility parameters.

JAR files need to run utility: cmbutil81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbcmenv
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action) -c <fileSystem> (category)

-p <directory path location for configuration files>
-d <directory path location cmbcmenv.properties> (default current directory)
-seeerrr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a <update> (action) -c <fileSystem> (category)

-p <directory path location for configuration files>
-d <directory path location cmbcmenv.properties> (default current directory)
-seeerrr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a (action) -c <fileSystem> (category)

-d <directory path location cmbcmenv.properties> (default current directory)
-seeerrr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a <add> (action) -c <URL> (category)

-url <URL location for configuration files>
-d <directory path location cmbcmenv.properties> (default current directory)
-seeerrr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a <update> (action) -c <URL> (category)

-url <URL location for configuration files>
-d <directory path location cmbcmenv.properties> (default current directory)
-seeerrr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a (action) -c <URL> (category)

-d <directory path location cmbcmenv.properties> (default current directory)
-seeerrr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a <add> (action) -c <LDAP> (category)

-ldapenabled <TRUE | FALSE> (LDAP enabled (default TRUE))
-ldapdatasourcesenabled <TRUE | FALSE> (LDAP datasources enabled (default FALSE))
-ldapuserauthenenabled <TRUE | FALSE> (LDAP user authentication enabled (default FALSE))
-ldapfactory <LDAP Java JNDI context factory> (default com.sun.jndi.ldap.LdapCtxFactory)
-ldapstype <ACTIVE_DIRECTORY | STANDARD_LDAP> (LDAP server type (default STANDARD_LDAP))
-ldapurl <LDAP service provider url>
-ldapref <follow | ignore> (LDAP referral (default ignore))
-ldapauth <simple> (LDAP referral (default simple))
-ldapuid <LDAP principal>
-ldapcred <LDAP credentials>
-ldaprootdn <LDAP root domain name>
-ldapsrchscope <SUBTREE_SCOPE | ONELEVEL_SCOPE> (LDAP search scope (default SUBTREE_SCOPE))
-ldapprotocol <none> (LDAP protocol (default none))
-ldapauthattr <LDAP authentication attribute> (default no value)
-ldapport <LDAP port> (default no value)

```

-ldapdescattr <LDAP user description attribute> (default DN)
-ldapsslkeyring <LDAP IBM SSL keyring name> (default no value)
-ldapsslpwd <LDAP IBM SSL password> (default no value)
-ldapsslcpkrs <LDAP IBM SSL ciphers> (default SSL_RSA_EXPORT_WITH_RC4_40_MD5
SSL_RSA_EXPORT_WITH_DES40_CBC_SHA SSL_RSA_EXPORT_WITH_RC2_CBC_40_MD5)
-d <directory path location cmcmenv.properties> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))

-a <update> (action) -c <LDAP> (category)
-ldapenabled <TRUE | FALSE> (LDAP enabled (default TRUE))
-ldapdatasourcesenabled <TRUE | FALSE> (LDAP datasources enabled (default FALSE))
-ldapuserauthenabled <TRUE | FALSE> (LDAP user authentication enabled (default FALSE))
-ldapfactory <LDAP Java JNDI context factory> (default com.sun.jndi ldap.LdapCtxFactory)
-ldapstype <ACTIVE_DIRECTORY | STANDARD_LDAP> (LDAP server type (default STANDARD_LDAP))
-ldapur1 < LDAP service provider url>
-ldapref <follow | ignore> (LDAP referral (default ignore))
-ldapauth <simple> (LDAP referral (default simple))
-ldapuid <LDAP principal>
-ldapcred <LDAP credentials>
-ldaprootdn <LDAP root domain name>
-ldapsrscope <SUBTREE_SCOPE | ONELEVEL_SCOPE> (LDAP search scope (default SUBTREE_SCOPE))
-ldapprotocol <none> (LDAP protocol (default none))
-ldapauthattr <LDAP authentication attribute> (default no value)
-ldapport <LDAP port> (default no value)
-ldapdescattr <LDAP user description attribute> (default DN)
-ldapsslkeyring <LDAP IBM SSL keyring name> (default no value)
-ldapsslpwd <LDAP IBM SSL password> (default no value)
-ldapsslcpkrs <LDAP IBM SSL ciphers> (default SSL_RSA_EXPORT_WITH_RC4_40_MD5
SSL_RSA_EXPORT_WITH_DES40_CBC_SHA SSL_RSA_EXPORT_WITH_RC2_CBC_40_MD5)
-d <directory path location cmcmenv.properties> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))

-a <del> (action) -c <LDAP> (category)
-d <directory path location cmcmenv.properties> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))

```

Examples

- This example adds the CMCFGDIR keyword and value to the cmcmenv.properties file which points to a directory where the INI files are located.

```
java com.ibm.mm.sdk.util.cmcmenv -a add -c fileSystem -p "c:\Program Files\IBM\CMGMT"
```
- This example adds the CMCOMMON_URL keyword and value to the cmcmenv.properties file which point to a web server directory where the INI files are located.

```
java com.ibm.mm.sdk.util.cmcmenv -a add -c URL -url
http://www.mycorp.com/cmgmt
```
- This example adds the CMCOMMON_LDAP keyword and LDAP values to the cmcmenv.properties file which point to an LDAP server where the Java Federated and/or ICM datastore data sources are to be stored. After you do this, you will need to run some other LDAP Java utilities described below to put entries for the Federated and/or ICM data sources into this LDAP server. The data sources for Federated and/or ICM datastores is only available for the Java version of these connectors.

IBM Secure Way:

```
java com.ibm.mm.sdk.util.cmcmenv -a add -c LDAP
```

```
-ldapdatasourcesenabled TRUE -ldapurl ldap://www.mycorp.com  
-ldapuid cn=root -ldapcred mypwd -ldaprootdn o=IBM,c=US
```

MS Active Directory:

```
java com.ibm.mm.sdk.util.cmcmenv -a add -c LDAP  
-ldapdatasourcesenabled TRUE -ldapstype ACTIVE_DIRECTORY  
-ldapurl ldap://www.mycorp2.com -ldapuid myuid -ldapcred  
mypwd -ldaprootdn DC=mycorp,DC=org -ldapport 389
```

INI configuration files

These sections describe the various INI files, their purpose, `cmbcmenv.properties` file keywords, and the utility JAR files required to generate them. The sections also describe their Java utility usage, flags, and examples. The files listed here will be created if they do not exist. The `cmbutil81.jar` should always be included with the `cmbutilicm81.jar`, `cmbutilfed81.jar` and `cmbutiljdbc81.jar`.

For Enterprise Information Portal: after installing the system administration client or connectors, you can run `cmbenv81.bat` (Windows) or `cmbenv81.sh` (AIX and Solaris) to automatically set the classpath for the Java utilities.

For Content Manager: after installing the system administration client, you can run `cmbicmenv81.bat` (Windows) to automatically set the classpath for the Java utilities.

Attention: Parenthesis contain comments and information, not utility parameters. The phrase "n/a" means that the INI file has no utility.

Table 28. C++ INI files

INI files	Connector	cmbcmenv.properties keywords	Required utility JAR files	Page number
<code>cmbcc2mime.ini</code>	common	CMCFGDIR	n/a	n/a
<code>cmbpool.ini</code>	common	CMCFGDIR	n/a	n/a
<code>cmbicmenv.ini</code>	ICM	CMCFGDIR, CMCOMMON_URL	<code>cmbutil81.jar</code> , <code>cmbutilicm81.jar</code>	Page 193
<code>cmbicmsrvs.ini</code>	ICM	CMCFGDIR, CMCOMMON_URL	<code>cmbutil81.jar</code> , <code>cmbutilicm81.jar</code>	Page 194
<code>cmbfedenv.ini</code>	Fed	CMCFGDIR, CMCOMMON_URL	<code>cmbutil81.jar</code> , <code>cmbutilfed81.jar</code>	Page 195
<code>cmbds.ini</code>	Fed	CMCFGDIR, CMCOMMON_URL	<code>cmbutil81.jar</code> , <code>cmbutilfed81.jar</code>	Page 196
<code>cmbdsod.ini</code>	OD	CMCFGDIR	n/a	n/a
<code>cmbdes.ini</code>	DES	CMCFGDIR	n/a	n/a

Table 29. Java INI files

INI files	Connector	cmbcmenv.properties keywords	Required utility JAR files	Page number
<code>cmbcc2mime.ini</code>	common	CMCFGDIR, CMCOMMON_URL	n/a	n/a

Table 29. Java INI files (continued)

INI files	Connector	cmcmenv.properties keywords	Required utility JAR files	Page number
cmbcs.ini	common	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar	Page 197
cmbclient.ini	common	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar	Page 198
cmbsvclient.ini	common	CMCFGDIR, CMCOMMON_URL	n/a	n/a
cmbsvcs.ini	common	CMCFGDIR, CMCOMMON_URL		
cmbpool.ini	common	CMCFGDIR, CMCOMMON_URL		
cmbicmenv.ini	ICM	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar, cmbutilicm81.jar	Page 193
cmbicmsrvs.ini	ICM	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar, cmbutilicm81.jar	Page 194
cmbfedenv.ini	Fed	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar, cmbutilfed81.jar	Page 195
cmbds.ini	Fed	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar, cmbutilfed81.jar	Page 196
cmbjdbsrvs.ini	JDBC	CMCFGDIR, CMCOMMON_URL	cmbutil81.jar, cmbutiljdbc81.jar	Page 199
cmbdsod.ini	OD	CMCFGDIR, CMCOMMON_URL		
cmbdes.ini	DES	CMCFGDIR, CMCOMMON_URL		

cmbicmenv.ini (ICM connector)

This INI file has database connect information. Whenever you catalog a new database, you need to add it to this INI file.

JAR files need to run utility:

- cmbutil81.jar
- cmbutilicm81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbenvicm
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

```
-s <library server database name>  
-u <database userid>  
-p <database password>  
-d <directory path location cmbicmenv.ini> (default current directory)  
-seeerr <TRUE | FALSE> (display error messages for add, update and  
delete operations (default TRUE))
```

-a <update> (action)

```
-s <library server database name>  
-u <database userid>  
-p <database password>  
-d <directory path location cmbicmenv.ini> (default current directory)  
-seeerr <TRUE | FALSE> (display error messages for add, update and  
delete operations (default TRUE))
```

-a (action)

```
-s <library server database name>  
-d <directory path location cmbicmenv.ini> (default current directory)  
-seeerr <TRUE | FALSE> (display error messages for add, update and  
delete operations (default TRUE))
```

Examples

- This example adds an entry for a library server.

```
java com.ibm.mm.sdk.util.cmbenvicm -a add -s icmnlbdb -u icmconct -p  
mypwd
```

cmbicmsrvs.ini (ICM connector)

This INI file has datastore data source information. Whenever you catalog a new database, you need to add it to this INI file.

JAR files need to run utility:

- cmbutil81.jar
- cmbutilicm81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbsrvsicm
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

```
-s <library server database name>
-sm <database schema name>
-r <DB2> (database representation type (default DB2))
-ssso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
-rs <TRUE | FALSE> (remote server indicator (default FALSE))
-host <hostname> (default no value)
-port <port number> (default no value)
-rdb <remote database name> (default no value)
-node <node name> (default no value)
-os <NT | MVS | AIX | SUN> (operating system type (default no value))
```

-a <update> (action)

```
-s <library server database name>
-sm <database schema name>
-r <DB2> (database representation type (default DB2))
-ssso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
-rs <TRUE | FALSE> (remote server indicator (default FALSE))
-host <hostname> (default no value)
-port <port number> (default no value)
-rdb <remote database name> (default no value)
-node <node name> (default no value)
-os <NT | MVS | AIX | SUN> (operating system type (default no value))
```

-a (action)

```
-s <library server database name>
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

Examples

- This example adds an entry for a library server.

```
java com.ibm.mm.sdk.util.cmbsrvsicm -a add -s icmnlbdb -sm ICMADMIN
```

cmbfedenv.ini (Federated connector)

This INI file has database connect information. Whenever you catalog a new database you need to add it to this INI file.

JAR files need to run utility:

- cmbutil81.jar
- cmbutilfed81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbenvfed
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

-s <federated database name>
-u <database userid>
-p <database password>
-d <directory path location cmbfedenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a <update> (action)

-s <federated database name>
-u <database userid>
-p <database password>
-d <directory path location cmbfedenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a (action)

-s <federated database name>
-d <directory path location cmbfedenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

Examples

- This example adds an entry for a Federated database.

```
java com.ibm.mm.sdk.util.cmbenvfed -a add -s icmnlbdb -u icmconct -p  
mypwd
```

cmbds.ini (Federated connector)

This INI file has datastore data source information. Whenever you catalog a new database you need to add it to this INI file.

JAR files need to run utility:

- cmbutil81.jar
- cmbutilfed81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbdsfed
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

```
-s <federated database name>
-sm <database schema name>
-r <DB2> (database representation type (default DB2))
-ssso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
-rs <TRUE | FALSE> (remote server indicator (default FALSE))
-host <hostname> (default no value)
-port <port number> (default no value)
-rdb <remote database name> (default no value)
-node <node name> (default no value)
-os <NT | MVS | AIX | SUN> (operating system type (default no value))
```

-a <update> (action)

```
-s <federated database name>
-sm <database schema name>
-r <DB2> (database representation type (default DB2))
-ssso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
-rs <TRUE | FALSE> (remote server indicator (default FALSE))
-host <hostname> (default no value)
-port <port number> (default no value)
-rdb <remote database name> (default no value)
-node <node name> (default no value)
-os <NT | MVS | AIX | SUN> (operating system type (default no value))
```

-a (action)

```
-s <federated database name>
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

Examples

- This example adds an entry for a Federated database.

```
java com.ibm.mm.sdk.util.cmbdsfed -a add -s icmnlbdb -sm ICMADMIN
```

cmbcs.ini (Java connectors)

This INI file has local or remote keywords for each datastore. Local does not use RMI. The CS package for a datastore uses the server package for that datastore internally. Remote uses RMI. The CS package for a datastore uses the client package for that datastore internally.

JAR files need to run utility: cmbutil81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbcs
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

-dstype <datastore type>

-local <TRUE | FALSE> (use local datastore if TRUE else use remote datastore if FALSE for a particular datastore type (default TRUE))

-d <directory path location cmbclient.ini> (default current directory)

-seeerr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a <update> (action)

-dstype <datastore type>

-local <TRUE | FALSE> (use local datastore if TRUE else use remote datastore if FALSE for a particular datastore type (default TRUE))

-d <directory path location cmbclient.ini> (default current directory)

-seeerr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

-a (action)

-dstype <datastore type>

-d <directory path location cmbclient.ini> (default current directory)

-seeerr <TRUE | FALSE> (display error messages for add, update and delete operations (default TRUE))

Examples

- This example adds an entry to the cmbcs.ini.

```
java com.ibm.mm.sdk.util.cmbcs -a add -dstype ICM
```

cmbclient.ini (Java connectors)

This INI file has the datastore RMI server host name and port number.

JAR files need to run utility: cmbutil81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbclient
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

```
-s <federated database name>
-sm <database schema name>
-r <DB2> (database representation type (default DB2))
-ssso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

-a <update> (action)

```
-s <federated database name>
-sm <database schema name>
-r <DB2> (database representation type (default DB2))
-ssso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

-a (action)

```
-s <federated database name>
-d <directory path location cmbicmenv.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

Examples

- This example adds the entry to the cmbclient.ini.

```
java com.ibm.mm.sdk.util.cmbclient -a add -hostname myhost.corp.com
-port 1919
```

cmbjdbcsvs.ini (JDBC connector)

This INI file has the datastore data sources. You need to add an entry for every JDBC server that should be returned from listDataSources in the JDBC connector.

JAR files need to run utility:

- cmbutil81.jar
- cmbutiljdbc81.jar

Usage

```
java com.ibm.mm.sdk.util.cmbsrvsjdbc
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

```
-s <JDBC datasource>
-jdbcdriver <JDBC driver name>
-d <directory path location cmbjdbcsvs.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

-a <update> (action)

```
-s <JDBC datasource>
-jdbcdriver <JDBC driver name>
-d <directory path location cmbjdbcsvs.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

-a (action)

```
-s <JDBC datasource>
-d <directory path location cmbjdbcsvs.ini> (default current directory)
-seeerr <TRUE | FALSE> (display error messages for add, update and
delete operations (default TRUE))
```

Examples

- This example adds the entry to the cmbjdbcsvs.ini.

```
java com.ibm.mm.sdk.util.cmbsrvsjdbc -a add -s jdbc:db2:sample
-jdbcdriver COM.ibm.db2.jdbc.app.DB2Driver
```

Lightweight Directory Access Protocol (LDAP) data sources

These sections describe the various LDAP data sources, their purpose, and the utility JAR files required to generate them. The sections also describe their Java utility usage, flags, and examples. The `cmbutil81.jar` should always be included with the `cmbutilicm81.jar`, `cmbutilfed81.jar` and `cmbutiljdbc81.jar`.

Attention: Parenthesis contain comments and information, not utility parameters.

Refer to Table 30 for the page number that matches your type of LDAP data source. For the ICM connector, information contained in LDAP is the same as the information contained in “`cmbicmsrvs.ini` (ICM connector)” on page 194. For the Federated connector, information contained in LDAP is the same as the information contained in “`cmbds.ini` (Federated connector)” on page 196.

Table 30. Page numbers for LDAP data sources

Java connector type	<code>cmbcmenv.properties</code> keywords	IBM Directory Server	Microsoft Active Directory
ICM	CMCOMMON_LDAP	Page 201	Page 204
Federated	CMCOMMON_LDAP	Page 205	Page 208

LDAP (IBM Directory Server) data sources for Java ICM connector

This utility adds entries into the LDAP server pointed to by way of the `cmbscmenv.properties` file.

IBM Directory Server:

1. You must create the following attributes and objects using the IBM Directory Server Directory Management Tool after your LDAP server is started. This step needs to be done before any data sources can be added.
 - a. Schema → Attributes → Edit attribute

```
ibm-dkdbAuth
ibm-dkdbSchema
ibm-dkdbType
ibm-dkdsName
ibm-dkdsType
ibm-dkssso
ibm-dkscheduleAuth
ibm-dkscheduleDayOfWeek
ibm-dkscheduleEnable
ibm-dkscheduleTime
ibm-dkscheduleUID
ibm-dkscheduleUserGroup
ibm-dkRemote
ibm-dkHostName
ibm-dkPort
ibm-dkRemoteDatabase
ibm-dkNodeName
ibm-dkOSType
```

- b. Schema → Object classes → Add object class

```
ibm-dkServerType
(with required attributes) ibm-dkdsType
ibm-dkServerDef
(with required attributes) ibm-dkdsName
(with required attributes) ibm-dkdsType
(with optional attributes) ibm-dkdbAuth
(with optional attributes) ibm-dkdbSchema
(with optional attributes) ibm-dkdbType
(with optional attributes) ibm-dkssso
(with optional attributes) ibm-dkscheduleAuth
(with optional attributes) ibm-dkscheduleDayOfWeek
(with optional attributes) ibm-dkscheduleEnable
(with optional attributes) ibm-dkscheduleTime
(with optional attributes) ibm-dkscheduleUID
(with optional attributes) ibm-dkscheduleUserGroup
(with optional attributes) ibm-dkscheduleUID
(with optional attributes) ibm-dkRemote
(with optional attributes) ibm-dkHostName
(with optional attributes) ibm-dkPort
(with optional attributes) ibm-dkRemoteDatabase
(with optional attributes) ibm-dkNodeName
(with optional attributes) ibm-dkOSType
```

2. The LDAP administrator can have an organizational hierarchy created in LDAP if desired. The data sources can be created under this organization. You can import an LDIF file that contains the information about the organizations. This is optional.

For example, the file below would create the SVL organization under the root `o=IBM,c=US`. Using the IBM Directory Server Web Administration client through your browser (ie `http://myserver.corp.com/ldap`), and by selecting **Database** → **Import LDIF**, the administrator can import an LDIF file.

org.ldif

```
# IBM Directory Server sample LDIF file
#
# The suffix "o=IBM, c=US" should be defined before attempting to load
# this data.
version: 1

dn: o=IBM, c=US
objectclass: top
objectclass: organization
o: IBM

dn: ou=SVL, o=IBM, c=US
objectclass: organizationalUnit
ou: SVL
```

When using the `DKDatastoreICM.listDataSources` or `listDataSourceNames` the connector reads the data sources from the LDAP server. In the configuration string of the datastore, you can specify the organization to use by supplying the `LDAPORG=<org>` (for example, `org` could be `SVL` as in the examples above). This is only valid when using the IBM Directory Server LDAP server.

JAR files need to run utility: (`cmbcm81.jar`, `cmbicm81.jar`) or `icmsdk81.jar` or `cmbsdk81.jar`

Usage

```
java com.ibm.mm.sdk.server.cmbswldapicm
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-o <LDAP organization under which server definition context will be stored> (default no value)

-a (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-o <LDAP organization under which server definition context will be stored> (default no value)

```

-a <add> (action)
-s <library server database name>
-schema <database schema name>
-r <DB2> (database representation type (default DB2))
-sso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-o <LDAP organization under which server definition context will be stored> (default no value)
-rs <TRUE | FALSE> (remote server indicator (default FALSE))
-host <hostname> (default no value)
-port <port number> (default no value)
-rdb <remote database name> (default no value)
-node <node name> (default no value)
-os <NT | MVS | AIX | SUN> (operating system type (default no value))

-a <del> (action)
-s <library server database name>
-o <LDAP organization under which server definition context will be stored> (default no value)

```

Examples

- This example adds the entry into LDAP:
 - Create the context if it has not already been created.


```
java com.ibm.mm.sdk.server.cmbswldapicm -a add -c TRUE -o ou=SVL
```
 - Create a data source under that context if it has not already been created. (repeat)


```
java com.ibm.mm.sdk.server.cmbswldapicm -a add -s icmn1sdb -r DB2
-sso FALSE -dbauth SERVER -schema ICMADMIN -o ou=SVL
```

LDAP (MS Active Directory) data sources for Java ICM connector

This utility adds entries into the LDAP server pointed to by way of the `cmbcmenv.properties` file.

JAR files need to run utility: (`cmbcm81.jar`, `cmbicm81.jar`) or `icmsdk81.jar` or `cmbstdk81.jar`

Usage

```
java com.ibm.mm.sdk.util.cmbadldapicm
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-a (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-a <add> (action)

-s <library server database name>

-schema <database schema name>

-r <DB2> (database representation type (default DB2))

-sso <TRUE | FALSE> (single signon supported (default FALSE))

-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))

-rs <TRUE | FALSE> (remote server indicator (default FALSE))

-host <hostname> (default no value)

-port <port number> (default no value)

-rdb <remote database name> (default no value)

-node <node name> (default no value)

-os <NT | MVS | AIX | SUN> (operating system type (default no value))

-a (action)

-s <library server database name>

Examples

- This example adds the entry into LDAP:
 - Create the context if it has not already been created.

```
java com.ibm.mm.sdk.server.cmbadldapicm -a add -c TRUE
```
 - Create a data source under that context if it has not already been created. (repeat)

```
java com.ibm.mm.sdk.server.cmbadldapicm -a add -s icmnlbdb -r DB2 -sso FALSE -dbauth SERVER -schema ICMADMIN
```

LDAP (IBM Directory Server) data sources for Java Federated connector

This utility adds entries into the LDAP server pointed to by way of the `cmbcmenv.properties` file.

IBM Directory Server:

1. You must create the following attributes and objects using the IBM Directory Server Directory Management Tool after your LDAP server is started. This step needs to be done before any data sources can be added.
 - a. Schema → Attributes → Edit attribute

```
ibm-dkdbAuth
ibm-dkdbSchema
ibm-dkdbType
ibm-dkdsName
ibm-dkdsType
ibm-dkssso
ibm-dkscheduleAuth
ibm-dkscheduleDayOfWeek
ibm-dkscheduleEnable
ibm-dkscheduleTime
ibm-dkscheduleUID
ibm-dkscheduleUserGroup
ibm-dkRemote
ibm-dkHostName
ibm-dkPort
ibm-dkRemoteDatabase
ibm-dkNodeName
ibm-dkOSType
```

- b. Schema → Object classes → Add object class

```
ibm-dkServerType
(with required attributes) ibm-dkdsType
ibm-dkServerDef
(with required attributes) ibm-dkdsName
(with required attributes) ibm-dkdsType
(with optional attributes) ibm-dkdbAuth
(with optional attributes) ibm-dkdbSchema
(with optional attributes) ibm-dkdbType
(with optional attributes) ibm-dkssso
(with optional attributes) ibm-dkscheduleAuth
(with optional attributes) ibm-dkscheduleDayOfWeek
(with optional attributes) ibm-dkscheduleEnable
(with optional attributes) ibm-dkscheduleTime
(with optional attributes) ibm-dkscheduleUID
(with optional attributes) ibm-dkscheduleUserGroup
(with optional attributes) ibm-dkscheduleUID
(with optional attributes) ibm-dkRemote
(with optional attributes) ibm-dkHostName
(with optional attributes) ibm-dkPort
(with optional attributes) ibm-dkRemoteDatabase
(with optional attributes) ibm-dkNodeName
(with optional attributes) ibm-dkOSType
```

2. The LDAP administrator can have an organizational hierarchy created in LDAP if desired. The data sources can be created under this organization. You can import an LDIF file that contains the information about the organizations. This is optional.

For example, the file below would create the SVL organization under the root `o=IBM,c=US`. Using the IBM Directory Server Web Administration client through your browser (ie `http://myserver.corp.com/ldap`), and by selecting **Database** → **Import LDIF**, you can import an LDIF file.

org.ldif

```
# IBM Directory Server sample LDIF file
#
# The suffix "o=IBM, c=US" should be defined before attempting to load
# this data.
```

```
version: 1
```

```
dn: o=IBM, c=US
objectclass: top
objectclass: organization
o: IBM
```

```
dn: ou=SVL, o=IBM, c=US
objectclass: organizationalUnit
ou: SVL
```

When using the `dKDatastoreFed.listDataSources` or `listDataSourceNames` the connector reads the data sources from the LDAP server. In the configuration string of the datastore, you can specify the organization to use by supplying the `LDAPORG=<org>` (for example, `org` could be `SVL` as in the examples above). This is only valid when using the IBM Directory Server LDAP server.

JAR files need to run utility: (`cmbscm81.jar`, `cmbfed81.jar`) or `cmbsdk81.jar`

Usage

```
java com.ibm.mm.sdk.server.cmbswldapfed
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-o <LDAP organization under which server definition context will be stored> (default no value)

-a (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-o <LDAP organization under which server definition context will be stored> (default no value)

```

-a <add> (action)
-s <library server database name>
-schema <database schema name>
-r <DB2> (database representation type (default DB2))
-sso <TRUE | FALSE> (single signon supported (default FALSE))
-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))
-o <LDAP organization under which server definition context will be stored> (default no value)
-rs <TRUE | FALSE> (remote server indicator (default FALSE))
-host <hostname> (default no value)
-port <port number> (default no value)
-rdb <remote database name> (default no value)
-node <node name> (default no value)
-os <NT | MVS | AIX | SUN> (operating system type (default no value))

-a <del> (action)
-s <library server database name>
-o <LDAP organization under which server definition context will be stored> (default no value)

```

Examples

- This example adds the entry into LDAP:
 - Create the context if it has not already been created.


```
java com.ibm.mm.sdk.server.cmbswldapfed -a add -c TRUE -o ou=SVL
```
 - Create a data source under that context if it has not already been created. (repeat)


```
java com.ibm.mm.sdk.server.cmbswldapfed -a add -s icmnlbdb -r DB2
-sso FALSE -dbauth SERVER -schema ICMADMIN -o ou=SVL
```

LDAP (MS Active Directory) data sources for Java Federated connector

This utility adds entries into the LDAP server pointed to by way of the `cmbcmenv.properties` file.

JAR files need to run utility: (`cmbcm81.jar`, `cmbfed81.jar`) or `cmbSDK81.jar`

Usage

```
java com.ibm.mm.sdk.util.cmbadldapfed
```

Flags

Input parameter is optional if it has a default value.

-h (help)

-a <add> (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-a (action)

-c <TRUE | FALSE> (LDAP server definition context under which server definitions will be stored (default FALSE))

-a <add> (action)

-s <library server database name>

-schema <database schema name>

-r <DB2> (database representation type (default DB2))

-sso <TRUE | FALSE> (single signon supported (default FALSE))

-dbauth <CLIENT | SERVER> (single signon supported (default SERVER))

-rs <TRUE | FALSE> (remote server indicator (default FALSE))

-host <hostname> (default no value)

-port <port number> (default no value)

-rdb <remote database name> (default no value)

-node <node name> (default no value)

-os <NT | MVS | AIX | SUN> (operating system type (default no value))

-a (action)

-s <library server database name>

Examples

- This example adds the entry into LDAP:
 - Create the context if it has not already been created.

```
java com.ibm.mm.sdk.server.cmbadldapfed -a add -c TRUE
```
 - Create a data source under that context if it has not already been created. (repeat)

```
java com.ibm.mm.sdk.server.cmbadldapfed -a add -s icmnlbdb -r DB2 -sso FALSE -dbauth SERVER -schema ICMADMIN
```

Migrating EIP Version 7 databases

The EIP Version 8.2 migration utility converts the information stored in EIP Version 7.1 databases to a format that is compatible with the new EIP Version 8.2 database. Besides the required EIP functionality, the new EIP Version 8 database contains, but does not use, all the information found in a Content Manager Version 8 database.

Planning EIP Version 7 migration

The migration process is automated and copies all the required information from the Version 7.1 database to a text file, then copies the text information into the new database.

Restriction: The EIP migration process migrates users from Version 7.1 databases. EIP Version 8.2 does not provide any automated migration of workflow data. You must redraw your Version 7.1 workflow diagrams using the EIP Version 8.2 workflow builder and redeploy the EIP Version 7.1 workflow processes.

The following list gives basic guidelines to help plan EIP Version 7.1 database migration:

- You must create and catalog one EIP Version 8.2 database for each EIP Version 7.1 database you plan to migrate.
- You can only migrate one database at a time.
- The migrated databases will require more space than the Version 7.1 database to accommodate extra rows and tables that contain unused Content Manager Version 8 database functions.
- If you plan to migrate information mining, please contact your IBM representative. Before you remove the information mining services or EIP with all features, you must backup the information mining database.

If you installed the information mining feature with EIP in an earlier release, the information mining database (information mining database) is deleted when you remove EIP. If you want to keep data in this database, back it up before you uninstall. In a db2cmd command window enter db2 list db directory. If IKF appears in the returned list of databases, the information mining database exists. In the DB2 Command Window, type db2 backup database IKF to <dir> where <dir> is a directory of your choice.

Migrating EIP 7.1 databases

This section explains how to migrate EIP 7.1 databases to EIP Version 8.2. Tip: If you are upgrading from EIP Version 8.1, no database migration is required.

The EIP Version 8.2 migration utility copies most of the EIP 7.1 data to an EIP 8.2 database. The EIP 7.1 database is preserved. Optionally, back up the EIP 7.1 databases before you migrate.

You can migrate EIP 7.1 databases two ways:

- Migrate multiple EIP 7.1 databases into one EIP 8.2 database, or
- Migrate each EIP 7.1 database into a corresponding new EIP 8.2 database

The migration utility copies the following data into the new database:

- Server definitions
- User management objects, authorization objects and user mappings
- Federated entities with federated attributes, schema mappings
- Search templates with search criteria
- User defined server type
- Mime Type, Mime to Application
- Workflow related data.

Restriction: EIP Version 7.1 worklist information is not migrated. You must recreate the worklist information in the corresponding EIP 8.2 database.

Before you migrate

Before you use the migration utility, you must create the new database(s).

To successfully run the migration utility, install and verify the following EIP 8.2 components:

- EIP Version 8 Federated Connector (local on the system where you will perform the migration)
- EIP Version 8 administration database (federated database) (local or remote to the system where you will perform the database migration)
- If you plan to migrate to or from a remote database, you must catalog the database(s) before you use the migration utility. Use DB2 Client Configuration Assistant, the DB2 command line processor, or the EIP Version 8.2 Server Configuration Utility to catalog the remote database(s).

Using the migration utility

1. Create a temporary directory on the computer where you will use the migration utility.
2. Insert the EIP Version 8 installation CD and navigate to the EIP root directory.

3. Copy migration81.jar, Cmbmig7_2_8.bat for Windows or Cmbmig7_2_8.sh for AIX to the temporary directory created in step 1.
4. Start the migration utility from a command prompt. For example on Windows, C:\temp \run cmbmig_7_2_8.bat. On AIX, the command would be # cd /tmp/run cmbmig_7_8.sh. **Tip:** the migration utility software automatically configures the storage space necessary for the new database(s).
5. After you start the migration utility, answer the following prompts:
 - a. Name of the original database. *Example:* CMBDB1
 - b. DB2 connect ID for the old database. *Example:* cmbadmin
 - c. DB2 connection password. *Example:* password
 - d. Schema name for the old database. *Example:* cmbadmin
 - e. Name of the new database. *Example:* ICMNLSDB
 - f. Library server user ID. *Example:* ICMADMIN
 - g. Library server password. *Example:* password
 - h. Schema name for the library server database. *Example:* ICMADMIN

If you migrate multiple EIP 7.1 databases into one EIP 8.2 database, you must use the migration utility once for each old database and supply the same answers for steps 5-8. To migrate each EIP 7.1 database into a corresponding EIP 8.2 database, you must run the migration utility for each database with unique answers for steps 5e through 5h.

Verifying the migration

The utility displays a message when database migration completes. If errors occurred, exception messages are written to the error log file dklog.log.

To verify database migration:

1. Log on to the EIP Version 8.2 system administration client.
2. Click the drop-down list next to the Server field on the client login window.
3. Select a migrated database.
4. Type the user ID and password for the migrated database.
5. Click OK.
6. The client opens, and the name of migrated database is listed in the client main window.

Working with the EIP sample client

With the EIP sample client, Windows end users can search for and view data stored on content servers. Users can search the content servers through a direct connection. Or users can connect to the EIP federated database and select a federated search template to search multiple servers at the same time. To create the sample client, you compile Java code after installing EIP. The EIP installation program installs the sample client by default. The sample client is available in multiple languages.

To compile and access the sample client:

1. Establish the development environment: Click **Start→Programs→Enterprise Information Portal for Multiplatforms 8.2→Development Window**.
2. In a command window, change to `c:\CMBROOT\SAMPLES\java\beans\gui`
3. Select the language code for your locale from the list of files named with `CMBCA Text Resources.xx.java`, where `xx` is the language code for your locale. **Hint:** To help ensure an error-free compile, rename all of the `CMBCA Text Resource` files that do not apply to your locale, or move them to another directory.
4. Compile the sample client by typing `javac *.java`.
5. Launch the sample client by typing `java SampleClient .`
6. Select a content server, or select the federated database.
7. Type the user ID associated with the server or federated database.
8. If you log in to the federated database, you can use a federated search template to retrieve information from different content servers.
9. Select an item from the list of returned items.
10. If you searched a Content Manager OnDemand server, you must install the OnDemand Viewer to view data returned from an OnDemand server.

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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 *search templates* in the Enterprise Information Portal system.

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.

ADSM. See *Tivoli Storage Manager*.

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.

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*.

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.

AVI. See *Audio/Video Interleaved*.

B

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.

BLOB. See *binary large object*.

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.

cardinality. The number of rows in a database table.

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 application. An application written with the object-oriented or Internet APIs to access *content servers* from Enterprise Information Portal.

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.

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*.

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.

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.

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*.

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*.

DDO. See *dynamic data object*.

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 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.

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

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).

F

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*.

file system. In AIX, the method of partitioning a hard drive for storage.

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 functionality 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.

H

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

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

HTML. See *Hypertext Markup Language*.

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.

I

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.

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*.

IOCA. See *Image Object Content Architecture*.

item. 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

key field. See *attribute*.

L

LAN. See *local area network*.

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 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.

M

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.

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

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.

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*.

N

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.

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.

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

part. See *object*.

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.

PID. See *persistent identifier*.

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.

Q

QBIC. See *query by image content*.

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

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.

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.

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.

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*.

RIFF. See *Resource Interchange File Format*.

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*.

S

search criteria. 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 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.

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*.

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.

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.

T

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.

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.

TSM. See *Tivoli Storage Manager*.

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

U

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. In Enterprise Information Portal, anyone who is identified in the Enterprise Information Portal administration program.

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*.

V

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

W

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.

workflow. 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 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.

X

XDO. See *extended data object*.

XML. See *Extensible Markup Language*.

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