Content Services Export Tool - Start Here

Use the Content Services (CS) Export Tool to export content from a Content Services (CS) library, or subset of a CS library to a Content Engine (CE) object store.

Exporting data from a CS library to a CE object store is not a conversion or full migration of the content. See the What gets exported topic for more information.

IMPORTANT Please contact your FileNet representative if you need to export a complete Content Services library system to the Content Engine environment. We strongly recommend that you do NOT attempt such an export without the assistance of FileNet Professional Services, or a certified partner.

You must have the following files for the CS Export Tool to operate properly:

cs_export.exe
csexport_log_viewer.htm
csexport.xsl

csexport.pdf (This file, not required for CS Export Tool operation)

For additional information, see the following:

CS Export Tool - Overview topics

CS Export Tool - Configuration topics

CS Export Tool - How to... topics

CS Export Tool overviews

The *CS Export Tool overview* topics detail general information about the CS Export Tool.

CS Export support is provided for Version 5.x of Document Services. No export support is available for earlier versions. Users must upgrade Content Services systems to the supported version before they can export documents to the Content Engine environment.

NOTE Exporting data from a Content Services library to a Content Engine object store is not a conversion or full migration of the content. See the What gets exported topic for more information.

IMPORTANT CS Export runs as a trusted application. You must add the user running CS Export to the “Content Engine Servers” group. Then you must log-off, and log-on, on the Content Engine object store server(s) and the machine running CS Export, if it is not running on the same server as the Content Engine Object Store Service.

NOTE When adding documents to a Content Engine object store, CS Export looks into the registry to get each document's MIME Type based on its extension (*.doc* for example). If a MIME Type does not exist, a MIME Type of *application/octet-stream* is assigned. This does not cause a problem when these documents are viewed through Workplace. You can add MIME Types via the CS Export Tool Projects dialog, where you can access the Edit MIME Types dialog.

The processing of CS documents occurs in ascending order based on the document’s ID.

Exporting documents or other CS content to a Content Engine object store may require a separate machine and sufficient additional storage for all of the content that is copied from the Content Services system, potentially doubling the file storage requirements during the export process.

IMPORTANT Please contact your FileNet representative if you wish to export a complete Content Services library system to the Content Engine environment. We strongly recommend that you do NOT attempt such an export without the assistance of FileNet Professional Services, or a certified partner.

Multiple Storage Repositories on different devices

In order to migrate Content Services libraries with multiple storage repositories on multiple drives or servers, ALL repositories need to be moved to one server and one device, and then remapped using Content Services Explorer before running the CS Export Tool.

This single repository will be the *Shelf Drive Letter* that the CS Export Tool will refer to for exporting versions from the CS library.

NOTE The shelf drive letter must be mapped to the shelf location where the CS content files are located.
This mapping must be to the root of the drive where CS Shelf Files are located. This must be performed by the user prior to running the tool. You can use Windows Explorer to map a network drive.

For additional CS Export Tool overview information, see the following topics:

- Exporting content that already exists
- Supported platforms
- Multi-thread design
- What gets exported
- Export phases
- Data locking requirements
- Data structures
- Security requirements
- Log files
- Export data while CS is online
- CS Export restartability
- Command line interface

Exporting content that already exists

The CS Export Tool will export content from Content Services into a folder(s) that already exist in the Content Engine object store folder structure. If folders of the same name(s) already exist in the target object store, then the existing folder(s) will be used.

This is most useful when exporting the same directory structure more than once to the same target object store and folder.

NOTE When this happens, informational message(s) will be generated to the CS Export Tool log, and may also appear in the Windows 2000 server application event log.

Example xml message for duplicate export targets

```
<INFORMATIONAL>
<TIMESTAMP>2002-04-01T11:31:39Z
</TIMESTAMP>
<CONTEXT>Re-using existing target folder.
</CONTEXT>
<DETAIL>CFnMyFoldersMigration::ProcessNode - Unable to create SubFolder
because another folder of the same name already exists: [Test migration
sub folder 1] under Folder:[Test migration folder 1] </DETAIL>
</INFORMATIONAL>If content already exists in a folder, CS Export will make
a file with a unique name, instead of just skipping or overwriting the
file. This is essential since Content Services allows multiple documents
with the same name in the same folder. This also occurs when re-exporting
a folder into the same location more than once. New copies of the same
document will appear with current_name(#) format.

CS Export also generates an informational element in the xml log seen
here:

<INFORMATIONAL>
<TIMESTAMP>2002-04-01T11:32:03Z</TIMESTAMP>
<CONTEXT>Document containment name renamed.</CONTEXT>
<DETAIL>Document [003670004] in folder [Test migration sub folder 1] was
renamed to [003670004(4)] because a document with the same name already
existed.</DETAIL>
</INFORMATIONAL>
```

Supported platforms

Windows 2000 and Windows 2003 are the only supported platforms for the CS Export Tool. This is because the CS Export Tool is itself a Content Engine client.

The CS Export Tool is a Content Engine COM client that can run on servers running Content Engine components including a stand-alone Content Engine Enterprise Manager server, and thus can only be run in a Windows platforms. For the Content Engine, the tool communicates to it using the Content Engine COM API and therefore should support any supported Content Engine database.

The CS Export Tool communicates directly with the CS database, bypassing the CS server API. The CS Export Tool supports both Microsoft SQL and Oracle as a backend CS database.

NOTE If Oracle is used as the database engine, you will need to install the Oracle client software on the server where the CS Export Tool is installed.

The CS Export Tool will support Content Services version 5.2 and higher. It also will support Content Engine version 3.5 and higher.

The CS Export Tool will be supported in the following platforms:

CS Version	CS O/S	CS Database	Migrate To	CE O/S	CE Remote Database
5.2, 5.3	Win 2000/2003	SQL 2000		Win 2002/2003	Win 2000/2003/SQL or Oracle 9.2
5.2, 5.3	Win 2000/2003, HP-UX, AIX	Oracle 8.17.4/9.2		Win 2002/2003	Win 2000/2003, Oracle 9i on AIX 5.1 or 5.2 64bit, HP 11i 64 bit, Solaris 9
5.2, 5.3, 5.4	Sun Solaris 8, 9	Oracle 8.17.4/9.2		Win 2002/2003	Win 2000/2003, Oracle 9i on AIX 5.1 or 5.2 64bit, HP 11i 64 bit, Solaris 9

Table 1 CS to CE Supported platforms

CS Export multi-thread design

The CS Export Tool uses multiple worker threads to improve document migration performance. The number of threads that are spawned is user configurable in the Project Details dialog. Each worker thread repeatedly migrates a batch of documents, (the size of the batch is also user configurable), until all of the documents have been migrated or the user aborts the operation.

The CS Export Tool, prior to spawning the worker threads, first constructs a master list of all documents that will be migrated for a particular migration. This list is actually an ADO recordset. Once the worker threads are created and running, they begin to process documents by retrieving information from the current record in the recordset.

Once a record is requested by a thread, the recordset cursor is automatically advanced to the next record so that the same document cannot be processed by different threads.

NOTE A thread won't actually begin processing of documents until it has the number of documents that corresponds to the user's batch size, which is also user configurable.

There is no guarantee that the document(s) a thread will process for a given batch will have contiguous document ID's.

What gets exported

With the exceptions listed below, all objects created and used by FileNet applications will be supported by the CS Export functionality.

NOTE When your CS system has documents filed in multiple folders (eg; multiple references of the same Document ID), it is recommended you first export all of your folders, but choose to not select any document classes. Then select the documents to be exported by using the docclass filter in the *Doc Classes to export* dialog and perform a 2nd migration.

IMPORTANT Content Services Custom Properties that have a default value set at the property level (or at the class level) in CS will have that default value set during the export process. The Required Flag will **not** get migrated to the Content Engine. Also, after the migration is completed, the default may be set manually. It should be noted that a default should **not** be set to a value that is not in a *Controlled Vocabulary List* (CVL) assigned to this property.

NOTE This is to eliminate the possibility of errors where a custom property has a default vaulte set to a value that is not in the *Controlled Vocabulary List* (CVL) assigned to the property.

WARNING When running CS Export and exporting a CS document using a Doc class that has an integer custom property with a CVL assigned and the property is blank (null) on the document, CS Export generates an error saying "Error Setting custom property" and the detail message states "FileNet P8 Content Engine DMA Core Library - The value specified for property 'SVCPIntegerItem01' is not one of the permitted values." You can view the errors in the CS Export log files.

Exporting the following Content Services objects are not supported:

- Workflow objects
- Compound Document objects
- Replication Objects
- External Documents

- Any object representing Content Services specific data and services (Application, Archive Category, Archive Repository, Backup, Display Language, Message, Name Service, NLS Support, Other System, Property Manager, Search, Session, Storage Category, Storage Manager, Storage Repository, System, Update, Upgrade, Usage, Workstation)

Stored searches are exported but are not functional.

NOTE When CVL's are imported from Content Services to Content Engine, a Date CVL is converted into a string. There is no option to add Date CVL's so importing a Date CVL is not possible.

Export phases

The CS Export Tool runs in 2 phases. See the CS Export flow diagram topic for a flowchart that details the export process:

- Metadata
- Folders, Documents and Versions

For additional information on CS Export Restartability, See the CS Export restartability topic for details:

For the Folders, Documents and Versions phase, both content and Metadata give full details. Metadata will always produce an XML detail log. The metadata XML log is fed into the Content Engine Import API for the creation of the doc classes, and custom properties. The Content Engine Import is not used for the export of folders, docs and versions.

NOTE The CS Export Tool export phases do not modify any part of the source Content Services system.

Metadata phase

The metadata phase exports all doc classes, CVLs and custom properties to the target Content Engine object store. Doc classes are added as child classes of **CS Export Document Base Class**. CS system properties that do not map to native Content Engine DocVer/CVL properties are placed into custom properties on this base class.

Here are the steps the CS Export Tool follows:

- Read all of the Document classes, CVLs, and properties from the source CS system and produce an XML export file to be used by the Content Engine XML import code.
- Create all CS property classes and CVLs by passing the generated XML to the import procedures.
- Create all CS doc classes as child classes of **CS Export Document Base Class** by passing the generated Doc Class XML to the import procedures.

The following table shows Property to CE Custom Property Relationships.

CSProperty	CSDatabase	CECustomProperty
Item::Item ID	ELEMENT.E_NAME	CS Original Document ID
Item::Original Filename	ELEMENT.E_ORG_FILENAME	CS Original Filename
Item::Keywords	ELEM_KW	CS Original Keywords
Item::Comment	ELEMENT.E_COMMENT	CS Original Item Comment
Version::Comment	VERSION.V_COMMENT	CS Original Version Comment
Version::Version ID	VERSION.V_NAME	CS Original Version
Version::Checkin Date	VERSION.V_CREATE_DATE	CS Original Creation Date

Table 2 Property to CE Custom Property Relationships

Folders, Documents and Versions

For every document class in the source CS system there are system properties that do not map to native Content Engine system properties. For example, each version moved from CS contains a version branch and version number. For Content Engine to maintain all of this information, a custom property is required.

All such system properties for CS versions and documents will be added to the **CS_Export_Document_Base_Class** in Content Engine. The CS_Export_Document_Base_Class will be the parent class for every document class exported from CS.

The Folders and Documents phase migrates selected folders and documents from the source CS library to the target CE object store using the CE API. This phase proceeds as follows:

The tool queries the source CS system for documents based on document classes and folders the user has selected for export.

This information is primarily held in the **ELEMENT** and **VERSION** tables of the CS database. Keyword and other list properties are retrieved from the CS database in separate queries. Slightly different SQL commands are issued for Oracle and SQL Server databases with and without named instances.

Data locking requirements

Two types of locking on the source content may be required during the export process:

- Type 1 - the suspension of changes to the doc classes and CVLs
- Type 2 - the suspension of all changes to the source database (eg; making the source read only)

The primary intent for this tool is not to make an exact copy of a CS system to a Content Engine system. However, if you need the two systems to be identical at the end of the export (with respect to documents and versions) then certain considerations will apply:

- The export must run during a time when there are no other client modifications to the CS system (Type 2 locking – see above). If this can be accomplished for the duration of the export, then a one-pass export is possible.
- If Type 2 locking is not possible for the entire duration, then a two-pass export must be used. A two-pass export requires Type 1 locking during the first pass and Type 2 for the second.

CS Export data structures

Data is read from the Content Services system into two groups for performance reasons. All metadata from the CS system is read into ram at one time.

If other exported objects need this data, then the data is placed in static storage. Other data that can be read and immediately written to Content Engine is considered transitory and is not retained after it is persisted to the Content Engine object store.

Data Storage

For performance reasons, the data that is read from the CS system by CS Export is separated into two groups. Some information is static and is held in memory for the duration of the migration. Other information is transitory and is written to the CE immediately after it is read.

Static data

Static data is composed of metadata and folder information that is very small in relation to the size taken up by the often large number of items and versions. Static data is referenced every time a document is added to the CE and is held in memory to facilitate faster access.

Static data is referenced every time an item and version’s properties are enumerated, and it is for this reason that the static data is held in RAM for faster access.

Transitory data

Transitory data consists of the Item and Version CS objects only. Because of the potentially very large number of these types of objects, they are not retained in memory.

CS Export security requirements

You must have Administrator privileges to install and operate the Content Services Export Tool.

In addition, you need access to Content Services resources such as disk shares and the SQL or Oracle content source.

In CS, security is assigned at the document level, so that all versions of a particular document have the same security settings. When a version is checked out, it is assigned the security of its prior version by default. CS Export sets security on the first version of a version series, and not subsequent ones.

When migrating Security, the inheritance behavior is that all security is applied only to the exported object. If you want objects to inherit security, you must set those settings in the Content Engine after migration.

NOTE Only the CS security is migrated and the Content Engine default instance security is not applied on exported documents.

CS Export log files

For the export process, there is one Master log file produced for all export phases.

The CS Export Tool log files and project files storage location is user configurable from the CS Export Projects dialog. The default location is: ..\Documents and Settings\CEAdmin\My Documents\CS Export Migration Projects. Where *CEAdmin* is the logged in user.

The final log file produced is the summary HTML report, written to a separate summary XML log file. This file bears the same name as the CS Export project file and has an .htm file extension.

The summary information file also contains totals for the number of errors and warnings as well as the number of exported objects. This file contains links to all of the XML detail and summary files produced by the particular export job.

This file allows you to go to one location with a browser and have access to all Log information pertaining to a particular export.

Export data while CS system is online

Since large Content Services systems may take up to multiple days to export depending on the size of the source content, number of objects and physical network connections, the CS Export Tool allows you to export folders and documents to a Content Engine object store while the Content Services system is operational.

If objects are exported from an active Content Services system, one where documents are being added, deleted, or modified, it may be necessary to keep the exported objects up to date if changes are made to the CS originals in the Content Services environment.

RECOMMENDATION During the export process, the Content Engine system should be set to read-only to prevent simultaneous updates of the same objects in both systems causing the original object to become out-of-sync with the exported object. After all objects have been exported, the users will presumably stop accessing the CS system and begin using the Content Engine system.

WARNING CS Export is designed to be run on a Content Engine object store that is not being accessed. Exporting data to the Content Engine environment while there are still users online in the CS environment may cause errors.

CS Export restartability

The CS Export Tool provides the capability to restart the *Document* portion of a CS to CE migration.

Much of the integrity and reliability of the restart mechanism relies upon the CS Export Tool being rerun under the same circumstances as the original migration. That is, the user has not reconfigured the tool in any way such that the query that produced the original master list of documents has not changed.

NOTE The restartability functionality is provided for CS to CE migrations, but not for Dry Runs.

The restart functionality allows the user the ability to manually abort a lengthy migration, and then resume processing at a later time. It can also be used to recover from an unexpected failure and continue processing from the point of the failure.

The user will have no ability to change the name or location of the restart file. It will be located in the same directory as the projects configuration file and have a name that is derived from the project name. If the project name is *MyProject* then the restart file will be named *MyProject-Restart.rst.*

The CS Export Tool will use a restart file, configured in the Project Details dialog, to store and retrieve information that will allow it to restart processing from a previous run that was not completed.

The information stored in the restart file consists of two separate CS document identifiers. One of these values is referred to as the *Restart ID* and is the ID of the last known successfully migrated CS document. The second value is the largest ID the application is currently processing.

As the CS Export Tool processes documents, these two values are periodically updated. Each time the tool writes out this information it simply overwrites the previous information.

NOTE Implicitly assumed is that the CS documents are processed in ascending order.

When restarting an export run, this information will be used to 1.) modify the original query into the CS database to filter the documents processed to have CS document ID’s

above the restart ID and 2.) Prior to the restarted migration this information will be used to clean up any dangling documents on the CE server that were not completely migrated in the original run.

NOTE This is relative to the original CS query. There may be CS documents whose ID is less then the restart ID but they were not part of the original run.

The other identifier represents an upper bound on the last CS document that the tool began processing.

Due to the multi-threaded nature of the CS Export Tool and that CS documents are processed in batches, at any instances in time the tool may be in the process of migrating a range of documents which are in various states of completion.

NOTE Implicit in the restart algorithm and the use of the terms ‘lower’ and ‘upper’ bound is the fact that CS documents are processed in CS item ID order, from lowest to highest relative to the original content selected to be migrated.

When the CS Export Tool is configured for a restart operation, it will do the following:

- Load the restart file and reconfigures the application based upon the configuration information in the restart file.
- First query the CS database for documents with item IDs greater than the Restart ID.
- Second query the target object store for previously migrated documents with CS Original Document ID greater than the Restart ID and less than the aforementioned upper bound.
- Cross reference all documents retrieved in the second query statement with those retrieved in first query statement. If any document appears in both lists then that document is deleted from the target object store. These documents potentially have been incompletely migrated and will be reprocessed.
- Using the query results from the first query statement, processing then begins normally.

CS Export command line interface

CS Export has no command line switches. All input and output parameters are received through the export project initialization file. For example:

```
CS_Export ProjectFileName.ini
```

Running CS_Export.exe with an initialization file (*.ini) as the only parameter loads the specified export project file and take you to the Select Export Content dialog.

The export project file contains entries for all of the necessary parameters required to define the source (CS library) and the destination (Content Engine object store) for the export process. The CS Export Tool handles all details of creating, editing, and saving the export project INI file.

NOTE If the password field is set to <PROMPT> then the CS Export Tool will prompt for a password echoing asterisks (*'s) to the screen.

CS Export Flow Diagram

Return to Export Phases topic.

The CS Export Tool runs in two phases, 1.) Metadata and 2.) Folders and Documents. These are diagramed below:

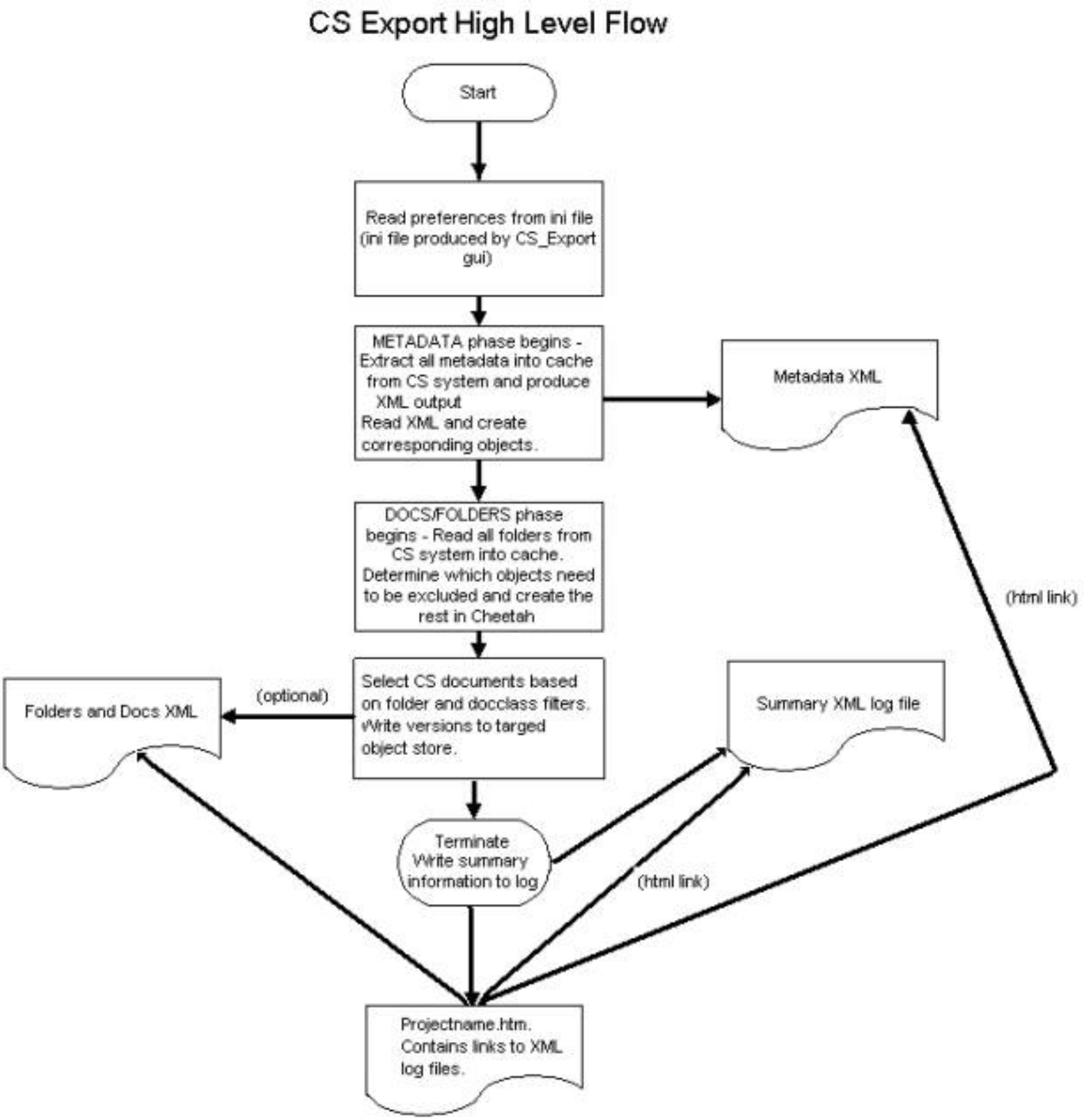

Figure 1: CS Export Flow

Return to Export Phases topic.

CS Export Tool configuration

The CS Export Tool configuration topics will guide you through the steps required to prepare the environment for exporting data from your Content Services installation.

For additional CS Export Tool configuration information, see the following topics:

- CS Export Tool requirements
- Checklist: Exporting data with CS Export
- Worksheet: CS Export Tool settings
- CS Export Projects screen
- Project Details screen
- User/Group Security Mapping screen
- User/Group Security Levels Mapping screen
- MIME Types screen
- Select Export Content screen
- Doc Classes to Export screen
- CS Export Progress screen

CS Export Tool requirements

The CS Export Tool has the following requirements:

- Windows 2000 or Windows 2003 Server operating system and other common requirements such as the latest security hotfixes, Service Packs (SP's), etc.
- Content Services (CS) connection information
- User account that runs the CS Export Tool must have Content Services and Content Engine database access permissions
- All Content Services storage repositories must be mapped to a single drive using the CS System Administration Tool
- CS Export must be installed on the Content Engine server with the CE Enterprise Manager (client) installed
- Content Engine object store must be created
- Content Services database (SQL or Oracle) information
- CS Export runs in a trusted application mode. You must add the user running CS Export to the “Content Engine Servers” group. Then you must log off and back on to the Content Engine object store server(s) and the machine running CS Export, if it is not running on the same server as the Content Engine Object Store Service. You must also log-out and log-on, on to the machine where you are running the CS Export tool.

  NOTE When using SQL server with non-default port numbers, you will be required to configure some mechanism such as an Data source (ODBC) - System DSN to connect to the SQL server.

Checklist: Exporting data with CS Export

To export data from Content Services to Content Engine

Required	Before you begin any Content Engine installation, always check the FileNet support web site (http://www.css.filenet.com) for the latest in documentation updates, and software patches. Log on using your CSS web account. If you do not have an account, follow the online instructions for new users. • To check for documentation updates, choose the **Documentation** link, navigate to Content Engine then follow the links to the correct version number and platform. • To check for software patches, choose the **Troubleshooting** link and navigate to **Download Files/Fixes**.
Highly Recommended	Do a full backup of the CS library systems you plan to migrate from. **NOTE** If the export process fails for any reason, you will need to restart the library export project.
Recommended	Read the product **Release Notes** for information that may affect the CS Export Tool.
Required	Verify that all Content Engine servers are in compliance with the requirements specified in the System Requirements sections found in the Content Engine Installation Guide.
Required	Upgrade your Content Services library system servers if you are not running Version 5.x of Document Services.
Highly recommended	Do a full backup of the exported library system(s) once they are loaded into the object store(s).

Worksheet: CS Export Tool settings

The following CS Export settings will be required to make a connection to an existing Content Services library. Gather the required information as described below:

- Project Details settings

Print this topic and contact your Content Services database administrator for any values you are unsure of.

Required Project Details settings

Project Details settings	Your value
CS Export Project Name	
Content Services Info	
Database Server	
DB Username	
DB Password	
Machine Name	
Shelf Drive Letter	
Database Timeout (seconds)	
Document Versions	
Export Latest Versions Only - Checked by default	
Export Stored Searches	
Export Offline Versions	
'Dry Run' - Don't write to target Object Store system	
Display warnings for shelves not found	
Content Engine	
Target Object Store	Configurable once logged in
Master Log File	
Export Phases	

Metadata Log File	Log file Default: ProjectName-Metadata.xml
Folders/Docs/Versions	
Write to File (check box)	File Default: ProjectName-Folders&Docs.xml
Batch Size	Default: 3
Number of threads	Default: 30
Restart File	File Default: ProjectName-Restart.xml
Migrate Security	Must be checked for security items to be active.
Map Security Levels	
Edit button	

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CS Export Projects screen

When you start the Content Services Export Tool, the Projects screen (shown below) will be displayed.

Use this screen to select and edit the CS Export project parameters that are maintained in project initialization files. These files contain the export configuration data that is used to process the export. The CS Export Tool initialization files are located in the default CS Export folder (The CS Export Tool log files and project files storage location is user configurable from the CS Export Projects screen. The default location is: ..\Documents and Settings\CEAdmin\My Documents\CS Export Migration Projects (Where *CEAdmin* is the logged in user.), and have an *.ini file extension.

Also, use this screen to choose the **Select Export Conten**t and **Edit MIME Types** screens.

You can view existing CS Export reports using the **Display Selected Reports** option.

NOTE The CS Export Tool project files can be processed from a command prompt using the project *.ini files. For more information see the CS Export command line interface topic.

The CS Export Tool project files storage location (folder) is user configurable from the CS Export Projects screen. The default location is the ..\Documents and Settings\CEAdmin\My Documents\CS Export Migration Projects (Where *CEAdmin* is the logged in user.) folder. The CS Export Tool stores all of the project information in that folder.

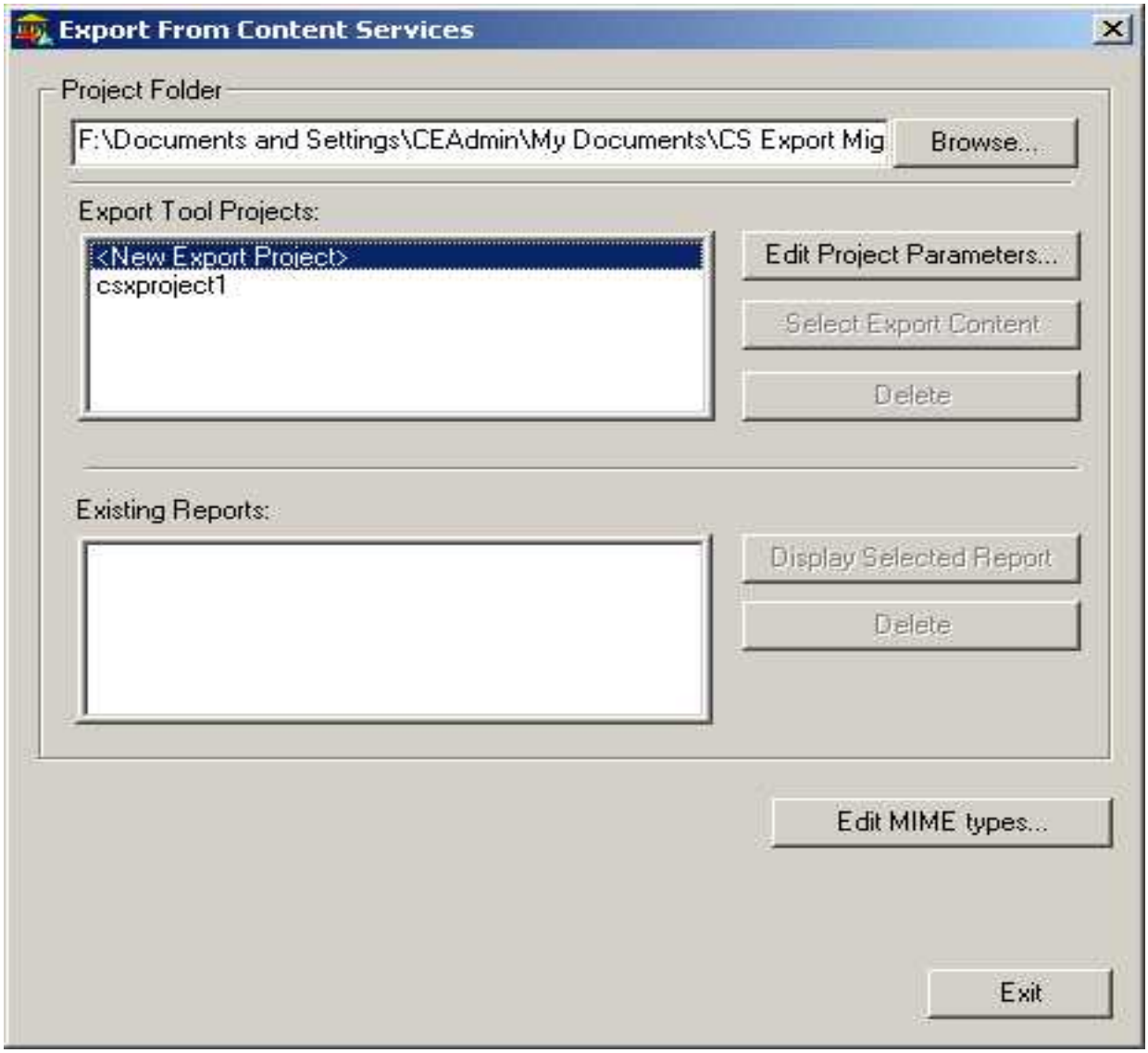
The user may navigate to another project folder by clicking the Browse button at the top of the screen. The tool responds by displaying a navigation screen where the user may select another location.

The tool displays CS Export projects in the Export Tool Projects list in the upper part of the screen. CS Export project files have an .ini extension and are editable, although this is not necessary since the tool presents all options through the user interface. The user may delete project files by selecting one from the list and clicking the Delete button. When the user clicks the *Edit Project Parameters* button, the tool opens the *Project Details screen*. Clicking the *Select Export Content* button causes the tool to open the *Select Export Content screen*.

The tool displays CS Export report files created from previous runs in the *Existing Reports* portion of the screen. When the user selects an item from the list and clicks the *Display Selected Report* button, the tool displays an HTML page with links to the actual report files.

The user may delete items in the list by selecting one and then clicking the **Delete** button.

For information on MIME Types, see the MIME Types screen topic.



Content Services Export Projects screen

CS Export Project Details screen

The CS Export Tool Project Details screen (shown below) is where you set the CS Export Tool's configuration parameters.

The user enters the following information:

- The name of the project.
- Login information for the CS database, including the database name, user name and password, and the name of the server where the database is located. The database name must correspond to a previously created ODBC DSN. The user specified must have full read access to the source CS database.
- The shelf drive letter is mapped to the shelf location where the CS content files are located. This mapping must be to the root of the drive where CS Shelf Files are located. This must be performed by the user prior to running the tool. You can use Windows Explorer to map a network drive to the shelf location.
- The timeout value for queries to the CS database. This value defaults to 30 seconds, but may need to be increased for large CS databases.
- Information about the target object store where the CS data will be added.
- The name and location of the Master log file. The tool writes error, warning, and informational messages to this file.
- Information about the export phases to perform and log files to be written:
    - The user enables running the Metadata and Folders, Documents and Versions phases by checking the appropriate boxes. The tool provides default name for the log and restart files that can be changed by the user. When the user clicks the "…" button next to a file name, the tool displays a screen where the user can navigate to a new folder location.
    - Creating the log file for the Folders, Documents and Versions phase is optional and is disabled by default. Enabling the log file for this phase can significantly affect the performance of the tool. The user also may modify the number of threads and batch size used in this phase. Generally, a relatively low batch size and a high number of threads provide the best performance. The default for these values is a batch size of three with 30 threads.
- The user will have no ability to change the name or location of the restart file. It will be located in the same directory as the export projects configuration file and have a

name that is derived from the project name in the following manner. If the project name is **MyProject** then the restart file will be name **MyProject-Restart.rst**.

- Information about the documents to be migrated. The user specifies the number of versions, whether searches will be migrated, and whether offline versions will be included by checking appropriate boxes on the left side of the screen. Currently, saved searches are migrated as documents and are not converted to Workplace saved searches.

Other information for running the tool:

When the Dry Run box is checked, the tool checks for errors in the CS data and writes to the log files, but does not write any information to the CE object store. This feature is intended to be used to correct errors in the source CS data prior to running the actual migration.

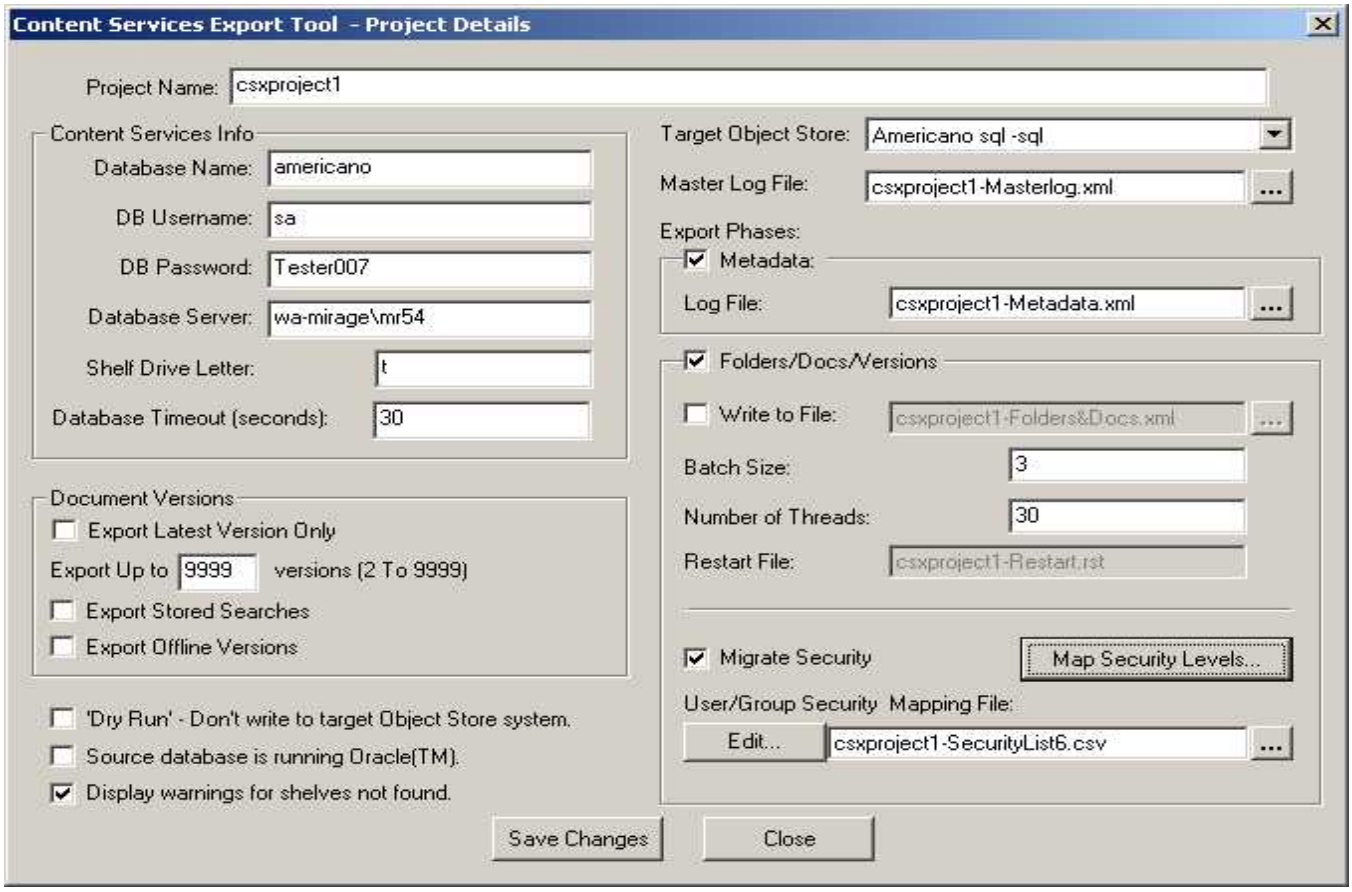
If the source CS database is Oracle, the “Source database is running Oracle™” must be checked. This causes the tool to execute slightly different SQL commands when communicating with an Oracle database.

Checking the “Display warnings for shelves not found” box causes the tool to pause during the Folders, Documents and Versions phase and display a warning if any CS shelves are not found on the mapped drive. When this box is unchecked, the tool continues when this situation is encountered and writes a message to the Master log file.

When the **Save Changes** button is clicked, the tool checks for the existence of the User/Group Security Mapping file. If this file does not exist, the tool displays a warning message to that effect. The tool then saves the information displayed to the project’s .ini file and closes the screen. Clicking the Close button causes the screen to be closed without saving changes.

IMPORTANT If the user running the CS Export Tool is not a member of the *Content Engine Servers* group, an error message is displayed when the tool fails to log into the Windows Content Engine domain when opening the *Project Details* screen. If the user is added to the *Content Engine Servers* group, you must stop and restart all Content Engine services and log-off and log-on, on to the server.

Use the CS Export settings worksheet to gather the required information to run the CS Export Tool. The project details screen is shown below:



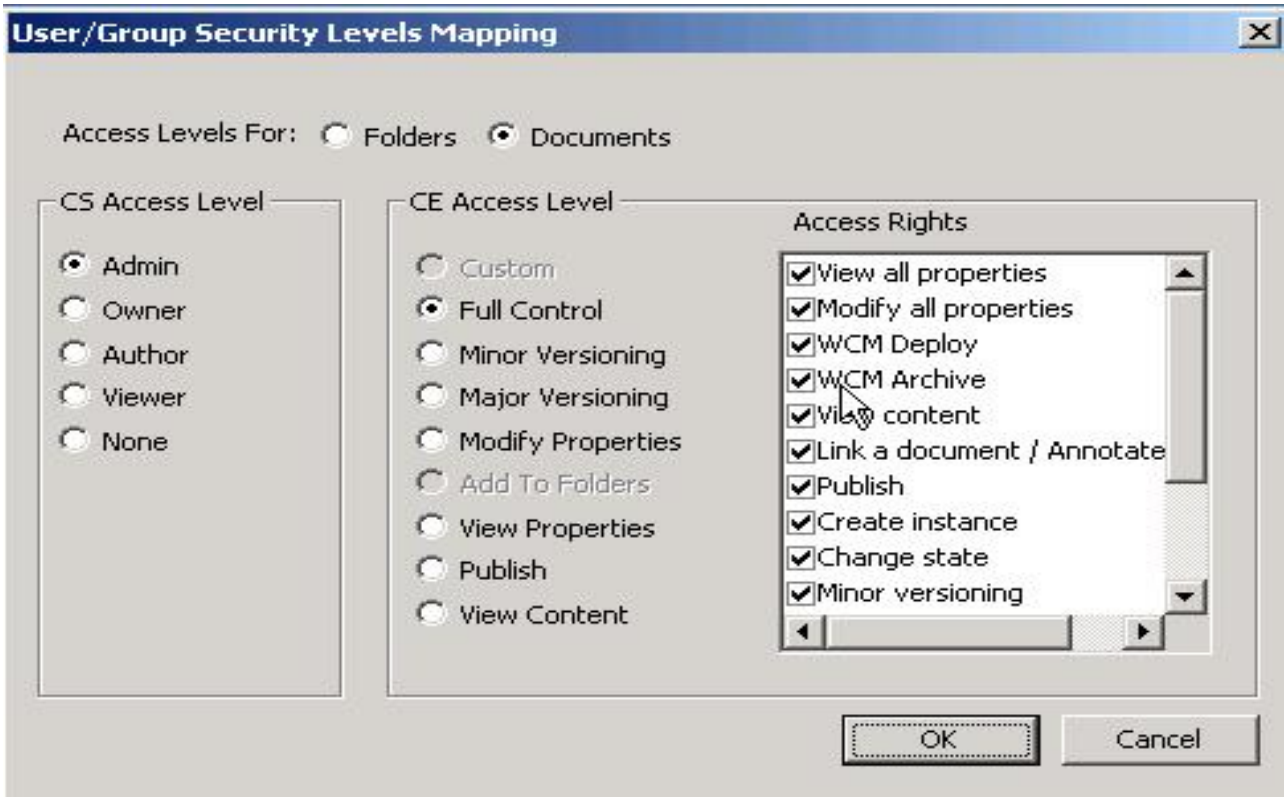
CS Export Project Details screen

CS Export User/Group Security Levels Mapping screen

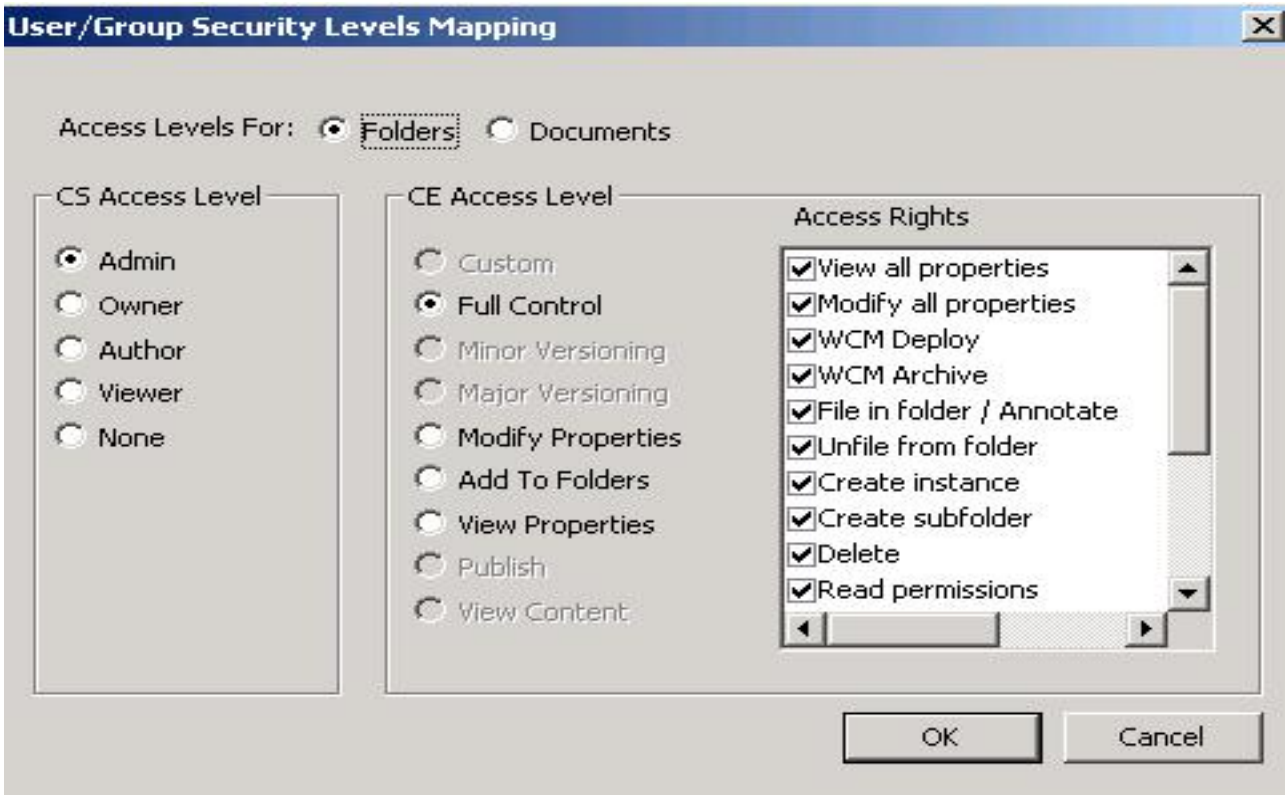
The user must check the *Migrate Security* box to activate the security items (**Map Security Levels** and **Edit** buttons).

When the user clicks the **Map Security Levels...** button in the *Migrate Security* portion of the Project Details screen, the tool opens the **User/Group Security Levels Mapping** screens shown below:

NOTE You can select between the *Folders* and *Documents* pages.



User/Group Security Levels Mapping screen (Documents)



User/Group Security Levels Mapping screen (Folders)

The tool displays CS access levels on the left portion of the screen and CE access levels and rights on the right. If the user has not yet mapped access levels for the project, the tool displays the following default mapping relationships:

CS Access Level	Folders	Documents
Admin	idmAccessLevelFullControl	idmAccessLevelFullControlDocument
Owner	idmAccessLevelFullControl	idmAccessLevelFullControlDocument
Author	idmAccessLevelLinkFolder	idmAccessLevelMinorVersionDocument
Viewer	idmAccessLevelRead	idmAccessLevelView
None	0 (None)	0 (None)

Table 2 Default Security Level Mapping

When the user changes the object type at the top of the screen, the tool enables and disables the appropriate CE access level radio buttons in the middle part of the window, and redisplays the appropriate CE access rights in the list to the right. The user can set several access level relationships without closing the screen.

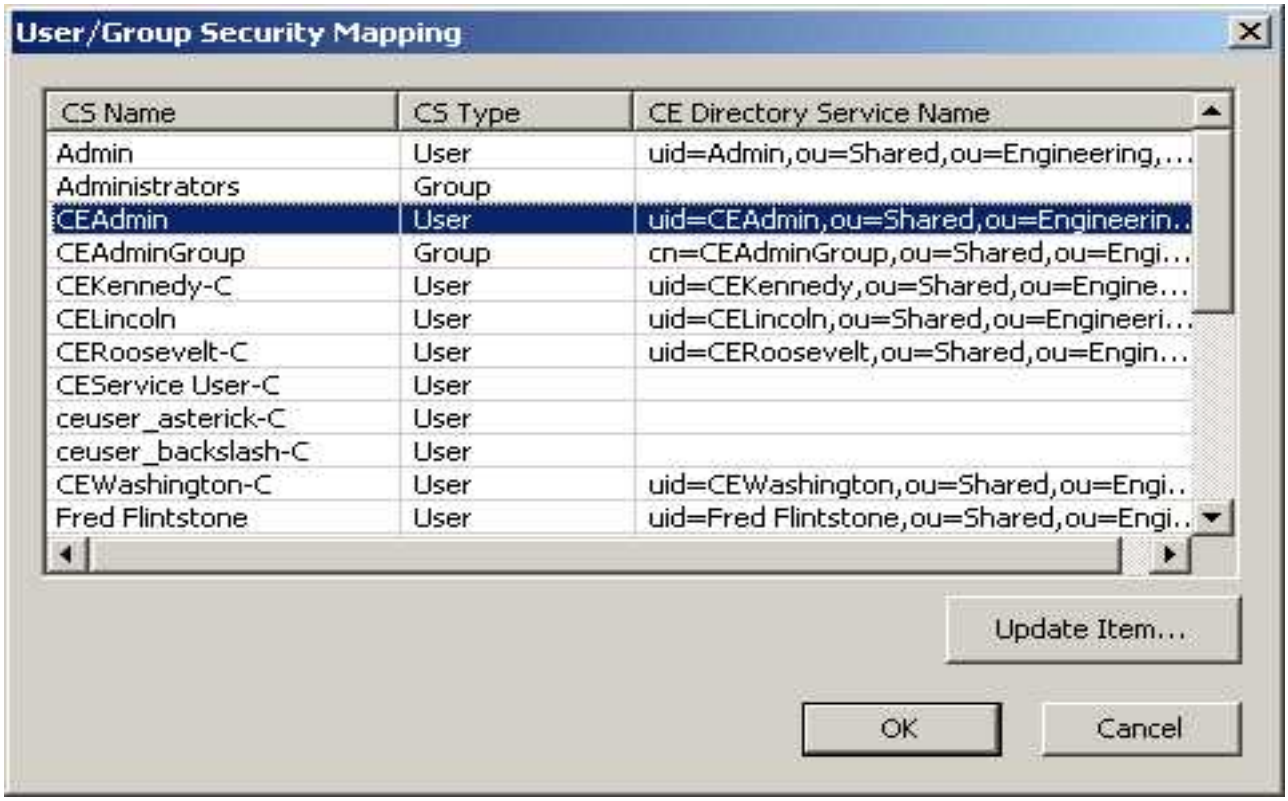
The tool holds these changes in memory until the user clicks the **OK** button.

When the user clicks the **OK** button, security level mapping information is saved to the project's .ini file and the screen is closed.

CS Export User/Group Security Mapping screen

The user must check the *Migrate Security* box to activate the security items (**Map Security Levels** and **Edit** buttons).

When the user clicks the **Edit** button in the *Migrate Security* portion of the Project Details screen, the tool opens the **User/Group Security Mapping File** screen **(Edit button)** shown below:



User/Group Security Mapping screen (Edit button)

From this screen the user maps CS users and groups to those found in the Content Engine Windows domain.

NOTE The screen does not display all CS users and groups, just those that are used in ACLs in CS.

The tool populates the screen as follows:

a.) If the User/Group Security Mapping file specified on the Project Details file does not exist, the tool does the following:

- Queries the CS database for all users and groups. These are found in **USR** and **GRP** tables.

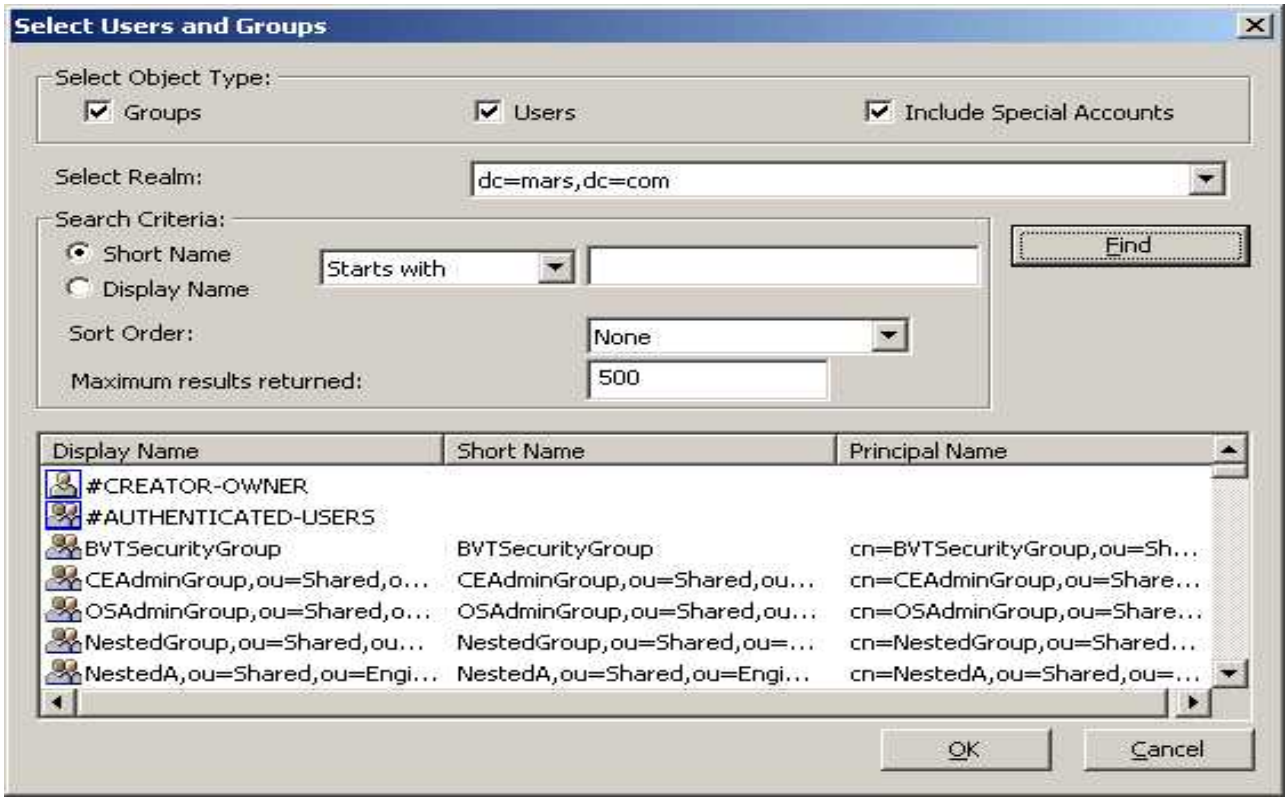
- Attempts to match CS user and group names with the short name values of users and groups found in the Content Engine directory service.

- Displays all CS user and group names in the list, along with any matches found in the Content Engine directory service.

b.) If the User/Group Security Mapping file exists, the tool fills the list with the information contained in that file.

NOTE If the User/Group Security Mapping file does not exists, the tool displays an information warning screen.

When the user selects an item in the list and clicks the **Update Item** button, the tool displays the Select Users and Groups screen shown below:



Select User/Group Security Mapping File screen (Update Item... button)

Here the user may search for users and groups in the CE directory service using the Find button. When the user selects an item in the list and clicks the **OK** button, the tool sets

that value in the Content Engine Directory Service screen column for the selected CS user or group.

When the user clicks the **OK** button in the CS Export User/Group Security Mapping screen, the tool saves the values in the list to the file specified in the Project Details screen in CSV format and closes the window.

CS Export Edit MIME Types screen

From the CS Export Tool Projects screen, you can access the **Edit MIME Types** screen (shown below).

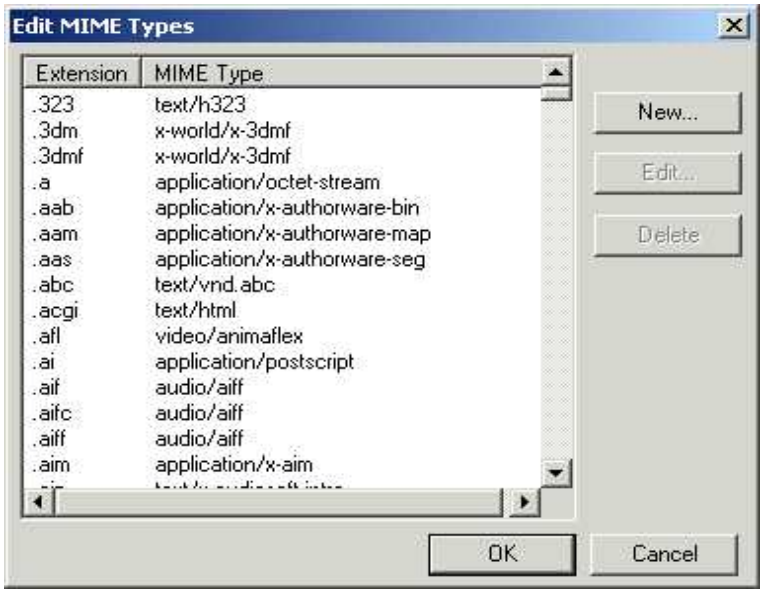
Use this screen to create and edit the CS Export MIME Types.

NOTE: If a MIME Type does not exist, a MIME Type of application/octet-stream is assigned. This does not cause a problem when these documents are viwed through Workplace.

The CS Export Tool sets the MIME Types of documents it adds to an object store. In order to do so, it must have information about the relationships between file extensions and MIME Types. When started for the first time, the tool creates a file named CSExportMime.xml in the application directory that contains these relationships. This information is obtained from two sources:

- The HKEY_CLASSES_ROOT registry key on the user's machine.
- The set of known standard MIME Type extension relationships.

Since this may not include all of the MIME Types needed for a migration, the user can edit MIME Types by clicking the **Edit MIME Types** button. The tool then displays the following screen:



Edit MIME Types screen

Edit individual MIME Type screen

Select Export Content screen

Use the CS Export Tool Select Export Content screen (shown below) to set the CS Export Tool's configuration parameters dealing with what folders will be exported from the Content Services source library. You also configure where the content that gets exported will be located in the Content Engine object store.

If you need to restart your migration, you can also set that option from the Select Export Content screen. For more information see the CS Export restartability and Restart a CS Export project topics.

Use the CS Export settings worksheet to gather the required information to run the CS Export Tool.

When you click the **Select Export Content** button in the Projects screen, the tool reads information from the source CS database and the target object store and after a short delay, displays the *Select Export Content* screen. Here you specify the content to be migrated from the source CS library to the target object store:

Select the folders to export on the left portion of the screen. When a folder is selected, all folders contained within it are also selected.

NOTE To export documents that are not contained in folders, you must check the “Export folderless documents” box.

The folder location is specified in the object store where the CS data will be migrated in the right portion of the screen.

When the user clicks the Doc Class Export Filter button, the tool displays the Doc Class to Export screen. for more information about Document classes, see the Doc Classes to Export screen topic.

To restart the *Folders, Documents and Versions* phase from a previous migration, you must check the **Restart From Previous Run** check box. The tool then uses the information contained in the restart file to determine its starting point for the phase.

Upon selection of this check box the user is prompted with the following message:

Restarting will cause all of the application configurtation parameters to be reset to

the values in the restart log. Do you wish to continue?

If you decline (select No) then the state of the check box is returned to unselected and the user is returned to the *Select Export Content* screen to continue. If you accept (select Yes) then the information in the restart file is used to reinitialize the application's configuration parameters including those on the *Select Export Content* screen. In addition all of the controls on the *Select Export Content* screen that allows you to modify what content will be exported are disabled (Note, the DocClasses button itself is not disabled but when its screen is displayed the user is only able to view which document classes have been selected, they cannot alter their selections).

If you unselect the restart option then the information in the application's configuration files is restored and any controls on the screen that were disabled are enabled.

Note that any changes you make to the *Select Export Content* screen prior to selecting the restart option will be lost when the restart option is unselected (e.g. If the original configuration had only one folder selected when the tool initially ran, and then upon restarting the application, the user selects a second folder before choosing the restart option, and then decides to unselect the restart option, only the first folder will be selected. Because the selection of the second folder is never persisted, the selection state is lost).

NOTE The restart option is not intended to be used during a dry run. You will receive an error message indicating that the restart option cannot be selected when the project has been configured for a dry run.

The state of the *Restart From Previous Run* check box is not persisted.

When you click the **Close** button, the tool closes the *Select Export Content* screen and returns you to the *Projects Details* screen. When you click the **Start Export** button, the tool begins the migration or dry run. If you selected the **Folders, Documents and Versions** phase in the *Project Details* screen and the tool is running a migration, the tool checks security and restart status. It does not check these for dry runs.

The tool checks for the existence of the Restart file. If the file exists but the user did not check the **Restart From Previous Run** box in the *Project Details* screen, the tool displays a screen asking if you would like to restart the tool from the point where it previously stopped. If you indicate you would like to restart, the tool proceeds. If you indicate you would not like to restart, the tool migrates all CS documents.

To restart the *Folders, Documents and Versions* phase from a previous migration, check

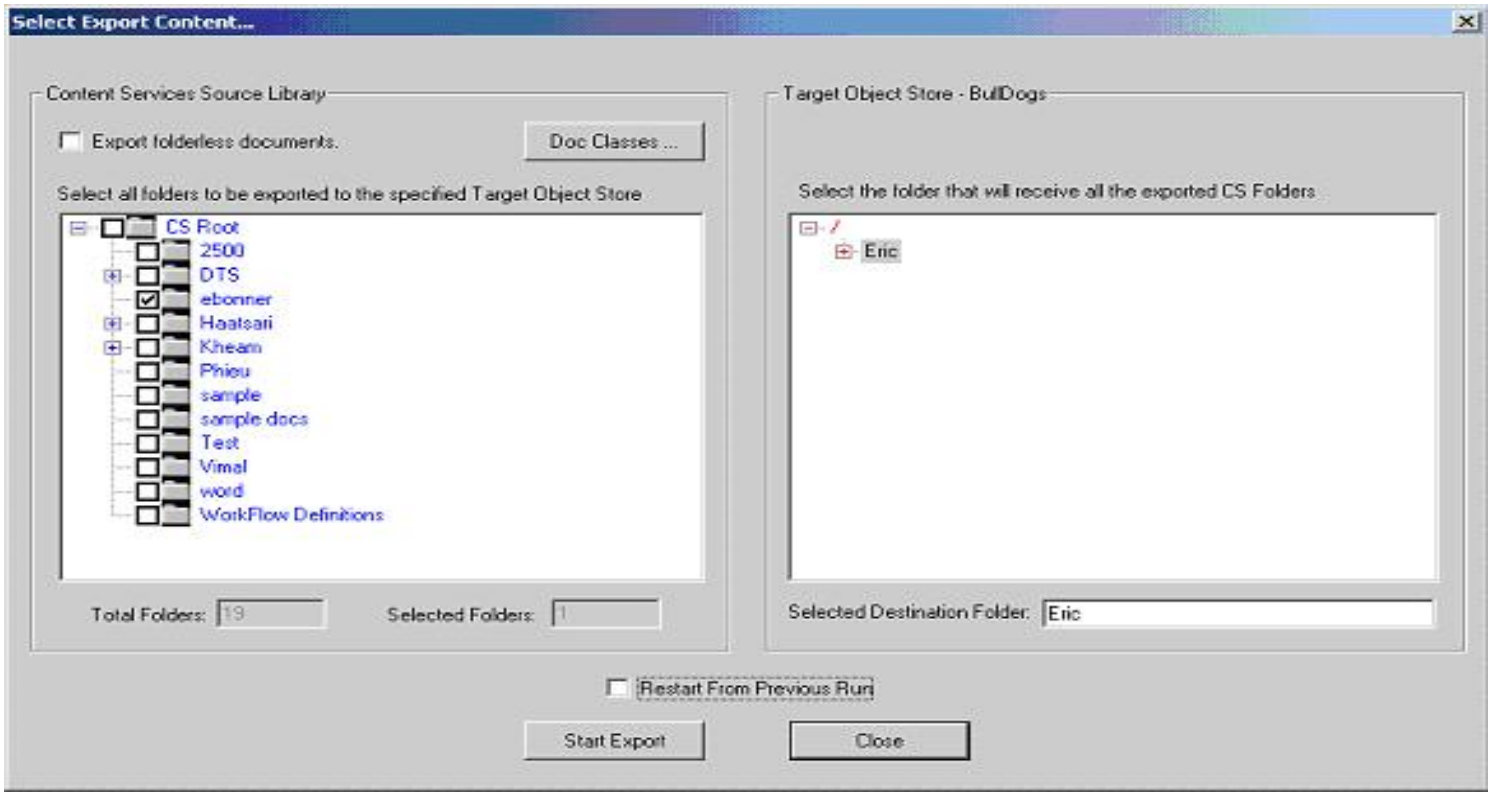
the **Restart From Previous Run** box. The tool then uses the CS Item ID contained in the Restart File as the starting point for the phase. If you check the **Restart From Previous Run** box but the tool is unable to find the Restart file at the location specified by the user on the *Project Details* screen, the tool displays an error message and does not start the migration. You may then close the *Select Export Content* screen and reopen the Project Details screen where the Restart file name and location may be changed.

NOTE The state of this checkbox is not persisted between invocation of the application. Each time the user navigates to the screen to select the content they wish to export (and start a run), they must actively select the restart checkbox if that is their intended purpose.

Selecting the restart option will prompt the user with a warning indicating that the current application configuration options will be superseded by the values in the restart log. If the user chooses to continue, then not only are the configuration options reloaded from the restart log but most of the controls on the *Select Export Content* screen will be disabled so as to prevent the user from modifying any of the options that may affect which content will be exported. If the user unselects the restart option the application configuration information is reloaded from the selected project's initialization file (ProjectName.ini) and the tool is re-enabled to allow the user to make changes.

If there is no User/Group security mapping file, you will receive the following warning message:

No User/Group no security mapping file warning



Select Export Content screen

Doc Classes to Export screen

Use the *CS Export Doc Classes to export* screen (shown below) to select the doc classes (and all documents for that class) to be exported.

Here you can choose which CS document classes will be exported to the target object store. All document classes are selected by default.

NOTE If the restart option has been enabled on the *Select Export Content* screen then the user will only be able to view the currently selected and unselected document classes but will not be able to change the selections.

Use the CS Export settings worksheet to gather the required information needed to run the CS Export Tool.

Doc Classes to Export screen

NOTE The Doc Classes to export shown will be specific to the library that is being exported.

CS Export Progress screen

Use the *CS Export Progress* screen (shown below) to view the real-time progress for the export project.

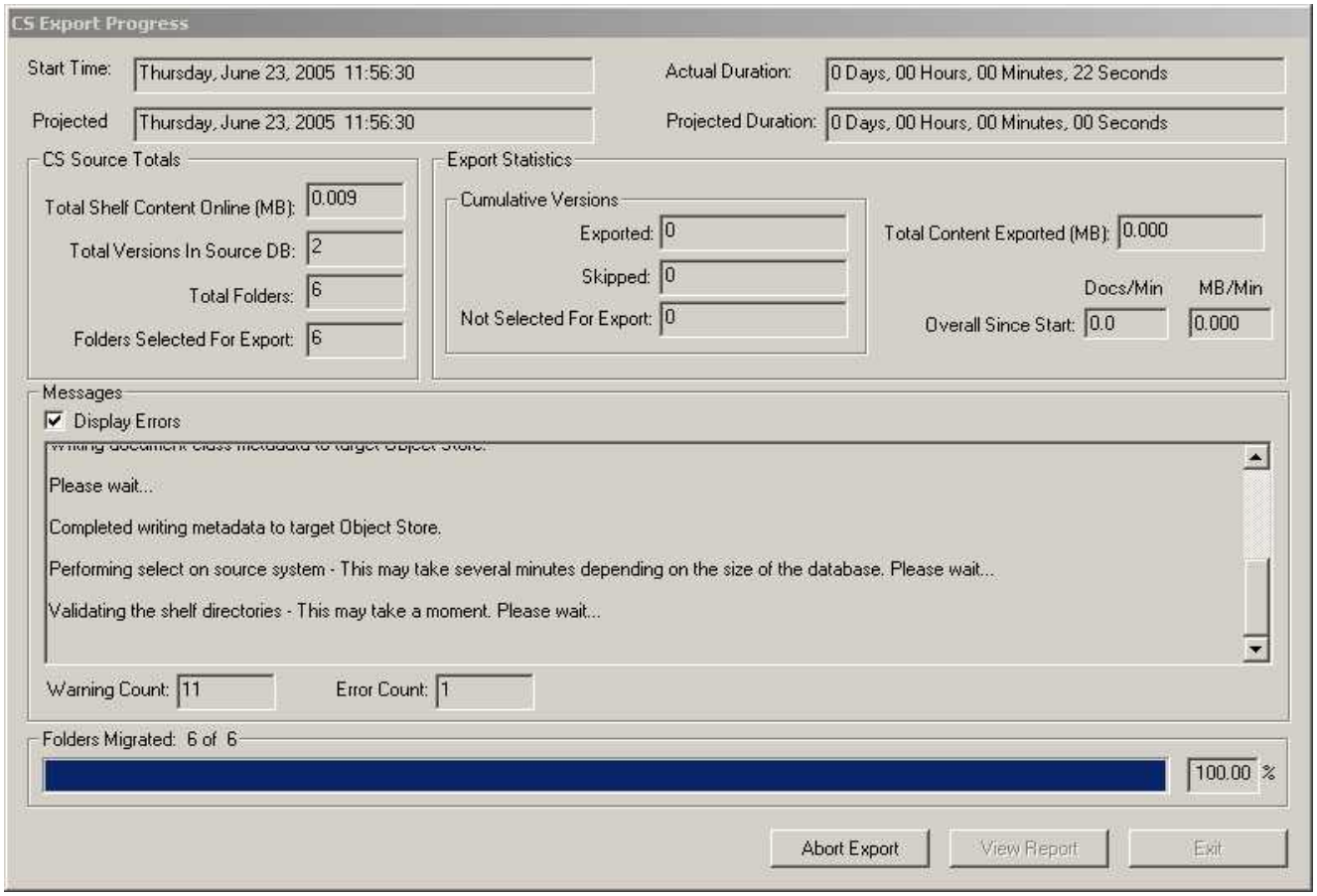
NOTE If for any reason you need to cancel the export, click **ABORT EXPORT**.

From the CS Export Progress screen, you can view the following export items:

- Start Time
- Actual Duration
- Projected Duration
- CS Source Totals
- Export Statistics
- System Messages
- CS Export Warning and Error counts

Export Statistics

- Cumulative Versions
- Total:
  - Exported
  - Skipped
  - Not Selected For Export
- Total Content Exported (MB)
- Overall Since Start:
  - Docs/Min
  - MB/Min



CS Export Progress screen

How to...

The *How to...* topics guide you through the steps required to export content from a Content Services library to a Content Engine object store.

The CS Export Tool is a stand-alone application you can run from a shortcut, a command prompt, or from a Windows Explorer window.

For additional information, see the following topics:

- Run the CS Export Tool
- Create a new export project file
- Set User/Group security mappings and levels
- Select the content to be exported
- Start the export project
- View export project log files
- Restart a CS Export project
- Run CS Export with an INI file

Run the CS Export Tool

Copy the required CS Export Tool files and run the CS Export Tool to export data from a Content Services library to a Content Engine content store.

The CS Export Tool can be started from:

- My Computer or Windows Explorer.
- A command prompt with an export initialization file.

IMPORTANT Please contact your FileNet representative if you wish to migrate a complete Content Services library system to the Content Engine environment. It is strongly recommend that you do not attempt such a migration without the assistance of FileNet Professional Services, or a FileNet certified partner.

NOTE CS Export runs as a trusted application. You must add the user running CS Export to the “Content Engine Servers” group. Then you must restart the Content Engine object store server and the machine running CS Export if not running it on the same server running the Content Engine object store service.

To copy CS Export files to the server

1. Contact your FileNet representative for the CS Export files.
2. Make sure you are logged on to the domain with a user account that has Administrator privileges.
3. Create a folder for the CS Export files: C:\Program Files\FileNet\Content Engine\CSExport.
4. Copy the CS Export program files (cs_export.exe, csexport.pdf, csexport_log_viewer.htm, and csexport.xsl) to the newly created folder .

To run the CS Export Tool

1. Verify you have the required CS Export worksheet settings before you begin. If you are unsure of the CS Export information for your environment, contact your data base administrator.

2. Make sure you are logged on to the domain with a user account that has local **Administrator** privileges and belong to the **Content Engine Servers** group.

   NOTE CS Export runs in a trusted application mode. You must add the user running CS Export to the “Content Engine Servers” group. Then you must log off and back on to the Content Engine object store server(s) and the machine running CS Export, if it is not running on the same server as the Content Engine Object Store Service. You must also log out and back into the machine where you are running the CS Export tool.

3. Locate your CS Export files and execute **cs_export.exe**.

4. Proceed to the Create a new export project file topic.

Create a new export project file

Once the CS Export Tool loads, the Export Tool Projects dialog appears. From this dialog you either create a new export project initialization file or use an existing file. The project .ini file contains all of the information required to run the CS_Export.exe program.

The CS Export log and project files are stored in the ..\My Documents\CEAdmin\CS Export Migration Projects folder. Where CEAdmin is the logged in user.

From the CS Export Tool Projects dialog you can:

- Create a new export project .ini file.
- Use an existing export project .ini file.

To create a new export project file

1. Verify you have the required CS Export worksheet settings completed before you begin. If you are unsure of the CS Export information for your environment, contact your data base administrator.
2. Verify you have a Content Engine object store created.
3. Make sure you are logged on to the domain with a user account that has local **Administrator** privileges and belongs to the **Content Engine Servers** group.
4. Locate your CS Export files and execute **cs_export.exe**.
5. Click the **<New Export Project>** item and then click **Edit Project Parameters**. A new CS Export Project Details screen displays.
6. Use the information you gathered in step 1 above, and enter the following for the project name:

   My_Export_Example

7. Complete the CS Export Project Details screen fields and click **Save Changes**.
8. Proceed to the Set User/Group security mappings and levels topic.

Set User/Group Security Mapping and Levels

Once you have created your CS Export Tool Project file, you will need to set the Security Mapping and and Security Levels for the export process.

NOTE For additional information on User/Group Security settings, see the CS Export User/Group Security Levels Mapping dialog and CS Export User/Group Security Mapping Dialog topics for details:

To change User/Group Security Mapping and Levels

1. Verify you have the required CS Export worksheet settings completed before you begin. If you are unsure of the CS Export information for your environment, contact your data base administrator.
2. Verify you have a Content Engine object store created.
3. Make sure you are logged on to the domain with a user account that has Administrator privileges.
4. Locate your CS Export files and execute cs_export.exe.
5. Verify the **Migrate Security** box is checked.
6. Click **Map Security Levels**.
7. Make appropriate changes and click **OK**.
8. Click the **Edit** button.
9. Make appropriate changes and click **OK**.
10. Proceed to the Select the content to be exported topic.

Select the content to be exported

Once you have created your CS Export Tool Project file, you need to determine the content to export. Use the *Select Export Content* dialog to select the content and export location for the CS content.

From the Select Export Content dialog you can select the DOC Classes to export, select to export folder-less documents and select the Content Services content folders along with the Content Engine target library location.

From the *Select Export Content* dialog you can:

- Select Doc Classes to export.
- Export folder-less documents (checkbox).
- Select CS folders to export.

To select content to be exported

1. Verify you have the required CS Export worksheet settings completed before you begin. If you are unsure of the CS Export information for your environment, contact your data base administrator.
2. Verify you have a Content Engine object store created.
3. Make sure you are logged on to the domain with a user account that has Administrator privileges.
4. Locate your CS Export files and execute cs_export.exe.
5. Click the **My_Export_Example** item and then click the **Select Export Content** button.
6. A new *Select Export Content* dialog appears.
7. Select the Doc Classes to export by clicking on the **Doc Classes** button.
8. Select the Content Services library folders (check boxes) to be exported.

9. Proceed to the Start the export project topic.

Start the export project

Once you have created your CS Export Tool Project file, and selected the content to export, you will need to start the export process. You start an export from the *Select Export Content* dialog.

NOTE For additional information on CS Export Restartability, See the CS Export restartability topic for details:

To start the export project

1. Verify you have the required CS Export worksheet settings completed before you begin. If you are unsure of the CS Export information for your environment, contact your data base administrator.

2. Verify you have a Content Engine object store created.

3. Make sure you are logged on to the domain with a user account that has local **Administrator** privileges and belongs to the **Content Engine Servers** group.
4. Locate your CS Export files and execute **cs_export.exe**.
5. Click **My_Export_Example** and then Click **Select Export Content**. A new Select Export Content dialog appears.

6. Select the Doc Classes to export by clicking on the Doc Class Export Filter button.

7. Select the Content Services library folders (check boxes) to be exported.

8. Click **Start Export**.

   Once the export has started, the CS Export Progress screen will be displayed. This screen will display all CS Export progress. When the CS Export process has completed, the export program displays a *** FINISHED *** banner in the Projected Duration field.
9. Click the Close button to end the export process.

10. Proceed to the View export project log files topic.

View CS Export project log files

The CS Export Tool runs in 2 phases and a log file is generated for each phase:

- Metadata
- Folders, Documents and Versions

The export tool prompts to view the log after you have completed an export. Then an HTML page is launched that links to the three XML report pages. When you first start the CS Export Tool, a list box of available .htm report pages will be displayed.

The final log file produced is the summary HTML report, which is written to a separate summary XML log file. This file bears the same name as the CS Export Tool project file and has an .htm file extension. This file contains links to all of the XML detail and summary files produced by the particular export job.

To view CS Export project log files

1. Make sure you are logged on to the domain with a user account that has Administrator privileges.
2. Run either a Windows Explorer or My Computer window.
3. Navigate to the Export folder.
4. Double-click the My_Export_Example.htm file.
5. View the individual log files from the links in the HTML file.

Restart a CS Export project

Use the following procedure to restart a CS Export project.

The restart capability allows a user to abort the current export operation and then pick up where they left off.

The restart option only applies to the *Folders, Documents and Versions* phase, and not to the *Metadata* phase.

NOTE The restartability functionality is provided for migrations, but not for dry runs.

To restart a CS Export project

1. Configure the CS Export Tool to migrate documents from a CS to a CE repository. At this point do not enable the restart functionality. Also ensure that you have selected enough documents so that the migration time takes at least a modest amount of time so that it gives you time to abort before it finishes.

2. Initiate the migration operation. At some point abort the operation.

3. Go back and reconfigure the tool and enable the restart functionality.

4. Restart the migration operation.

Run CS Export with an INI file

Running CS Export with a valid export .INI file loads the specified job file and takes you to the *Select CS Export Content* screen.

NOTE If password field is <PROMPT> then CS Export prompts for that password echoing asterisks (*'s) to the screen.

To run CS Export with an INI File

1. Make sure you are logged on to the domain with a user account that has Administrator privileges.

2. Run a command prompt.

3. Navigate to the Export folder. For example:

   ..\Program Files\FileNet\Content Engine\CSExport

4. Enter the following command:

   CS_Export My_Export_Example.ini

5. Press <Enter>.

NOTE Previously created CS Export project files (*.ini) are located in the **..\My Documents\CS Export Migration Projects** folder.