

IBM Content Manager



# CommonStore for SAP for iSeries Server Installation and User's Guide

*Version 8.1*



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**Note!**

Before using this information and the product it supports, be sure to read the general information under Appendix G, "Notices" on page 149.

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This edition applies to Version 8.1 of IBM Content Manager CommonStore for SAP, program number 5724-B87, and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this book

This book describes how to install, customize, and use the CommonStore Server on iSeries™ (formerly: AS/400®) computers.

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## Who should read this book

This book is intended for administrators. In addition, it contains some background information for developers. Administrators and developers should have in-depth knowledge of SAP R/3 and the archive system that they intend to use.

System administrators using this manual need not possess experience with CommonStore, but should have a good working knowledge of the underlying operating system. It is further assumed that they are familiar with the SAP three-tier architecture and that they have a basic understanding of document management.

This book is not primarily intended for end users. However, it contains some conceptual information that is relevant for users involved in archiving procedures.

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## What's new in this version

Version 8.1 offers you the following new features:

- Content Manager for iSeries Version 5.1 support
- HTTP interface support

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## Release information

The customizing information presented in this book refers to the SAP R/3 Releases 3.1 and 4.0. For information on how to customize SAP R/3 Release 4.5 and above, see your SAP documentation.

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## Conventions and terminology used in this book

This section describes the abbreviations, acronyms, and highlighting conventions used in this book.

### Product names

To facilitate reading, the product name CommonStore for SAP is most of the times shortened to CommonStore.

Throughout this book, the brand name VisualInfo™ refers to the products IBM EDMSuite™ VisualInfo and IBM Content Manager.

Since SAP Release 3.1, the names of some program components and products have changed. The change is hinted at on the first occurrence of such a name.

### Highlighting conventions

Highlighting is necessary to set product-related terms, product elements, and code examples off from the text flow. This book uses the following highlighting conventions:

Throughout this book, *italics* are used for

- Book titles
- Emphasis
- Options / variables / parameters / keywords

**Boldface** is used for the following elements:

- Check box labels
- Choices in menus
- Column headings
- Commands and subcommands
- Entry fields
- Field names in windows
- Forms and subforms
- Index classes
- Items
- Menu-bar choices
- Menu names
- Radio button names
- Spin button names

Monospace is used for

- Coding examples
- Entered data
- Group and user IDs
- Message text
- Transaction codes (T-codes)

**Underlined bold** indicates default values.

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## How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other CommonStore documentation:

- Visit our home page at <http://www.ibm.com/software/data/commonstore/>. There, you find the feedback page where you can enter comments and send them.
- Send your comments by e-mail to [swsdid@de.ibm.com](mailto:swsdid@de.ibm.com). Be sure to include the name of the book, the part number of the book, the version of CommonStore, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).
- Fill in one of the forms at the back of this book and return it by mail, by fax, or by giving it to an IBM representative. The mailing address is on the back of the Readers' Comments form. The fax number is +49-(0)7031-16-4892.

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## List of Abbreviations

The abbreviations used in this document are listed in Table 1.

*Table 1. Abbreviations used in this book*

<b>AFP™</b>	Advanced Function Printing™
<b>AIX®</b>	Advanced Interactive Executive (IBM implementation of UNIX®)
<b>ALF</b>	Advanced List Format
<b>API</b>	Application Program Interface
<b>AS/400</b>	Application System/400®
<b>CCMS</b>	Computer Center Managing System
<b>CCSID</b>	Coded Character Set Identifier
<b>COLD</b>	Computer Output on Laser Disk
<b>crontab</b>	Chronological Table
<b>DBA</b>	Database Administrator
<b>DLL</b>	Dynamic Link Library (files with the extension .dll)
<b>EBCDIC</b>	Extended Binary Coded Decimal Interchange
<b>GUI</b>	Graphical User Interface
<b>HTML</b>	Hypertext Markup Language
<b>iSeries</b>	The former Application System/400
<b>ITS</b>	Internet Transaction Server
<b>NFS</b>	Network File System
<b>NT</b>	New Technology (Microsoft operating system Windows NT®)
<b>OCR</b>	Optical Character Recognition
<b>OLE</b>	Object Linking and Embedding
<b>OS/2®</b>	Operating System/2®
<b>OS/390®</b>	Operating System/390
<b>OS/400®</b>	Operating System/400®
<b>OTF</b>	Output Text Format (files with the extension .otf)
<b>PC</b>	Personal Computer
<b>PDF</b>	Portable Document Format (files with the extension .pdf)
<b>R/3</b>	SAP R/3 system
<b>S/390®</b>	System/390®
<b>SAP</b>	Systems, Applications, Products in Data Processing (software vendor)
<b>TCP/IP</b>	Transmission Control Protocol/Internet Protocol
<b>TIFF</b>	Tagged Image File Format (files with the extension .tif)
<b>UNIX</b>	An operating system developed at Bell Laboratories
<b>URL</b>	Uniform Resource Locator



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## **Part 1. CommonStore — Overview**



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## Chapter 1. What is CommonStore for SAP?

Starting with Release 2.2 of the R/3 system, SAP clearly recognized the requirement of enhancing R/3 through a robust archiving concept. Step by step, mechanisms evolved for offloading the operational R/3 database and processing business documents that reside in an external archiving system. With Release 3.0, all key applications and modules offered mature archiving functionality that was shipped as part of the standard R/3 package. These new features leveraged the power of tools like the *SAP Business Workflow*, *Document Management System*, *SAPoffice*, *SAPconnect* or *Archive Development Kit*.

While the enhanced application logic for handling external documents is fully integrated with R/3, SAP decided to leave the "core" archiving functionality to established business partners as part of their *Complementary Software Program*. The *SAP Business Framework* provides the interfaces necessary to integrate these external functions with R/3 and thus create the complete software architecture that fits the business processes of the customer while protecting software and hardware investments. With mySAP.com, SAP established a new *Software Partner Program* that, like its predecessor, is committed to provide third-party vendors with integration consulting and standard, release-stable interfaces to connect their external products to R/3. As the primary interface for integrating storage and content management systems, *BC-AL* (SAP ArchiveLink) has been introduced with Release 2.2 and enhanced in Releases 3.0, 3.1, and 4.5 of the R/3 system. Additionally, *BC-HCS* (SAP HTTP Content Server Interface) has been defined in R/3 Release 4.5 as a subset of BC-AL that focuses on content rather than storage management. SAP offers its software partners certification for each of these interface releases.

Only a solution that builds on BC-AL or BC-HCS leverages the archiving potential of the enabled R/3 modules. **IBM Content Manager CommonStore for SAP** (hereinafter referred to simply as CommonStore) is such a solution. While SAP uses the term *optical archive* to refer to a system that complies with the BC-AL specifications, this expression is misleading in that conformance with BC-AL is independent of hardware components used by the archive supplier (for example, optical storage media or scanners). In later R/3 releases, the more general wording *external archiving system* or *external archive* appears in SAP publications. This term will be used throughout this document when referring to products based on BC-AL.

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### CommonStore and the SAP R/3 archiving interfaces

BC-HCS is a general, cross-application interface that connects the enabled R/3 business applications to a *content server* and allows them to process documents in logical *content repositories*. This content server can be a database, a file server, an R/3 system, or an external archive like CommonStore. To elucidate the relevance of BC-HCS in the R/3 archiving context, only the last constellation will be considered in this section.

The BC-HCS interface is completely based on the industry-standard *HTTP* (Hypertext Transfer Protocol); servers and documents are addressed and parameters and functions are transmitted between CommonStore and the R/3 application server using *URLs* (Universal Resource Locators). While both concepts

are typically used to access objects on the World Wide Web, CommonStore primarily focuses on BC-HCS to exchange content within a corporate intranet.

CommonStore integrates with BC-HCS to perform functions like:

- storing, updating or appending documents in a content repository
- retrieving entire documents or document segments from a content repository
- obtaining information about documents and their components
- searching documents for text patterns (without retrieving them)
- performing attribute-based searches (on print lists, especially journals)
- deleting documents

To inhibit unauthorized access to archived documents, CommonStore applies security measures to prevent the forgery or manipulation of URLs and eavesdropping on contents. These measures include the use of a PKCS#7 digital signature and public key procedure according to the Digital Signature Standard. The degree of protection and rights of access to a document can be specified when a document is stored by R/3.

As the name implies, a content server in the BC-HCS scenario exclusively acts as a Web server that is contacted by R/3 to perform various functions. Unlike the R/3 system which acts as a Web client, a content server like CommonStore is unable to instigate communication between the two components.

In order to support archiving functions and scenarios that cannot be covered by the client/server perspective BC-HCS is based on, CommonStore supports the additional protocols covered by BC-AL. In their entirety, the supported BC-AL 4.5 functions (which have not been changed with R/3 Release 4.6 or mySAP.com) comprise:

- BC-HCS (as described above)
- A *BAPI* (Business Application Programming Interface) for bar code-based archiving scenarios.
- *OLE* (Object Linking and Embedding) functionality for storing inbound documents or PC files and starting external viewing applications (for example, archive clients) on 32-bit Windows frontends.

When used with R/3 Releases prior to 4.5 (the first R/3 Release to support BC-HCS), CommonStore realizes the operations now covered by BC-HCS through RFCs (Remote Function Calls), a communication protocol defined by SAP. In the releases 4.5 and 4.6, HTTP messages replace the corresponding RFCs.

All BC-AL operations are based on the notion that the SAP database represents a master index catalog of all documents, including those whose content resides in the external archive. According to the approach, BC-AL passes no document-related information to the external archiving system. Instead, a symbolic *UUID* (Universal Unique Identifier) is created for each document and applied to identify it throughout its life cycle. BC-AL itself maintains a table that maps each business document (for example, credit memo or customer invoice) to its corresponding UUID. For many SAP users however, it is a requirement to access archived documents independently of R/3 or mySAP.com (that is, without using SAP GUI or the mySAP.com Workplace). For this case, to support searching the external archive for business information like customer number or fiscal year, CommonStore provides proprietary function modules that transfer these respective document attributes from R/3 to the archive database.



## CommonStore architecture

As illustrated in Figure 1, CommonStore consists of the following components:

1. The CommonStore Server is the most important component of CommonStore. It handles the whole archiving functionality.
2. The CommonStore client, which in turn consists of the CommonStore Dynamic Link Library (DLL) and either the CommonStore Archiving Client or the CommonStore Viewing Client (alternatively, the SAP ArchiveLink Viewer can be used). See also the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide* for more-detailed information.

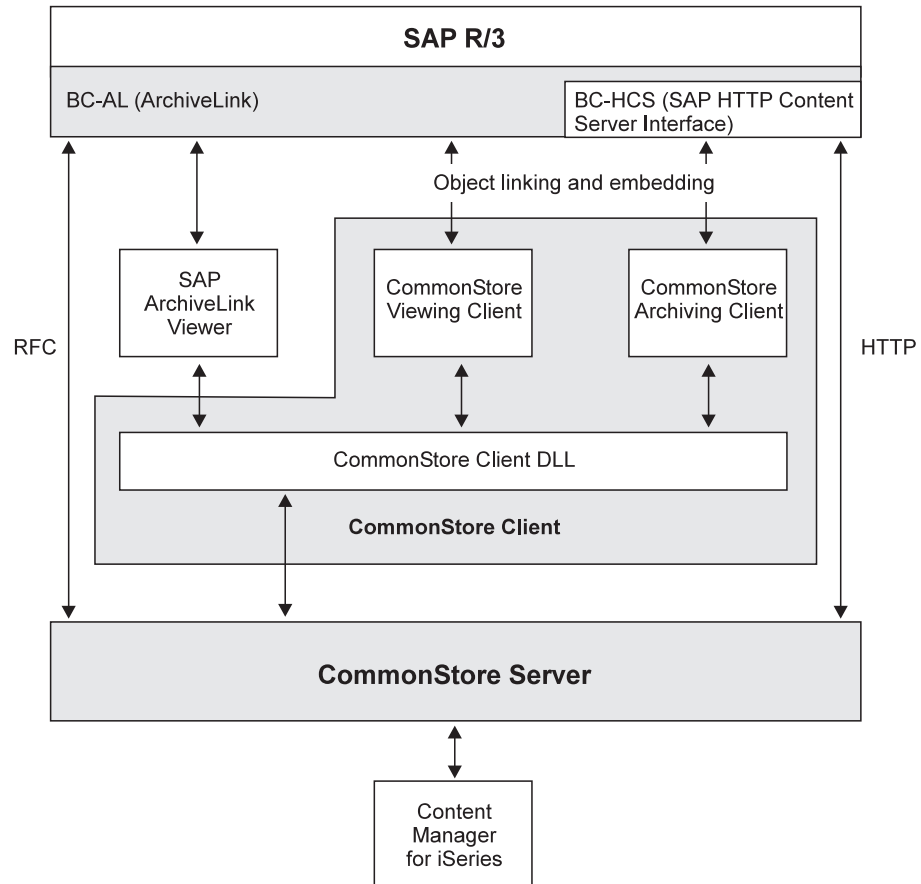


Figure 1. Interfaces of IBM Content Manager CommonStore with SAP R/3



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## Chapter 2. Scenarios and features

As there are diverse applications for archiving and content management in the SAP R/3 and mySAP.com environments, integrating CommonStore into the SAP landscape can bring multiple benefits. In the following sections, the most important aspects will be discussed, distinguishing *data archiving* (driven by system administration) and *document archiving* (driven by business process optimization).

### Data Archiving

When an R/3 system goes into production, its database usually has a size that allows efficient storage of data on local hard disks of the database server. While new data is entered and generated during production, the database size increases continually. This approximately linear database growth depends on the intensity of system usage and may easily reach rates of 30 to 50 percent per annum.

This rapid evolution has several inadvertent side effects:

- Since the physical tables are usually stored on hard disks directly attached to the database server, **an increase in hard disk requirements** is unavoidable.
- Due to an **increase in administration effort** for the database, maintenance windows (for example, for system backup) claim unacceptable amounts of time.
- The increased number of rows per database table delays basic operations (for example, searching tables). The accumulation of these delays leads to a perceptible **degradation of response times** when accessing the database.

As practical experience has shown, the database growth noticeably affects the system performance and administration effort within one to two years of usage.

SAP recommends archiving application data to reduce database growth and counteract its consequences: "Nearly all customers will thus (have to) archive data which is no longer needed for on-line operation." (translation from the official SAP document *BC – Archivieren und Löschen von Anwendungsdaten* as of R/3 Release 3.1). This process removes mass data from the system which is not actively used. CommonStore can be employed to perform the task of archiving inactive data concurrently with normal system operation.

Especially for SAP customers within the European Economic and Currency Union, the launch of the new Euro currency raises additional issues related to the R/3 database size. Though SAP itself provides the functionality relevant for the LCC (local currency changeover), this operation still requires system downtime for the conversion of currency-related database fields. This downtime is approximately proportional to the respective table sizes. SAP advises: "Data archiving offers a way to consistently reduce database tables, therefore you should seriously consider whether to implement it in the period before local currency changeover." (extract from the white paper *SAP Data Archiving and the Euro*, Version 3.0). Using CommonStore to remove inactive currency data from the operational database minimizes the total conversion downtime and the runtime of a database restore in case the LCC should fail.

Application data archived through CommonStore:

- Can be **stored on external media** independently of R/3 (for example, optical media or magnetic tape).

- Will be **compressed by up to a factor of 5** during archival.
- Is accessible by R/3 at any time and can even be **analyzed in the external archive**.
- Is **not affected by hardware or release changes** of the R/3 system.

## Document Archiving

For legal and/or internal policy reasons, companies are required to keep records for a certain period of time.

Conventionally filing these documents on paper or in microfiche archives results in:

- Extensive cost for **duplicating or filming** the documents to be stored.
- Expenditures for the **physical storage** of paper or microfiche media.
- Inefficient **retrieval** of stored documents.

However, most business processes supported by R/3 allow processing documents electronically (as opposed to a paper-based process).

The benefits of this approach include :

- The ability to use **cost-efficient storage media** for the document repository.
- **Direct access** by all authorized users without the delay caused by conventional archive inquiries.
- **Parallel access** by several users at the same time.
- The option of leveraging *SAP Business Workflow* to **improve** existing **work routines**.
- **Increased customer satisfaction** through optimized processes.

CommonStore is capable of handling different kinds of electronically represented documents.

The following groups of document types should be differentiated:

- *Inbound documents* (for example, supplier invoices) that reach the enterprise via mail or telefax and are stored as rasterized images. For this document type, the advantages of using CommonStore come to light most apparently.
- *Outbound documents*, which are normally printed and sent to their respective recipient. CommonStore not only provides for fast retrieval in case of internal or external audits, but also for quick referral on inquiries by customers or suppliers.
- *Reports and print lists* (for example, journals), which are generated by R/3 and would normally be printed. The use of CommonStore typically makes a physical print-out obsolete. The electronic journal (as opposed to its paper equivalent) is easily searchable and can even contain *hyperlinks* to other documents (as an example, a specific entry in a document journal might refer to a scanned original document). Furthermore, the archived lists can be used as input to other applications like data mining systems.
- *Desktop files* created by PC applications (for example, office or CAD applications), can be stored through CommonStore and accessed by R/3 users via SAP office or DMS.

In addition to these "basic" document types handled by CommonStore, a typical requirement for an archiving system is to store documents from external

applications and make them available to R/3 users. This particularly includes *COLD* (computer output on laser disc) that was generated outside of R/3.



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## Part 2. Installing





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## Chapter 3. Installing the CommonStore Server

This chapter describes how to install the CommonStore Server component. The server contains, among other modules, the archiving engine, that is, the archpro program. This program performs the true archiving jobs, that is, it stores or retrieves messages and attachments from an archive.

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### Prerequisites for installation on iSeries computers

**Note**

Before proceeding, please first read the file `Readme.1st` located in the root directory of the installation CD ROM to receive the latest updates.

### General prerequisites for installation on AS/400

You must prepare the environment before you can begin installing CommonStore.

You must therefore ensure that the appropriate software is already installed:

- Installed, tested, and operational SAP R/3 System, releases 3.11 to 6.10
- OS/400 V5R1M0 or higher on the CommonStore Server
- Java™ Developer Kit 1.3 (5722JV1)
- CommonStore needs access to the LIBRFC service program (\*SRVPGM) and the LIBSAPSECU service program. The current version of CommonStore is bound to the LIBRFC program residing in the R346DERFC library and the LIBSAPSECU program residing in the SAPSECU library. If you want to bind a newer LIBRFC or SAPSECU program to CommonStore, refer to “Updating the CommonStore Server” on page 24.

**Note**

SAP R/3 refers to the Gateway via T-code SM59.

### Additional prerequisites for installation on AS/400

#### Prerequisites for the installation with Content Manager for iSeries

- Installed, tested, and operationally complete IBM Content Manager for iSeries V5R1.
- Configured Content Manager for iSeries with defined index classes, workbaskets, and VI users — which should be used for archiving (see Chapter 4, “Basic administration” on page 33).

You must prepare the environment before you can install the CommonStore Server. Therefore, make sure that at least one of the packages listed under “Archive client software” on page 14 and “Archive server software” on page 14 are already installed.

## Archive client software

Table 2 shows the required release level of the supported archive client software. Before installing CommonStore, the listed version or a later release of your client software must be installed on the workstations connected with the archive server.

*Table 2. Prerequisites for the client software of your archive system*

Archive	Prerequisites
Content Manager for iSeries	Content Manager for iSeries Client for Windows Version 5.1 including appropriate fix packs.

## Archive server software

Table 3 shows the required release level of the supported archive server software. Before installing CommonStore, the listed version or a later release of your server software must be installed on the archive server.

*Table 3. Prerequisites for the server software of your archive system*

Archive	Archive server platform	Prerequisites on archive server
Content Manager for iSeries	iSeries, OS/400	Completely installed, tested, and operational Content Manager for iSeries including the latest program temporary fixes (PTFs)

---

## Installation steps for iSeries

With CommonStore, the archiving of all R/3 document types is supported. In order to archive application data (document class: REO) and — provided the SAP GUI is used for displaying — to archive and view print lists (document class: ALF), it is sufficient to install the CommonStore Server package.

Otherwise, in order to archive the following document types, you will have to also install the CommonStore Client package:

- Print lists (document class: ALF)
- Outbound documents (document classes: OTF or PDF)
- Inbound documents (document class: FAX)

Using the CommonStore Client, you can also view the archived documents of the document format ALF and FAX.

### Note

To transfer the archived data from or to the R/3 System, you will need an exchange path. Depending on where your exchange path is located, you will need NFS mounts. This path may be located on any server in your R/3 environment, provided both the R/3 System and the CommonStore Server have READ and WRITE access to this path. Please make sure that the exchange paths are dimensioned large enough (in accordance with the volume of the data to be archived) if they physically reside on a platform other than OS/400. If the exchange path is on the AS/400, the ASP with the exchange path should have enough capacity to hold the data to be archived.

## CommonStore on iSeries computers

This chapter describes how to install the CommonStore Server package on iSeries computers. For a basic setup, see Chapter 4, “Basic administration” on page 33.

### Installation steps — overview

#### Notes

- If not stated differently, the user QSECOFR is required for installation.
- Before proceeding, read the file `Readme.1st`, which is located in the root directory of the installation CD ROM to receive the latest updates.

Install the CommonStore Server code from CD ROM using either one of the following two alternative methods (described in “Installing the CommonStore Server code using the standard AS/400 command LODRUN” and “Installing the CommonStore Server code manually” on page 19, respectively).

**Installing the CommonStore Server code using the standard AS/400 command LODRUN:** This section describes how to install the CommonStore Server code using the standard AS/400 command **LODRUN**. The installation routine procedure performs the steps described below. Steps 1 - 6 must be performed on the machine on which the CommonStore Server will run. If the installation fails at any point, the reason has to be checked in the job log. If the reason is able to be recovered, the **LODRUN** command can be restarted after clearing the failing reason and after deleting already-installed portions. The missing steps (beginning with the failing one) can also be performed manually by using the manually installation description in “Installing the CommonStore Server code manually” on page 19.

1. Sign on the system with the user QSECOFR.

#### Note

The user is checked in the installation procedure. At delivery time, all objects are owned by QSECOFR!

2. Enter the command **LODRUN** as follows:

```
LODRUN DEV(*OPT) DIR('/OS400')
```

Instead of \*OPT, you also can use the name of your CD-ROM device containing the CommonStore Server CD ROM.

3. In the presented panel, enter 1 in the option field in order to install a new CommonStore Server Code. The code is installed in library CS400V8.

```
ARKTOS                                     9.04.02
QSECOFR                                     08:17:43
INTRO                                     LODRUN-Panel for CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

Select an option:

1. Install/Overwrite CommonStore/400 with ContentManager/400 V5R1
2. Update an existing CommonStore/400-System

Option: 1

F3=End F12=Cancel F21=CommandLine
```

Figure 2. The INTRO panel

- 4. In the next panel (when installing the CommonStore Server code from CD ROM, the INSTALLCD panel), enter the correct name of the source path in which the installation files reside. If not stated differently in any hints or READMEs, the default path, /OS400, has to be used.

```
ARKTOS                                     9.04.02
QSECOFR                                     08:24:00
INSTALLCD                                 Installation panel for CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

Enter the sourcepath of the installation files:
(please enter the path name with a leading slash [/])

/OS400

F3=End F12=Cancel F21=CommandLine
```

Figure 3. The INSTALLCD panel

**Note**  
If a library named CS400V8 already exists, a warning will be shown. If confirming the request, the library will be cleared and the new objects will be installed.

- 5. In the RQSGRPPRF panel, enter the name of the Content Manager group profile. By default, this is QVIGROUP.

```
ARKTOS                                     9.04.02
QSECOFR                                     08:31:21
RQSGRPPRF      Post Installation steps CommonStore/400

                IBM CommonStore/400 for ContentManager/400
                  Version 8.1.0.0
                  (xxxx-xxx)

                Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

                Please enter the name of the group profile
                for ContentManager/400

                QVIGROUP

F3=End  F12=Cancel  F21=CommandLine
```

Figure 4. The RQSGRPPRF panel

6. In the RQSUSRPRF panel, enter the name of the CommonStore user profile to be created. The default is CSTORE.

```
ARKTOS                                     9.04.02
QSECOFR                                     08:35:00
RQSUSRPRF      Post Installation steps CommonStore/400

                IBM CommonStore/400 for ContentManager/400
                  Version 8.1.0.0
                  (xxxx-xxx)

                Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

                Please enter the name of the user profile
                for CommonStore/400

                CSTORE

F3=End  F12=Cancel  F21=CommandLine
```

Figure 5. The RQSUSRPRF panel

7. If the library R331HRFC does not exist, the RQSLIBRFC panel will be shown:

```

ARKTOS                                     9.04.02
QSECOFR                                     08:35:00
RQSUSRPRF      Post Installation steps CommonStore/400

      IBM CommonStore/400 for ContentManager/400
      Version 8.1.0.0
      (xxxx-xxx)

      Interface to SAP R/3 ArchiveLink
      (c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

      Please enter the name of the library which
      contains the service program LIBRFC

      R346DERFC

F3=End  F12=Cancel  F21=CommandLine

```

Figure 6. The RQSLIBRFC panel

In this case, please refer also to “Updating the CommonStore Server” on page 24. Please enter the name of the library containing the service program LIBRFC. This can be checked by entering the following command:

```
WRKOBJ OBJ(*ALLUSR/LIBRFC) TYPE(*SRVPGM)
```

With the information provided in steps 5, 6, and 7 on page 17, steps 6 ff. described in “Installing the CommonStore Server code manually” on page 19 are processed automatically.

8. If the library SAPSECU does not exist, the RQSSAPSECU panel is shown:

```

ARKTOS                                     9.04.02
QSECOFR                                     08:35:00
RQSUSRPRF      Post Installation steps CommonStore/400

      IBM CommonStore/400 for ContentManager/400
      Version 8.1.0.0
      (xxxx-xxx)

      Interface to SAP R/3 ArchiveLink
      (c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

      Please enter the name of the library which
      contains the service program LIBSAPSECU

      SAPSECU

F3=End  F12=Cancel  F21=CommandLine

```

Figure 7. The RQSSAPSECU panel

In this case, refer to “Updating the CommonStore Server” on page 24. Enter the name of the library containing the service program LIBSAPSECU. You can check this by entering the following command:

```
WRKOBJ OBJ(*ALLUSR/LIBSAPSECU) TYPE(*SRVPGM)
```

With the information provided in steps 5, 6, and 7 on page 17. The steps 6 ff., described in “Installing the CommonStore Server code manually”, are processed automatically.

9. Refer to “Post-installation steps” on page 21.

**Installing the CommonStore Server code manually:** This section describes how to install the CommonStore Server code manually (a process usually performed using the **LODRUN** routines, see also “Installing the CommonStore Server code using the standard AS/400 command LODRUN” on page 15).

1. Sign on the system with the user QSEC0FR.

**Note**

If the installation is not performed with QSEC0FR, authority problems can occur.

2. If it does not already exist, create the library named CS400V8 by entering the following command:

```
CRTLIB LIB(CS400V8) AUT(*ALL) Text('<optional text>')
```

3. Restore the objects from the CD ROM using

```
RSTOBJ OBJ(*ALL) SAVLIB(CS400V8) DEV(<Devd>)  
OBJTYPE(*PGM) MBROPT(*ALL)  
ALWOBJDIF(*ALL) RSTLIB(CS400V8)  
OPTFILE('/OS400/CS400')
```

where <Devd> is the name of your CD-ROM device.

4. Restore the IFS-objects performing following steps:
  - a. Use the command **MKDIR** to create the following IFS-directories:

```
'/CommonStore400'  
'/CommonStore400/Java'  
'/CommonStore400/queue'  
'/CommonStore400/Data'  
'/CommonStore400/webroot'  
'/CommonStore400/NLS'  
'/CommonStore400/NLS/DE_DE'  
'/CommonStore400/NLS/EN_US'
```

- b. Use the command **RST** to restore the objects:

```
RST DEV(('qsys.lib/<Devd>.devd'))  
OBJ(('C*')) OPTFILE('/OS400/CS400IFS')  
ALWOBJDIF(*ALL)
```

5. Create a data area in the library (with the same name as the library itself) pointing to the IFS-directory containing the standard CommonStore initialization file by entering the following command:

```
CRTDTAARA DTAARA(CS400V8/CS400V8)  
TYPE(*CHAR)  
LEN(2000)  
VALUE('/CommonStore400/')
```

6. If it does not already exist, create a user profile for the use of CommonStore using:

```
CRTUSRPRF USRPRF(<CSTORE>)PASSWORD (*USRPRF)  
USRCLS(*SECADM) JOB(CS400V8/<Cs400jobd>)  
INLPGM(CS400V8/SETCSENV)  
GRPPRF(<Qvigroup>) OWNER(*GRPPRF)  
HOMEDIR('/CommonStore400') AUT(*ALL)
```

where <Cstore> is the name of the CommonStore user profile, <Cs400jobd> is the name of the standard job description of <Cstore> (see also step 3 of “Post-installation steps” on page 21), and <Qvigroup> is Content Manager’s group profile.

7. Change the ownership of the IFS-Objects in /CommonStore400 (including /CommonStore400) using the following commands:

```

CHGOWN OBJ('/CommonStore400') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/queue') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Data') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/webroot') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/NLS') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/NLS/DE_DE') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/NLS/EN_US') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Archint_sample_cm.ini) NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/csmimes.properties') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Data/icudt18e.dat') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java/archcls.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java/mail.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java/activation.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java/ivjsap35.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java/infobus.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/Java/cssap.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/webroot/cscclient.jar') NEWOWN(<Qvigroup>)
CHGOWN OBJ('/CommonStore400/NLS/EN_US/CSSrvMsg.cat') NEWOWN(<Qvigroup>)

```

where <Qvigroup> is Content Manager’s group profile.

8. Change the authority for the IFS-objects using the following commands:

```

CHGAUT OBJ('/CommonStore400') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Data') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/queue') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/webroot') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/NLS') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/NLS/EN_US') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/NLS/DE_DE') USER(*PUBLIC) DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Archint_sample_cm.ini') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/csmimes.properties') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java/archcls.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java/mail.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java/activation.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java/ivjsap35.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java/infobus.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Java/cssap.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/webroot/cscclient.jar') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/NLS/EN_US/CSSrvMsg.cat') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)
CHGAUT OBJ('/CommonStore400/Data/icudt18e.dat') USER(*PUBLIC)
DTAUT(*RWX) OBJAUT(*ALL)

```

9. Grant the object authority for the group profile on objects used by CommonStore Server using the following commands:

```

GRTOBJAUT OBJ(<Librfc1ib>) OBJTYPE(*LIB) USER(<Qvigroup>) AUT(*ALL)
GRTOBJAUT OBJ(<Librfc1ib>/*ALL) OBJTYPE(*ALL) USER(<Qvigroup>) AUT(*ALL)
GRTOBJAUT OBJ(<Libsapsecu>) OBJTYPE(*LIB) USER(<Qvigroup>) AUT(*ALL)

```



```

GRTOBJAUT OBJ(<Libsapsecu>/*ALL) OBJTYPE(*ALL) USER(<Qvigroup>) AUT(*ALL)
GRTOBJAUT OBJ(<Librfclib>) OBJTYPE(*LIB) USER(<Qvigroup>) AUT(*ALL)
GRTOBJAUT OBJ(<Librfclib>/*ALL) OBJTYPE(*ALL) -USER(<Qvigroup>) AUT(*ALL)
GRTOBJAUT OBJ(CS400V8) OBJTYPE(*LIB) USER(<Qvigroup>) AUT(*ALL)
GRTOBJAUT OBJ(CS400V8/*ALL) OBJTYPE(*ALL) USER(<Qvigroup>) AUT(*ALL)

```

where <Librfclib> is the name of library containing the service program LIBRFC, <Libsapsecu> is the name of the library containing the service program LIBSAPSECU, and <Qvigroup> is the name of Content Manager's group profile.

**Post-installation steps:** In order to have a proper and prepared environment, a number of objects should be created; further, it is recommended that certain other objects be created or maintained. This section describes how to do this.

To run a CommonStore Server system, it is recommended that a special environment be set up for it, including user profiles, job descriptions and job specifications, an out queue, a subsystem description, and the objects for the subsystem description.

At the very least, the following should be created:

- A user profile
- A directory entry for the user
- A job description

The following steps describe how to do this:

1. Creating a user profile: See step 6 on page 19 of "Installing the CommonStore Server code manually" on page 19.
2. If a directory entry for the user does not already exist, add one in the system directory by using the following command:

```

ADDIRE USRID(<Cstore> <Systemname>)
      USRD('CommonStore Server administrator and user')
      USER(<Cstore>) NETUSRID('<Cstore> <Systemname>')

```

where <Cstore> is the user name created during installation or the user name intended for use as the CommonStore user and <Systemname> is the local system name of the CommonStore installation. This can be checked by entering DSPNETA

3. Create a job description including all needed libraries in the initial library list and including the job queue to be used when submitting jobs to the system:

```

CRTJOB JOB(CS400V8/CS400JOB)
JOBQ(*LIBL/<Jobqueues>)
OUTQ(*USRPRF)
INLLIBL(QTEMP
CS400V8
QUSRVI
QVI
QGPL
<Librfclib>
<Libsapsecu>
)

```

where <Jobqueue> is the job queue to be used when submitting jobs, <Librfclib> is the name of the library containing the service program LIBRFC, and <Libsapsecu> is the name of the library containing the service program LIBSAPSECU.

4. Check the service table entry (similar to file \etc\services on other platforms). The installation procedure of the SAP components sets the required entries

automatically on the machine where they are installed. If the CommonStore Server is to run on a different machine, you will need to add the following entries in the service table:

```
sapdp00 3200/tcp
sapgw00 3300/tcp
```

If you use an instance other than 00, please adjust the numbers accordingly, for example:

```
sapdp07 3207/tcp
sapgw07 3307/tcp
```

Use the command **WRKSRVTBLE** to check the service table entries. To add the entries, use the following commands in couple:

```
ADDSRVTBLE SERVICE('sapdpxx')
              PORT(32xx)
              PROTOCOL('tcp')
```

and

```
ADDSRVTBLE SERVICE('sapgwxx')
              PORT(33xx)
              PROTOCOL('tcp')
```

where xx is the instance number of the SAP System.

5. Create the exchange directory for the R/3 data to be archived. This directory will preferably be located on the machine on which the CommonStore Server is running, as all R/3 application servers need access to this directory.

**Note**

The R/3 System and the CommonStore user will need READ and WRITE permission to this directory.

6. Export this directory to all SAP R/3 application servers. Refer to the manual *Network File System Support V4R4* or contact your IBM SE or a business partner of IBM.
7. Mount this remote directory on all R/3 application server machines. Choose the following sequence of menus when using SMIT:
  - a. **System Storage Management (Physical and Logical Storage)**
  - b. **File Systems**
  - c. **Mount a FileSystem**
8. When the CommonStore user logs on to the system, the CL startup program SETCSENV is called. This program sets the environment variables in Table 4 for the current job.

Table 4. Environment variables set by the SETCSENV program

Name	Value
ICU_DATA	'/CommonStore400/Data'
LANG	'/QSYS.LIB/DE_DE.LOCALE'

These environment variables are vital for CommonStore. Do not change the value of ICU\_DATA. The variable LANG points to the location of the locale

that CommonStore uses when in operation. For example, in Germany this is '/QSYS.LIB/DE\_DE.LOCALE', and in the United States, this is '/QSYS.LIB/EN\_US.LOCALE'.

You can adjust these settings by changing the source of the SETCSENV CL program and recompile it. You find the source in CS400V8/QCLSRC, which is a member of SETCSENV. Use the following command for the compilation:

```
CRTCLPGM PGM(CS400V8/SETCSENV)
        SRCFILE(CS400V8/QCLSRC)
```

**Important**

When you run CommonStore as a submitted job, you must set the CPYENVVAR parameter to \*YES.

It is recommended that the CommonStore Server be run by submitting it to the system as AJE (auto started job) when starting an appropriate subsystem. Several configuration steps are to be taken if not-yet existent structures are to be used to do this:

- Creating a subsystem description with concluded class description for the storage maintenance and adjusting of job priorities
- Creating a job queue to release the submitted jobs to the system
- Creating a job description for the "autostart job entry" with the command string to run

In the following, only the creation of an "autostart job entry" to run the CommonStore Server is described. For creating your own subsystem, refer to *OS/400 Work Management V4R2*.

1. Create a job description for the autostart job. Use the following command:

```
CRTJOB JOB(CS400V8/CS400STR)
JOBQ(*LIBL/<Jobqueues>)
OUTQ(*USRPRF)
USER(<Cstore>)
RQSDTA('call archpro')
INLLIBL(QTEMP
CS400V8
QUSRVI
QVI
QGPL
<Librfclib>
<Libsapsecu>
)
```

2. where <Jobqueue> is the job queue to be used when submitting jobs, <Librfclib> is the name of library containing the service program LIBRFC, and <Libsapsecu> is the name of the library containing the service program LIBSAPSECU.
3. Add the job description to a subsystem as "autostart job entry" by entering the following:

```
ADDAJE SBSDB(<Libnam>/<Sbsd>)
      JOB(ARCHPRO)
      JOB(CS400V8/CS400STR)
```

Where <Libnam>/<Sbsd> is the qualified name of the subsystem description. The next time the subsystem is started, the job ARCHPRO and client jobs (agents) of ARCHPRO will be active.

## Updating the CommonStore Server

There are different reasons to update the installed code:

1. New version
2. Fixes/PTFs
3. Linkage of the programs with newer service program levels of LIBRFC, LIBSAPSECU (SAP R/3) or QVI-API (IBM Content Manager for iSeries)

You will need a new code for the first two reasons. You have to use the latest delivered and installed CD-ROM Version for the third reason. The actual delivered code is compiled with the following service program levels:

Table 5. Service program levels for delivered code

Name	Date/time	Export signature
LIBRFC	31.01.01/10:54:24	13B4786A8696EDB0E92C2DC7F594DE27
LIBSAPSECU	27.11.01/16:08:59	B3DA8C0969E6DA42E6F6F4F566594A7B
QVI-API V5R1	02.05.01/18:10:33	D8E5C9C1D7C9404040404040404040

Check the service program levels on the system by entering the following:

```
DSPSRVPGM SRVPGM(<LibrfcLib>/LIBRFC)
DSPSRVPGM SRVPGM(<Libsapsecu>/LIBSAPSECU)
DSPSRVPGM SRVPGM(QVI/QVI-API)
```

where <LibrfcLib> is the name of the library containing the service program LIBRFC and <Libsapsecu> is the name of the library containing the service program LIBSAPSECU.

You have to stop the CommonStore Server using the program ARCHSTOP. Use the following OS/400 command:

```
CALL PGM(ARCHSTOP) PARM(<optional parameters>)
```

Be sure that all archpro instances have ended before proceeding with the next step.

### Note

Before proceeding, please first read the file `Readme.1st` located in the root directory of the installation CD ROM to receive the latest updates.

The update procedure is done just like installation. Update the CommonStore Server code from CD ROM as follows:

1. To install the CommonStore Server code, the standard AS/400 command **LODRUN** is used. If the update fails at any point, the reason has to be checked in the job log. If the reason is able to be recovered, **LODRUN** should be restarted after clearing the failing reason.
  - a. Sign on the system with the user QSECOFR

### Note

The user is checked in the update procedure. At delivery time, all objects are owned by QSECOFR!

- b. Enter the command **LODRUN** as shown below:

```
LODRUN DEV(*OPT) DIR('/OS400')
```

Instead of \*OPT, you also can use the name of your CD-ROM device containing the CommonStore Server CD ROM.

- c. In the presented panel, enter 2 in the option field in order to update the CommonStore Server Code.

```
ARKTOS                                     9.04.02
QSECOFR                                    08:37:07
INTRO                                     LODRUN-Panel for CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

Select an option:

1. Install/Overwrite CommonStore/400 with ContentManager/400 V5R1
2. Update an existing CommonStore/400-System

Option: 2

F3=End F12=Cancel F21=CommandLine
```

Figure 8. The INTRO panel

- d. In the next panel, enter the path to the source directory in which the installation files reside. If not stated differently in technical notes or README files, specify the default path /OS400.

```
ARKTOS                                     9.04.02
QSECOFR                                    11:01:20
UPDATECD                                  Update panel for CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

Enter the sourcepath of the installation files:
(please enter the path name with a leading slash [/])

/OS400

F3=End F12=Cancel F21=CommandLine
```

Figure 9. The UPDATECD panel

- e. In the next panel (UPDATE), enter the appropriate option:

```

ARKTOS                                     9.04.02
QSECOFR                                     11:01:57
UPDATE                                     UPDATE-Panel for CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

Select an option:

1. Link CommonStore/400-Programs with newer LIBRFC
2. Link CommonStore/400-Programs with newer LIBSAPSECU
3. Link CommonStore/400-Programs with newer QVI-API
4. Other update option
Option:

F3=End  F12=Cancel  F21=CommandLine

```

Figure 10. The UPDATE panel

- In the case of option 1, the following panel will be presented. Enter the name of the library containing your service program LIBRFC:

```

ARKTOS                                     9.04.02
QSECOFR                                     11:11:13
UPDLIBRFC                                  UPDATE steps CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

Please enter the name of the library which
contains the service program LIBRFC

R346DERFC

F3=End  F12=Cancel  F21=CommandLine

```

Figure 11. The UPDLIBRFC panel (option 1)

- In the case of option 2, the following panel will be presented. Enter the name of the library containing your service program LIBSAPSECU:

```

ARKTOS                                     9.04.02
QSECOFR                                    11:14:20
UPDSAPSECU                                UPDATE steps CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

                                     Please enter the name of the library which
                                     contains the service program LIBSAPSECU

                                     SAPSECU

F3=End  F12=Cancel  F21=CommandLine

```

Figure 12. The UPDSAPSECU panel (option 2)

- In the case of option 3, the following panel will be presented. Enter the name of the library containing your service program QVI API.

```

ARKTOS                                     9.04.02
QSECOFR                                    11:14:20
UPDQVI API                                UPDATE steps CommonStore/400

                                     IBM CommonStore/400 for ContentManager/400
                                     Version 8.1.0.0
                                     (5724-B87)

                                     Interface to SAP R/3 ArchiveLink
(c) Copyright IBM Corporation, 1997, 1998, 1999 All Rights Reserved.

                                     Please enter the name of the library which
                                     contains the service program QVI API

                                     QVI

F3=End  F12=Cancel  F21=CommandLine

```

Figure 13. The UPDQVI API panel

- In the case of option 4, the user-defined program CS400UPD2 starts immediately. This is a user exit that allows the user to run self-written programs.

**Note**  
 Make sure that all the installed components are of the same version; otherwise, the program files might be unable to communicate with each other.

---

## Installed files

During the installation, the installation program copies numerous files to your iSeries computer, which are placed in the CS400V8 library. This section discusses the most important of these files.

## Programs

This section describes the most important programs installed by CommonStore. Not described are the service programs that CommonStore uses.

The CommonStore Server package contains the following executable files:

### **archadmin**

This program allows a (remote) connection to a CommonStore Server in order to view the messages issued by the CommonStore Server. You can establish a connection across machine and platform boundaries.

### **archagentv**

This is the agent program for Content Manager for iSeries, which is started by the CommonStore Server. It is responsible for archiving data to and retrieving it from the archive. The CommonStore Server starts as many agents as are defined by the keyword VIAGENTS in the server configuration profile.

**archbc** This program triggers the archagentvi program to scan the Content Manager workbaskets for documents with bar codes and to send them to SAP R/3. Initiate this program by a scheduled job or manually.

#### **Note**

This program is only needed for late archiving of documents via bar code with Content Manager.

### **archpro**

This is the continuously-running main program of the CommonStore Server, which controls all other CommonStore components.

### **archstop**

This program shuts down the CommonStore Server.

### **archwin**

This is the CommonStore DLL dispatcher, that is, the program which communicates with the CommonStore DLL. The CommonStore DLL is needed to support the SAP ArchiveLink viewer and the CommonStore client programs.

#### **Note**

This program is needed only if the CommonStore DLL or the CommonStore Client are in use.

### **archcls.jar and csmimes.properties**

The archcls.jar file is a Java class library required for accessing the CommonStore Server by using the Hypertext Transfer Protocol (HTTP).

The csmimes.properties file is a resource file. It specifies the mappings of archive content types to MIME types. The Web browser needs this information to display the retrieved content correctly.



## Other objects in the CS400 library

Additionally, CommonStore installs another object, the CS400 data area (type: \*DTAARA). This data area contains the full path name to the CommonStore directory in the IFS of your iSeries computer. When the CommonStore Server starts, it first checks whether an optional profile was requested for the job. If not, this data area is searched for the path to the server configuration profile archint.ini. The syntax of the path specification is as follows:

```
 /<path name>/
```

### Important

The full path name must begin and end with a slash.

## Files in the IFS of your iSeries computer

The following path is the standard path to CommonStore files in the IFS of your iSeries computer:

```
 /CommonStore400
```

This is the standard instance path created during the installation. Initialization files (.ini), Java archives (.jar), configuration files, and other files reside in this directory or in its subdirectories.

## Sample configuration profiles for the CommonStore Server

The server configuration profile is also referred to as the initialization file or ini file. If the option *-i* is not used in connection with the **archpro** command, the CommonStore Server looks for the default server configuration profile (usually archint.ini) in the local directory.

The easiest way to create this file is by modifying the appropriate sample profile. You edit the sample profile that is suitable for your archive system, and then save it as archint.ini or whatever name might be required by your system setup. The server configuration profile contains all necessary information for the CommonStore Server and its connections to the archive systems. See Chapter 4, “Basic administration” on page 33.

### Notes:

1. The CommonStore Server needs only this file for customization.
2. The following sample configuration profiles are provided as part of the CommonStore package. They are intended for use as templates. In other words, after you have customized them according to your setup, they assume the role of the server configuration profile whenever you specify them using the option *-i*.

#### **archint\_sample\_cm.ini**

Use this sample profile as a template for your Content Manager for iSeries archive system.

3. You can configure the CommonStore Server to work with different archive types. To do so, follow these steps:
  - a. Open the appropriate sample profiles and copy the sections beginning with the ARCHIVE keyword to your server configuration profile (usually archint.ini).
  - b. Change the settings in the copied sections so that they work with the archive systems that you want to use.

- c. Use the VIAGENTS keyword to specify the number of agents to be employed.

If you are not sure about the settings to use, have a look at the other sample profiles or see Appendix A, “Keywords in the server configuration profile” on page 115.

---

## **Part 3. The CommonStore Server**



---

## Chapter 4. Basic administration

This section provides an overview of the basic steps you must perform to configure the CommonStore Server. The following steps are described:

1. Setting up the basic server configuration profile
2. Enabling the Hypertext Transfer Protocol (HTTP)
3. Creating the passwords to access the archive server
4. Starting the CommonStore Server using the configured profile

---

### CommonStore Server configuration profile setup

The installation package includes a sample profile called `archint_sample_cm.ini` for your Content Manager archive system.

After you have customized the profiles according to your setup, they assume the role of the CommonStore Server configuration profile whenever you specify them using the option `-i`. For more information, see “Starting the CommonStore Server” on page 43.

The CommonStore Server reads the profile before it executes. Any change in this profile requires that you restart the server for the changes to take effect.

### Syntactical rules

The following rules apply to the syntax of the entries in a server configuration profile:

- Every line is analyzed separately.
- Keywords can start in any column of the line.
- There must not be any characters — except for blanks — before keywords.
- If a keyword is encountered several times, the last one is used.
- Scanning of the file continues until the keyword `END` is encountered or the end of the file is reached.
- It is strongly recommended that you do not use keywords as the values of keywords. However, you can use keywords as values when you *enclose them in single quotes*, for example: `SERVER 'VI'`.

### Performing basic setup steps

For the basic setup, perform the following steps:

1. Copy the appropriate sample profile to a file named `archint.ini`.
2. Adjust the paths specified in the profile to reflect your environment. This usually involves setting the following keywords:
  - `BINPATH`
  - `LOGPATH`
  - `TEMPPATH`
3. Set the keywords `BASEPATH` and `ARCHPATH` to the exchange path that you created by following the instructions in the sections “CommonStore on iSeries computers” on page 15 and “Post-installation steps” on page 21.
4. Enter the settings according to your R/3 system:

**DESTINATION**

<SID>

**PROGID**

See “Creating an RFC destination” on page 60.

**GWHOST**

Host name or IP address of the gateway that you want to use

**GWSERV**

Service or port number of the gateway that you want to use

**LU** Host name or IP address of the application server

**TP** Service or port number of the message dispatcher of your application server

**LOGICAL\_SYSTEM**

A logical system linked to the R/3 client specified by the CLIENT keyword

**CLIENT**

Name of the R/3 client; see also “Checking the logical system” on page 61.

**USER** Name of the CPIC user; see also “Creating an SAP R/3 CPIC user for the RFC communication” on page 60.

5. Enter the settings for an archive created in your archive system. At this point, it is enough to specify a test archive in the server configuration profile. For each logical archive in the archint.ini file, the following settings (depending on your archive system) are necessary:

**Content Manager:**

- STORAGETYPE VI
- LIBSERVER
- LOGICAL\_SYSTEM
- INDEX\_CLASS
- INDEX\_CLASS\_SCAN
- VIUSER
- WB\_ERROR
- WB\_SCAN

6. Set the system type of the server application from which you want to archive with CommonStore. Add or change the SYSTEMTYPE statement in the server configuration profile as shown:

```
SYSTEMTYPE SAPSYSTEM
```

7. Set the number of agents for your archive system. Use at least one agent for your archiving system, that is, set the value to 1 for the archive system employed.
8. Set the value of ARCHWINS to 0.

**Note**

If you use the CommonStore Client, check the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide* for the necessary settings.

9. Set the CCSID (Coded Character Set Identifiers) of the SAP systems. An iSeries computer is an EBCDIC (Extended Binary Coded Decimal Interchange) system. Sometimes, the operating system provides an automatic EBCDIC-to-ASCII conversion. However, it does not convert binary data. Consequently, it is impossible to interpret the requests from Windows clients.

Another problem might be that the original SAP data is converted to EBCDIC during archiving processes, thus making it unusable for SAP. To avoid these conflicts, the CommonStore Server uses controlled character conversion. SAP\_CCSID describes the data format of outgoing print lists, for example SAP\_CCSID 819.

---

## Configuring the CommonStore Server for the Hypertext Transfer Protocol

For communication by the Hypertext Transfer Protocol (HTTP), you must specify a valid Web port in the server configuration profile.

---

### Passwords

When you start the CommonStore Server for the first time, you are prompted for passwords. Proceed as follows:

- Start the CommonStore Server from the installation library (CS400) by following these steps:
  1. Sign on to the iSeries system with the user ID that you created during the installation procedure. Make sure that you have the correct library list. When in doubt, see the initial library list examples in “Post-installation steps” on page 21.
  2. Enter the following command:

```
CALL ARCHPRO PARM('-f' 'serverpasswd')
```

**Important**

Do not enter a blank between the - and the f.

You are prompted for the passwords of each logical archive defined in the server configuration profile (usually archint.ini). Use the same command to change the password of an archive.

- Enter at least one password for the R/3 log-in procedure by using this command:

```
CALL ARCHPRO PARM('-f' 'r3passwd')
```

You only need one password for asynchronous calls, but you can enter a password for each logical R/3 system. A logical R/3 system corresponds to an R/3 client.

**Note**

You must enter this command each time you want to change the R/3 password.

---

## Getting started

Start the CommonStore server by issuing one of the following commands. Bear in mind that the archpro program always needs to know which server instance to start.

You must start the CommonStore Server with the user profile that you created during the installation. During the log-on procedure, the SETCSENV program is started, which sets the environment variables for the current job.

### CALL ARCHPRO

When using the archpro command without additional parameters, enter it from the instance directory of the server instance that you want to start. Using the default setup with only one CommonStore Server, this is the instance01 directory.

### CALL ARCHPRO PARM('-i' '<ini file>')

Choosing this option, you can start the CommonStore Server from any directory. It also allows you to specify a server configuration profile other than archint.ini. Note that in addition to the server configuration profile (<ini file>), you must specify the relative or absolute path to the profile. See the following example:

```
CALL ARCHPRO PARM('-i' '/CommonStore400_inst2/archint2.ini')
```

Usually, you start the CommonStore Server as a submitted job, for example:

```
SBMJOB CMD(CALL PGM(ARCHPRO))
JOB(*USRPRF)
JOBQ(<Jobq>)
INLLIBL(*CURRENT)
LOG(4 00 *NOLIST)
LOGCLPGM(*NO)
CPYENVVAR(*YES)
```

#### Note

It is very important that you set the CPYENVVAR parameter to \*YES.

See “Starting the CommonStore Server” on page 43 for more information.



---

## Chapter 5. Creating multiple server instances

It is possible to run more than one instance of the CommonStore Server. In other words, several independent sets of CommonStore processes can be activated at the same time on the same machine.

While the same set of executables can be employed for all instances of the CommonStore Server, it is necessary to maintain distinct server configuration profiles, one for each instance of the CommonStore Server. These profiles must reside in separate instance directories.

All profiles employ identical values of BINPATH to make use of the same set of binaries. To distinguish instance-specific files, every profile must define different values of INSTANCEPATH pointing to the instance directory.

Include the option `-i` in all command invocations to specify the profile to be used (refer to Chapter 8, “Working with the CommonStore Server” on page 43).

The following steps are necessary for installing multiple instances:

1. Creating instance directories
2. Separating the server configuration profiles
3. Creating additional Windows services (optional)

---

### Creating instance directories

To create multiple instances of the CommonStore Server on the same machine, you must place each instance in its own instance directory. For example, to create a second instance, create a directory named `instance02` at the same level as the `instance01` directory. Copy the content of the `instance01` directory to the new directory. In the `instance02` directory, change the settings in the server configuration profile (`archint.ini`) as needed. In the server configuration profile of each instance, set the `INSTANCEPATH` keyword to the instance directory.

---

### Separating the server configuration profiles

It is necessary that you place each server configuration profile in a distinct directory in the file system. Additionally, these profiles must contain different values for the following keywords:

- `INSTANCEPATH`. This keyword specifies the directory in which the profile itself resides and in which instance-dependent files are stored. In particular, make sure that the following keywords, which are connected with the `INSTANCEPATH` keyword, have different values in each server configuration profile:
  - The name of the server configuration profile itself (`archint.ini`)
  - `TRACEFILE` (if `TRACE` is not switched to `OFF`)
  - `CONFIG_FILE` (`archint.cfg`)
  - `LOGPATH` (if `LOG` is not switched to `OFF`)
  - `QUEUEPATH`
- The TCP/IP ports used for communication to remote CommonStore modules, that is:
  - `WEBPORT` (if the `WEBDPS` parameter is present and set to a non-zero value)

- ARCHPRO\_PORT (the port over which an instance accepts connections)

---

## Chapter 6. Enrolling licenses on iSeries computers

When you start the CommonStore Server for the first time, you are prompted for the license key and the required passwords. Start the CommonStore Server from the installation library (CS400) by following these steps:

1. Sign on to the iSeries system with the user ID that you created during the installation procedure. Make sure that you have the correct library list. When in doubt, see the initial library list examples in “Post-installation steps” on page 21.

2. Enter the following command:

```
CALL ARCHPRO PARM('-f' 'license')
```

**Important**

Do not enter a blank between the - and the f.

The CommonStore Server prompts you for a 9-character license key. Enter the same command to change the license key.



---

## Chapter 7. Enabling the browser-viewing function

To display content, your Web browser reads the MIME type information that was assigned to a file type, and starts the appropriate plug-in for displaying this MIME type. You must prepare your browser for displaying archived content by mapping the content types of archived attachments to the appropriate MIME types. You do this in a file called *csmimes.properties*. MIME types are assigned to content types by use of the equals character. You first type the content type, then the equals character, and then the MIME type. There must be exactly one mapping per line. See the following example:

```
TIFF6=image/tiff
PDF=application/pdf
```

The *csmimes.properties* file must reside in the *INSTANCEPATH* directory, that is, the directory that the *INSTANCEPATH* keyword points to in the server configuration profile (usually *archint.ini*). See Appendix A, “Keywords in the server configuration profile” on page 115 for more information about keywords and their use.

A sample version of the *csmimes.properties* file is copied to the *instance01* directory at installation time. If you run more than one instances of the CommonStore server, you must have a copy of this file in each instance directory.

If CommonStore cannot find a copy of *csmimes.properties* in the *INSTANCEPATH* directory, it reads the required information from the compressed sample version, which is included in the *archcls.jar* Java archive. This file is also copied at the time you install the CommonStore server. The sample version contains the following mappings:

```
FAX=image/tiff
TIFF6=image/tiff
PDF=application/pdf
ALF=application/x-alf
OTF=application/x-otf
WAV=audio/wav
HPG=application/vnd.hp-HPGL
MP3=audio/x-mpeg
MPG=video/mpeg
MPEG=video/mpeg
JPG=image/jpeg
GIF=image/gif
TXT=text/plain
HTM=text/html
XML=text/xml
```

In most cases, you must edit and customize the sample file because it probably does not cover all your needs. In a normal setup with only one instance of the CommonStore Server, edit the copy in the *instance01* directory.

**Important**

- To apply the changes that you made in any copy of `csmimes.properties`, you must restart the corresponding instances of the CommonStore Server (`archpro`).
- If you use the sample file as a basis, check if the content types match the content types that you defined in your archive. For example, if an `.mp3` file has `MPEG3` as its content type, the mapping `MP3=audio/x-mpeg`, as included in the sample file, does not work. You would have to change it to `MPEG3=audio/x-mpeg`.

---

## Chapter 8. Working with the CommonStore Server

This section explains how to start and stop the CommonStore Server. It also tells you how to turn off the initial archive availability check. This section uses syntax diagrams to illustrate the syntax of commands that you enter at the command prompt. If you are not familiar with reading syntax diagrams, read the brief explanation in Appendix F, “Reading syntax diagrams” on page 147.

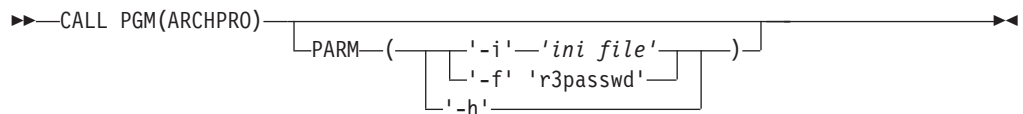
---

### Starting the CommonStore Server

The CommonStore Server consists of several components. These components are all controlled by `archpro`, the continuously-running CommonStore main program. To start the entire CommonStore Server, it is sufficient to enter `archpro` at the command prompt. The `archpro` program then reads the server configuration profile (either the `archint.ini` file in the current directory or the specified ini file) and automatically starts all configured components (so-called child processes).

The syntax for starting `archpro` directly from the command prompt is as follows:

#### ARCHPRO



#### **-f r3passwd**

Use this parameter to specify the password of a logical R/3 system. You only have to do this when you set up CommonStore for SAP and when you must change the password.

**-h** Specify this parameter to obtain online help for the `archpro` command. This parameter is exclusive. If you specify it, you cannot use any other parameter.

#### **-i ini file**

If `archpro` is started without any parameters, the server configuration profile must reside in the directory specified in the CS400V8 data area of the CS400V8 library. It must be named `archint.ini`. If you want `archpro` to use a profile located in a directory other than the current one or a profile that is not named `archint.ini`, you can specify the parameter `-i` followed by path and file name of the profile you want to use.

#### **Examples:**

- `CALL PGM(ARCHPRO)`
- `CALL PGM(ARCHPRO) PARM('-i' '/CommonStore400_2/archint.ini2')`

As soon as CommonStore is running, the main component (`archpro`) checks the other child processes every few seconds. If the `archpro` program detects that a process is no longer active, it automatically restarts the corresponding component. The archives are not checked for availability before a restart.

---

## Turning archive availability checks off

If the check remains enabled, you receive an error message and the archpro program does not start.

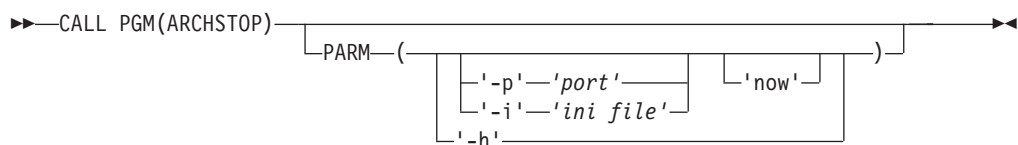
---

## Stopping the CommonStore Server

The CommonStore Server is stopped using the archstop command. This command opens a connection to the main component (archpro) and sends it a shutdown command. Whenever the archpro program receives the shutdown command, it shuts down all child processes and stops itself. All stop messages issued by the CommonStore server also appear in the archstop command window.

The syntax for this command is as follows:

### ARCHSTOP



- h** Specify this parameter to obtain online help for the **archstop** command. This parameter is exclusive. If you specify it, you cannot use any other parameter.
- p** *port*  
Specifies the port, where *port* is the fixed port number as defined in the server configuration profile by the ARCHPRO\_PORT keyword.
- i** *ini file*  
Instead of the port, you can specify the path and the file name of the server configuration profile. In this case, the port number is taken from the profile.
- now**  
Causes the server to stop immediately. If this parameter is left out, CommonStore first finishes the active jobs before it terminates.

### Examples:

- CALL PGM(ARCHSTOP)
- CALL PGM(ARCHSTOP) PARM('-p' '5510')
- CALL PGM(ARCHSTOP) PARM('-i' '5510' 'now')
- CALL PGM(ARCHSTOP) PARM('-i' '/CommonStore400\_2/archint.ini2')

---

## Uploading bar codes

It is possible to link a bar-code scanning application to a Content Manager archive so that captured documents are immediately placed in a Content Manager index class. This is a detached process because it is unrelated to your SAP environment. CommonStore allows you to process these documents so that users can access them through SAP R/3. It archives these documents in a “regular” archive, that is, an index class with your preferred set of archive attributes. In addition, CommonStore notifies SAP R/3 of the existence of these documents by sending it the bar codes and the archive document IDs. SAP R/3 is capable of using this information for the creation of archive links. The links allow you to access and process the scanned documents like any other archived document.



CommonStore for SAP provides the following methods for this process:

- Using the CommonStore Client (as described in the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide*)
- Using the *archbc* program, which is part of the CommonStore Server. This method is recommended for great numbers of scanned documents.

This section discusses the use of the *archbc* program. An external scan program scans all documents, after which the bar code on each document is recognized. After this, the document is put into a dedicated (incoming) index class and added to a Content Manager workbasket for further processing. For each item, the bar code is stored in the **SapBarCodeId** attribute field. All these operations are performed by an external scan program.

When you start the *archbc* program, the workbasket is scanned, its content is archived, and the bar codes and document IDs are sent to R/3.

During this process, the items are re-indexed to match the format of the documents in the destination index class. Finally, they are removed from the incoming workbasket. It is possible to specify the same index class as the incoming index class and the destination index class. In this case, CommonStore does not re-index the documents in the incoming workbasket. The following error scenarios are thinkable:

1. CommonStore cannot connect to R/3. In this case, the items are moved back to the incoming workbasket.
2. CommonStore receives an error from R/3. In this case, the items are moved to an error workbasket for further (manual) processing. You must find and eliminate the error before you can place the documents in the incoming workbasket again. This does not affect the processing of other documents.

If an error occurred the failed items thus reside in the error workbasket. In order to re-process these items it is sufficient to move them into the incoming workbasket and to restart the scanning. No manual re-indexing is necessary.

In the CommonStore ini file the incoming index class and destination index class are denoted as `INDEX_CLASS_SCAN` and `INDEX_CLASS`, while the incoming workbasket and the error workbasket are denoted as `WB_SCAN` resp. `WB_ERROR`.

To initiate archiving with bar code, enter `CALL ARCHBC PARM('-p' '<port>' '-a' '<archive>')`.

This command starts the Content Manager workbasket scanning (workbasket **WB\_SCAN** on index class **INDEX\_CLASS\_SCAN**) for documents with bar codes. This is done for the logical archive whose ID is `<archiv_id>`. This command can be run as a scheduled job (`ADDJOBSCDE`).

As soon as the workbasket is empty, all of the documents have been archived, and their ID has been sent to R/3, the program will finish automatically.

## Usage

```
CALL ARCHBC PARM('-p' '<port>' '-a' '<archive>')
```

Starts the move operation.

```
CALL ARCHBC PARM('-p' '<port>' '-a' '<archive>' 'abort')
```

Stops the move operation.

## Options

- p <port>**  
Fixed port used by archpro (as defined in the CommonStore Server configuration profile). This is port that you set the ARCHPRO\_PORT keyword to.
- a <archive-id>**  
Archive ID containing the scan and final index classes.
- abort** Tells CommonStore Server to abort the operation.

**Note:**

Only port numbers above 5000 are accepted.

**Hint:**

In order to abort an archbc run, it is recommended that you open another window and send the abort command from there. This allows you to continue receiving the archbc messages in the first window.

---

## Chapter 9. Files created at run time

CommonStore for SAP creates a number of files at run time. The most important ones are described in this section.

---

### Trace files

The CommonStore Server can produce different trace files to provide you and the support team with information about error cases. You can configure tracing in the CommonStore Server profile. The following trace files are available:

#### **archint\_startup.trace**

This file contains only error information on starting and stopping the CommonStore Server.

#### **archint.trace**

This file is written by the CommonStore Server if specified in the server configuration profile. You can also change the name of this file in the server configuration profile. The file contains all CommonStore Server trace information, including information about starting, stopping, file names, and errors.

---

### CommonStore Server log file

The log file produced by the CommonStore Server gives you detailed information about the most recent operations or events. You can use the data in the server log to display information about performance bottlenecks or errors in self-developed applications. The server log file contains one line for each operation. These lines contain an error code. If you encounter problems, you can look up the error codes in the server log file. Unless your errors go back to a misconfigured setup, you rarely need to switch on the additional trace facility.

The CommonStore Server log file is basically a table. The first block of columns is the same under all conditions, whereas the second block varies with respect to the type of the operation. The structure of the first block of columns is reflected in the example in Table 6.

*Table 6. The common block of columns in the server log file*

1	2	3	4	5	6	7	8
Time stamp	Return code	Job number	Operation	Archive ID	CS server exec. time	Agent exec. time	Agent PID
18:47:32	-50	17	Archive	A1	0.456	0.123	A123F
14:02:21	0	16	Append	A1	0.217	0.035	B14C
...	...	...	...	...	...	...	...
09:42:04	0	1	Att Search	A1	0.158	0.020	34FC

The following list briefly explains the meaning of the data in each column:

#### **Time stamp**

Points of time when the CommonStore Server received the jobs for processing.

**Return code**

The validation codes that the CommonStore Server returned for each processed job. A return code of 0 indicates a successful operation. All other codes indicate an error.

**Job number**

The numbers assigned to the jobs that were processed by the CommonStore Server.

**Operation**

Indicates the type of an operation or the stages in the process of completing it. See Table 7 for reference.

Table 7. Operation types as indicated in the server log file

Value	Meaning
Archive	Archiving
Retrieve	Retrieval
Part-Retrieve	Partial retrieval
Delete	Deletion

**Archive ID**

The logical archive IDs of the archives addressed in the operations, as specified in the server configuration profile.

**CS server exec. time**

The times that the CommonStore Server needed to process the jobs. The numbers reflect the times in seconds.

**Agent exec. time**

The times that the agent needed to process the jobs. The numbers reflect the times in seconds.

**Agent PID**

The identification numbers (process IDs) that an agent assigns to the jobs that it processes. These are hexadecimal values.

## Variable columns for operation type *Archive*

If the operation type of a job is *Archive*, the second block of the CommonStore Server log file shows the columns of the example in Table 8.

Table 8. Columns in the server log for operation type *Archive*

9	10	11
DocID	Content type	Full source file name
2000021421141232#405A.0908	FAX	/tmp/notice.txt
...	...	...
1000911493141728#405A.0908	TXT	/tmp/invoice.txt

## Variable columns for operation type *Retrieve*

If the operation type of a job is *Retrieve*, the second block of the CommonStore Server log file shows the columns of the example in Table 9 on page 49.

Table 9. Columns in the server log for operation type *Retrieve*

9	10	12
DocID	ComponentID	Full target file name
2000021421141232#405A.0908	data	/tmp/notice.txt
...	...	...
1000911493141728#405A.0908	data	/tmp/invoice.txt

### Variable columns for operation type *Part-Retrieve*

If the operation type of a job is *Part-Retrieve*, the second block of the CommonStore Server log file shows the columns of the example in Table 10.

Table 10. Columns in the server log for operation type *Part-Retrieve*

9	10	11	12
DocID	ComponentID	Offset	Length
2000021421141232#405A.0908	data	21373.0	208.0
...	...	...	...
1000911493141728#405A.0908	data	14577.0	217.0

If an operation was successful, the value of the **Length** field reflects the actual length of the retrieved item. Otherwise, the **Length** field shows the length value of the request.

### Variable columns for operation type *Delete*

If the operation type of a job is *Delete*, the second block of the CommonStore Server log file shows the columns of the example in Table 11.

Table 11. Columns in the server log for operation type *Delete*

9	10
DocID	ComponentID
2000021421141232#405A.0908	data
...	...
1000911493141728#405A.0908	data

### Variable columns for operation type *GetAttrSpec*

There are no additional variable columns for this operation type.



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## **Part 4. Configuring the archive**





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## Chapter 10. Configuring Content Manager for iSeries

With Content Manager, IBM provides a multi-platform client/server solution for capturing, archiving and administering documents and data, covering the entire spectrum of corporate operations. Content Manager is a multi-purpose document management system that supports all kinds of information regardless of type and origin. Documents created with other applications can even be stored in common folders in order to provide archive users with convenient access to important business data.

### **Central or distributed archives:**

Content Manager supports the concept of distributed information management. You can implement multiple object servers within a common enterprise-wide archiving solution, allowing documents and data to be stored directly at the location of their users. This minimizes network utilization and facilitates fast access to all kinds of information. Users can access all distributed archives directly from their desktop workstation, regardless of server location and system platform.

### **The solution for your environment:**

In order to meet individual customer requirements for the configuration of archive solutions, Content Manager supports several different operating systems:

- Windows 2000, Windows NT
- AIX
- MVS/ESA™
- OS/400

This unique scalability allows to install the main archive on a powerful UNIX, iSeries (AS/400), or mainframe computer, whereas smaller archives for decentralized organization structures can be implemented on low-cost PC servers. You can add servers or jukeboxes to extend the Content Manager archiving solution at any time.

IBM's well-known System Managed Storage technology (SMS) is another advantage of Content Manager. Based on a customizable setup, SMS automates the transmission of data from one archive to another and supports the time-controlled migration of documents between different storage media.

### **Usability:**

With the graphical user interface of Content Manager, you can search and retrieve all important documents from the archiving system, whether they are scanned originals (such as letters or invoices), faxes, text files, spreadsheets, graphic files, or audio-visual recordings. By using Content Manager, you can store all these types of information in collective files and thus deal with them in a convenient manner. Furthermore, Content Manager lets you automate recurrent jobs using the built-in workflow component.

To prepare Content Manager for use with CommonStore, you must perform these steps:

1. Create a Content Manager user account.

2. Create a Content Manager index class.
3. Create a Content Manager workbasket.

---

## Creating Content Manager user accounts

Create a user profile whose name matches the user ID of the CommonStore administrator. Grant this user profile \*ALLPRIV rights. For more information, see *IBM Content Manager for iSeries: System Administration Guide*.

---

## Creating Content Manager index classes

In Content Manager, documents of the same type are grouped in index classes. Documents of the same index class have the same set of descriptive search attributes. CommonStore maps document properties to index attributes. For every document type (form) that you want to archive, you must create an index class. For every document property that you want to search for in the archive, you must create an attribute.

To create an index class, you must first define the necessary key fields. See the *IBM Content Manager for iSeries: System Administration Guide* for information on how to create attributes and index classes.

Multiple archives can — but do not need to — share the same index classes.

For each logical archive or content repository defined in SAP R/3, you must define two Content Manager index classes. These are used to store the documents and the data in a content repository. In the specified index class, you store folders that represent SAP R/3 content objects. Every folder contains one or more Content Manager documents, each of them representing one component of the superordinate content object. These documents are stored in the index class declared by the INDEX\_CLASS\_COMP keyword.

For the index class you declare by using the INDEX\_CLASS keyword in your server configuration profile, define key fields in Content Manager as shown in Table 12.

*Table 12. Key fields to define for the index class declared by INDEX\_CLASS*

Key field name	Key field description	Character type	Length	Comment
DOCID	DocId	Char	40	Must be defined
DOCPROT	DocProtection	Char	10	Must be defined
TMESTMPC	TimeStampC	Char	26	Must be defined
TMESTMPM	TimeStampM	Char	26	Must be defined
LENCCSID	LengthAndCCSID	Char	40	Must be defined

For the index class you declare by using the INDEX\_CLASS\_COMP keyword in your server configuration profile, define key fields in Content Manager as shown in Table 13.

*Table 13. Key fields to define in the index class declared by INDEX\_CLASS*

Key field name	Key field description	Character type	Length	Comment
COMPID	ComponentId	Char	40	Must be defined

Table 13. Key fields to define in the index class declared by INDEX\_CLASS (continued)

Key field name	Key field description	Character type	Length	Comment
CONTTYPE	ContentType	Char	40	Must be defined
CHARSET	Charset	Char	20	Must be defined
VERSION	Version	Char	10	Must be defined
SAPBCI	SapBarCodeId	Char	40	Must be defined for inbound documents with bar codes
TMESTMPC	TimeStampC	Char	26	Must be defined
TMESTMPM	TimeStampM	Char	26	Must be defined
LENCCSID	LengthAndCCSID	Char	40	Must be defined

None of the attributes defined by the INDEX\_CLASS or INDEX\_CLASS\_COMP keyword are set to *required*.

Keep in mind that it is the value of the index-class description-field that must agree with the value of the keyword in the server configuration profile, and not the index-class name. This affects the following keywords:

- INDEX\_CLASS
- INDEX\_CLASS\_COMP
- INDEX\_CLASS\_SCAN

You must probably customize your setup if you want to archive inbound documents using the *early archiving via bar code* or *late archiving via bar code* method. To apply one of these methods, which usually involves the capturing of documents using the Content Manager client or an external capturing software that interfaces to Content Manager, you must define an additional index class. To declare this index class in your server configuration profile, use the INDEX\_CLASS\_SCAN keyword.

A setup is recommended where the Content Manager client or the capturing software stores the captured documents in this index class. After linking the documents in SAP/R3, CommonStore transfers these documents from the “scan” index class to their final repository, the index class declared by the INDEX\_CLASS\_COMP keyword.

The only key field you must define when using INDEX\_CLASS\_SCAN is **SapBarCodeId** (see Table 13 on page 54). You can also provide additional fields. This makes sense if you use Optical Character Recognition (OCR) software, which is able to fill these fields. If these fields exist in the index classes declared by the keywords INDEX\_CLASS\_COMP *and* INDEX\_CLASS\_SCAN, Content Manager retains their content when transferring documents between the two index classes. In addition, when accessing the archive from SAP/R3, you can specify values of these fields as search attributes when you query documents using the Content Manager client.

---

## Creating Content Manager workbaskets

See the *IBM Content Manager for iSeries: System Administration Guide* for information on how to create Content Manager workbaskets. Do *not* select the **Overload** function or the **Remove items after indexing** functions.

Keep in mind that it is the value of the workbasket description field that must agree with the value of the keyword in the server configuration profile, and not the workbasket name. This affects the following keywords:

- WB\_SCAN
- WB\_ERROR

The entries in the table are case-sensitive. If you receive error messages saying that key fields were not found or not defined, first check the key-field descriptions.

---

## Content Manager – troubleshooting

If you encounter problems with CommonStore and Content Manager, try to track down and solve the problem by using the following procedure:

1. Stop the CommonStore Server.
2. Specify TRACE ON DEBUG in the server configuration profile.
3. Manually restart the CommonStore Server.

If you must restart the ARCHPRO program as a batch job, switch on logging of all messages and CL commands in the submit job command or in the concluded job description. Use the following command to submit the job to the appropriate subsystem:

```
SBMJOB CMD(CALL PGM(ARCHPRO))
JOB(*USRPRF)
JOBQ(<Jobq>)
INLLIBL(*CURRENT)
LOG(4 00 *SECLVL)
LOGCLPGM(*YES)
CPYENVVAR(*YES)
```

where <Jobq> is the job queue to be used when submitting jobs.

4. Check the resulting trace file (usually archint.trace).
5. See the book *IBM EDMSuite ImagePlus VisualInfo: Messages and Codes* for detailed error descriptions or the *IBM Content Manager for iSeries: System Administration Guide* for further trace information.
6. When in doubt, double-check the Content Manager key fields, the index classes, and workflow definitions.

---

## **Part 5. SAP archiving scenarios**



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## Chapter 11. Basic setup

This chapter provides an overview of the basic steps to be performed in order to get the connection running between the R/3 System and the CommonStore Server.

With CommonStore, you can cover all SAP archiving scenarios. Table 14 shows the components that you must install for the different scenarios. For customization steps regarding the CommonStore Client, refer to the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide*.

Table 14. Components to install for the various SAP archiving scenarios

	CommonStore Server	CommonStore Archiving Client	CommonStore Viewing Client
Archiving Inactive Data	X		
Displaying archived inactive data	X		
Archiving Print Lists	X		
Displaying archived Print Lists in the SAP GUI	X		
Displaying archived Print Lists via the ALViewer	X		X
Archiving Incoming Documents	X	X	
Displaying archived Incoming Documents via http	X		
Displaying archived Incoming Documents via OLE	X		X
Archiving Outgoing Documents	X		
Displaying archived Outgoing Documents via http	X		
Displaying archived Outgoing Documents via OLE	X		X

**Note**

To set up a system for a certain scenario, you must always perform the basic setup in addition to particular steps for that scenario.

---

### Steps for the basic setup

#### Setting up communication using RFC

The following list shows the necessary steps for setting up RFC communication. Each step is described in a section of its own.

1. Creating an SAP CPIC user for the RFC communication
2. Creating an RFC destination

3. Checking the logical system
4. Maintaining ArchiveLink number ranges (SAP Rel 4.0 and higher)
5. Creating an ArchiveLink protocol
6. Creating ArchiveLink queues
7. Creating a content repository (logical archive) customized for RFC communication

## Setting up communication using the Hypertext Transfer Protocol (HTTP)

The following list shows the necessary steps for setting up HTTP communication. Each step is described in a section of its own. The steps listed here are the titles of the corresponding sections.

1. Checking the logical system
2. Maintaining ArchiveLink number ranges (SAP Rel 4.0 and higher)
3. Creating an ArchiveLink protocol
4. Creating ArchiveLink queues
5. Creating a content repository (logical archive) customized for HTTP communication
6. Sending a certificate to the CommonStore Server

---

## Detailed customizing steps for the basic setup

### Creating an SAP R/3 CPIC user for the RFC communication

1. Use T-Code SU01.
2. Then enter the name of the CPIC user which you want to create.
3. Press the **Create** button.
4. The panel changes.
5. Enter the password.
6. Set the time frame for the validity of this user.
7. Set the **User type** to CPIC.
8. Set the **Authorization profiles** to SAP\_ALL and SAP\_NEW.
9. Click on the **Continue** icon.
10. Click on the **Save** icon.

**Note:**

In archint.ini, you must enter:

USER

name of the CPIC user

### Creating an RFC destination

1. Use T-Code SM59.
2. Click on **TCP/IP connections**.
3. Click on the **Create** button. The panel changes.



4. Enter the following settings:

<b>RFC destination</b>	KD7.ARCHIFIX, where KD7 is the SAP SID and ARCHIFIX is the name of the machine where the CommonStore Server is installed. Using this naming convention makes trouble shooting easier.
<b>Connection type</b>	T
<b>Description</b>	CommonStore RFC Connection

5. Press **ENTER**. The panel changes.
6. Click for **Activation Type** on **REGISTRATION**. The panel changes.
7. Enter a program ID (for example KD7.ARCHIFIX).  
It is recommended that you keep the RFC destination identical with the program ID, to make troubleshooting easier.

**Note:** Add the following entry to the server configuration profile:

PROGID	the name of the Program ID as customized above (for example KD7.ARCHIFIX)
--------	--

8. Choose the menu path: **Destination → Gateway-Options**
9. Enter the following settings:

<b>Gateway host</b>	Same as for GWHOST in the CommonStore Server configuration profile
<b>Gateway service</b>	Same as for GWSERV in the CommonStore Server configuration profile
10. Click the **OK** button.
11. Click the **Save** icon.

## Checking the logical system

1. Use T-Code BD54.

**Note:** The changes do not affect the client.

2. If there are already logical systems specified in the table, use one of them.

**Note:** Please avoid making changes to the settings of an existing logical system as this might have far-reaching consequences.

3. If no logical system has been set up, create one by following these instructions:
  - a. Press the **New Entries** button.
  - b. Enter the name of your new logical system and a description.
  - c. Click on the **Save** icon.

4. Check the link of the R/3 client to the logical system (see “Checking the link of the R/3 client to a logical system”).

**Note:**

The following must be entered in the CommonStore Server configuration profile:

LOGICAL_SYSTEM	the name of the chosen logical system
CLIENT	the name of the client connected to the logical system

### Checking the link of the R/3 client to a logical system

1. Use T-Code SCC4. See also “Checking the logical system” on page 61.
2. Double-click the entry of your client. The panel changes.

**Note:**

If the *logical system* is already specified for this client, please avoid making any changes as this might have far-reaching consequences.

3. If no *logical system* has been specified, press the **Change** button. Else move on to the next step.

**Note:**

Changes do not affect the clients.

4. Enter the chosen logical system.
5. Click on the **Save** icon.

## Maintaining ArchiveLink number ranges (SAP Rel. 4.0 and higher)

1. In the IMG (T-Code <xph>SPRO, F5), go to **Basis Components** → **Basis** → **SAP ArchiveLink** → **Basic Settings** → **Maintain number ranges**.
2. Click the **Execute** button.
3. Click the **Change Intervals** button.
4. Go to the menu path **Edit** → **Insert interval**.
5. Add a new interval with the following settings:

No 01 From number	0000000001
To number	9999999999

Do not change the setting for **Current number**.

## Creating an ArchiveLink protocol

If it is necessary to create an ArchiveLink protocol, proceed as follows:

1. Use T-code 0AA3.
2. Click the **New protocol** button.

3. Enter the following settings:

<b>Protocol</b>	CSPRT (logical name)
<b>Version</b>	0031 for RFC communication.
	If you use HTTP communication instead of RFC communication, specify 0045.
	Never use 0040 because this SAP protocol version does not work correctly.
Description	Enter information on this protocol.

4. Click the **Save** icon.

## Creating ArchiveLink queues

The procedure differs with respect to your SAP R/3 release. Follow the correct column of instructions where appropriate:

1. The procedure differs with respect to your SAP R/3 release. Follow the instructions in the appropriate column.

### For older R/3 releases:

- a. Use T-Code 0AM1.
- b. Click the **Create queues** button.

### For Release 4.0x or later:

In the IMG (T-Code SPRO, F5), go to **Basis Components** → **Basis** → **SAP ArchiveLink** → **Basic Settings** → **Create Queues**.

2. Enable the checkboxes.
3. As the queue administrator, specify a user in your SAP system who is to be informed by SAP when problems occur.
4. Press the **Execute** button.

## Creating a content repository (logical archive) customized for RFC communication

The procedure differs with respect to your SAP R/3 release. Follow the correct column of instructions where appropriate:

1. Use T-code OAC0.
2. Click the **Change** icon. A list of content repositories is displayed.
3. Click the appropriate button or icon.

### For older R/3 releases:

**New Entries** button

### For Release 4.5 or later:

**Create** icon

The panel changes.

4. In SAP Rel. 4.6 click the **Full administration** button.

5. Enter the appropriate settings according to your SAP release:

**For older R/3 releases:**

**Opt. archive ID**  
AI

**Description**  
CommonStore RFC Archive

**RPC Host**  
Leave blank

**RPC service/RFC dest**  
KD7.ARCHIFIX (as customized in “Creating an RFC destination” on page 60)

**Arch. protocol**  
CSPRT (as customized in “Creating an ArchiveLink protocol” on page 62)

**Version no.**  
Corresponding to your SAP system, for example, for SAP release 3.1, use 0031. *Never* use 0040, as this SAP protocol version has a bug.

**Connection name**  
Leave blank

**Basic path**  
Transfer directory between CommonStore and the SAP application server

**Arch. path**  
Transfer directory between CommonStore and the SAP application server

**Spool path**  
Leave blank

**RFC** YES (Click)

**RPC** NO (Do not click)

**For Release 4.5 or later:**

**Content rep.**  
For example AI

**Description**  
CommonStore RFC Archive

**Storage type**  
Choose **RFC Archive** from drop-down list

**Protocol**  
For example CSPRT

**Version no.**  
0031

**RFC destination**  
For example KD7.ARCHIFIX (as customized in “Creating an RFC destination” on page 60)

**Basic path**  
Transfer directory between CommonStore runs and the SAP application server

**Arch path**  
Transfer directory between CommonStore runs and the SAP application server

**Notes**

- It is recommended that you specify the same path as in the fields **Basic path** and **Arch.path**.
- The transfer directory needs to be shared between the machine where CommonStore runs and the SAP application server, when using RFC.

## Creating a content repository (logical archive) customized for HTTP communication

1. Use T-code 0AC0.
2. Click the **Change** icon. The panel changes.

3. Click the **New Entries** button. The panel changes.

4. Enter the following settings:

<b>Content rep.</b>	For example AI
<b>Description</b>	CommonStore HTTP Archive
<b>Storage type</b>	HTTP Content Server
<b>Protocol</b>	For example CSPRT
<b>Version no.</b>	Always 0045
<b>Http svr:p</b>	Server and port of the CommonStore Server separated by a colon, for example, Csarch:8080
<b>Program:</b>	cs
<b>Basic path</b>	Transfer directory in which data can be temporarily saved
<b>Arch. path</b>	Transfer directory in which data can be temporarily saved

#### Notes

- It is recommended that you specify the same path as in the fields **Basic path** and **Arch.path**.
- When using the HTTP the transfer directory does not need to be shared between the machine where CommonStore runs and the SAP application server.

## Sending a certificate to the CommonStore Server

1. Use T-code 0AHT.
2. Double click on the content repository you want to send a certificate to. A certificate will be sent to the corresponding CommonStore Server.
3. The CommonStore Server will save this certificate and will use it when archiving and retrieve calls arrive for this content repository.



---

## Chapter 12. Data archiving

This chapter details how to configure your SAP system to enable data archiving. CommonStore supports various archiving solutions, including the following:

- Archiving to different media types, such as hard drives, tapes, WORM, and so on.
- Automatically moving data from one archive medium to another

The latter point is important if the frequency of access to archived data changes. For example, users might still access recent accounting data quite often. As the data gets older, the access frequency decreases, which allows you to move the data to a slower, and possibly cheaper archive medium. You can configure CommonStore so that it takes care of media swaps without manual interference.

---

### Steps for data archiving

The necessary customizing steps for setting up data archiving are listed below.

#### **Prerequisites:**

1. Set up your SAP system (see Chapter 11, “Basic setup” on page 59).
2. Set up the CommonStore Server (see Chapter 4, “Basic administration” on page 33).
3. Configure the archive system and the storage management. Make sure that the media type, the retention period, and so on are set up correctly.

#### **Setup:**

1. Creating an entry for data archiving in the link table.
2. Customizing the ArchiveLink path.

#### **Execution of the archiving process**

As a sample, the necessary steps will now be explained for the archive object FI\_BANKS, which refers to bank master data. In general bank master data is not archived, but it is helpful to use this archive object when setting up data archiving in a productive SAP system, because productive data will not be affected by the test runs.

3. Creating test data for the archiving object FI\_BANKS
4. Running a data archiving session for the archiving object FI\_BANKS
5. Checking the customizing settings for archiving

#### **Execution of the retrieve process**

6. Retrieving archived application data from the archive to the file system. This step may be necessary in SAP systems below release 4.0, when creating print lists on archive data. In these older releases it is not possible to access archived data from a report.
7. Reloading archived data to the R/3 database. This step should be used only for test purposes. In a productive environment, it is not recommendable to reload data to the database, as this may cause inconsistencies. Starting with SAP Release 4.6 reloading to the database is not possible any more, anyway.

---

## Detailed customizing steps for data archiving

### Creating an entry for data archiving in the link table

1. Use T-Code 0AC3. The explanations below refer to customizing for the reorganization (REO) document class.
2. Check if there is already an entry in your link table with the following settings:

<b>Obj.type</b>	ARCHIVE
<b>Doc.type</b>	ARCHIVE

If there is such an entry, update only the **Arch.ID** for this entry.

In order to create a new entry in the link table, proceed as follows:

- a. Click the **Change** button. The panel changes.
- b. Click on the **New Entries** button. The panel changes.
- c. Enter the following settings:

<b>Object type</b>	ARCHIVE
<b>Document type</b>	ARCHIVE
<b>Status</b>	X
<b>Opt. archive ID</b>	AI
<b>Link</b>	TOA01
<b>Retention per.</b>	Specify the retention period (not used by CommonStore!)

- d. Click the **Save** icon.
3. Check the entry for the SAP object ARCHIVE as follows:
    - a. Use T-Code SE16.
    - b. Enter TOA0M as the table name.
    - c. Check the lines containing the following entries:
      - SAP\_OBJECT = ARCHIVE
      - AR\_OBJECT = ARCHIVE
    - d. Set the DOCUMENT\_TYPE to REO.

**Note:**

If this entry is missing, CommonStore does not receive orders for archiving application data.

### Customizing the ArchiveLink path

1. Use T-Code FILE.
2. Click the first magnifying glass (logical file path definition).
3. Mark **ARCHIVE\_GLOBAL\_PATH** in the **Select** window at the bottom of the page.
4. Click the second magnifying glass (**Assignment of physical paths to logical path**).
5. In the **Select** window, double-click on the syntax group corresponding to the operating system on which the R/3 System is installed.



- As the **Physical path**, specify the path customized as **Basic path** in “Creating a content repository (logical archive) customized for RFC communication” on page 63 (for example /sap/trans/base/archint/<FILENAME>, where /sap/trans/base/archint is the basic path specified when creating the logical archive).

**Note**

In order instead to explicitly specifying the path, you can also customize the path as follows:

<F=ARCHIVELINK><FILENAME>

- Click the third magnifying glass.
- In the **Select** window, double-click on **ARCHIVE\_DATA\_FILE\_WITH\_ARCHIVELINK**.
- Check if **Logical path** is set to **ARCHIVE\_GLOBAL\_PATH**.
- Click the **Save** icon.
- In the **Select** window, double-click on **ARCHIVE\_DATA\_FILE**.
- Check if **Logical path** is set to **ARCHIVE\_GLOBAL\_PATH**.
- Click the **Save** icon.

## Creating test data for the archiving object FI\_BANKS

- Use T-Code FI01.
- Enter the following settings:

<b>Bank country</b>	AD
<b>Bank key</b>	1234567

- Press the ENTER key. The panel changes.
- Enter the following settings:

<b>Bank</b>	Archiving test
-------------	----------------

- Click the **Save** icon.

## Running a data archiving session of the archiving object FI\_BANKS

- Use T-Code SARA.
- Choose **FI\_BANKS** as the **Object name**.
- Press **ENTER**.
- Check the customization settings (see “Checking the customization settings for archiving” on page 70).
- Click the **Archive** button.
- Enter the name of a **Variant**.
- Press the **Maintain** button.

8. Enter the following settings:

**BankAD**  
**country**  
**Min. 0**  
**no.**  
**of**  
**days**  
**in**  
**the**  
**system**

9. Disable **Only with delete flag**.
10. Disable **Test run**.
11. Enable **Detail log**.
12. Click the **Continue** button.
13. Enter **CommonStore Test** as the description.
14. Click the **Save** icon.
15. Click the **Back** icon.
16. Click on the **Start date** button.
17. Click the **Immediate** button.
18. Click on the **Save** icon.
19. Click the **Spool params.** button.
20. If no **Output device** is specified, leave it blank.
21. Click the **Save** button. (If **Output device** was blank, a warning will appear.)
22. Click the **Continue** button.
23. Click the **Create job** icon.
24. Go to **Job overview**. You can see the different jobs started for this archiving session.

SUB submit  
WRI write  
DEL delete

After the DEL job has been finished and if the **Start autom.** check box is enabled (see also "Checking the customization settings for archiving"), a request will be sent automatically to CommonStore to archive the file generated from SAP.

## Checking the customization settings for archiving

1. Use T-Code SARA.
2. Choose **FI\_BANKS** as the object name.
3. Press the **Customizing** button. The next steps in this procedure differ with respect to your SAP R/3 release.

- Follow the instructions in the appropriate column:

**For older R/3 releases:**

- Make sure that the **log. file name** is one of the following:
  - ARCHIVE\_DATA\_FILE
  - ARCHIVE\_DATA\_FILE\_WITH\_ARCHIVELINK
- In the section **Connection to archiving system**, choose **ARCHIVE** as the document type and then enable **Start autom.**

**For Release 4.5 or later:**

The Data Archiving Customizing panel opens.

- Under the heading *Archiving object-specific Customizing*, click **Technical settings**.
- Make sure that the **log. file name** is one of the following:
  - ARCHIVE\_DATA\_FILE
  - ARCHIVE\_DATA\_FILE\_WITH\_ARCHIVELINK
- In section **File storage to storage system**, select an archive from the selection box that opens when you click the button next to the **Content Repository** field.
- Select the **Start automatic** check-box.

- In the section **Settings for delete program**, enable **Start autom.**
- Check if **Test run variant** is set to a test variant (for example **SAP&TEST**).
- Check if **Prod.run variant** is set to a productive variant (for example **SAP&PROD**).
- Click the **Save** icon.
- Click the **Back** icon.

## Retrieving archived application data from the archive

- Use T-Code SARA.
- Choose **FI\_BANKS** as the object name.
- Press **ENTER**.
- Click the **Management** button.
- The next steps in this procedure differ with respect to your SAP R/3 release. Follow the instructions in the appropriate column:

**For older R/3 releases:**

- In the list of archiving sessions, expand the item **Processed archiving sessions**.
- Expand any sub-items until you see the session documents..
- Mark the session that you want to retrieve.
- Press the **Buffer** button.

**For Release 4.5 or later:**

- In the list of archiving sessions, expand the item **Completed archiving sessions**.
- Expand any sub-items until you see the session documents..
- Mark the session that you want to retrieve.
- Press the **Storage system** button.

- The panel will display the files belonging to the marked archive run.
- Click the **Retrieve files** button. A call is sent to CommonStore and the retrieved files are allocated in the file system.

**Note**

Make sure that CommonStore has WRITE access to the exchange path.

## Reloading archived files to the R/3 database

### Notes

- Reloading data to the database is not possible in SAP Rel. 4.6.
- The files must first be retrieved from the archiving system (see “Retrieving archived application data from the archive” on page 71) before a reload is possible.

1. Use T-Code SARA.
2. Choose **FI\_BANKS** as the object name.
3. Press **ENTER**.
4. Click the **Reload** button.
5. Enter the name of a variant.
6. Press the **Maintain** button.
7. Enter following settings:  
Bank country AD
8. Disable **Test run**.
9. Enable **Detail log**.
10. Click the **Continue** button.
11. Enter CommonStore Test as the description.
12. Click the **Save** icon.
13. Click the **Back** icon.
14. Press the **Archive selection** button. A list of reloadable archive runs is displayed.
15. Mark the run to be reloaded.
16. Press the **Start date** button.
17. Press the **Immediate** button.
18. Click the **Save** icon.
19. Press the **Spool params** button. If no **Output device** is specified, leave it blank.
20. Click the **Save** button. (If **Output device** was blank, a warning appears. Click the **Continue** button.)
21. Click on the **Create job** icon.
22. Go to **Job overview**. A reload (REL) job for this archiving session is executed.

---

## Chapter 13. Print-list archiving

Archiving print lists is one of the supported SAP document archiving solutions. Print-list archiving is about processing analyses or journals of SAP bookings. Take, for example, a journal that displays information about the items a customer purchased in the past, such as the order number, the value of the individual orders, and so on.

Without archiving, all the people in need of this analysis would have to create the journal, or someone would have to print it several times and then distribute it to authorized users. But creating and printing journals has a negative impact on the performance, especially when the system has to deal with a lot of bookings.

A solution to creating a journal once and making it accessible to multiple users is *archiving print lists*.

Since SAP Release 4.0, you can create print lists using archived data, that is, without having to retrieve the data to the file system first.

You can search archived print lists quickly because extensive search capabilities have been added, which even allow to search using indexes.

Another interesting feature are print lists with hyperlinks. Hyperlinks enable you to access an archived document by clicking the link of an SAP booking in a print list.

---

### Steps for archiving print lists

The necessary customizing steps for setting up the environment for archiving print lists are listed below.

#### Prerequisites

1. Set up your SAP system (see Chapter 11, “Basic setup” on page 59).
2. Set up the CommonStore Server (see Chapter 4, “Basic administration” on page 33).
3. Configure the archive system and the storage management. Make sure that the media type, the retention period, and so on are set up correctly.

#### Setup

1. Customizing the archive device
2. Creating an entry in the link table for archiving print lists
3. Checking the entry in the TOAOM table
4. Creating an ArchiveLink batch job
5. Enabling extended ALF viewing
6. Customizing the protocol for viewing print lists

#### Execution of the archiving process

7. Creating a print list. Consider the following points:
  - To create print lists with hyperlinks, enable Extended ALF Viewing.
  - You must customize the protocol for viewing print lists. See “Customizing the protocol for viewing print lists” on page 76.

- Create the print list as described in “Creating a print list” on page 76.

### Displaying an archived print list

8. Viewing the archived print list

## Detailed customizing steps for print lists

### Customizing the archive device

1. Go to T-code SPAD.
2. Click the **Change** icon.
3. Click the **Output device** button. The window *Spool Administration: List of Output Devices* opens.
4. Double-click the **ARCH** entry in the list.
5. Enter ARCH in the **Output device** field.
6. On the tabbed page labeled DeviceAttributes, select **ARCHLINK: SAP ArchiveLink Archiver** from the **Device type** drop-down list.
7. From the **Device class** drop-down list, select **Archiving program**.
8. Click the HostSpoolAccMethod tab.
9. From the **Host spool access method** drop-down list, select **I: Archive service**.
10. **Save** the changes.

### Creating an entry in the link table for archiving print lists

1. Use T-Code 0AC3. The explanations below refer to customizing for the ALF document class.
2. Check if there is already an entry in your link table with the following settings:

<b>Obj.type</b>	DRAW
<b>Doc.type</b>	D01

If there is such an entry, update only the **Arch.ID** for this entry.

To create a new entry in the link table, please proceed as follows:

- a. Press the **Change** button. The panel changes.
- b. Click the **New Entries** button. The panel changes.
- c. Enter the following settings:

<b>Object type</b>	DRAW
<b>Document type</b>	D01
<b>Status</b>	X
<b>Opt. archive ID</b>	AI
<b>Link</b>	TOA01
<b>Retention per.</b>	Specify the retention period

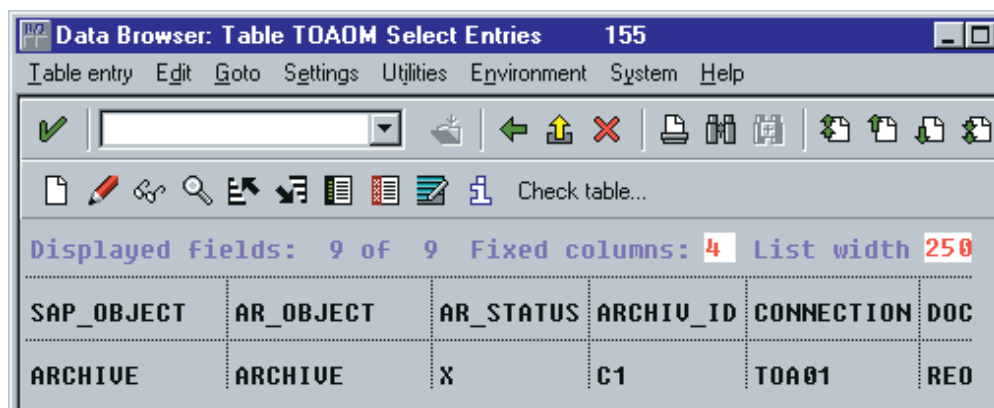
- d. Click the **Save** icon.
3. Check the entry for the SAP object DRAW as follows:
    - a. Use T-Code SE16.
    - b. Enter TOA0M as the table name.
    - c. Check the lines containing SAP\_OBJECT=DRAW and AR\_OBJECT=D01.
    - d. DOCUMENT\_TYPE must be set to ALF.

**Note:**

If this entry is missing, CommonStore will not receive orders for archiving Print lists.

## Checking the entry in the TOAOM table

1. Use T-Code SE16.
2. Enter TOAOM as the table name.
3. Check the line in which SAP\_OBJECT and AR\_OBJECT columns have the value ARCHIVE. See the example in Figure 14.



The screenshot shows the SAP Data Browser interface for the TOAOM table. The title bar reads "Data Browser: Table TOAOM Select Entries 155". The menu bar includes "Table entry", "Edit", "Goto", "Settings", "Utilities", "Environment", "System", and "Help". Below the menu is a toolbar with various icons. The status bar indicates "Displayed fields: 9 of 9 Fixed columns: 4 List width 250". The table data is as follows:

SAP_OBJECT	AR_OBJECT	AR_STATUS	ARCHIV_ID	CONNECTION	DOC
ARCHIVE	ARCHIVE	X	C1	TOA01	REO

Figure 14. Example of a TOAOM table

**Note**

The DOCUMENT\_TYPE must be set to REO. If this entry is missing, CommonStore does not accept orders for archiving application data (reorganizing).

To create ArchiveLink queues, see "Creating ArchiveLink queues" on page 63.

## Creating an ArchiveLink batch job

1. Go to T-code SM36.
2. Enter the following settings:

<b>Job name</b>	ARCHIVELINK (for example)
<b>Job class</b>	C

3. Click the appropriate button or icon:

<b>For older R/3 releases:</b>	<b>For Release 4.5 or later:</b>
<b>Start date</b>	<b>Start condition</b>

A new panel will pop up in which you can set your time preferences.

4. Click the **Save** button.

5. Click the **Steps** button.
6. In section *Program values*, click the appropriate button.

**For older R/3 releases:**

ABAP/4

**For Release 4.5 or later:**

ABAP/Program

7. Specify as ABAP program: ILQBATCH.
8. Save your settings.

## Enabling extended ALF viewing

1. Use T-code RZ10.
2. Select or enter a profile name in the **Profile** field.
3. Click the **Extended maintenance** radio button.
4. Click the **Change** button.
5. Click the **Parameter** button with the blank-sheet icon (new parameter) or press F5.
6. Add the following parameter as specified:  
rsपो/archive\_format=2
7. Save your changes.

## Customizing the protocol for viewing print lists

1. Use T-code OAA3.
2. Double-click the entry of the protocol used in the archive definition for print lists (for information on how to create a new ArchiveLink protocol, see “Creating an ArchiveLink protocol” on page 62).
3. Follow the instructions in the column appropriate for your SAP R/3 release:

**For older R/3 releases:**

- a. Double-click the entry **Display object** or **Display archived object** (the first entry in the list).
- b. Enable the **ALF** radio button.
- c. Click on the **Edit** button.
- d. Enter R/3 in the **Comm. method** field.

**For Release 4.5 or later:**

- a. Double-click the entry **Display stored document**.
- b. Enable the **ALF** radio button.
- c. Click the **Change** icon.
- d. Enter R/3 in the **Communication Type** field.

SAP GUI for viewing. In this case, no extra customizing step is necessary. This is the SAP-recommended way for the future. Starting with SAP Release 4.5/4.6, print lists with hyperlinks can also be viewed in the SAP GUI.

If you want to use the ArchiveLink Viewer, you need to install the CommonStore Viewing Client package on the end-user machines (consisting of csview.exe and CSCClient.dll). See the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide* for more information.

## Creating a print list

1. Use T-code OAC2. A list of document types defined in the SAP system is displayed.
2. Click the **Printer** icon or press **Ctrl+P**.
3. Click the **Printer** icon again.



4. Choose an existing printer.
5. Make sure that the following check boxes are selected in section *Spool options*:
  - **Print immediately**
  - **Delete after output**
6. Depending on your preferences, select **Archive only** or **Print and archive** from the **Archiving mode** drop-down list.
7. Click the **Continue** button. The panel changes.
8. Enter the following settings:

<b>Object type</b>	DRAW
<b>Document type</b>	D01
<b>Information</b>	Enter a 3-character information.
<b>Text</b>	Enter a description text.

9. Click the **Archive** button. A message appears in the status bar that a spool request has been created.  
The print list is created and saved to the file system. As soon as the ArchiveLink batch job runs, it is archived.

## Viewing the archived print list

1. Use T-code OADR.
2. Enter your selection criteria.
3. Click the **Execute** button or **F8**. A list of all archived print lists will be displayed.
4. Select the print list to be viewed.
5. Click the **Display from archive** button. Depending upon the settings in the protocol, the print list will be displayed in the SAP GUI or with the ArchiveLink Viewer.



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## Chapter 14. Archiving incoming documents

Archiving incoming documents is one of the three SAP document archiving scenarios, which is needed for documents getting into the company. This may be supplier invoices, business correspondence, faxes, and voice mails.

CommonStore supports the following archiving scenarios for incoming documents:

- Early archiving
- Simultaneous archiving
- Late archiving

Depending on the companies business processes and requirements one of them may be established. The following sections describe these archiving scenarios for incoming documents more detailed.

---

### Early archiving

The early archiving scenario is used for archiving documents before the corresponding SAP object (for example booking) is created. The process flow for this scenario is as follows:

1. The incoming documents get into the company mailroom. An employee responsible for scanning and archiving and sending information to SAP, archives the documents via CommonStore.
2. SAP creates a workflow item for the archived document into an organizational object (for example user or group) inbox.
3. The paper document is not needed any longer. The document is routed through the company in electronic form only.
4. A employee responsible for processing the workflow task, processes the task and displays the electronic document from the archive via the CommonStore Viewing Client and enters the required data into a SAP screen which appears when processing the workflow task.

The first two steps of the process flow above can be performed in two different ways. Early archiving may be triggered either by the SAP GUI (*Early archiving via OLE*) or external by CommonStore via RFC (*Early archiving without OLE*).

### Early archiving via OLE

Early archiving via OLE is supplied by SAP since release 3. This scenario requires concurrent running SAP GUI and CommonStore Archiving Client on the scan workstation.

Documents need to be scanned by any scan application into electronic documents. In addition to the CommonStore Archiving Client the SAP GUI has to be started, because it triggers the CommonStore Archiving Client via OLE communication for archiving documents. The SAP GUI performs an OLE call to the CommonStore Archiving Client for each single document to archive even if mass archiving is performed.

## Early archiving without OLE

Early archiving without OLE is supplied by SAP from release 4.6C. SAP developed a new RFC function module for triggering workflow item creation from external applications.

CommonStore offers external applications (for example scan applications like Kofax Accent Capture) to use the CommonStore API-DLL for implementing archiving functionality via CM CommonStore. Scan application can establish a One-Step-Process for scanning and continuous archiving documents. Early archiving without OLE can be performed with the CommonStore Archiving Client as well.

There are four advantages using early archiving without OLE instead of using early archiving via OLE:

- Early archiving without OLE has increased performance.
- The employee responsible for scanning and archiving documents needs to run the CommonStore Archiving Client on the scan workstation only.
- Early archiving can be done automatically between time intervals by using the automatic processing feature of the CommonStore Archiving Client.
- Scanning and archiving documents can be triggered by one action.

### Note

Early archiving without OLE requires at least a CommonStore Server version 7 and a SAP system release 4.6C.

For information on how to set up and perform early archiving see the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide*.

---

## Simultaneous archiving

Simultaneous archiving is used if the document is archived immediately when the SAP business object is created. The process flow for this scenario is as follows:

1. The incoming documents get into the companies mailroom. An employee scans the documents and places the electronic documents in the file system.
2. A employee responsible for performing the booking, creates the booking and the corresponding document is archived immediately after the booking is entered.

The SAP Business Workflow is not needed in this scenario, because the booking and archiving is done at the same time.

---

## Late archiving

Late archiving is used if the document is archived somewhen after the corresponding SAP business object is created. This requires the document is routed through the company in paper form until it is archived. The process flow for this scenario looks as follows:

1. The incoming documents gets into the company and is routed to the responsible clerks in paper form.

2. A employee responsible for creating the booking for the document, applies a bar code onto the paper document after he did the booking. The paper document is sent to the archiving department.
3. The documents are scanned and checked for quality and completeness. The scanning application recognizes the bar code and stores it.
4. The CommonStore Archiving Client reads the electronic documents from the filesystem and archives them. The bar codes of the archived documents are sent to the SAP system.
5. ArchiveLink assigns the archived document to the appropriate business object in a link table.

Late archiving with bar codes requires a scan application and the CommonStore Archiving Client on a workstation. A SAP GUI is not required.

The CommonStore Archiving Client can perform late archiving with bar code periodically between time intervals using the automatic processing feature.

On information about setting up and performing late archiving with bar code, see the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide*.



---

## Chapter 15. Displaying archived documents

When using document archiving, archived documents are linked to SAP objects (for example bookings). There are different possibilities to display archived documents.

### Print Lists

To display print lists, you can use the following devices:

- The SAP GUI
- The ALViewer

As the ALViewer is not delivered with SAP Release 4.5 and later releases, it is recommended that you display print lists on the the SAP GUI. For details on displaying print lists using the SAP GUI, see Chapter 13, "Print-list archiving" on page 73.

### Incoming and Outgoing Documents

To display incoming and outgoing documents you can use the following functions or devices:

- CommonStore native or HTTP displaying
- SAP HTTP displaying
- As the ALViewer is not delivered with SAP Release 4.5 and later releases, it is recommended that you display print lists on the the SAP GUI. For details on displaying print lists using the SAP GUI, see Chapter 13, "Print-list archiving" on page 73.

CommonStore offers a very flexible solution for displaying archived documents, either in a browser (HTTP displaying) or in your preferred viewer (native displaying). The big advantage when using CommonStore browser viewing is that for documents in different formats (for example TIFF and PDF), the same displaying program - the browser - can be used.

Starting with Release 4.5, you can enable HTTP displaying in SAP. Compared with SAP HTTP displaying, CommonStore HTTP displaying has the following advantages:

- CommonStore HTTP displaying is available for all SAP releases, whereas SAP HTTP displaying is only available with Release 4.5 and above.
- When using CommonStore HTTP displaying with earlier SAP releases, SAP users can continue using this displaying method after an SAP system upgrade.
- With CommonStore HTTP displaying, the same features are available for all document formats: You can attach notes to archived documents and you can send the archived documents and the associated notes via e-mail. Both features are not available with SAP HTTP displaying.

---

## Steps for displaying incoming and outgoing documents

In order to setup the CommonStore native or HTTP displaying, the CommonStore Viewing Client needs to be installed. See the *IBM Content Manager CommonStore for SAP: Client Installation and User's Guide* for more information.

The necessary customizing steps for displaying archived documents via SAP http displaying are listed below:

**Prerequisites**

1. Set up your SAP system (see Chapter 11, “Basic setup” on page 59 ).
2. Set up the CommonStore Server for HTTP communication (see “Configuring the CommonStore Server for the Hypertext Transfer Protocol” on page 35).
3. Configure the archive system and the storage management. Make sure that the media type, the retention period, and so on are set up correctly.

**Setup:**

You must customize the ArchiveLink protocol to enable HTTP displaying.

---

## Customizing the ArchiveLink protocol for HTTP communication

This section explains how to customize the ArchiveLink protocol for displaying incoming and outgoing documents using the Hypertext Transfer Protocol (HTTP).

1. Use T-code 0AA3.
2. Double-click on the entry of the protocol used in the archive definition (for information on how to create a new ArchiveLink protocol, see “Creating an ArchiveLink protocol” on page 62).
3. Click the appropriate entry according to your SAP R/3 release.

**For older R/3 releases:**

**For Release 4.5 or later:**

**Display object or Display archived object**  
(the first entry in the list)

**Display stored document**

4. Select the radio button of the document class corresponding to the format of your document (FAX for incoming documents).
5. Follow the instructions in the column appropriate for your SAP R/3 release.

**For older R/3 releases:**

**For Release 4.5 or later:**

- a. Click the **Edit** button.
- b. Choose **Comm.method = http**.

- a. Click the **Change** icon.
- b. Enter **http** in the **Communication Type** field.

**Note**

The protocol version must be 4.5 or higher for this selection to become available.

6. Save the settings.



---

## Chapter 16. SAP notes

In this chapter, only a few of the most important SAP notes are presented. For more information, check the **SAPNet-R/3 Frontend** (previously known as Online Service System).

**For users of SAP R/3 3.0D — 3.11:**

Please consider SAP note number 0089324 to eliminate an error in the ADK (Archive Development Kit) and to improve the performance in the archiving process.

**For users of SAP R/3 3.1G:**

Please consider SAP note 0119599 to eliminate an error in the ADK (Archive Development Kit) concerning the single access of archived application (reorganized) data.

**For users of SAP R/3 4.0B:**

Multiple connections to the R/3 gateway (profile parameter *DISPATCHERS*) are not possible with this release of the R/3 software and may lead to error messages from the CommonStore dispatcher and shutdown of the CommonStore Server. Please consider SAP note number 0116377 and update the R/3 kernel to patch level 1.2.1.

**For users of SAP R/3 3.x — 4.5:**

Users of the ArchiveLink Viewer release 4.5 should note that the ArchiveLink viewer 4.5 crashes. Please consider SAP note number 0150914.

**For users of SAP R/3 3.x:**

Please consider R/3 notes 0089164 and 0087585 to eliminate the OLE Server is busy time-out problem.

**For users of SAP R/3 3.x — 4.0:**

Please consider the SAP note 99388 for installing the SAP Archive Information System.



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## **Part 6. Additional CommonStore features for SAP**



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## Chapter 17. Index transfer

The feature of transferring search index information already stored in the SAP R/3 system to Content Manager for iSeries enables you to find and retrieve (without the R/3 system) documents that were archived by the SAP R/3 system. External access to these documents makes the installation of two front-ends unnecessary. That is, you do not need the SAP GUI and the Content Manager Client.

It goes without saying that the transfer of search-index information to an external system makes sense only if the users who need access to the archived documents use Content Manager, but not SAP R/3. If all users are connected to the R/3 system, you better use the solution that is built into R/3.

This is because the transfer of search indexes is time-consuming and storing the same indexes twice is an inefficient use of storage space. Besides, a search indexes that was transferred to an external system is never as good as a search index created in the original system. The CommonStore index-transfer feature is provided as a sample that you can adapt to your requirements.

---

### Prerequisites for the index-transfer feature

Transferring search index information from the SAP R/3 System to an external system requires the use of Content Manager for iSeries to store the archived documents. The CommonStore index-transfer feature is based on an SAP R/3 ABAP/4 program, which has to be implemented in the R/3 environment.

#### **Important**

On UNIX, it is mandatory that the SAP user (operating system level) be located in the same primary group as the CommonStore Server user.

---

### Installing the index-transfer feature

The ABAP/4 program is required for the CommonStore index-transfer feature. The messages and texts are installed using the SAP R/3 transport system.

A detailed description of the steps to be performed in order to add the CommonStore index-transfer feature to the R/3 System can be found in the INSTALL.TXT file provided with the CommonStore Index Transfer files.

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### Customizing the index-transfer feature

The customization of the CommonStore index-transfer feature divided in two parts: customizing the R/3 System and setting up the archive system to save the search index information.

#### **Customizing the SAP R/3 system**

##### **Setting the transfer path**

There are two possibilities for the customizing of the transfer path. The first way is to use the path also used for data archiving purposes ARCHIVE\_GLOBAL\_PATH. The second way is to create a new logical file path. The next steps guide through

the customizing of a transfer path: Using the T-code FILE, a logical file path definition can be created by pressing the **New Entries** button. Enter the name for the logical file path as ZZ\_ARCHIV\_DOWNLOAD\_PATH and save the new entry. Select now the newly created logical file path and press the **Assignment of physical paths to logical path** button. Add a new syntax group by clicking on the **New Entries** button. Choose the syntax group for the system (the syntax group applies to the host operating system on which the SAP R/3 System is running) and enter the absolute path to the transfer path in the **Physical path** field. The physical path must end with the R/3 parameter <FILENAME>, that is, /sap/trans/base/<FILENAME>. This transfer path must be accessible by the CommonStore Server. The transfer path can be the same as the one for archiving. You can specify the parameter so that the directory defined in the logical archive section is used. For example, you can define a logical file name by clicking the **Logical file name definition, client-independent** button. Create a new entry by clicking on the **New Entries** button and specify ZZ\_ARCHIV\_DOWNLOAD as the logical file. The physical file can be set as <PARAM\_1>.<DATE><HOUR><MINUTE><SECOND>. Other parameters may also be specified, but keep in mind that parameters should be used which create unique file names. The data format has to be specified as ASC, the logical path is ZZ\_ARCHIV\_DOWNLOAD\_PATH, which has already been customized. Finally, save the settings.

**Important**

- The physical path must end with the parameter <FILENAME>.
- The transfer path must be accessible by the CommonStore Server.

**Customizing the attribute tables**

The **ZICSFIELDS** and **ZICSKEYS** tables are used to specify the database fields that should be exported as search index information. Customizing the **ZICSFIELDS** table enables the CommonStore index-transfer feature to export index information from a main table, such as **BKPF**, **EKKO**, or **VBAK**. Customizing the **ZICSKEYS** table enables the program to export index information for subtables, such as **BKPF** or **KNA1**. It has to be ensured that all table names specified in the attribute tables **ZICSFIELDS** and **ZICSKEYS** are included in a tables statement in the ABAP/4 code of the program **ZICSXFER**. The following paragraphs describe the fields of the two tables and their job.

**ZICSFIELDS table**

**SAP\_OBJECT**

The object type of the SAP object to be exported. This has to be the same object type as the one specified in the the parameter screen of CommonStore index transfer.

**AR\_OBJECT**

The document format of the SAP object to be exported. If it is desired that no explicit document format be specified in the parameter screen of the Index Transfer program, this field must be left blank.

**FID** A unique field number between 0 and 9999.

**FNAME**

The name of the database field to be exported. This field must be contained in the database table specified using the **SAP\_OBJECT** field or in the corresponding subtable.

**SUBTAB**

Specifies the subtable in which the **FNAME** field is located. If the **SUBTAB**

field is blank, the **FNAME** field will be taken from the application table related to the SAP object. If the **SUBTAB** field contains the string **ARCHLINK**, the **FNAME** field will be taken from the corresponding table for optical archiving (**TOA01**, **TOA02**, **TOA03**, or **TOADL**). If this field contains the name of another database table, the **FNAME** field will be taken from the that table using the keys specified in the **ZICSKEYS** table to access this table.

#### **EXPORT**

If the export flag is set to **X**, the field will be stored in the export file. Not all fields are necessarily exported. Some fields are required only to access other fields in subtables.

#### **ARNAME**

Allows an alternative name for the attribute in the archive system to be specified. The standard name, which is taken when leaving this field blank, is the field name as specified in the **FNAME** field.

#### **FESTTEXT**

For some fields, it may be necessary to set a fixed value for exportation. This value can be specified in this field. Leaving this field blank causes the value of the database field to be taken for the transfer.

#### **ISKEY**

Specifies if the exported field is used as a key field by the CommonStore archive agent. Generally speaking, key fields are the same fields as the key fields in the R/3 database or a subset of them. The **ISKEY** field can be blank or assigned a value of **X**.

#### **LISTHEADER**

If this field is left blank, the exported field will not be displayed in the report generated when the program runs. To display the exported field in the report, the name of a text element has to be specified in this field, e.g. **text-060**.

#### **ZICSKEYS table**

**FID** A field identifier as entered in the **ZICSFIELDS** table. The key fields for accessing the subtable can be specified using this identifier.

#### **FIELD\_SUB**

The name of the database key field in the subtable.

#### **TAB\_ORG**

The name of the original table in which the **FIELD\_ORG** field can be found.

#### **FIELD\_ORG**

The name of the database key field in the original table. Using the two fields **TAB\_ORG** and **FIELD\_ORG**, a select value can be obtained. This value is used to find the corresponding record in the subtable using the key field **FIELD\_SUB**.

#### **VALUE\_SUB**

If a value is specified in this field, the database value of the field specified in **FIELD\_SUB** will be compared with this value instead of the value obtained when using the two fields **TAB\_ORG** and **FIELD\_ORG**.

Table 15. Sample configuration for the ZICSFIELDS table

SAP_OB JECT	AR_OB JECT	FID	FNAME	SUBTAB	EXPORT	ARNAME	FEST TEXT	ISKEY	LISTHEADER
BKPF		0100	ARCHI V_ID	ARCHLINK	X				text-051
BKPF		0101	ARC_D OC_ID	ARCHLINK	X				text-050
BKPF		0102	DOC_TYPE	ARCHLINK	X				
BKPF		0103	AR_DATE	ARCHLINK					text-052
BKPF		0110	BUKRS		X			X	text-061
BKPF		0115	BELNR		X			X	text-060
BKPF		0120	GJAHR						
BKPF		0125	LIFNR	BSEG	X				
BKPF		0130	KUNNR	BSEG	X				
BKPF		0135	HKONT	BSEG	X				
BKPF		0140	MONAT		X				
BKPF		0145	BLDAT		X				
BKPF		0150	XBLNR		X				
BKPF		0155	GSBER	BSEG	X				
BKPF		0160	KOSTL	BSEG	X				

Table 16. Sample configuration for the ZICSKEYS table

FID	FIELD_SUB	TAB_ORG	FIELD_ORG	VALUE_SUB
0125	BELNR	BKPF	BELNR	
0125	BUKRS	BKPF	BUKRS	
0125	GJAHR	BKPF	GJAHR	
0130	BELNR	BKPF	BELNR	
0130	BUKRS	BKPF	BUKRS	
0130	GJAHR	BKPF	GJAHR	
0135	BELNR	BKPF	BELNR	
0135	BUKRS	BKPF	BUKRS	
0135	GJAHR	BKPF	GJAHR	
0155	BELNR	BKPF	BELNR	
0155	BUKRS	BKPF	BUKRS	
0155	GJAHR	BKPF	GJAHR	
0160	BELNR	BKPF	BELNR	
0160	BUKRS	BKPF	BUKRS	
0160	GJAHR	BKPF	GJAHR	



### Important

- Remember to set the path variables ZZ\_ARCHIV\_DOWNLOAD and ZZ\_ARCHIV\_DOWNLOAD\_PATH in the R/3 System (see also “Setting the transfer path” on page 89).
- It has to be ensured that all table names specified in the attribute tables ZICSFIELDS and ZICSKEYS are included in a tables statement in the ABAP/4 code of the program ZICSXFER.
- The information document type and object type in the transaction ZIEX has to be set as customized in the ZICSFIELDS table, for example, if SAP\_OBJECT is BKPF, the object type field must also be set to BKPF; if AR\_OBJECT is empty, the field document type in the transaction can be set to any existing document type for the object type.

## Customizing Content Manager

The CommonStore index-transfer feature exports more index fields than possibly required. From all index fields those can be chosen that are wanted, by customizing Content Manager. The idea is to set up an index class containing only the key fields that are wanted in Content Manager. In principle, there is the possibility that one SAP business object has links to more than one archived document. For this reason, for every set of search index information, a Content Manager folder is created and the index information is stored in its attributes (key fields). After that, only a reference to the original archived document related to the index information is stored in the folder; this is to avoid the redundant storage of objects. When searching an archived document externally, that is, searching in Content Manager, you must not search within the index class in which the original document has been stored, but rather within the index class containing the folders with the search index information.

### Creating key fields

The key fields are named using a special naming scheme. For more information on this application, refer to the *IBM Content Manager for iSeries: System Administration Guide*. The naming scheme allows the key field to be assigned a “speaking” name for the user and an internal name for the CommonStore system. The field names hence consist of two parts. The first part is the speaking name, which can be a string complying with the Content Manager naming guidelines. The second part is the internal name, which is the name of the index field as named in the R/3 database tables and surrounded by brackets ([ and ]). The index field names as named in the R/3 database are listed below. For every index field that should be imported into Content Manager, a key field must be created. The internal name of the key field is required.

#### EXAMPLE:

The key field for the reference number may be named REFER\_NO [BELNR].  
The key field for the fiscal year may be named FISCAL\_Y [GJAHR].

### Using index class splitting

When transferring large amounts of search index information, the index class is filled up quickly. To maintain the high performance of the Content Manager system, it is recommended that the index classes in which search information is stored be changed from time to time. This process can be automated by specifying a split criteria in the CommonStore Server profile. When a split is necessary because the split criteria is valid, a previously manually created destination index class will be used. This index class must contain all key fields necessary to store

the preferred search index information. To see how Content Manager is customized, refer to “Customizing Content Manager” on page 93. The split criteria can be customized in the CommonStore Server profile. The names for the index classes are specified by the keyword SPLIT\_CRIT. To see how this works, please refer to “Customizing the server configuration profile”. If no split criteria are specified, all search index information is stored in an index class named <class>\_Search, where <class> is the name of the index class in which the original archived documents are stored.

**Important**

- The index classes necessary for splitting must be created manually before the first index export runs. For the naming of these classes, refer to “Customizing the server configuration profile”.
- If no split criteria are specified, all search index information is stored in an index class named <class>\_Search. This index class also has to be created manually.

## Customizing the server configuration profile

In cases of large search index information amounts, it is strongly recommended that the index class where the search information is stored be changed in regular intervals in order to ensure that the database tables do not grow too big. To activate splitting the search index information in several index classes, the keyword SPLIT\_CRIT can be used in the server configuration profile. See the entry for this keyword in Appendix A, “Keywords in the server configuration profile” on page 115.

### The SPLIT\_CRIT split criteria keyword

In principle, every field exported by the index-transfer feature can be used to split the exported data into more than one index class. Fields used for splitting must never be empty; this is because their value is required for the splitting process. However, fields in which the contents differ from record to record are unsuitable for splitting; it is therefore unwise to use the archive document ID (which changes from document to document) for index class splitting. The split criteria should also incorporate information which is known when searching an archived document; this is because the index class in which the search is to be carried out must be chosen in advance in the search dialog of the Content Manager Client application. It is not necessarily possible to perform a search on all index classes available in the Content Manager system. In the following, the rules for forming names for automatic index class creation are explained.

Every field belonging to a group of documents can be used, for example the field **BUKRS**, which is the company code for accounting documents. For every company code, a new index class will be created. Date and year fields can be used to split data on a monthly, quarterly, or annual basis. In the case of date and year fields, there is an additional operation which makes use of the brackets. The individual months or the distance between the years can be specified in the brackets. The general syntax for this is as follows:

<field>[1A]

where <field> must be a date or year field.

<field>[M01, ... ,M12]

where M01 to M12 are the months of a year in any combination and <field> must be a date or month field.

**<field>[M01, ... , M12,1A]**

This is the combination of the first two possibilities. In this case, <field> must be a date field.

**<field>[1Q, ... ,4Q,1A]**

In this case, a quarterly split is performed. <field> must be a month field, and when using 1A, it must be a date field. This is the same as splitting at the months 01, 04, 07, and 10, with the difference being that the index classes are named <class>\_1Q instead of <class>\_01.

**<field>[1H,2H,1A]**

In this case, a semi-annual split is performed. <field> must be a month field, and when using 1A, it must be a date field. The splitting will be done using the months 01 and 07; the index classes are named <class>\_1H and <class>\_2H instead of <class>\_01 and <class>\_07.

Regarding the preceding explanations: <field> is the name of a field in an R/3 table that is exported and can be found in the export file. <class> is the name of an index class in Content Manager in which the original archived documents can be found. More than one index field can be used for splitting. The values are then concatenated in the index class name by inserting a \_ between the individual values.

**EXAMPLE:**

From the **BKPF** table: **MONAT[M01,M07]** will use two index classes, **CSA1\_01** and **CSA1\_07**. All search index information for which the value of **MONAT** is less than 07 will go into the index class **CSA1\_01**; if the value is greater than or equal to 07, the index information will go into the index class **CSA1\_07**.

**Important**

The search index information for all the years from January to June will go into **CSA1\_01**, while the search index information from July to December will go into **CSA1\_07**. Furthermore, in order to differentiate between years, it is necessary that more than one index field be used for splitting. The above example is the same as using the split criteria **MONAT[1H,2H]**. The only difference is that the names of the index classes are **CSA1\_1H** and **CSA1\_2H**.

**EXAMPLE:**

From the **BKPF** table: **MONAT[1Q,2Q,3Q,4Q]** **GJAHR** will use four index classes for every fiscal year. The classes are named, for example, **CSA1\_1Q\_1998**. To search documents, the fiscal year and the quarter must be well known.

**EXAMPLE:**

From the **BKPF** table: **GJAHR[1A]** will change the new index class after every fiscal year. Assuming that the first index class was named **CSA1\_1997**, the next will be named **CSA1\_1998**, the next **CSA1\_1999**, and so on.

**Important**

- All index classes must be created manually.
- Index fields used for splitting must never be empty. Their value is required to create or find the target index class.
- Keep in mind that different index fields or the combination of index fields in a different manner can result in the same index class name.
- <field> and <field>[1A] have the same meaning. The split will be annual. In this case, <field> must be a date field or a year field.
- If no split criteria are specified, all search index information is stored in a index class named <class>\_Search.

---

## Using the index-transfer feature

The CommonStore index-transfer feature can be activated using the T-code ZIEX. It is designed to work as a report. The initial screen enables the user to specify parameters which influence the selection results of the transfer program. The report can be started in two manners: the interactive mode (in which the user specifies the selection parameters, executes the program, and receives the results of the export run on-line on a reporting screen), and the batch mode. In the batch mode, the user also specifies the selection parameters, but the report is executed by a job that has been defined. All output is sent to the job protocol, and the user cannot see any result on-line. The effect in both cases is the same: an export file is generated containing search index information exported from the R/3 database tables. After creating the export file, the report contacts the CommonStore Server, which gets the export file and imports the search index information into the Content Manager archive system. If everything went all right, the archive systems client application can be used to search for documents externally using the search index information from the SAP R/3 System.

**Important**

Because the program is designed as an R/3 report and the transfer operation is an asynchronous request, the user does not get any notification if the import into the archive system was successful. Notification is made only when the CommonStore Server was able get the export file and everything was all right.

## The parameter screen

The index-transfer report has several parameters. Some of them are obligatory, others have a default value. The next paragraphs describe the parameters that can be set in the parameter screen:

**Archive ID:** The archive ID specifies the exact logical R/3 archive for which index information should be exported. The archive ID parameter is obligatory. The archive ID can be chosen in a list of all valid logical R/3 archives by opening the parameters choice box.

**Archiving Period:** The archiving period specifies a date range in which all documents for which index information is to be exported must have been archived. A date (in the form a day in a month in a year) can be entered in these date fields.

If the start date is left empty, the index-transfer report determines the start date by itself by finding out the end date of the last export run for this parameter.

**to:** The end date is also left empty, which means that the date of the current day is used as the default. Using these settings — the start date field (empty) and the end date field (also empty) — all search index information that is not exported until today will be written into the export file. If the report is started all the times after all documents of the day are archived, it can be ensured that index information for all archived documents is exported. However, if the report runs in the middle of the day and documents are archived afterwards, the index-transfer feature cannot run automatically; this is because the date of the current day must be specified as the start date. As a result, the index information already transferred for the documents archived before the last run will be exported again.

**Document Type and Object Type:** The document format and the object type are used to indicate the documents that should be exported. The object type is obligatory, the document format can be used to limit the amount of exported search index information. If this field is left empty, all documents of the specified object type will be used to export index information (of course restricted by the other parameters).

**Maximum records per file:** Using the load sharing parameters, the generation of more than one export file can be achieved. This feature is useful only when dealing with large amounts of search index information. Every export file contains a maximum number of records set using the '**Maximum records per file**' parameter. If the maximum count is reached, a new file is generated automatically. For every export file created, the CommonStore Server is contacted and receives a request to import the search index information into the archive system. If there are enough agents customized for the archive system, this can result in several parallel sessions, each of them importing search index information from a different file into the archive system.

#### **Important**

The load sharing parameters should be coordinated with the CommonStore Server administrator to determine the ideal number of parallel jobs.

**Create statistics:** If the **Create statistics** check box is checked, the time required for the database selection and the overall time used by the report (not the time used by the CommonStore Server) is taken and displayed after the report has finished work in the reports output screen.

**Remove file after error:** The **Remove file after error** check box may be used to determine problems pertaining to the export file, e.g. whether a certain index field is contained in the export file or not. The default is to **delete** files after errors. It should be unchecked only if your CommonStore support instructs you accordingly.

## **Interactive mode**

The interactive mode can be started by clicking on the **Execute** button. The report is started immediately, performs the database selection dependent on the parameters set on the parameter screen, and displays the results on the next screen. The output of the report is a kind of a print list and can be printed or archived. If the report has run and the output is visible, the search index information is not necessarily in the archive system. At this time, the CommonStore Server has received the request and must now submit the request to an agent which will

import the index information into the archive system. These actions may take some time. Using the index-transfer report in the interactive mode, none of the transfer runs can be started periodically. An R/3 job must therefore be created, and the report must be started in the batch mode.

## Batch mode

To run the report in the batch mode, the parameter screen has to be saved as a variant. Using this variant, a job can be created which runs e.g. once a day. Defining a job can be done by choosing the **Tools/Administration/Jobs/Define job** menu (SM36). A start date for the job can be entered by clicking on the **Start date** button. If the job should run periodically, it has to be specified on this screen. After saving the start date, the steps of the job can be defined by clicking on the **Steps** button. By clicking on the **ABAP/4** button, the screen is enabled to take the name of the ABAP/4 report that should be started using this job. The name of the ZICSXFER index-transfer report must be specified in the **Name** field. The previously saved variant can be chosen as the variant. The list created by the index-transfer report is a kind of a print list and can also be archived as a protocol of the transfer run. If this feature is desired, the settings for printing and archiving this print list can be performed by clicking the **Print specifications** button. After saving the steps screen, the job definition is ready and the job starts at its customized time. For more information on the running job, a job log can be displayed using the job overview screen (**Tools/Administration/Jobs/Job overview**, T-code SM37).

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## Technical description for SAP administrators

The index-transfer feature ZICSXFER is designed as an R/3 report which generates a print list as output. The report performs a SQL selection on the database tables used for optical archiving (**TOA01**, **TOA02**, **TOA03**, and **TOADL**). The selection uses the specified parameters to get information about archived documents. The fields that should be exported as search index information are taken from the **ZICSFIELDS** table. Fields that should be exported from subtables can be accessed using the **ZICSKEYS** table. All matching objects are stored in an internal table (one record for every matching document). A loop writes them out one by one in a file to disk. After the file has been created, the RFC named **Z\_IBMCS\_ARCHIV\_IDX\_EXPORT** is called which connects to the specified RFC destination (can be determined using the logical R/3 archive) and thus also to the CommonStore Server. To track the export runs, the parameter set of each run is written to the **ZICSPARM** customer table using a unique reference number created by the program. The CommonStore Server sends back information for every reference number, using the RFC named **Z\_IBMCS\_ARCHIV\_IDX\_RESPONSE** regardless as to whether the import of the search index information into the archive system was successful or not. Only if the response returns a reference number for a successfully transferred export file is the parameter set committed as exported in the **ZICSPARM** table.

If the report is started leaving the start date of the archiving period empty, the **ZICSPARM** table is checked for entries that match the current parameter set. If a committed set was found, the day after the end date of the archiving period is taken and set to be the start date of the archiving period of the current parameter set entered in the parameter screen. If the report is started all the times after all documents of the day are archived, it can be ensured that index information for all archived documents is exported. However, if the report runs in the middle of the day and documents are archived afterwards, the index-transfer feature cannot run automatically; this is because the date of the current day must be specified as the start date. As a result, the index information already transferred for the documents

archived prior to the last run are exported again. The path and file name that is generated in the report for every export file is specified in the variable for the logical path ZZ\_ARCHIV\_DOWNLOAD\_PATH in the T-code FILE. This path has to be the archive transfer path that is also used for regular archiving. When generating multiple files using the load sharing feature, the names are extended using a sequential number starting with 000. The CommonStore Server receives the RFC named Z\_IBMCS\_ARCHIV\_IDX\_EXPORT from the SAP R/3 System and moves the transfer request to a agent for the related archive system. The agent analyses the file and puts for every item as many index fields as possible into the archive system. For a detailed description of how and which index fields are imported into the archive system, please refer to "Customizing the index-transfer feature" on page 89. After the agent has put the search index information successfully to the archive system, the CommonStore Server sends back a commit message to the SAP R/3 System by means of an RFC named Z\_IBMCS\_ARCHIV\_IDX\_RESPONSE. An ABAP/4 function module receives the call and sets the parameter set for the export file to "committed," which means that the transfer run for this set of parameters was correct and the index information of documents archived in this date range will not be transferred again automatically. The next time a transfer run is started, the report program checks the ZICSPARM table to obtain the parameters from the last run and creates the new run as a follow-up task to the previous one.

## Splitting the export run into multiple files

To use the feature of multiple parallel Content Manager connections, a transfer run can be split into several files. To do this, the maximum number of records per file must be adapted to spread the index information over multiple files. The index-transfer feature then generates as many files as necessary for not exceeding the maximum number of records per file. For example, if there are 5000 index records to transfer and the maximum number of records per file is set to 1000, five files are generated.

## Leaving files in the file system after errors

In cases of determining problems regarding the export file, e.g. if a certain index field is contained in the export file or not, the **Remove file after error** check box may be checked. Keep in mind that all export files generated by the report are then left in the file system if an error occurs. The file must be deleted manually. In cases of large amounts of search index information, the files may be big and numerous.

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## Considerations when using the SAP Transport Management System

When using the SAP Transport Management System to transfer the object from one system to another, the following objects must be included in the request:

- R3TR DEVC ZIBM and all subcomponents
- R3TR TABU ZICSFIELDS, the data of the ZICSFIELDS table
- R3TR TABU ZICSKEYS, the data of the ZICSKEYS table
- The customization of the transfer path ZZ\_ARCHIVE\_DOWNLOAD and ZZ\_ARCHIVE\_DOWNLOAD\_PATH in the transaction FILE.

If all objects have been transported properly, no further customizing is required in the target system.





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## Chapter 18. Linking external documents to SAP R/3 objects

CommonStore for SAP contains a program package called *Cold*, which allows you to link documents that you cannot process using ArchiveLink methods. Cold links external documents to SAP objects. These are documents that have no direct connection to SAP. Linking these documents by use of the Cold program makes them accessible from the SAP GUI.

### Example:

You print a document that is available from an SAP object and send it to a customer. The customer signs the sheet of paper and sends it back. This document is related to data in your SAP system, but the connection to this data was lost in the moment the document was “converted” into paper. After scanning and archiving the signed document, the Cold program creates a link to the SAP source object. You can now access the archived document directly from the SAP GUI.

Cold allows you to create object links to the following types of documents:

- Not yet archived external documents
- Archived external documents

Technical constraints made it necessary to produce two versions of the Cold package, one for older R/3 releases, the other for releases 4.5 and above. If you intend to use Cold, make sure that you install the package that is compatible with your SAP R/3 release. Table 17 shows which package to choose for which SAP release. It also gives you the sub-paths to the directories containing these packages on the product CD ROM.

Table 17. The location of the Cold packages on the product CD ROM

Older R/3 releases	Release 4.5 and above
Cold/cold_below_4.5	Cold/cold_higher_4.5

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### Linking not yet archived documents (T-Code: ZCSI)

If you want to link a not yet archived external document to an existing SAP object (as described in the example above), the external document must provide information to identify the SAP object. The Cold important program can then use this information to create a link to the corresponding SAP object.

If there is no SAP object to link the external documents to, the CommonStore Cold import program can create references to these documents in the form of SAP print lists.

This scenario involves the following steps:

1. The CommonStore Archiving Client or Kofax Ascent Capture triggers the archiving process and sends information to SAP by which the proper SAP objects can be identified. This information is temporarily stored in the SAP bar-code table.
2. The Cold program uses the identification information to detect the proper SAP objects, and links the archived documents to the SAP objects. The information

that permits direct access from SAP R/3 is generated in the corresponding SAP tables. The CommonStore Server stores the data in the Content Manager for iSeries archive system.

## Functions

- Makes SAP-external documents accessible from the SAP GUI
- Documents can be attached to existing SAP business objects or inserted as SAP print lists.
- SAP DMS can be used in addition.
- The program provides a user exit, which allows to implement the method used for identifying the SAP object.
- If the linking information is provided in form of a print list, you can additionally use the SAP Document Management System (DMS) to display the linked documents. The program automatically generates hyperlinks in the corresponding log. Thus, while the log of this import process is being archived, you can simultaneously access the imported documents via the hyperlink.

## Prerequisites

- Each document can be accessed using the CommonStore Client or Kofax Ascent Capture.
- All documents must be archived insofar as CommonStore must generate a document ID. If the documents are already available in the archive system, the CommonStore List Importer can be used instead to insert the documents into the *Open Barcode* table.
- Documents with a reference to an SAP object must be provided with an identifier, for example, the corresponding SAP object ID, either in the file name or in an external description file. The object ID, which is needed to link the documents to the corresponding SAP objects, is transmitted to SAP as a bar code.

## Sequence of events

The sequence of processing steps differs with regard to the application that forwards the external documents to the CommonStore Server.

If you use the CommonStore Client, the procedure is as follows:

1. The documents are made available in a file system, for example by a scanning application.
2. The CommonStore Client reads the files and submits them to the CommonStore Server for archiving.
3. The CommonStore Client transmits the information on the documents to SAP using the late archiving method. The identifier of the document is sent to SAP as a bar code. The information is thus available in the temporary *Open Barcode* table in the SAP system. After a successful completion, the files in the file system are erased.
4. In the SAP system, the CommonStore Cold import program is first triggered. It reads the entries in the Open Barcode table and, depending on the stated business object (DRAW for print lists), links the documents with an existing SAP business object or places them in the SAP application DMS (Document Management System). In this context, the transmitted bar code is interpreted either as a business object ID or as a print-list description. If it proves impossible to directly interpret the bar code as an SAP business object ID, the user-exit function can be implemented to determine the corresponding SAP

object ID on the basis of the transmitted bar code. On request, the user-exit function simultaneously generates hyperlinks in the import protocol.

If Kofax Ascent Capture is integrated into the CommonStore environment, the procedure is as follows:

1. The scanned documents are sent to SAP using the late archiving method. The identifiers of the documents are sent to SAP as a bar code.
2. In the SAP system, the CommonStore Cold import program is first triggered. It reads the entries in the Open Barcode table and, depending on the stated business object (DRAW for print lists), links the documents with an existing SAP business object or places them in the SAP application DMS (Document Management System). In this context, the transmitted bar code is interpreted either as a business object ID or as a print-list description. If it proves impossible to directly interpret the bar code as an SAP business object ID, the user-exit function can be implemented to determine the corresponding SAP object ID on the basis of the transmitted bar code. On request, the user-exit function simultaneously generates hyperlinks in the import protocol.

## Report selection and fields

The ABAP/4 report ZCSI can be invoked together with the following parameters:

### **ARCHIV ID (TOA01- ARCHIV\_ID)**

Using this parameter, one can specify which values are to be read from the Open Barcode table. Further, the ID of the archive (needed for the ArchiveLink) can likewise be set.

### **BUSINESS OBJECT (TOA01- SAP\_OBJECT DEFAULT 'DRAW')**

Using this parameter, you can specify the SAP business object to which the documents are to be linked. If you choose the value DRAW for this parameter, this indicates to the CommonStore index-import program that the documents have no reference to an SAP business object and are hence to be collected as SAP print lists with an automatic entry and sent to DMS.

### **DOCUMENT TYPE (TOA01- SAP\_OBJECT DEFAULT 'D01')**

Using this parameter, you can define the kind of document on which the SAP business object depends.

### **DOCUMENT TYPE TEC (TOADV-DOC\_TYPE DEFAULT 'ALF')**

Using this parameter, you can define the technical document type. In case of print lists, the document class is automatically defined as ALF.

### **OBJECT ID (DEFAULT 'C0000000')**

Using this parameter, you can define the eight-digit starting number for the automatic generation of print-list numbers. The value must have the following structure: AIIIIIII. The first digit is an alphabetic character, and the following seven digits are single-digit integers. The CommonStore index-import program checks the existence of the same ID (in the TOADL table) and automatically increments numerically. Thus, there is a maximum of 99 999 999 imported documents per leading alphabetic character. This parameter takes effect only when you import print lists.

### **INFO (DEFAULT 'IMP')**

Any desired value (representing information) can be specified using this parameter. It is displayed in DMS and thus serves as index.

### **PRINTER (DEFAULT 'LP01')**

Any desired value (to identify the printer) can be specified using this parameter. It is displayed in DMS and thus serves as index information.

This parameter can be assigned a value each time that the CommonStore Cold Import Program runs. This parameter takes effect only when importing print lists.

**FORMULAR (DEFAULT 'CS\_INDEX')**

Specifying this parameter, you can use any value to identify the form. It is displayed in DMS and thus serves as index information. This parameter can be assigned a value each time that the CommonStore Cold import-program runs. This parameter takes effect only when importing print lists.

**CREATE DMS Entry (DEFAULT 'X')**

Using this parameter, you can additionally make print-list documents accessible through DMS.

**Example:**

In this example, SAP personnel data is linked with personnel documents — specifically, scanned resumes. The SAP business object is the personnel data file and the business object ID is the SAP personnel number. The resumes are in TIFF format, and each resume is available as an individual file. All of the documents receive the SAP personnel numbers as their file names. The CommonStore Client loads the PDF documents, archives them via the CommonStore Server, and then transmits the documents to the Open Barcode table in the SAP system. In doing so, not only the archive document IDs are sent, but also the personnel numbers (in the form of bar-code IDs). The CommonStore import program reads the Open Barcode table, recognizes the personnel numbers, and links the personnel data file with the corresponding documents. After successfully linking them, the entry in the Open Barcode table is erased. From now on, the documents are accessible via the SAP application HR.

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## Chapter 19. Archiving bulks of printed documents (Lasersoft integration)

Often when you print SAP documents, you want to add overlay information to the raw information in the documents. For example, think of invoices that you send to customers. Not only do you want the invoices to include the billing data, but also a header, a footer, a company logo, and so on. Adding this information by using SAP script makes the printing process very slow. The overlay information is added to each document individually; when printing high volumes, the performance of the SAP application server usually decreases massively.

For this reason, many companies use an external application for high-volume printing, such as Lasersoft. Lasersoft works in the following way: It receives just the raw data of the SAP documents to be printed. It identifies the start and the end of each single document in the print stream, and to each of these parts in the print list adds the overlay information before sending the document to the printer. This way, the task of adding overlay information is taken away from the SAP application server, and does not affect its performance any more.

You can archive outgoing documents using ArchiveLink, but this would only store the raw data in the archive. Mostly, it is much more favorable to archive documents exactly the way they were printed. You can recognize documents more easily when viewing or retrieving them from the archive. In addition, it takes a burden off your shoulder if you are legally obliged to keep exact copies of the documents that you sent to customers.

CommonStore can archive electronic copies of your printouts and produce links to the archived documents in the corresponding SAP business objects. This ensures that your documents are archived in the same format as you sent them, and that you can still access them from SAP.

---

### Sequence of events

Integrating Lasersoft with SAP R/3 and CommonStore for SAP allows you to run printing and archiving processes as shown in Figure 15.

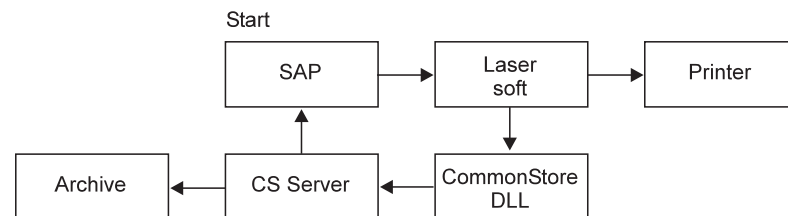


Figure 15. Lasersoft integration

1. After activating the RDI interface, SAP adds an identifier to each document and sends the documents to the Lasersoft printing application. The identifiers are generated using the information in the DARA lines. The identifiers are stored in the SAP system for later use.
2. Lasersoft receives the data from SAP and adds the overlay data to each document.

3. Lasersoft passes the modified print stream to the printer and sends the identifiers and archiving requests for each document to CommonStore.
4. CommonStore archives the documents and sends the archive document IDs and the identifiers to SAP.
5. SAP receives the identifiers and document IDs through ArchiveLink and assigns them to the proper business objects.

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## Setup

To integrate Lasersoft into your SAP/CommonStore environment, first make sure that SAP R/3, CommonStore, and Lasersoft are properly installed. The next step is to activate the RDI interface in SAP R/3. For information on how to do this, see your SAP documentation. You can also request payable service support by doing one of the following:

- Opening an SAP OSS note
- Opening a Problem Management Record (PMR) for CommonStore support

Set up the communication between Lasersoft and SAP. See the Lasersoft documentation for information.

To enable Lasersoft communication with CommonStore, the CommonStore DLL and a file named csclient.ini must reside on the Lasersoft server. The easiest way to create and configure these files is to install the CommonStore Viewing Client on the Lasersoft server because this automatically places the files in the proper directories. For Lasersoft and the CommonStore Server to communicate with each other, the CommonStore DLL requires the following parameters, which are written to the csclient.ini file:

**Server** The name or IP address of the CommonStore Server.

**Port** The port number that the CommonStore Server uses. Your entry must match the port number specified in the server configuration profile (usually archint.ini). The number must be greater than 5000.

**API tracefile**

The name of the API trace file including the full path. The API trace file records all communication processes between Lasersoft and the CommonStore DLL. It facilitates the detection of errors. Make sure that API tracing is enabled in the CommonStore Viewing Client.

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## Chapter 20. Converting documents to TIFF before archiving

You can connect CommonStore for SAP with an external application called Compart DocBridge. This program converts office documents, such as Microsoft Word and Excel files, into the Tagged Image File Format (TIFF) before they are archived. This has several advantages:

- Files in TIFF take up only little space in the archives.
- You cannot easily modify TIFF files. This is important if you must preserve information and safeguard it against unauthorized manipulation.
- TIFF is a widespread standard. It is easy to find an inexpensive or even free viewer capable of displaying TIFFs. Mostly, this is not possible with documents in a proprietary format, which often require that you have a licensed copy of the software that they were created with. In addition, such formats frequently involve migration issues. That is, you must convert older files if you want to view them using a newer version of the application.

CommonStore for SAP provides a user exit written in Java, which allows you to communicate with the Compart rasterizing server, the main component of Compart DocBridge. To use this feature, it is required that you use the Hypertext Transfer Protocol (HTTP) for archiving. The RFC protocol does not work.

You must add a few keyword settings to your server configuration profile (usually `archint.ini`) to make the user exit work. Which keywords you need depends on your individual setup. For each archive that you want to enable the user exit for, you must add the required keyword specifications to the corresponding ARCHIVE statement.

### TRANSFORM CLASS

Enables the user exit for HTTP archiving. Set the value to 'CPRaster' (including the single quotes).

You cannot use this keyword in conjunction with the TRANSFORM keyword.

### REMOTEHOST

Specifies the name of the computer that hosts Compart DocBridge. Use this keyword if Compart DocBridge resides on a computer other than the CommonStore Server. Otherwise, use the WORKDIR keyword.

### USERPROFILE

Makes Compart DocBridge use a profile when it is invoked through the user exit. This keyword is optional because the use of a profile is not required. Possible values are ON and OFF.

### CONTENTDETECTION

Enables the detection of the content type by Compart DocBridge. Any content-type information that comes with the document is ignored if you set this keyword. If you switch off content detection, documents are archived according to the content-type information that they contain. Possible values are ON and OFF.

**Attention**

Using this keyword might result in the detection of an unknown content type, in which case the documents are not archived.

**WORKDIR**

Specifies the working directory of Compart DocBridge. Use this keyword if Compart DocBridge resides on the same computer as the CommonStore Server. Contrary, if the external application resides on a remote computer, use the REMOTEHOST keyword.

If you set the WORKDIR and REMOTEHOST keywords together, the WORKDIR statement is ignored. To set the WORKDIR keyword correctly, specify the full path to the working directory, enclosed in single quotes.

**Example:**

See the following extract of a server configuration profile:

```
ARCHIVE D2TSM
  STORAGETYPE      ADSM
  SERVER           Archive1
  MGMT_CLASS       TSM2
  ADSMNODE         TSM2
  LOGICAL_SYSTEM   T90CLNT090
  TRANSFORM_CLASS  'CPRaster'
  REMOTEHOST       Compart
  CONTENTDETECTION ON
```

For information on Compart DocBridge, contact Compart or see the DocBridge documentation. You can reach Compart by the following e-mail address and phone number:

E-mail: [info@compart.net](mailto:info@compart.net)  
Phone: +49-7031-620523



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## Chapter 21. Using the SAP Document Finder

You can use the SAP Document Finder to search and view documents in a Content Manager archive. Thus, you need not switch to another application for archive queries.

When you start the Document Finder and select archive index classes as the document area to search, you see entry fields for the archive attributes in the search mask. This allows you to search directly in the archive. The CommonStore support feature for the SAP Document Finder shows the search results in a hit list, which provides clickable links to the documents.

A newly generated hit list shows the index classes that contain matching documents. The index classes are represented by folder icons. To view a document, you proceed as follows:

1. Display the documents in an index class by clicking the twistie next to the folder icon.
2. Select the desired documents.
3. Display the documents by use of the context menu.

Figure 16 on page 110 shows the hit list that CommonStore returns when you enter a successful archive query in the SAP Document Finder.

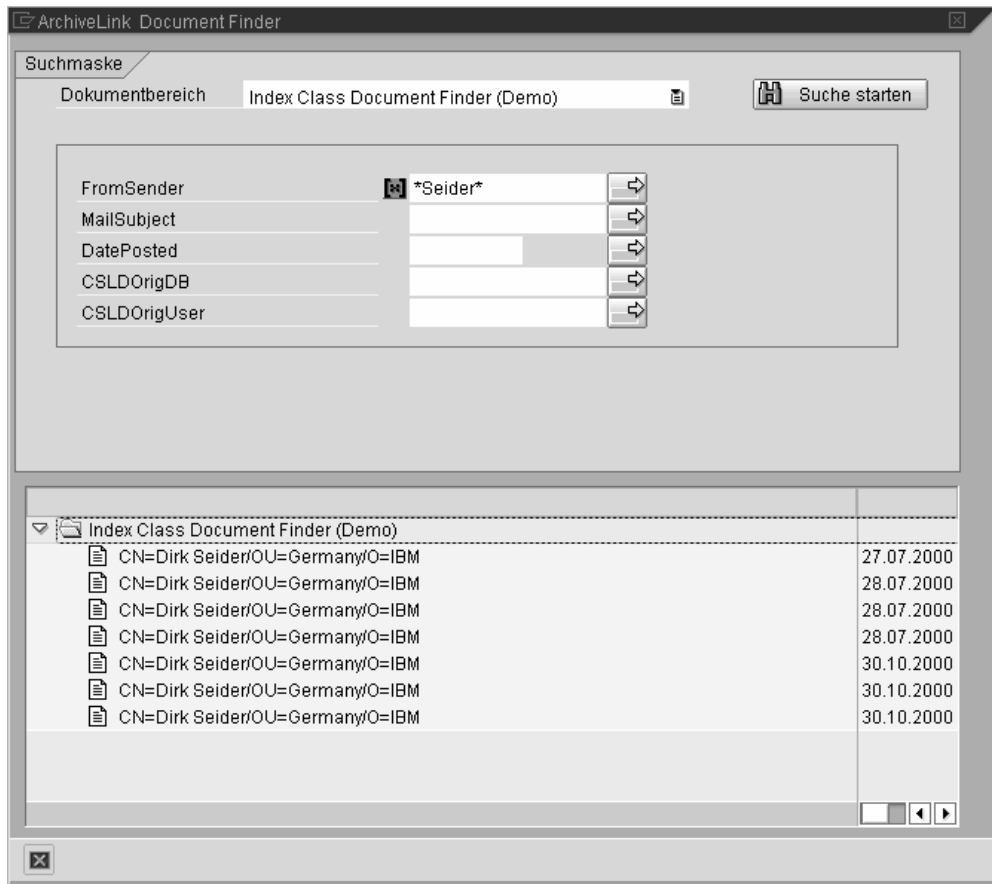


Figure 16. Hit list displayed in the SAP Document Finder

## Document Finder prerequisites

To use the CommonStore interface for the SAP Document Finder, you need the software shown in Table 18.

Table 18. Software prerequisites for the SAP Document Finder support feature

Software	Version
SAP R/3 GUI and front end	Release 6.10 (or later)
IBM Content Manager	

The option to use the Document Finder is generally available in SAP R/3 Release 6.10. To make it available with release 4.6, contact SAP or CommonStore support.

## Customizing the Document Finder for use with CommonStore

It is strongly recommended that you see the online documentation for SAP R/3 Release 6.10 on this subject. Since SAP is a complex system and each setup is different, covering all the topics that might be of importance is beyond the scope of this book. This section can only give you a few basic instructions.

You must first create SAP document areas for the logical archives that you defined in the server configuration profile. Name the document areas exactly like the logical archives. You must create one document area for each logical archive.

The SAP Document Finder uses the RFC protocol to request attribute lists, hit lists, and so on. Therefore, you must maintain an RFC destination in your SAP system. When you enter transaction code SM59 on the SAP front-end, you reach the panel that allows you to provide the appropriate settings. Name the program ID of the RFC destination after the ID in the server configuration profile (usually *archint.ini*). For more information, see “Creating an RFC destination” on page 60 or the appropriate section in your SAP documentation.

To set the program ID in the server configuration profile, use the *PROGID* keyword. The CommonStore Server then creates an internal program ID. To the name you specified using the *PROGID* keyword, it appends the number 1.

**Example:**

If your server configuration profile contains the entry *PROGID CSTORE.RFC*, the program ID for Document Finder RFC communication is *CSTORE.RFC1*.

This implies that you need two RFC destinations if you want to use the RFC protocol for archiving and Document Finder queries.

In addition, the SAP Document Finder uses the Hypertext Transfer Protocol (HTTP) to display query results. Therefore, you must also enable HTTP communication for the involved logical archives. For more information, see “Creating a content repository (logical archive) customized for HTTP communication” on page 64.



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## Part 7. Appendixes



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## Appendix A. Keywords in the server configuration profile

The keywords allow you to adapt server configuration profiles to your needs. Each keyword is explained in detail; the following sections describe the function of each keyword, the context in which to use it, and the parameters or values you can specify. The keywords are in alphabetical order.

---

### General remarks

To avoid unnecessary errors, read the following general remarks carefully *before* you start modifying a server configuration profile.

#### **Important::**

1. Do not use the names of keywords as values. It is especially important that you do *not* use VI as an archive ID by setting the ARCHIVE keyword to this value.
2. The # character is the comment symbol. When a line in the server configuration profile starts with a #, CommonStore does not process it.
3. Some keywords are now obsolete. Therefore, they are no longer documented. The CommonStore Server still accepts these keywords, but issues a warning if it detects one of them in a server configuration profile. The following keywords are obsolete:

- ARCHAGENT
- ARCHAGENTOD
- ARCHAGENTVI
- ARCHREG
- ARCHWIN
- DISPATCHER

Use the BINPATH keyword to replace . BINPATH specifies the directory in which the binary files of the CommonStore Server reside. For more information, see the entry for BINPATH on page 117.

#### **ACTIVEQ\_FILE** *filename*

Using this general CommonStore keyword, you can specify the complete path and file name of the active queue file.

#### **EXAMPLE:**

```
ACTIVEQ_FILE /usr/lpp/cssap/bin/q_active
```

#### **ARCHIVE** *archive\_ID*

The value *archive\_ID* specifies the logical archive ID, for example A1. The archive ID must be unique. CommonStore uses it to identify the requested archive. All keywords required to access this archive are combined in the so-called ARCHIVE statement. The STORAGETYPE keyword must be specified as the second keyword. All following keywords depend on the storage type. Keywords belonging to different storage types must not be combined in a single ARCHIVE statement. See the following example:

```
ARCHIVE A2
  STORAGETYPE VI
  LIBSERVER LIBSERV2
  INDEX_CLASS TestClass
  VIUSER FRNUSER
```

**Important**

- You must not use VI as an archive ID. In general, keywords of the server configuration profile must not be used as names.
- It is recommended that you save these settings and do not change them after you have completed the set-up; this is because any retrieval operation depends on them.
- The specification ARCHIVE DEFAULT is no longer valid. If you cannot access an archive, check if this statement is in the server configuration profile (usually archini.ini). If the answer is yes, replace DEFAULT with the logical archive ID.

**ARCHIVETYPE GENERIC | SAP**

This is an additional keyword for the ARCHIVE statement. If you set it to SAP, CommonStore verifies if certain special attributes exist, which are required for SAP archives.

**ARCHPATH** *path*

Using this keyword, you can specify the path under which objects to be retrieved are made available to SAP applications. The CommonStore Server retrieves the files in this directory. It can be shared by all application and database servers using NFS. The CommonStore Server must have access to this path as well.

If not specified, the default path is /tmp.

**EXAMPLE:**

```
ARCHPATH /sap/trans/base/archint/
```

**Note**

This must be the same path as provided in the SAP R/3 System (transaction code OAC0). Check ownership and rights in the file system. If more than one SAP R/3 application server is running, this path must be shared via NFS by all application servers.

Only for archive data: The path which is used by the SAP ADK (T-code SARA) must be the same; this is because ADK, ArchiveLink, and the CommonStore Server share their data in this path. It can be customized in the ADK (**Environment** → **Customizing**). Further changes can be done using the T-code FILE.

**ARCHPRO\_PORT** *port*

Using this keyword, you can specify the TCP/IP registration port used by all CommonStore clients and all CommonStore DLLs for connecting to the CommonStore Server. ARCHPRO\_PORT replaces ARCHWIN\_PORT.

This port must correspond to the settings in the client configuration profile (name: CSClient.ini) on Windows PCs. This fixed port is also used by the archstop and the archbc programs.

**EXAMPLE:**

```
ARCHPRO_PORT 5500
```



**Notes**

The port number you specify must be greater than or equal to 5000.

This is the fixed registration port of all Windows PCs. If more than one CommonStore server is installed on a single machine, each instance requires a different setting of the ARCHPRO\_PORT keyword.

**ARCHWINS** *number*

Using this keyword, you can specify the total number of parallel sessions (name: *archwin*) which the CommonStore Server establishes for the CommonStore Client and the CommonStore DLL. The default is 1.

**EXAMPLE:**

```
ARCHWINS 3
```

**Note**

If you do not use CommonStore Client or the CommonStore DLL, specify 0.

**ARCHWIN\_PORT** *portnumber*

This keyword is obsolete. Use ARCHPRO\_PORT instead.

ARCHPRO\_PORT has exactly the same effect and is used in the same manner. For more information, see ARCHPRO\_PORT.

**BASEPATH** *path*

Using this keyword, you can specify the path under which objects to be archived are made available by the SAP applications. Before issuing an order to the CommonStore Server, the files can be found in this directory. It can be shared by all application and database servers using a Network File System (NFS). The CommonStore Server must have access to this path as well. The ARCHPATH and BASEPATH keywords can specify the same physical path. If not specified, the default path is /tmp.

**EXAMPLE:**

```
BASEPATH /sap/trans/base/archint/
```

**Note**

This must be the same path as provided in the SAP R/3 System (transaction code OAC0). Check ownership and rights in the file system.

Only for archive data: The path that is used by the SAP ADK (transaction code SARA) must be the same; this is because ADK, ArchiveLink, and the CommonStore Server share their data in this path. It can be customized in the ADK (**Environment** → **Customizing**). To further change the path, use the transaction code FILE.

**BINPATH** *path*

Specifies the complete path to the binary files of the CommonStore Server.

**EXAMPLE:**

```
/QSYS.LIB/CS400V8.LIB
```

**Attention**

Do not rename any binary files.

**CHECK\_ARCHIVE\_SERVER ON|OFF**

Specifies whether the CommonStore Server starts if an archive is not available. When set to ON, all archives for the configured agents must be available and have the mandatory attributes defined at startup; otherwise, CommonStore refuses to start. When set to OFF, CommonStore displays a warning if an archive is not available; nevertheless, it continues to start up. The default value is ON.

**CLIENT *ddd***

Using this keyword, you can specify the client in the SAP R/3 System (transaction code SCC4). The placeholder *ddd* is a three-digit number. This keyword is required if you specify any section using the LOGICAL\_SYSTEM keyword.

**EXAMPLE:**

```
CLIENT 800
```

**Note**

This keyword refers to the corresponding DESTINATION statement.

**CONFIG\_FILE *filename***

Specifies the configuration file for the CommonStore Server to store all variable parameters such as passwords, user names, and the current version number. The value *filename* specifies the full path and the name of the file. This keyword is required.

**EXAMPLE:**

```
CONFIG_FILE /CommonStore400/archint.cfg
```

**Important**

The configuration file is encrypted.

**DISPATCHERS *number***

Using this keyword, you can specify the total number of parallel dispatchers (name: *archdp*) to SAP R/3 that the CommonStore Server establishes. The default is 1.

**EXAMPLE:**

```
DISPATCHERS 3
```

**Note**

If one dispatcher is blocked, the SAP Gateway will automatically take recourse to the next dispatcher.

**DPACTIVATION START|REGISTER**

Specifies how the dispatcher program should be activated. This setting refers to the setting in the SAP R/3 System (T-code SM59). If you register

the dispatcher program at the SAP Gateway, you have to provide a program ID in the **PROGID** statement in the profile and in the SAP system as well (T-code SM59).

If not specified, the default is REGISTER.

**Note:**

It is strongly recommended that the register mode be used.

**END**

Using this keyword, you can specify the end of the parameter definitions. When END is encountered, the CommonStore Server stops searching the configuration profile for keywords.

**ERRORLOG\_FILE** *filename*

Specifies a directory and a file in which all errors occurring during a CommonStore operation are recorded. The error log file is a text file. The entries in the error log file consist of one section per failed operation. The first error in a failed operation is recorded in the error log file. The entries in the error log file contain the following information:

1. Date and time when the error occurred.
2. Component where the error occurred (Tivoli Storage Manager, Content Manager, CMOD, R/3, and so on).
3. Return code, extended return code if present, reason code if present.
4. Error description obtained from the application programming interface or generated by CommonStore.

The error log file grows without size limitation.

**DEFAULT**

Value of INSTANCEPATH + "csserror.log"

**EXAMPLE**

```
ERRORLOG_FILE /CommonStore400/log/csserror.log
```

**FORMAT** *format*

Using this Content Manager-specific keyword, you can specify the Content Manager data format to be used for archived documents. The default is **TIFF6**.

**EXAMPLE:**

```
FORMAT SAPALF
```

**Note**

This keyword refers to the corresponding **ARCHIVE** statement and is used only for Content Manager archives.

**HARDKILL ON | OFF**

This parameter sets the hardkill-option for archstop. If archstop is unable to shutdown all CommonStore Server processes, this option should be checked.

**Note:**

It is strongly recommended that this parameter be used only if archstop is unable to shutdown all CommonStore Server processes.

**INDEX\_CLASS** *index\_class\_name*

For use with VisualInfo or Content Manager only. Specifies the index class that the CommonStore server uses to archive documents content. This index class must be defined on the corresponding Content Manager or VisualInfo library server.

**EXAMPLE:**

```
INDEX_CLASS TestClass1
```

**INSTANCEPATH** *path*

Specifies the directory in which the instance-related files (profile, configuration file, ...) are located. Create a sub-directory for each CommonStore server instance that you use. Set the INSTANCEPATH keyword for each instance, that is, for each instance specify a path that points to the related subdirectory. All instance-related files are maintained in these directories.

**DEFAULT**

Value of the BINPATH keyword.

**EXAMPLE**

```
INSTANCEPATH /CommonStore400
```

**LANGUAGE** *name*

Using this keyword, you can specify the language for the internal communication between the CommonStore Server and R/3.

**LIBSERVER** *server\_name*

Specifies the name of the Content Manager library server. CommonStore establishes a connection to this server with the subsequent definitions.

**EXAMPLE:**

```
LIBSERVER LIBSRVESD
```

**Note**

You only need this keyword if you want to use the recent *Archive documents with bar code* facility of CommonStore.

**LOG ON|OFF**

If you set this keyword to ON, CommonStore creates a log file containing information about all archived and retrieved data for each day.

The log files are generated in the following format:

```
aiyyyymmdd.log
```

where

- yyyy = the year,
- mm = the month, and
- dd = the day.

### LOGICAL\_SYSTEM *name*

Using this keyword, you can specify the logical system name customized in the SAP R/3 System (transaction code SCC4). This keyword appears in two places in the CommonStore Server configuration profile: in the DESTINATION statement and in the ARCHIVE statement.

The main location is the DESTINATION statement. There it unites the parameters set by using the CLIENT and the USER keywords, which are necessary for the connection to R/3. Each client can have its own user for sending CFBC/CFBA messages to the R/3 System. CommonStore uses these settings when asynchronous R/3 orders are answered. In the following example, the LOGICAL\_SYSTEM statement appears in the DESTINATION statement:

#### EXAMPLE:

```
LOGICAL_SYSTEM      T90CLNT090
CLIENT              800
USER                MUSTER
```

The LOGICAL\_SYSTEM specified in the ARCHIVE statement is only a reference to the main location. When for a request only the archive ID is known, then CommonStore uses the LOGICAL\_SYSTEM specified in the ARCHIVE statement to look up the connection parameters to R/3 from the corresponding LOGICAL\_SYSTEM specification of the DESTINATION statement. These connection parameters are necessary for sending the answer to R/3. You only need the LOGICAL\_SYSTEM specification in the ARCHIVE statement to archive documents via bar code using the late archiving method in connection with Content Manager or VisualInfo. In the following example, the LOGICAL\_SYSTEM appears in the ARCHIVE statement:

#### EXAMPLE:

```
ARCHIVE A1
STORAGETYPE        ADSM
SERVER             ADSMSERV02
MGMT_CLASS         SAP_MGMT02
ADSMNODE           CSTORE02
LOGICAL_SYSTEM     T90CLNT090
```

#### Note

This keyword refers to the corresponding DESTINATION and ARCHIVE statements. See also the explanation above.

### LOGPATH *path*

The value path defines the complete path to the log file. The log files' file names are generated automatically.

#### EXAMPLE:

```
LOGPATH /CommonStore400/log
```

### LU *hostname*

Using this keyword, you can specify the host the Application Server runs on (Logical Unit). If not specified, the default host name is *localhost*.

Enter the complete SAP router string, starting with /H. If TCP/IP firewalls are involved, the router string can be, for example:  
/H/tdben2/H/siccfw1.isicc.ibm.com/H/sapgate1/S/3297/H/hs8100

**EXAMPLE:**

LU /H/sapj30

**Note**

This keyword refers to the corresponding DESTINATION statement.

**MAXBCTTRANSFER** *number*

For use with Content Manager or VisualInfo only. The keyword allows you to specify the number of entries that the workbasket reads per scan and that are sent to SAP R/3.

**EXAMPLE:**

MAXBCTTRANSFER 100

**Note**

An archbc job always tries to send *all* documents with bar code for R/3 which can be located in the specified workbasket. This parameter determines only the maximum number of bar codes (maximum INSERT\_BARCODE\_RFC to SAP R/3) per R/3 call. You only need it to archive documents via bar code using the late archiving method.

**QUEUEPATH**

Specifies the directory in which the queue files are stored. Use this keyword to change the default queue directory, which is a subdirectory that is appended to the path you specified using the INSTANCEPATH keyword. The name of this directory is *queue*. See the following example:

**EXAMPLE:**

/CommonStore400/queue

**PROGID** *program\_id*

Using this keyword, you can specify the program ID under which the dispatcher program is registered on the SAP Gateway server. This keyword must be defined in the corresponding DESTINATION statement. It can be any name, but it has to be the same name as specified in the SAP R/3 system (transaction code SM59) in register mode.

**EXAMPLE:**

PROGID anyname

**Notes**

- This specified program ID must be the same one provided in the SAP R/3 System (transaction code SM59) and can be tested in the same SAP panel. This keyword refers to the corresponding DESTINATION statement.
- Make sure that the register mode is clicked in SAP R/3.

**REPORT ON|OFF**

If set to ON, the CommonStore Server produces some additional

information. The output is written to an output unit called stdout, which is normally the console. The default value is OFF.

**Note**

Set the keyword to ON for tracing purposes, for example, when you set up the CommonStore Server or track down errors.

**SAP\_CCSID**

Using this keyword, you can specify the code page of the SAP system. The code page determines the data format of outgoing print lists.

EXAMPLE:

```
SAP_CCSID 819
```

**SENDQ\_FILE** *filename*

Using this keyword, you can specify the complete path and file name of the send-queue file.

EXAMPLE:

```
SENDQ_FILE /CommonStore400/q_send
```

**SPLIT\_CRIT** *split\_criteria*

For use with Content Manager or VisualInfo only. Enabling this keyword causes the archive agent to automatically create a new index class in which search index information is stored if the value of *split\_criteria* is valid. Splitting index classes into regular intervals is strongly recommended in cases of large amounts of search index information in order to prevent the database tables from growing too big. *split\_criteria* consists of an R/3 database field name that must be available in the CommonStore export file generated by the CommonStore Index Transfer feature. In principle, every field found in the export file can be used to split the exported data into more than one index class. In the case of date, month, and year fields, the following special rules and constraints apply:

- `<field>[1A]`, where `<field>` must be a date or year field.
- `<field> [M01, ... ,M12]`, where M01 to M12 are the months of a year in any combination and `<field>` must be a date or month field.
- `<field> [M01, ... , M12,1A]`. This is the combination of the two aforementioned possibilities. `<field>` must be a date field in this case only.
- `<field> [1Q, ... ,4Q,1A]`. In this case, a quarterly split is performed. `<field>` must be a month field, and if 1A is used, it must be a date field. This is the same as splitting at the months 01, 04, 07 and 10, with the difference that the index classes are named `_1Q` instead of `_04`.
- `<field> [1H,2H,1A]`. In this case, a semi-annual split is performed. `<field>` must be a month field, and if 1A is used, it must be a date field. The splitting will be done at months 01 and 07. The index classes are named `_1H` and `_2H` instead of `_01` and `_07`. `<field>` is the name of a field in an R/3 table that is exported and can be found in the export file, while `<class>` is the name of an index class in Content Manager where the original archived documents can be found.

EXAMPLE:

```
SPLIT_CRIT BLDAT[1A]
```

**Note**

The keyword SPLIT\_CRIT can be specified for every Content Manager or VisualInfo archive.

**STARTUP\_TRACEFILE** *filename*

Specifies the full file name of the startup trace file. When a non-empty file name is specified, all CommonStore executables record messages during the initial startup phase in this file. This trace file is very useful in case of initial communication problems among the server executables. For all other problems, it is typically of no help. If the keyword is not specified, a startup trace file is not written.

**EXAMPLE:**

```
STARTUP_TRACEFILE /CommonStore400/trace/startup.trace
```

**Note**

The startup trace file is re-written at each start of the CommonStore Server.

**STORAGETYPE VI**

Using this keyword, you specify the archive system to which the logical archive is attached. CommonStore needs this information to select the proper archiving agent. As there is only one possible archive system for CommonStore for SAP on AS/400, the only possible value of this keyword is VI. Still, you must specify the storage type for each logical archive that you define.

**EXAMPLE:**

```
STORAGETYPE VI
```

**Note**

This keyword refers to the corresponding ARCHIVE statement and is used for all archives. Any further archiving parameters that you specify apply to the archive with this setting.

**SYSTEMTYPE SAPSYSTEM**

Specifies that CommonStore is used for SAP.

**EXAMPLE:**

```
SYSTEMTYPE SAPSYSTEM
```

**TEMPPATH** *path*

Specifies the directory in which the CommonStore Server writes temporary files needed for processing.

If this setting is missing in your server configuration profile, CommonStore checks the environment variable TMPDIR. If this variable is not set either, the temporary files are written to the system's temporary directory.

**EXAMPLE:**

```
TEMPPATH /temp
```

**TP** *service*

Using this keyword, you can specify the service with which the message



dispatcher at the R/3 gateway can be reached. If not specified, the default service is **sapdp00**. The last two digits are used for the SAP R/3 system ID.

**EXAMPLE:**

```
TP sapdp00
```

**Note**

This keyword refers to the corresponding DESTINATION statement.

**TRACE ON|OFF**

If set to ON, the CommonStore Server writes trace information into the trace file. If set to ON, a second trace is written: dev\_rfc. You can specify the directory of the RFC trace file by setting the environment variable RFC\_TRACE\_DIR for the desired directory. This trace is an SAP trace containing all RFC trace information.

If you specify the following parameters, you can force the CommonStore Server to write only specific trace information:

- DISP (for information on the CommonStore dispatcher program)
- FILEIO (for information on the input/output file activities)
- ARCHPRO (for information coming from the CommonStore archpro program)
- AGENTS (for information coming from the CommonStore VI agents)
- DEBUG (for debug information on the CommonStore Server)
- REPORT (for the information which is written to stdout)
- RFC (for switching on the dev\_rfc trace)

The value ON includes all of these parameters except for DEBUG.

**EXAMPLES:**

```
TRACE ON  
TRACE ARCHPRO RFC DEBUG
```

**Note**

This parameter should be used only for the purpose of detecting problems. If not specified, the default is **TRACE OFF**. Do not delete the trace file while the CommonStore Server is running as this will affect further writing to this file. Keep in mind that the RFC trace file and the CommonStore trace file could grow quite large in a very short time.

**TRACEFILE *filename***

Specifies the trace file for the CommonStore Server. All trace information stored is stored in this file. The value filename specifies the path and the name of this file. CommonStore uses this setting only if tracing has been activated. The default value is archint.trace.

**EXAMPLE:**

```
TRACEFILE /CommonStore400/trace/archint.trace
```

**Attention**

Do *not* delete a trace file while the CommonStore Server is running. Stop the CommonStore Server first by using the archstop command.

**TRACEMAX** *number*

Specifies the maximum size of the CommonStore Server trace file in KB.

**EXAMPLE:**

```
TRACEMAX 500
```

**TRANSFORM** *filter*

Using this keyword, you can specify an optional command to be invoked before archiving documents. The value of *filter* is a shell command that accepts the data delivered by SAP R/3 from standard input and writes the data to standard output. A non-zero exit code returned by *filter* is interpreted as a failure and results in an archiving error being reported to R/3. Note that the OS/400 - QShell Interpreter (5722SS1, Option 30) is required.

**EXAMPLE:**

```
TRANSFORM cat
```

**Notes**

- It is assumed that *filter* is re-entrant (that is, it can be invoked several times in parallel) to be able to handle parallel connections to the archive. If making the process re-entrant is not an option, the number of parallel connections to the archive (using the keyword VIAGENTS) has to be set to 1, thus serializing all requests.
- Where this is an issue, the CommonStore administrator is responsible for establishing an overall archiving process which holds up against audits. CommonStore itself performs checks on neither the command specified nor the data generated by this command.

**USER** *username*

Using this keyword, you can specify the SAP R/3 user name. The password corresponding to the user name and destination will be stored in the archint.cfg configuration file.

**EXAMPLE:**

```
USER MUSTER
```

**Note**

This keyword refers to the corresponding DESTINATION statement.

**VERSION** *version\_no*

Defines the CommonStore Server version. It is not used at the moment and is therefore not documented in the sample ini files.

**EXAMPLE:**

```
VERSION 1.4.6.1
```

**VIAGENTS** *number*

For use with Content Manager and VisualInfo only. Using this keyword, you specify the number of client sessions (name: *archagentvi*) that the CommonStore server starts in parallel. The default value is 0.

**EXAMPLE:**

```
VIAGENTS 3
```

**VIUSER** *username*

For use with Content Manager and VisualInfo only. Using this keyword, you can specify the user name for the log-in procedure.

**WAITQ\_FILE** *filename*

Using this keyword, you can specify the complete path and file name of the wait-queue file.

**EXAMPLE:**

```
WAITQ_FILE /CommonStore400/q_wait
```

**WB\_ERROR** *workbasket \_name*

Using this Content Manager-specific keyword, you can specify the workbasket where documents are saved that proved faulty when they were processed by the Content Manager agent. Usually, this workbasket is empty. Specify a corresponding workbasket in Content Manager.

**EXAMPLE:**

```
WB_ERROR SapScanSaveWB_A11
```

**Note**

This keyword refers to the corresponding ARCHIVE statement and is used only for Content Manager or VisualInfo archives. You only need it to archive documents via bar code using the late archiving method.

**WB\_SCAN** *workbasket\_name*

For use with Content Manager and VisualInfo only. This keyword allows you to specify the workbasket in which the scanning application temporarily stores scanned documents. Under normal circumstances, the workbasket is empty after the archive agent has processed these documents. Specify an appropriate workbasket in Content Manager or VisualInfo.

**EXAMPLE:**

```
WB_SCAN SapScanWB_A11
```

**Note**

This keyword refers to the corresponding ARCHIVE statement and is only used with Content Manager and VisualInfo archives. You only need it to archive documents via bar code using the late archiving method.

**WEBDPS** *number*

Specifies the number of parallel sessions for CommonStore Web access. The default value is 0.

**EXAMPLE:**

```
WEBDPS 5
```

**Note**

By default, Web access to the CommonStore archive is not enabled. To enable Web access, specify the WEBDPS keyword.

**WEBPORT** *port*

Using this keyword, you can specify the TCP/IP port number used to access the Web dispatcher using a Web browser. The port number must match the port number specified in the *~archive* section in the Web access service file for the SAP Internet Transaction Server (ITS).

**EXAMPLE:**

```
WEBPORT 5501
```

**Note**

The HTTP protocol used for communication with the Web dispatcher uses the TCP/IP port 8085 by default. If no Web server is running on the machine on which the CommonStore Server is running, the default TCP/IP port 8085 can be used.

**WEBROOT** *path*

Specifies the directory in which the HTTP interface of the CommonStore Server expects to find the files necessary for Web operations, such as browser viewing.

**EXAMPLE:**

```
WEBROOT /CommonStore400/webroot
```

---

## Appendix B. CommonStore Server commands

This command reference serves as a quick look-up guide that allows more experienced users to control CommonStore from a Windows Command Prompt. To illustrate the command syntax, syntax diagrams are employed. If you are not familiar with reading syntax diagrams, read the brief explanation in Appendix F, "Reading syntax diagrams" on page 147.

---

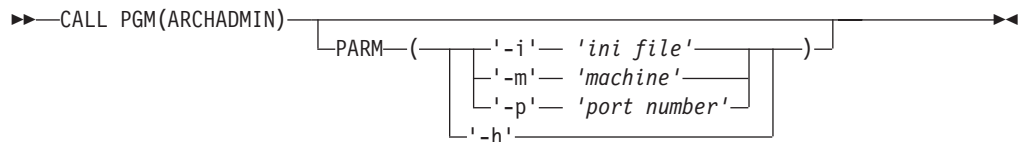
### ARCHADMIN

#### Purpose

This program allows a connection to a CommonStore Server to be opened in order to view the messages issued by the CommonStore Server. It is possible to open the connection across machine and platform boundaries.

#### Format

##### ARCHADMIN



#### Parameters

- m** *machine*  
Specifies the machine name or IP address of the computer on which the archpro program is running.
- p** *port number*  
Specifies the fixed port used by the archpro program.
- i** *ini file*  
Specifies the path and the file name of the server configuration profile used by the archpro program. Using this parameter, you can specify a file on the local machine only.
- h** Displays help information on how to use the archadmin command.

#### Comments

You connect a computer to another computer running the archpro program by specifying the machine name and the port number (parameters -m and -p). If you do not specify a machine name, CommonStore assumes that the machine to connect to is the one named `local_host`. The fixed port number can also be read from the server configuration profile. If you neither specify -p, nor -i, the required information is taken from the standard server configuration profile, the `archint.ini` file. Only port numbers above 5000 are accepted. Connections between different operating systems, for example Windows and AIX, are supported.

## Examples

**CALL PGM(ARCHADMIN)**

Connects to the archpro program by reading the port number from the archint.ini file

**CALL PGM(ARCHADMIN) PARM('-p' '5510')**

Connects to the archpro program by using the fixed port 5510

**CALL PGM(ARCHADMIN) PARM('-m' 'obelix' '-p' '5510')**

Connects to the archpro program running on a computer named obelix; the connection is established by using the fixed port 5510

**CALL PGM(ARCHADMIN) PARM('-m' '9.164.10.20' '-p' '5510')**

Connects to the archpro program running on a computer whose IP address is 9.164.10.20; the connection is established by using the fixed port 5510

**CALL PGM(ARCHADMIN) PARM('-i' '/CommonStore400\_2/archint.ini2')**

Connects to the archpro program running on the local machine. The port number is read from the specified server configuration profile (archint2.ini).

---

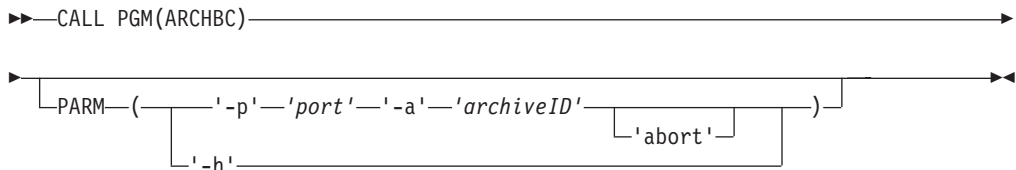
## ARCHBC

### Purpose

The ARCHBC program performs archiving operations via bar code.

### Format

**ARCHBC**



### Parameters

**-p** *port*

Specifies the fixed port used by archpro

**-a** *archiveID*

Specifies the logical archive containing the scan parameters and the final index classes

*abort*

Cancels the archiving operation

**-h** Provides help on the command syntax

### Comments

CommonStore accepts only port numbers above 5000.

## Examples

```
CALL ARCHBC PARM('-p' '5500' '-a' 'A1')
```

Starts the *move* operation on archive A1

```
CALL ARCHBC PARM('-p' '5500' '-a' 'A1' 'abort')
```

Cancels the *move* operation on archive A1

### Hint

In order to stop an ARCHBC run, it is recommended that you open another window and send the **abort** command from there. This allows you to continue receiving the ARCHBC messages in the first window.

---

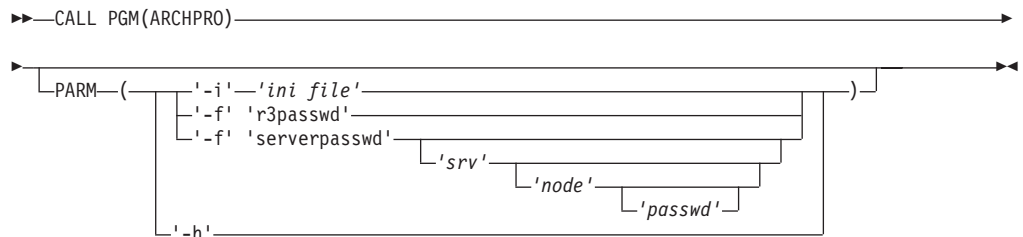
## ARCHPRO

### Purpose

The ARCHPRO program is the continuously running CommonStore main program which controls all other CommonStore components.

### Format

#### ARCHPRO



### Parameters

#### -i *ini file*

Specifies the path and the file name of the server configuration profile that you want to use, where *ini file* is the file name including path information.

#### -f **serverpasswd** [*srv* [*node* [*passwd*]]]

Use this parameter to specify the passwords for your Content Manager archives. You only have to do this once, when you set up CommonStore.

#### -f **r3passwd**

Use this parameter to specify the password of a logical R/3 system. You only have to do this when you set up CommonStore for SAP and when you must change the password.

#### -f **license**

Use this parameter to enroll a production license. You are then prompted to specify the license file.

#### -h

Displays help information on how to use the archpro command.

## Comments

Specify the name of the server configuration profile (ini file) by using the *-i* parameter if the CommonStore software is distributed among several subdirectories of the root directory. Specify the *-i* parameter before any other parameter.

## Examples

**CALL PGM(ARCHPRO)**

Starts the CommonStore Server with the default server configuration profile

**CALL PGM(ARCHPRO) PARM('-i' '/CommonStore400\_2/archint.ini2')**

Starts the CommonStore Server with the specified server configuration profile

**CALL PGM(ARCHPRO) PARM('-f' 'serverpasswd')**

Causes CommonStore to prompt you for all archive passwords

**CALL PGM(ARCHPRO) PARM('-f' 'serverpasswd' 'SRV')**

Causes CommonStore to prompt you for the passwords of the archive and of all nodes or users with access to this archive on the server named SRV

**CALL PGM(ARCHPRO) PARM('-f' 'serverpasswd' 'SRV' 'USR')**

Causes CommonStore to prompt you for the passwords of the archive and of the node or user named USR on the server named SRV

**CALL PGM(ARCHPRO) PARM('-f' 'serverpasswd' 'SRV' 'USR' 'PWD')**

Specifies the password PWD for the node or user USR with access to the archive on the server named SRV. Using the parameter in this way omits the prompting for the password.

**CALL PGM(ARCHPRO) PARM('-f' 'license')**

Causes CommonStore to prompt you for a license file of a productive license in order to enroll it

---

## ARCHSTOP

### Purpose

This program completely stops the CommonStore Server by means of a regular shutdown.

### Format

**ARCHSTOP**

►►CALL PGM(ARCHSTOP) PARM( ( '-p' 'port' ) ( '-i' 'ini file' ) ( 'now' ) ( '-h' ) )

### Parameters

**-p** *port*

Stops the archpro instance that uses the specified port



**-i** *ini file*

Stops the archpro instance using the port listed in the specified server configuration profile

**now**

Stops the specified archpro instance immediately, without waiting for active jobs to complete

**-h** Displays help information on how to use the archstop command

## Comments

The port number is essential in establishing a connection between a computer and the ARCHPRO program. The fixed port number can also be read from the server configuration profile. If you neither specify **-p**, nor **-i**, the required information is taken from the standard server configuration profile, the archint.ini file. Only port numbers above 5000 are accepted.

## Examples

**CALL PGM(ARCHSTOP)**

Stops archpro using the port number listed in the standard server configuration profile

**CALL PGM(ARCHSTOP) PARM('-P' '5510')**

Stops the archpro instance using port 5510 after all jobs have been completed

**CALL PGM(ARCHSTOP) PARM('-P' '5510' 'now')**

Stops the archpro instance using port 5510 immediately

**CALL PGM(ARCHSTOP) PARM('-i' '/CommonStore400\_2/archint.ini2')**

Stops the archpro instance using the port listed in the specified server configuration file



---

## Appendix C. Sample profile

The following section shows the sample server configuration profile as it is delivered on the product CD ROM. Although this profile was tested in a particular environment, it is unlikely that you can simply copy it as it is. Most probably, you must adjust the profile to make it work with your setup.

```
#####  
#  
#           CommonStore Interface to SAP R/3 ArchiveLink           #  
#  
#   (c) Copyright IBM Corporation 1997, 2002. All rights reserved. #  
#  
#                               Profile for CommonStore           #  
#  
#####  
  
#-----#  
# Path (directory) of the CommonStore binaries                    #  
#-----#  
BINPATH /QSYS.LIB/CS400V8.LIB  
  
#-----#  
# Path (directory) of the CommonStore instance.                  #  
# Should point to the instance directory of the server installation. #  
# All instance related files will be located in this directory, e.g. #  
# trace files, log files, config files, etc.                      #  
#-----#  
INSTANCEPATH /CommonStore400  
  
#-----#  
# REPORT          ON|OFF                                         #  
# Switches reporting to STDOUT on or off                          #  
#-----#  
REPORT          ON  
  
#-----#  
# TRACE          DISP FILEIO ARCHPRO AGENTS DEBUG RFC ON OFF    #  
# Switches trace levels                                           #  
#  
# Examples for usage:                                             #  
# TRACE          ON                                              #  
# TRACE          AGENTS RFC DEBUG                                #  
#-----#  
TRACE          OFF  
  
#-----#  
# Size of the trace file in KB                                     #  
#-----#  
TRACEMAX          5000  
  
#-----#  
# LOG            ON|OFF                                         #  
# Switches the writing of the log file on or off                  #  
#-----#  
LOG              ON  
  
#-----#  
# Path for temporary files                                        #  
#-----#  
TEMPPATH /tmp  
  
#-----#
```

```

# Path in which SAP R/3 is storing the data for CommonStore. It should
# be shared through all R/3 application servers via NFS mount.
#-----#
BASEPATH /sap/transfer/base

#-----#
# Path in which CommonStore is storing the data for SAP R/3. It should
# be shared through all R/3 application servers via NFS mount.
#-----#
ARCHPATH /sap/transfer/base

#-----#
# Technical connection parameters for SAP R/3. Similar to the sideinfo
# file provided by the SAP.
# Multiple LOGICAL_SYSTEM sections can be specified.
#-----#
DESTINATION          KD7
  PROGID             KD7.ARCHINT
  GWHOST              /H/sapserver
  GWSERV              sapgw00
  LU                  sapserver
  TP                  sapdp00
  LOGICAL_SYSTEM     T90CLNT090
  CLIENT              800
  USER                MUSTER

#-----#
# Technical connection parameters when ADSM is used as archive.
# Further entries with explicitly defined archive ID are needed
# if different Content Manager Servers and/or different Index Classes
# should be used for storing R/3 documents.
#-----#
ARCHIVE A1
  STORAGETYPE        VI
  LIBSERVER           LIBSERV2
  INDEX_CLASS        SapA10
  VIUSER              FRNUSER
  FORMAT              SAPALF

ARCHIVE A2
  STORAGETYPE        VI
  LIBSERVER           LIBSERV2
  INDEX_CLASS_SCAN   SapScanA11
  INDEX_CLASS        SapA11
  WB_SCAN             SapScanWB_A11
  WB_ERROR            SapScanSaveWB_A11
  VIUSER              FRNUSER
  LOGICAL_SYSTEM     T90CLNT090

#-----#
# Specifies how many documents will be transferred at the same time
# from the workbasket to the R/3 system
#-----#
MAXBCTRANSFER 100

#-----#
# Number of parallel instances of the CommonStore child programs
#-----#
DISPATCHERS 2
VIAGENTS 2
ARCHWINS 2
WEBDPS 0

#-----#
# TCP/IP port numbers used by CommonStore.
# ARCHWIN_PORT is used by archstop, archbc and the Windows DLL.
# WEBPORT is used by the web dispatcher for the internet access.

```

```
#-----#
ARCHWIN_PORT    5500
WEBPORT        5580

#-----#
# LUM
#-----#
SYSTEMTYPE      SAPSYSTEM
#-----#
# SAP CSSID
#-----#
SAP_CSSID 819
#-----#
# End of profile
#-----#
END
```



---

## Appendix D. Troubleshooting

This section provides solutions to known problems. Please refer to this section before you call IBM technical support. The most common problems are covered here. Applying a solution described in this book is usually less time-consuming than using external help. In case of problems with the supported archive system, see “Content Manager – troubleshooting” on page 56.

**Problem:** Archiving takes too long. Where is the bottleneck?

**Solution:** See the most common reasons:

- The archive server is overloaded. Content Manager can import only a limited number of documents simultaneously.
- The number of archiving agents is too low. If you create archiving jobs faster than the current number of agents can import documents, the documents are written to a queue. Increase the number of agents by increasing the value of the VIAGENTS keyword in the server configuration profile (usually the archint.ini file):  
Do not specify more than ten agents because this slows down the system due to swapping.
- The CommonStore Server has too little memory.
- Tracing is enabled.

**Problem:** The CommonStore Server does not start.

**Solution:** The CommonStore Server checks at startup whether all settings are correct and whether it was possible to establish a connection to the archive servers. Furthermore, all paths and files specified in the server configuration profile (usually archint.ini) must be accessible. Proceed as follows:

1. Make sure that the paths and files are accessible for the user. Do not use file names where directories are expected or vice versa. When there is no screen output of the archpro program, enable tracing by setting the keyword as follows:

```
TRACE ON
```

Look for error messages in the CommonStore Server trace files archint.trace and startup.trace.

2. Determine which child process has problems with the connection. The archpro program normally displays a corresponding error message.

The same error message is also found in the trace file. If you cannot find out which component failed, check them separately. Enable only one agent at a time.

**Problem:** How can I tell that a CommonStore child component is working (is ready)?

**Solution:** The connection is working when the archpro program displays the following messages:

- archpro.exe is informed that xxx has started (from the agents)
- archpro.exe is informed that xxx is ready to obtain order (from the agents)
- Dispatcher is ready and waiting for RFCs ... (only from dispatcher)

The message about xxx's start is sent by the child process immediately after the start. It means that a connection between archpro.exe and the child process has been established. The ready message is sent by the child after the corresponding check has been done. For the agents, this means that they have performed a log-on to the archive server and have verified all corresponding settings (user name, password, management class, index class, ...). When you see the ready message, you know that this component is working correctly.

---

## Reporting errors to the support team

To report an error to the CommonStore support team, open a problem management record (PMR). Make sure that you include the information listed in this section. When asked for files, include the versions that were created at the time when the error occurred.

- Description of your environment. Try to be as precise as possible when specifying the number of , the hardware configuration, the client configuration, the archive systems and their version numbers, any installed fixpacks, and other relevant software.
- Scenario description. What do you want to do? What exactly does not work?
- Error messages (literally)
- Is the problem reproducible? If yes, tell us how.
- Error log file
- Server configuration profile (usually archint.ini)
- Server trace files (usually archint.trace, archint.startup\_trace, and archservice.trace (for CommonStore Servers on Windows)). Note that the archint.trace file is truncated when it has reached its maximum file size. So make sure that it contains trace information of the time when the problem occurred. If not, try to reproduce the problem and stop the system.
- dev\_rfc
- If available, job logs of the failing components
- The last 50 records of the EKD0080 file in the <Ekdlbfil> file library of Content Manager.
- If CommonStore does not retrieve a document, can you retrieve it using the Content Manager Client?
- Any relevant job logs

### **Important**

The CommonStore support team expects the administrator to have read the documentation. Most problems occur in connection with incorrectly configured archives. In such cases, we ask you to consult Content Manager support.



---

## Appendix E. CommonStore Server return codes

Refer to the following list to look up the meaning of a particular return code. The codes are listed in numerical order. Therefore, take down the number in parantheses when you receive a return code message.

**CS\_RC\_OK (0)**

Operation completed successfully (no error).

**CS\_RC\_CLOSE\_SOCKET (-1)**

This return code indicates that the corresponding socket will be closed. Typically, this does not mean that an error occurred.

**CS\_RC\_CHILDINIT\_FAILED (-3)**

Initialization of a CommonStore child process failed. This indicates a startup problem of a CommonStore child process.

**CS\_RC\_CHECKARCHIVE\_FAILED (-5)**

A CommonStore agent could not be started because the startup check of the corresponding archive failed.

**CS\_RC\_VERSION\_ERROR (-6)**

CommonStore does not start because it detected a child process that was created by the wrong version of a program file. Replace the corresponding executable file with the correct version.

**CS\_RC\_CHILD\_TERMINATED (-10)**

CommonStore has detected that a child process has terminated unexpectedly. The child process is restarted automatically.

**CS\_RC\_SHUTDOWN (-99)**

CommonStore was shut down by a shutdown request from the archstop program.

**CS\_RC\_SHUTDOWN\_NOW (-100)**

CommonStore was shut down by an immediate shutdown request from the archstop program.

**CS\_RC\_NOMEM (-110)**

A CommonStore process is running out of memory.

**CS\_RC\_NOTFOUND (-115)**

The requested data was not found. See the CommonStore trace file for further details.

**CS\_RC\_ERRDELETE (-116)**

The archived document or component cannot be deleted. This error code can also occur when data is appended to a component or a component is updated.

**CS\_RC\_NOTSUPPORTED (-118)**

CommonStore is unable to carry out requested operation. Such operations can be, for example, index transfer requests sent to an agent of Tivoli Storage Manager or invalid actions for an update operation.

**CS\_RC\_FILENOTFOUND (-200)**

CommonStore cannot find a file or document.

**CS\_RC\_UNKNOWNDOC (-201)**

The requested document cannot be found in the archive.

- CS\_RC\_QUERYNOTFOUND (-202)**  
The document cannot be found in the archive. The query was unsuccessful.
- CS\_RC\_ACCESSDENIED (-203)**  
You do not have the proper access rights to process the archived document in this way.
- CS\_RC\_DOCEXISTS (-204)**  
The document cannot be archived because the same document already exists in the archive.
- CS\_RC\_ERRCERT (-205)**  
CommonStore failed when it tried to administer a certificate.
- CS\_RC\_COMPNOTFOUND (-206)**  
The component you want to append data to cannot be found in the archive. It probably does not exist.
- CS\_RC\_CONTREP\_NOTFOUND (-207)**  
The content repository (archive ID) you specified cannot be found in the server configuration profile (usually archint.ini).
- CS\_RC\_INVALIDOFFSET (-208)**  
The offset specified for the part retrieval goes beyond the end of document.
- CS\_RC\_FREESEARCH\_NOTFOUND (-210)**  
The specified pattern cannot be found in a free search request.
- CS\_RC\_ATTRSEARCH\_NOTFOUND (-211)**  
The specified pattern cannot be found in an attributed search request.
- CS\_RC\_OK\_VERSION1 (-213)**  
A document archived with CommonStore version 1 was found (no error).
- CS\_RC\_READONLY (-214)**  
The document cannot be modified in the archive because it was archived with CommonStore version 1.
- CS\_RC\_LOGSYS\_NOTFOUND (-215)**  
The DESTINATION statement in the server configuration profile does not contain the specified logical system or it does not contain any logical system at all.
- CS\_RC\_NO\_ATTR\_ARCHIVED (-216)**  
The plain document data was archived successfully, but all attributes provided in the attribute list were dropped because the archive cannot store them. This message is typically issued by the TSM agent when processing an archiving request with additional attributes created by CommonStore.
- CS\_RC\_NOCOPYGROUP (-217)**  
CommonStore cannot use the specified TSM management class due to a problem with the copy group.
- CS\_RC\_TRANSFORM\_FAILED (-219)**  
The invocation of the TRANSFORM command failed.
- CS\_RC\_NO\_AGENT (-220)**  
The CommonStore Server has received a request for an agent that is not configured in the server configuration profile (usually archint.ini). This request has been cancelled immediately.

**CS\_RC\_QUEUE\_ERROR (-221)**

The CommonStore Server cannot queue asynchronous jobs on disks. This job has been cancelled immediately. The CommonStore Server shuts down because a normal (safe) operation is not possible any more. Check the CommonStore Server queue directory before restarting the CommonStore Server.

**CS\_RC\_SAP\_ATTR\_NOTALLOWED (-240)**

An archiving operation failed because the attribute list in the archiving request contains one of the reserved SAP attributes. CommonStore creates these attributes automatically. They must not be specified a second time.

**CS\_RC\_SAP\_ATTR\_MISSING (-241)**

Certain SAP attributes required by CommonStore are missing in the index class or application group.

**CS\_RC\_FILEOPEN\_ERROR (-250)**

An error occurred when CommonStore tried to open a file or request its status.

**CS\_RC\_FILEREAD\_ERROR (-251)**

An error occurred when CommonStore tried to read data from a file.

**CS\_RC\_FILEWRITE\_ERROR (-252)**

An error occurred when CommonStore tried to write data to a file.

**CS\_RC\_ADSM\_ERROR (-260)**

An error has occurred in the TSM agent, but the related API call did not fail.

**CS\_RC\_VI\_ERROR (-261)**

An error has occurred in the Content Manager agent, but the related API call did not fail.

**CS\_RC\_OD\_ERROR (-262)**

An error has occurred in the OnDemand agent. Check the csserror.log file for a description of the error.

**CS\_RC\_HTTP\_REQUEST\_WRONG\_VERSION (-500)**

The HTTP request sent to CommonStore HTTP dispatcher did contain a newer version. This request is not yet supported by the current CommonStore HTTP dispatcher.

**CS\_RC\_HTTP\_REQUEST\_WRONG\_METHOD (-501)**

The HTTP request sent to CommonStore HTTP dispatcher did contain wrong HTTP method.

**CS\_RC\_HTTP\_REQUEST\_MISSING\_PARAMETER (-502)**

The HTTP request sent to CommonStore HTTP dispatcher did not contain all (or empty) mandatory parameters.

**CS\_RC\_HTTP\_REQUEST\_MISSING\_ENTITY (-503)**

The HTTP request sent to CommonStore HTTP dispatcher did not contain a body.

**CS\_DO\_WRONG\_SEARCHATTR (-1003)**

The search attribute pattern is incorrect.

**CS\_DO\_ARCHIVELIST\_EMPTY (-1004)**

A search operation failed because the list of archive IDs is empty.

**CS\_DO\_FOLDER\_ISEMPTY (-1006)**

The folder operation cannot be completed because the folder is empty.

- CS\_VI\_RETRIEVE\_ERROR (-1112)**  
The retrieval operation failed although the API functions did not return an error. The error occurred during additional consistency checks.
- CS\_VI\_TOO\_MANY\_HITS (-1114)**  
When searching a folder with the specified doc ID in the archive index class more than one hit was found.
- CS\_VI\_PARTS\_INCONSISTENT (-1116)**  
The part numbers returned by the Content Manager API are inconsistent. The are numbers missing in the sequence.
- CS\_VI\_INDEXCLASS\_NOTFOUND (-1118)**  
The index class cannot be found on the specified Content Manager server.
- CS\_VI\_CONTENTCLASS\_NOTFOUND (-1120)**  
The content class cannot be found on the specified Content Manager server.
- CS\_VI\_NO\_DATA\_RETURNED (-1121)**  
An API function does not return the requested data. However, the API function itself did not fail.
- CS\_BC\_RFC\_ABORT\_BY\_USER (-7095)**  
A user has stopped Archbc processing (no error).
- CS\_BC\_RFC\_ERROR\_TABLE (-7096)**  
The creation of the bar-code entry table failed. CommonStore was unable to send the bar codes to SAP.
- CS\_BC\_RFC\_ERROR\_INSERT (-7097)**  
The bar codes could not be sent to SAP because the remote function call ARCHIV\_BARCODE\_INSERT\_RFC resp. BAPI\_BARCODE\_SENDLIST failed.
- CS\_BC\_RFC\_ERROR\_CONNECTION (-7098)**  
CommonStore could not establish a connection with SAP. The remote function calls ARCHIV\_BARCODE\_INSERT\_RFC or BAPI\_BARCODE\_SENDLIST could not be carried out. No bar codes were sent to SAP.
- CS\_BC\_RFC\_NO\_DATA\_TO\_SEND (-7099)**  
The bar-code table is empty. Thus, bar codes cannot be sent to SAP.
- CS\_RC\_BC\_ARCHIVE\_FAILED (-7100)**  
The request to archive and send bar codes failed because the archiving operation failed. The bar code was not sent to SAP.
- CS\_VI\_ITEM\_IN\_WRONG\_INDEXCLASS (-7111)**  
An item cannot be re-indexed because it neither resides in the scan index class nor in the target component index class.
- CS\_VI\_ARCHIVE\_HAS\_NO\_SCAN\_IC (-7125)**  
The operation failed because a scan index class for the specified content repository (archive ID) is not defined.
- CS\_VI\_ARCHIVE\_HAS\_NO\_SCAN\_WB (-7127)**  
The operation failed because a scan workbasket for the specified content repository (archive ID) is not defined.
- CS\_VI\_ARCHIVE\_HAS\_NO\_ERROR\_WB (-7128)**  
The operation failed because an error workbasket for the specified content repository (archive ID) is not defined.

**CS\_RC\_CWI\_R3\_CONNECTION\_ERROR (-7201)**

The request to create a work item failed because CommonStore could not connect to SAP.

**CS\_RC\_CWI\_R3\_FAILED (-7202)**

SAP returned an error as it received the request to create a work item.

**CS\_RC\_CWI\_ARCHIVE\_FAILED (-7203)**

A work item could not be created because the archiving operation failed. The request to create a work item was not sent to SAP.

**CS\_RC\_SOCKET\_PROBLEM (-10000)**

A problem with the socket communication in CommonStore occurred. See the CommonStore trace file for further details.

**CS\_RC\_NO\_HANDLER (-10001)**

A CommonStore process received a request for which a message handler was not installed.

**CS\_RC\_INTERNAL\_ERROR (-10002)**

An internal error occurred in CommonStore or in the socket communication. See the CommonStore trace file for further details.

**CS\_RC\_WRONG\_TYPE (-10003)**

The parser detects a wrong data type when it receives a message over a socket.



---

## Appendix F. Reading syntax diagrams

This appendix explains how to read the syntax diagrams as used in Chapter 8, “Working with the CommonStore Server” on page 43 and in Appendix B, “CommonStore Server commands” on page 129.

To use a diagram, follow a path from left to right, top to bottom, adding elements as you go. In these diagrams, all spaces and other characters are significant.

Each diagram begins with a double right arrowhead and ends with a right and left arrowhead pair. Lines beginning with single right arrowheads are continuation lines.

▶▶—keyword—*variable\_value*—————▶◀

Keywords are all in lowercase, but can be entered in uppercase or in lowercase. Variable values that you provide are shown in *italics* and are usually in lowercase. Where values are shown in uppercase, they should be entered as they appear.

In a choice of items, the default item is always shown above the main line:

▶▶—keyword— $\left[ \begin{array}{l} \textit{default\_value} \\ \textit{other\_value} \\ \textit{other\_value} \end{array} \right]$ —————▶◀

Optional syntax elements are shown below the main line:

▶▶—keyword— $\left[ \textit{value} \right]$ —————▶◀

In some cases, when an item has additional items associated with it, an additional syntax diagram is shown that represents the full syntax of that item. For example, in the following syntax diagram, additional information that can or must be specified for ITEM1 appears in the “ITEM1 Variables” syntax diagram.

▶▶—keyword—*keyword\_name*—| ITEM1 |—ITEM2—————▶◀

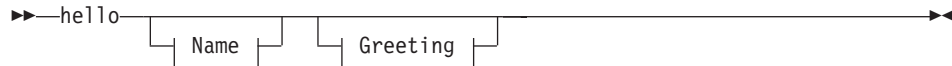
### ITEM1 Variables:

$\left[ \begin{array}{l} \textit{variable1} \\ \textit{variable2} \\ \textit{variable3} \end{array} \right]$ —————|

### Sample syntax diagram

The following is a sample syntax diagram. It shows the expressions that you can form with the hello command.

#### Hello Command



#### Name



#### Greeting



Valid versions of the hello command are:

```
hello
hello name
hello, how are you?
hello name, how are you?
```

Note that the space before the *name\_of\_person* value is significant and that, if you leave out a value for *name\_of\_person*, you still code the comma before **how are you?**.



---

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- *IBM EDMSuite ImagePlus VisualInfo: Messages and Codes*, GC31-9065
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- *Network File System Support V4R4*, SC41-5714
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