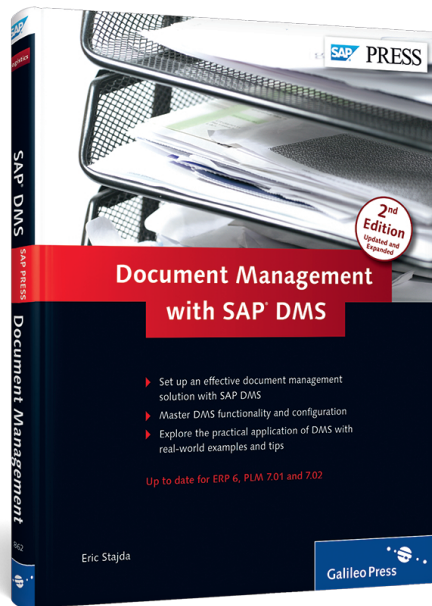


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Document Management with SAP® DMS



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Contents at a Glance

1	Introduction	19
2	Questions to Answer before Starting Your SAP DMS Project	25
3	SAP DMS Step-by-Step Instructions	43
4	Configuring SAP DMS	83
5	Infrastructure Requirements	119
6	SAP DMS Security	135
7	Frontends to SAP DMS	155
8	SAP PLM 7.02 DMS Web UI	177
9	Integrating a CAD System to SAP DMS	209
10	Simple Document Approval Process using SAP Workflow	217
11	SAP DMS BAdIs and User Exits	235
12	Conclusion	253
A	Glossary	261
B	Review of Menu Items	265
C	The Author	271

Contents

1	Introduction	19
1.1	What Is SAP DMS?	19
1.2	Benefits of SAP DMS	20
1.3	SAP DMS Project Complexity	21
1.4	Resources Required for a Project	22
1.5	How to Use This Book	22
1.6	A Note on the Availability of SAP DMS	23
1.7	Summary	24
2	Questions to Answer before Starting Your SAP DMS Project	25
2.1	Defining Which Documents to Manage with SAP DMS	25
2.2	How Documents Fit Into the Overall Business Process ...	26
2.3	How to Search for Stored Documents	27
2.4	Define the Lifecycle of Documents	28
2.5	The Change Control Process	29
2.6	A Formal Approval Process	29
2.7	Identify Business Roles and Mapping	30
2.8	Security Requirements	30
2.9	Defining Which Type of Application Files to Store	31
2.10	Document Numbering	32
2.11	Change History Requirements	32
2.12	Versions and Revisions	33
2.13	Management of Content Versions	34
2.14	Searching and Maintenance in Multiple Languages	34
2.15	Full-Text Search Requirements	34
2.16	Stored Document Volume and Size	35
2.17	Locations for Document Creators versus Consumers	36
2.18	Document Retention Requirements	36
2.19	Conversion to Neutral Format for Long-Term Retention	37

2.20	Interface with External Systems	37
2.21	Data Migration Requirements	38
2.22	Training	39
2.23	Organizational Change Impact	39
2.24	Summary	40
3	SAP DMS Step-by-Step Instructions	43
3.1	SAP DMS Transactions	43
3.2	Transaction CV01N: Creating a Document Information Record	44
3.2.1	Execute Transaction CV01N (Create Document)	44
3.2.2	Fill Out Relevant Fields on the Document Data Tab	45
3.2.3	Add an Original File	46
3.2.4	Check in an Original File	46
3.2.5	Fill Out Attributes on the Addnl Data Tab	47
3.2.6	Add a Language-Dependent Description	48
3.2.7	Link the New Document to Another SAP Object	49
3.2.8	Save the Document Information Record	52
3.3	Transaction CV02N: Changing a Document Information Record	52
3.3.1	Execute Transaction CV02N (Change Document)	53
3.3.2	Update the Description Field and Lab Office	54
3.3.3	Change the Status of the Document Information Record	54
3.3.4	Add Object Links	55
3.3.5	Save the Document Information Record	55
3.3.6	Create a New Version of the Document Information Record	55
3.3.7	Check Out the Original File Associated with the New Version	56
3.3.8	Check in the Original File after Changes	58
3.3.9	Add Another Original File to the New Version ...	58
3.4	Transaction CV03N: Displaying a Document Information Record	59

3.4.1	Display an Original File Associated with the Document Information Record	59
3.4.2	Display the Status Network	59
3.4.3	Review the Change History for the Document Information Record	61
3.4.4	Check How Many Versions Are Available for a Document Information Record	62
3.5	Transaction CV04N: Searching for a Document Information Record	62
3.5.1	Search for a Document Information Record by Document Type and User	64
3.5.2	Search for a Document Information Record by Document Type and Classification Attributes	65
3.5.3	Search for a Document Information Record by Object Link	66
3.5.4	Search Long Text for a Document Information Record	67
3.5.5	Full-Text Search	68
3.6	Additional SAP DMS Functionalities	68
3.6.1	Copy a Document Information Record	69
3.6.2	Delete a Document Information Record	69
3.6.3	Show the Sequence of Sources	69
3.6.4	Creating and Displaying the Document Hierarchy	69
3.6.5	Display the Status Log	70
3.6.6	Set and Display Revision Levels	70
3.6.7	Execute a Document Where Used	70
3.6.8	Create a Document Structure	71
3.6.9	Copy an Original File to a Local Directory	71
3.6.10	Reset Check-Out	71
3.7	Product Structure Browser	72
3.7.1	Select the Focus of the Product Structure Browser	73
3.8	Classification Search	75
3.8.1	Example Classification Search	75
3.9	Document Distribution	76
3.10	Internal Viewer	78
3.11	Summary	81

4 Configuring SAP DMS 83

- 4.1 Questions to Answer before Starting the Configuration 83
- 4.2 SAP DMS Configuration in the SAP IMG 84
- 4.3 Configuration Steps 84
- 4.4 Defining Number Ranges 84
- 4.5 Creating Document Types 86
 - 4.5.1 Configuration Location 88
 - 4.5.2 Configuration Example 88
 - 4.5.3 Configuration Steps 88
- 4.6 Defining Laboratories/Design Offices 103
- 4.7 Defining Revision Levels 104
- 4.8 Defining Workstation Applications 105
 - 4.8.1 Example Workstation Application: Microsoft Word 106
 - 4.8.2 Workstation Application Details 106
 - 4.8.3 Define Workstation Application in Network 108
 - 4.8.4 Define Templates for Original Files 110
 - 4.8.5 Set Up Microsoft Office Integration 110
- 4.9 Maintain a Default Entry for Frontend Type "PC" 111
- 4.10 Start Processing for Documents 112
- 4.11 Define Workstation Application for Thumbnails 114
- 4.12 Define Profile 115
- 4.13 Additional Configuration Items 117
- 4.14 Summary 117

5 Infrastructure Requirements 119

- 5.1 Content Server 119
 - 5.1.1 Content Server Requests 120
 - 5.1.2 Choosing Database- or File-Based Storage 121
 - 5.1.3 Key Transactions for the Content Server 121
 - 5.1.4 Content Server Quick Installation Guide 122
- 5.2 Cache Server 122
 - 5.2.1 Cache Size and Deletion 123
 - 5.2.2 Determining Path for Client Requests 124
 - 5.2.3 Key Transactions for the Cache Server 124

5.2.4	Customizing for the Cache Server	124
5.3	Index Server (TREX)	125
5.3.1	Benefits of Full-Text Searching	125
5.3.2	Executing a Full-Text Search	126
5.3.3	Use of TREX and SAP PLM 7.01	126
5.4	Conversion Server	127
5.4.1	SAP Software's Part in the Conversion Process ...	127
5.4.2	Sample Conversion Scripts and Tools	128
5.4.3	Configuration of the Conversion Server	128
5.5	Conversion with SAP Visual Enterprise Generator	129
5.6	Developing Your Infrastructure Architecture	131
5.6.1	Types of Users at Each Location	131
5.6.2	Which Functionalities to Implement	131
5.6.3	Wide Area Network Capability	132
5.7	Summary	133

6 SAP DMS Security 135

6.1	Defining Your Security Requirements	135
6.2	Standard SAP DMS Authorization Objects	136
6.2.1	Authorization Object C_DRAW_TCD: Activities for Documents	137
6.2.2	Authorization Object C_DRAW_TCS: Status- Dependent Authorization	138
6.2.3	Authorization Object C_DRAW_STA: Document Status	139
6.2.4	Authorization Object C_DRAW_BGR: Authorization Group	140
6.2.5	Authorization Object C_DRAD_OBJ: Object Link	141
6.2.6	Authorization Object C_DRAW_DOK: Document Access	142
6.2.7	Authorization Object C_DRZA_TCD: Activities for Recipient Lists	143
6.2.8	Authorization Object C_DRZI_TCD: Distribution Order	144
6.3	Additional Non-SAP DMS Authorization Objects	145

6.3.1	Authorization Object C_TCLA_BKA: Authorization for Class Type	145
6.3.2	Authorization Object C_KLAH_BKL: Authorization for Class Type	146
6.3.3	Authorization Object C_STUE_BER: Bill of Material Maintenance	147
6.4	Use of Access Control Lists	148
6.4.1	Override of ACL via Authorization Object ACO_SUPER	151
6.5	SAP PLM 7.01: Access Control Management	151
6.6	Customer-Specific Authorization Checks	153
6.7	Summary	154

7 Frontends to SAP DMS 155

7.1	WebDocuments	155
7.1.1	The Technology behind WebDocuments	156
7.1.2	Configuration of WebDocuments	157
7.1.3	An Example of Working in WebDocuments	160
7.2	SAP Easy DMS	164
7.2.1	SAP Easy DMS Installation	166
7.2.2	SAP Easy DMS Configuration	166
7.2.3	SAP Easy DMS and Microsoft Windows Explorer	166
7.2.4	Controlling SAP Easy DMS via Registry Settings	167
7.2.5	Additional Features When Working with Files in SAP Easy DMS	167
7.2.6	Additional Features When Working with Folders in SAP Easy DMS	170
7.2.7	Searching	171
7.2.8	Editing Offline	172
7.2.9	Adjusting the Layout	173
7.2.10	Using Filters	174
7.2.11	Effort for Implementing SAP Easy DMS	175
7.3	SAP DMS Portal iView	175
7.4	Summary	176

8	SAP PLM 7.02 DMS Web UI	177
8.1	Introducing the New Web UI for SAP DMS	177
8.2	Working with the SAP PLM 7.02 DMS Web UI	178
8.2.1	Logging Into SAP PLM 7.02 DMS via SAP NetWeaver Business Client	178
8.2.2	Create Document	179
8.2.3	Populate General Data	180
8.3	Additional Features of the SAP PLM 7.02 Web UI	188
8.3.1	My Objects	188
8.3.2	Simple Search	189
8.3.3	Advanced Search	191
8.3.4	Side Panel	192
8.3.5	"You Can Also" Functionality	192
8.3.6	Object Navigator	193
8.3.7	Personal Object Work List	194
8.3.8	Document Browser	195
8.3.9	Extended Document Browser	195
8.3.10	SAP PLM Web UI Inbox	197
8.4	SAP PLM 7.02 DMS Web UI Additional Configuration Items	197
8.4.1	SAP IMG Configuration Items	198
8.5	Summary	207
9	Integrating a CAD System to SAP DMS	209
9.1	Available SAP CAD Integration Interfaces	209
9.2	Capabilities and Benefits of CAD Interfaces	210
9.2.1	Capabilities	210
9.2.2	Benefits	211
9.3	SAP CAD Desktop	211
9.4	Example CAD Integration Scenario	213
9.5	CAD Data Migration	214
9.6	SAP Visual Enterprise Tools and CAD Data	214
9.7	Summary	215

10 Simple Document Approval Process using SAP Workflow 217

- 10.1 The Workflow Scenario 217
- 10.2 Required SAP DMS and Workflow Configuration 218
- 10.3 Creating the Workflow Definition 218
 - 10.3.1 Execute Transaction PFTC (Task: Maintain) 218
 - 10.3.2 Enter Information on the Basic Data Tab of the Workflow Definition 219
 - 10.3.3 Create New Container Element 220
 - 10.3.4 Save the Workflow Definition 222
 - 10.3.5 Add Triggering Event 223
 - 10.3.6 Start the Workflow Builder 223
 - 10.3.7 Set the Additional Start Conditions 224
 - 10.3.8 Add Tasks to the Workflow 225
 - 10.3.9 Activate the Workflow 231
- 10.4 Execute and Test the Workflow 231
- 10.5 Summary 233

11 SAP DMS BAdIs and User Exits 235

- 11.1 About SAP BAdIs and User Exits 235
- 11.2 BAdIs Relevant to SAP DMS 237
 - 11.2.1 BAdI DOCUMENT_MAIN01: General Document Processing 240
 - 11.2.2 BAdI DOCUMENT_THUMBNAIL: Enhancement for Thumbnails 241
 - 11.2.3 BAdI DOCUMENT_AUTH01: Checking Authorization from the DMS 242
 - 11.2.4 BAdI DOCUMENT_FILES01: Processing of Original Application Files 243
 - 11.2.5 BAdI DOCUMENT_STORAGE01: Transport of Original Application Files 244
 - 11.2.6 BAdI DOCUMENT_STATUS01: Status Checks ... 245
 - 11.2.7 BAdI DOCUMENT_MAIN02: Document Exits and Menu Enhancements 246
 - 11.2.8 BAdI DOCUMENT_NUMBER01: Checking the Attributes of the Document Key 247

11.2.9	BAdI: DOCUMENT_PROC01: Filter for SAP DMS Processes	247
11.2.10	BAdI DOCUMENT_WEB01: Enhancements for the DMS@Web Scenarios	248
11.2.11	BAdI DOCUMENT_OFFINTEGR01: Enhancements for Microsoft Office Integration	249
11.2.12	BAdI DOCUMENT_ECL01: Displaying Original Application Files with the Viewer	249
11.2.13	BAdI CONVERTER_MAIN01: Exits during Conversion	250
11.3	User Exits Available in SAP DMS	251
11.4	Enhancement of SAP DMS in PLM 7.01	252
11.5	Summary	252

12 Conclusion 253

12.1	SAP DMS: Now You Know It	253
12.1.1	Introduction	253
12.1.2	Questions to Answer before Starting Your SAP DMS Project	254
12.1.3	SAP DMS Step-by-Step Instructions	254
12.1.4	Configuring SAP DMS	254
12.1.5	Infrastructure Requirements	255
12.1.6	SAP DMS Security	255
12.1.7	Frontends to SAP DMS	255
12.1.8	SAP PLM 7.02 DMS WebUI	256
12.1.9	Integrating a CAD System to SAP DMS	256
12.1.10	Simple Document Approval Process using SAP Workflow	256
12.1.11	SAP DMS BAdIs and User Exits	257
12.2	The Future of SAP DMS	257
12.3	Summary	257

Appendices	259
A Glossary	261
B Review of Menu Items	265
B.1 Menu Option Document	265
B.2 Menu Option Edit	266
B.3 Menu Option Goto	266
B.4 Menu Option Extras	266
B.5 Menu Option Environment	267
B.6 Menu Option Originals	268
B.7 Additional Resources	269
C The Author	271
Index	273

This chapter reviews information you need to address before starting your SAP DMS project. This is the foundation to making sure your project will be successful.

2 Questions to Answer before Starting Your SAP DMS Project

Before starting your SAP DMS project, there are a number of questions you need to answer and considerations that you should take into account. At this point in the process, your focus should be more on defining your requirements and goals and less on what SAP DMS can do. After you prepare a solid foundation and plan, the information can be used effectively when you begin configuring and using SAP DMS.

Defining your requirements and goals is critical to project success. It's much easier to reach a goal efficiently with planning and insight. This chapter discusses the basic considerations you need to address before starting your SAP DMS project.

2.1 Defining Which Documents to Manage with SAP DMS

The first step in your SAP DMS project is defining the documents you want to manage. On a daily basis, a business can generate thousands of documents, which make up the intellectual capital and value of that business. Some generated documents are trivial, whereas others are critical to the production and sale of products. Critical documents include CAD drawings, test reports, product specifications, product literature, and financial documents. Without these critical documents, a company can't create, purchase, or sell goods. These are the types of documents that should be managed within SAP DMS.

If a company is using SAP software, business processes such as manufacturing, sales, purchasing, engineering, and finance are likely being executed and managed within the SAP system. When selecting which documents to manage within SAP DMS, you should select documents that support such business processes. Key documents are then gathered into one location where the business process is being executed. This makes the data more widely available and less difficult to find, and allows updates to be managed in a controlled manner.

Example

You want to manage all documents associated with the engineering change process you execute within the SAP system. Multiple documents are generated and controlled through this process, and these documents should be stored within SAP DMS.

2.2 How Documents Fit Into the Overall Business Process

The next important step is defining how the documents you want to manage fit into the overall business process with which they are associated. Are documents created or required at certain steps in the process? With which business objects are documents associated? Map out your business in a process flow. For each step in the flow, you can identify which documents are required. You should look at what is significant about each document and what it feeds downstream or what it triggers.

For example, it's a best practice that each company has a process for the development and introduction of new products. During this process, certain documents are required to move to the next phase or maturity level of the product design. If you're in the "prototype" phase of your product design, you'll need drawings released at a certain status, signifying that they can be used to build prototypes but not production parts. Along with the drawings, you may need documents such as specifications and finite elements analysis reports.

Example

Imagine that you work for a company that produces bicycles. Before a bicycle can be shipped from the factory, a document describing how the bicycle should be assembled by the consumer must be stored in the system, printed, and included as part of the overall package.

The assembly instructions are related to the finished good item material master for the bicycle in the SAP system and may be included as an item in the bill of materials (BOM). You might also have a business process or system check in place to make sure that the assembly instructions are stored in the SAP system before manufacturing and shipping of the bicycle can happen.

2.3 How to Search for Stored Documents

With SAP DMS, you aren't just storing files or attachments. Along with the files, you're also storing attributes. Examples of standard attributes stored with each file include the following:

- ▶ Description
- ▶ Owner
- ▶ Responsible lab office

Along with standard attributes, you can store additional attributes, which can be used to search for stored documents.

For example, if you're storing CAD drawings you might want to know in which CAD application and release of the application the drawings were created. You might also want to know the size of the drawing and which customers are using it. These are a few examples of additional attributes you might want to maintain.

This is an important topic, and you should make the necessary effort to define and add document attributes that are required to fulfill your search requirements. This will prevent you from creating an unstructured and unsearchable system.

Example

You plan on storing the resumes of all of your employees. When new positions or opportunities become available, you want to be able to search across the resumes to find qualified internal candidates, using the following attributes:

- ▶ Employee location
- ▶ Salary category (hourly, salaried)
- ▶ Willing to relocate
- ▶ Skill set
- ▶ Languages spoken
- ▶ Education level

Searching on these attributes will return a list of resumes that match the selection criteria.

2.4 Define the Lifecycle of Documents

Each document can have a lifecycle of its own. Think of a lifecycle as the time from which the document was created to when it becomes obsolete. Steps in between can include times when the document is in one of the following states:

- ▶ In work
- ▶ Pending approval
- ▶ Approved
- ▶ Released

At each step of the lifecycle, the SAP system can be configured to act in a certain way or perform certain actions, such as sending notifications when a document reaches the released state.

Example

When a document is in the released state, you can specify that no further updates can be made to the document without creating a new version. The released version remains as history in the system. Imagine that the released version relates to a certain design or release level of a product you are building. Because it remains as history in the system, you can always track back to the documentation that was used to build the product at that specific design or release level.

2.5 The Change Control Process

Another item you need to address and plan for before implementing SAP DMS is the change control process. That is, for documents being stored, you need to determine whether updates are controlled through a change control process. A change control process can involve controlling changes to a document through the SAP Engineering Change Management in the SAP system. This is a formal and rigorous process that can include capturing a reason for changes, elements of workflow, and required digital signatures for release. A formal change control process provides you with a complete history of when and why a document was updated, which is important for documents that are critical to business operation.

Example

Let's take the case of CAD drawings again. Manufacturing depends on these drawings to build the product in a correct manner. If there is no change process in place for these drawings, someone could update them at will and never communicate the changes. As a result, the engineering group might have one idea of how the product looks, and manufacturing might have another, different idea. A business can't operate in such a manner for any amount of time.

2.6 A Formal Approval Process

Before a document can become an official released version, it may have to go through a formal approval process. Typically, documents that are critical to the design and manufacturing of a product, such as CAD drawings, specifications, and design failure mode effects analysis, go through a formal approval process. This process can be facilitated through a workflow process and might require a digital signature. With a digital signature, the user is required to input a user name and password or other type of security information to validate that the user is signing off on or approving the document. The result of the formal approval is a released version of the document with a record of who approved it. Any further changes to the document can be made only by creating a new version.

Workflow process

Example

When a document reaches the Review status, a workflow process is started that sends a workflow notification to a reviewer. The reviewer reviews the document and decides if it should be released or sent back for rework. If the person decides that the document needs rework, he puts the document back into a status of "In Work" and provides the appropriate commentary back to the person who requested the review. If approved, the document is set to a status of "Released" and is locked to prevent further change. For additional changes to the document, a new version must be created. The released version remains in the system as history.

2.7 Identify Business Roles and Mapping

You need to make an effort to identify the different business roles that will be interacting with SAP DMS. This role mapping allows connections to process activities and which roles are connected to what people (and jobs) in the "to-be" process. Map the following to each identified role:

- ▶ Activities they will carry out
- ▶ Number of individuals in each role
- ▶ Where the individuals reside (if you have several business locations)
- ▶ Training they will require

Identifying the roles allows you to build a complete use case for SAP DMS that goes beyond just looking at a simple set of transaction codes.

2.8 Security Requirements

Next, you need to address security requirements for each document. Consider the following questions:

- ▶ What roles in the business are allowed to change each document?
- ▶ Does the document status need to be taken into consideration?
- ▶ When a document is in In Work status, should a select group be able to view it?

- ▶ When the document is released, should it be opened for everyone to view?

For example, all CAD drawings are viewable by everyone after they are released for production. A “released for production” design means that the manufacturing group is building a production product and that product is being sold to the consumer. Therefore, the design can be deconstructed and analyzed. Before a design is released for production, while in a “prototype” or “early development” stage, only the project team that is working on the design has access to view or change the drawings. This reduces the possibility of design secrets getting out before the product is released.

The SAP system provides a complex set of conditions you can use to control access to documents. Several conditions can be combined, including document type, status, and authorization group assigned to the document.

Tip

You can set up SAP DMS so that, for example, only a person in the role of Document Control under project F1100 can view documents that are in a status of “Pending Review.” After this is done, no other roles will have access.

2.9 Defining Which Type of Application Files to Store

Defining the type of application files to be stored within SAP DMS is important. The term *application file* is defined as the output file of a specific application. Sample applications include Microsoft Word, Excel, and PowerPoint. Each application can be configured in the SAP system to behave in a certain manner when an associated file is launched for display or change.

To define the appropriate application file types, take a look around your business and see what applications are being used. Most likely, it's a basic set of applications. The SAP system doesn't restrict the type of application files that can be stored. Therefore, you can store the output of just about any application in SAP DMS.

2.10 Document Numbering

Document numbering needs to be covered during every SAP DMS project. Companies have adopted various number schemes for differing reasons. In some cases, companies are using intelligent number schemes, where specific elements of the document number have specific meanings, are human readable, and may have developed out of a lack of having a computer-based system for managing documents. Some companies will have adapted to the idea that numbers have no meaning and are just numbers used to identify the document. In relation to SAP DMS, you need to think about how document numbers will be utilized. Every document stored in SAP DMS will be assigned a number as a system requirement. SAP DMS supports assigning internally generated sequential numbers to documents. SAP DMS also supports assigning an external number, which means that it can support intelligent document numbers if required. An external number may be alphanumeric, while internal numbers are purely numeric.

Best Practice

When doing implementations, we recommend using an internally generated number for documents as a best practice. Following this practice matches best with how the SAP system functions and limits user input.

2.11 Change History Requirements

SAP DMS keeps excellent track of all changes being made to documents stored within the system, including but not limited to, updates to attributes, when object links change, description changes, status changes, and each time a file check-in/check-out occurs. You will want to define your very specific change history requirements to make sure SAP is capturing everything required for your specific use case. As an example, you might consider having a requirement to record each time someone views a document. Some industries have additional audit requirements, in which the SAP change records may need to be extended. The process of extending the change records can be accomplished via enhancements using standard delivered SAP Business Add-Ins (BAdIs).

Example

Company A makes military goods. Documents related to its product designs are stored in SAP DMS. Due to legal requirements, any time a user changes a document, who changed the document and when must be recorded. The change record in SAP DMS captures this information as part of the standard change record.

2.12 Versions and Revisions

A *version* in SAP DMS is defined as a separate instance of a document information record that has its own status, such as In Work or Released. It is a snapshot in time. A *revision* level is assigned to a document version and is associated with a release state. It's usually used as a representation of a major change. For each document, you can store multiple versions. With each version, you can assign a revision identifier.

It's important to clarify what these terms mean to your business because they can become confusing. When you start to work with the system and start to speak of versions and revisions, each person may have a different picture in mind because, at times, the terms are interchangeable.

For example, you might create a document and store it in SAP DMS. On storing, an initial version of 00 is assigned to the document. Let's say you then decide that you want to save your work as a snapshot at version 00. To do so, you can create a new version of the document, to which version 01 is assigned. When your work on version 01 of the document is complete, you want to release this as an official revision of the document. You can release the document through a change control process that associates revision A to version 01. The "revision" indicator identifies to your business users that the document is an officially released document. Further changes will be made to version 02 of the document, and it may take many additional versions until a revision B is created.

Version and
revision example

2.13 Management of Content Versions

Within a specific version of a stored document, SAP DMS has the capability to store content versions of the files stored. A content version for a file is created each time the user checks in a file after a check-out. This allows for a complete history of updates made to the file. The system enables you to activate an earlier version of a file if required. This is a nice function if a later version has become corrupted or you've decided to go back to an earlier version. This feature allows you to also meet cases where by law or for liability, you're required to manage a complete history of file updates.

2.14 Searching and Maintenance in Multiple Languages

You should also consider whether you'll need to maintain certain attributes, such as "description," in multiple languages. This requirement is not uncommon in large companies that have locations and employees across the globe with business transactions performed in multiple languages. For such situations, the SAP system provides you with the capability to maintain entry, display, and searching of attributes in multiple languages. It is a good idea to plan for this up front because you'll need to take this into consideration when configuring the SAP system.

2.15 Full-Text Search Requirements

TREX Beyond basic searching on attributes (e.g., description, status, owner), SAP DMS offers you the capability to perform full-text searches on stored documents. As part of its overall capabilities, SAP NetWeaver Search and Classification (colloquially known as TREX) allows you to create a full-text searchable index of all documents stored within SAP DMS. Full-text searching capability is popular among users because it allows them to easily search across all stored documents with keywords. An additional advantage with full-text search is that TREX searching is much faster than a database search.

Example

Due to a product change, you need to find all documents that reference part # "P100". As part of the basic SAP DMS search transaction, you can enter a search term of "P100", and all indexed documents with "P100" referenced will be returned.

2.16 Stored Document Volume and Size

Having an idea of the volume of documents to be stored is helpful because the infrastructure, and specifically the content server, will need to be sized differently to support, for example, 10 thousand versus 10 million documents.

Also, understanding the average size of files being stored will help with network sizing. Document consumers will likely exist in a number of different geographic locations. Depending on where content servers are located, users viewing or changing documents stored in SAP DMS will be accessing files across a wide area network (WAN), which will impact the network's usage and sizing.

Example

At your company, the creators of CAD data are located in the Detroit office, where the content server is also located. The CAD data can be between 10MB and 35MB per file.

Individuals using the CAD data are located across the globe, in Europe and Asia. Each time an individual from Europe or Asia views the CAD data, it's accessed across the WAN and downloaded to the local PC. Because the files are very large, this can have a major impact on WAN utilization and on the time the user spends waiting for the document.

To address this, you can install a cache server at the different remote locations. Data is then cached at the remote site the first time it is viewed. Additional requests by individuals at the remote location will first go to the cache server to see if documents can be accessed there; only if this is not possible, will the requests go to the remote content server. If files can be pulled from the cache server, response times for delivering the files to users will be quicker, thereby decreasing the impact on the WAN's performance.

2.17 Locations for Document Creators versus Consumers

It's also best to identify the different geographic locations of creators and consumers of documents. A *creator* is someone who generates and stores documents in the system. A *consumer* is someone who searches for documents and displays them. If there are a large number of document creators at a specific location, such as at an engineering center, the site may require the installation of a local content server. At locations with a high number of document consumers, such as manufacturing plants, it might be beneficial to install a cache server. Following these two concepts will help decrease the impact on the performance of your WAN.

2.18 Document Retention Requirements

Document retention requirements define how long a document should be stored or be available based on business and legal requirements. Therefore, you need to review what your retention requirements are per document.

For example, in the construction industry, it's considered a best practice to retain all construction drawings and specifications for an indefinite period. Also, studies and reports that relate to a building's design must be maintained indefinitely.

Retention periods It's also best to address how a document should be handled after the retention period has passed. That is, you need to decide whether it should be archived or deleted. Considering document retention requirements is important mainly because the system must support the legal requirements of the business. If a lawsuit is brought forward against your company, you must be able to produce documents that support your case. In the case of product liability lawsuits, not being able to produce proper documentation can lead to catastrophic results.

Example

Your company has decided to keep all CAD data related to a product's design for a total of 15 years after the start of the product's production. When this period has been passed, all CAD data will be deleted from the system if the product is no longer being manufactured. To accomplish this, a process runs daily in the SAP system to see if any documents have passed the retention period. If so, they are marked for deletion. Then, using a different process, documents are permanently deleted from the system.

2.19 Conversion to Neutral Format for Long-Term Retention

For long-term retention, documents can be converted from their original application file format to a neutral file format such as TIF or PDF. If document retention requirements state that a document should be kept for the next 20 years, it's almost certain that the application the file was originally created in will no longer function at that point in the future. "Neutral" file formats such as TIF and PDF help solve this problem.

Example

On the release of product and packaging specifications stored in SAP DMS, all associated files are converted from the original Word format to the PDF format. This conversion is carried out automatically by the SAP system when the status of "Released" is reached. The trigger for the conversion is controlled through the SAP Implementation Guide (IMG) configuration and carried out on a conversion server, which is a component of the SAP Knowledge Provider.

2.20 Interface with External Systems

If you'll need to interface to any external systems to pull documents from or push documents to, SAP has a robust interfacing-facing technology, including SAP NetWeaver Process Integration (SAP NetWeaver PI), to support both options. This is an important consideration as you plan the correct infrastructure components to support such an interface.

Example

As part of controlled change process, specific documents are released in System A. These documents also need to be stored in SAP DMS for consumption by users in SAP. During the release process in System A, a message is sent from System A to SAP NetWeaver PI where the message is transformed and forwarded to the related SAP system. When the message is received in SAP, a document record is created in SAP DMS with the original file attached.

2.21 Data Migration Requirements

As part of your project, you'll likely have documents that need to be migrated from an external location into SAP DMS. Consider the following questions when planning your data migration:

- ▶ Where is the current location of the documents to be migrated?
- ▶ How many documents will be migrated?
- ▶ What is the average size of each file to be migrated?
- ▶ Which attributes will be migrated with each file?
- ▶ Are there relationships between files that need to be built as part of the migration?
- ▶ Will only the current version of a document be migrated or will all historical versions be migrated? (Try to spend time determining the value of historical versions before migrating everything.)
- ▶ If documents are stored in a legacy system, how will documents and attribute data be extracted?
- ▶ What are the validation procedures to confirm that documents are coming into SAP DMS correctly?

Planning your data migration is a crucial step to having a successful SAP DMS project. Answering the preceding questions can help you get a good grasp of the complexity of the migration and plan accordingly.

2.22 Training

You must consider how training will be carried out and how you might tailor it to different groups of users. For example, you may have some users who just need to log in to the system and display documents. Their training will be relatively simple in comparison to an administrator type role. The administrator might be responsible for creating, changing, and deleting documents, which requires additional training time.

For training methodology, consider what will be handled in classroom training, online training, or possibly prerecorded training. Classroom training is the most likely delivery method as the complexity of the activities to perform increases.

Tip

In an earlier section of this chapter, we asked that you start to think about high-level roles. You can use these roles as a starting point for mapping training requirements.

2.23 Organizational Change Impact

Now, take time to look at the organizational change management (OCM) aspects of implementing SAP DMS. When implementing SAP DMS, activities that individuals currently do will surely change, and new responsibilities and tasks will be created. The goal here is to document these activities and how they impact individuals. Some of the benefits of OCM include the following:

- ▶ Change is identified early in the process.
- ▶ Roles and responsibility changes are communicated earlier in the process. The surprise factor is removed because individuals know what to expect.
- ▶ Individuals have more time to prepare for change.
- ▶ Risks can be identified early, allowing for overall project risk to be reduced.

Example

Company A has a process where an individual receives released documents from the Engineering group via email and then logs into a system to store the released file. In the future, the Engineering group will directly log in to the SAP system and store the released files. In this case, the individual who was receiving the documents via email can now focus on more value-added activities.

2.24 Summary

In this chapter, we've reviewed important issues you need to address before an SAP DMS implementation. It's important that you define your goals and prepare for moving into the next steps of your SAP DMS project: using and configuring the system.

You should have answers to the following questions:

- ▶ What documents do you want to manage with SAP?
- ▶ How do documents fit in to the overall business process?
- ▶ How do you want to search for documents?
- ▶ What is the change control process?
- ▶ Is there a formal approval process?
- ▶ Which business roles are involved in the process?
- ▶ What are the security requirements?
- ▶ What type of application files will be stored?
- ▶ Do you have any special requirements around document numbering?
Will you use internal or external numbering?
- ▶ Are there any special change history requirements?
- ▶ How are versions and revisions used in your business?
- ▶ Will you maintain content versions for stored files?
- ▶ Do you need to support searching and maintenance in multiple languages?
- ▶ Do you need to enable full-text searching capabilities?
- ▶ What is the volume and size of documents to be stored?

- ▶ Are there document retention requirements?
- ▶ Do documents need to be converted to a neutral format for long-term retention?
- ▶ Will you be interfacing with external systems?
- ▶ What are the data migration requirements?
- ▶ Who needs to be trained? What training methodology do you expect to use?
- ▶ How will implementing SAP DMS impact your organization?

The more clearly you can answer these questions, the more successful your project will be in the long run.

Next, in Chapter 3, you'll learn how to execute basic SAP DMS transactions and other functions.

Index

A

ABAP, 113
ABAP Objects, 235
Access control list, 136, 148, 185, 261
Access control management, 151, 180, 185, 261
ACO_SUPER, 151
Activities for documents, 137
Activities for recipient lists, 143
Additional attributes, 27, 44, 47, 86, 99
Additional Data tab, 65
Additional Files checkbox, 108
Addnl Data tab, 47
Adjusting the layout, 173
Advanced search, 191
Alternative Screen, 90
Application file, 31
Appl. Icon, 107
Archive identification field, 107
Archiving Authorization, 89
AScEx., 90
Attachments, 27
Authorization for class type, 145, 146
Authorization group, 136, 140, 261
Authorization objects, 136, 137
Authorizations tab, 185
AutoCAD, 79, 210, 214
AutoDesk Inventor, 210

B

Backup and restore, 121
BAdI, 235, 257
 CDESK_BADI_MAIN, 239
 CONVERTER_MAIN01, 239, 250
 DOCUMENT_AUTH01, 136, 237, 242
 DOCUMENT_BROWSER, 237
 DOCUMENT_ECL01, 238, 249
 DOCUMENT_FILES01, 238, 243
 Document_Main01, 235

BAdI (Cont.)

DOCUMENT_MAIN01, 238, 240
DOCUMENT_MAIN02, 238
DOCUMENT_MAN02, 246
DOCUMENT_NUMBER01, 238, 247
DOCUMENT_OBJ, 238
DOCUMENT_OBJ1, 238
DOCUMENT_OBJ2, 238
DOCUMENT_OFFINTEGR01, 238, 249
DOCUMENT_PROC01, 239, 247
DOCUMENT_SEARCH01, 239
DOCUMENT_STATUS01, 239, 245
DOCUMENT_STORAGE01, 239, 244
DOCUMENT_SYSTEM01, 239
DOCUMENT_THUMBNAIL, 239, 241
DOCUMENT_WEB01, 248
DOCUMENT_WEB01 DMS, 239
EASYDMS, 239
EASYDMS_MAIN01, 239
/PLMI/CL_DIR_BRW_EXPL_SETNGS, 252
/PLMI/CL_EX_DIR_LINK, 252
/PLMI/IF_EX_DIR_THMB, 252

BCV, 192

Bill of material maintenance, 147

BMP, 79

BOM, 27

BOR Object Type category, 223

Business Context Viewer, 192

Business objects, 26

Business process, 26

Business role, 30

Business Server Page, 156

Business users, 22

C

Cache server, 35, 119, 122, 255, 261

Customizing, 124

Cache size and deletion, 123

- CAD, 209
 - application, 27*
 - benefits, 210*
 - data, 35, 37*
 - data migration, 214*
 - Desktop, 209, 211*
 - drawings, 25, 27, 29, 31*
 - integration, 209*
 - integration scenario, 213*
 - CAD indicator, 91, 261
 - CAD interface, 261
 - Calcomp, 79
 - CALS MIL-R
 - Type I and Type II, 79*
 - CATIA V4, 210
 - CATIA V5, 210, 214
 - CDESK_ADD_FUNCTION, 239
 - C_DRAD_OBJ, 141
 - C_DRAW_BGR, 137, 140
 - C_DRAW_DOK, 142
 - C_DRAW_STA, 139
 - C_DRAW_TCD, 137
 - C_DRAW_TCS, 137, 138
 - C_DRZA_TCD, 143
 - C_DRZI_TCD, 144
 - CGM, 79
 - Change control process, 29
 - Change Docs, 89
 - Change history, 32
 - Change number, 261
 - Characteristics, 100
 - Characteristic Values tab, 184
 - Check In, 93
 - C_KLAH_BKL, 146
 - Class, 75, 90
 - Type, 75, 90, 100*
 - Class characteristics, 76
 - Classes tab, 183
 - Classification Search, 43, 75
 - CM Relevance, 89
 - Comparison tool, 249
 - Condition builder, 224
 - Configuration in SAP IMG, 84
 - Configuration of WebDocuments, 157
 - Construction drawings, 36
 - Consumers, 36, 131
 - Container element, 220
 - Content server, 35, 119, 131, 255
 - request, 120*
 - single, 132*
 - Content version, 34, 93, 261
 - Content version checkbox, 108
 - Conversion, 37
 - Conversion process, 86, 239, 250
 - Word to PDF, 127*
 - Conversion scripts and tools, 128
 - Conversion server, 119, 127, 131, 255, 261
 - Created In Cad, 262
 - Create document, 179
 - Creating document types, 86
 - Creators, 131
 - CSProxyCache.INI, 123
 - C_STUE_BER, 147
 - C_TCLA_BKA, 145
 - Custom authorization check, 137
 - Customer authorization check, 153
 - CVAW_ENTIRE, 156
-
- ## D
- Data check off checkbox, 108
 - Data migration, 38
 - Default Appl., 90
 - Default class, 99, 102
 - Define
 - laboratories/design offices, 103*
 - object links, 98*
 - profile, 115*
 - revision levels, 104*
 - workstation applications, 105*
 - Define search sequence for viewable file, 199
 - Delete file after check-in, 108
 - Deletion Indicator, 69, 112
 - Description, 27
 - DGN, 79
 - Dialog when overwriting checkbox, 107
 - Digital signature, 29
 - Distribute originals, 76
 - Distribution order, 143
 - Distr. Lock, 93
 - Dis. WS applic., 90

Document access, 142
DOCUMENT_AUTH01, 153
Document Browser, 195, 262
Document Creators, 36
Document description, 262
Document distribution, 76, 262
Document hierarchy, 69
Document information record, 262
 copy, 69
 create, 44
 delete, 69
 search, 67
 searching for, 62
 versions, 62
Document key, 262
Document numbering, 32
Document owner, 262
Document part, 262
Document processing, 112
Document retention, 36, 263
Document status, 30, 136, 139, 263
Document structure, 71
 original file check, 71
Document Structure indicator, 263
Document type, 136, 218, 263
 configuration example, 88
 steps for configuration, 88
Document Type, 44, 89
 Description, 89
Document version, 263
Drag and drop, 164

E

ECL viewer, 238, 249, 263
Editing offline, 172
EDMICS C4, 79
Engineering change, 26
Engineering Change Management, 29,
 91, 93
Enhancement package 5, 24
Enhancement package 6, 23
Event, 223
Example workstation application, 106
External Number Range, 90

F

File format field, 107
File Size, 90
File Suffix For Appl., 107
Fld. Sel., 94
Folder creation, 198
Folders in SAP Easy DMS, 170
Folder structure, 165
Formal approval process, 29
Form routine, 94
Frontend type, 263
 PC, 111
Full-text search, 34, 68, 126
 benefits, 125
Full-text search, 34

G

General task, 227
GIF, 79, 115

H

HPGL/HPGL-2, 79
HP ME 10/30 MI, 79
HTTP, 120

I

Icon for release status, 201
I-deas, 210
IGES, 79
Indexing process, 68
Index server, 263
Index server (TRES), 119, 125, 131
Infrastructure requirements, 119, 255
Initial status, 92
Initial version, 33
Integrated viewer, 109
Interface with external system, 37
Internal Number Range, 89
Internal viewer, 78

J

JPEG, 79
 JPG, 115
 JT
 Direct Model, 79

L

Lab office, 263
 Lab Office field, 103
 Language-dependent description, 48
 Layers, 80
 Lifecycle, 28
 document, 28
 Local Object button, 222
 Logging into SAP PLM 7.02 DMS, 178
 Long-term retention, 37

M

Material master, 182
 MaxCacheSize, 123
 ME10, 210
 Measurement tools, 80
 Medusa, 210
 Microsoft Office, 257
 Microsoft Office integration, 109
 Microsoft Windows Explorer, 166
 Microsoft Word, 106
 Microstation, 210
 MIL-RII Ð TRIFF, 79
 MIME type field, 107
 Multiple languages, 34
 Multiple original files, 58
 Multi-step workflow definition, 218
 My Objects feature, 188

N

Neutral file, 263
 Neutral format, 37
 New version
 create, 55

Non-SAP DMS authorization object, 145
 Number Assignment, 89
 Number Exit, 90
 Number ranges, 84
 external, 84
 internal, 84

O

Object Check, 93
 Object link, 50, 55, 141, 182, 263
 Object linking, 86
 Object Links, 49
 Object Links tab, 66
 Object Navigator, 193
 Object oriented programming (OOP),
 236
 Object type
 DRAW, 223
 Office integration, 238, 249
 Organizational change management, 39
 Original file, 52, 121, 238, 243, 264
 add, 46
 change, 56
 check in, 46, 58
 copy, 71
 display, 59
 Originals Processing tab, 184
 Override of ACL via authorization
 object, 151
 Owner, 27

P

PCT, PICT, 79
 PCX, 79
 PDF, 37
 Personal Object Work List, 194
 PNG, 79
 Portal iViews, 155
 Prev. 1-6, 94
 Processed Documents button, 53
 Process route, 186, 204, 264
 Product Structure Browser, 43, 72
 Pro/Engineer, 210

Profile key, 116
 Program
 MCDOKDEL, 69
 Program exit, 94
 Project resources, 22
 Project type authorization, 140
 Prototype, 26
 PS, 79

R

RAS, 79
 Redline and markup, 264
 Redlining of images, 80
 Registry settings, 167
 Released, 31, 217
 Release Flag, 70, 93
 Release Level, 28
 Rename temporary file, 107
 Report
 MCDOKDEL, 114
 Reset check-out, 71
 Responsible lab office, 27
 Retention period, 36
 Review the change history, 61
 Revision, 33, 264
 Revision level, 70, 104
 Rev. Lev. Assgmt., 89
 Right hemisphere, 264
 Roles, 30

S

SAP application consultant, 22
 SAP Basis/IT infrastructure resources, 22
 SAP Business Workplace, 232
 SAP Classification System, 47
 SAP DMS, 19
 availability, 23
 BAAls and user exits, 257
 benefits, 20
 CAD system, 256
 configuring, 83, 254
 frontend, 155, 255
 future outlook, 257

SAP DMS (Cont.)
 portal iView, 175
 project complexity, 21
 project questions, 254
 security, 255
 step-by-step instructions, 254
 transactions, 43
 SAP DMS Project, 254
 SAP Easy DMS, 155, 164, 237
 configuration, 166
 implementing, 175
 installation, 166
 SAP Easy DMS, 264
 SAP ECC 6.0, 23
 SAP Enhancements, 236
 SAP GUI, 155, 178
 SAP IMG configuration items, 198
 SAP Knowledge Provider, 37
 SAP MaxDB, 121
 SAP NetWeaver Business Client, 178
 SAP NetWeaver Process Integration, 37
 SAP PLM 7.0, 177
 SAP PLM 7.01, 23, 78, 126, 151, 240, 252
 SAP PLM 7.02, 23, 177, 256
 Web UI Features, 188, 197
 SAP Visual Enterprise, 214
 Author, 215
 Generator, 78, 129, 134, 215
 Viewer, 78, 130, 215, 264
 Searching, 171
 Search requirements, 27
 Secure storage, 47, 253
 Security, 44, 135
 Security requirements, 30, 135
 Sending notifications, 28
 Sequence of sources, 69
 Set Up Web Documents, 157
 Side Panel, 192
 Sign.Strat., 94
 Simple document approval, 256
 Simple Search feature, 189
 Solid Edge, 210
 SolidWorks, 210
 Stamping functionality, 238, 249
 Standard attributes, 27
 Standard SAP authorization object, 137

- Start Authorization checkbox, 107
 - Start conditions, 224
 - Start processing for documents, 112
 - Status Change, 89
 - Status-dependent authorization, 138
 - Status log, 70, 264
 - Status network, 44, 55, 70, 86, 92, 264
 - display*, 59
 - graphic*, 97
 - Status Type, 94
 - Steps to configuration, 84
 - Stereolithography (STL), 79
 - Storing files, 27
 - Superior Document, 69, 264
 - System architecture, 131
- T**
-
- Technology behind WebDocuments, 156
 - Templates for original files, 110
 - Terminating events tab, 227
 - Thumbnail, 114
 - TIF, 37, 79
 - Training, 39
 - Transaction
 - CC04*, 43, 72
 - CDESK*, 211
 - Change Document*, 52
 - CL02*, 100
 - CL30N*, 43, 75
 - Class Maintenance*, 100
 - CSADMIN*, 122
 - CV01N*, 43, 69, 246
 - CV02N*, 43, 53, 246
 - CV03N*, 43, 59, 246
 - CV04N*, 43, 63, 77, 112, 115, 171, 239, 247
 - CV11*, 71
 - CV18*, 76
 - CV19*, 77
 - Display Document*, 59
 - Distribution Log*, 77
 - LPD_CUST*, 202
 - Transaction (Cont.)
 - OACO*, 122
 - OACT*, 122
 - PFTC*, 218
 - SBWP*, 232
 - SCMSCA*, 124
 - SCMSHO*, 124
 - SCMSIP*, 124
 - SCMSMO*, 122
 - SE18*, 235
 - SE38*, 69, 114
 - SE80*, 156
 - SMOD*, 236
 - SPRO*, 84
 - Start Document Distribution*, 76
 - SWU3*, 218
 - Transport request, 225
 - TREX, 34, 126, 255, 263
 - Triggering event, 223
 - TXT, 79
- U**
-
- UG NX, 214
 - Unigraphics, 210
 - URL, 239, 248
 - Use KPro, 89
 - User exit, 235, 251, 257
 - CV000001*, 236, 251
 - CV110001*, 251
 - CVDI0001*, 251
 - CVDI0002*, 251
 - CVDI0003*, 251
 - CVDI0004*, 251
 - CVDI0005*, 251
 - CVDI0006*, 251
 - CVDI0007*, 251
 - CVDI0008*, 251
 - CVDI0009*, 251
 - CVDI0010*, 251
 - CVDI0011*, 251
 - CVDI0020*, 251
 - CVDS0001*, 251
 - Using filters, 174

V

Valid from, 264
Version, 33
Version Assgmt., 89
Vers. No. Incr., 90
Viewer application, 202
Virtual Reality Modeling Language
(WRL), 79

W

WebDocuments, 155
 configuration, 158
WebDocuments frontend, 155, 160
WebUI, 256
 Inbox, 197

White list setup, 205
Wide area network capability, 132
Workflow
 adding tasks, 225
 Builder, 223
 definition, 218
 notification, 217
 scenario, 217
Workflow Task
 Object Type/Object ID, 94
Workstation application, 105, 107, 116,
 200, 264

Y

"You can also" link, 192, 202