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Andy Klee ...
Out of My Mind

Welcome to the first issue of ERPtips Knowledge Express. I appreciate that you are taking time out of your busy day to read this issue. I'll try to be brief and to the point, so you can get to the 'good stuff' – the heavily curated content from our SAP experts.

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Andy Klee...Out of My Mind

First, the numbers. In 2003, we started publishing SAP tips and techniques, and today our online library of content includes 7,000 pages of detailed SAP documentation. 7,500 individual SAP clients and consultants have downloaded ERPtips content 200,000 times in the past decade—finding SAP solutions much like the ones featured in this premiere edition of our new publication.

The new Knowledge Express publication represents both our corporate and my personal commitment to providing a steady stream of useful SAP solutions—covering all the core applications and technology, combining step-by-step instructions with the complete 'backstory'—the why and not just the how.

Many of you are already aware that we focus on providing SAP training in a rich variety of formats—public and onsite, on-premise and virtual—for project teams, end users, and Super Users. But there is nothing more important to me than producing this publication—it is how we started, and it is the lifeblood of my career in ERP.

That's really all I need to say. We are committed to ERPtips Knowledge Express.

Many thanks,

Andy

Andy Klee, Publisher and President
Klee Associates, Inc.

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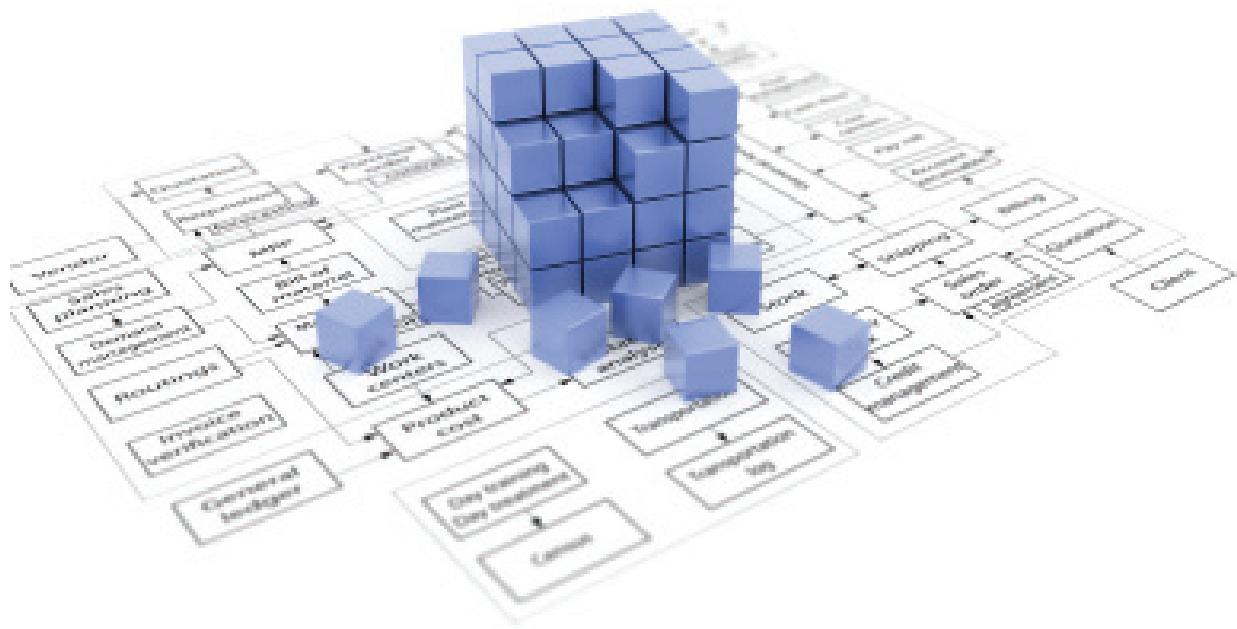
Floorplan Manager – What It Can Do For You
A Guide for SAP Developers and Consultants
By Rehan Zaidi

Editor's Note: If you haven't worked with Floorplan Manager since its introduction in NetWeaver Release 7.01, you should read this article. It brings us up to the present, walks us through an overview, then discusses the three available floorplans. There is also discussion of Free Style UBBs and Generic UI Building Blocks. These are all valuable tools in creating visually-consistent Web Dynpro applications.

Introduction

Starting with NetWeaver Release 7.01, SAP delivered the Floorplan Manager (FPM) framework for developing Web Dynpro for ABAP applications. This went through considerable improvements and additions in the subsequent releases. It is important to know how to work within the Floorplan Manager, as a mastery of this knowledge will help save you time and effort, and will enable you to build Web Dynpro applications that are of a uniform visual consistency.

Some of the questions that this article addresses are:

- What is the Floorplan Manager?
- What are User Interface Building Blocks (UIBBs)?
- What are the available floorplans?

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What are Generic UI Building Blocks (GUIBBs)?

This article is the first in a series on FPM and will cover the basics of the Floorplan Manager and its advantages. I will start with a brief explanation of the Floorplan Manager, and then I will move on to look at the available floorplans, the usage of Generic UI Building Blocks, and finally how to use your own Web Dynpro component views in an FPM application.

The concepts covered in this article may be applied to other objects as well. Throughout the article, terms may be used interchangeably. This article is primarily intended for SAP technical consultants. I will assume that the reader is familiar with basic Web Dynpro for ABAP concepts. For more information, refer to the SAP documentation on http://help.sap.com.

Floorplan Manager: An Overview

The Floorplan Manager (FPM) may be defined simply as the framework that provides templates (floorplans) allowing you to create uniform design Web Dynpro for ABAP applications in a short amount of time. There are three commonly used floorplans available that may be used as the basis of your applications, namely OIF (Object Instance Floorplan), GAF (Guided Activity Floorplan) and the OVP (Overview Page type Floorplan). These floorplans provide the basic foundation and lessen the amount of coding required for creating complex and complicated applications.

An FPM application is simply a Web Dynpro for an ABAP application that is assigned on the properties tab; one of the three components as shown in Figure 1.
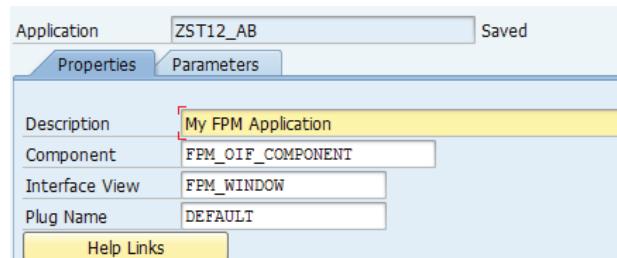
Figure 1: FPM_OIF_COMPONENT Assigned to an Application

We start by creating a Web Dynpro Application. By assigning the respective component, we get the basic template of the underlying floorplan. Figure 2 shows the components that will need to be assigned to the Application for the respective floorplan design. For example, if we need an Overview design, the component FPM_OVP_COMPONENT is to be used.

Design	Component to be Used
Overview Page Type Floorplan	FPM_OVP_COMPONENT
Object Instance Floorplan	FPM_OIF_COMPONENT
Guided Activity Floorplan	FPM_GAF_COMPONENT

Figure 2: Components to be used
Note: Both Generic UIBBs and Free Style UIBBs can be used in FPM applications.

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We then enhance this application through configuration by adding application-specific views (User Interface Building Blocks -UIBBs). These may be Generic Building Blocks provided by SAP or Freestyle UI Building Blocks. (We will see the difference between the two in the latter part of the article.)

There are a number of advantages that FPM framework offers to consultants:

- A lot of time and effort is saved since the basic template is provided, which can be enhanced with the addition of application-specific views, and the configuration options for the application and the components used within.
- All Applications that are based on a particular floorplan; for example GAF, have a uniform look and feel. There are three floorplans (OIF, GAF and OVP) and each one has a similar look and feel.
- Adjustments to the application may be done via simple configuration.
- In addition, for common use and general purpose, reusable Generic UI Building Block components are provided. These allow programmers to add application features such as List Display, Form Input, Search Option, and so on. This primarily involves configuration of the relevant component provided by SAP for these GUIBBs, along with minimal coding effort via custom defined feeder classes.

Note: Since SAP Netweaver Release 7.30, a Flexible UI editor (FLUID) is available for sophisticated configuring of the Floorplan Manager based on the application, along with the various components involved. Prior to this, an ordinary configuration editor existed.

In the next section, we will see the three floorplans: OIF, GAF, and OVP in detail.

A Look into the Available Floorplans

As already mentioned, there are a few useful floorplans available. Let us now discuss the three floorplans one by one.

Object Instance Floorplan

As the name implies, the emphasis of the OIF is on a single Object Instance. These instances may belong to a certain object type, such as Purchase Requisition or Employee or Employee Address, and so on. There are various tabs provided for entering or viewing data pertaining to the object instance in question. A number of tabs will allow the user to enter or view various properties of a given object instance. At the top is the Page Title, which may show the ID of the object in question and the ticket area. A toolbar is also provided at the top. The content area is composed of tabstrips. Each tab is termed as a Main View, which may have multiple Subviews. Via configuration, you may assign the relevant UIBB to the Subview in question. The OIF does not have a scrolling capability. Also there are no personalization options available.

Guided Activity Floorplan (GAF)

This floorplan is used when the user has to perform tasks containing a number of steps. The GAF-based application guides the user though the activity, showing the various steps in the form of a numbered roadmap. Each step may be divided into a number of substeps. The data entered by the user appears in the Content Area. Typically, the Next and the Previous buttons are present (the Previous and Next buttons are disabled in the first and last step screen respectively). It may also be possible that the last screen shows a Confirmation message or screen for the completion of the activity.

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At the top are the Page Title and the Page Toolbar. Under the Page Toolbar is the RoadMap showing the numbered Main steps (and substeps, if any) in the activity, and the current step is highlighted. The toolbar displays a set of buttons relevant for the step in question. For example, there may be steps numbered 1, 2, and 3, with substeps for the 2nd step labeled 2a and 2b.

Below the road map is the main content area. Within the configuration editor, the relevant UIBB is assigned to the main step or substep to be displayed at runtime. When users are on a particular step, they can then click Next to go to the next step. The relevant view is then displayed in the content area.

Note: A Page Title (earlier knows as the IDR) is the title of the application showing the Object ID (as in the case of OIF) or the step that the user is currently on (in the case of GAF applications).

Overview Floorplan (OVP)

The Overview Floorplan may be considered as a successor of the OIF. The OVP has been added since the Netweaver Release 7.02. The most important and useful feature of the OVP floorplan is the personalization option, which can be used to change the layout of the page according to the user's liking. The user can drag and drop tabs, as well as hide any tabs that they do not wish to display.

An OVP page may consist of a number of sections, each of which can have a number of Assignment Blocks. These sections may contain both Free Style UIBBs and GUIBBs, and the sections can be personalized according to your needs. For example, there may be one or two column layouts, which can be made in various sizes. Each section can consist of Assignment Blocks. These Assignment Blocks are collapsible blocks that can be hidden by the user or can be displayed on the screen in the form of tabs. Assignment blocks are used to display information pertaining to the object in question. For example, in an Employee page, you can have Assignment Blocks such as Employee Qualifications, Employee Addresses, and so on.

Using Free Style UIBBs

As already mentioned, other than Generic UIBBs, Free Style UIBBs can also be used as the building blocks of FPM applications. For any Web Dynpro component whose interface view is to be used as a building block (UIBB) within an FPM application, it is necessary that the component implements the Web Dynpro interface IF_FPM_UI_BUILDING_BLOCK.

Note: The interface views of "normal" Web Dynpro components created by application developers can be used in an FPM-based application, provided the interface IF_FPM_UI_BUILDING_BLOCK is implemented by the component.

To do this, we need to call transaction SE80 and then select the Implemented Interfaces tab for the component in question. We will enter the IF_FPM_BUILDING_BLOCK as shown in Figure 3. Also we will click the Implementation State icon to make sure that it is green in color as shown in Figure 3.

Figure 3: Implementing IF_FPM_UI_BUILDING_BLOCK

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If this interface is not implemented in the respective component whose view is used as a UIBB, an error will be generated that says "Component ____ of UIBB(View) ____ does not implement a valid interface" when we try to use the View as a UIBB of the FPM application.

Generic UI Building Blocks

SAP provides general-purpose building blocks (Generic UI Building Blocks) that will save you time and effort and will help create a clean, uniform look within the system. Typical GUIBB are as follows:

- The FORM GUIBB lets you take input in the form of fields from the user. Instead of defining the screen fields and writing extensive code, we can simply use the GUIBBs in our application.
- The LIST GUIBB. This is a list output. It consists of various fields that are specified using the feeder class.
- The TREE GUIBB. Data is displayed in a hierarchical tree-like structure.
- The SEARCH GUIBB. As the name suggests, this allows the Search function to be incorporated in your applications. This will allow you to enter search criteria using single values or ranges for one or multiple field names.
- The TABBED COMPONENT GUIBB. These are similar to the tabstrip concept, allowing you to display data from multiple views as tab pages. A Tabbed GUIBB is a special GUIBB that contains multiple UIBBs. For example, a tab component can have one List GUIBB and one free style UIBB.

Note: Feeder classes provide data that is displayed, for example, in a list or tree, or input, as in the case of a form entered by the user.

Each GUIBB is implemented using a respective standard Web Dynpro Component. For example, the FORM GUIBB is implemented using the component FPM_FORM_GUIBB. The display of these can be configured using the configuration editor. An important concept surrounding the usage of GUIBBs is the Feeder Class.

A feeder class is a connection between the application and the GUIBB in question. Feeder classes are based on interfaces that provide necessary methods with signatures for enabling this link.

Figure 4 shows some of the interfaces that must be implemented in the feeder class for respective components used.

Component	Interface Name
Form Component	IF_FPM_GUIBB_FORM
List Component	IF_FPM_GUIBB_LIST
Search Component	IF_FPM_GUIBB_SEARCH
Tree Component	IF_FPM_GUIBB_TREE

Figure 4: Components and Relevant Interfaces

Note: The Floorplan Manager framework provides a message manager that allows you to display errors and warning messages. The Floorplan Manager framework also allows the drag and drop feature of data between UIBBs. Also, the sharing of data between UIBBS is supported.

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Conclusion

In this installment, I have covered the basics of the Floorplan Manager, including its advantages. After reading this article you should now have a working knowledge of how to use the Floorplan Manager efficiently and effectively. I hope that this article has been helpful and informative. In the next installment of this series, I will show how to create applications based on FPM-framework.

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Next Generation ABAP Development: 2nd Edition published by SAP Press

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HR/Payroll

Creating OM Actions With Ease: A Guide for SAP HR Consultants and Users

By Rehan Zaidi

Editor's Note: When multiple tasks must be completed in a specific sequence; for example when creating a position, the door is left open to user error. By building Actions, these task sequences can be automated. This article demonstrates what Actions are, where they can be used, and steps us through the process of building an action from scratch and of making changes to existing functions.

Introduction

In a previous article published in the ERPtips library titled "Creating Personnel Action w/o ABAP Knowledge", we saw the creation of Personnel Actions for the PA module.

In this article, we will cover creating Organizational Management (OM) Actions. I will begin with a brief description of what OM Actions are. After this overview, we will take a closer look at the steps involved to create these actions from scratch, specify the default action for a transaction, and how to create actions using the "Copy" function.

Some of the questions that the article addresses are:

- What is an OM Action?
- What are the Action Infotypes and Function Codes?
- How can I make changes to an existing action?
- How do I create an action from scratch?
- What are the advantages to creating actions?

Throughout the article, we will use the "Create Position" Action as an example for illustration; however, the concepts can be applied to other objects as well. There will be informative figures provided to supplement any examples. Throughout the article, the terms OM Action, Action, and Personnel Action will be used interchangeably.

This article is primarily intended for SAP HCM functional consultants. I will assume that the reader is familiar with basic SAP HR concepts. For more information, refer to the SAP documentation on http://help.sap.com. All the screen shots have been taken from ECC 6.0. However, the concepts also apply to previous releases.

OM Action Overview and the Creation Procedure

An Action may be defined simply as a set of Infotypes that must be created in a given sequence at the time the action is run. This must be done in order to perform a given task for an object in question. Typical examples include Create Organization Unit or Create Position.

For example, when the Create Position action is run, the necessary Infotypes relevant for the Creation of a Position are presented to the user in a given order in the Create mode, allowing the user to input data with the option of saving it. There are a number of standard SAP actions existing in the system. You can also define your own additional custom actions.

The actions are created using configuration settings in the IMG, the access path of which is shown in Figure 1.
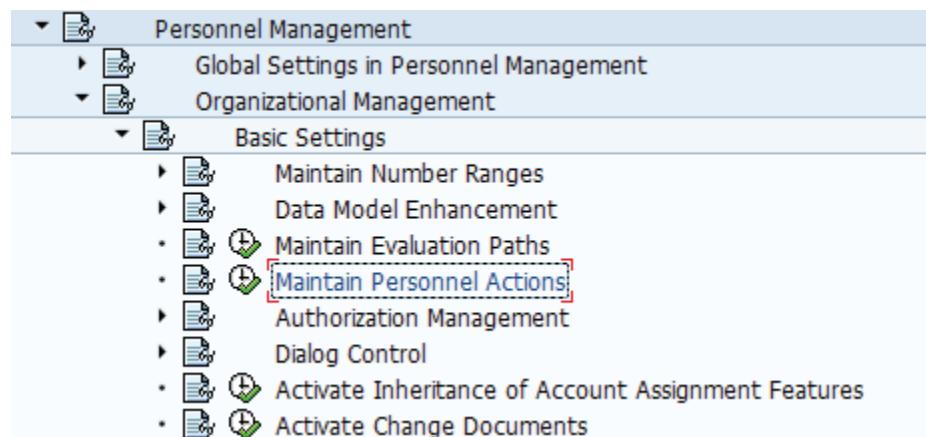
Figure 1: IMG Path for Creating OM Personnel Actions

Within the maintenance screen that the IMG path leads you to, an action is defined by a code and a description as shown in Figure 2.

Figure 2: Action Code and Description

The main information related to the Action is stored in the tables T777M, the maintenance screen of which is shown in Figure 3.

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Figure 3: Actions Individual Maintenance Screen

Figure 3 shows the various Infotypes presented to the user for creation when the action is executed. The various Infotypes for Action S (as stored in table T777M) are shown in Figure 4.

Figure 4: Table Entries for Action "S"

Figure 4 shows that the first Infotype presented to the user in Create mode is Infotype 1000; i.e., Object, followed by Relationships Infotype 1001 with subtype A002 linked with Object type S in the Insert mode and so on. (The details of these fields will be discussed in the upcoming section.)

Note: It is not necessary that the numbers shown in the Sequence number field be in sequence. For example, one Infotype can have the number sequence 001 followed by 020 and then 022 and so on.

There are a number of advantages to consultants by creating actions:

- No programming efforts are required in order to create the action. The entire procedure involves configuration settings.
- Any sequence can be defined and that can be followed at runtime. It is guaranteed that the specified sequence will be adhered to at runtime.
- Even custom-built Infotypes can be included in the action sequence along with standard ones.
- Actions can be created for a number of Objects, such as position, Job, Organizational unit, and so on.

You can either create your action from scratch or copy an existing action with little or no modification. Typically, the process of creating an action consists of three steps. The first step is to specify the Action Name and Description. Next is to specify the sequence of involved Infotypes for the organizational object in question, along with the

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mode (Insert or Copy) and any optional Default values. The third step is to specify the transaction for the action, along with the setting for making our action the Default action for the given transaction.

In the next section, we will see the procedure and the necessary steps for creating a new Action.

Creating Actions from Scratch

This process is composed of three steps. Let us discuss them one by one.

Step 1: Specifying the Action Name and Description

Follow the IMG path shown in Figure 1. This will lead you to the screen shown in Figure 5.

Figure 5: Action Maintenance Dialog

Click the "New Entries" button. Then enter the name of the new Personnel Action along with a suitable description in the screen that appears. In our case, we have chosen "ZPOS" and the description as "New Action of Position" (Figure 6).

Figure 6: Specifying Action Code and Description

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Step 2: Specifying the Action Infotypes and Function Codes

Select the given row that you have created (in our case ZPOS) and then double click the folder Action Individual Maintenance icon on the left side of the pane. The screen will appear as shown in Figure 7.

Note: While you create the action, the first Infotype must always be Object (Infotype 1000); i.e., have line number 001.

Act.	Action text	SNo	P...	O...	Infoty.	Subtyp	Variation field	Funct.Co
Z123	New Action of Position	1	**	S	1000			INSE
Z123	New Action of Position	10	**	S	1001	A002	S	INSE
Z123	New Action of Position	20	**	S	1002	0001		INSE

Figure 7: Action Individual Maintenance Screen

The most important fields in addition to the Action, Action description, and the Sequential number fields are shown below:

Field	Description
Object Type	The Object type field is used to specify the code for the Object type for which the action is to be used.
Infotype	This is the four-digit Infotype number denoting the Infotype that is to be processed.
Subtype	This can be left blank. If applicable, it can be used to create the subtype involved for the given Infotype. For example, if we are including the Relationships Infotype 1001, the subtype will be the relationship and the direction of the relation (A or B) links the two objects together, as shown in the figures.
Function Code	This is an important entry that specifies the mode in which the corresponding Infotype specified is presented to the user. The two possible values for this option are Insert (INSE) Copy (COP).
Plan Version	The Plan Version field allows you to specify the Plan Version for which the newly created action will be relevant. We can choose the F4 help in order to choose the Plan Version. Also if we enter the value **, then all the plan versions are covered.
Variation Field (VARYF)	This is only relevant when the relationship Infotype 1001 is used as the Infotype field. The linked object type is then entered in the variation field.
Screen Variation	The entry made in this field is relevant if the INSE value is specified for the Function code column. The possible values that can be entered in the field are MASS and DUTY. The MASS value in this field suppresses the fast entry mode for the Infotypes that are created.

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For each Infotype record that needs to be created at runtime as a result of the action, a separate row should be created. If, for example, three records in Infotype 1001 are to be created, then three rows for 1001 specifying the relationship and linked object type should be specified.

Enter the respective values in the relevant columns based on your scenario. Once you are done with this step, save your entries.

Step 3: Specifying the Default Action for the Transaction

The third step requires creating the necessary setting for making our created action the default action for the Object type in question. The table relevant for this is T77S0.

Call transaction SM31. Then enter the name of the table, T77S0, in the field provided and click the "Maintain" button. This will take you to the screen shown in Figure 8.

Change View "View T77S0": Overview

New entries

Documentation

Group	Sem.abbr.	Value abbr	Description
TCODE	PQ13	S	Actions for Position
TCODE	PQ13M	S	Default Action for Transaction PQ13
TCODE	PQ14	T	Actions for Task
TCODE	PQ14M	T	Default Action for Transaction PQ14
TCODE	PQ15	U	Actions for Company
TCODE	PQ15M	U	Default Action for Transaction PQ15
TCODE	PQ17	QP	Actions for qualifications profile

Figure 8: Maintenance Screen of View T77S0

Let us now consider the Position example. Search for the entry where the group is equal to TCODE and the Value Abbreviation field equal to S – Object type Position (see Figure 8).

There are two entries, which are of primary importance for our action, as shown in Figure 8.

The first entry denotes that the transaction PQ13 is assigned for the Object type Position. When we run the transaction, the description appears at the top saying "Actions for Position".

For us, the more important entry is the second entry containing the PQ13M as the semantic abbreviation. The PQ**M (in our case PQ13M) is not a real transaction. It is used to denote that the transaction PQ13, when run for the Object type S, will have the default action S filled in the Action field shown in the screen as in Figure 8.

By default, for the Semantic Abbreviation PQ13M and Group TCODE, we have the value abbreviation S; i.e., the standard action Create Position (the value abbreviation S in the row that contains PQ13 is the Object Type S; i.e., position). For the PQ13M row, we will enter our value of the newly created action (Z123) in the Value Abbreviation field provided as shown in Figure 9.

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Figure 9: Entering Default Action

Note: The row containing Semantic abbreviation of the form PQ**M can be used to assign the Default Action to a transaction (the Actions Transaction) pertaining to an Object type.

If no action is entered for the PQ13M row, then at the start of the transaction PQ13M the action field is blank. When all the above steps are done, we need to test our action using the relevant transaction (in our case PQ13).

Creating Actions Using the Copy Function

As already mentioned, instead of creating an action from scratch, we can also copy an existing action and then make changes to it. In that case, steps 1 and 2 may be shortened.

You can delete the Infotype rows in step 2 that are not required and add new entries for the ones that are required, but are not there in the original. This saves considerable time instead of developing from scratch.

For copying an action, simply select an action row while being in the Action Overview screen and then click the Copy As icon as shown in Figure 10.

Figure 10: Copying an Action

On the next screen, change the original Action code and Action text in order to specify the new action and text, then click Save. In this case, the S action has been copied and renamed Z124.

Figure 11: Specifying a New Action and Its Description

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The pop-up appears as shown in Figure 12.
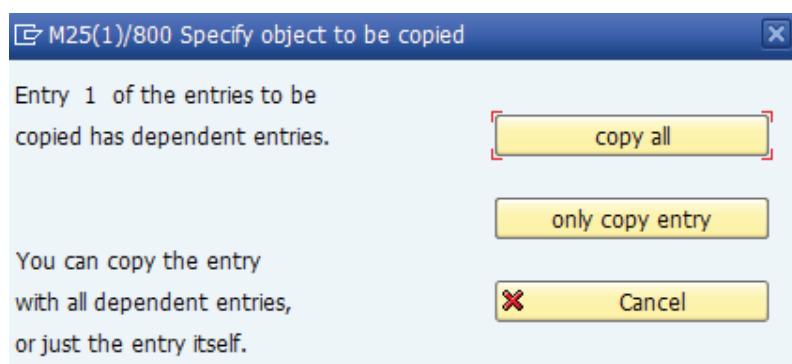
Figure 12: Pop up for Specifying Copy of Dependent Entries

Click Copy All.

Next, a dialog box will be displayed showing the number of dependent entries copied. These are the number of entries in the Action Individual Maintenance screen (i.e.; the Infotype details).

Next, you can go into the Individual Maintenance screen of the action and add or delete any entries you like.

The rest of the steps are the same as in the previous section.

Testing Your Created Action

Once all the settings are done, we should now test our action. For testing the Create Position action, call transaction PQ13. The screen will appear as shown in Figure 13.
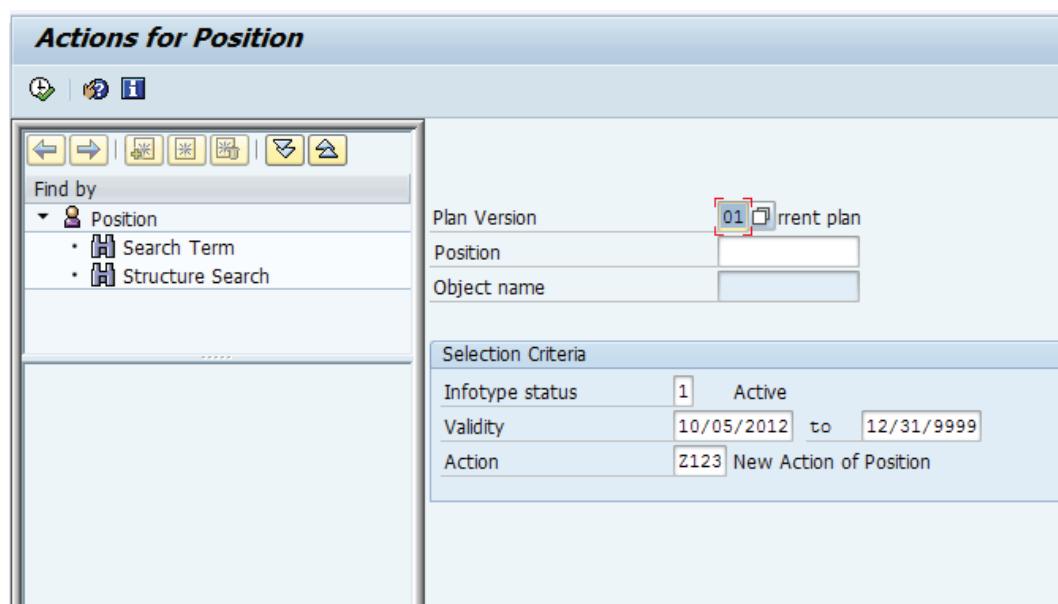

Figure 13: Actions for Position Transaction

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As you can see, the newly created action is shown as the default action (see Action field in Figure 13).

You can now press the F8 key or click Execute on the toolbar. Each Infotype specified will be shown in the Create mode one after the other. Once the user saves the first Infotype, the next one in the sequence is presented automatically.

Conclusion

In this installment I have covered the creation of OM Actions from scratch. I have covered how to specify the default action from the transaction and how to create actions using the copy function to make it easier on the user. You should now know what the action Infotypes and function codes are as well as how to make changes to an existing action. I hope that this article has been both informative and helpful to you.

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Knowledge EXPRESS

Quality Management

Achieve Organizational Efficiency by Implementing Dynamic Modification Rule (DMR)

By Jawad Akhtar, Assistant Vice President & SAP Project Manager, Abacus Consulting

Editor's Note: The road to increased profit often involves elimination of redundant, unnecessary, or cumbersome steps and finding opportunities to reduce human error. In this article, Jawad Akhtar shows us how the DMR module in Quality Management can help us achieve those goals. We'll get an overview of the functionality for both Production and Procurement, the setup steps, and a demonstration of how it works.

Introduction

The Dynamic Modification Rule (DMR) in the quality management (QM) module reduces data entry in results recording because all inspection lots with SKIP status no longer require data entry efforts. It can also help to improve organizational efficiencies, if production or procurement processes yield satisfactory output on a consistent basis.

DMR's integration in the procurement and production processes promises to bring about significant value addition and efficiency to the business processes. It eliminates the need to routinely record all inspection results of every incoming raw material from a vendor or continuous manufacturing finished goods where the source has a history of quality acceptance.

Quality Management

It skips a predefined number of inspection lots for results recording purposes and only requires a user to enter a usage decision of the inspection lots. However, any rejected inspection lot automatically triggers a normal or even tightened inspection. This ensures that necessary checks and balances are in place, despite moving toward automating some of the processes by means of implementing DMR for reduced inspection efforts.

In procurement, DMR helps to quickly bring the raw material or packing material onto the production line if the vendor adheres to the stringent quality control of the company. DMR provides for inspections at periodic intervals. As soon as any problem in quality is observed, it reverts back to regular or tightened inspection until the vendor again meets the quality standards.

The company benefits from reduced data entry as well as being able to reduce the lead time it take to quality clear these procured goods (during goods receipt processing) and make them available to the production process. It also helps to reduce inventory carrying costs. It enables vendors to negotiate better payment terms and a better selling price for their product, given that reliability with the company has been established. Eventually all these factors add up to a process called annual or periodic vendor evaluation in the SAP system (to which quality plays a very important role, in addition to price and timely deliveries).

This article covers multiple goods receipts against production order and how DMR works. It starts with normal inspection. Then the inspection lot is rejected so you can see how the next inspection lots undergo regular or tightened inspection. Although the focus of this article is on DMR integration with the production process, the information is also applicable to procurement processes.

Getting Started

I'll begin the article by covering the details of the important and quick checks in master data needed to initiate the DMR. I'll then cover the specifics of QM master data need to successfully set up and trigger DMR. Finally, I cover DMR in action, in which various scenarios are covered to cross-check and validate whether DMR results are able to achieve the desired outcome.

Quick Checks in Master Data

You need to make two quick checks of your master data to ensure that DMR is effectively implemented when conducting transactions. The checks are in:

1. Material Master
2. Master Inspection Characteristic (MIC)

Material Master

While the material record has already been created, its quality management view needs to be activated at the organizational level (Plant).

Use Transaction code MM01 or the menu path:

Logistics → Materials Management → Material Master → Material → Create (General) → Immediately

Enter the material number and click the Select view(s) icon. In my example, I use material 1659. Select the Quality Management view and then click the Organizational levels icon. Enter the Plant as 3000. Press Enter or click the Continue icon . This leads to the QM view of the material master (Figure 1).

Quality Management
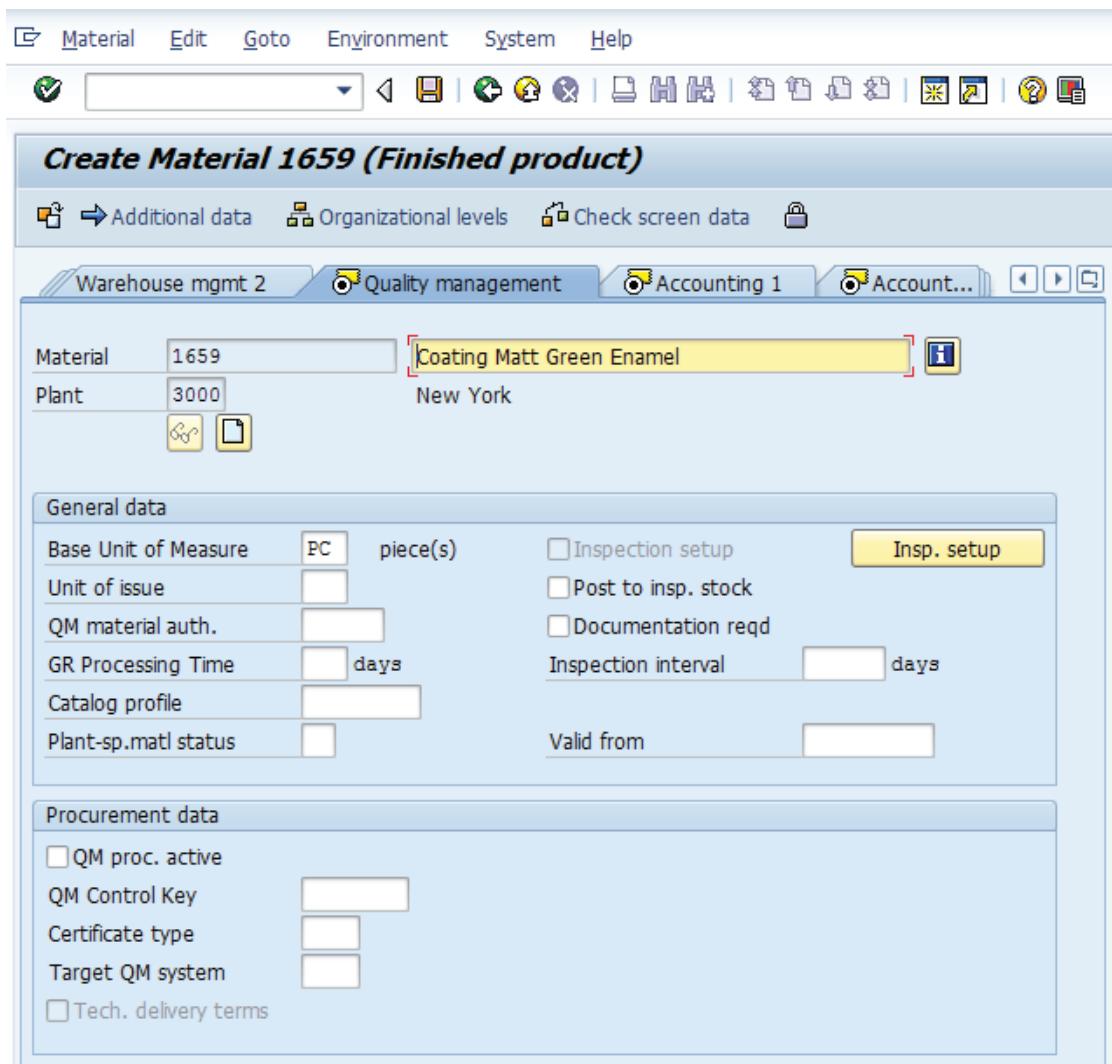
Figure 1: QM View of Material Master

Click the Insp. setup icon to go to the screen in Figure 2. Click the Inspection Type Detail icon for inspection type 04. Select the check box Skips allowed. This ensures that when DMR is working for the inspection type 04, it allows skipping of inspection results recording. Inspection type 04 is used to activate QM for goods receipts against production order. Click the Continue icon and save the material master by pressing Ctrl-S or clicking the Save icon.

Quality Management
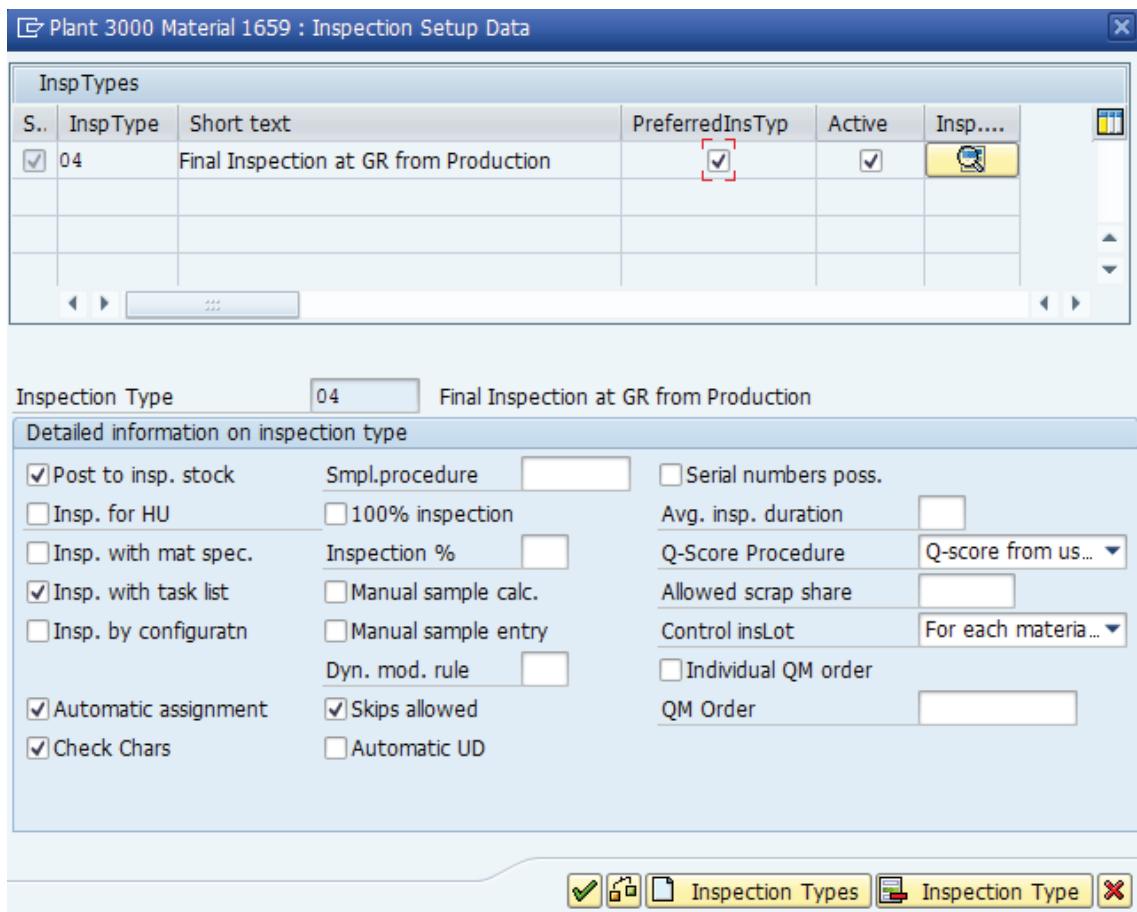
Figure 2: Inspection Type Setup for Material

Note: If you intend to use DMR for goods receipt against the procurement process, then you need to make the same Skips allowed check in the material master for inspection type 01. Inspection type 01 is the QM activation for goods receipt for in-house production. You can activate the check in any inspection type for which you want initiate the DMR process.

Check the Sampling Procedure in Master Inspection Characteristic (MIC)

Another check you need to make for DMR activation is in MIC, to ensure that the sampling procedure is checked on in MIC. MIC is the quantitative or qualitative attribute of a material. It has its own set of specifications that you define as important QM master data. Sampling procedure is also QM master data. You use it to define the sample size of an inspection lot and how to calculate it.

To change MIC, use Transaction code QS23 or the menu path:

Logistics → Quality Management → Quality Planning → Inspection Characteristic → Change (Figure 3)

Quality Management
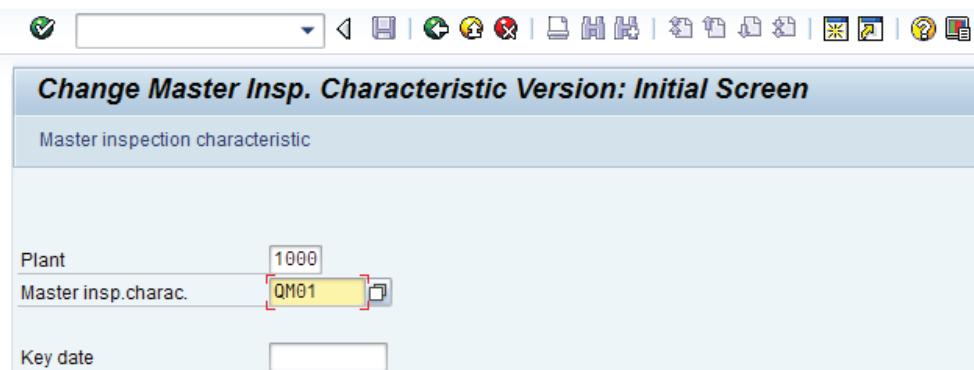
Figure 3: Initial Screen of MIC

Figure 3 is the initial screen for MIC. Enter QM01 as the Master insp.charac. value and 1000 as the Plant value. Press Enter to go to the screen in Figure 4.
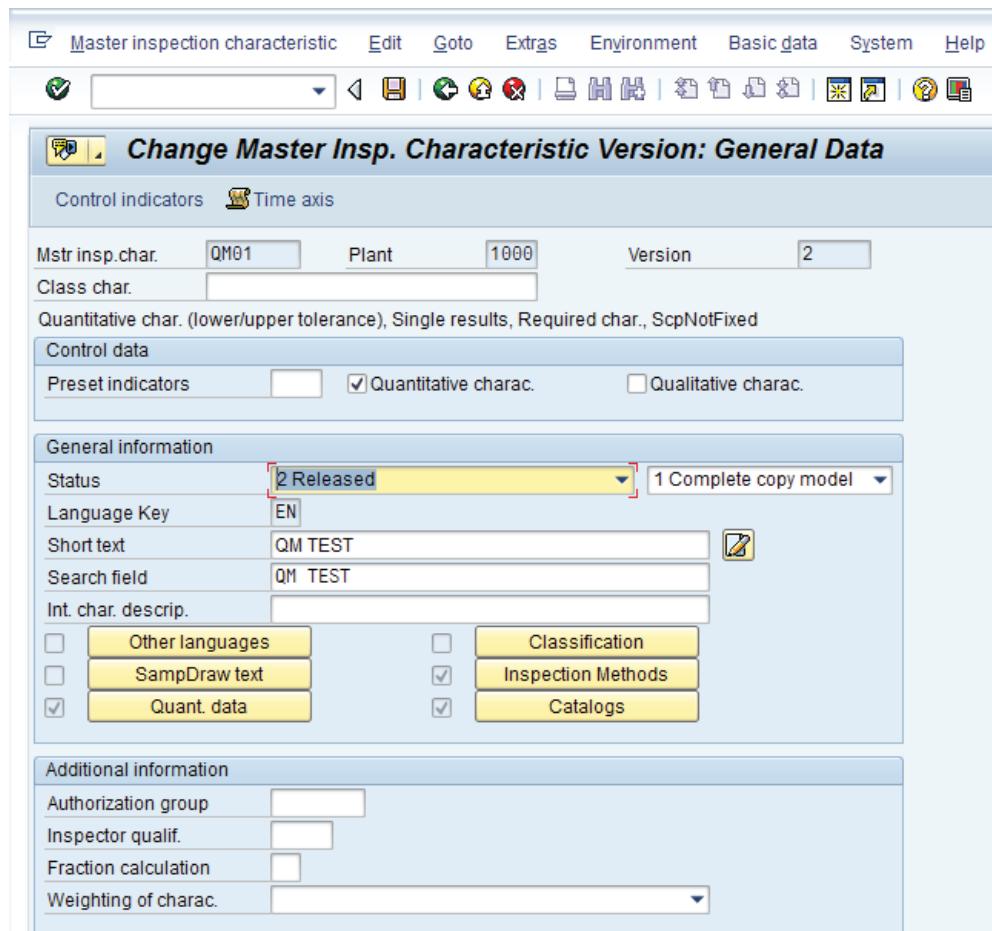
Figure 4: General Data Screen of MIC

Figure 4 is the general data of MIC. Click the Control indicators icon to go to the screen in Figure 5.

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In the screen in Figure 5, check the Sampling procedure check box to turn it on. Click the Continue icon and save the MIC by pressing Ctrl-S or clicking the Save icon.
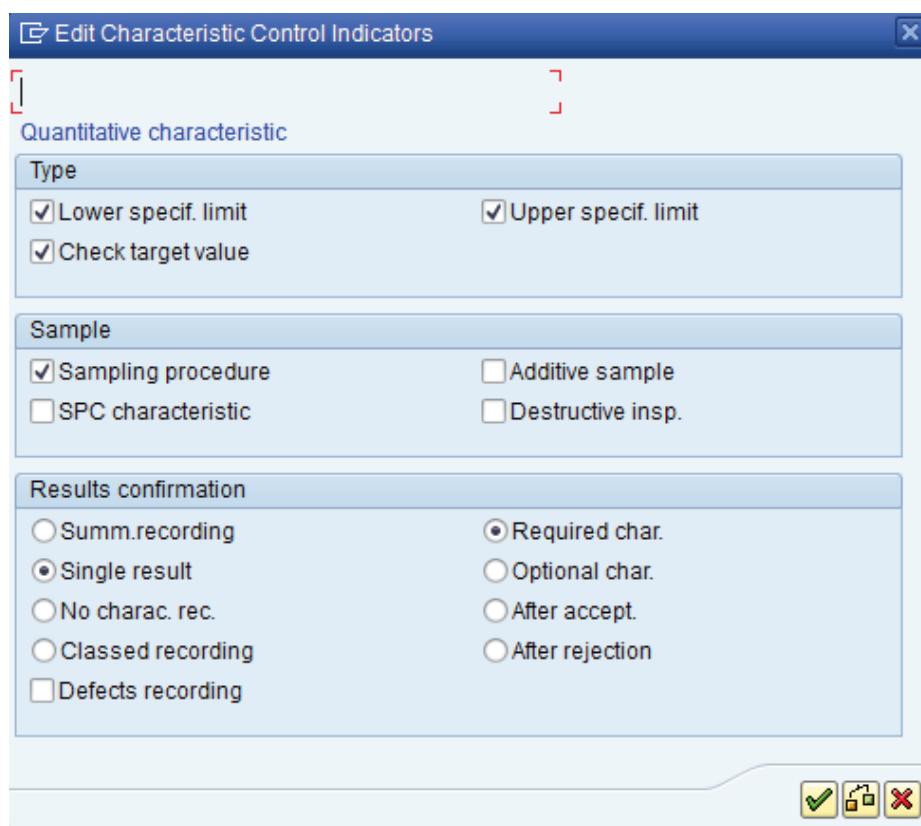
Figure 5: Control Indicators of MIC

QM Master Data Maintenance for DMR

To effectively implement DMR in the production process, maintain the following QM master data in the specified sequence.

1. Define a sampling scheme
2. Set up a sampling procedure
3. Create the DMR
4. Maintain a DMR relationship with the sampling procedure
5. Create an inspection plan

1. Define a Sampling Scheme

In a sampling scheme, sample size is defined based on the total quantity of the goods receipt. In addition to sample size calculation, the sampling scheme also incorporates the information related to the number of samples that can be accepted or rejected in a sample size to help decide if the inspection lot must be accepted or rejected.

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To create a sampling scheme, use transaction code QDP1 or the menu path:

Logistics → Quality Management → Quality Planning → Basic Data → Sample → Sampling Scheme → Create (Figure 6).
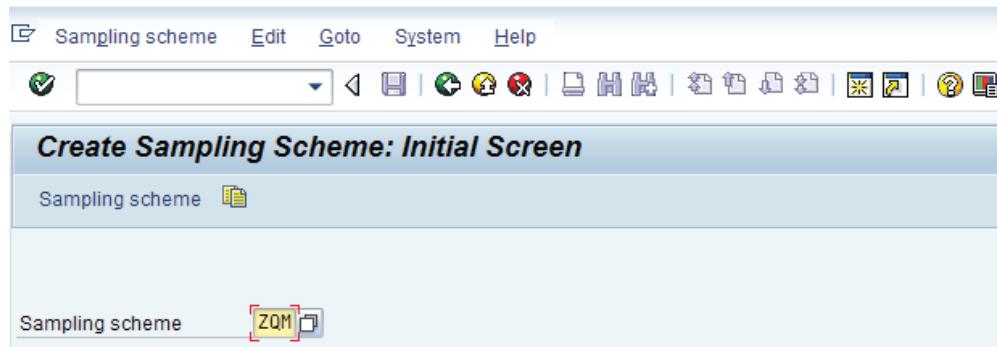
Figure 6: Initial Screen of Sampling Scheme

Enter the sampling scheme (ZQM in my example) and press Enter to go to the screen in Figure 7.
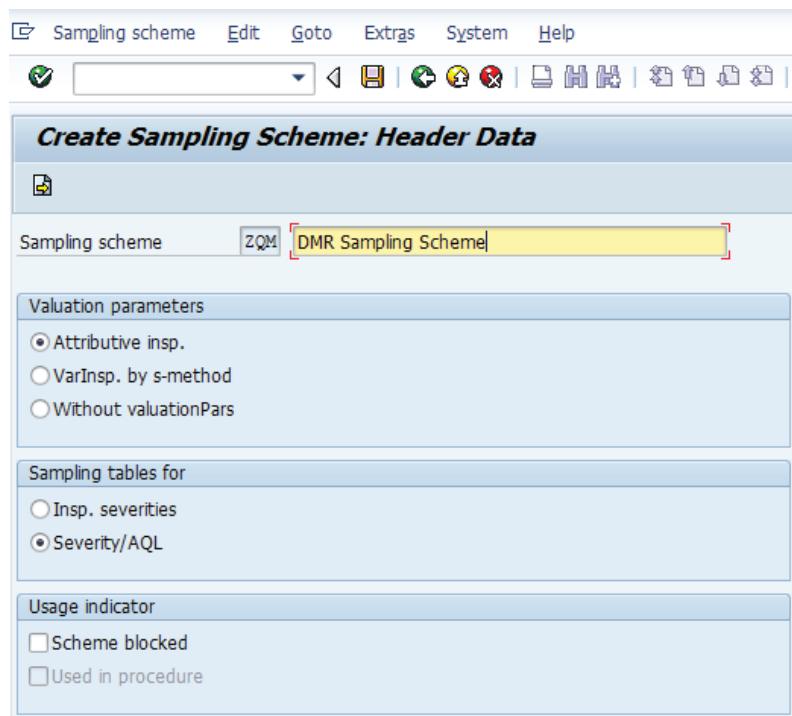
Figure 7: Header Data of Sampling Scheme

Figure 7 is the header data for the sampling scheme. Select the Valuation parameter Attributive insp. to ensure that all MICs within the tolerance limits are automatically valuated as accepted and the non-conforming MICs have the rejected valuation. Select the Sampling tables for as Severity/AQL. Click the Continue icon (Figure 8).

Quality Management
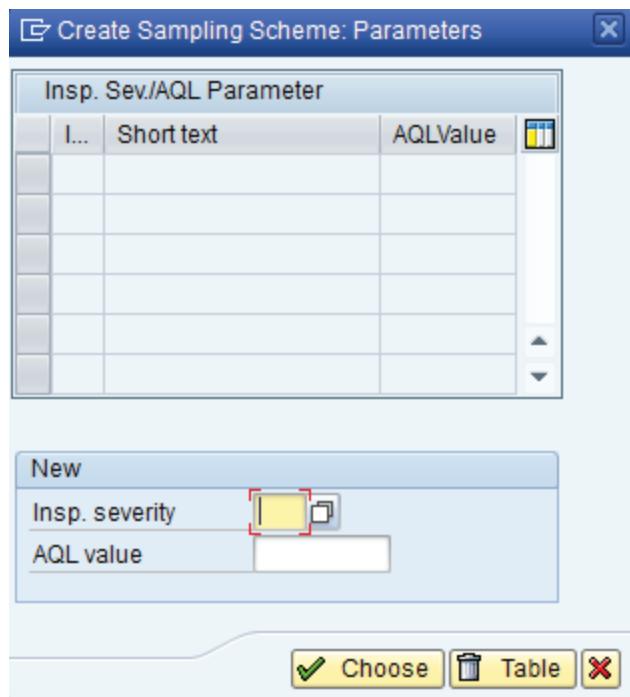
Figure 8: Sampling Scheme Parameters for Inspection Severity/AQL Parameters

AQL stands for Acceptable Quality Limit, which is the international industry standard to define the total percentage of samples that are either accepted or rejected from an overall sample calculation. Hence, an AQL level of 2.5 percent allows defects of 2.5 percent of the overall sample size calculation. If the sample size of an inspection lot is calculated to be 100 and its AQL is 2.5 percent, then no more than 2.5 percent of the samples can be rejected for the entire inspection lot to be considered acceptable.

Although various international AQL standards are available in the SAP system as standard offerings and can be immediately used, I cover the creation of AQLs in detail in this article, just in case there is a business need to define them for a company-specific scenario.

Figure 8 is the initial screen to define inspection severity and AQL value. After you define them, click the Insp. severity drop-down, which leads to the screen in Figure 9. The drop-down options of inspection severity are defined in customizing, which is not in the scope of this article.

Quality Management
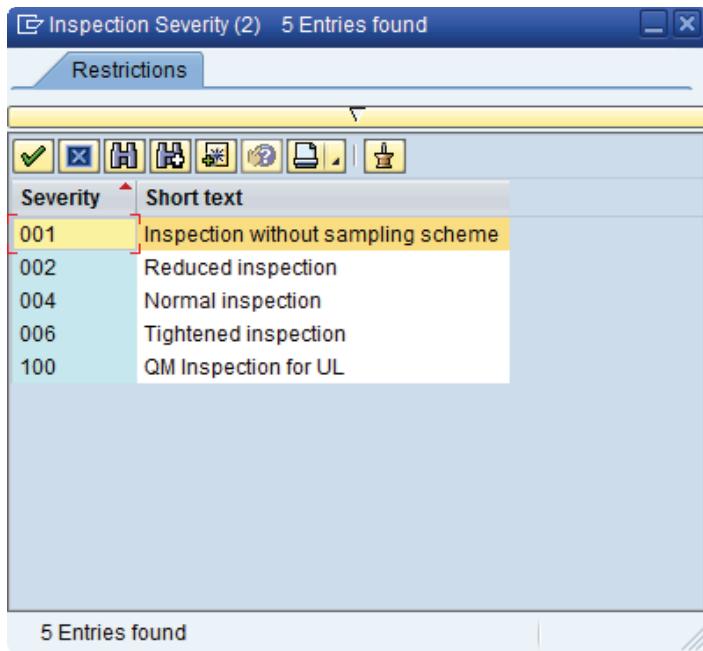
Figure 9: Drop-Down List of Inspection Severity

In my example, I selected an inspection severity of 002, which is for Reduced inspection. This took me to Figure 10, where I entered an AQL value of 2.0.
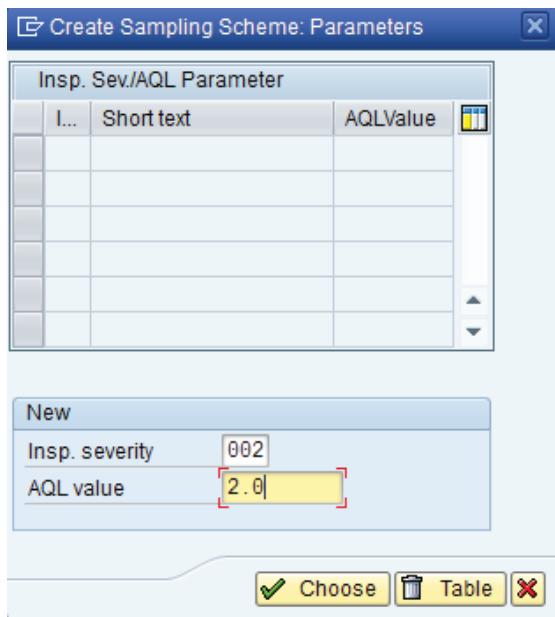
Figure 10: Inspection Severity and AQL Value Input Screen

Press Enter or click the Choose icon to go to Figure 11.

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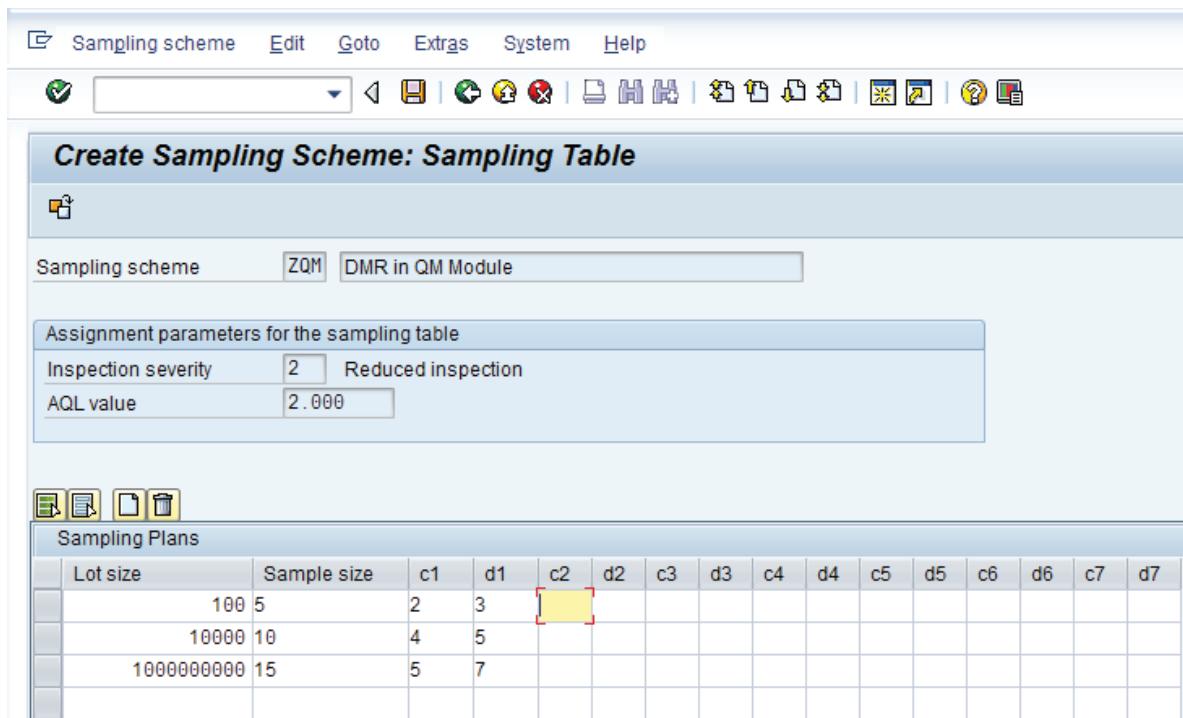
Figure 11: Sampling Table for Inspection Severity 2 (Reduced Inspection) and AQL Value of 2.000

Figure 11 is the sampling table for sampling scheme ZQM with inspection severity of 002 and an AQL value of 2.000. Note that it is standard SAP system behavior that all leading zeros are eliminated, but up to three decimal places are shown. Therefore in Figure 11, the Inspection severity of 002 has been changed to 2. Although the AQL value is defined as 2.0 in Figure 10, the system shows up to three decimal places.

Figure 11 defines that for an inspection lot quantity of 100 units, the sample size is 5 units. Of that, a minimum of 2 (column c1) units must be accepted, while a maximum of 3 (column d1) units can be accepted for rejection. This is applicable for all the inspection lots for which there is a reduced inspection. For an inspection lot of 10,000 units or greater, the sample size is 10 units and the number of acceptable samples is 4. A maximum of 5 rejections is acceptable. Click on the Other Table icon in Figure 11, to go to Figure 12.

Quality Management
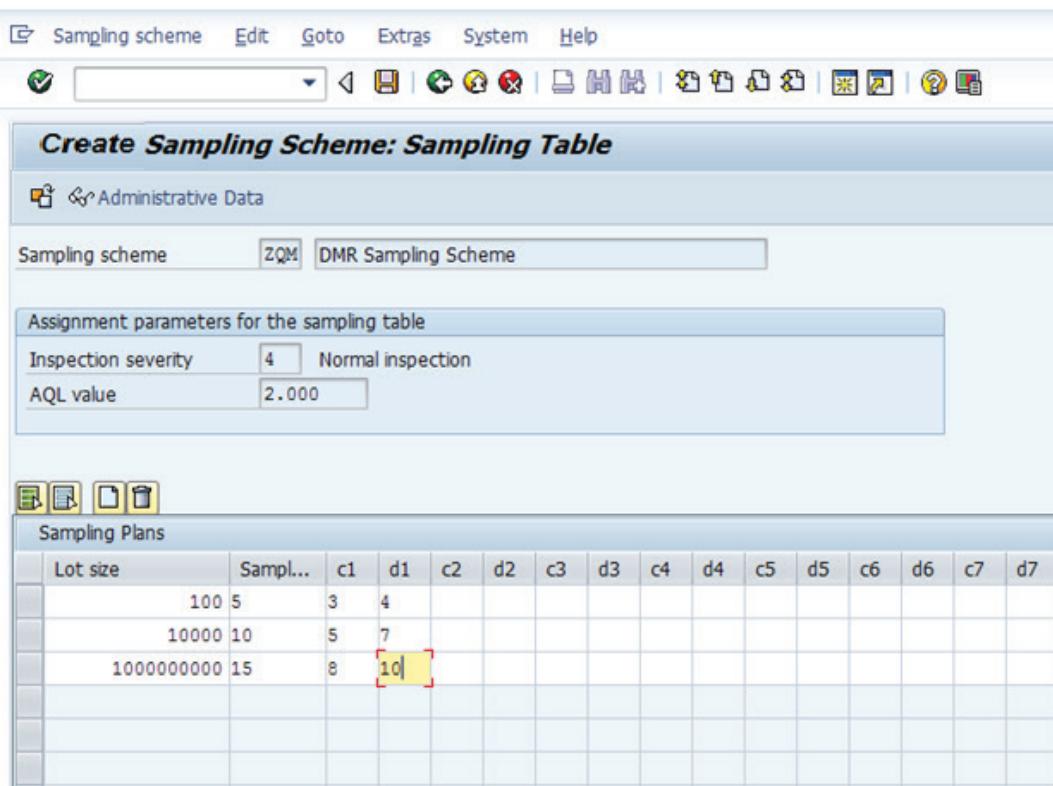
Figure 12: Sampling Table for Inspection Severity 4 (Normal Inspection) and AQL Value of 2.000

The same process for creating another set for Inspection severity and AQL is repeated for an inspection severity of normal, which is denoted by 004 and with an AQL level of 2.000, as shown in Figure 12. Note that I clicked the other table icon in Figure 11 to go to Figure 12, where I am creating another table.

Figure 12 defines that for a inspection lot quantity of 100 units, there will be a sample size of 5 units out of which a minimum of 3 (column c1) units has to be accepted while a maximum of 4 (column d1) units are allowed for rejection. For an inspection lot of 10,000 or greater, the sample size is 10 and the number of acceptable samples is 5. A maximum of 7 rejections is acceptable.

Click the Save icon or press Ctrl-S to save the sampling scheme.

Depending on business requirements, there can be several variations for defining reduced, normal, and tightened inspections in an SAP system. For example, with reduced inspection, there can be fewer sample sizes to inspect while keeping the acceptance and rejection samples the same. Alternatively, sample size can remain the same while the acceptance and rejection ratio can be adjusted.

In my example, I have kept the sample size for reduced and normal inspection the same, which is 5 units for an inspection lot of 100 units, but have defined that for reduced inspection the acceptable samples should be at least 2 units and the maximum rejected samples should be 3 units. For a normal inspection, at least 3 units must be acceptable and a maximum of 4 units can be rejected.

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Note: You can use the same process to define tightened inspection. This is a more stringent form of quality checks that is used by companies when the production department has repeatedly failed to produce acceptable quality products. The produced good is then monitored more frequently for quality checks until it is able to maintain and sustain the acceptable quality products over a longer period of time. Once achieved, the tightened inspection can be brought back to normal inspection or even reduced inspection. The option to define a tightened inspection with an inspection severity code of 006 is defined in Figure 9. All subsequent steps remain the same as for reduced or normal inspections in this article.

2. Set Up a Sampling Procedure

As explained previously, a sampling procedure is the QM master data that is used to define how the sample size of an inspection lot is calculated.

To create a sampling procedure, Use Transaction code QDV1 or the menu path:

Logistics → Quality Management → Quality Planning → Basic Data → Sample → Sampling Procedure → Create (Figure 13).
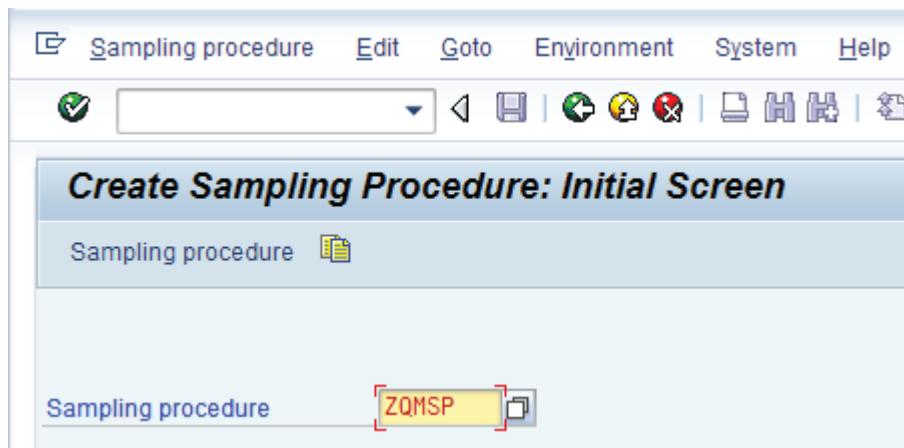
Figure 13: Initial Screen of Sampling Procedure

Figure 13 is the initial screen of the sampling procedure. Define the sampling procedure (e.g., ZQMSP) and press Enter to bring up the screen in Figure 14.

Quality
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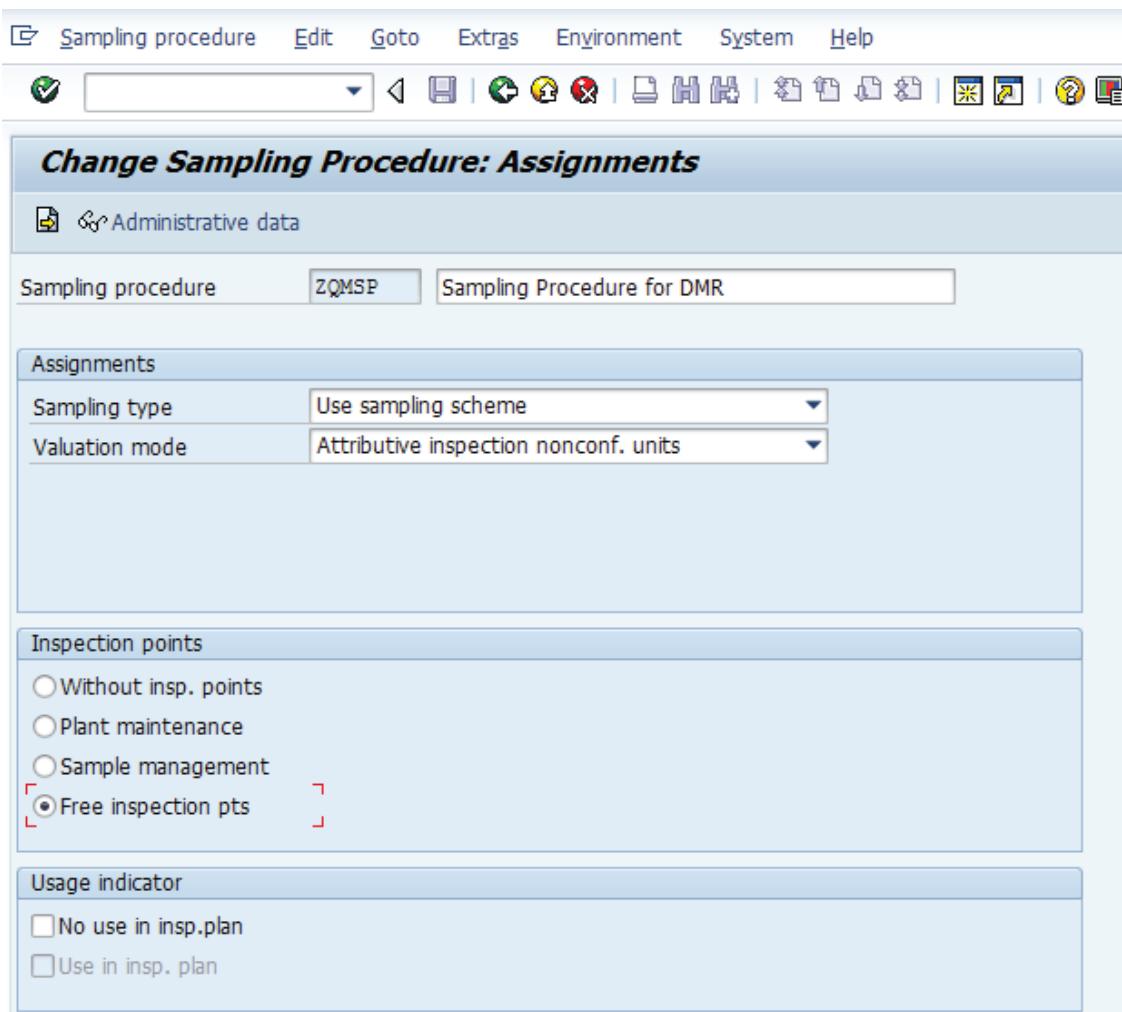
Figure 14: Sampling Procedure with Sampling Type and Valuation Mode

Figure 14 is the assignments screen of the sampling procedure. Here I assign the sampling type 'Use sampling scheme', which was previously created. Other sampling types available are Fixed Sample, which means that regardless of the inspection lot size, the sample size is fixed, and Percentage, which means that the sample size is calculated based on a defined percentage of the inspection lot.

For Valuation mode, select 'Attributive inspection nonconf. Units' to ensure that all MICs are valuated if the results are within the specified tolerance limits. If any result is not, then the MIC is valuated as rejected.

Click the Continue icon to bring up the screen in Figure 15. Since the sampling type selected in Figure 14 was Use sampling scheme, you now need to assign the relevant sampling scheme that you previously created. I assigned sampling scheme ZQM.

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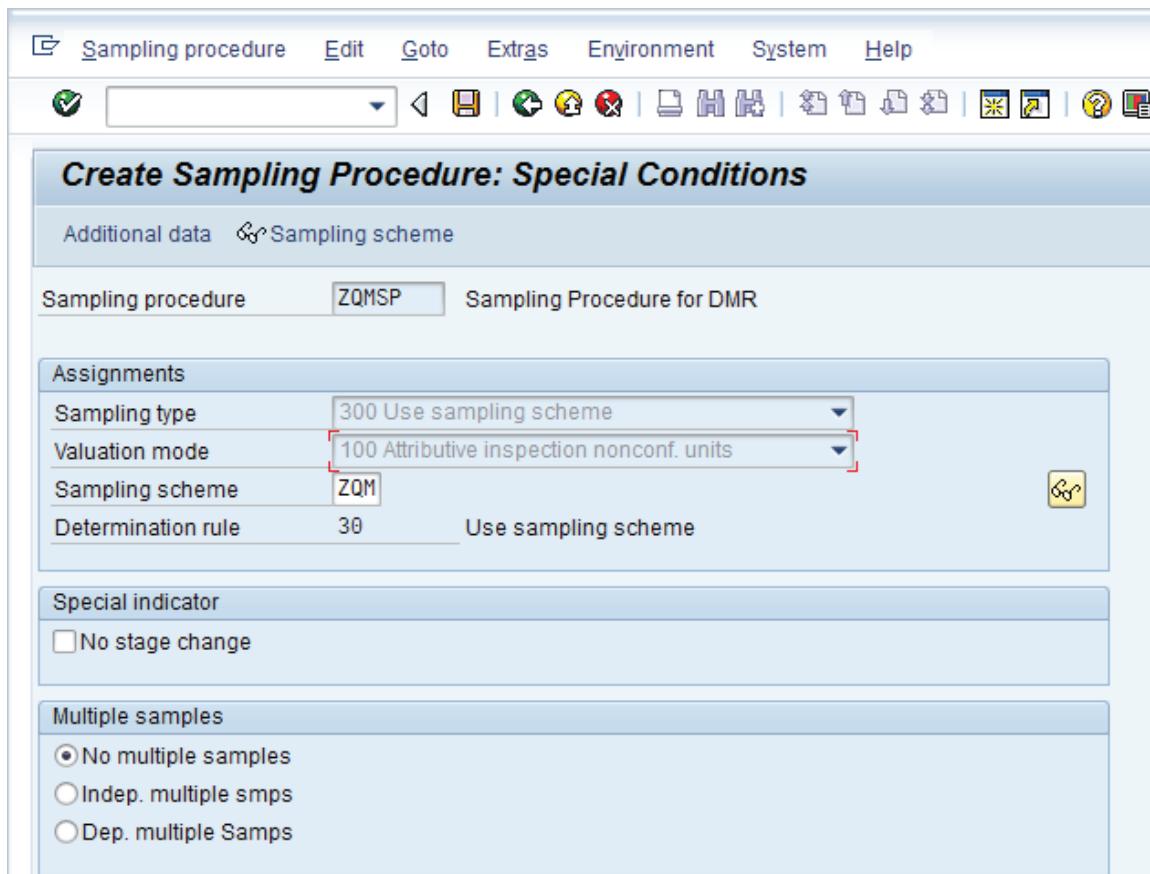
Figure 15: Sampling Procedure with Sampling Scheme

Click the Additional data icon to go to the screen in Figure 16.
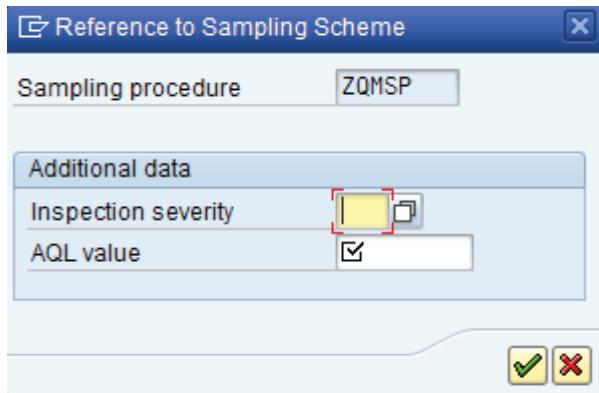
Figure 16: Sampling Scheme with Inspection Severity and AQL Value

Figure 16 is required to assign inspection severity and the AQL value for the previously created sampling scheme ZQM. Press F4 or click the drop-down box while keeping the mouse on the Inspection severity field to bring up the screen in Figure 17.

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Figure 17 shows two options of sampling scheme ZQM from which to choose; namely, reduced inspection with AQL of 2.000 and normal inspection with AQL 2.000.
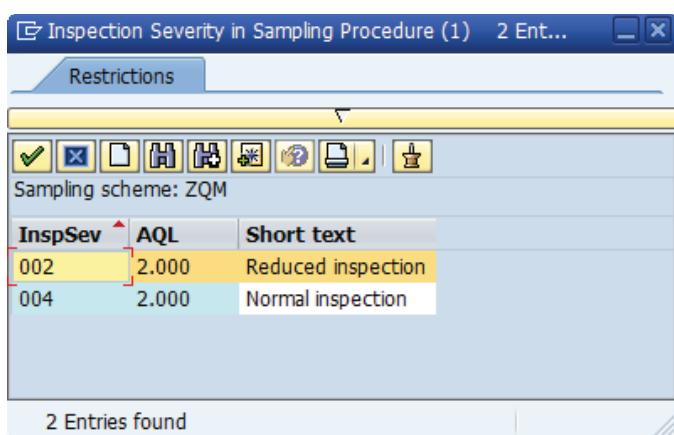
Figure 17: Drop-Down Options to Select Inspection Severity for Sampling Procedure

I chose Reduced inspection with an AQL value of 2.000 from the screen in Figure 17. Click the Continue icon to go to the screen in Figure 18.
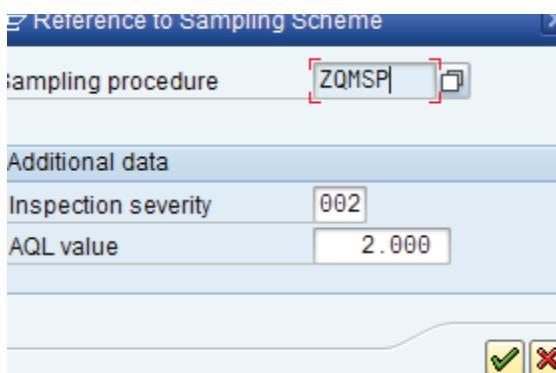
Figure 18: Sampling Procedure ZQMSP with Inspection Severity of 002 and AQL Value of 2.000

Click the Continue icon in Figure 18 and then save either by pressing Ctrl-S or clicking the Save icon to save the sampling procedure.

3. Create the DMR

The DMR is used to comprehensively define the details of the factors that trigger normal inspection to reduced inspection. The DMR is used to define the number of inspection lots that have the accepted or rejected statuses before it switches inspection stages from normal to reduced to tightened or vice versa.

To create a DMR, use transaction code QDR1 or the menu path:

Logistics → Quality Management → Quality Planning → Basic Data → Sample → Dynamic Modification Rule → Create (Figure 19).

Quality Management
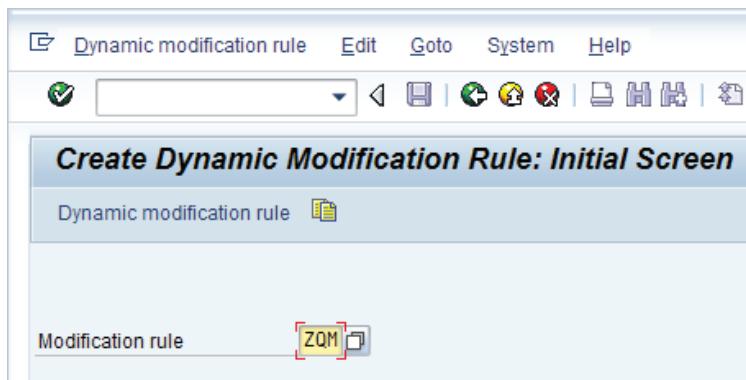
Figure 19: Initial Screen for DMR Creation

Figure 19 is the initial screen for creating a DMR. In my example, I created a DMR as ZQM. Press Enter to go to the screen in Figure 20.
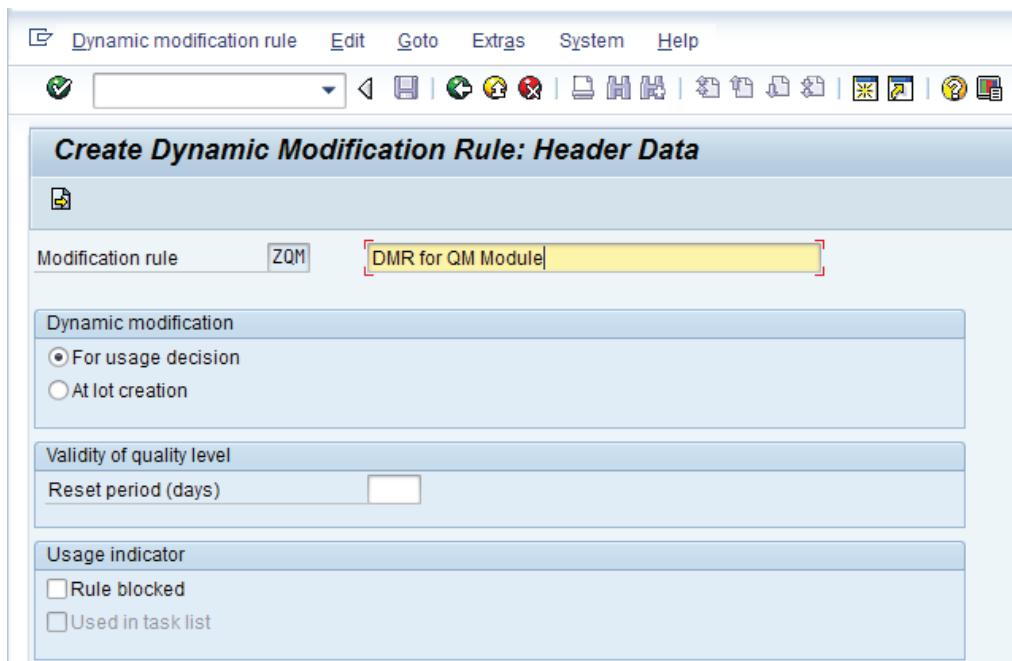
Figure 20: DMR Header Data

Figure 20 is the header data screen for DMR. Enter the short description and select the DMR rule 'For usage decision'. This option ensures that the basis for DMR triggering is a usage decision of an inspection lot – that is, if an inspection lot has been accepted during the usage decision (the decision to use a material or not), then DMR decides whether any inspection stage change is needed.

Click the Continue icon to bring up the screen in Figure 21. This is the detailed screen for defining inspection stages of a DMR. An inspection stage is used to define the number of accepted or rejected inspection lots that lead to an inspection stage change. "Inspection stages" are also referred as "stages". In my example in Figure 21, I defined two stages: stages 1 and 2.

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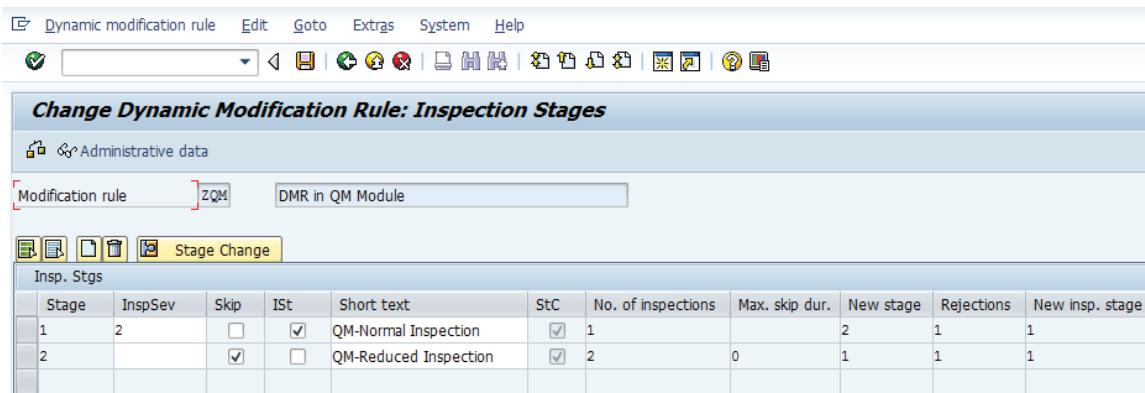
Figure 21: DMR with Details About the Inspection Stages

For stage 1, I defined an inspection severity of 2, which is the normal inspection. I also activated the check box ISt (which is for initial stage) to ensure that DMR should always start out with normal inspection (stage 1), before the stage changes to reduced inspection (stage 2). In stage 2, I activated the check box for Skip inspection, which means skips in results recording are allowed for the inspection stage 2 (reduced inspection). Next, select the row of inspection stage 1 in Figure 21 and click the Stage change icon. This leads to the screen in Figure 22.
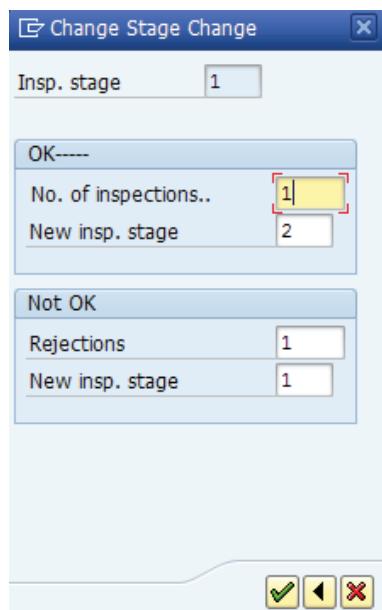
Figure 22: Details of Inspection Stage Change 1 for DMR

Figure 22 is the detailed screen for inspection stage change for inspection stage 1. Here, I defined that at least 1 inspection lot must have the usage decision OK or Accepted so that inspection stage 1 changes to stage 2. If there is a single rejection (as shown in Figure 22) with Not OK or a rejection in the Rejections field, then the next inspection stage is 1, which is the normal inspection and that requires results to be recorded. Click the Continue icon and this leads back to Figure 21.

Repeat the same process in Figure 21 by selecting Stage 2 and selecting the Stage Change icon to go to the screen in Figure 23.

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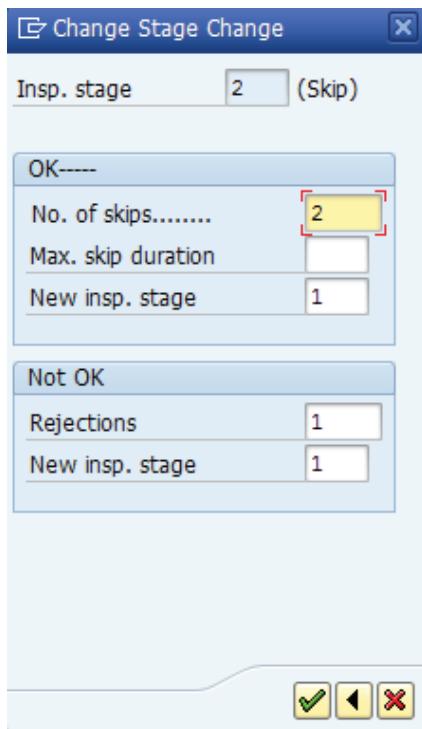
Figure 23: Details of Inspection Stage Change 2 for DMR

Figure 23 stipulates that there can be a maximum of two skips, before the system considers a stage change. If during results recording of a skipped inspection lot (for which no result recording is needed in the first place), the system will still create the next inspection lot with skip status on goods receipts against a production order. Similarly if there is one rejection (not OK), then the next stage remains 1, which is a normal inspection. Click the Continue icon to go to Figure 24.
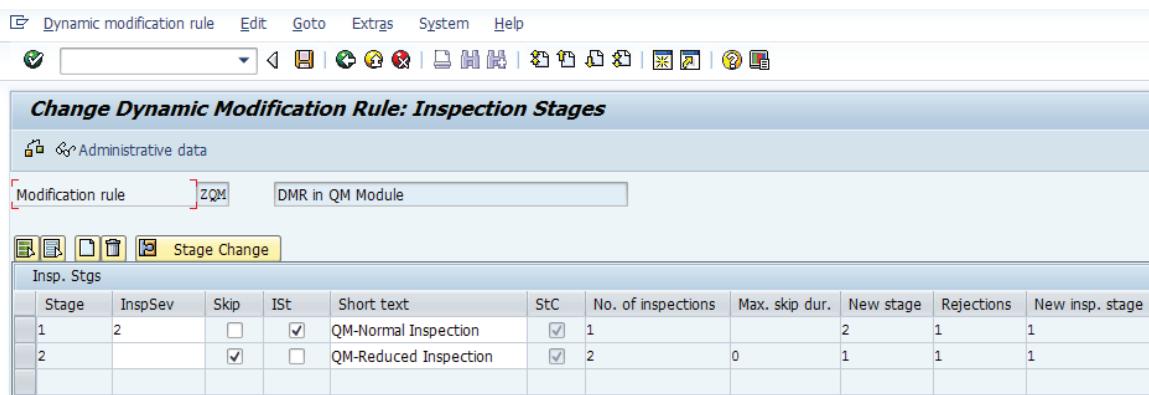
Figure 24: Overview of Inspection Stages' Change of DMR

Figure 24 shows that after you incorporate all the necessary details for individual stage changes, they are reflected in the various columns. Click the Consistency check icon in Figure 24, to go to the screen in Figure 25.

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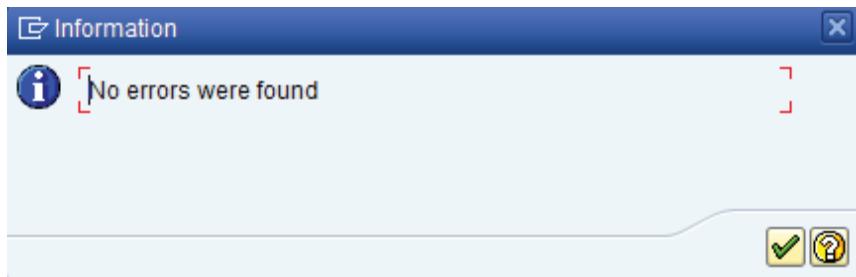
Figure 25: Consistency Check of DMR

Figure 25 gives an information message that the DMR creation found no error. Click the Continue icon and save the DMR by pressing Ctrl-S or clicking the Save icon. This leads to the screen in Figure 26.

Figure 26: Pop-Up Screen to Allow Creation of a DMR Relationship with the Sampling Procedure

Figure 26 brings up an option to allow the user to create a relationship between DMR and the sampling proce-dure. Click the Yes icon in Figure 26 and this leads to Figure 27.

Figure 27: Information Message of DMR Creation

Figure 27 is the information message that DMR ZQM has been created. Click the Continue icon.

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4. Maintain a DMR Relationship with the Sampling Procedure

One of the requirements for DMR use is that a relationship be maintained between DMR and the sampling procedure. Although in my example, the option to maintain this relationship was made available while creating the DMR (as shown in Figure 26), this relationship can also be created independently.

Use transaction code QDB1 or the menu path:

Logistics → Quality Management → Quality Planning → Basic Data → Sample → Sampling Procedure → Assign Dynamic Modification Rule (Figure 28).

Figure 28: Initial Screen for DMR Relationship Creation with Sampling Procedure

Figure 28 is the initial screen to maintain the relationship between DMR and the sampling procedure. Click the New Entries icon [New Entries] and this leads to Figure 29.

Quality Management
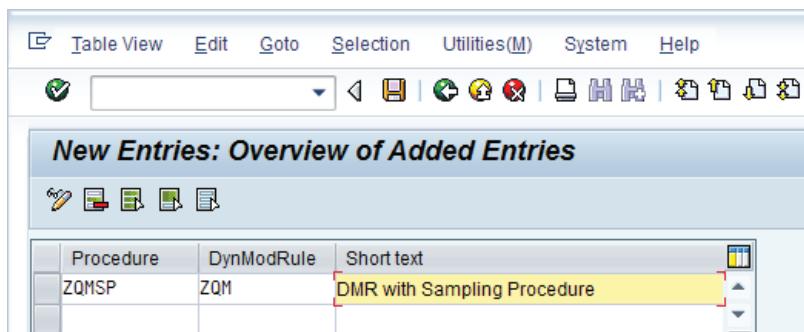
Figure 29: DMR ZQM Relationship with Sampling Procedure ZQMSP

In Figure 29, I created a new relationship between sampling procedure ZQMSP and DMR ZQM and saved it, by pressing Ctrl-S or clicking the Save icon.

5. Create an Inspection Plan

An inspection plan is the task list referred to whenever an inspection lot against a production order is created. An inspection plan consists of previously created MICs.

To create an inspection plan Use Transaction code QP01 or the menu path:

Logistics → Quality Management → Quality Planning → Inspection Planning → Inspection Plan → Create (Figure 30).
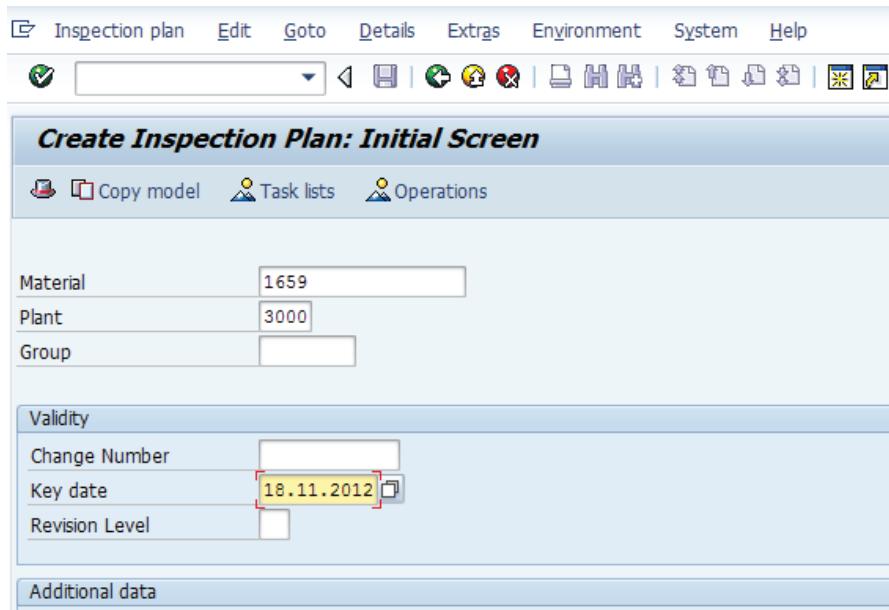
Figure 30: Initial Screen for Inspection Plan

Figure 30 is the initial screen for the inspection plan in which I have defined the Material as 1659 and Plant as 3000 for the creation of an inspection plan. Press Enter or click the Continue icon, which takes us to Figure 31.

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Figure 31: Header Data of Inspection Plan

In Figure 31, the header information given is that the Usage is 5, which is for goods receipt and the Status of the inspection plan is set to 4, which is released. A usage specifies the purpose for using a specific inspection plan. A material can have a different inspection plan for different uses – for example, for goods receipt-specific usage or a universal usage that can be for all the different inspections or a goods issuance usage that is used in a sales order-related quality check before goods are sent to the customer against a sales order.

In Figure 31, notice the option Dynamic mod. Level, which allows you to define the DMR in the inspection plan. The drop-down of the DMR field reveals three options, as shown in Figure 32.

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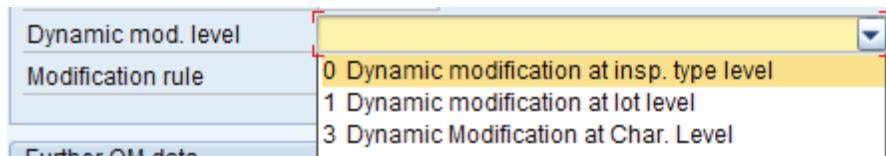
Figure 32: Drop-Down List of Dynamic Modification Rule (DMR) Level

Figure 32 shows that DMR can be activated on the entire inspection type, which means, for example, all the incoming inspection lots against a production order (inspection type 04) have DMR activated. The second option for DMR is at the inspection lot level, which entails that each and every individual inspection lot is evaluated to see if it qualifies for DMR. Finally, the third option is to have DMR triggered at the individual MIC level (characteristics level).

In my example, I chose the option to have DMR at the inspection lot level, as shown in Figure 33 and also defined in the previously created DMR ZQM.
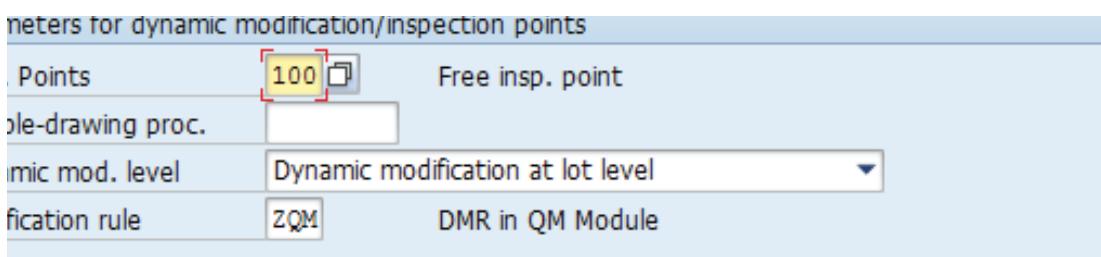
Figure 33: DMR Level at Inspection Lot Selected with DMR Rule of ZQM

Next, click the Operation icon in Figure 34. Assign the Work center 1111 and Control key as 'QM01' on which the inspection is going to be carried out. Select the line item 0010 and click the Inspection characteristics icon to bring up the screen in Figure 35.
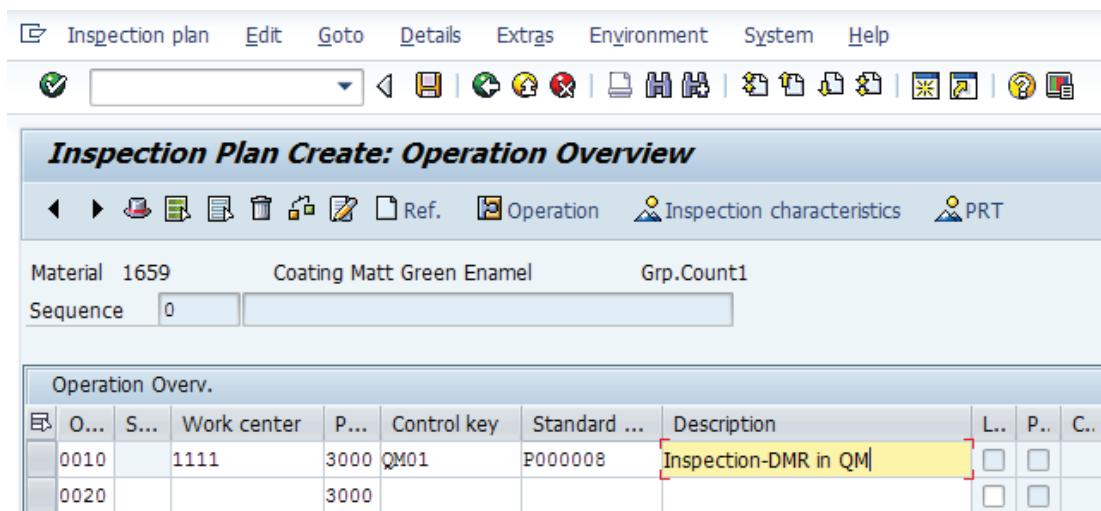
Figure 34: Overview Screen of Inspection Plan
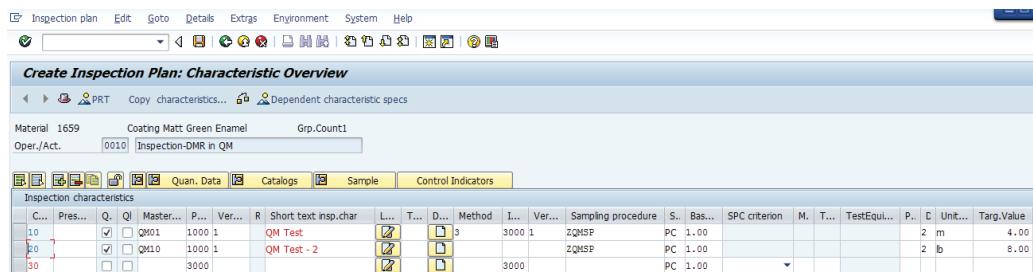
Figure 35: Two MICs, QM01 and QM10, with Sampling Procedure ZQMSP

I assigned the previously created MICs, namely QM01 and QM10, both in plant 1000. All other details are automatically copied from the MIC, including upper and lower limits and target value. Notice that the sampling procedure is assigned as ZQMSP for both characteristics.

You can now save the inspection plan. Press Ctrl-S or click the Save icon.

DMR at Work

Now that all required QM master data needed to successfully trigger DMR is complete, I demonstrate the end-to-end process flow to show how DMR actually works.

A production order was created for the above material for which DMR has been activated and a goods receipt was performed. As soon as the goods receipt was done, it created an inspection lot.

To go to the worklist for a QM inspection lot, Use Transaction code QA32 or the menu path:

Logistics → Quality Management → Quality Inspection → Worklist → Inspection → Change Data (Figure 36).
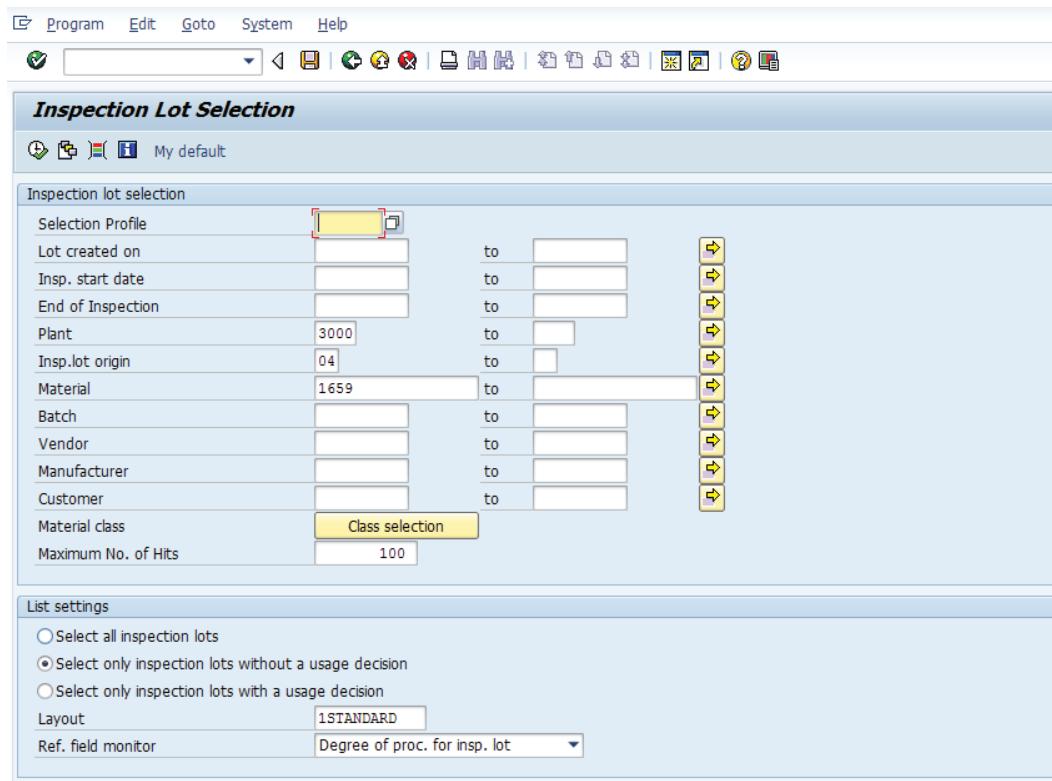
Figure 36: Worklist of Inspection Lots

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Enter the material number 1659, plant 3000, and inspection type 04. Press F8 or click the Execute icon. This leads to Figure 37.

Figure 37 is the worklist of all the inspection lots for which the results recording or usage decision has not been taken. Notice that modification rule ZQM was successfully applied to inspection lot 40000000720. Also, the sample size has been correctly calculated to 5 kg based on the goods receipt quantity of 10 kg (refer to Figure 11). This confirms that the sampling scheme and sampling procedure are correctly defined.

Figure 37: Inspection Lot 3462 with Calculated Sample Size and DMR Rule of ZQM

Select the inspection lot 40000000720 and click the Results icon to bring up the screen in Figure 38. Figure 38 is the results recording screen in which the individual specifications of material and the corresponding MICs are available for reference.

Figure 38: Results Recording of Inspection Lot 40000000720

Enter the results of each sample and the system automatically performs its valuation (denoted by the green check mark in the Valuation column in Figure 39). Save the results by pressing Ctrl+S or clicking the Save icon. This leads to Figure 37 again. Select inspection lot 40000000720 and click the Usage Decision icon, which leads to the screen in Figure 39. The usage decision (UD) is made by providing the UD code A for acceptance.

Quality Management

Figure 39: UD of Inspection Lot 40000000720

Click the Inspection lot stock tab in Figure 39. This leads to the screen in Figure 40.

Figure 40 is the inspection stock posting screen in which the quality inspection stock is transferred or moved to unrestricted use stock when saved. The unrestricted stock is the quality cleared and quality approved stock. Enter '10' PC to transfer the stock from quality inspection to unrestricted and save the UD by pressing Ctrl-S or clicking the Save icon.

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Figure 40: Stock Posting of Inspection Lot 40000000720

As soon as the UD has been undertaken with an Accepted decision, further goods receipts against the same production order will have inspection lots with SKIP status as shown in Figure 41. This means no results recording are necessary and the UD only is sufficient.

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Figure 41: Inspection Lots with SKIP Status

If you still have a business need to record the results of an inspection lot with SKIP status, you can still do it. The standard process of results recording prevails, although the system issues an information message that this specific inspection lot has SKIP status.

To further check if the DMR is properly configured, I selected two inspection lots with SKIP status, 40000000724 and 40000000724, entered results, and then rejected (shown in Figure 41) by giving a UD code as rejected for both of them. When the subsequent goods receipt against the production order was undertaken, the DMR with SKIP was not triggered, and normal results recording had to be performed. This is shown in Figure 42 for inspection lot 40000000725. This behavior validates the settings made in Figure 23 that at least two 'skipped' inspection lots (number of skips allowed was 2) must have rejected status before the system changes the status to normal inspection (stage 1) and enables the user to enter results.
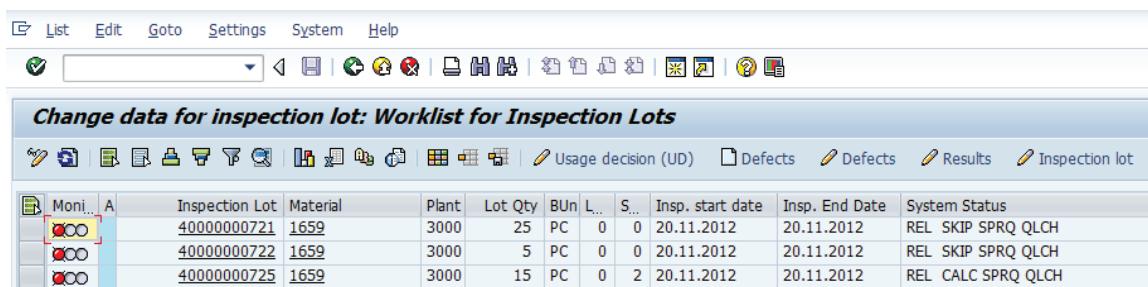
Figure 42: Inspection Lots Requiring Results Recording

As soon as the inspection lot 40000000725 was accepted during results recording and the UD, the goods receipt against subsequent inspection lots were again given SKIP status as shown in inspection lot 40000000726 in Figure 43, thereby confirming that DMR is successfully configured.
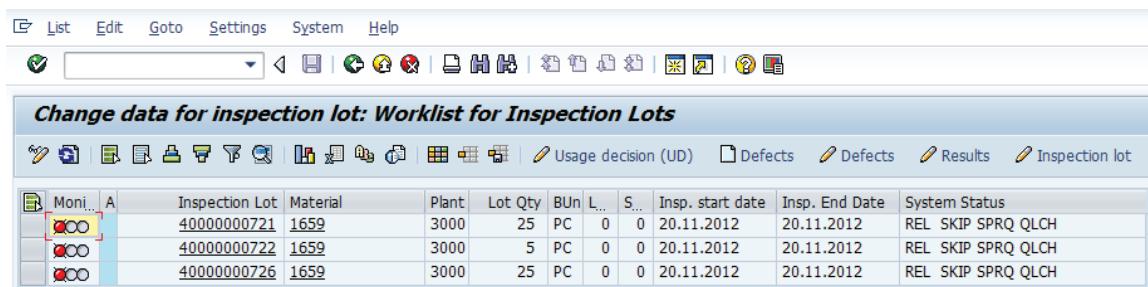
Figure 43: Inspection Lot 40000000726 Again with SKIP Status

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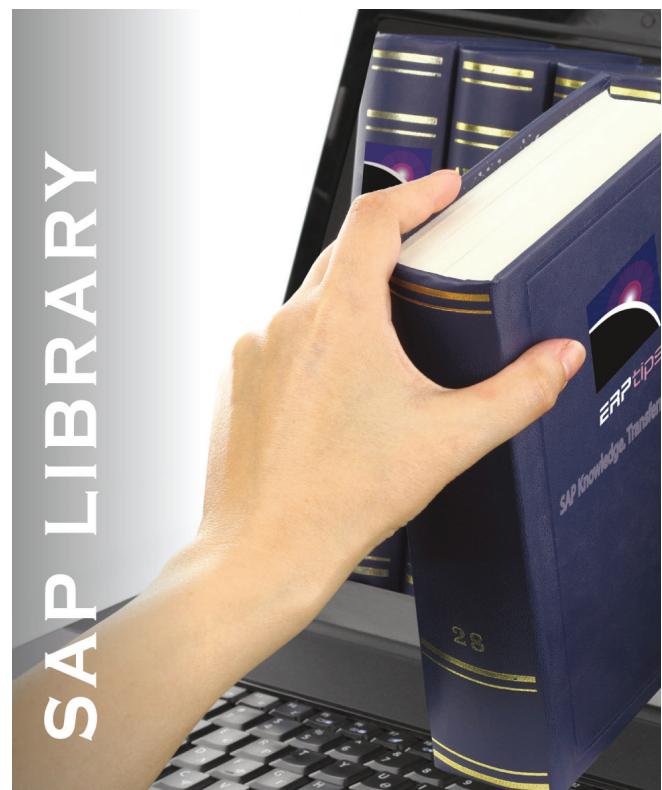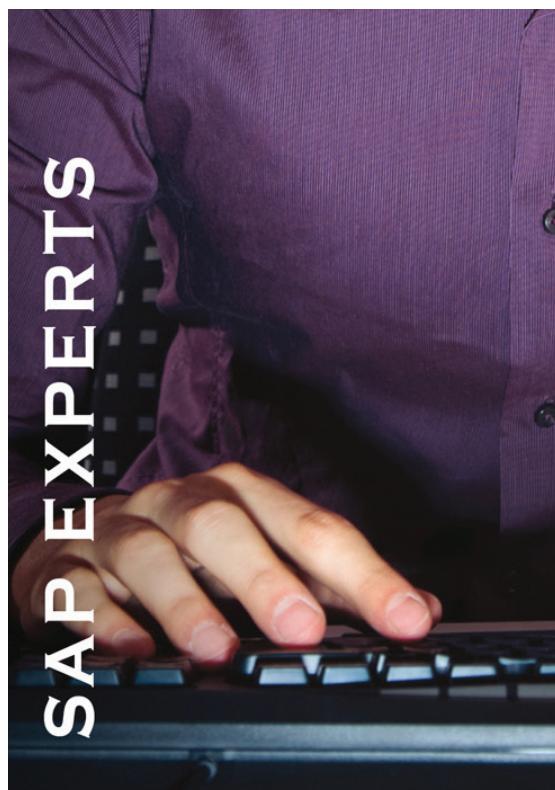
Conclusion

In this article, I have shown the importance of setting up complete, correct and comprehensive master data to implement DMR. Since this is master data, therefore changes can be made to it at any time to better suit the business needs of the company. Alternatively, new master data can also be set up to attend to new business processes. DMR takes significant routine out of the users' daily work to bring about organizational efficiency, yet at the same time is flexible enough to accommodate any sudden and unforeseen changes.

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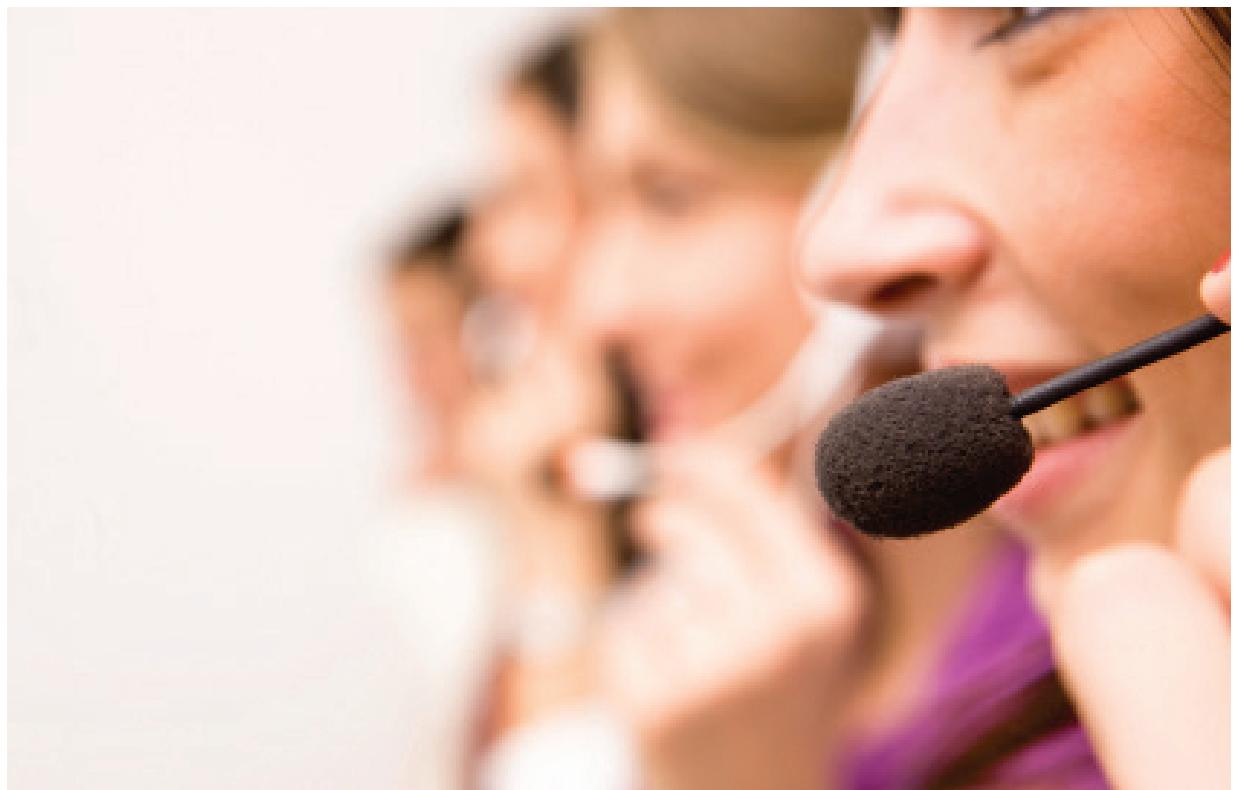
Integrate SAP SolMan ChaRM with Third Party ITSM Tools Using Webservices

By Rajiv Jha

Editor's Note: The IT Service Management (ITSM) in SAP Solution Manager can safely be regarded as one component of its broad Change & Request Management (ChaRM) functionality. The ChaRM functionality is taken to a new height with the introduction of SolMan 7.1. However, its functionalities are still not yet as advanced as that of some third party tools specifically developed for ITSM. In this article we will talk about a couple of scenarios of SAP SolMan integration with third party tools using a webservice integration method that can help the organization achieve the maximum ITSM benefit for successful IT execution.

Introduction

The IT Service Management, or ITSM, refers to the implementation and management of processes and tools that meet the business requirements. The ITSM execution can be broadly based on three pillars- people, process, and technology. There are several technologies (or tools) in the market focused around ITSM providing default processes that can be adapted to the requirement of a given organization. Most of these tools are based on standard processes defined by IT Infrastructure Library (ITIL), which is the widely accepted standard for ITSM execution framework (or processes). So, a good selection of tools can enable an organization to achieve the two pillars of ITSM- technology and process. Finally, the organization needs to define different roles to execute these processes using the underlying technology.

A good selection of tools can enable an organization to achieve the two pillars of ITSM-technology and process.

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So far we see that the process of implementation of ITSM can be easily achieved by conscious tool selection and role assignment method. But, what does a typical ITSM tool provide? In terms of functionalities, the ITSM tool provides a central platform where a typical end user (or any IT user for that matter) can raise a request and avail support from the IT experts' team. In order to better categorize and accordingly address the concern raised by the user, ITIL provides different segregation methods, called processes. Overall an ITSM operation scenario can be segregated into five processes:

1. Service Desk and Incident Management
2. Problem Management
3. Change Management
4. Release Management
5. Configuration Management

Based on requirements, some or all of these processes can be implemented and used for operations. A request can be raised by a user via any of the above five processes, but if the support team needs to perform any change in IT landscape due to the request, a change request process must be initiated.

In SAP, the change request is followed by the workflow called a change document that defines the way a change needs to be carried out and moved across the landscape. Then a change (or transport) is created and the system changes are carried out inside the transport. The end-to-end change management and control is illustrated in Figure 1.
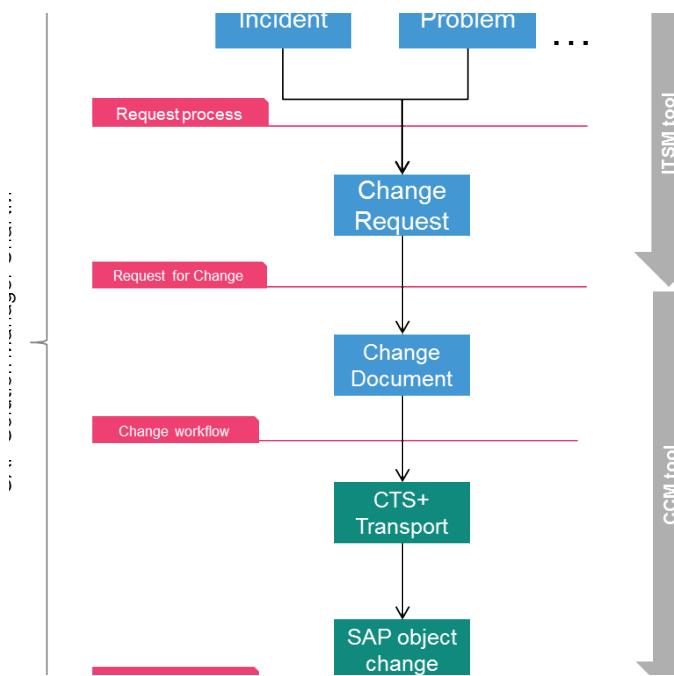
Figure 1: E2E IT Service Management for SAP

As stated before, there are several ITSM tools in the market such as Remedy ITSM, HP Service Manager, SysAid, etc., and these tools are mature in terms of the content, reporting, and functionalities they offer. However, being generic tools for any IT landscape, they do not dive deep to control and trace the actual change performed in the SAP landscape. This means I can trace the request and manage workflow for successful completion of the task, but I will not have any control/ visibility on the change developed in the SAP system, as there is no integration of the ITSM tool with the SAP object development.

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SAP change development and control workflow is called SAP Change Control Management (CCM) (Figure 1). Again, there are several tools focused on SAP CCM functionality such as Transport Express, Transport Manager, Conigma, etc. So, we have tools for ITSM and for CCM. However, the problem comes in mapping and integrating these tools to have End-to-End (E2E) overview of change implementation in the SAP landscape, starting from requirement until the change development and moving across the SAP landscape. Additionally, the cost of license and implementation needs to be addressed.

SAP has addressed this pain point in its central tool **SAP Solution Manager** within SAP ChaRM functionality (Figure 1) by availing end-to-end traceability. Also, ChaRM can be considered as a quick win tool as the standard setup is straightforward and comes with no software cost. However, ChaRM cannot yet be considered as a mature tool since it is still lacking advance functionalities in both ITSM and CCM areas. It can also be hard to consider ChaRM for a global service desk solution, as the SolMan ITSM piece is focused on SAP application support and not for generic purposes.

SolMan Integration Scenarios

With the introduction of SAP Solution Manager 7.1, SAP has improved SolMan ITSM to a significant level but it is not yet so advanced compared to other ITSM tools in areas such as dashboards, help desk, monitoring, etc. Yet, SolMan ITSM, especially in the current 7.1 version, can be a preferred choice for application support due to its built-in integration with all SAP systems and alignment with other SAP landscapes. Similarly, though the CCM part does not have some nice-to-have features such as rollback of transport changes or conflict management across the landscape, it is a quick win, free tool and sufficient for a support model with the standard SAP landscape.

Considering points mentioned in the above paragraph, it makes sense to think about a global service desk third party tool that can help you achieve an overall service level agreement with the vendor supporting your entire IT organization and use SAP Solution Manager in one of the two models described below:

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Model 1: Global Service Desk Tool Integration with SolMan ITSM

This model is based on using a global service desk tool as the single point of entry for any user request. The request is then reviewed and categorized by a service desk person. If identified as an SAP application support related request, the request is then forwarded to SAP ChaRM, responsible for complete SAP application support activity.
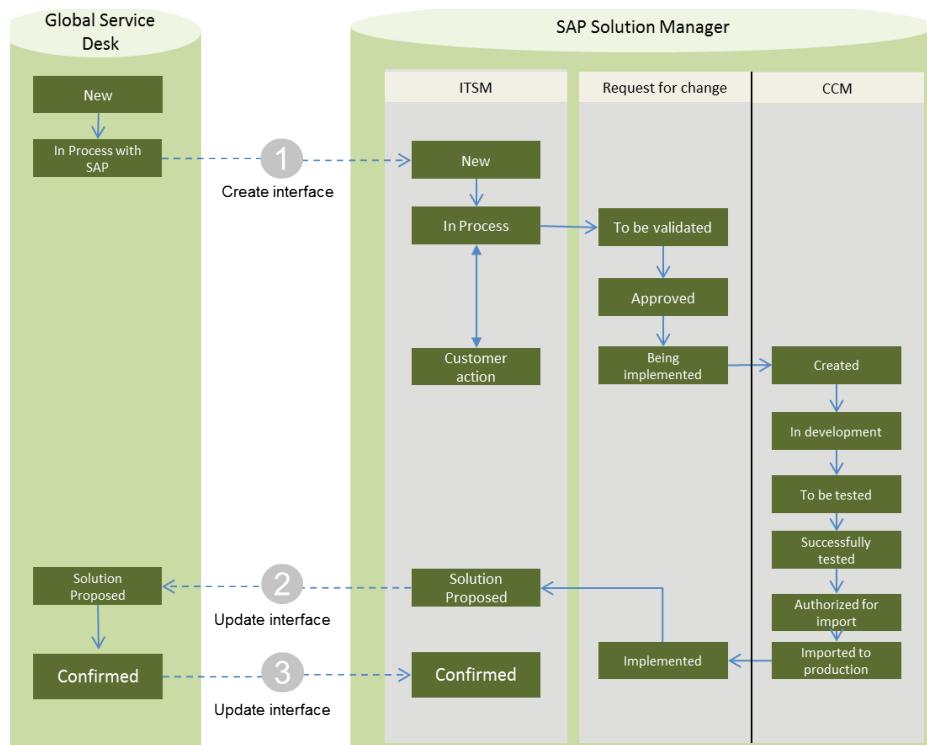
Figure 2: Model 1- Integration at ITSM Level

Figure 2 is a detailed status flow sample showing the global service desk tool interaction with SAP Solman. SolMan ChaRM then internally exchanges information between ITSM and CCM workflows and sends back the information to global service desk once the change is moved to production.

Note: User status values shown in Figure 2 may change based on the workflow design adapted by an organization for different scenarios of change control management.

This scenario can be applicable in the following situations:

1. You have separate service providers for SAP application support and general IT support.
2. You want to use SAP for complete change tracking; i.e., utilizing both SAP ITSM and CCM for SAP change handling.
3. In addition to the tickets forwarded from global helpdesk, you have also activated automatic system-generated ticket creation directly in SAP SolMan for scenarios such as system monitoring, process monitoring, alert handling, etc.
4. You are using SolMan test management, which is integrated with the SAP ChaRM scenario.

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Integration in Model 1 requires at least three points for interface/ communication between global helpdesk and SolMan ITSM. The first interface being creation and the remaining two interfaces for update activities. There are some adapters available in the market that can support achieving the interface described here as Model 1. The adapters may require you to install add-ons on both the tools for complete communication. Moreover, they may support you in the standard interfacing scenario. So, if your organization deviates from the standard ITSM process flow, these adapters may not be useful. So, looking for a custom interface can be a good option for companies wanting to implement ITSM for long term support engagements.

Model 2: Global Service Desk Tool Integration with SolMan ChaRM

A second feasible model can be that the organization decides to use one global service desk tool for complete request creation and tracking purposes with SAP Solution manager restricted to change control or CCM functionality for any SAP related requests. This scenario makes a clear distinction between the tool usage for ITSM and CCM functionalities and ensures complete change traceability similar to model 1.

Before we continue talking about the tool integration, one thing is worth mentioning. With the introduction of SAP Solution Manager 7.1, SAP has availed a new functionality that a Request for Change (or formally called a change request) can accommodate multiple change documents. What does this mean? Let us consider a scenario in which you have some defect in the system related to pricing procedure and this involves changes to ECC and CRM systems. In the SAP CCM module (part of ChaRM), a change document is system dependent. This is logical since the change document acts as a workflow for transport movement across the landscape. As the transports are system dependent, so has to be the corresponding workflow that determines transport behavior. This means, in your scenario, you need two change documents, one for ECC and another for the CRM system.

Since the SolMan Request for Change (RfC) document accommodates multiple change documents, a third party tool need not worry about tracing multiple change document numbers for traceability, if it connects to SAP Solution Manager at the Request for Change (RfC) level. Moreover, the status of the Request for Change (RfC) document moves to the next status level only if all the change documents satisfy the required condition. This ensures that the RfC document is getting final status only. Along with this feature, tool integration at the RfC level also ensures complete SAP change approval and that other SAP SolMan scenario integration (documents, BPCA, etc.) is intact.

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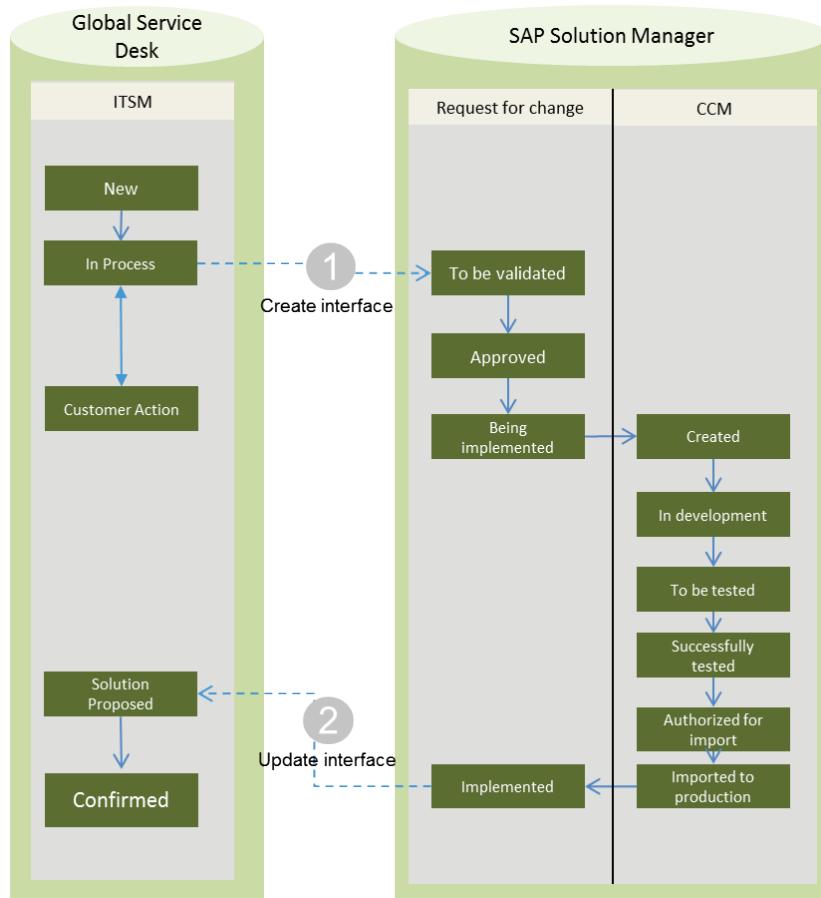
Figure 3: Model 2- Integration Between ITSM and CCM Tools

Model 2 optimizes the E2E ITSM and CCM tool integration usage while ensuring availability of complete trace, transparency, and change control. The status flow shown in Figure 3 is a detailed sample flow covering End-to-End service flow information.

The two models discussed above have been overly simplified for the sake of basic concept-building. However, when you drill into details to adapt the scenario to your requirements, you can change and adapt interface trigger points. Moreover, these two models are not the only possible combinations. The idea is to help you understand the possibilities of integration at different levels with custom interfaces.

SolMan Webservice Interface Communication

Interface of SAP Solution Manager with any third party tool can be achieved in various ways such as involving SAP PI for message mapping and communication, or using third party adapters, or using SAP webservices. As the former two methods involve the addition of extra systems or add-ons, webservice integration can be cost effective. In this section we will talk about the webservice method of communication and the setup required in SAP Solution Manager to communicate with third party tools. Webservice setup on the third party tool varies based on underlying technology and thus is not covered in this article.

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Webservice Communication Method

Webservice can be considered as a method of information exchange or communication between two applications/devices using the web (WWW). The webservice method may use web API or XML service messages to communicate. In SAP, we mostly focus on webservice communication using XML message.

The Webservice communication involving XML starts with an outbound message from 'Consumer System' and ends with the inbound message to 'Provider System'. The combo SOAP, WSDL, UDDI defines a general model for information exchange between the two systems (Figure 4):
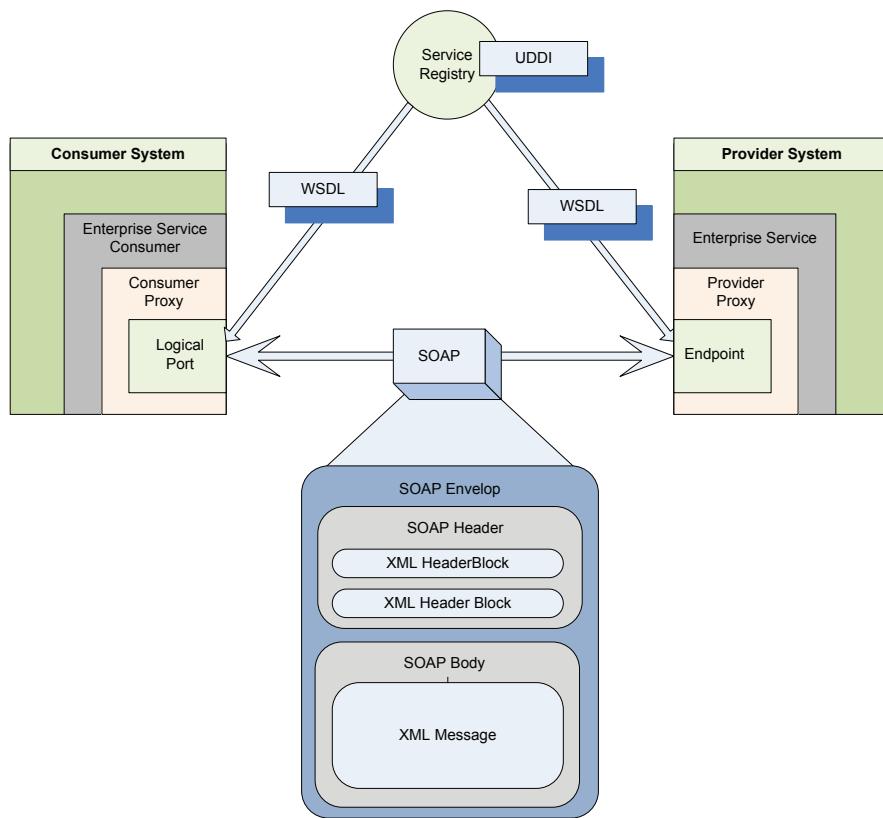
Figure 4: Webservice Communication Using XML Message

UDDI (Universal Description and Discovery protocol) is a standard protocol registration open to companies worldwide, regardless of their size.

WSDL (Web Service Description Language) describes network services as a set of endpoints operating on messages.

SOAP (Simple Object Access Protocol) envelope contains a Header and Body, with each in turn containing XML header and XML body messages respectively.

With the above webservice architecture information, let us now see how the provider and consumer systems are configured in SAP Solution Manager to generate WSDL and communicate using SOAP.

Note: Since the communication is bi-directional, sending a message and receiving acknowledgment or vice versa, SAP SolMan (and the service desk tool) needs to be configured as both the provider and consumer systems.

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SolMan Webservice Provider Configuration

The service provider configuration in SAP Solution Manager is achieved in several steps mentioned below:

1) You can create the webservice using existing or by creating a custom function module/ group, BAPI.

Note: This is the function module where you need to define criteria to control the behavior of resultant inbound communication, if any.

2) Once the BAPI is chosen, you need to choose the option to create webservice from the function module/ group in transaction SE37.

3) Create the webservice following a wizard that opens upon execution of Step 1. Ensure that you select the option to **publish the function module.** Upon completion of the wizard, the Enterprise service interface (Figure 4) is created.

4) You can check the interface in transaction SE80. Follow the path: Edit object→ Tab Enterprise Services → Service Definition: (Interface Name).

5) To publish the created interface, go to transaction SOAMANAGER and go to the **Single Service Administration** area.

6) The service you created has an internal name and you need to assign it an external name. For this purpose, first search and select the service. Then click on the **Configuration** tab.

7) Choose **Create service** and provide it an external name. The system will also ask you to choose the **security setting** for secure communication (Figure 5). Once done, save changes and move out.
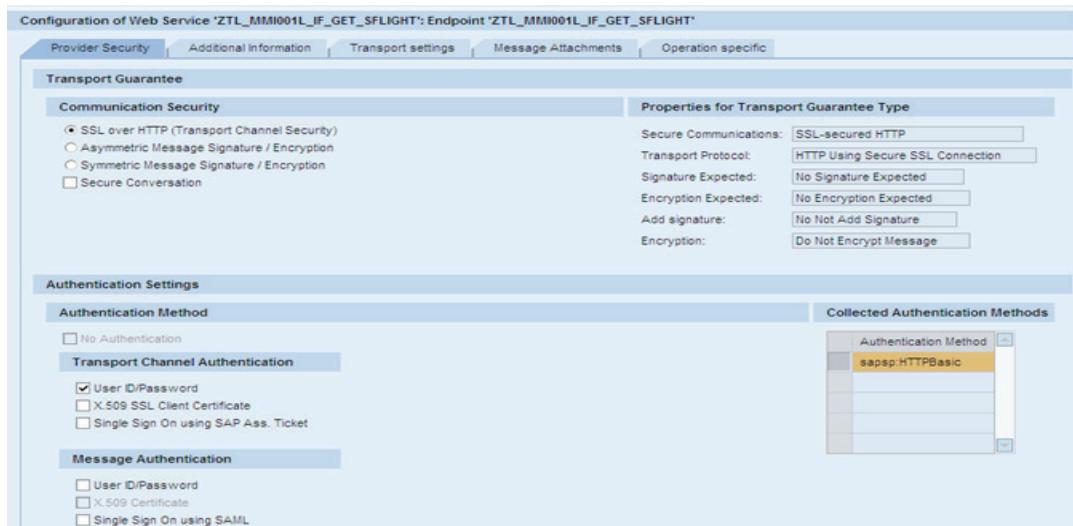
Figure 5: Provider Security Settings

8) You can now view the generated WSDL link in the overview tab.

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If you want to cross check that the generated WSDL is correct, select the WSDL link and open it in a web browser. Search for label Location in the field content. There you can find the following URL:

/default_host/sap/bc/srt/xip/sap/<Service Name>/<Current Target SAP System Client>/<Service Name>/

In the SICF transaction, you can check that the generated service activated (choosing test service option) at the same navigation path described above. If not, you performed something wrong in the configuration of the web service provider.

SolMan Consumer Proxy Configuration

For the configuration in SolMan as message sender (outbound), again we need to go through some technical steps in the SAP SolMan system:

1) Initiate/open **Enterprise services** in transaction SE80. Select the Create option for **client proxy**.

2) The wizard opens to accept a URL/HTTP destination. You need to add the URL (WSDL link) of the third party global service desk tool that is to be connected.

3) In the next step, add Package and Prefix. This info will be required to generate tables, table type, structure, data elements, etc. in the system.

4) Complete the procedure, which generates the consumer proxy automatically.

Note: The following elements are generated:

- Class: A service consumer

- Table: A table for each (input and output) operation service provider.

- Structure: Structures/tables/table types for each structure necessary for input or an output step.

- Data Element: A data element for each necessary object created above.

Once the class interface is generated, you can see the generated methods:

Figure 6: Methods in the Class Interface

All the methods highlighted inside the box in Figure 6 are used for advanced level configuration. You may see more information on these methods in the SAP help portal.

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Once the class proxy is generated, we can move ahead for logical port creation.

5) In transaction SOAMANAGER select the option **Single Service Administration.**

6) Search and select the consumer proxy that is created with an internal name as of now.

7) In the configuration tab, choose the **Create logical port** button.

8) You can generate and default the logical port via auto (WSDL link or file) or manual methods.

9) In case of manual configuration, you need to provide the user info (ID and password used by SAP Sol-Man to connect to the third party tool).

10) Check the **additional information** tab. HTTP destination (RFC connection that can be tested in transaction SM59) is generated.

11) Check and update **RM protocol, Message ID protocol** and **Statistics for service call** in the Messaging tab. For example, HTTP header option for transfer protocol.

12) Update the following in the **Transport settings** tab:

- URL Access path: URL info excluding the domain server detail.

- URL protocol: HTTP/ HTTPS

- Computer name of access URL: domain server

- Port number: Server Port

13) Finally, check the **Operation specific** tab. In some cases, you may need to update this tab.
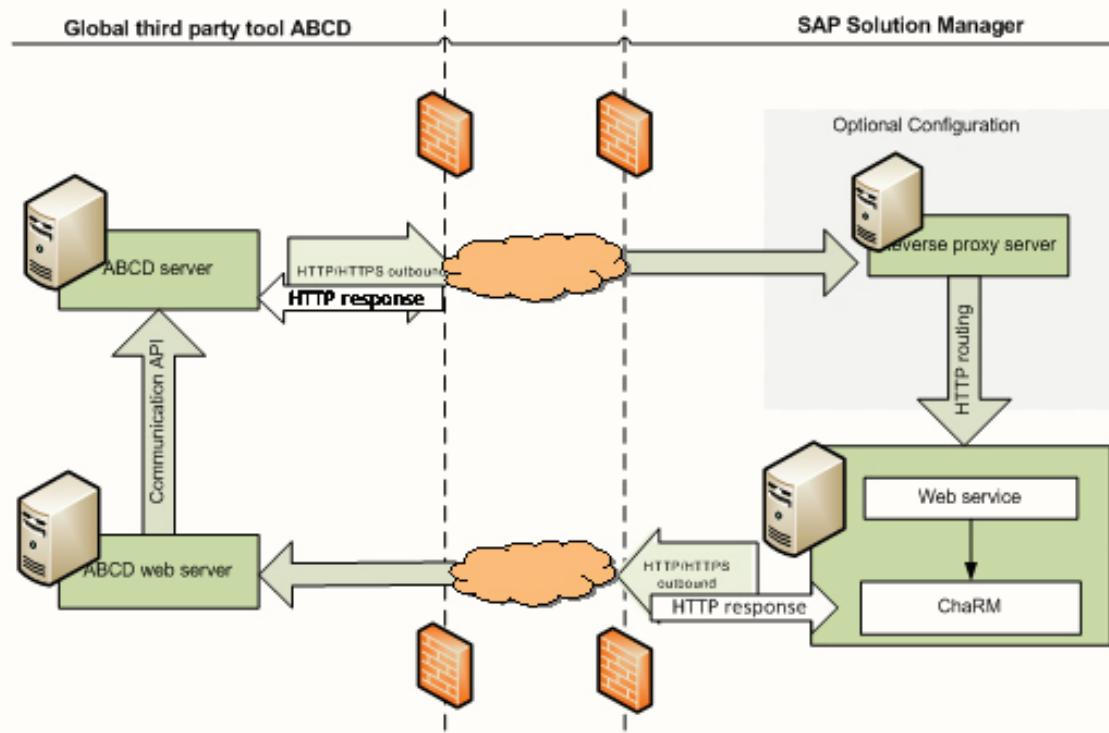
Figure 7: Network Communication Architecture Between SAP SolMan and Third Party Service Desk AB

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Conclusion

Webservice communication between SAP Solution Manager and any third party service desk tool helps avail an end-to-end solution for IT Change and Request Management. Similar to SAP Solution Manager, service provider and consumer settings need to be completed for the third party service desk tool. Depending upon the tool method, some additional steps might also be required in order to ensure seamless bidirectional real time communication across the tools. The diagram in Figure 7 shows the end-to-end network communication between a third party tool and SAP Solution Manager, achieved after successful webservice integration.

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BW

6 Steps Your Organization Should Take To Be Ready for SAP HANA

By Anurag Barua

Editor's Note: There is strong evidence that HANA is coming whether you are ready for it or not, so Anurag Barua is here to provide some guidelines for gearing up. He discusses the importance of having a champion for the cause, building business use cases and demonstrations, and of course, getting your people trained. For a basic primer on SAP HANA, please refer to Anurag's article titled "Demystifying SAP HANA" in the ERP-tips Document Library.

After seeing first-hand the many innovations in the HANA realm, talking to countless HANA experts, and listening to many keynote speakers at the recently concluded 2013 Sapphire/ASUG Conference in Orlando, it has become clear to me that the SAP HANA juggernaut is now rolling at a tremendous speed. While I would hesitate to call it a tsunami, it is certainly a steadily building tidal wave that is not likely to abate, but only gather strength. I am of the opinion that companies can delay adoption of SAP HANA but cannot afford to deny it.

Unfortunately, in my regular interactions with customers, I find that many companies are delaying or denying their involvement with SAP HANA and some are doing both. The reasons given often have to do with cost, but there seems to be a general lack of understanding of how HANA can be leveraged for solid business reasons without paying a fortune.

I have been thinking hard about this general gap and ways by which it can be narrowed if not completely closed. In this article, I will propose 6 simple steps that can help your organization be ready to make the transition to SAP HANA when it goes completely mainstream.

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1. Become Your Organization's HANA Champion

When a "new" technology is introduced and there is skepticism if not necessarily cynicism about its potential, there is no better tactic than becoming your company's HANA champion. Or if you are a decision-maker, you should designate someone in your organization as the HANA champion. The responsibility of the champion should be to spread awareness of SAP HANA within the organization. Since this is most likely to be a part-time pursuit (and not necessarily endorsed by all decision-makers), you will need to be very strategic about how you spread the message. You cannot afford to be SAP's mouthpiece, but will need to provide as much information about HANA as possible. This will include organizing demonstrations, conference calls, etc. Another important technique is getting your decision-makers in contact with companies that have implemented HANA in some shape or form so that the decision-makers have the opportunity to talk to those that have found a need for it and presumably have benefited. A key component of this role is facilitation. You will need to facilitate many of these discussions.

2. Recommend Use Cases for HANA

Since SAP HANA is speedily evolving into a platform that is technology-agnostic, the possibilities of leveraging HANA are endless. You will need to work closely with your organization's functional subject matter experts (SMEs) to see where the pain points are. The rule of thumb is that if the root causes are related to large data volumes, excessive time needed to access data, inability to analyze information etc., SAP HANA may be able to solve the problem regardless of where your data resides. Here are some concrete examples:

- Let's assume your organization is in the banking and/or financial services industry. You deal with extremely large data volumes on which you need to spot past and current trends and be able to make future projections. Today, you may not be satisfied with the pace at which this is happening. This is a good use case for HANA. A simple proof-of-concept could entail replicating your financial data using trigger-based SLT extraction to an SAP HANA database and doing your querying and analysis off the HANA database. Even better, as Phase II of this project, you may consider pushing your complex transformations/logic, etc., to the SAP HANA layer thereby letting HANA do the heavy lifting instead of your current software or your analysts. Figure 1 illustrates this use case at a high level.
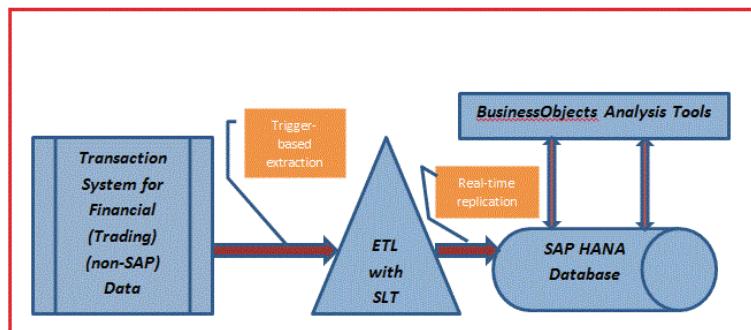
Figure 1: SAP HANA Use Case for a Financial Services Company

- Recently I had a very engaging conversation with a senior leader from a consumer goods company. The company has multiple systems including both SAP and non-SAP systems in its landscape. Since it frequently acquires companies, this list keeps growing. Along with the number of systems, the complexity of the landscape is growing. Meanwhile, it is taking more time for data to be available for reporting and analysis. Decisions are being made with not very current data and often without much analysis. It is often late in spotting past trends and challenged in doing any meaningful projections. As a consequence of all this, the senior leadership team feels that the company is losing its competitive edge relative to its competitors.

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I told the individual that this is a really strong use case for SAP HANA. My suggestion to him was to extract all the data from these disparate systems in (near) real-time using SAP SLT and replicating to the SAP HANA database. Using the SAP HANA Studio, various analytic views can be modeled to realize complex analytical models and scenarios. And since the company has SAP BusinessObjects, it will work well on SAP HANA for analytics. I recommended BusinessObjects Explorer and BO Analysis (Edition for OLAP). Since the company also uses mobile devices extensively, I recommended using BusinessObjects Mobile (Mobi) for Phase 2. And in order to add the dimension of foresight to hindsight and insight, I recommended using the power of SAP HANA for Predictive Analytics as a Phase 3 option. The executive was – not surprisingly – very keen on containing costs and I suggested a proof-of-concept using a limited number of systems and the HANA Enterprise Cloud instead of buying and housing the HANA hardware/appliance. Figure 2 is a high-level illustration of my proposed solution.

If the app solves a business problem or opens doors to revenue opportunities for your organization, you are definitely on the way to something big.
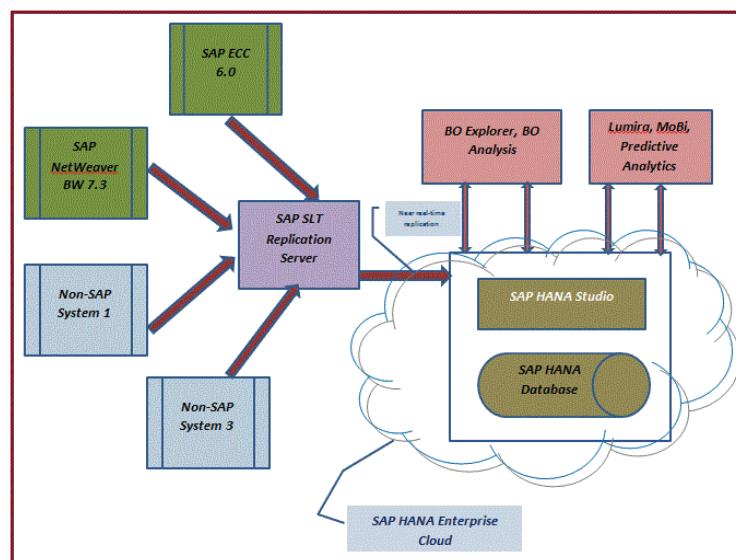
Figure 2: SAP HANA Use Case for a Consumer Goods Company

3. (Try) to Build a Simple App on the SAP Enterprise HANA Cloud

Your championing of SAP HANA (or any new technology for that matter) will, at best, create a mild buzz in your organization. You will need to walk the walk, not merely talk the talk. If you are someone with an innovative idea (that may or may not be relevant to your organization), you can build a simple app or prototype without making a huge investment. This could be the most effective way to showcase HANA's capabilities. And if the app solves a business problem or opens doors to revenue opportunities for your organization, you are definitely on the way to something big.

Today, developing an app has become a lot cheaper and more convenient with the availability of the SAP Enterprise HANA cloud; i.e., the "HANA on tap" model. If you are at a loss for ideas, all you need to do is to go to the Experience HANA site (www.experiencehana.com) and browse the over 400 apps for inspiration. It will please you to know that a lot of these apps were built with non-SAP technologies. The list simply keeps growing. One of the apps that I personally think encapsulates the vast possibilities of SAP HANA is Quiri. It leverages SAP HANA's Big Data processing capabilities to provide Siri-like functionality. You can check out its features and also do a trial run by visiting the following URL: http://www.experiencehana.com/docs/DOC-3566. SAP provides accelerators that will speed up your development of apps, and the SAP Startup Focus Program is quite popular.

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4. Explode Common Myths Surrounding HANA

Too many myths continue to surround HANA. It is time that you disabuse your clients of these misconceived notions. The ones that I hear most often are:

- I am not an SAP customer so I do not need HANA. As we all know, a business does not need to be an "SAP customer" in the classical sense to be able to utilize HANA.
- HANA is a fad and may fade away. You will need to be extremely brave and somewhat audacious to be able to say that. HANA is built on solid technologies, is gaining rapid acceptance worldwide, and is an irreversible trend.
- HANA resources are scarce. Not true. I regularly come across countless HANA-certified resources. Certification alone does not mean that they are experienced or even competent. But HANA is still new, so access to certified resources is a good start. Remember the initial days of Java. It was a new technology, so finding experienced resources was not realistic. So the most effective way to assemble a team and start a project was to engage Java-certified resources.

5. Prepare a Water-Tight Business Case for SAP HANA

Good use cases are a precursor and often a prerequisite for a business case. If you have identified a few use cases, you should be in a position to put together a solid business case for SAP HANA. This is an area where a lot of HANA practitioners and/or HANA visionaries seem to come up short. I have seen quite a few "business cases' for SAP HANA that have had lukewarm response due to some of the following common reasons:

- The business benefits of SAP HANA were not clearly articulated. It sounds like a no-brainer but a business case is not a business case if the benefits of the investment are not clearly described.
- An obsession with "SAP BW on HANA" can kill a lot of business cases. Although SAP BW on HANA is a popular option, not every organization needs its SAP BW system to be turbo-charged by HANA. A lot of business users and decision-makers seem to be antagonistic to the very notion of a data warehouse and the perceived latency between the transaction posting and reporting. SAP BW on HANA as a POC is a hard argument to make when a company has invested into the Business Warehouse Accelerator (BWA).
- The total cost of a HANA POC is not clearly indicated. I recommend that those proposing a POC think of the most effective 30-second elevator pitch to the CFO. The CFO will probably want to know the cost within the first 15 seconds. So if you are vague about the total cost of such an initiative, it is dead on arrival because remember, the CFO has heard that HANA is costly.
- You have to clearly lay out the options for implementing HANA. It is quite common to forget the HANA Rapid Deployment Solutions (RDS) that SAP provides that are scenario-specific, pared-down, faster and cheaper implementations of HANA.

6. Take Full Advantage of OpenSAP Courses for HANA

Every organization that has HANA on its radar is anxious about getting some of their IT folks trained in HANA. But as with everything related to HANA, they have "heard" that the cost of training your personnel in HANA is a costly affair. Of course, if anyone had expected HANA to be offered as free lunch, unfortunately, that is not the case. There are official training courses from SAP Education that are expensive (depending on how you define "expensive"). There are the spin-offs of these training courses that are provided to you at a steep discount by questionable outfits and free material that you can find on the web.

In a nod to the growing importance of HANA to SAP, it has started providing something close to a free lunch (or at least free appetizers). As of the time I am writing this, SAP has started providing free basic HANA courses at https://open.sap.com/. The current course "Introduction to Software Development on HANA" is very popular. By training yourself on HANA, you can be your organization's HANA trainer. In fact, as the primary champion of HANA in your organization, it is probably something you should do anyway. I have made it mandatory for every Analytics practitioner in our organization to complete this course. It is not a very significant time commitment (at about four hours per week) but there is much to be gained.

Conclusion

In conclusion, there are clear advantages to trying to keep pace with SAP HANA or even ahead of the curve by adopting some cost-effective measures. This is likely to pay you richer dividends when SAP HANA goes fully mainstream.

Anurag Barua, Senior Director at GyanSys, Inc. He has 20-plus years of experience in conceiving, designing, managing, and implementing complex software solutions, including nearly 15 years of SAP experience. He has been associated with several SAP implementations in various capacities. His core SAP competencies include FI/CO, Logistics, SAP NetWeaver BW, SAP BusinessObjects, Enterprise Performance Management, SAP Solution Manager, Sarbanes-Oxley compliance, reporting, and project management. He is a frequent speaker at SAP conferences and contributes to several publications. He has a BS degree in computer science, an MBA degree in finance, and is a PMI-certified PMP. He can be reached at SAP.Authors@ERPtips.com. Be sure to mention the author and article title.

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Big Data: A Primer

By Anurag Barua

Editor's Note: When we first read this article, we thought for a moment Anurag was having one over on us. Pig? Oozie? Zookeeper? But a quick fact-check revealed that he didn't make it up at all. This article is an excellent introduction to the mysteries behind processing massive amounts of both structured and unstructured data. Read about Hadoop and friends plus how SAP HANA helps SAP clients manage "Big Data".

Introduction

Among words and phrases that have been used relentlessly (and abused at times) recently, the ones that come to my mind immediately are "Fiscal Cliff", "Big Data", "New Normal", "Economic Downturn", etc. However, no other phrase is as ubiquitous as "Big Data". Hardly any conversation these days among people that use technology, seriously or frivolously, goes by without some reference to the challenges and opportunities presented by Big Data. And even as Big Data as a phrase has fully permeated our daily lexicon, I am still struck by how much people seem to talk about it without really knowing what it means.

In this article, I will try to demystify the concept of Big Data, discuss its components, and take a look at Hadoop – the technology that is gaining acceptance as the pre-eminent Big Data technology, and end with a discussion on how SAP's HANA technology helps customers in managing Big Data.

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So What Is Big Data?

I have heard and seen various definitions, but for a phrase that hasn't been credited to anyone, it isn't a surprise that there isn't a single accepted definition. Quite simply, it refers to the explosion of data – both structured and unstructured - that the world has witnessed in the last few years. To get some notion of the magnitude of this explosion, consider this: as of today, the world is generating nearly 2.5 exabytes of data **daily**. In case you were wondering how much data is 1 exabyte, it is 1 billion gigabytes. I can give you a long list of analogies on the magnitude of this daily data explosion but you get the point. We are living in an era where we are (literally) surrounded by data, and much like we inhale and exhale (air), we are constantly generating and assimilating data.

I would like to stress the "unstructured" aspect of Big Data. Today's data no longer conforms to a predictable stream of bits and bytes that would sit nicely in the rows and columns of tables in relational databases, as a result of the digital revolution and abetted by the constantly plummeting price of storage.

We are living in an era where we are (literally) surrounded by data.

How do you Measure Big Data?

For something that is as amorphous as Big Data, you would think that measuring Big Data is impossible. You would be wrong. And I do not just mean it in the sense of measuring data by the **size** of your database, but actually in its implication. Today, the conventional wisdom on measuring Big Data includes three parameters:

1. Volume: This is of course the most traditional measure of your data; i.e., the gigabytes, terabytes, exabytes, petabytes and who knows what the next coinage in this saga is going to be. While all enterprises are witnessing a growth in data volume, the ballooning effect of Big Data is most prominent in industries with a relatively high number of transactions. As the price of storage continues on its downward spiral, more and more data can be stored on devices that keep costing less and less (remember Moore's Law?).

2. Variety: Data used to be generally structured in nature prior to the advent of social networking and the mobile revolution. Today, it is unstructured data that hogs bandwidths. A "like" on Facebook or a trending of your product or service on Twitter does not fit easily into the neat structure of a relational database. These are but two of the most visible examples. But there are numerous media and applications that continue to generate a mind-boggling variety of data. Connecting the dots then becomes the major challenge.

3. Velocity: This is the rate at which data is generated. Why would knowing the velocity be important, you may ask? The answer is that it gives you a good idea of whether you are capturing data fast enough and also helps you plan on the nature and size of your storage.

Big Data Technologies: Overview of Hadoop

The most popular Big Data technology is called Hadoop. It is a complete technical framework, open-source, written in Java that supports the management and processing of Big Data. It enables applications to run on all kinds of systems leveraging a distributed file system for transfer of huge quantities of data at an extremely rapid pace. Hadoop's origins are commonly traced to Google: the company that has mastered both the art and the science of

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dealing with Big Data. But it's Google's one-time competitor Yahoo that deserves credit for funding the initiative that underpins Hadoop: MapReduce. Hadoop introduced a paradigm shift by replacing the dependence on hardware with a distributed computing model that delegates the processing and storing of Big Data to a cluster of machines, thereby assuring a very high degree of availability.

Hadoop is the shortened name for the Apache Software Foundation Project and has two major tracks: Hadoop MapReduce and the Hadoop Distributed File System (HDFS). MapReduce is the engine that enables an application to be broken up into smaller pieces to be processed by a particular node. HDFS deals with Hadoop's file structures and storage and utilizes a distributed structure that stores data across nodes worldwide. These two components co-exist and are complementary in nature. In other words, HDFS and MapReduce are deployed together in the same cluster so that both the processing of Big Data and its storage potentially happens at the same location.

Even in geekdom Hadoop is still not very mainstream although Big Data is. But Hadoop is starting to move from the realm of the exotic to the mainstream as the world's technology majors are starting to enable and incorporate Hadoop. However there's no denying that with components with unlikely names like Pig, Hive, Oozie, Flume, and Zookeeper, discussions involving Hadoop will continue to sound like science fiction. What is an undeniable fact is that most of the world's widely recognized companies dealing with Big Data use Hadoop. Here's just a very small representative sample: Facebook, LinkedIn, eBay, Yahoo, Google, Spotify, AOL, Rakuten, etc. These names should give you a good sense of the power of Hadoop: the greater the volume of unstructured data, the greater seems to be the demand for Hadoop. While Hadoop as a technology seems to be in the right place at the right time, there aren't too many applications that are currently being built on Hadoop. The reasons might have to do with some of the inherent disadvantages in Hadoop: it does not provide the real-time response that analytics needs and requires a high level of programming expertise. So although Hadoop as a technical foundation offers great promise, it will take a couple of killer apps and a boost of performance-enhancing drugs to take it to the next level. And this is where SAP's High Availability Analytics Appliance (HANA) can make a difference.

SAP HANA and Big Data

Much has been said and written about SAP HANA. It's one of SAP's primary focus areas. There's also been a media blitz on SAP HANA and therefore you may be confused as to what the fuss is all about. Well, for one, this is a product SAP has reason to be proud of because they have combined several key technologies to come up with a product that is impressive in its performance. But what really is the "performance" that I am talking about here? Quite simply, SAP HANA is an appliance that allows for in-memory computing. This means that it can process prodigious quantities of data at a fraction of the time that it traditionally takes in the processing of data that is retrieved from secondary storage devices.

To understand the Traditional (non-real time) Analytics Framework in the absence of in-memory processing, let's take a look at Figure 1.

(HANA) is a product SAP has reason to be proud of because they have combined several key technologies to come up with a product that is impressive in its performance.

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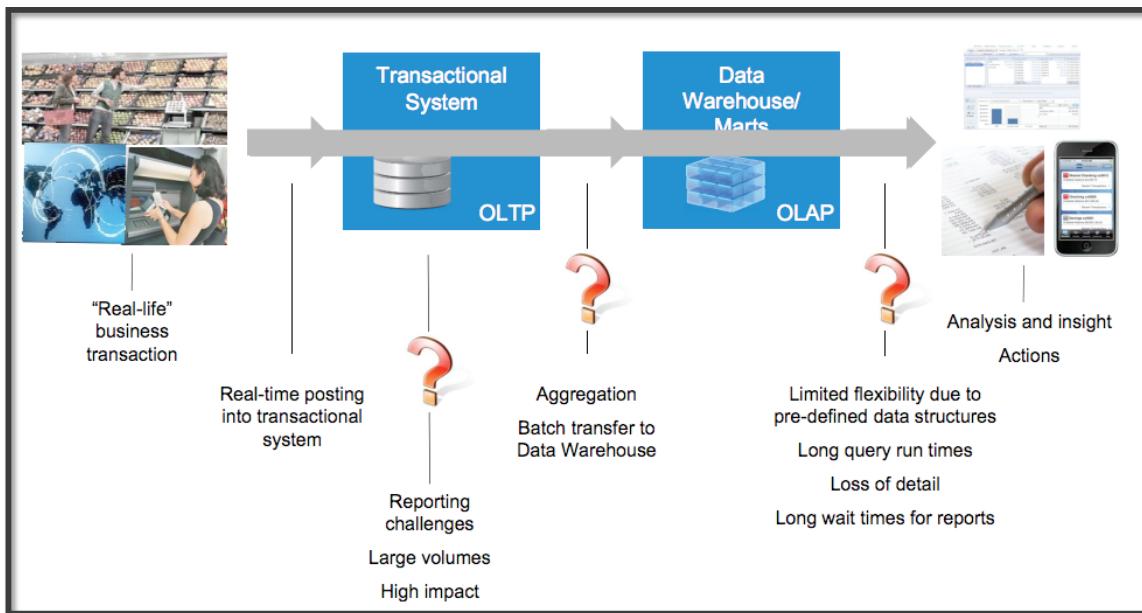
Figure 1 (Courtesy SAP): Traditional Analytics Framework

Data are extracted from one or more transactional (OLTP) systems such as ECC or CRM, etc., where the application data resides in a data warehouse (OLAP) system. This model presents several disadvantages such as a time lag between the actual occurrence of the transaction and when it is available for analysis. Flexibility is limited because your data warehouse has structures that you have already designed and changing them on the fly is neither easy nor advisable. Because the data residing in your primary reporting layer (InfoCubes in the case of SAP BW) is highly aggregated, disaggregation may cause longer query run times because data may have to be either fetched from the DataStore Objects (DSOs) or from the application/transactional system in real time. Finally, since most of the data is stored in secondary memory, loading and activation of new data is often a time-consuming affair.
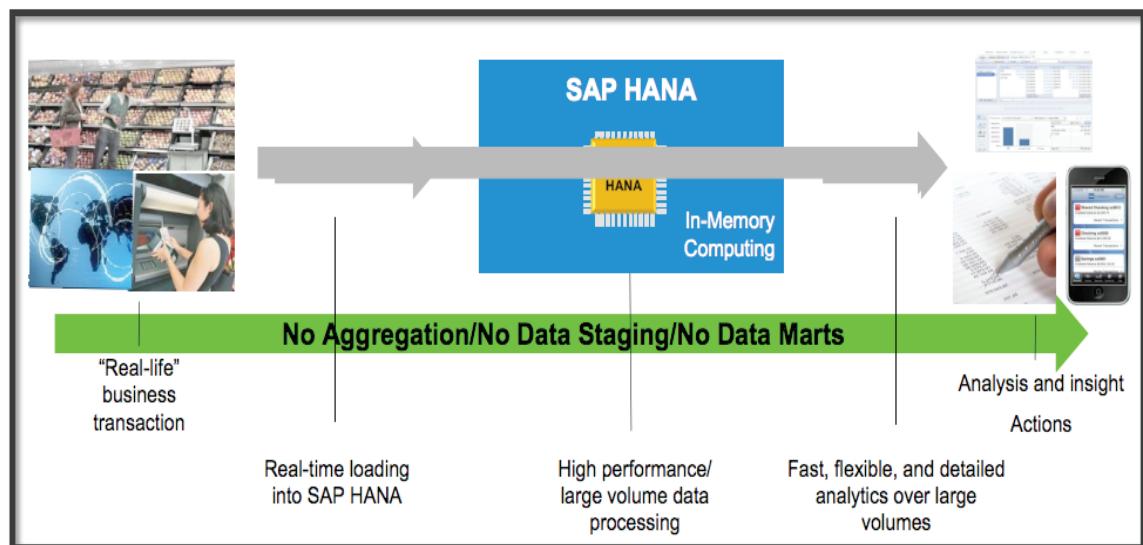
Figure 2 (Courtesy SAP): Analytics in the SAP HANA Era

Now let's take a look at how the paradigm changes when you use SAP HANA's computing approach as shown in Figure 2. Instead of transactions being first posted into transaction systems, they can be loaded directly (in real-time) into SAP HANA's in-memory database. The loading is a lot faster and huge volumes can be loaded and processed, as needed. Besides, there is no need for aggregating the data, which means that reporting off an SAP HANA database is extremely fast at both an aggregated and detailed level. Also, by being able to push complex calculations down to the HANA layer, you can also run sophisticated algorithms that help you carry out data mining and predictive analysis.

The most common use cases for HANA involve:

1. The replication of data from one or more SAP applications/instances to an SAP HANA appliance.
2. Migration of your SAP NetWeaver BW database from a (traditional) RDBMS model to an SAP HANA database and ETL from one or more source systems to your HANA-migrated BW environment for Analytics.

It will take a little longer before all SAP applications are HANA-enabled, but you can imagine how different (i.e., faster and streamlined) things are going be when you can post all your SAP transactions into a HANA database and not have to worry about the time for transaction processing, extracting to a data warehouse, reporting latency, and archiving your data. Some even think that a data warehouse might eventually become redundant. In short, SAP HANA is SAP's answer for managing and processing Big Data.

Versions and Components of SAP HANA

The SAP HANA appliance is available in three license versions:

1. Platform edition
2. Enterprise edition
3. Enterprise extended edition

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Depending on the edition you choose, the components that will be available of and the price you will pay will differ. There are multiple components that comprise each of these editions but at the highest level, SAP HANA consists of the following four key components:

1. The HANA appliance. There is a lot of confusion about what this really m eans. But yes, it is an appliance that is delivered by one of SAP's certified hardware partner vendors.
2. The SAP HANA database. This is bundled in the appliance and is the nucleus of the HANA appliance. Data in this database are stored in-memory.
3. SAP HANA Studio. SAP HANA provides users with the availability to create flexible data models and this is where it is done.
4. SAP HANA Cloud: For those customers that do not necessarily want an in-premise solution, SAP has made its platform available in the cloud.

Other than these core components, there are others that I will name, some integrated and others peripheral, but will not elaborate because it is outside of the scope of this article: SAP Landscape Translation Server, SAP Data Services 4.0, SAP HANA Information Composer, SAP HANA Client, SAP HANA Direct Extractor (DXC) Connection, etc.

Conclusion

In conclusion, as the volume, variety, and velocity continues on its inexorable and irreversible growth path, enterprises are seeing both the challenges and the opportunities, and the hardware and software vendors and service providers are stepping up to the plate and innovating to help customers meet these challenges and capitalize on these opportunities. There will forever be a debate whether the constantly decreasing price of hardware (especially memory) and the concurrent increase in computing and storage speeds is a cause or an effect of the Big Data explosion. But there is no debate on this: We live in a time when Big Data is getting bigger and bigger and this genie cannot and should not be put back in the bottle.

Anurag Barua is senior director at GyanSys, Inc. He has 21 years of experience in conceiving, designing, managing, and implementing complex software solutions, including nearly 15 years of SAP experience. He has been associated with several SAP implementations in various capacities. His core SAP competencies include FI/CO, Logistics, SAP NetWeaver BW, SAP BusinessObjects, Enterprise Performance Management, SAP Solution Manager, Sarbanes-Oxley compliance, reporting, and project management. He is a frequent speaker at SAP conferences and contributes to several publications. He has a BS degree in computer science, an MBA degree in finance, and is a PMI-certified PMP. He can be reached at SAP.Authors@ERPtips.com. Be sure to mention the author's name and the article title.

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Introducing SAP's Business Objects Enterprise Intelligence Management (EIM) Suite — Part 1

By Anurag Barua

Editor's Note: "Torture the data and it will confess to anything." (Ronald Coase) OK, we don't really want tortured data, do we? SAP's EIM Suite is here to help stop the beatings. Anurag Barua gives us not only some food for thought regarding the importance of this set of tools, but also walks us through a high-level overview of what they can do for you, describing and illustrating the Information Steward and the roles it supports.

Enterprises worldwide are being submerged by a tsunami of data, both structured and unstructured. It is becoming an increasingly uphill battle for companies to keep a handle on how this data are getting entered into their systems. Consequently, even though many enterprises might have good data governance policies, very little can be done to ensure that they are being adhered to. Adding to this state of affairs is the proliferation and complexity of IT landscapes worldwide. This is resulting in data (often similar) being entered in multiple systems and this is causing inconsistencies, duplication, and lack of clarity on what is the "single version of the truth". All of these facts point to the increasingly undeniable importance of data as an asset in every business enterprise.

Why is (Good) Data Important

In today's age, no one needs any convincing that data is an enterprise's most important asset. Since we inhabit an exploding universe of data, we can extend that to mean that data is an individual's key asset. This is something that was recognized by luminaries in various professions quite a while ago. Here are some engaging quotes by some of these:

- The fictitious (and highly avaricious) Gordon Gekko opined in the 1987 movie Wall Street that "the most valuable commodity I know of is information".
- Quality and process guru Edwards Deming had surmised many years ago that "In God we trust, everyone else bring data".
- Nobel Prize winner in Economics Ronald Coase had famously said, "Torture the data, and it will confess to anything".

There are reams of statistics that provide evidence of the quantitative impact of bad data. According to a recent Forbes study, bad data costs a typical Fortune 200 company upwards of $5 million annually. Gartner puts the number at over $8 million but you get the point. High quality of data and good governance practices generates the following benefits for organizations:

- It assists in better decision-making. Higher revenues and profits are directly correlated to an enterprise's ability to transform data into information.
- It enhances the reliability of data. Unreliable data has an unfortunate multiplier effect and causes a rapid loss of faith in the data, thereby denying enterprises the ability to leverage one of their most important assets.
- It has a positive effect on user productivity. A common scenario in enterprises worldwide is multiple systems where similar data are being entered. This is a serious drain on employee productivity.
- It can reduce the potential of fraud by ensuring that each person has access to data that is commensurate with his/her role in the organization (and no more and no less).

Data that is clean, well-managed, and nurtured over its lifetime pays companies rich dividends.

Introduction to SAP's EIM Suite

Enterprise Information Management (EIM) is a discipline in IT that is the collective name for a set of tools that help enterprises manage their data during its entire lifetime in order to enhance an enterprise's decision-making capabilities. Analytics/Business Intelligence (BI) tools are a major component of the EIM suite. Equally important is the Enterprise Content Management (ECM) suite of tools that help with storage and management of content, especially documents.

SAP is a relatively new entrant in this space. However, it has rapidly consolidated and expanded its offerings in this space to provide a versatile suite of applications that help in almost every conceivable activity related to data; i.e., extraction, transformation, and loading (ETL), profiling, cleansing, harmonizing, migration, master data management, governance, etc. In formal terms, since it is quite a comprehensive area, there is often some confusion over which applications constitute the EIM suite. To add to this confusion, SAP keeps adding and/or reorganizing and/or renaming existing applications.

For the purposes of this series, I will be discussing the following core components of SAP EIM. Since the emphasis is on data quality and governance, a discussion on ECM tools is out of scope.

- SAP BusinessObjects Information Steward
- SAP BusinessObjects Data Services
- SAP BusinessObjects Data Federator
- SAP NetWeaver Master Data Management (MDM)
- SAP Master Data Governance (MDG)

In terms of technology, the EIM suite is diverse. The first three applications are SAP BusinessObjects applications, while MDM is a NetWeaver based application. These applications are not mutually exclusive and have some degree of overlap amongst one another.

In the first part of this two-part series, I will provide you with an overview of the SAP Information Steward and its features. In the second and final part, I will focus on SAP BusinessObjects Data Services – a comprehensive and versatile application that enables data extraction, profiling, cleansing and harmonizing, integration, and text data processing.

SAP Information Steward: Overview

The SAP Information Steward provides you with all the tools you need to ensure governance of your data. Stewardship of your data is a very important concept that is not generally well understood. I like to compare the concept to an airline steward. (S)he takes care of your needs before take-off and after the airplane has landed. Most will disagree with my highly complementary description of the airline steward's role today but you get the point. To understand the role the Information Steward application plays, it is important to understand the responsibilities of a data steward. Most organizations have not yet realized the imperative to have one, but if you do, these are responsibilities of that role:

- Establish data dictionary naming standards and ensure they conform to the enterprise's naming standards
- Set consistent data definitions
- Set access requirements to data repository
- Establish measures that increase the quality and reliability of data
- Constant monitoring of data quality, document deviations, and enable the speedy application of corrective measures

Information Steward enables all of these activities. SAP describes it as a "single environment to discover, assess, define, monitor, and improve the quality of their enterprise data assets". It empowers businesses to define rules and constraints for data governance and quality and to work in collaboration with IT. It helps users view how information measures up against information governance rules and standards, and visualize how the quality of data impacts business. It assists in defining ownership for your data, tracking the lifecycle of data right from the time it is created at the source, evaluating data quality against standard and custom-defined criteria in the form of scorecards and dashboards, disseminating data governance KPIs within the organization, and helps build a repository of business terms as they relate to the various categories of data and the relationships among them.

From a purely functional standpoint, there are three categories of users that this application targets:

- Data Stewards: These are the individuals that have overall responsibility for caring for and nurturing the data.

- Analysts: They work closely with the stewards to set various rules for governance and quality such as the rules, dashboards, and scorecards.

- System Administrators: They are responsible for all the "back-end" activities such as installation, creating the connections to various data sources, creating projects, troubleshooting, etc.

Accessing the Information Steward

Information Steward is a zero footprint application; i.e., it does not require you to install any client software on your machine. Once it is installed on your BusinessObjects server environment, the Administrator will provide you with a URL that you will need to enter into your browser's address bar. You should see a page that looks like the one shown in Figure 1.

Figure 1: Logging into SAP Information Steward

Once you log in with your credentials, you will be able to see the main menu containing the four components (described below) and the various systems it is connected to with the Data Insight component selected by default. This is an activity that the system administrator will need to carry out. This is shown in Figure 2.

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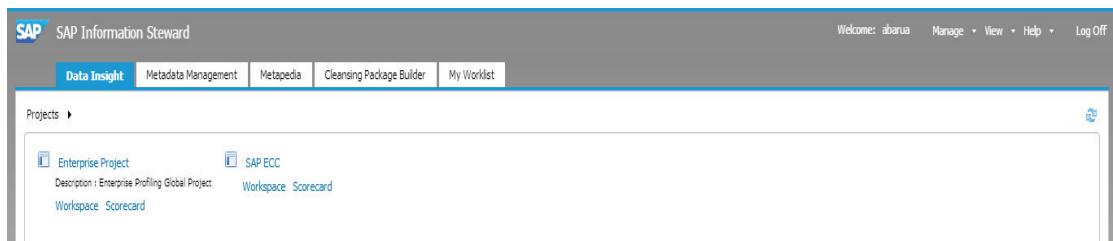
Figure 2: Default Information Steward Initial Screen

Information Steward: Components

The Steward has 4 components:

1. Metadata Management:

This component, as the name might suggest, helps you manage your metadata in a holistic fashion. It allows you to bring together metadata from various data sources, consolidate them, analyze the relationships among them, and add value to them. It also includes the ability to analyze documents created in BusinessObjects and Business-Objects Universes. In the example shown in Figure 3, you will notice that there are two systems that are connected to this Information Steward instance; i.e., an SAP ECC and SAP NetWeaver BW system. This means that you will be able to manage metadata from both systems.
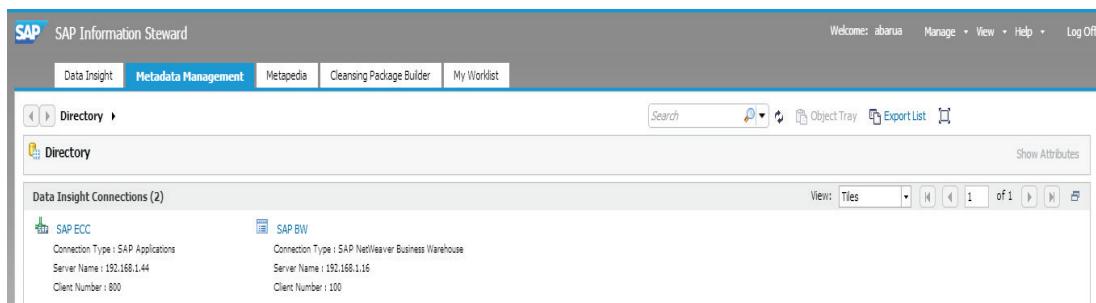
Figure 3: Metadata Management in Information Steward

2. Data Insight:

This is an application that helps you fully profile and analyze data. Figure 4 displays the initial view of this application.

Figure 4: Data Insight initial screen

One of most important features of Data Insight is the ability to create rules that you can then apply to the data. When you click on the Wheel icon and then click on the "New" button, you will be taken to the Rule Editor screen wherein you will have the option to select from one of the following quality dimensions/attributes:

- Accuracy
- Completeness
- Conformity
- Consistency
- Integrity
- Timeliness
- Uniqueness

Figure 5 displays the Rule Editor screen.

Figure 5: Rule Editor in Data Insight

You can get fairly sophisticated in creating rules. In case you want to carry out complex validations (that require logic to be programmed), you can use the Advanced Editor to create custom code. Another major feature is the ability to create scorecards. These scorecards give you a good sense of the quality of your data. You can assess the quality of data domains based on the criteria and thresholds you set for them.

3. Metapedia:

As the name might suggest, Metapedia is the encyclopedia that can be maintained in Information Steward. You can create an encyclopedia of business terms, assign them attributes, assign approvers, create synonyms, associate keywords for easy searching, and also link each term with the metadata. You can also consider this application as a metadata repository with a very rich context. Figure 6 shows you the Term creation screen.

Figure 6: Creation of Term in Metapedia

4. Cleansing Package Builder:

This application provides you with the ability to do data cleansing. The primary concept is that of a cleansing package that consists of categories. Each category consists of attributes, and each attribute consists of variations and standard forms. A category is a business object such as an account or a person. You can set up parsing rules that will then be applied to the data for cleansing. Figure 7 shows you the initial screen for the Package Builder.

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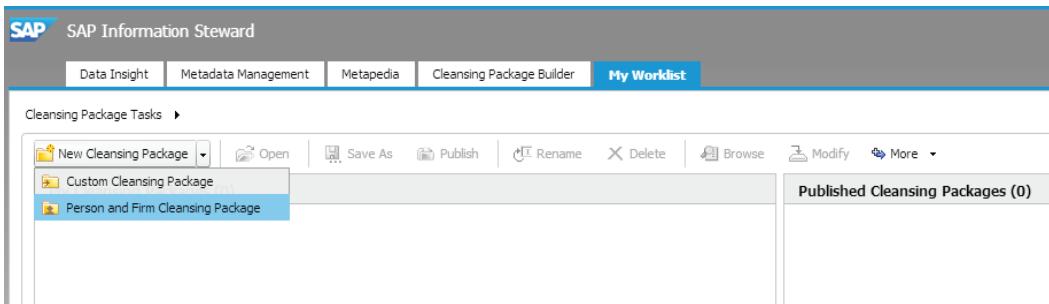
Figure 7: Cleansing Package Builder Initial Screen

Once you are on this screen, you can create a new cleansing package. You have the option to create a custom cleansing package or a Person and Firm Cleansing Package. Like all the other features of the Information Steward, the Cleansing Package Builder is quite intuitive and often self-explanatory. Let us now look at the features of a Person and Firm Cleansing Package. I just created a test package and then clicked on the "Manage" tab. Figure 8 displays the resulting screenshot.
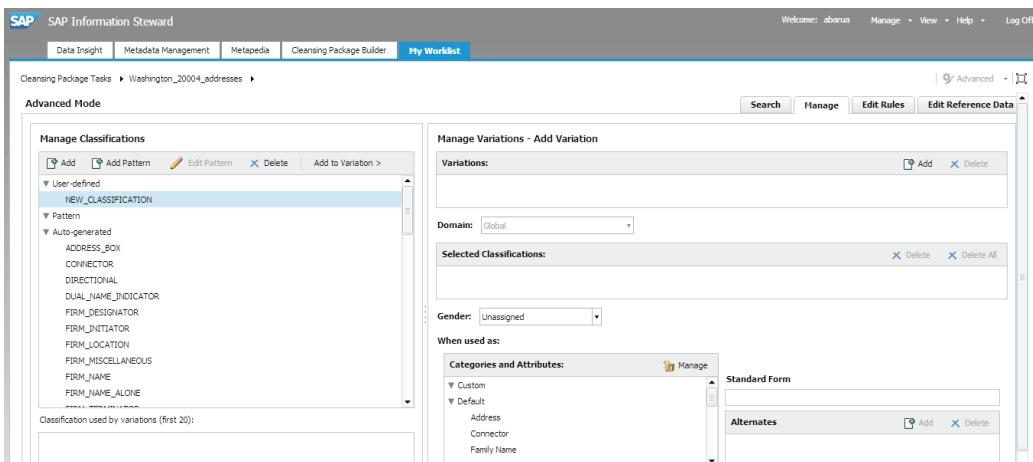
Figure 8: Managing a Cleansing Builder Package

You can use predefined classifications or create your own. You can choose categories and attributes.

Standard Roles in the Information Steward

SAP provides the following six standard roles for this application:

- Manager
- Administrator
- Data Steward
- Rule Approver
- Analyst
- User

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Furthermore, SAP provides standard user groups for each of the sub-applications of the Information Steward. For example, Data Insight has the following five standard user groups:

- Data Insight Administrator
- Data Insight Scorecard Manager
- Data Insight User
- Data Insight Analyst
- Data Insight Approver

Each of these user groups has set privileges.

Anurag Barua is senior director at GyanSys, Inc. He has 21 years of experience in conceiving, designing, managing, and implementing complex software solutions, including nearly 15 years of SAP experience. He has been associated with several SAP implementations in various capacities. His core SAP competencies include FI/CO, Logistics, SAP NetWeaver BW, SAP BusinessObjects, Enterprise Performance Management, SAP Solution Manager, Sarbanes-Oxley compliance, reporting, and project management. He is a frequent speaker at SAP conferences and contributes to several publications. He has a BS degree in computer science, an MBA degree in finance, and is a PMI-certified PMP. He can be reached at SAP.Authors@ERPtips.com. Be sure to mention the author's name and the article title

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DMS

Five Features of SAP Document Management System (DMS)

By Jawad Akhtar, Assistant Vice President & SAP Project Manager, AbacusConsulting

Editor's Note: Suffering from TMI? Too much information and can't find it? Don't know who CAN find it who should not? Read about how to secure your corporate documents, classify them, use digital signatures, and deploy as web documents. Yes, it takes some planning and setup, but since third party DMS systems require the same effort, why not take advantage of the functionality and integration that's already built in with the SAP suite?

Introduction

Globally, many companies have implemented and run SAP ERP to optimize their business processes. One of the lesser known and used functions of SAP is Document Management System (DMS). SAP DMS comes with standard SAP implementation and is part of SAP Product Lifecycle Management (PLM). SAP DMS is available from version 3.1 and above. A DMS consultant is needed to successfully implement the solution. It can be implemented during SAP implementation with other SAP modules or even as a stand-alone and independent solution. It is highly recommended to involve a Basis/NetWeaver consultant to ensure server sizing is in place, to account for and accommodate the storage of a large number of documents in SAP.

SAP DMS is much more than a central documents repository of all the company's digital assets. It enables you to:

- Store and retrieve all the company's important documents in a central repository that is immediately accessible and completely integrated with the business processes mapped in the SAP system

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- Check in and check-out documents as needed
- Have multiple parts and versions of a single document for tracking and monitoring purposes
- Index all documents for easy and comprehensive searches using classification
- Organize all documents in a structured and hierarchical way
- Search all documents by keywords in the text of a document
- Track all documents by their statuses and have document statuses control business functions
- Approve documents by individual digital signatures or by a series of multiple digital signatures
- Access documents on the Internet (WebDocuments)
- Distribute documents to relevant stakeholders either manually or automatically by SAP Workflow
- Have the option to work with SAP DMS via SAP EasyDMS, a Microsoft Windows Explorer interface
- Control accessibility to only the relevant stakeholders by various authorization options

SAP DMS is a cross-application component that can be extensively used not only in Supply Chain (SCM) modules such as Plant Maintenance (PM), Production Planning (PP), Sales and Distribution (SD), and Materials Management (MM), but also in all SAP modules like Human Capital Management (HCM) or Financial and Managerial Accounting (FICO).

The article will cover the following five features to help all those who are intending to implement SAP DMS or are looking to have some greater understanding of the features to help them decide if SAP DMS is the right solution to manage the company's digital assets. The article will not show how these features work, but will provide an overview of five of the available features.

1. Store and retrieve all the company's important documents in a central repository
2. Link DMS documents to objects of master and transactional data of various SAP modules
3. Index all documents for easy and comprehensive searches using classification
4. Approve documents by individual digital signatures and also by a series of digital signatures
5. Access documents on the Internet (WebDocuments)

SAP DMS, also known as Document Info Record (DIR) and used interchangeably, should be considered as a single platform to store all information, which then subsequently becomes available to facilitate business processes. In other words, SAP DMS (or DIR) is the same to documents, that:

- **Sales Order** in Sales & Distribution (SD) module, which contains all the important information a company needs to conduct a sales process.
- **Purchase Order** in Materials Management (MM) module, which contains all the important information a company needs to conduct a procurement process.
- **Production/Process Order**, which contains all the important information a company needs to conduct a production process.
- **Maintenance Order**, which contains all the important information a company needs to conduct a Maintenance process.

The Five Features

Secure Storage of Original Files

You can upload multiple documents in soft copy (or scanned form) and store them in a central repository (storage area) of SAP DMS. These documents are accessible for viewing and other functions. They are supported by check-in and check-out functionality.

Some of the common business documents used in an organization that you can store in SAP DMS are engineering drawings or manuals, material specifications, customer/vendor certificates and Industry standards (such as ISO-9001 or ISO-14000), quality certificates (vendors/customers), letters of credit, bills of lading, user manuals/instructions, certificates of origin, employee handbooks, auditors' reports, employees' leave forms and invoices.

Several standard file type extensions (such as .doc, .xls, .ppt, .txt, .jpg, and .gif, as shown in Figure 1) are available in SAP DMS. It is easy to configure and make new file type extensions available per business requirements with the involvement of your SAP DMS consultant.
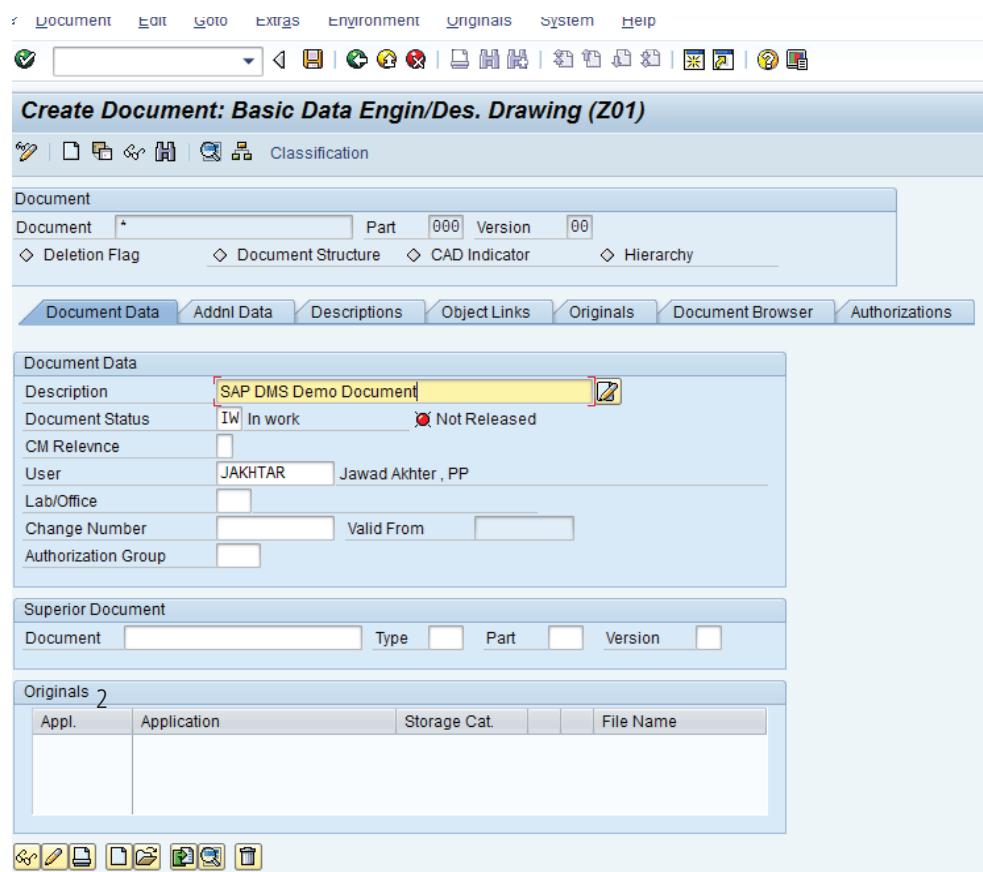
Figure 1: The Document Data Screen of a DIR

Figure 1 shows the original screen of DIR, in which the option to upload an original (soft copy) file is shown. To assign or upload the original files, be it a Word document or a PowerPoint presentation from the network or local hard drive, click the Original icon as shown in Figure 1 and a pop-up screen appears as shown in Figure 2.
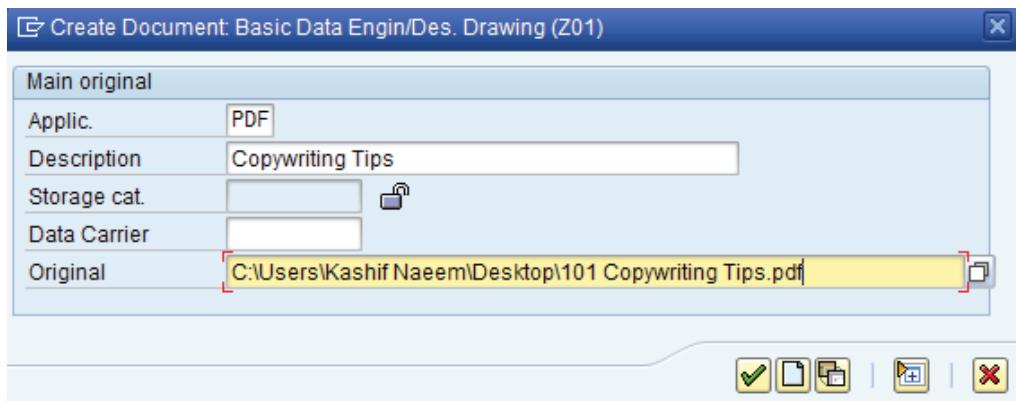
Figure 2: Popup Screen for Assigning Originals to a DIR

Figure 2 shows the pop-up screen for assigning the new original files to DIR. The user can enter a short description of the original file and then define the menu path where the original file is stored. Use the drop-down option shown in Figure 2 to define the file's menu path. Click the Continue icon as shown in Figure 2 to go to the screen in Figure 3.
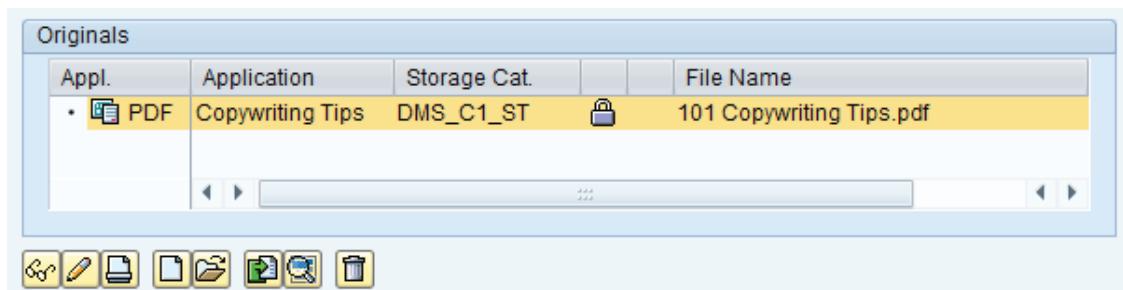
Figure 3: Original Document Assigned to DIR and Checked In

Figure 3 shows an original file named 101 Copywriting Tips. It is in PDF format. The lock function is activated by clicking the Lock icon shown in Figure 3 and then selecting the check-in option that follows. A check-in ensures that the original file is now saved securely in an SAP server and is accessible to everyone with the relevant authorization. With several icons available for the original stored files, the functions to change, display, delete, download, or print are all available.

Object Links

An Object link ensures that all documents attached to an SAP object are automatically made available. One SAP DMS document type can have multiple object links. For example, an SAP DMS document type Z01 can have object links to both equipment and to the functional location of the PM module. Another SAP DMS document type Z02 can have object links to the Material Master and Vendor Master.

Here are some examples of the major object links and their applications in business functions:

1. **Material Master:** All documents associated with the material master automatically become available when-ever it is used in a standard SAP business function.
2. **Customer Master:** All documents associated with a customer automatically become available when a sales order for that particular customer is created.
3. **Equipment Master:** All documents (such as drawings, manuals, specification sheets, and checklists) attached to equipment in the PM module are automatically available for reference whenever any PM order is created using the same equipment master.
4. **Vendor Master:** All documents associated with a vendor automatically become available when a purchase order for that particular vendor is created.

There is a long list of standard object links available in SAP DMS; if the standard object link in SAP does not fulfill the business needs of an organization, then a new object link can be created. An SAP DMS functional expert would collaborate with an ABAP resource to develop a new object link.

The following two examples of object links show their integration with SAP core modules such as PM and MM. The first is a link of SAP DMS with equipment number 10000647. As shown in Figure 4, an SAP DMS document is attached to Equipment Master as an object link and is available whenever this equipment is in use. The second tab contains purchase order line item (not shown in Figure 4) which is also attached to this DMS document.
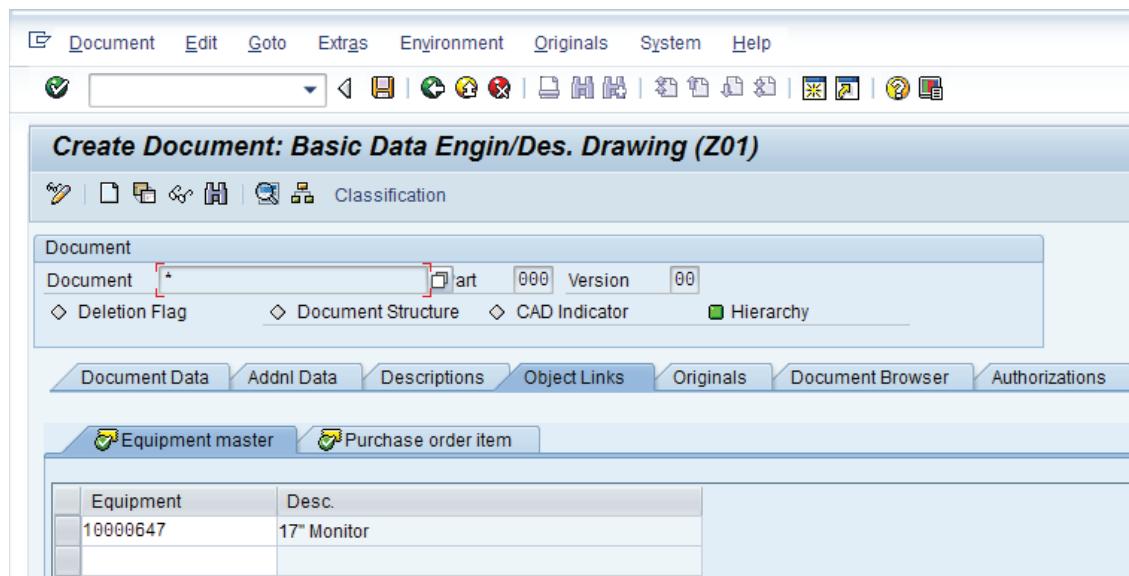
Figure 4: An Object Links Tab in SAP DMS with Equipment Number and Purchase Order Line Item

Figure 5 shows the purchase order display screen and shows how the DMS document gets directly attached to a purchase order line item number with instant availability of information to the procurement department. The user clicks on the gem-clip (1) as shown in Figure 5, which brings up the attached DMS documents (2) and the user can select a DMS document and display its content (3). In the example below, the report 'ERP in Manufacturing 2010' appears as a DMS object link to the purchase order line item.

DMS
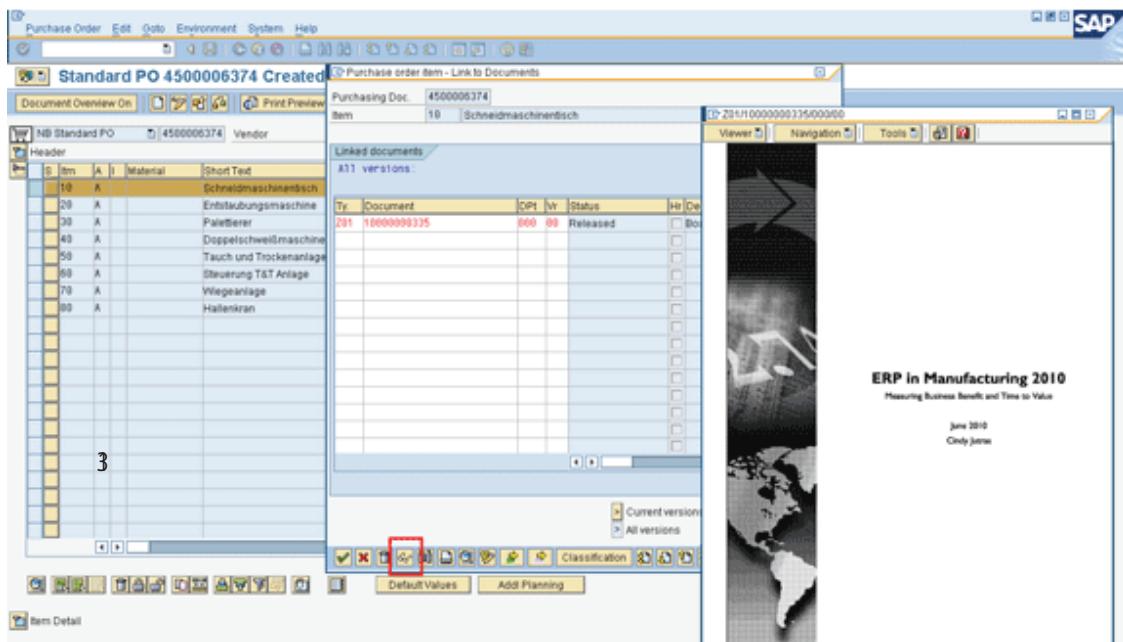
Figure 5: An Object Links Tab in SAP DMS with Equipment Number and Purchase Order Line Item

SAP Classification

SAP classification is a cross-application SAP functionality used extensively by all the modules for indexing and searching purposes. SAP DMS also makes effective use of SAP classification. It has to be set up by an SAP DMS Functional Expert as searchable tags for documents, which can then be used with any of the different search terms. Different DMS document types need to be indexed logically for easy searching, often requiring multiple search criteria to find all the relevant SAP DMS documents.

Below are some of the examples of business applications for SAP Classification use in DMS:

- **MM Module:** SAP DMS Document Type — Letter of Credit having fields such as Opening Bank, Advising Bank, Negotiating Bank, or LC Expiry Date

- **MM Module:** SAP DMS Document Type – Bill of Lading having fields such as Port of Shipment, AWB Number, or Consignee details

- **PM Module:** Equipment master having fields such as Drawing Title, Project Number, Job Number, Tag Number, or Drawing Number

- **PS Module:** With the scope of the technical library containing all the literature and drawings needed for engineering and design functions, with fields such as Book Title, Description, Reference Number, Edition, Year, Addenda, or Author

- **HCM Module:** Employee Contract Renewal/Refusal with fields such as Personnel Number, Position, Contract Start Date, Contract End Date, Contract Renewal Date, Reason for Confirmation, or Reason for Refusal/Renewal

Figure 6 shows that SAP classification has been set up in SAP DMS for document indexing. All the fields in the figure will eventually be available for searching. These fields are highly customizable and require no technical knowledge to set up and use.

DMS

Additionally, companies can also use SAP DMS to record data and information for which the provision of data entry of company-specific information does not exist in any specific SAP module. SAP DMS is a better option than considering custom-development (ABAP) to make the requisite fields available, as SAP DMS provides the user the flexibility to make changes in the fields anytime as and when needed, as well as add or modify existing fields to cater to different or new business scenarios. Functional knowledge of classification is important in this case.
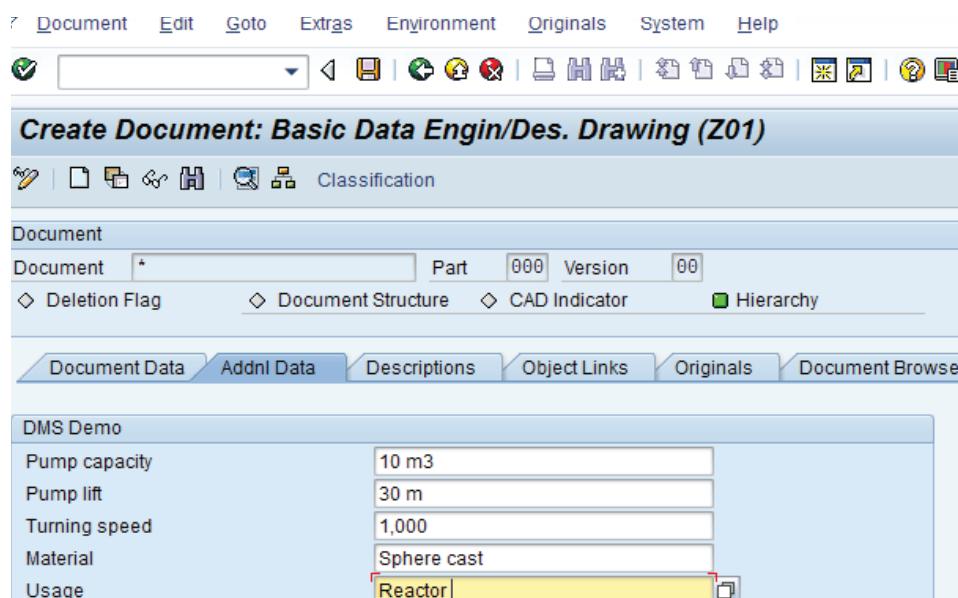
Figure 6: Additional Data Tab of SAP DMS Containing Characteristics

Digital Signature

Digital signature in SAP DMS is the authentication process of ensuring that whenever a document is given a certain status, it is further validated by the person with his or her SAP password. Digital signature is complemented by the functionality known as Signature Strategy, which is the sequence and series of multiple digital signatures before a document can be released or its status is allowed to be changed.

In Figure 7, I show multiple digital signatures using Signature Strategy. Two different users need to digitally sign a document before a status is released.

DMS
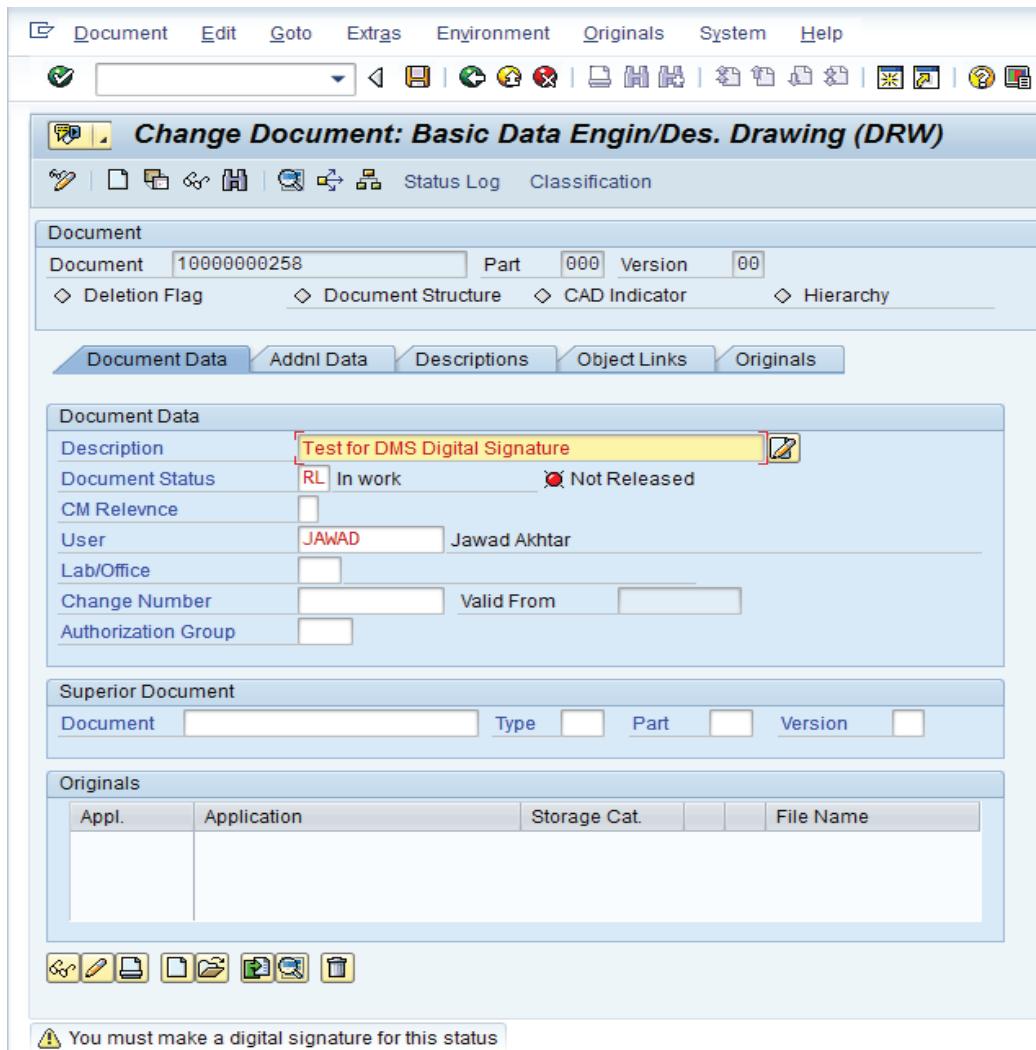
Figure 7: Warning Message That DMS Document Requires a Digital Signature for the Status RL

Figure 7 shows that when the user changes the DMS document status to Released (abbreviated with RL), the system requires the user to digitally sign the document by displaying a message at the bottom of the screen. On confirming the message, a pop-up window (Figure 8) appears.

DMS
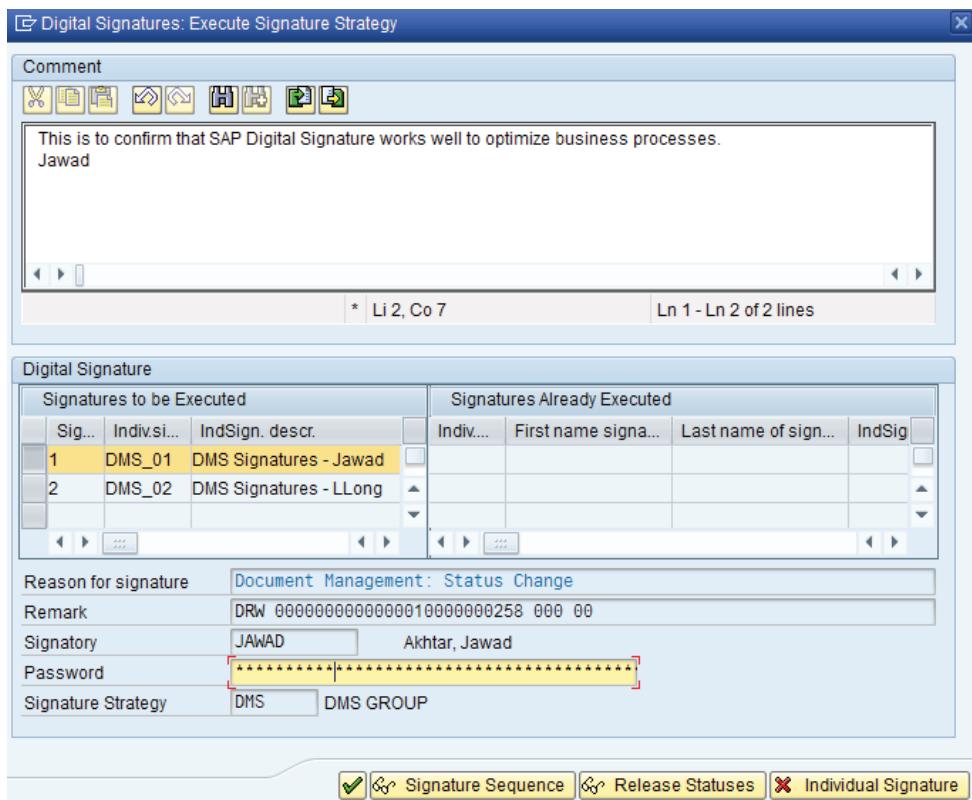
Figure 8: First of the Two Individual Digital Signatures to be Executed

As shown in Figure 8, the user can enter text in the Comments box before or at the time of digitally signing the DMS document. Also, notice that the signature strategy in the middle left hand side of the screen stipulates that two different individual digital signatures (DMS_01 and DMS_02) are required. The first individual signature, DMS_01, is performed by entering the SAP password.

When the first signatory signs the DMS document, the document can be saved to enable the next signatory to access and digitally sign the document.

Although the first digital signature was already entered, the pop-up information message, as shown in Figure 9, states that the digital signature process is still incomplete. This is because the DMS document has so far been signed by only one of the two signatories, hence the process remains incomplete.
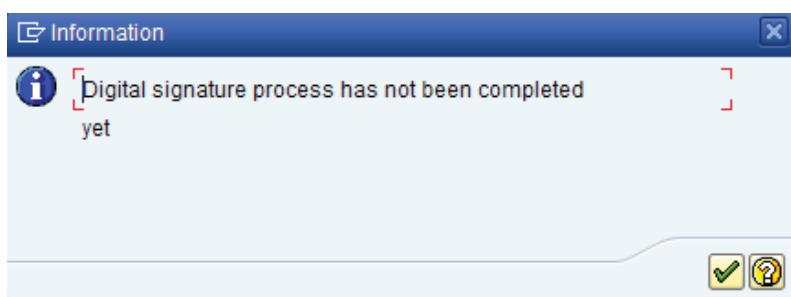
Figure 9: Information Message that the Digital Signature Process is Incomplete

DMS

When the next user uses the option to change the DMS document, the system prompts a message towards the bottom of the screen, that the digital signature process is not complete. Click the Digital Signature button shown in Figure 10 to go to the screen shown in Figure 11.
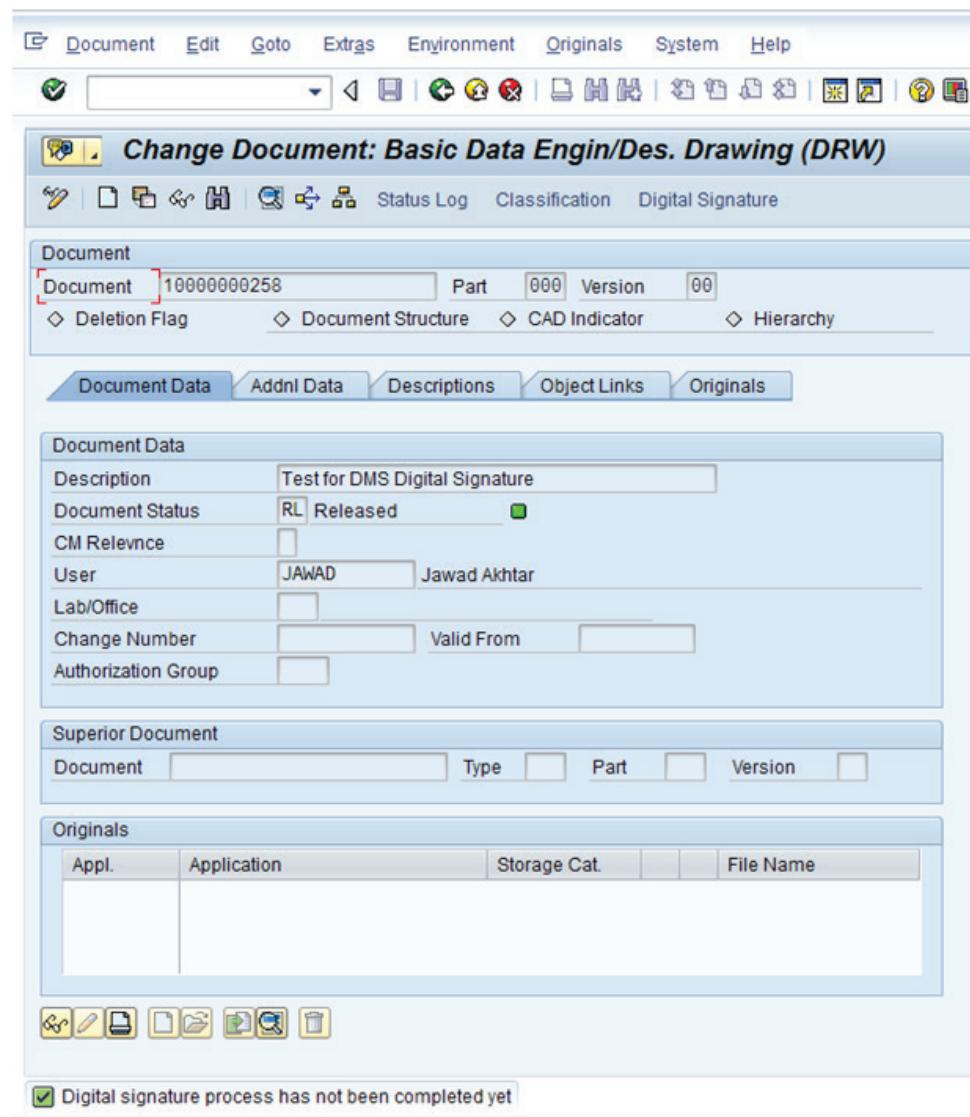
Figure 10: Information Message that Digital Signature Process is Incomplete

Figure 11 shows again a pop-up window in which the second individual digital signature must be entered in the form of an SAP password. Notice the option to enter comments and that the signature that was already executed appears on the middle right side of the screen. Once the password has been successfully entered, it leads to the information message shown in Figure 12.
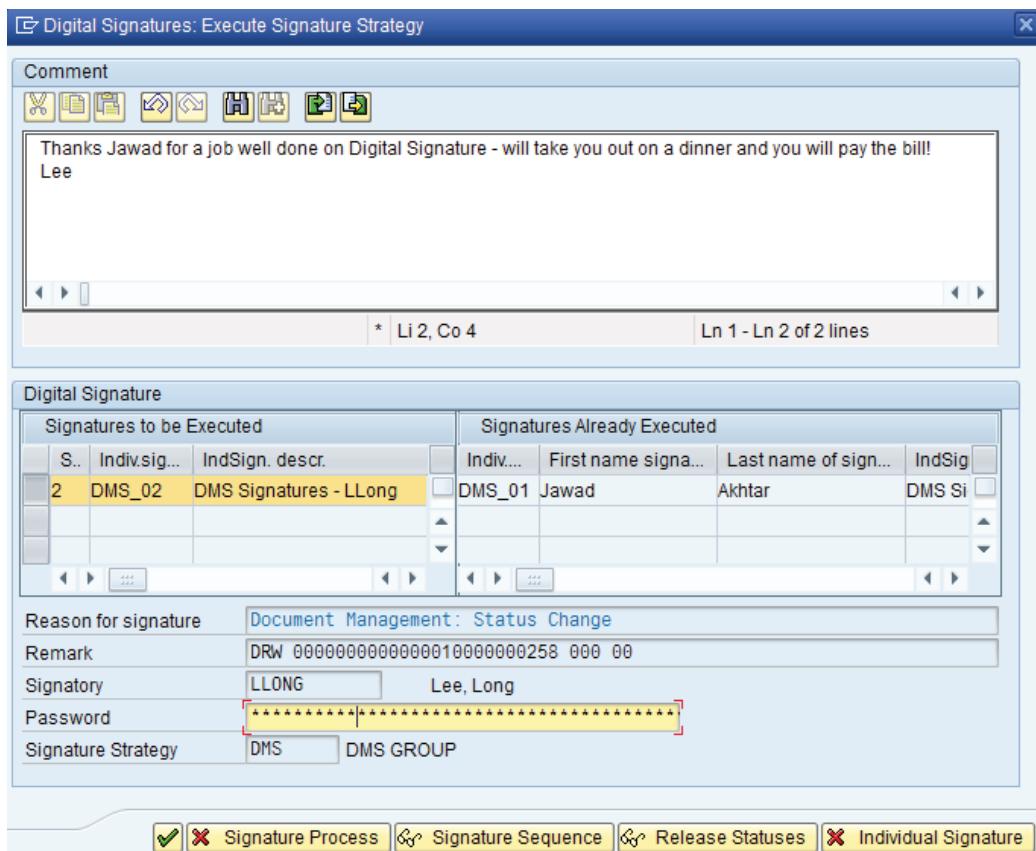
Figure 11: Second of the Two Individual Digital Signatures to be Executed

Figure 12 shows the information message that appears to confirm the successful completion of the digital signature process.


Figure 12: Information Message that the Digital Signature Process is Complete

WebDocuments

SAP has made the entire SAP DMS available on the Internet with the functionality known as WebDocuments. WebDocuments enables all the features and functionalities of standard SAP DMS, but in the Web/Internet environment.

DMS

WebDocuments can be extensively used by all those persons and companies to whom the organization does not wish to give access to SAP GUI. These can be, for example, employees traveling most of the time who wish to submit expense claim forms, parts development by vendors, or dealers/distributors needing access to OEM manuals and user guides.

Figure 13 shows the initial WebDocuments screen. It is a completely Web-based interface (Internet Explorer) and it requires the SAP DMS functional consultant to undertake necessary configuration to activate and make WebDocuments available.
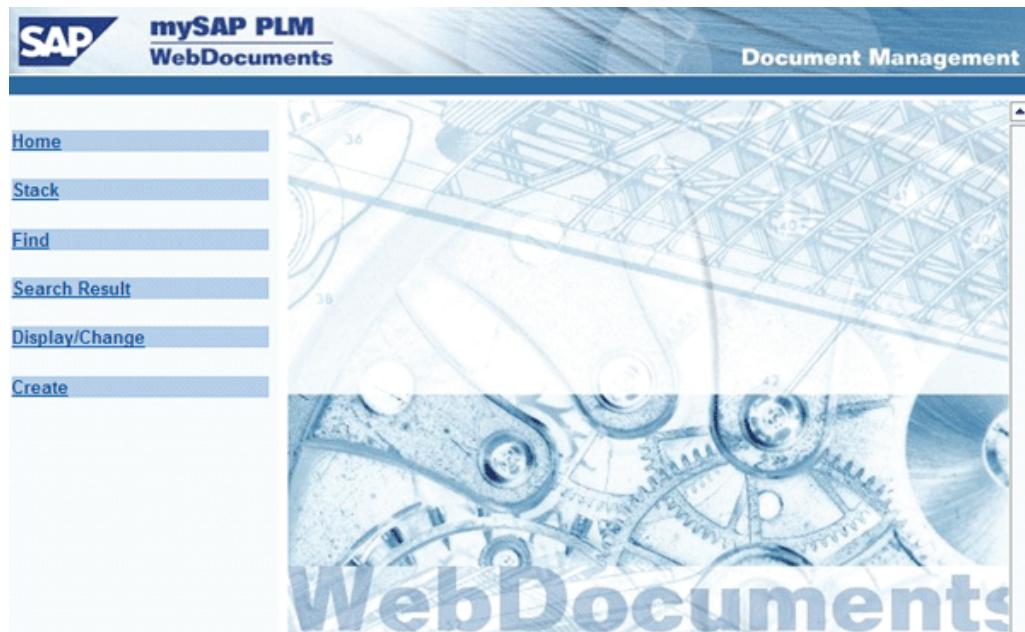

Figure 13: Initial Screen of WebDocuments as Viewed from Internet Explorer Browser with WebDocuments Menu on the Left Side

Figure 14 shows the WebDocument version of the same SAP DMS document type available in the SAP GUI system. Here, the Find documents functionality is shown. Click the Find hyperlink and the find function details appear, as shown on the right side of Figure 14.
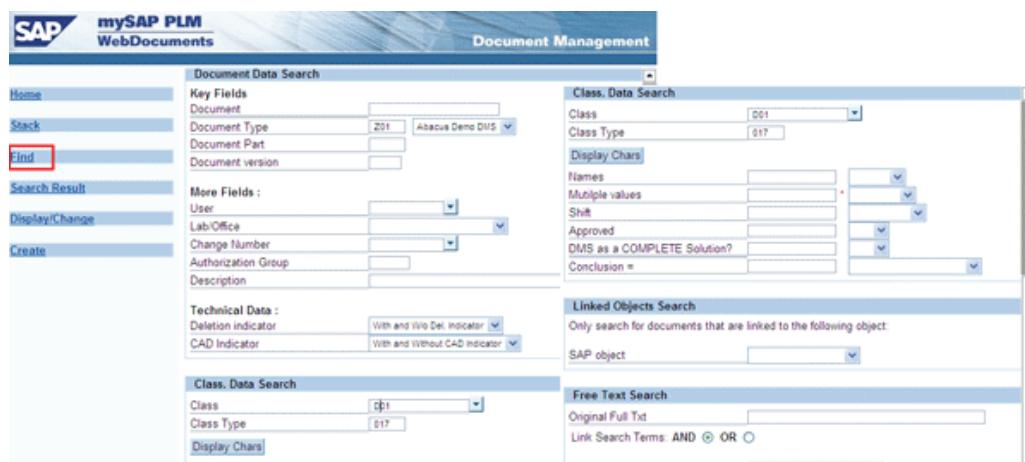

Figure 14: Detailed Search Screen Appears with Parameters and Other Keywords Available for Searching

DMS

Figure 15 shows that the SAP DMS document can also be created by WebDocuments and all the details are the same as in the SAP GUI. Click the Create hyperlink and the option to Create WebDocuments appears. Users can create, change, and display the WebDocuments on this screen.
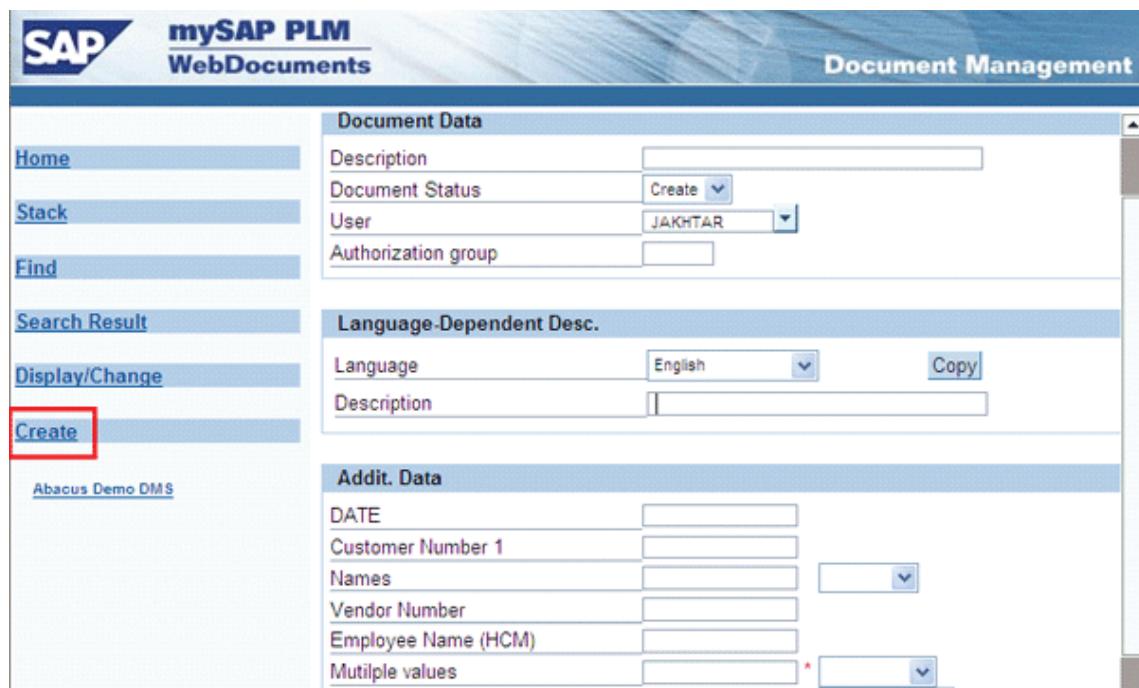
Figure 15: Option to Create WebDocuments - Same as SAP DMS Document Creation Functionality in the GUI Interface

Conclusion

DMS helps organizations take greater advantage of their SAP investment by making use of already-delivered and 'ready-to-use' latent functionalities like SAP DMS, with the engagement of an SAP DMS consultant. Using SAP DMS is a better solution than investing time, effort and money in third-party DMS solutions, which eventually also need to be integrated with SAP. SAP DMS can help manage the company's digital assets effectively, bring about organizational efficiency and improve business decision making.

Jawad Akhtar earned his B.Sc. in chemical engineering from Missouri University of Science & Technology, USA in 1996. He has 15 years of professional experience, six of which are in SAP consulting. He has completed eight end-to-end SAP project implementation lifecycles in the areas of PP, QM, MM, PM and SAP DMS in the Automobile, Steel, Chemicals, Fertilizer, FMCG, and Building Products Industries. He has also worked as an SAP Integration Manager, as well as an SAP Project Manager, and been proactively involved in a business development and solution architect role for six years. His profile on LinkedIn is at http://pk.linkedin.com/in/jawadakhtar. You may reach Jawad via email at SAP.Authors@ERPtips.com. Be sure to mention the author's name and/or the article title.

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SAP Knowledge. Transferred. Sustained.

That is what we believe in, that is what we do every day as we teach, consult, and train our clients from across the globe. This issue of ERPtips Knowledge Express represents the tip of our SAP knowledge iceberg. I am excited for you to get this peek at our mastery of SAP and our commitment to supporting our clients' and subscribers' everyday and sometimes unique SAP challenges. We are passionate about helping our SAP clients leverage their investment and are continually informing the SAP community about what's new or may be new to a client organization. After 15 years of experience in SAP solution mapping, I am excited about how we at ERPtips avail our training knowledge to you, the SAP client.

ERPtips has been in the SAP training and consulting space for the past decade, focused on:

- *Public training*
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- *Virtual training*
- *End user training*
- *SAP coaching services*
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I am particularly excited to announce our fall, fully virtual SAP public training classes starting August 26th! Our classes are taught boot camp style with exposure to the full components of the module. Participants take away usability and a deep understanding of the material, learning tips and techniques along the way. Our mastery level consultants have proven to be excellent trainers, as they bring an average of over ten years of real world experience with them.

I look forward to seeing you in our classes or speaking with you personally about your SAP training or consulting needs. Please enjoy this issue of ERPtips Knowledge Express. We are already busy working on our October issue, committed to bringing you ideas, solutions, and strategies to help you maximize the ROI of your company's investment in SAP. Please reach out to me with topics you would like us to feature in future issues or with specific SAP training challenges and questions.

Sincerely,

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