Ensure Customizing Data Consistency and Smooth-Running Business Processes Across Your SAP System Landscape with Customizing Synchronization

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(complete bio appears on page 52)

If your organization is like most, you no longer rely solely on SAP R/3 to support your business activities. To remain competitive, you need adaptive business solutions that provide best-of-breed functionality, scalability, and integration, so most SAP customers are now tapping into mySAP Business Suite solutions, such as mySAP Customer Relationship Management (CRM) and mySAP Supply Chain Management (SCM) to better manage customer relations and coordinate supply chain networks. With system complexity increasing as a result, it's essential that you maintain centralized control over your IT landscape, from the implementation of your solutions to their operation, especially when it comes to your SAP customizing settings, which need to be synchronized across all of your components. Otherwise, your business processes might falter, a risk you cannot afford in a highly collaborative business environment.

The thought of examining each and every component installed in your system landscape to identify inconsistencies is daunting to say the least. Fortunately, SAP provides two customizing comparison tools to help with the task — the Customizing Cross-System Viewer (CCSV), available with SAP Basis 4.0A and higher releases, and the newer Customizing Scout, introduced with SAP Solution Manager 2.2,[1] a free add-on to SAP Web Application Server 6.10.[2] Identifying inconsistencies

[1] For a detailed introduction to SAP Solution Manager, see the article "SAP Solution Manager — 'Command Central' for Implementing Your mySAP Solutions … and Much More!" in the September/October 2003 issue of *SAP Professional Journal*, and visit the SAP Service Marketplace at **http://service.sap.com/solutionmanager**.

[2] Previously published *SAP Professional Journal* articles cover the CCSV and Customizing Scout in detail: "Enhancements in Customizing: Business Configuration Sets, the Customizing Cross-System Viewer, and the Activity Log" (November/December 1999) and "Are You Certain You've Got Consistent Customizing Settings Across Your SAP Landscape?" (March/April 2002).

is only half the battle, though — you still need to correct them once you find them. Add the potential for some discrepancies slipping through the cracks or errors being introduced by manual changes, and you find yourself wanting to avoid the task altogether. But avoiding the task is not an option — it is critical that your business processes run smoothly — so to meet this challenge, SAP provides customizing synchronization capabilities to complement the comparison tools, relieving you from much of the burden of manually resolving inconsistencies.

You may already be familiar with the Application Link Enabling (ALE) and CRM Middleware distribution functionalities. ALE Customizing Data Synchronization can be used to distribute customizing data between SAP R/3 systems, and CRM Middleware can be used to perform an initial download of customizing data from an SAP R/3 system to an SAP CRM system. This article introduces you to a new feature also included with Solution Manager as of version 2.2 — Customizing Distribution — that includes the key features of the ALE and CRM Middleware functionalities and then picks up where they leave off, in order to handle more complex system landscapes containing different types of components. Going beyond the available documentation, this article takes a detailed look at the concepts behind Customizing Distribution and, using a CRM server installation as an example, shows customizing, configuration, and implementation teams, as well as system administrators and business consultants, how to use Customizing Distribution to keep the various components of an integrated SAP system landscape in synch.

And even if you have no immediate plans to install Solution Manager, keep reading — you will gain some insight into ways you can reduce your customizing administration efforts and acquire the knowledge you need to make the right decision on how to identify inconsistencies and synchronize customizing data in your own SAP environment.

Before we dive right into how customizing synchronization works, let's take a step back and briefly review why customizing inconsistencies occur in the first place and how you can identify them.

> ✓ ***Note!***
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> *This article focuses on Solution Manager 3.1 and on SAP Basis 4.6C and higher releases, and assumes knowledge of basic customizing concepts, including Business Configuration (BC) Sets, the Implementation Guide (IMG), customizing objects, and the Transport Management System (TMS). See the sidebar on the next page for an overview of key customizing synchronization terminology.*

Why Does Customizing Data Become Inconsistent?

There are many ways that the customizing data in your SAP system landscape can fall out of synch. Let's assume that your SAP R/3 landscape follows SAP's recommended configuration and consists of a development (DEV) system, a quality assurance (QA) system, and a production (PRD) system. In such a landscape, any of the following conditions can cause discrepancies between the customizing settings of the systems:

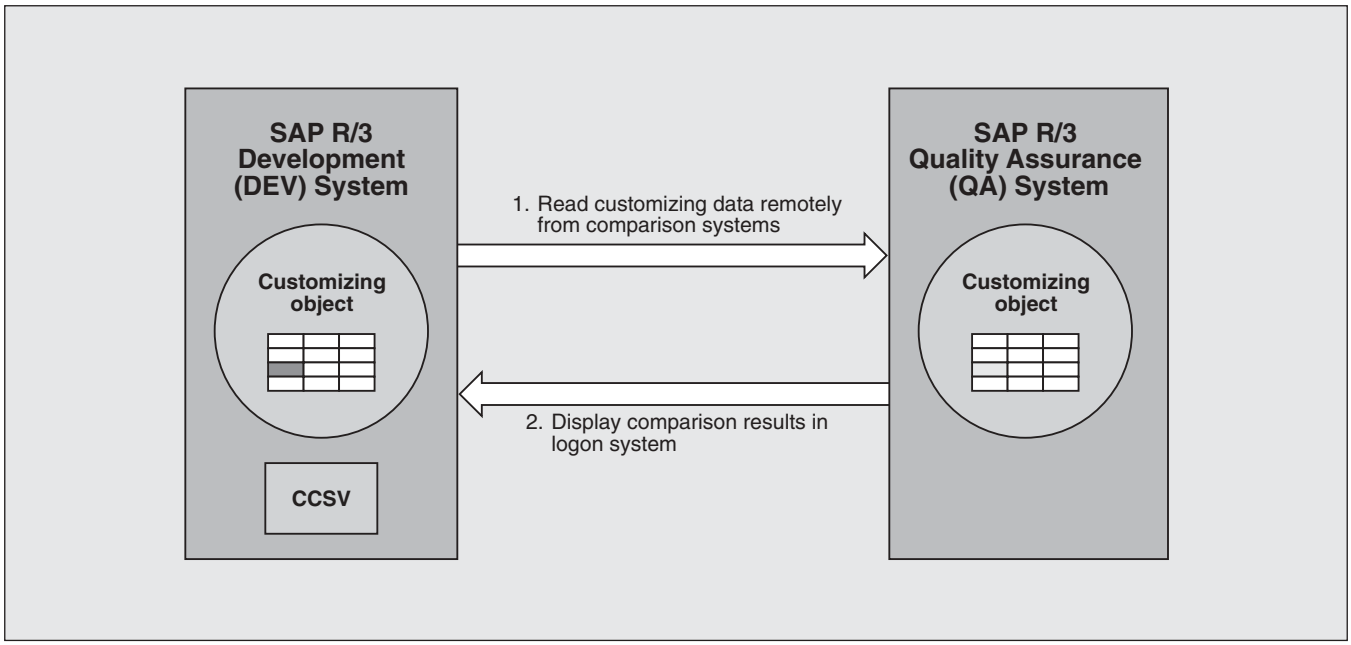
- Customizing requests in the DEV system that are awaiting transport to the QA system will cause the DEV system to be inconsistent with the QA system. Abandoned customizing work in the DEV system that is still active will also result in inconsistencies.
- Customizing performed directly in the QA system (accidentally or for testing purposes, for instance) that is not corrected in the DEV system will lead to discrepancies between the systems.
- "Current" settings used in the PRD system for constantly changing settings, like currency conversions, will inevitably lead to inconsistencies between the DEV and QA systems.

While it's nice to know *why* discrepancies can occur, it doesn't help you with the work of actually finding them. Let's take a quick look at how SAP tools make this a quick and easy task.

Key Customizing Synchronization Terminology

- **Business Configuration (BC) Set:** A set of customizing settings logically grouped according to business management criteria that can be used for documentary, quality assurance, and reuse purposes. The customizing settings stored in a BC Set are independent of the source customizing tables or views and can be accessed across the system landscape. Customizing Distribution uses BC Sets to activate customizing settings in target systems.
- **Customizing object:** A set of customizing tables and views associated by business or application criteria that are maintained and transported together. Customizing objects are defined and managed in the customizing object directory (transaction *SOBJ*), and are embedded in the relevant Implementation Guide (IMG) activities, making it easy to maintain associated customizing tables. Customizing objects are classified as "standard" (views, view clusters, tables with text tables), "nonstandard" (individual transactions, logical transport objects), and "other" ("dummy" objects, which are used to embed transactions in the IMG).
- **Customizing project:** Guides you through the steps required to customize an SAP system using a "project IMG," a subset of a component's SAP Reference IMG that contains the IMG activities required for the project. Customizing projects also bundle the transport requests used to trigger delta distributions (see below).
- **Customizing synchronization:** An umbrella term for tools used to resolve customizing discrepancies, such as the Customizing Distribution feature of Solution Manager.
- **Distribution scenario:** An active distribution run that identifies the customizing data to be distributed (via the synchronization group definition), determines when the data will be distributed (according to the selected distribution option), defines how the data will be distributed (using transport requests), and specifies where the data is located (the source system) and where it will be distributed to (the target systems).
- **Software component:** A reusable component of a product — e.g., the SAP_APPL and SAP_BASIS software components of SAP Web Application Server. SAP delivers product changes to customers as an enhancement (an upgrade) or a collective correction (a support package) to a software component. Customizing Distribution uses software components to control the integration of synchronization objects into a synchronization group (see below).
- **Solution Manager:** A platform for integrating tools, content, and methodologies to implement, support, and operate mySAP Business Suite solutions. Solution Manager includes the Customizing Scout and Customizing Distribution as of version 2.2.
- **Synchronization group:** Determines the scope of the customizing settings to be distributed. A synchronization group consists of one or more synchronization objects and is the core of a distribution scenario. Synchronization groups can be arranged hierarchically in a distribution scenario, in order to group related customizing for a global rollout, for example.
- **Synchronization object:** Contains the technical information used to map the customizing objects of components with differing structures — e.g., an SAP R/3 component and an SAP CRM component — to ensure cross-system communication flow and customizing data transfer between components. SAP provides predefined synchronization objects for some components, and customers can also define their own.
- **Transport Management System (TMS):** A set of tools within the Change and Transport System (CTS) for maintaining transports between SAP systems. Customizing Distribution and TMS work hand in hand: Customizing Distribution transfers customizing settings from the source development system to the target development system, and TMS then shepherds the settings in stages through the rest of the source and target landscapes — to the quality assurance systems, and finally to the production systems.
- **Transport request:** Also referred to as simply a "transport," a document that records and distributes changes to (customizing) objects between SAP systems. In a Customizing Distribution scenario, the transport in the source system records customizing changes and triggers the delta distribution of the changes, while the transport in the target system serves as a container for receiving and activating the changes.

Figure 1 Comparing Objects with Identical Structures Using the CCSV



Finding Customizing Inconsistencies

To meet the challenge of identifying discrepancies, SAP introduced the Customizing Cross-System Viewer (CCSV) with SAP Basis 4.0A. Accessed via the Implementation Guide (IMG), the CCSV compares selected IMG structures with customizing objects in transports or, as of SAP Basis 4.6C, in either transports or Business Configuration (BC) Sets. The comparison can be between different clients in the same SAP R/3 system or clients in different SAP R/3 systems (a DEV system and a QA system, for example), as shown in **Figure 1**. A previously published *SAP Professional Journal* article provides in-depth coverage on using the CCSV for customizing comparisons, so I won't belabor the details here.[3]

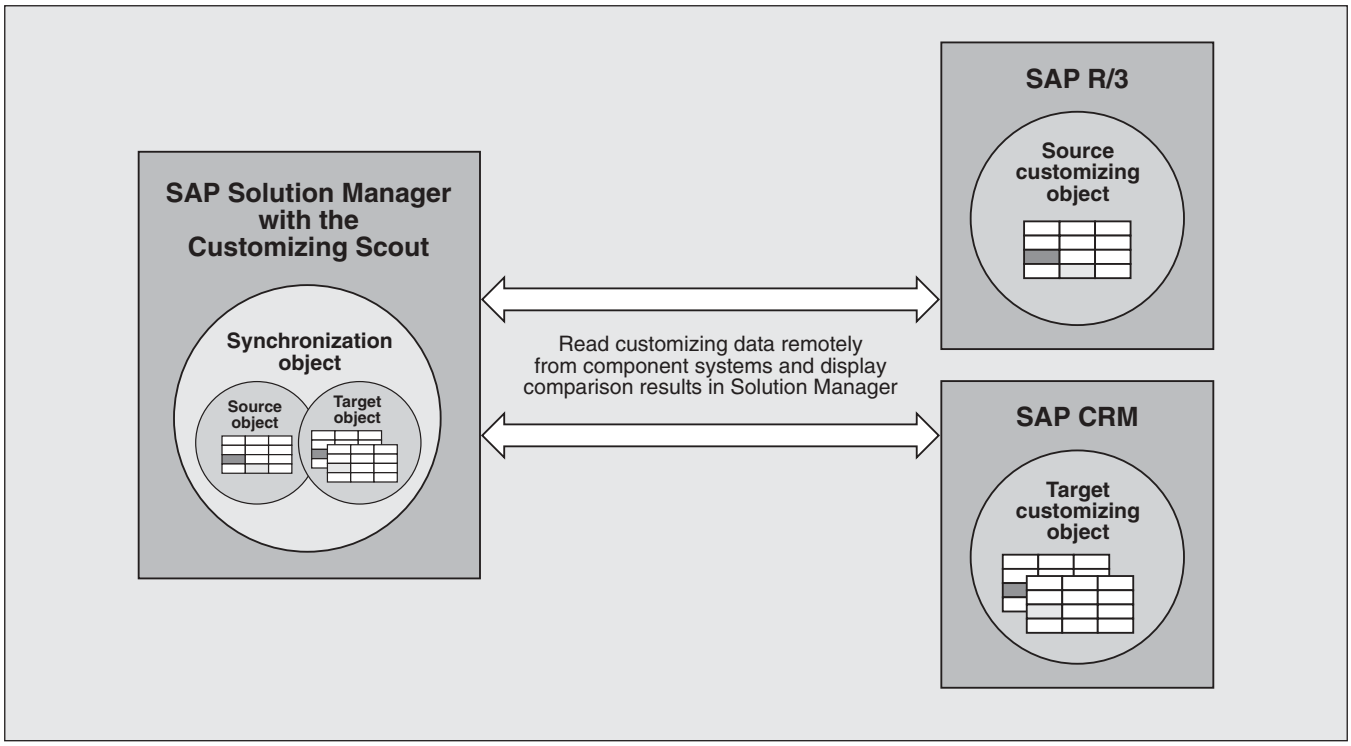
The CCSV provides all the functionality you need to identify discrepancies in a homogeneous SAP R/3 landscape, but most organizations these days have distributed system landscapes that include non-SAP R/3 components like SAP CRM. In the mySAP Business Suite, for example, different types of components each have their own customizing tables — a customizing object might be represented as a single table in SAP R/3 and as two tables in SAP CRM, for instance. These differing representations result in structural differences across components.

To support cross-component comparisons, the Customizing Scout was introduced as part of the Solution Manager 2.2[4] add-on to SAP Web Application Server 6.10. Solution Manager is installed as an add-on product in your SAP landscape, which enables the Customizing Scout to compare objects in different components, such as SAP R/3 and SAP CRM, from a single location, so you don't have to log on and off of the different systems. **Figure 2** is a graphical overview of how the Customizing Scout works. It resolves structural differences between customizing objects in different components using "synchronization objects," which contain mapping information to accommodate these differences. While you can define your own synchronization objects,

[3] "Are You Certain You've Got Consistent Customizing Settings Across Your SAP Landscape?" (March/April 2002).

[4] For an introduction to SAP Solution Manager, see the article "SAP Solution Manager — 'Command Central' for Implementing Your mySAP Solutions … and Much More!" in the September/October 2003 issue of this publication.

Figure 2 Comparing Objects with Differing Structures Using the Customizing Scout



Solution Manager 2.2 and now 3.1 make use of predefined objects delivered with SAP CRM 3.1 and 4.0, SAP Master Data Management (MDM) 2.0 and 3.0, and SAP Human Resources (HR) 4.7 and SAP R/3 Enterprise 4.7 for comparing SAP HR and SAP R/3 systems. SAP has found these to be the most commonly customized products.[5] The Customizing Scout may also be used to compare SAP R/3 3.1I and higher releases, which generally do not require synchronization objects since structural differences are not an issue for comparisons between the same SAP R/3 releases. For scenarios where there *are* structural differences between customizing objects, however, the predefined synchronization objects save you from the considerable time and effort required to map and group the objects yourself. A previously published *SAP Professional Journal* article discusses the concept and use of the Customizing Scout in detail.[6]

While the CCSV and Customizing Scout provide a welcome relief by identifying discrepancies for you, they are what they are — monitoring tools. You still need to make the necessary adjustments to bring your customizing settings into synch, which can be an arduous and time-consuming effort depending on the number of components and settings that are out of synch — you can imagine the potential amount in a complex system landscape! Fortunately, SAP provides a way to help you automate this process: the Customizing Distribution feature of Solution Manager.

Synchronizing Customizing Settings in an SAP Landscape

Customizing synchronization increases efficiency by reducing the time and cost involved in distributing your customizing data — in a recent survey,[7] the

[5] Objects for SAP Supply Chain Management (SCM) 5.0 are planned for future Solution Manager releases.

[6] "Are You Certain You've Got Consistent Customizing Settings Across Your SAP Landscape?" (March/April 2002).

[7] Dr. Andreas Hufgard, Director, IBIS Prof. Thome AG, *Evaluation of SAP Solution Manager 2003 – Extracts from the Results Presentation* (**www.ibis-thome.de**).

German consulting firm IBIS Prof. Thome AG found that the benefits of customizing synchronization increase in proportion to the number of transport requests managed in an installation, which can be a significant number, depending on your landscape. IBIS Prof. Thome AG also points out in the survey that customizing synchronization improves security, reduces errors, and lowers the total cost of ownership by making the data synchronization a single, automated process — customizers don't have to log on to each component individually and make the changes manually.

Like the Customizing Scout, Customizing Distribution uses synchronization objects to synchronize components, and as part of Solution Manager shares the same predefined objects used by the Customizing Scout for SAP CRM 3.1 and 4.0, SAP MDM 2.0 and 3.0, and SAP HR 4.7 and SAP R/3 Enterprise 4.7 for synchronizing SAP HR and SAP R/3 systems (objects are generally not required for distributions between the same SAP R/3 releases). The ALE Customizing Data Synchronization and CRM Middleware functionalities — i.e., initial distributions between SAP R/3 systems and between SAP R/3 and SAP CRM systems — have been incorporated and enhanced in the Customizing Distribution feature (see the sidebar on the next page for more on how Customizing Distribution incorporates the key ALE and CRM Middleware distribution functionalities). Through its integration into Solution Manager, and by extension with the Customizing Scout, Customizing Distribution supports comprehensive and efficient customizing comparison and distribution across complex, and even heterogeneous, system landscapes.

With the Customizing Distribution feature, you can:

- **Eliminate inconsistencies detected by the Customizing Scout:** Both the CCSV and Customizing Scout provide an overview of detected customizing differences between the specified systems in the form of an object list. With the CCSV, once you've identified the "real" discrepancies in the list (i.e., those caused by an unreleased transport request in the DEV system as opposed to current settings), you need to eliminate them manually. In contrast, since Customizing Distribution and the Customizing Scout are integrated via Solution Manager and use the same synchronization objects, you can start Customizing Distribution directly from the object list used by the Customizing Scout. After the synchronization is complete, you can start a new comparison run to determine whether it was successful.

- **Synchronize business processes running across components:** Business processes that run across different systems, such as SAP R/3, SAP CRM, and SAP SCM, often require the same customizing changes in each system. For example, let's say you want to streamline a sales process that references document or transaction types in your SAP R/3 and SAP CRM systems. In the past, you would have to make the same customizing changes to each system manually so that they use the same set of customizing. With Customizing Distribution, which uses the same synchronization objects the Customizing Scout uses for cross-component monitoring, you can change the customizing settings in the SAP R/3 system and then distribute those changes to the SAP CRM system to automatically synchronize the settings.

- **Lay the groundwork for efficient master data management:** Certain master data requires semantically identical settings, which means that certain customizing must be defined prior to maintaining the master data. Material master data for electronic equipment, for instance, references customized units of measurement to physically size products. If a referenced unit of measurement isn't available when a product is distributed from an SAP R/3 system to an SAP CRM system, for example, it might be transported with the wrong reference or with no reference at all, causing all kinds of problems with business processes. Customizing Distribution can be used to distribute that unit of measurement to the systems that require it.

- **Distribute customizing changes with global rollouts:** With a software solution, headquarters typically predefines a "template" for local or

ALE and CRM Middleware Synchronization Functionalities in Customizing Distribution

In addition to Customizing Distribution, SAP offers two other methods for synchronizing customizing settings, which you may have used at some point — ALE Customizing Data Synchronization and CRM Middleware. The key capabilities of these tools have been incorporated and enhanced in Customizing Distribution.

ALE Customizing Data Synchronization

ALE Customizing Data Synchronization was designed to manage distributions between SAP R/3 systems. Customizing Distribution can also handle such distributions, and it goes a step further by covering cross-component distributions as well — e.g., from SAP R/3 to SAP CRM, SAP CRM to SAP MDM, or SAP MDM to SAP R/3, and vice versa.

CRM Middleware

CRM Middleware can distribute customizing between SAP R/3 and SAP CRM systems. This capability is also incorporated into Customizing Distribution. In addition, while CRM Middleware requires a separate distribution between development systems, quality assurance systems, and production systems in the source and target landscapes, Customizing Distribution requires only a distribution between the development systems — you can then use standard Transport Management System (TMS) functionality to carry the distributed customizing through the source and target landscapes (i.e., DEV → QA → PRD) and ensure customizing data consistency.

For More Information

Further information on ALE Customizing Data Synchronization and CRM Middleware is available in the online documentation at **http://help.sap.com**:

- For documentation on CRM Middleware, go to the CRM 4.0 help and navigate to *mySAP Customer Relationship Management → Architecture and Technology → Business Integration → CRM Middleware*.
- For documentation on ALE Customizing Data Synchronization, go to the SAP Web Application Server 6.30 help and navigate to *SAP Library → SAP NetWeaver Components → Technical Operations Manual for mySAP Technology → Administration of the SAP Web Application Server → Management of the ABAP Subsystem → Management of ABAP Technology → ALE Introduction and Administration → Technology of ALE Business Processes → Synchronizing Customizing Data Between Systems*.

regional rollout. Unfortunately, this is not the case with customizing transports — headquarters has no way to track whether subsidiaries have actually imported the transported customizing settings. And even if subsidiaries *do* import the transports, there is no guarantee that the settings were applied properly. Through its integration with the Customizing Scout, Customizing Distribution helps ensure that changes are made correctly and automates the distribution of the customizing requests, which was a manual process in the past.

- **Consolidate your systems:** Systems dedicated to customizing development no longer need to be installed at different locations to accommodate

different components (e.g., one in SAP R/3, one in SAP CRM, and so on). You can perform your customizing work on one central source system, and, depending on your needs, distribute your centrally maintained customizing work company-wide using Customizing Distribution. Reducing the size of your development system landscape can save you a whole lot of money in terms of maintenance and hardware costs.

So how do you synchronize your customizing settings with Customizing Distribution? There are two available options. Depending on the scenario, you can perform:

- An *initial distribution* of customizing settings, where you provide a full set of initial customizing to a "plain-vanilla" (i.e., "uncustomized") SAP CRM system from a reference SAP R/3 development system.
- A *delta distribution* of customizing settings, where you enhance existing customizing and then distribute only those changed settings to different components that use the same set of customizing to run certain business processes or to components at subsidiaries via a global rollout. If you wanted to enhance your list of commission groups or units of measurement, for example, you could make these enhancements and delta distribute them from your source SAP R/3 system to your target SAP CRM system.

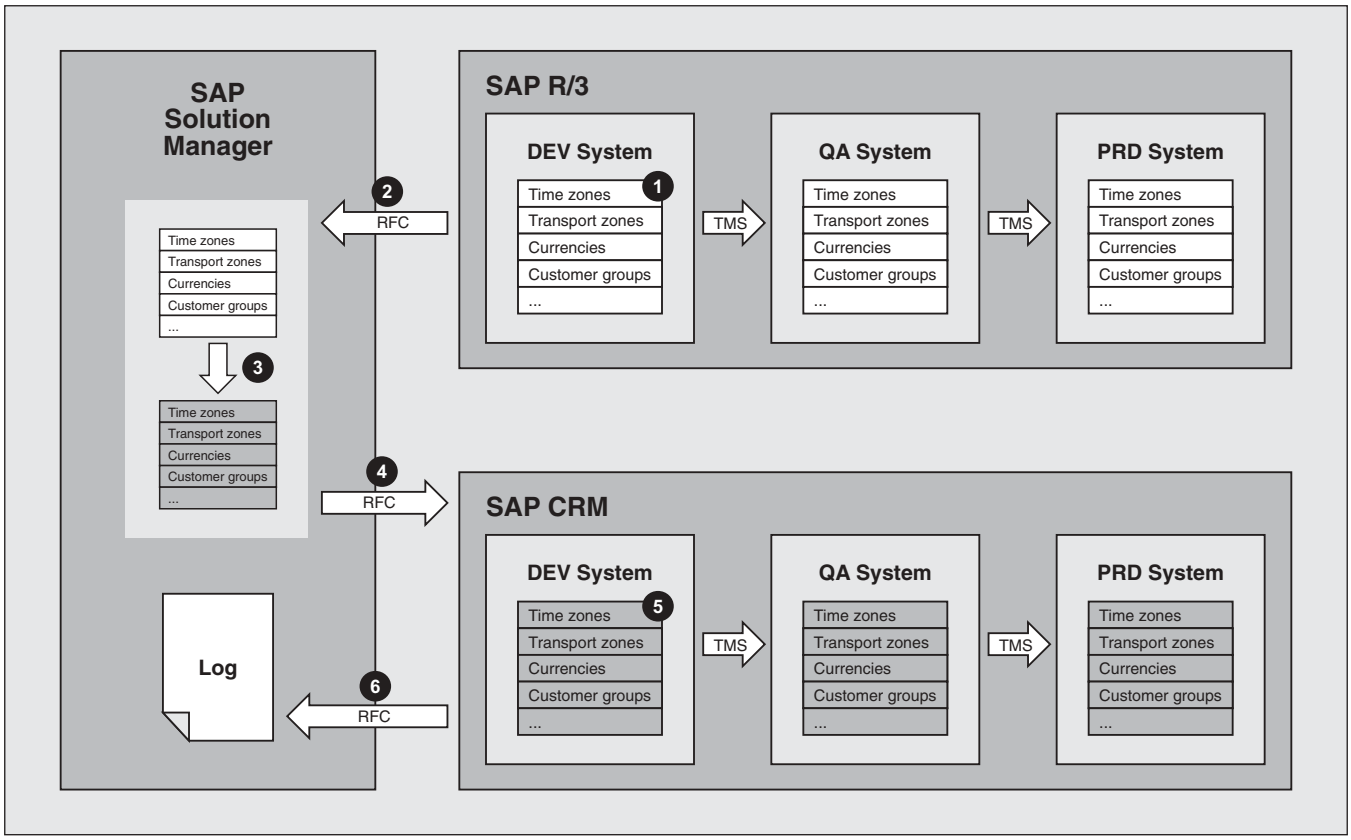
Let's take a closer look at how these two different types of distributions work in the context of Customizing Distribution.

In an *initial distribution*, the data is distributed via Solution Manager from the source to the target system using Remote Function Calls (RFCs). The customizing changes are written to transport requests in the target system that were set up by the project manager, technical consultant, or developer prior to the start of the distribution. Solution Manager identifies the customizing objects to be delivered to the target system using a list of synchronization-relevant customizing objects that was also defined prior to the distribution. Since initial distributions are generally applied only once, to provide a set of initial customizing to an "uncustomized" system, I will not discuss this type of distribution in detail — for detailed information on initial distributions, please refer to the Customizing Distribution online help (see the sidebar "Customizing Synchronization Resources" on page 52). This article focuses on delta distributions, which are applied on a regular basis (daily, weekly, monthly, etc.) to distribute updates made to existing customizing settings.

In a *delta distribution*, transport requests set up previously in the source and target systems trigger the distribution of the customizing settings. In this case, the transports themselves are not distributed; the source transport serves as a container for collecting your customizing work, and the target transport serves as a container for receiving it. Once the customizer saves the customizing changes, Solution Manager collects the data using the source transport and then distributes the data to the target transport. To better understand this process, let's briefly walk through a simple example. Let's say our system landscape contains a source SAP R/3 development system, a target SAP CRM development system, and Solution Manager (see **Figure 3**):

1. An application consultant customizes some time zone and currency settings in the source SAP R/3 development system. A list of the customized objects containing keys to the changed settings is recorded in the transport request that was previously set up in the source system.
2. Via RFC, Solution Manager is notified of the changes as soon as the settings are saved and assumes control of the distribution process.
3. Using the object list information recorded in the source transport request, Solution Manager compares the customized objects with predefined synchronization objects to identify the objects that can be distributed.
4. Solution Manager collects the customized data for the identified objects based on the keys in the object list, and, using the mapping information provided by the predefined synchronization objects, converts them into a BC Set-compliant format. The data is then sent to the transport request in the target SAP CRM system via RFC.

Figure 3 A Delta Distribution Using Customizing Distribution



5. The customizing data is received by the target system and assembled as BC Sets. Solution Manager then activates the BC Sets in the background and writes the customized data to the appropriate database tables. Solution Manager stores a link to each BC Set in the Customizing Distribution logging environment, which you can later use to explore the BC Set's contents (if you want to see the changes made to a commission group or unit of measurement, for example), and simultaneously transfers information on the changed customizing objects and keys to the target transport request.
6. Solution Manager is notified of the activated settings via RFC and generates a log to help you monitor the status of the distribution. You can use the log functionality to display the complete history of synchronizations according to a variety of selection criteria — you could display all the logs of the source transport requests for a specific source customizing project, for example.

> ✓ ***Note!***
>
> *While Solution Manager performs all of the delta distribution steps automatically — from recording the data in the source transport to generating the log — you can also perform a manual delta distribution to restart a synchronization that failed due to an unavailable system, for example. In manual mode, the trigger is still a transport request, but distribution starts only after you select a specific transport for distribution, regardless of whether the transport has been released. (For more on distribution monitoring and failure handling, see the section "Tracking Customizing Distribution Activities" later in the article).*

Which Synchronization Method Should I Use?

The synchronization method you choose to use will depend on your particular usage scenario. Here we'll look at some common synchronization scenarios and when it makes sense to use ALE Customizing Data Synchronization, CRM Middleware, or the Customizing Distribution feature of Solution Manager.

Initial Distributions

Both ALE Customizing Data Synchronization and CRM Middleware can be used to initially load customizing data. The ALE functionality, however, can only handle SAP R/3 ↔ SAP R/3 distributions, and CRM Middleware was specifically designed to support customizing object downloads from SAP R/3 to SAP CRM Server (or vice versa). Working with CRM Middleware also requires a separate initial load for each individual system pairing — i.e., from an SAP R/3 development system to an SAP CRM development system, and then from an SAP R/3 quality assurance system to an SAP CRM quality assurance system, and so on, instead of simply supplying customizing once and then transporting it through the system landscape.

While the ALE and CRM Middleware options are adequate for limited usage scenarios, for centralized control of more complex landscapes, and flexibility in terms of synchronization frequency, you need Customizing Distribution. Customizing Distribution requires only a single logon, it is not limited to SAP R/3 and SAP CRM, and you can schedule timed automatic distributions or combine an initial upload with a delta distribution by simply selecting an option (more on this in the section "Step 3: Set Up a Customizing Distribution Scenario" in the article).

Delta Distributions

Both ALE Customizing Data Synchronization and Customizing Distribution can be used to delta distribute customizing. Each method is based on transport requests that serve as triggers for the distribution. A key differentiator between these methods is the range of components, and thus the number of SAP solutions, that can be supported — ALE Customizing Data Synchronization is limited to SAP R/3 ↔ SAP R/3 distributions, while Customizing Distribution can cover a variety of components using predefined synchronization objects delivered by SAP. ALE Customizing Data Synchronization also requires several manual steps to organize transports — you need to generate ALE transport requests based on customizing requests in the source system, import the ALE transport requests into the target system, and convert the ALE transport requests back into regular customizing requests to transport them in stages through the system landscape to the production system, steps that are not required with Customizing Distribution.

CRM Middleware is not triggered by transport requests, and therefore cannot be used to distribute only changed customizing settings. CRM Middleware was designed for initial downloads of SAP R/3 customizing objects to an SAP CRM system (or vice versa) — with this method, *all* objects and their complete customizing contents are replaced, not just the changed ones. As you can imagine, such a download can consume a significant amount of time and affect performance, and may also accidentally overwrite customizing in the target system.

Cross-Component Distributions

ALE Customizing Data Synchronization does not support cross-component distribution. It uses customizing objects only, which do not contain the mapping information required to accommodate the structural differences

Once the synchronized customizing is transferred to the target system — in our example scenario, the SAP CRM system — you can then use regular transport management functionality to move the customizing from the development systems to the quality assurance and production systems.

between components. And, as its name indicates, CRM Middleware supports only SAP R/3 ↔ SAP CRM initial distributions.

In addition to supporting the environments covered by the ALE and CRM Middleware methods, Customizing Distribution allows you to extend your synchronization work across additional components — between SAP R/3 and SAP CRM or SAP MDM and SAP R/3, for example. Predefined synchronization objects provide the mapping between commonly customized components, so no additional effort is required to transfer the customizing.

Distribution Verification

While ALE Customizing Data Synchronization uses the Customizing Cross-System Viewer (CCSV) to compare and monitor distributions, comparisons are restricted to systems with the same components (e.g., SAP R/3 ↔ SAP R/3).

With CRM Middleware, you can use the "Monitor Load Objects" functionality to track the download status for each object, but this can become costly and inefficient. And even though you can ensure a successful download, there is no guarantee that the customizing was entered correctly in the target database tables. The only way to verify that the customizing was stored correctly is to check it manually.

Customizing Distribution provides a logging tool that verifies that all of your customizing has been distributed and received properly by the target systems and documents the time of the distribution. With very little extra effort, you can also use the Customizing Scout in conjunction with Customizing Distribution for cross-system comparisons and distributions.

Distribution to Production Systems

Distribution of customizing between production systems is normally "against the rules," but there are certain kinds of customizing called "current" settings that require changes in the production system, such as currency conversions during production processing.

CRM Middleware allows initial distributions between production systems, as does ALE Customizing Data Synchronization, as long as transport recording is active in the production systems. However, ALE Customizing Data Synchronization is intended for distributing data between development systems and then transporting the data in stages to the production system — activating transport recording in production systems will open the door for undesired (and inevitable) changes to your productive customizing.

Customizing Distribution cannot be used for distribution between production systems — similar to ALE Customizing Data Synchronization, it was designed on the premise that development work should only be done in development systems, and then be transported in stages to the production environment. In addition, BC Sets, which are required for Customizing Distribution, currently must not be activated in the production system, to ensure that productively used customizing data is not accidentally overwritten.*

* This may change in a future release of Solution Manager. Information on customizing synchronization developments can be found in the SAP Service Marketplace at **http://service.sap.com/customizing** under *Customizing Synchronization*.

To sum up, Customizing Distribution is ideal for reducing your manual customizing work and saving you time and resources — whether you are working in a simple SAP R/3 environment or in a landscape involving various components such as SAP R/3 and SAP CRM (see the sidebar above for a detailed

discussion of how the available customizing synchronization tools meet the needs of common usage scenarios). Of course, the more complex your system landscape gets, the more beneficial Customizing Distribution becomes, since it controls related transports and offers sophisticated logging functionality for tracking results. We'll next take a detailed look at how to use this brand-new feature to ease and improve the maintenance of your SAP customizing data by walking through an example delta distribution.

Setting Up a Customizing Distribution Scenario

To use Customizing Distribution, you must identify the source and target systems, and the changes to be distributed, by performing the following three tasks:

1. Create a synchronization group.
2. Add objects to the synchronization group.
3. Set up a customizing distribution scenario.

Prerequisites for Performing the Example Customizing Distribution

To follow along with the example distribution steps in your own environment, the following must be in place*:

- ☑ Solution Manager must be installed and configured (version 3.1 is used in the example), as well as an SAP R/3 system and an SAP CRM system (SAP R/3 4.7 and SAP CRM 4.0 are used in the example).
- ☑ The SAP R/3 and SAP CRM development systems must be connected to the Solution Manager system via trusted RFCs (transaction *SMSY*).
- ☑ Customizing projects with identical names must be set up in the source SAP R/3 system and the target SAP CRM system, as well as a Solution Manager project. While you can perform a distribution without doing this, it is recommended so that you can better monitor which source transport is distributing data to which target transport, each of which is generated by the Solution Manager project. In the example, the source and target customizing projects and the Solution Manager project are all named *DISTRIBUTE*.
- ☑ Transport requests must be assigned to the corresponding customizing projects in the source and target development systems. (Note that an initial distribution only requires requests in the target system in order to transport the customizing through the target system landscape.)
- ☑ Customizers must have user profiles in the source and target systems, as well as in the Solution Manager system, with the required authorizations.
- ☑ Tasks must be created for each customizer accessing the transport requests of the target and source systems. The number of tasks created will depend on the number of customizers performing customizing work; the example has one transport with one task. (Note that for an initial distribution, tasks will only be required in the target transport request.)

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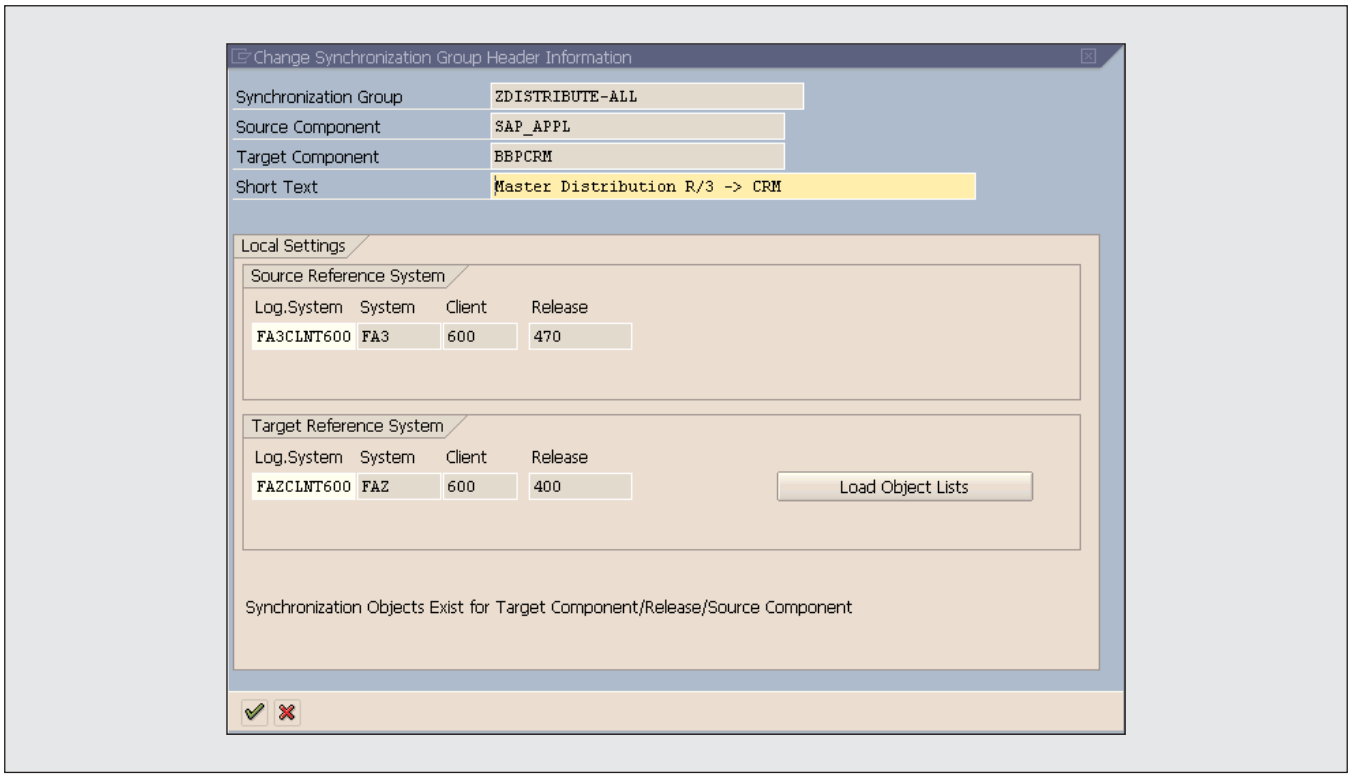
* For detailed information on the prerequisites for using Customizing Distribution:

- Go to the Solution Manager page in the SAP Service Marketplace (**http://service.sap.com/solutionmanager**), click on *Installation Guides*, select the appropriate *Configuration Guide: SAP Solution Manager* document, and review the relevant sections in the "Implementation and Distribution" usage scenario.
- In the SAP online documentation (**http://help.sap.com**), go to the SAP Web Application Server 6.30 online help and navigate to *SAP NetWeaver → SAP Solution Manager → Customizing Synchronization → Compare Cross-Component Customizing → Customizing Distribution and Comparison System Settings*.

Figure 4 Synchronization Group Header Settings



A synchronization group is the foundation of a distribution scenario. It clusters all synchronization-relevant objects to be used in the distribution, so you don't have to choose every object individually when you are configuring your distribution scenario. A synchronization group contains the objects that define the changes to be distributed — these can be either the predefined synchronization objects provided by SAP, which include mapping information to accommodate structural differences between objects in different components (e.g., by converting SAP R/3 customizing tables into an SAP CRM-compatible format), or you can define your own.[8]

Let's now walk through the steps involved in setting up a Customizing Distribution scenario, and what you need to do to get a delta distribution process up and running (see the sidebar on the previous page for an overview of the prerequisites for following these steps in your own environment). Even though the steps will focus on a delta distribution, I will also point out where the steps would differ for an initial distribution.

We will be using an example system landscape that includes Solution Manager, a source SAP R/3 development system, and a target SAP CRM development system to which we want to distribute customizing data (in this case, a new commission group entry) from the SAP R/3 system to the SAP CRM system.

Step 1: Create a Synchronization Group

To create a synchronization group, follow these steps:

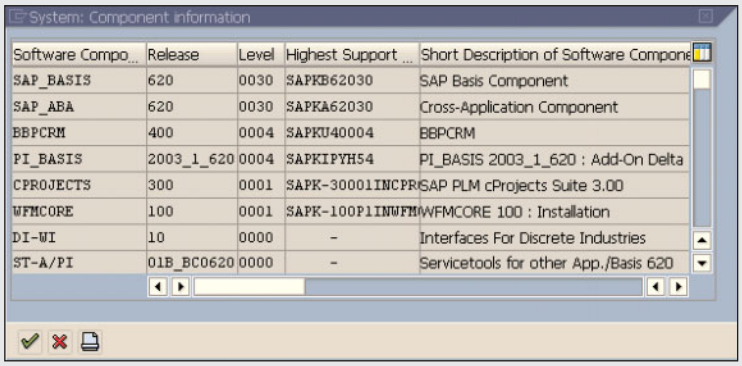
1. Launch the synchronization group editor using transaction *SCDT_GROUPS*, and click on the *Create Synchronization Group* icon ( ).
2. In the dialog box (**Figure 4**), enter the header information for your synchronization group.

[8] For more information on defining mapping objects, refer to the most up-to-date online documentation at **http://help.sap.com**, and navigate to *SAP NetWeaver → SAP Web Application Server → SAP Library → SAP NetWeaver Components → Customizing (BC-CUS) → Customizing Synchronization.* You can also refer to the application help for transaction *SCDT_MAPPING*, which is part of SAP Web Application Server 6.10 and higher.

Viewing the System Software Components

If you are not sure about a system's software components, you can display a list of installed components by following these steps:

1. Choose *System* → *Status* from the SAP standard menu.
2. In the SAP system data box, click on the component information icon ( ), which will display a list of all the software components installed in the system, such as *SAP_BASIS*, *SAP_APPL*, and *BBPCRM*. (Note that not all software components are relevant for customizing synchronization. See the Customizing Distribution online help for more details on supported components.)



Software Compo...	Release	Level	Highest Support ...	Short Description of Software Compone
SAP_BASIS	620	0030	SAPKB62030	SAP Basis Component
SAP_ABA	620	0030	SAPKA62030	Cross-Application Component
BBPCRM	400	0004	SAPKU40004	BBPCRM
PI_BASIS	2003_1_620	0004	SAPKIPYH54	PI_BASIS 2003_1_620 : Add-On Delta
CPROJECTS	300	0001	SAPK-30001INCPR	SAP PLM cProjects Suite 3.00
WFMCORE	100	0001	SAPK-100P1INWFM	WFMCORE 100 : Installation
DI-WI	10	0000	-	Interfaces For Discrete Industries
ST-A/PI	01B_BC0620	0000	-	Servicetools for other App./Basis 620

- Enter the technical name for the group in the *Synchronization Group* field (in the example, *ZDISTRIBUTE-ALL*). This value will depend on your company-specific naming conventions. To indicate the header settings at a glance, you can integrate the source and target component as well as the source and target systems, such as *Z_LHK_R3_LTD_CRM*, for example.

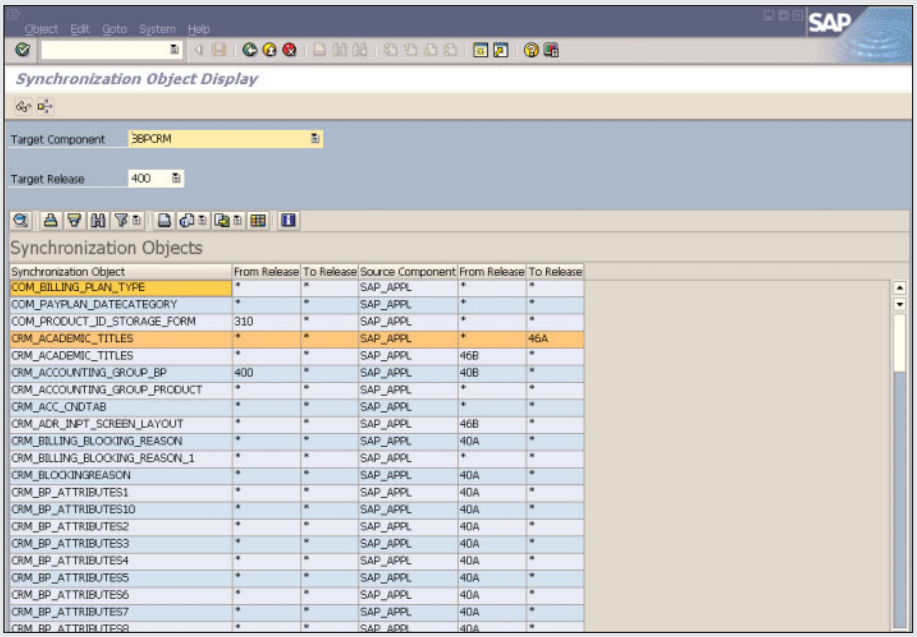
- Enter the relevant software components in the *Source Component* and *Target Component* fields — source *SAP_APPL* and target *BBPCRM* in the example (see the sidebar above for details on how to look up the components installed in your system). Only systems containing the software components specified here can be chosen as source and target systems for the distribution — in the example, this means that only SAP R/3 systems and SAP CRM systems can be chosen.

- Enter a description in the *Short Text* field (*Master Distribution R/3 -> CRM* in the example), which will be displayed in the F4 help for selecting a synchronization group when you set up your distribution scenario (more on this later). While you can enter any description you wish, I recommend including the source and target system or component name, coupled with client information if necessary, because if you intend to work with several distribution scenarios, it helps to be able to see at a glance where the distribution is coming from and where it is going to, without having to access the distribution scenario details.

3. In the *Local Settings* frame, enter the reference source and target systems (in the example, an SAP R/3 4.7 system and an SAP CRM 4.0 system, respectively), which will be used to select customizing objects for the distribution. The

Loading the Predefined Synchronization Objects

Technically, the predefined synchronization objects are delivered as part of the software component, not as part of Solution Manager, and must be uploaded to Solution Manager before you can add them to the synchronization group (see the section "Step 2: Add Objects to the Synchronization Group" in the article). You can load the predefined objects from the specified target system via the SAP standard menu path *Goto* → *Load Object Lists*, or by clicking on the "Load Object Lists" button on the synchronization group header settings screen (Figure 4). Solution Manager will then collect the objects from the target system via RFCs and store them in its internal tables — based on the settings for the example in the article, it will retrieve all predefined objects available for SAP R/3 4.7 ↔ SAP CRM 4.0 distributions. To view the loaded predefined synchronization objects, select *Environment* → *Display Synchronization Objects* from the Customizing Distribution initial screen or transaction *SCDT_SHOW_MAPPING* (the screenshot below shows a partial list of the predefined objects for the target system specified in Figure 4). To view detailed mapping information for an object, simply double-click on its name.



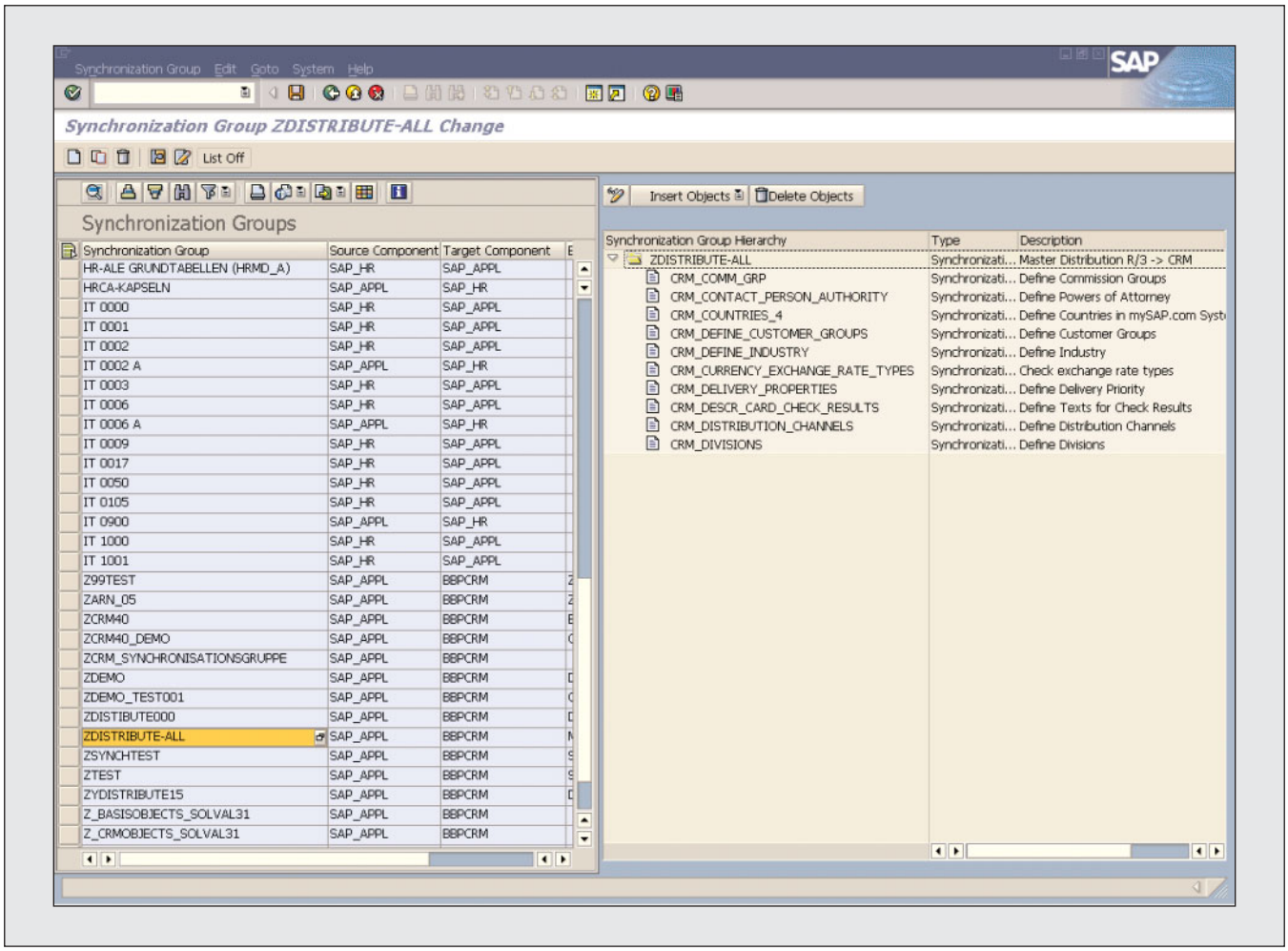
Synchronization Object	From Release	To Release	Source Component	From Release	To Release
COM_BILLING_PLAN_TYPE	*	*	SAP_APPL	*	*
COM_PAYPLAN_DATECATEGORY	*	*	SAP_APPL	*	*
COM_PRODUCT_ID_STORAGE_FORM	310	*	SAP_APPL	*	*
CRM_ACADEMIC_TITLES	*	*	SAP_APPL	*	46A
CRM_ACADEMIC_TITLES	*	*	SAP_APPL	46B	*
CRM_ACCOUNTING_GROUP_BP	400	*	SAP_APPL	40B	*
CRM_ACCOUNTING_GROUP_PRODUCT	*	*	SAP_APPL	*	*
CRM_ACC_CNDTAB	*	*	SAP_APPL	*	*
CRM_ADR_INPT_SCREEN_LAYOUT	*	*	SAP_APPL	46B	*
CRM_BILLING_BLOCKING_REASON	*	*	SAP_APPL	40A	*
CRM_BILLING_BLOCKING_REASON_1	*	*	SAP_APPL	*	*
CRM_BLOCKINGREASON	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES1	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES10	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES2	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES3	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES4	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES5	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES6	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES7	*	*	SAP_APPL	40A	*
CRM_BP_ATTRIBUTES8	*	*	SAP_APPL	40A	*

target system information is also used to load the list of predefined synchronization objects available for the specified target component (see the sidebar above) — in the example, the SAP CRM objects. The systems specified here do not necessarily have to be the source and target systems you plan to choose for the distribution scenario (more on this in the section "Step 3: Set Up a Customizing Distribution Scenario").

4. Confirm your entries and continue ( ).

We're now ready to add objects to our *ZDISTRIBUTE-ALL* synchronization group.

Figure 5 Adding Objects to a Synchronization Group



Step 2: Add Objects to the Synchronization Group

On the synchronization group maintenance screen (**Figure 5**), open the newly created synchronization group (*ZDISTRIBUTE-ALL* in the example) by double-clicking on its name in the left frame. The opened group will then appear in the right frame. If you select an existing group, you will see a list of the objects contained in the synchronization group; if the group is new, it will be empty. To add objects to the group, click on the *Insert Objects* button at the upper right, which will display a dropdown with the following options:

- *Insert Synch.Objects …* — The text of this option changes based on the target software component specified in the synchronization group header settings (Figure 4). In the example, we chose a Release 4.0 (*400*) SAP CRM (*BBPCRM*) system as the target, so the menu item will read *Insert Synch.Objects BBPCRM 400*. Choosing this option presents you with a list of the predefined synchronization objects uploaded to Solution Manager (see the sidebar on the previous page) from which you then choose the ones that apply to your particular usage scenario. I recommend using this option for cross-component comparisons, because it saves you the time and effort involved in manually identifying the IMG activities that are relevant for your distribution. This option can be

used for both delta and initial distributions. (Note that due to technical restrictions, this is the only available option for initial distributions.)

- *Add Objects from Target IMG* and *Add Objects from Source IMG* — These options allow you to manually add customizing objects from the IMG of the reference target or source system specified in the synchronization group header settings (see step 3 of the previous section). These options are useful if you know precisely which IMG activities you need for the distribution, and they are primarily intended for SAP R/3 ↔ SAP R/3 distributions. Once an IMG object is added to the synchronization group, one of the following happens:

  - If the distribution is between different components (e.g., SAP R/3 ↔ SAP CRM), Customizing Distribution automatically replaces the IMG object with a predefined synchronization object that represents the IMG object, in order to handle the structural mapping. Before replacing the IMG object, Customizing Distribution verifies that the IMG object exists in both the source and target software components specified in the synchronization group header. If a corresponding object cannot be found in one of the systems, Customizing Distribution will not add the object, since in that case there isn't a corresponding object to synchronize.

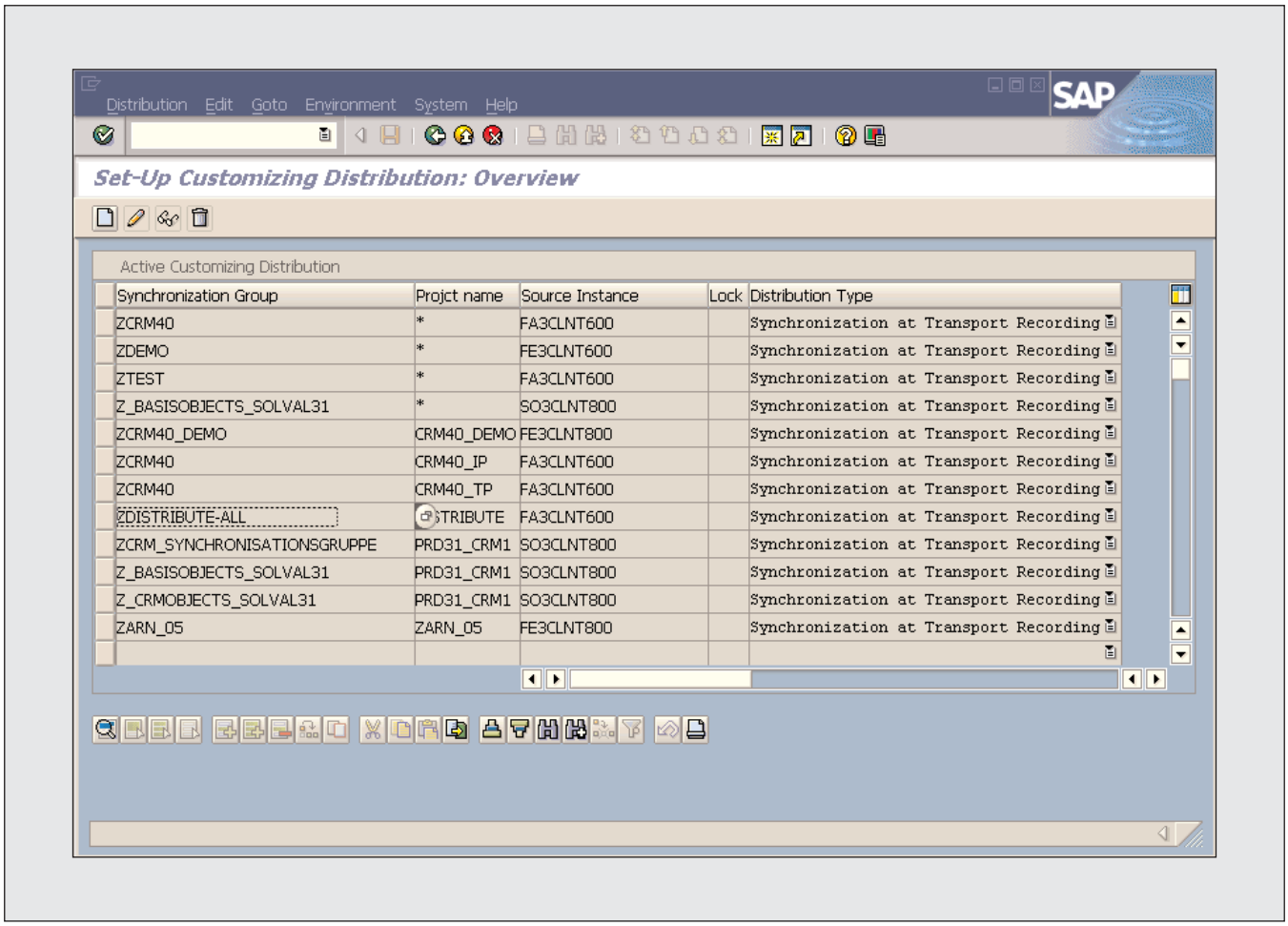
  - If the distribution is between the same system and release (e.g., SAP R/3 4.6C ↔ SAP R/3 4.6C), the IMG object is added without being replaced or mapped, since the structures are identical. An IMG object distribution will also usually work between releases, such as SAP R/3 4.6C and SAP R/3 Enterprise 4.7, for example. Let's say that a new field was added to a certain table in SAP R/3 Enterprise 4.7. An SAP R/3 4.6C system will not provide or receive customizing data for this field, since it doesn't exist in that system, so it will have no effect on a distribution in either direction. For any other structural differences, however, such as a renamed field, you must create a mapping between them using transaction *SCDT_MAPPING*, which is available as of SAP Web Application Server 6.10 (see footnote 8 on page 37).

  The *Add Objects from Target IMG* and *Add Objects from Source IMG* options can only be used for delta distributions, and they are best suited for distributions between homogeneous components.

✓ *Tip*

While it might seem like Customizing Distribution can only be used to synchronize one specific source component and one specific target component, such as SAP R/3 ↔ SAP CRM or SAP R/3 ↔ SAP R/3, this is not the case. Let's say you have identified a set of customizing objects that apply to an SAP R/3 ↔ SAP R/3 distribution as well as an SAP R/3 ↔ SAP CRM distribution. You can cluster the relevant SAP R/3 and SAP CRM synchronization groups into a "parent" synchronization group by simply opening the parent group in the right frame of the synchronization group maintenance screen (Figure 5) and dragging and dropping the relevant synchronization groups from the left frame into the right frame. You can then base the distribution scenario on this parent group. Note that if the synchronization groups in the parent group use both predefined synchronization objects and IMG activities or customizing objects, then only some of the objects in the groups will work in an initial distribution scenario (remember that only the predefined synchronization objects work in an initial distribution). Keep in mind that the more objects and components you include in a single distribution scenario, the more difficult it becomes to monitor the distribution, so while it's possible, and even tempting, to use all kinds of combinations, I recommend using either component-specific or cross-component distribution pairs with a fixed source → target component combination, such as SAP R/3 → SAP CRM.

Figure 6 Currently Active Customizing Distribution Scenarios



- *Add Customizing Object from Target* — This option is similar to the previous IMG options, except that the customizing objects are selected directly from the target system instead of via the IMG. This option is for those who are more comfortable working with customizing objects than IMG activities, and it is reserved for delta distributions.

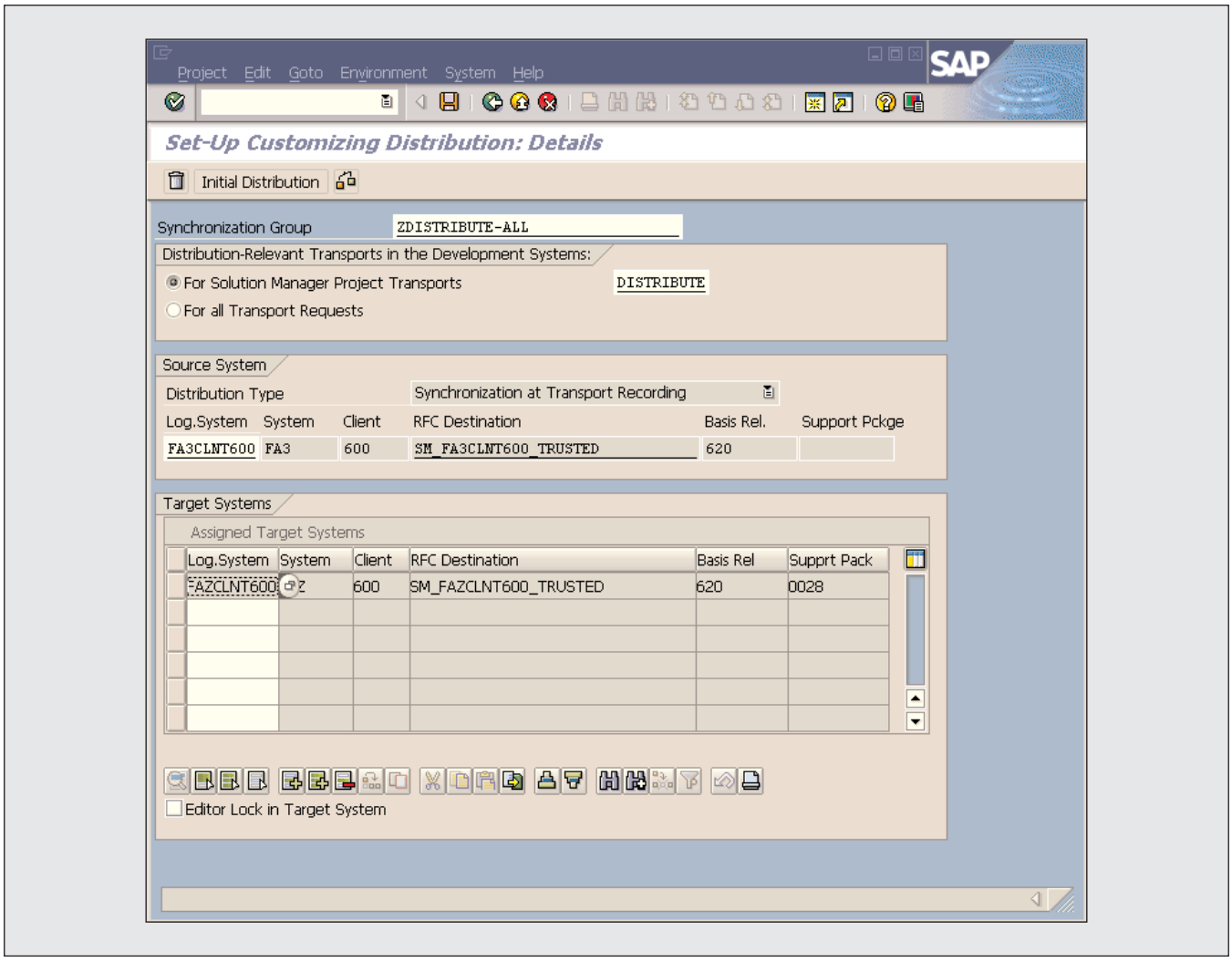
Make your selections, and then save the synchronization group. As you can see in Figure 5, for the example scenario I have chosen the *Insert Synch.Objects …* option, because it automatically provides me with the complete library of synchronization objects, from which I can then choose the ones that are relevant for my particular SAP R/3 Enterprise 4.7 ↔ SAP CRM 4.0 distribution scenario. We will set up the distribution scenario next.

Step 3: Set Up a Customizing Distribution Scenario

Now that we've created a synchronization group containing the objects that are relevant for the distribution, the next step is to make the information part of a distribution scenario. Follow these steps:

1. Call transaction *SCDT_SETUP* to view a list of all currently active distribution scenarios (see **Figure 6**), and click on the create icon ( ) to set up a new distribution scenario.

Figure 7 Customizing Distribution Scenario in Detail



2. In the distribution details screen (**Figure 7**), select a synchronization group in the *Synchronization Group* field via F4. As you can see in the example, I've selected the *ZDISTRIBUTE-ALL* group we created in the previous sections.

3. Customizing Distribution works either with or without customizing projects set up in the source and target systems. These projects are recommended to make it easy to monitor the distribution, and they are used in the example here. Select the mode you wish to use for your distribution scenario in the *Distribution-Relevant Transports in the Development Systems* frame:

   - **For Solution Manager Project Transports:** Select this option if customizing projects exist in your source and target systems, in which case changes recorded to transports in the source customizing project are written to transports in a target customizing project with the same name. If there is also an identically named Solution Manager project, as there is in the example, you can make the systems assigned to it available for you to select as source and target systems for your distribution (more on this in steps 5 and 6) by selecting it via F4 help in the accompanying field.

> ✓ ***Note!***
>
> *When using the For Solution Manager Project Transports option, the customizing projects in the source and target systems must have identical names, otherwise the distribution will not work. If an identically named Solution Manager project does not exist, then you will instead need to manually enter the name of your source customizing project in the field that accompanies the option. If you are working with several open transport requests in the source and target system customizing projects, I recommend explicitly assigning these source and target transports to each other to ensure that customizing intended for distribution is stored correctly. To make this assignment, go to Edit → Transport Request Assignment in the SAP standard menu of the distribution details screen (Figure 7).*

- **For all Transport Requests:** Select this option if you do not have customizing projects set up in your source and target systems, which may be the case if you organize your customizing work in transports right away instead of using the project context. With this option, all transport requests in the selected source system client are included in the distribution, not just those in the source customizing project.

With the *For Solution Manager Project Transports* and *For all Transport Requests* options, you either select a project in order to indirectly specify a source transport for distribution, or make no selection and leave it to Customizing Distribution to consider all relevant transports in the selected client of the system. To make monitoring the distribution more transparent, I recommend the first option, which I've chosen for the example. As you can see, I've also selected the Solution Manager project *DISTRIBUTE* to make the systems assigned to it available for the distribution.

4. In the *Source System* box, specify an event to trigger the distribution in the *Distribution Type* field, by choosing one of the following options:

   - **Synchronization at Transport Recording:** Delta distribution begins as soon as customizing changes are recorded in the source transport request. This option allows your customizing changes to be immediately available and tested.

   - **Synchronization at Transport Release:** Delta distribution begins when the source transport request is released. Customizing can be distributed in a more controlled manner with this setting, because you can bundle semantically interdependent changes into a single transport request.

   - **Timed Distribution:** A scheduled background job initiates the delta distribution based on the delta customizing changes recorded in the source transport request. This option helps keep your customizing stable by transferring changes at predefined times, such as nights or weekends.

   - **No Automated Distribution:** To perform an initial distribution, select this option and then select the *Initial Distribution* button in the SAP standard toolbar, which launches a screen on which you can schedule the distribution process as a background job. Since this option collects *all* the customizing for the objects stored in the selected synchronization group — not just the changed customizing — it is ideal for providing customizing to new installations. (Note that for an immediate distribution, you must complete steps 5 and 6 before initiating the distribution.)

The option you choose will depend on the needs of your business environment — some systems require instant distribution, while for others, a weekly distribution is sufficient (e.g., from the central development system to the local

development system). Fortunately, Customizing Distribution offers the flexibility to handle a variety of needs. For the example, I have chosen the *Synchronization at Transport Recording* distribution option to make the SAP R/3 customizing available to the SAP CRM system as soon as possible.

> ✓ ***Note!***
>
> *Keep in mind that once you've selected a trigger event for an automatic delta distribution (Synchronization at Transport Release, Synchronization at Transport Recording, or Timed Distribution) and saved the scenario, you cannot change the active scenario. To change any of the triggers, you would have to delete the scenario and create a new one. Selecting the No Automated Distribution option for an initial distribution, on the other hand, allows you to change the trigger after the scenario is saved — if at a later point during the project you decide you'd rather delta distribute your customizing, you can launch the distribution scenario details and switch to a different trigger (note that this is a one-time-only option, however; once you've switched to a delta distribution trigger and saved the scenario, it cannot be changed).*
>
> *You can also initiate an initial distribution for a scenario set as a delta distribution — simply select the desired delta distribution trigger, click on the Initial Distribution button, and start the distribution immediately. Coupling initial and delta distribution in this way helps you keep the number of distribution scenarios as low as possible, which makes it easy to get a good overview of your distribution activities. Of course, you can also just set up different distribution scenarios that use the same synchronization group — one for initial distribution, and another for delta distribution, for example; the number of distribution scenarios you choose to set up is a matter of preference.*

5. In the corresponding fields, enter the source system information for the distribution scenario. Remember that the components specified in the synchronization group header settings (refer back to Figure 4) limit which source systems can be selected. For the example, we specified *SAP_APPL* as the source component, so only SAP R/3 systems can be selected here. Remember also that if you selected a Solution Manager project on the distribution details screen (Figure 7), any SAP R/3 system in that project will be available for selection here as well.

   In Figure 7, we specify client *600* in system *FA3*, which is the SAP R/3 system we also specified as the reference source in Figure 4. Remember that you don't have to choose the reference source as the distribution source — you can choose any other system in the landscape that contains the *SAP_APPL* software component (i.e., any other SAP R/3 system).

6. In the *Target Systems* frame, assign the target systems to which customizing should be distributed. Again, remember that the components specified in the synchronization group header settings determine which target systems can be selected. For the example, we specified *BBPCRM* as the target component, so only SAP CRM systems can be selected here. As in the previous step, if a Solution Manager project with the same name as the source and target customizing projects was selected on the distribution details screen (Figure 7), the SAP CRM systems included in that project will also be available for selection.

   In Figure 7, we specify client *600* in system *FAZ*, which is the SAP CRM system we also specified as the reference target in Figure 4. Again, remember that you don't have to choose the same system as the reference target and distribution target — you can choose any other system in the landscape that contains the *BBPCRM* software component (i.e., any other SAP CRM system).

> ✓ ***Tip***
>
> *You can protect your distributed customizing settings from unwanted changes by selecting the Editor Lock in Target System option at the bottom of the distribution details screen (Figure 7). Selecting this option locks the settings and prevents customizers from accidentally changing them once they've been distributed to the target system. Note that the locking feature is restricted to standard customizing objects, such as views and view clusters. Individual transactions or logical objects, for example, cannot be locked — in this case, the distribution team must manually protect against changes by warning customizers not to change such objects in the target system.*

> ✓ ***Tip***
>
> *If you use filter mechanisms for individual synchronization objects or groups — for example, to define master key ranges that cannot be changed by subsidiaries after a rollout — only the settings that are included in the filter are locked when you select the Editor Lock in Target System option on the distribution details screen. This effect is useful if you need to distribute a set of unchangeable customizing to subsidiaries, but still want to allow them to make local customizing changes.*

7. Save the distribution scenario.

That's it! Your distribution scenario is now ready to run. Before running it regularly in your environment, however, it's a good idea to verify that it functions properly in a technical sense and that it applies the customizing data in the target system in the way that you intended. I'll show you an easy way to do this next.

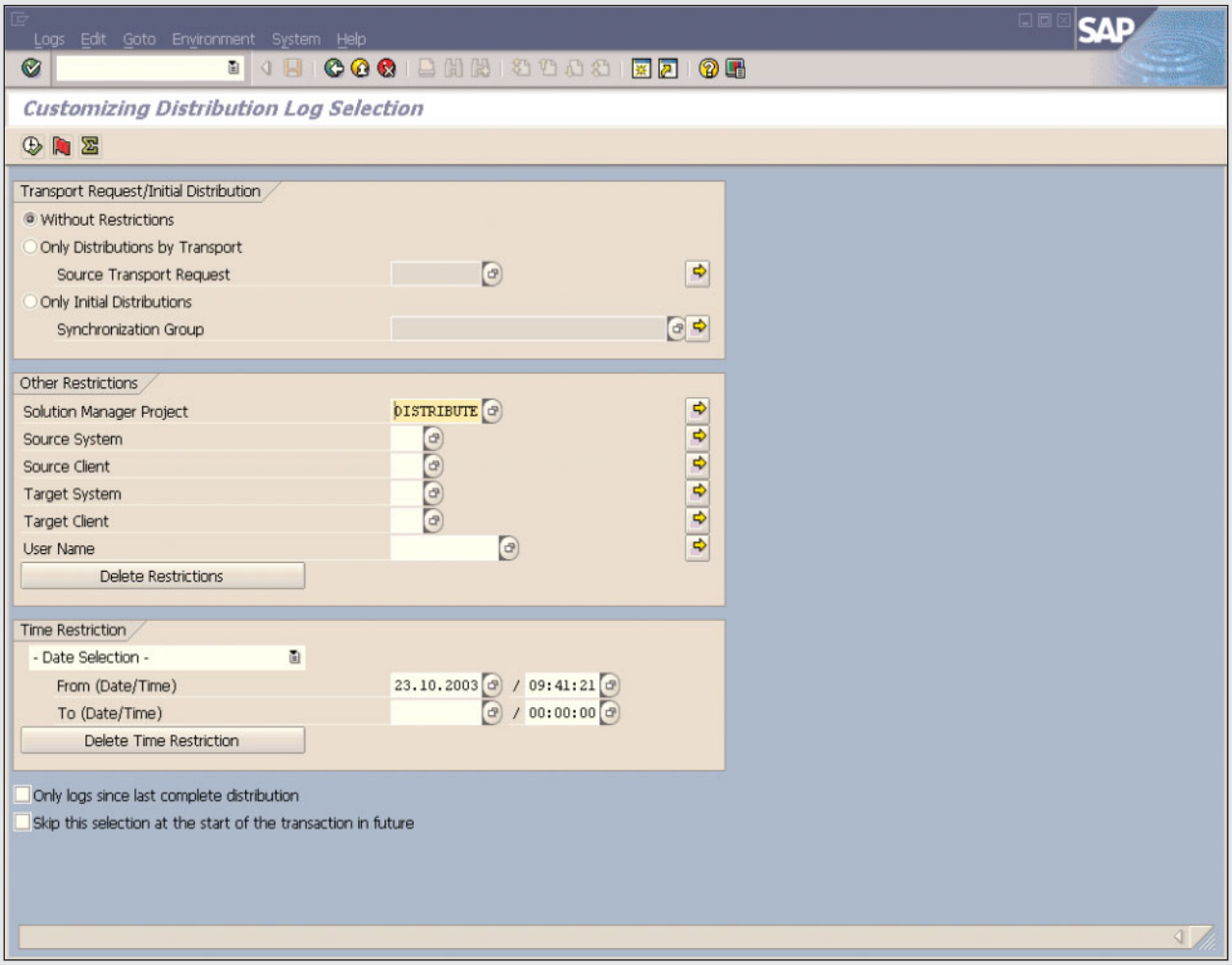
> ✓ ***Tip***
>
> *To view all the synchronization objects that are currently in use in your distribution scenarios, select Goto → Display All Active Objects in transaction SCDT_SETUP. This can be helpful for determining why a customizer is having trouble changing a customizing object in the target system — an object in use in a distribution scenario is locked by Customizing Distribution and cannot be changed.*

Tracking Customizing Distribution Activities

Let's say we've added a new commission group entry in our SAP R/3 source system via the corresponding IMG activity. Once we save the customizing change into a previously created transport request, the distribution to the SAP CRM system automatically starts — remember, for the example scenario we chose *Synchronization at Transport Recording* as the trigger. You can verify that the distribution is functioning properly by using the Customizing Distribution logging tool, which lists all the relevant information for a distribution scenario. You can use this information to cross-check your customizing data to ensure it arrives at the designated target systems and, if a distribution fails, to track the error to the point at which it occurs. To access the log details, select *Goto → Customizing Distribution: Logs* from the SAP standard menu in the distribution details screen (Figure 7), or use transaction *SCDT_LOG*.

First, a selection screen will appear, where you can specify a variety of selection criteria for the log display (see **Figure 8**), allowing for maximum flexibility in tracing and tracking your distribution

Figure 8 Customizing Distribution Log Selection Screen



✓ *Tip*

To limit the data to be displayed as much as possible, select the option "Only logs since last complete distribution" at the bottom of the log selection screen (Figure 8). This option will prevent the display of obsolete logs detailing erroneous runs that were successful after a complete redistribution of the entire transport (see the tip on page 51).

activities. In the example, I have chosen logs for the Solution Manager project *DISTRIBUTE*, effective after October 23, 2003. Click on the *Display Logs by Selection* icon ( ) to view the log.

Figure 9 Distribution Log Display

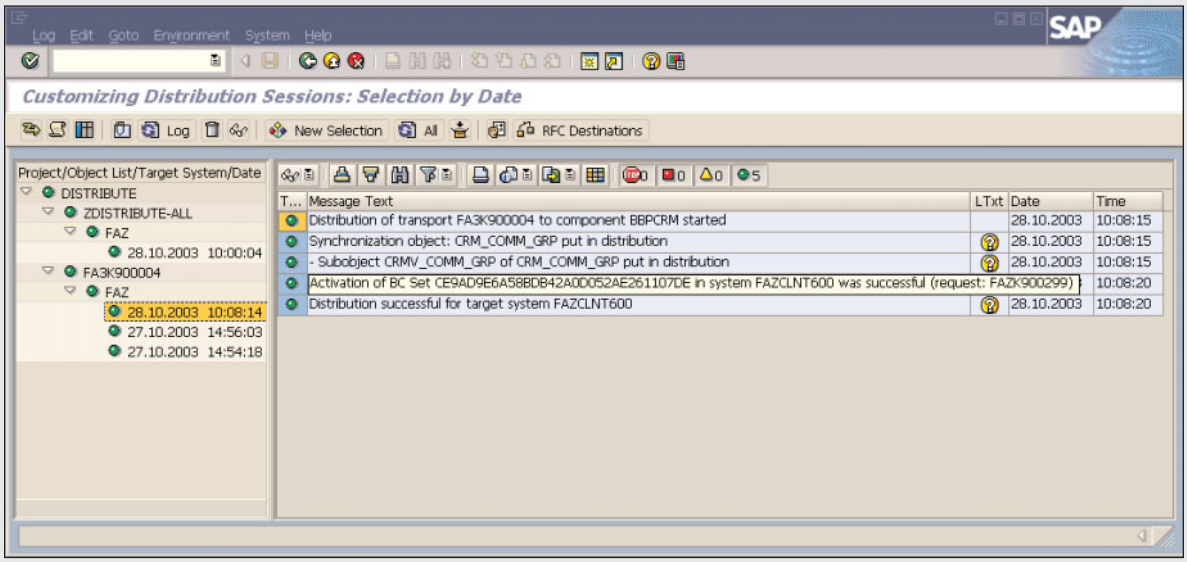


Figure 10 Log Display for an Erroneous Distribution Run

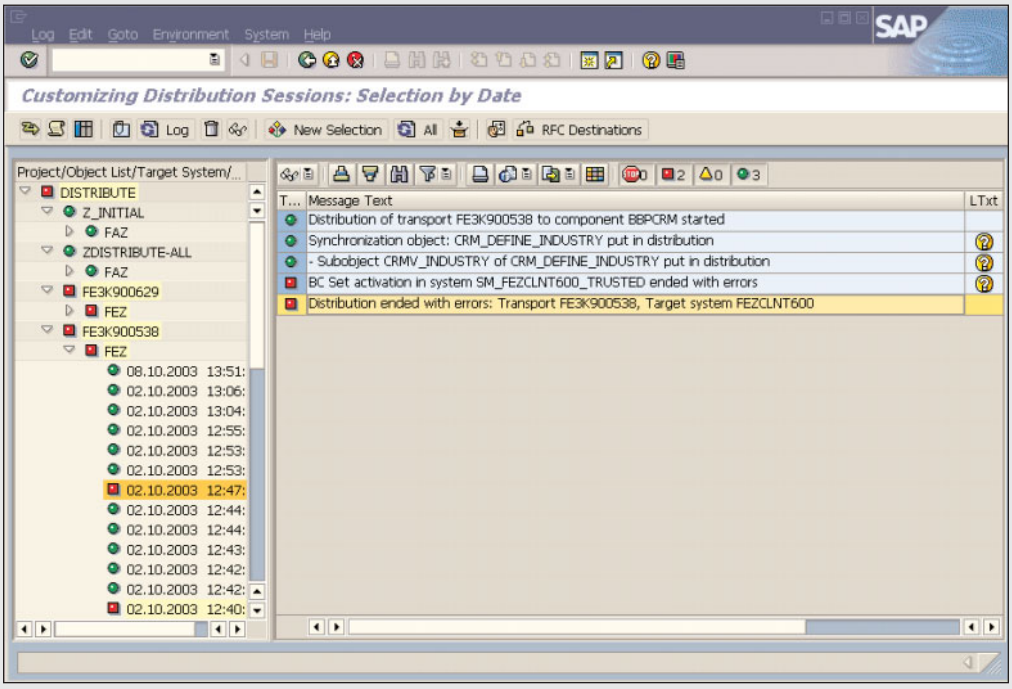


Figure 9 shows the result. The *Project/Object List/Target System/Date* frame on the left lists all the distribution runs for the *DISTRIBUTE* project that meet the selection criteria. The first run was an initial distribution for the synchronization group *ZDISTRIBUTE-ALL* that distributed customizing

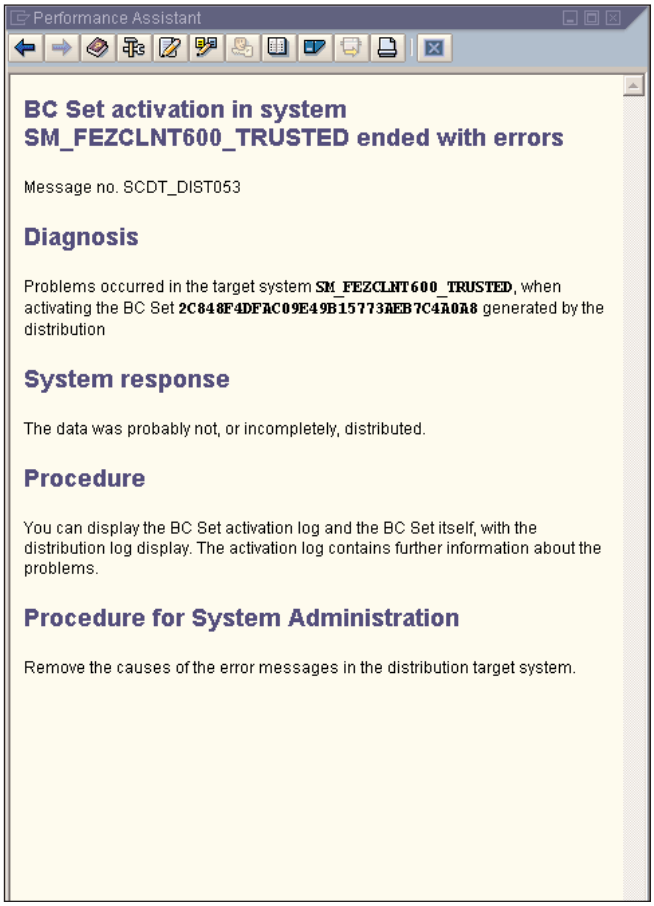
settings to system *FAZ*. The second run was a delta distribution initiated via the source transport request *FA3K900004*.

The right frame provides details for the distribution runs, which allow you to determine:

- The synchronization object affected by Customizing Distribution — in our example, *CRM_COMM_GRP*
- The BC Set to which the customizing was written — in our example, the automatically generated BC Set *CE9AD9E6A…*
- Whether the BC Set was successfully activated — in our example, indicated by the message *Activation of BC Set CE9AD9E6A… in system FAZCLNT600 was successful*
- The target transport to which the distributed customizing was written — in our example, request *FAZK900299*

The example in Figure 9 shows a successful distribution. A log of an erroneous run — due to RFC errors or a BC Set activation failure in the target system, for example — will provide diagnostic information, including how the system responded and steps for correcting the problem. **Figure 10** shows the log for an erroneous distribution run. Clicking on the question mark icon (?) will take you to diagnostic information for the error message. **Figure 11** shows the diagnostic information for the log message *SM_FEZCLNT600_TRUSTED ended with errors* in Figure 10.

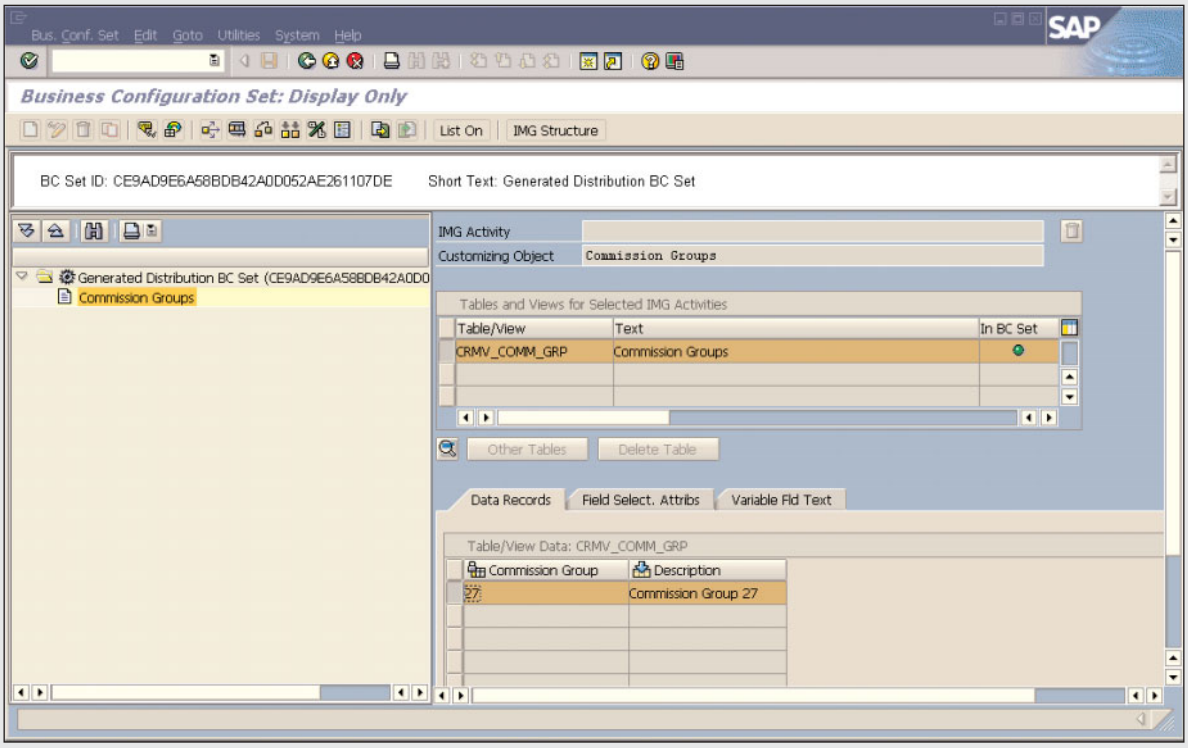
Figure 11 Diagnostic Information for a Log Error Message



✓ *Tip*

- *To manually redistribute customizing for a failed distribution, such as an unsuccessful BC Set activation in the target system, based on an individual transport, select Goto → Customizing Distribution: Ind. Transport from the SAP standard menu in the distribution details screen (Figure 7) and specify a source customizing project and the desired transport.*
- *If you want to focus on all erroneous distribution runs for all synchronization groups of a specific source project, rather than on one specific transport, you can simply schedule a background job that checks the relevant distribution scenarios for erroneous runs and initiates redistribution for them by selecting Edit → Automatic Redistribution after Errors from the SAP standard menu in the distribution details screen (Figure 7).*

Figure 12 Distributed Customizing Settings Bundled in BC Sets



The *Display BC Set in Target System* icon ( ) on the log display screen provides a closer look at the contents of the BC Set used to activate the customizing, allowing you to precisely trace which customizing settings were distributed and at what time. In our example, shown in **Figure 12**, the customizing was a new data entry for Commission Group 27.

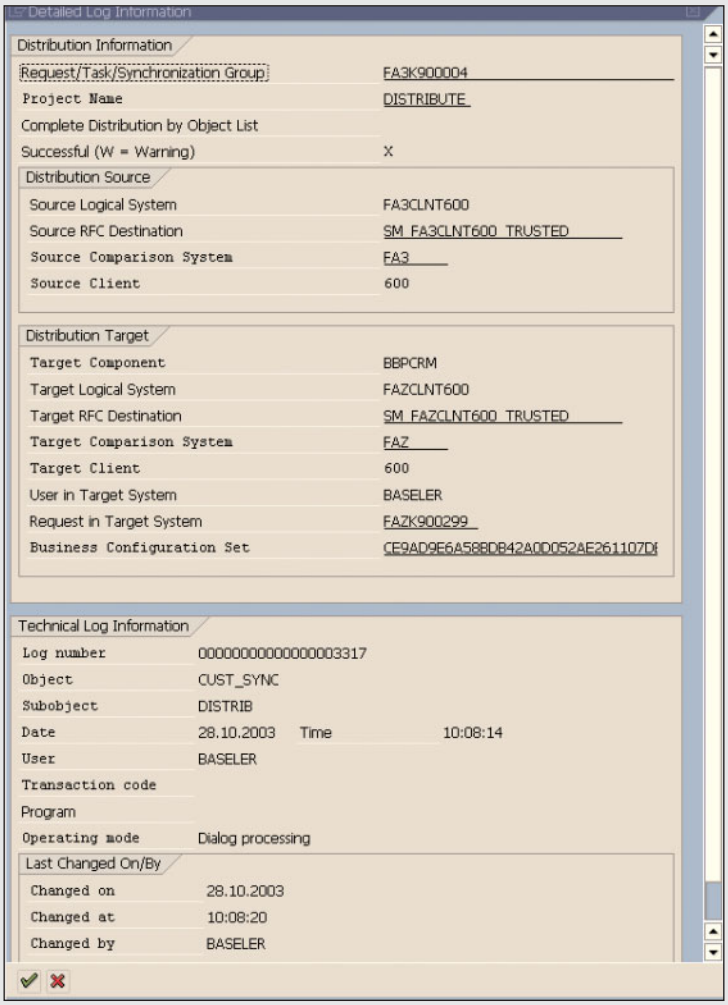
> ✓ ***Note!***
>
> *BC Sets used for distributing customizing settings to the target system work just like regular BC Sets, with one exception: they are also able to delete data records in the target system, which enables you to distribute customizing deletions as well as changes.*

The *Detailed Log Information* icon ( ) on the log display screen allows you to cross-navigate into all relevant technical parts of your distribution, providing you with even more insight into the distribution process. As you can see in **Figure 13**, you have access to*:*

- The source and target transports involved
- The BC Set activation log
- The RFC destinations used

Access to this information allows you to quickly identify the sources of errors in the distribution and adjust your infrastructure accordingly. If there is an erroneous target RFC destination, for example, you can navigate directly to the RFC maintenance transaction (*SM59*) from the log details screen by simply clicking on it (*SM FAZCLNT600 TRUSTED* in the example).

Figure 13 Log Details for a Selected Delta Distribution



✓ *Tip*

You can perform a complete redistribution of an entire transport either automatically, by releasing the transport request in the Transport Organizer (transaction SE09) of your source system, or manually, via the Redistribute Transport Request in Target System icon ( ) in the Customizing Distribution Sessions screen or via the Customizing Distribution: Distribute Individual Transport transaction (SCDT_FETCH).

Conclusion

This article showed you how Customizing Distribution not only incorporates the key features and functions of the existing ALE and CRM Middleware customizing synchronization tools — initial distributions between SAP R/3 systems and between SAP R/3 and SAP CRM systems — but also goes a step further to enable efficient customizing comparison and distribution in a multiple-component, multiple-system landscape. My hope is that you now have the knowledge you need to evaluate and choose the right distribution solution for your environment,

Customizing Synchronization Resources

☑ Customizing synchronization iTutors (**http://service.sap.com/rkt-solman**):

SAP Solution Manager 3.1 → Select Your SAP Solution Manager 3.1 Learning Map → Functional Role: Solution Consultant → Step 1: Learn What You Need → Update Your Core Competence - Must Know → Customizing Synchronization

The following tutors are available for Solution Manager:

- Customizing Comparison with the Customizing Scout
- Customizing Synchronization
- Setting Up the Customizing Distribution and Comparison

☑ Online documentation on customizing synchronization in the most up-to-date SAP Solution Manager 3.1 online documentation (**http://help.sap.com**):

SAP NetWeaver → SAP Solution Manager → English-HTML: Customizing Synchronization

☑ Customizing Synchronization FAQs in the SAP Service Marketplace (**http://service.sap.com/customizing**) under *FAQs*

and when you're ready, to perform a successful synchronization with Customizing Distribution — from configuring a distribution scenario, to using logging features to track your distribution activities and resolve errors. And customizing synchronization is only one of the many usage scenarios you can benefit from when using the Solution Manager implementation and operation platform. The Customizing Scout and Customizing Distribution together provide you with sophisticated monitoring and distribution functionality to help you minimize your manual customizing synchronization work, freeing you to focus on other pressing business needs.

Doreen Baseler joined SAP in 1999 as a member of the ASAP (AcceleratedSAP) Implementation Tools Development group, where she focused on creating SAP standards and guidelines for customizing development and the use of the Reverse Business Engineer to analyze productive systems. In 2000, Doreen assumed product management responsibility for the successor to the ASAP and ValueSAP tools, the SAP Solution Manager implementation and operations platform, including rollout and implementation training. In 2003, she started concentrating on Customizing Synchronization and Global Rollouts, with a focus on user experience projects. Doreen is also a featured speaker at SAP TechEd and other international events. Prior to joining SAP, Doreen studied technology, business, and economics at the Department of Technical Communication, as well as English and Spanish, at the Fachhochschule Magdeburg. She can be reached at doreen.baseler@sap.com.

