ALE QuickStart for Distributed HR

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This documentation uses a step-by-step example to describe how an ALE distribution scenario is configured and then executed between an HR System and a non-HR System.

You will

- Create master data for a person (employee) in the HR System, and despatch it to the non-HR System, as an example of communication per message type

- Validate an infotype entry in the non-HR System as an example of a synchronous BAPI

To do this, you will

- Set up **clients 100** and **200**

- Assign the **LOGSYS0100** (HR System) and **LOGSYS0200** (non-HR System) logical systems to the clients

- Define the RFC destination

- Create the **HRONLY** model view

- Enter the **AcctngServices** object type and **CheckAccountAssignment** method in the distribution model for the validation

- Enter the **HRMD_A** message type in the distribution model, and a filter for the infotype 0000, infotype 0001, infotype 0002, infotype 0003, and infotype 0006 object types to despatch master data

- Generate partner profiles

- Create master data for a person by creating the required infotype records (if master data is already available, you can use it instead)

- Create a record for infotype 0027 to validate an entry in the non-HR System

- Activate change pointers to distribute subsequent master data changes

- Despatch HR master data, and check communication

If you need more information on ALE, call up the R/3 library and read the sections on the ALE introduction and overview [Ext.] and ALE programming [Ext.].

Set Up Clients

To facilitate communication between logical systems, you must set up various clients first. It makes no difference if these clients are in the same R/3 System, or in separate R/3 Systems.

You can use existing clients, or create new clients as copies of existing clients such as client 000, or a client in the International Demo and Education System (IDES). To set up a new client, choose *Tools → Administration → Administration → Client administration*.

For the example, *clients 100* and *200* must be available in one R/3 System. Both clients are copies of *client 000*.

See also:

Copy and transport clients [Ext.]

Assignment of Logical System to Client

To avoid confusion and the resulting errors, clients in a distributed environment must have unique IDs. The name of the logical system is used as a unique ID. It has a unique assignment to a client in an R/3 System.

After you have set up two clients for the exercise, you must assign each of them to a logical system. If you use two clients in a physical R/3 System, as in this example, you only need to make the settings described in this step once because they are cross-client entries.

In Customizing, choose *Basis → Distribution (ALE) → Prepare Sending and Receiving Systems → Set Up Logical Systems*.

First, create the logical systems in the distributed environment. To do this, choose *Name Logical System*:

1. Execute the function. Enter a logical system (LogSystem) and name for both of your clients. For this example:

LogSystem	Name
LOGSYS0100	[Name of your system] client 100
LOGSYS0200	[Name of your system] client 200

2. Save your settings.

Now assign the appropriate logical systems to both of your clients. To do this, choose *Assign Logical System to Client*.

1. Execute the function.
2. Choose the client that you require by double-clicking on it.
3. Use the *Logical system* field to enter the name (that you created) of the logical system to be assigned to the client.

Client	Logical system
100	LOGSYS0100
200	LOGSYS0200

4. Save your entry.

Set Technical Communication Parameters

To ensure that both logical systems can communicate with each other, they need to know how to connect with each other technically. This information is stored in the RFC destination.

First of all, you must maintain the RFC destination for the receiving system in the sending system, and the RFC destination for the sending system in the receiving system. The function that you require is stored in Customizing for Distribution (ALE) under *Prepare Sending and Receiving Systems → Configure Systems in Network → Define Target Systems for RFC Calls*. Perform the following steps for both systems:

1. Execute the function.

2. Choose *Create*.

3. The name of the destination is the name of the logical system to which the destination refers (in UPPERCASE LETTERS). For this example:

    RFC destination `LOGSYS0200` in client 100.

4. Select connection type `3` (connection to R/3 System).

5. Describe the RFC destination.

    For example, you could enter `RFC destination for logical system LOGSYS0200` as a description of destination LOGSYS0200.

6. Enter the following logon parameters: logon language `E`, the logon client (such as `200` for LOGSYS0200), and the logon user (user with password for target system).

7. Choose `Enter`.

8. Enter the *target host* and *system number:*

    The target host determines the application server of the receiving system that is used for data communication. You can enter a UNIX host name, a host name in DNS format, an IP address, or a SAProuter name.

    If you use SAP Logon, you can access the information by choosing *Server Selection → Servers*. Select the appropriate SAP system ID, and choose *OK*. A list of available application servers is displayed.

    The system number specifies the service (TCP service, SAP system number). If you use SAP Logon, you can display the system number by selecting the system in the initial screen and choosing *Properties*.

9. Save your settings.

10. After you have saved the RFC destination, you can *test the connection* and log on using the *remote logon* function. If the *remote logon* function works correctly, and if the logon user is a dialog user, a new window is displayed for the other system. To check the logon user and client, choose *System → Status*.

In the second step, you must maintain the RFC destination for synchronous method calls (BAPI). The function that you require is accessed by choosing *Prepare Sending and Receiving Systems → Configure Systems in Network → Synchronous Processing → Determine RFC Destinations for Method Calls*.

Set Technical Communication Parameters

1. Execute the function in the calling system (LOGSYS0100).

2. Choose the other logical system (LOGSYS0200).

3. Determine RFC destination `LOGSYS0200` (in UPPERCASE LETTERS) by choosing *Edit →
   Assign standard destination for BAPIs*.

4. Save your entries.

See also:

RFC destination for outbound Internet message [Ext.]

Model Distribution

The systems involved in the distribution of data need to know which messages must be despatched, where they are despatched from, and where they are despatched to. For this reason, such information is stored in the distribution model. The distribution model forms the basis of distribution, and controls it directly.

By performing the following steps, you model a message flow between both your logical systems. You set up the distribution of HR master data from an HR System to a non-HR System, and the validation of an infotype entry in the non-HR System.

Modeling is effected by maintaining a model view of the distribution model. To maintain a new view of the distribution model in the R/3 System, perform the following steps:

1. Log on to a logical system. In this example, the logical system is LOGSYS0100.

2. In Customizing for Distribution (ALE), choose *Model and Implement Business Processes →
    Maintain Distribution Model*.

3. Choose *Create model view*, and create view `HRONLY` for the distribution model.

4. Place the cursor on your model view, and choose *Add message type* to specify the message
    type required for the example by entering the following values:

    Sender/client: `LOGSYS0100`

    Receiver/server: `LOGSYS0200`

    Message type: `HRMD_A`

5. Place the cursor on your model view, and choose *Add BAPI* to specify the method required
    for the example by entering the following values:

    Sender/client: `LOGSYS0100`

    Receiver/server: `LOGSYS0200`

    Object name/interface: `AcctngServices`

    Method: `CheckAcctngAssignment`

6. Expand the tree structure below the `HRONLY` view until you reach the *No filter set* entry below
    your message type. Choose the *No filter set* entry by double-clicking on it. Choose *Create
    filter group*. Expand the tree structure until you reach *Infotype*. Choose *Infotype* by double-
    clicking on it. Specify filter objects (that is, infotypes) `0000`, `0001, 0002, 0003,` and `0006`.

    A corresponding filter group is created.

7. Save the distribution model.

> Auto-Customizing is available for this step, although it cannot be used to define
> filters. In Customizing for Distribution (ALE), choose *Model and Implement Business
> Processes → Configure Pre-Defined ALE Business Processes → Human Resources
> → Auto-Customizing*.

Model Distribution

See also:

Modeling [Ext.]

Distribution model [Ext.]

Generate Partner Profiles in Sending System

After you have maintained the distribution model, you must ensure that the systems involved know how ALE will execute the transfer. This takes place in the partner profiles.

First, you generate the partner profiles in sending system LOGSYS0100.

1. In Customizing for Distribution (ALE) in sending system LOGSYS0100, choose *Model and Implement Business Processes* → *Maintain Distribution Model*.

2. Select the HR-ONLY entry, and choose *Environment* → *Generate partner profiles*.

3. Enter the name of your view of the distribution model, `HRONLY`.

4. Without changing any of the default parameters, execute the program.

The required partner profiles are generated in the sending system.

Distribute Distribution Model

To ensure you can create partner profiles in the receiving non-HR System, it needs to be informed of all message flows in the distributed environment. You can meet this requirement by transporting views of the distribution model from the sending system to the receiving system.

Perform the following steps in the sending system:

1. In Customizing for Distribution (ALE), choose *Model and Implement Business Processes →ﾠMaintain Distribution Model*, and then choose *Edit → Model view → Distribute*.

2. Enter the name of your view of the distribution model, `HRONLY`.

3. Choose the name of the receiving system, `LOGSYS0200`.

4. Execute the program.

Your view of the distribution model is copied to the receiving system.

Generate Partner Profiles in Receiving System

After you have copied the distribution model to the receiving system, you can generate partner profiles in the receiving system.

1. In Customizing for Distribution (ALE) in receiving system LOGSYS0200, choose *Model and Implement Business Processes → Maintain Distribution Model*.

2. Select the HR-ONLY entry, and choose *Environment → Generate partner profiles*.

3. Enter the name of your view of the distribution model, `HRONLY`.

4. Without changing any of the default parameters, execute the program.

The required partner profiles are generated in the receiving system.

Create and Validate HR Master Data

After you have made all of the settings required for distributing HR master data, you perform this step to create data in the sending system for subsequent dispatch.

1. To create the infotype records required for hiring a person, choose *Human resources → Personnel management → Administration → HR master data → Personnel actions*.

2. Create a record of infotype 0027 "Cost Distribution" for the person.

    For test purposes, first enter a cost center that does not exist in the non-HR System. The system performs a validation, and displays an error message.

    Now enter an existing cost center. The validation indicates that this entry is allowed.

    Note that this cost center must exist in the non-HR System, and be replicated in the HR System.

The validation is performed remotely on the basis of your entering the *CheckAccountAssignment* method in the distribution model.

Activate Change Pointers

To enable you to distribute subsequent master data changes, you must activate the required change pointers. They are used to log changes as they occur.

1. In Customizing for Distribution (ALE), choose *Modeling and Implementing Business Processes → Master Data Distribution → Replication of Modified Data → Activate Change Pointers - Generally*. Set the change pointer status to *Active*, and save this setting.

2. Choose *Modeling and Implementing Business Processes → Master Data Distribution → Replication of Modified Data → Activate Change Pointers for Message Types*. Set the change pointer status to *Active* for the appropriate message type (which is HRMD_A in this example), and save this setting.

3. Choose *Modeling and Implementing Business Processes → Master Data Distribution → Replication of Modified Data → Creating IDocs from Change Pointers*, and set up periodic jobs for report RBDMIDOC that are regularly used to evaluate and process the change pointers for master data changes.

(This documentation merely refers to, rather than describes the distribution of master data changes.)

Despatch HR Master Data

The HR master data just created must now be despatched to the receiving system. The only data that is distributed comes from infotypes that can always be despatched and which have not been excluded by a filter. In the example, infotypes 0000, 0001, 0002, 0003, and 0006 are despatched.

Use the ALE master data functions by choosing *Tools → ALE → Master data distribution*.

1. In the sending system, choose *Human resources → Organizational data and master data → Send*.

2. Enter object type P for person, and the object ID (personnel number) of the person you have set up.

3. Execute the program.

You should now be able to display the despatched HR master data in the receiving system. If it is not available, either the data transfer is not complete or an error has occurred. The next step explains how to check communication that has already taken place, and how to find any errors that may have occurred.

Check Communication

The system includes monitoring functions for checking communication. These functions enable you to determine whether communication was successful, or whether errors occurred. If an error occurred, information on the type of error is also displayed.

You can monitor communication at the sending system, and at the receiving system. To do this, choose *Tools → ALE → ALE administration*.

In the Sending System:

Execute the function. Choose *Monitoring → Display IDoc list* and select the IDocs of the `HRMD_A` logical message type that were created today.

The system displays a list of appropriate IDocs, grouped according to status.

Status	Meaning
03, 12, 38	Document transferred successfully
02, 04, 05, 25 26, 29	Processing error
30	Waiting status (data still being processed)
>=50	Inbound document (not relevant in this context)
Others	Not relevant in this context

If you double-click on a line, the system displays a list of all IDocs with this status. If you double-click on one of these documents, the system displays the corresponding detailed information. If errors occur, choose *Error long text* to display information on the cause of the error.

In the Receiving System:

Execute the function. Choose *Monitoring → IDoc → Display IDoc list* and select the IDocs of the `HRMD_A` logical message type that were created today.

The system displays a list of appropriate IDocs, grouped according to status.

Status	Meaning
53	Document successfully updated by application
64	Waiting status (data still being processed)
<50	Outbound document (not relevant in this context)
51, 56, 60, 61, 63, 65	Inbound error
Others	Not relevant in this context

Check Communication

You can also display detailed information, as in the sending system.

Error Handling:

If an error occurs, use the monitoring functions to analyze it. Try to solve the error, and despatch your master data again.

If your IDoc was successfully transferred to communication in the sending system (status 03) but did not appear in the receiving system, a technical communication error has occurred. To check, choose *Services → Communication → Transactional RFC*. If an error occurs, contact your system administrator.