



Installation Guide

Table of Contents

1 Introduction

- 1.1 Prerequisites for installing FLM
- 1.2 Java Prerequisites
- 1.3 Preparation for installing FLM

2 Performing the Installation of FLM

- 2.1 SAINT
- 2.2 Apply FLM Notes
- 2.3 SGEN

3 Post Installation Configuration

- 3.1 Adobe ReaderRights Credential
- 3.2 Namespace /FLM/ and Software Component FLM
- 3.3 Packages /FLM/CUST and ZFLM
 - 3.3.1 /FLM/CUST
 - 3.3.2 ZFLM
- 3.4 Content Management Physical Tables
- 3.5 Number Range /FLM/TID
- 3.6 SICF Settings
- 3.7 Define Content Repositories
- 3.8 Define and Assign Content Categories

4 Digital Security

5 User Management

6 Setting Up Authorisation Checks for FLM Forms

- 6.1 Overview
- 6.2 Authorization Fields
- 6.3 Authorization Object
- 6.4 Roles
 - 6.4.1 Creating an FLM Admin Role
 - 6.4.2 Creating Form User Roles
- 6.5 User Master Roles
- 6.6 Offline user
- 6.7 FLM Developer User Role and Authorizations
- 6.8 FLM Read Only Role
- 6.9 FLM Portal and Authorizations

7 Deploying the FLM Portal

- 7.1 Introduction
- 7.2 Enterprise Archive
 - 7.2.1 JSPM / SDM Procedure
 - 7.2.2 Java Connectors

• **8 Customer Initialization tasks**

8.1 Creating a new customer code

- 8.1.1 Customer Details
- 8.1.2 ADS Settings
- 8.1.3 Authorizations
- 8.1.4 FLM Portal Settings
- 8.1.5 Offline Settings
- 8.1.6 Customer Code Parameters

8.2 Define Form Categories

8.3 Define Form Statuses

8.4 Define Form Actions

8.5 System Specific Settings

8.6 Number Range /FLM/<Customer Code>

8.7 Message Class /FLM/<Customer_Code>

8.8 Link Document Types

8.9 Create Form Classes

- 8.10 Upload Master Template
- 8.11 Copy Standard FLM Javascript snippet library to local client.
- 8.12 Test Form
- 8.13 Upload TS01 and DOC1 Packages
- 8.14 Setting up QAS and PRD.
- 8.15 FLM Maintenance and Monitoring.

- 9 Setting Up Offline (Email) Handling in FLM

- 9.1 Setting up Inbound Email (Offline) Processing:

- 10.0 Setting Up Flex

- 10.1 Configuration

1 Introduction

This document describes the installation process for Forms Lifecycle Manager release **295 SP2**.

We estimate that the installation of FLM on a customer site takes around one day. The starting point for the FLM installation is a working NetWeaver system with ADS configured and working.

1.1 Prerequisites for installing FLM

Please review the [System Requirements](#) before installing.

- User performing the post installation activities will need an abap developer role and developer key.
- ADS must be configured. See the [ADS Configuration Tips](#) for additional information.
- Current versions of kernel, tp and R3trans

Make sure that your system contains the current versions of kernel, tp and R3trans.

- Current SPAM / SAINT Update

Make sure that you have imported the most recent SPAM / SAINT Update into your system. Compare the short text of the last SPAM / SAINT Update you imported with that of the SPAM / SAINT Update in the SAP Service Marketplace. If the version of the SPAM / SAINT Update in the SAP Service Marketplace is more recent, import it.

- SAP Notes you may need prior to installation:

NW 700 SP15 - systems at this SP will require the following note.	1163925
NW 700 SP20 and below - Apply the following SAP Notes for FLMCG WSDL	1378391 1230235

- Before starting the installation, read the following SAP Notes and documentation:

Description	Note
Problems w/add-on inst/upgrade to SAP NW 7.0s ABAP	822380
Known Problems with Support Packages in SAP NW 2004s AS ABAP	822379

- The following software components are required in your system:

SAP_ABA	700
SAP_BASIS	700

1.2 Java Prerequisites

For the on-line scenario you also require a Java Component, the "FLM Portal", which resides on the SAP WebAS Java stack 700.

1.3 Preparation for installing FLM

Support Packs are not cumulative so all ABAP ADD-ON .SAR files received with the FLM distribution must be applied.

1. Mount the Add-On Installation Media.
2. Unpack the archive FLM_INST_<VER>.SAR in the subdirectory DATA using the command:

```
sapcar -xvf FLM_INST_<VER>.SAR
```

3. From the resulting EPS/IN directory, copy the QA1*.PAT file into your development system EPS inbox directory:

```
//sapmnt/trans/EPS/in
```

4. Ensure that the permissions of the file are set for read/write access for the SAP O/S users.

Quick note: Steps 2-4 can also be done in SAINT:

SAINT -> Installation Package -> Load Packages -> From Front End

For Service Packs you would use SPAM.

For more information about this, see the online documentation for Add-On Installation Tool. To do this, choose the help function in the application toolbar and navigate to Online Documentation → Loading Installation Packages.

2 Performing the Installation of FLM

This section describes the installation procedure for the software.

If you are updating a preexisting installation of FLM be sure to first backup all your forms by exporting all the forms in the system on a form-by-form basis (one at a time) including business logic.

2.1 SAINT

1. Log on to your SAP system as client 000 and as a user that has SAP_ALL authorization. Do **not** use the user SAP* or DDIC.
1. For installations or upgrades use Add-On Installation Tool (transaction SAINT).

For more information about this, see the online documentation for Add-On Installation Tool. To do this, choose the help function on the toolbar.

2.2 Apply FLM Notes

1. Apply any relevant [FLM Notes](#).

2.3 SGEN

At this point you should compile FLM using the SGEN transaction.

1. Transaction SGEN.

2. Select the first option: Generate All Objects of Selected - Continue
3. Select for Parallel Generation: Leave default. - Continue
4. Start Job Directly.
5. Generation speed depends on your system but should take under 10 minutes.

You can stop here if you are updating an existing installation of FLM.

Check the [Upgrade Guide for FLM and SAP](#) for more details.

Depending on the version of FLM some forms will not run because they are missing required parameters introduced after the update.

To fix this:

1. Create a new Userexit in the Wizard.
2. Copy the signature from the new Userexit to the offending pre-existing user exits.
3. Remove the newly created Userexit.

3 Post Installation Configuration

If you have already setup a DEV system and are installing the QAS and PRD systems skip to section: 8.15 Setting up QAS and PRD.

Installation should be done on the Client that will be using FLM so the objects created below transport properly to QA and Customer Systems. We suggest creating a new transport when prompted named "FLM <VER> Installation <CLNT>".

3.1 Adobe ReaderRights Credential

In order for ADS to be able to render pdf forms which are interactive, it is required to install into each Java stack an 'Adobe Credential for ReaderRights'. This is a piece of Adobe intellectual property delivered via the SAP OSS system in the form a small file. It is installed into the WebAS java stack and then configured using the 'Visual Administrator'. Only one Credential is required per customer.

The process is described in SAP Note 736902.

3.2 Namespace /FLM/ and Software Component FLM

During the process of forms creation the FLM framework generates Data dictionary objects in the namespace /FLM/. Therefore this namespace must be set to 'modifiable'. Process:

1. Transaction SE03 [ess-ee-zero-three].
2. Choose 'Set System Change Option'.
3. Navigate in the 'Software Component' Table to FLM.
4. Choose 'Modifiable'.
5. Navigate in the 'Namespace/Name range' Table to /FLM/.
6. Choose 'Modifiable'.
7. Save the settings.

3.3 Packages /FLM/CUST and ZFLM

Two packages are important for the maintenance of the FLM system, /FLM/CUST and ZFLM.

3.3.1 /FLM/CUST

This package is used to hold and transport the business logic associated with customer forms and is delivered empty. Certain aspects of form business logic has to be generated by the FLM framework in the /FLM/ namespace, and hence an /FLM/ package can only be used to hold these objects.

After the initial installation, this package should be repaired in transaction SE21 to change the transport layer to the customer's standard transport layer, such that objects in this package can be successfully migrated through the customer landscape.

3.3.2 ZFLM

This package is used to hold objects that cannot be maintained in the /FLM/ namespace, eg authorisation objects, such that they can be migrated through the customer's landscape. The package is created in transaction SE21.

1. Transaction SE21.
2. Package will be ZFLM and select Create.
3. Short Description: FLM: Authorization Objects
4. Application Component: CA
5. Software Component: HOME
6. Transport Layer: Customer Specific, Default SAP.
7. Save

3.4 Content Management Physical Tables

FLM uses the 'Content Management System' [CMS] or 'Content Server' to store form and form templates. The setup of CMS is SAP standard and described fully in the IMG documentation accordingly.

The standard FLM installation scenario makes use of SAP DDIC physical tables as the final repository for CMS data, and under those circumstances it is necessary to create physical table for that purpose. We will create two tables, one for the form templates and one for to hold the form data.

Template Table:

1. Transaction SE11.
2. Select the radiobutton 'Tables' and enter table SDOKCONT1. (Those are OHs)
3. Copy this table to /FLM/SDOKCONT1t, assigning package /FLM/CUST and workbench request as required.
4. Activate this table.

Data Table:

1. Transaction SE11.
2. Select the radiobutton 'Tables' and enter table SDOKCONT1. (Those are OHs)
3. Copy this table to /FLM/SDOKCONT1d, assigning package /FLM/CUST and workbench request as required.
4. Activate this table.

Form Archiving was introduced at FLM 295 SP2 and requires a separate table.

Archive Table:

1. Transaction SE11.
2. Select the radiobutton 'Tables' and enter table SDOKCONT1. (Those are OHs)
3. Copy this table to /FLM/SDOKCONT1a, assigning package /FLM/CUST and workbench request as required.
4. Activate this table.

Ensure that the technical settings of the table match the expected size of the table, and adjust accordingly.

FLM supports only the SAP Database CMS repository type.

3.5 Number Range /FLM/TID

The FLM Transport ID (/FLM/TID) Number Range Object is delivered with FLM and a new interval range must be setup in it.

1. Transaction SNRO [es-en-ar-oh].
2. Enter number range object name (/FLM/TID).
3. Press Number Range button.

4. Press change Intervals.
5. Create an Interval. E.g 01 100000000 – 1999999999 - 1000000000
6. Press save.

3.6 SICF Settings

FLM makes use of a business server pages transaction in order to allow FLM form URLs to be sent as part of the reminder functionality in form routing. The BSP application must be activated in transaction SICF.

Proceed as follows:

1. Transaction SICF.
2. Enter *FLM* into Service Name field
3. Press Execute
4. Right-click and select Activate all FLM nodes
5. Choose to Activate this node and all child nodes

Please note that there are certain standard BSP service nodes that must be activated as a pre-requisite for using any BSP application; please consult SAP Note 517484 for details.

3.7 Define Content Repositories

In this Activity, you can define content repositories to which contents can be moved.

In Knowledge Warehouse three different types of content repositories can be used, FLM only supports using the SAP System Database and we will highlight the steps for its configuration.

You can find further information on content repositories in the SAP Knowledge Warehouse Installation Guide and in the SAP Library under Basis - Basis Services - SAP Knowledge Provider - Content Management Service - Concepts.

Setup the Content Repository to use the SAP System Database:

Template Content Repository:

1. Transaction OAC0 (OH-A-C-Zero).
2. Change - Create
3. Content Rep. : We suggest "ZFLM0001"
4. Description: FLM: Template Content Repository
5. Document Area: We suggest /FLM/ or Forms Lifecycle Manager
6. Storage type: SAP System Database
7. Version No.: 0046
8. Contents Table: /FLM/SDOKCONT1t
9. Save

Data Content Repository:

1. Transaction OAC0 (OH-A-C-Zero).
2. Change - Create
3. Content Rep. : We suggest "ZFLM0002"
4. Description: FLM: Data Content Repository
5. Document Area: We suggest /FLM/ or Forms Lifecycle Manager
6. Storage type: SAP System Database
7. Version No.: 0046
8. Contents Table: /FLM/SDOKCONT1d
9. Save

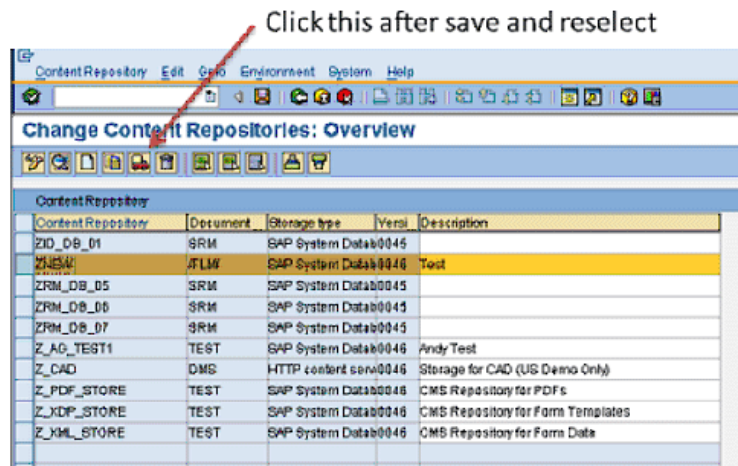
Form Archiving was introduced at FLM 295 SP2 and requires a separate content repository.

Archive Content Repository:

1. Transaction OAC0 (OH-A-C-Zero).
2. Change - Create
3. Content Rep. : We suggest "ZFLM0003"
4. Description: FLM: Archive Content Repository
5. Document Area: We suggest /FLM/ or Forms Lifecycle Manager
6. Storage type: SAP System Database

7. Version No.: 0046
8. Contents Table: /FLM/SDOKCONT1a
9. Save

If you encounter problems with entering data at this step please see SAP NOTE: 1163925



3.8 Define and Assign Content Categories

In this activity you assign the storage categories of documents managed in the Knowledge Warehouse to content repositories (in the Knowledge Provider these are also called content categories).

Follow the steps below to create a new storage category and assign it to the content repository.

Template Content Repository:

1. Transaction OACT (OH-A-C-T).
2. New Entries
3. Category: We suggest "ZFLM0001"
4. Description: FLM: Template Content Categories
5. Document Area: /FLM/
6. Content Repo: This is the repository created in the previous step, ZFLM0001
7. Save

Data Content Repository:

1. Transaction OACT (OH-A-C-T).
2. New Entries
3. Category: We suggest "ZFLM0002"
4. Description: FLM: Data Content Categories
5. Document Area: /FLM/
6. Content Repo: This is the repository created in the previous step, ZFLM0002
7. Save

Form Archiving was introduced at FLM 295 SP2 and requires a separate content category.

Archive Content Repository:

1. Transaction OACT (OH-A-C-T).
2. New Entries
3. Category: We suggest "ZFLM0003"
4. Description: FLM: Archive Content Categories
5. Document Area: /FLM/
6. Content Repo: This is the repository created in the previous step, ZFLM0003
7. Save

4 Digital Security

// This section is typically not required as part of the initial configuration and can be skipped.

For FLM to support digital signatures, this must be configured after installation in the Maintain Security Settings for Customer activity in the IMG:



Change View "FLM: Digital Security Settings for Customer code": Detail

The screenshot shows the 'Change View "FLM: Digital Security Settings for Customer code": Detail' screen. The 'Customer' field is set to 'ADL Arch Labs'. The 'Digital Security' section includes 'SSL Active' (unchecked), 'Server-side Security' (with fields for Type, Reason, Location, Contact, Leg Att, Alias, and User Exit Active), and 'Client-Side Security' (with 'Store signed forms as attachments to themselves' unchecked).

You can create the credentials for a certification (server-side digital signature) as they will appear to the user using the 'new entries' function. The 'permissions' selection allows you to configure what is allowed to be changed on the form without damaging the integrity of its digital certification.

5 User Management

In SAP, each user's authorization can be defined with reference to a composite role, single roles, and profiles. The object to be checked is an 'authorization object', and is made up of authorization fields that the system will need to use in the check.

FLM is delivered with authorization checking code and the authorization fields, but the set-up of the users, roles, profiles and objects will be different in each implementation.

The installation guide suggests the creation of the following roles, one of which will be need to be assigned to a user accessing FLM

FLM_ADMIN
FLM_DEVELOPER
FLM_USER

FLM_PORTAL
FLM_READONLY

6 Setting Up Authorisation Checks for FLM Forms

FLM relies entirely on the user master record as defined in the ABAP stack. The UME of the java stack must have the ABAP stack set as it's data source in order to take advantage of this standard installation configuration.

Firstly, in order to control which users have access to which form categories and form types, an authorisation object must be created in the customer system and transported through the system landscape. Typically this would be in the customer namespace, we recommend for example, Z/FLM/0001.

Find our more in [FLM Authorizations and Security](#).

6.1 Overview

In SAP, each user's authorization can be defined with reference to a composite role, single roles, and profiles. The object to be checked is an 'authorization object', and is made up of authorization fields that the system will need to use in the check.

FLM is delivered with authorization checking code and the authorization fields, but the set-up of the users, roles, profiles and objects will be different in each implementation.

6.2 Authorization Fields

Three authorization fields are delivered as part of FLM:

/FLM/CUST Customer
/FLM/FTYPE Form type
/FLM/FCAT Form category

These three authorization fields, along with the standard field ACTVT, must be included in the authorization object.

6.3 Authorization Object

FLM is not shipped with an authorization object. Part of the installation process involves the creation of authorization object 'z/flm/0001'.

Creating an Authorization Object

- Transaction SU21 or menu path 'Tools->ABAP Workbench->Development->Other tools->Authorization objects->Objects'
 - Choose the pushbutton for create authorization object.
 - Enter the following:
 - Object: 'z/flm/0001'
 - Text: 'FLM: Form posting authorization'
 - Class: 'AAAB'
 - Field name: /FLM/CUST
 - Field name: /FLM/FCAT
 - Field name: /FLM/FTYPE
 - Field name: ACTVT
-

Maintain the Authorization Objects

Regenerate SAP_ALL

Maintain authorization object

Object: Z/FLM/0001
 Text: FLM: Form posting authorization
 Class: AAB: Cross-application Authorization Objects
 Author: USER2

Authorization fields

Field name	Heading
/FLM/CUST	SFS: Customer Code
/FLM/FCAT	FLM: Form Category Code
/FLM/FTYPE	SFS: Form Type
ACTVT	Activity

Authorization Object Documentation

Create Object Documentation

Further authorization object settings

Conversion for authorization fields allowed

Permitted Activities

- Select pushbutton to maintain the permitted activities. Use ZFLM for the package.
- Select options '01', '02', '03', '10', '24', '25' and '70'. Save,
- Select pushbutton to create documentation, then save
- Save the authorization object. You may get a message indicating it has already been saved, if so just cancel out of the maintenance window.
- Finally we need to regenerate the SAP_ALL profile in order to include the new object. Use the pushbutton 'Re-generate SAP_ALL' on the top of the front screen for transaction RSU21_NEW.

6.4 Roles

There are various ways of linking the authorization object to user ids using roles and profiles. In this section we describe one method, using a 'single role' and a 'generated profile'.

6.4.1 Creating an FLM Admin Role

We need one role for FLM administration

- Or transaction code PFCG or select the menu path 'Tools->Administration->User Maintenance->Role Administration->Roles.'
- Enter role name 'FLM_ADMIN' and choose the 'Single Role' pushbutton.
- Enter the role description then Save

Change Roles

Other role

Role:
 Description:

Description Menu Authorizations User MiniApps Personalization

Administration Information

Created	
User:	<input type="text" value="USER2"/>
Date	<input type="text" value="2007-06-11"/>
Time	<input type="text" value="10:22:17"/>

Transaction Inheritance

Derive from Role:

Long Text

Ln 1, Col 1 - Ln 1, Col 19 Ln 1 - Ln 1 of 1 lines

- Select the Authorizations tab

Change Roles

Other role

Role:
 Description:

Description Menu Authorizations User MiniApps Personalization


Created by

User	<input type="text"/>
Date	<input type="text"/>
Time	<input type="text" value="00:00:00"/>

Last Changed On/By

User	<input type="text"/>
Date	<input type="text"/>
Time	<input type="text" value="00:00:00"/>


Information About Authorization Profile


Profile Name: 

Profile Text:

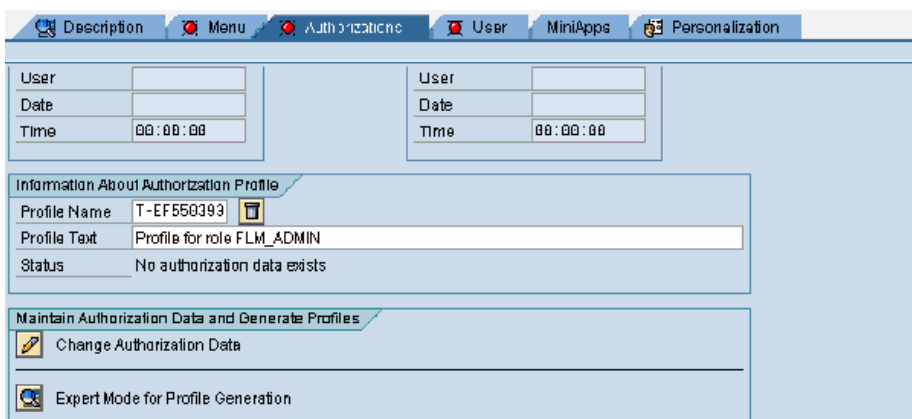
Status: No authorization data exists

Maintain Authorization Data and Generate Profiles

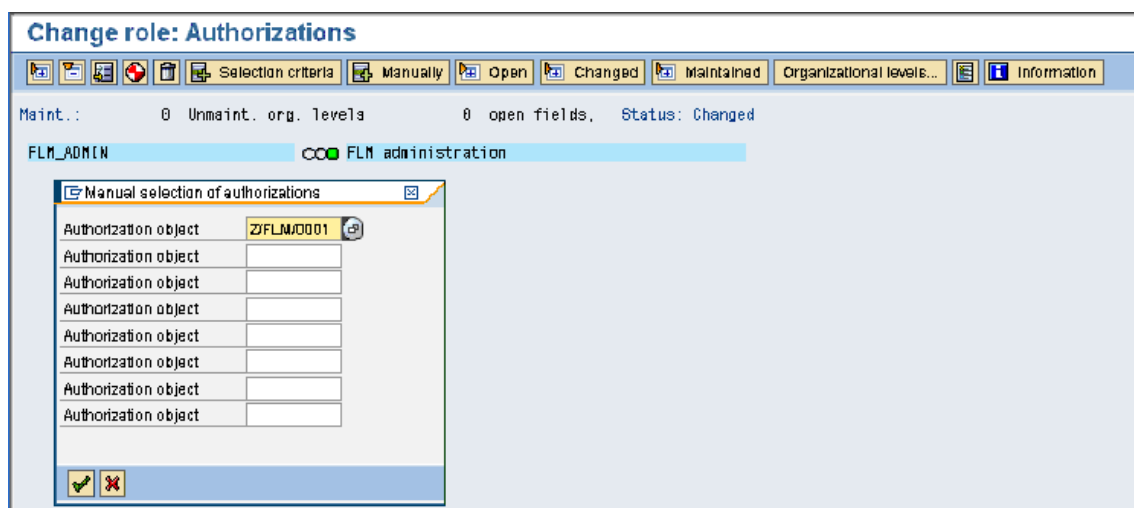
 Change Authorization Data

 Expert Mode for Profile Generation

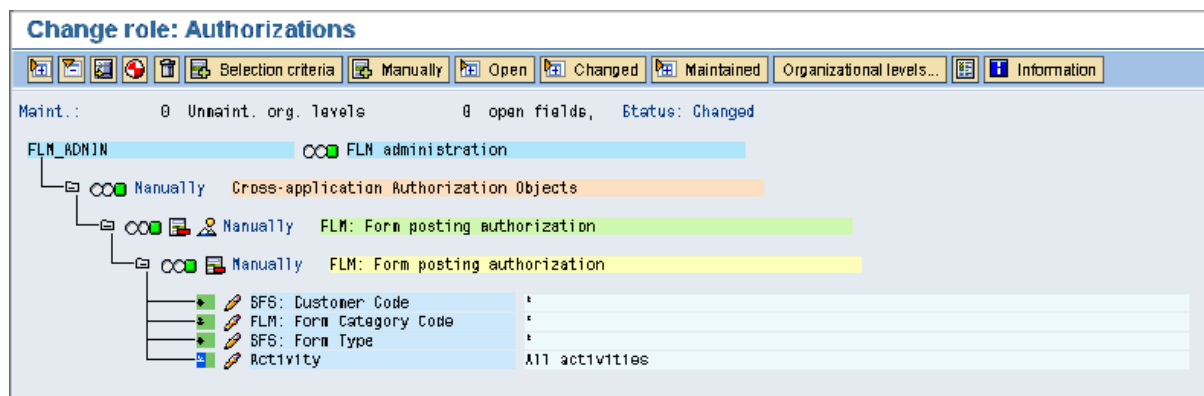
- In the 'Information About Authorisation Profile' box, select the 'Propose Profile Names' pushbutton, and a profile name is generated automatically. Save.



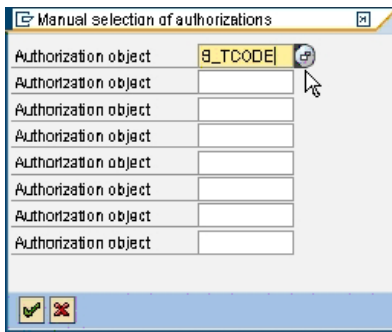
- Select the Change Authorization Data pushbutton. A pop-up window is displayed. Select the 'Do not select templates' pushbutton.
- Now select the 'Manually' pushbutton, and enter the authorization object 'Z/FLM/0001'.



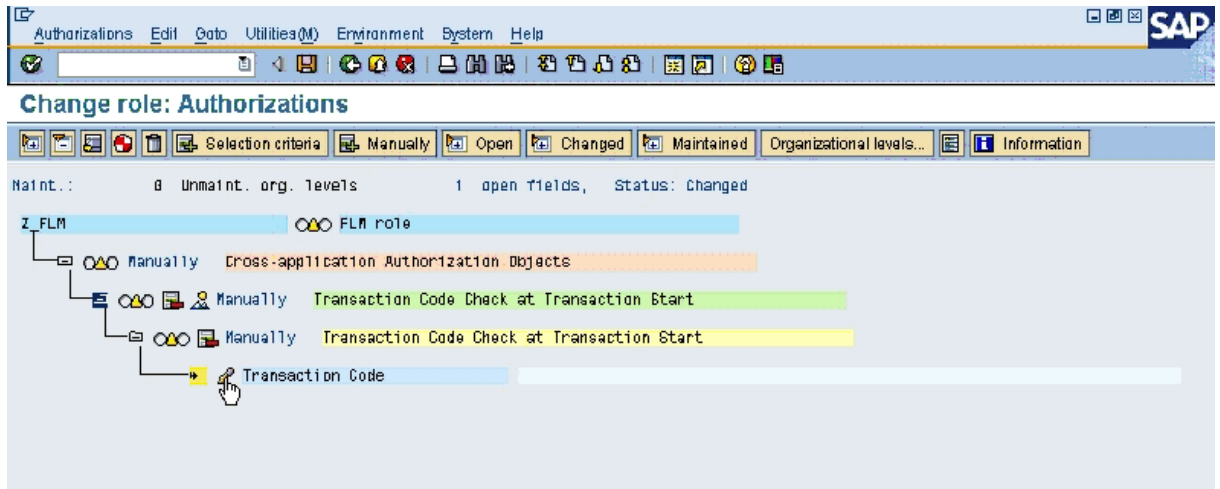
- Expand the hierarchy and then enter values for each field: select the '*' symbol in order for this role to include all form types, categories and activities.



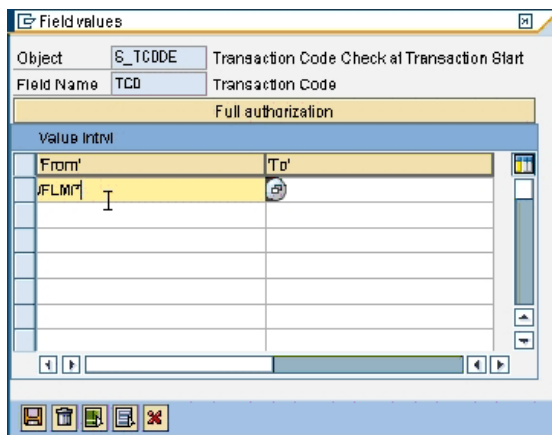
- Select the 'Manually' pushbutton again, and enter the authorization object S_TCODE



- Expand the Tree out and select the Change Transaction code button.



- Enter '/FLM/*' into the 'Form' field as shown. This is granting authority for ALL /FLM transactions to the FLM_ADMIN role.



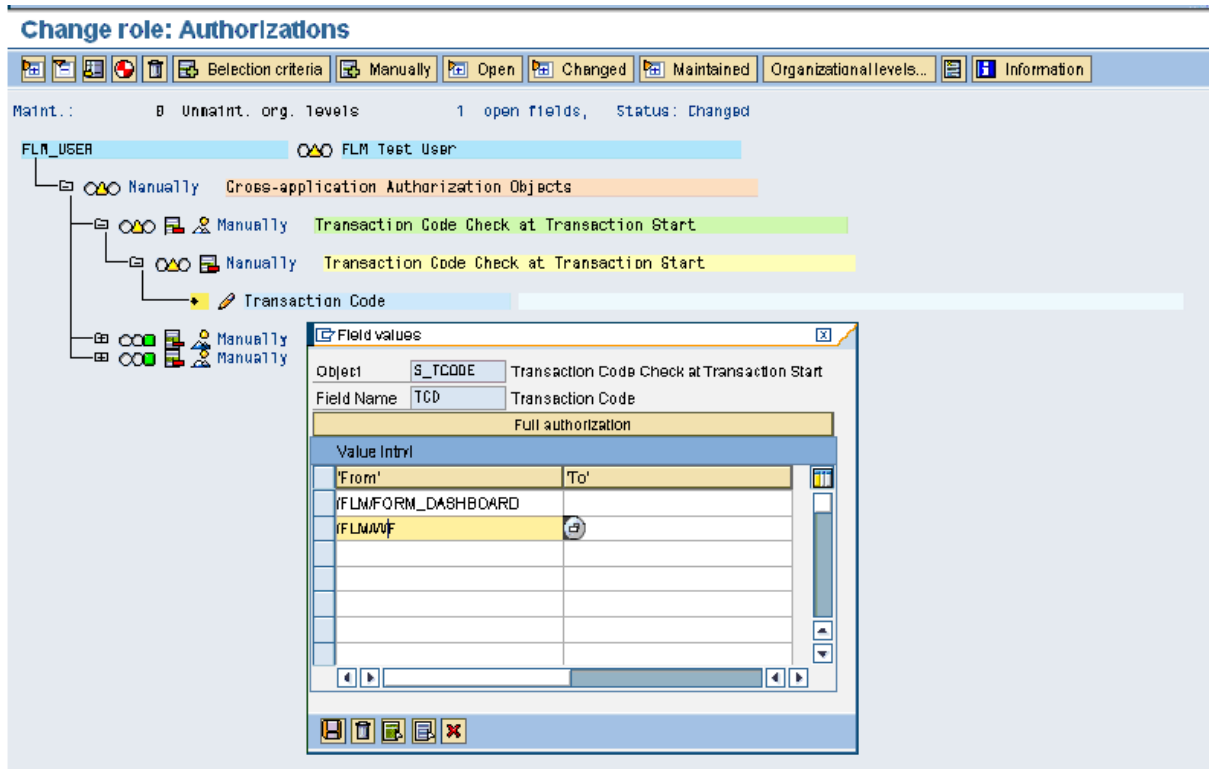
- Generate. (Save)
- Role FLM_ADMIN is now ready to be linked to user records.

6.4.2 Creating Form User Roles

Follow the same steps as for setting up the FLM_ADMIN role, but in the final step, limit the role by form category, form type and /or /FLM transaction code.

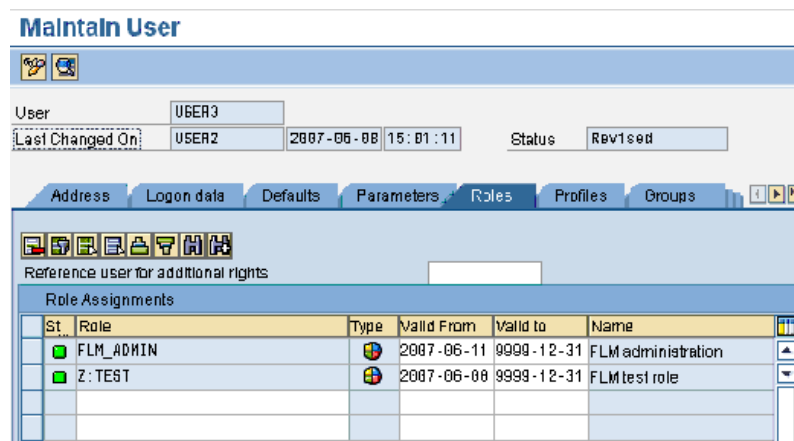
For example: If the user only submits forms but cannot change submitted forms, then select activity 01 but not 02 for authorisation object Z/FLM/0001.

If the user can display forms in the Dashboard (transaction code /FLM/FORM_DASHBOARD), but not post forms in FPE (transaction /FLM/FPE) or trigger form routing escalations (transaction /FLM/WF) for example ,select only the relevant transaction code(s) in place of the /FLM/* assigned to the admin role against authorisation object S_TCODE

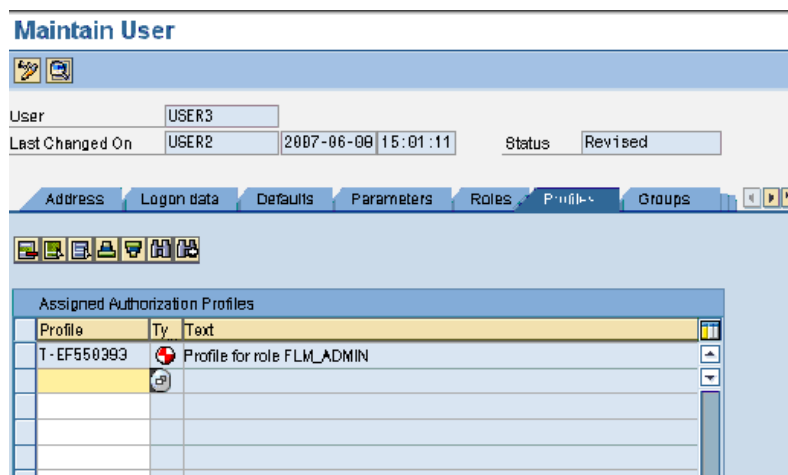


6.5 User Master Roles

Once the roles and profiles have been created, it is necessary to link the roles to the user master records as normal. This can be achieved on a user-by-user basis, or by adding the FLM roles to existing composite roles. Users are maintained in transaction SU01. The role is added as shown in the 'Roles' tab.



When the role is added to the user, the profile appears in the 'Profiles' tab.



6.6 Offline user

The FLM system requires one SAP user as the so-called 'Offline User'. The FLM framework uses this user for processing offline forms [ie form sent to user not via the FLM Portal], since at this time no SAP dialog user is available for authorisation checking.

It is recommended that an SAP user is given the auth object Z_FLM... with open authorisations to the whole FLM system as follows:

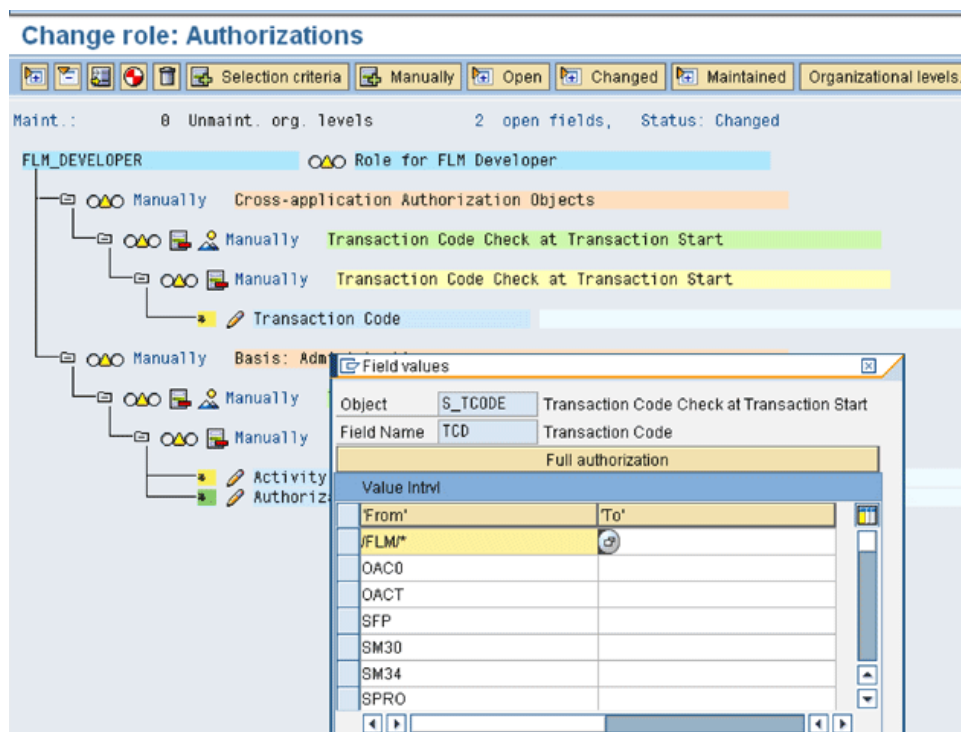
- /FLM/CUST *
- /FLM/FCAT *
- /FLM/FTYPE *
- ACTVT *

This user master record is entered into the FLM configuration under the 'Set Customer Code' IMG activity against the 'Offline User' field. = user name attributed to offline email user activity.

Create technical (System) user FLMOffline.

6.7 FLM Developer User Role and Authorizations

- [PFCG] Add the authorisation Z/FLM/0001 Object with '*' as before.
- Also add the authorisation object S_TCODE with the following transactions
 - /FLM/*
 - OAC0
 - OACT
 - SE10
 - SE16
 - SE24
 - SE91
 - S010
 - SFP
 - SM30
 - SM34
 - SPRO
 - SOST
 - SCOT
 - SLG1
 - ST22



- Add authorisation objects S_CTS_ADMI and S_TRANSPRT to enable the role to create and administer transport requests.
- Add authorisation object S_GUI.
- Add role FLM_DEVELOPER to the developer user, along with a normal ABAP developer role such as SAP_BC_DWB_ABAPDEVELOPER

6.8 FLM Read Only Role

The FLM_READONLY role can be created for giving remote access to the FLM System.

See [FLM Authorizations and Security](#) for more details.

6.9 FLM Portal and Authorizations

The FLM Portal requires at minimum the S_RFC authorization object to run.

Create a technical (Service) user FLMPortal to use in your Portal Java Connector.

Create a Role: FLM_PORTAL and add the S_RFC authorization object and assign the role to FLMPortal.

7 Deploying the FLM Portal

7.1 Introduction

In order make use of the FLM Portal for on-line forms, the FLM Portal must be deployed to the Java Server using the Java Support Package Manager [JSPM].

Tip 1: We've found it best to run a local SLD in production that reports back to a remote SLD rather than use a remote SLD. The reason for this is that the Java Connector will register itself with the SLD and if the SLD were to become unavailable the FLM Portal may produce errors for the duration.

Tip 2: Be sure you have a logon group defined in transaction SMLG. Often the Logon group will be blank by default. This requires a Java Stack restart to recognize.

7.2 Enterprise Archive

The FLM portal is shipped as an SAP Component Archive on the installation disks. This file is called "flm.com~flmgui.sca" and is located in the \\sapmnt\trans\EPS\in directory with correct permissions.

7.2.1 JSPM / SDM Procedure

The high-level procedure for deploying this archive is as follows. For step-by-step guidance on any particular step, please consult the appropriate SAP documentation:

1. Copy the archive from the installation media to a local file available to the Java application server.
2. Start JSPM and login to the Java server.
3. Select 'New Software Components' if this is a new install or 'Single Support Packages' if you are upgrading.
4. Follow the on-screen instructions to deploy the file

If you receive an .ear file instead of a .SAR use SDM to deploy the archive.

7.2.2 Java Connectors

Once the archive has been successfully deployed, the new java application must be connected to the ABAP backend system by configuring necessary "Java Connectors" [JCo's].

There are two java connectors that must be configured:

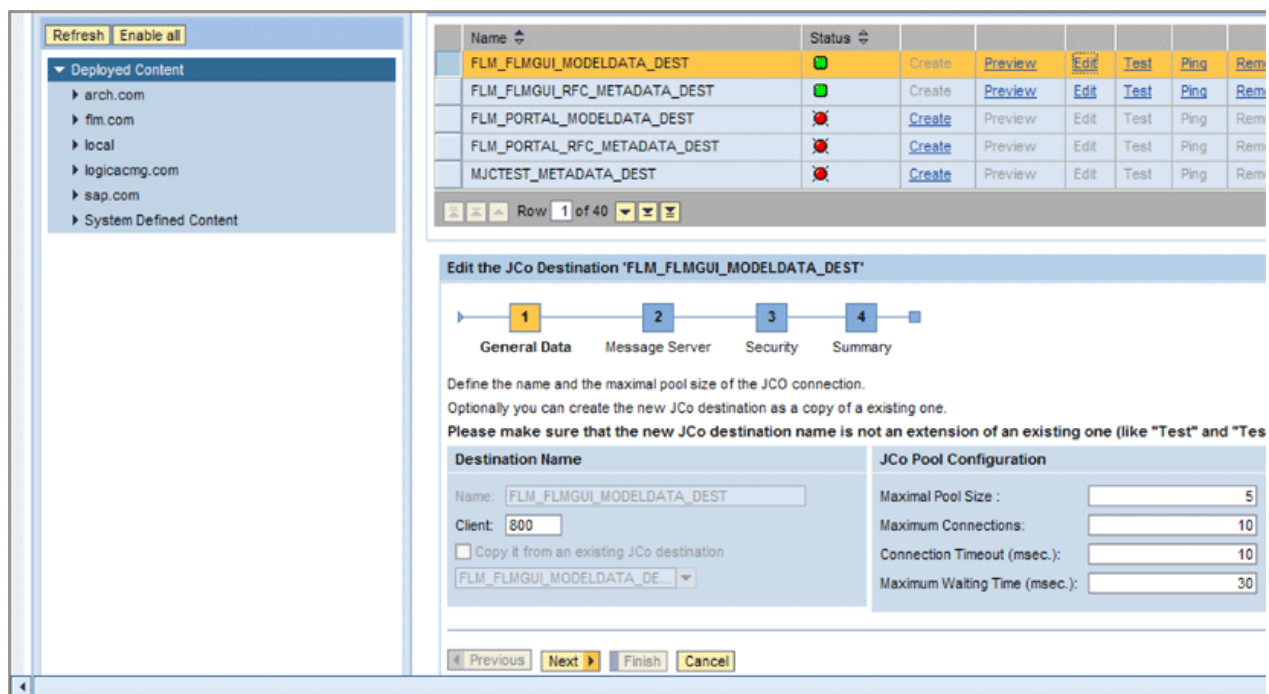
- FLM_FLMGUI_RFC_METADATA_DEST
- FLM_FLMGUI_MODELDATA_DEST

These two connectors will have been registered in the System Landscape Directory [SLD] during the deployment of the archive in the previous step. Hence each JCo can now be configured using the Content Manager application of the local Java stack.

Tip: for Production a local SLD should be configured that reports back to the remote/Solution Manager SLD so any outage on the remote SLD does not affect the Java Connector.

Login to the User Management portal and click 'create JCo destination'.

Here, create the two Java connectors as detailed above and configure their settings and security using the wizard:



Please consult SAP standard documentation for further guidance on the step-by-step process of configuring Java Connectors.

Tip: Be sure to set the correct Language for the Java Connector. English and English (United Kingdom) will display Dates differently.

Note:

It is highly recommended to configure the JCo's to make use of 'Logon Tickets' - SSO - for the Model Data JCo, rather than by hardcoding usernames and passwords, as this ensures that user management is centralised into the ABAP stack and that all SAP-standard authorisation checks are enforced.

For the purposes of prototyping and development, FLM can be used with hardcoded JCO userreferences as the FLM authorisations due not rely on the user maintained in these connections, but rather the user who has logged into the FLM Portal.

<http://<server>:<port>/webdynpro/dispatcher/flm.com/flmgui/FLMPortal>

8 Customer Initialization tasks

8.1 Creating a new customer code

Each implementation of FLM is defined by at 3-digit customer code. You will need to use this activity to setup a default customer code by clicking on 'new entries' at the top of the window and defining a new 3-letter customer code. Also enter a text description.

SPRO -> Cross-Application Componets -> General Application Functions -> Forms Lifecycle Manager -> Initialize Customer Code -> Set Customer Code

On the main screen is a list of setup customer codes. The tick box shows which customer code is currently set as default.

You can create a new customer code by clicking 'new entries' at the top of the screen. This must be a unique 3-letter code approved by Arch.

For the initial configuration only the following fields are required:

- FLM Customer Code
- Default Customer - Checked
- Auth Object: most likely z/flm/0001 as recommended by this guide.
- File Type: PDF Format
- Recommended: Default Sender Addr: <SID>@<SERVER>
- Recommended: Offline User - most likely FLM_OFFLINE as recommended by this guide.

Please Note: If you are deploying FLM to multiple clients on the same system the Customer Code in each Client must be unique otherwise you won't be able to transport between clients and cross-client tables may not function as expected.

Customer Details	
FLM Customer Code	ACL Arch Consulting Ltd
<input checked="" type="checkbox"/> Default Customer	Master Language English
<input type="checkbox"/> Solution Manager Active	Factory Calendar
ADS Settings	
<input type="checkbox"/> Metadata On	ADS Trace Level No trace
Authorisations	
Auth Object	Z/FLM/0001
<input type="checkbox"/> Usergroup Functionality Active	
FLM Portal Settings	
<input type="checkbox"/> No Logo Section	<input type="checkbox"/> No Logout Button
Offline Settings	
EncryptKey	GHIJKLMNOPQRSTUVWXYZ
File Type	PDF Format
Default Sender Addr	dv1@arch.co.uk
Offline User	USER3
Rej Title Text	/FLM/OFFLINE_REJ_TITLE
Rej Body Text	/FLM/OFFLINE_REJ_BODY

8.1.1 Customer Details**FLM Customer Code:**

Enter the 3-letter code you want to define your new FLM implementation, and text that describes the customer code.

If you are deploying FLM to multiple clients on the same system the Customer Code in each Client must be unique in that system. Your DEV-QA-PRD systems can all use the same customer code.

Default Customer:

Checking the 'default' box will set it as the default customer, to which forms will be assigned unless you otherwise specify. Each FLM system can have multiple FLM Customer Codes maintained. However, only one FLM Customer Code can be 'default' in each system (or client). Only the default customer can be actively processing forms at runtime - other FLM Customer Codes are for development purposes only.

Master Language:

The master language defines which language the form data schema must initially be defined in. All other

languages at the same version will then share the same data schema, which cannot be altered.

The master language also determines the template used for the ABAP user-exits, and also the language of various drop-downs in the system.

Once the language is set and a form defined, this should not be changed.

Solution Manager Active:

Check this box if SAP Solution Manager is active in your landscape. This sole effect of this to stop the FLM Form Wizard from generating its own transports.

In this case you must use Solution Manager to generate the transports, and then pick these up manually in the Form Transport Wizard run.

If you wish the Form Transport Wizard to pick up the correct transports automatically, the request headers (workbench and customizing) must be given the Attribute 'SAPCOMPONENT' with the value 'FLM:Cust = XXX , Form = YYYY', where XXX is your 3-letter FLM customer code and YYYY is your 4-letter FLM Form Type Code.

Factory Calendar:

Entering a factory calendar will assign that calendar to the customer code. For example you may wish to use a working-day calendar for escalation and reminder time lapses. Default FC is 01 or Country Code (GB for Britian).

8.1.2 ADS Settings

Metadata On:

Metadata is off by default. If you are running NW700 SP15 or better you can turn this on to see meta data in your PDFs.

ADS Trace Level:

Sets the ADS trace level. 0 = no trace, 4 = highest level of trace.

At level 4 a successfully rendered pdf will also have several extra attachments corresponding to the trace file from ADS, the form template, the form data schema etc.

At all lower levels the trace information is stored in the defaultTrace file on the java stack and can be viewed from the Log viewer here:

```
\\usr\sap\<SID>\<Instance>\J2EE\cluster\server<n>\log\defaultTrace.trc
```

8.1.3 Authorizations

Authorizaton Object:

This is the authorization object created in Section 6, most likely z/flm/0001.

An authorization object combines up to 10 authorization fields, which are checked using the AND connective.

Authorizations are checked against objects in the system. Authorization objects enable complex checks (linked to several conditions) of an authorization. For the authorization check to be successful, the user must pass the check for each field contained in the object.

Standard Usergroup Functionality Activated:

This switch enables you to use standard SAP usergroups for group access to forms.

Usergroups are maintained and assigned to users in transaction SUGR.

If this scenario is enabled then forms are routed to either individual users or to single usergroups. If forms

are assigned to individual users then they are still only available to that one user in the FLM Inbox. If they are assigned to usergroups then anyone in that usergroup can process those forms.

You must also switch on 'Group Access to Forms' for every form type if you wish to use this scenario, as it is a global setting. You can do this under the FLM IMG activity 'Form Types Configuration'.

If you have also maintained a remote system for your FLM user management under the FLM IMG activity 'System specific settings', then the user groups are read from the remote system and not the local one.

8.1.4 FLM Portal Settings

No Logo Section:

If this flag is set, there will be no logo section displayed in the FLM Portal. This removes the logo, the title 'Forms Lifecycle Manager' and the name of the logged in user.

No Logout Button:

If this flag is set, there will be no logout button on the FLM Portal. This is to support scenarios where forms utilize the UWL exclusively.

8.1.5 Offline Settings

EncryptKey:

The encryption key is used to scramble URLs being sent out by FLM such that the form parameters are not human-readable. The key must comply with the following rules:

- choose only letters in the range G to Z
- you must fill all 16 positions
- you cannot choose the same letter twice.

File Type:

The return file type defines how the form is returned to FLM in the offline scenario. You have two choices, either as the full PDF format (which includes attachments, annotations etc) or as just an XML data blob. The XML data version is much smaller than the PDF format, but only includes the pure form data.

You can set the return file type globally on the FLM customer master record, or you can set it individually at the form type level. If the format is set in both places, the form-specific value prevails.

The recommended setting is to choose the full PDF format to be sent; you would choose XML really only if bandwidth was severely limited or where infrastructure was unreliable, as the file size in this case is considerably smaller.

Default Sender Addr:

Any outbound email from FLM must be supplied with a return address in order for replies to be automatically generated.

You maintain this address either globally on the FLM Customer master record, or on a per-system basis, in the System-Specific Settings table.

It is recommended to use the latter method (from FLM 295 onwards) as this method allows you to differentiate between DEV, QA and PRD systems.

Offline User:

Whenever a form is sent offline to an e-mail recipient then FLM assigns this 'Offline User' as the 'Form Owner' as we no longer have a real SAP named user for the form owner..

FLM also uses this field when running certain programs in order to pass the built-in FLM authorization checks.

The user maintained here should generally not be a dialog user and should be given sufficient FLM authorisations to process all forms.

Rej Title Text:

Text Object for Body of e-mail Rejection

When an off-line e-mail is received back into the FLM system it may have certain fields validated before it is received fully into the system. If the form fails validation, an e-mail may also be sent back to the sender to explain why it could not be received.

This field holds the name of the text object that is used to store the title of that e-mail.

Reg Body Text:

Text Object for Body of e-mail Rejection

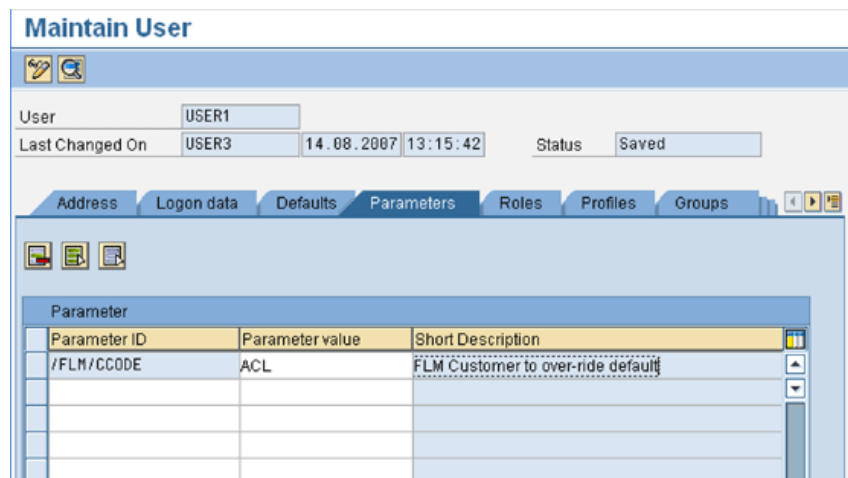
When an off-line e-mail is received back into the FLM system it may have certain fields validated before it is received fully into the system. If the form fails validation, an e-mail may also be sent back to the sender to explain why it could not be received.

This field holds the name of the text object that is used to store the body of that e-mail.

8.1.6 Customer Code Parameters

// If the Customer is only maintaining one Customer Code than this step can be skipped.

The FLM framework needs to know for every FLM user which 3-digit FLM Customer Code that user should be associated with. This is achieved in the user master record, by adding the parameter /FLM/CCODE to the user master record in the 'Parameters' tab, as shown below:



Any user that does not have this parameter maintained will take the default customer code set up in the FLM system; hence any FLM customer only maintaining one customer code is not required to maintain this parameter.

8.2 Define Form Categories

In this activity you define the set of available Form Categories in your system. A Form Category is a logical grouping of Form Types that is used as a part of the user authorisation concept in FLM. You must define your form categories before you can begin creating logical forms via the FLM Form Wizard, as each form must be assigned to a 2-character category.

The groupings shown in the demo below are examples of typical form categories: 'Purchasing' 'Human Resources' and 'Accounting'.

To create a new form category, go to 'New Entries' and define a two-character form category code with an

associated description for each form category required. Form Category codes are only applicable for the customer code within which they were set up.

Customer	Form Cat	Category Name
ACL	ALL	All Forms

8.3 Define Form Statuses

This section displays all the available statuses that can be assigned to each form. A separate status is available according to customer code, description and category.

Form statuses refer to the stage of the workflow, or **routing**, that the form is in at any one time.

Customer	Status	Description	Category
ACL	A	Approved	Intermediate Status
ACL	I	Initial	Initial Status
ACL	P	Posted	Final Status
ACL	R	Rejected	Intermediate Status
ACL	S	Submitted	Intermediate Status
			<input checked="" type="checkbox"/>
			<input checked="" type="checkbox"/>
			<input checked="" type="checkbox"/>
			<input checked="" type="checkbox"/>
			<input checked="" type="checkbox"/>

An **initial** status defines a form at the first stage of a routing, i.e. **initial**.

An **intermediate** status defines a form in the middle stages of a routing, e.g. **approved, rejected, submitted, or approved**

A **final** status defines the form at the end of a routing, e.g. **End Of Routing**

All statuses displays all available statuses

You can create a new form status tag by going to the 'new entries' menu and entering new criteria for customer code, status code, description, and category. Once this new status has been created in this activity, it will then become available to select in the routing configuration table (see 1.3.2)

8.4 Define Form Actions

Form Actions list the options available to select the next position in the form routing, e.g. submit, approve, post etc. You can enter a new action by going to 'new entries' and entering a customer code, action code and description for each new action. Actions Y and Z are reserved and cannot be reassigned. All other letters of the alphabet are available to assign to different stages of a workflow as you wish. The stage names themselves are only suggestions and are completely customisable.

FLM: Form Actions		
Customer	Action	Description
ACL	P	Post
ACL	R	Reject
ACL	S	Submit

8.5 System Specific Settings

The System Specific Settings are not required for the initial configuration but it is advised that an entry be created for each system in the SAP landscape.

Certain parameters, such as hostnames, vary naturally between the different systems in the SAP landscape (development, quality, production). This configuration table provides a system-specific way to set those parameters. This avoids having to open up downstream system in order to make changes to configuration tables locally.

Begin by adding entries into this table, one for each System ID in your FLM landscape. Against each entry you can then make certain settings, detailed below, which can then be read locally against the local system ID by FLM (and customer code) to provide this necessary information.

1. Select FLM Settings
2. New Entry
3. Enter the SID of the system.
4. Save
5. Repeat for each system in the Landscape DEV->QAS->PRD etc...

FLM: System Specific Settings	
SAP System ID	
DEV	
PD1	
QA1	

SAP System ID

External System Links

Main Ext RFC

UME Ext RFC

Alt Ext RFC 1

Alt Ext RFC 2

SAP EMail Address

Sender Email

External DNS Name

If URLs are sent externally, specify the DNS here.

DNS Name

FLM Portal Details

Host Name

Port User Mapping Active

Customer Variables

8.6 Number Range /FLM/<Customer Code>

Each FLM customer is allocated a 3-digit customer code, for example ABC. The customer must create a number range object in this case called /FLM/ABC. Process:

1. Transaction SNRO [es-en-ar-oh].
2. Enter number range object name.
3. Press create icon.
4. Enter Short and Long Texts.
5. In *Number length domain* enter CHAR10.
6. Set the warning %, eg 5%.
7. Press save.
8. Ignore warning about buffering.
9. Create a number interval. (e.g. 01 1000000000 - 1999999999 - 1000000000)
 1. **Note:** if FLM is being used on more than one SAP Client on the same Instance the interval should be <CLIENT>0000000 - <CLIENT>99999999 (e.g. 8110000000 - 8119999999).
10. To create the number interval go to SNRO again
11. Enter the name of the object you just created and click on "Number ranges"

8.7 Message Class /FLM/<Customer_Code>

The customer message class is used to store work instructions for your forms. For example, message 001 could be 'Please resubmit your form'. The process for creating your message class is as follows:

1. Transaction SE91.
2. Enter message class /FLM/<Customer_Code>.
3. Press create icon.
4. Enter short text.
5. Press save.
6. Assign to package /FLM/CUST.
7. Create a transport/assign to an existing transport.

8.8 Link Document Types

In this activity, you link your document types to the content categories as defined in the CMS in the previous

step. You should create these entries:

File Type	Description	Category
XDP	Form Templates	ZFLM0001
XML	Form Data	ZFLM0002
ATT	Attachments	ZFLM0002
TXT	Texts	ZFLM0002
ANN	Annotations	ZFLM0002
SWF	Flex Forms	ZFLM0002
AR1	Archive - Form Data	ZFLM0003
AR2	Archive - Attachements	ZFLM0003
AR3	Archive - Annotations	ZFLM0003

SPRO -> Cross-Application Componets -> General Application Functions -> Forms Lifecycle Manager -> Initialize Customer Code ->Link Data Types

The content repository was created during the installation phase 3.7 and can be found in transaction OAC0 (OH-A-C-Zero). We suggested the name be something like ZFLM0001 (templates) and ZFLM0002 (data) but it could be anything. If in doubt contact the administrator who did the installation.

From FLM 295sp2 onwards you should also link data types AR1, AR2 and AR3 for the forms archive system (these should always be linked to separate content repositories and content categories and physical tables from the main FLM tables).

8.9 Create Form Classes

Each FLM customer code and form stores its business logic in a series of form classes. You must generate these classes (suggested initial number = 50) as part of the installation process.

When prompted for a development class [or package] choose /FLM/CUST, as this will then allow you to transport these classes through the landscape.

Prior to FLM 295 SP2 you must manually activate the classes after the run. Use transaction SE80 to do this, choose 'Inactive Objects' from the dropdown then shift-select from the list.

You can run this report subsequently if you run out of classes to add more space, and each time you have to transport the classes through the landscape.

8.10 Upload Master Template

Use this activity to upload a master template into the FLM system. This can then be accessed by the form wizard to be used as a base template for a new form. Select the template shipped as an .xdp file with the FLM software package from the installation CD, and execute.

FLM bases all new forms on an existing template, and so for each new customer code initialization this template must be uploaded into the system.

This procedure can be repeated as required if the template must be changed later on:

1. Copy the FLM template from the DOCU/RESOURCES folder on the installation disks to the presentation server
2. Rename the file to 'Master_FLM_Template.xdp'.
3. Navigate to transaction SPRO and Navigate to FLM in the Cross-Application Settings -> General Application Functions -> Forms Lifecycle Manager -> Initialise Customer Code -> Initialise FLM System -> **Upload Master Template**
4. Browse to the file from step 1)
5. Press Execute and follow the on-screen instructions

8.11 Copy Standard FLM Javascript snippet library to local client.

FLM delivers a set of useful javascript functions into client 000. This report copies those entries into the local client.

SPRO -> Cross-Application Componets -> General Application Functions -> Forms Lifecycle Manager -> Initialize Customer Code -> One-Time Execution Programs -> Copy Standard FLM javascript library to local client.

8.12 Test Form

At this phase you must setup a new test form to complete the customer code configuration and ensure the customer code is configured properly.. Please see the [Functional Test Sequence](#) for more detail.

The first time a form is rendered on a EHP1/2 system you may get an error for form class: /FLM/000n this is due to the classes being exported from NW700 and Imported into 701. To fix this open the class in SE24 and Utilities -> Clean Up -> Method Includes and then again Utilities -> Regenerate Sections.

You will have to do this for TS01 and DOC1 as well.

8.13 Upload TS01 and DOC1 Packages

After you have tested the system is running properly upload the TS01 and AUTODOC form packages. TS01 is a example time sheet form and the AUTODOC contains the template required for the auto documentation feature.

SPRO -> Cross-Application Componets -> General Application Functions -> Forms Lifecycle Manager -> Tools ->Form Transport Wizard

8.14 Setting up QAS and PRD.

When you are ready to install FLM on your QAS and PRD systems please do the following:

1. Install FLM .SAR files in SAINT Client 000
2. Import installation transports you created for the tasks above.
3. Create intervals in transaction SNRO for /FLM/TID and /FLM/<Customer_Code> in the correct client.
 1. **Note:** if FLM is being used on more than one SAP Client on the same Instance the interval should be <CLIENT>0000000 - <CLIENT>9999999 (e.g. 8110000000 - 8119999999).
4. Install FLM Portal .ear file with SDM and setup Java Connectors. With the Model Jco using SSO if available.

See the relevant sections above for more details.

8.15 FLM Maintenance and Monitoring.

Please review the [FLM Administrators Guide](#) additional information regarding routine background jobs and monitoring.

9 Setting Up Offline (Email) Handling in FLM

FLM processing relies on e-mails in the following scenarios:

- On-line forms: outbound notification e-mails
- On-line forms: outbound reminder e-mails
- Off-line forms: outbound e-mail with PDF attachment
- Off-line forms: inbound e-mail with attachment processing
- SAP Output: e-mail with PDF attachment

FLM utilizes the standard SAP email handling for outbound and inbound emails.

To test if the SMTP configuration is working follow the [Offline Functional Test Sequence](#)

9.1 Setting up Inbound Email (Offline) Processing:

Use the menu path *Settings->Inbound processing*.

Insert the Recipient Address for the address to which offline forms are to be returned. This is likely the **Default Sender Addr** in the FLM Customer Code or the **Sender Email** defined FLM System Specific Settings. The Recipient Address will also likely need a rule on the corporate email network that forwards it to the SAP system via a Send Connector or other method.

Choose the exit '/FLM/EMAIL_HANDLER' to process all inbound e-mails.

Communication T...	Recipient Address	Docu...	Exit Name	Call...
Internet Mail	fim@quattro.w4.local	*	/FLM/EMAIL_HANDLER	1
Internet Mail	*	ICS	CL_APPOINTMENT_REPLY	2
Internet Mail	survey@800.id3.r3.sap-ag.de	*	CL_UWS_FORM_RUNTIME_MAI	3

For more information on how to configure and test the SAP SMTP configuration please see: [SAP SMTP \(Offline\) Configuration](#)

10.0 Setting Up Flex

// This section is typically not required as part of the initial configuration and can be skipped.

10.1 Configuration

Add an entry in table SDOKFEXT using SE16 as follows:

```

type:          application/x-shockwave-flash
extension:     swf
description:   Shockwave Flash File

```