



Functions in Detail

FLM Release 261

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1 Setting Up 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

This document describes the SAP set-up for handling the outbound and inbound e-mails for these scenarios.

Also refer to SAP note 455140 for further reading.

1.1 Outbound Emails

1.1.1 Transaction SCOT: SAP Connect

Change the SMTP node to point this at the external SMTP server.

SMTP node set-up

SAPconnect: Administration (system status)

Start of evaluation time: 2007-06-10 00:00

Completed	Error	In transit	Waiting	Duration In transit	Duration Waiting
∅	∅	∅	∅	hh:mm	∅ hh:mm

E5F (800)

- FAX Telefax
 - SXC1
- INT Internet
 - IMGW
 - SMTP
- X40 X.400
 - SXC1
- RML R/Mail or
 - MAIL
- PAG
 - PSSFAX
- PRT

SAPconnect: General node data

General information

Node: SMTP

Description: Mail Server

Maximum waiting time for repeat send attempt procedure:

Hours/minutes: / 30

Node in use

SMTP Connection

Mail Host: pickwick.w4.local

Mail Port: 25

Code Page: 4110 Unicode UTF-8

Supported address types

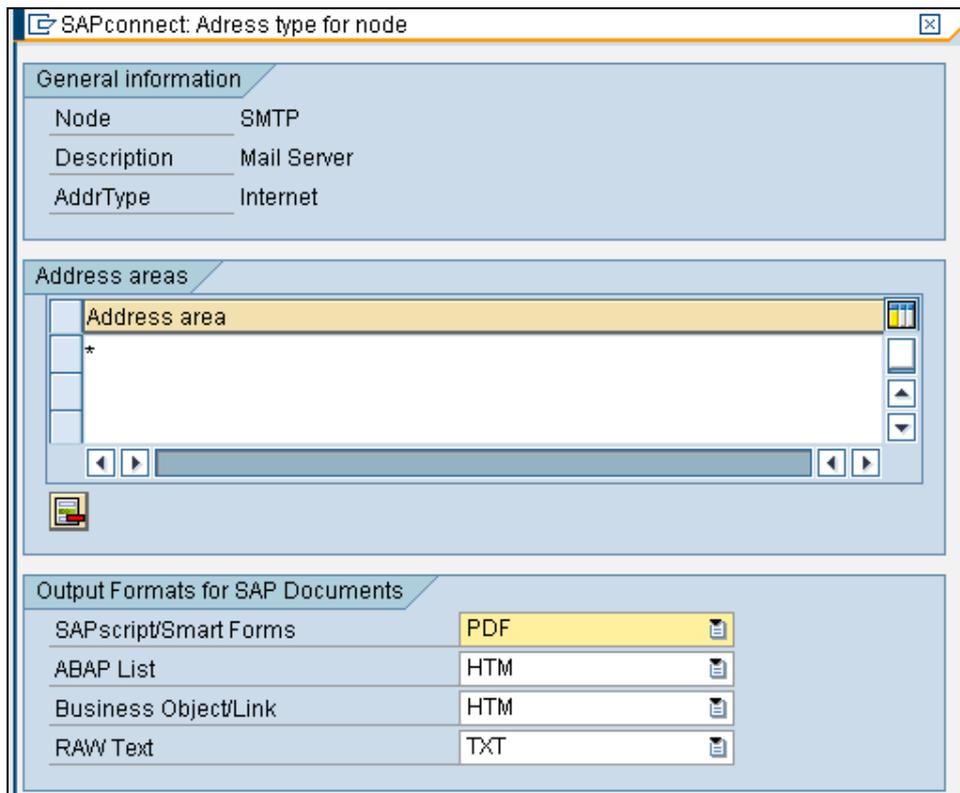
Fax

Internet

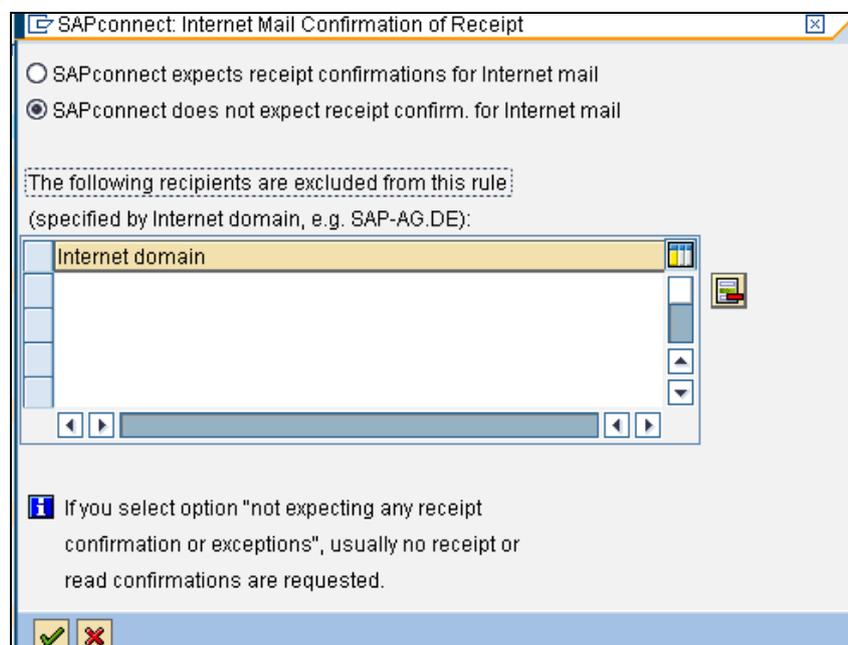
Pager (SMS)

Last changed by: USER1 on 2007-05-30

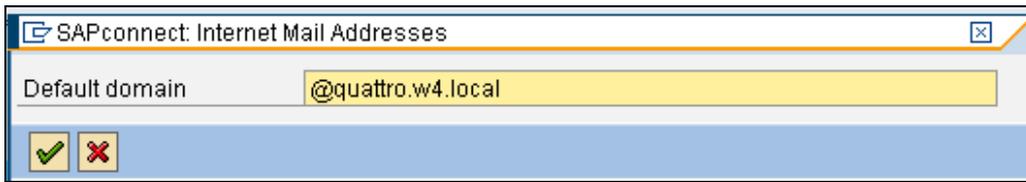
Set up the Internet address types as follows:



Turn off confirmation of receipt
 Use the menu path *Settings->Confirmation of receipt*.



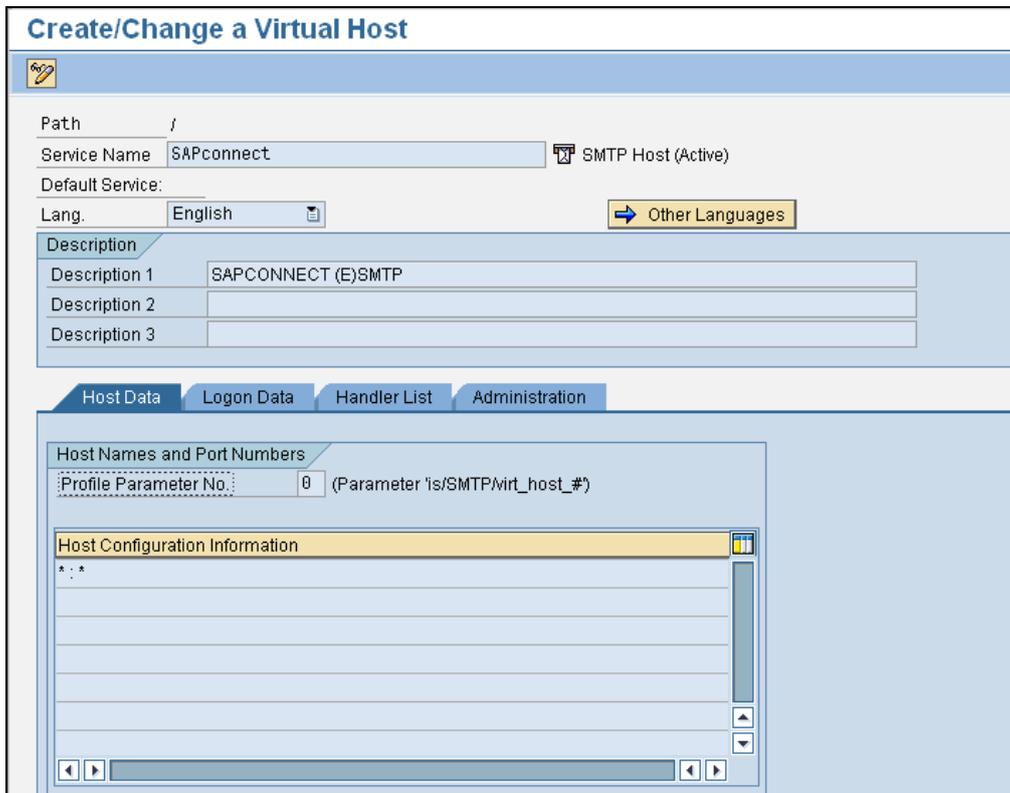
Set default domain
 Use the menu path *Settings->Default domain*. This is the location of the SAP application server.



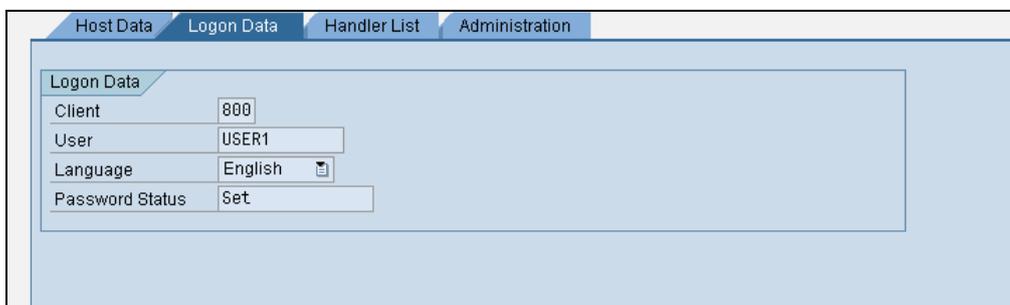
Paragraph

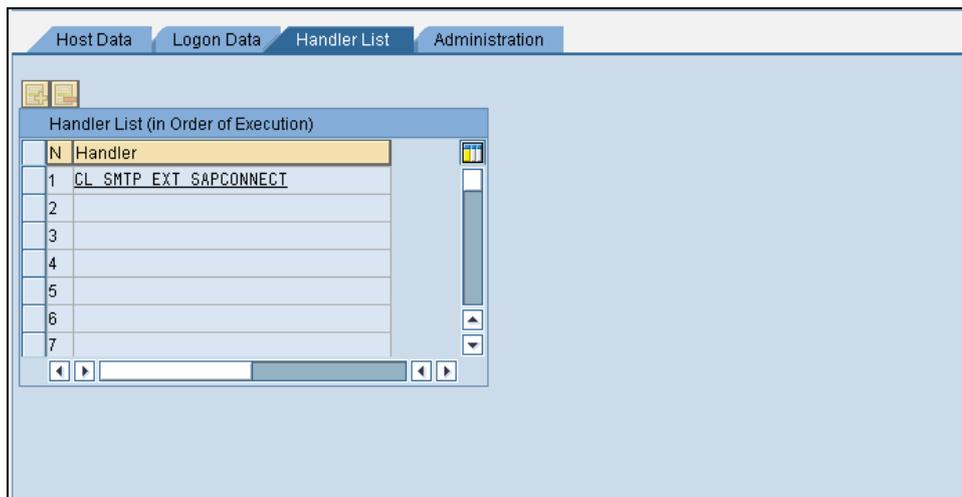
1.1.2 Transaction SICF: Service for SAP Connect

Execute hierarchy type 'SERVICE' and change the 'SAPconnect' service.



Enter a user id to logon to SAPconnect.





1.1.3 User Defaults

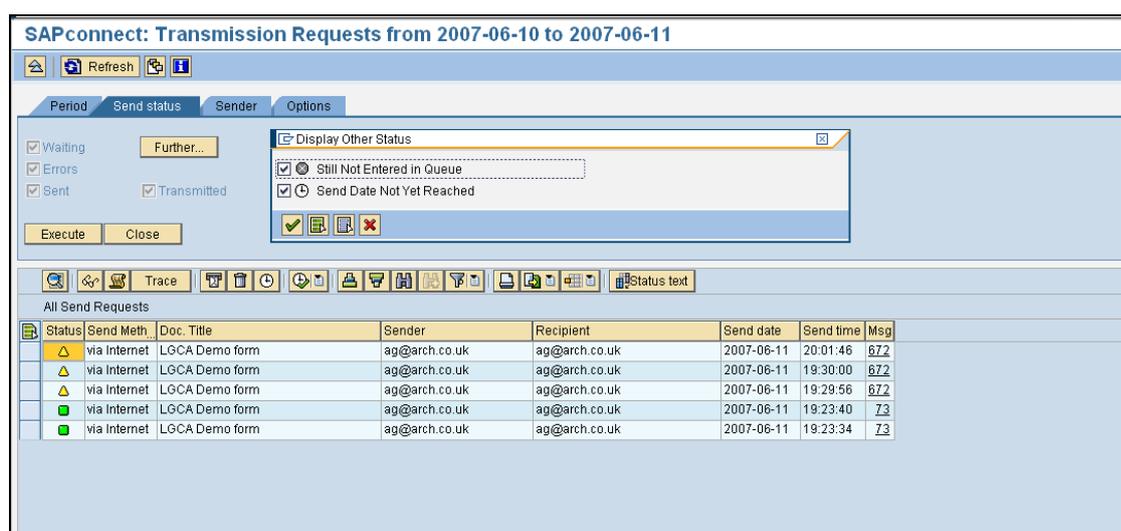
Ensure that the user selected for the SAPconnect logon has an e-mail address, and has a personal time zone that matches the required locale. (Transaction SU01).

1.1.4 SPAM filter on Exchange Server.

Set the Intelligent Message Filter on the Exchange Server in order to enable e-mails from the SAP server. [We needed to set this to '8' in order for the e-mails to be permitted.]

1.1.5 SOST for tracking test e-mails.

Use the 'Send status' tab with the 'Further' settings in order to track outbound e-mails.



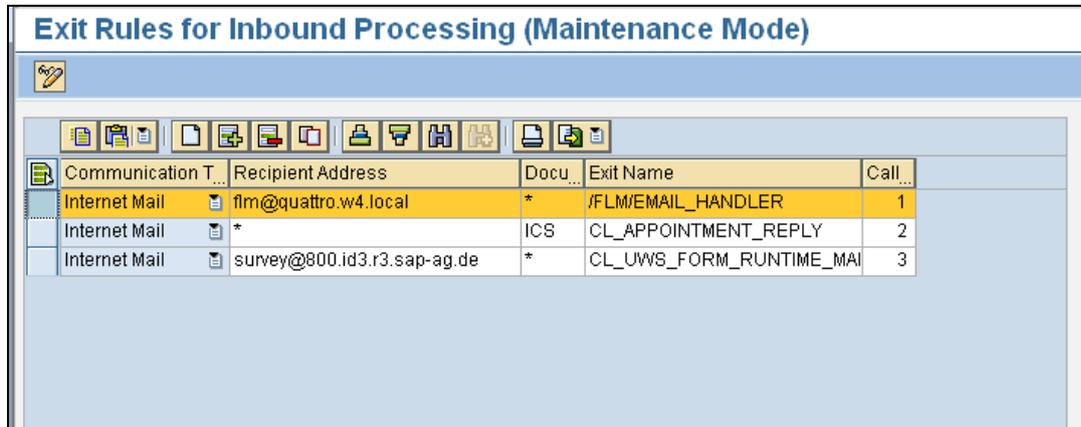
1.2 Inbound E-mails

1.2.1 SCOT: SAP Connect Settings

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

Insert an entry for the address to which off-line forms are to be returned.

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

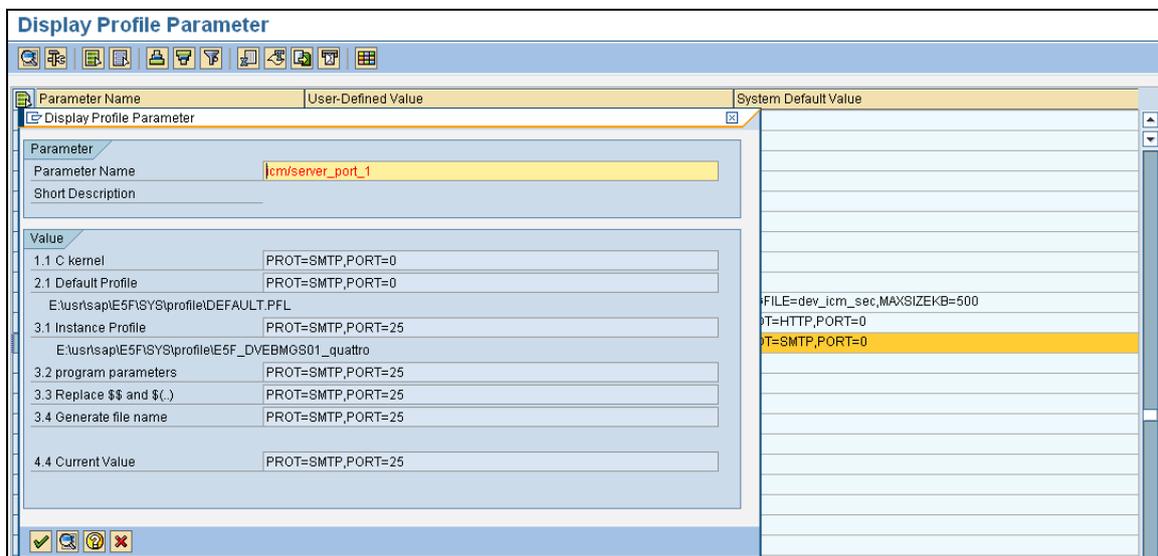


Communication T...	Recipient Address	Docu...	Exit Name	Call...
Internet Mail	flm@quattro.w4.local	*	/FLM/EMAIL_HANDLER	1
Internet Mail	*	ICS	CL_APPOINTMENT_REPLY	2
Internet Mail	survey@800.id3.r3.sap-ag.de	*	CL_UWS_FORM_RUNTIME_MAI	3

1.2.2 System Profile Parameters

Run program RSPARAM in SE38 to display the profile parameters.

Navigate to parameter icm/server_port_1, and set the port to 25.



Parameter Name	User-Defined Value	System Default Value
Display Profile Parameter		
Parameter		
Parameter Name	icm/server_port_1	
Short Description		
Value		
1.1 C kernel	PROT=SMTP,PORT=0	
2.1 Default Profile	PROT=SMTP,PORT=0	
E:\usr\sap\E5F\SYS\profile\DEFAULT.PFL		
3.1 Instance Profile	PROT=SMTP,PORT=25	
E:\usr\sap\E5F\SYS\profile\E5F_DVEBMGS01_quattro		
3.2 program parameters	PROT=SMTP,PORT=25	
3.3 Replace \$\$ and \$(.)	PROT=SMTP,PORT=25	
3.4 Generate file name	PROT=SMTP,PORT=25	
4.4 Current Value	PROT=SMTP,PORT=25	
		FILE=dev_icm_sec,MAXSIZEKB=500
		RT=HTTP,PORT=0
		RT=SMTP,PORT=0

2 Setting up FLM Routing Server

The FLM Routing Server is a service program that runs as a background job, and performs actions on forms based on their system status. The set-up required for the routing server depends on the business process to be mapped. This document describes the set-up for four types of functionality:

- Using the Routing Tables for Form Submission.
- FLM Routing Server for triggering Off-line forms.
- FLM Routing Server for Form Escalation.
- FLM Routing Server for Reminder E-mails.

2.1 Using the Routing Tables for Form Submission.

When a form is submitted back to SAP, either for an on-line scenario or for an off-line scenario, the form is returned with its original status plus the 'action' selected by the submitting user. The system follows the routing server logic to determine a new status, new user etc. for the submitted form during the update to SAP.

2.1.1 Table /FLM/WF_STAT: Form Status Derivation

The form derivation table is keyed on customer, form type, form status and action. The following information is derived from this table:

- New form status
- *For example an initial form with an action 'submit' may derive the new status 'submitted'*
- New form mode
- *This can be set to 'on-line' or 'off-line'. See section 1.2*
- E-mail notification settings
- *There is an e-mail notification flag, plus standard texts for the e-mail subject and e-mail body.*

Within the form status derivation table we need to map every possible status of the form, and every possible action that can be performed for each status, such that a business process is mapped; it is this table that defines the form's lifecycle.

Example of a simple off-line form routing without approval:

Form type	Status IN	Action	Status OUT	Version OUT	Mode	E-mail Notification
AB01	Initial	Submit	Submitted			

Note that as there are no approval steps, the final form status is 'Submitted'.

Example of a simple on-line form routing with approval:

Form type	Status IN	Action	Status OUT	Mode	E-mail Notification
AB01	Initial	Submit	Submitted	On-line	X
AB01	Submitted	Approve	Approved	On-line	
AB01	Submitted	Reject	Rejected	On-line	X
AB01	Rejected	Submit	Submitted	On-line	X

This example represents an on-line form, with an approval step. When the form is submitted or rejected, an e-mail notification will be triggered to the next person in the business process.

Example of an on-line form with off-line approval:

Form type	Status IN	Action	Status OUT	Mode	E-mail Notification
AB01	Initial	Submit	Submitted	Off-line	
AB01	Submitted	Approve	Approved	On-line	
AB01	Submitted	Reject	Rejected	On-line	X
AB01	Rejected	Submit	Submitted	Off-line	

Note that an e-mail notification is not sent to an off-line user, since they will already be receiving an e-mail with the PDF form.

2.1.2 Table /FLM/WF_USER: Form owner Derivation

The user derivation table is keyed on form type, status, current owner and action. This table is used to derive the new form owner only.

FLM: Form Routing Prototyping table					
	FType	User Name	Status	Action	User Name
	ADBE		P	Reject	USER3
	ADBE	USER2	P	Reject	USER3

This table can be used in scenarios where the number of users is very low, or when there is no other source of organizational data available to determine who should approve a form. Its main use might be for workshopping or prototyping a business process without the need to develop code to determine the user.

2.1.3 User-exits

In practice the new form owner is likely to be derived from an existing data source such as the SAP HR Organisational structure.

A user-exit will be available to determine the next form owner, based upon any SAP data including the form posting table (FLM/FPE) and form history table (FLM/FPE_H) such that previous form owners can be determined. *(This is of particular importance when deriving the new owner in the case of form rejection.)*

2.1.4 Variable substitution in e-mail standard texts

Variable substitution is available in all three e-mail scenarios (*offline* e-mail, *notification* e-mail and *reminder* e-mail).

Three types of variable can be substituted: FLM fields, system fields and form fields.

FLM fields

FLM fields can be included in each standard text using the format:

'&<field name>&'

In FLM version 2.4, the following fields are available:

- &FID& Unique Form ID
- &FORMTYPE& Description of form type
- &URL& URL link to the form

System fields

System fields can be included in each standard text using the menu path: Include-

>Symbols->System->ABAP System Symbols

In FLM version 2.4, the following fields are supported:

- &SYST-DATUM& System date
- &SYST-UZEIT& System time
- &SYST-UNAME& System user

Form fields

In the scenarios when form data exists, any non-repeating data can be included in the standard texts; the data field must not exist within a repeating subform. So root/header/footer fields can all be included, whereas item fields cannot.

Again the format required is:

'&<field name>&'

Note that if any form field was given the same name as an FLM field then the substitution would work for the FLM field, not the form field.

2.2 FLM Routing Server for triggering Off-line forms.

During a status change as defined within table /FLM/WF_STAT, if the mode flag is set to 'off-line' then this will trigger the render and distribution of an off line form. The settings for the off-line form e-mail are stored in table /FLM/EMAIL.

2.2.1 Table /FLM/EMAIL: Off-line form e-mail settings

This table stores the standard texts for the subject, body and attachment name, plus the recipient e-mail address for a form. The full key includes the status and version of the form, so that different versions of the form at different statuses would be sent to different recipients.

Change View "FLM: Offline form settings": Overview

New Entries

Customer	FType	Language	Version	Status	Receiver EMail	Title Text	Body Text	Attachment Name
ACL	ADBE	EN	00		ag@arch.co.uk	/FLM/OFFLINE_EMAIL_TITLE	/FLM/OFFLINE_EMAIL_BODY	/FLM/OFFLINE_EMAIL_ATT_NAME
ACL	ERCS	EN	00		ag@arch.co.uk	/FLM/OFFLINE_EMAIL_TITLE	/FLM/OFFLINE_EMAIL_BODY	/FLM/OFFLINE_EMAIL_ATT_NAME
ACL	L6CA	EN	00		ag@arch.co.uk	/FLM/OFFLINE_EMAIL_TITLE	/FLM/OFFLINE_EMAIL_BODY	/FLM/OFFLINE_EMAIL_ATT_NAME

2.3 FLM Routing Server for Form Escalation.

The FLM Routing Server program /flm/wf_engine should be scheduled as a background job and performs two functions: (a) Escalate forms, (b) Send e-mail reminders.

FLM Routing Server

Restrict Form Selections

Customer Code to

Form Type to

Perform Routing Actions

Escalate

Send E-mail reminders

Test only

The form escalation job should be run at least once per day. For form escalation the routing server checks on all forms to check whether they need to be escalated to another user. The form escalation settings are stored in table /FLM/WF_ESCA.

2.3.1 Table /FLM/WF_ESCA: Form Escalation settings

Customer	FType	Status	Esc Days	Action
ACL	ABIE	P	10	Reject
ACL	ADBE	P	1	Reject
ACL	KL10	P	10	Reject

The form escalation table is keyed on customer, form type and status. For any form at any particular status an escalation window (in days) can be set, plus an escalation action, which will be taken for any form that exists in the status for the escalation window.

The escalation action pushes the form one step along its route, for example, a submitted form could be automatically rejected [or approved] if no approval was granted within 5 days.

The effect of the action is to trigger five potential updates:

- o Change the form owner
- o Change the form status
- o Change the form version
- o Trigger an offline form
- o Trigger an e-mail notification

These actions are configurable using tables /flm/wf_stat, /flm/wf_user and /flm/email as described in sections 1.1 and 1.2.

2.4 FLM Routing Server for Reminder E-mails.

The second task the routing server provides is to send out reminder e-mails to users who have not processed a form. Normally this would be used in an approval scenario; if the form has been neither approved or rejected then a reminder is sent out. The functionality is similar to the escalation functionality, since a 'window' of days is defined after which a reminder e-mail will be sent out.

If both an escalation window and a reminder window are defined for the same form and same status, then the reminder window will be set to be less than the escalation window. For example, a submitted for that is waiting approval might trigger a reminder after 2 days, and then be escalated after 4 days.

2.4.1 Table /FLM/WF_REMI: Form Reminder settings

Change View "FLM: E-mail Reminders": Overview						
      						
FLM: E-mail Reminders						
Customer	FType	Stat	Esc Da	Resend	Title Text	
ACL	ABIE	P	4	<input type="checkbox"/>	/FLM/REMINDER_EMAIL_TITLE	
ACL	ADBE	P	1	<input checked="" type="checkbox"/>	/FLM/REMINDER_EMAIL_TITLE	
ACL	ADBE	R	5	<input type="checkbox"/>	/FLM/REMINDER_EMAIL_TITLE	
ACL	KL10	P	20	<input type="checkbox"/>	/FLM/REMINDER_EMAIL_TITLE	

The e-mail reminder window is defined by form status on table /FLM/WF_REMI. Standard texts for the e-mail subject and e-mail body are also derived from this table, and variable substitution is possible as described in section 1.1.4. There is also a 'Resend' flag, which controls whether several e-mail reminders will be sent out for the same form/status.

FLM Routing Server must only be run once per day for any form type, as running this multiple times on a single day would generate multiple reminders on the same day regardless of the 'Resend flag'.

The logic behind the selection of the form for a reminder e-mail is as follows:
 [1] Is today the last day of the reminder window?
 [2] Has the reminder window passed AND is the Resend flag set?
 If the answer to either of these is yes then a reminder e-mail is generated.

For example, if the reminder window was set to be 2 days and the resend flag was not set then the owner would receive a reminder on day 2 only. However, if the reminder window was set to be 2 days and the resend flag was set, then the owner would receive a reminder on day 2 and on each subsequent day until he/she processed the form, or the form was escalated by FLM Routing Server.