FUJITSU

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST OFFICE ™

Document Title:	**Audit Extraction Client User Manual**
Document Reference:	DEV/GEN/MAN/0015
Document Type:	User Manual
Release:	17.58
Abstract:	User manual for the HNG-X Audit Extraction client application
Document Status:	APPROVED
Author & Dept:	Gerald Barnes
External Distribution:	None
Security Risk Assessment Confirmed	YES

Approval Authorities:

Name	Role	Signature	Date
Jason Muir	Operational Security Manager Prosecution Support Service	See Dimensions for record	

See HNG-X Reviewers/Approvers Matrix (PGM/DCM/ION/0001) for guidance on who should approve.

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

0 Document Control

0.1 Table of Contents

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	2 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

0.2   Table of Figures

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 3 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 4 of 72

FUJITSU

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST OFFICE™

0.3 Document History

Version No.	Date	Summary of Changes and Reason for Issue	Associated Change - CP/PEAK/PPRR Reference
0.1	24/01/09	For informal review	
0.2	07/05/2009	Incorporates comments from Group Review	
0.5	08/10/2009	Incorporates amendments arising from Testing	
0.6	09/10/2009	For Review	
1.0	26/10/2009	Approved version incorporating comments from review	
1.1	05/05/2010	Draft incorporating changes for Audit Strengthening	CP0336
2.0	14/06/2010	Approved version.	CP0336
2.1	12/01/2011	Draft incorporating changes for reporting duplicate message sequences and formatting event data.	PC0205806, PC0206531
3.0	08/02/2011	Approved version incorporating comments from review	
3.1	30/06/2015	Change Centera to Eternus.	CP0847
4.0	27/07/2015	The approved version having taken into account all comments received.	CP0847
4.1	15/06/2016	Changes for HDCR.	CP1564
4.2	1/07/2016	Changes as a result of a review by Andy Dunks.	CP1564
5.0	21/07/2016	The approved version.	CP1564
5.1	22/08/2016	Introduce the new query Hx_IOPMailServiceSDAddressWithExtraAddresses.xql.	PC0252826
5.2	24/01/2017	Add new section detailing the configuration of the PGP Desktop functionality.	PC0255637
5.3	20/02/2017	Incorporation of review comments	
5.4	20/02/2017	Document some new audit queries.	PC0256298
5.5	27/02/2017	Some changes to the new queries documented in version 5.4.	PC0257379
5.6	07/03/2017	Some minor updates about the new Hx_JSN query.	PC0257379
5.7	10/03/2017	Document new and amended queries to output the poid element/attribute.	CP 1913
5.8	03/04/2017	Document two new queries which output additionally the method of payment. Hx_IOPPANBarcodesWithPaymentCode.xql is based on Hx_IOPPANBarcodes.xql. Hz_IOPPANBarcodesWithPaymentCode.xql is based on Hz_IOPPANBarcodes.xql.	PC0258294
5.9	13/04/2017	Put this document out for review again with the changes of the draft 5.8 in.	PC0258294
6.0	10/05/2017	The approved version.	PC0252826 PC0255637 PC0256298 PC0257379 CP 1913 PC0258294

FUJ00158710
FUJ00158710

Audit Extraction Client User Manual

FUJITSU

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST OFFICE

6.1	24/10/2017	It was requested during the 2017 PCI audit that ARQs be closed regularly (ref "PCI SNO 18"). Section 8.7.1 "Closing Policy" has been added to satisfy this request.	CP6619
7.0	08/11/2017	The approved version.	CP6619
7.1	14/11/2017	Document the Hx_Pouches.xql query.	PC0264249
8.0	1/12/2017	The approved version.	PC0264249
8.1	23/02/2018	Add some extra fields to the Hx_IOPMailServiceSDAddress query.	PC0267150
8.2	23/03/2018	Apply comments from the SSC.	PC0267150
8.3	23/03/2018	Add a new field to the Hx_IOPPANBarcodes.xql query.	PC0267766
8.4	04/05/2018	Document the new Hx_BranchTradingStatement.xql and Hx_BFwdandCFwd.xql queries.	PC0269657 PC0269658
9.0	21/05/2018	The approved version.	PC0269657 PC0269658

0.4 Review Details

*See HNG-X Reviewers/Approvers Matrix (PGM/DCM/ION/0001) for guidance on completing the lists below. You may include additional reviewers if necessary, but you should generally **not exclude** any of the mandatory reviewers shown in the matrix for the document type you are authoring.*

Review Comments by :	
Review Comments to :	Gerald Barnes & RMGADocumentManagement[_____GRO_____]
Mandatory Review	
Role	Name
SSC	Steve Parker (*)
Customer Services (Prosecution Support Analyst)	SecOps (cspoa.security[_____GRO_____] (*)
Optional Review	
Role	Name
Test	Dave Bower
Issued for Information – Please restrict this distribution list to a minimum	
Position/Role	Name

(*) = Reviewers that returned comments

0.5 Associated Documents (Internal & External)

Reference	Version	Date	Title	Source
PGM/DCM/TEM/0001 (DO NOT REMOVE)			POA HNG-X Generic Document Template	Dimensions
ARC/SEC/ARC/0003			HNG-X Technical Security Architecture	Dimensions

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 6 of 72

DES/APP/HLD/0029			Audit Data Retrieval High Level Design	Dimensions
DEV/APP/LLD/0071			Audit Data Retrieval Low Level Design	Dimensions
DEV/APP/SPG/0016			Audit Extraction Client Support Guide	Dimensions
DEV/INF/ION/0001			Archive Server Configuration	Dimensions
SVM/SDM/SD/0017			Security Management Service – Service Description	Dimensions
SVM/SEC/PRO/0017			Management of the Prosecution Support Service for Audit Record Queries	Dimensions
DES/APP/HLD/0123			HNG-X HLD - Settlement Functions	Dimensions

Unless a specific version is referred to above, reference should be made to the current approved versions of the documents.

0.6 Abbreviations

Abbreviation	Definition
AE	Audit Extractor
APOP	Automated Payments Out-Pay
ARQ	Audit Record Query
AUWv2	Audit Workstation Version 2
BRDB	Branch Database
CS	Customer Services
DR	Disaster recovery
FAD	Financial Accounts Department
HNG-X	Horizon Next Generation – Plan X
IKey	USB security token used for two-factor authentication
IRE11	The active data centre in Ireland that replaces the Bootle data centre
IRE19	The DR failover data centre in Ireland that replaces the Wigan data centre
MSAD	Microsoft Active Directory
NBX	Network Banking Transaction.
PAN	Personal Account Number. The number associated with a credit or debit card.
PIN	Personal Identification Number
Peak	Problem Management System operated by Fujitsu Services
PO	Post Office
POLIA	Post Office Limited, Internal Audit
PSS	Prosecution Support Section

SSC	Software support centre
TMS	Transaction Management System

0.7 Glossary

Term	Definition
Gatherer	The module responsible for collecting the audit files from the hosts, agents, correspondence servers and interface mechanisms. This module is also responsible for the application of the audit file naming policy.
Sealer	The module responsible for calculating the checksum seal of each audit data file before it is written to the audit archive. This value is recalculated after data is extracted by the Retriever and compared to the original value when first sealed. Used to ensure data integrity during storage on audit archive.
Retriever	The module responsible for moving audit data from the buffers where it is placed when retrieved by Eternus.
Extractor	The Client/Server system responsible for retrieving data from Eternus and managing Audit Data Extractions.
Eternus	Online mass disk storage unit selected by the Royal Mail Group Account to store and manage audit data.
Sec Ops	The team that runs ARQs and sends the results to the Post Office.

0.8 Changes Expected

Changes

0.9 Accuracy

Fujitsu Services endeavours to ensure that the information contained in this document is correct but, whilst every effort is made to ensure the accuracy of such information, it accepts no liability for any loss (however caused) sustained as a result of any error or omission in the same.

0.10 Security Risk Assessment

There are no security risks relating specifically to this document.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 8 of 72

1   Introduction

In addition to the historic data collected under Horizon, the HNG-X system generates significant amounts of data that is of interest to Post Office Ltd Internal Audit (POLIA) and other groups.

This document describes the Audit Extraction Client application that is run on the Audit Workstations (AUWv2s). The AE client provides functionality to manage Audit Record Queries (ARQs) and to retrieve and process audit data from the audit archive.

2   Scope

This document describes the functionality provided by the Audit Extraction Client for the retrieval, filtering and querying of audit data and the managing of Audit Record Queries (ARQs).

It does not provide any details of the processes involved in handling requests for audit data. For process information see document SVM/SEC/PRO/0017 – Management of the Prosecution Support Service for Audit Record Queries.

3   Terminology

Within this document certain terms are used which have specific meaning within the audit solution. They are:

Filtering :   Filtering is the process of searching the retrieved audit files for specified FAD codes or strings in order to select a subset of data for further processing. The user has the option of selecting the whole file in which a match is found or of just selecting the matching messages or records.

Query :   A specification using the XQuery language for the selection of messages and message attributes from retrieved audit data. A number of standard queries are provided as part of the audit system.

Querying :   Querying allows the selection of the message attributes to be included in the final output and also allows for a finer granularity of message selection to be applied.

4   Audit Data Integrity

The Audit Extraction Client is compatible with the HNG-X Security Architecture (see ARC/SEC/ARC/0003 – HNG-X Technical Security Architecture).

The integrity of audit data must be guaranteed at all times and controls have been established to provide assurances to Post Office Internal Audit that this integrity is maintained.

During audit data extractions the following controls apply:

1. Extractions can only be made through dedicated Audit Workstations (AUWv2s) which exist at Bracknell and Lewes. The AUWv2s are subject to rigorous physical security controls: they are located in secure rooms subject to proximity pass access within a secured Fujitsu Services site.

2. Logical access to the AUWv2s and their functionality is controlled by two-factor authentication using dedicated logins, password control and a second authentication factor.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 9 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

3. Checksum seals are calculated for audit data files when they are written to the audit archive and re-calculated when the files are retrieved.

5 Retrieval Schematic

The diagram below details the process of retrieving Audit Files from the Audit system.

In brief the process comprises:

1. Define the Audit Files to be retrieved.

2. Retrieve list of matching files from the Sealer database.

3. Submit the list for retrieval from the Audit Eternus.

4. Seal check the retrieved Audit Files, comparing the generated seal with the value held for the Audit File at the Sealer database.

5. Optionally, filter or query the retrieved data.

Audit Extraction Client User Manual

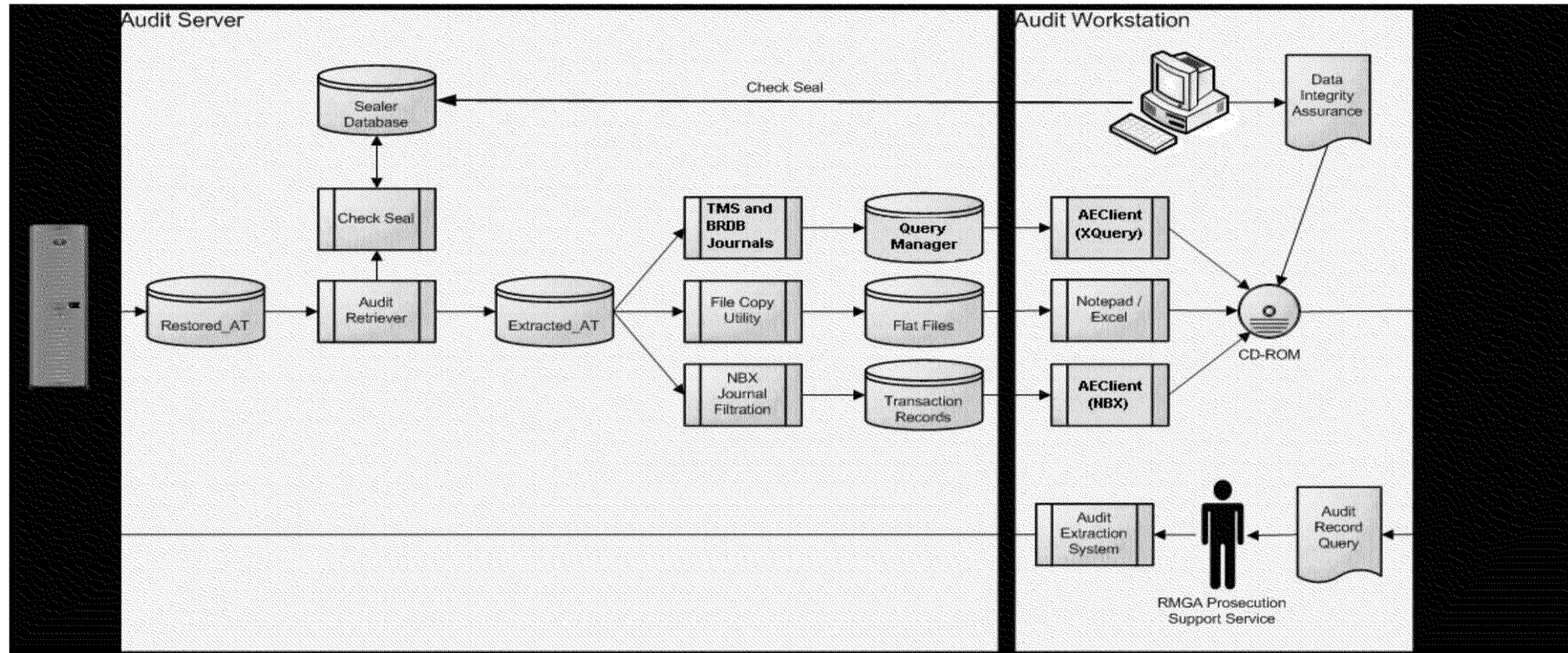**FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)**

Figure 1 – Audit File Retrieval

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	11 of 72

FUJITSU

POST OFFICE ™

6   Overview

The audit extraction process assumes that audit data has been gathered, sealed and written to the audit archive. The main types of files that are gathered are:

a.   TMS Journals from the Correspondence Servers (Horizon)

b.   Branch Database Journal Messages (HNG-X)

c.   Output from database tables

d.   Transaction files to and from PO systems (via gateways)

e.   Tivoli Event files

f.   NBX

g.   Output from APOP database tables

All file types are referenced in DEV/INF/ION/0001.

The following table lists the different groups that can request audit data and shows how these map to the Requester value that is selected on the New ARQ or Fast ARQ forms:

Group requesting audit data	Requester value
Post Office Limited, Internal Audit	POCL IA
Post Office Limited, Security	POCL Security
Post Office Limited, Other	POCL Other
Fujitsu Pathway, Internal Audit	Pathway IA
Fujitsu Pathway, System Support Centre	Pathway SSC
Fujitsu Pathway, Other	Pathway Other
Other 3rd Parties (e.g. police)	Other 3rd Party

6.1   Audit Record Query

The following paragraphs present an overview of each step in the extraction process and are ordered to reflect the actual processing of an ARQ.

All POLIA requests for audit data are made via the standard Audit Record Query form, generally sent via e-mail. Details of outlet, Branch Code and timeframes are required in order to fulfil the request. In addition to this, specific requirements may be requested.

Contractual limits and turnaround times for the provision of Audit Record Queries are detailed in the document SVM/SDM/SD/0017.

Internal requests for data extraction will be in the form of a Peak on the CS Security stack.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 12 of 72

6.1.1 Marking Files

The audit data files required to satisfy the audit data request are marked for retrieval.

6.1.2 Audit File Retriever

Retriever copies the requested files from the Eternus buffers and makes them available to the Sealer for seal verification.

6.1.3 Audit Data Check Seal

To assure the integrity of the audit data while on the audit archive, the checksum seal for the file is re-calculated by the audit file sealer and compared to the value calculated when the file was originally written to the audit archive. The result is maintained in a check seal table.

6.1.4 Audit Extractor Client (AEClient)

This is a facility that uses various tools to extract or reform the retrieved audit data in accordance with the ARQ for despatch to the ARQ originator.

7 Logging on to the Audit Workstation

There are Audit Workstations located at both the Bracknell and Lewes Fujitsu offices. These machines are not connected to the Fujitsu network but have direct lines to the IRE11 and IRE19 Audit Servers.

The Audit workstation implements the HDCR Windows 10 Secure Workstation build. Restricted access to workstation functionality will be implemented based upon the MSAD group to which the user belongs.

Two groups exist for Audit Workstation access:

1. Audit Users

   The standard user account. Members of this group will be able to perform extraction and analysis of data held on the Audit system.

2. Audit Admin

   Grants access, from the Audit workstation, to the operational area of the Audit servers to allow investigative and maintenance tasks to be performed.

Access to the Audit workstation is via two-factor authentication: the user requires an IKey security token and a PIN number. The user inserts their IKey token into a USB port on the audit workstation and is then presented with a screen on which to enter their PIN number.

8 Using the Audit Extraction Client application

8.1 About the Application

The Audit Extraction Client application implements a multiple document interface allowing access to multiple ARQs across all servers simultaneously.

The concept of WIGAN and BOOTLE servers has been retained. The IRE11 data centre is equivalent to BOOTLE and the IRE19 data centre is equivalent to WIGAN.
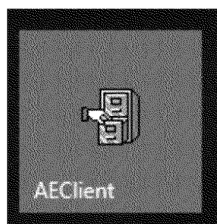
8.2 Starting the Application

Initially the application can be accessed by double clicking on the file C:\Program Files (x86)\AuditExtractorClient\AEClient.exe.

However it is recommended, to speed access in the future, the user right clicks on the file and selects either "Pin to Start" or "Pin to startbar".

8.2.1 Pin to Start

To start the client in future click the "Start Button" (or press the Windows Key), scroll down and select the Audit Client –
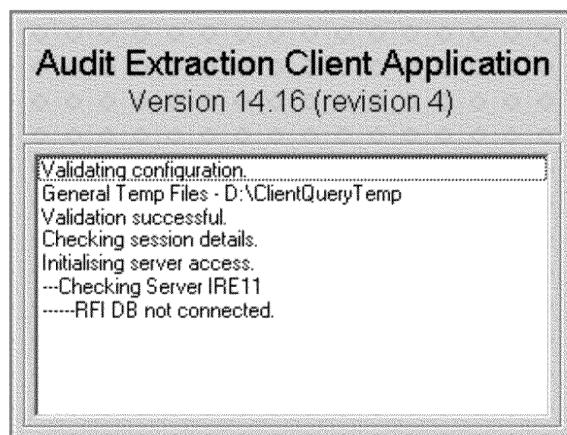

8.2.2 Pin to startbar

To start the client in future click on the AEClient icon at the bottom of the screen -

8.3 Validating the environment

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 14 of 72

Figure 2 - Audit Extractor Client Splash Screen

Once started the application performs a number of checks to ensure that the environment has a valid configuration, and that at least one Audit server is accessible.

During the check the Audit Extraction Client splash screen (Figure 2) is displayed.
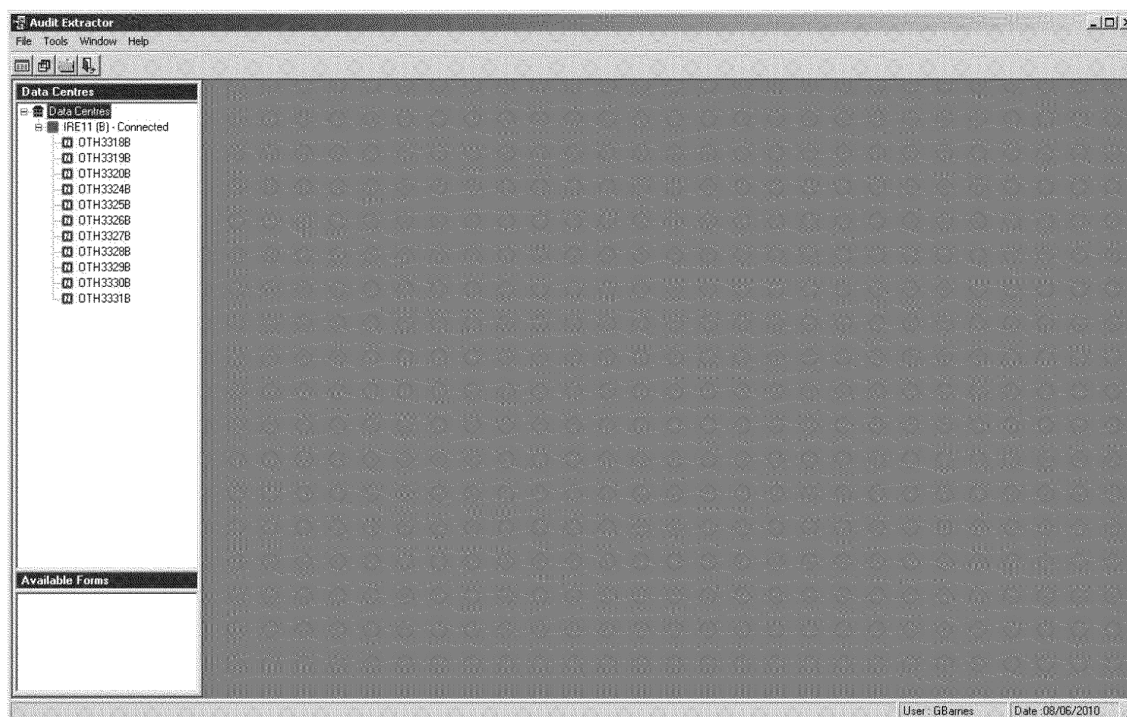
In the event of a configuration error being detected, or no Audit servers being accessible, an appropriate message is displayed to the user and execution terminated. If this occurs, Audit support should be contacted.

Upon successful completion of the validation, the splash screen will briefly show a list of connected Audit servers before displaying the main Audit Extraction Client form.

8.4 The Main Form

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 15 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

Figure 3 - Audit Extractor Client Main Multiple Document Interface form

The main form (figure 3) allows access to all of the Audit Extraction Client features, encapsulating ARQ management, data retrieval and data extraction.

The form is a multiple document interface which allows multiple ARQs to be open simultaneously.
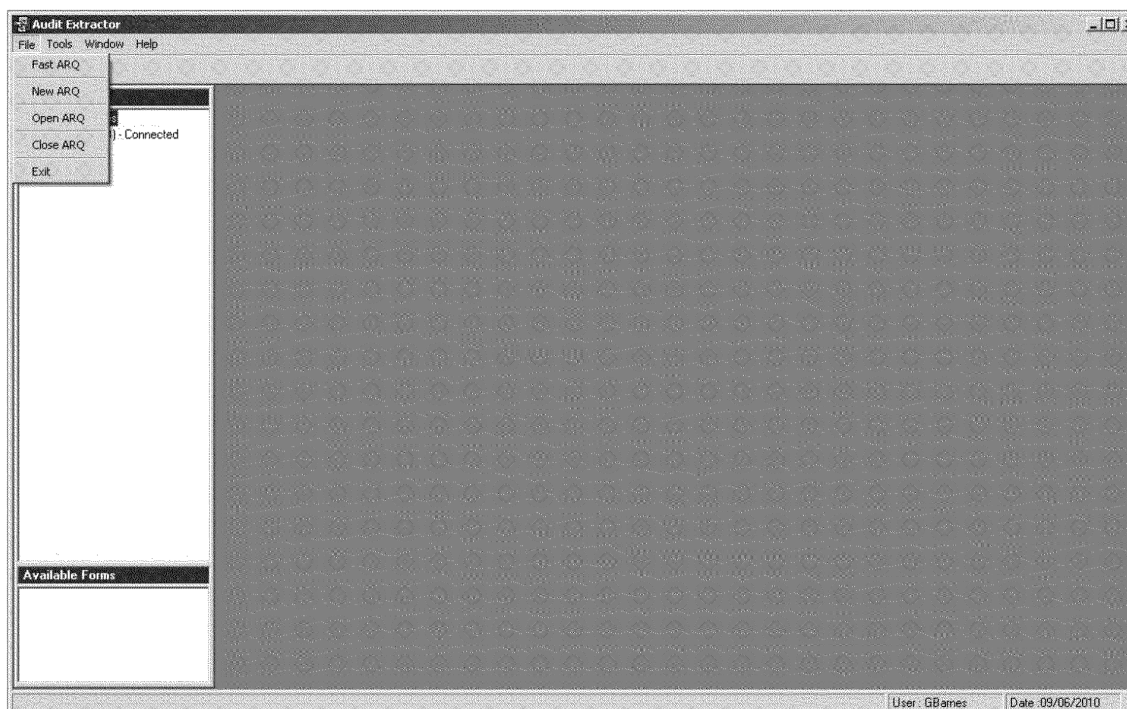
8.4.1   Menus

8.4.1.1   File

FUJITSU

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST OFFICE™

Figure 4 - Audit Extractor Client Main form showing File menu

The File menu has five sub-menu items:

Fast ARQ

Displays the Fast ARQ form. When selecting this option the user will be required to supply the data centre at which the ARQ should be created.

New ARQ

Displays the New ARQ form. When selecting this option the user will be required to supply the data centre at which the ARQ should be created.

Open ARQ

Displays the Open ARQ form. When selecting this option the user will be required to supply the data centre at which the ARQ to be opened was created.

Close ARQ

Displays the Close ARQ form. When selecting this option the user will be required to supply the data centre at which the ARQ to be closed was created.
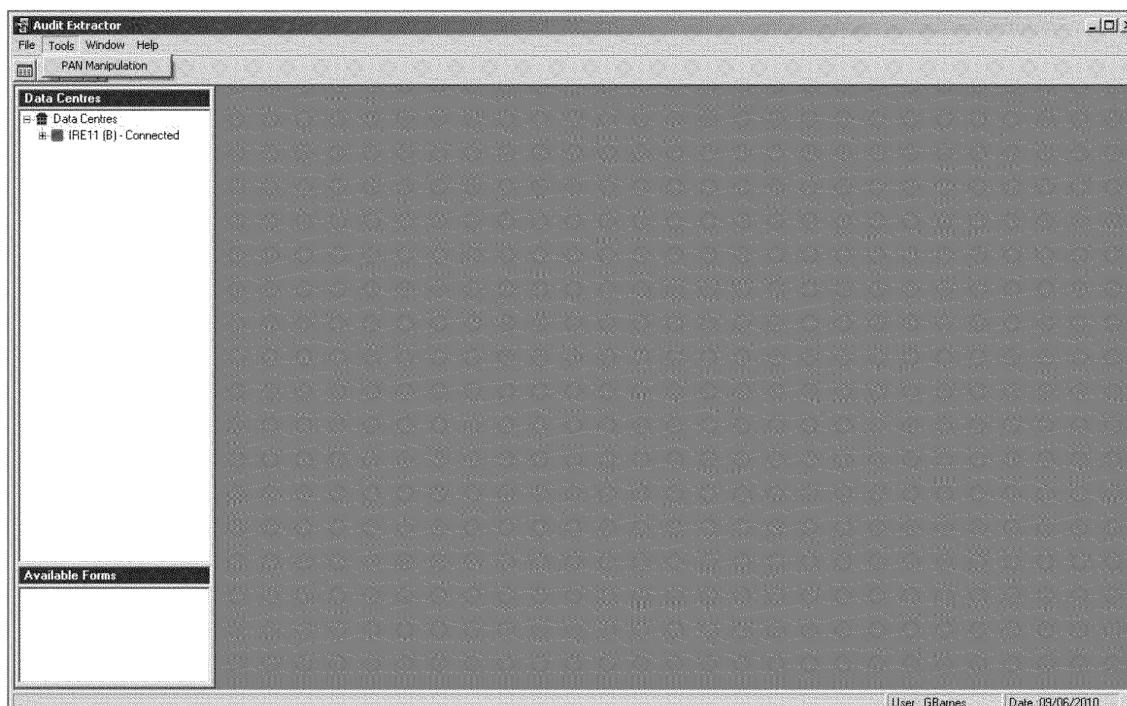
Exit

Closes the application.

8.4.1.2 Tools

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 17 of 72

Figure 5 - Audit Extractor Client Main form showing Tools menu

The Tools menu has one sub-menu item called PAN Manipulation that displays the PAN Management dialogue.
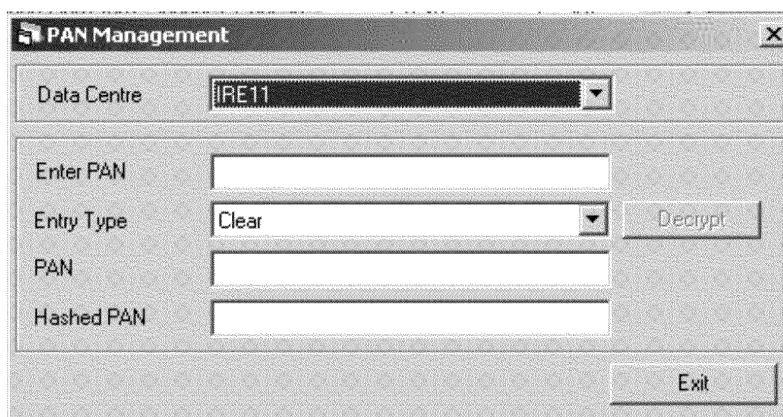
Figure 6 - PAN Management Dialogue

The PAN Management dialogue allows the user to enter a PAN in clear, encrypted or hashed form and generate other forms of the PAN value.

The output generated for each entry type is shown in the table below:

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 18 of 72

Entry Type	Output
Clear	Clear and Hashed
Hashed	Hashed
Encrypted	Clear and Hashed

It should be noted that for Audit purposes there is no requirement to encrypt clear PANs.

Actions performed via this dialogue are recorded for internal audit purposes (see DEV/APP/SPG/0016 – Audit Extraction Client Support Guide for details).
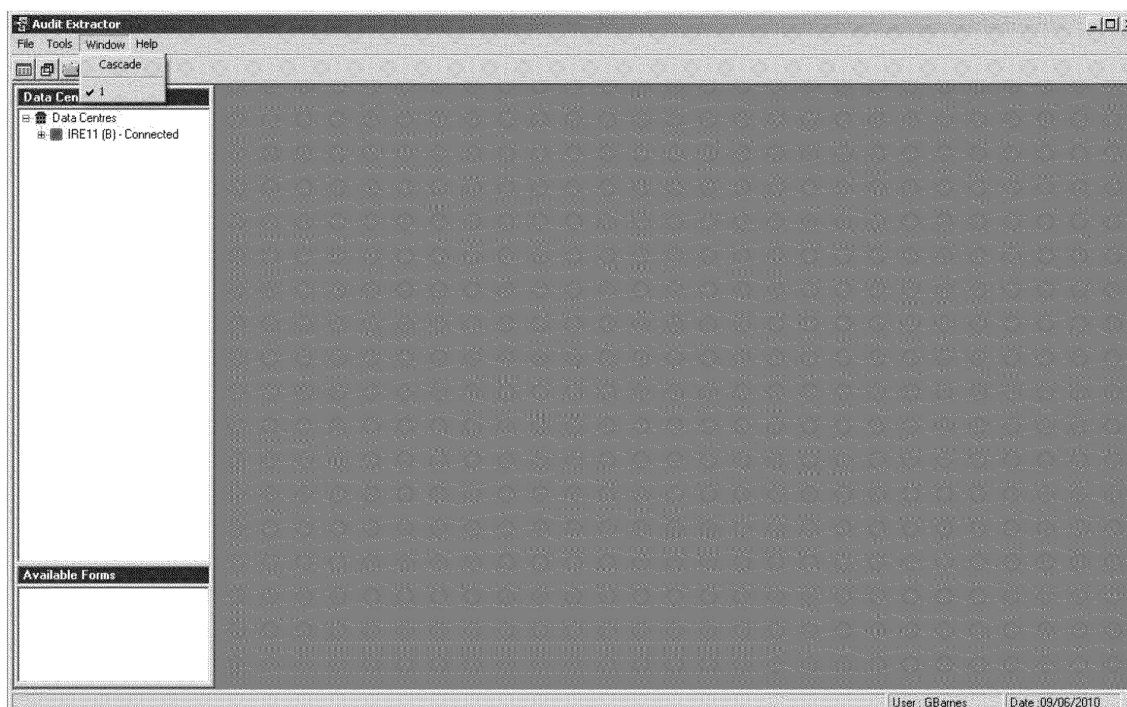
8.4.1.3   Window

Figure 7 - Audit Extractor Client Main form showing Window menu

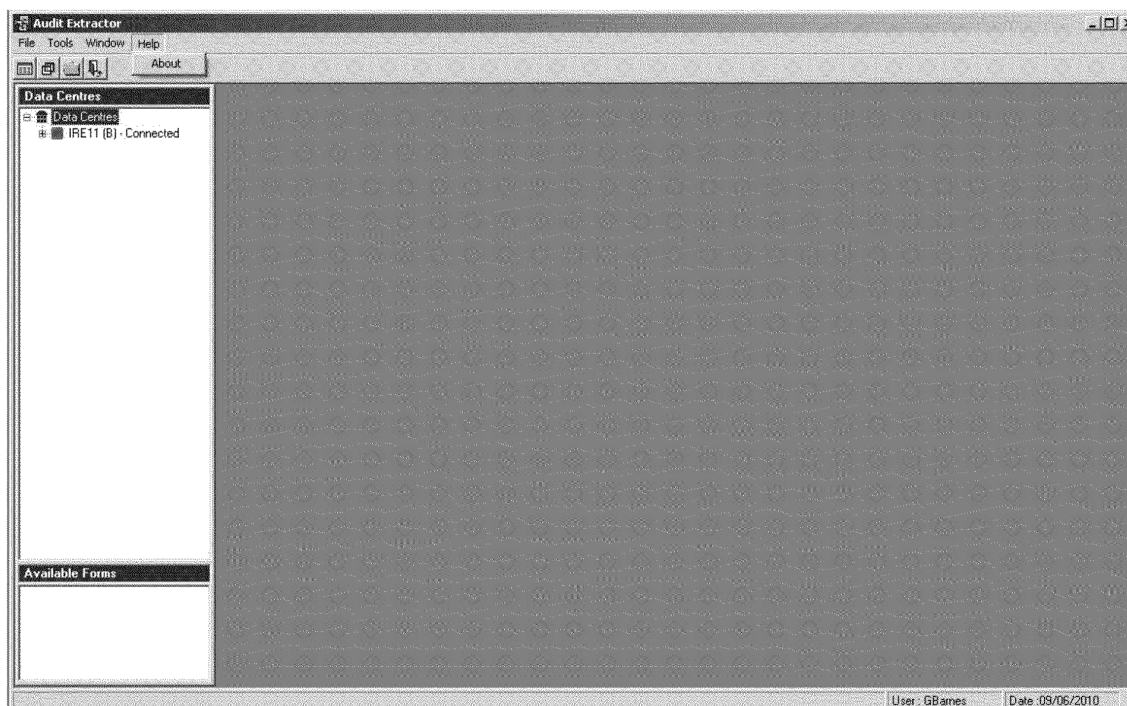The Window menu has one sub-menu item:

Cascade

Allows open forms within the MDI form to be arranged as cascaded windows.

8.4.1.4   Help

© Copyright Fujitsu Services
Limited 2009-2017

**FUJITSU RESTRICTED (COMMERCIAL IN
CONFIDENCE)**
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 19 of 72

Figure 8 - Audit Extractor Client Main form showing Help menu

The Help menu has one sub-menu item called About that displays a message box showing the version number of the AE client application.
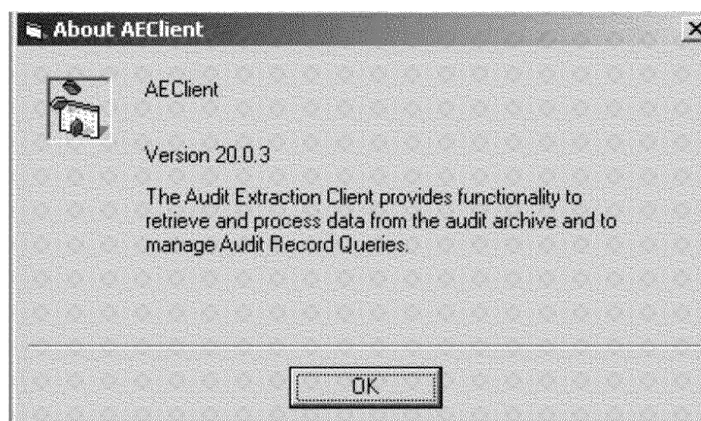
Figure 9 – About message box

8.4.2   Toolbar

The toolbar provides buttons for the following operations:

Audit Extraction Client User Manual

FUJITSU

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

- Create a new 'fast' ARQ

- Create a new 'slow' ARQ

- Open an ARQ

- Close an ARQ

8.4.3　Data Centres Panel

The Data Centres panel (see Figure 3) is tied to the left side of the screen and consists of two parts:

1. The Data Centres section in the top part of the panel displays the status of all configured data centres and lists active ARQs under the data centre at which they were created.

2. The Available Forms section in the lower part of the panel displays icons representing any open forms that have been minimised.

The relative sizes of the two sections can be changed by clicking on the top edge of the Available Forms 'title bar' and dragging it with the mouse.

The Data Centres section provides access to a number of functions, as well as providing a graphical indication of system and ARQ status.

Clicking on an icon in the Available Forms section restores the form to its original size.

8.4.3.1　System Status

The Audit Extractor Client periodically checks whether a connection can be made to each of the configured data centres. The results are indicated by the icon displayed to the left of the data centre name and by descriptive text following the name.

A data centre is considered to be connected if both the RFISQL and SEALERSQL databases can be accessed.

Icon	Status	Meaning
▪	Connected	The data centre is accessible and useable
▫	Not Connected	One or both of the RFISQL and SEALERSQL databases are inaccessible. No ARQ actions are possible.

8.4.3.2　ARQ Status

The ARQ Status, as indicated by the icon to the left of the ARQ, has one of the following values:

Icon	Status	Meaning
N	Normal	The ARQ is available.
O	Open	The ARQ is open in the current user session
L	Locked	The ARQ is locked by another user or at a different work station. The ARQ cannot be opened by the current user while in this state.
!	Attention	The ARQ has been opened by the current user, at the current work station but under a different session. The ARQ must be reset using the AEAdmin tool.

8.4.3.3　Functional Access From Data Centres Window

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref:　　　DEV/GEN/MAN/0015
Version:　9.0
Date:　　21 May 2018
Page No:　21 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

Quick access to the Fast, New, Open and Close ARQ forms is gained by right clicking on the required data centre. When these forms are accessed via this route the target data centre is automatically completed and does not show on the forms.

Where active ARQs are displayed, right clicking on the ARQ will display a drop down menu with the following options:

Open - For a 'slow' ARQ, opens the selected ARQ at the current stage.

For a 'fast' ARQ, opens the selected ARQ in the Fast ARQ form.

Status - Displays the ARQ Status form.

Close - Displays the Close ARQ form populated with the selected ARQ details.

Double clicking on an active ARQ will open a 'slow' ARQ at the current stage or a 'fast' ARQ in the Fast ARQ form.

When a 'fast' ARQ is re-opened, all the fields of the Fast ARQ form are read only. No further updates can be made to the ARQ.

8.5 'Slow' ARQ Forms

8.5.1 Creating a New ARQ

Figure 10 - New ARQ form

This option is used to setup an audit trail for a request and to specify the search criteria identified from the ARQ form.

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

The New ARQ form can be displayed in three ways:

1. Select 'New ARQ' from the File menu.

   When opened from the File menu, the New ARQ form will be displayed as in Figure 10. The Data Centre frame at the top of the form allows the selection of the data centre in which the new ARQ is to be created.

2. Click the 'New ARQ' button in the toolbar.

   When opened from the toolbar, the New ARQ form will be displayed as in Figure 10. The Data Centre frame at the top of the form allows the selection of the data centre in which the new ARQ is to be created.

3. Right click on the required data centre and select 'New ARQ' from the drop down menu.

   When opened by right clicking a data centre, the Data Centre frame is not shown in the form as the data centre will automatically be set to the one which was clicked. The title bar of the form shows the name of the selected data centre.

Field	Input Value	Mandatory?
Data Centre (if displayed)	The data centre at which the ARQ is to be created.	Mandatory
Requester	Select From: Other 3rd party Pathway IA Pathway Other Pathway SSC POCL IA POCL Other POCL Security	Mandatory
Date Received	The date the request was received.	Mandatory
Date Required	The date the request is to be returned.	Mandatory
Catalogue Entry	Is left blank.	Not used
Receipt Reference	ARQ Number, taken from the ARQ form.	Mandatory
Access Reason	Reason for request.	Optional

Once the mandatory data has been entered one of the following actions may be performed:

Specify Selection Criteria

Saves the ARQ details to the RFI database, creates the ARQ directory structure in F:\UserArea on the selected Audit Server and displays the Specify Selection Criteria form (see section 8.5.3).
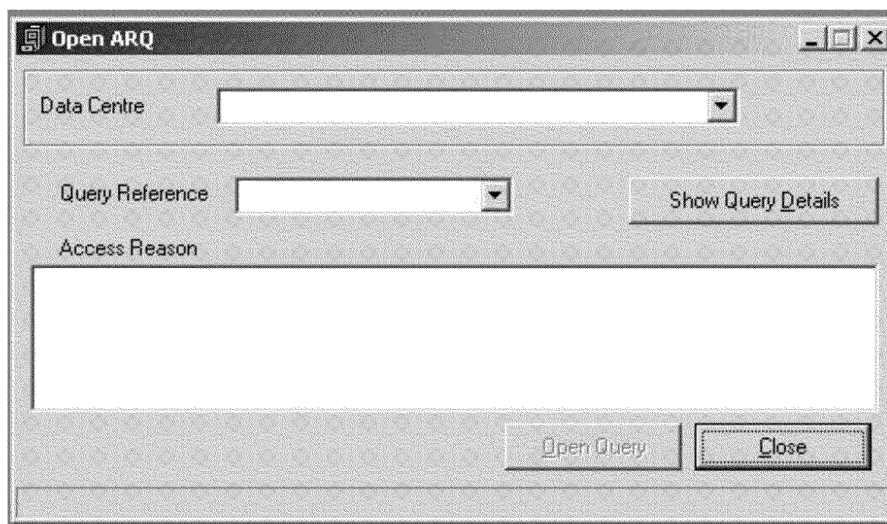
Save Request

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 23 of 72

Saves the ARQ details to the RFI database and creates the ARQ directory structure in
F:\UserArea on the selected Audit Server.

(F:\UserArea is a folder of the Audit Server that contains a sub-directory for each ARQ.)

The newly created ARQ will be displayed underneath the appropriate data centre in the Data Centres
window.

8.5.2   Opening an Existing ARQ

Figure 11 - Open ARQ form

An active ARQ may be opened in five ways:

1. Select 'Open ARQ' from the File menu.

    When opened from the File menu, the Open ARQ form will be displayed as in Figure 11. The
    Data Centre frame at the top of the form allows the selection of the data centre from which the
    ARQ is to be opened.

2. Click the 'Open ARQ' button in the toolbar.

    When opened from the toolbar, the Open ARQ form will be displayed as in Figure 11. The Data
    Centre frame at the top of the form allows the selection of the data centre from which the ARQ is
    to be opened.

3. Right click on the required data centre and select 'Open ARQ' from the drop down menu.

    When opened by right clicking a data centre, the Data Centre frame is not shown in the form as
    the data centre will automatically be set to the one which was clicked.

4. Right click on a specific ARQ in the Data Centres window and select Open from the drop down
    menu.

© Copyright Fujitsu Services
Limited 2009-2017

**FUJITSU RESTRICTED (COMMERCIAL IN
CONFIDENCE)**
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 24 of 72

Right clicking on a specific ARQ will result in either the *Specify Selection Criteria* or *Maintain ARQ* forms being displayed, depending on the status of the selected ARQ.

5. Double click on the ARQ in the Data Centres window.

Double clicking on a specific ARQ will result in either the *Specify Selection Criteria* or *Maintain ARQ* forms being displayed, depending on the status of the selected ARQ.

Field	Input Value
Data Centre (if displayed)	The data centre at which the ARQ is to be opened - selected from drop down list.
Query Reference	The ARQ to be opened - selected from drop down list of query references.
Access Reason	Access reason as entered when ARQ was created. This is a read-only field.

Once the data centre and query reference have been selected, one of the following actions may be performed:

Show Query Details

Displays a form showing details of the selected query (see section 8.5.2.1).

Open Query

Opens the ARQ at its current stage.

Clicking the **Close** button will close the Open ARQ form.

8.5.2.1   Showing Query Details

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
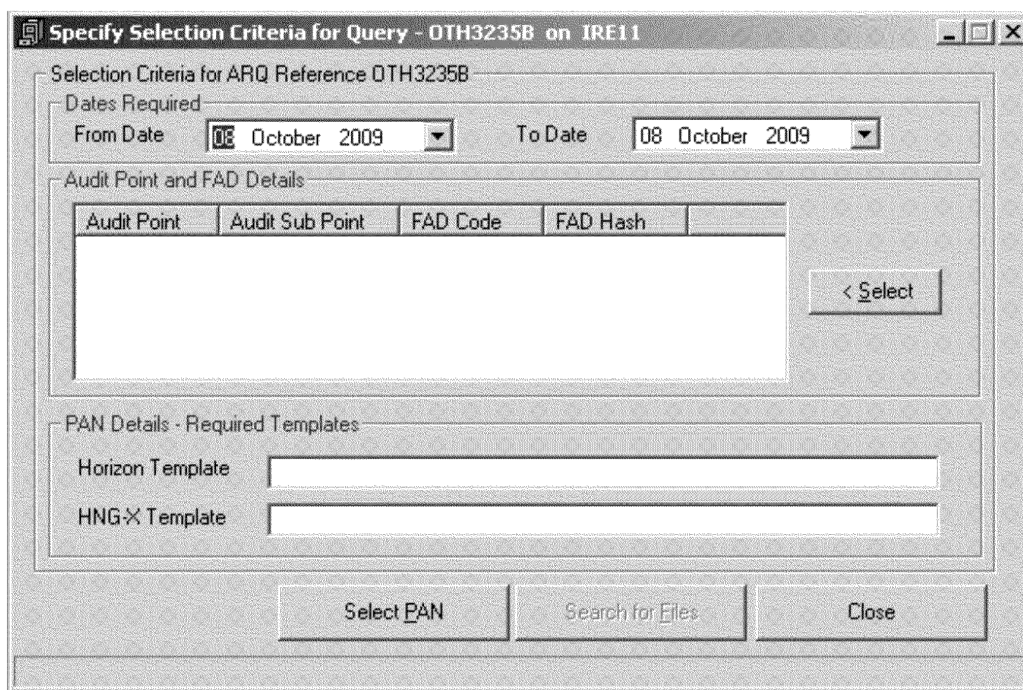Date: 21 May 2018
Page No: 25 of 72

Figure 12 – Details of Current Query form

This form is displayed when the 'Show Query Details' button is clicked on the Open ARQ or Close ARQ forms.

It shows details of the selected request. Some of the fields may be empty, depending on the current stage of the request.

All of the fields are read-only.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	26 of 72

8.5.3   Specifying Selection Criteria for Retrieval

Figure 13 - Specify Selection Criteria form

This form provides the central point for specifying the Audit Files for retrieval.

The form may be closed (without closing the ARQ) by selecting the Close button. Provided no audit points or templates have been selected, the form is closed and the ARQ remains at its current stage. If any audit points or templates have been selected, a dialogue box is displayed asking the user to confirm that the selections are to be discarded (see figure 14).
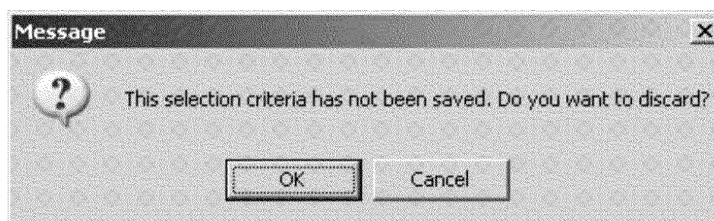

Figure 14 – Discard Selection dialogue

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 27 of 72

If the user clicks 'OK', the dialogue box and Specify Selection Criteria for Query form will be closed and the ARQ remains at its current stage. Upon re-opening, the ARQ will resume with the Specify Selection Criteria for Query form.

If the user clicks 'Cancel', the dialogue box is closed but the Specify Selection Criteria for Query form remains open.

All retrievals must include the 'From Date' and 'To Date' and either an Audit Point or a template or both.

From Date	- The earliest date for which Audit Files are to be retrieved
To Date	- The last date for which Audit Files are to be retrieved
Audit Point	- Audit Point to which the selected Audit Sub Point belongs
Audit Sub Point	- Audit Sub Point from which Audit Files should be retrieved
Horizon Template	- Template for matching Horizon Audit File names
HNG-X Template	- Template for matching HNG-X Audit File names

From and To Dates are selected by clicking on drop-down arrows adjacent to the date fields and selecting the required date.

When extracting HNG-X transaction data, the 'From Date' should be set to at least the day before the date for which the extract is required. This is because it is necessary to capture the logon messages for the counter session of interest in the retrieved Audit Files. The logon messages contain cryptographic keys that are used to digitally sign the counter messages and failure to capture these logon messages in the extract may result in cryptographic errors during filtering.

Since a counter session can span more than one day, setting the 'From Date' to a date earlier than the first date for which the extract is required improves the chances of the session logon messages being included in the retrieved files.

The 'To Date' is usually set to two days after the last date specified on the ARQ. An Audit File may not be gathered until one or two days after it was created so adding extra days to the 'To Date' helps to ensure that all the required Audit Files are retrieved.

Audit Points and Audit Sub Points or FAD codes are selected by clicking on the '<Select' button which will display the Update Audit Points form (see section 8.5.3.1)

NBX Query details and template formats may be specified by clicking on the Select PAN button (see section 8.5.3.2). If template formats are specified, only those Audit Files whose filenames match the specified templates will be retrieved. That is, if both Horizon and HNG-X templates have been specified, Audit Files whose names match either of those templates will be retrieved.

Once all of the required extraction criteria have been specified, the user can click the "Search for Files" button to produce a list of Audit Files that match the selection criteria. The Maintain ARQ form will then be displayed (see section 8.5.4.1) showing the list of selected files.

8.5.3.1   Selecting the Audit Point/Audit Sub Point

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 28 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

Figure 15 - Update Audit Points or FAD Code

This form allows for the selection of Audit Point and Audit Sub Point pairs, or for the identification of the required Audit Point and Sub Point based upon the Post Office FAD Code.

To select an Audit Point/Sub Point directly:

Select the required Audit Point from the Audit Point drop down list.

Optionally, select the required Audit Sub Point from the Sub Point drop down list.

Click on the 'Add' button.

If no Audit Sub Points are explicitly selected, all Audit Sub Points for the selected Audit Point will be added.

To select an Audit Point/Audit Sub Point based upon the Post Office FAD Code:

Enter the FAD Code in the Post Office FAD Code box.

Click on the 'Add' button.

The extract date range will be used to identify all active transaction data Sub Points for the specified FAD Code.

If the 'Include Events' checkbox is checked, a dialogue is shown advising the user that Event Audit Points and Sub Points will be added to the list of selected audit points (see figure 16).

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
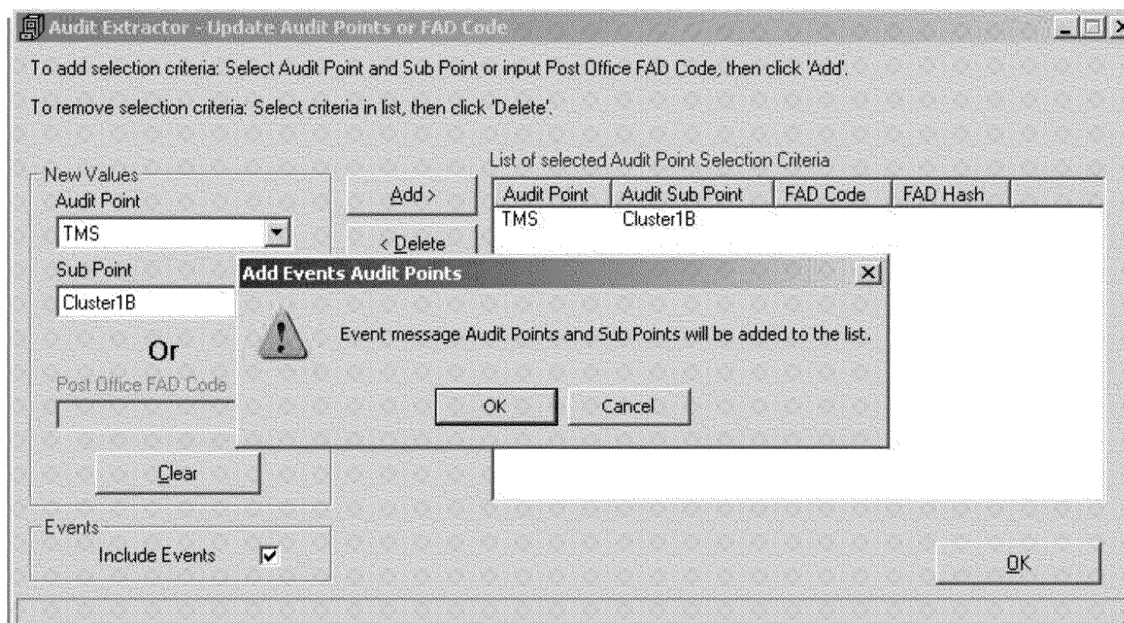
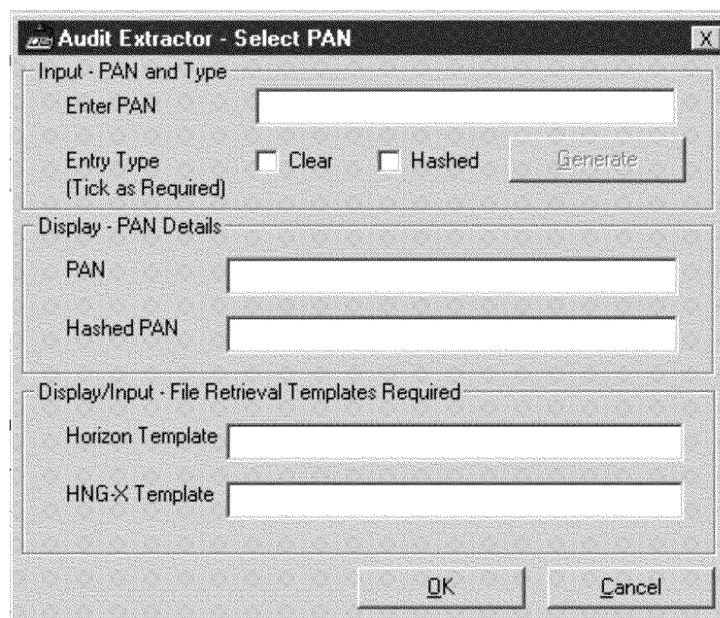**Figure 16 – Add Events Audit Points message box**

If the user clicks 'OK' the list of Audit Points/Sub Points will be updated with the Events Audit Points/Sub Points applicable to the selected TMS or BRDB audit points.

Audit Points/Sub Points can be removed from the list of selected audit points by highlighting the entries in the list and clicking the 'Delete' button. The Events Audit Points/Sub Points can be removed by unchecking the 'Include Events' checkbox.

Once all of the required Audit Point/Audit Sub Points have been selected, the user can click on the 'OK' button to return to the Specify Selection Criteria form.

8.5.3.2 Select PAN

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	30 of 72

Audit Extraction Client User Manual

FUJITSU

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST
OFFICE ™

Figure 17 - Select PAN form

This form allows the specification of Audit File selection criteria in the form of two templates which will be applied to Horizon and HNG-X Audit File names respectively.

The user:

1. Enters either a clear or hashed PAN in the 'Enter PAN' box.

2. Selects the type of PAN entered using the 'Entry Type' checkboxes.

3. Clicks the 'Generate' button.

If a clear PAN was entered, the 'PAN', 'Hashed PAN', 'Horizon Template' and 'HNG-X Template' fields will be populated.

If a hashed PAN was entered, only the 'Hashed PAN' and 'HNG-X Template' fields will be populated.

The user then clicks the 'OK' button to accept and use the generated templates.

Actions performed via this dialogue are recorded for internal audit purposes (see DEV/APP/SPG/0016 – Audit Extraction Client Support Guide for details).

8.5.4   Maintain ARQ

This form allows the management of an ARQ once the initial extract details have been specified.

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

The form provides the following views:

ARQ Details

Overview of actions performed on the ARQ.

Retrieval Criteria

Retrieval Criteria applied for Audit File extraction.

Audit Files

Audit Files currently selected for extraction and extraction status.

Filtering

Specifies filtering of Audit File contents.

Validation and Query

Results of filtered data validation and application of query.

Presentation

Export results to Excel files.

It should be noted that the available views will depend upon the type of data being extracted and the current stage of the analysis. Initially only the ARQ Details, Retrieval Criteria and Audit Files tabs will be available.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 32 of 72

8.5.4.1   ARQ Details

Figure 18 - Maintain ARQ form - ARQ Details tab

This view is for information only.

It displays the actions that have been performed on the ARQ to date.

Clicking on the 'View Actions' button displays the list in a separate form.

The 'Extract Status' and 'Abstraction Status' values are described in DEV/APP/LLD/0071 – Audit Data Retrieval Low Level Design.

© Copyright Fujitsu Services
Limited 2009-2017

**FUJITSU RESTRICTED (COMMERCIAL IN
CONFIDENCE)**
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 33 of 72

8.5.4.2   Retrieval Criteria

Figure 19- Maintain ARQ form - Retrieval Criteria tab

This tab provides a view of the currently applied Audit File selection criteria, and a description of any limitations the selection will place upon additional filtering.

The 'Select' button is greyed out as this is a read-only view. In order to amend the selection criteria, the user must click the 'AMEND Criteria' button which will cause the 'Specify Selection Criteria for Query' form to be displayed (see section 8.5.3). Note that the Date range selection criteria can not be amended if a Post Office FAD code was used in the original selection criteria.

A short description of the data which will be retrieved is shown to the left of the Amend Criteria button. This indicates the type of filtering (and subsequent analysis) that will be available using the current retrieval criteria.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

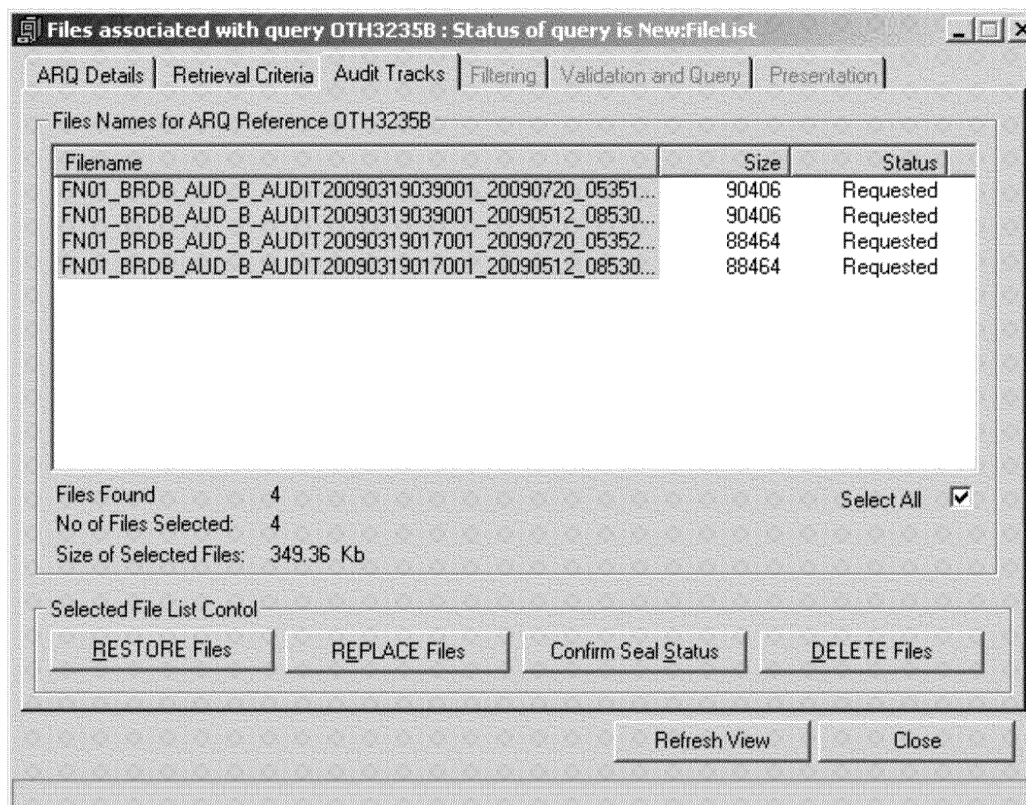|	
Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	34 of 72

8.5.4.3 Audit Files

Figure 20 - Maintain ARQ form – Audit Tracks tab

This view displays the currently selected list of Audit Files and their statuses.

The user can select some or all of the Audit Files in the file list and then perform the following actions:

Restore Files

This action restores all of the currently highlighted Audit Files from the Eternus to the Audit server.

Replace Files

This action updates the file list, retaining only the highlighted files.

Confirm Seal Status

This action performs a seal check for the highlighted Audit Files. It should be noted that seal checking is performed automatically when Audit Files are retrieved.

© Copyright Fujitsu Services
Limited 2009-2017

**FUJITSU RESTRICTED (COMMERCIAL IN
CONFIDENCE)**

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 35 of 72

Delete Files

This action removes the highlighted files from the file list.

All Audit Files remaining in the list must be successfully retrieved and seal checked in order to progress the ARQ through to filtering and to ensure that the final report on the ARQ contains only those Audit Files that were used in the analysis.

8.5.4.4   Filtering

The Filtering tab is enabled once all the selected Audit Files have been retrieved.

Filtering can be applied to all Audit data irrespective of the source. For example, if an ARQ results in both Horizon and HNG-X data being returned, applying the filter will result in both data sets being filtered.

Two types of filtering are available:

1. By date and FAD code.

   This type of filtering is applied when the retrieved Audit Files contain exclusively message-based data. This can be either Horizon (TMS) or HNG-X (BRDB) data.

   If any of the Audit Files to be filtered contain non-message data, this type of filtering is not available.

2. By free-format string.

   This type of filtering is applied when the retrieved Audit Files contain non-message data or a mixture of message and non-message data.

   If the Audit Files contain exclusively message-based data, this type of filtering is not available.

The type of filtering that is available will depend upon the sources of the Audit File data. As the Audit File data type is related to the Audit Sub Point under which the data was gathered, an indication of which filtering type will be used is displayed on the Retrieval Criteria tab when the Audit Point selection criteria are specified.

When applying a free-format string filter, the output type can be specified as 'FILE' or 'ABSTRACT'.

Filtering with an output type of 'FILE' will result in the complete file (including non-matching items) being included in the output if the file contains any item matching the specified filter.

When 'ABSTRACT' is specified as the output type, only those items matching the filter criteria will be included in the output.

Message data filtered by date and FAD code will always be abstracted.

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

8.5.4.4.1 Filtering of Message-based Data

Figure 21 - Maintain ARQ form – Filtering tab (Message based)

This type of filtering is applied to exclusively message-based data (either TMS or BRDB) and is only available when all Audit Sub Points selected on the Retrieval Criteria tab contain only message data.

Filtering based upon message date and FAD code is possible.

The FAD code to be included in the filter must be added to the FAD list using the 'Add' Button. Only one FAD code can be added at this release.

Once the date range and FAD list have been completed the filter can be saved and applied.

Note that if Post Office FAD codes were specified in the original selection criteria, the FAD List is populated with these values and they can not be removed. In this situation there is no point in adding further FAD codes as it is unlikely that the relevant data would have been retrieved.

Figure 22 - Maintain ARQ form – Showing View Abstraction Errors button

If any errors occur during the application of the filter an appropriate message will be displayed in the status bar of the Filtering tab and the 'View Abstraction Errors' button will appear (see figure 22).
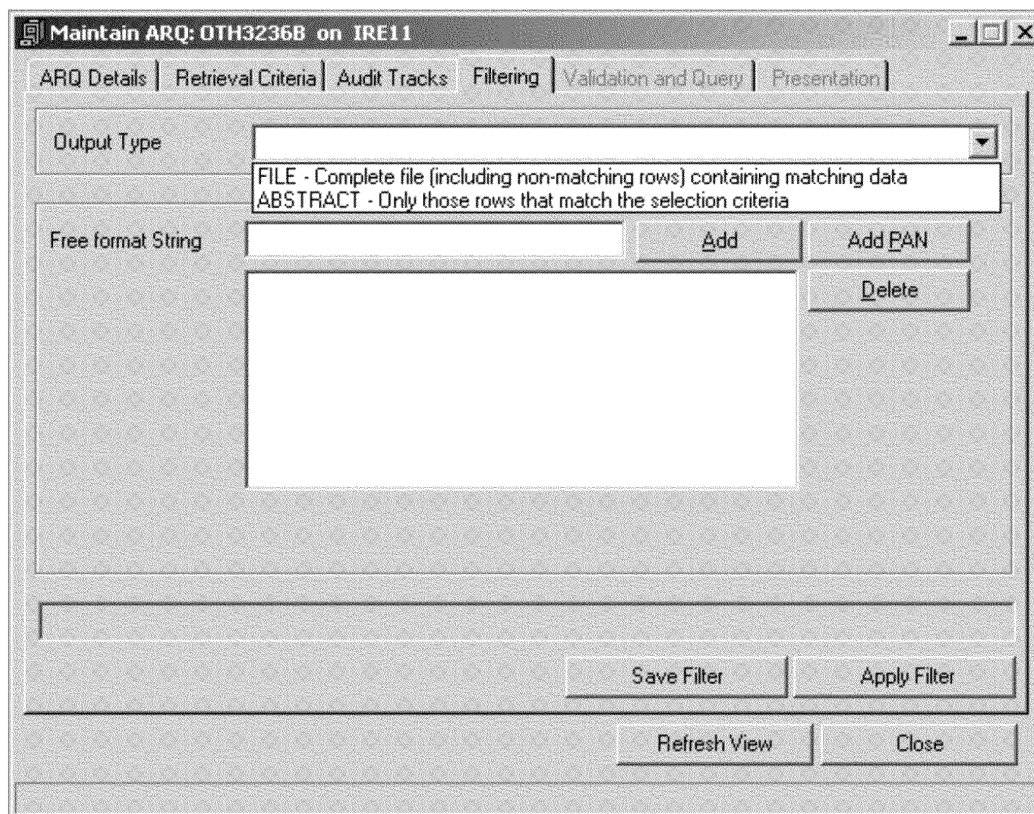
© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 38 of 72

Figure 23 – Abstraction Errors form

If the 'View Abstraction Errors' button is clicked, the Abstraction Errors form (figure 23) will be displayed showing details of the errors.

8.5.4.4.2 Filtering of Text-based Data

Figure 24 - Maintain ARQ form – Filtering tab (Text based)

Text data filtering will be used where the Audit Sub Points specified on the Retrieval Criteria tab contain either non-message data or a mixture of message and non-message data.

Free format text strings are added to the filter list using the 'Add' button, and may be removed by highlighting the required item and clicking on the 'Delete' button.

PAN values in clear, encrypted and hashed form may be derived from the PAN Generation dialogue (see section 8.5.4.4.3) which is accessed via the 'Add PAN' button.

Once all the filter criteria have been specified, the filter can be saved by clicking on the 'Save Filter' button and applied by clicking on the 'Apply Filter' button.

When more than one string or PAN has been specified, a match is found if an item contains any one of the specified string or PAN values i.e. the values are 'OR'ed together for the search.

NOTE: String searches are case sensitive.

8.5.4.4.3 PAN Generation Dialogue

© Copyright Fujitsu Services
Limited 2009-2017

**FUJITSU RESTRICTED (COMMERCIAL IN
CONFIDENCE)**
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 40 of 72

Figure 25 - Maintain ARQ - Text Based filtering - PAN Dialogue

The PAN Generation Dialogue allows for the generation of the following PAN combinations:

PAN Input Type	Output PAN Type
Clear	Hashed
Encrypted	Clear and Hashed

If the only PAN type available is hashed, no conversion is possible.

It is not possible to generate an encrypted PAN.

Actions performed via this dialogue are recorded for internal audit purposes (see DEV/APP/SPG/0016 – Audit Extraction Client Support Guide for details).

8.5.4.5 Validation and Query

This tab will only be available if the following conditions have been met:

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 41 of 72

1. The retrieved data consists exclusively of TMS and/or BRDB messages.

2. Filtering has been performed.

Horizon and HNG-X transaction data have different formats. In addition, message sequences across the transition from Horizon to HNG-X will be non-contiguous. For these reasons, the validation, querying and presentation steps must be applied separately for the two data sources.

The data source is selected on the Validation and Query tab and, once selected, activates the Sequence Validation, Select Query and Execute Query sub-tabs.

Selecting the data source will also cause the message sequence and sequence gap information to be displayed on the Sequence Validation sub-tab.

8.5.4.5.1 Sequence Validation

Files associated with query OTH3479B : Status of query is New:FileList

ARQ Details | Retrieval Criteria | Audit Tracks | Filtering | Validation and Query | Presentation

Data Source: Horizon   Status: Concatenation completed

Sequence Validation | Select Query | Execute Query

Node	Lowest Message	Highest Message
342432::1	2708185	2708400
342432::2	1186095	1186102
342432::3	5134232	5134441
342432::4	4938959	4940012
342432::5	4770109	4771449
342432::6	3937287	3938447
342432::32	398506	398540
342432::52	274266	274300
342432::53	225003	225035

GAPS - NONE

DUPLICATES - NONE

Refresh View   Close

Figure 26 - Maintain ARQ form - Validation and Query tab - Sequence Validation

TMS and BRDB messages are numbered in sequence for each node. During filtering any retrieved audit message data is analyzed to determine what message sequences are present in the data and whether there are any gaps or duplicates in those sequences. A gap in a message sequence may indicate that a

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 42 of 72

Audit Extraction Client User Manual

FUJITSU

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST OFFICE

message is missing from the audit data. Duplicates may indicate that an audit file has been gathered twice.

The Sequence Validation sub-tab displays details of the message sequences and highlights any gaps or duplicates found during filtering.

Sequences and sequence gaps are organised on a FAD::Node basis.

When no gaps or duplicates are found, the form will be similar to that shown in Figure 26 with the text 'GAPS – NONE' and 'DUPLICATES – NONE' displayed.

Figure 27 – Maintain ARQ form – Validation and Query – Gaps and Duplicates found

When gaps are found, the gaps are shown in red in the message sequence list and the text 'GAPS FOUND' is displayed, together with the text 'SEEK ASSISTANCE FROM AUDIT SUPPORT'.

When duplicates are found, the duplicates are shown in blue in the message sequence list and the text 'DUPLICATES FOUND' is displayed, together with the text 'SEEK ASSISTANCE FROM AUDIT SUPPORT'.

Figure 27 shows the form when both gaps and duplicates are found.

Audit Extraction Client User Manual

FUJITSU

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

POST OFFICE™

Figure 28 – Maintain ARQ form – Validation and Query – No messages found

In the event that no messages are identified during filtering the only output displayed will be "GAPS - NONE" and "DUPLICATES – NONE" as shown in Figure 28.

8.5.4.5.2 Select Query

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 44 of 72

Figure 29 - Maintain ARQ form - Validation and Query tab - Select Query

The Select Query sub-tab enables the selection of the query to be applied to the selected data source.

If both Horizon and HNG-X data sources exist within the ARQ, each data source will require a query to be selected and progressed independently.

The first time the Select Query sub-tab is accessed for an ARQ data source, no query will be shown.

Subsequent returns to this tab will show the selected query. (The selected query will have been saved in the sub-directory for the ARQ within the F:\USERAREA directory on the archive server. By saving the queries in the ARQ directory we allow for amendments to be made to standard queries which will only affect the current ARQ.)

Standard queries may be retrieved by clicking on the Retrieve button and displaying the Available Queries dialogue.
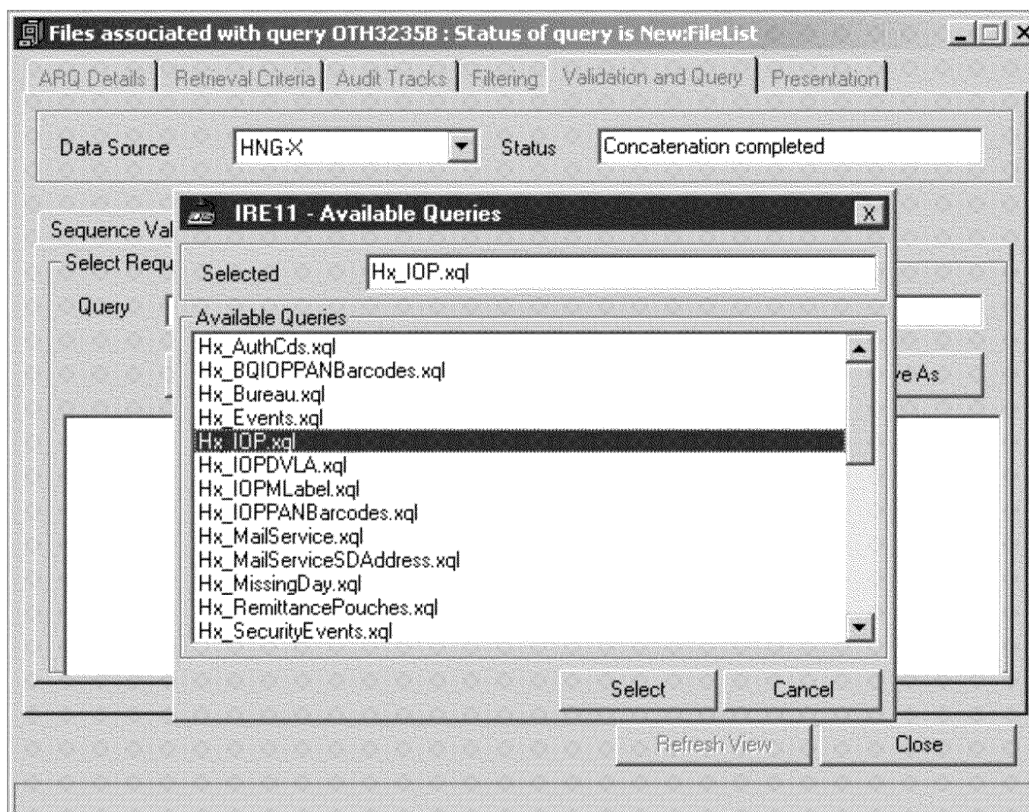
Figure 30 - Maintain ARQ form - Validation and Query tab - Select Query - Available Queries

The Available Queries dialogue (see figure 30) lists all of the queries available at the Audit server to which the ARQ has been directed.

A Query can be selected by clicking on the query in the Available Queries list and, once it is shown as selected, clicking on the Select button.

The Available Queries dialogue will be removed, and the selected queries details used to populate the Query box on the Select Query tab.

At this point, the query has been selected, but has not been assigned to the ARQ data source. This doesn't happen until the Query is executed.

The Open button must be clicked to load the query into the query text box.

If amendments to the standard query are required, double clicking on the query text box will display an editable query dialogue.

Amendments may be saved to the original standard query in the CommonQueries server directory, or to a new Common query by clicking on Save or Save As respectively.

It is important to remember that these two buttons act upon the Common Queries and have no impact upon the ARQ itself.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 46 of 72

Figure 31 - Maintain ARQ form - Validation and Query tab - Select Query (Populated)

The contents of the Query Text box must now be applied to the ARQ data source.

This occurs every time the query is executed, and ensures that the query displayed on screen at the time of query execution matches what is actually applied.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 47 of 72
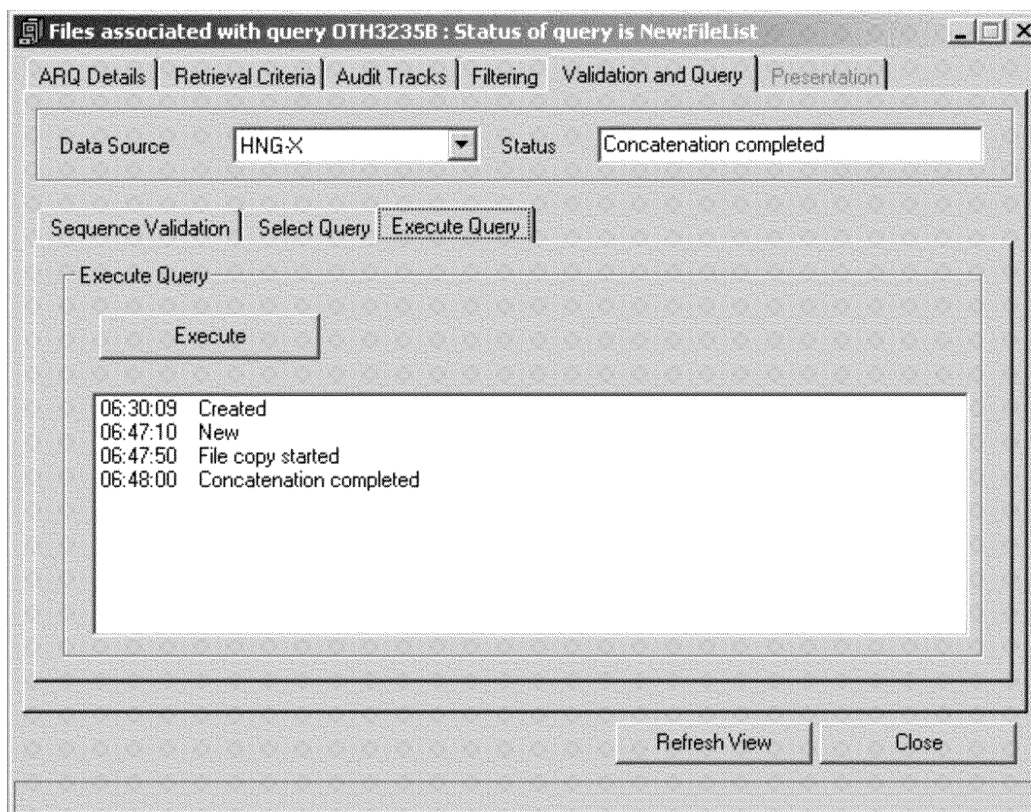
Figure 32 - Maintain ARQ form - Validation and Query tab - Execute Query

Before submitting the query for execution a check is performed against the size of the data file to be queried.

If the file exceeds 200Mb a warning that the file may be too large to query will be displayed. The user may choose to proceed, or cancel the action.

If the option to proceed is selected, and the file subsequently proves too large for querying, it will be necessary to close the ARQ, produce a number of ARQs using smaller date ranges to satisfy the request and separately filter each of the new ARQs.

Progress of query execution at the server is displayed in the Execute Query action list.

If the query results in an output file, the presentation tab will be activated.

(Note there is no check to prevent the user selecting the Execute Query sub-tab and attempting to execute a query before a query has been selected. In this case, a message box is displayed with the message 'Unable to validate as no Query loaded'.)

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 48 of 72

8.5.4.5.3 Predefined Queries

A set of predefined queries will be maintained on both Audit servers. These queries implement the queries that were available under Horizon in the FLoWR query language.

There are two versions of each query file: one for Horizon and one for HNG-X. The file name for the Horizon query begins with the letters 'Hz' and that for the HNG-X query begins with 'Hx'.

H[xz]_AuthCds.xql	Query based upon the IOP query which also shows banking agent response information.
H[xz]_BQIOPPANBarcodes.xql	Query based upon the IOP query which also shows any banking agent C2 messages, PAN and client account references.
H[xz]_Bureau.xql	Query based upon the IOP query which also shows details of Bureau transactions.
H[xz]_Events.xql	Basic events query. Shows all counter events generated at a branch.
H[xz]_Events_Num.xql	As H[xz]_Events.xql but includes the JSN (Num for Riposte) too. Note that Hx_Events_Num.xql was modified for CP 1913 to include a poid column as described in section 8.5.4.5.3.6 "Hx_Events_Num.xql".
H[xz]_IOP.xql	Basic branch transactions query. Shows basic information on transactions recorded at a branch.
H[xz]_IOP_DEST_SRC.xql	As H[xz]_IOP.xql but omits the "reversal" attribute.
H[xz]_IOP_Num.xql	As H[xz]_IOP.xql but includes the JSN (Num for Riposte) too.
H[xz]_IOP_TITO.xql	As H[xz]_IOP.xql but includes transfer in/out information if present.
H[xz]_IOPDVLA.xql	Query based upon the IOP query which also shows even more additional information relating to DVLA transactions than H[xz]_IOPDVLA.xql. It does not restrict those transactions shown to be DVLA related as H[xz]_IOPDVLA.xql does.
H[xz]_IOPDVLAAdditional.xql	Query based upon the IOP query which also shows additional information relating to DVLA transactions.
H[xz]_IOPMLabel.xql	Query based upon the IOP query which also shows additional information relating to Mails labels.
H[xz]_IOPPANBarcodes.xql	Query based upon the IOP query which also shows additional information relating to Pan and client account references. As of release 17.58 this query was enhanced with an additional field – see section 8.5.4.5.3.11 "Hx_IOPPANBarcodes" on page 55 for details.
H[xz]_IOPPouchId.xql	Query based upon the IOP query which also shows the pouchId.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 49 of 72

H[xz]_IOPMailService.xql	Query based upon the IOP query which also shows additional information relating to Mails service transactions.
H[xz]_IOPMailServiceSDAddress.xql	Query based upon the IOP query which also shows additional information relating to the destination address of Mails transactions. As of release 17.58 this query was enhanced with additional fields – see section 8.5.4.5.3.10 "Hx_IOPMailServiceSDAddress" on page 55 for details.
H[xz]_IOPMailServiceSDAddressWithExtraAddresses.xql	Hz_IOPMailServiceSDAddressWithExtraAddresses.xql is identical to Hz_IOPMailServiceSDAddress.xql. Hx_IOPMailServiceSDAddressWithExtraAddresses.xql outputs in its spreadsheet some extra columns over and above Hx_IOPMailServiceSDAddress.sql which are shown in section 8.5.4.5.3.1.
H[xz]_RemittancePouches.xql	Query which shows the barcodes of all remittance pouches delivered to, or collected from a branch.
H[xz]_SecurityEvents.xql	Query based upon the Events query which also shows additional security information.
H[xz]_Signons.xql	Query based upon the Events query which only shows details of sign-ons & signoffs.
H[xz]_StockDeclarations.xql	Query which shows details of all stock declarations made at a branch
H[xz]_JSN.xql	This query is mainly of significance for Hx_JSN.xql though Hz_JSN.xql has been designed to be similar. For Hx_JSN.xql it makes a point of outputting all JSNs. For any counter JSNs are unique and there are no gaps in the sequence of them. More details of Hx_JSN.xql are shown in section 8.5.4.5.3.2. More details of Hz_JSN.xql are shown in section 8.5.4.5.3.3.
H[xz]_POID.xql	Hz_POID.xql just produces a spreadsheet with "POID never supported in Horizon" in an Info column. Hx_POID.xql is described in section 8.5.4.5.3.4 "Hx_POID.xql".
H[xz]_Poid_User.xql	Hz_Poid_User.xql just produces a spreadsheet with "POID never supported in Horizon" in an Info column. Hx_Poid_User.xql is described in section 8.5.4.5.3.5 "Hx_Poid_User.xql".
H[xz]_IOPPANBarcodesWithPaymentCode.xql	These queries are copies of H[xz]_IOPPANBarcodes.xql with an additional column for the "Method of Payment". Full details are given in sections 8.5.4.5.3.7 and 8.5.4.5.3.8.
H[xz]_Pouches.xql	Hz_Pouches.xql just supplies a line "This query is not yet supported in Horizon". Hx_Pouches.xql is described in section 8.5.4.5.3.9.
H[xz]_BranchTradingStatement.xql	Hz_BranchTradingStatement.xql just produces a

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 50 of 72

	spreadsheet with "trading statements are not available for Horizon yet" in an Info column. Hz_BranchTradingStatement.xql is described in section 8.5.4.5.3.12 "Hx_BranchTradingStatement.xql".
H[xz]_BFwdandCFwd.xql	Hz_BFwdandCFwd.xql just produces a spreadsheet with "rollover figures not available for Horizon yet" in an Info column. Hx_BFwdandCFwd.xql is described in section 8.5.4.5.3.13 "Hx_BFwdandCFwd.xql".

8.5.4.5.3.1　　Hx_IOPMailServiceSDAddressWithExtraAddresses.xql

These are the extra columns Hx_IOPMailServiceSDAddressWithExtraAddresses.xql produces over and above Hx_IOPMailServiceSDAddress.xql.

Hx_IOPMailServiceSDAddressWithExtraAddresses.xlsx column header	Contents from XML
VDestina.Address.Premises	$tt/Message/Data/VDestina/Address/Premises
VDestina.Address.PostcodeZip	$tt/Message/Data/VDestina/Address/PostcodeZip
TandT.Control.Source.Name	$tt/Message/Data/TandT/Control/Source/Name
TandT.Control.Source.Add1	$tt/Message/Data/TandT/Control/Source/Add1
TandT.Control.Source.Postcode	$tt/Message/Data/TandT/Control/Source/Postcode

where $tt is the trackAndTraceMessage "Entry Name" directive value of the PSAAccountingLine element.

8.5.4.5.3.2　　Hx_JSN.xql

These are all the columns in Hx_JSN.xql.

Hx_JSN.xlsx column header	Contents from XML
RequestType	node-name($s)
BranchId	$s/RequestHeader/BranchId
CounterId	$s/RequestHeader/CounterId
JSN	$s/RequestHeader/JournalSeqNumber
TimeSent	$s/RequestHeader/TimeSent
UserId	$s/RequestHeader/UserId
ServiceIdentifier	$s/ServiceIdentifier
SessionId	$s/Dyno/directive:Entry[@Name='basketHeader']/BasketHeader/directive:Entry[@Name='ssn']/Long)

where $s is the message.

This report is ordered by CounterID and JSN.

This report is intended to output all JSNs. However the actual code logic that checks that no JSNs are missing or duplicated checks the JSN in the "Request Header" which is outside of the XML returned and processed in these queries. If the JSN was in this "Request Header" but missing from the JSN field of the XML above it would not appear.

8.5.4.5.3.3   Hz_JSN.xql

These are all the columns in Hz_JSN.xql.

Hz_JSN.xlsx column header	Contents from XML
GroupId	$s/GroupId
Id	$s/Id
Num	$s/Num
Date	$s/Date
Time	$s/Time
TxnData.SessionId	$s/TxnData/SessionId

where $s is the message.

This report is ordered by Id and Num.

8.5.4.5.3.4   Hx_POID.xql

These are all the columns in Hx_POID.xql.

Hx_POID.xlsx column header	Contents from XML
CounterId	$s/RequestHeader/CounterId
JSN	$s/RequestHeader/JournalSeqNumber
TimeSent	$s/RequestHeader/TimeSent
UserId	$s/RequestHeader/UserId
Poid	$s/RequestHeader/Poid
RefDataVersion	$s/RequestHeader/RefDataVersion
ServiceIdentifier	$s/ServiceIdentifier
TokenId	$s/RequestHeader/TokenId
TrainingMode	$s/RequestHeader/TrainingMode

where $s is the top level GenericRequestDTO element and $s/RequestHeader/Poid exists.

The report is ordered by CounterId and JSN (as integers).

8.5.4.5.3.5   Hx_Poid_User.xql

These are all the columns in Hx_Poid_User.xql.

Hx_Poid_User.xlsx column header	Contents from XML

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 52 of 72

CounterId	$s/RequestHeader/CounterId
JSN	$s/RequestHeader/JournalSeqNumber
TimeSent	$s/RequestHeader/TimeSent
UserId	$s/RequestHeader/UserId
branchUser	$s/Dyno/directive:Entry[@Name='branchUser']
firstName	$s/Dyno/directive:Entry[@Name='firstName']
lastName	$s/Dyno/directive:Entry[@Name='lastName']
userRole	$s/Dyno/directive:Entry[@Name='userRole']
stockUnit	$s/Dyno/directive:Entry[@Name='poid']
poid	$s/RequestHeader/CounterId
globalUser	$s/Dyno/directive:Entry[@Name='globalUser']

where $s is the top level GenericRequestDTO element and $s/ServiceIdentifier = "eum/CreatePOIDUser".

The report is ordered by CounterId and JSN (as integers).

8.5.4.5.3.6   Hx_Events_Num.xql

This was modified for CP 1913 to output a poid column.

The logic for this column is –

```
if (exists($req/Poid))
then
        <Poid>{data($req/Poid)}</Poid>
else
(
        if (contains($poid,'POID'))
        then
                <Poid>{data($poid)}</Poid>
        else
                <Poid></Poid>
)
```

so there may either be a poid from the poid user creation message or from the second logon message.

where $req is the top level RequestHeader element and $poid= $s/directive:Entry[@Name='eposAdditionalData'] where %s is the item in the MessageList of the AuditData being processed.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 53 of 72

8.5.4.5.3.7 Hx_IOPPANBarcodesWithPaymentCode.xql

These are the extra columns Hx_IOPPANBarcodesWithPaymentCode.xql produces over and above Hx_IOPPANBarcodes.xql.

Hx_IOPPANBarcodesWithPaymentCode.xlsx column header	Contents from XML
PaymentCode	{data($x/directive:Entry[@Name='paymentCode']/Integer)}

$x can be any of $s//EpossAccountingLine , $s//BankingAccountingLine, $s//DCSAccountingLine, $s//APAccountingLine, $s//PSAccountingLine, $s//PS2ndaryAccountingLine or $s//ForExAccountingLine)

where

$s is any GenericRequestDTO.

The possible values of PaymentCode are defined in associated document "HNG-X HLD - Settlement Functions".

Version 11.0 of that document gives –

This defines the Method of payment declared as part of the AP Transaction.

Value	Meaning
1	Cash
2	Cheque or Chq/Cash
3	Saving Stamps included
4	Debit Card or Debit / Credit Card

8.5.4.5.3.8 Hz_IOPPANBarcodesWithPaymentCode.xql

These are the extra columns Hz_IOPPANBarcodesWithPaymentCode.xql produces over and above Hz_IOPPANBarcodes.xql.

Hz_IOPPANBarcodesWithPaymentCode.xlsx column header	Contents from XML
EPOSSTransaction.AdditionalData.MoP	data($x/EPOSSTransaction/AdditionalData/MoP)

$x is any Message

8.5.4.5.3.9 Hx_Pouches.xql

These are all the columns in Hx_Pouches.xql.

Hx_Pouches.xlsx column header	Contents from XML
CounterId	$s/RequestHeader/CounterId
JSN	$s/RequestHeader/JournalSeqNumber
TimeSent	$s/RequestHeader/TimeSent
UserId	$s/RequestHeader/UserId
RefDataVersion	$s/RequestHeader/RefDataVersion
ServiceIdentifier	$s/ServiceIdentifier
TokenId	$s/RequestHeader/TokenId
TrainingMode	$s/RequestHeader/TrainingMode
accBarcode	$s/Dyno/directive:Entry[@Name='basketHeader']/BasketHeader/directive: Entry[@Name='optionalData']/OptionalData/directive:Entry[@Name='accBarcode']/String
pouchData	$s/Dyno/directive:Entry[@Name='basketHeader']/BasketHeader/directive: Entry[@Name='optionalData']/OptionalData/directive: Entry[@Name='pouchData']/MessageList/String)

where $s is the message which must start GenericRequestDTO and lines are included only if the accBarcode is not blank.

The report is ordered by first CounterId and then within that JSN.

8.5.4.5.3.10   Hx_IOPMailServiceSDAddress

As of release 17.58 this query was enhanced with the following additional fields.

Hx_IOPMailServiceSDAddress.xlsx column header	Contents from XML
FirstLineOfAddress	data(fn:replace($x/directive:Entry[@Name='nrtData']/nrtdata/NrtMessage, "(^.*<Address1>([^<]*)</Address1>.*$|^.+$)", "$2", "s"))
CertificateOfPostingIssuedYorN	data($x/directive:Entry[@Name='copIssued']/Boolean)
CustomerReference	data($x/directive:Entry[@Name='customerReference']/String)
DestinationPostCode	data($x/directive:Entry[@Name='destinationAddress']/String)

where $x is the settlement message – the full query needs to be looked at for details.

8.5.4.5.3.11   Hx_IOPPANBarcodes

As of release 17.58 this query was enhanced with the following additional field.

Hx_IOPPANBarcodes.xlsx column header	Contents from XML
CustomerReference	data($x/directive:Entry[@Name='customerReference']/String)

where $x is the settlement message – the full query needs to be looked at for details.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 55 of 72

8.5.4.5.3.12   Hx_BranchTradingStatement.xql

This query outputs the following fields.

Hx_BranchTradingStatement.xlsx column header	Contents from XML
Time	data($s/RequestHeader/TimeSent)
Ident	data($sv)
RolloverReport	data($s/Reprint/ReportData))

where $s is any RollBranchRequestDTO and $v is $s/ServiceIdentifier.

The report is ordered by the first "Time" column.

The RolloverReport gives all the data from the Branch Trading statement in a special print format. One way to make the data in each cell more legible is to select the cell with data in, press Cntrl Home, Cntrl Shift End, Cntrl C and then paste the output into notepad.

8.5.4.5.3.13   Hx_BFwdandCFwd.xql

This query outputs the following fields.

Hx_BFwdandCFwd.xlsx column header	Contents from XML
Time	data($s/RequestHeader/TimeSent)
Ident	data($sv)
SU	(fn:replace(data($s/Reprint/ReportData), ".*<ifnotreprint>\s<space x=""[0-9]*""/>[0-9:\s/]*\s<space x=""[0-9]*""/>TP:\s<space x=""[0-9]*""/>([0-9]*)\s<space x=""[0-9]*""/>BP:\s<space x=""[0-9]*""/>([0-9]*)\s<space x=""[0-9]*""/>SU:\s<space x=""[0-9]*""/>([A-Za-z0-9]*)\s<nl/>\s.*","$3", "s"))
TP	(fn:replace(data($s/Reprint/ReportData), ".*<ifnotreprint>\s<space x=""[0-9]*""/>[0-9:\s/]*\s<space x=""[0-9]*""/>TP:\s<space x=""[0-9]*""/>([0-9]*)\s<space x=""[0-9]*""/>BP:\s<space x=""[0-9]*""/>([0-9]*)\s<space x=""[0-9]*""/>SU:\s<space x=""[0-9]*""/>([A-Za-z0-9]*)\s<nl/>\s.*","$1", "s"))
BP	(fn:replace(data($s/Reprint/ReportData), ".*<ifnotreprint>\s<space x=""[0-9]*""/>[0-9:\s/]*\s<space x=""[0-9]*""/>TP:\s<space x=""[0-9]*""/>([0-9]*)\s<space x=""[0-9]*""/>BP:\s<space x=""[0-9]*""/>([0-9]*)\s<space x=""[0-9]*""/>SU:\s<space x=""[0-9]*""/>([A-Za-z0-9]*)\s<nl/>\s.*","$2", "s"))
BFwd	(fn:replace(data($s/Reprint/ReportData), ".*Balance B/Fwd\s<space x=""[0-9]*""/>>(-?[0-9.]*-?).*","$1", "s"))
CFwd	(fn:replace(data($s/Reprint/ReportData), ".*Balance C/Fwd\s<space x=""[0-9]*""/>>(-?[0-9.]*-?).*","$1", "s"))

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 56 of 72

where $s is any RolloverSUBPRequestDTO or RollSURequestDTO and $v is $s/ServiceIdentifier.

The complex expressions for SU, TP, BP, BFwd and CFwd are designed to return the stock unit name, Trading Period, Balance Period, brought forward figure and carried forward figure for the stock unit rollover reports.

The report is ordered by the first "Time" column.

This report can be used to check that brought forward and carried forward figure match as follows.

Break the period you want for a given office into contiguous periods and run FASTARQs for each using the new report Hx_BFwdandCFwd. I have found 4 months works fine for one of the contiguous periods. A bigger number of months can be tried. There will be a limit at some point.

Rename the spreadsheet with the very oldest data Hx_BFwdandCFwd.xlsx Hx_BFwdandCFwdFull.xlsx.

Then open progressively less and less old Hx_BFwdandCFwd.xlsx s and copy the data and paste it to the bottom of Hx_BFwdandCFwdFull.xlsx. It is essential this is done correctly since each spreadsheet is in time order and we want to preserve this.

Now select all the data in the report (leave the headings etc.) and do Home Sort by column C (the stock unit).

Now select the empty column H, right click, Format Cells and select General. This step is essential to make the formula work.

 Now copy the following formula

=IF(C10=C9,IF(G9<>F10,"Discrepancy","OK"),"Different SU")

into cell H9.

 Now copy cell H9 and paste it into all the column H cells below it which have data to the left.

Now visually check row H and confirm it only has OK or Different SU in. Alternatively copy all of row H and paste it into notepad and search notepad for the word Discrepancy and make sure none are found.

8.5.4.5.4 Note on Executing Multiple Queries under a Single ARQ

When executing multiple queries, the validation step (see section 8.5.4.5.1) must be performed for each data source in an ARQ, and the querying and presentation steps (see sections 8.5.4.5.2 and 8.5.4.6) must be performed for each query for each data source.

The recommended approach is to process each query for each data source through to presentation before starting the next.

8.5.4.6   Presentation

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 57 of 72

Figure 33 - Maintain ARQ form – Presentation tab

This form allows filtered message data and event data to be output to Excel.

Results may be targeted to a different location/file using the "Change" button adjacent to the required output file box.

Once all required options have been selected, clicking the Create Output button instigates the creation of the required files.

There is a limit in Excel 2013 32 bit of about a million rows per spreadsheet. To ensure that this is never exceeded when the number of rows is set to exceed 240,000 output is split across multiple worksheets.

This number is a constant MAX_XL_ROWS in the audit client source. If it is found that it would be useful if this is increased it can be by request to the audit team. The maximum it can be set to would be around the million mark. It will take a moderate amount of work to test such a large number and make sure it works.

8.6 'Fast ARQ' Form

© Copyright Fujitsu Services
Limited 2009-2017 | **FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)**
UNCONTROLLED IF PRINTED | Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 58 of 72

Figure 34 - Fast ARQ form

This form is used to specify the search criteria and initiate a 'fast' ARQ. There are fewer options than with the 'slow' ARQ forms but, once started by clicking the 'Execute ARQ' button, the ARQ will proceed through the retrieving, sealing, filtering, querying and presentation steps without further user interaction.

The Fast ARQ form can be displayed in three ways:

1. Select 'Fast ARQ' from the File menu.

   When opened from the File menu, the Fast ARQ form will be displayed as in Figure 34. The Data Centre frame at the top of the form allows the selection of the data centre in which the new ARQ is to be created.

2. Click the 'New fast ARQ' button in the toolbar.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 59 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

When opened from the toolbar, the Fast ARQ form will be displayed as in Figure 34. The Data Centre frame at the top of the form allows the selection of the data centre in which the new ARQ is to be created.

3. Right click on the required data centre and select 'Fast ARQ' from the drop down menu.

When opened by right clicking a data centre, the Data Centre frame is not shown in the form as the data centre will automatically be set to the one which was clicked.

Field	Input Value	Mandatory?
Data Centre (if displayed)	The data centre at which the ARQ is to be created.	Mandatory
Requester	Select From: Other 3rd party Pathway IA Pathway Other Pathway SSC POCL IA POCL Other POCL Security	Mandatory
Receipt Ref.	ARQ Number, taken from the ARQ form.	Mandatory
Date Received	The date the request was received.	Mandatory
Date Required	The date the request is to be returned.	Mandatory
Filter Start Date	Start date for which filtering should be applied.	Mandatory
Filter End Date	End date for which filtering should be applied.	Mandatory
Extra days for extraction	Number of days beyond the Filter End Date for which audit files should be retrieved. (An Audit File may not be gathered until one or two days after it was created so adding extra days to the Filter End Date helps to ensure that all the required Audit Files are retrieved.)	Mandatory
FAD Code	FAD Code to filter on.	Mandatory
Include Events	Checked if Event data is to be retrieved.	Optional
Select drive and folder for output	Specifies the location on the Audit Workstation where the final output files are to be copied.	Mandatory
Queries to be run	Specifies the queries that are to be run against the audit data that has been retrieved and filtered.	Optional
Output folder	This is a read-only field that displays the selected output folder.	

After setting the selection criteria, the user can click the 'Execute ARQ' button to start the ARQ processing. If no queries have been selected, a message box is shown asking the user to confirm that they wish to continue (see figure 35).

FUJITSU **FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)** POST OFFICE
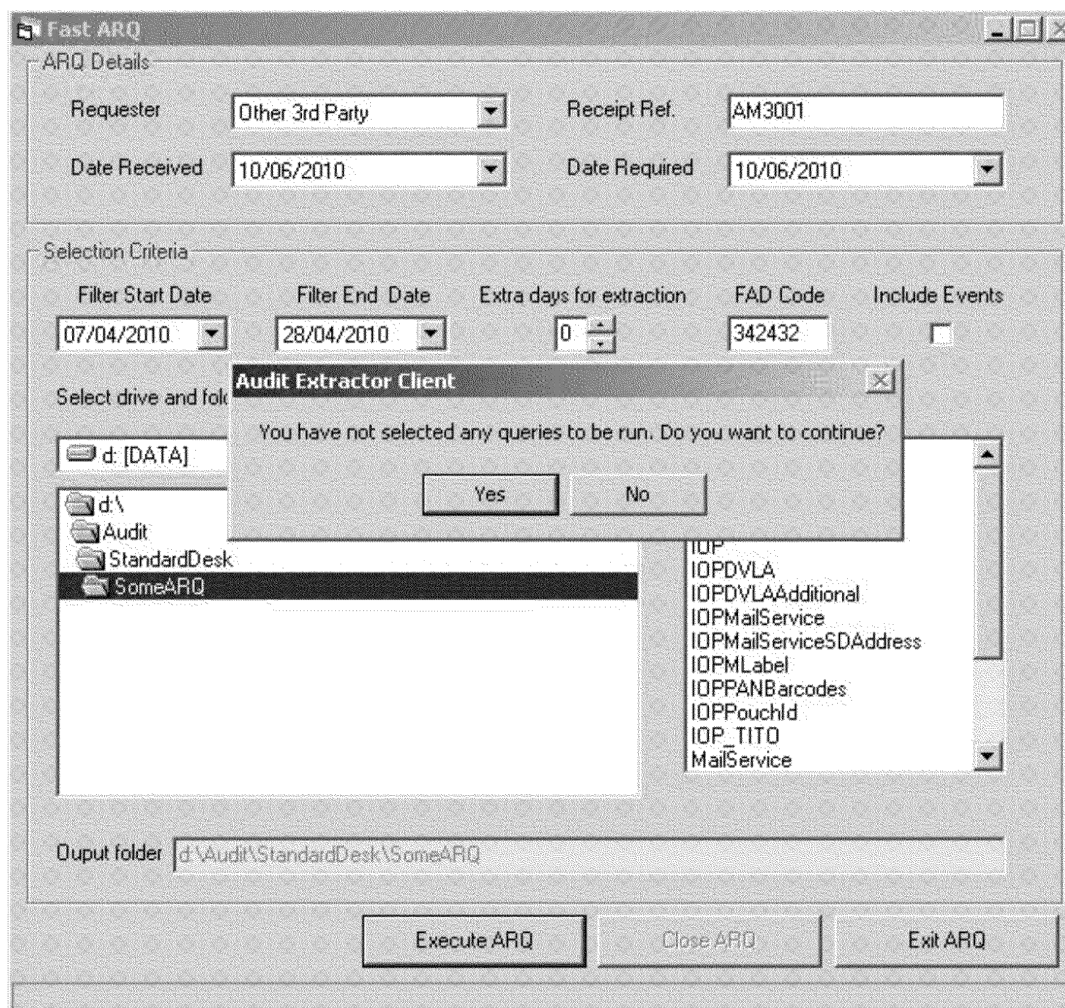
Figure 35 – Continue confirmation message box

If the user clicks 'No', the message box closes and the user is returned to the Fast ARQ form to select one or more queries. If the user clicks 'Yes', the ARQ processing commences.

When the ARQ completes, the message 'ARQ completed successfully' will be displayed in the status bar and the 'Close ARQ' and 'Exit ARQ' buttons are enabled.

An Excel spreadsheet is created in the specified output directory on the audit workstation for each of the queries that have been executed. If events were included, a spreadsheet called Events.xls is also created in the output directory.

(Note that if no queries were selected, there will be no Excel spreadsheets of message data created on the audit workstation since no queries were run. The files of filtered message data (Filteredhx.xml and Filteredhz.xml) will exist in the QUERY_AT\FINAL directory for the ARQ in the F:\UserArea on the audit server.)

Clicking 'Exit ARQ' will close the Fast ARQ form but, if the ARQ has not been executed, a message box will be displayed requesting confirmation that the ARQ is to be exited (see figure 36).

Figure 36 – Exit Fast ARQ confirmation message box

Clicking 'Close ARQ' will display the Close ARQ form (see section 8.7).

8.7   Closing an ARQ

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 62 of 72

Figure 37 - Close ARQ form

This form is used to close an active ARQ. It may be opened in five ways:

1. Select 'Close ARQ' from the File menu.

   When opened from the File menu, the Close ARQ form will be displayed with the 'Data Centre' frame at the top of the form as shown in figure 37. This allows the selection of the data centre from which the ARQ is to be closed.

2. Click the 'Close ARQ' button in the toolbar.

   When opened from the toolbar, the Close ARQ form will be displayed with the 'Data Centre' frame at the top of the form as shown in figure 37. This allows the selection of the data centre from which the ARQ is to be closed.

3. Right click on the required data centre and select 'Close ARQ' from the drop down menu.

   When opened by right clicking a data centre, the 'Data Centre' frame is not shown in the form as the data centre will automatically be set to the one which was clicked.

4. Right click on an ARQ in the Data Centres window and select Close from the drop down menu.

   When opened by right clicking an ARQ, the 'Data Centre' frame is not shown in the form as the data centre will automatically be set according to the data centre of the selected ARQ. In

addition, the Query Reference drop down list will be disabled and pre-populated with the selected query reference.

5. Click the 'Close ARQ' button on a Fast ARQ form.

When opened by clicking the 'Close ARQ' button, the 'Data Centre' frame is not shown in the form as the data centre will automatically be set according to the data centre of the ARQ. In addition, the Query Reference drop down list will be disabled and pre-populated with the query reference of the ARQ.

Once the data centre and query reference have been selected, one of the following actions may be performed:

Show Query Details

Displays a form showing details of the selected query (see section 8.5.2.1).

Close Query

Closes the ARQ.

Clicking the **Close** button will close the Close ARQ form.

Once the request is closed the audit log (see Appendix 2) is written to the F:\UserArea on the appropriate Audit Server.

8.7.1 Closing Policy

Note that open ARQs can use a lot of disk space and should be closed when they are finished with.

In particular once an ARQ has been run and the data sent to the Post Office and they have confirmed receipt of the data Sec Ops will close the ARQ and delete any ARQ data off of the audit workstations.

Appendix 1 FLoWR Query Language

It had been the intention to include a simplified guide to the FLOWR query language as part of this manual. However, due to the complexity of the queries required and data to be analysed the W3C XQuery 1.0 Specification document has been included.

Section 3.8 pertains to FLOWR, although it is probable that the additional information contained in this document will be required during the life of the system.

D:\FLoWR_Guide\
W3C_XQuery 1_0_Sp

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 64 of 72

Appendix 2 Example ARQ Audit Log

Included is an example close log.

RFIOTH3076B.txt

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

UNCONTROLLED IF PRINTED

|	
Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	65 of 72

Appendix 3 PGP Zip Configuration

A requirement of the audit system is the ability to transfer the created Excel spreadsheet results in a secure manner to the relevant customer. The mechanism that has been chosen to achieve this is to create a self-extracting PGP zip file via the Symantec Encryption Desktop application. Every user who activates the application for the first time has to go through a configuration process prior to being able to use the application. The process for configuring the application is as follows:

Execute Symantec Encryption Desktop from the start menu.
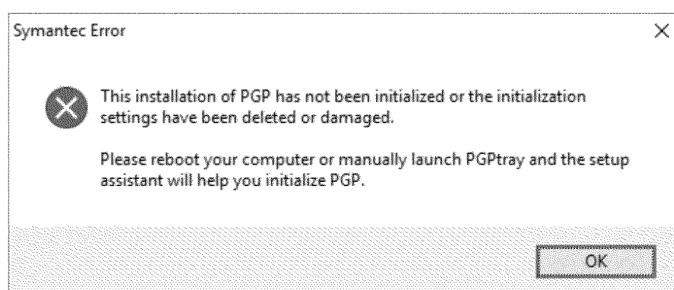
This may bring up the following Symantec error message, depending upon whether you are the first user to perform the configuration steps. This message can safely be ignored as the initial configuration corrects the error being reported. Select 'OK' to continue.
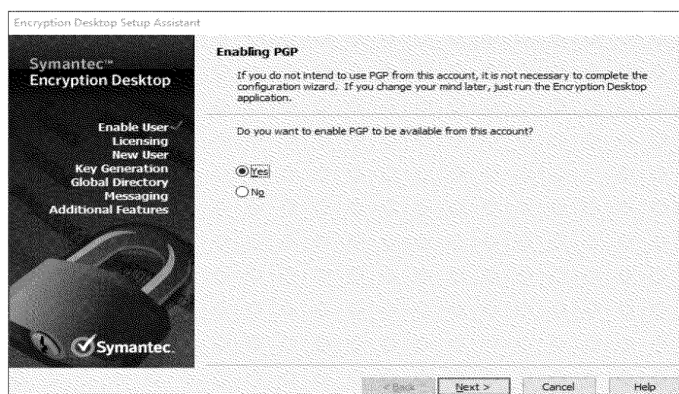
Ensure that 'Yes' is selected to enable PGP from this account and select the 'Next' button.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 66 of 72
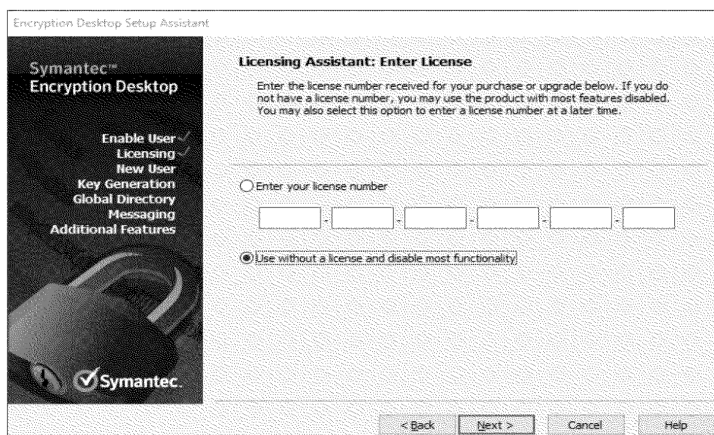
The PGP Zip functionality that is required can be utilised without the need for a licence key so select the 'Use without a licence ...' option and select the 'Next' button
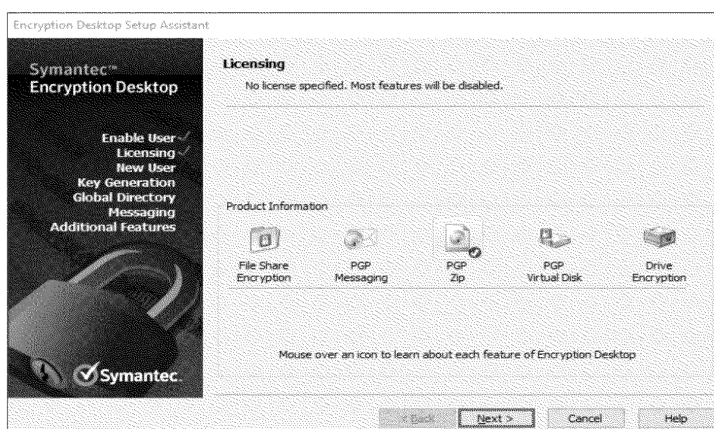
This screen confirms that only the PGP Zip functionlaity will be configured. If this is the case then select the 'Next' button.
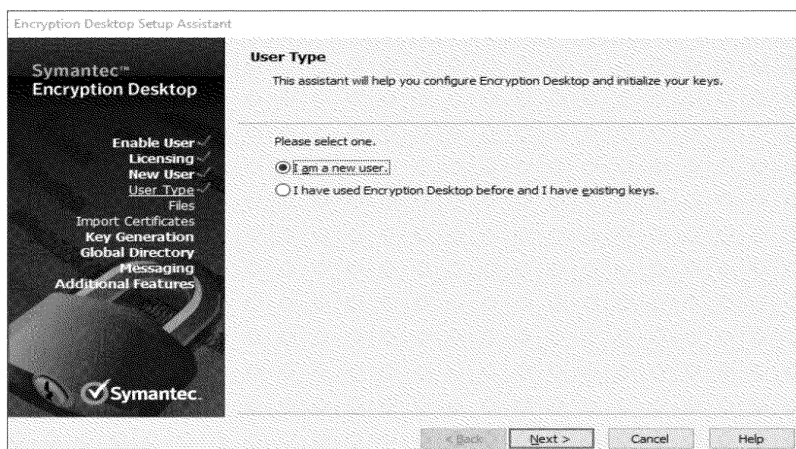
Select the 'I am a new user' option and select the 'Next' button.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref:	DEV/GEN/MAN/0015
Version:	9.0
Date:	21 May 2018
Page No:	67 of 72
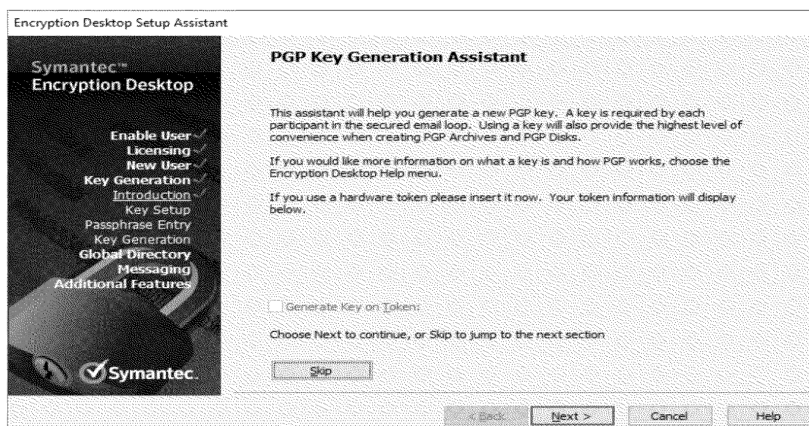
For the creation of Zip files it is not necessary to create PGP keys so on this page select the 'Skip' button.
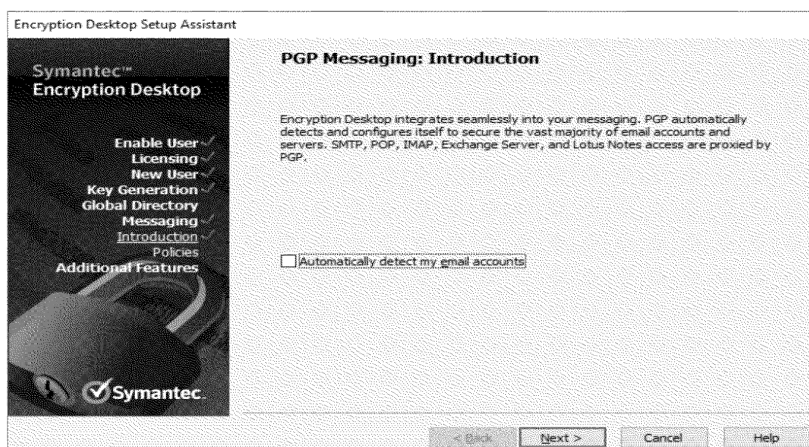
Ensure the 'Automatically detect my email accounts' option is NOT set and select the 'Next' button.
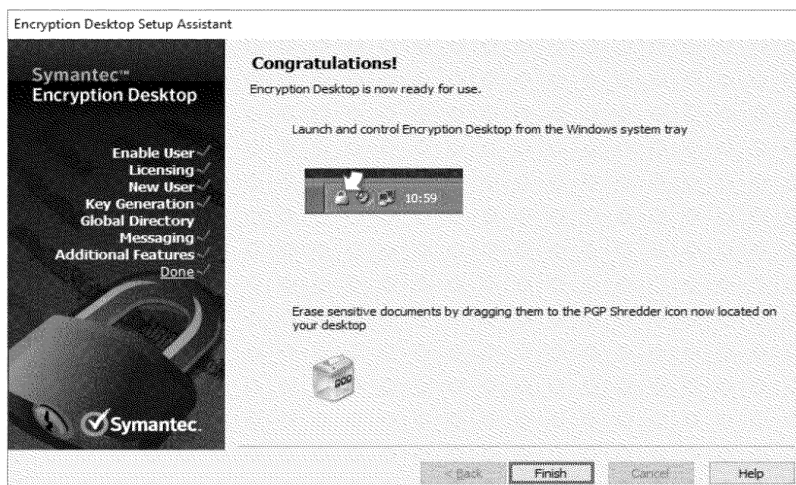
At this point the PGP Zip functionaliy has successfully been configured so select the 'Finish' button.

On subsequent activation of the Symantec Encryption Desktop software the user is presented with the following screen:
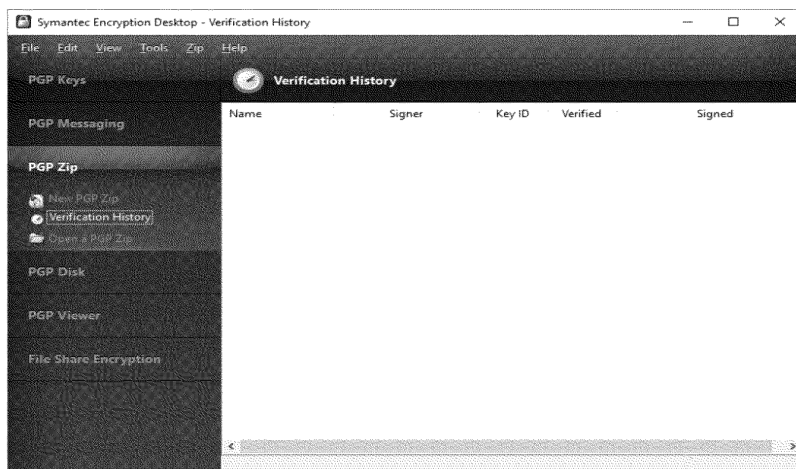
To create a Zip file of the Audit results select the 'New PGP Zip' option. The generates the following screen:
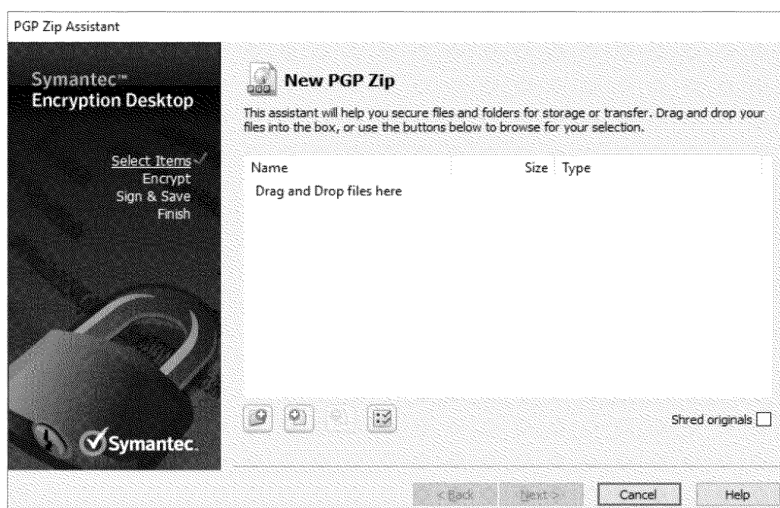
The user should then drag and drop all the audit result files into the list area of the screen and optionally select the 'Shred originals' option if the files on disk are to be destroyed. The user should then select the 'Next' button.

© Copyright Fujitsu Services Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 69 of 72

Select the 'PGP Self-Decrypting Archive' option and then select the 'Next' button.
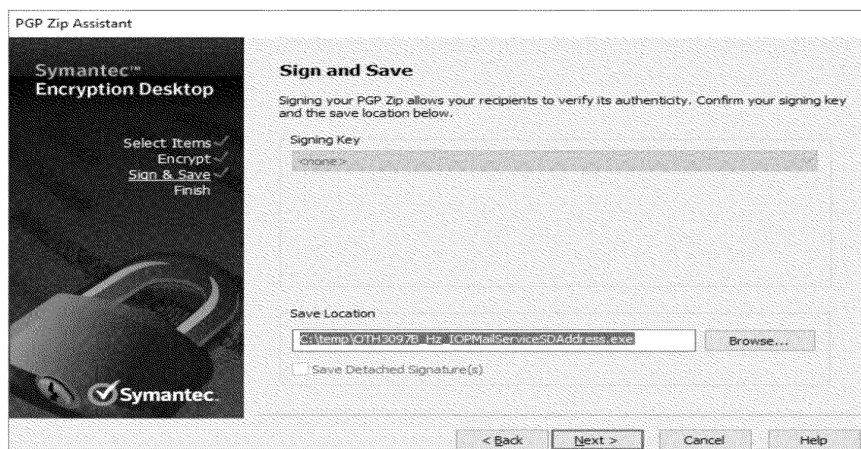

At this stage the user should enter the passphrase that the customer will use in order to extract the results file. Note that the 'Next' button will only be enabled when the text in the Passphrase and Confirm areas match. When this is the case select the 'Next' button.

© Copyright Fujitsu Services
Limited 2009-2017

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)
UNCONTROLLED IF PRINTED

Ref: DEV/GEN/MAN/0015
Version: 9.0
Date: 21 May 2018
Page No: 70 of 72

Audit Extraction Client User Manual

FUJITSU RESTRICTED (COMMERCIAL IN CONFIDENCE)

The final stage is to specify the location that the PGP Zip file is to created in. This will typically be the medium that is going to be used to transfer the data. When specified select the 'Next' button.
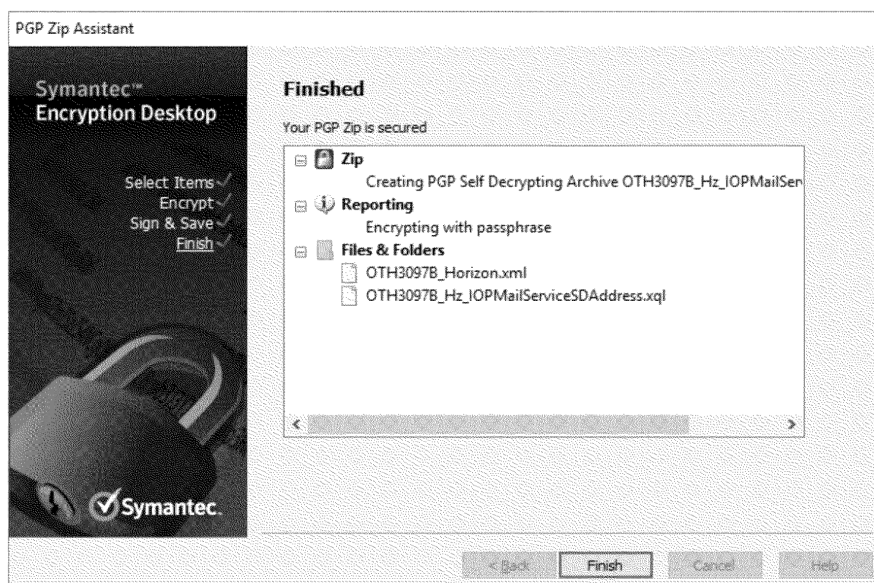
At this point select 'Finish' and the zip file creation will be completed.