Oracle® Retail MICROS Retail-J

Administration Guide
Release 12.1

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ORACLE

Oracle® Retail MICROS Retail-J Administration Guide, Release 12.1

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MICROS Retail-J
Administration Guide

Revision History

Document Revision	Date	Comment
1.2	March, 2015	Added Oracle cover and copyright page.
1.1	January, 2013	Rebranded.
1.0	November, 2011	First published in this form.

Glossary

Term	Definition
Access set	Access sets contain details used to connect to the database, LER and HTTP. Two files are associated with access data sets namely: Access.dat and Access.hdx.
Cold Backup	Backup taken while the database is offline
Hot Backup	Backup taken while the database is online
IIN	(Card) Issuer Identification Number; allocated in ranges to issuing networks (for example Visa) by the American Bankers Association. Issuer Identification Numbers are associated with specific attributes which help validate card transactions.
LER	Local Entity Repository
SUP	Software Update Process
TRC file	The trace facility allows a network or database administrator to obtain more information on the internal operations of the components of an Oracle application network than is provided in a log file. Tracing an operation produces a detailed sequence of statements that describe the events as they are executed. All trace output is directed to trace output files that can be evaluated to identify the events that led to an error.
XSD	XML Schema Definition; used by Retail-J to define the structure and format of data imported, used and exported by the application.

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1. Introduction

This document is intended as a day-to-day working reference for Retail-J administrators. It is organised around a set of daily, weekly, monthly and ad hoc checklists.

Troubleshooting hints are provided and functionality is described in sufficient detail to support your own investigation.

1.1 Operational Responsibilities

As your supplier, Micros accepts certain responsibilities in, for example, installation and support. There are some aspects of your use of the application which Micros does not usually control and these are generally managed by you or your service provider. These include:

- Hardware, database and network maintenance
- Operating system and database patch installation
- Backup and restore
- Archiving
- Purging
- Internal issue reporting
- Deploying software and database updates
- Third party imports and exports to other systems (for example settlement and IDocs)

Where this document touches on these elements it is to advise on commonly understood best practice, the relevance of which will depend on the specifics of your operation.

2. Management Checklists

The following checklists are designed to offer advice in establishing an operational routine for your installation. All implementations differ in some or many respects and so the checklists should be taken as a guideline rather than a complete operational blueprint.

2.1 Daily

Location		**Operation**
Estate Manager	Application	Review application alerts
		Check that scheduled jobs have run and expected processes are active.
		Check for missing/out of sequence transactions
		Process missing transactions
		Check failed documents
		Check outstanding messages
		Confirm settlement submission
		Check import logs (data from third party applications)
		Check export logs (data to third party applications)
		Reconcile sales (and stock where installed) between POS and store server and/or between store and Estate Manager
		Broadcast changes to stores and tills
		Check that the off-line hot card list went to all stores and was updated
		Check all promotions went down to stores

Location		Operation
		successfully.
		Check that MMG, products, prices and selling codes have been transmitted to each branch and processed.
	Database	Manually scan the log files
		Check Trace files (Oracle)
		Confirm hot backup (hourly)
		Confirm cold backup (nightly)
Store Server	Database	Confirm hot backup (hourly)
		Confirm cold backup (nightly)

2.2 Weekly

Location		Operation
Estate Manager	Application	Check for orphaned products not linked to a MMG
		Check for products not recognized at store level
		Check price over-rides (with appropriate reasons) as early indication of a pricing error at branch level
		Check size of logs stored in the file system
	Database	Check purging (size of baskets table)
		Rebuild indexes
		Update table statistics
		Check size of logs stored in the database
		Check disk space
Store Sever	Application	Check size of logs stored in the file system
	Database	Check size of logs stored in the database
		Check disk space
POS	Application	Check size of logs stored in the file system
	Database	Check size of logs stored in the database
		Check disk space

2.3 Monthly

Location		Operation
Estate Manager	Application	Check that stock counts have been completed
	Database	Check that tapes are being archived at least monthly if not possibly weekly to guard against data corruption
		Check that database restore points are implemented and functioning.

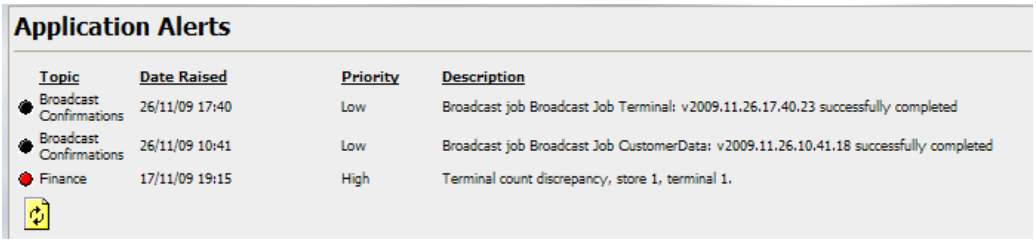
Store Server		Check that tapes are being archived at least monthly if not (possibly) weekly to guard against data corruption

2.4 Ad hoc

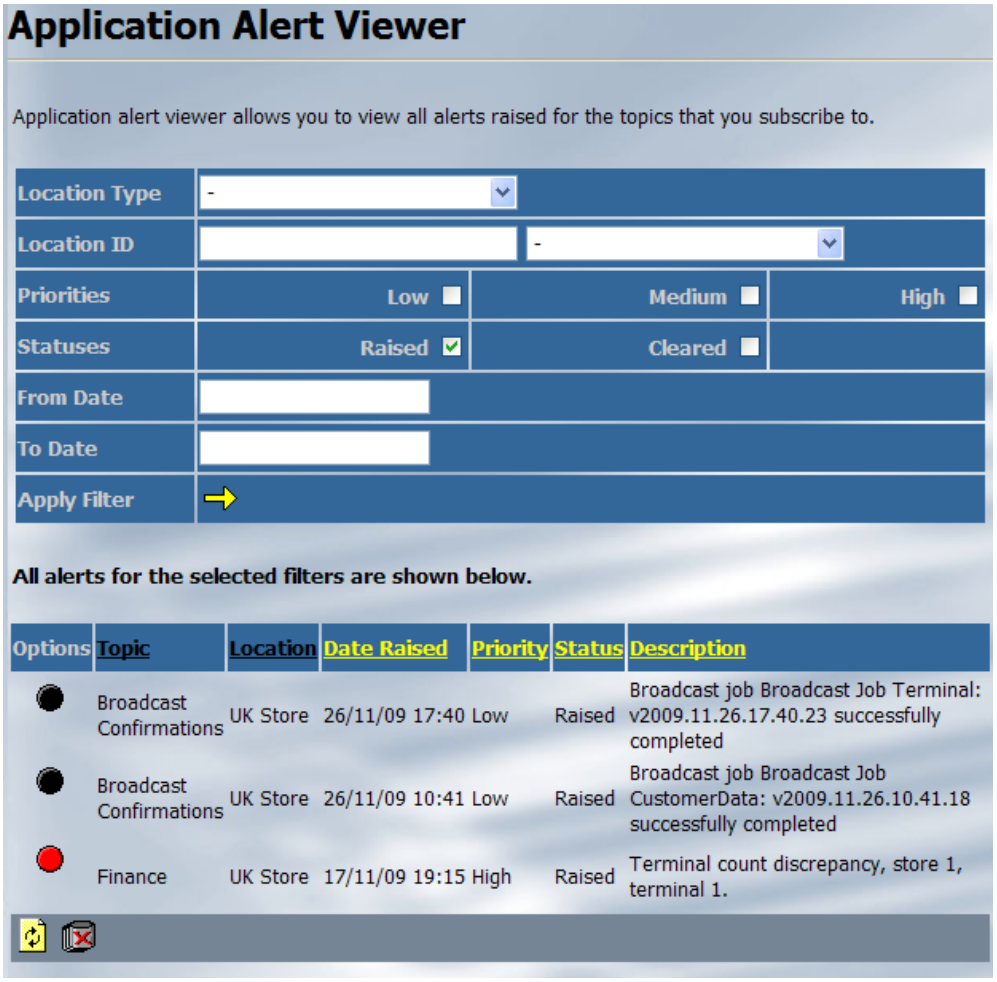
Location		**Operation**
		Report and monitor the resolution of system issues
Estate Manager	Application	Add a new store
		Apply software updates
		Check software updates have been applied
		Check that configuration changes are applied at branch level
		Check that stock counts have been completed
		Check for missing PEDs
	Performanc e	Review system performance

3. Application Alerts

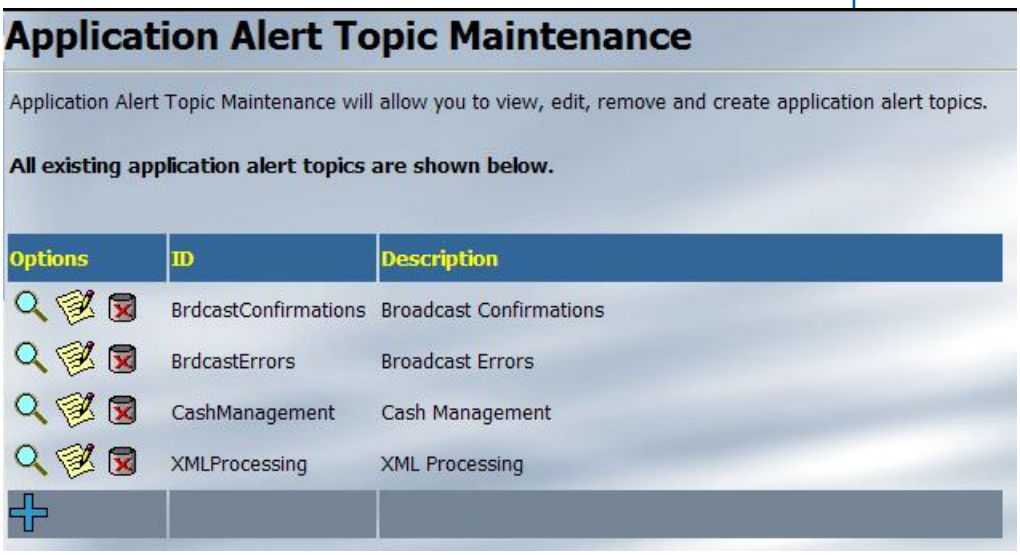
Application alerts are useful status and troubleshooting indicators. They are shown on the Welcome screen when you logon to the application.



They can also be seen at Administration > System Status > Application Alert Viewer.

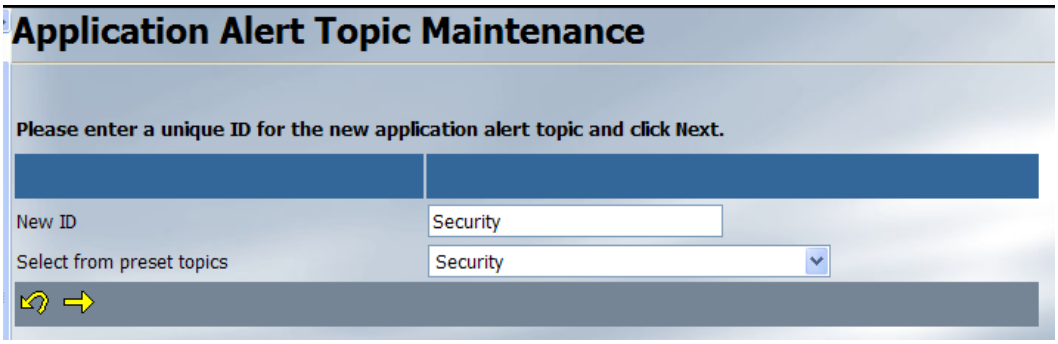


Set up the topics, from which you would like to see alerts, from: Data Maintenance > General > Application Alert Topics.



Here you can see the alert topics to which you are subscribed.

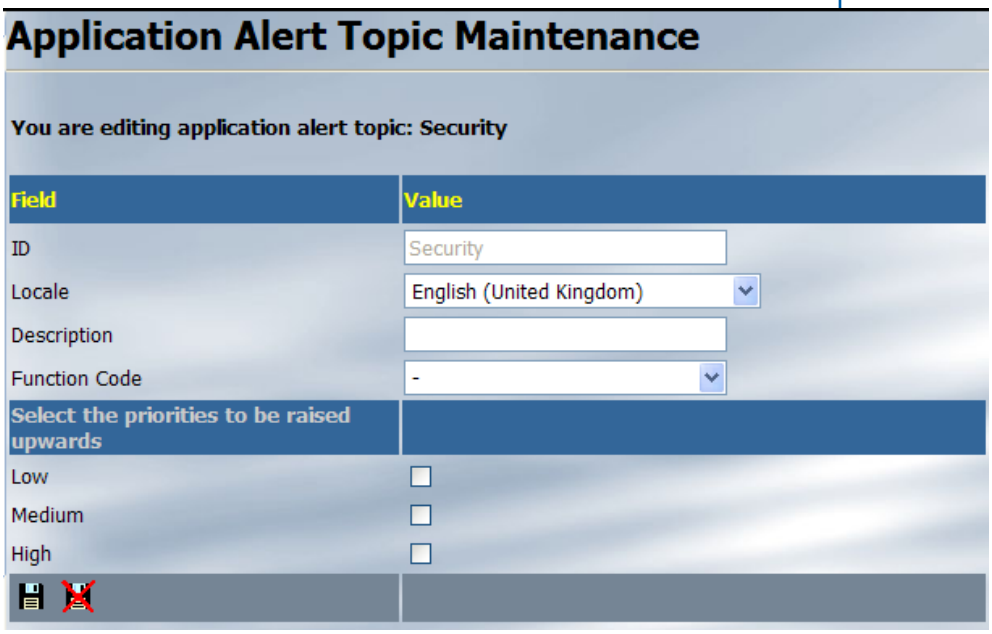
To add a new Application Alert Topic, click the Add icon.



The available field is described in the table below:

Field	Description
New ID	Depending on your role, you will be able to select one of the following application topic alerts from the drop down list: Audit Data Extractor, Audit Validator, Broadcast Confirmations, Broadcast Errors, Cash Management, Communications, Customer Detection, Customer Notifications, Day End, Entity Updater, Finance, Import Confirmations, Import Errors, Inventory Reservation Request, Price Changes, Product Inventory, Returns, Security, Stock Counting, Stored Transactions, Tender Credit Limit Alerts, Tender Limit Alerts, Tender Limit Alerts (Customer Not Present), Transaction Tender Limit Alerts, Terminal Status, Unknown Flight Alerts, Update Confirmations, Update Errors, Web Mail, XML Processing.

On the following screen, you can set the Locale, Description and Function Code and at which level in the application hierarchy alerts can be seen.



The available fields are described in the following table.

Field	Description
ID	The chosen alert topic (read only).
Locale	A drop down list of available options.
Description	A unique description up to 10 characters in length.
Function Code	Select a role from the drop down list.
Priorities to be raised upwards.	Select one or more of the Low, Medium and High check boxes to categorize the alerts. You can filter on priority in the Application Alert Viewer.

4. Document Management

The following diagram uses a simplified model of document messaging for troubleshooting purposes.

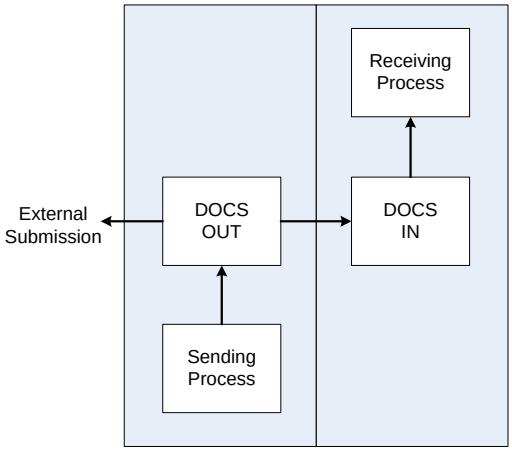


Figure 1: Document Troubleshooting

In the simplified model, a sending process places documents in Documents Out, these documents arrive in Documents In on a receiving device. Alternatively, they may be sent externally to another system. The receiving process takes the documents from Documents In and processes them. Say, Documents Out is situated at the store and Documents In is on the estate manager.

The following are possible outcomes of the messaging process for any given document.

Document Out Status	Document In Status	Notes
Unsent	Not Applicable	The document has not yet been sent.
Fail	Not Applicable	The document has failed before reaching Documents In or before external submission.
Sent	Received	The document has been submitted from Documents Out to Documents In and its receipt has been acknowledged but the document has not yet been processed by the receiving process.
Sent	Success	The document has been submitted from Documents Out to Documents In and has been successfully processed by the receiving process.
Sent	Fail	The Document has been successfully submitted from Documents Out to Documents In but has failed while being processed by the receiving process. Take an example, the Documents In status of a document is Failed. The error is reported as a Duplicate Transaction. In this case, you would not reprocess that item. The effect of reprocessing the item is to submit it to the receiving process again. Given it was a duplicate transaction then it would fail again. Instead, you might take a note of the when the document failed and check the Application log for more details.

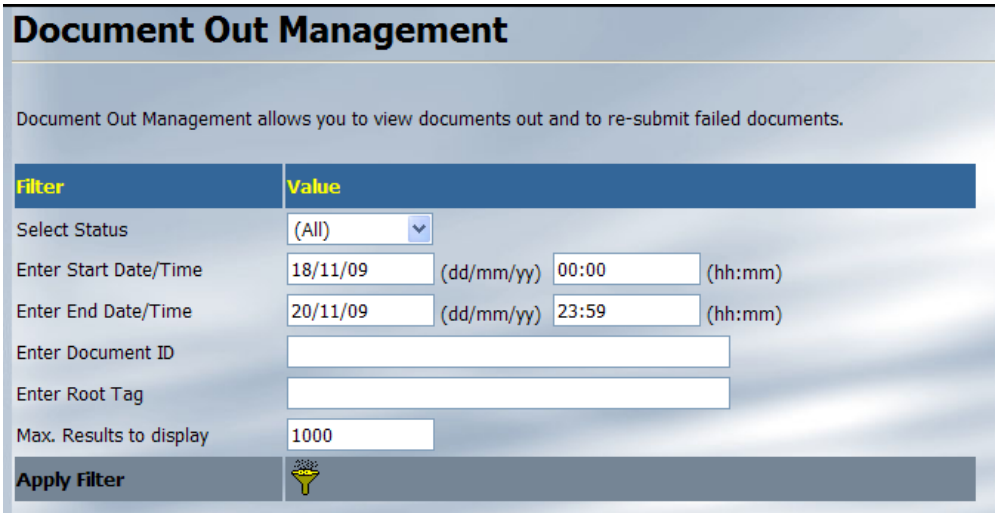
Figure 2: Document Outcomes

4.1.1 Document Out Management

Any data leaving the system that is “this” device, such as POS sales, goods received or stock counts, are in the form of XML documents. The Document Management function shows which documents have been submitted and the outcome of the submission. It also enables the System Administrator to view documents and re-submit failed documents.

To view documents leaving the system, go to Administration Menu > Processes > Document Out Management.

The Document Out Management screen is displayed.



The available filter fields are described in the table below.

Field	Description
Status	Select one of the following from the drop down list: Unsent, Sent, Failed, System Busy, Ignored. The default is All.
Start Date/Time	The date range for document selection.
End Date/Time	
Document ID	Enter a specific Document ID.
Root Tag	Enter a specific document type, for example, POSBasket, SystemEvent, SafeCMAction, POSStoreRecallEvent, Order, Layaway, StockAdjustmentEvent and so on.
Max No. Results to Display.	Enter the maximum number of results to be displayed on screen. The default is 1,000.

Apply the filter using the Filter icon and the Document Out Management screen is displayed.

Options	Document ID	Root Tag	Date Received	Status
	b80dda9c5bfe6403:-69711478:125022c55d6:-71d9	SafeCMAction	20/11/09 13:44	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-761c	POSStoreRecallEvent	18/11/09 16:34	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7624	StockAdjustmentEvent	18/11/09 16:32	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7626	Order	18/11/09 16:32	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7627	POSBasket	18/11/09 16:32	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-762d	StockAdjustmentEvent	18/11/09 16:31	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-762f	Order	18/11/09 16:31	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7630	POSBasket	18/11/09 16:31	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7638	Layaway	18/11/09 16:22	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7639	POSBasket	18/11/09 16:22	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-763e	POSBasket	18/11/09 16:16	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7641	POSBasket	18/11/09 16:14	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-764a	POSBasket	18/11/09 16:02	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-765d	POSBasket	18/11/09 15:18	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-7666	POSBasket	18/11/09 15:03	Sent
	b80dda9c5bfe6403:-69711478:125022c55d6:-766b	SystemEvent	18/11/09 15:01	Sent

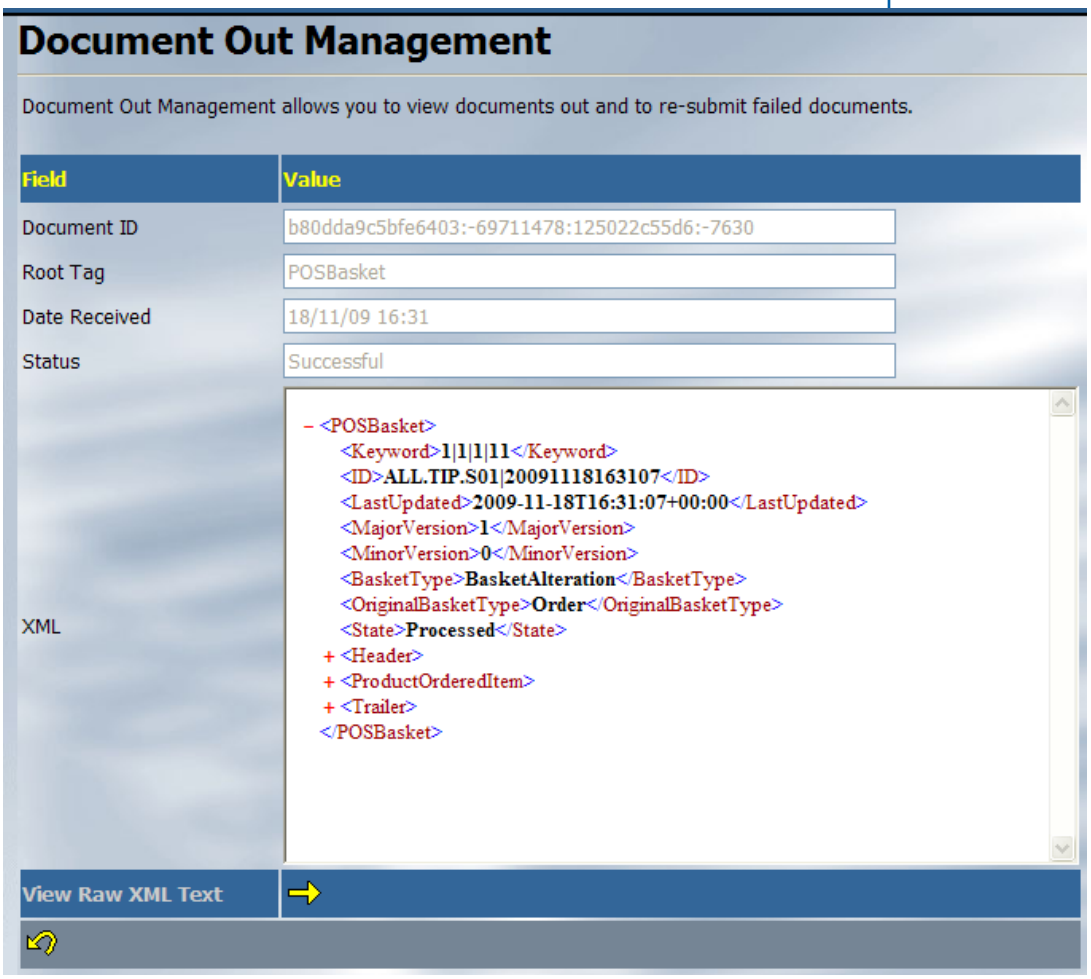
The available fields are described in the table below.

Field	Description
Options	You can View or Delete the entry.
Document ID	The document reference
Root Tag	The type of document, for example, SystemEvent, POSBasket and so on.
Date Received	Date and time of receipt.
Status	Unsent, Sent, Failed, System Busy, Ignored

To view the details of a specific document:

1) Click View beside the appropriate document

Details of the document are displayed.



Note: If required raw XML code can be viewed by clicking Next beside View Raw XML Text.

2) When finished, click Back to return to the list of documents.

To remove a specific document:

Click Remove beside the appropriate document.

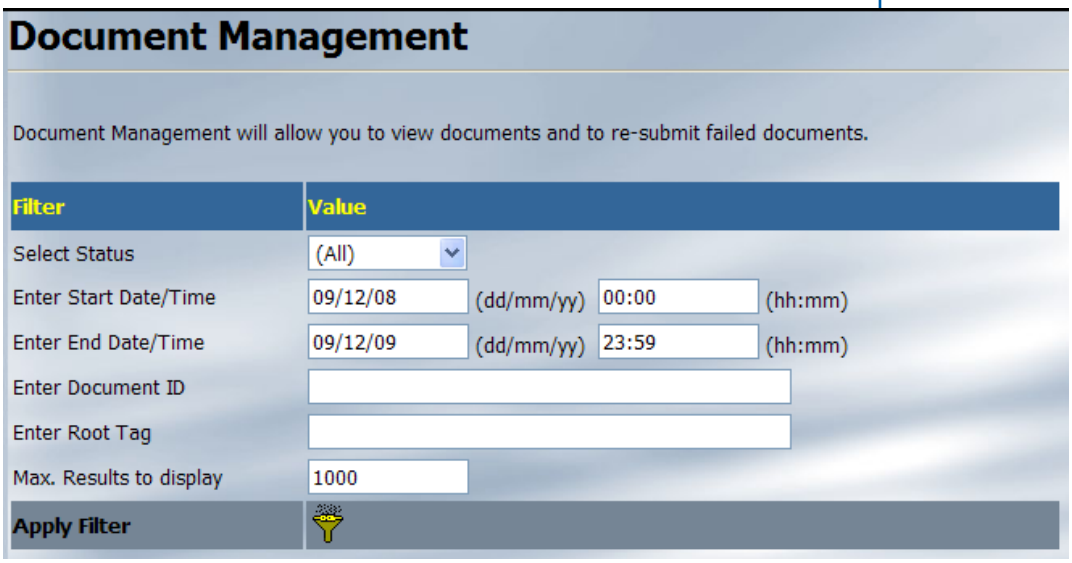
The document is removed from the list.

4.1.2 Document In Management

Any data coming to the system, such as sales from POS terminals, expected delivery details, new prices or products, are in the form of XML documents. The Document Management function shows which documents have been received and whether they have been processed. It also enables the System Administrator to view documents and re-submit failed documents.

To view documents entering the system go to Administration Menu > Processes > Document In Management.

The Document Management screen is displayed.



The available filter fields are described in the table below.

Field	Description
Status	Select one of the following from the drop down list: All, Received, Successful, Failed, System Busy, and Ignored. The default is All.
Start Date/Time End Date/Time	Enter the latest date and time for which documents should be shown in the Enter End Date/Time fields. These default to today's date and 23:59. The format required is locale dependant and is shown to the right of each field, in this example dd/mm/yy and hh:mm. Alternatively, leave the field blank to finish with the most recent document.
Document ID	Enter a specific Document ID.
Root Tag	Enter a specific Root Tag, for example, POSBasket, SystemEvent, SafeCMAction, POSStoreRecallEvent, Order, Layaway, StockAdjustmentEvent.
Max No. Results to Display.	Enter the maximum number of results to be displayed on screen. The default is 1000.

Apply the filter using the Filter icon and the Document In Management screen is displayed.

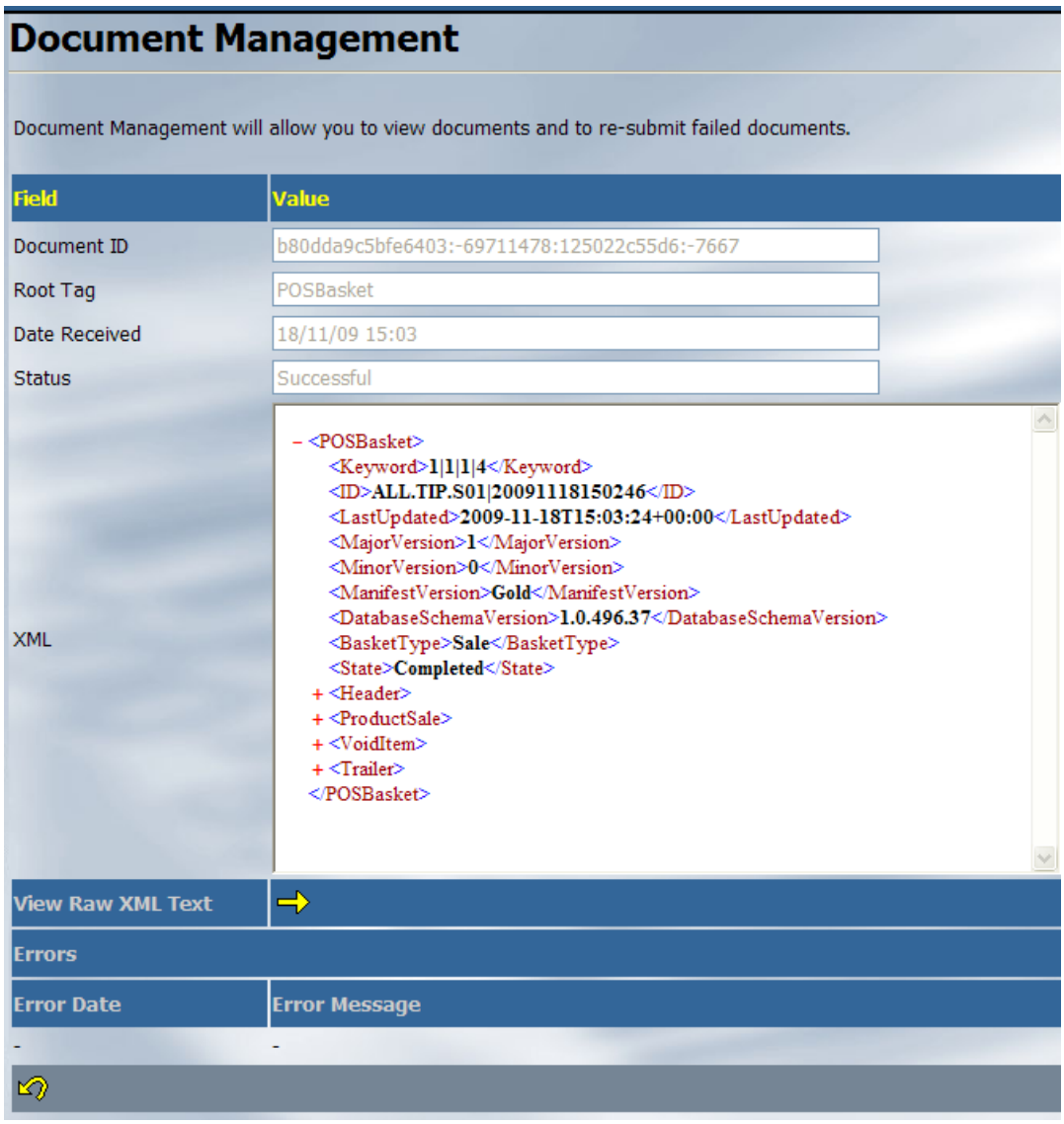
The available fields are described in the following table.

Field	Description
Options	You can View or Delete the entry. If a Document has failed, it will have a status of Failed and the Repost icon is displayed.
Document ID	The document reference
Root Tag	The type of document, for example, System Event, Expected Delivery and so on.
Date Received	Date and time of receipt.
Status	Received, Successful, Failed, System Busy, Ignored

To view the details of a specific document:

3) Click View beside the appropriate document

Details of the document are displayed.



Note: If required raw XML code can be viewed by clicking Next beside View Raw XML Text.

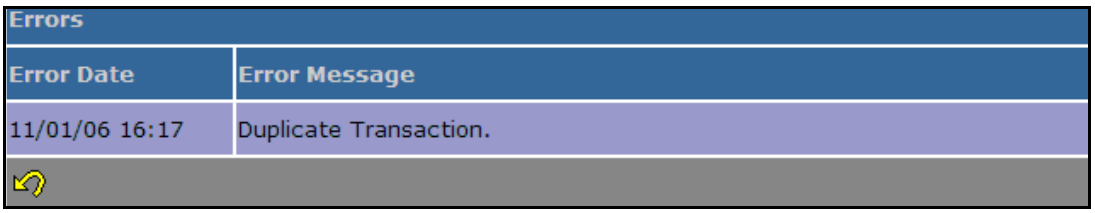
4) When finished, click Back to return to the list of documents.

To remove a specific document:

Click Remove beside the appropriate document
The document is removed from the list

If a Document has failed, it will have a status of 'Failed' and will have a Repost icon.

To view the reason behind why the message failed, click the view icon.
At the bottom of the screen will be a short summary of the reason the document failed.



To view a more in-depth reason behind the failure, view the Application log for that date and time.

To repost the document, click the Repost icon. This will change the status of the document from failed to unsent and will force the XML Document Processor to reprocess the transaction when it next runs.

Note: This can be useful if, for example, a document failed because the device didn't exist. The device could be added and the documents reposted.

If a large number of documents have failed, the search criteria can be changed to encompass all known failures and the Repost All icon can be clicked at the bottom of the Documents In page. This will repost all documents for the date range specified.

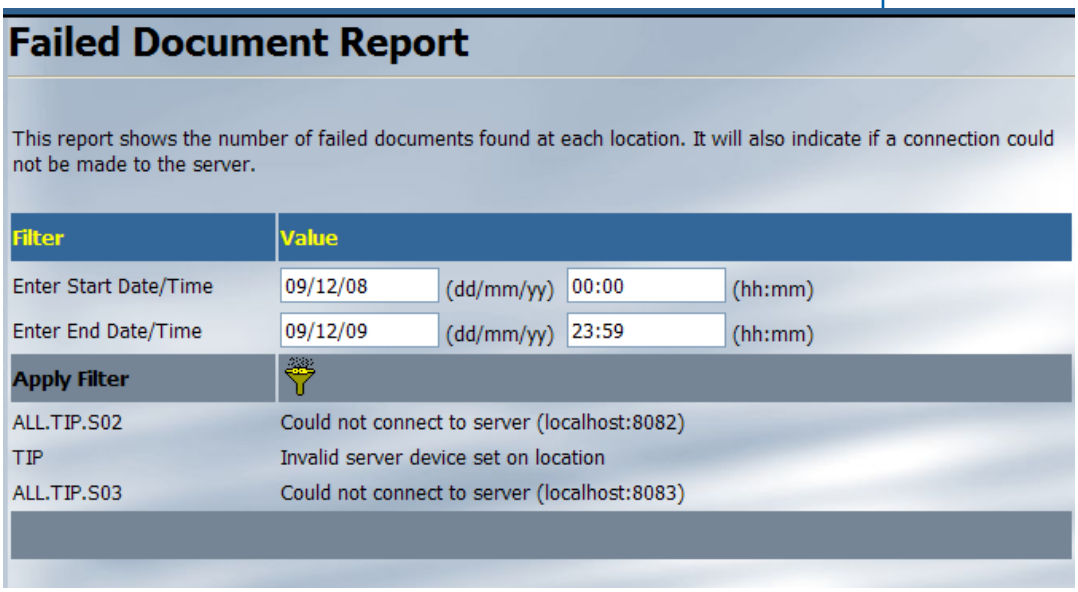
4.2 Estate Level Troubleshooting

4.2.1 Failed Documents Report

The Failed Documents Report provides a list of the documents that have failed in each location. This may be useful when troubleshooting, for example to establish whether a set of price or product data has been successfully transmitted.

To view the list of Failed Documents go to Administration > Processes > Failed Documents Report.

The Failed Documents Report is displayed.



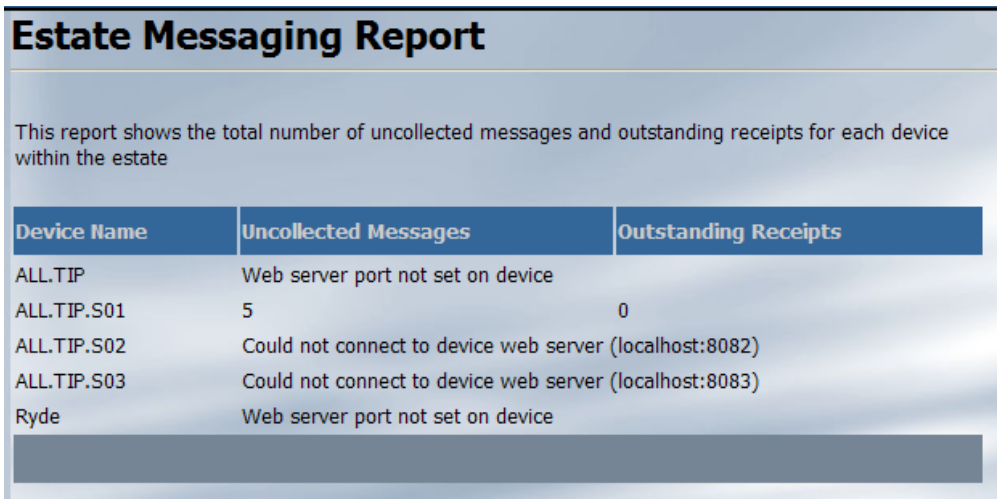
The list also includes attempts to connect to the server which have failed.

4.2.2 Estate Messaging Report

The Estate Messaging Report shows the total number of uncollected messages and outstanding receipts for each device within the estate. This is useful for spotting potential problems and communication (network) failures.

To view the Estate Messaging Report' go to Administration > Messaging > Estate Messaging Report.

The Estate Messaging Report screen is displayed



The following information is displayed.

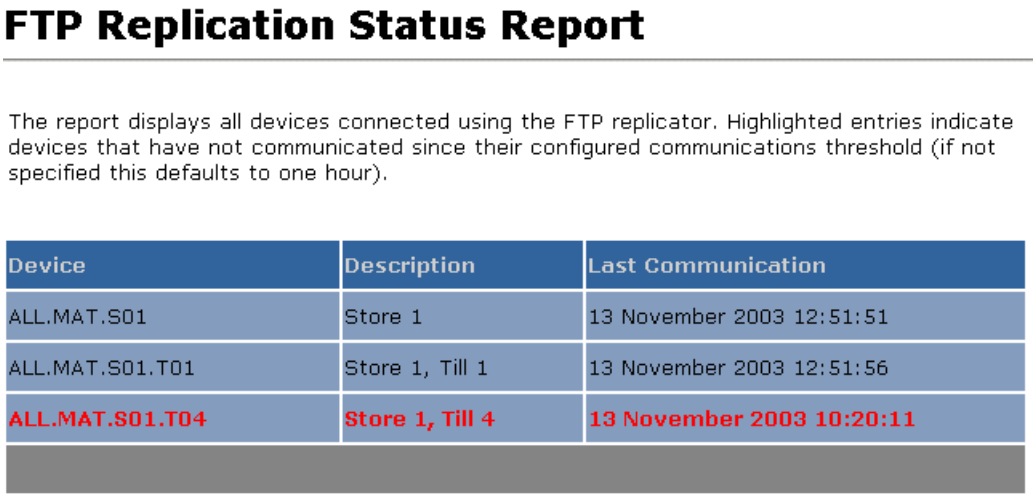
Field	Description
Device Name	This indicates the Name of the device.
Uncollected Messages	This column shows either the total number of uncollected messages for the device or another message explaining why a number is not displayed. For example, "web server port not set on device" as shown in the above example. This can be corrected by changing the web server IP address and port in Data Maintenance > Devices
Outstanding Receipts	This indicates the total number of outstanding receipts for the device

4.2.3 FTP Replication Report

The FTP Replication Status Report displays a list of devices and the time each of these last communicated by using the FTP Replicator.

To display the report go to Administration > System Status >

The FTP Replication Status Report is displayed.



FTP Replication Status Report

The report displays all devices connected using the FTP replicator. Highlighted entries indicate devices that have not communicated since their configured communications threshold (if not specified this defaults to one hour).

Device	Description	Last Communication
ALL.MAT.S01	Store 1	13 November 2003 12:51:51
ALL.MAT.S01.T01	Store 1, Till 1	13 November 2003 12:51:56
ALL.MAT.S01.T04	Store 1, Till 4	13 November 2003 10:20:11

Devices that have failed to communicate within the configured duration are highlighted in red.

The report works by reading the .inf files which are held in `<Application Home>\<Organisation Home>\ FTPReplicator\stats`.

The files in this directory are automatically updated each time a device's FTP Replicator makes a connection to its parent device. If devices are shown in this list but no longer exist, delete the files in the above directory.

5. Importing Data

This section looks at data import from the point at which data enters Retail-J.

The main assumption is that the data has been validated, structured and formatted ready for import to the system.

The following diagram depicts an example three tier estate, showing a data import flow and the points at which you can check that data has been imported successfully.

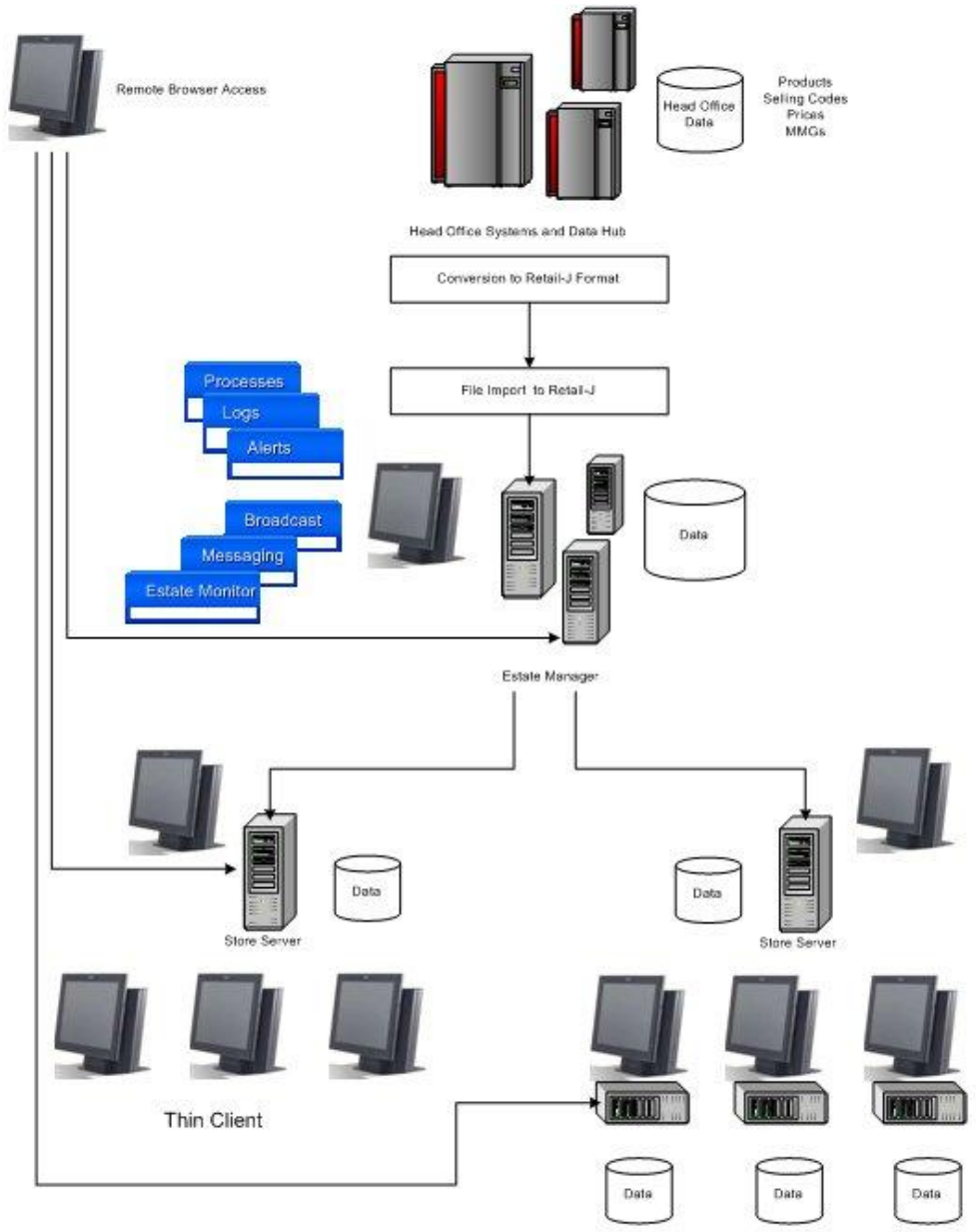


Figure 3: Data Import Example Estate

At the top of the diagram are head office applications and data storage.

The next level is the Retail-J Estate Manager. It is assumed that the management of imported data is undertaken at this level.

In the example estate, there are 2 stores. One store operates with a store server and thin clients. The other store operates a store server with thick clients.

Data enters Retail-J via the File Importer. Once imported to the Estate Manager database, data is distributed to the remaining databases in the estate using the Batch Broadcaster process.

The process of data import and broadcast comprises four main stages:

- Configuration
- Importing data
- Broadcasting
- Checking that updates have been implemented

5.1 Configuration

The two aspects of configuration covered in this section are:

- Data format
- Application Alerts

5.1.1 Data Formats

Retail-J data is formatted as XML. The allowable structure and contents of each type of data record is specified in its own XSD. XSDs are distributed with the application.

The following are populated examples of records commonly imported into Retail-J.

Product

```
Product>
 <XMLSchemaVersion>1</XMLSchemaVersion>
 <LastUpdated>2009-11-25T14:50:01+00:00</LastUpdated>
 <MajorVersion>1</MajorVersion>
 <MinorVersion>0</MinorVersion>
 <ProductID>test1</ProductID>
 <Type>1</Type>
 <MMGroupID>0013</MMGroupID>
 <Description enabled="1">test product</Description>
 <Description country="GB" language="en" variant="">test product</Description>
 <StartDate>2009-11-25T00:00:00+00:00</StartDate>
 <EndDate>2069-12-31T00:00:00+00:00</EndDate>
 <ItemPackages>1</ItemPackages>
 <AssociatedProductTotal>0.0</AssociatedProductTotal>
</Product>
```

Selling Code

```
SellingCode>
 <XMLSchemaVersion>1</XMLSchemaVersion>
 <LastUpdated>2009-11-25T14:49:56+00:00</LastUpdated>
 <MajorVersion>1</MajorVersion>
 <MinorVersion>0</MinorVersion>
 <SellingCodeID>1</SellingCodeID>
 <ItemCode>test1</ItemCode>
</SellingCode>
```

Product Price

```
<ProductPrice>
  <ProductID>11</ProductID>
  <UnitPrice productID="11" baseProductID="" currencyID="GBP" startDate="2009-12-
  10T00:00:00+00:00" endDate="2069-12-31T00:00:00+00:00" locationRegion="ROOT"
  locationType="ROOT">2999</UnitPrice>
 </ProductPrice>
```

Promotion

```
<Promotion>
 <XMLSchemaVersion>1</XMLSchemaVersion>
 <LastUpdated>2009-12-10T12:10:36+00:00</LastUpdated>
 <MajorVersion>1</MajorVersion>
```

```
 <MinorVersion>1</MinorVersion>
 <PromotionID>000003</PromotionID>
 <Description enabled="1">Buy two test product get £1 off</Description>
 <Description country="GB" language="en" variant="">Buy two test product get 1 free</Description>
<MultibuyGroup>
 <XMLSchemaVersion>1</XMLSchemaVersion>
 <CriterionID>1</CriterionID>
 <ThresholdType>1</ThresholdType>
 <ThresholdValue>0.0</ThresholdValue>
 <ThresholdValue currency="GBP">2.0</ThresholdValue>
 <MinItemPriceRange>0.0</MinItemPriceRange>
 <MinItemPriceRange currency="GBP">0.0</MinItemPriceRange>
 <MaxItemPriceRange>0.0</MaxItemPriceRange>
 <MaxItemPriceRange currency="GBP">0.0</MaxItemPriceRange>
 <RewardType>4</RewardType>
 <RewardValue>0.0</RewardValue>
 <RewardValue currency="GBP">100.0</RewardValue>
 <EffectiveRewardValue>0.0</EffectiveRewardValue>
 <EffectiveRewardValue currency="GBP">0.0</EffectiveRewardValue>
 <ExpiryDate>2069-12-31T00:00:00+00:00</ExpiryDate>
 <StartDate>1970-01-01T00:00:00+00:00</StartDate>
 <AccountToDept>0025</AccountToDept>
 <AlertThresholdValue>0.0</AlertThresholdValue>
 <AlertThresholdValue currency="GBP">0.0</AlertThresholdValue>
 <UseFixedValueInBestDeal>0</UseFixedValueInBestDeal>
 <UpperThresholdValue>0.0</UpperThresholdValue>
 <UpperThresholdValue currency="GBP">0.0</UpperThresholdValue>
 <GroupDescription>Buy two test product get 1 free</GroupDescription>
 <Rolling>0</Rolling>
 <DisableOnItemDiscount>0</DisableOnItemDiscount>
 <UniqueItems>0</UniqueItems>
 <AllItems>0</AllItems>
 <RoundingRule>2</RoundingRule>
 <UseLowestNetValue>0</UseLowestNetValue>
 <MMGroupID>0013</MMGroupID>
 <TriggerOnLostSales>0</TriggerOnLostSales>
 </MultibuyGroup>
<Timetable>
 <XMLSchemaVersion>1</XMLSchemaVersion>
 <CriterionID/>
 <StartDate>1970-01-01T00:00:00+00:00</StartDate>
 <FinishDate>2069-12-31T00:00:00+00:00</FinishDate>
 </Timetable>
 <Notes enabled="1"/>
 <AlertMessage enabled="1"/>
</Promotion>`
```

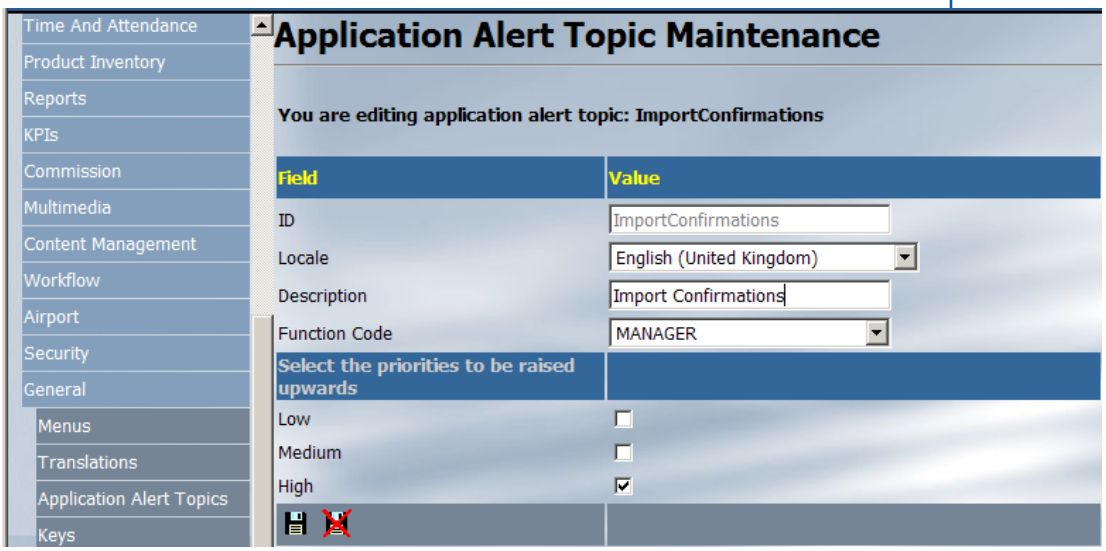
It is the responsibility of the user to deliver valid and correctly formatted data to the File Importer.

5.1.2 Set up Application Alerts

You need the following Application Alerts to monitor imports and import errors:

- Import Confirmations
- Import Errors

Application Alerts are set up from Data Maintenance > General > Application Alert Topics. An example is shown below.



When you broadcast the incoming static data changes out to your estate you will also need to set up the following Application Alerts:

- Broadcast Confirmations
- Broadcast Errors

Select one or more of the Low, Medium and High check boxes to categorize the alerts. You can filter on priority in the Application Alert Viewer.

Application Alerts are shown on the Welcome screen and from Administration > System Status > Application Alert Viewer.

5.2 Data Import

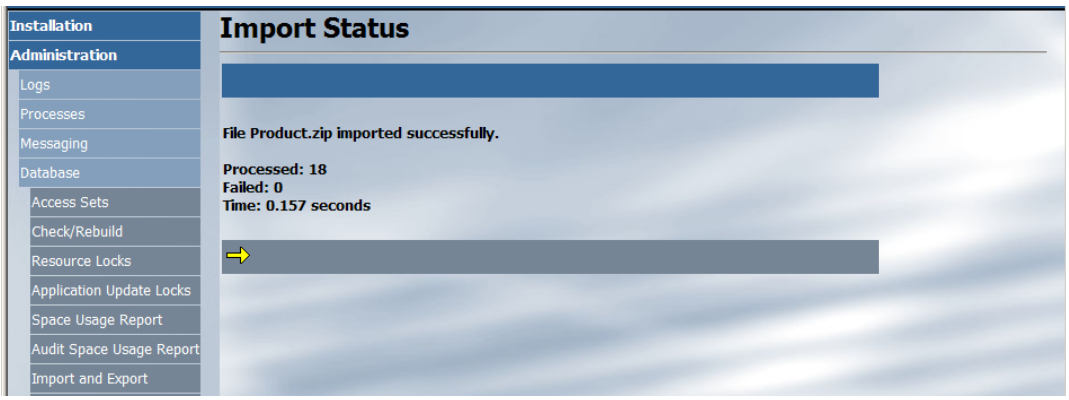
The two methods of data import covered in this section are:

- Manual File Import
- File Importer

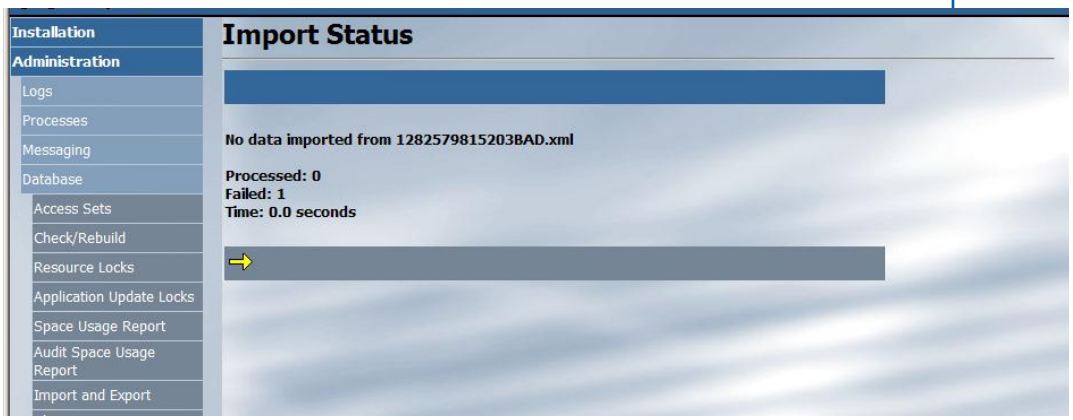
5.2.1 Manual Import

It is possible to manually import and export data from Administration > Database > Import and Export.

The number of processed and failed records are reported on the Import Status page once the import is complete.



An invalid record will be rejected and cause the import to fail as with the example below.



Manual file imports are not reported as Application Alerts.

5.2.2 File Importer

The file importer checks a nominated import directory at a configured interval and imports supported file types into Retail-J taking account of the configured maximum number of errors allowed.

The processes in use are set from Administration > Process Configuration.

You can start, pause and stop processes from Administration > Process Management

Records will import successfully if their structure and data types match those specified in the corresponding XSD.

The result of the import can be seen in the following locations:

- The Welcome page (where all Application Alerts are listed).

Application Alerts

Topic	Date Raised	Priority	Description
Import Confirmations	15/09/10 17:43	Low	Successfully processed import, file : AAuto15203GOOD.xml
Import Confirmations	15/09/10 17:43	Low	Successfully processed import, file : AAuto15203GOOD2.xml
Import Errors	15/09/10 17:43	High	Failed to process import, file : AAuto15203BAD3.xml
Import Errors	15/09/10 17:43	High	Failed to process import, file : AAuto15203BAD.xml
Import Errors	15/09/10 17:43	High	Failed to process import, file : AAuto15203BAD2.xml

- Administration > System Status > Application Alert Viewer

Options	Topic	Location	Date Raised	Priority	Status	Description
	Import Confirmations	TIP	15/09/10 17:43	Low	Raised	Successfully processed import, file : AAuto15203GOOD.xml
	Import Confirmations	TIP	15/09/10 17:43	Low	Raised	Successfully processed import, file : AAuto15203GOOD2.xml
	Import Errors	TIP	15/09/10 17:43	High	Raised	Failed to process import, file : AAuto15203BAD3.xml
	Import Errors	TIP	15/09/10 17:43	High	Raised	Failed to process import, file : AAuto15203BAD.xml
	Import Errors	TIP	15/09/10 17:43	High	Raised	Failed to process import, file : AAuto15203BAD2.xml

- Administration > Logs > View Application Event Log

Date/Time	Application ID	Reference ID
Severity	Message	
15/09/10 17:43	**FileImportProcess**	AAuto15203BAD3.xml
	Successfully processed : 0, Failed to process : 3	
15/09/10 17:43	**FileImportProcess**	AAuto15203BAD.xml
	Successfully processed : 0, Failed to process : 2	
15/09/10 17:43	**FileImportProcess**	AAuto15203BAD2.xml
	Successfully processed : 0, Failed to process : 1	

Failed files should be corrected and re-imported. Alternatively, import a new file which includes the failed records.

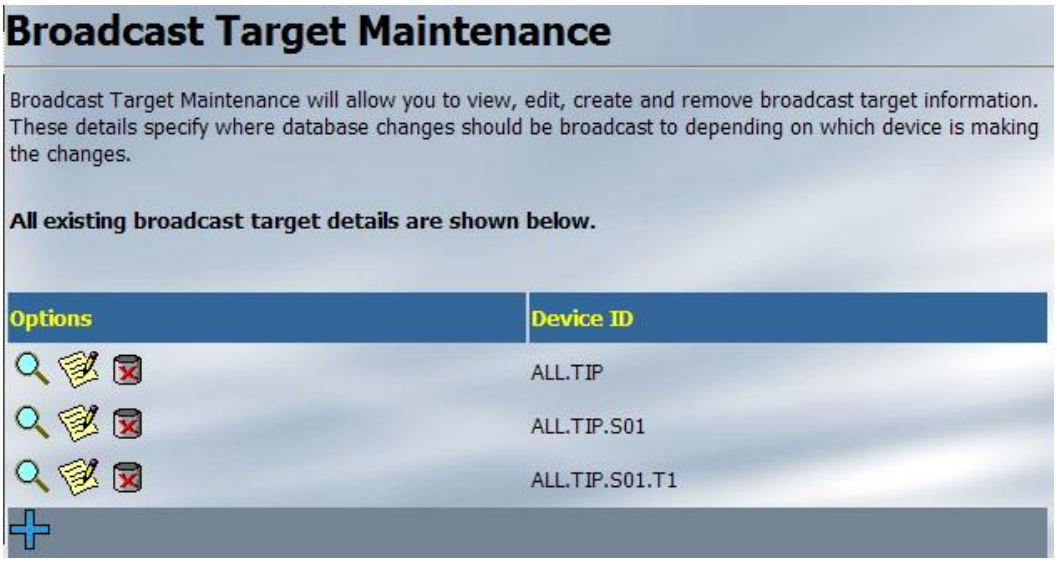
5.3 Broadcasting

Once data has been imported into the Estate Manager, the next step is to broadcast it to the remaining databases in the estate.

Broadcasting is described in more detail in section **Error! Reference source not found. Error! Reference source not found.**. This section looks at broadcasting in the context of distributing imported data.

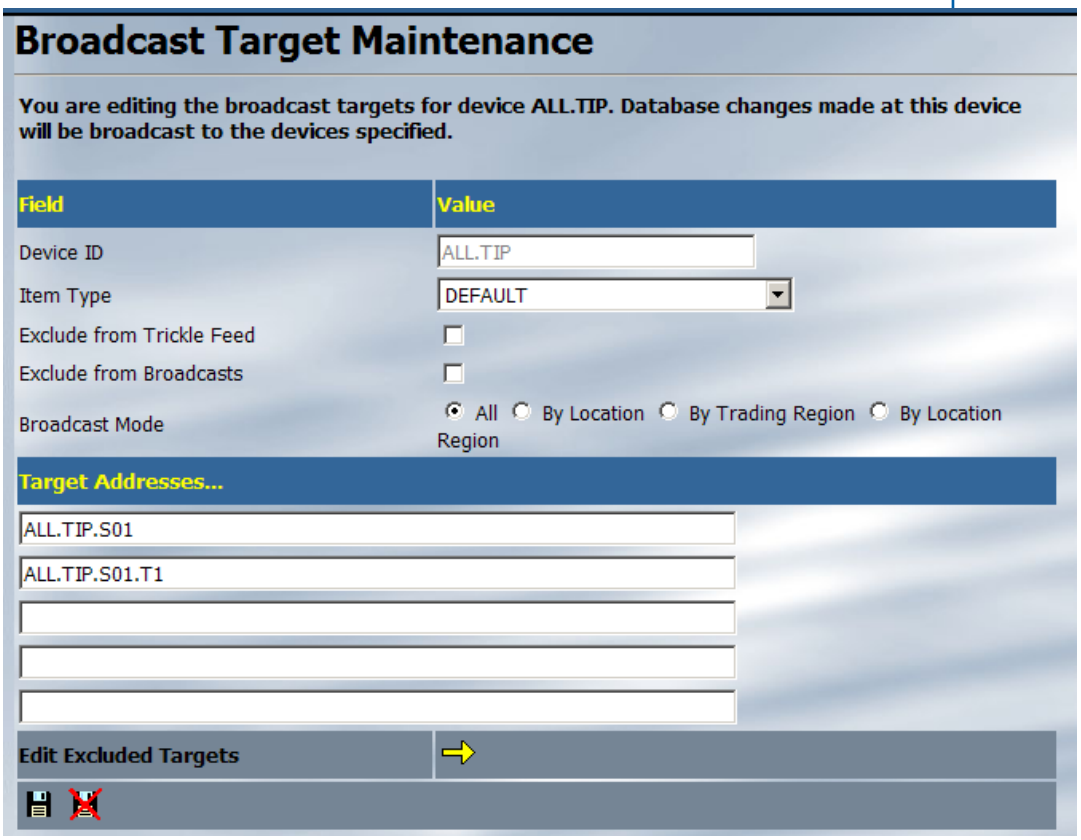
5.3.1 Broadcast Targets

Broadcast targets are relative to the device on which they are set. The screen below shows the broadcast targets for a simple estate comprising an estate manager, a store server and an in-store till



There are two basic approaches to setting broadcast targets. You can set each device to broadcast to every device beneath it or you can set a device to broadcast only to it's immediate subordinates in the hierarchy. In the latter case, a subordinate would broadcast to it's subordinates when changes were made to its database, provided it was running a Batch Broadcaster process. For the purposes of centralised reporting, the former approach is recommended.

In the following example, broadcast targets have been set at the Estate Manager for both subordinate devices.



In practice, a wild card (*) would be used to cover multiple devices at each level in the estate hierarchy, for example: `ALL.TIP.*` and `ALL.TIP.*.*` would cover all store servers and all tills in a three level hierarchy.

5.3.2 Batch Broadcaster Process

Batch Broadcasting can be run as a process or manually.

Where Batch Broadcasting is run as a scheduled process, we suggest that there should be a checkpoint in your processes between file import and the broadcast of updates out to the estate. Errors are more easily corrected the earlier they are discovered.

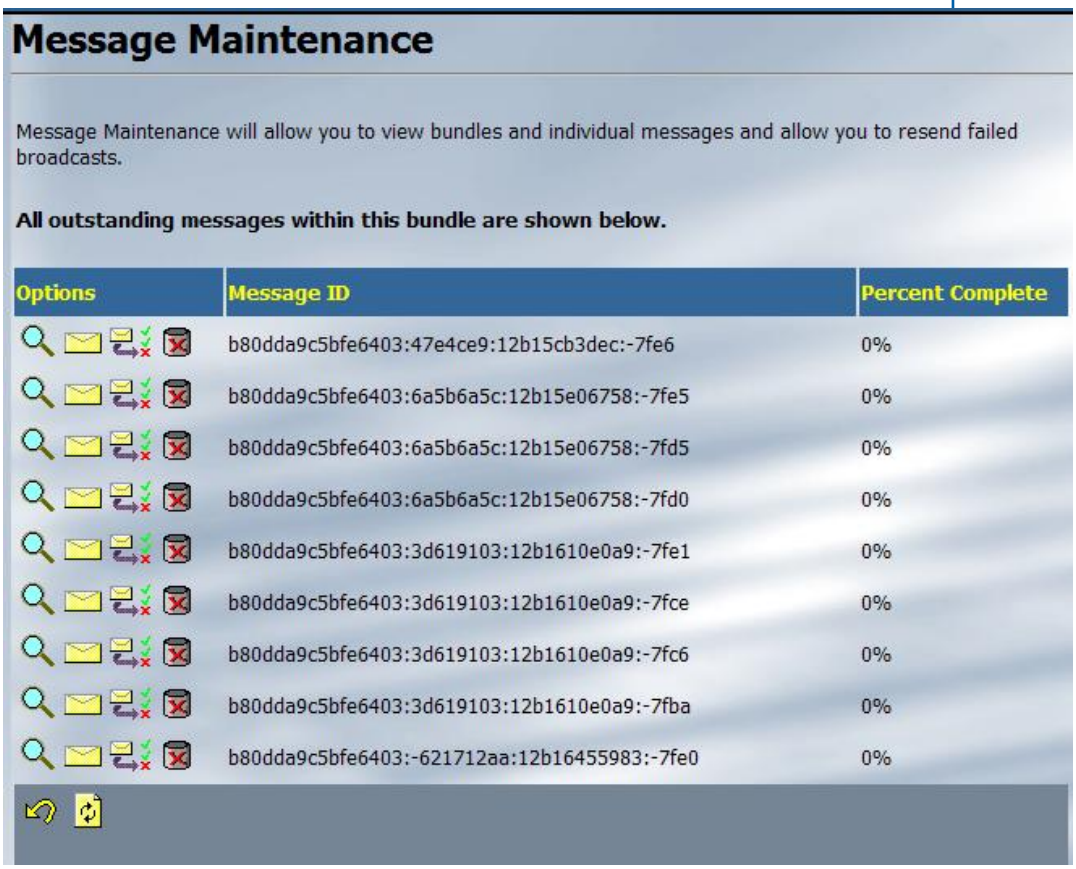
5.4 Checking Updates

You can monitor messaging, to check the flow of updates through the estate, from the following locations:

- The Welcome page (where all Application Alerts are listed)
- Administration > System Status > Application Alert Viewer
- Administration > Logs > View Application Event Log
- Administration > Messaging > Estate Messaging Report
- Administration > Messaging > Messages Message Maintenance

5.4.1 Percentage Completion

You can review the contents of message bundles from Administration > Messages > Message Maintenance.



Each message bundle shows Percent Complete which can offer an indicator to devices which have not been updated.

For one receiving device, messaging percentages are:

- 0% Not Sent
- 50% Sent
- 100% Acknowledgement Received

Where there are a number of receiving devices, percentages are reported pro rata. In the example below there are 10 receiving devices with different numbers of devices online.

Total Number of Receiving Devices	Number of online devices.	Message Not Sent %	Message Sent %	Acknowledgement Received %
10	10	0	50%	100%
	5	0	25%	50%
	1	0	5%	10%

Where messages are sent by one device to another for onward routing, for example from a store server to a number of tills; the intermediate device waits for all of its own recipients to respond before transmitting an acknowledgement to the next level up (usually the Estate Manager).

Note, the default configuration deletes messages after 7 days. Devices left off line for longer than the configured period for message deletion may not be fully updated when brought back online.

5.4.2 Estate Browsing

To confirm that updates have been made in the estate, you can browse directly to a selection of devices (by typing the URL of the relevant device into your browser address line) and check the data concerned.

Alternatively, use Administration > System Status > Estate Monitor to reach your chosen device or devices.

5.4.3 Troubleshooting

A summary of troubleshooting activities is listed below:

- Validate import files on extraction from the host system.
- Check failed files for bad records and resubmit.
- Ensure Batch Broadcasting runs only once you are satisfied that all your data is correct and fully downloaded.
- Review messaging progress.
- Use % completion to determine which devices may need to be checked.
- Browse to suspect devices.
- Browse to sample stores to check updates have been effected.

6. Transaction Monitoring (Sales Audit)

Sales Audit is an important tool for investigating the progress, success and failure of transactions. Generally, only the system administrator and auditor roles will have access to the Sales Audit system.

The Sales Audit system resides only on the Estate Manager and uses a separate audit database. When a transaction is received from a store, this is processed to both the operational and the audit databases.

The audit database provides a data source for exporting transactions to 3rd party applications and collating card sales for acquirer settlement files.

The following diagram illustrates the transaction flow through the Sales Audit process.

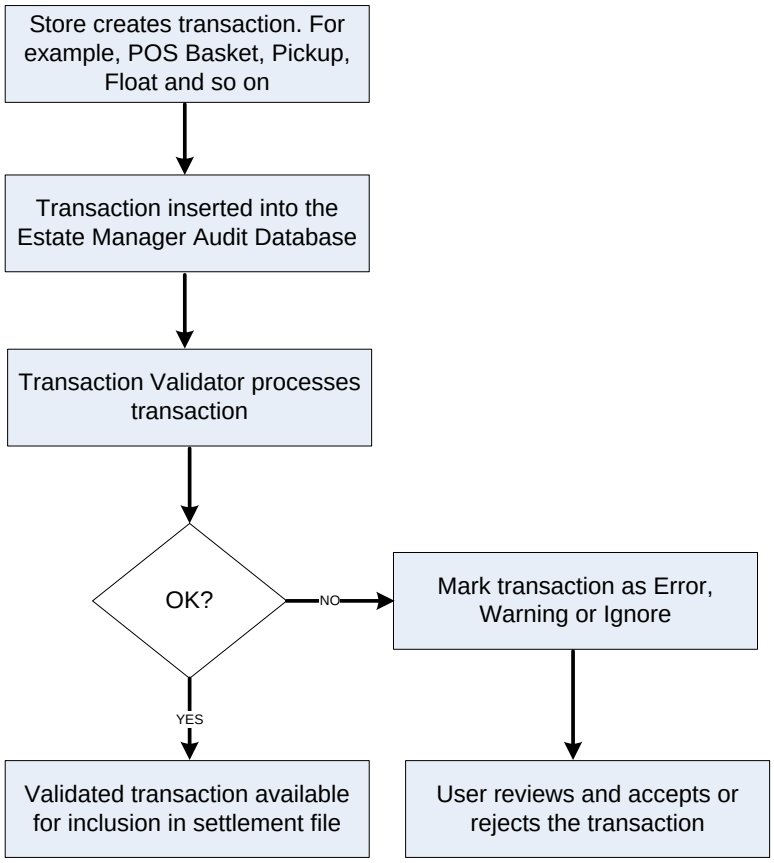


Figure 4: Sales Audit Transaction Flow

The Sales Audit system processes all transactions from all stores and checks the integrity of each transaction, flagging the results in the user interface.

Typically, the system administrator will concentrate on transactions reported on the Audit Status screen.

6.1 Transaction and Sequence Number Errors

The Audit Status screen reports on errors of interest to the system administrator. These include:

- Duplicate Transactions
- Duplicate Sequence Numbers
- Missing Sequence Numbers
- Unexpected Sequence Numbers
- Transaction numbers wrapped round to zero
- Sequence numbers wrapped round to zero

Usually the reason for these errors is straightforward, for example:

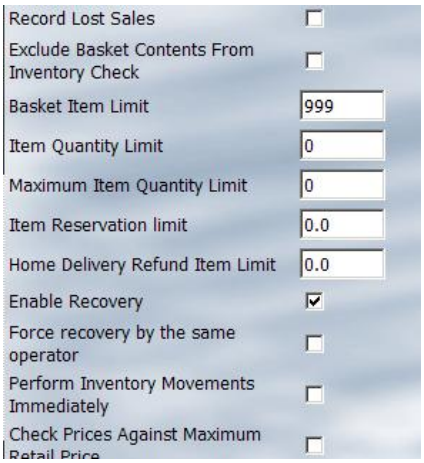
- If a till has been replaced, its sequence number should be reset to a number above the next sequence number expected for that device.
- Transactions have been resent.
- Transactions have been suspended at the POS and possibly deleted.
- Transactions are processed at different times and speeds.
- More than 9,998 transactions have been processed on a till without a purge taking place.

6.1.1 POS Failure

A transaction number can be lost if the POS fails during a transaction.

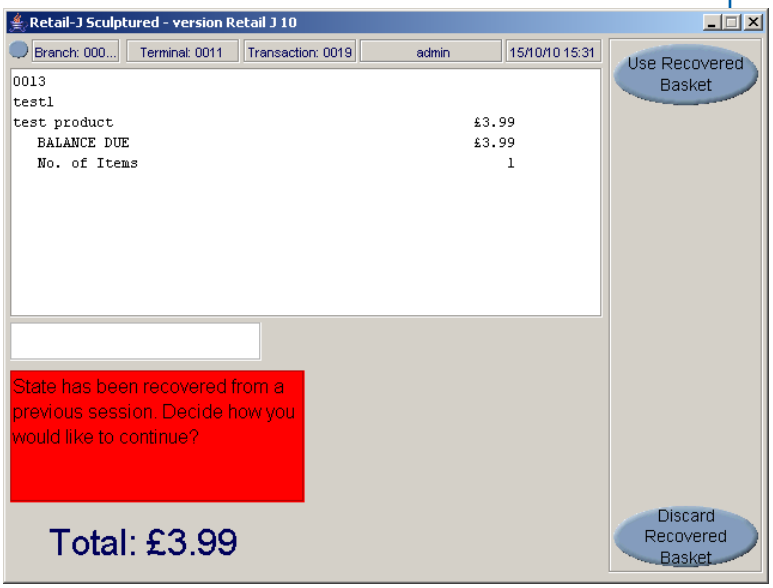
To configure the system to retain the current transaction (and transaction number).

Check the Enable Recovery check box in Data Maintenance > POS Support > Terminal Profiles to create a recovery file during each transaction.

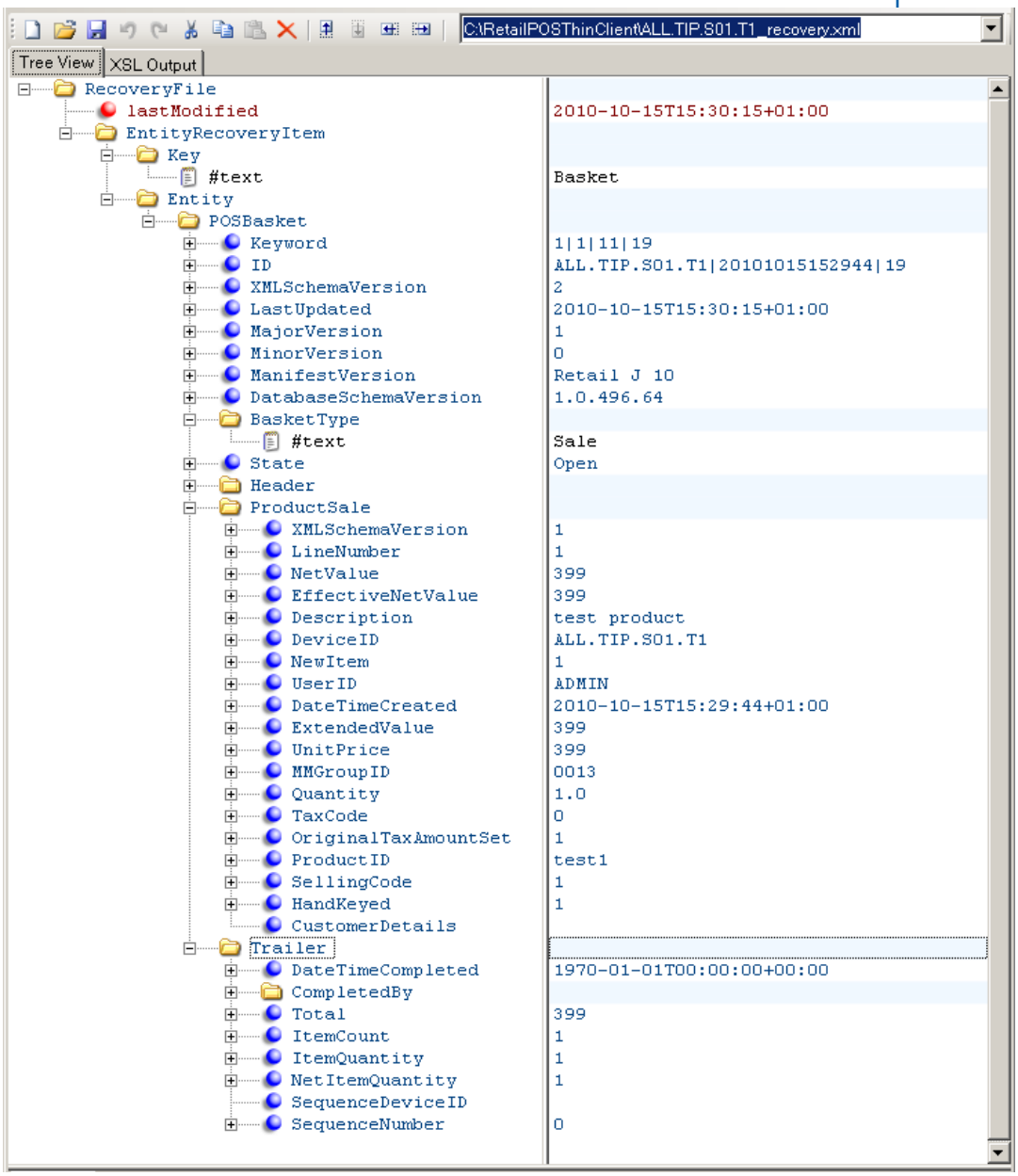


The recovery file is called DEVICE_ID_recovery.xml. The current transaction is recorded in this file in case of POS failure.

When the POS is restarted, the operator can chose to use or discard the recovered basket.



Here is an example of the recovery file:


C:\RetailPOSThinClient\ALL.TIP.S01.T1_recovery.xml
Tree View
XSL Output
RecoveryFile
lastModified 2010-10-15T15:30:15+01:00
EntityRecoveryItem
Key
#text Basket
Entity
POSBasket
Keyword 1|1|11|19
ID ALL.TIP.S01.T1|20101015152944|19
XMLSchemaVersion 2
LastUpdated 2010-10-15T15:30:15+01:00
MajorVersion 1
MinorVersion 0
ManifestVersion Retail J 10
DatabaseSchemaVersion 1.0.496.64
BasketType
#text Sale
State Open
Header
ProductSale
XMLSchemaVersion 1
LineNumber 1
NetValue 399
EffectiveNetValue 399
Description test product
DeviceID ALL.TIP.S01.T1
NewItem 1
UserID ADMIN
DateTimeCreated 2010-10-15T15:29:44+01:00
ExtendedValue 399
UnitPrice 399
MMGroupID 0013
Quantity 1.0
TaxCode 0
OriginalTaxAmountSet 1
ProductID test1
SellingCode 1
HandKeyed 1
CustomerDetails
Trailer
DateTimeCompleted 1970-01-01T00:00:00+00:00
CompletedBy
Total 399
ItemCount 1
ItemQuantity 1
NetItemQuantity 1
SequenceDeviceID
SequenceNumber 0