

BDA FTP Automation
Chris Grove – 31 October 2012



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JOHANNESBURG STOCK EXCHANGE
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BDA FTP Automation

- During the T+3 workshops conducted earlier in the year, the key theme through-out these workshops was 'AUTOMATION'.
- We discussed and presented to members a phased approach should a decision be made to implement T+3 into BDA.
- The overall scope of implementing T+3 on BDA was broken up into 3 Phases and 1 parallel phase.
- Parallel phase only impacts BDA and no other integration is required.



- Scope for Phase 1
 - Split Of Brokers Proprietary and Controlled Client settlements
 - Client Pledge
 - SLB Swift Message Automation
 - Corporate Action Swift Message Automation
 - FTP Automation

- Today's session is really to focus the last scope item in phase 1 – FTP Automation
- Two key objectives of the FTP Automation
 - We want to expand the existing upload offering based on member feedback from the previous workshops
 - Want to improve the current FTP process that requires manual intervention by users

- Expanding the current service offering by adding:
 - A mechanism that allows members to automate the loading of Client data into BDA i.e. CLMNT.
 - Provide a mechanism that allows members to update client instructions for elective Corporate Action (CA) events. CA elective events that will be covered:
 - Scrip Dividend
 - Take-Up
 - Odd Lot
 - Drip

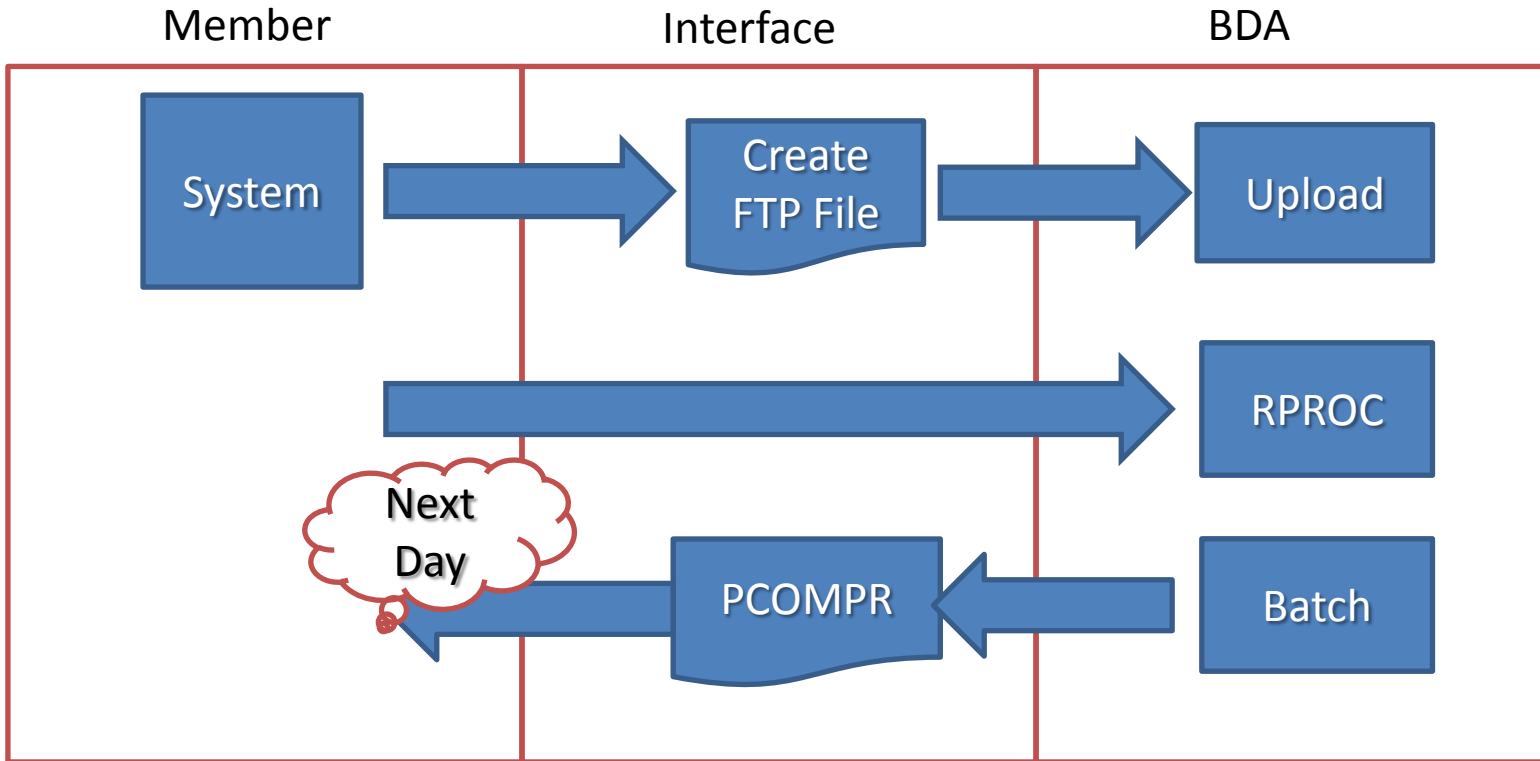
- Priority of expanding the existing service offering:
 - 1st - CA Elective events
 - 2nd - CLMNT
 - Plan to have these 2 additional service offerings implemented by May 2013.

- Before we can start with the development of adding the additional service offerings, we must 1st agree how we want to improve or change the existing FTP process
- Option 1
 - Improve the current process to be more automated
- Option 2
 - Implement a BDA Web-service interface

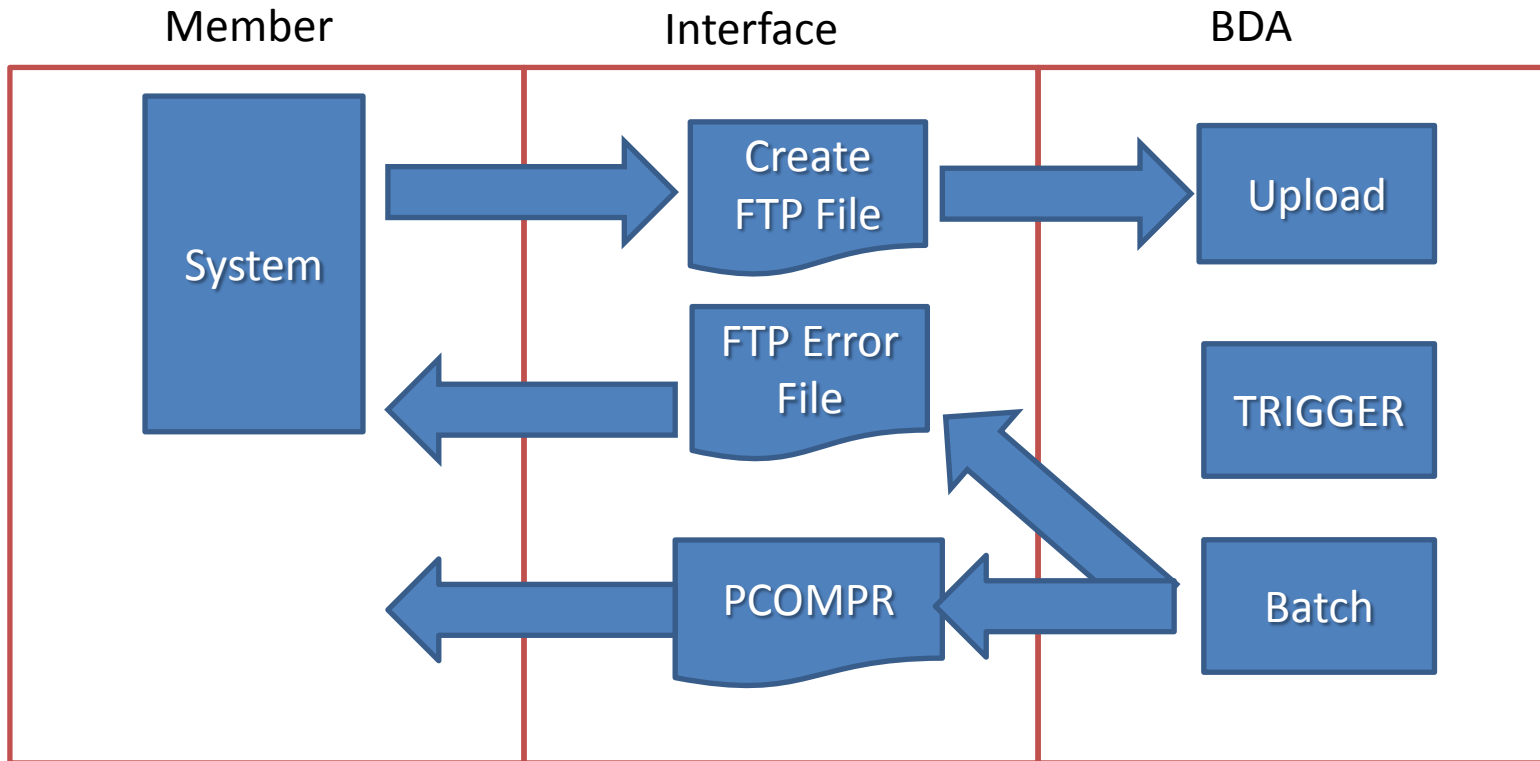


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Current FTP Process



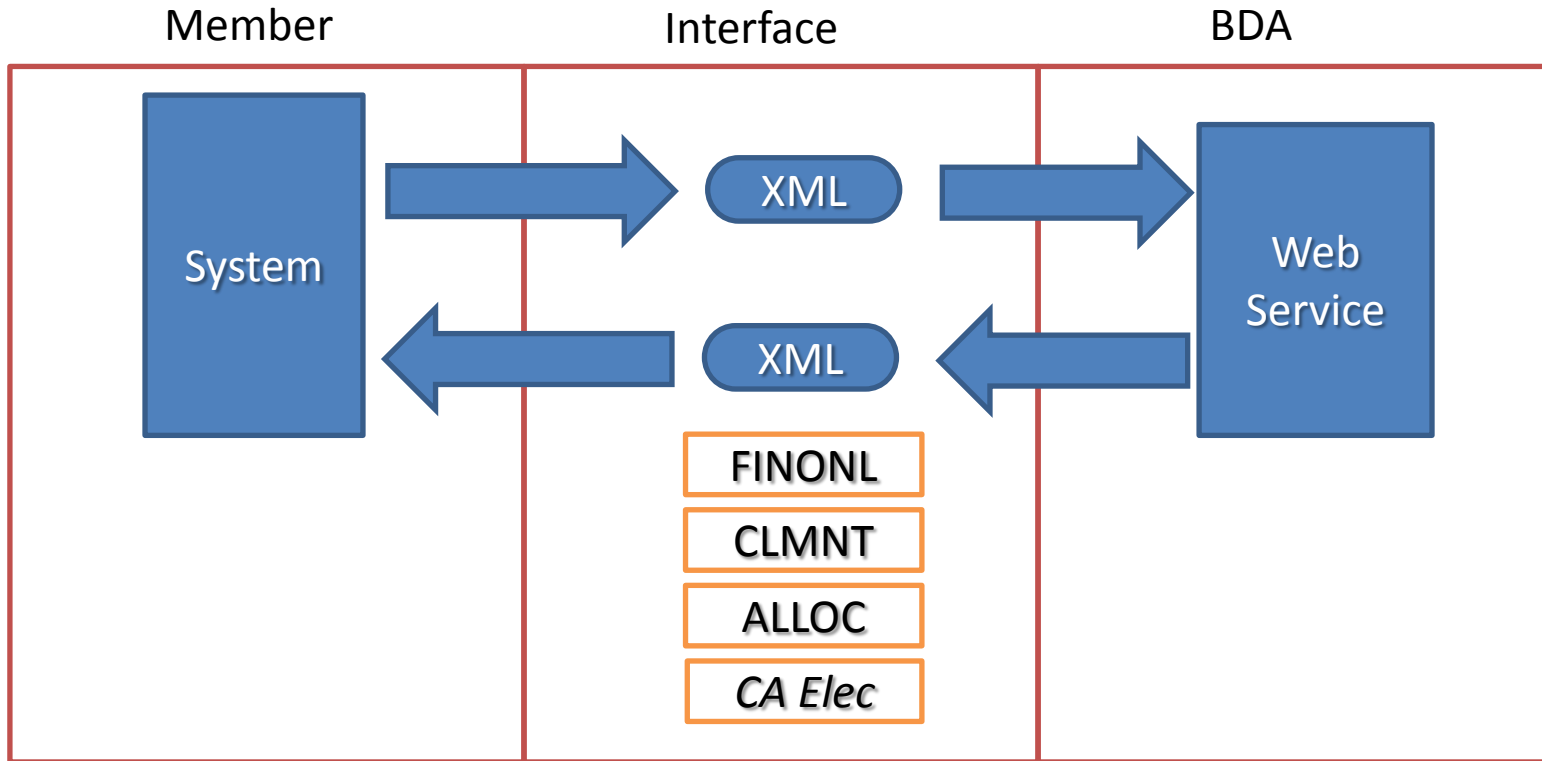
Option 1 - Improved FTP Process



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- FTP process and layouts unchanged
- System validation and processing unchanged
- RPROC step replaced by an automated watcher
- New output file created containing error details
- No changes to member systems for uploads
 - Changes necessary to process the error file
- Based on filename will be processed online or during evening batch, i.e. have two datasets that must be used as per current FINONL

Option 2 - Proposed Web Service Process



- Standardised Web Services Architecture
- HTTPS (user\pass not x509)
- Synchronous and asynchronous model
- Immediate return of error messages
- Existing FTP model unchanged and will remain as is

- Not designed for large batches at end of day
 - Not a replacement for large EOD batch uploads
- Smaller intraday timeous batches
- Functions to be included initially:
 - FINONL
 - CLMNT
 - ALLOUP
 - New Corporate Actions Elective events

- Functionality and Validation will remain unchanged
 - Enhancements will mainly be for XML processing and the Web Service approach only
- Interface layout largely unchanged (XML versus fixed format)
 - Will use proper data types: integer, string all constrained as per existing layout. (i.e. using length, maxLength , minInclusive attributes)
 - New fields may be added for feedback and status information
- Object interface and not a message interface
- Response object will be of the same type as the request object

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FTP Layout		XML Layout (xsd)
BRK-CDE	9(3)	<pre><xs:element name="BrokerCode"> < xs:simpleType> <xs:restriction base="xsd:unsignedShort"> <xs:minInclusive value="0"/> <xs:maxInclusive value="999"/> </xs:restriction> < /xs:simpleType> < /xs:element></pre>
CASH-ALPHA	X(2)	<pre><xs:element name="CashAlpha"> < xs:simpleType> <xs:restriction base="xs:string"> <xs:maxLength value="2"/> </xs:restriction> < /xs:simpleType> </xs:element></pre>

- Bandwidth used will increase by an estimated 6 times over the FTP format (Send and Receive)
 - If you send 100MB of FTP file during the day it is likely that you will end up sending 600MB of XML messages using the Web Service approach
- Interface layout largely unchanged (XML versus fixed format)
 - Will use proper data types: integer, string all constrained as per existing layout. (i.e. using length, maxLength , minInclusive etc attributes)
 - A function header will be created to add messaging parameters such as tracking GUID and timestamp
 - New fields will be added where necessary to accommodate error information

- The Web Services Model will make use of HTTPS transport protocol between the client and the JSE.
 - Make use of the current JSE SSL certificate on their web farm
 - Encrypt traffic between endpoints
- There will be a double user/password pair to ensure that the message envelope reaches the destination unchanged and that no unauthorised access is made.
 - Each participant will be issued with a set of mainframe as well as JSE Active Directory user/passwords for each member that they send messages on behalf of.

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- Development costs for members if Web Services is implemented
- May have additional bandwidth costs (volume dependant)
- No additional hardware should be required

➤ JSE Costs

- If it is decided that Web Service is the solution, a subscription fee per service will be charged based on same fee as per the current upload subscription fee.

- Feedback from Brokers that could not make it
 - UBS
 - View that a web-service will not add real value to them
 - Worried about cost implications
 - Computershare – Does back office admin for 34 brokers
 - Feel Web-service does not add any additional efficiencies
 - Current FTP mechanism works and will support additional changes to improve the process
 - Also feels FTP for CA elective events will be a lot simpler than a message based solution

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