



IBM Software Group

WebSphere Flat File Adapter V7.5 - What's New?

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WebSphere® Support Technical Exchange



Agenda

- Overview of new features in 7.5
- Detailed walk through of new features
- Summary
- Additional Info
- Q & A



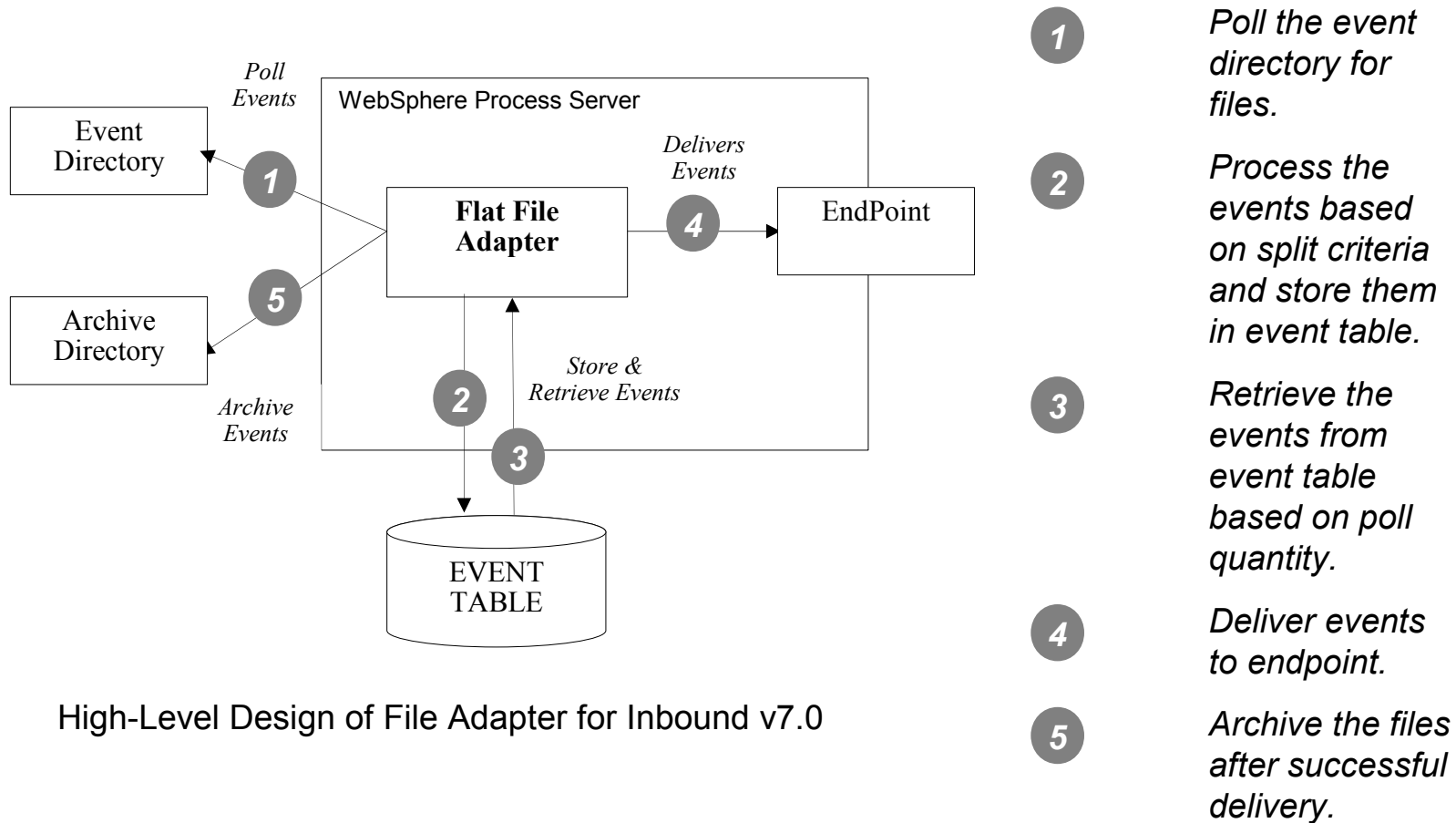
New features in 7.5 - Overview

- Support for high availability in active-active mode during inbound
- Support for handling large sized files during inbound (when splitting is enabled either by delimiter or size).
- Improved performance when dealing with large files, by considerably reducing the time taken by first polling cycle to deliver events
- Eliminates the need for permanent persistence of events for cyclic-mode during inbound.
- Improved sequence file generation, avoiding duplicate file generation at heavy load during outbound.

High Availability in Active-Active mode

- High availability active-active support enables all instances deployed in a clustered environment to be active and each instance is allowed to process the events independently.
- Current implementation supports failover availability during inbound event processing (using HA Active-Passive configuration).
- High availability active-active support enables continuous availability.
- High availability active-active support enables distribution of events to be processed between the available instances without any duplicate events being delivered to the endpoint.

Functioning in Active-Passive mode (before 7.5)

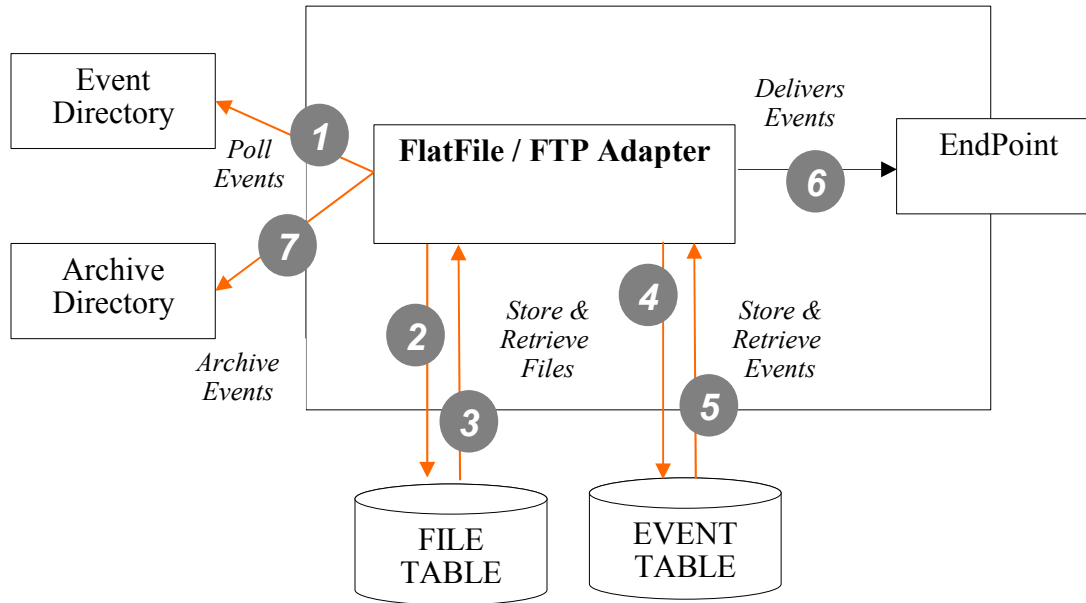


High-Level Design of File Adapter for Inbound v7.0

- 1** *Poll the event directory for files.*
- 2** *Process the events based on split criteria and store them in event table.*
- 3** *Retrieve the events from event table based on poll quantity.*
- 4** *Deliver events to endpoint.*
- 5** *Archive the files after successful delivery.*



High Availability in Active-Active mode



High-Level Design of File Adapter for Inbound v7.5

Event and File Sharing Model

- 1 Poll the event directory for files.
- 2 Record an entry for each file in the file table.
- 3 Retrieve a file from file table for processing.
- 4 Process the file based on split criteria and polling quantity and store them in event table.
- 5 Retrieve the events from event table based on poll quantity.
- 6 Deliver events to endpoint.
- 7 Archive the files after successful delivery.

New Table Introduced: File Table

File Table Schema

Filename Represents the filename the needs to processed for BO's	Status 0 – unprocessed 1 – in-process 2 – events updated 3 - processed 4 – failed 5 – archiving in progress	Last BO Count Represents processed BO count for current read	Last File Pointer Represents the end position of current read as file pointer	Timestamp Represents the time when the file is picked up for reading	File Handler Holds the file handler object

<i>Status Code</i>	<i>Description</i>
0 - unprocessed	New file entry. An adapter polling the event directory for files is responsible for making this entry.
1 - in-process	An adapter is in the process of reading part of this file for its content; while the status is "1" no other adapter is allowed to process this file. Updates the timestamp during this state.
2 - events updated	Once the adapter finished reading part of the file as required by the polling quantity, and after having been successful in generating new events for the current set of BO's, this status will be shown as "2".
3 - processed	When EOF file is reached, the file status is updated as "3" when adapter operates in non-cyclic mode; when adapter operates in cyclic mode the status of the file is shown as "2", even when the EOF is reached, this helps us to process the file again to check for new updates to the file.
4 - failed	Failed to read the file, because of some unexpected error. File might be corrupt or invalid.
5 – archiving in progress	An adapter is in the process of archiving this file; while the status is "5" no other adapter is allowed to process this file. Updates the timestamp during this state.



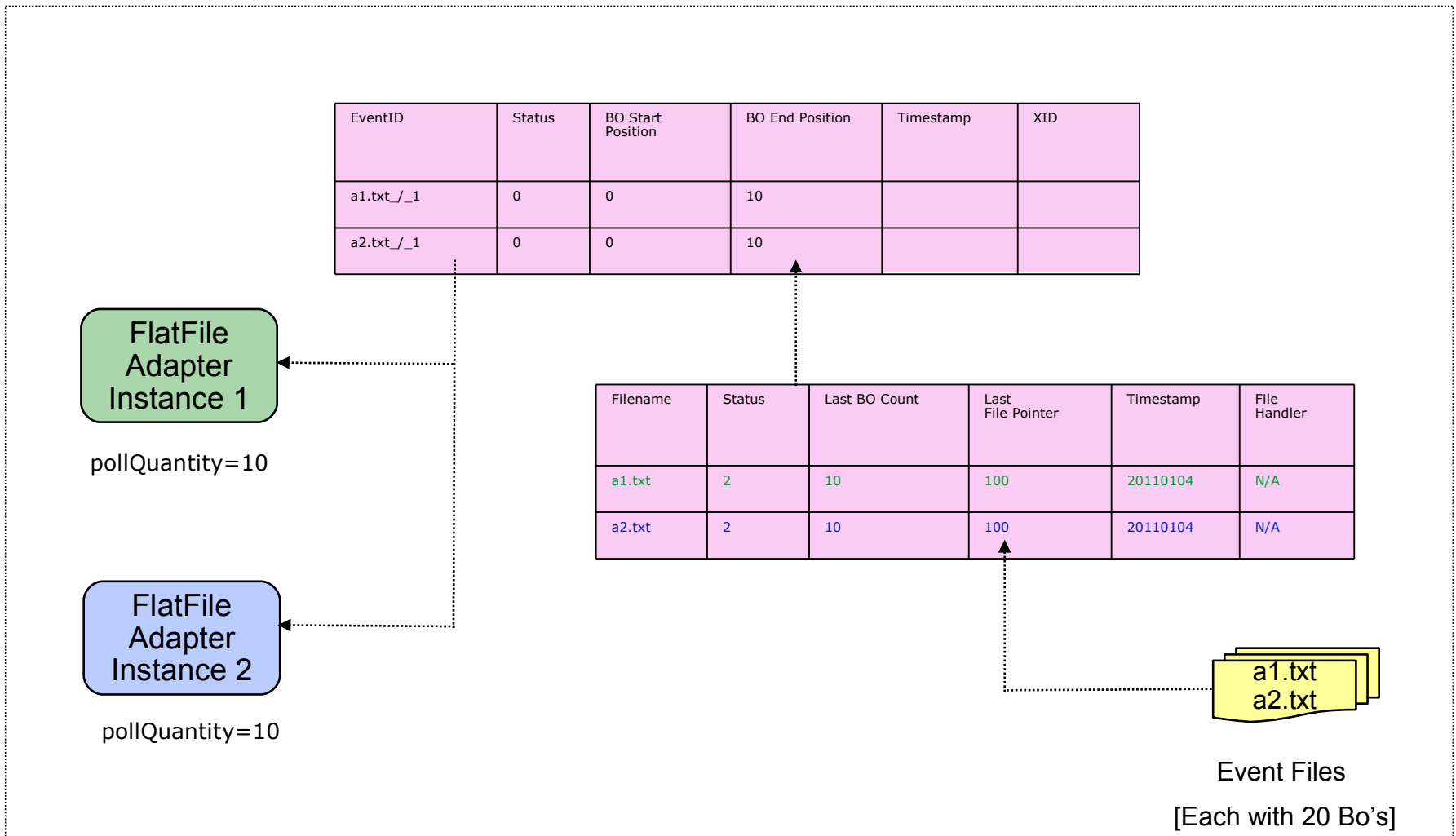
Changes to Event Table

Event Table

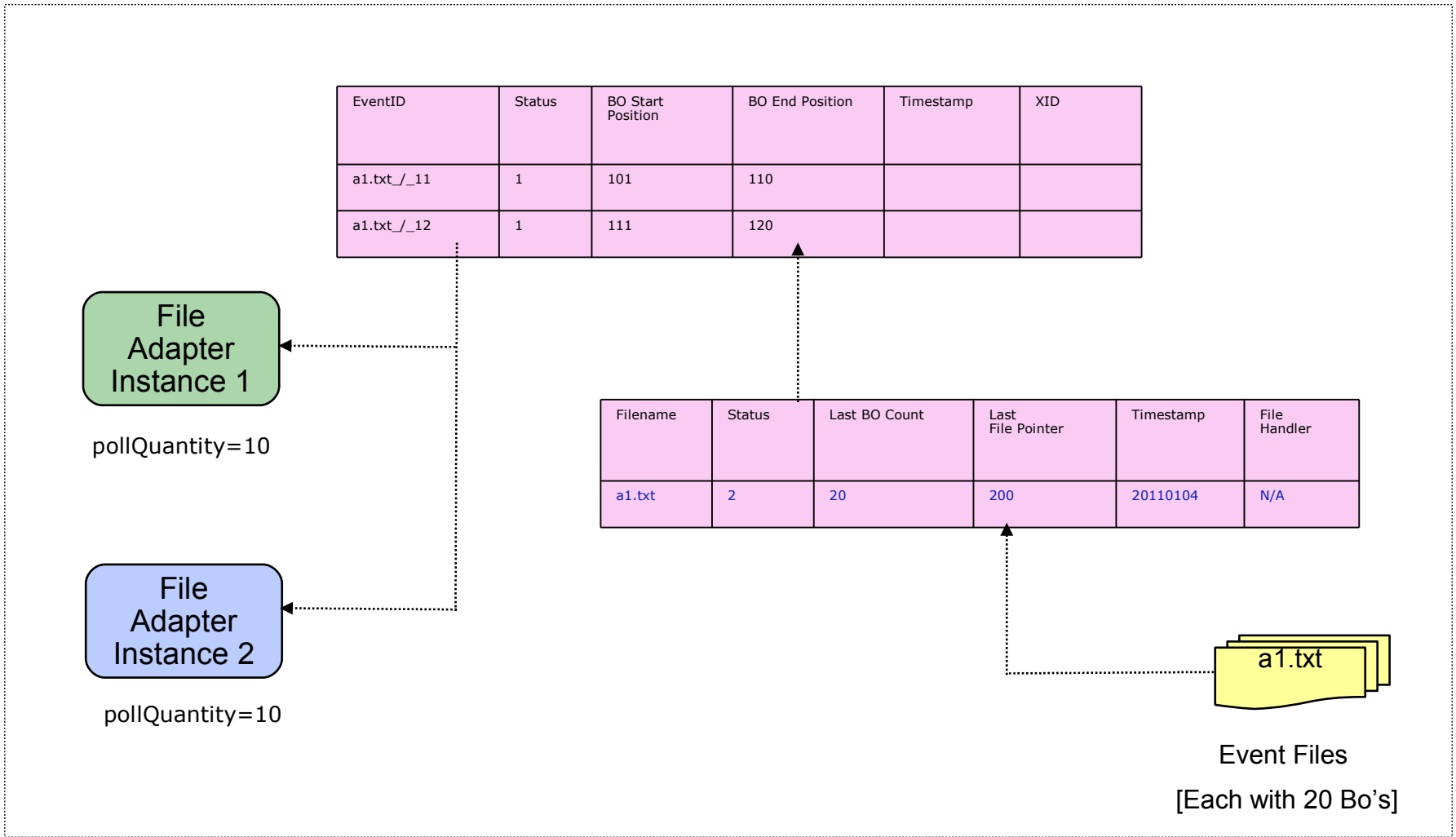
EventID EventID will be combination of Filename + Timestamp + BO Count	Status 0 – new event / unprocessed 0 with xid – in-process 1 – processed -1 – failed	BO Start Position Represents the start position of current BO as file pointer	BO End Position Represents the end position of current BO as file pointer	Timestamp Represents the time when events are picked up for processing	

<i>Status Code</i>	<i>Description</i>
0 - unprocessed	New event, ready for processing/delivery.
0 - in-process	An event with status "0" is considered as "in-process" state, when the xid is available for that event. According, to the new design the timestamp will be updated when event is picked up for processing.
1 - processed	Event that has been delivered already, needs to be archived.
-1 - failed	Event delivery failed, this event needs to be archived.

Processing Multiple Files with Multiple Instances



Processing Single File with Multiple Instances



HA configuration – Event persistence

Event delivery configuration

Type of delivery:

Ensure assured-once event delivery (may reduce performance)

Retry limit for failed events:

Event persistence configuration

Specify the event persistence properties to enable multiple adapters to poll in a clustered environment guaranteed event delivery.

Auto create event table

Event recovery table name:

Table name to store the file processing status:

Event recovery data source (JNDI) name:

User name used to connect to event data source:

Password used to connect to event data source:

Database schema name:

Time interval for processing the fetched events (in seconds):

Additional configuration

Retrieve files with pattern: *

Include business object delimiter in the file content

Include total business object count in the ChunkInfo property

Retrieve files in sorted order:

File content encoding:

Type must be Unordered

Event table must be specified

File table must be specified

Timeout value must be specified

No sort must be specified



HA configuration – enableHASupport

Enterprise Applications

Enterprise Applications > FFEmbeddedModuleApp > Manage Modules > CWYFF FlatFile > FFEmbeddedModuleApp.IBM WebSphere Adapter for Flat Files > Custom properties

Use this page to specify custom properties that your enterprise information system (EIS) the resource providers and resource factories that you configure. For example, most database vendors require additional custom properties for data sources that access the database

Preferences

Name	Value	Description
You can administer the following resources:		
adapterID	001	adapterID
enableHASupport	false	enableHASupport
hideConfidentialTrace	false	hideConfidentialTrace
logFileSize	0	logFileSize
logFilename		logFilename
logNumberOfFiles	1	logNumberOfFiles
logUtils		logUtils
threadContextPropagationRequired	true	threadContextPropagationRequired
traceFileSize	0	traceFileSize
traceFilename		traceFilename
traceNumberOfFiles	1	traceNumberOfFiles
Total 11		

To enable Active-Active configuration enableHASupport must be false

Migration Support & Backward compatibility

- Scenario 1) Customer only updates the old .rar with the new .rar file
 - ▶ We support the older activation spec instance
 - ▶ Runtime take different code path to support the same
 - ▶ The adapter behaves as the older version
 - ▶ Newer features not available

- Scenario 2) Customer wants to migrate to the new version of adapter and also migrate the existing eventstore table along with its data

continued...

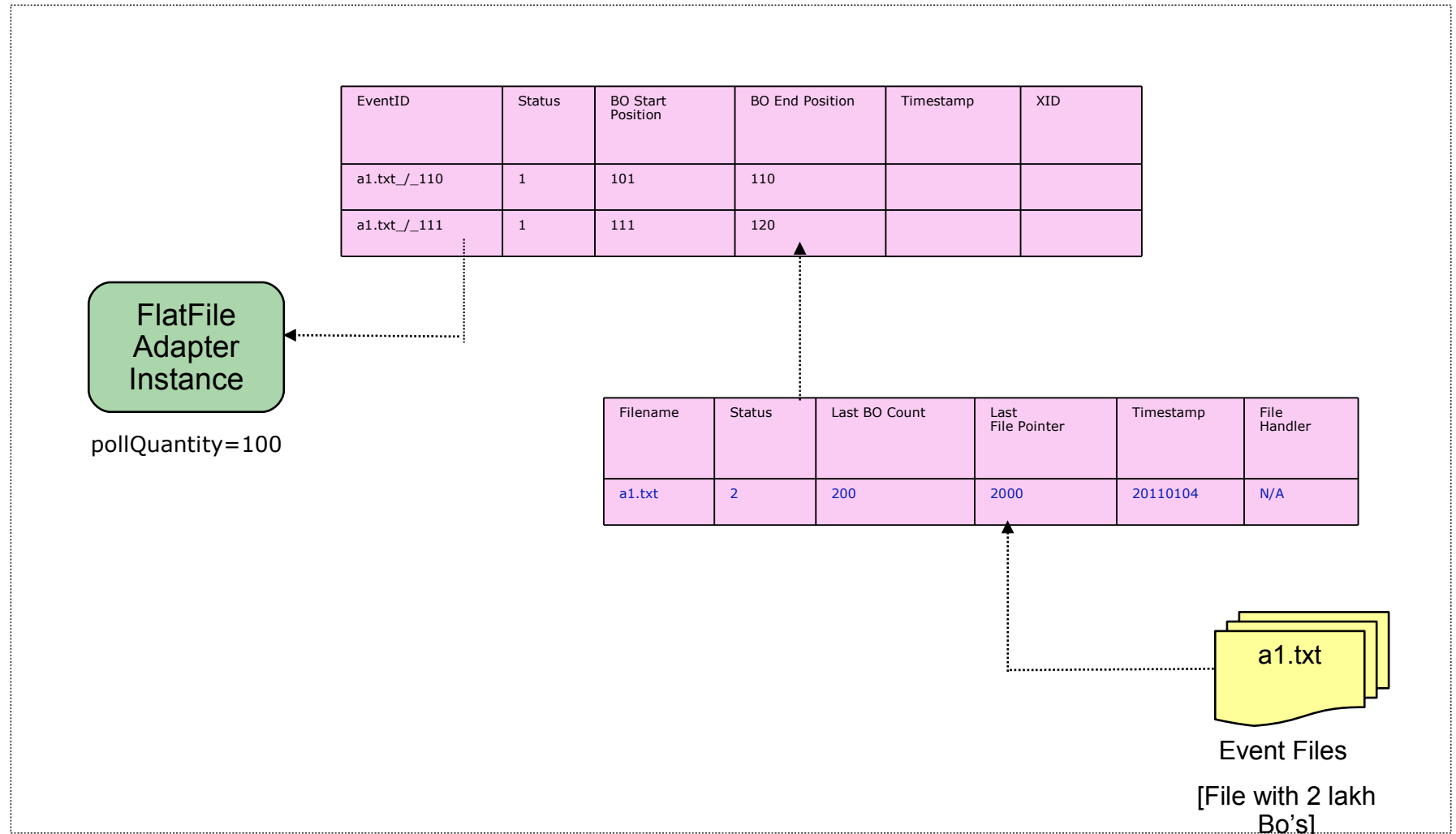
- ▶ We have migration scripts, which take care of migrating the existing data from the old event store table to the new event store table.
- ▶ Only failed events are migrated, and not live events
- Scenario 3) Customer uses the new version of adapter along with the new activation specs, but does not migrate the event table structure
 - ▶ The runtime checks if the event table exists and also if it complies with the new design
 - ▶ If not a runtime exception is thrown requesting the users to migrate their existing tables.

Support for Handling Large Files

- Eliminates the need for reading the complete file at one go in the beginning of the process.
- This enhancement eliminates any file size limitations for processing.
- Achieves consistent performance even when dealing with a large file.
- Delivers events to the endpoint as quick as possible, as required by the poll quantity. The time taken by the first polling cycle is consistent with the subsequent polling cycles.
- Reduces the memory footprint used considerably, when dealing with large files.



Processing Large File with Single Instance



Event table optimization in cyclic-mode

- In Cyclic-mode new event data is appended to the same event file instead of creating new files for new events.
- Now processed events need not be persisted in the event table in the case of cyclic-mode.
- With the introduction of a file table, we can store the position of the last processed event in the file. Therefore the processed events can be purged from the event table.



Improved sequence file generation

- The sequence file feature is used to generate unique file names.
- In previous versions, under heavy load sometimes duplicate file generation was observed.
- Now with a consistent encoding being used to read and write the sequence file, even under high load conditions, there is no duplicate file generation observed.



Other improvements

- Support for recovery in file-pass-by-reference mode during inbound.
- Support for archiving of failed chunks for SplitBySize during inbound.
- Improved consumability and documentation for cyclic-mode operation.



Summary

- Overview of new features in 7.5
- Detailed walk through of the features
 - ▶ Active-Active processing in Inbound
 - ▶ Support for large file processing
 - ▶ Improved performance in event delivery for large files
 - ▶ Event table optimization in cyclic-mode
 - ▶ Improved sequence file generation
 - ▶ Other improvements
- Benefits of the new features, important configuration steps, changes in event table and file table
- Migration scenarios

Additional WebSphere Product Resources

- Learn about upcoming WebSphere Support Technical Exchange webcasts, and access previously recorded presentations at:
http://www.ibm.com/software/websphere/support/supp_tech.html
- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at:
<http://www.ibm.com/developerworks/websphere/community/>
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- Access key product show-me demos and tutorials by visiting IBM® Education Assistant:
<http://www.ibm.com/software/info/education/assistant>
- View a webcast replay with step-by-step instructions for using the Service Request (SR) tool for submitting problems electronically:
<http://www.ibm.com/software/websphere/support/d2w.html>
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Questions and Answers