BA Technical Seller Training

IBM Predictive Maintenance & Quality
Orchestration

Agenda

- Overview of orchestration
- Deciding when to trigger scoring
- Preparing the input
- Intgegaion Flow
- Perform Scoring
- Decision Management
- Calling Maximo

Orchestration Overview

- Orchestration is the process that ties mendation activities in IBM PMQ together
- Orchestration is achieved with message flows in Message Broker
- Following activities are tied together in PMQ
- Preparing data for predictive models
- Running predictive models
- Feeding predictive results back to PMQ as events
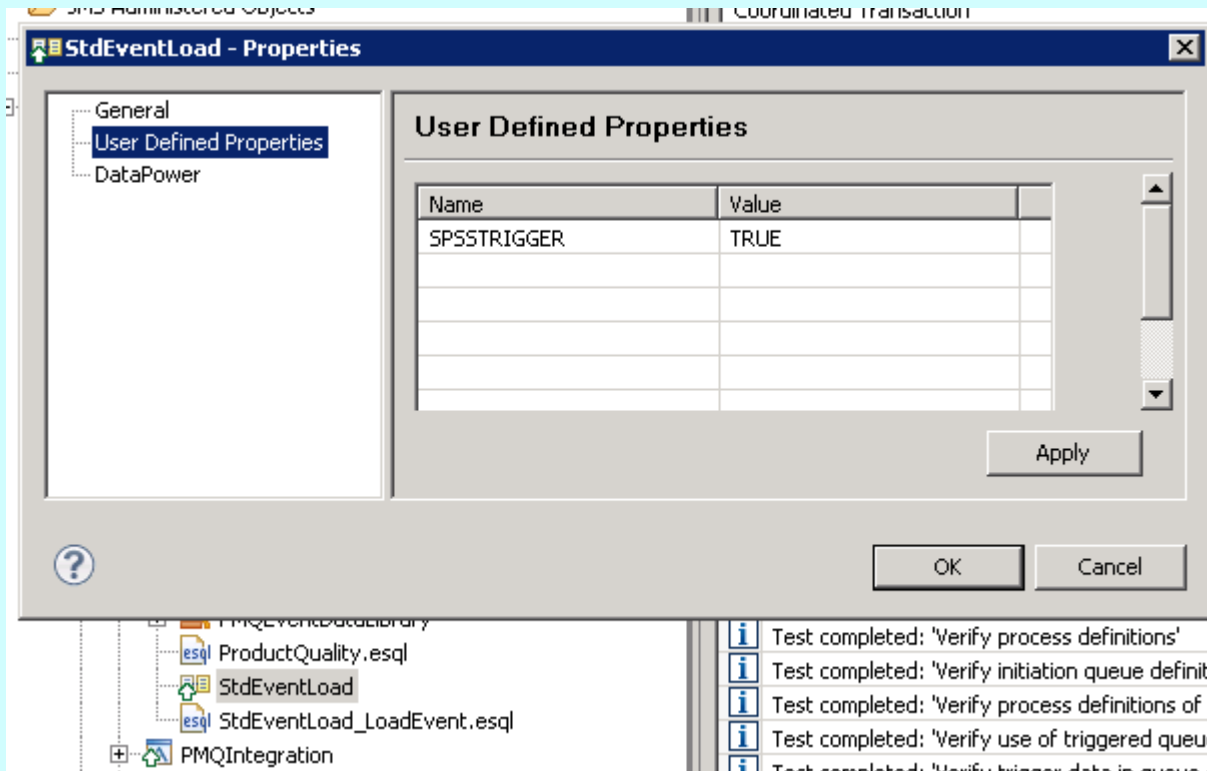- Calling external systems with mendations

Should Scoring and mending Occur?

- At the end of event processing (after aggregation)
- Determine if scoring and decision management should occur
- For example:

```
--------------------------------------------------------------------------------
-- Trigger SPSS Scoring based on following conditions
-- 1. Invoke scoring for resource type ASSET
-- 2. Invoke scoring for events with value type ACTUAL
-- 3. Invoke scoring for all events except when source system is PREDMAIT
-- Based on the SPSS model design additional conditions can be added below to trigger SPSS
-- By Default SPSS Trigger will be enabled. If you want to disable SPSS trigger set the UDP on the flow to False
--------------------------------------------------------------------------------
IF SPSSTRIGGER THEN
    IF RESOURCE_TYPE_ID IS NOT NULL AND (eventObsRef.value_type_cd IS NULL OR eventObsRef.value_type_cd = 'ACTUAL')
        AND (eventRef.source_system_cd IS NULL OR eventRef.source_system_cd <> 'PREDMAIT') THEN
            --SPSS Integration
```

- This decision is made at the level of the event (not event observation)

Property to Prevent Calling to SPSS

- Can be set in the Message Broker Explorer

Prepare Required Data

- Generally the input required for predictive scoring will be available from profile variables

- Some predictive modes may also require input from the event or from KPIs

- Retrieving this data requires selecting it as required

- The input data must be assembled into a message structure that will be processed to create a call to SPSS

- For example:

```
SET OutputRoot.XMLNSC.Request.Data.Profile.Parameter[J+1].(XMLNSC.Attribute)name = 'Resource_LifeTime';
SET ACTIVEDAYS = COALESCE(CAST((SPSSPROFILE.ResourceProfile[1].PROFILE_DATE -
    SPSSPROFILE.ResourceProfile[1].LAST_PROFILE_DATE) DAY AS INTEGER),0);
SET OutputRoot.XMLNSC.Request.Data.Profile.Parameter[J+1].(SOAP.Attribute)value = ACTIVEDAYS ;
SET OutputRoot.XMLNSC.Request.Data.Profile.Parameter[J+2].(XMLNSC.Attribute)name = 'RESOURCE_ID';
SET OutputRoot.XMLNSC.Request.Data.Profile.Parameter[J+2].(XMLNSC.Attribute)value = RESOURCE_ID;
```

Prepare Required Data

- The defined data structure includes an indication that a scoring model should be called, decision management should, or both

```
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request NAME 'Service';
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request.Service NAME 'ScoringService';
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request.Service.ScoringService NAME 'id' VALUE 'WI_SCORE_V7';
```

```
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request.Service NAME 'ScoringService';
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request.Service.ScoringService[2] NAME 'id' VALUE 'RESOURCE LIFETIME SCORE';
```
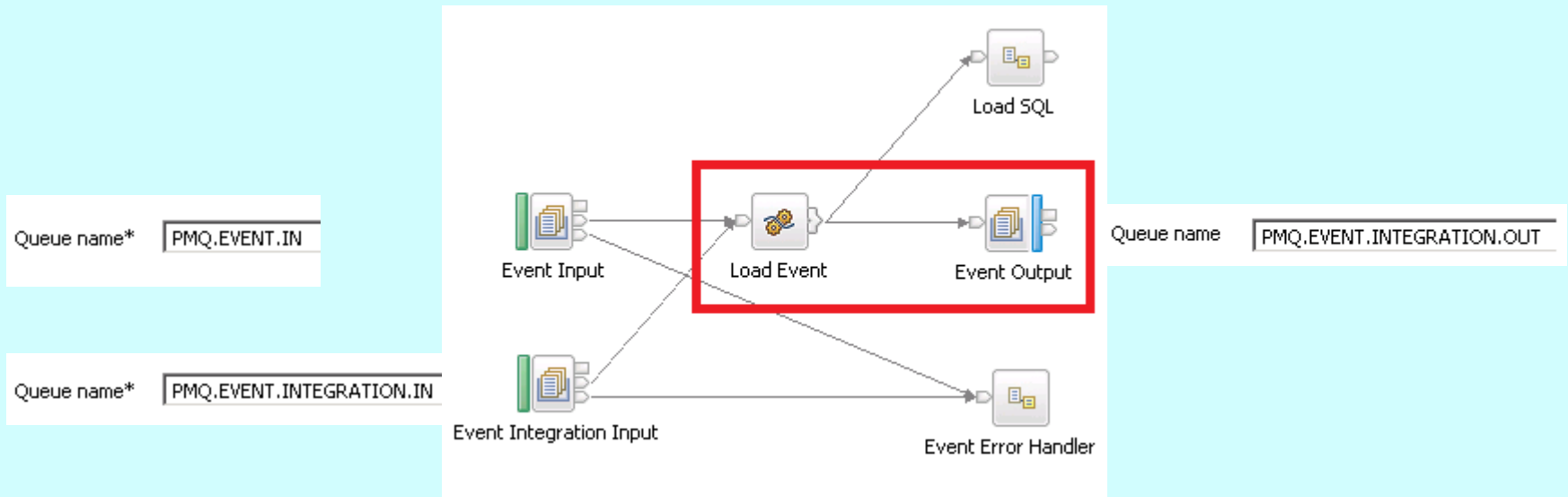-

```
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request.Service NAME 'DMService';
CREATE LASTCHILD OF OutputRoot.XMLNSC.Request.Service.DMService NAME 'id' VALUE 'RESOURCE_RECOMMENDATION';
```

Data Preparation for SPSS

- Health Score Model
  - Aggregated data in RESOURCE_KPI acts as input for health score model
  - SPSS needs data from RESOURCE_KPI for 3 profile calculations
    - Measurement of Type
    - Measurement Above Limit
    - Measurement Below Limit
- Life Span Model
  - Aggregated data in RESOURCE_PROFILE acts as input for life span analysis model
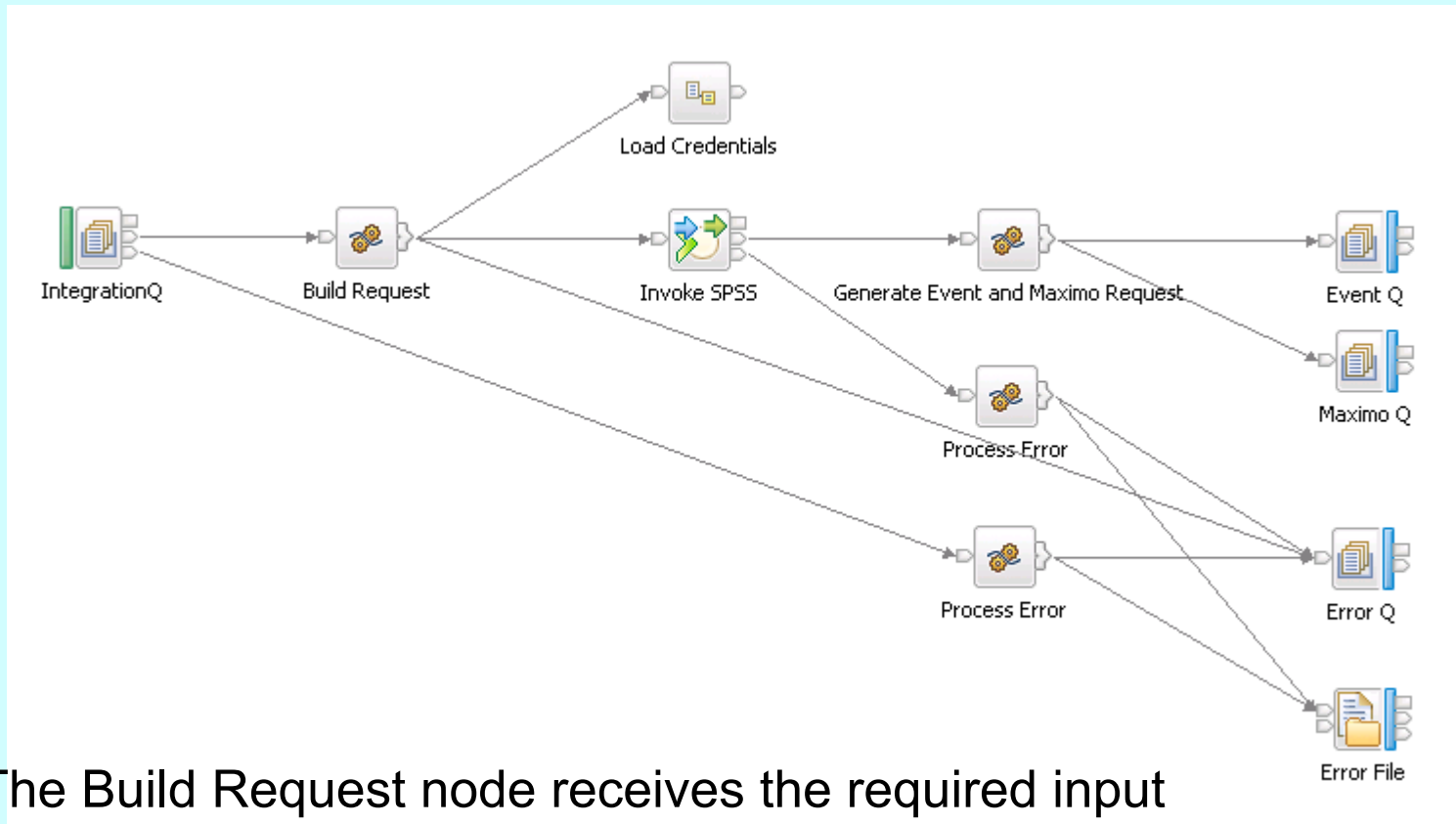 - SPSS needs data from RESOURCE_PROFILE for Life Span Analysis profile calculation

Pass Message to PMQ Integration Flow

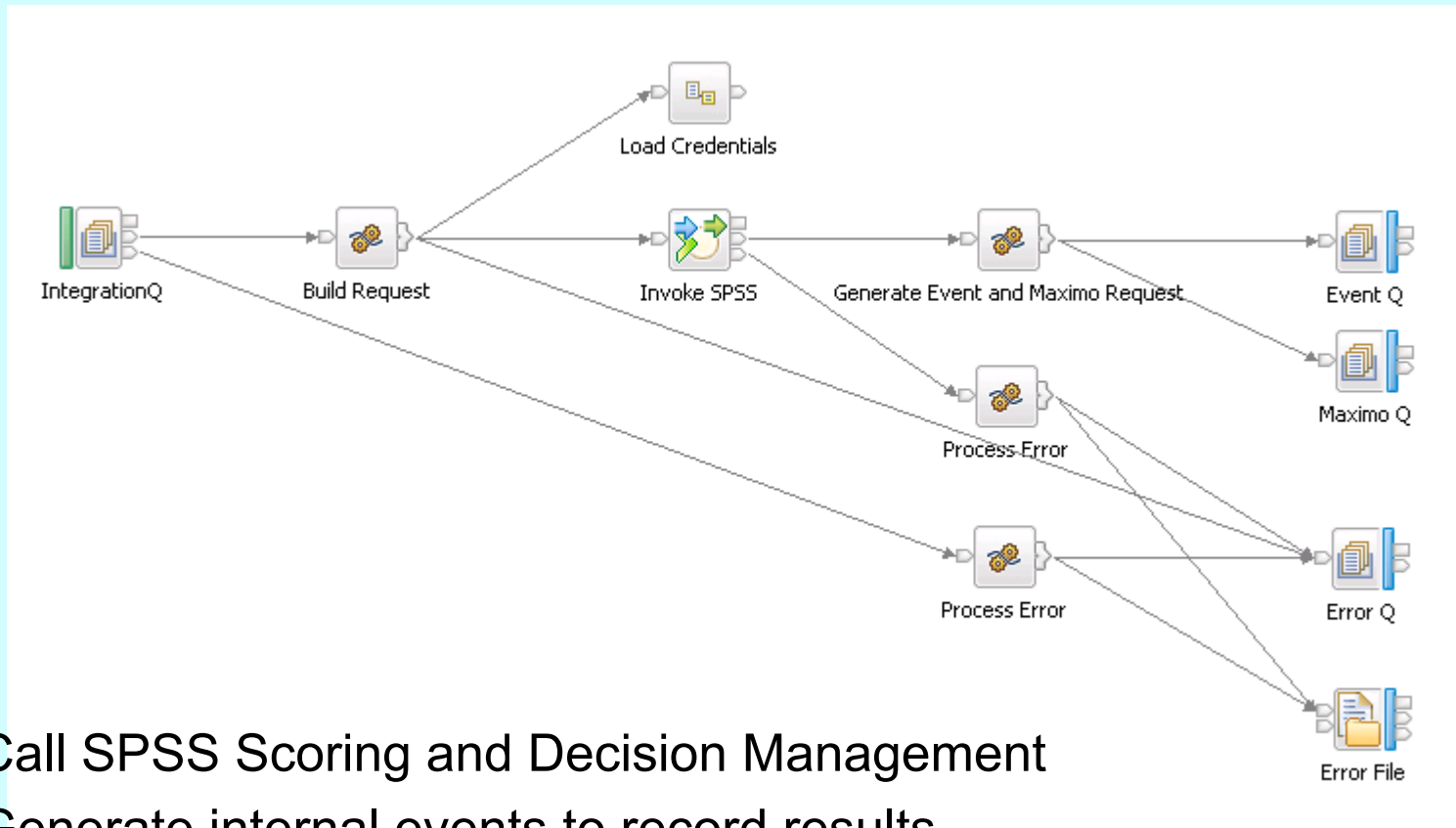- Assembled data is placed on a queue for the next step of orchestration

- The arrival of this message on the queue causes the integration flow to remove it from the queue and start processing
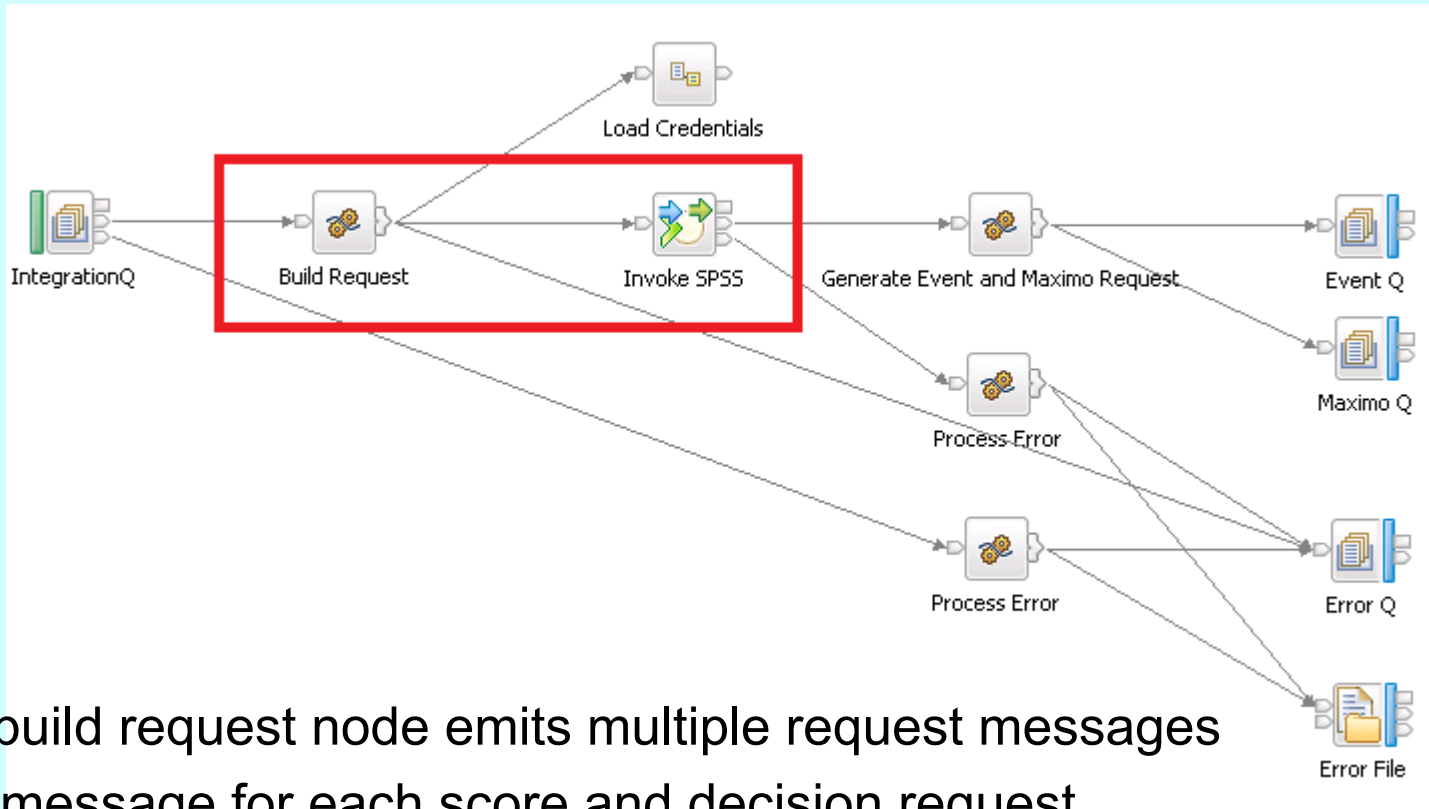
Message Flow Required Input

- The Build Request node receives the required input
- The input is assembled into the format required to call the SPSS web service

Message Flow to Call to SPSS Service

- Call SPSS Scoring and Decision Management
- Generate internal events to record results
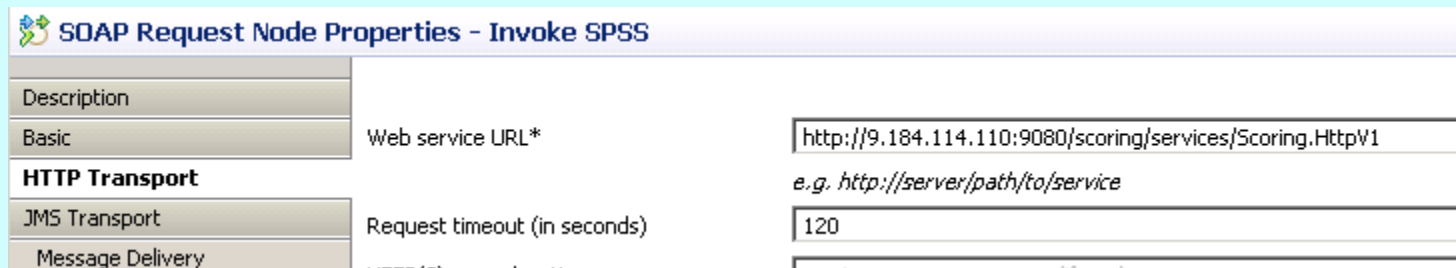- Create a workorder in Maximo if mended to do so

Calling SPSS Scoring and Decision Management

- The build request node emits multiple request messages
- One message for each score and decision request
- For the PMQ sample, this is two scoring and one decision request

SPSS Scoring Service Location

- The URL defining the name and location of the SPSS scoring service is set as a property of the web service request node

以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。如要下载或阅读全文，请访问：https://d.book118.com/447154033062006135