



z/TPF V1.1

TPF Users Group - 2012

WebSphere Operational Decision Management (WODM) Support

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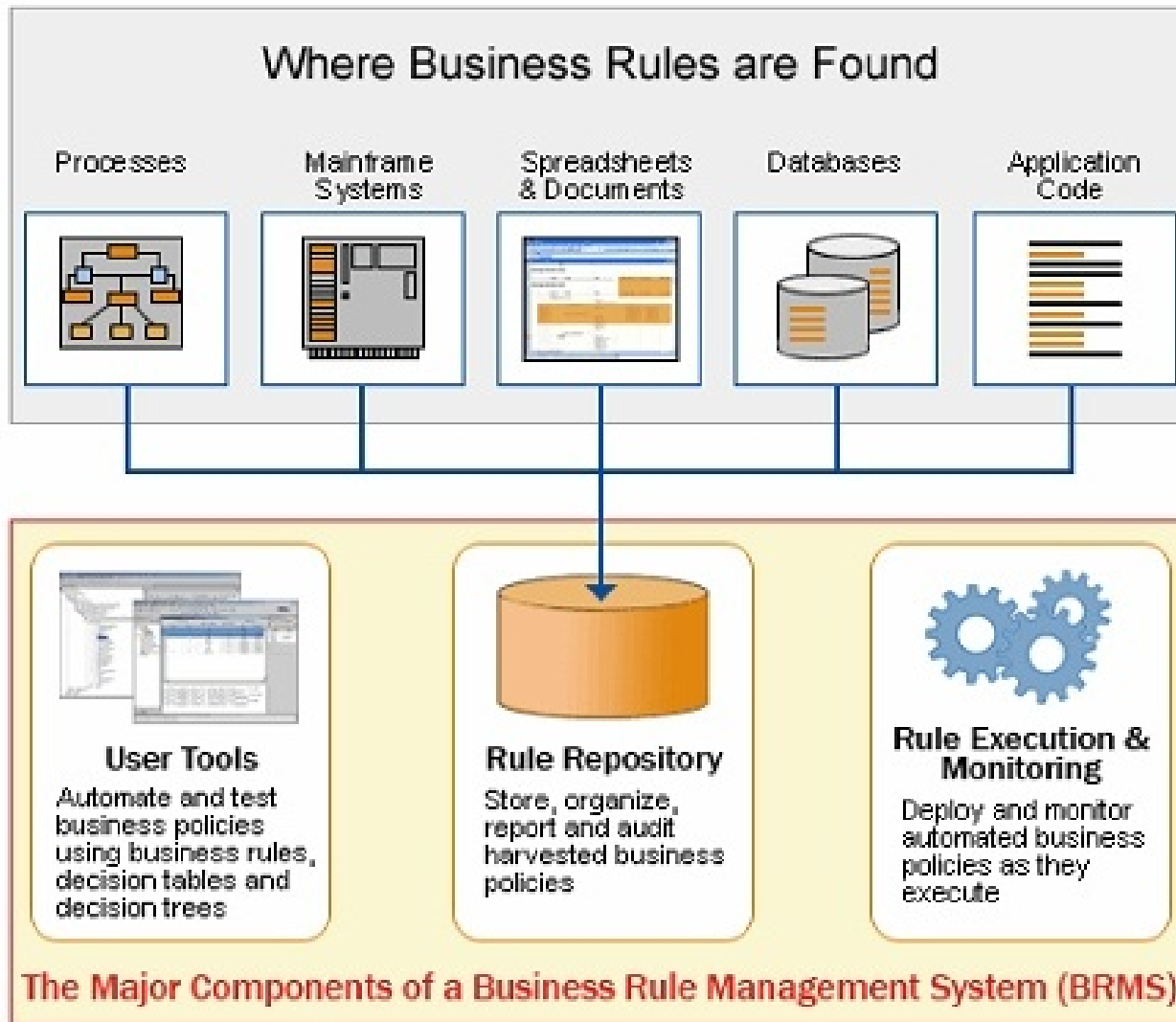
AIM Enterprise Platform Software
IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

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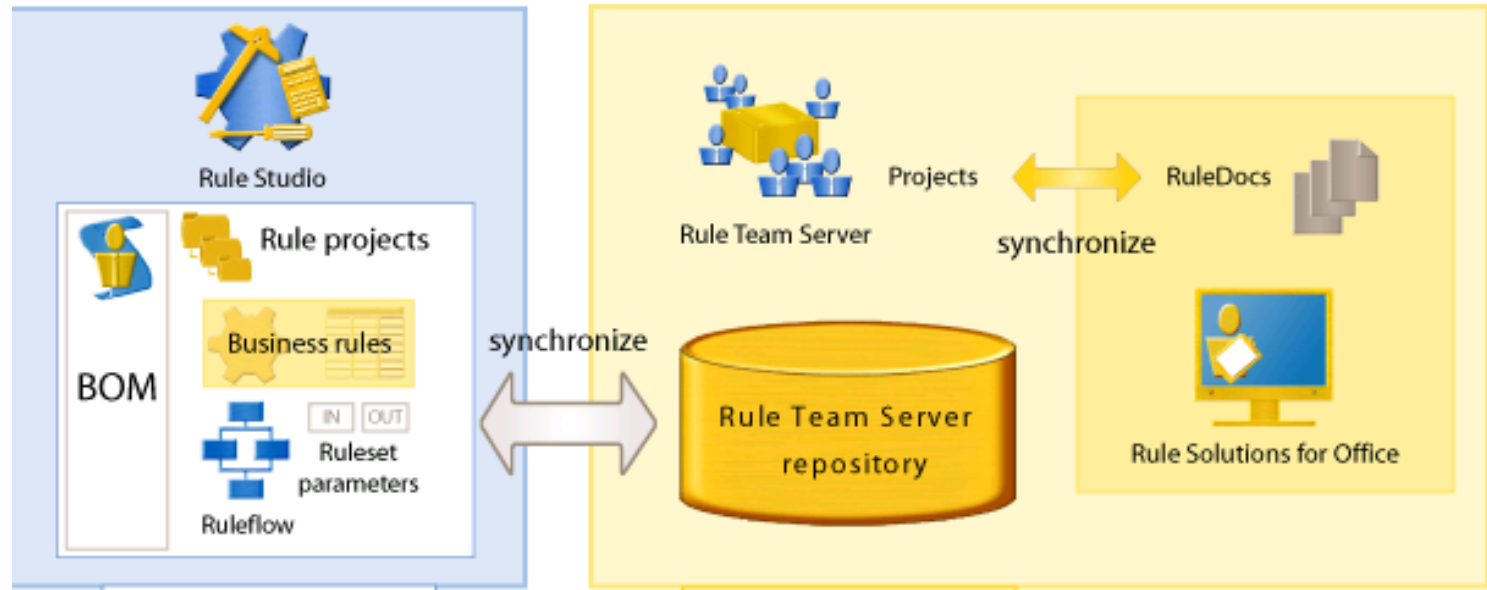
Agenda

- **Value of Business Rules Management System**
- **TPFUG Requirement**
- **Overview of component architecture**
- **New tooling**
- **Build environment changes**
- **APAR Details**



Business Rule Application Development

Business Rule Management and Authoring

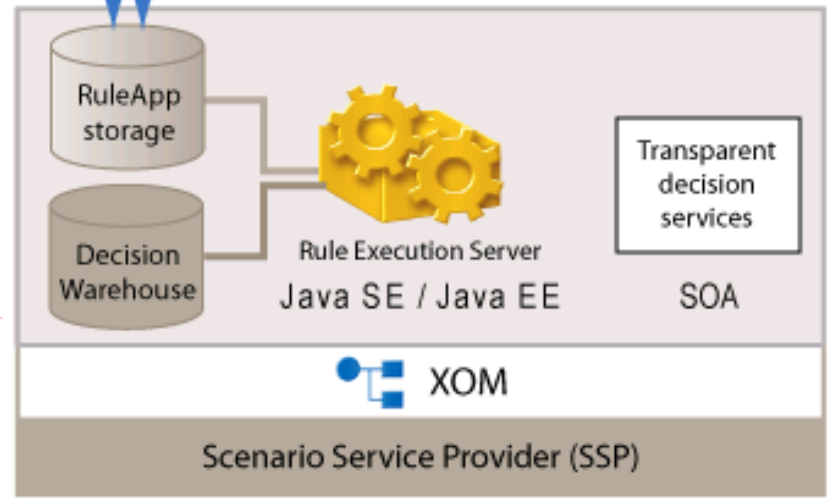


Ruleset extraction

Ruleset extraction

deploy

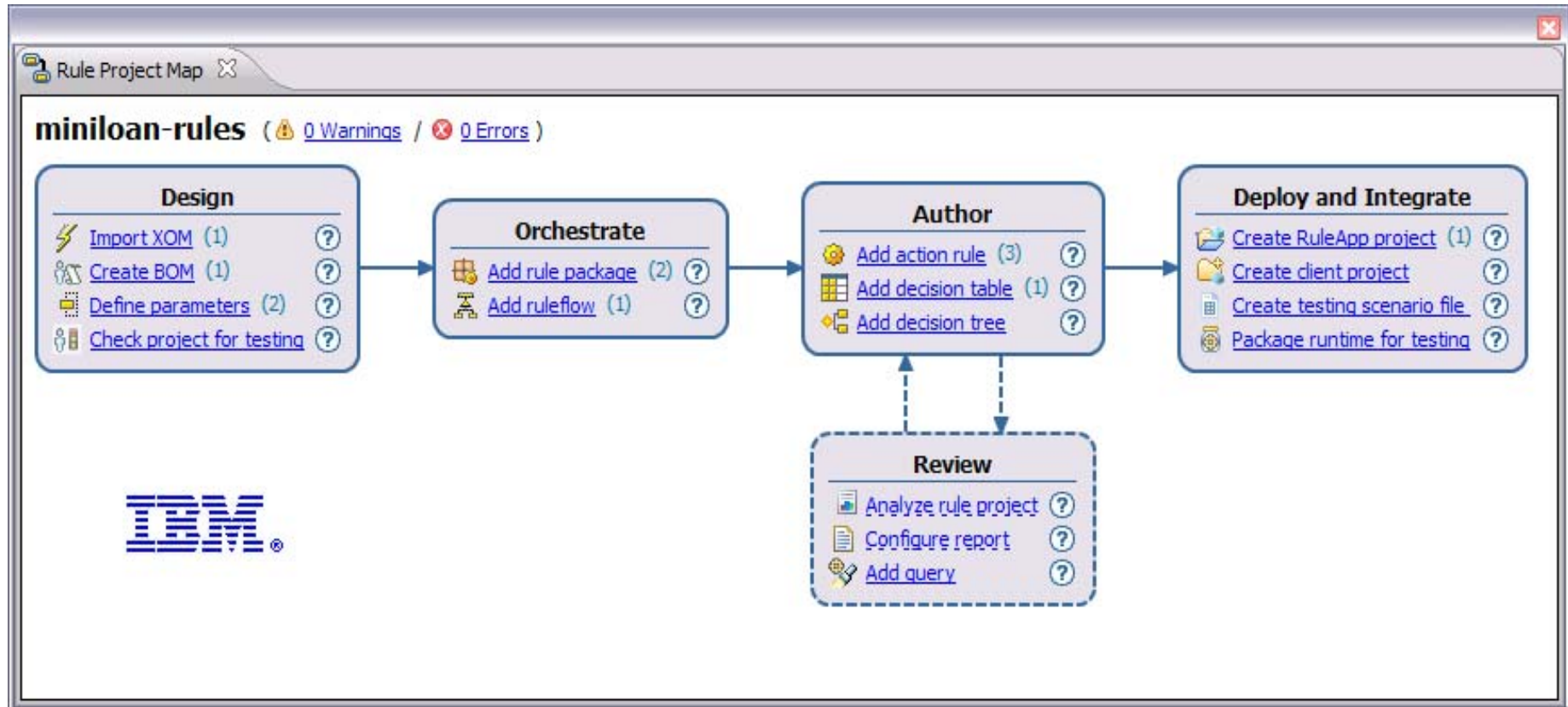
Enterprise Applications



Environment to run and monitor the rules execution

Set of tools to enable definition and management of business rules

Rule Designer



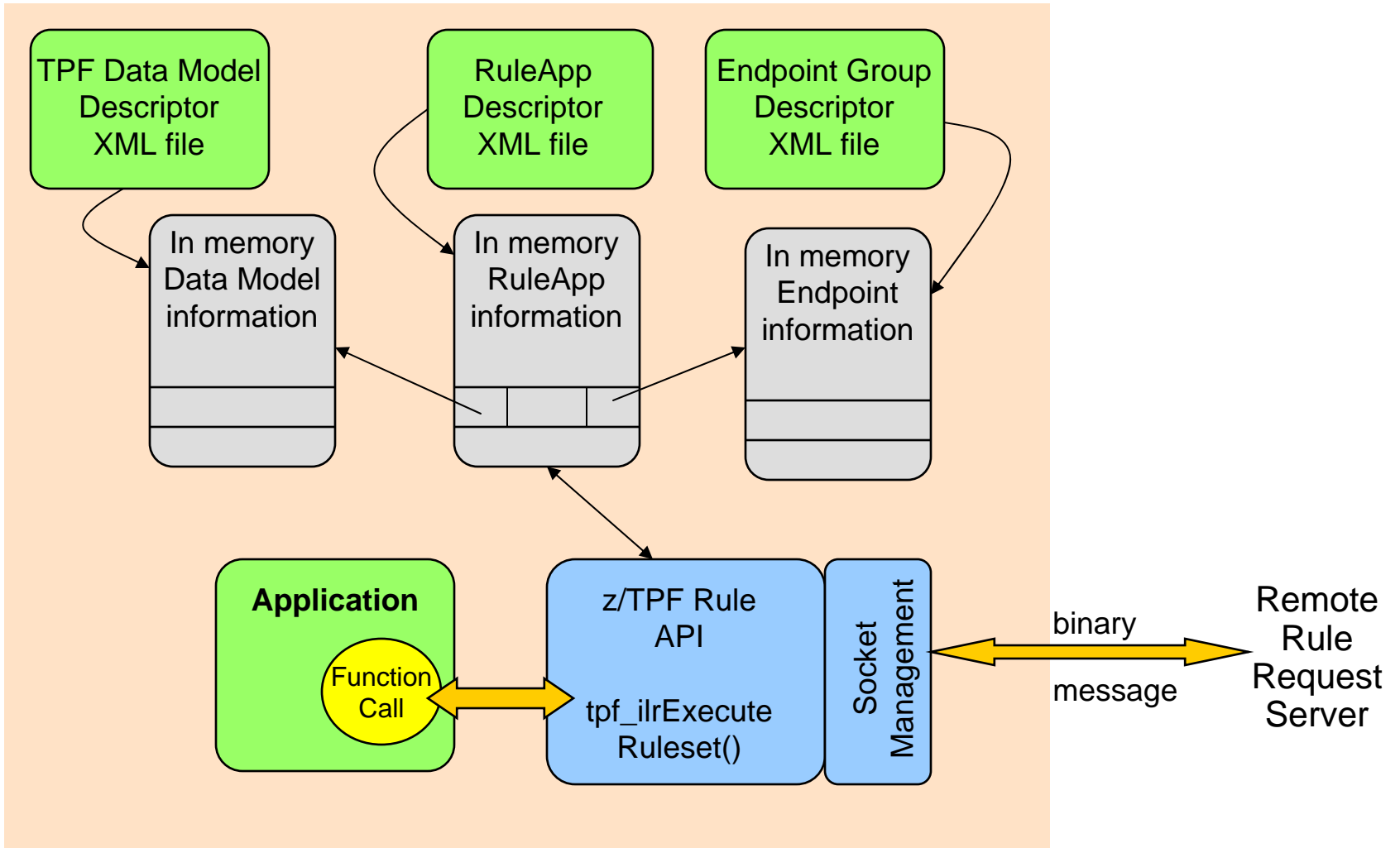
TPFUG SOA09001F – z/TPF Rules Engine

- Low latency, custom adapter for invoking IBM WODM rule execution server on WAS from z/TPF applications
- Tooling to generate code for marshaling/unmarshaling data between C (z/TPF) WODM

Terminology

- Ruleset – A set of rules that can be executed by the rule engine.
- RuleApp – A deployment and management unit containing one or more rulesets.
- Rule Engine – Executes a given ruleset against a set of objects.
- Rule Execution Server (RES) – A robust, scalable and secure engine for monitoring and managing deployment of rule-based applications.
- Rule Request Server (RRS) - Resource adapter that facilitates the requests and responses between z/TPF and the rule execution server.

Architecture of z/TPF infrastructure for WODM



IBM supplied
 User written
 System Created

Endpoint Group

- **Defines a set of servers containing the same RuleApps**
- **Managed by common deployment.**
 - Files loaded to TPF using E-type loader or image loader.
 - Automatically deployed
 - Files parsed once and results put into an in memory structure.
- **TPF toolkit wizard provided to create an Endpoint Group file.**

Endpoint Group file contents

- **Endpoint group**
 - Name
 - Threshold and max requests queued
- **One or more endpoints**
 - Server address and port
 - Initial and max number of sockets
 - TPF processor IDs that can access the endpoint

TPF Data Model

- **Object definitions**
 - Input and Output parameters to a ruleset execution
 - Data defined in a Business Event Specification
- **Managed by common deployment.**
 - Files loaded to TPF using E-type loader or image loader.
 - Automatically deployed
 - Files parsed once and results put into an in memory structure.
- **TPF toolkit wizard provided to create TPF Data Model file(s)**

Data Model file contents

- **Object List**
 - Name
 - Encoding (default IBM-1047)
 - One or more object definitions
- **Object**
 - Name, jName, aName
 - Total size
 - Comment
 - One or more member definitions
- **Member**
 - Name
 - Type
 - Repeat factor
 - Length
 - Description

Member Datatypes (Fixed length)

Data model type	C type	Java	HLASM
binary	char[<i>repeat</i>][<i>length</i>]	byte[][]	<i>repeat</i> X <i>Llength</i>
char	char[<i>repeat</i>][<i>length</i>]	List<String> ¹	<i>repeat</i> CL <i>length</i>
unsignedchar	unsigned char[<i>repeat</i>][<i>length</i>]	List<String> ¹	<i>repeat</i> CL <i>length</i>
short	short[<i>repeat</i>]	List<Short>	<i>repeat</i> XL2
unsignedshort	unsigned short[<i>repeat</i>]	List<Short>	<i>repeat</i> XL2
int	int[<i>repeat</i>]	List<Integer>	<i>repeat</i> XL4
unsignedint	unsigned int[<i>repeat</i>]	List<Integer>	<i>repeat</i> XL4
long	long[<i>repeat</i>]	List<Long>	<i>repeat</i> XL8
unsignedlong	unsigned long[<i>repeat</i>]	List<Long>	<i>repeat</i> XL8
longlong	long long[<i>repeat</i>]	List<Long>	<i>repeat</i> XL8
unsignedlonglong	unsigned long long[<i>repeat</i>]	List<Long>	<i>repeat</i> XL8
float	float[<i>repeat</i>]	List<Float>	<i>repeat</i> XL4
double	double[<i>repeat</i>]	List<Double>	<i>repeat</i> XL8

Member Datatypes (Variable length)

Data model type	C type	Java	HLASM
binaryString ²	char[]	byte[]	0XL1
charString ²	char[]	String ¹	0CL1
vbinaryString	TPF_DM_GET TPF_DM_SET	byte[]	_LENGTH XL4 _DATA 0XL1
vcharString	TPF_DM_GET TPF_DM_SET	String ¹	_LENGTH XL4 _DATA 0CL1

Notes:

Java strings use encoding value for code page translation to UTF-8

TotalSize required, repeat attribute not allowed

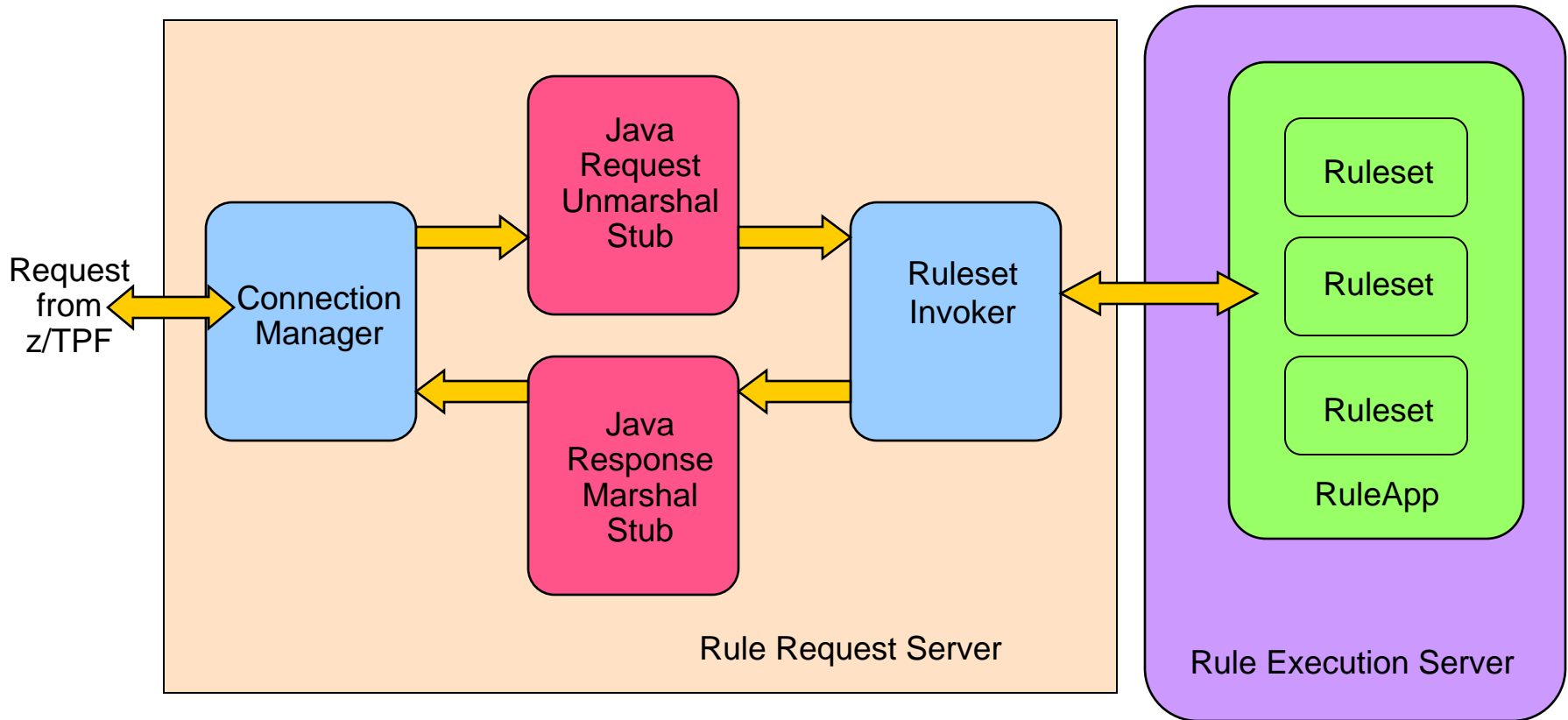
RuleApp

- **Defines the input and output objects to a ruleset and where the ruleset is deployed (end point group)**
- **Managed by common deployment.**
 - Files loaded to TPF using E-type loader or image loader.
 - Manually deployed
 - Files parsed once and results put into an in memory structure.
- **TPF toolkit wizard provided to create a RuleApp descriptor file.**

RuleApp file contents

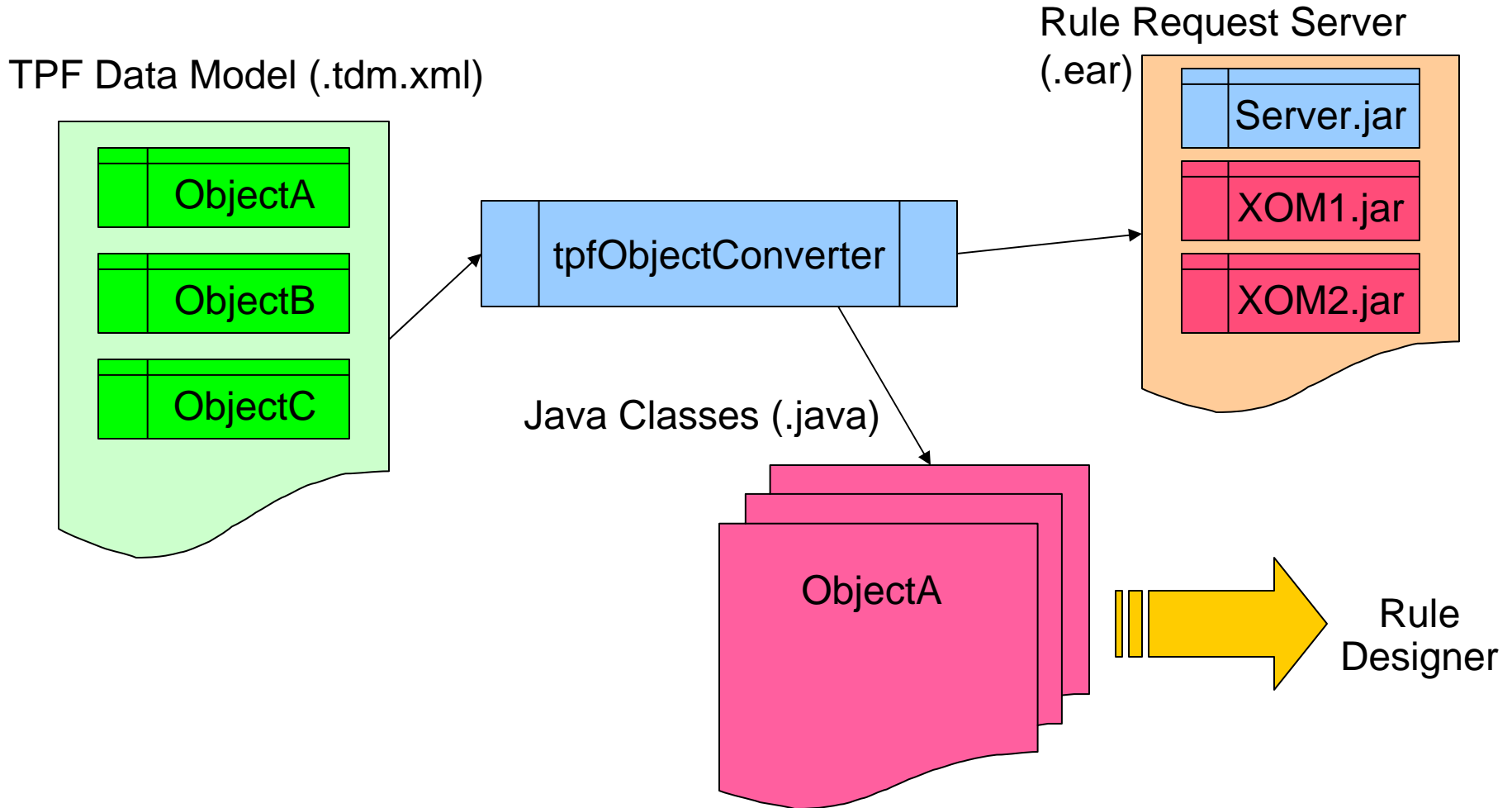
- **Rule Application**
 - Name
 - Version
 - One or more end point group names
 - One or more rulesets
- **Rulesets**
 - Name
 - Version
 - Timeout
 - Input/Output definitions
 - Name of parameter
 - TPF Data Model object name

Architecture of Rule Request Server



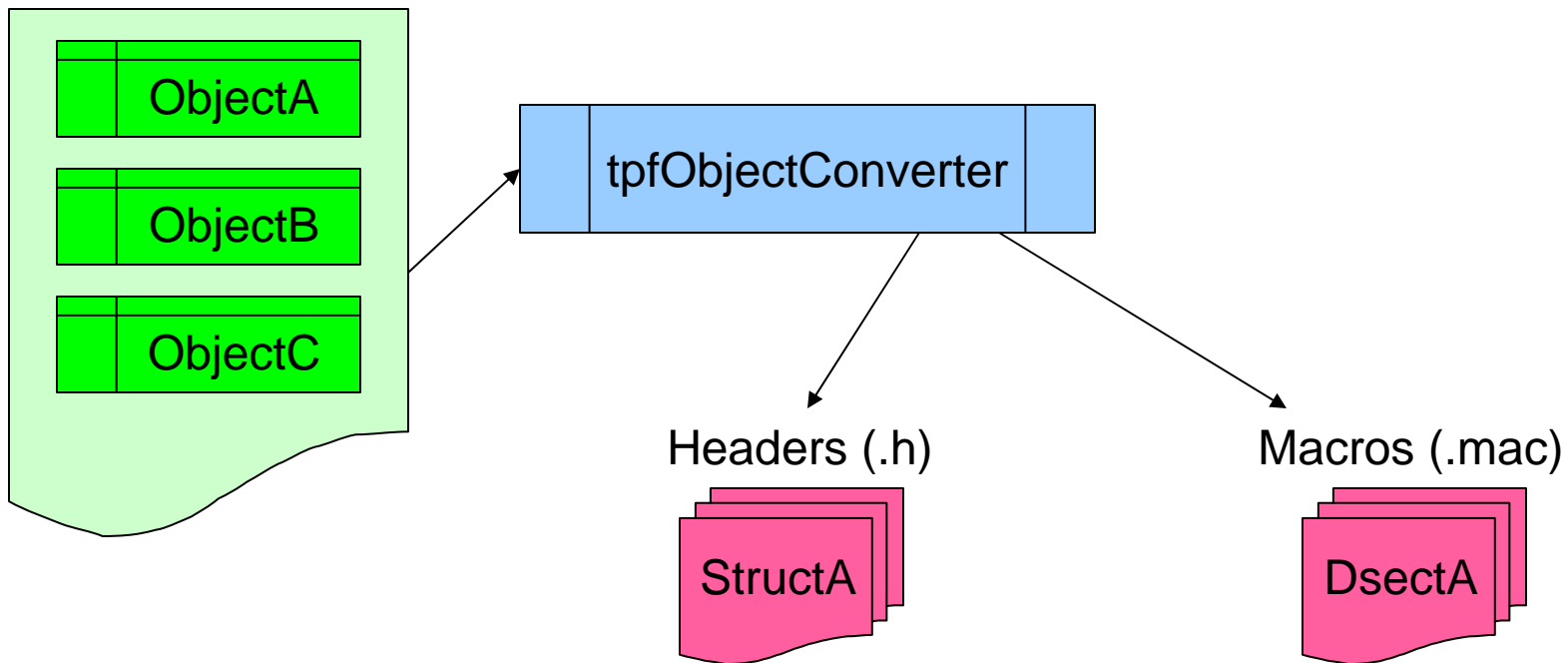
IBM supplied
 User written
 WODM
 Ruleset specific generated components

Customizing the rule request server (-rrs)



Producing DSECTs and C Headers

TPF Data Model (.tdm.xml)



Build Environment Changes

- **MakeTPF tools enhanced to support TPF Data Model (XML) file processing**
 - **bldtpf -tdmdd option added**
 - **Enables integration of rule request server EAR file and artifact generation into the build process**
- **New control files added**
 - **tpf.cntl_tdmdd and user.cntl_tdmdd**
 - **These contain an entry for each TPF Data Model (XML) file to be processed by the tpfObjectConverter and define which artifacts are produced: macros, headers, classes, rule request server EAR**

APAR Details

- **PJ40403 - z/TPF adapter for WODM**
 - The rule request server requires either WAS 7.0 or WAS 8.0
 - The z/TPF adapter for WODM requires Websphere Operational Decision Management v8.0
- **PJ40248 - tpfObjectConverter**
 - Requires Java Runtime Environment (JRE) to run
 - Requires Java Software Development Kit (SDK) to update the rule request server
- **TPF Toolkit V.next scheduled for release in 4Q2012**

Questions?

Thank you

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