Policy and SLA Management and Enforcement

Nick Butler,
WSRR Architect
Martin Smithson,
WSRR Architect
Why is Governance needed?
Why Governance is Important
A real life scenario

1. A currency service is created for a specific line of business (LOB)
2. Other LOBs start using the service
3. LOBs increase use of service / quality suffers
4. Service is fixed at provider’s expense
5. Fix works temporarily but problem reappears
6. Maintenance costs soar / provider ends service
Pro-actively protect access to services using SLAs
Avoid impact to business services availability

1. A currency service is created for a specific line of business (LOB)
2. Other LOBs start using the service
3. A policy is defined to reject rogue consumers
4. Legal & Sales negotiate service levels
5. Legal hit max level. Other LOBs unaffected
6. Legal re-negotiate an increased service level
IBM Policy and SLA Managements Solution

Visibility and Control

• Reduce costs and increase operational efficiency of enterprise boundaries
• Increase enterprise agility through rapid realization of policies and SLAs in response to business change

• Centrally manage and govern service and associated policies exposed at service gateway
• Enable automatic deployment of operational policies and SLA to service gateways
Policy & Service Level Agreements
Policy & Policy Management

• Policy - What is it?
  – Principle or rule to guide decisions and achieve a desired and rational outcome
  – Contains attributes detailing the 'what'
  – Published, it becomes the standardized directives used by a system to govern its behavior within its environment and transactions

• Policy Management provides an approach for efficiently and effectively addressing the many risks and requirements inherent in electronic communication:
  – Policy definition (structured way to declare policy constraints)
  – Policy enforcement, according to defined policies
  – Policy monitoring (ability to collect and report Policy Analytics)
Service Level Agreements (SLA)

• **SLA - What is it?**
  – Contract where the level of service is formally defined
  – Negotiated *agreement* between *two parties* where one is the service consumer and the other is the service provider
  – Records a common understanding about services, priorities, responsibilities, guarantees, and warranties
  – May specify the levels of availability, serviceability, performance, operation, or other attributes of the service

• **SLA Management encompasses the following process and activities:**
  – SLA contract definition *(basic schema with the quality of service parameters)*
  – SLA negotiation
  – SLA enforcement, according to defined policies
  – SLA monitoring
Before

WSRR UI

Model Policy & SLAs

SLA Policy

Policy Admin / Operations
Author & Attach Policy

App1

App2

DataPower

Consume WSDLs & Security Policy

Monitor Txs

Enforce Policy & SLAs

Monitoring Agent

DP Developer / Admin
Author DP Policy

IBM
Now!

WSRR

Model Policy & SLAs

SLA Policy

Policy Admin / Operations

Author & Attach Policy

Consume WSDLs & All Policies

DataPower

Enforce Policy

Monitor Txs

Monitoring Agent

IBM

App1

App2

Service
Policy Management & Governance
Use Cases

Operations

Manage Policy...

IT Admin

Enforce Policy

Subscribe & Fetch Policy

Apply Governance Process...

Deploy configuration

Messages
Policy Management & Governance
Service Modeling (Technology) & Policy (Semantics)

- Service Model and Policy Management

Service Model

Users

Policy Management

Consumer Application
SLA
Service Provider

Service Interface Definitions

Service
Binding
PortType
Operation

Attach

Policies

Operations
SLA Enforcement - Common Usage Scenarios

QoS Policy 'P1'

Active

SLA

QoS Policy 'P2'

QoS Policy 'P3'

QoS Policy 'P4'

‘App1’ Consumer

‘App2’ Consumer

‘App3’ Consumer

Unknown Consumers

‘AccountMgmt’ Service

Default SLA

Reject Message Policy ‘P4’
Policy Management & Governance
Service Subscriptions and Policy Enforcement

WSRR

Service Model

Policy Management

Application Interface Definitions

Maps to…

Policy Attachments & Policy Documents

Service Subscriptions

Subscribes

Consumes

Enforces...

Messages

Publish Find Enrich Manage Govern
Policy Management & Governance
Policy Semantics rendered into Configuration (Patterns)

DataPower Policy Framework

DSLA Support
Policy Mapper
Policy Assertion (Configuration)

WP RR Subs
Policy Attachments & Policy Documents

Web Service Proxy

DP Developer / Admin
Author Policy Vocabularies (Config Patterns)

Operations
Manage Policy & Services

Enrich…

Custom
Custom Policy Assertion

Messages

IBM
Sample Scenario

- A **Weather application** makes use of a **Global Weather service**
  - Specifically, version 1.0 of the Weather application consumes version 1.1 of the Temperature Converter service
- The Global Weather service is called via a DataPower appliance to police access to the service
Sample Scenario (cont)

- The detailed terms of the Service Level Agreement (SLA) between the app and service are defined using **Policy** in WSRR.
- The **Service Level Agreement** object in WSRR contains all policies that DataPower should enforce for this particular consumer-provider SLA.

![Diagram of service architecture](image-url)

Weather App Application Version

Web Service Proxy (WS-Proxy)

Global Weather Service Version

Weather Application Version 1.0

Global Weather Service Version 1.1

Service Level Agreement

Service Level Definition

Service Provider

Service Consumer

Modeled in WSRR as...
Querying for Available SLAs in WSRR

SLA Check

- The typical criteria used by enforcement point for finding suitable SLAs in WSRR must be:
  - ‘SLAActive’, and
  - match the `consumerId` and `contextId` specified in message
Extracting Policies from SLAs

- Retrieving policies to be enforced as part of a matched SLA:
  - **Policy attachment** documents contain references to policy documents to be enforced
  - **Policies are optional** – if none specified, then no traffic restrictions are enforced
Example QoS Policy (WS-MediationPolicy)

The example below implements the following ESB Mediation Policy semantics:

“If message traffic exceeds 100 messages in a second, then reject any new messages until the next second time period begins”
Set Up a WS-Proxy Instance
Create new Web Services Gateway

Control Panel

WS-Proxy Gateway configuration

Services

- Web Service Proxy
- Multi-Protocol Gateway
- XML Firewall
- Web Application Firewall
- XSL Accelerator

Monitoring and Troubleshooting

- View Logs
- Troubleshooting
- Web Services Monitor
- View Status

Files and Administration

- File Management
- System Control
- Import Configuration
- Export Configuration
- Keys & Certs Management
Set Up a WS-Proxy Instance
Subscribe to a Service ‘Collection’ in WSRR

Configure Web Service Proxy

Web Service Proxy Name [up]
WebBankingServicesProxy

Apply Cancel Delete Refresh

WSDLs

Subscribed to a collection of services defined by WSRR saved search ‘WebBankingServicesQuery’
WS-Proxy SLA support
New “SLA Policy Details” WebGUI Tab

New WebGUI tab page that provides details necessary for troubleshooting / auditing the effective policy consumed, as well as, configuration rules and actions generated.

Configure Web Service Proxy

List of policy files consumed as part of a specific web service WSDL

Drill-down into policy details using the policy filter area and the gateway web services tree control

Two views
WS-Proxy SLA support: “Policy Model” view

Policy Model view provides details on the effective policy consumed by appliance...

- View pre-processed (“input”) data into policy framework
- Inspect web service attachment nodes (i.e. “policy subjects”)
- View policy assertions and consumer identification details
WS-Proxy SLA support: “DataPower Rules” view

DataPower Rules view provides details on the **configuration generated** by appliance...

View post-processed (“output”) data from policy framework

Inspect web service attachment nodes (i.e. “policy subjects”)

View DataPower configuration artifacts (i.e. rules and actions)
it's DEMO time!
Summary

- The Service Gateway “pattern” can leverage declarative policy to expose its variable behavior to the business operational teams.

- These declarative policy documents can be authored and governed from WSRR.

- Policy intent can be declared using built-in DataPower policy vocabularies (WS-SecurityPolicy, WS-MediationPolicy, …) or custom policy domain vocabularies (as needed).

- Policy-based pattern abstractions can provide business agility while retaining operational stability.

- Allow re-use of approved business patterns to different web services and consumers by leveraging policy attachment capability in WSRR.
Resources

- WSRR Information Portal
- IBM developerWorks articles
- Product documentation
- Whitepapers
- Contact your IBM representative to arrange a PoT
100 Years In the Making:

- Market share leadership
- Strongest ecosystem
- Unparalleled expertise, and level of investment
- Broadest, deepest portfolio

Thank You!... Questions?
IBM Subscription and Support

Get maximum value from your IBM Software Investment via Subscription & Support

IBM Software Subscription and Support:

- Provides you and your team with access to capability and code enhancements throughout the entire product lifecycle
- Can accelerate productivity, operational efficiency, and responsiveness to new business challenges, while containing costs and resource requirements

Add Capabilities with Subscription

- Take advantage of new capabilities and product enhancements as they become available – download updates to your licensed software when you want them.
- Streamline budgeting for software upgrades and migrations
- Enhance user benefits by exploiting the latest technology

Empower Employees with Support

- Access online self-help, download and support resources through the IBM Support Portal at your convenience – 24x7
- Submit Service Requests for fast, dependable problem resolution
- Set priorities for your technical support needs: Your staff decides which problems are “Severity 1”
- Engage via phone with software technical support specialists

© 2009 IBM Corporation
SAVE THE DATE

Impact 2013
April 28 - May 2 • Venetian Hotel & Resort, Las Vegas

Stay connected for updates!

www.ibm.com/impact
Twitter: http://twitter.com/IBMImpact
Facebook: http://www.facebook.com/ibmimpact
Livestream: http://www.livestream.com/ibmimpact
Copyright and Trademarks

© IBM Corporation 2012. All Rights Reserved.

IBM, the IBM logo, ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.