API Directory Overview

ITANA API/Governance Working Group

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Agenda

• Background of our project
• Our Environment
  • Usage
  • Monitoring
  • Publishing Process
  • Subscription Process
• Lessons Learned
• API Directory Future
Project Background

- Initiated from the Mobile Project
  - The majority of the developer’s time was spent on getting data and transforming it to a useable format
- API Directory Project scope
  - Create an infrastructure to create and share re-usable APIs.
  - APIs that allows transition from UMIAC
    - Class Rosters, Instructor, and Curriculum Data
API Directory

More than just a list of APIs
Middleware Platform (WSO2)
  - API Store (Discovery)
  - API Gateway (Monitoring)
  - API Key Manager (OAuth Security)
  - Enterprise Service Bus (Transform & Security)
  - Data Services Server (Services for DB’s)

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API Directory & WSO2 Components

- API Directory Landing Page
- API Directory Help Page
- Built on Drupal

- API Publisher/Store
  - Discover APIs
  - Register Apps
  - Oauth Key distribution
- Oauth Token generation service
- API Gateway - All API traffic goes thru here
  - Token validation
  - Throttling limit enforcement
  - Reporting
- Built on WSO2 API Manager 1.9
API Directory Components and Capabilities

- Message Transformation
  - SOAP to REST
  - XML/JSON
  - Filter/Aggregation
- API Definition
- Proxy Services
- Security Mediation
  - Static Password
  - Pass user identity from JWT (Oauth Token)
  - Pass user identity from client app
- Built on WSO2 ESB 4.8.1
API Directory Components and Capabilities

- Build APIs and SOAP services against database back-ends
- Built on WSO2 DSS 3.1
API Directory Components

Client Apps

Requests APIs

API Publisher

WSO2 AM 1.9

Publishes to

API Gateway

WSO2 AM 1.8

Parses

Executes APIs

API Store

WSO2 AM 1.9

Verifies Token

Requests APIs

Shibboleth

WSO2 ESB

4.8.1

WSO2 DSS

Request APIs

Gets Token

Tableau

Splunk

Forwards Logs

Gets Token

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Backend Applications & Databases
WSO2 Technical Architecture

- On premise VMs
- Active/Passive Servers
- Physical Load Balancers
- Oracle Exadata 12c
Usage

# Of Subscriptions (Top 5)
- UMScheduleOfClasses: 398
- McommunityPeople: 168
- Buildings: 147
- ShortCodes: 45
- CAENLabs: 37

# Of Hits (Top 5)
- StudentDashboard: 195,906
- UMScheduleOfClasses: 125,929
- CurriculumAdmin: 82,639
- Pinnacle: 72,120
- ShortCodes: 3,929
Monitoring
Publishing Process

- API Publishing Checklist
  - Definition and meta data for API
  - Support Owner
  - Documentation
  - Functional Test plan
  - Security Testing
  - Data Steward/Manager sign off ([Data Steward List](#))
Subscription Process

- Straight forward for Public APIs
- Private/Confidential Data is more complicated
  - API Subscribability vs. Visibility
  - Not a good subscription workflow
  - Personal IDs vs. System IDs
  - Provisioning access is to the ID and not the App
- ServiceNow Integration
Lessons Learned

• Branding is Important
• Target personas and evangelize
  • Data Stewards
  • API Developers
  • API Subscribers
  • Product Managers
• Service Level Expectations for APIs
• Developers are passionate about API Design decisions
• Vendor Support (Quick Start, Prod Support)
• It’s more than a project
API Directory - Future

- More APIs
  - ImageNow, SumTotal, More PeopleSoft
- More Integrations
  - ESB with connectors to Salesforce
- Integration Competency Center (ICC)
- Subscription Workflows
- Collaboration with our Health System
  - IBM Message Queue and API Manager