IUDX v2.5.0 Release Notes

March 31, 2021

1. Introduction

We are happy to announce the IUDX-v2.5.0 release for the core software components and platform components for India Urban Data Exchange (IUDX). It incorporates feature upgrades and enhancements from Release 2.0 which was the first production release for IUDX.

This note provides a list of feature additions and other work components that form a part of this release.

2. Feature Additions

2.1 Resource Server

- File Server APIs
    - Implements file search, upload, download and delete features
    - Integrated with IUDX authorization service
- Resource Group Latest Data Access APIs
    - Secure data access operations on a group level
    - REDIS based latest data cache implementation

2.2 Authorization Server

- Two factor authentication
    - Option of enabling two-factor authentication for authenticating policy APIs
- Provider Delegation
    - New provider delegate role who can manage policies on behalf of the provider
- Policy expiry time
    - Implemented time-based policies which expire at a provider specified time
- Allow addition of resources to the same authorization token

2.3 Deployment Framework

- Fully functional CI (Continuous Integration) pipeline
    - Automated testing and report generation
    - Automated containerization of services and publication to docker registry
- New Kubernetes based deployment framework (Rel 1.0)
    - Framework for Catalogue and Resource API Servers and RabbitMQ deployment

2.4 New Data Ingestion Framework

- Apache Flink based cloud deployable ingestion pipeline
    - Extensible and configuration based setting up of ingestion pipeline
- API Server to manage and monitor adaptors
- Logging/monitoring modules in the adaptors

2.5 IUDX Usage Toolbox

- Python SDK 1.0
- Secured analytics application and framework
    - Showcase secure and scalable application development using IUDX

2.6 Catalogue and Provider UI Panels

- UI for Accounts Panel (consumer, provider panel included)
    - Addition of provider delegate role
    - Provider view for policies
    - Consumer panel for token grant and views
- Revamped UI for Catalogue Panel

2.7 Additional Testing

- Load and performance testing
- Enhanced Unit and Integration testing
- Enhanced Input parameter validations

2.8 Maintenance and Support

- Updated Error code scheme
- Updated API documentation

3. Key Links

- Source Code
    - Resource Server - https://github.com/datakaveri/iudx-resource-server
    - File Server - https://github.com/datakaveri/iudx-file-server
    - REDIS based cache layer - https://github.com/datakaveri/latest-ingestion-pipeline

- o Authorization Server - https://github.com/datakaveri/iudx-auth-server
- o New Flink based Ingestion Framework - https://github.com/datakaveri/iudx-adaptor-framework
- o Sample Analytics Application and Framework https://github.com/datakaveri/iudx-analytics-app
- o Python SDK - https://github.com/datakaveri/iudx-python-sdk
- New Kubernetes Framework - https://github.com/datakaveri/iudx-deployment
- CI Framework
  - o Docker Registry - https://github.com/datakaveri/iudx-docker-registry
  - o Jenkins Pipeline - https://jenkins.iudx.io/
  - o Architecture Document: Link
- JMeter Load and Performance Test Reports
  - o Catalogue Server: Link
  - o Resource Server: Link
  - o Authorization Server: Link
- Unit Test Reports
  - o Resource Server: Link
  - o File Server: Link
  - o Authorization Server: Link
- Integration Test Reports
  - o Catalogue Server: Link
  - o Resource Server: Link
  - o Authorization Server: Link
- API Docs
  - o Catalogue Server - https://api.catalogue.iudx.org.in/apis
  - o Resource Server - https://rs.iudx.org.in/apis
  - o Authorization Server - https://authdocsdev.iudx.io/
- UI Links
  - o Catalogue UI - https://catalogue.iudx.org.in/
  - o Accounts Panel - https://accounts.iudx.org.in/

4. Features planned for upcoming releases

- Resource Server
  - o New APIs: Reset and invalidate streaming credentials, data publish
  - o New API Metering system
  - o Query and Rate limiting based on identity of the user

- o Pagination Support
- Catalogue Server
  - o New API Metering system
  - o Mechanisms for internal interaction with other IUDX servers
  - o Query and Rate limiting based on identity of the user
- Auth Server
  - o New Vert.x based implementation
  - o New Identity Management Framework
  - o New Metering and Reporting APIs (Usage reporting APIs)
- System Level Upgrades
  - o OSS Components updates to LTS versions and updation of clients (ELK, RabbitMQ, Postgres, Vert.x)
  - o Mechanisms for inter-server communication and notifications
  - o Cluster Management upgrade
- Dev Ops
  - o Design and implement the setup of Kubernetes for IUDX Auth Server
  - o Design and implement the setup of Kubernetes for IUDX Databases (Elasticsearch, Redis, Postgres)
  - o Migration of all IUDX Services from Docker Swarm to Kubernetes
  - o Code coverage of test cases and developed code [JaCoCo]
    - ▪ Applicable for Resource, Catalogue and Auth API Servers
  - o Code quality assessment and integration with github badges
- Testing
  - o Penetration Testing
  - o Volumetric Testing
  - o Vulnerability Assessment
  - o Alignment with OWASP principles
  - o Platform Security Testing