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Enterprise Log Aggregation

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Informatica Professional Services

Agenda

What is Enterprise Log Aggregation?
ICDM Operational Insights Service
Example Solution Architecture
Informatica ICDM Platform API
Demo: Extract Logs from Informatica Cloud
Demo: Example Dashboard using Microsoft Power BI
Using a Document Store Database (MongoDB)
Demo: Extract Logs from Secure Agents
Reference: Links to ICDM API Documentation

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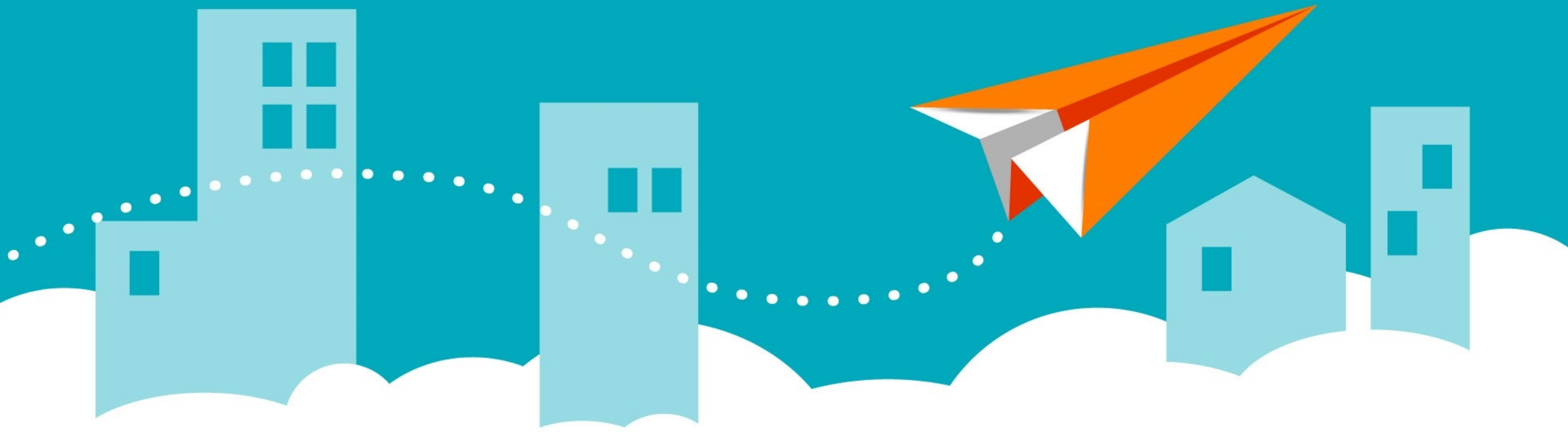
Enterprise Log Aggregation



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Enterprise Log Aggregation

- Gain Insight into Cross-Application Operational Metrics at an Enterprise Level

- Objectives
  - Tuning and Optimization, Process Orchestration, Predictive Analytics
  - Security, Real-Time Threat Detection, Auditing, Regulatory Compliance

- Commercial Log Aggregation Tools
  - Splunk Enterprise
  - ELK Stack: Elasticsearch, Logstash, Kibana (Open Source)
  - AWS CloudWatch
  - Azure Monitor (formerly Azure Log Analytics)
  - Google Cloud Logging

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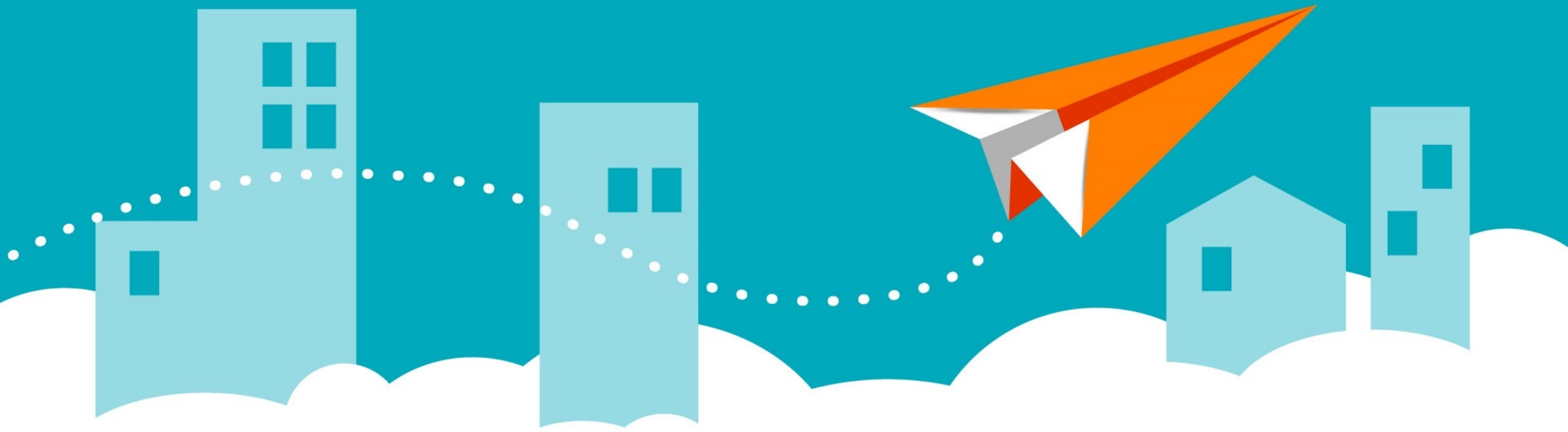
Enterprise Log Aggregation

- Operations:
  - Single at-a-glance dashboard, one place to check
  - RCA of Intermittent Failures: what else is happening when a process fails on one system
  - Network failure prediction: identify outages and disruptions before they happen
- Developers:
  - Long-running processes: Informatica doesn't know if an Oracle index gets dropped
  - Slowly-increasing runtimes: Informatica doesn't know if an Oracle tablespace is growing larger
  - Process orchestration tuning and optimization across multiple applications

ICDM Operational Insights



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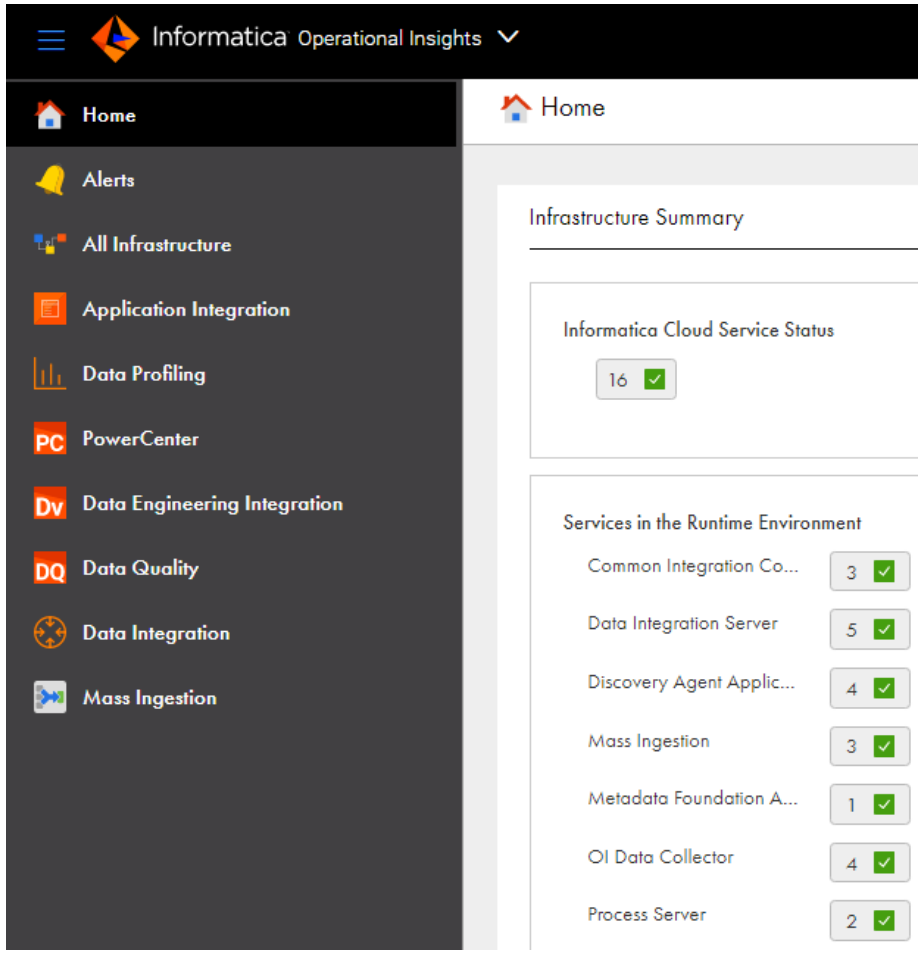
Operational Insights Service



- Provides Informatica Status Dashboards
  - ICDM Cloud Status, Secure Agents Status
  - Infrastructure Monitoring: PC, IDQ, DEI, IICS
  - CDP: Data Profiling
  - CDI: Data Integration
  - CAI: Application Integration
  - CMI: Mass Ingestion
- Provides Infrastructure Email Alerts
  - IICS Secure Agent offline
  - CPU, Memory, Disk over threshold

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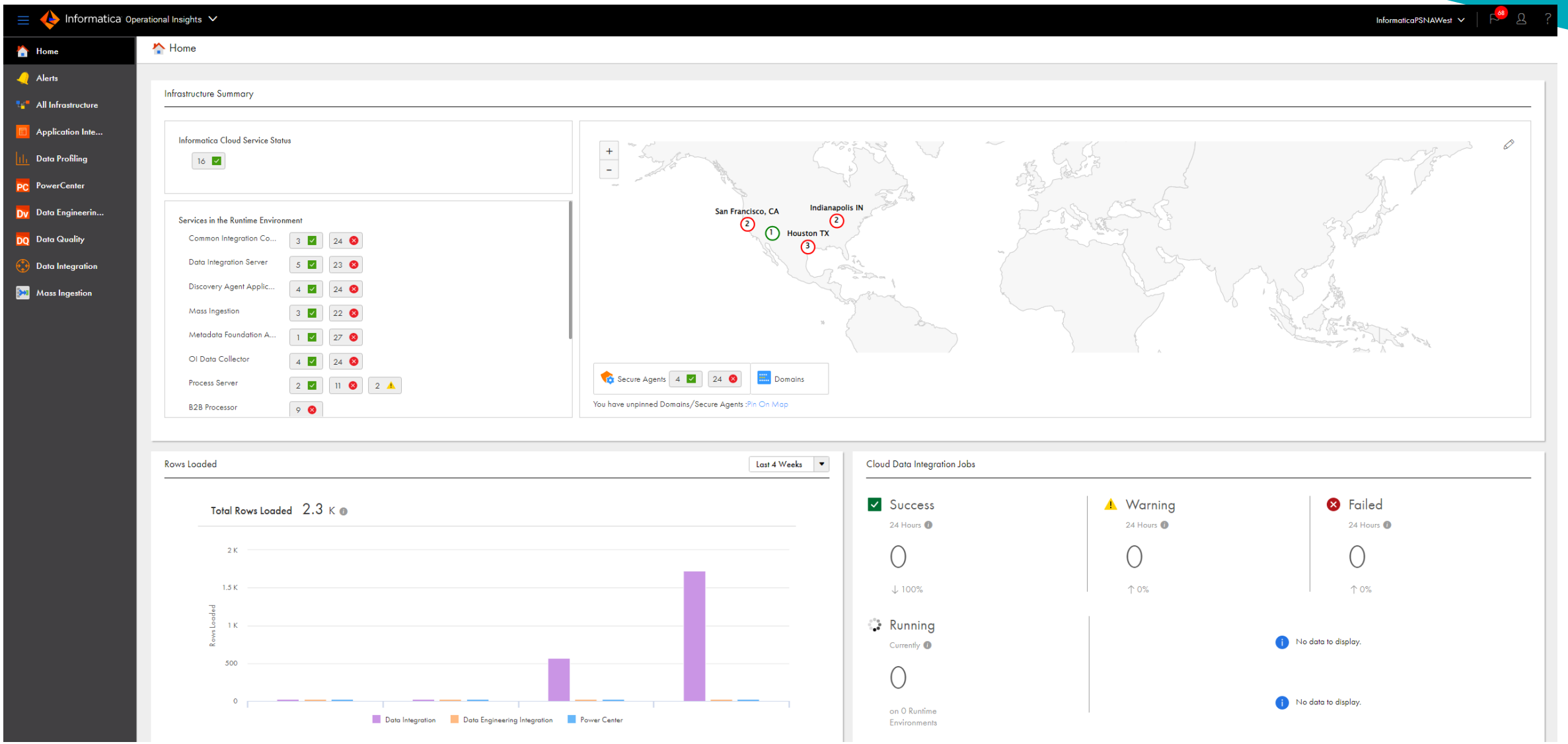
Cloud Status Dashboard



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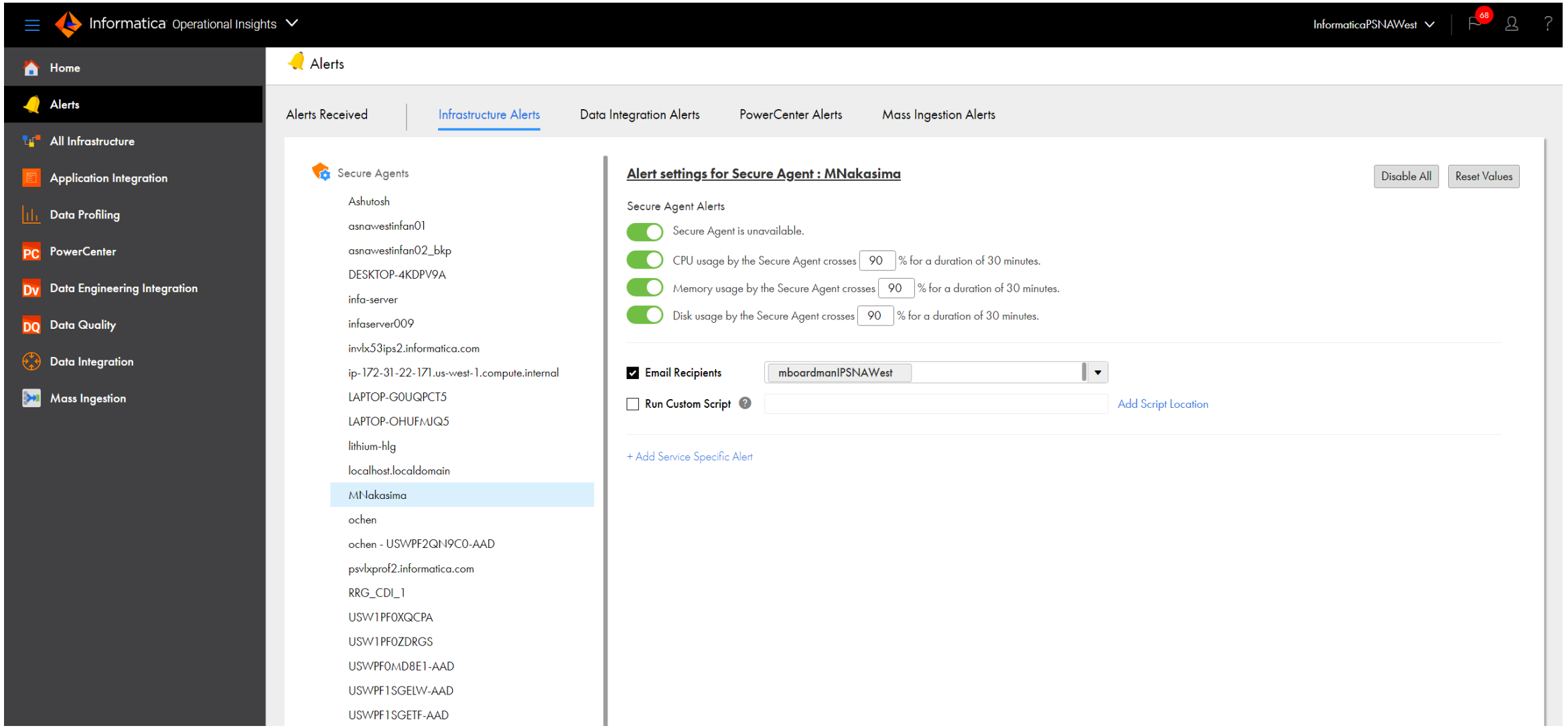
Infrastructure Alerts



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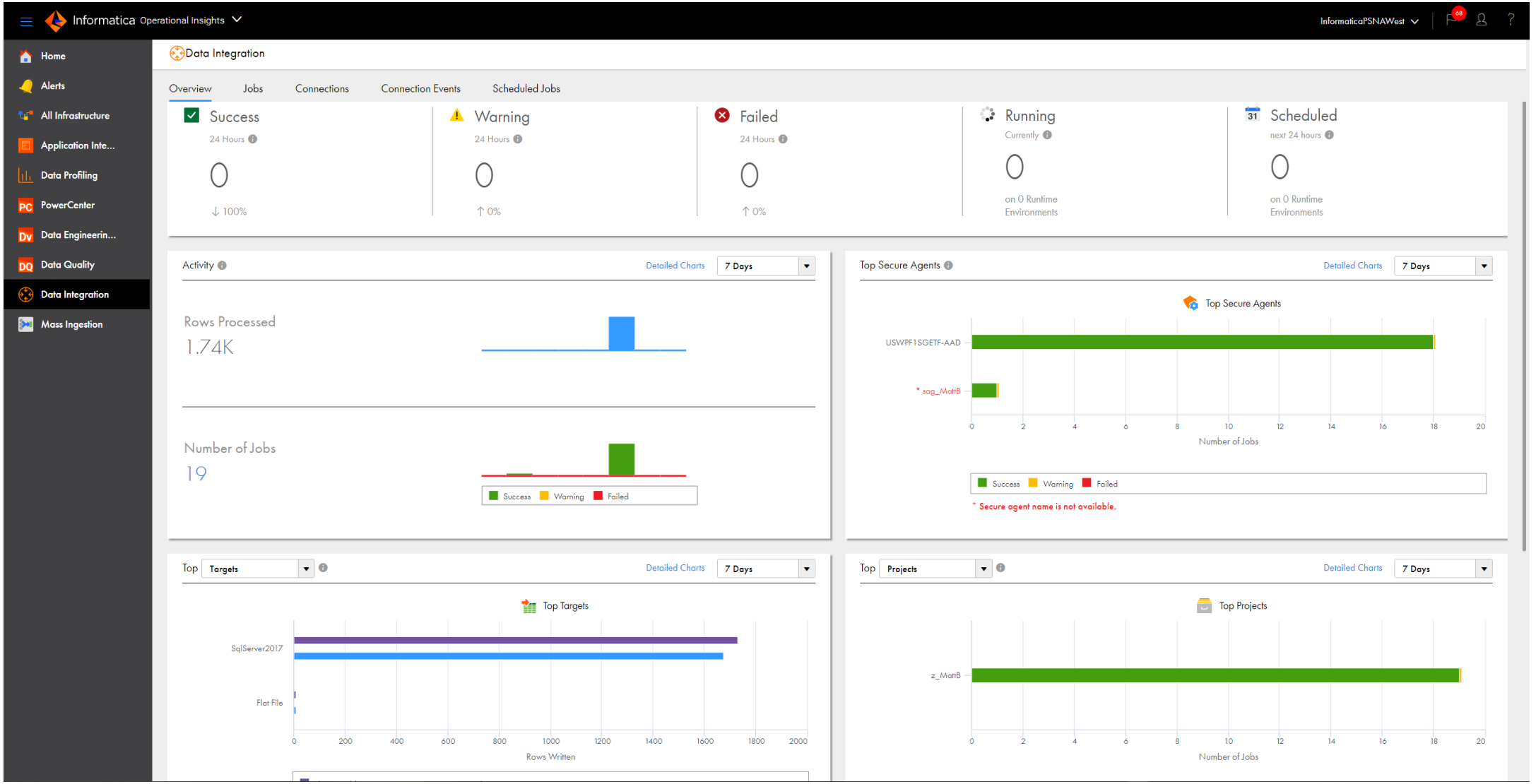
Cloud Data Integration



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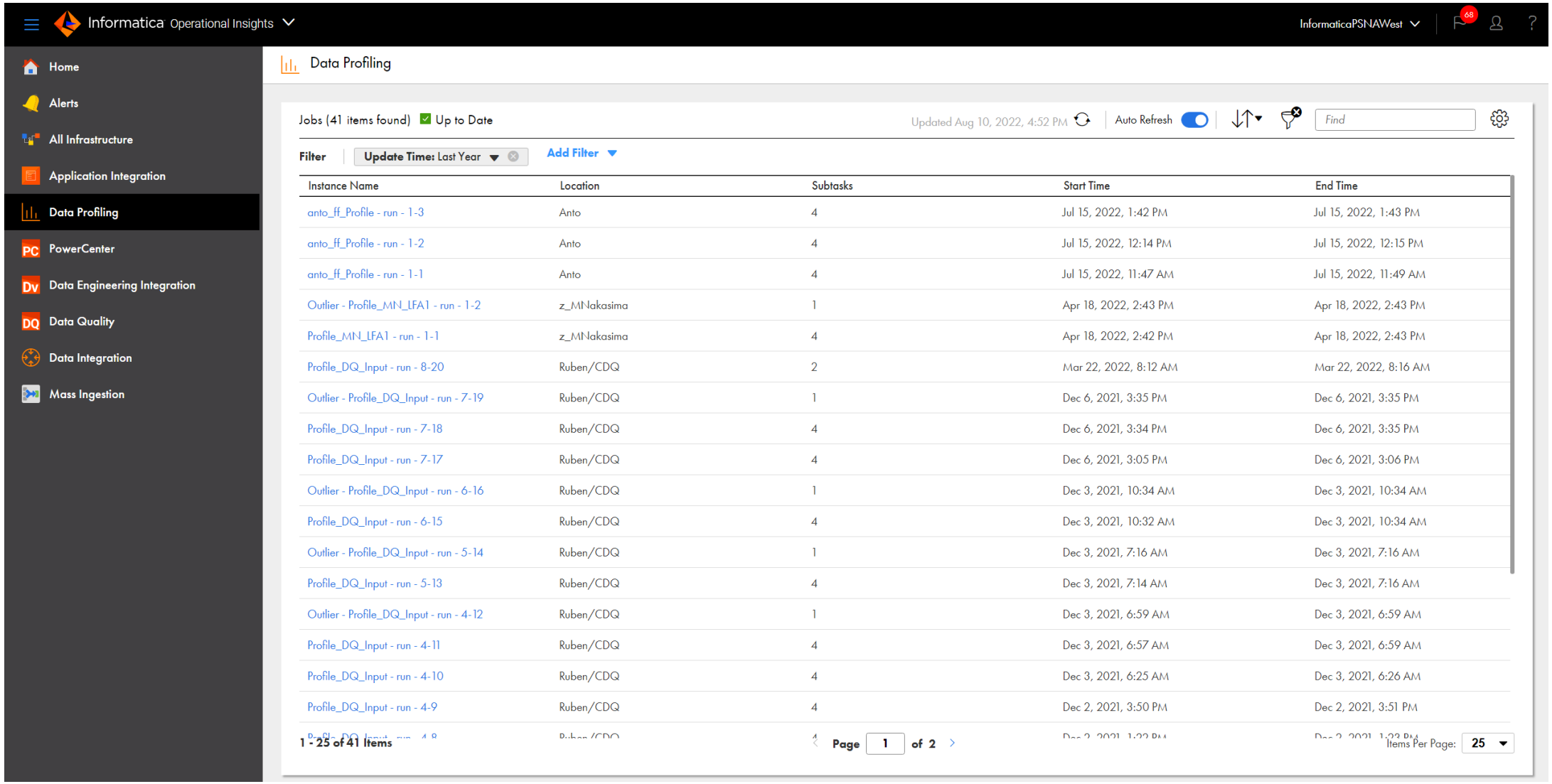
Cloud Data Profiling



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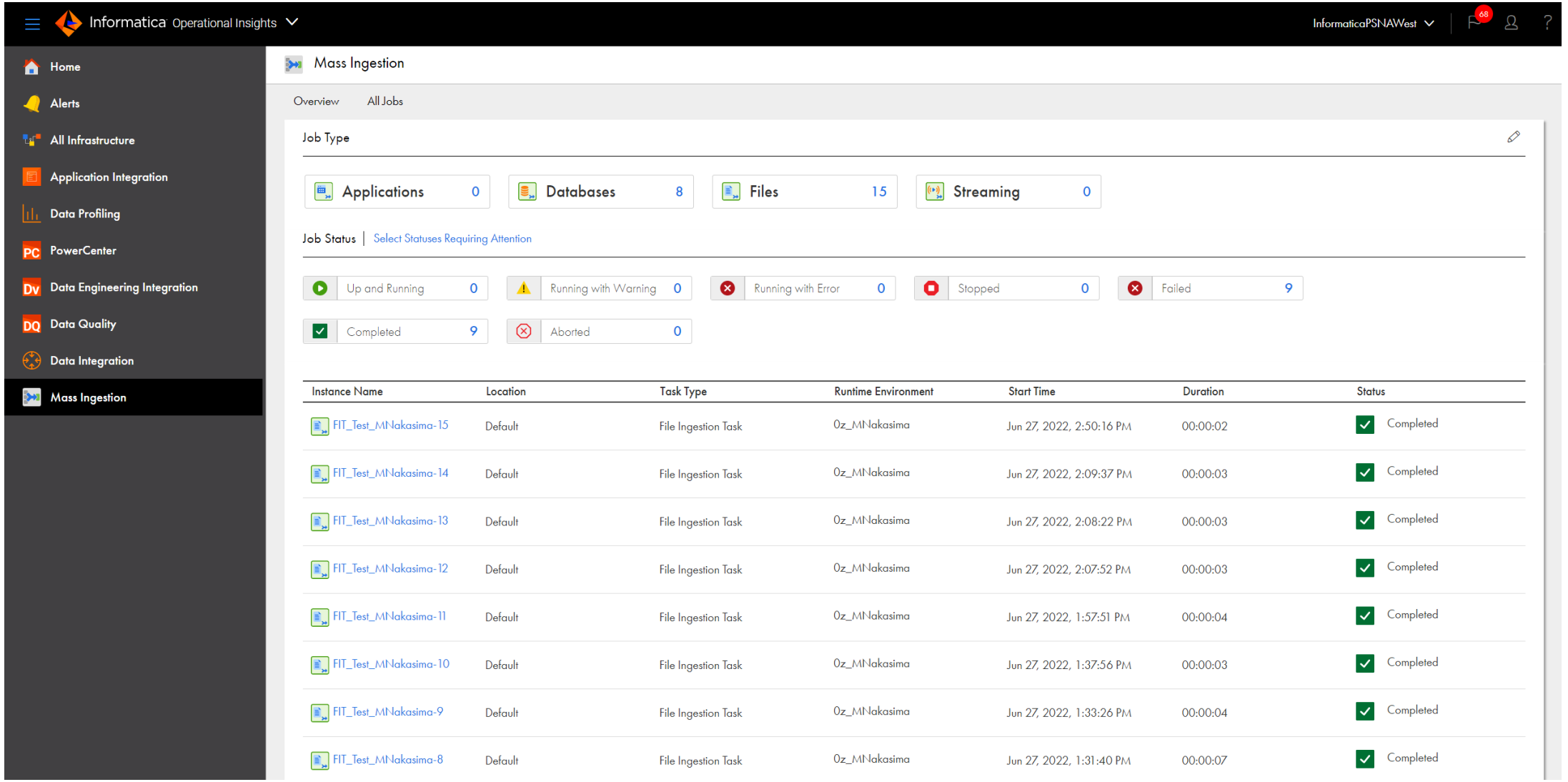
Cloud Mass Ingestion



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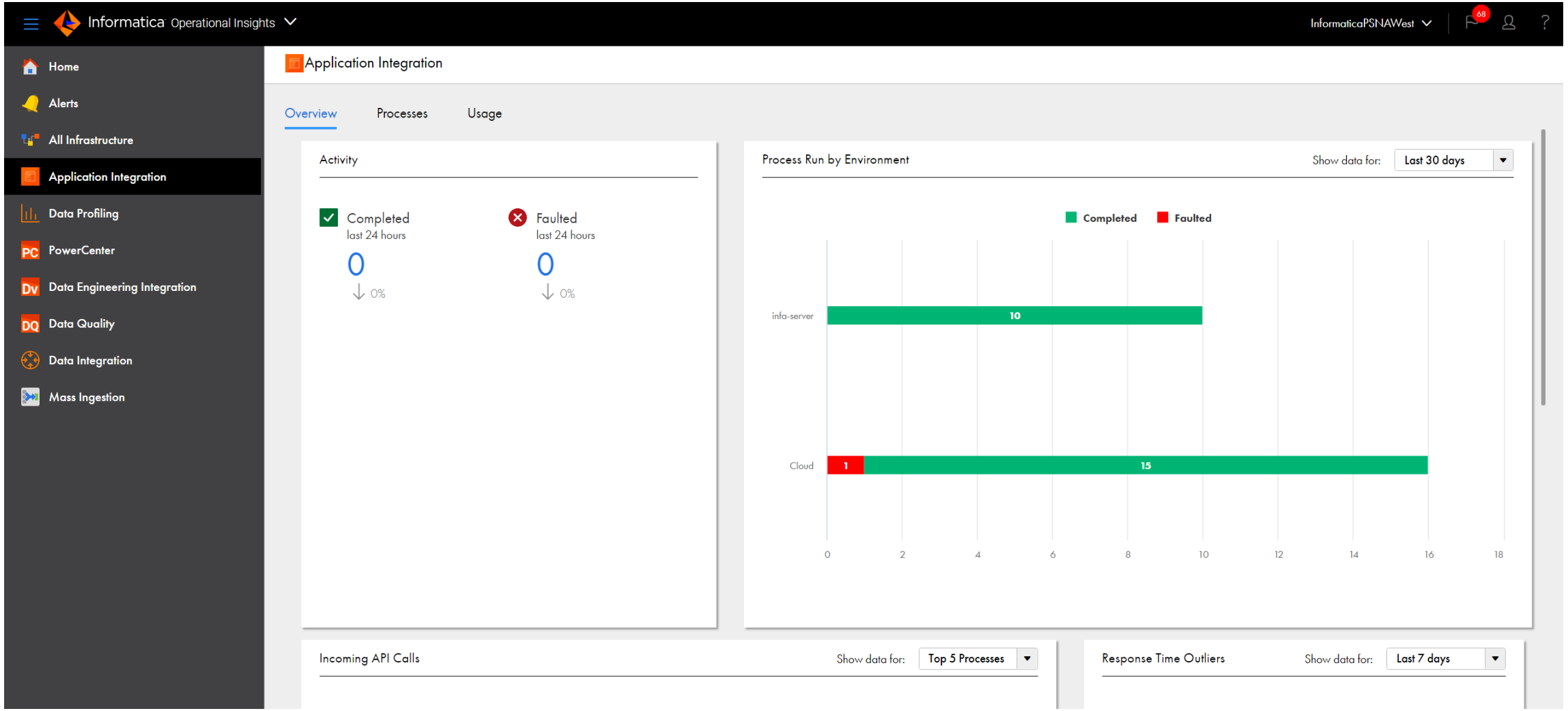
Cloud Application Integration



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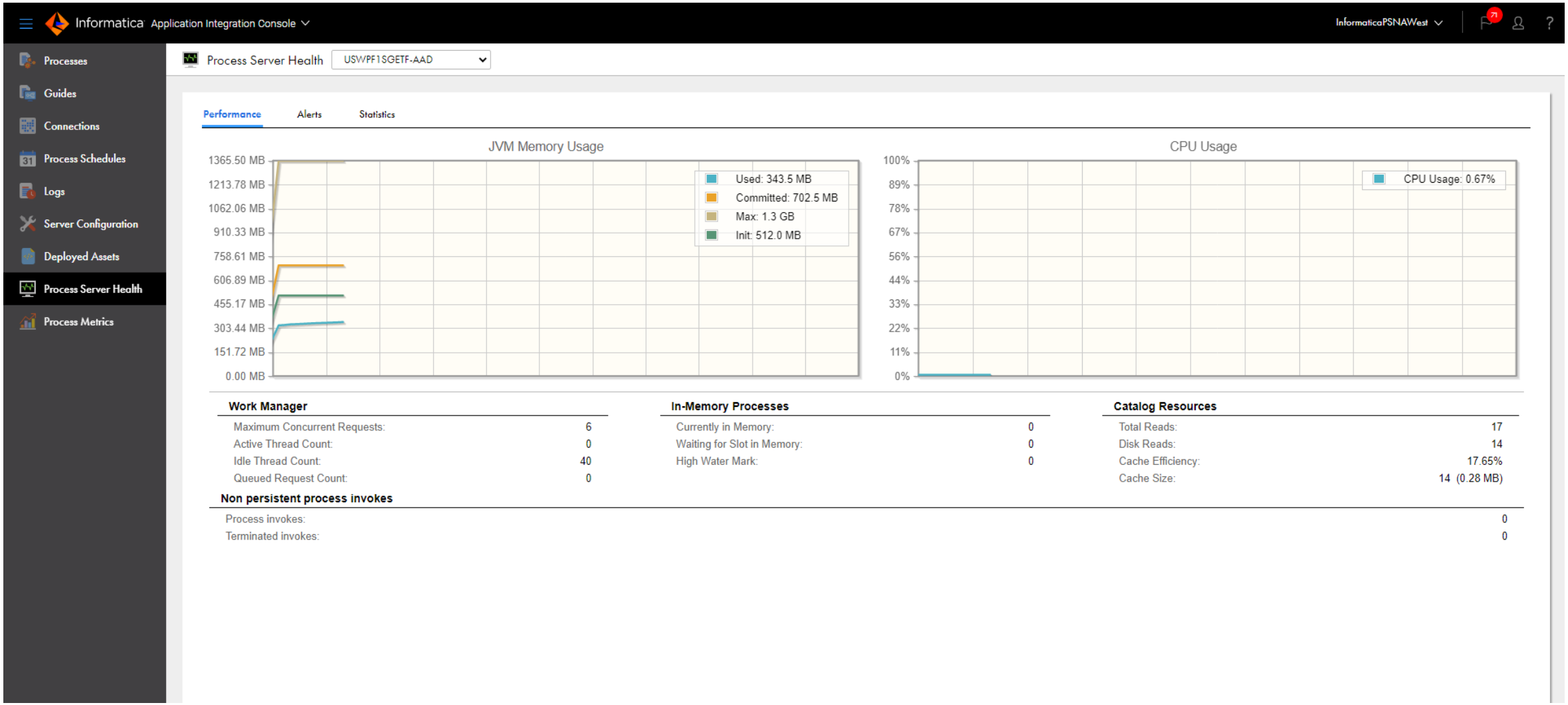
CAI Console



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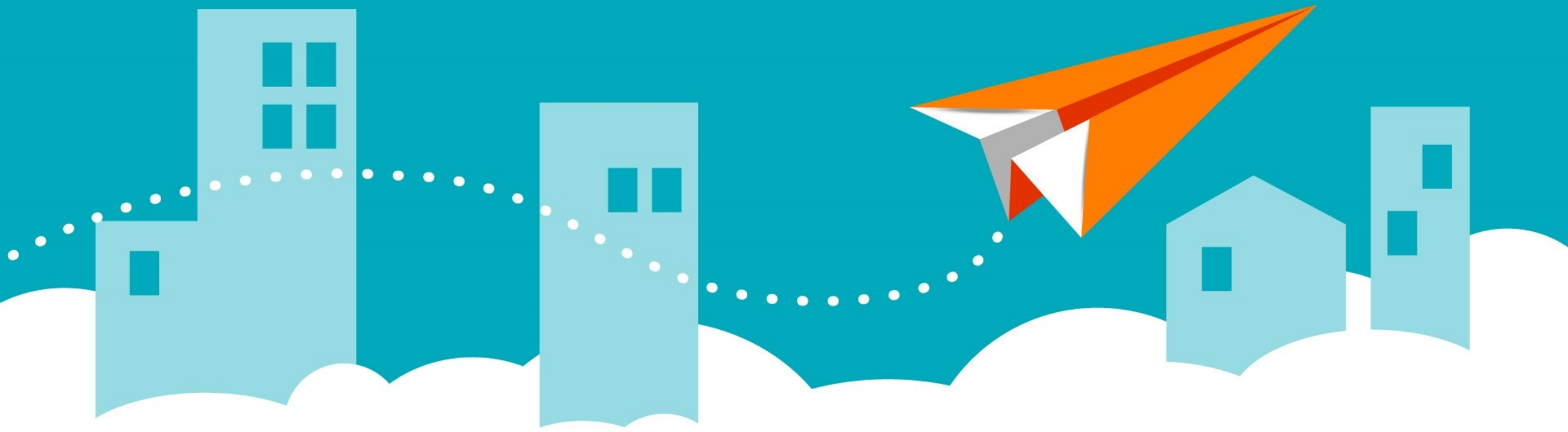
Example Solution Architecture



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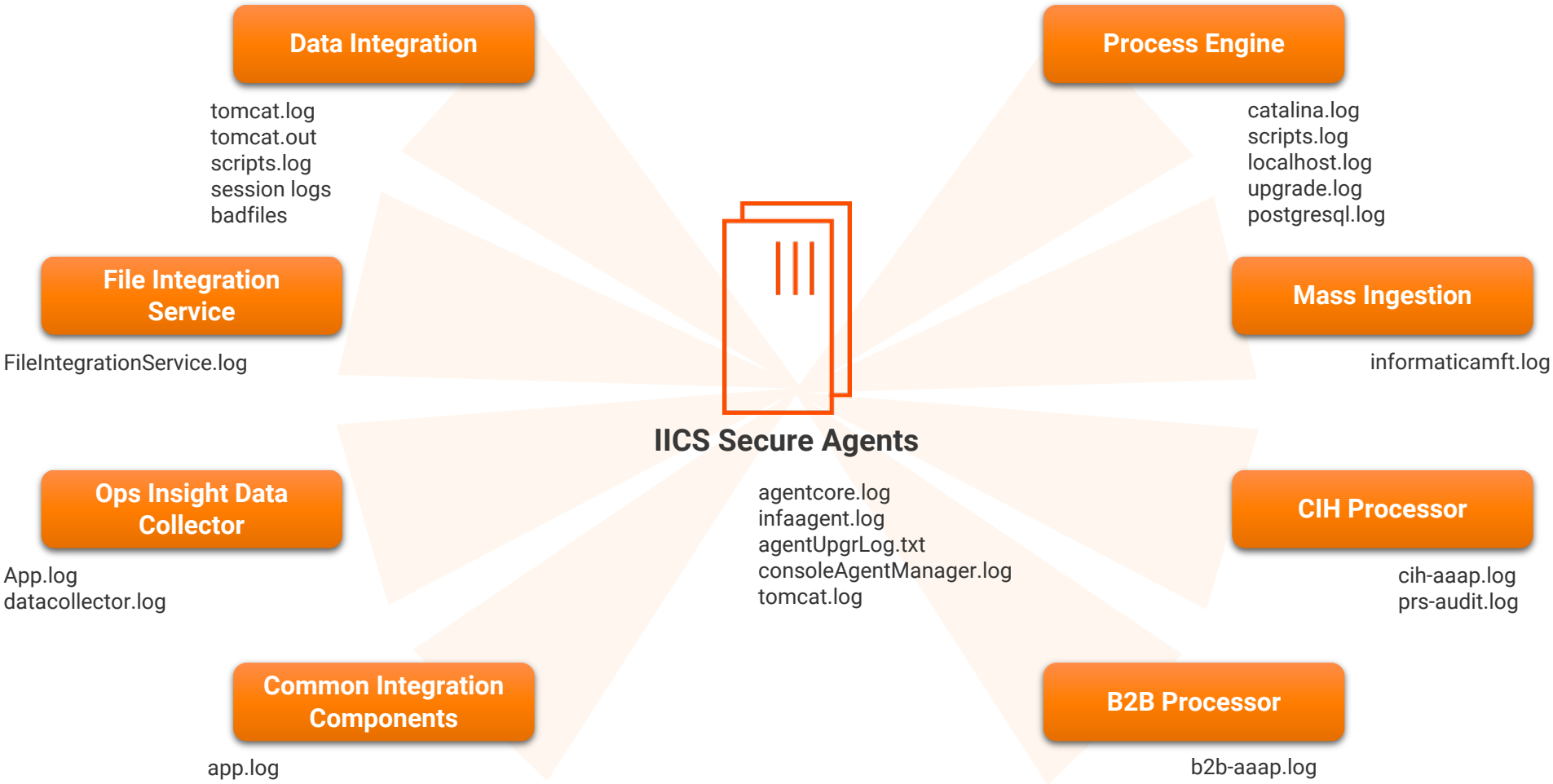
Service Logs on Informatica Secure Agents



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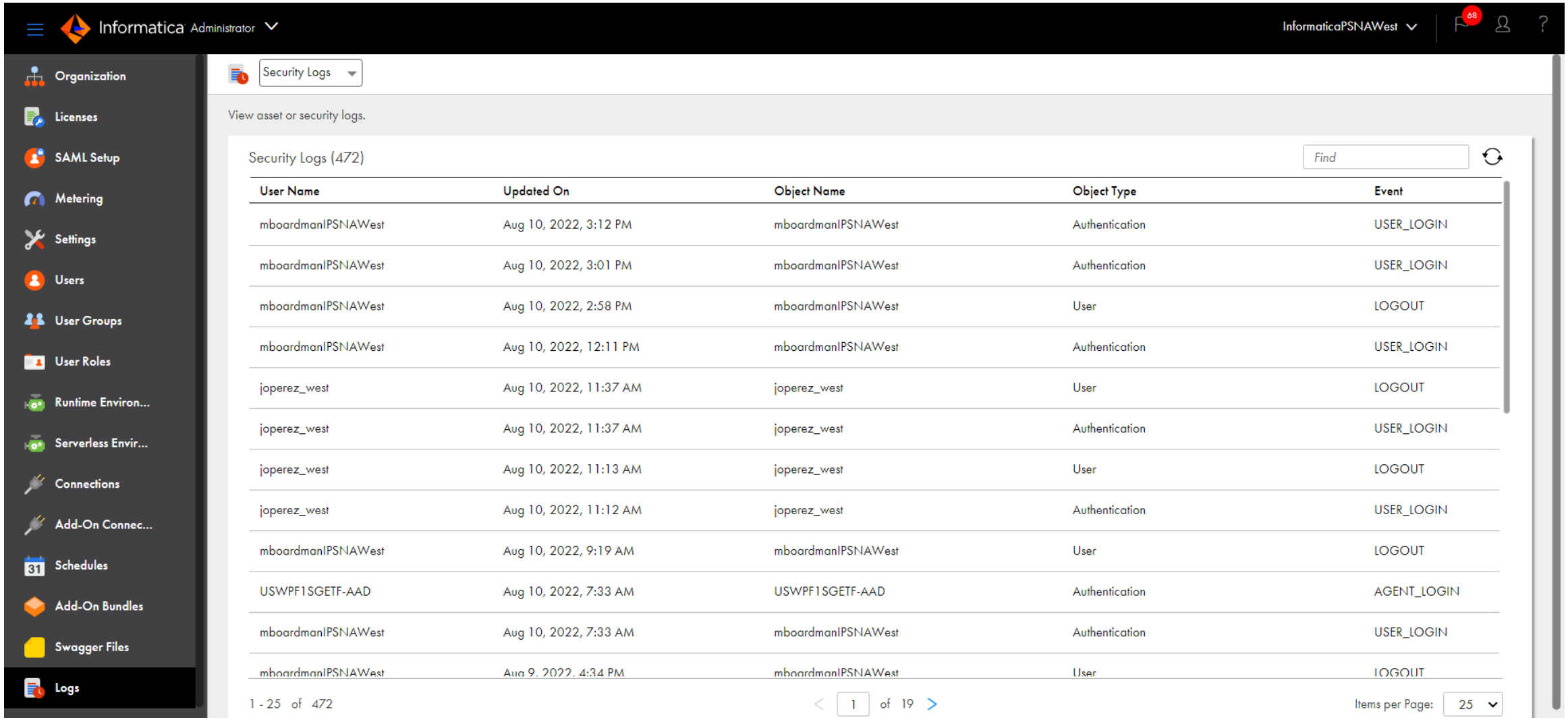
Asset and Security Logs in Administrator Applet



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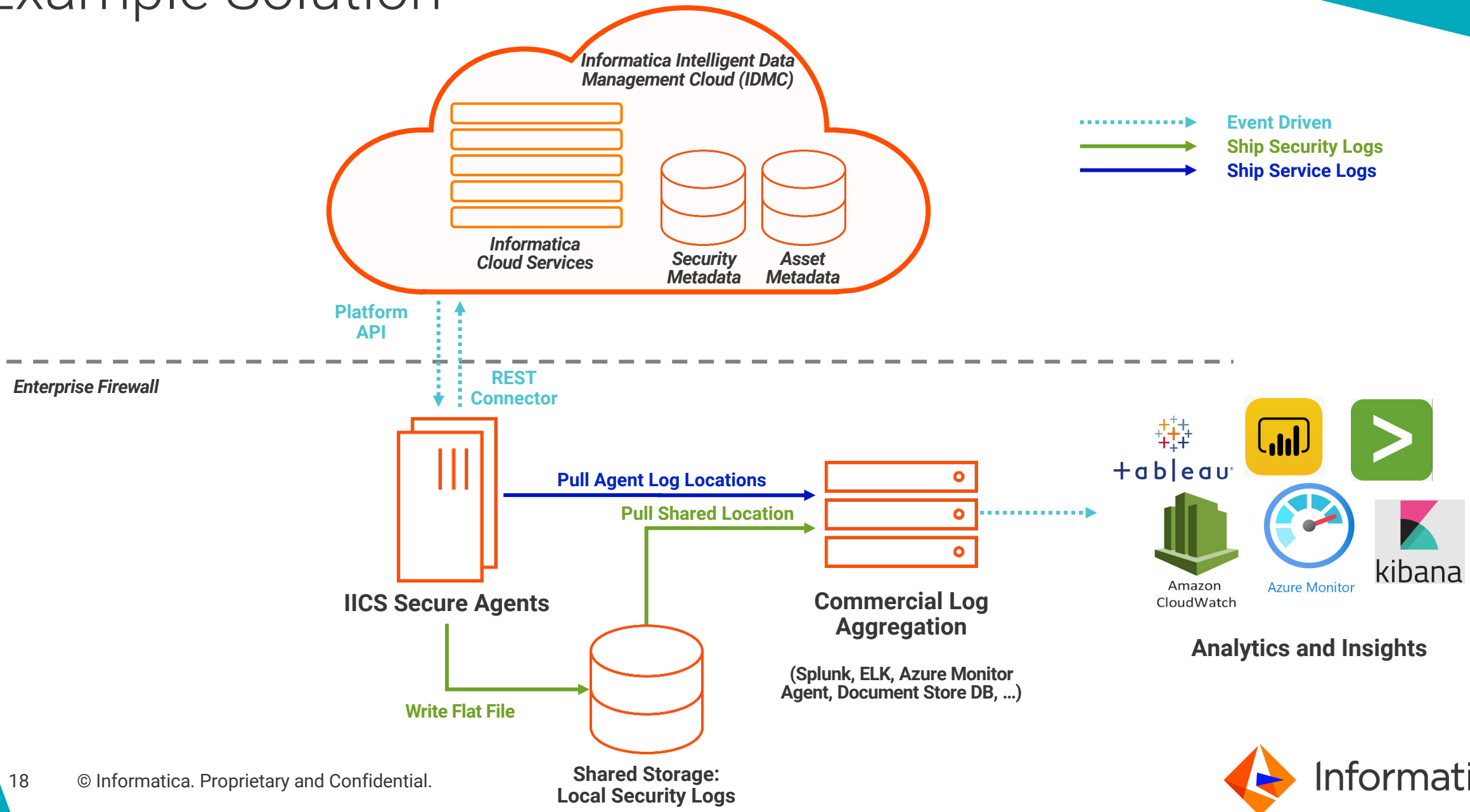
Example Solution



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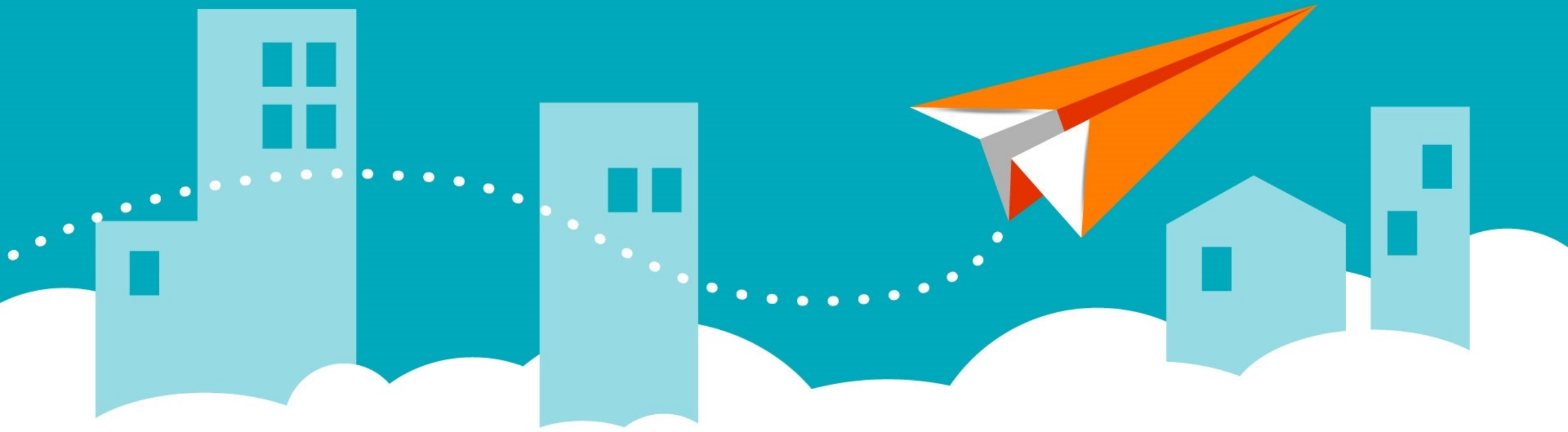
Informatica ICDM Platform API



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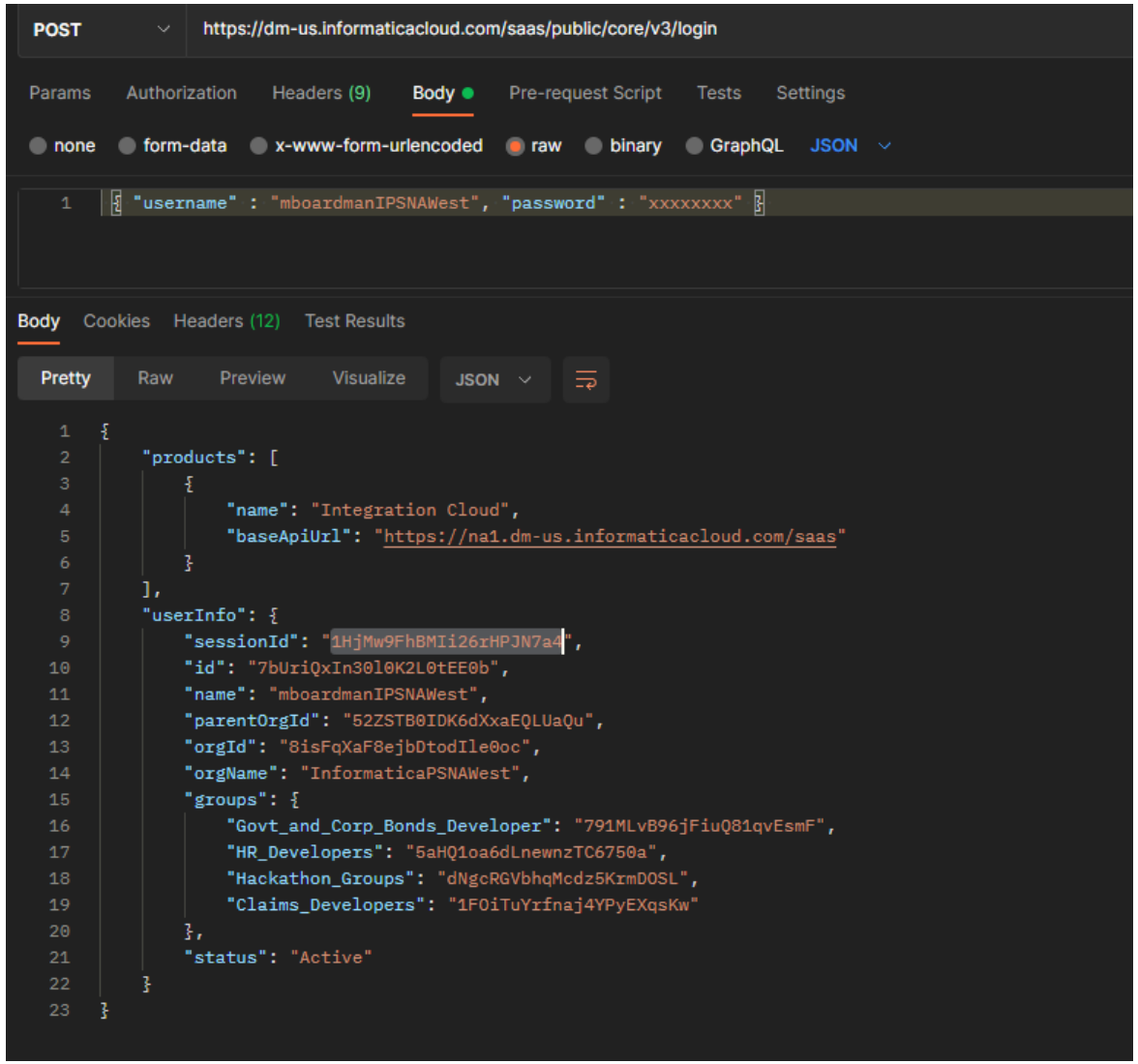
Cloud Platform API - Login



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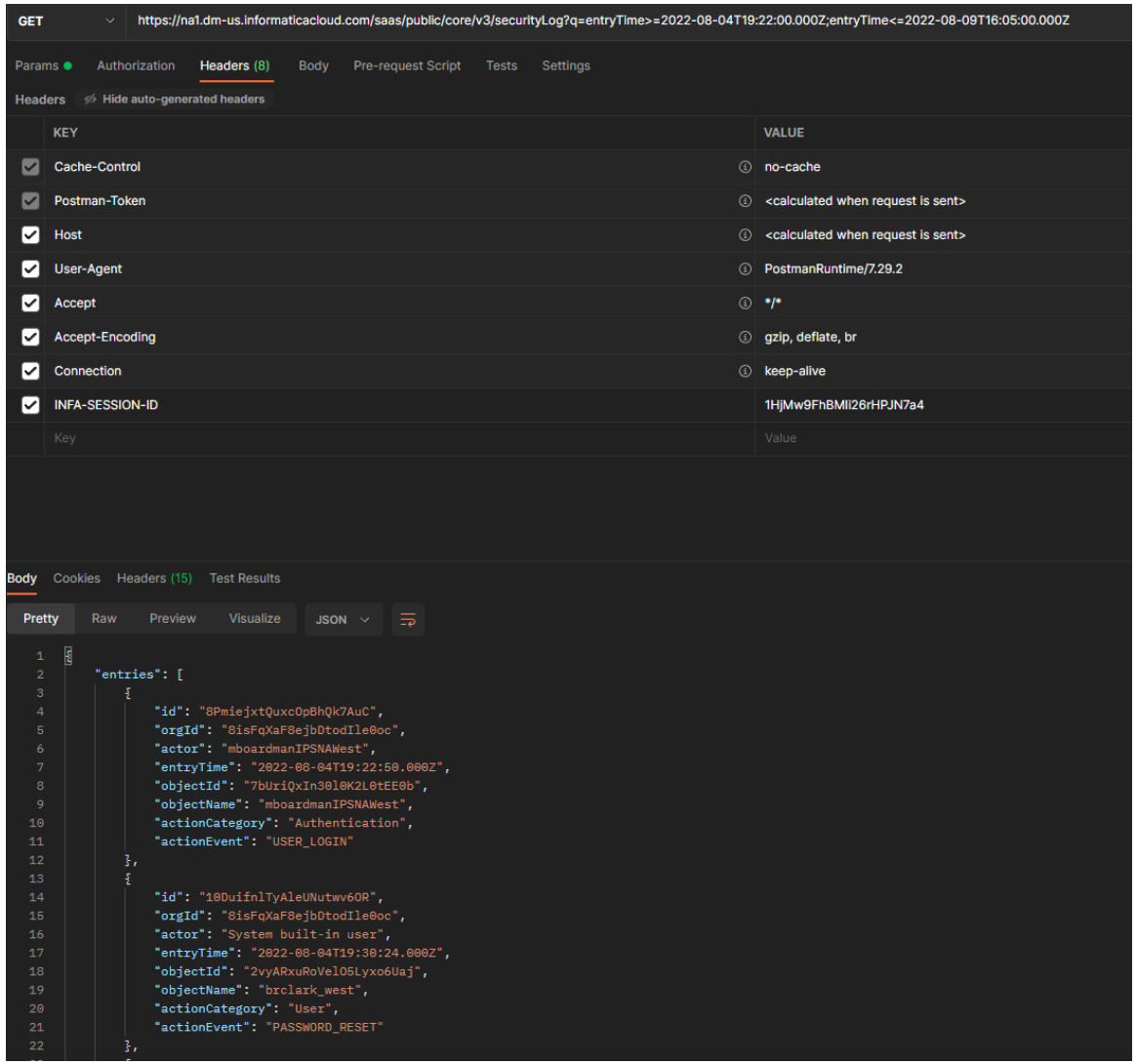
Cloud Platform API – Security Logs



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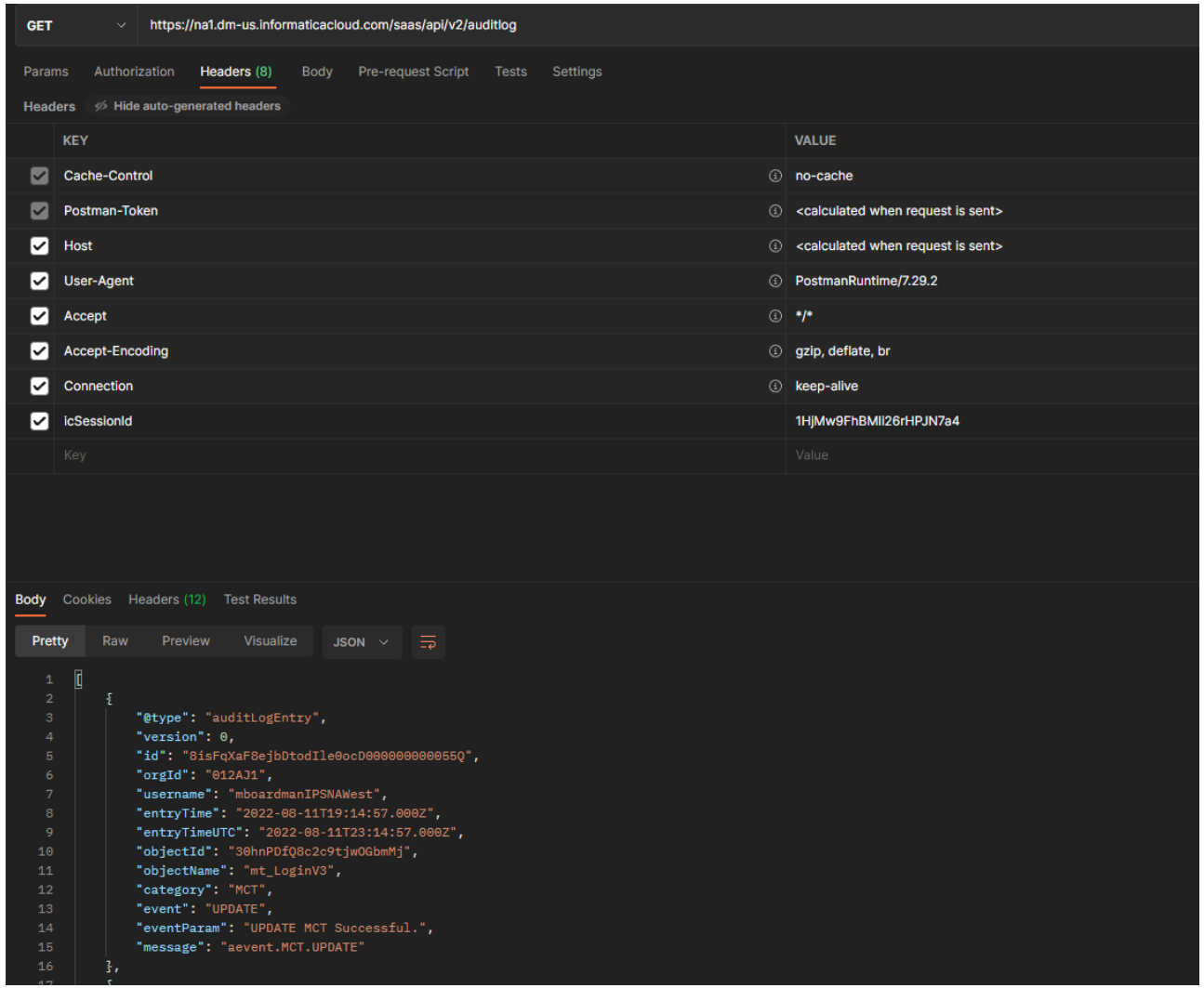
Cloud Platform API – Asset (Audit) Logs



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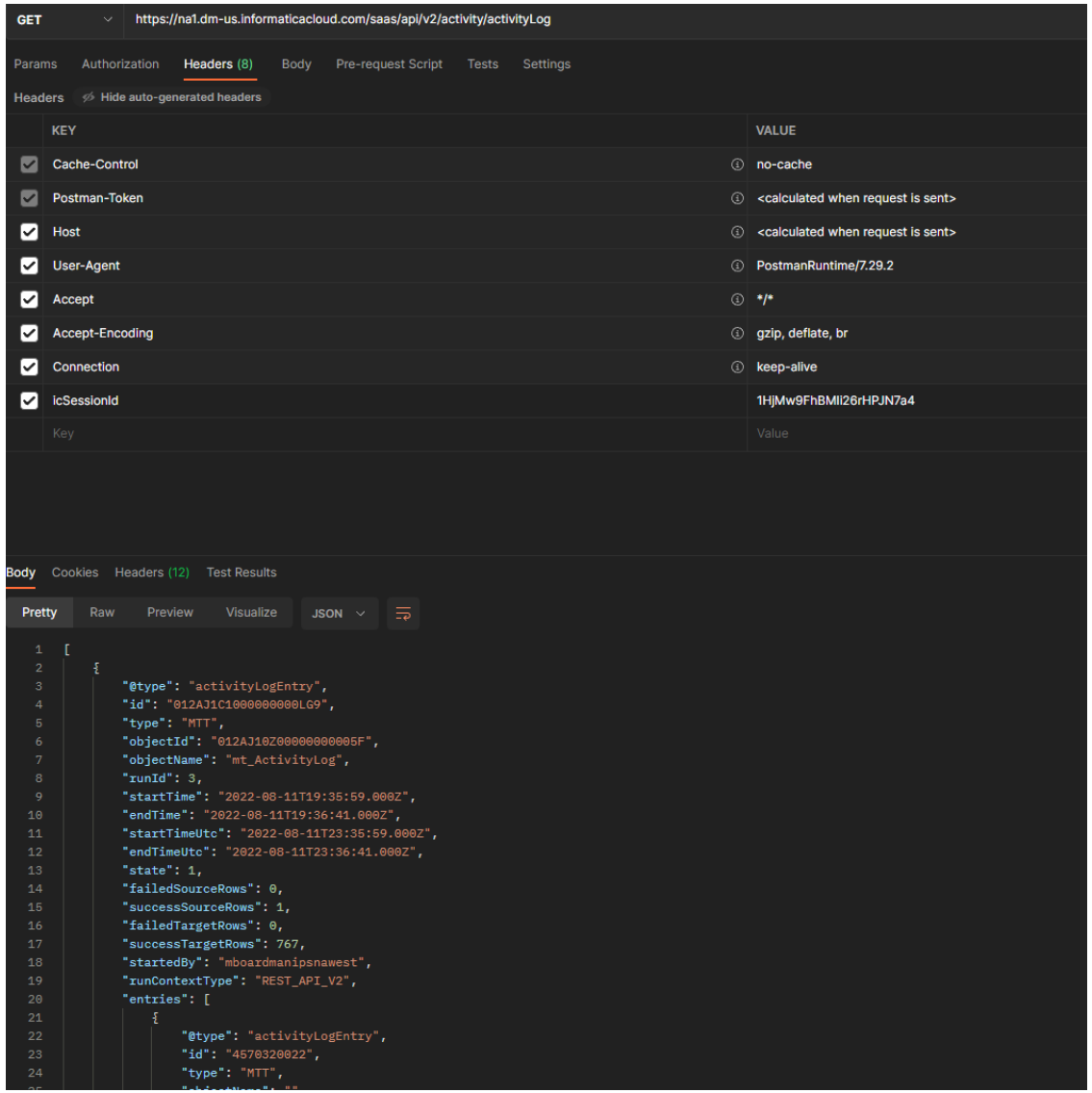
Cloud Platform API – CDI Job Logs



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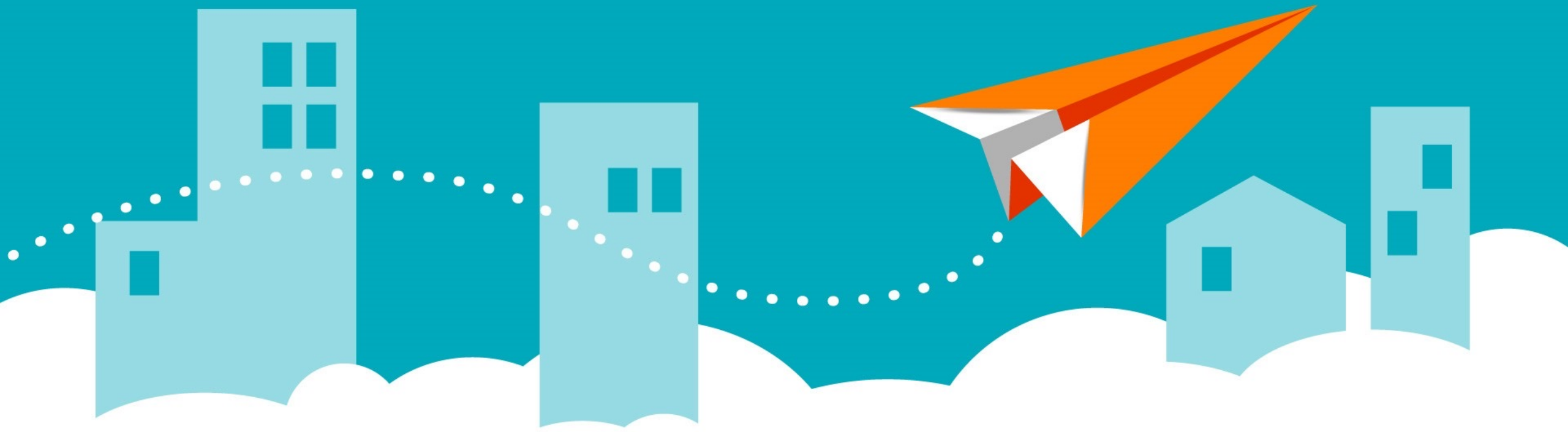
Extract Logs from Informatica Cloud



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Steps using Data Integration

- Create Swagger Files (Describe REST API)
- Create REST v2 Connectors
- Build Mappings and Mapping Tasks
  - Login to get Session Token
  - Extract Security Log
  - Extract Asset Log
  - Extract CDI Job Log
- Build Taskflow

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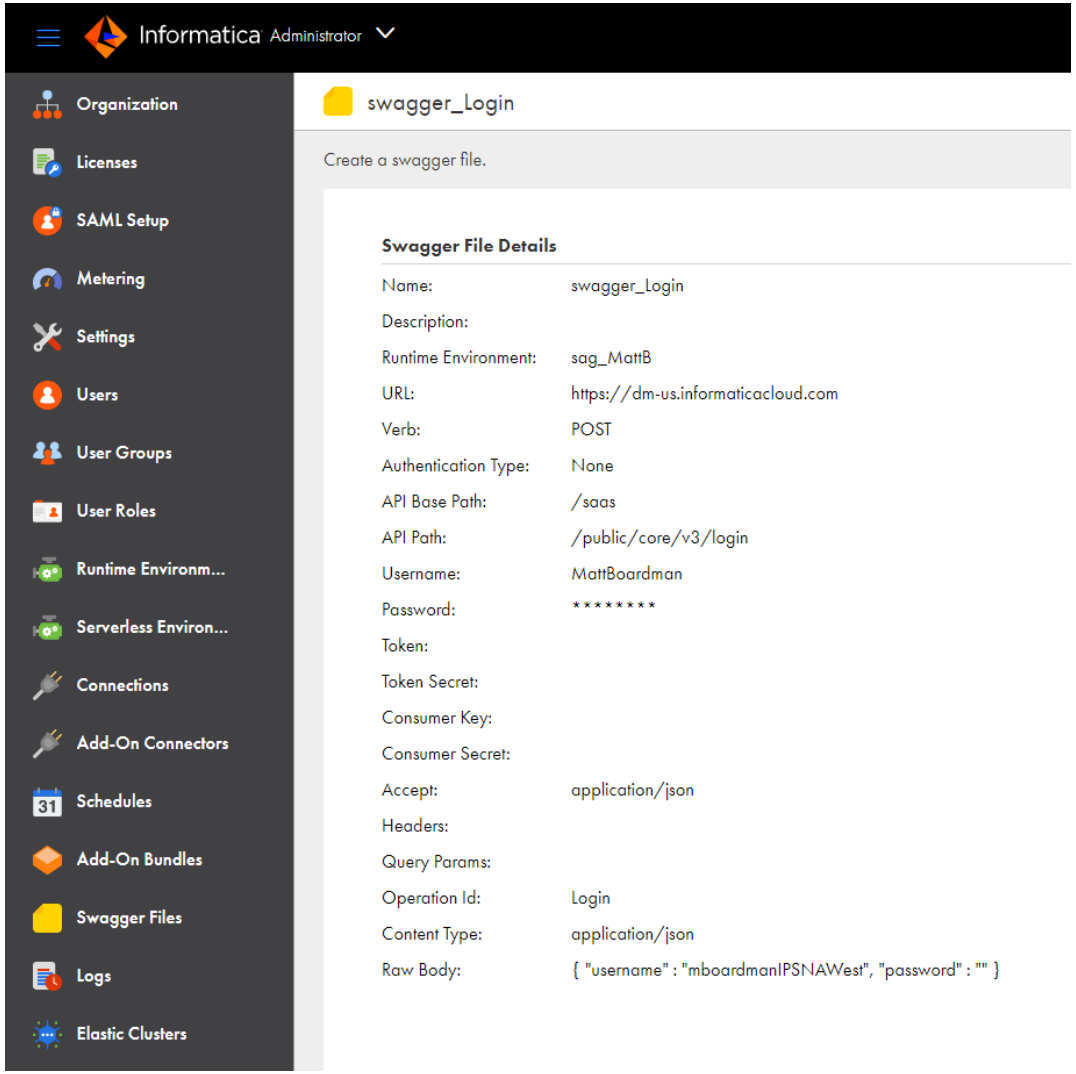
Swagger Files



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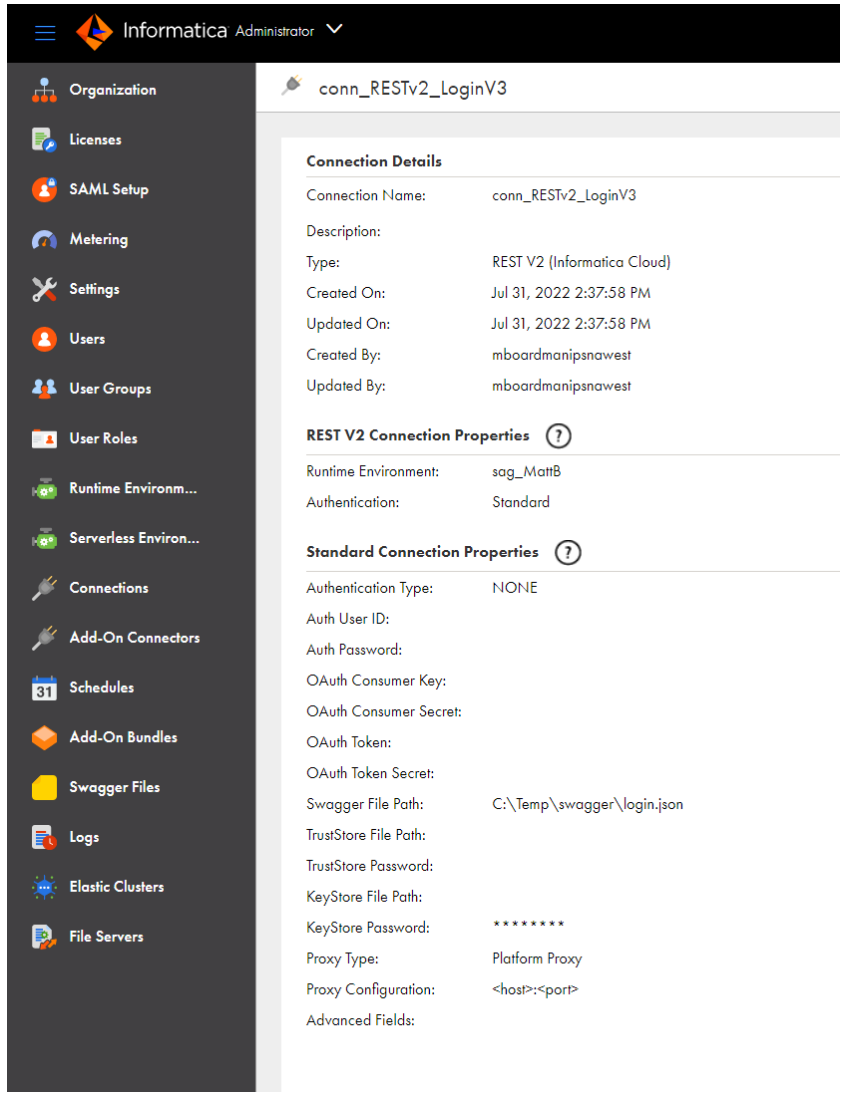
REST v2 Connections



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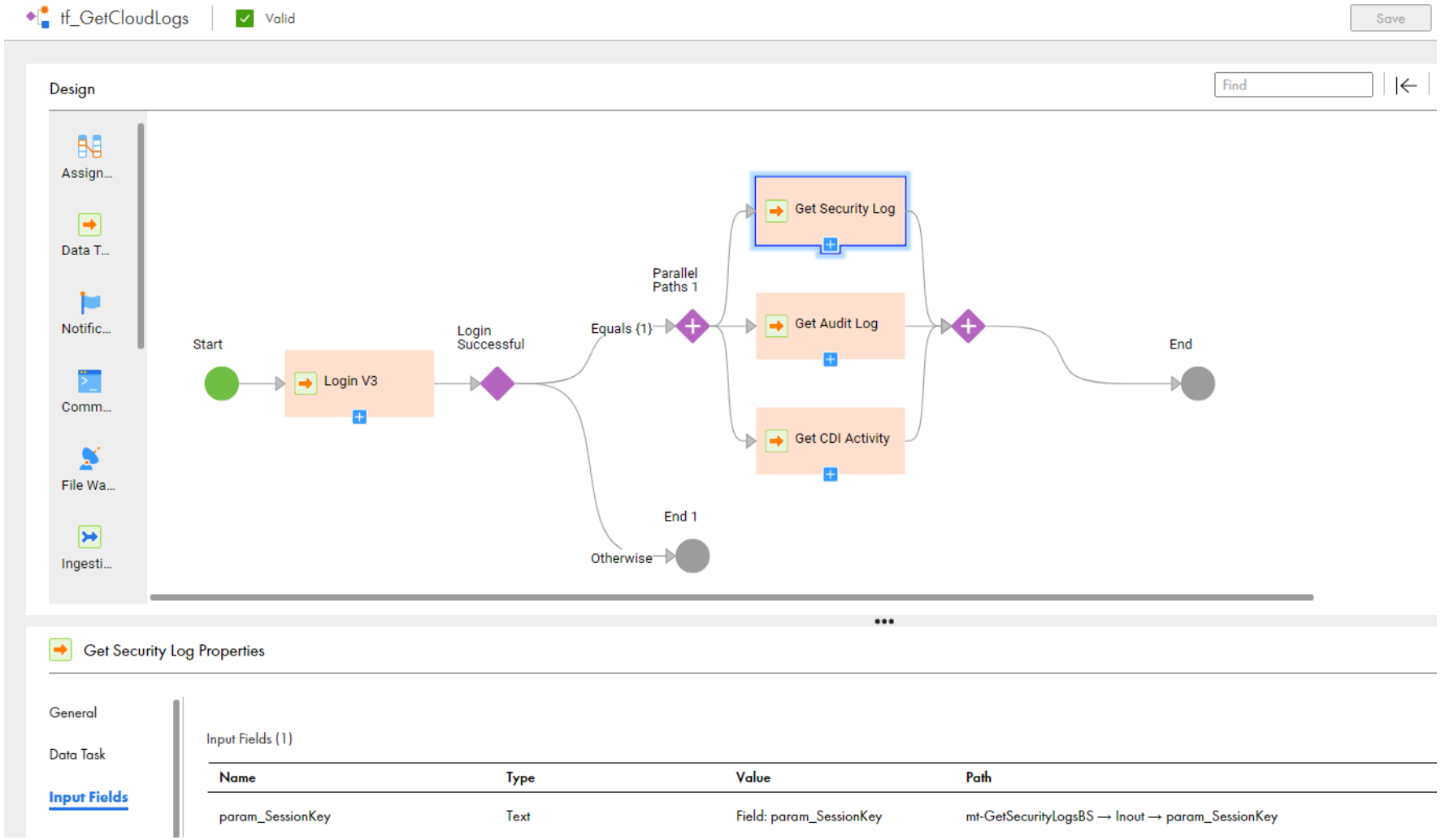
Taskflow



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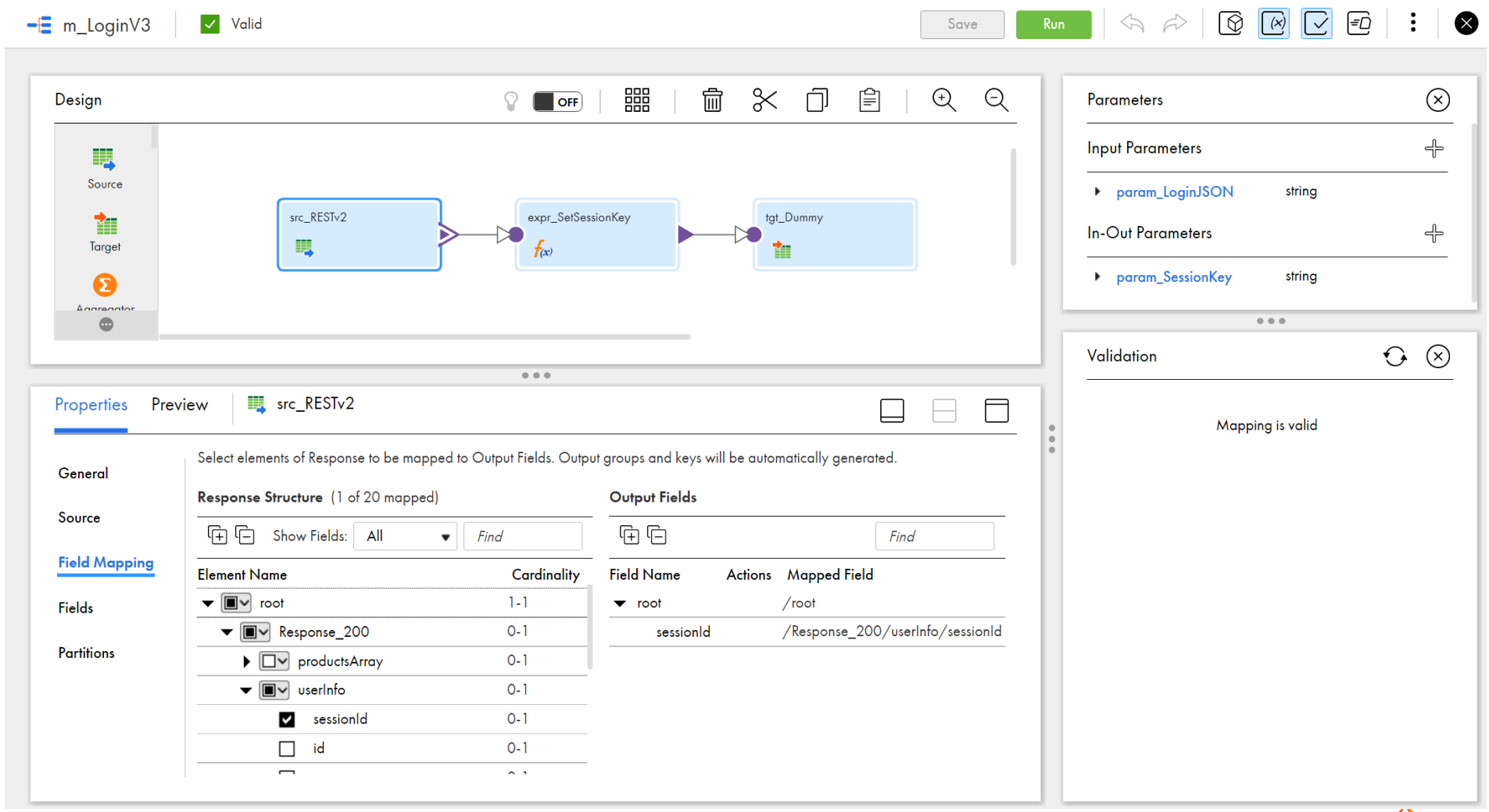
Mapping: Login to get Session Key



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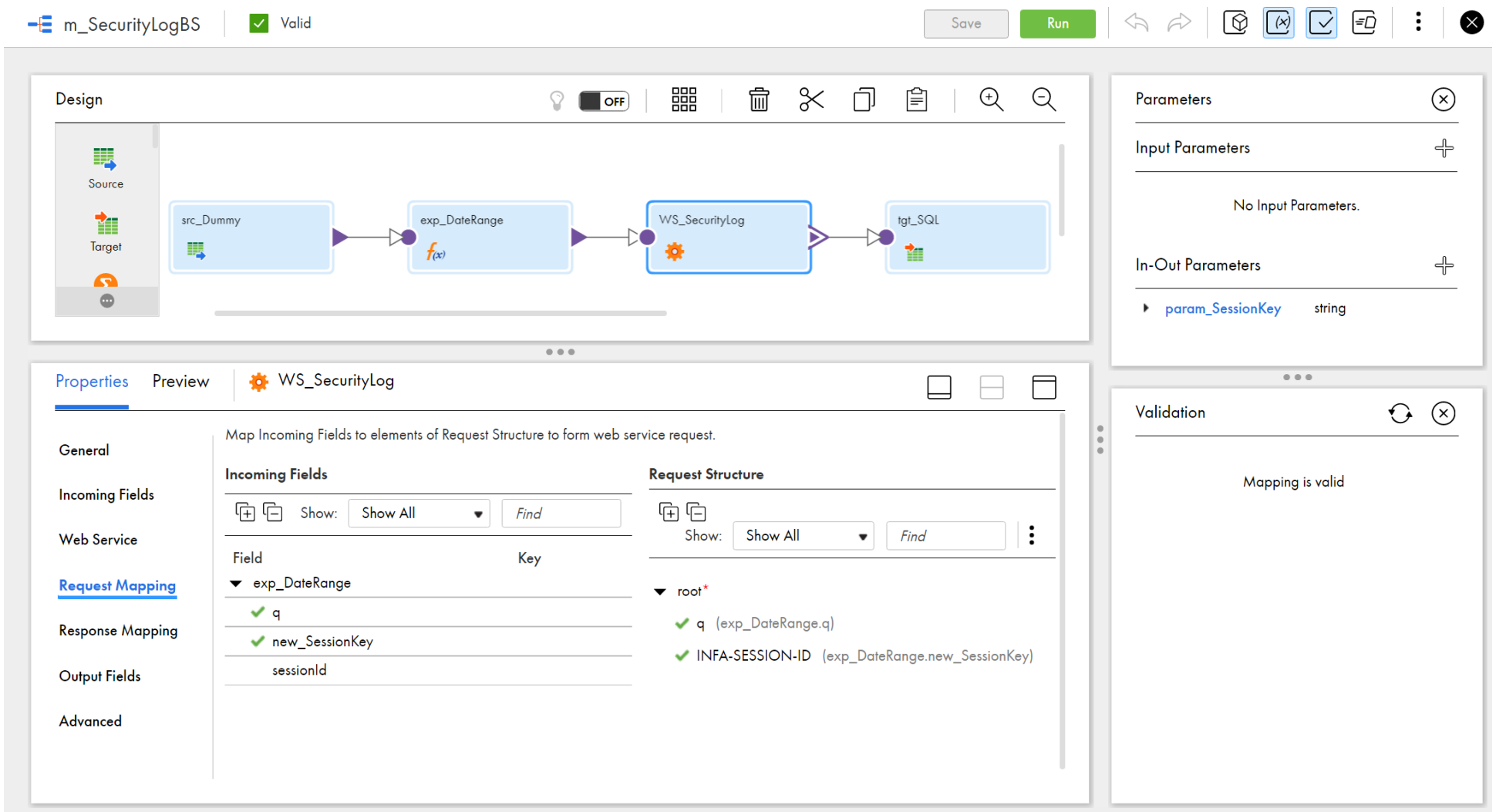
Mapping: Extract Security Log



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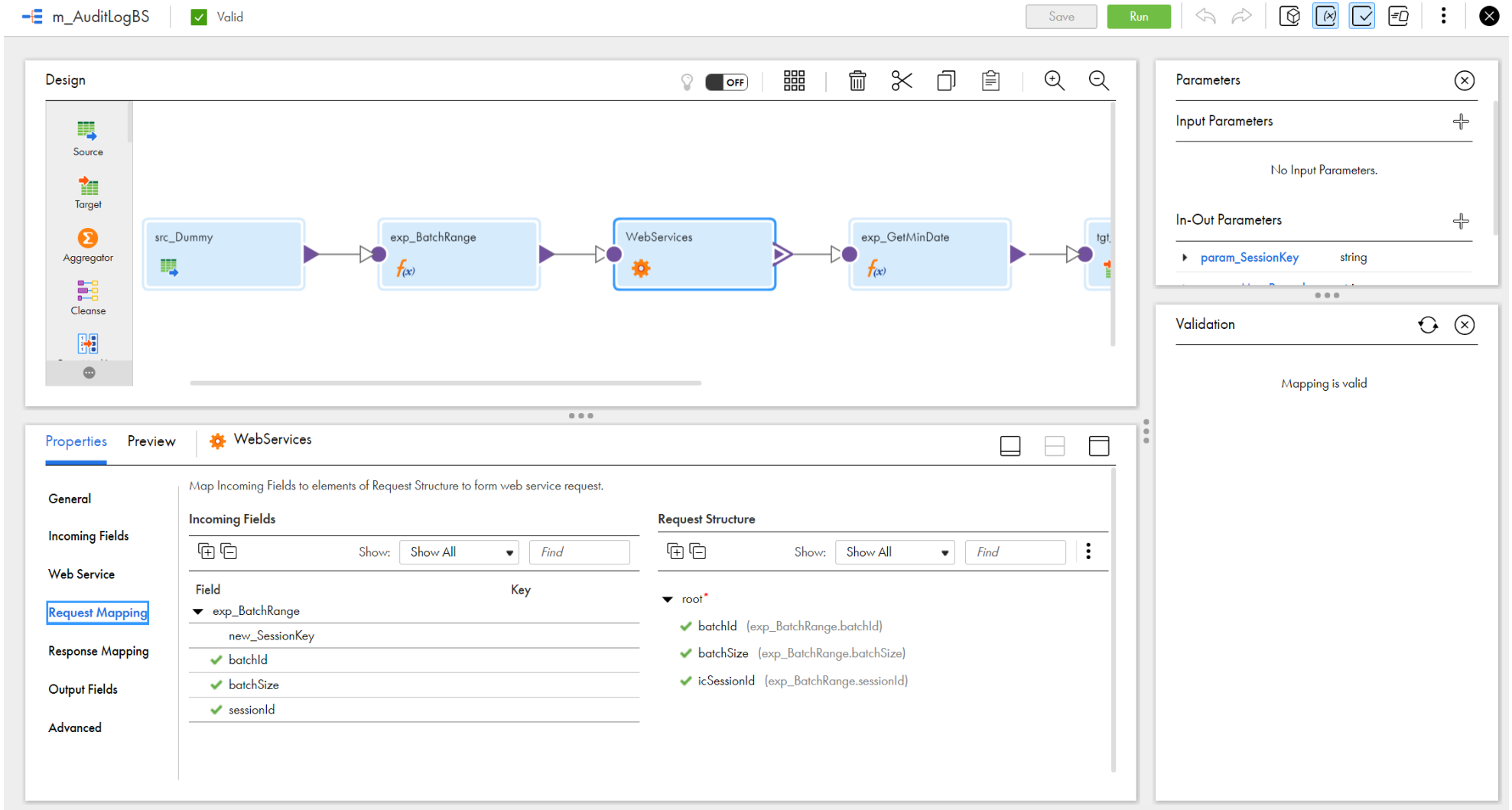
Mapping: Extract Asset (Audit) Log



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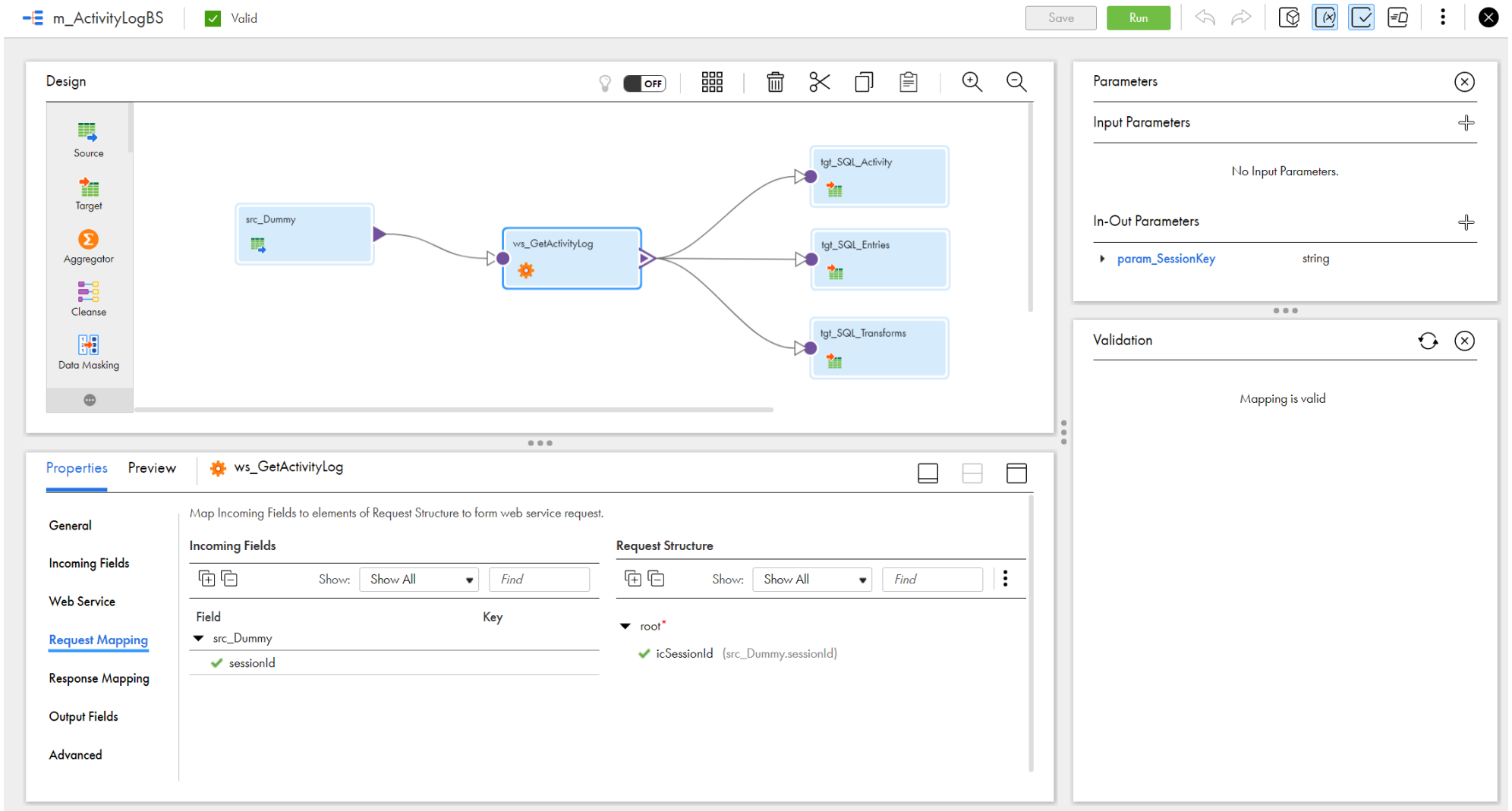
Mapping: Extract Data Integration Jobs Log



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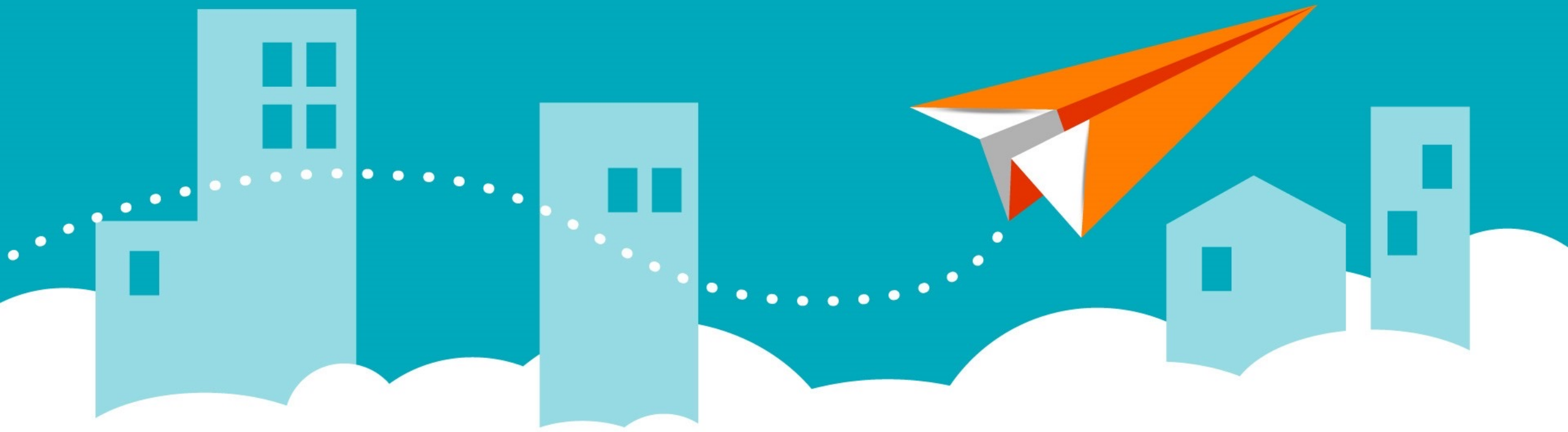
Example Dashboard using Microsoft Power BI



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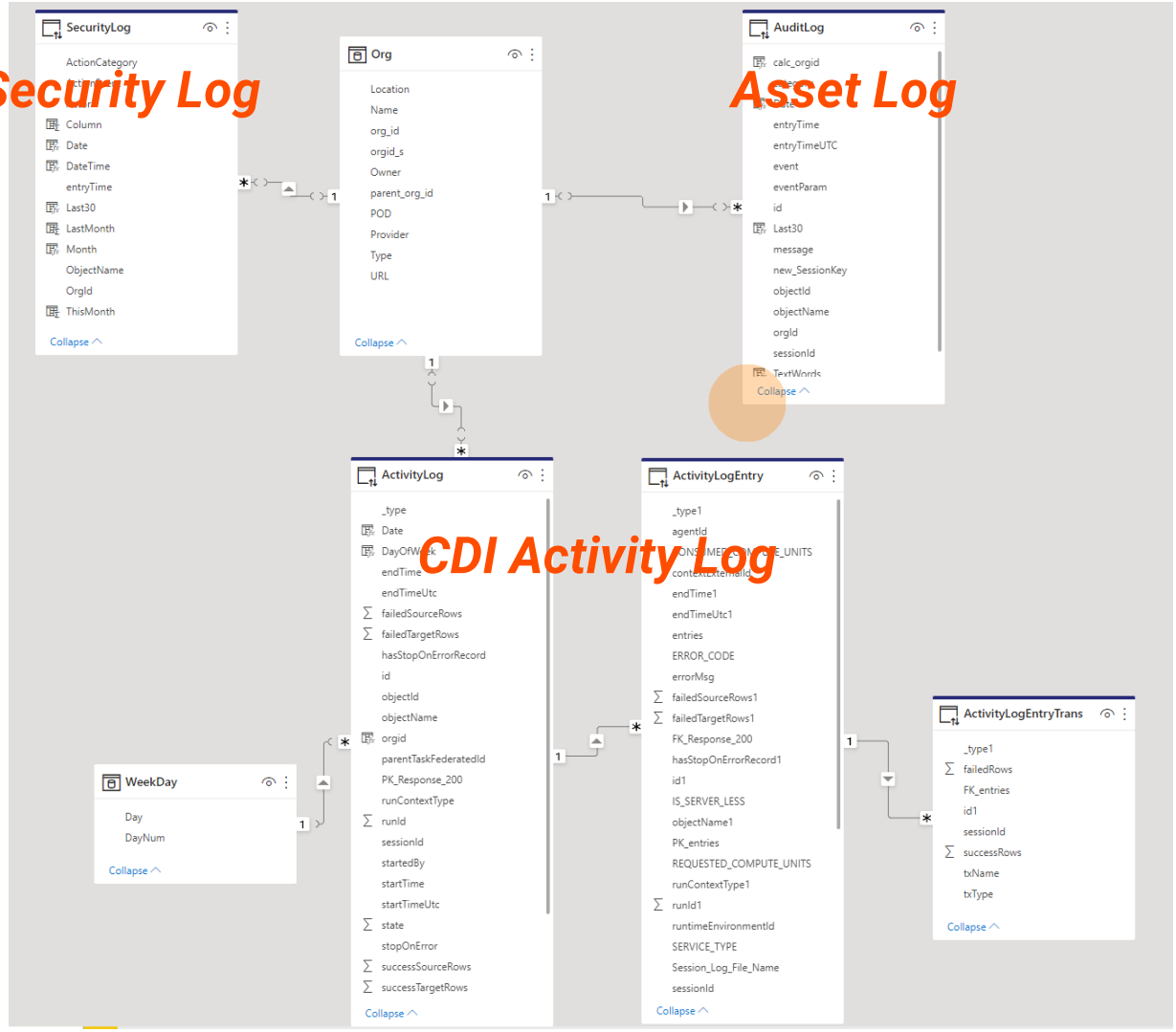
Example Data Model

- From Power BI:
  - Complete Security Log from API
  - Complete Asset (Audit) Log from API
  - Three-Level Activity Log from CDI API
    - Activity Log
    - Activity Log Events
    - Activity Log Transforms (Source/Target)
  - Reference Tables
    - IICS Org Locations
    - Weekday Names



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Example Dashboard – From Security Logs

IICS Org Administration Dashboard - Security

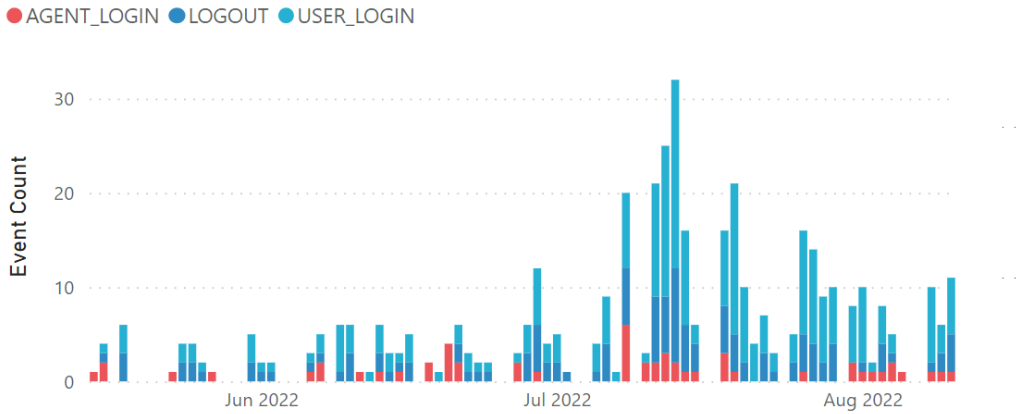
1	5	15	12
Orgs	Distinct Agents	Distinct Users	Users Created

Org Locations

Available Orgs

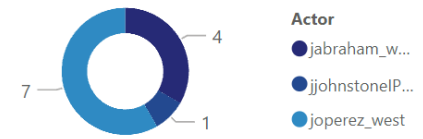
- na1
  - InformaticaPSNAWest
- usw1
  - C360.SaaS - Early Adopter Core
  - IPS Training Org 2

Last 90 Days Login Events



Last 30 Days Logins

Last 30 Days Administration



Users and Groups

DateTime	Actor	ActionEvent	ObjectName
7/14/2022 9:08:06 PM	joperez_west	CREATE	abhshukla_west
7/13/2022 1:48:18 PM	jjohnstoneIPSNAWestEnv	CREATE	bthompsonIPSNAWestEnv
7/12/2022 8:15:13 PM	jabraham_west	CREATE	brclark_west
7/12/2022 8:14:29 PM	jabraham_west	CREATE	rsouth_west
7/12/2022 8:13:33 PM	jabraham_west	CREATE	ekleyn_west

Agent Login Events

DateTime	ActionCategory	ActionEvent	ObjectName
8/10/2022 2:33:41 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/9/2022 2:44:24 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/8/2022 8:45:17 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/5/2022 2:22:43 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/4/2022 1:03:23 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/4/2022 2:25:14 AM	Authentication	AGENT_LOGIN	LAPTOP-G0UQPCT5
8/3/2022 7:50:31 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/2/2022 2:52:38 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD
8/1/2022 3:43:48 PM	Authentication	AGENT_LOGIN	USWPF1SGETF-AAD

User Login Events

DateTime	ActionCategory	ActionEvent	Actor
8/10/2022 10:12:41 PM	Authentication	USER_LOGIN	mboardmanIPSNAWest
8/10/2022 10:01:04 PM	Authentication	USER_LOGIN	mboardmanIPSNAWest
8/10/2022 9:58:28 PM	User	LOGOUT	mboardmanIPSNAWest
8/10/2022 7:11:31 PM	Authentication	USER_LOGIN	mboardmanIPSNAWest
8/10/2022 6:37:34 PM	User	LOGOUT	joperez_west
8/10/2022 6:37:30 PM	Authentication	USER_LOGIN	joperez_west
8/10/2022 6:13:13 PM	User	LOGOUT	joperez_west
8/10/2022 6:12:46 PM	Authentication	USER_LOGIN	joperez_west
8/10/2022 4:19:48 PM	User	LOGOUT	mboardmanIPSNAWest

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Example Dashboard – From Asset Logs

IICS Org Administration Dashboard - Activity

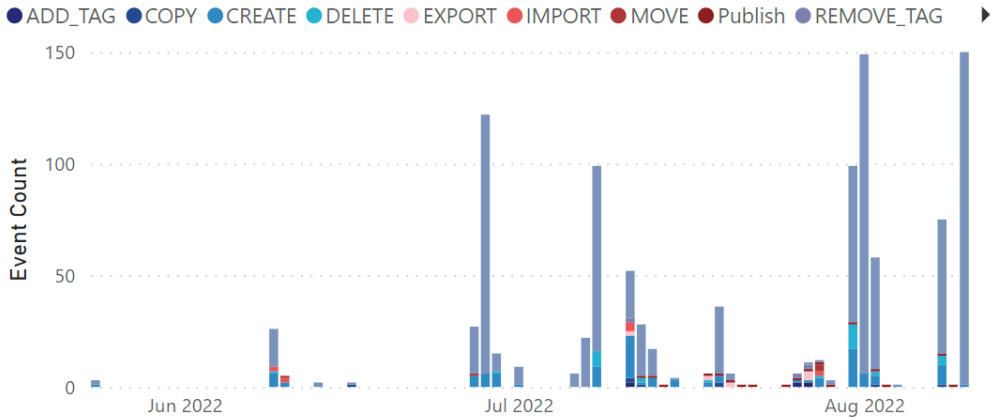
1	6	22	78
Orgs	Distinct Users	Object Types	Distinct Objects

Org Locations

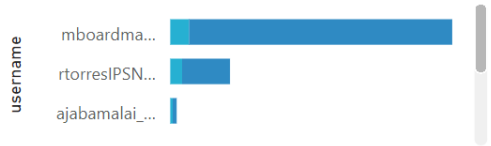
Available Orgs

- na1
  - InformaticaPSNAWest
- usw1
  - C360.SaaS - Early Adopter Core
  - IPS Training Org 2

Last 90 Days Activity

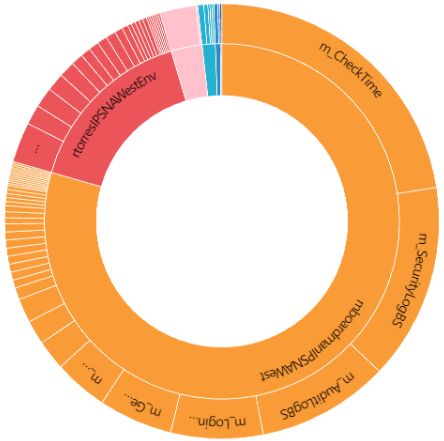


Last 30 Days Objects



Last 30 Days Popular Messages

Last 30 Days Development



Activity Audit Log

entryTime	username	category	event	eventParam	message	objectId	objectName
2022-06-29T14:49:20.000Z	egamezIPSNAWestEnv	SAAS_RUNTIME_ENVIRONMENT	UPDATE	UPDATE SAAS_RUNTIME_ENVIRONMENT Successful.	aevent.SAAS_RUNTIME_ENVIRONMENT.UPDATE	8lMwY2oaVFclsaA1uGH7Cx	0z_AjayDirects_CDIE
2022-07-08T14:46:24.000Z	egamezIPSNAWestEnv	SAAS_RUNTIME_ENVIRONMENT	UPDATE	UPDATE SAAS_RUNTIME_ENVIRONMENT Successful.	aevent.SAAS_RUNTIME_ENVIRONMENT.UPDATE	8lMwY2oaVFclsaA1uGH7Cx	0z_AjayDirects_CDIE
2022-07-08T14:52:50.000Z	egamezIPSNAWestEnv	SAAS_RUNTIME_ENVIRONMENT	UPDATE	UPDATE SAAS_RUNTIME_ENVIRONMENT Successful.	aevent.SAAS_RUNTIME_ENVIRONMENT.UPDATE	8lMwY2oaVFclsaA1uGH7Cx	0z_AjayDirects_CDIE
2022-07-08T14:54:42.000Z	egamezIPSNAWestEnv	SAAS_RUNTIME_ENVIRONMENT	DELETE	DELETE SAAS_RUNTIME_ENVIRONMENT Successful.	aevent.SAAS_RUNTIME_ENVIRONMENT.DELETE	8lMwY2oaVFclsaA1uGH7Cx	0z_AjayDirects_CDIE
2022-07-08T14:57:51.000Z	egamezIPSNAWestEnv	SAAS_RUNTIME_ENVIRONMENT	UPDATE	UPDATE SAAS_RUNTIME_ENVIRONMENT Successful.	aevent.SAAS_RUNTIME_ENVIRONMENT.UPDATE	0hMImdplunOiFJ5r15e6Uz	0z_AjayDirects-CDIE

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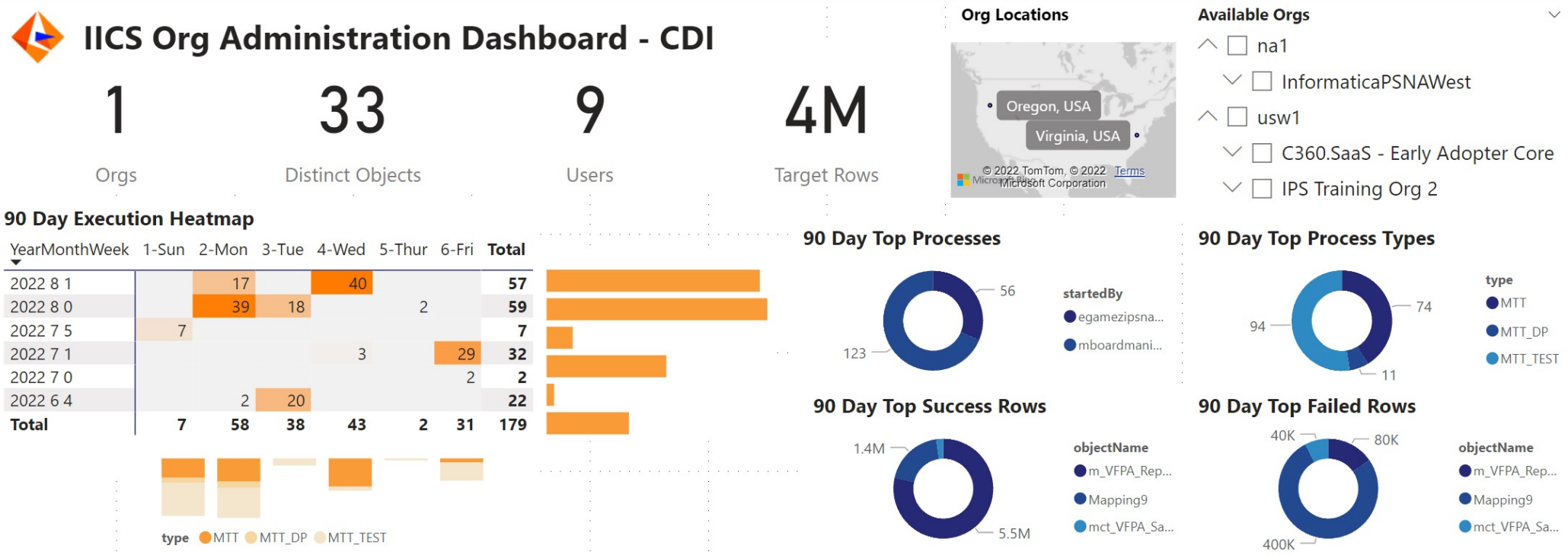
Example Dashboard – From CDI Job Logs



Session Activity

id	type	objectId	objectName	runId	Date	startTime	endTime
012AJ1C1000000000JX2	MTT	012AJ10Z000000000005E	mt_AuditLogBS	6	8/10/2022	2022-08-10T18:12:47.000Z	2022-08-10T18:13:07.000Z
012AJ1C1000000000KP7	MTT	012AJ10Z000000000005C	mt_GetSecurityLogsBS	13	8/10/2022	2022-08-10T18:12:47.000Z	2022-08-10T18:13:04.000Z
012AJ1C1000000000KU7	MTT	012AJ10Z000000000059	mt_LoginV3	19	8/10/2022	2022-08-10T18:12:26.000Z	2022-08-10T18:12:43.000Z
012AJ1C1000000000KU6	MTT_TEST	012AJ10Z000000000005G	m_CheckTime	32	8/10/2022	2022-08-10T17:24:22.000Z	2022-08-10T17:24:34.000Z
012AJ1C1000000000K8C	MTT_TEST	012AJ10Z000000000005G	m_CheckTime	31	8/10/2022	2022-08-10T17:14:09.000Z	2022-08-10T17:14:22.000Z
012AJ1C1000000000K8B	MTT_TEST	012AJ10Z000000000005G	m_CheckTime	30	8/10/2022	2022-08-10T17:12:10.000Z	2022-08-10T17:12:23.000Z
012AJ1C1000000000KJG	MTT_TEST	012AJ10Z000000000005G	m_CheckTime	29	8/10/2022	2022-08-10T17:11:14.000Z	2022-08-10T17:11:27.000Z
012AJ1C1000000000KDZ	MTT_TEST	012AJ10Z000000000005G	m_CheckTime	28	8/10/2022	2022-08-10T17:04:31.000Z	2022-08-10T17:04:44.000Z
012AJ1C1000000000K8A	MTT_TEST	012AJ10Z000000000005G	m_CheckTime	27	8/10/2022	2022-08-10T16:51:31.000Z	2022-08-10T16:51:43.000Z
012AJ1C1000000000JX1	MTT_DP	012AJ117000000000005D	m_CheckTime	5	8/10/2022	2022-08-10T16:50:03.000Z	2022-08-10T16:50:15.000Z

Errors

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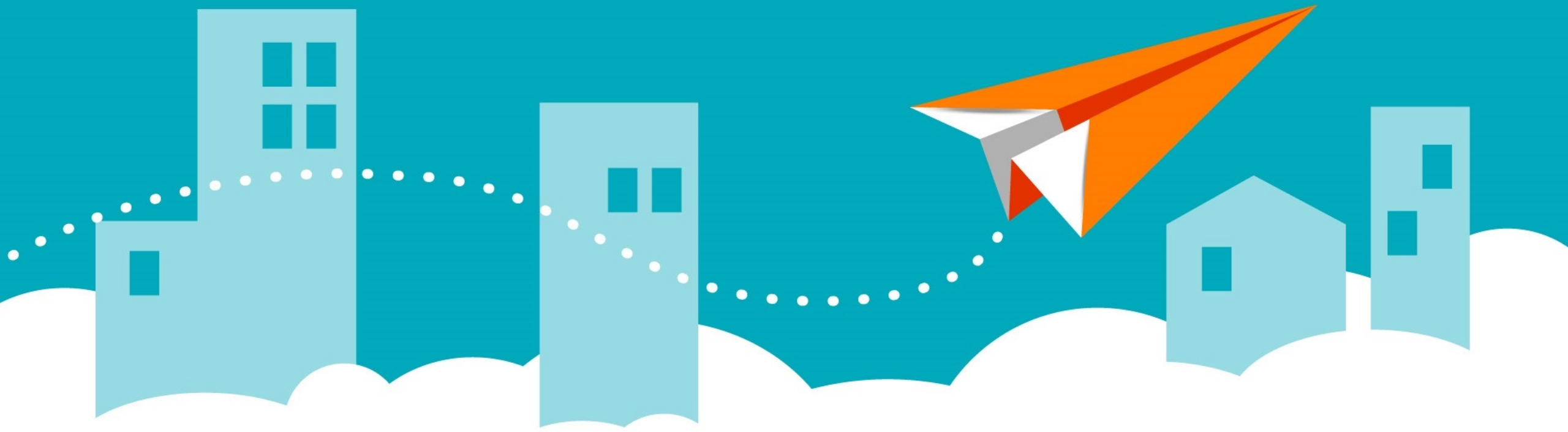
Using a Document Store Database (MongoDB)



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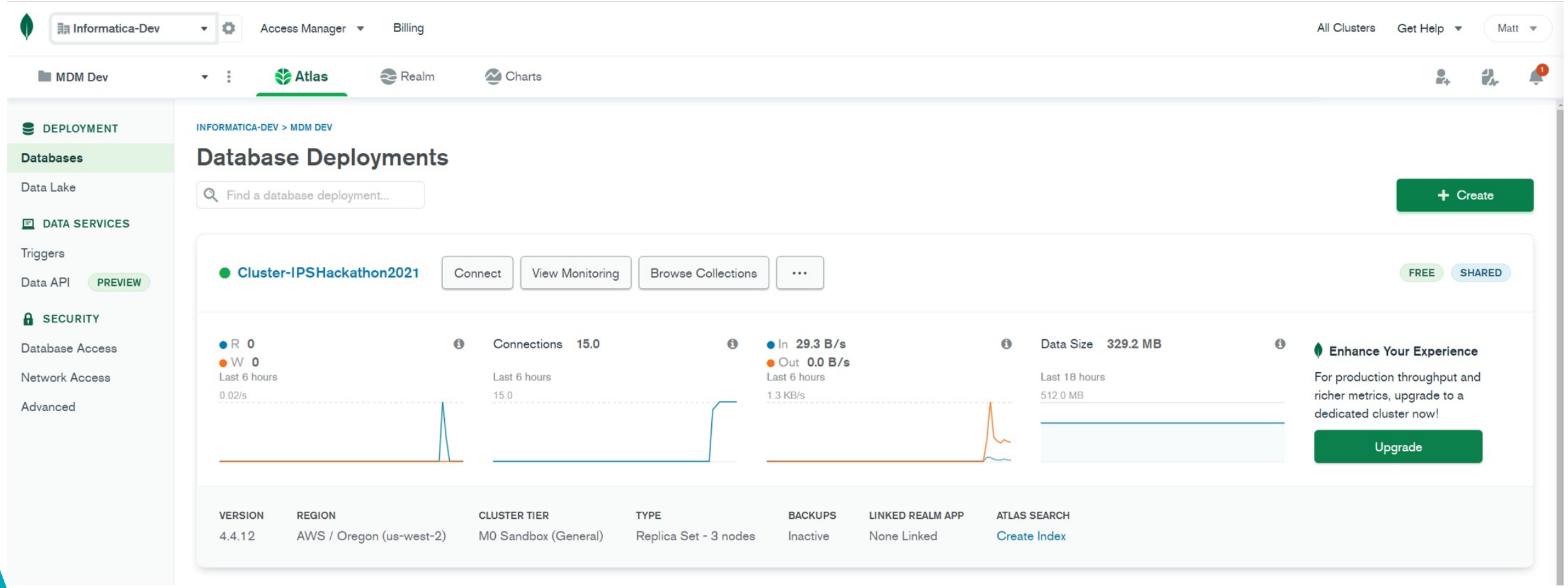
Example: Hosted MongoDB (Atlas)



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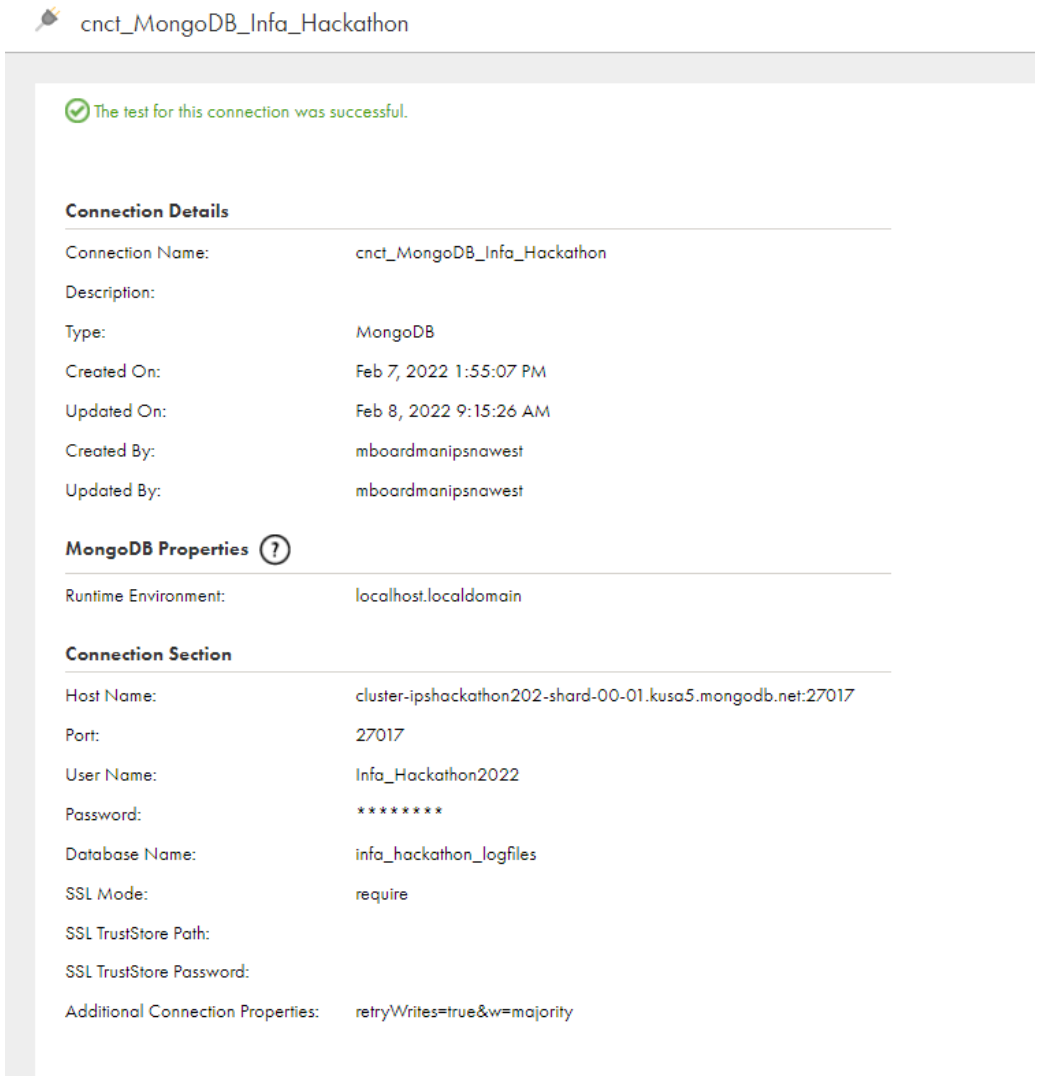
IICS agent connection for MongoDB



- Require SSL mode
- Connect to primary shard rather than the cluster
- Whitelist secure agent IP from Atlas
- Additional connection parameters:
  - retryWrites=true
  - w=majority

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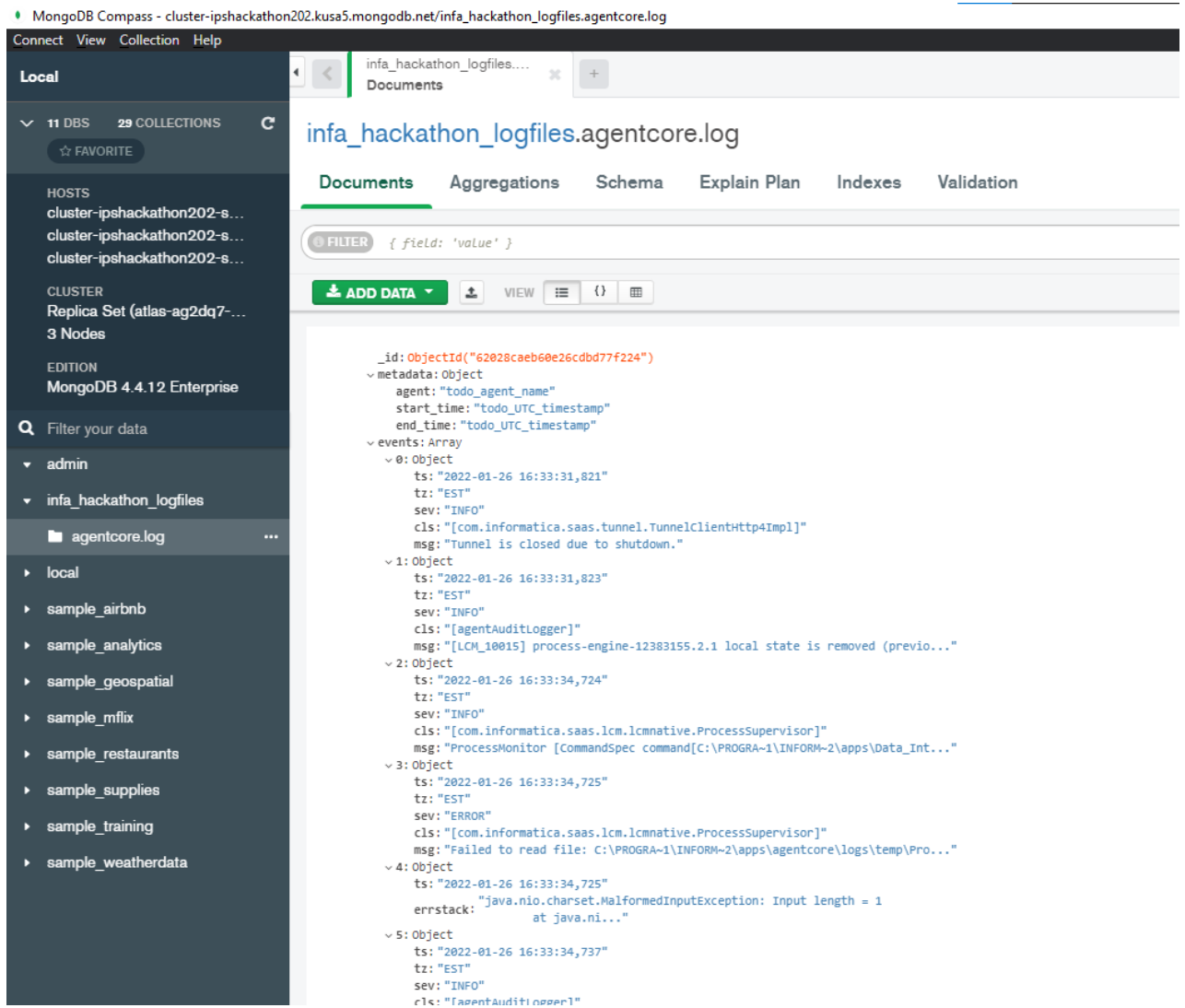
Viewing Secure Agent Log Data

- MongoDB Compass
  - View logs in canonical format
  - View complete error messages (may span multiple lines in log)
- MongoDB BI Connector
  - Plugin to allow SQL queries



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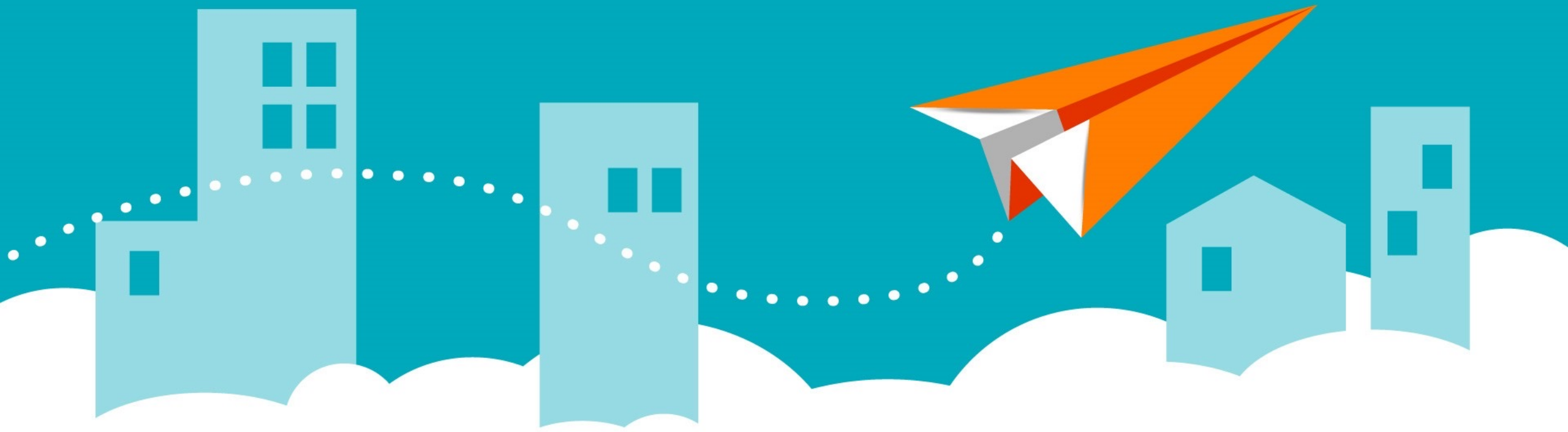
Demo: Extract Logs from Secure Agents



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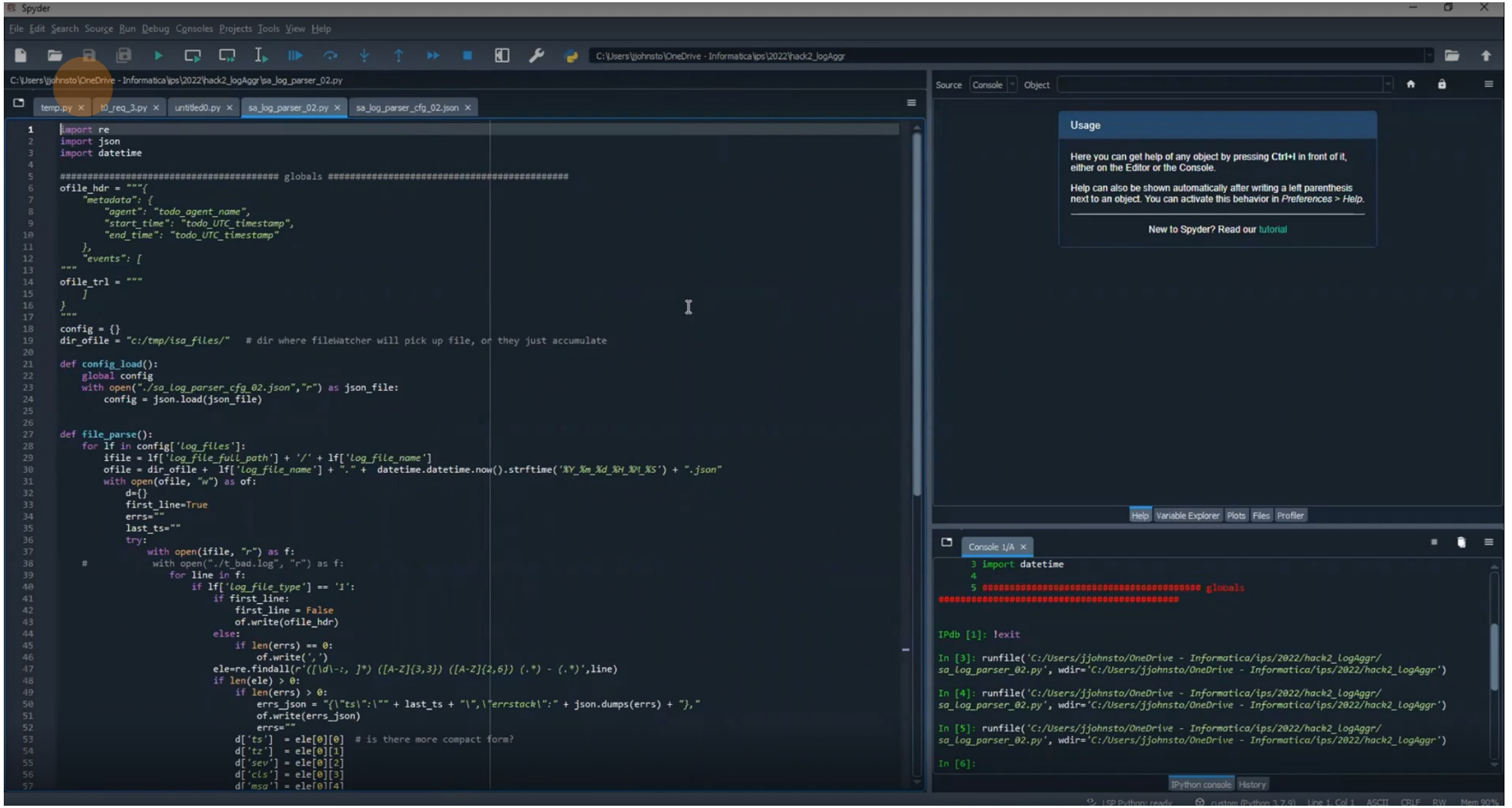
Python translation from Log4J to JSON format



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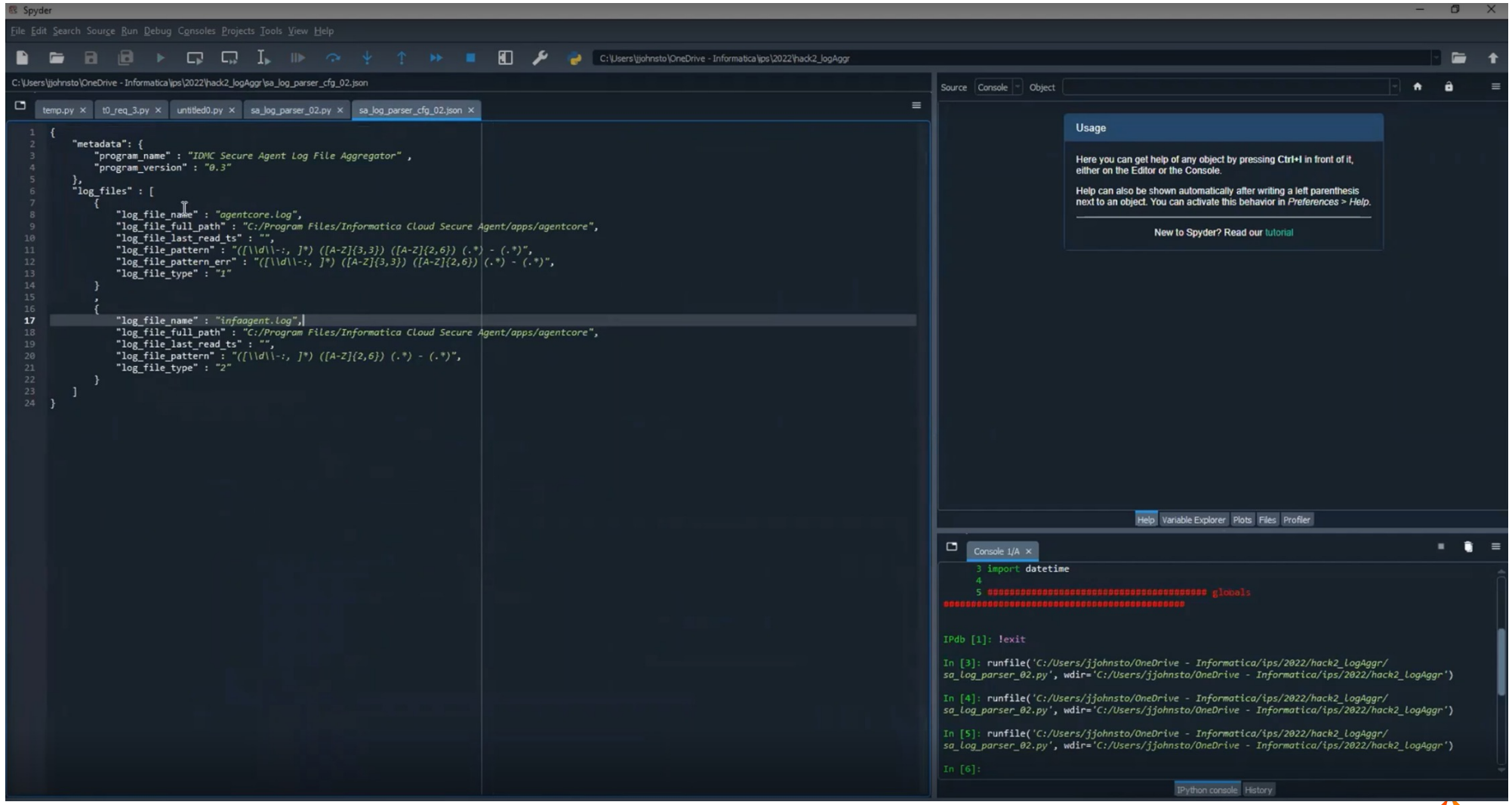
Python translation from Log4J to JSON format



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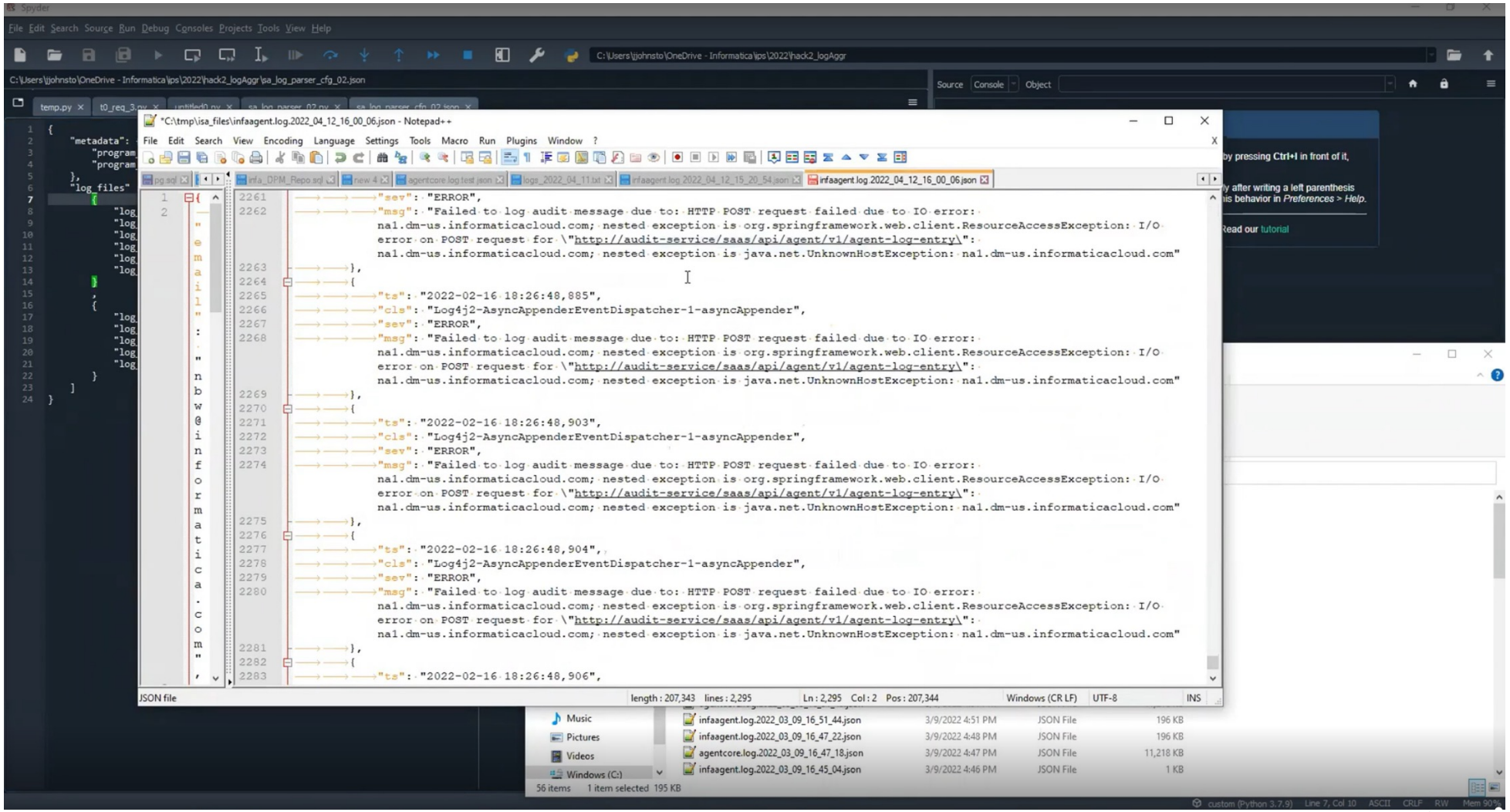
Python translation from Log4J to JSON format



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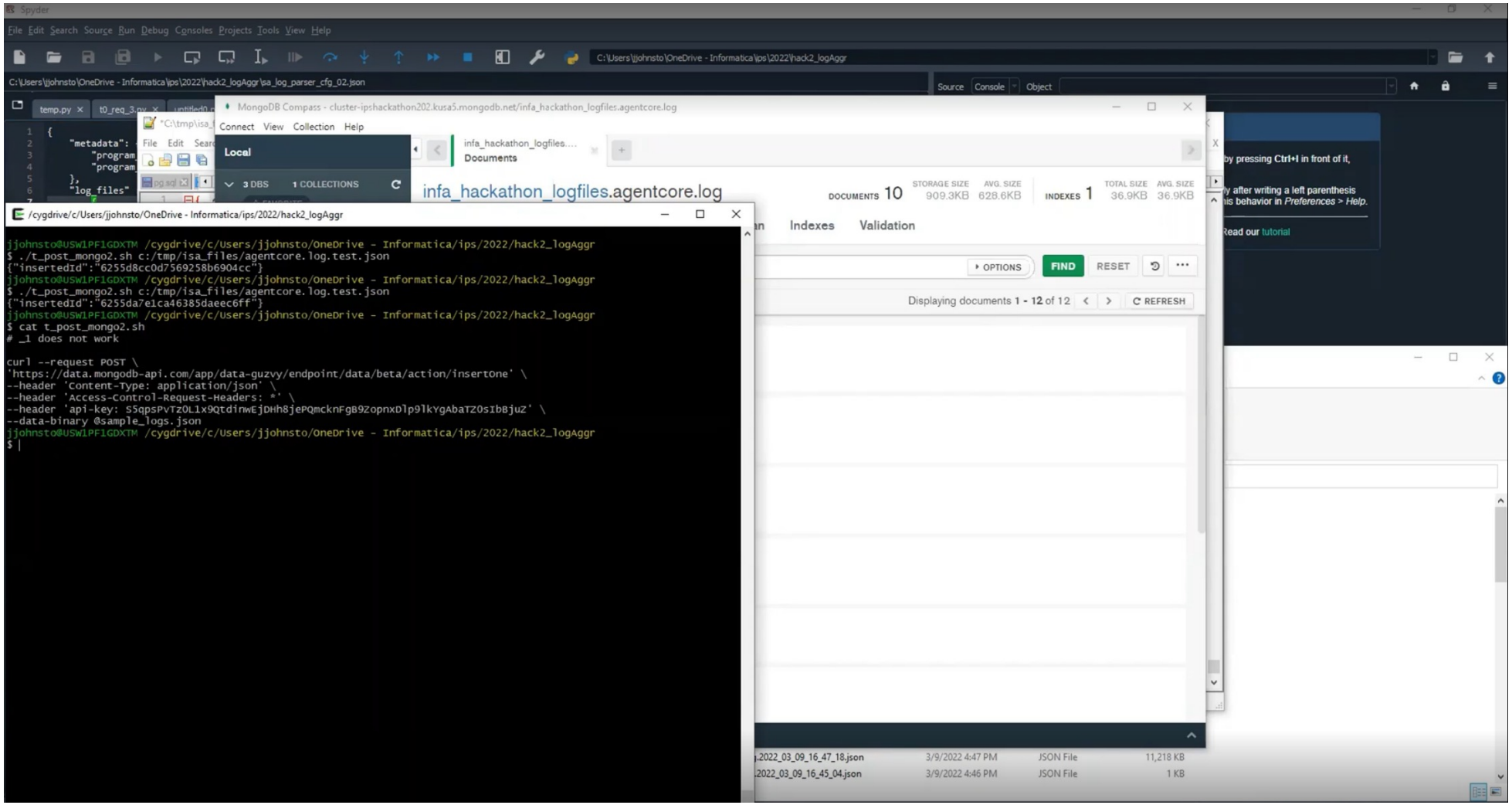
Python translation from Log4J to JSON format



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Informatica Hackathon

- Cooperative learning environments
- Solve new and interesting challenges
- Initiatives with sales and product management teams


Matt Boardman


Ben Lee


Jim Johnstone


Srilakshmi Subramaniam


Masaki Nakasima

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Links to API Documentation

IICS Platform API:
https://docs.informatica.com/integration-cloud/cloud-platform/current-version/rest-api-reference/informatica-intelligent-cloud-services-rest-api.html

CDI API:
https://docs.informatica.com/integration-cloud/cloud-platform/current-version/rest-api-reference/data-integration-rest-api.html

CAI API:
https://docs.informatica.com/process-automation/informatica-activevos/current-version/7----apis--sdks--and-services/administration-api/other-server-admin-apis/process-monitoring-api.html

CMI API:
https://docs.informatica.com/integration-cloud/cloud-platform/current-version/rest-api-reference/mass-ingestion-files-rest-api.html

CIH API:
https://docs.informatica.com/integration-cloud/cloud-integration-hub/current-version/cloud-integration-hub/cloud-integration-hub-rest-apis.html

MDM SaaS:
https://docs.informatica.com/master-data-management-cloud/business-360-console/current-version/business-360-rest-api-reference/business-360-rest-api/rest-api-guidelines.html

MongoDB Connector:
https://docs.informatica.com/integration-cloud/cloud-data-integration-connectors/h2l/1251-configuring-the-simba-mongodb-jdbc-driver-options-for-mongo/configuring-the-simba-mongodb-jdbc-driver-options-for-mongodb-co/configure-the-simba-mongodb-jdbc-driver-options-in-a-mongodb-con/configure-the-simba-mongodb-jdbc-driver-properties.html

Thank you!

- Informatica Network: https://network.informatica.com/
- Informatica Product Documentation: https://docs.informatica.com/
- Informatica Velocity: https://velocity.informatica.com/

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