

Introduction to Apache NiFi

Description

This course presents the basics of Apache NiFi with a heavy hands-on approach to reinforce topics presented. Attendees will practice fundamental principles, employ troubleshooting techniques and develop a full data flow application. After completion, attendees will have a solid foundational knowledge using NiFi as well as insight in various application opportunities of the flexible product. Topics include application architecture, use case investigation and strategies, terminology and concepts of operation, flow design, monitoring, change management, Expression Language, effective data schema usage, security, authorization and clustering.

Duration: 4 days

Day 1

Introductions

NiFi Essentials

- What is NiFi?
- Common Use Cases
- Introduction to User Interface (UI)
- Terminology

Hands On Demo - Build a simple flow, demonstrate processor, flowfile, queue

NiFi Key Concepts

- NiFi History
- NiFi Architecture
- Highlighted Features/Capabilities
- FlowFile

More User Interface Features

- Components Toolbar
- Status Bar
- Navigate and Operate Palette

Explore Components

- Processors, Process Groups, Ports
- Help and Documentation
- Processor Configuration

Hands On Demo - Expand flow to include Process Group/Ports

Connection, Relationship, Queue

Hands On Demo - Back pressure

Bulletins and Bulletin Board

Hands On Demo - Bulletins

Project Overview - Syslog Storage and Retrieval

Work on Project Day 1 Objectives: Receive and process syslog messages

Day 2

Templates

Expression Language

Hands On Exercises - Expression Language Exercises [60 mins]

Review specific EL solutions

Controller Services

Hands On Demo - HTTP Controller Service (Day 1 project)

Ingest Processors

Processor Scheduling

Common Patterns for Non-Success Relationships

Hands On Demo - Template (create, export, import, instantiate)

Project Discussion

Work on Project Day 2 Objective: Rest API Definition and Help Response

Day 3

Data Provenance

Flow Layout/Search

Hand On Demo - Clean up flow layout

Hands On Demo - Provenance queries

Record Processing

- Record Reader/Writer
- Introduction to Avro
- Methods to obtain Avro Schema
- Avro Schema Registry

Hands On Demo - Data Format Conversion using Records

Variable Registry

Advanced UI of UpdateAttribute

Hands On Demo - UpdateAttribute Advanced UI

Troubleshooting

Hands On Exercise - Troubleshoot problematic flows

Project Discussion

Work on Project Day 3 Objective: Rest API Data Validation

Day 4

Data Transfer

- Processors
- Site-to-Site

Hands On Demo - Site-to-Site

Securing NiFi

- Multi-Tenancy
- Users and Access Policies

Managed Authorizer

Hands On Demo - Secure NiFi

NiFi Clustering

- Architecture
- Terminology
- Flow Election/Synchronization
- Disconnected Nodes

Hands On Demo - Setup 2-Node NiFi Cluster [60 mins]

Project Discussion

Work on Project Day 4 Objective: Data Format Conversion