OpenEdge® JMS Adapter 12.x: Running the interactive product as a Linux service

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Introduction

Simon Prinsloo (Masters of IT, University of Pretoria)
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◦ Working with Progress since v.7 in 1996
◦ Worked on various commercial systems
◦ Initially a lot of focus on CASE tools and implementing modern developments in legacy projects
◦ Recently a lot of back-end development and upgrades of older systems

Agenda

JMS Connection Models using OpenEdge®

Installing the Progress® OpenEdge® JMS Adapter

Running the JMS Adapter as a Broker

PASOE and the JMS Adapter

The oemessagingservice by TVH Parts Holding NV

Demo

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JMS Connection Models using OpenEdge®

Connection Model	Connection String
ClientConnect	-SMQConnect
ServerConnect	-SMQConnect
BrokerConnect	Traditional AppServer connection

BrokerConnect:
- -H *host-or-ip* -S *port* -DirectConnect
- -URL AppServerDC://*host*:*port*
- -H *host-or-ip* -S 5162 -AppService *Brokername*
- -URL AppServer://*host*:5162/*Brokername*

JMS Connection Models using OpenEdge® PASOE

Connection Model | Connection String

ClientConnect | -SMQConnect Not supported on Pasoe

~~ServerConnect~~ | ~~-SMQConnect~~ Legacy AppServer Only

BrokerConnect | Traditional AppServer connection

- -H *host-or-ip* -S *port* -DirectConnect

- -URL AppServerDC://*host:port*

- -H *host-or-ip* -S 5162 -AppService *Brokername*

No Name Server in OpenEdge 12.x

- -URL AppServer://*host*:5162/*Brokername*

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Installing the OpenEdge® JMS Adapter

Install as part of your Progress OpenEdge installation
- Simply add the serial number and control code to the list

Install as a standalone product
- There is an installer with only this product on your ESD
- In this mode, you can only use BrokerConnect

Overlay it on an existing OpenEdge installation
- This leaves you in the same state as the first option

Installing the OpenEdge® JMS Adapter

The standalone installer is available on you ESD page

	New Releases	Previous Releases	

Release	Description	Date Available
12.8.3	Progress® OpenEdge® 12.8.3 (all platforms)	Jun 12, 2024
1.3.0	Progress® OpenEdge® Command Center 1.3.0	Jan 10, 2024
12.8	Corticon® Server+ & Studio 7.0 for OpenEdge® 12.8	Nov 15, 2023
12.8.3	Progress® OpenEdge® Client Networking MSI Package	Jun 12, 2024
12.8.3	Progress® OpenEdge® JMS Adapter	Jun 12, 2024
12.8.3	Progress® Report Builder Engine	Jun 12, 2024
12.8.0	Mitigation to patch OpenEdge Authentication Gateway and AdminServer	Feb 27, 2024

Installing the OpenEdge® JMS Adapter

The product is free of charge and the serial number and control code are on the download page itself.

Platform	Serial Number	Control Number
Windows 64-bit	██████	████ ████ ████
Linux 64-bit	██████	████ ████ ████

Download Selected Files

		File Description	File Size		File Name
☐	+	Linux 64-bit	297.6 MB	⬇	PROGRESS_OE_12.
☐	+	Windows 64-bit	491.3 MB	⬇	PROGRESS_OE_12.
☐	+	PROMSGS Linux 64-bit	13.8 MB	⬇	PROGRESS_OE_12.
☐	+	PROMSGS Windows 64-bit	9.9 MB	⬇	PROGRESS_OE_12.
☐	+	PROMSGS Installation Notes	60.8 KB	⬇	PROMSGS Installatio

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Running the JMS Adapter as a Broker

Configure an adapter in *ubroker.properties*
- Conveniently, it comes preconfigured with an adapter called *genericMQ1*, which will listen on port 3620

Configure your JMS Provider in *jmsProvider.properties*
- I am using *Apache Qpid JMS (javax.jms) 1.11.0*
  - https://qpid.apache.org/download.html

Build an AdminObjectFinder for use with JNDI
- I took a shortcut

Running the JMS Adapter as a Broker

Set environment variables
- JMSPROVIDER – Identifies the provider to use in *jmsProvider.properties*
- JMSCLIENTJAR – The JMS Client Jar files to append to the Java classpath

Start the OpenEde JMS Adapter
- $DLC/bin/oemessaging start [*AdapterName*]
  - AdapterName defaults to *genericMQ1*

Running the JMS Adapter as a Broker

There is no place to configure additional arguments to the JVM, for example to set -xms and –xmx

Java might bind to the IPv6 stack while your ABL session might run on the IPv4 stack, so you may need
- -Djava.net.preferIPv4Stack=true
- -Djava.net.preferIPv6Addresses=false

Running the JMS Adapter as a Broker

Workaround to set the JVM arguments

◦ Add them <u>AFTER</u> the JMS Client jars in the JMSCLIENTJAR variable

```
set JMSCLIENTJAR="some.jar:another.jar -Djava.net.preferIPv4Stack=true -Djava.net.preferIPv6Addresses=false"
```

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PASOE and the JMS Adapter

ServerConnect model applied to legacy AppServers

ClientConnect is not supported for PASOE

The OpenEdge® JMS Adapter 12.x cannot be run as a background service
- https://community.progress.com/s/article/Is-it-possible-to-start-the-oemessaging-command-line-utility-for-the-Generic-JMS-Adapter-as-a-background-service

The Idea on the OpenEdge Ideas page to make it possible to run it as a service did not get a lot of tracksion
- https://openedge.ideas.aha.io/ideas/OPENEDGE-I-972

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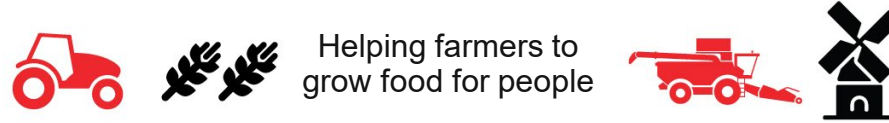➢The oemessagingservice by TVH Parts Holding NV

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Our vision: We are committed to delivering all products and services to keep equipment running smoothly.

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AGRICULTURAL PARTS & ACCESSORIES

Tractors
Implements
Combines

Helping farmers to grow food for people

CPA
CONSTRUCTION PARTS & ACCESSORIES

Mini excavators
Compact track loaders
Skid steers
Mobile elevating work platforms
Telehandlers

Helping to build and maintain infrastructure and serve manufacturing needs for people

IPA
INDUSTRIAL PARTS & ACCESSORIES

Container handling
Personnel & burden
Sweepers & scrubbers
Tail lifts
Ground support equipment

Helping to support the supply chain for people

MPA
MATERIAL HANDLING PARTS & ACCESSORIES

Forklifts
Rough terrain
Handling equipment
Truck mounted

TVH

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Facts & figures

> **1600 m** euro consolidated turnover (2023)

> **82 000** active customers in **184** countries

88% of our customers would recommend TVH as a great partner to work with

> **5000** colleagues worldwide

63 nationalities **55** spoken languages

> **49 500 000** known references
> **1 120 000** different stock items

90 branches worldwide

> **94%** same-day shipment
> **21 000** orders per day

> **88%** orders via e-commerce

Migration of the ERP

- Classic AppServer to PASOE

- OpenEdge 11.7 to OpenEdge 12.8

JMS Integration

- ServerConnect not available with PASOE

- ClientConnect not supported with PASOE

- BrokerConnect is the only option

- The broker cannot run as a service

Generic OpenEdge® JMS Adapter 12.x

- Interactive product

Objective of the oemessagingservice

- Run the OpenEdge® JMS Adapter as a Linux service
- Prototype using OpenEdge ABL
  - INPUT-OUTPUT THROUGH
  - Control via a socket mimicking (very basic) http
  - Interact using shell scripts and curl
  - Footprint is too large
  - Requires OpenEdge to be installed on the broker server

Python solution

- Much smaller footprint
- Python is available by default on Linux

The solution consists of three parts

- jmsadapter.py – Runs as a service, launch and interact with the adapter process
- jmsman.py – Used to interact with jmsadapter.py
- metrics.py – Scrapes metrics for monitoring

Deployment Repositories

Opensource Apache License v. 2

- oemessagingservice – Runs and manages the adapter as a service
- Instance repositories – Contains configuration and installation script

Proprietary per instance

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Environment

- WSL v1 – Ubuntu 22.04
  - Not an officially supported configuration
  - Limitations on systemd
- Progress® OpenEdge® JMS Adapter is incompatible with the HyperV network
  - Starts as a systemd service in HyperV and WSL 2
  - Causes OpenEdge runtime errors when used

Demo

Progress® OpenEdge® JMS Adapter

◦ v12.8 stand alone

◦ There are 12.2 versions running in the wild

Repositories

◦ oemessagingservice – The opensource solution

◦ https://github.com/TVHGroup/oemessagingservice

◦ messagingconfig – Demo configuration

◦ https://github.com/Vidisolve/pugchallenge2024

Demo

Prerequisites (See the README on GitHub for details)

1. Progress® OpenEdge® JMS Adapter v12.2 or later

2. Python 3.10 or later

3. The JMS Client jars needed to run the adapter

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Manual installation steps (See the README on GitHub for details)

1. Configure Progress® OpenEdge® JMS Adapter
    - Add the adapter in ubroker.config (Optional)
        - If you use *genericMQ1*, you may want to customize it
    - Update jmsProvider.properties if needed

2. Clone oemessagingservice to a suitable location

3. Copy the JMS Client Jars to the *jars* subfolder

4. Supply *adapter.json* based on *config/adapter.json.template*

5. Create a systemd service file, install it and enable the service

Demo

See it in action

Questions

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