SAS® Event Stream Processing 5.1: What's New

What's New for SAS Event Stream Processing 5.1

Metering Server Support

A new metering server enables you to track ESP server usage data. The metering server persists event metering data to ensure accurate measurement of events that flow through projects on a server. This enables you to audit event counts.

For more information, see "Using the Metering Server" in SAS Event Stream Processing: Using the ESP Server.

Streaming Analytics Algorithms

SAS Event Stream Processing Analytics 5.1 provides several new analytics algorithms:

- Linear Regression
- Logistic Regression
- Support Vector Machines
- Fit Statistics for Scored Results
- Receiver Operating Characteristic (ROC) Information
- Histogram
- Text Vectorization
- Moving Relative Range
- Image Processing
- Deep Neural Network
- Convoluted Neural Network

For more information, see *SAS Event Stream Processing: Using SAS Event Stream Processing Analytics*.

New and Improved Connectors and Adapters

SAS Event Stream Processing 5.1 provides the following new connectors and adapters:

- Adapter connector that enables you to run adapters in the same process space as the ESP server
- BACnet publisher connector and adapter
- OPC-UA connector and adapter
- URL connector
- UVC connector and adapter
- WebSocket connector

The following enhancements are now available:

- The location of client transport configuration files used by adapters and publish/subscribe clients is now configurable, instead of fixed at the current working directory
- The SAS Cloud Analytic Services (CAS) adapter
  - can now access CAS tables from a configurable CAS library
  - now supports TLS encrypted connections to CAS
- The optional header for CSV written by the file and socket subscriber can now include opcode and flags
- The IBM WebSphere MQ connector and adapter
  - can now ignore the Message Descriptor format parameter
  - now supports reading and writing to or from a queue instead of a topic
  - now supports XML
- Publisher adapter failover using Kafka is now supported
- The RabbitMQ connector and adapter can now specify content of Rabbit MQ message headers
- REST adapter error handling has been improved

For more information, see *SAS Event Stream Processing: Connectors and Adapters*.

WebSocket API

SAS Event Stream Processing 5.1 enables any language that supports WebSockets to publish and subscribe to an event stream processing engine without requiring the use of client-side C++ classes. It also provides WebSocket-based project statistics reporting and Streamviewer WebSocket support.

For more information, see *SAS Event Stream Processing: WebSocket API*.

Integration with SAS Model Manager

You now can import SAS Micro Analytic Service stores into SAS Event Stream Processing Studio directly from SAS Model Manager. For more information, see *SAS Event Stream Processing: Using SAS Event Stream Processing Studio* and"Working with SAS Micro Analytic Service Stores" in SAS Event Stream Processing: Creating and Using Windows.

Data Types

SAS Event Stream Processing 5.1 provides three new data types in events:

- BINARY (binary large object, or blob)
- RUTF8STR (reference-counted string, or rstring)
- ARRAY (32–bit integers, 64–bit integers, double)

These data types are not stored inline. Instead, they are referenced in an event, which means that the event holds a pointer to the data. For more information, see "Data Types in Events" in SAS Event Stream Processing: Overview. For information about the relevant XML elements, see *SAS Event Stream Processing: XML Language Dictionary*.

Port Consolidation for Server RESTful API

In previous releases of SAS Event Stream Processing, you had to specify different ports for HTTP administration requests and for a publish/subscribe HTTP server. Release 5.1 provides a single port for all HTTP requests. For more information, see "Starting and Using the ESP Server" in SAS Event Stream Processing: Using the ESP Server.

Programming Enhancements

The following programming enhancements are available in SAS Event Stream Processing 5.1:

- A new retention type, bytime_jumping_lookback , uses business units such as weeks, months, and years rather than seconds
- New aggregate function ESP_aCat
- Server publish/subscribe support for using the project port without requiring the global port

Cluster Redundancy

You now can enable cluster redundancy by setting up spare engines. When an engine fails, the router automatically and transparently replaces it with the specified spare engine. For more information, see "Cluster Redundancy" in SAS Event Stream Processing: Advanced Topics.

Cluster Manager Failover

You now can set up a cluster of Cluster Managers to enable Cluster Manager failover. The failover mechanism is implemented using the HTTP protocol and uses the existing HTTP port. For more information, see "Cluster Manager Failover" in SAS Event Stream Processing: Advanced Topics.

Polyline Geometry for Geofence Windows

You now can define a polyline in the Geofence window. A *polyline* is a shape representing a border or a tripwire. Define a polyline as a list of position coordinates that represent the polyline's segment or segments. For more information, see "Polylines" in SAS Event Stream Processing: Creating and Using Windows.

Check for Software Updates

Updates to this release of SAS Event Stream Processing are available. To determine whether updates have been installed on your system, run the following on the Linux command line:

```
$grep Release $DFESP_HOME/etc/changlog.txt
```

Run the following on the Windows command line:

```
findstr Release %DFESP_HOME%\etc\changlog.txt
```

When updates have been applied, a message like this one appears:

```
Release 5.1.0 -- baseline SAS Release
Release 5.1.1 -- platform specific hotfix #1:
```

If the following message appears on the Linux console, updates have not been applied:

```
grep: $DFESP_HOME/etc/changlog.txt: No such file or directory
```

If the following message appears on the Windows console, updates have not been applied:

```
FINDSTR: Cannot open %DFESP_HOME%\etc\changlog.txt
```

For more information about software updates to SAS Event Stream Processing, contact your SAS representative.