**GRYPHIN 2.0**

**RELEASE NOTES**

**v0.1**

**X.X**

**OPEN ACCESS TECHNOLOGY INTERNATIONAL, INC.**

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**Revision History**

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| **Version** | **Date** | **Comments** | **Author(s)** |
| 0.1 | 12/24/2018 | Initial Draft | Nemat S. |
| 0.2 | 12/27/2018 | Addressed Chris’s comments | Nemat S. |

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# Gryphin

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| --- | --- |
| **Acronym** | **Description** |
| MongoDB | Document oriented database  <https://www.mongodb.com/> |
| L6 | The Gryphin adaptor that is responsible for taking messages from Kafka topics in native format and converting them to common format. |
| JSON | Java Script Object Notation is a data exchange format.  <https://www.json.org/> |
| InfluxDB | Time series database.  https://www.influxdata.com/ |
| L7 | The Gryphin adaptor that is responsible for taking messages from Kafka topics and writing them to InfluxDB. |
| REST | Representational State Transfer |
| API | Application programming interface. |
| PostgreSQL | Is an object-relational database management system  <https://www.postgresql.org/> |
| JMX | Java Management Extensions |
| XML | Extensible Markup Language |
| Camel routes | Routing engine for messages. |
| GCM | GridControl Manager |
| EWS | External Web Services |
| R4 | Adaptor that reads the messages in common format from Kafka and writes them to Gryphin’s database. |
| DERMS | Distributed Energy Resource Management System. |
| AVRO | Remote procedure call and data serialization framework  <https://avro.apache.org/> |
| L4 | Adaptor that reads messages from MQTT and writes them to Kafka topics |
| DSO | Distribution System Operator |
| SCADA | Supervisory Control and Data Acquisition |
| XML | eXtensible Markup Language |

## Base Enhancements and Functional Changes

The following enhancements and functional changes have been included in the OATI “Base” system. These items are available to OATI Customers that subscribe to OATI Service, or that have purchased a Premium Maintenance Agreement for their OATI Software License.

### Internal Only

#### Change Description – Added a building error JSON message.

**Change Details** - This enhancement will build an error **JSON** message and post it on Kafka.

**Change Impacts** - No impact on the existing functionality.

**Change Configuration** – This change is not configurable.

311902

#### Change Description – Added a building success JSON msz, which collects from the response status msz of the DSO rest service and posts the JSON msz to Kafka.

**Change Details** - This service will cover all of the response messages and post these messages to Kafka.

**Change Impacts** - No impact on existing functionality.

**Change Configuration** – This change is not configurable.

311901

#### Change Description – Decoupled simulator packages from the L6 project.

**Change Details** - Simulators packages were decoupled from the L6 Connector. Now, the simulator is running in standalone mode.

**Change Impacts** - L6 Connector.

**Change Configuration** – This change is not configurable.

310803

#### Change Description – Added exception handling for the Aggregator endpoint.

**Change Details** - This enhancement will handle all of the exceptions raised in the Aggregator endpoint.

**Change Impacts** - No impact on existing functionality.

**Change Configuration** – This change is not configurable.

312069

#### Change Description – Added Gryphin EWS Continuous Deployment with Ansible.

**Change Details** - Added Ansible script for automating Continuous Deployment.

**Change Impacts** - No changes impacted on the existing functionality.

**Change Configuration** – This change is not configurable.

307980

#### Change Description – Added Gryphin EWS Artifacts packaging from the Confirmed Interchange phase and the supported scripts.

**Change Details** – Adedd the ability to pack all of the artifacts for the Change Directory phase automatically using scripts from the CI Phase.

**Change Impacts** - No impact on existing functionality.

**Change Configuration** – This change is not configurable.

307981

#### Change Description – Added Kakfa Topic partitioning for assigning each EWS application Kafka consumer based on key.

**Change Details** – This enhancement introduced the ability for Kakfa Topic partitioning to be assigned to each EWS application Kafka consumer based on key.

**Change Impacts** - No impact on existing functionality.

**Change Configuration** – This change is not configurable.

312107

#### Change Description – L4 component functionalities verification.

**Change Details** - L4 will now subscribe to the RabbitMQ cluster, process the messages, and publish the messages to the Kafka cluster. In the case of any failures, it will send an email notification.

**Change Impacts** - L4 Component.

**Change Configuration** – This change is not configurable.

310162

#### Change Description – Merged the Telemetry and Events generated by the GridPort devices.

**Change Details** – The Analog, Multistate and Discrete measurements will now be treated as telemetry readings.

**Change Impacts** - L6 and L7 components.

**Change Configuration** – This change is not configurable.

311210

#### Change Description – Added a receiver policy on the rate limiter request.

**Change Details** – A rate limit request API with a required time out session will now be triggered.

**Change Impacts** - No impact on the existing functionalities.

**Change Configuration** – This change is not configurable.

311705

#### Change Description – Implemented a single entry point for handling different data formats (XML, AVRO, MsgPack etc.).

**Change Details** - L6 was modified in order to implement the ability to handle any kind of incoming data format with a single entry point. The configuration file will be updated with the corresponding Kafka topic name.

**Change Impacts** - L6 Connector.

**Change Configuration** – This change is not configurable.

311121

#### Change Description – Modified the Rest Service so that when it is down, EWS will retry the same message based on the configuration parameterss given.

**Change Details** – EWS will now retry the logic with exponential backoff settings.

**Change Impacts** - No impact on the existing functionalities.

**Change Configuration** – This change is not configurable.

311782

#### Change Description – Added camel route exception flowing to the caller method.

**Change Details** - This enhancement will handle all of the exceptions raised in the camel routes.

**Change Impacts** - No impact on existing functionality.

**Change Configuration** – This change is not configurable.

311783

#### Change Description – Updated the POM Versions.

**Change Details** – A modification was made in order to update the POM Versions on each release wise.

**Change Impacts** - No impact on existing functionality.

**Change Configuration** – This change is not configurable.

311844

#### Change Description – Verified the sender and message validity.

**Change Details** - Sender roles and message validity will be based on incoming requests.

**Change Impacts** - No impact on the existing functionalities.

**Change Configuration** – This change is not configurable.

308739

## Base Variances

The items listed below have been identified and fixed as described.

### Internal Only

#### Change Description – Corrected an error where unsealed body XML could not be parsed, or was not compliant with the USEF XML schema.

**Change Details** - Invalid XML content will not be processed into the EWS service.

**Change Impacts** - No impact on the existing functionalities.

**Change Configuration** – This change is not configurable.

311703

#### Change Description – Added fields to the Telemtry JSON to keep both the raw and EU converted values.

**Change Details** - Fields were added to the L6 JSON output in order to hold the raw and EU converted values from GridPort devices.

**Change Impacts** - L6 Connector.

**Change Configuration** – This change is not configurable.

311212

#### Change Description – Configuration Management System validation.

**Change Details** – The CMS service will now succesfully receive Point creation request and Register Map updates from the production GCM service.

**Change Impacts** - Configuration Management System.

**Change Configuration** – This change is not configurable.

311436

#### Change Description – Decoupled the simulator from the L7 component.

**Change Details** – Decoupled the simulator packages from the L7 component. Now, the simulator runs in standalone mode.

**Change Impacts** - L7 Connector.

**Change Configuration** – This change is not configurable.

311851

#### Change Description – Decoupled the simulator from the R4 component.

**Change Details** – Decoupled the simulator packages from the R4 component. Now, the simulator runs in standalone mode.

**Change Impacts** - R4 Connector.

**Change Configuration** – This change is not configurable.

311852

#### Change Description – Added exception handling for the ParticipantListBuilder.

**Change Details** - This enhancement will handle all of the exceptions raised in the ParticipantListBuilder.

**Change Impacts** - No impact on the existing functionality.

**Change Configuration** – This change is not configurable.

312047

#### Change Description – Included Discrete point processing in the L6 Connector.

**Change Details** – Added the ability for the Discrete point to process for the GridPort telemetry data and generate output in the Common JSON Format.

**Change Impacts** - L6 Connectors.

**Change Configuration** – This change is not configurable.

312768

#### Change Description – Included a flag for the Alarm and Event generation.

**Change Details** – An Alarm and Event generation Boolean flag (True/False) is now included in the Common JSON Format in L6 output.

**Change Impacts** - L6 Connector.

**Change Configuration** – This change is not configurable.

311211

#### Change Description – L4 MQTT subscriber development and refactoring.

**Change Details** – Developed the MQTT Subscriber in the MQTT cluster environment in order to send different formats of messages like XML, AVRO and Message Pack to the Kafka Publisher.

**Change Impacts** - L4 Component.

**Change Configuration** – This change is not configurable.

311120

#### Change Description – Loaded specific properties by using Maven.

**Change Details** - Read properties from pom.xml are now loaded.

**Change Impacts** - No impact on the existing functionalities.

**Change Configuration** – This change is not configurable.

311843

#### Change Description – Added new device support in the Configuration Management system.

**Change Details** - New devices were created by using the Configuration Management system. Currently, the GCM simulator keeps Register Maps in the MongoDB required for device configuration.

**Change Impacts** - CMS, L6.

**Change Configuration** – This change is not configurable.

311215

#### Change Description – R4 connector improvements and code review comments.

**Change Details** - R4 connector improvements were made. R4 will now re-connect to the RabbitMQ Cluster when RabbitMQ is either down or up.

**Change Impacts** - R4.

**Change Configuration** – This change is not configurable.

311853

#### Change Description – Added support for L6 point processing activities.

**Change Details** - L6 can now apply processing rules for Analog, Multistate, and Discrete point categories in similar ways. All these points are treated as telemetry data.

**Change Impacts** - L6 Component.

**Change Configuration** – This change is not configurable.

312825

#### Change Description – Tested and fixed connector defects.

**Change Details** - Tested the connectors flow and fixed the relevant issues.

**Change Impacts** - L4, R4, L6, L7 connectors.

**Change Configuration** – This change is not configurable.

312268

#### Change Description – Wrote R4 control commands and applied the necessary transformations to the InfluxDB.

**Change Details** - Wrote R4 control commands and applied the necessary transformations on the JSON objects in order to dump to InfluxDB for analysis.

**Change Impacts** - R4 connector.

**Change Configuration** – This change is not configurable.

311435

#### Change Description – Refactored code and checked if the appropriate Mongo services were working.

**Change Details** - Mongo collection now has a table with appropriate data.

**Change Impacts** - No impact on the existing functionalities.

**Change Configuration** – This change is not configurable.

311781

#### Change Description – Included PointName in the L6 and L7 output schema.

**Change Details** - Addition of PointName in the L6 and L7 output schema.

**Change Impacts** - L6 Connector.

**Change Configuration** – This change is not configurable.

311213

#### Change Description – Inserted controls commands into Mongo.

**Change Details** - R4 control commands are now stored in the MongoDB and Influx databases through the L7 connector from Kafka.

**Change Impacts** - L7.

**Change Configuration** – This change is not configurable.

311214

## Base Interfaces

There are no changes in this Release.

## Optional Components

There are no changes in this Release.

## Framework Changes

There are no changes in this Release.

## Project Specific

#### Change Description – METI project development for support of Regulation Control External RestFul interface.

**Change Details** - This METI Application Programming Interface (API) will now provide communication between the METI users to SCADA for Regulation Control functionalities.

**Change Impacts** - No impact on the existing functionality.

**Change Configuration** – This change is not configurable.

311376

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