Galleon Publish Interface

version 1



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Purpose

The Publish Interface may be used by Galleon system components to post data that is ready for further processing or user consumption.

The interface provides an abstraction to the chain of tools used to process, store, and disseminate data collected or generated by the system.

Design

The Publish Interface is designed to allow Galleon system components to post finished data to the system along with context that allows for further processing or dissemination.

Publish Process

The Publish Interface processes published data using the following procedure.

- 1. A Client produces data that should be further processed, analyzed, or stored.
- 2. The Client calls the Post Handler of the Publish Interface, providing the source and type of the data being posted and the paths to one or more files and directories.
- 3. The Publish Interface forwards the published data to one or more Ingesters through their Post Handlers. The interface identifies the appropriate ingesters using the source and type parameters.
- 4. An Ingester processes, forwards, or stores the posted data. The ingester may resubmit its results to the Publish Interface for further processing, but must update the source and/or type parameter.

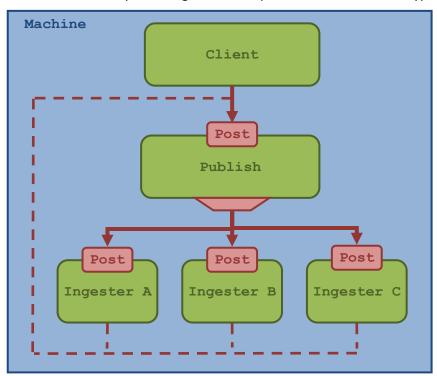


FIGURE 1: PUBLICATION OF DATA VIA THE PUBLISH INTERFACE

Ingesters

Ingesters are system components that have registered a Post Handler with the Publish Interface. Ingesters may be used to process, analyze, or store data that has been collected or generated by the system.

Source Tags

The source of the data submitted to the Publish interface is identified using a Source Tag. An ingester will identify sources from which it would like to receive data during registration.

The source tag can be used to provide the name of a tool and unique identifiers for tool instances.

Type Tags

The type of data submitted to the Publish interface is identified using a Type Tag. An ingester will identify types of data which it would like to receive during registration.

The type tag can be used to specify the format of the data.

Publishing Pipeline

When data is posted to the Publish Interface, the data will be routed to one or more ingesters based on its source and type tags. These ingesters may be used to process that data to produce new data types, disseminate that data to external systems, or store that data in a type-specific location.

Ingesters may resubmit data to the Publish Interface for further processing, but must not use the same source and type tags that were provided to it.

When the Publish Interface or ingester has finished with the posted data it will return to its caller, allowing the interface client to clean up. The Post Handlers will return one of several error codes to the client. The caller may handle this error as appropriate, including updating a log and/or sending an error to the user.

Layers

The Publish Interface exposes *Infrastructure* Layer functionality related to the way the system stores and ingests data. A Post Handler is provided as part of the Publish Interface.

Ingesters that have registered a Post Handler with the interface may be located in any layer.

Implementation

Configuration

A system implementing the Publish Interface should define the following keys within the system configuration file:

interface.publish.version The version of the Publish Interface that has been implemented by the

system. The current version is '1'. Only one version key may be defined

at a time.

interface.publish.post The Post Handler for the Publish Interface. Only one post key may be

defined at a time.

Handlers

The Publish Interface defines one type of handler for posting data to the Interface or to an Ingester.

Post Handler

Post Handlers are provided by the interface implementation and any data ingesters. The handlers are used to post data to the processing pipeline and advance it through the pipeline.

Behavior

An interface client or ingester calls the Publish Interface's Post Handler to submit data to the publication pipeline. The interface will forward the operation to one or more ingesters based on the source and type tags.

The format of the files and directories passed to an ingester's Post Handler are specific to the type tag associated with that data.

The Post Handlers will not modify any files or directories provided during an operation. The interface client is responsible for cleaning up those files after the Post Handler has returned.

Usage

```
post_handler <source_tag> <type_tag> <file_path>+
source_tag tag specifying the source of data posted to the handler
type_tag tag specifying the type of data posted to the handler
file path one or more local paths to files or directories containing the data to be published
```

Handler Return Codes

The Publish Interface defines return codes that will be returned from the various interface handlers.

The code values and their meanings are provided below:

- 0 Success
- 1 Unspecified Error
- 2 Invalid Arguments

Appendix A: Version History

Date	Description
8 Nov 2013	Version 1, Revision 1 Publish Interface initialized and submitted for design review.
28 Jul 2014	Version 1, Revision 2 Publish Interface revised after first Galleon pilot.
1 Dec 2014	Version 1, Revision 3 Publish Interface revised after second Galleon pilot.
1 Jun 2015	Version 1, Final Publish Interface finalized and delivered.

Appendix B: Future Work

The following items have been identified as possible areas for future work:

Expose Registration Function

Provide a mechanism to programmatically register a Post Handler with the Publish Interface.