

orchestration-service-by-id

Service Description

Abstract

This document provides service description for the **orchestration-service-by-id** service.

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1 Overview

This document describes the **orchestration-service-by-id** service that provides runtime (late) binding between application systems. It is a special version of **orchestration-service**. Its primary purpose is to provide application systems with orchestration information: where they need to connect to. The outcome of the service includes data that will tell the application system what service provider system(s) it should connect to and how (acting as a service consumer). Such orchestration data include:

- Accessibility information details of a service provider (e.g. network address and port),
- Details of the service instance within the provider system (e.g. base URL, IDD specification and other metadata),
- Authorization-related information (e.g. access token and signature),
- Additional information that is necessary for establishing connection.

The rest of this document is organized as follows. In Section 2, we describe the abstract message functions provided by the service. In Section 3, we end the document by presenting the data types used by the mentioned functions.

1.1 How This Service Is Meant to Be Used

The given system should consume the Service Registry Core System's **query** service to get information about the **orchestration-service-by-id** service. Using this information the system can request the **orchestration-service-by-id** service with its own database id. The service returns the top priority local provider of all services contained by the Orchestrator store database for the consumer system.

1.1.1 The orchestration process

Figure 1 describes the orchestration process.

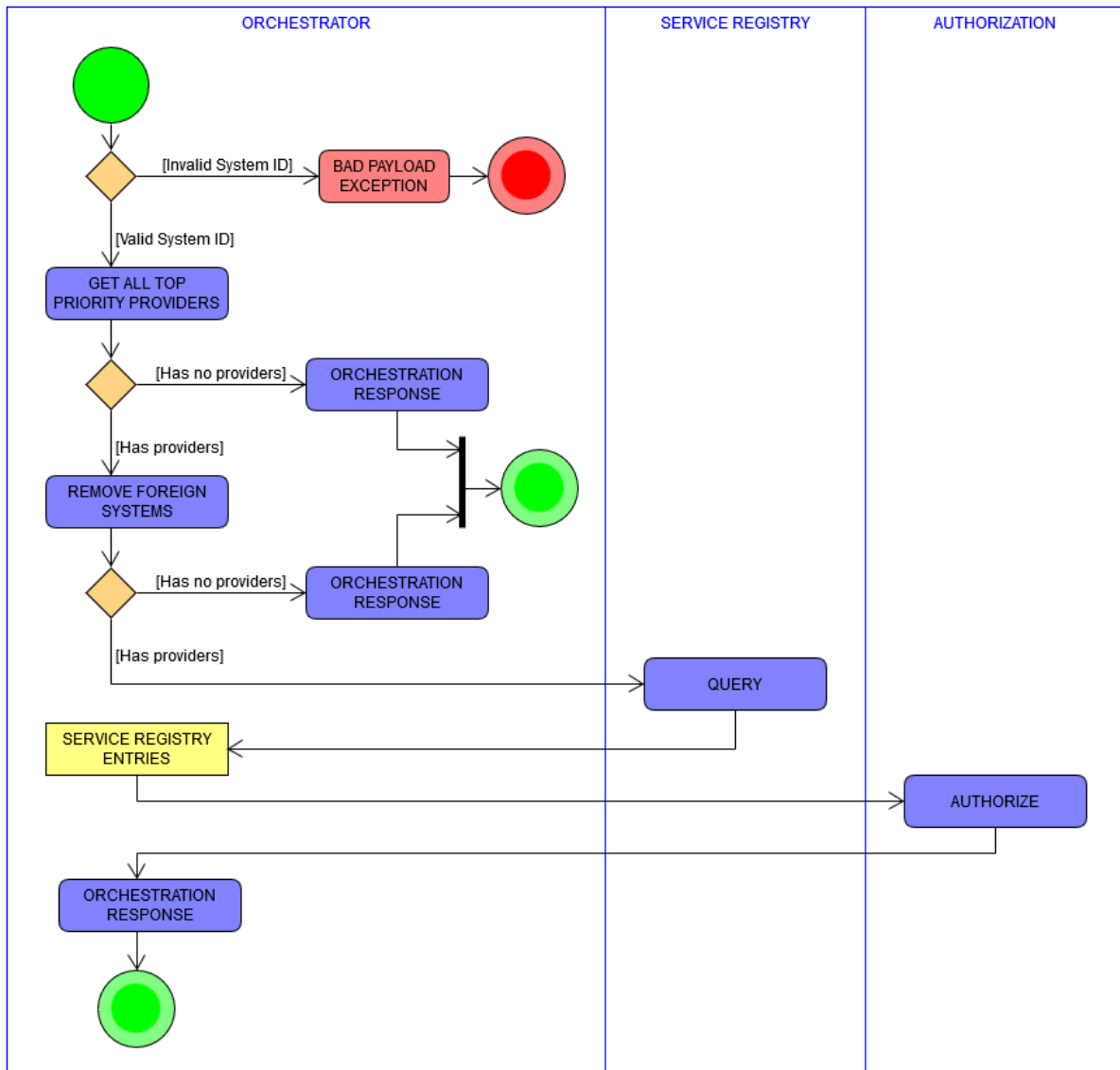


Figure 1: UML activity diagram of the orchestration process.

1.2 Important Delimitations

- This service is only supports the fix store orchestration.
- Orchestration flags are not supported.
- Quality-of-Service requirements are not supported.
- Provider reservation is not supported.

1.3 Access policy

Available for anyone within the local cloud.

2 Service Interface

This section describes the interfaces to the service. The **orchestration-service-by-id** service is used to looking for matching providers. Each subsection names an interface, an input type and an output type, in that order. The input type is named inside parentheses, while the output type is preceded by a colon. Input and output types are only denoted when accepted or returned, respectively, by the interface in question. All abstract data types named in this section are defined in Section 3.

The following interfaces are available.

2.1 interface **HTTP/TLS/JSON (Number)** : **OrchestrationResultList**

Profile type	Type	Version
Transfer protocol	HTTP	1.1
Data encryption	TLS	1.3
Encoding	JSON	RFC 8259 [1]
Compression	N/A	-

Table 1: HTTP/TLS/JSON communication details.

3 Information Model

Here, all data objects that can be part of the **orchestration-service-by-id** service provides to the hosting System are listed in alphabetic order. Note that each subsection, which describes one type of object, begins with the *struct* keyword, which is used to denote a collection of named fields, each with its own data type. As a complement to the explicitly defined types in this section, there is also a list of implicit primitive types in Section 3.7, which are used to represent things like hashes and identifiers.

3.1 struct **OrchestrationResultList**

Field	Type	Description
response	List<OrchestrationResult>	List of orchestration results.

3.2 struct **OrchestrationResult**

Field	Type	Description
authorizationTokens	Metadata	Tokens to use the service instance (one for every supported interface). Only filled if the security type is <code>TOKEN</code> .
interfaces	List<ServiceInterfaceRecord>	List of interfaces the service instance supports.
metadata	Metadata	Service instance metadata.
provider	SystemRecord	Descriptor of the provider system record.
secure	SecureType	Type of security the service instance uses.
service	ServiceDefinitionRecord	Descriptor of the service definition record.
serviceUri	String	Path of the service on the provider.
version	Version	Version of the service instance.
warnings	List<OrchestratorWarning>	List of warnings about the provider and/or its service instance.

3.3 struct **Metadata**

An Object which maps String key-value pairs.

3.4 struct **ServiceInterfaceRecord**

Field	Type	Description
createdAt	DateTime	Interface instance record was created at this UTC time-stamp.
id	Number	Identifier of the interface instance.
interfaceName	Interface	Specified name of the interface.
updatedAt	DateTime	Interface instance record was modified at this UTC time-stamp.

3.5 struct **SystemRecord**

Field	Type	Description
address	Address	Network address of the system.
authenticationInfo	String	X.509 public key of the system.
createdAt	DateTime	System instance record was created at this UTC time-stamp.
id	Number	Identifier of the system instance.
metadata	Metadata	Additional information about the system.
port	PortNumber	Port of the system.
systemName	Name	Name of the system.
updatedAt	DateTime	System instance record was modified at this UTC time-stamp.

3.6 struct **ServiceDefinitionRecord**

Field	Type	Description
createdAt	DateTime	Service definition instance record was created at this UTC timestamp.
id	Number	Identifier of the service definition instance.
serviceDefinition	Name	Name of the service definition.
updatedAt	DateTime	Service definition instance record was modified at this UTC timestamp.

3.7 Primitives

Types and structures mentioned throughout this document that are assumed to be available to implementations of this service. The concrete interpretations of each of these types and structures must be provided by any IDD document claiming to implement this service.

Type	Description
Address	A string representation of the address.
DateTime	Pinpoints a specific moment in time.
Object	Set of primitives and possible further objects.
Interface	Any suitable type chosen by the implementor of service
List<A>	An <i>array</i> of a known number of items, each having type A.
Name	A string identifier that is intended to be both human and machine-readable.
Number	Decimal number
OrchestratorWarning	A potentially interesting information about a provider and/or its service instance.
PortNumber	A Number between 0 and 65535.
SecureType	Any suitable type chosen by the implementor of service.
String	A chain of characters.
Version	Specifies a service version.

4 References

- [1] T. Bray, "The JavaScript Object Notation (JSON) Data Interchange Format," RFC 8259, Dec. 2017. [Online]. Available: <https://rfc-editor.org/rfc/rfc8259.txt>



ARROWHEAD

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5 Revision History

5.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1	YYYY-MM-DD	4.6.0		Xxx Yyy

5.2 Quality Assurance

No.	Date	Version	Approved by
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