Service Description (SD)
DeviceDiscovery

September 25, 2019

1 Service Description Overview

This document describes the DeviceDiscovery service shown in Figure 1 including the interfaces, functions and information model. The DeviceDiscovery service allows to register and de-register devices including their systems, and find devices among the registered devices.

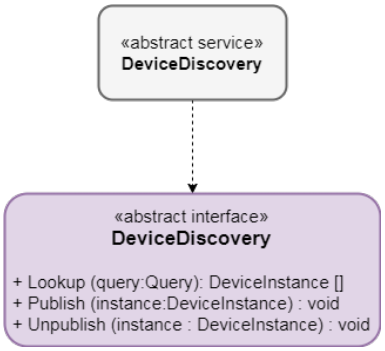

Figure 1: The DeviceDiscovery service interface

2 Abstract Interfaces

2.1 DeviceDiscovery Interface

The DeviceDiscovery service provides three functionalities.

2.1.1 Functions

Publish The publish method is used to register a device. The devices will contain a symbolic name as well as a physical endpoint. The instance parameter represents the endpoint information that should be registered.

Unpublish The unpublish method is used to unregister a device that no longer should be used. The instance parameter contains information necessary to find the device to be removed.

Lookup The lookup method is used to find and translate a symbolic device name into a physical endpoint, IP address, and a port. The query parameter is used to request a subset of all the registered devices in the DeviceRegistry system based on a specified criteria.

2.1.2 Sequence Diagrams

Sequence Diagram for Publish method Figure 2 shows the sequence diagram for the publish method of the DeviceDiscovery service.

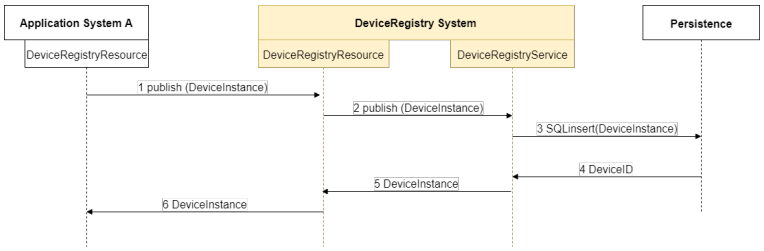

Figure 2: Sequence Diagram for the publish method of the DeviceDiscovery service

Sequence Diagram for Unpublish method Figure 3 shows the sequence diagram for the unpublish method of the DeviceDiscovery service.

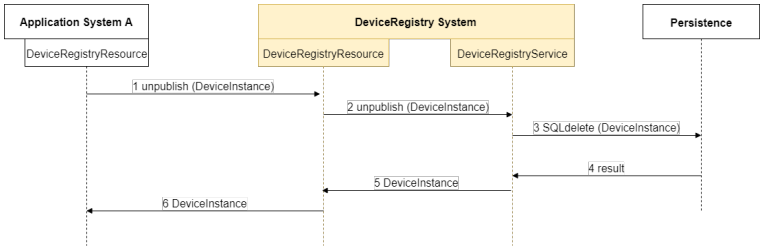

Figure 3: Sequence Diagram for the unpublish method of the DeviceDiscovery service

Sequence Diagram for Lookup method Figure 4 shows the sequence diagram for the lookup method of the DeviceDiscovery service.

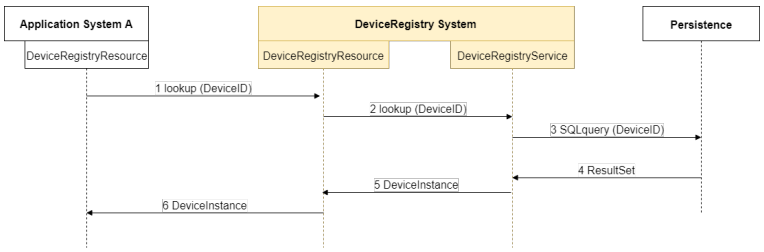

Figure 4: Sequence Diagram for the lookup method of the DeviceDiscovery service

3 Abstract Information Model

A DeviceRegistryEntry contains the following information, as presented in Table 1. This is the payload that needs to be sent when registering or de-registering an entry from the DeviceRegistry.

Table 1: DeviceRegistryEntry type description

Field	**Description**
providedDevice: ArrowheadDevice	The Arrowhead Device object that is provided (SD and IDDs)
deviceName: String	The name of the Arrowhead device
macAddress: String	The mac address of the Arrowhead device
endofValidity: String (date-time)	This provides an ISO 8601 format date-time, and stores it in the database.
metadata: String	Metadata belonging to a service/provider pair. Metadata is to be provided using key pairs such as, $encode = syntax$, e.g., $encode = xml$, $compress = algorithm$, e.g., $compress = exi$, $semantix = XX$, e.g., $semantic = senml$.

4 Non-functional Requirements

Not specified

5 Revision history

5.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1	2017-09-10	1.0	Initial Version	Ani Bicaku
2	2017-11-15	1.1	Initial Version	Ani Bicaku
3	2019-09-23	1.2	Update Version	Ani Bicaku, Mario Zsilak