RFP 182: Service Decorations

Draft

8 Pages

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Abstract

Service properties provide a powerful way to add metadata to a service. It they can be used for filtering, inspection and are posted to interested parties via a change notification mechanism. Up until now service properties are owned by the bundle that registers the service. Only that bundle has the ServiceRegistration that allows modification of these properties.

This RFP explores the possibility to allow other bundles to provide service properties or decorate services somehow.

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0.3 Feedback

This document can be downloaded from the OSGi Alliance design repository at https://github.com/osgi/design The public can provide feedback about this document by opening a bug at https://www.osgi.org/bugzilla/.

0.4 Table of Contents

0.5 Terminology and Document Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY" and "OPTIONAL" in this document are to be interpreted as described in 6.1.

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0.6 Revision History

The last named individual in this history is currently responsible for this document.

Revision	Date	Comments
Initial	August 2016	David Bosschaert, Tim Ward, Peter Kriens - Initial Version

1 Introduction

Service properties provide a powerful way to add metadata to a service. It they can be used for filtering, inspection and are posted to interested parties via a change notification mechanism. Up until now service properties are owned by the bundle that registers the service. Only that bundle has the ServiceRegistration that allows modification of these properties.

This RFP explores the possibility to allow other bundles to provide service properties or decorate services somehow.

2 Application Domain

This is a description of the real world, unrelated to computer solutions. E.g. if you must make a text editor, you describe how the authors input text, do review cycles with peers and publish. This section should define the terminology that is used in later sections and paint a clear picture about issues and facts of the problem domain. Do not discuss solutions or problems that are solved, focus on a description of the context of the problem. This should answer questions like: What actors/entities take part in the problem domain? What is their role?

It should describe the world as it is now, not when the solution is applied. This is a real world description, not of a computer system solving the real world problem!

This section should also list assumptions that the RFC may make about the problem context. E.g. the number of users of a gateway shall not exceed 100.

The difficult part is to not describe the solution, or the problem. This section should strictly limit itself to the context of the problem and the solution.

Also, you should list existing products that exist in the problem context. E.g. for the Communications architecture there are Java Phone API, Java Messaging Service and javax.microedition.io that operate in this scope. It is not required to evaluate them, just list them.

2.1 Terminology + Abbreviations

3 Problem Description

Detailed description of what problem is actually being solved. This section should answer questions like: What problem is being addressed? Who will benefit from the proposed solution? Why does the OSGi need this RFC?

4 Use Cases

List one or more use case models that describe system functionality.

4.1 NodeStatus services

RFC 183 defines a NodeStatus service which represents a node running in the cloud or some other compute platform. The RFC needs a way for nodes to mark themselves so that a provisioning agent or scheduler can know what type of work should be given to this node. For example, a node might have a very strong CPU and the application deployer wants to use the node for offloading computational jobs. Or a node might have a lot of disk space and should be used to host a database.

A NodeStatus service is a simple OSGi service which is exposed via Remote Services. Its metadata is made available via service properties. While RFC 183 could define a proprietary mechanism to allow other bundles to extend the NodeStatus service properties, a general solution on the Core OSGi level would be preferable.

4.2 Location for Services

A bundle keeps a configurable database for devices in the house. When it sees the service appear, it adds a 'location' property to the service so that other bundles can see where the service is located.

4.3 Service Wiring

Each DS component gets its references with a target that asserts its own identity.

```
@Reference(target="(identity=me)")
```

A bundle then provides a GUI to wire services together. In runtime, this bundle adds a property to wired services with a list of identities that it should wire to.

4.4 Whiteboard Marking

As a whiteboard implementation I want to "mark" a service as having been processed. This way parties that are interested in the processed services can react to them by looking for the "processed" property.

This would still need to work in the case where the whiteboard service was registered using Declarative Services and potentially had its properties updated using Config Admin. This could get messy, with the service property being briefly deleted by SCR on a config change, and then having to be re-added by the whiteboard implementation, even if there was no period of unavailability for the processed service…

5 Requirements

SD0010 – Allow bundles to provide additional properties to an OSGi service, even if these bundles do not have access to the original ServiceRegistration of that service.

6 Document Support

6.1 References

[1]. Bradner, S., Key words for use in RFCs to Indicate Requirement Levels, RFC2119, March 1997.

[2]. Software Requirements & Specifications. Michael Jackson. ISBN 0-201-87712-0

Add references simply by adding new items. You can then cross-refer to them by chosing <Insert><Cross Reference><Numbered Item> and then selecting the paragraph. ***STATIC REFERENCES (I.E. BODGED) ARE NOT ACCEPTABLE, SOMEONE WILL HAVE TO UPDATE THEM LATER, SO DO IT PROPERLY NOW.***

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