BES Directory Profile: V. 0.1

Status of this Memo

This memo provides information to the Grid community regarding the specification of the BES Direcotry Profile. Distribution is unlimited.

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Abstract

The BES Directory Profile (BDP) is a profle on OGSA Basic Execution Services 1.0 that provides a Unix directly like interface to OGSA BES endpoints that allow the client to examine and modify BES configuration information as well aslist, create, and terminate activities. The profile defines no porttypes, rather it simply describes what directory elements must exist in a compliant implementation and what the semantics are of interacting with those entries. The goal is to provide a simple uniform mechanism to support requirements identified by the Production Grid Interoperability Working Group of the Open Grid Forum [cite]. The mechanism described for the BDP is independent of the OGSA BES specification. Thus, changes in the OGSA BES specification in the future will not impact the usefulness of the BDP.

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# Introduction

Production Grid Interoperability Working Group identified a number of execution management use cases and requirements in GFD.180. A number of ways to meet these requirements have been extensively discussed. They fall into two categories: 1) define a new set of specifications from scratch to meet the requirements, and 2), profile and minimally extend existing specifications to meet the requirements.

The BDP is a part of the second approach, profiling and extending existing specifications to meet the requirement. It combines, extends, and profiles five existing specifications to meet the PGI requirements: WS Addressing EndPoint References, OGSA Basic Execution Srevices (OGSA\_BES, or BES) [GFD.108], RNS 1.1 OGSA-WSRF Basic Profile 1.0 [GFD.172], WS-Iterator 1.0 [GFD.188], and OGSA-ByteIO WSRF Basic Profile 1.0 [GFD.98].

The OGSA Basic Execution Services specification (OGSA\_BES, or BES) [GFD.108] has been in use for over five years. Over the course of use several common extensions have been used by different implementers.

# Notational Conventions

The key words “MUST,” “MUST NOT,” “REQUIRED,” “SHALL,” “SHALL NOT,” “SHOULD,” “SHOULD NOT,” “RECOMMENDED,” “MAY,” and “OPTIONAL” are to be interpreted as described in RFC-2119 [RFC 2119].

The document refers to an “Acvitivity Endpoint Profile compliant system” as a “Compliant system”.

This specification uses namespace prefixes throughout; they are listed in Table 2‑1. Note that the choice of any namespace prefix is arbitrary and not semantically significant.

Table 2‑1: Prefixes and namespaces used in this specification.

|  |  |
| --- | --- |
| Prefix | Namespace |
| xsd | <http://www.w3.org/2001/XMLSchema> |
| wsa | <http://www.w3.org/2005/03/addressing> |
| rns | <http://schemas.ogf.org/rns/2009/12/rns> |
| byteio | http://schemas.ggf.org/byteio/2005/10/byte-io |
| sbyteio | http://schemas.ggf.org/byteio/2005/10/streamable-access |
| rbyteio | http://schemas.ggf.org/byteio/2005/10/random-access |
| aep | http://schemas.ggf.org/aep/2012/3 |

# BDP Endpoint Requirements

This section describes the compliance requirements.

## EPR MetaData fields

MUST: A metadata field in the EPR of the BES endpoint indicating that the endpoint is BDP compliant.

/bdp/Is\_Compliant

## Resource Properties

/bdp/Is\_Compliant

## RNS 1.1 Compliance –

Compliant implementations will implement the RNS 1.1 OGSA-WSRF Basic Profile 1.0 and WS-Iterator 1.0.

## RNSEntry Elements from lookup

* Activities is an RNS\_Entry that refers to another RNS 1.1 endpoint that has the following entries
  + Mine - is an RNS\_Entry that refers to another RNS 1.1 endpoint that has the following entries (***maybe there should be one dir entry for each state?***)
    - Running – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has an entry for each of the users running jobs on the BES.
    - Queued – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has an entry for each of the users queued jobs on the BES.
    - Finished Running – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has an entry for each of the users finished or errored jobs on the BES.
  + All - is an RNS\_Entry that refers to another RNS 1.1 endpoint that has the following entries
    - Running – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has an entry for all of the running jobs on the BES.
    - Queued – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has an entry for all of the queued jobs on the BES.
    - Finished Running – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has an entry for all of the finished or errored jobs on the BES.
* submissionPoint – is an RNS\_Entry that refers to an RbyteIO file. When JSDL files are written to this file the effect is the same as a BES\_CreateActivity, i.e., the activity is started.

# Optional Activity Endpoint Compliance Targets

## RNSEntry elements returned from lookup

Optional RNSEntry elements are elements that may or may not be present. If they are present though, they have the following meaning and refer to the specified information.

* Configuration – is an RNS\_Entry that refers to another RNS 1.1 endpoint that has the following entries
  + ResourceDescription – is an RNS\_Entry that refers to a ByteIO resource (file) that contains an natural language descrition of the resource
  + constructionProperties – is an RNS\_Entry that refers to a ByteIO resource (file) that can be written to configure the BES, and read to retrieve the configuration. Note that the format of the file is implementation dependpent.
* **log -** is an RNS\_Entry that refers to a ByteIO resource (file) that contains the log file for the BES
* accounting – should we have something to get the accounting records?

# WS-Notification Subscriptions - Optional

Users may want to subscribe to state change and resource exceeded events.

How?

We need to define the topics

Topic: State Change

Notification returns old state and new state and some description

And - what gets returned for each topic

# Security Considerations

Access control is out of scope.

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# Contributors

We gratefully acknowledge the contributions made to this specification by [insert names].

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Normative References

[RFC 2119] Bradner, S. Key words for use in RFCs to Indicate Requirement Levels. Internet Engineering Task Force, RFC 2119, March 1997. Available at <http://www.ietf.org/rfc/rfc2119.txt>

[JSDL10] Available at http://www.ggf.org/documents/GFD.56.pdf