

Standardised Namespaces for XML infosets in OGF

Status of This Memo

This memo provides information to the Grid community on how to define identifying names uniquely and uniform in the GGF/OGF domain. It does not define any standards or technical recommendations. Distribution is unlimited.

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Obsoletes

This document obsoletes GFD.58.

Abstract

This document defines a rule set to generate namespaces for XML documents and infosets.

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1. Introduction

The Open Grid Forum accelerates grid adoption to enable business value and scientific discovery by providing an open forum for grid innovation and developing open standards for grid software interoperability. [OGF]. Many of the documents produced in OGF, if not the majority, are specifications to standardise Grid Computing. Every Working Group and Research Group thus faces the problem to structure the namespace IRI for their particular area of interest. A non-exhaustive survey of current OGF research groups showed that indeed the defined namespaces vary greatly.

Indeed, recurring patterns of identification within a larger organisational domain greatly improve communication and recognition both internal and external to an organisation. This very popular pattern has many names, of which the most commonly known name is “Corporate Identity” in the commercial world.

This document defines a small part of a greater “Grid Community Identity” by standardising the way in which constituted OGF groups organise their associated namespaces.

This document does not define any rules or processes other than constructing namespace IRIs; it is expected that other specifications and documents emerge that altogether lay the foundation for effective standardisation operations, for example

- A document defining the process and infrastructure for an online repository hosting the XML Schemas of published OGF standards
- Documents that further refine the use of the extension elements provided in this specification

1.1 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 [RFC2119].

2. Use of Namespace IRIs

Namespace IRIs are used for identification purposes. XML Schema elements and attributes that have the same name but different semantics can be safely identified if a namespace is attached to them. As such, Namespace IRIs must be unique, and comparable.

The underlying encoding and comparison rules for IRIs are defined in [RFC3987].

This document, given that the rules defined herein are followed, ensures uniqueness of such Namespace IRIs. As such, Namespace IRIs are just ordered sequences of characters, or strings and should not be treated any different in the first place.

However, if chosen carefully, namespace IRIs may be used without modification if interpreted differently in a different context. While treated as a sequence of characters in a XML Schema document’s namespace declaration, Namespace IRIs may be interpreted as a URL or IRI that, when used in a HTTP context, returns the normative XML Schema document that is identified by the very IRI.

2.1 Examples

The following list is a non-exhaustive collection of Namespace IRIs that have been created following this document (or its predecessor, GFD.58):

- <http://schemas.ggf.org/jsdl/2005/11/jsdl>
- <http://schemas.ggf.org/jsdl/2005/11/jsdl-posix>
- <http://schemas.ggf.org/byteio/2005/10/byte-io>
- <http://schemas.ggf.org/byteio/2005/10/random-access>
- <http://schemas.ggf.org/byteio/2005/10/streamable-access>
- <http://schemas.ggf.org/bes/2005/11/bes>
- <http://schemas.ggf.org/naming/2006/08/naming>

3. Namespace Generation Rules

This section presents a set of rules to generate namespaces. The outcome of every rules application is a namespace suitable for XML schema documents. The rules presented in this section closely follow the “augmented BNF” framework given in [RFC2616].

The rule element named “token” MUST be interpreted as given in [RFC2616] chapter 2.2.

3.1 Namespace

A namespace uniquely identifies a specification within the GGF domain. To demonstrate that the specification relates to GGF, its namespace shall have a common part related to GGF, and a specification related part:

```
namespace      = common-part [specific-part ]
```

3.2 common-part

The common part that every namespace contains is further refined to the following:

```
common-part    = scheme customs domain
```

Example: A common part for namespace identifiers

```
http://schemas.ggf.org
```

3.3 scheme

The scheme is an additional element for further extension. For the purpose of this document, its semantics are just a string. Other documents inherited from this document may impose additional semantics to extended tokens to the scheme rule.

```
scheme         = ( "http" | extension ) "://"
```

3.3.1 http

The scheme literal value “http” MUST be used when generating namespaces for XML schema documents and infosets associated to specifications published by constituted OGF groups.

3.4 customs

The customs part defines the general purpose of the containing namespace. It is used to partition the semantics of the OGF domain namespace.

```
customs      = "schemas" | "www" | extension
```

Other documents extending the rule set given here MAY introduce further extension and impose other semantics to those tokens.

3.4.1 schemas

The customs literal value “schemas” defines that the containing namespace is used to define a namespace for a specification’s associated XML schema. All OGF specifications that publish XML schema documents MUST use this literal value when defining the namespace.

3.4.2 www

The customs literal value “www” defines that the containing namespace is used to define a Profile conformance claim IRI. All OGF Profile documents MUST use this literal value when defining a Profile conformance claim IRI.

3.5 domain

The domain part of the common-part element of a namespace identifier associates the namespace with a higher-level community.

```
domain      = ".ggf.org" | ".ogf.org" | extension
```

The domain literal value “ggf.org” will be deprecated as of the date of the formal publication of this document in the GFD document series of OGF. As of that date:

- Existing Namespace IRIs are still valid
- Newly constructed Namespace IRIs MUST NOT use the domain literal value “ggf.org”.

3.5.1 .ggf.org

The domain literal value “ggf.org” MUST be used when generating namespaces for XML schema documents and infosets associated to specifications published by GGF Working Groups and Research Groups.

3.5.2 .ogf.org

The domain literal value “.ogf.org” MUST be used when generating namespaces for XML schema documents and infosets associated to specifications published by constituted OGF groups.

3.6 specific-part

The specific-part of a namespace defines the project specific properties. The minimum information provided **MUST** include the project acronym and a version. If the structure of the project permits, arbitrarily detailed information **MAY** be added to the namespace:

```
specific-part = project version [ project | part ]
```

If additional information is needed, the main namespace **MUST** be constructed using

```
specific-part = project version project
```

and all subordinate namespaces **MUST** be constructed using

```
specific-part = project version part
```

Example: Specific parts defined by the JSDL working group

```
/jsdl/2005/11/jsdl
/jsdl/2005/11/jsdl-posix
```

For further information see section 3.11.

3.7 project

To satisfy the project rule, each constituted OGF group selects an acronym describing that group. The acronyms **MUST NOT** contain any hints on the nature of the project group; they also **MUST NOT** incorporate fractions of or whole acronyms of other projects.

```
project = "/" <project acronym>
```

Example: A selection of correct and wrong project acronyms

```
/rss          (correct)
/graap        (correct)
/jsdl         (correct)
/jsdl-wg      (wrong!)
/bes          (correct)
/ogsa-bes     (wrong!)
```

3.8 version

To satisfy the version rule a project **MUST** give the year and month of publication of the XML schema document. It is irrelevant whether the published specification is a draft or a final document.

```
version = "/" version-year "/" version-month
```

This document imposes the restriction on the selection of the year and month components that new values **MUST NOT** be selected if the next published version is backwards compatible to the current version of the XML schema document.

Example: A version particle for a draft published in June 2005

```
/2005/06
```

3.9 version-year

The year of publication **MUST** be given using four digits:

```
version-year = 4DIGIT
```

The value for the year particle **MUST** be chosen according to the Gregorian calendar.

Example: A year particle for a draft published in 2005 AD

```
2005
```

3.10 version-month

The month of publication **MUST** be given using two digits using a leading zero where appropriate:

```
version-month = 2DIGIT
```

The value for the year particle **MUST** be chosen according to the Gregorian calendar. The Gregorian months "January" through "December" are in ascending order associated to the values "01" up and including to "12" Hence the value "01" denotes the publication month "January" and

Example: A month particle for a draft published in June

```
06
```

3.11 part

Where necessary, projects **MAY** define namespaces having specific-part elements of arbitrary length:

```
part = "/" token [ part ]
```

Restrictions outlined in chapter 3.5.1 **MUST** be followed.

Example: Some example part particles

```
/foo
```

```
/foo/bar  
  
/foo/bar/baz
```

Example: Concrete part particles defined by the current draft ByteIO specification

```
/transfer-mechanisms/simple  
  
/transfer-mechanisms/dime  
  
/transfer-mechanisms/mtom
```

3.12 extension

This rule defines an extension point for later documents and extended specifications:

```
extension = token
```

The rule named “token” MUST be interpreted as in [RFC2616] chapter 2.2.

Other documents SHOULD exploit this extension rule. However, if the need exist, they MAY alter the interpretation of parts of this document.

4. Security Considerations

This document defines rules and guidelines on how to create namespaces for constituted OGF groups. It touches the concept of “Corporate Identity” which may need protection by legal terms and conditions. For example, there are no procedures known to the authors that will be followed in case of fraudulent use of “ggf.org” or “ogf.org” etc in namespace definitions that are not endorsed by OGF.

Such legal steps are out of scope of this document, and should be considered by OGF panel prior to publishing this document in the GFD series.

Having said that, no other security actions are required.

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References

RFC2119 RFC2119: Key words for use in RFCs to Indicate Requirement Levels
<http://www.ietf.org/rfc/rfc2119.txt>

- RFC2616 RFC 2616: Hypertext Transfer Protocol – HTTP/1.1
<http://www.ietf.org/rfc/rfc2616.txt>
- RFC3987 RFC3987: Internationalized Resource Identifiers (IRIs)
<http://www.ietf.org/rfc/rfc3987.txt>
- OGF Open Grid Forum Website, The OGF Mission.
http://www.ogf.org/About/abt_overview.php

Appendix A. Complete rule set

This appendix lists the complete set of rules defined in this document:

```

namespace      = common-part [specific-part ]
common-part    = scheme customs domain
scheme         = ( "http" | extension ) "://"
customs        = "schemas" | extension
domain         = ".ggf.org" | ".ogf.org" | extension
specific-part  = project version [ project | part ]
project        = "/" <project acronym>
version        = "/" version-year "/" version-month
version-year   = 4DIGIT
version-month  = 2DIGIT
part           = "/" token [ part ]
extension      = token

```

Appendix B. Outlook on further actions

This specification has been developed having mainly namespaces for XML schema documents and infosets in mind.

However, other considerations supported this specification. For example, this document has been heavily influenced by the plans on how to update the OGF related WWW presence. Combined efforts led to the idea to provide a centralized repository for all published XML schema documents and infosets. This way, programmatic XML document validation can be performed online, supporting the idea of a ubiquitous (Grid) network. In the end, all these considerations and discussions led to the general URL pattern for XML namespaces to ease the integration of the XML schema document repository into the overall OGF WWW presence.

To enable this combined effort, the OGF panel may decide to enact a general infrastructure policy stating

- that every namespace defined by OGF may be interpreted as a URL
- that a centralized repository operated by OGF delivers a XML schema document when queried using that URL
- that the delivered XML schema document is identified by the very namespace used as a URL to query the central XML schema repository.