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Namespace Considerations and Registries for GSS-API Extensions
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Abstract

This document describes the ways in which the GSS-API may be extended and directs the creation of an IANA registry for various GSS-API namespaces.

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1. Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

2. Introduction

There is a need for private-use and mechanism-specific extensions to the Generic Security Services Application Programming Interface (GSS-API). As such extensions are designed and standardized (or not), both at the IETF and elsewhere, there is a non-trivial risk of namespace pollution and conflicts. To avoid this we set out guidelines for extending the GSS-API and direct the creation of an IANA registry for GSS-API namespaces.

Registrations of individual items and sub-namespaces are allowed. Each sub-namespace may provide different rules for registration, e.g., for mechanism-specific and private-use extensions. All Standards-Track uses of the GSS-API namespaces will be registered as part of the RFC publication process. See [Section 8.2](#).

3. Extensions to the GSS-API

Extensions to the GSS-API can be categorized as follows:

- o Abstract API extensions
- o Implementation-specific
- o Mechanism-specific
- o Language binding-specific

Extensions to the GSS-API may be purely semantic, without effect on the GSS-API's namespaces. Or they may introduce new functions, constants, types, etc...; these clearly affect the GSS-API namespaces.

Extensions that affect the GSS-API namespaces should be registered with the IANA as described herein.

[4.](#) Generic GSS-API Namespaces

The abstract API namespaces for the GSS-API are:

- o Type names
- o Function names
- o Constant names for each type
- o Constant values for each type

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- o Name types (OID, type name and syntaxes)

Additionally we have namespaces associates with the OBJECT IDENTIFIER (OID) type:

- o Mechanism OIDs
- o Name Type OIDs

[5.](#) Language Binding-Specific GSS-API Namespaces

Language binding specific namespaces include:

- o Header/interface module names
- o Object classes and/or types
- o Methods and/or functions
- o Constant names
- o Constant values

[6.](#) Extension-Specific GSS-API Namespaces

Extensions to the GSS-API may create additional namespaces. See [Section 8.2](#).

[7.](#) Registration Form(s)

Registrations for GSS-API namespaces SHALL take the following form:

+-----+-----+-----+-----+

Registration Field	Possible Values	Description
Registration type	'Instance', 'Sub-Namespace'	Indicates whether this entry reserves a given symbol name (and possibly, constant value), or whether it reserves an entire sub-namespace (the name is a "prefix") or constant value range.
Bindings	'Generic', 'C-bindings', 'Java', 'C#', <programming language name>	Indicates the name of the programming language that this registration involves, or, if 'Generic', that this is an entry for the generic abstract GSS-API (i.e., not specific to any programming

		language).
Object Type	'Data-Type', 'Function', 'Method', 'Integer', 'String', 'OID', 'Context Flag', 'Name Type', 'Header File Name', etcetera	Indicates the type of the object(s) whose symbolic name or constant value this entry registers. The possible values of this field depend on the programming language in question, therefore they are not all specified here.
Symbol Name/Prefix	<Symbol name or name prefix>	The name(s) of symbols or values being registered.
Binding of	<Name of abstract API element of which this object is a binding>	If the registration is for a specific language binding of the GSS-API, then this names the abstract API element of which it is a binding (OPTIONAL).

Constant Value/Range(s)	<Constant value> or <constant value range>	The value(s) of the constant named by the <Symbol Name/Prefix> (OPTIONAL).
Description	<Text>	Description of object(s) being registered.
Registration Rules	Values from [RFC2434] , such as 'IESG Approval', 'Expert Review', 'First Come First Served', 'Private Use', etcetera.	Describes the rules for allocation of items that fall in this sub-namespace, for entries with Rgistratio Type of Sub-namespace (OPTIONAL). For private use sub-namespaces the submitter MUST provide the e-mail address of a responsible contact.
Reference	<Reference>	Reference to document that describes the object(s) being registered, if any (OPTIONAL).
Expert Reviewer(s)	<Name of expert reviewers,	(OPTIONAL, see Section 8.2.1)

	possibly WG names>	
Status	'Standards-Track', 'Informational', 'Experimental', 'Obsolete', 'Other'	Status of the registration.

The IANA should create a single GSS-API namespace registry, or multiple registries, one for symbolic names and one for constant values, and/or it may create a registry per-programming language, at its convenience.

Entries in these registries should consist of all the fields from

their corresponding registration entries.

Entries should be sorted by: registration type, programming language, object type, and symbol name/prefix.

8. IANA Considerations

This document deals with IANA considerations throughout. Specifically it creates a single registry of various kinds of things, though the IANA may instead create multiple registries each for one of those kinds of things. Of particular interest may be that IANA will now be the registration authority for the GSS-API name type OID space.

8.1. Initial Namespace Registrations

Initial registry content corresponding to the items defined in [[RFC2743](#)], [[RFC2744](#)], [[RFC2853](#)], [[RFC1964](#)] and [[RFC4121](#)] and others will be supplied during the IANA review portion of the RFC publishing process. The KITTEN WG chairs MUST indicate that such content has been reviewed by the WG and that there is WG consensus that the entries are in agreement with those RFCs.

8.2. Registration Maintenance Guidelines

Standards-Track RFCs can create new items with any non-conflicting Symbol Name/Prefix value for this registry by virtue of IESG approval to publish as a Standards-Track RFC. The status of such entries SHALL initially be as specified by the RFC (defaulting to 'Standards-Track').

Standards-Track RFCs can mark existing entries as obsolete or

historic, and can even create conflicting entries if explicitly stated (the IESG, of course, should review conflicts very carefully).

IANA shall also consider submissions from individuals, and via Informational and Experimental RFCs, subject to Expert Review. IANA SHALL allow such registrations if a) they are not conflicting, and b) if expert review passes. Guidelines for expert reviews are given below. The Status of any such registrations SHALL agree with the

Status of the source RFC, or, for individual registrations, 'Other'.

8.2.1. Expert Reviews of Individual Submissions

Expert review selection SHALL be as follows. If, at the time that the IANA receives an individual submission for registration in this registry, there is are any IETF Working Groups chartered to produce GSS-API-related documents, then the IANA SHALL ask the chairs of such WGs to be expert reviewers or to name one. If there are no such WGs at that time, then the IANA SHALL ask past chairs of the KITTEN WG and the author/editor of this RFC to act as expert reviewers or name an alternate.

Expert reviewers of individual registration submissions with Registration Type == Sub-namespace should check that the registration request has a suitable description (which need not be sufficiently detailed for others to implement) and that the Symbol Name/Prefix is sufficiently descriptive of the purpose of the sub-namespace or the name of the submitter or associated company.

Expert reviewers of individual registration submissions with Registration Type == Instance should check that the Symbol Name falls under a sub-namespace controlled by the submitter and that the Status of the submission is "Informational." Registration of such entries which do not fall under such a sub-namespace may be allowed provided that they correspond to long existing non-standard extensions to the GSS-API and this can be easily checked or demonstrated, otherwise IESG Protocol Action is REQUIRED (see previous section). Also, reviewers should check that any registration of constant values for types which have Standard-Track status have a detailed description that is suitable for other implementors to reproduce, and that they don't conflict with other usages or are otherwise dangerous in the reviewers estimation.

9. Security Considerations

This document has no security considerations.

10. References

10.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC2434] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 2434](#), October 1998.

10.2. Informative References

- [RFC1964] Linn, J., "The Kerberos Version 5 GSS-API Mechanism", [RFC 1964](#), June 1996.
- [RFC2743] Linn, J., "Generic Security Service Application Program Interface Version 2, Update 1", [RFC 2743](#), January 2000.
- [RFC2744] Wray, J., "Generic Security Service API Version 2 : C-bindings", [RFC 2744](#), January 2000.
- [RFC2853] Kabat, J. and M. Upadhyay, "Generic Security Service API Version 2 : Java Bindings", [RFC 2853](#), June 2000.
- [RFC4121] Zhu, L., Jaganathan, K., and S. Hartman, "The Kerberos Version 5 Generic Security Service Application Program Interface (GSS-API) Mechanism: Version 2", [RFC 4121](#), July 2005.

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