              Storage Resource Broker URI Scheme Registration

                     draft-gilbert-srb-uri-00.txt

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Abstract

    This document is the Storage Resource Broker (SRB) group
    recommendation for a SRB Uniform Resource Identifier (URI) which may
    be used to resolve the address of a network entity to which SRB
    calls may be directed. This document is published as an Internet
    Draft for ease of access and registration with the Internet Assigned
    Numbers Authority (IANA).

1.   Introduction

   This document introduces the SRB Uniform Resource Identifier (URI),
   which may be used to resolve the address of a network entity to which
   SRB calls may be directed. Having the URI registered with IANA will
   ensure that there is no duplication of the URI scheme "srb".

2.   URI Scheme Syntax Definition and Character Encoding

2.1 General Syntax

   For ease of use, the srb URI has been modeled on the http URI [1].
   The only change being the addition of the mdas zone and domain name as
   part of the userinfo.

 srb:// [username.mdasdomain [.zone] [:password] @] host [:port] [/path]

   where square brackets [...] delineate optional components, the
   characters :, /, @, and . stand for themselves, and spaces should
   be ignored. If the optional port number is not included, the default
   port 5544 will be used.

2.2   ABNF Grammar

   The SRB URI is defined in ABNF as shown below. Note that it
   utilizes the Core Rules specified in section 6.1 of [2].

```
   SRB-URI     =   "srb://" address [ abs_path ]
   address     =   [ accountinfo "@" ] hostport
   accountinfo =   userinfo [ ":" password ]
   userinfo    =   username "." mdasdomain [ "." zone ]
   username    =   1*(alphanum / "-" / "_" / escaped)
   mdasdomain  =   1*(alphanum / "-" / "_" / escaped)
   zone        =   1*(alphanum / "-" / "_" / escaped)
   password    =   1*(unreserved / escaped)
   hostport    =   host [ ":" port ]
   host        =   hostname / IPv4address / IPv6reference
   hostname    =   *( domainlabel "." ) toplabel [ "." ]
   domainlabel =   alphanum / alphanum *( alphanum / "-" ) alphanum
   toplabel    =   ALPHA / ALPHA *( alphanum / "-" ) alphanum
   IPv4address =   1*3DIGIT "." 1*3DIGIT "." 1*3DIGIT "." 1*3DIGIT
   IPv6reference  =  ; as specified in RFC2732 [3]
   port        =   1*DIGIT
   abs_path    =   ; as specified in RFC2396 [4]
   alphanum    =   ALPHA / DIGIT
   escaped     =   "%" HEXDIG HEXDIG
```

   The host is case insensitive. The "username", "mdasdomain","password",
   "fsegment" and "segment" are Unicode [3] strings that shall be

UTF-8 [4] encoded and then escaped as necessary. In those fields,
all characters are case sensitive.

3.   Intended Usage

   The SRB URI is intended to help an entity resolve the address of
   another SRB entity, where an "entity" may be a user, a device, or a
   service. The "accountinfo" portion of the URL specifies an alias
   for the entity, without carrying any information about the location
   of the entity. The "hostport", on the other hand, is the domain name
   of an Endpoint, Gatekeeper, Border Element, or other functional
   element to which SRB calls may be directed or for which services may
   be performed.

4.   Applications and/or protocols, which may use SRB URI scheme

   SRB URIs may be carried by other protocols. SRB URIs may be also
   contained within web pages or within XML data, which may be utilized
   by SRB entities in order to initiate calls or perform services.

5.   Acknowledgments

   This document is prepared and posted on behalf of the Storage
   Resource Broker group at SDSC.

6.   Security Considerations

   The basic authentication scheme is a non-secure method of filtering
   unauthorized access to resources on an SRB server. It does not
   prevent the Entity-Body from being transmitted in clear text across
   the physical network used as the carrier. It is based on the
   assumption that the connection between the client and the server can
   be regarded as a trusted carrier. As this is not generally true on
   an open network, the basic authentication scheme should be used
   accordingly. In spite of this, clients should implement the scheme
   in order to communicate with servers that use it. The SRB URI does
   not prevent additional authentication schemes and encryption
   mechanisms from being employed to increase security. [1]

   When an SRB URI is carried within SRB messages, security is
   addressed by the SRB security framework. When an SRB URI is
   carried within other protocols, the security is addressed within
   the corresponding protocol. In general, security, as it relates to
   the usage and carriage of the SRB URIs, is considered as an issue
   that should be addressed within scope of SRB or other relevant
   protocols and is not within the scope of this document. [6]

7.   IANA Considerations

   The purpose of this document is to serve as a reference point for
   registering the SRB URI scheme with IANA. This will ensure that
   there is no duplication of the URI scheme "srb".

Registration Template

   URI scheme name: srb

   URI scheme syntax: Section 2 of this document

   Character encoding considerations: Section 2 of this document

   Intended usage: Section 3 of this document

   Applications and/or protocols which use this scheme: Section 4 of
   this document

   Interoperability considerations: None. (Section 2 of this
   document contains the first version of "srb" URI definition.)

   Security considerations: Section 6 of this document

   Relevant publications: Rajasekar, A., Wan, M., Moore, R.,
   Schroeder, W., Kremenek, G., Jagatheesan, A., Cowart, C., Zhu, B.
   Chen, S., & Olschanowsky R., (2003). Storage Resource Broker -
   Managing Distributed Data in a Grid. Journal of the CSI, 33(4),
   42-54.

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8.   Informative References

   [1] Berners-Lee, T., Fielding, R. and H. Frystyk, "Hypertext
        Transfer Protocol -- HTTP/1.0", RFC 1945, May 1996.

   [2] Crocker, D., Editor, and P. Overell "Augmented BNF for Syntax
        Specifications: ABNF", RFC 2234, November 1997.

   [3] Hinden, R., Carpenter, B. and L. Masinter, "Format for Literal
        IPv6 Addresses in URL's", RFC 2732, December 1999.

   [4] Berners-Lee, T., Fielding, R. and L. Masinter, "Uniform Resource
        Identifiers (URI): Generic Syntax", RFC 2396, August 1998.

   [4] ISO/IEC 10646-1:1993, Information technology "Universal
        Multiple-Octet Coded Character Set (USC)" Part 1: Architecture
        and Basic Multilingual Plane.

   [5] Yergeau, F., "UTF-8, a transformation format of ISO 10646", RFC
        2279, January 1998.

   [6] Levin, O., "H.323 Uniform Resource Locator (URL) Scheme
        Registration", RFC 3508, April 2003.

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