The AAA and AAAS Uniform Resource Identifier (URI) schemes
draft-garcia-aaa-uri-00

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Abstract

This memo normatively defines the ABNF of the AAA and AAAS URI
schemes and provides instructions to IANA to register them in the
namespace of registered URI schemes.
# Table of Contents

1. Introduction ................................................. 3  
2. Terminology ................................................. 3  
3. The AAA and AAAS URIs ....................................... 3  
4. Examples ...................................................... 4  
5. IANA Considerations ......................................... 5  
6. Security Considerations ..................................... 5  
7. Acknowledgements ............................................ 5  

   Normative References ........................................ 5  
   Informative References ...................................... 6  
   Author’s Address ............................................. 6  

   Intellectual Property and Copyright Statements ............... 7
1. Introduction


This memo defines the syntax of the AAA and AAAS URI for the purpose of the registration of both URIs in the Official IANA Registry of URI schemes. The syntax of both URIs defined in this document is compatible with that initially defined in RFC 3588.

2. Terminology

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 RFC 2119 [1] and indicate requirement levels for compliant implementations.

3. The AAA and AAAS URIs

This section defines the syntax of the AAA and AAAS URI schemes in augmented Backus-Naur Form (BNF) defined in RFC 2234 [2]. The syntax in this section adopts the definitions of "absoluteURI", "host" and "port" from RFC 2396 [3] and their corresponding updates specified in RFC 2732 [4].

Both the AAA and the AAAS URI schemes are used to identify resources related to authentication, authorization and accounting (AAA) functions that are accessed with AAA protocols such as RADIUS [9] or Diameter [11].

The AAA URI scheme indicates that transport layer security is not required or used. The AAAS URI scheme indicates the requirement to the AAA protocol to use a transport protocol that provides security functions, such as TLS [8].

There URIs use USASCII character encoding scheme.

The AAA and AAA URI schemes have the following ABNF:

AAA-URI   = "aaa://" host [":" port] [ transport ] [ protocol ]
AAAS-URI  = "aaas://" host [":" port] [ transport ] [ protocol ]
The semantics and syntax of "host" and "port" are defined in RFC 2396 [3] and updated in RFC 2732 [4]. If "host" includes a "hostname" (as opposed to an "IPv4address" or an "IPv6address") then it MUST be a Fully Qualified Domain Name. If the port is empty or not given, the default port allocated to Diameter (3868) is assumed.

OPEN ISSUE: Note that the initial definition of the AAA/AAAS URIs in RFC 3588 mandate an FQDN. Now we have included "host", that can be either a hostname, IPv4address or IPv6address (see RFC 2396 and RFC 2732 for details). Does the inclusion of IP addresses represent a problem?

```
transport          = ";transport=" transport-protocol
transport-protocol = ( "tcp" / "sctp" / "udp" )
```

OPEN ISSUE: As TLS over TCP and TLS over SCTP are transport protocols, should we add them to the list of transport protocols above?

TCP refers to the Transmission Control Protocol specified in RFC 793 [6]. SCTP refers to the Stream Control Transport Protocol specified in RFC 2960 [10]. UDP refers to the User Datagram Protocol specified in RFC 768 [5]. TLS refers to the Transport Layer Security over TCP specified in RFC 2246 [8]. If the transport parameter is empty or not given, the default transport protocol, SCTP, is assumed.

```
protocol           = ";protocol=" aaa-protocol
aaa-protocol       = ( "diameter" / "radius" / "tacacs+" )
```

The token "diameter" refers to the Diameter base protocol specified in RFC 3588 [11]. The token "radius" refers to the RADIUS protocol specified in RADIUS [9]. The token "tacacs+" refers to the TACACS protocol defined in RFC 1492 [7]. If the protocol parameter is not given or empty, the default AAA protocol, Diameter, is assumed.

Diameter does not provide support for UDP as a transport protocol, therefore, UDP MUST NOT be used when Diameter is the AAA protocol.

4. Examples

The following are examples of valid AAA and AAAS URIs:

```
aaa://host.example.com;transport=tcp
aaaas://host.example.com;transport=tls;protocol=diameter
aaa://host.example.com;protocol=diameter
aaa://host.example.com:6666;protocol=diameter
aaa://host.example.com:6666;transport=tcp;protocol=diameter
```
aaa://host.example.com:1813;transport=udp;protocol=radius

5. IANA Considerations

This memo instructs IANA the following actions:
- To include "aaa" and "aaas" in the Official IANA Registry of URI Schemes, [http://www.iana.org/assignments/uri-schemes](http://www.iana.org/assignments/uri-schemes)
- To create a new "transport" sub-registry under [http://www.iana.org/assignments/aaa-parameters](http://www.iana.org/assignments/aaa-parameters), whose values are as per Section 3.
- To create a new "protocol" sub-registry under [http://www.iana.org/assignments/aaa-parameters](http://www.iana.org/assignments/aaa-parameters), whose values are as defined Section 3.

Contact information: IETF AAA Working group. In case the WG does no exist anymore, any person appointed by the IETF Operations and Management Area Director.

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Change control:
- OPEN ISSUE: Need to define the procedure to add new parameters or tokens to existing parameters to those URIs. Is an expert review needed?

6. Security Considerations

This memo does not specify a protocol, but the syntax of the AAA and AAAS URI. The AAAS URI is used to indicate that a secured transport layer is required, such as TLS [8]. These URIs are transport independent, therefore, each particular protocol defines its own security considerations.

7. Acknowledgements

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Normative References

Informative References


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