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Traversal Using Relays around NAT (TURN) Uniform Resource Identifiers
draft-petithuguenin-behave-turn-uri-bis-05

[Abstract](#)

This document defines two URI schemes that can be used to provision the configuration values needed by the resolution mechanism defined in [\[RFC5928\]](#).

[Status of this Memo](#)

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1. Introduction

[\[RFC5928\]](#) defines a resolution mechanism to convert a secure flag, an host name or IP address, a eventually empty port, and an eventually empty transport to a list of IP address, port, and TURN transport tuples.

To simplify the provisioning of TURN clients, this document defines a TURN and a TURNS URI scheme that can carry the four components needed for the resolution mechanism.

[2. Syntax of a TURN or TURNS URI](#)

A TURN/TURNS URI has the following ABNF syntax [\[RFC5234\]](#):

```
turnURI      = scheme ":" turn-host [ ":" turn-port ]
               [ "?transport=" transport ]
scheme       = "turn" / "turns"
transport    = "udp" / "tcp" / transport-ext
transport-ext = 1*unreserved
turn-host    = IP-literal / IPv4address / reg-name
turn-port    = *DIGIT
IP-literal   = "[" ( IPv6address / IPvFuture ) "]"
IPvFuture    = "v" 1*HEXDIG "." 1*( unreserved / sub-delims / ":" )
IPv6address  =
    6( h16 ":" ) ls32
    /
    "::" 5( h16 ":" ) ls32
    / [
        h16 ] "::" 4( h16 ":" ) ls32
    / [ *1( h16 ":" ) h16 ] "::" 3( h16 ":" ) ls32
    / [ *2( h16 ":" ) h16 ] "::" 2( h16 ":" ) ls32
    / [ *3( h16 ":" ) h16 ] "::" h16 ":" ls32
    / [ *4( h16 ":" ) h16 ] "::" ls32
    / [ *5( h16 ":" ) h16 ] "::" h16
    / [ *6( h16 ":" ) h16 ] "::"
h16          = 1*4HEXDIG
ls32         = ( h16 ":" h16 ) / IPv4address
IPv4address  = dec-octet "." dec-octet "." dec-octet "." dec-octet
dec-octet    = DIGIT                ; 0-9
              / %x31-39 DIGIT        ; 10-99
              / "1" 2DIGIT           ; 100-199
              / "2" %x30-34 DIGIT     ; 200-249
              / "25" %x30-35          ; 250-255
reg-name     = *( unreserved / pct-encoded / sub-delims )
```

<unreserved>, <sub-delims>, and <pct-encoded> are specified in [\[RFC3986\]](#).

<secure> is equal to false if <scheme> is equal to "turn" and equal to false if <scheme> is equal to "turns".

[3. Security Considerations](#)

Security considerations for the resolution mechanism are discussed in [\[RFC5928\]](#).

The "turn" and "turns" URI schemes do not introduce any specific security issues beyond the security considerations discussed in [\[RFC3986\]](#).

[4. IANA Considerations](#)

This section contains the registration information for the "turn" and "turns" URI Schemes (in accordance with [\[RFC4395\]](#)).

4.1. TURN URI Registration

URI scheme name: turn

Status: permanent

URI scheme syntax: See [Section 2](#).

URI scheme semantics: See [\[RFC5928\]](#).

Encoding considerations: There are no encoding considerations beyond those in [\[RFC3986\]](#).

Applications/protocols that use this URI scheme name:

*The "turn" URI scheme is intended to be used by applications that might need access to a TURN server.

Interoperability considerations: N/A

Security considerations: See [Section 3](#).

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References: This document.

[Note to RFC Editor: Replace "This document" with reference to this document]

4.2. TURNS URI Registration

URI scheme name: turns

Status: permanent

URI scheme syntax: See [Section 2](#).

URI scheme semantics: See [\[RFC5928\]](#).

Encoding considerations: There are no encoding considerations beyond those in [\[RFC3986\]](#).

Applications/protocols that use this URI scheme name:

*The "turns" URI scheme is intended to be used by applications that might need access to a TURN server.

Interoperability considerations: N/A

Security considerations: See [Section 3](#).

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References: This document.

[Note to RFC Editor: Replace "This document" with reference to this document]

5. Acknowledgements

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This document was written with the xml2rfc tool described in [\[RFC2629\]](#).

[6. References](#)

[6.1. Normative References](#)

[RFC3986]	Berners-Lee, T., Fielding, R. and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax" , STD 66, RFC 3986, January 2005.
[RFC5234]	Crocker, D. and P. Overell, " Augmented BNF for Syntax Specifications: ABNF ", STD 68, RFC 5234, January 2008.
[RFC5928]	Petit-Huguenin, M., " Traversal Using Relays around NAT (TURN) Resolution Mechanism ", RFC 5928, August 2010.

[6.2. Informative References](#)

[RFC2629]	Rose, M.T., "Writing I-Ds and RFCs using XML" , RFC 2629, June 1999.
[RFC4395]	Hansen, T., Hardie, T. and L. Masinter, " Guidelines and Registration Procedures for New URI Schemes ", BCP 35, RFC 4395, February 2006.
[I-D.wood-tae-specifying-uri- transports]	Wood, L, " Specifying transport mechanisms in Uniform Resource Identifiers ", Internet-Draft draft-wood-tae-specifying-uri-transports-08, May 2010.

[Appendix A. Release notes](#)

This section must be removed before publication as an RFC.

[Appendix A.1. Modifications between petithuguenin-05 and petithuguenin-04](#)

*Nits.

*Fixed schemes registration.

[Appendix A.2. Modifications between petithuguenin-04 and petithuguenin-03](#)

*Fixed references code link.

[Appendix A.3. Modifications between petithuguenin-03 and petithuguenin-02](#)

*Updated RFC references.

[Appendix A.4.](#) Modifications between petithuguenin-02 and petithuguenin-01

*Nits.

[Appendix A.5.](#) Modifications between petithuguenin-01 and petithuguenin-00

*Shorten I-D references.

[Appendix A.6.](#) Design Notes

*<password> is not used in the URIs because it is deprecated.
<username> is not used in the URIs because it is not used to guide the resolution mechanism.

*As discussed in Dublin, there is no generic parameters in the URI to prevent compatibility issues.

[Appendix A.7.](#) Running Code Considerations

*Reference Implementation of TURN URI parser and resolver (<<http://debian.implementers.org/turn-uri.tar.gz>>). Marc Petit-Huguenin. Implements version -05.

[Appendix A.8.](#) TODO List

*Instead of using a transport parameter perhaps a scheme prefix, as proposed in [\[I-D.wood-tae-specifying-uri-transports\]](#) is better.

*Same thing for using a "+s" suffix instead of a "s" suffix for security.

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