MIME TYPE definition for IP in IP tunnels
<draft-durand-ngtrans-tunnel-mime-type-00.txt>

Status of Memo

This document is an Internet-Draft and is in full conformance with all provisions of Section 10 of RFC2026.
This document is an Internet-Draft. Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at http://www.ietf.org/ietf/1id-abstracts.txt
The list of Internet-Draft Shadow Directories can be accessed at http://www.ietf.org/shadow.html.

Abstract

IP in IP tunnels are very common in the Internet. They are often used to deploy new technologies such as multicast or IPv6 when the underlying infrastructure is not ready to natively support those new protocols. Virtual Private Network are also often build using IP in IP tunnels.
This document describe a MIME type that provide configuration information about IP in IP tunnels.

1. Introduction

Managing IP in IP tunnels can be a complex task and various approaches have been developed to assist network administrators. In the context of IPv6 transition, the tunnel broker model [BROKER] has been developed for that very purpose and highlighted the need for a formal description of IPv6 in IPv4 tunnels. However, such a description can be made more generic and provide information about almost any IP in IP tunnels.

2. Related work
3. Tunnel management

Tools and/or protocols to do the actual tunnel management are out of the scope of this document.

4. MIME type definition

In conformance with [MIME], the MIME object to describe IP in IP tunnels is defined in the IETF tree as a subtype of the "Application" MIME type.

The proposed subtype is "tunnel".

The tunnel described by this object is a unidirectional tunnel from host src to host dst.

4.1 Mandatory Parameters

4.1.1 Encapsulation type

parameter name: encapsulation-type
parameter value: Integer
defined values:
  0 IPv4 in IPv4
  1 IPv6 in IPv4
  2 IPv6 in IPv6
  3 IPv4 in IPv6

4.1.2 src exposed IP source address

parameter name: src-exposed
parameter value: any textual representation of an IPv4 or an IPv6 address enclosed in square brackets.

Src exposed source address is the source address in the outer header of any packet originated from src through the tunnel.

4.1.3 src encapsulated IP source address

parameter name: src-encapsulated
parameter value: any textual representation of an IPv4 or an IPv6 address enclosed in square brackets.

Src encapsulated source address is the source address in the inner header of any packet originated from src through the tunnel.

4.1.4 dst exposed IP source address

parameter name: dst-exposed
parameter value: any textual representation of an IPv4 or an IPv6 address enclosed in square brackets.

Dst exposed source address is the destination address in the outer header of any packet originated from src through the tunnel.
4.1.5 dst encapsulated IP source address

parameter name: dst-encapsulated
parameter value: any textual representation of an IPv4 or an IPv6 address enclosed in square brackets.

Dst encapsulated source address is the destination address in the inner header of any packet originated from src through the tunnel.

4.2 Optional Parameters

4.2.1 Exposed IP addresses lifetime

parameter name: exposed-lifetime
parameter value: Integer

The lifetime in second of the exposed pair of IP addresses of src and dst. A value of zero means infinite lifetime.

4.2.2 Encapsulated IP addresses lifetime

parameter name: encapsulated-lifetime
parameter value: Integer

The lifetime in second of the encapsulated pair of IP addresses of src and dst. A value of zero means infinite lifetime.

4.2.3 E-mail contact for src

parameter name: src-email
parameter value: valid email address, according to [MAIL822].

This is the administrative contact email address for host src. The exact semantic of this parameter is beyond the scope of this document.

4.2.4 E-mail contact for dst

parameter name: dst-email
parameter value: valid email address, according to [MAIL822].

This is the administrative contact email address for host dst. The exact semantic of this parameter is beyond the scope of this document.

5. IANA registration

To: ietf-types@iana.org
Subject: Registration of MIME media type application/tunnel

MIME media type name: application

MIME subtype name: tunnel

Required parameters: encapsulation-type,
src-exposed, src-exposed,
dst-exposed, dst-encapsulated
Optional parameters: exposed-lifetime, encapsulated-lifetime, src-email, dst-email

Encoding considerations: None

Security considerations:
The information contained in this MIME type may be used by application to configured tunnel. Inaccurate information can introduce all kind of security hazards, thus it is of the utmost importance that these information are transferred over a secure channel, that their originator is authenticated and that they are guaranteed not to be corrupted.

Interoperability considerations:
The mandatory parameters are necessary to guarantee interoperability.

Published specification: none

Applications which use this media type:
Tunnel Brokers, tunnel servers, tunnel clients, any database storing tunnel information.

Additional information:

  Magic number(s): none
  File extension(s): none
  Macintosh File Type Code(s): none

Person & email address to contact for further information:

Alain Durand
Alain.Durand@sun.com

Intended usage: COMMON

Author/Change controller: Alain.Durand@sun.com

6. Security Considerations

The information contained in this MIME type may be used by application to configured tunnel. Inaccurate information can introduce all kind of security hazards, thus it is of the utmost importance that these information are transferred over a secure channel, that their originator is authenticated and that they are guaranteed not to be corrupted. The exact procedure/protocols to be used for this purpose is out of the scope of this document.

7. References

[BROKER] Durand, A., Fasano, P., Guardini, I., Lento, D.,
IPv6 Tunnel Broker,
draft-ietf-ngtrans-broker-03.txt, work in progress

[MIME] Freed, N., Borenstein, N.,
"Multipurpose Internet Mail Extensions (MIME) Part four: MIME registration procedure,
RFC 2048,
November 1996.


8. Author’s addresses

Alain Durand
SUN Microsystems, Inc
901 San Antonio Road
MPK17-202
Palo Alto, CA 94303-4900
USA
Tel: +1 650 786 7503
Mail: Alain.Durand@sun.com