IPv6 Maintenance
Internet-Draft
Intended status: Standards Track
Expires: January 7, 2016

S. Krishnan
Ericsson

July 6, 2015

# Uplink access technology indications in Router Advertisements
# draft-krishnan-6man-uat-00

Abstract

In IPv6 networks Router Advertisements can be used for providing common configuration information to nodes that are attached. There are some scenarios where it is advantageous for routers to provide their uplink access technology information to attached hosts. This document describes a neighbor discovery option that will allow the routers to do so.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at http://datatracker.ietf.org/drafts/current/.

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."

This Internet-Draft will expire on January 7, 2016.

Table of Contents

1. Introduction . . . . . 2
2. Terminology . . . . . 2
3. Uplink Access Technology option . . . . . 3
4. Router Behavior . . . . . 3
5. Host Behavior . . . . . 4
6. Security Considerations . . . . . 4
7. IANA Considerations . . . . . 4
8. Acknowledgements . . . . . 4
9. Normative References . . . . . 4
Author's Address . . . . . 5

## 1. Introduction

In several IPv6 networks, the access technology used by routers on their uplinks is different from that used on their downlinks. There are some scenarios where it is advantageous for routers to provide their uplink access technology information to the hosts attached on the downlinks. One such example is a tethering scenario where a mobile phone that uses a cellular uplink such as LTE, shares its internet connection to hosts that connect over a local WiFi link. In this case it would be beneficial for hosts to know that the uplink connection is a cellular link and potentially modify their behavior based on their knowledge. e.g. Application and software updates (and similar bulk transfers) could be rescheduled based on administrative configuration.

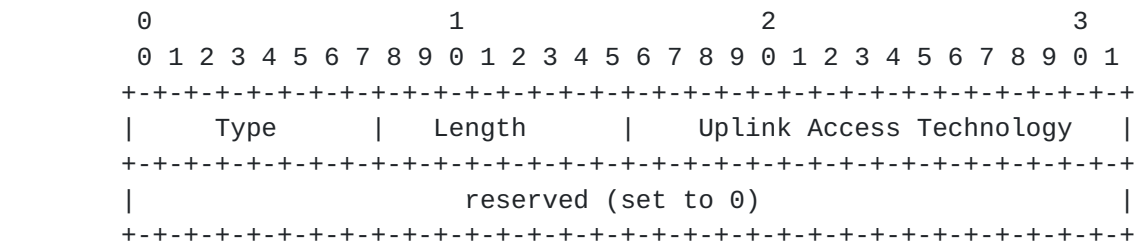
This document describes an IPv6 Neighbor discovery option [RFC4861] for routers to advertise their uplink access technology(ies) in a router advertisement message.

## 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 [RFC2119].

## 3. Uplink Access Technology option

This option is to be carried in RA messages sent out by a router on a given link. It specifies the uplink type(s) that the router uses.




Type

8-bit identifier of the type of option. The option identifier for the UAT option will be allocated by the IANA.

Length

8-bit unsigned integer. The length of the option (including the type and length fields) in units of 8 octets. It MUST be set to 1.

Uplink Access Technology

A 16-bit field that specifies the uplink access technology used by the router sending the Router Avertisement carrying this option.

Figure 1: Uplink Access Technology (UAT) Option Layout

Multiple UAT options MAY be present in a single Router Advertisement message to allow for routers that use multiple uplinks. This document defines the following initial values for the UAT field that can be extended by adding new values to the IANA registry.

| UAT | Access Technology |
|---|---|
| 0x01 | 3GPP |
| 0x02 | DSL |
| 0x03 | Cable |
| 0x04 | 802.3 |

Figure 2

## 4. Router Behavior

The value of the UAT(s) provided in this option can either be administratively configured or implicitly derived from the access technology type on the uplink interfaces.

## 5. Host Behavior

The value of the UAT(s) provided in this option is purely informational. It helps the hosts gleam additional information about the router's uplink and perform different actions. Legacy hosts that do not recognize this option will simply ignore it.

## 6. Security Considerations

An attacker may attempt to modify the information provided inside this option to make hosts . These attacks can easily be prevented by using SeND [RFC3971]

## 7. IANA Considerations

This document defines a new IPv6 neighbor discovery option for carrying the uplink access technology type(s). IANA is requested to create a new registry for storing uplink access technology types and populate it with the following initial values.

| UAT | Access Technology | Reference |
|---|---|---|
| 0x01 | 3GPP | [RFC-krishnan-6man-uat-00.txt] |
| 0x02 | DSL | [RFC-krishnan-6man-uat-00.txt] |
| 0x03 | Cable | [RFC-krishnan-6man-uat-00.txt] |
| 0x04 | 802.3 | [RFC-krishnan-6man-uat-00.txt] |

Figure 3

## 8. Acknowledgements

TBA.

## 9. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC3971] Arkko, J., Kempf, J., Zill, B., and P. Nikander, "SEcure Neighbor Discovery (SEND)", RFC 3971, March 2005.

[RFC4861] Narten, T., Nordmark, E., Simpson, W., and H. Soliman, "Neighbor Discovery for IP version 6 (IPv6)", RFC 4861, September 2007.

Author's Address

Suresh Krishnan
Ericsson
8400 Decarie Blvd.
Town of Mount Royal, QC
Canada

Phone: +1 514 345 7900 x42871
Email: suresh.krishnan@ericsson.com