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## Support for Mobile IP in RADIUS

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### [2.](#) Abstract

RFC 2002 describes the framework for Mobile IP, while [RFC 2290](#) describes how a mobile node and a peer negotiate the appropriate use of Mobile IP over a PPP link, through use of the IPCP IP Address and Mobile-IPv4 Configuration Options. This document describes how Mobile IP is supported within RADIUS.

### [3.](#) Mobile-IP-Configuration attribute definition

#### Description

This Attribute describes how a mobile node and NAS negotiate the appropriate use of Mobile IP over a PPP link. It MAY be included in Access-Accept or Accounting-Request packets.

A summary of the Mobile-IP-Configuration Attribute format is shown below. The fields are transmitted from left to right.

```

0                                     1                                     2                                     3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2

```

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```

+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      Type      |      Length      |      Address      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|      Address (cont)      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

Type

? for Mobile-IP-Configuration

Length

6

Address

The Address field is four octets. When included in an Access-Accept, the Address field MUST contain the value 0xFFFFFFFF, indicating that Mobile-IP is authorized. When included in an Accounting-Request, the Address field is set to the Home Address supplied by the mobile node.

Discussion

The purpose of the Mobile-IP-Configuration attribute is to provide the NAS with the information needed to negotiate the appropriate use of Mobile IP over a PPP Link, as described in [RFC 2290](#) [2].

When a Mobile-IP-Configuration attribute is present, the absence of a Framed-IP-Address attribute is interpreted as indicating that a co-located care-of-address MUST NOT be assigned. If a Framed-IP-Address attribute is included along with a Mobile-IP-Configuration attribute, then a co-located care-of-address MAY be assigned by the NAS. A co-located care-of-address may be assigned statically or dynamically.

Since the mobile node may not always wish to do mobile IP, inclusion of the Mobile-IP-configuration attribute does not imply that the mobile node must use mobile IP. However, when the Mobile-IP-Configuration attribute is omitted, use of Mobile IP is not authorized, and MUST NOT be negotiated by the NAS.

If the mobile node prefers a co-located care-of-address, this will typically be indicated during PPP IPCP negotiation by setting the IP Address option to zero, and the Mobile-IPv4 Configuration option to the Home Address. If a foreign agent care-of-address is preferred, this will typically be indicated during PPP IPCP negotiation by sending only a Mobile-IPv4 Configuration option with the Home Address.

As described in [2], if the NAS is not Mobile-IP capable or is not authorized to negotiate Mobile IP (no Mobile-IP-Configuration attribute), then it will respond with a Configure-Reject. If the mobile node has requested a co-located care-of-address, and the NAS

can comply (Framed-IP-Address attribute included along with a Mobile-IP-Configuration attribute), the NAS will typically reply with a Configure-NAK including an IP Address Option set to the co-located care-of-address or home address, depending on whether the mobile node is attached via a foreign link or home link.

If the NAS only supports a foreign agent care-of-address (Mobile-IP-Configuration attribute but no Framed-IP-Address attribute), it will typically reply with a Configure-NAK including an IP Address Option set to zero. If the mobile node has requested a foreign agent care-of-address, and the NAS can negotiate Mobile-IP (Mobile-IP-Configuration attribute included), then the NAS MUST reply with a Mobile-IPv4 Configuration Option set to the Home Address indicated by the mobile node.

As noted in [2], the NAS need not know the mobile node's Home Address beforehand in order to decide how to reply. This information is not useful because if the Home Address expected by the NAS did not match that provided by the mobile node, there would be no way to correct the problem, since a Configure-NAK is undefined for the Mobile-IPv4 Configuration Option in IPCP.

#### [4.](#) Acknowledgements

Thanks to Jim Solomon of Motorola for useful discussions of this problem space.

#### [5.](#) References

- [1] C. Perkins. "IP Mobility Support." [RFC 2002](#), IBM October 1996.
- [2] J. Solomon, S. Glass, "Mobile-IPv4 Configuration Option for PPP IPCP." [RFC 2290](#), Motorola, FTP Software, February 1998.

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