

[<draft-ietf-radius-ms-ba-attr-01.txt>](#)

## RADIUS Attributes for Multilink PPP Bandwidth Allocation Control

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### **2. Abstract**

This document describes a set of vendor-specific RADIUS attributes designed to support the dynamic control of bandwidth allocation in multilink PPP [[1](#)]. Attributes are defined that specify whether use of the PPP Bandwidth Allocation Protocol [[2](#)] is allowed or required on incoming calls, the level of line capacity (expressed as a percentage) below which utilization must fall before a link is eligible to be dropped, and the length of time (in seconds) that a link must be underutilized before it is dropped.





0	BAP usage not allowed
1	BAP usage allowed
2	BAP usage required

#### **4.2. MS-Link-Utilization-Threshold**

##### Description

This Attribute represents the percentage of available bandwidth utilization below which the link must fall before the link is eligible for termination. Permissible values for the MS-Link-Utilization-Threshold Attribute are in the range 1-100, inclusive. It is only used in Access-Accept packets.

A summary of the MS-Link-Utilization-Threshold 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
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| Vendor-Type | Vendor-Length |                               Value
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
                        Value (cont) |
+---+---+---+---+---+---+---+---+---+---+

```

##### Vendor-Type

14 for MS-Link-Utilization-Threshold

##### Vendor-Length

6

##### Value

The Value field is four octets in length and represents the percentage of available bandwidth utilization below which the link must fall before the link is eligible for termination. Permissible values are in the range 1-100, inclusive.

#### **4.3. MS-Link-Drop-Time-Limit**

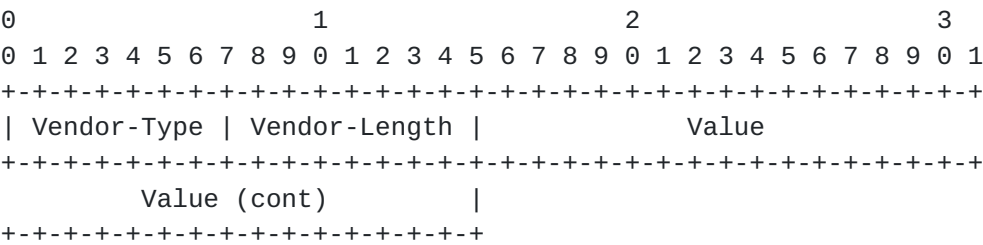
##### Description

The MS-Link-Drop-Time-Limit Attribute indicates the length of time (in seconds) that a link must be underutilized before it is dropped. It MAY only be included in Access-Accept packets.

A summary of the MS-Link-Drop-Time-Limit Attribute format is given



below. The fields are transmitted left to right.



Vendor-Type  
15 for MS-Link-Drop-Time-Limit

Vendor-Length  
6

Value  
The Value field represents the number of seconds that a link must be underutilized (i.e., display bandwidth utilization below the threshold specified in the MS-Link-Utilization-Threshold Attribute) before the link is dropped.

5. Table of Attributes

The following table provides a guide to which of the above attributes may be found in which kinds of packets, and in what quantity.

Request	Accept	Reject	Challenge	Acct-Request	#	Attribute
0	0-1	0	0	0	13	MS-BAP-Usage
0	0-1	0	0	0	14	MS-Link-Utilization-Threshold
0	0-1	0	0	0	15	MS-Link-Drop-Time-Limit

The following table defines the meaning of the above table entries.

- 0 This attribute MUST NOT be present in packet.
- 0+ Zero or more instances of this attribute MAY be present in packet.
- 0-1 Zero or one instance of this attribute MAY be present in packet.

6. Security Considerations

None.



## **7. Acknowledgements**

Thanks to Narendra Gidwani (nareng@microsoft.com) and Aydin Edguer (edguer@MorningStar.com) for useful comments.

## **8. Expiration Date**

This document expires August 20, 1998.

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## **11. References**

- [1] Sklower, K., et. al., "The PPP Multilink Protocol (MP)", RFC 1990, August 1996
- [2] Richards, C. and Smith, K., "The PPP Bandwidth Allocation Protocol (BAP) The PPP Bandwidth Allocation Control Protocol (BACP)" [RFC 2125](#), March 1997





- [3] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997
- [4] Rigney, C., et. al., "Remote Access Dial In User Service", [RFC 2138](#), April 1997