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RADIUS Accounting
Interim Accounting Record Extension
<[draft-ietf-radius-acct-interim-01.txt](#)>

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Abstract

The RADIUS Accounting document [[1](#)] defines a mechanism which is used by a Network Access Server (NAS) to send accounting information to a RADIUS server. The current protocol defines a Start and Stop record. This document defines an interim record which is used to make the RADIUS accounting protocol more robust.

[1.0](#) Introduction

The current protocol defines a message which a NAS sends to the RADIUS server when a session begins, and a message when the session ends. All information which is necessary for the billing process (i.e. session time, number of bytes transferred, etc) are only available in the Accounting Stop message. Therefore if a NAS becomes unavailable for some time (i.e. power failure, reboot, network problem, etc...) it becomes impossible for a service provider to bill for sessions

initiated on the NAS (this is especially important with long lived sessions).

This document introduces a new accounting message which is sent from NAS to the RADIUS server which is called the interim accounting message. This message is sent in order to periodically update the RADIUS server with information pertaining to a specific session.

1.1 Specification of Requirements

In this document, several words are used to signify the requirements of the specification. These words are often capitalized.

MUST This word, or the adjective "required", means that the definition is an absolute requirement of the specification.

MUST NOT This phrase means that the definition is an absolute prohibition of the specification.

SHOULD This word, or the adjective "recommended", means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications must be understood and carefully weighed before choosing a different course.

MAY This word, or the adjective "optional", means that this item is one of an allowed set of alternatives. An implementation which does not include this option **MUST** be prepared to interoperate with another implementation which does include the option.

2.0 Operation

When a user is authenticated, a RADIUS server issues an Access-Accept in response to a successful Access-Request. If the server wishes to receive interim accounting messages for the given user it must include the Acct-Interim-Interval RADIUS attribute in the message, which indicates the interval in seconds between interim messages.

It is also possible to statically configure an interim value on the NAS itself. Note that a locally configured value on the NAS overrides a value found in an Access-Accept.

This scheme does not break backward interoperability since a RADIUS server not supporting this extension will simply not add the new Attribute. On the other hand, NAS' not supporting this extension will simply ignore the Attribute. This means that if a RADIUS Server uses

the interim extension for other purposes (i.e. resource management) it

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MUST be aware of NAS' which do not support this extension.

Note that all information in an interim message is cumulative (i.e. number of packets sent is the total since the beginning of the session, not since the last interim message).

It is envisioned that an Interim Accounting record would contain all of the attributes normally found in an Accounting Stop message with the exception of the Acct-Term-Cause attribute.

Since all the information is cumulative, a NAS MUST ensure that only a single generation of an interim Accounting message for a given session is present in the retransmission queue at any given time. This means that the NAS MUST first delete any pending interim messages for the given session (whose information is now obsolete) from the retransmissions before issuing a new interim message. Note that this event would only occur if the RADIUS accounting server was not reachable.

A NAS MAY use a fudge factor to add a random delay between Interim Accounting messages for separate sessions. This will ensure that a cycle where all messages are sent at once is prevented (this could occur if a primary link was recently restored and many dial-up users were directed to the same NAS at once).

Although this extension allows control from a central RADIUS Server, the authors wish to strongly caution against using low interval values (i.e. less than 60 seconds). In a NAS with large port densities, it can become a CPU intensive task as well as a waste of network bandwidth.

3.0 Attributes

This section defines the new RADIUS Attributes necessary to support the Interim Accounting extension.

3.1 Acct-Status-Type

Description

This attribute indicates whether this Accounting-Request marks the beginning of the user service (Start) or the end (Stop).

It MAY be used by the client to mark the start of accounting (for example, upon booting) by specifying Accounting-On and to mark the end of accounting (for example, just before a scheduled reboot) by specifying Accounting-Off.

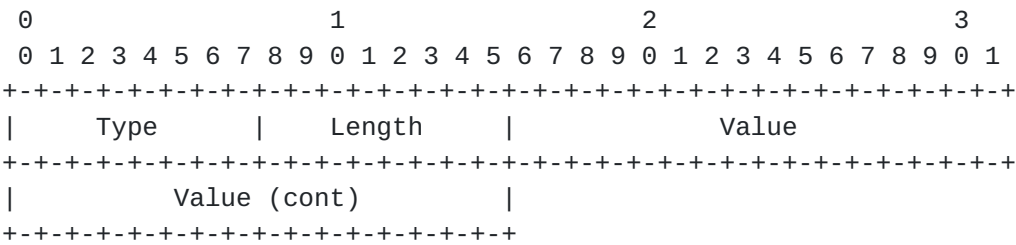
Additionally this attribute MAY indicate an interim update.

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A summary of the Acct-Status-Type attribute format is shown below. The fields are transmitted from left to right.



Type

40 for Acct-Status-Type.

Length

6

Value

The Value field is four octets and can have one of the following values:

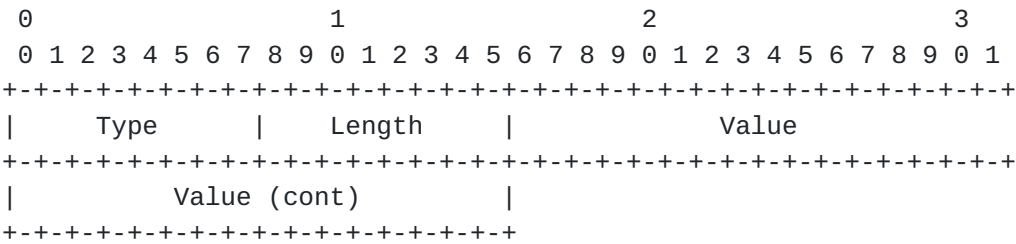
- 1 Start
- 2 Stop
- 3 Interim Update
- 7 Accounting-On
- 8 Accounting-Off

3.2 Acct-Interim-Interval

Description

This attribute indicates the number of seconds between each interim update in seconds for this specific session. This value can only appear in the Access-Accept RADIUS message.

A summary of the Acct-Interim-Interval attribute format is shown below. The fields are transmitted from left to right.



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Type

85 for Acct-Interim-Interval.

Length

6

Value

The Value field contains the number of seconds between each interim update to be sent from the NAS for this session. The value MUST NOT be smaller than 60 and SHOULD NOT be less than 600.

4.0 Contacts

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5.0 References

- [1] Rigney, C., "RADIUS Accounting", [RFC 2139](#), April 1997.
- [2] Rigney, C., Rubens, A., Simpson, W., and Willens, S., "Remote Authentication Dial In User Service (RADIUS)", [RFC 2138](#), April 1997.

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