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G. Hunt
Unaffiliated
A. Clark
Telchemy
Q. Wu
Huawei
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Measurement Identity and information Reporting using SDES item and XR
Block
draft-ietf-xrblock-rtcp-xr-meas-identity-01.txt

Abstract

This document defines a RTCP SDES item and a RTCP XR Block carrying parameters which identify a measurement, to which one or more other RTCP XR Report Blocks may refer.

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1. Introduction

This draft defines one new RTCP SDES item and one new XR Report Block to carry parameters which identify a measurement for use in a range of RTP applications. The SDES item and the XR Report Block do not itself contain any measurement results (metrics). However, they provide information relevant to a measurement reported in one or more other block types, including

- o a field for incorporation of an application-specific auxiliary identifier,
- o the sequence number of the first packet of the RTP session,
- o the extended sequence numbers of the first packet of the current measurement interval, and the last packet included in the measurement,
- o the duration of the most recent measurement interval and
- o the duration of the interval applicable to cumulative measurements (which may be the duration of the RTP session to date).

The method for calculation of the extended RTP sequence number is provide in [RFC3550].

The RTCP SDES item containing the measurement identity is intended to provide information to relate RTP to a non-RTP session while the RTCP XR Report Block containing the measurement information is intended to provide a single copy of the information necessary to relate measurement data in the RTCP XR blocks to the stream, and measurement period, to which they refer. Commonly, multiple other small metric blocks contain measurement data for the same stream and period, and it would be a large overhead if all of these metric blocks carried duplicated data for measurement identification.

A RTCP Measurement Identity SDES packet MAY be associated with a set of RTCP XR metrics blocks which share the same application specific measurement identifier.

The RTCP XR Report Block MAY be associated with a set of RTCP XR metrics blocks which share the same information relevant to a reported measurement. There MAY be several such sets in an RTCP packet, in which each set share the same information relevant to a reported measurement. There MAY also be RTCP XR blocks in the packet which are not associated with a Measurement Information block, for example blocks which were defined before the Measurement Identity and information mechanism was introduced by this document.

1.1. RTCP and RTCP XR Reports

The use of RTCP for reporting is defined in [RFC3550]. [RFC3611] defined an extensible structure for reporting using an RTCP Extended Report (XR). This draft defines a new Extended Report block that MUST be used as defined in [RFC3550] and [RFC3611].

1.2. Performance Metrics Framework

The Performance Metrics Framework [PMOLFRAME] provides guidance on the definition and specification of performance metrics. The RTP Monitoring Architectures [MONARCH] provides guideline for reporting block format using RTCP XR. Metrics or SDES item described in this draft either reference external definitions or define metrics generally in accordance with [PMOLFRAME][MONARCH].

1.3. Applicability

The RTCP SDES item and the RTCP XR block defined in this document provides information relevant to the measurement for members of a family of RTCP XR metrics blocks which are designed to use it. To use the mechanism defined here, the RTCP XR block containing measurement information is not required in the same RTCP packet as the SDES item contain measurement identity.

2. Terminology

2.1. Standards Language

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 RFC 2119 [RFC2119]

3. Measurement Identity SDES Item

This section defines the format of Measurement Identity SDES item. The SDES item is carried in the RTCP SDES packet. The packet format for the RTCP SDES is defined in Section 6.5 of [RFC3550]. Each SDES packet has a fixed-length field for version, source count, packet type (PT), length as well as a variable-length field for the SDES item. In the SDES packet, the PT field is set to SDES (202).

3.1. APSI: Application Specific Identifier SDES Item

```

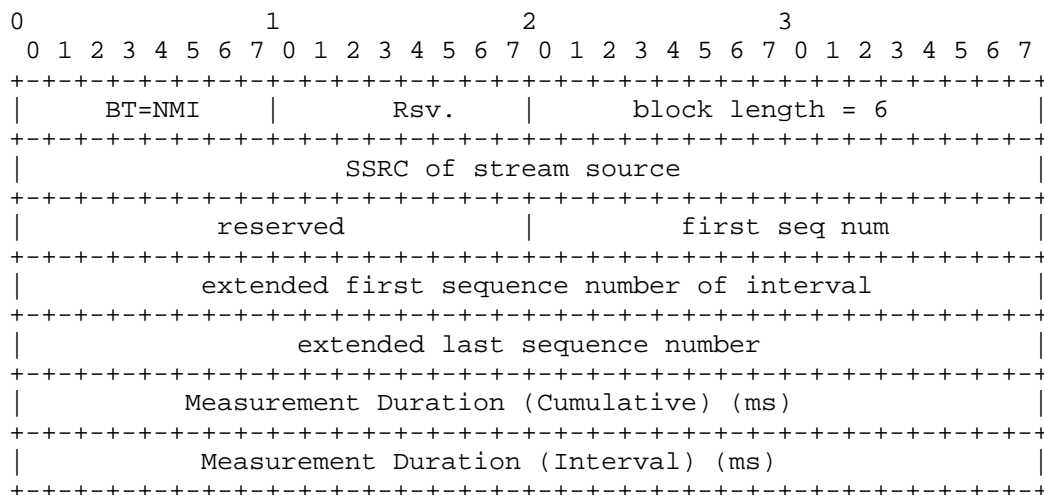
      0               1               2               3
    0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   APSI=TBD   |   length   |application specific identifier
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   ....
+---+---+---+---+---+

```

Application specific identifier is an additional identifier which is useful in the context of a specific application, e.g. an MPEG-2 transport identifier [MPEG2]. Where the identifier is less than 32 bits, the identifier SHOULD be mapped into the most significant bits of the field. If no additional identifier is provided, all bits of the field MUST be set to zero. This item MUST be ignored by applications which are not configured to make use of it.

4. Measurement Information XR Block

4.1. Report Block Structure



Report Block Structure

4.2. Definition of Fields in Measurement Information Report Block

Block type (BT): 8 bits

A Measurement Information Report Block is identified by the constant NMI.

[Note to RFC Editor: please replace NMI with the IANA provided RTCP XR block type for this block.]

Rsv.: 8 bits

This field is reserved for future definition. In the absence of such a definition, the bits in this field MUST be set to zero and MUST be ignored by the receiver.

Block Length: 16 bits

The length of this report block in 32-bit words minus one. For the Measurement Information block, the block length is equal to 7.

SSRC of source: 32 bits

As defined in Section 4.1 of [RFC3611].

Reserved: 16 bits

These bits are reserved. They MUST be ignored by receivers. They MUST be set to zero by senders.

First seq num: 16 bits

The RTP sequence number of the first received RTP packet of the session, used to determine the number of packets contributing to cumulative measurements.

Extended first sequence number of interval: 32 bits

The extended RTP sequence number of the first received RTP packet of the current measurement interval.

Extended last sequence number: 32 bits

The extended RTP sequence number of the last received RTP packet which contributed to this measurement.

Measurement Duration (Cumulative) (ms): 32 bits

The duration in ms of the reporting interval applicable to Cumulative reports which use this Measurement Information block.

Measurement Duration (Interval) (ms): 32 bits

The duration in ms of the reporting interval applicable to Interval reports which use this Measurement Information block.

5. IANA Considerations

New SDES types for RTCP SDES are subject to IANA registration. For general guidelines on IANA considerations for RTCP SDES, refer to [RFC3550].

5.1. New RTCP SDES Type value

This document assigns additional five SDES types in the IANA "RTCP XR Block Type Registry" to the Measurement Identity SDES items as follow:

abbrev.	name	value
APSI:	Application Specific Identifier	TBD

[Note to RFC Editor: please replace APSI with the IANA provided RTCP SDES type for the SDES item.]

5.2. New RTCP XR Block Type value

This document assigns the block type value NMI in the IANA "RTCP XR Block Type Registry" to the "Measurement Information Block".

[Note to RFC Editor: please replace NMI with the IANA provided RTCP XR block type for this block.]

5.3. Contact information for registrations

The contact information for the registrations is:

Qin Wu (sunseawq@huawei.com)

101 Software Avenue, Yuhua District
Nanjing, Jiangsu 210012
China

6. Security Considerations

RTCP reports can contain sensitive information since they can provide information about the nature and duration of a session established between two or more endpoints. Therefore, the use of security mechanisms with RTP documented in Section 9 of [RFC3550] should apply.

7. References

7.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", March 1997.
- [RFC3550] Schulzrinne, H., "RTP: A Transport Protocol for Real-Time Applications", RFC 3550, July 2003.
- [RFC3611] Friedman, T., Caceres, R., and A. Clark, "RTP Control Protocol Extended Reports (RTCP XR)", November 2003.

7.2. Informative References

- [MONARCH] Wu, Q., "Monitoring Architectures for RTP", ID draft-ietf-avtcore-monarch-04, August 2011.
- [MPEG2] "ISO/IEC, "Standard 13818-1"", December 2000.
- [PMOLFRAME] Clark, A. and B. Claise, "Framework for Performance Metric Development", ID draft-ietf-pmol-metrics-framework-12, July 2011.

Appendix A. Change Log

Note to the RFC-Editor: please remove this section prior to publication as an RFC.

A.1. draft-ietf-xrblock-xr-rtcp-meas-identity-00

The following are the major changes to draft-ietf-avt-rtcp-xr-meas-identity-02:

- o Change the use of SDES item to convey measurement identity instead of XR Block in section 2.
- o Update references.
- o Update security section and remove SDP signaling section.

A.2. draft-ietf-xrblock-xr-rtcp-meas-identity-01

The following are the major changes to draft-ietf-xrblock-xr-rtcp-meas-identity-00:

- o Replace SDES item containing additional measurement information with XR Block.
- o Add section 2 to describe following RFC2119 language.
- o Add Section 1.2 to make SDES item and XR Report be compliant with RFC3550 and RFC3611
- o Add Section 1.3 to make SDES item and XR Report follow Performance Metrics Framework and RTP Monitoring Architecture.
- o Add section5.2 to register the new RTCP XR Block Type value.
- o Remove RTCP SDES Type values that are needed.

Authors' Addresses

Geoff Hunt
Unaffiliated

Email: r.geoff.hunt@gmail.com

Alan Clark
Telchemy Incorporated
2905 Premiere Parkway, Suite 280
Duluth, GA 30097
USA

Email: alan.d.clark@telchemy.com

Qin Wu
Huawei
101 Software Avenue, Yuhua District
Nanjing, Jiangsu 210012
China

Email: sunseawq@huawei.com

