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Guidelines for Choosing an RTP Control Protocol (RTCP) Canonical Name
(CNAME) for Hosts with Private IP Addresses
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Abstract

The RTP Control Protocol (RTCP) Canonical Name (CNAME) is a persistent transport-level identifier for an RTP endpoint. While the Synchronisation Source (SSRC) identifier of an RTP endpoint may change if a collision is detected, or when the RTP application is restarted, the CNAME is meant to stay unchanged, so that RTP endpoints can be uniquely identified and associated with their RTP media streams. For proper functionality, CNAMEs should be unique within the participants of an RTP session. The recommendations for choice of the RTCP CNAME provided in RFC 3550 are insufficient to achieve uniqueness in some environments, particularly private IP networks. This memo updates the guidelines in RFC 3550 to allow endpoints to choose unique CNAMEs in these environments.

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1. Introduction

In Section 6.5.1 of [RFC3550], there are a number of recommendations for choosing the RTCP CNAME for an RTP endpoint. These recommend that the CNAME is of the form "user@host" for multiuser systems, or "host" if the username is not available. The "host" part is specified to be the fully qualified domain name of the host from which the real-time data originates, or the numeric representation of the IP address of the interface from which the RTP data originates for hosts that do not have a domain name.

As noted in [RFC3550], the use of private network address space (e.g., 10.0.0.0/8) can result in hosts having network addresses that are not globally unique, and can lead to non-unique CNAMEs if hosts with private addresses and no direct IP connectivity to the public Internet have their RTP packets forwarded to the public Internet through an RTP-level translator. [RFC3550] suggests that such applications provide a configuration option to allow the user to choose a unique CNAME, and puts the burden on the translator to translate CNAMEs from private addresses to public addresses if necessary to keep private addresses from being exposed. Experience has shown that this does not work in practice, therefore this memo proposes an alternate algorithm for CNAME choice in private networks.

2. Requirements Notation

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. Choice of RTCP CNAME in Private Networks

In private IP networks, using the numeric representation of the private IP address as the RTCP CNAME is NOT RECOMMENDED, since it results in RTCP CNAMEs that are not globally unique.

A host that does not know its fully qualified domain name, and is configured with a private IP address on the interface it is using for RTP communication, SHOULD use the numeric representation of the layer-2 (MAC) address of the interface it is using for RTP communication as the "host" part of its CNAME. For IEEE 802 MAC addresses, such as Ethernet, the standard colon-separated hexadecimal format is to be used, e.g., "00:23:32:af:9b:aa".

4. Security Considerations

The security considerations of [RFC3550] apply to this document as well.

5. IANA Considerations

There are no IANA considerations in this document.

6. Normative References

- [RFC3550] Schulzrinne, H., Casner, S., Frederick, R., and V. Jacobson, "RTP: A Transport Protocol for Real-Time Applications", STD 64, RFC 3550, July 2003.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

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