Stream Control Transmission Protocol (SCTP) Chunk Flags Registration

Abstract

This document defines the procedure for registering chunk flags with
the Internet Assigned Numbers Authority (IANA) for the Stream Control
Transmission Protocol (SCTP). It updates RFC 4960 and also defines
the IANA registry for contents for currently defined chunk types. It
does not change SCTP in any other way.

Status of This Memo

This is an Internet Standards Track document.

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1. Introduction

   [RFC4960], which currently defines the Stream Control Transmission
   Protocol (SCTP), provides a procedure to define new chunk types.
   However, several protocol extensions currently being discussed need
   to define new chunk flags for existing chunks.

   This document updates RFC 4960 to overcome this limitation. It
   defines the procedure to register chunk flags and specifies the
   registry entries for existing chunk types. The protocol is not
   changed in any other way. Therefore, only Section 14.1 of [RFC4960]
   is affected.

2. Conventions

   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. IANA Considerations

   Section 3.1 provides the updated procedure for SCTP Chunk Type
   registration; it replaces Section 14.1 of [RFC4960].

   Section 3.2 provides a new procedure for SCTP Chunk Flag
   registration. A registry entry must be created for each SCTP Chunk
   Type.

   Section 3.3 provides the SCTP Chunk Flag registry values for the SCTP
   Chunk Types specified in [RFC3758], [RFC4820], [RFC4960], [RFC4895],
   and [RFC5061].

3.1. Updated IETF-Defined Chunk Extension

   The assignment of new chunk type codes is done through an IETF Review
   action, as defined in [RFC5226]. Documentation of a new chunk MUST
   contain the following information:

   a) A long and short name for the new chunk type;

   b) A detailed description of the structure of the chunk, which MUST
       conform to the basic structure defined in Section 3.2 of
       [RFC4960];

   c) A detailed definition and description of intended use of each
       field within the chunk, including the chunk flags if any.
       Defined chunk flags will be used as initial entries in the chunk
       flags table for the new chunk type;

   d) A detailed procedural description of the use of the new chunk
       type within the operation of the protocol.

   The last chunk type (255) is reserved for future extension if
   necessary.

   For each new chunk type, IANA creates a registration table for the
   chunk flags of that type. The procedure for registering particular
   chunk flags is described in the following Section 3.2.

3.2. New IETF Chunk Flags Registration

   The assignment of new chunk flags is done through an RFC required
   action, as defined in [RFC5226]. Documentation of the chunk flags
   MUST contain the following information:

   a) A name for the new chunk flag;

   b) A detailed procedural description of the use of the new chunk
       flag within the operation of the protocol. It MUST be considered
       that implementations not supporting the flag will send '0' on
       transmit and just ignore it on receipt.

   IANA selects a chunk flags value. This must be one of 0x01, 0x02,
   0x04, 0x08, 0x10, 0x20, 0x40, or 0x80, which MUST be unique within
   the chunk flag values for the specific chunk type.

3.3. Initial Registrations

   This section describes the initial values of the chunk flag tables,
   one table for each chunk. Most tables are currently empty. IANA
   used these values to create the new registry.

3.3.1. DATA Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference
0x01	E bit	[RFC4960]
0x02	B bit	[RFC4960]
0x04	U bit	[RFC4960]

3.3.2. INIT Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.3. INIT ACK Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.4. SACK Chunk Flags

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+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.5. HEARTBEAT Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.6. HEARTBEAT ACK Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.7. ABORT Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
| 0x01             | T bit           | [RFC4960] |
+------------------+------------------+-----------+
```

3.3.8. SHUTDOWN Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.9. SHUTDOWN ACK Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference

3.3.10. ERROR Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference

3.3.11. COOKIE ECHO Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference

3.3.12. COOKIE ACK Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference

3.3.13. ECNE Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference

3.3.14. CWR Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference

3.3.15. SHUTDOWN COMPLETE Chunk Flags

Chunk Flag Value	Chunk Flag Name	Reference
0x01	T bit	[RFC4960]

3.3.16. AUTH Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.17. ASCONF ACK Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.18. PAD Chunk Flags

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+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.19. FORWARD TSN Chunk Flags

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+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

3.3.20. ASCONF Chunk Flags

```
+------------------+------------------+-----------+
| Chunk Flag Value | Chunk Flag Name | Reference |
+------------------+------------------+-----------+
```

4. Security Considerations

This document does not add any additional security considerations in
addition to the ones given in [RFC4960].

5. Acknowledgments

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Housley, Suresh Krishnan, and Dan Romascanu for their invaluable
comments.

6. Normative References

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