IANA Registry Update for the SEED Cipher Algorithm Support in the Multimedia Internet KEYing (MIKEY) draft-seokung-msec-mikey-seed-04

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Abstract

This document updates IANA registries to support the SEED block cipher algorithm for the Secure Real-time Transport Protocol (SRTP) and the secure Real-time Transport Control Protocol (SRTCP) in Multimedia Internet KEYing (MIKEY).

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1. Introduction

This document updates IANA registries to support the SEED [RFC4269] block cipher algorithm for the Secure Real-time Transport Protocol (SRTP) and the Secure Real-time Transport Control Protocol (SRTCP) [RFC3711] in Multimedia Internet KEYing (MIKEY) [RFC3830].

1.1. SEED

SEED is a 128-bit symmetric key block cipher that has been developed by KISA (Korea Information Security Agency) and a group of experts since 1998. The input/output block size of SEED is 128-bit and the key length is also 128-bit. SEED has a 16-round Feistel structure.

SEED is a Korean National Industrial Association standard and is widely used in South Korea for electronic commerce and various security products such as firewall, VPN, and so on.

2. Additions to [RFC3830] payload

This section specifies the new values to use the SEED cipher algorithm for SRTP and SRTCP. We define three modes of running SEED, SEED in Counter Mode (SEED-CTR), SEED in Counter with CBC-MAC Mode (SEED-CCM) and SEED in Galois/Counter Mode (SEED-GCM) Mode. These are defined in [I-D.ietf-avt-seed-srtp].

2.1. Modified Table 6.10.1.b from [RFC3830]

Modified Table 6.10.1.b from [RFC3830] :

<table>
<thead>
<tr>
<th>SRTP encr alg</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NULL</td>
<td>0</td>
</tr>
<tr>
<td>AES-CM</td>
<td>1</td>
</tr>
<tr>
<td>AES-F8</td>
<td>2</td>
</tr>
<tr>
<td>SEED-CTR</td>
<td>3 (NEW)</td>
</tr>
<tr>
<td>SEED-CCM</td>
<td>4 (NEW)</td>
</tr>
<tr>
<td>SEED-GCM</td>
<td>5 (NEW)</td>
</tr>
</tbody>
</table>

Figure 1: Table 6.10.1.b from [RFC3830] (Revised)
2.2. Modified Table 6.10.1.d from [RFC3830]

Modified Table 6.10.1.d from [RFC3830]:

<table>
<thead>
<tr>
<th>SRTP PRF</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES-CM</td>
<td>0</td>
</tr>
<tr>
<td>SEED-CTR</td>
<td>1 (NEW)</td>
</tr>
</tbody>
</table>

Figure 2: Table 6.10.1.d from [RFC3830] (Revised)

3. Security Considerations

No security problem has been found on SEED. SEED is secure against all known attacks including Differential cryptanalysis, linear cryptanalysis, and related key attacks. The only known attack is an exhaustive search for the key. For further security considerations, the reader is encouraged to read [SEED-EVAL].

4. IANA Considerations

In order to align Figure 1 with Table 6.10.1.b in [RFC3830] and Figure 2 with Table 6.10.1.d in [RFC3830], IANA is requested to add the values described in Section 2 to their [RFC3830] Payload Name Space.
5. References

5.1. Normative References

[I-D.ietf-avt-seed-srtp]


5.2. Informative References

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