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Reclassification of Suite B Documents to Historic Status

Abstract

This document reclassifies the RFCs related to the United States National Security Agency (NSA) Suite B cryptographic algorithms as Historic, and it discusses the reasons for doing so. This document moves seven Informational RFCs to Historic status: RFCs 5759, 6239, 6318, 6379, 6380, 6403, and 6460. In addition, it moves three obsolete Informational RFCs to Historic status: RFCs 4869, 5008, and 5430.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for informational purposes.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Not all documents approved by the IESG are candidates for any level of Internet Standard; see Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at https://www.rfc-editor.org/info/rfc8423.

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1. Introduction

Several RFCs profile security protocols for use with the National Security Agency (NSA) Suite B Cryptography. Suite B is no longer supported by NSA, and the web pages that specify the cryptographic algorithms are no longer available.

In July 2015, NSA published the Committee for National Security Systems Advisory Memorandum 02-15 as the first step in replacing Suite B with NSA's Commercial National Security Algorithm (CNSA) Suite. Information about the CNSA Suite can be found in [CNSA].

2. Rationale

As indicated in [CNSA], NSA is transitioning from Suite B to the CNSA Suite. As a result, the profiles of the security protocols for the Suite B algorithms are now only of historic interest.

3. The RFCs Related to Suite B

Between 2007 and 2012, several Suite-B-related RFCs were published to profile security protocols for use with the Suite B algorithms. They are:

- [RFC4869], "Suite B Cryptographic Suites for IPsec" (Obsoleted by RFC 6379)
- [RFC5008], "Suite B in Secure/Multipurpose Internet Mail Extensions (S/MIME)" (Obsoleted by RFC 6318)
- [RFC5430], "Suite B Profile for Transport Layer Security (TLS)" (Obsoleted by RFC 6460)
- [RFC5759], "Suite B Certificate and Certificate Revocation List (CRL) Profile"
- [RFC6239], "Suite B Cryptographic Suites for Secure Shell (SSH)"
- [RFC6318], "Suite B in Secure/Multipurpose Internet Mail Extensions (S/MIME)"
- [RFC6379], "Suite B Cryptographic Suites for IPsec"
- [RFC6380], "Suite B Profile for Internet Protocol Security (IPsec)"
- [RFC6403], "Suite B Profile of Certificate Management over CMS"
- [RFC6460], "Suite B Profile for Transport Layer Security (TLS)"

4. Documents That Reference the Suite-B-Related RFCs

These RFCs reference each other several times. These cross-references are not examined further in this document.

Other RFCs make reference to these Suite-B-related RFCs; these references are discussed in the following subsections.

4.1. Documents That Reference RFC 4869

One other RFC makes reference to RFC 4869 [RFC4869].

RFC 6071, "IP Security (IPsec) and Internet Key Exchange (IKE) Document Roadmap" [RFC6071], points out that RFC 4869 adds four pre-defined suites based upon Suite B specifications. They are:

- IKE/ESP suite "Suite-B-GCM-128"
- IKE/ESP suite "Suite-B-GCM-256"
- IKE/AH suite "Suite-B-GMAC-128"
- IKE/AH suite "Suite-B-GMAC-256"

In each case, these suite definitions make use of algorithms that are defined in other RFCs. No interoperability or security concerns are raised if implementations continue to make use of these suite names.

4.2. Documents That Reference RFC 5759

One other RFC makes reference to RFC 5759 [RFC5759].

RFC 6187, "X.509v3 Certificates for Secure Shell Authentication" [RFC6187], points out that RFC 5759 provides additional guidance for Elliptic Curve Digital Signature Algorithm (ECDSA) keys when used with Suite B.

4.3. Documents That Reference RFC 6379

One other RFC makes reference to RFC 6379 [RFC6379].

RFC 7321, "Cryptographic Algorithm Implementation Requirements and Usage Guidance for Encapsulating Security Payload (ESP) and Authentication Header (AH)" [RFC7321], points out that the AES-GCM algorithm is used by Suite B, and it has emerged as the preferred authenticated encryption method in IPsec. RFC 7321 has since been obsoleted by RFC 8221.

4.4. Documents That Reference RFC 6403

Two other RFCs make reference to RFC 6403 [RFC6403].

RFC 6402, "Certificate Management over CMS (CMC) Updates" [RFC6402], says that development of the profile for Suite B was the activity that demonstrated the need for these updates.

RFC 7030, "Enrollment over Secure Transport" [RFC7030], points out that the scenarios in Appendix of RFC 6403 are very similar to three of the scenarios described.

4.5. Documents That Reference RFC 6460

Three other RFCs make reference to RFC 6460 [RFC6460].

RFC 6605, "Elliptic Curve Digital Signature Algorithm (DSA) for DNSSEC" [RFC6605], states that material was copied liberally from RFC 6460. The Standards Track status of RFC 6605 is not affected by RFC 6460 moving to Historic status.

RFC 7525, "Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)" [RFC7525], observes that the Suite B profile of TLS 1.2 uses different ciphersuites.

RFC 8253, "PCEPS: Usage of TLS to Provide a Secure Transport for the Path Computation Element Communication Protocol (PCEP)" [RFC8253], points to RFC 6460 for the TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 and TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 ciphersuites. Both of these ciphersuites are defined in [RFC5289], which would have been a better reference. The Standards Track status of RFC 8253 is not affected by RFC 6460 moving to Historic status.

5. Impact of Reclassifying the Suite-B-Related RFCs to Historic

No interoperability or security concerns are raised by reclassifying the Suite-B-related RFCs to Historic status. As described in Section 4, none of the RFCs being moved to Historic status is the sole specification of a cryptographic algorithm or an identifier for a cryptographic algorithm.

6. IANA Considerations

This document has no IANA actions.

7. Security Considerations

No interoperability or security concerns are raised by reclassifying the Suite-B-related RFCs to Historic status.

NSA is transitioning away from some of the cryptographic algorithms and key sizes that were employed in the Suite B profiles.

8. References

8.1. Normative References

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8.2. Informative References

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[RFC6071] Frankel, S. and S. Krishnan, "IP Security (IPsec) and Internet Key Exchange (IKE) Document Roadmap", RFC 6071, DOI 10.17487/RFC6071, February 2011, <https://www.rfc-editor.org/info/rfc6071>.

[RFC6187] Igoe, K. and D. Stebila, "X.509v3 Certificates for Secure Shell Authentication", RFC 6187, DOI 10.17487/RFC6187, March 2011, <https://www.rfc-editor.org/info/rfc6187>.

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