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Deprecation of TLS 1.1 for Email Submission and Access

Abstract

This specification updates the current recommendation for the use of the Transport Layer Security (TLS) protocol to provide confidentiality of email between a Mail User Agent (MUA) and a Mail Submission Server or Mail Access Server. This document updates RFC 8314.

Status of This Memo

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1. Introduction

[RFC8314] defines the minimum recommended version of TLS as version 1.1. Due to the deprecation of TLS 1.1 in [RFC8996], this recommendation is no longer valid. Therefore, this document updates [RFC8314] so that the minimum version for TLS is TLS 1.2.

2. Conventions Used in This Document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

3. Updates to RFC 8314

OLD:

> 4.1. Deprecation of Services Using Cleartext and TLS Versions Less Than 1.1

NEW:

> 4.1. Deprecation of Services Using Cleartext and TLS Versions Less Than 1.2

OLD:

> As soon as practicable, MSPs currently supporting Secure Sockets Layer (SSL) 2.x, SSL 3.0, or TLS 1.0 SHOULD transition their users to TLS 1.1 or later and discontinue support for those earlier versions of SSL and TLS.

NEW:

> As soon as practicable, MSPs currently supporting Secure Sockets Layer (SSL) 2.x, SSL 3.0, TLS 1.0, or TLS 1.1 SHOULD transition their users to TLS 1.2 or later and discontinue support for those earlier versions of SSL and TLS.

In Section 4.1 of [RFC8314], the text should be revised from:

OLD:

> One way is for the server to refuse a ClientHello message from any client sending a ClientHello.version field corresponding to any version of SSL or TLS 1.0.

NEW:

> One way is for the server to refuse a ClientHello message from any client sending a ClientHello.version field corresponding to any version of SSL or TLS earlier than TLS 1.2.

OLD:

> It is RECOMMENDED that new users be required to use TLS version 1.1 or greater from the start. However, an MSP may find it necessary to make exceptions to accommodate some legacy systems that support only earlier versions of TLS or only cleartext.

NEW:

> It is RECOMMENDED that new users be required to use TLS version 1.2 or greater from the start. However, an MSP may find it necessary to make exceptions to accommodate some legacy systems that support only earlier versions of TLS or only cleartext.

OLD:

> If, however, an MUA provides such an indication, it MUST NOT indicate confidentiality for any connection that does not at least use TLS 1.1 with certificate verification and also meet the minimum confidentiality requirements associated with that account.

NEW:

> If, however, an MUA provides such an indication, it MUST NOT

> indicate confidentiality for any connection that does not at least use TLS 1.2 with certificate verification and also meet the minimum confidentiality requirements associated with that account.

OLD

> MUAs MUST implement TLS 1.2 [RFC5246] or later. Earlier TLS and SSL versions MAY also be supported, so long as the MUA requires at least TLS 1.1 [RFC4346] when accessing accounts that are configured to impose minimum confidentiality requirements.

NEW:

> MUAs MUST implement TLS 1.2 [RFC5246] or later, e.g., TLS 1.3 [RFC8446]. Earlier TLS and SSL versions MAY also be supported, so long as the MUA requires at least TLS 1.2 [RFC5246] when accessing accounts that are configured to impose minimum confidentiality requirements.

OLD:

> The default minimum expected level of confidentiality for all new accounts MUST require successful validation of the server's certificate and SHOULD require negotiation of TLS version 1.1 or greater. (Future revisions to this specification may raise these requirements or impose additional requirements to address newly discovered weaknesses in protocols or cryptographic algorithms.)

NEW:

> The default minimum expected level of confidentiality for all new accounts MUST require successful validation of the server's certificate and SHOULD require negotiation of TLS version 1.2 or greater. (Future revisions to this specification may raise these requirements or impose additional requirements to address newly discovered weaknesses in protocols or cryptographic algorithms.)

4. IANA Considerations

This document has no IANA actions.

5. Security Considerations

The purpose of this document is to document updated recommendations for using TLS with email services. Those recommendations are based on [RFC8996].

6. References

6.1. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC5246] Dierks, T. and E. Rescorla, "The Transport Layer Security (TLS) Protocol Version 1.2", RFC 5246, DOI 10.17487/RFC5246, August 2008, <https://www.rfc-editor.org/info/rfc5246>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <https://www.rfc-editor.org/info/rfc8174>.

[RFC8314] Moore, K. and C. Newman, "Cleartext Considered Obsolete: Use of Transport Layer Security (TLS) for Email Submission and Access", RFC 8314, DOI 10.17487/RFC8314, January 2018, <https://www.rfc-editor.org/info/rfc8314>.

[RFC8446] Rescorla, E., "The Transport Layer Security (TLS) Protocol

Version 1.3", RFC 8446, DOI 10.17487/RFC8446, August 2018, <https://www.rfc-editor.org/info/rfc8446>.

[RFC8996] Moriarty, K. and S. Farrell, "Deprecating TLS 1.0 and TLS 1.1", RFC 8996, DOI 10.17487/RFC8996, March 2021, <https://www.rfc-editor.org/info/rfc8996>.

6.2. Informative References

[RFC4346] Dierks, T. and E. Rescorla, "The Transport Layer Security (TLS) Protocol Version 1.1", RFC 4346, DOI 10.17487/RFC4346, April 2006, <https://www.rfc-editor.org/info/rfc4346>.

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