
Stream: Internet Engineering Task Force (IETF)
RFC: [9906](#)
Category: Standards Track
Published: November 2025
ISSN: 2070-1721
Authors: W. Hardaker USC/ISI W. Kumari Google

RFC 9906

Deprecate Usage of ECC-GOST within DNSSEC

Abstract

This document retires the use of GOST R 34.10-2001 (mnemonic "ECC-GOST") within DNSSEC.

RFC 5933 (now historic) defined the use of GOST R 34.10-2001 and GOST R 34.11-94 algorithms with DNS Security Extensions (DNSSEC). This document updates RFC 5933 by deprecating the use of ECC-GOST.

Status of This Memo

This is an Internet Standards Track document.

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). Further information on Internet Standards is available in 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/rfc9906>.

Copyright Notice

Copyright (c) 2025 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to BCP 78 and the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Revised BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Revised BSD License.

Table of Contents

1. Introduction	2
1.1. Requirements Notation	2
2. Deprecating ECC-GOST Algorithms in DNSSEC	3
3. Security Considerations	3
4. Operational Considerations	3
5. IANA Considerations	3
6. References	3
6.1. Normative References	3
6.2. Informative References	4
Acknowledgments	4
Authors' Addresses	4

1. Introduction

The use of the GOST R 34.10-2001 and GOST R 34.11-94 algorithms with the DNS Security Extensions (DNSSEC) [RFC9364] was documented in [RFC5933]. These two algorithms were deprecated by the Orders of the Federal Agency for Technical Regulation and Metrology of Russia (Rosstandart) in August 2012 and were superseded by GOST 34.10-2012 and GOST 34.11-2012, respectively. The use of these two newer algorithms in DNSSEC is documented in [RFC9558], and their associated requirement levels are not changed by this document.

Thus, the use of GOST R 34.10-2001 (mnemonic "ECC-GOST") and GOST R 34.11-94 is no longer recommended for use in DNSSEC [RFC9364].

1.1. Requirements Notation

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.

2. Deprecating ECC-GOST Algorithms in DNSSEC

The GOST R 34.11-94 algorithm [[RFC5933](#)] **MUST NOT** be used when creating Delegation Signer (DS) records. Validating resolvers **MUST** treat GOST R 34.11-94 DS records as insecure. If no other DS records of accepted cryptographic algorithms are available, the DNS records below the delegation point **MUST** be treated as insecure.

The ECC-GOST algorithm [[RFC5933](#)] **MUST NOT** be used when creating DNS Public Key (DNSKEY) and Resource Record Signature (RRSIG) records. Validating resolvers **MUST** treat RRSIG records created from DNSKEY records using these algorithms as unsupported algorithms. If no other RRSIG records of accepted cryptographic algorithms are available, the validating resolver **MUST** consider the associated resource records as insecure.

3. Security Considerations

This document potentially increases the security of the DNSSEC ecosystem by deprecating algorithms that are no longer recommended for use.

4. Operational Considerations

This document removes support for ECC-GOST. Zone operators currently making use of ECC-GOST-based algorithms should switch to algorithms that remain supported. DNS registries should prohibit their clients from uploading and publishing ECC-GOST-based DS records to ensure that they are using algorithms that are supported by DNSSEC validators and thus can be DNSSEC validated.

5. IANA Considerations

IANA has set the "Use for DNSSEC Signing", "Use for DNSSEC Validation", "Implement for DNSSEC Signing", and "Implement for DNSSEC Validation" columns in the "DNS Security Algorithm Numbers" registry [[DNSKEY-IANA](#)] [[RFC9904](#)] to **MUST NOT** for ECC-GOST (12). Note that the "Use for DNSSEC Signing" and "Implement for DNSSEC Delegation" columns were already set to **MUST NOT**.

IANA has set the "Use for DNSSEC Delegation", "Use for DNSSEC Validation", "Implement for DNSSEC Delegation", and "Implement for DNSSEC Validation" columns in the "Digest Algorithms" registry [[DS-IANA](#)] to **MUST NOT** for GOST R 34.11-94 (3). Note that the "Use for DNSSEC Signing" and "Implement for DNSSEC Delegation" columns were already set to **MUST NOT**.

6. References

6.1. Normative References

- [DNSKEY-IANA]** IANA, "DNS Security Algorithm Numbers", <<https://www.iana.org/assignments/dns-sec-alg-numbers>>.
- [DS-IANA]** IANA, "Digest Algorithms", <<http://www.iana.org/assignments/ds-rr-types>>.
- [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>>.
- [RFC5933]** Dolmatov, V., Ed., Chuprina, A., and I. Ustinov, "Use of GOST Signature Algorithms in DNSKEY and RRSIG Resource Records for DNSSEC", RFC 5933, DOI 10.17487/RFC5933, July 2010, <<https://www.rfc-editor.org/info/rfc5933>>.
- [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>>.
- [RFC9364]** Hoffman, P., "DNS Security Extensions (DNSSEC)", BCP 237, RFC 9364, DOI 10.17487/RFC9364, February 2023, <<https://www.rfc-editor.org/info/rfc9364>>.
- [RFC9904]** Hardaker, W. and W. Kumari, "DNSSEC Cryptographic Algorithm Recommendation Update Process", RFC 9904, DOI 10.17487/RFC9904, November 2025, <<https://www.rfc-editor.org/info/rfc9904>>.

6.2. Informative References

- [RFC9558]** Makarenko, B. and V. Dolmatov, Ed., "Use of GOST 2012 Signature Algorithms in DNSKEY and RRSIG Resource Records for DNSSEC", RFC 9558, DOI 10.17487/RFC9558, April 2024, <<https://www.rfc-editor.org/info/rfc9558>>.

Acknowledgments

The authors appreciate the comments and suggestions from the following IETF participants in helping produce this document: Mark Andrews, Steve Crocker, Brian Dickson, Peter Dickson, Thomas Graf, Paul Hoffman, Russ Housely, Shumon Huque, S. Moonesamy, Peter Thomassen, Stefan Ubbink, Tim Wicinski, Paul Wouters, and the many members of the DNSOP Working Group that discussed this specification.

Authors' Addresses

Wes Hardaker

USC/ISI

Email: ietf@hardakers.net

Warren Kumari

Google

Email: warren@kumari.net