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Using Classic McEliece in the Internet Key Exchange Protocol Version 2  
(IKEv2)  
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## Abstract

This document specifies how Classic McEliece Key Encapsulation Mechanism (KEM) is used in IKEv2.

## Status of This Memo

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## 1. Introduction

## 2. Terminology and 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.

It is assumed that readers are familiar with the IKEv2 protocol [RFC7296].

## 3. Classic McEliece KEM

## 4. Using Classic McEliece in IKEv2

## 5. Security Considerations

## 6. IANA Considerations

## 7. Acknowledgements

## 8. References

## 8.1. 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>>.

- [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>>.
- [RFC7296] Kaufman, C., Hoffman, P., Nir, Y., Eronen, P., and T. Kivinen, "Internet Key Exchange Protocol Version 2 (IKEv2)", STD 79, RFC 7296, DOI 10.17487/RFC7296, October 2014, <<https://www.rfc-editor.org/info/rfc7296>>.
- [RFC7383] Smyslov, V., "Internet Key Exchange Protocol Version 2 (IKEv2) Message Fragmentation", RFC 7383, DOI 10.17487/RFC7383, November 2014, <<https://www.rfc-editor.org/info/rfc7383>>.
- [RFC9242] Smyslov, V., "Intermediate Exchange in the Internet Key Exchange Protocol Version 2 (IKEv2)", RFC 9242, DOI 10.17487/RFC9242, May 2022, <<https://www.rfc-editor.org/info/rfc9242>>.
- [RFC9370] Tjhai, CJ., Tomlinson, M., Bartlett, G., Fluhrer, S., Van Geest, D., Garcia-Morchon, O., and V. Smyslov, "Multiple Key Exchanges in the Internet Key Exchange Protocol Version 2 (IKEv2)", RFC 9370, DOI 10.17487/RFC9370, May 2023, <<https://www.rfc-editor.org/info/rfc9370>>.
- [I-D.josefsson-mceliece]  
Josefsson, S., "Classic McEliece", Work in Progress, Internet-Draft, draft-josefsson-mceliece-03, 7 July 2025, <<https://datatracker.ietf.org/doc/html/draft-josefsson-mceliece-03>>.
- [I-D.nir-ipsecme-big-payload]  
Nir, Y., "A Larger Internet Key Exchange version 2 (IKEv2) Payload", Work in Progress, Internet-Draft, draft-nir-ipsecme-big-payload-06, 14 September 2025, <<https://datatracker.ietf.org/doc/html/draft-nir-ipsecme-big-payload-06>>.

## 8.2. Informative References

- [RFC9329] Pauly, T. and V. Smyslov, "TCP Encapsulation of Internet Key Exchange Protocol (IKE) and IPsec Packets", RFC 9329, DOI 10.17487/RFC9329, November 2022, <<https://www.rfc-editor.org/info/rfc9329>>.
- [I-D.smyslov-ipsecme-ikev2-reliable-transport]  
Smyslov, V. and T. Reddy.K, "Separate Transports for IKE and ESP", Work in Progress, Internet-Draft, draft-smyslov-

ipsecme-ikev2-reliable-transport-04, 15 April 2025,  
<[https://datatracker.ietf.org/doc/html/draft-smyslov-  
ipsecme-ikev2-reliable-transport-04](https://datatracker.ietf.org/doc/html/draft-smyslov-ipsecme-ikev2-reliable-transport-04)>.

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