

# Minimal G-IKEv2 Client

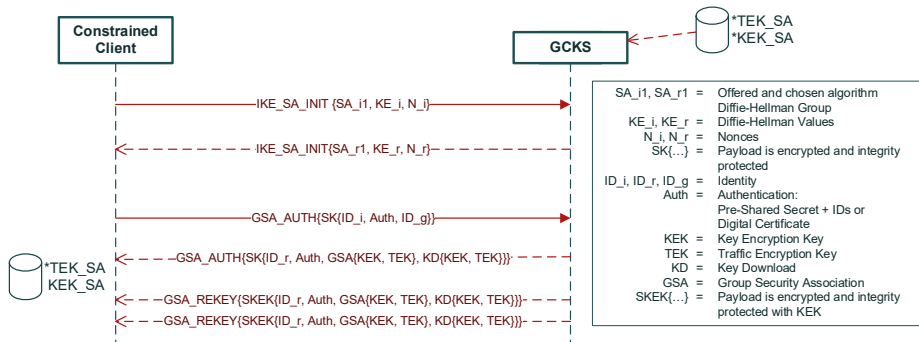
IETF99, 21.07.2017

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<https://tools.ietf.org/html/draft-yeung-g-ikev2-11>



# The Group IKEv2 Protocol

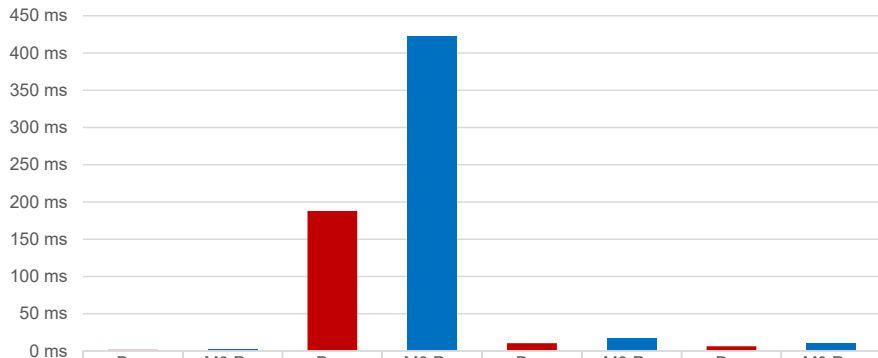


# Implementation

Feature	Required Memory
RIOT kernel (incl. stack)	2,560 Byte
RIOT IPv6 stack	1,024 Byte
RIOT UDP stack	1,024 Byte
RIOT net cache	928 Byte
RIOT packet buffer	1,280 Byte
IKE SA	~ 210 Byte
SAD for 1 group membership	~ 100 Byte
SPD for 1 group membership	40 Byte
$\Sigma$	6,142 Byte

Options	Arduino Uno	Arduino M0	Arduino Due
symmetric cipher (native RIOT support)			
Encryption (AES128)	✓	✓	✓
Integrity (HMAC-SHA256)	✓	✓	✓
PRF (HMAC-SHA1)	✓	✓	✓
asymmetric cipher (micro-ecc)			
Diffie-Hellman (SECP256R1)	✓	✓	✓
Flash Memory ( $\geq 57$ KB)	32 KB	256 KB	512 KB
RAM ( $\geq 6.2$ KB)	2 KB	32 KB	96 KB
<b>Total</b>	<b>X</b>	✓	✓

# Evaluation



	Due	M0 Pro	Due	M0 Pro	Due	M0 Pro	Due	M0 Pro
avg [ms]	1.62	2.62	187.92	421.94	10.29	17.41	6.32	10.53
std. dev. [ms]	0.00	0.00	0.11	0.13	0.00	0.00	0.40	0.00
min [ms]	1.62	2.62	187.72	421.71	10.29	17.41	6.15	10.52
max [ms]	1.62	2.62	188.11	422.18	10.29	17.41	7.26	10.53

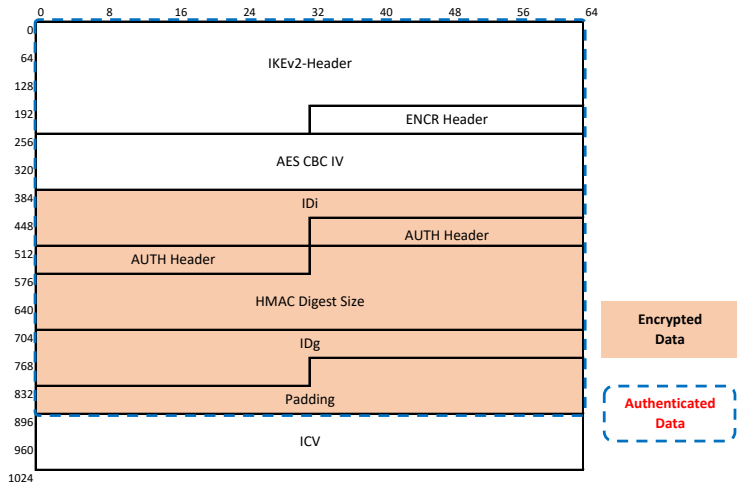
- Specifying Minimal GSA\_AUTH and GSA\_REKEY
  - difference to IKE\_AUTH is straightforward
  
- Providing guidelines for minimal server configuration

Implementation will be available open source  
for RIOT OS

Is the WG interested in designing a Minimal G-IKEv2  
(a la RFC 7815)?

# Backup

# GSA\_AUTH request





# GSA\_AUTH response

