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H. Deng
China Mobile
Y. Ma
Hitachi
Y. Wu
ZTE USA

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GRE key as the traffic selector for IPsec tunnel
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Status of this Memo

Abstract

This document describes the IPsec Tunnel based on GRE key as the traffic selector. When GRE key is used in IP packet transmission scenario of the wireless communication. Several enterprise need different security policy when transmit the packet through some unguaranteeded Internet cloudy. This document propose to adopt GRE key as the IPsec traffic selector.

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1. Introduction

GRE key has been used to allocate to encapsulate the traffic between two IP access gateways in many ways including the 3GPP [TS23.402].

Some company have some branch office would like to access from wireless Internet communication technologies, and coincidently some operator's mobile Internet is mixed together with public Internet, in such scenario, they may need different security policy for each connections.

In such scenarios, GRE key as the IPsec traffic selector is proposed.

2. Network Scenario

In some wireless communication, some IP mobilty management protocol has mandate the IPsec tunnel between different mobility agents.

Private addressing is common for user address allocation by operators. As shown in Fig. 1, if users from different enterprise headquarter (A and B) roaming to the same visited network and the same private address is allocated to users, the access router need to differentiate data from the users. In this case GRE key will be used to identify the tunnel from different users.

IPsec can be used to protect the GRE encapsulated packets. Operator can have its own security policy on whether to secure the data for users of different operators. For example, if user is from enterprise A, the data will be protected by some security policy. If the user is from enterprise B, the data will be protected differently.

In such case, it is impossible to differentiate packets from different users by using current traffic selector defined in IPsec. GRE key is necessary to be a traffic selector for Operator to deploy the security policy.

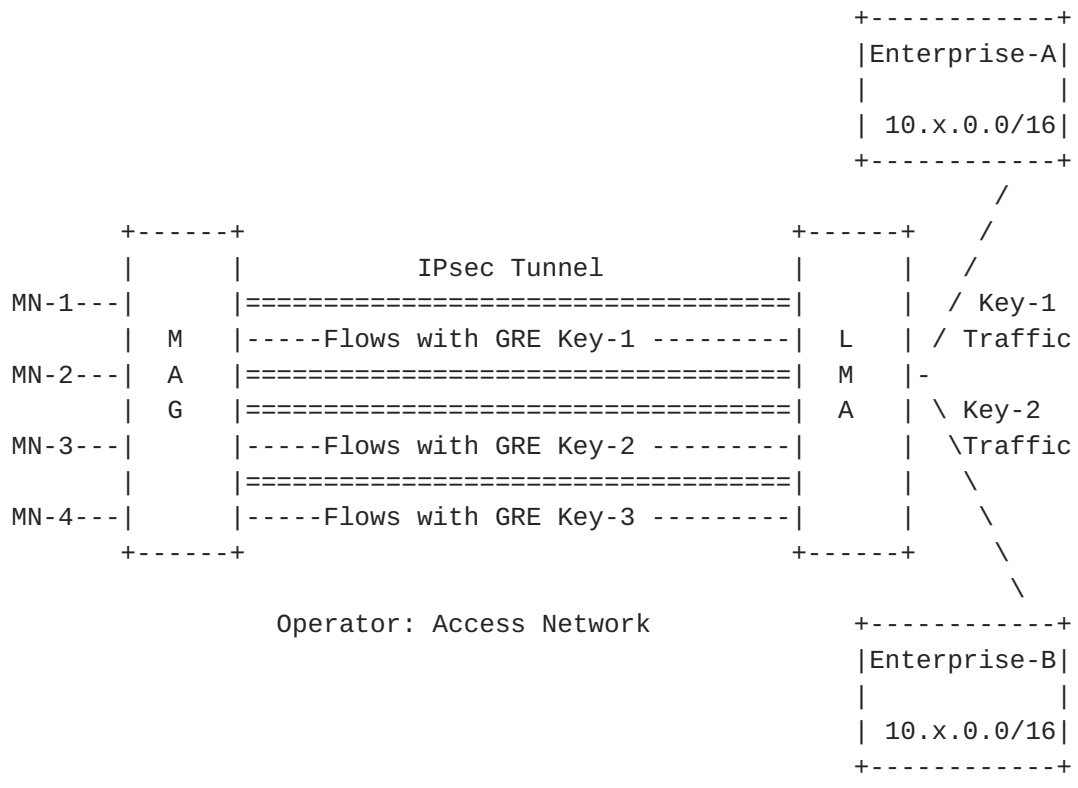

Figure 1: Network scenario for GRE key based IPsec Tunnel

3. GRE key as IPsec traffic selector

Current IKE/IPsec implementation does not support GRE key as the traffic selector. Extensions for IKE/IPsec is needed to support GRE key.

4. Security Considerations

IPsec tunnel has been used for protecting data transmission between two mobility agents.

5. IANA Consideration

This document defines no encodings, hence there are no IANA considerations.

6. Conclusion

This document describes a GRE key as traffic selector based IPsec tunnel mechanism.

7. Normative References

[RFC4301] Kent, S. and K. Seo, "Security Architecture for the Internet Protocol", RFC 4301, December 2005.

[TS23.402] 3GPP, "TS 23.402: Architecture enhancements for non-3GPP accesses", March 2008, <http://www.3gpp.org/ftp/Specs/html-info/23402.htm>.

Authors' Addresses

Hui Deng
China Mobile
53A,Xibianmennei Ave.,
Xuanwu District,
Beijing 100053
China

Email: denghui02@gmail.com

Yuanchen Ma
Hitachi
2, Kexueyuan Nanlu
Haidian District,
Beijing 100053
China

Email: ycma610103@gmail.com

Yingzhe Wu
ZTE USA
10105 Pacific Heights Blvd, Suite 250
San Diego, CA 92121
USA

Email: yingzhe.wu@zteusa.com

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