卫星IP网络可变区域分层IPSec的设计与实现

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摘要

分析了卫星IP网络性能增强技术与IPSec之间的矛盾，设计并提出了可变区域的分层IPSec协议，
将分层IPSec区域映射由静态分区转变为可选择的动态分区，并建立与之相应的复合型安全关联，
使得授权的性能增强网关不仅能够访问到TCP报头，而且能访问到应用层HTTP链接对象，在保障端对端安全的同时，
达到TCP性能增强与HTTP传输加速的双重目的。在此基础上，
对CZML　IPSec进行了实现和开销性能测试。实验证明CZML　IPSec没有增加不可接受的带宽开销与处理延时，
能够为卫星IP网络提供安全性并支持各种性能增强技术。

Design and implementation of CZML　IPSec over satellite　based internet

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Abstract

The confliction between satellite IP networks performance enhanced technology and IPSec was
analyzed, and multilayer IP security protocol with changeable zone was proposed. The scheme can
converts traditional static zone mapping to changeable dynamic mapping and corresponding
composite security relationship was constructed, so that it enables the licensed intermediate
nodes address not only TCP header but also object links in terms of HTML at uplayer. Hence, the
goals of TCP performance enhancement and HTTP transmission acceleration were achieved while
end to end security was held. The test for CZML　IPSec shows that bandwidth overhead and
processing time delay are not unacceptable. And CZML　IPSec can provide both end　to　end
security and performance enhancement for satellite IP networks.

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