

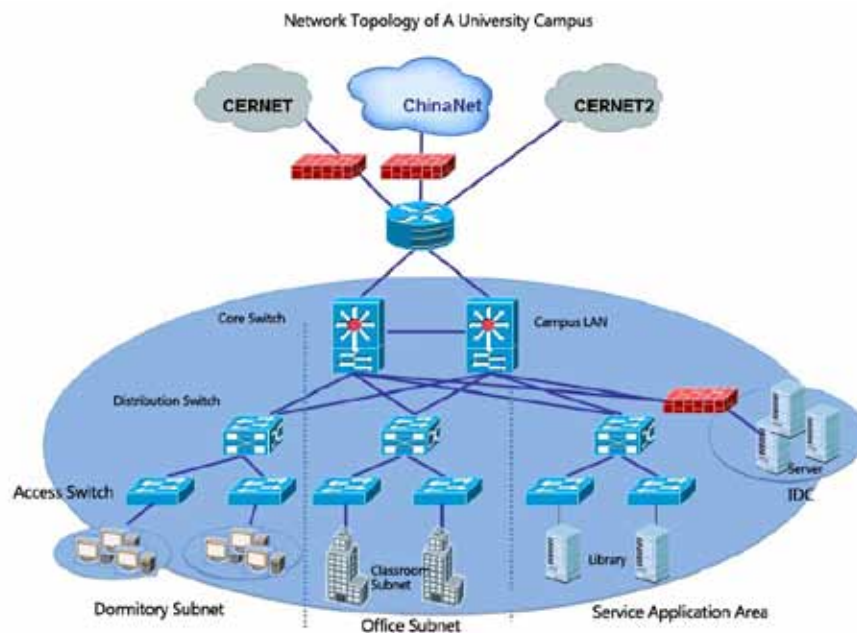
## Hillstone Network Solution for University Networks

### 1. High School Network Current Status & Security Problems Analysis

Colleges and universities are the cradle of internet technology. In many countries, college education is the first place where internet technology is used and where new network technology is experimented. In July, 1994, CERNET started a project to construct a network which interconnected all the colleges in China.

Campus LAN in China is almost always the first place where advanced network technology is used. This is because university campuses congregate lots of active users. Security problem and security outbreaks are also more prevalent in these networks.

Is it because network security is not emphasized on campus networks? On the contrary, university is also the first place that will experiment with new security technologies and security products. Colleges has already planned and deployed security products.

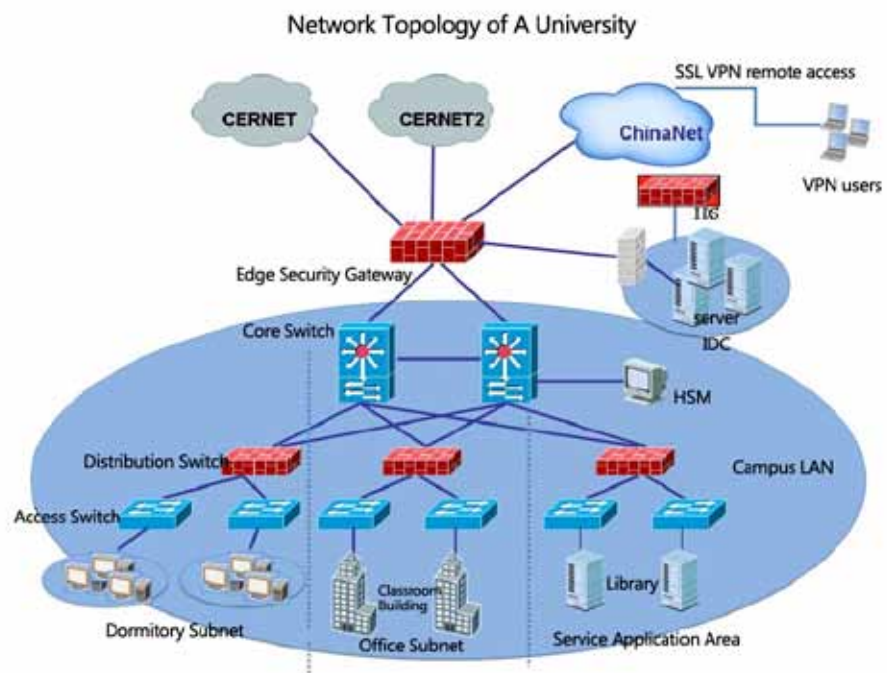


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In the sample network topology above, the campus LAN can be divided into three parts topologically: core, distribution and access. And if divided by network functionality, it can be divided into classroom subnet, office subnet, dormitory subnet, etc. The campus LAN may have many access methods, including dialup, LAN, wireless internet, etc. And the type of access users can be complicated too, for example, students, teachers and officers. Campus LAN often has multiple links as exits. Complex application traffic and multi-layer topology make the network security more important.

### 2. Suggestions on Campus Network Security

Hillstone Networks offers an effective and reliable solution to help solve the security problems in campus networks.



#### Solutions of Network Exit of Campus LAN

The network entrance is the key point of security defense. When deploying Hillstone Security Appliance at the entrance of Campus LAN, Hillstone can offer the following functionalities:

- High-performanced firewall to prevent network layer attacks
- High capacity NAT ports reuse technique, which can support more connections/



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sessions with one public IP address

- Link load balance and PBR
- QoS base on application such as P2P, IM, online video etc
- QoS and session control based on IP
- Internet access authentication using web authentication or L2TP
- Network Behavior Control: with URL filtering, BBS post, email monitor, and content filtering based on keywords
- SSL VPN
- IPv6 support

### IDC Security of Campus LAN

The server inside IDC offers service for the whole campus and therefore its security is very important. Hillstone can offer the following functionalities for IDC server protection:

- Defend network layer' s attacks, such as DoS/DDoS, SYN flood, etc.
- IPS (provide defense for more than 3000 attack).
- ARP defense
- Session limit and new session rampup limit, which can protect server that is been accessed.
- Server load balance with server health monitoring.
- DNS protection such as DNS proxy, Recursive query control etc.

### Distribution Layer Solution of Campus LAN

A large part of security problems in the campus networks comes from traffic of students. Hillstone Networks offers a security zone solution on the distribution layer to isolate the network and protects other parts of the network.

Hillstone Networks appliance can replace distribution layer switch and use security zone to isolate dormitory subnet, classroom and office subnet, and application service subnet:

- Up to 480G backboard bandwidth can support distribution layer switch functionality
- Up to 44 ports. Offer connectivity and policy control at distribution layer
- QoS based on dynamically identified protocol such as P2P, IM, online video etc
- QoS and session control based on IP
- Internet access authentication using web authentication or L2TP
- Network Behavior Control: with URL filtering, BBS post, email monitor, and content



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filtering based on keywords

- Optional Pluggable Hardware Module for extended AV performance

### Solution of SSL VPN of Campus LAN

Many research materials and resources can only be access within the network, teachers and researchers need to find a way to access these resources even outside of the campus. Library and recruiting system need to provide safe and convenient service for external users. The third generation SSL VPN of Hillstone Security Appliance solves these problems:

- Login with HTTPS, high performance encrypted data transfer that rivals IPSec.
- USB-key authentication, support third party authentication servers such as Radius, AD etc.
- User-PC binding function can prevent spoofing.
- Client health check prevent access by insecure PC.

### Hillstone Security Management (HSM)

After security device is deployed, administrators need to have an easy way to monitor device, collect logs, check network status, and audit users' behavior. Hillstone offers HSM solution to address these problems:

- Provide attack log, IPS log, Network log, traffic log, etc.
- Provide network traffic statistics
- Monitor network behaviors, including web visit, BBS post, email with attachments, application connections, etc.
- Records statistics of virus.
- Records statistics of attacks detected by IPS.
- Records statistics of downlink and uplink bandwidth, Top N applications and IPs.
- Records device running status.