

## Assignment 2: Firewalls

**Deadline:** as soon as possible

**This assignment can be done by at most two persons.**

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**1. What are the two characteristics of static packet filter firewalls?**

They only examine IP, TCP, UDP and ICMP headers.

Packets are examined one at a time in isolation.

**2. Why are FTP and Telnet dangerous?**

**3. How do stateful firewalls work for TCP?**

...

**4. Can stateful firewalls maintain state information for connectionless protocols like UDP and ICMP ?**

...

**5. How does a NAT firewall work?**

...

**6. Explain application firewall operation.**

...

7. If you will proxy four applications, how many proxy programs will you need?  
...
8. Should the last rule of a screening firewall be Deny All or Permit All? Explain.  
...
9. You have a rule in your ACL to block a particular type of traffic. However, when you do an audit, you find that the firewall is not blocking this traffic. What is the problem likely to be?  
...
10. Assume that LiU has decided to have the following security policy:
- to allow only incoming (inbound) connections to port 25 of LiU mail server (130.236.8.134)
  - to allow all outbound connections, that is, to permit all connections initiated by LiU internal hosts.

The LiU technician Pier implements the following ACL:

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```
allow tcp * : * → 130.236.8.134 : 25
allow tcp 130.236.136.96 : * → * : *
allow tcp 130.236.136.97 : * → * : *
... // plus one such a rule for every internal IP address
drop * * : * → * : *
```

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Does this rule set enforce the LiU security policy? Explain. (this one is a tricky question, be careful)

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