

Load Balancing HTTP Requests



Andrew Mallett

LINUX AUTHOR AND TRAINER

@theurbanpenguin www.theurbanpenguin.com



Objectives



Create 3 Virtual Hosts

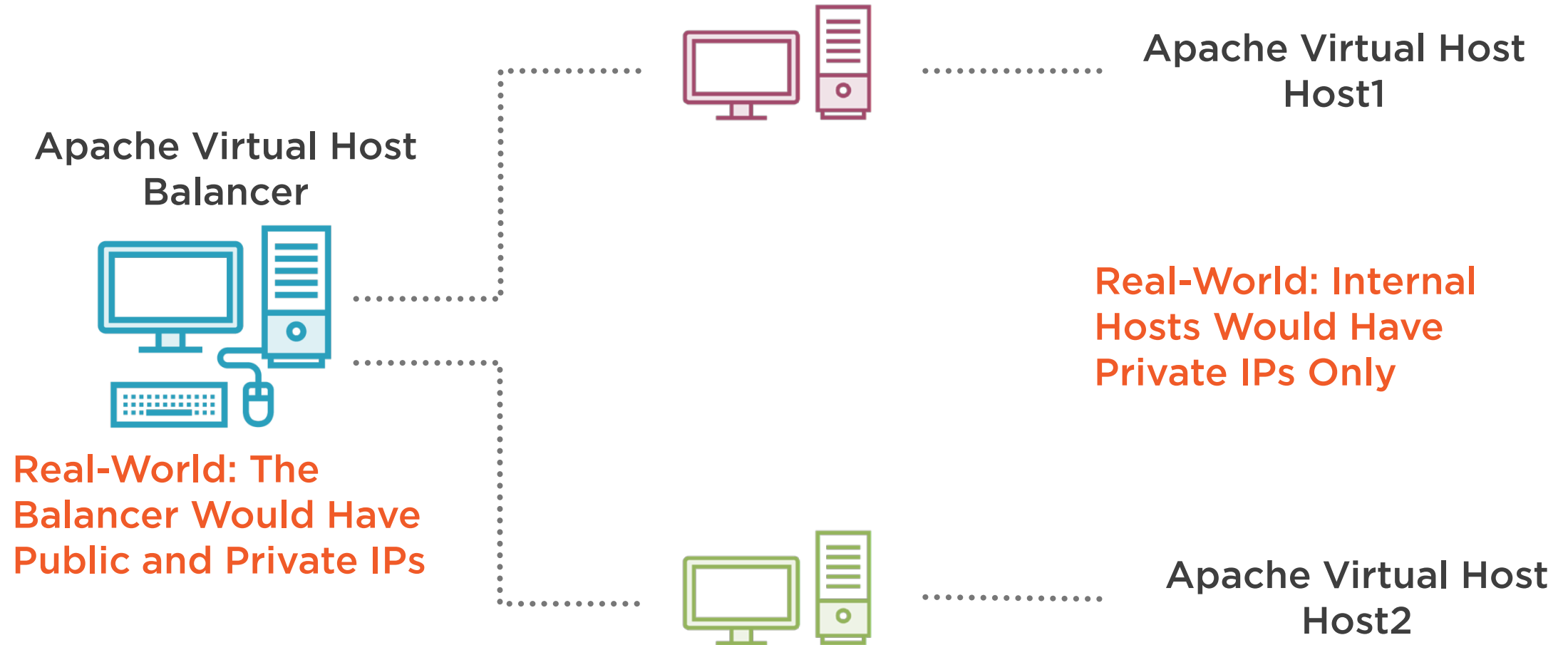
One Virtual Host will be used as the load balancer

The remaining two will receive the incoming requests

(Virtual Hosts are used in the demonstration to reduce the hardware required to test and setup)



Load Balancing



Load Balancing in Apache

Apache makes use of the `mod_proxy` and the `mod_proxy_balancer` modules to load balance requests across a web server farm. All requests are received by the load balancer and sent to an available host.



```
LoadModule proxy_module modules/mod_proxy.so
```

```
LoadModule proxy_balancer_module  
modules/mod_proxy_balancer.so
```

```
LoadModule proxy_http_module modules/mod_proxy_http.so
```

```
LoadModule lbmethod_byrequests_module  
modules/mod_lbmethod_byrequests.so
```

```
LoadModule slotmem_shm_module modules/mod_slotmem_shm.so
```

Adding Modules

If you are using Apache 2.2 then only the first two modules need loading. Apache 2.4 requires all of these modules to be loaded.



ProxyRequests off

Disable Standard Proxy

We do not want the server to act as a standard web proxy so we disable Proxy Requests



Configuring Load Balancing in Apache



Load Balancing Manager

```
<VirtualHost *:80>
  ServerName balancer
  ...
  <Proxy balancer://webfarm >
    BalancerMember http://host1:80
    BalancerMember http://host2:80
    ProxySet lbmethod=byrequests
  </Proxy>
  <Location /balancer-manager>
    SetHandler balancer-manager
    Require ip 127.0.0.1
  </Location>
  ProxyPass "/balancer-manager" !
  ProxyPass "/" "balancer://webfarm/"
  ProxyPassReverse "/" "balancer://webfarm/"
</VirtualHost>
```



Adding the Balancing Manager



Modules



Apache 2.2

- proxy_module
- proxy_balancer_module

Apache 2.4

- proxy_module
- proxy_balancer_module
- proxy_http_module
- lbmethod_byrequests_module
- slotmem_shm_module

Security



ProxyRequests off

ProxyPass “/” “balancer://webfarm/”

ProxyPassReverse “/” “balancer://webfarm/”



Proxy Block



```
<Proxy balancer://webfarm >  
  BalancerMember http://host1:80  
  BalancerMember http://host2:80  
  ProxySet lbmethod=byrequests  
</Proxy>
```

Next up: Implementing a
Web Proxy with Squid

