JASON DION
TRAINING THE CYBER SECURITY WORKFORCE

Layered Network Design

Security Architecture & Tool Sets

Layered Network Design

- Combining the network architecture, configuration management, practices, and policies

- Can be accomplished through
  - Network segmentation
  - Firewalls
  - Outsourcing network segments

Network Segmentation

- Compartmentalization of the network
- Benefits
  - Reduces the network's attack surface
  - Limits scope of regulatory compliance
  - Increases availability of critical services
  - Increases network efficiency
- Segmentation is implemented through firewalls, routers, switches, and VLANs

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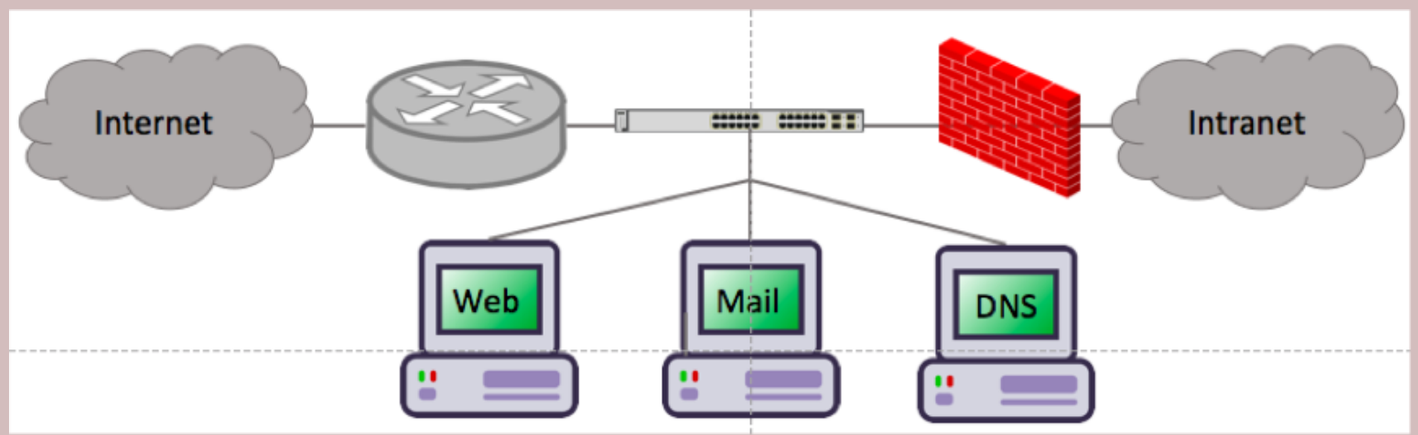
Single Firewall or Router

- Simplest network design utilized used to create a DMZ for a lower trusted segment of the network

- Ensure you put protections in place between DMZ and intranet



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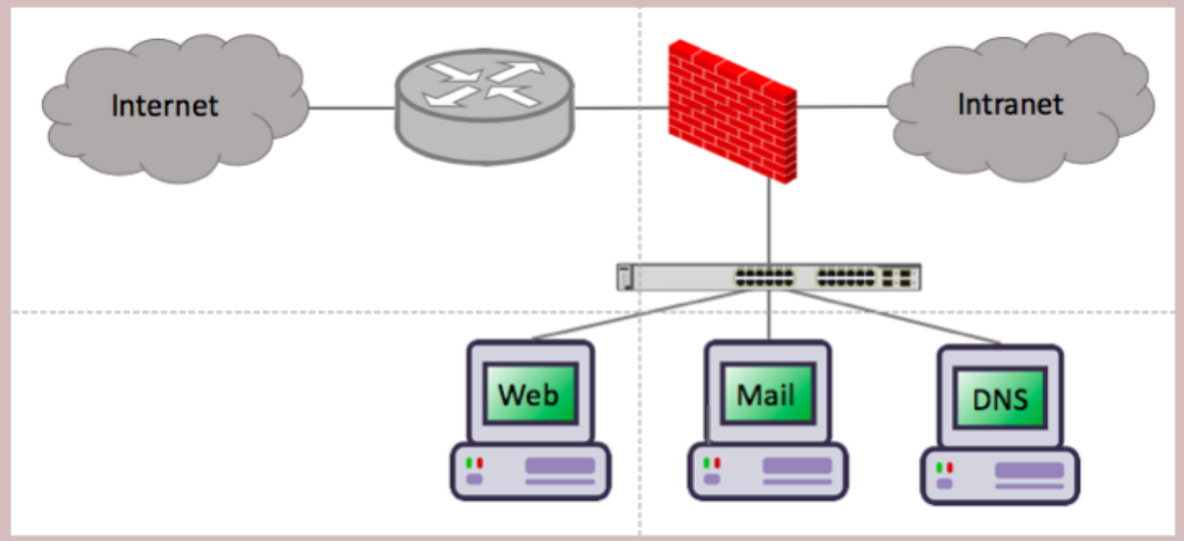
Multiple Interface Firewalls

- Different ACL and rulesets applied to each interface, creating multiple network segments

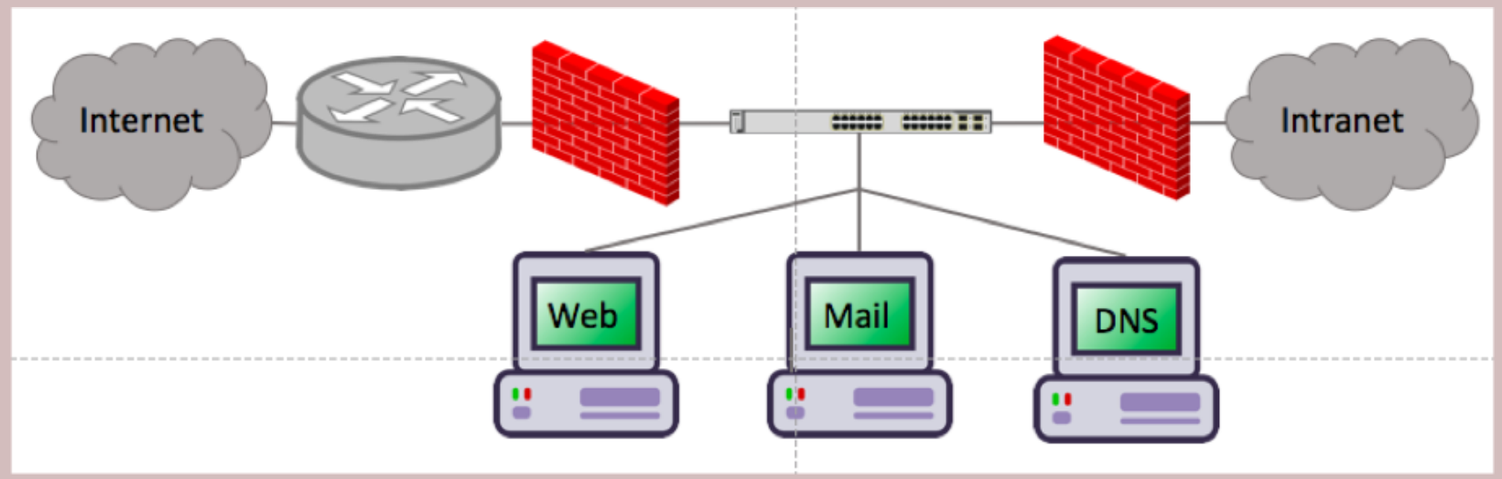
- Often called service-leg DMZ



Multi-Firewall

- Dual-firewalls (or more) puts a firewall at each control point

- Allows for more stringent controls as you move deeper into the network



Outsourcing Segments

- Remote Services
  - SaaS and PaaS rely on providers for security and network designs
- Directly Connected Remote Network
  - Acts as an extension of your intranet
  - Utilizes IaaS with direct point-to-point VPNs
  - To users, it appears the IaaS is just part of your network
  - Low-level host protections at IaaS are still handled by the third-party service provider