



National Aeronautics and Space
Administration
Jet Propulsion Laboratory
California Institute of Technology



IPAC Computing Infrastructure

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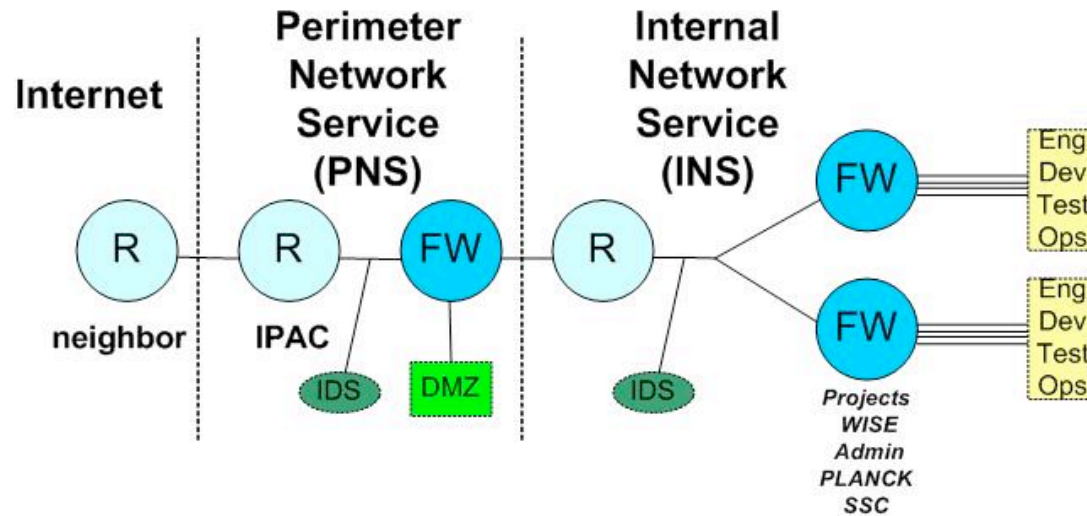
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Agenda

- IPAC Systems Group (ISG) Overview
- Network Infrastructure
- Security Infrastructure
- System Redundancy and Configuration Management



IPAC Logical Network Diagram



Legends:



Router -- network packet forwarding agent



Firewall -- network packet inspection and filtering agent



Intrusion Detection System -- network packet inspection and logging agent



Demilitarized Zone -- controlled area contains public services accessible to internet



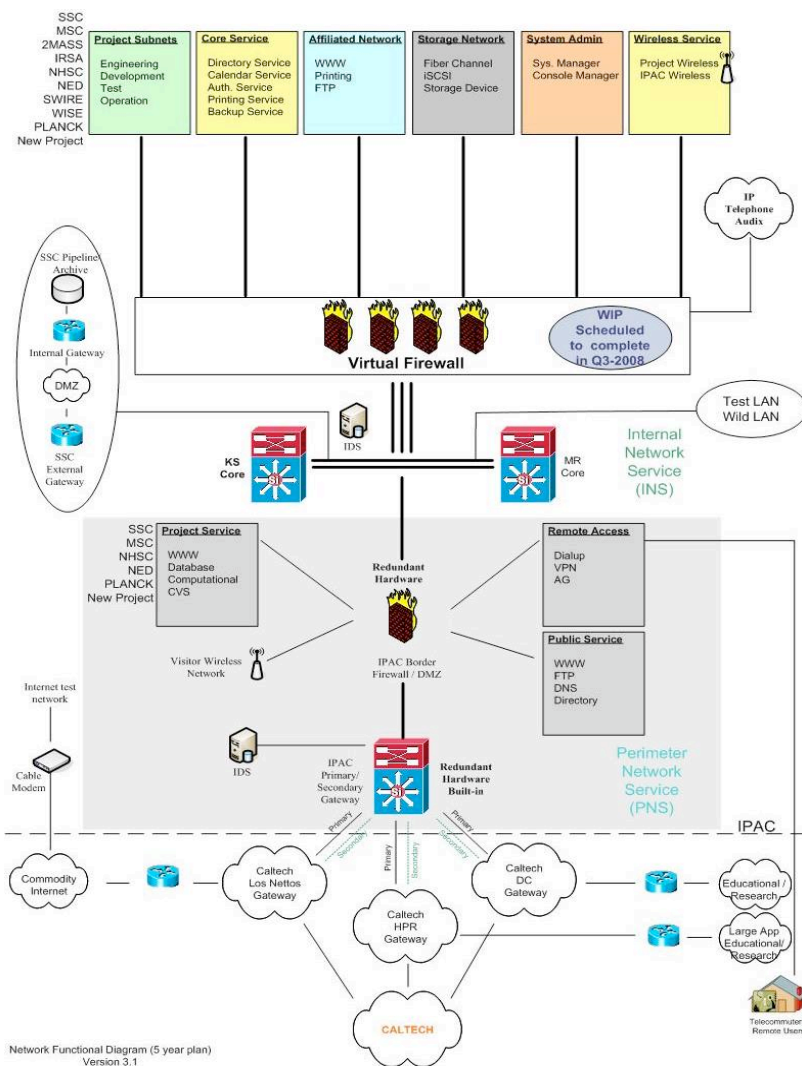
Project Subnets -- protected area contains project resources



Steven Lo
Version: 2.1



Network Diagram

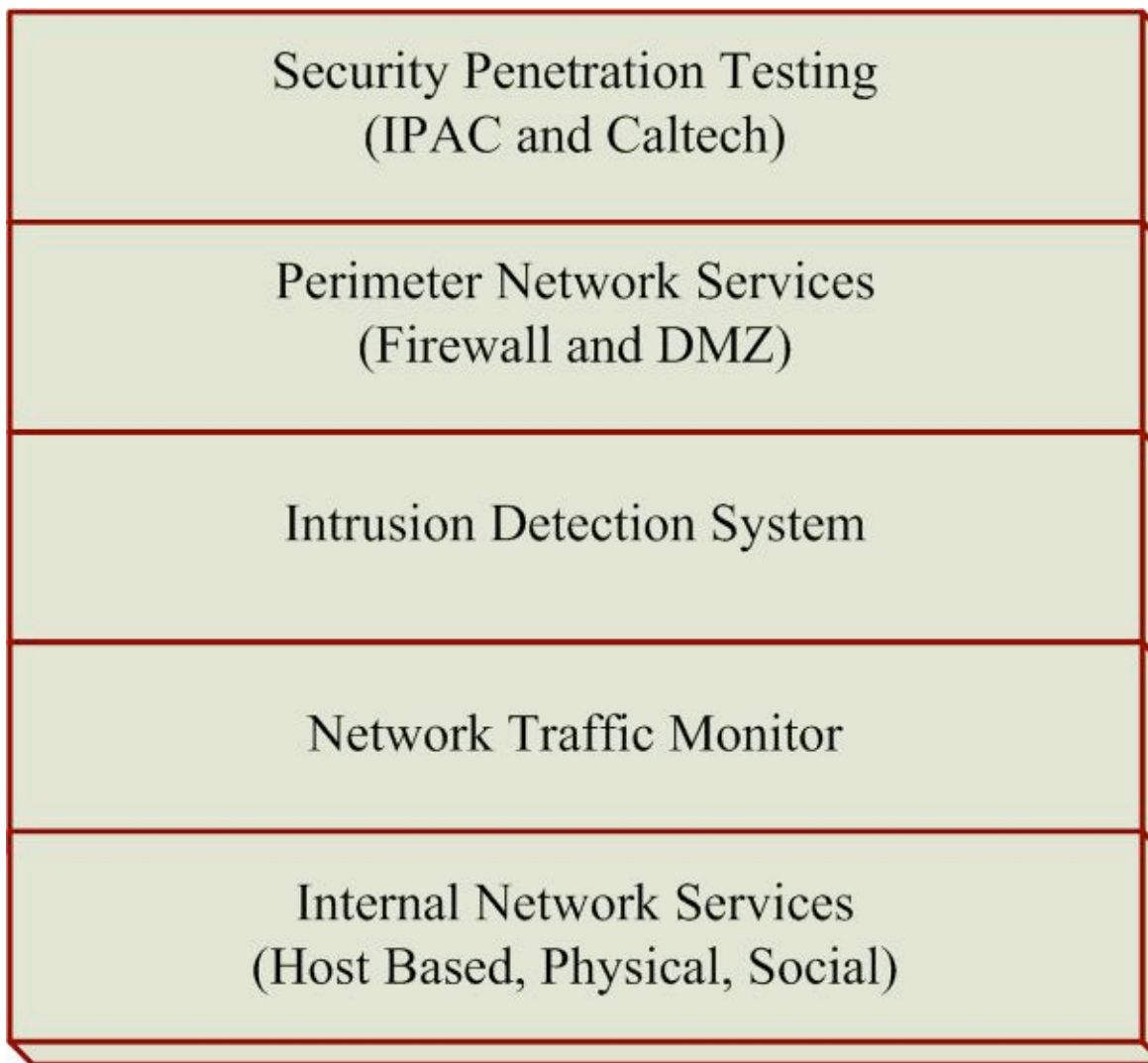


- Perimeter Network Service (PNS) layer provides:
 - Network packet routing
 - Firewall functions
 - DMZ for public services
 - Intrusion Detection System
- Internal Network Service (INS) layer provides:
 - Virtual Firewall framework
 - Gigabit network throughput





Layered Security Model



System Redundancy and Configuration Management

File Server Built-in Redundancy:

- RAID 1 (mirrored) on Operating System disk
- RAID 5 on data disks

Cluster Nodes Configuration Management:

- Linux Kickstart configuration files
- Average system rebuild is within 2 hours (if replacement hardware is available)

Questions

Questions?