WiFi and Network Infrastructure
Best Practices

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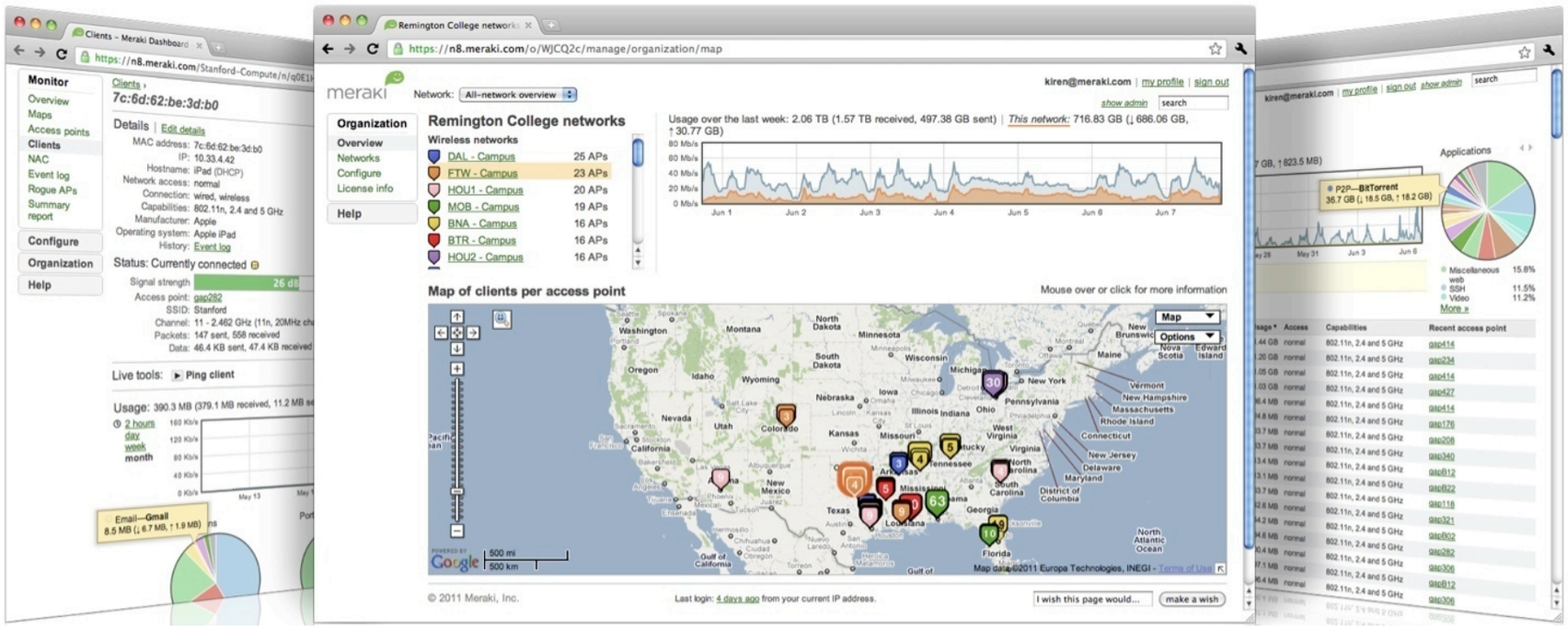
Meraki, Inc.

Agenda

- Meraki overview
- Wireless security and access
- Role-based policy enforcement
- Remote access
- Resource and application management
- Q&A

Meraki builds cloud-based networks that are easy to manage.

Wireless LAN, WAN and security product family



Cloud Managed Branch Routers and Wireless LAN
With Integrated Application, User, and Content-Aware Security

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18,000 sites and 40 Million Clients Connected

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Wireless security and access

Encryption: protecting data over the air

Admission control: who can join the network?

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WPA2-PSK

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Native LDAP / AD

- Scalable, easy to deploy
- No RADIUS configuration necessary
- Requires using splash page

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MAC-based authentication

- Easy to deploy for small networks
- Hard to scale
- Not encrypted, MAC can be spoofed

Access control: what can they access?

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- Ideal for guest access and unmanaged devices
- Protects internal network and isolates clients from each other

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Bridge mode: LAN / VLAN access

- VLAN tagging: tie SSID to a VLAN
- Firewall rules: restrict IP ranges, ports
- Policy firewall: user-driven firewall rules

Access control: what can they access?

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Policy firewall example

- Students: Internet-only access, via content filter
- Teachers: Internet-only access, bypass filter
- Staff: internal and external access

Guest access and protecting critical assets

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- Flexible and fine-grained access

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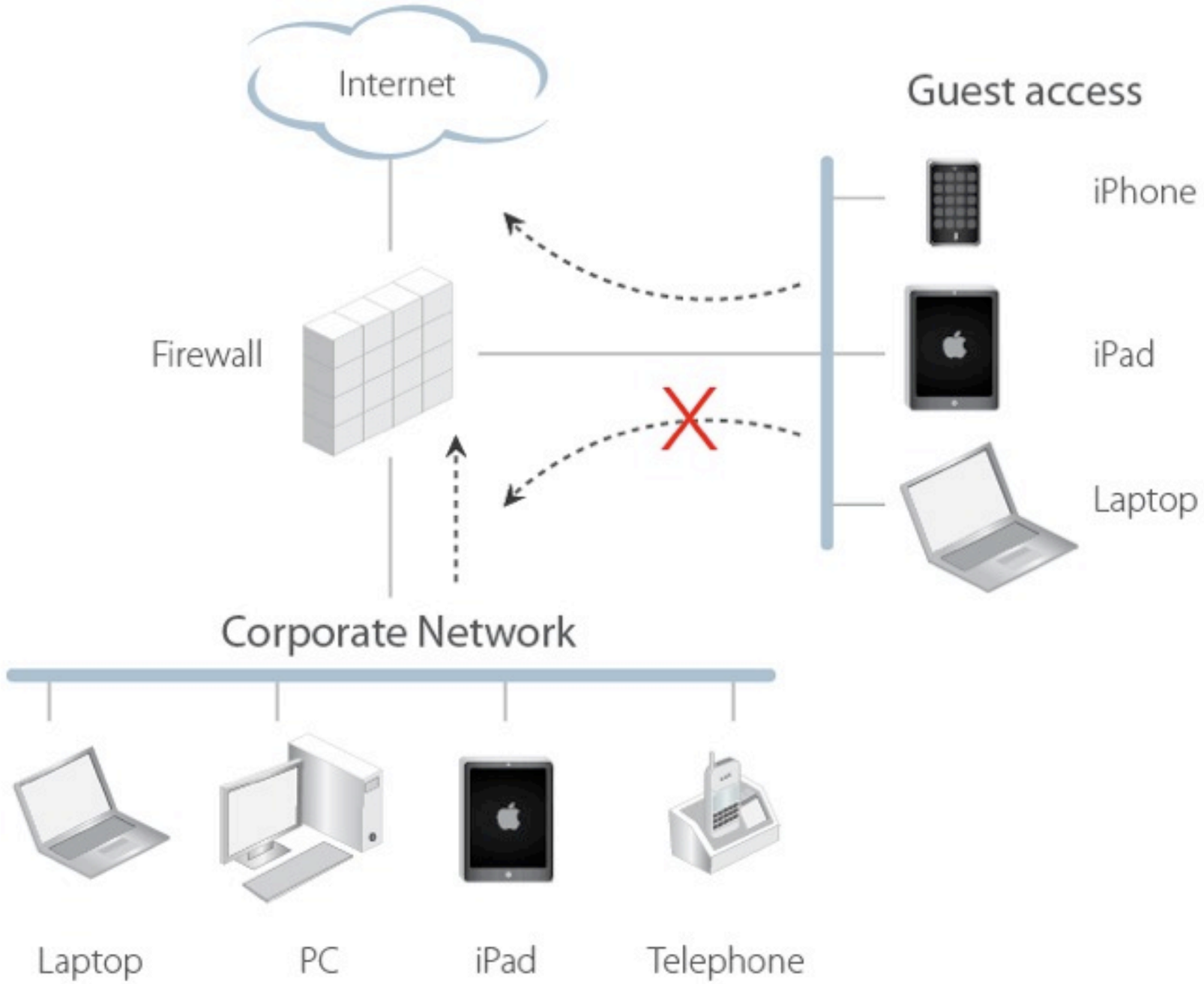
Block access to LAN resources
(file share servers, etc.)

Secure Guest Access



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Splash page

- Click to accept terms of service
- Show branding, advertisements, coupons

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Restrictions

- Bandwidth
- Applications
- Content (sites)

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Implementation

- Create groups for different employee types
- Upon authentication, policies applied based on RADIUS response

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- Bandwidth limits
- Content (sites)

Role-based content filtering

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Organizational control

- Block adult content
- Block recreational content
- Block potentially illegal activity

Example: policy firewall and content filtering

Remote access

Why offer remote access?

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Remote employees

- Permanent staff
- Traveling employees

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IT / admin

- Sometimes useful to “tunnel in”
- Requires leaving a door open

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May not be desirable based on environment

Restrict based on “need to know”

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Client VPN

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- Requires client-side software agent
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Site to site VPN

- Used to connect multiple offices together
- Transparent to clients
- Normally requires tedious VPN appliance configuration

Remote access

Remote access

Teleworker VPN

- Used for remote employee access
- Doesn’t client-side software agent
- Extends the corporate network to the home via an access point
- Needs remote termination / some configuration

Resource and application management

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Global settings

- Use for broad policy enforcement
- Choose restrictive settings carefully!

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Application traffic

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Goal: ensure a proper experience for all wireless users

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- Enforce policies and deploy services based on needs of the network

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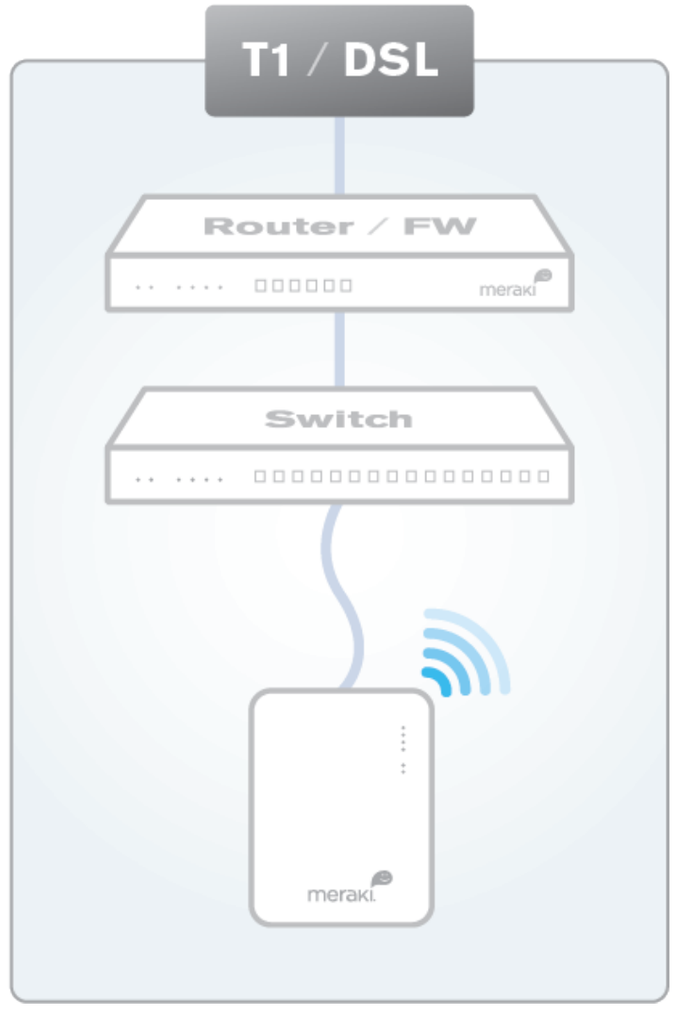
Points of insight



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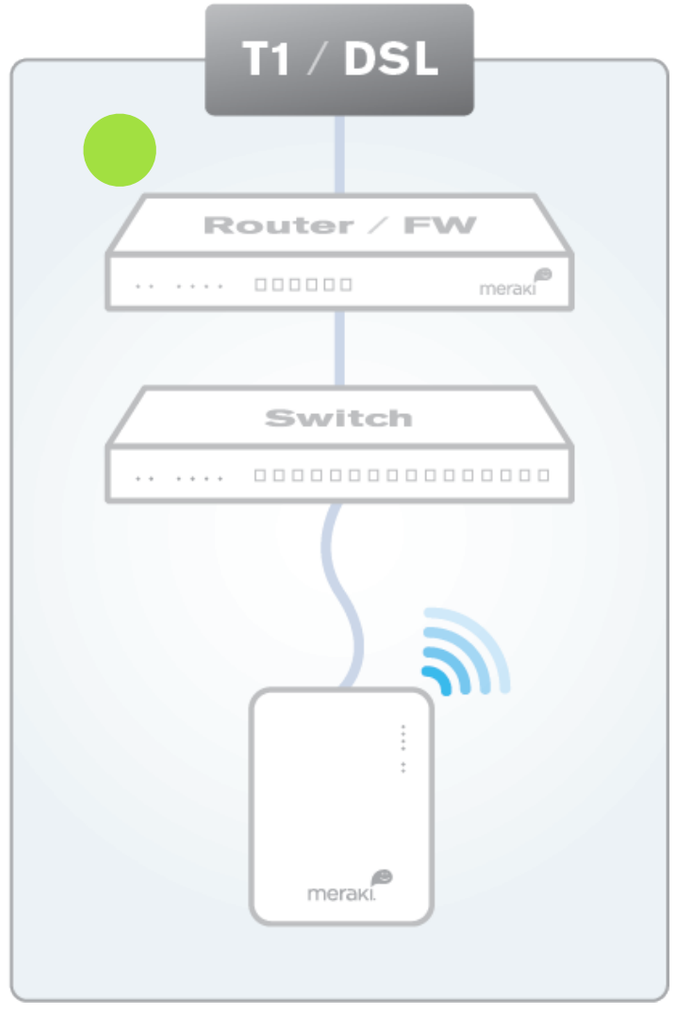

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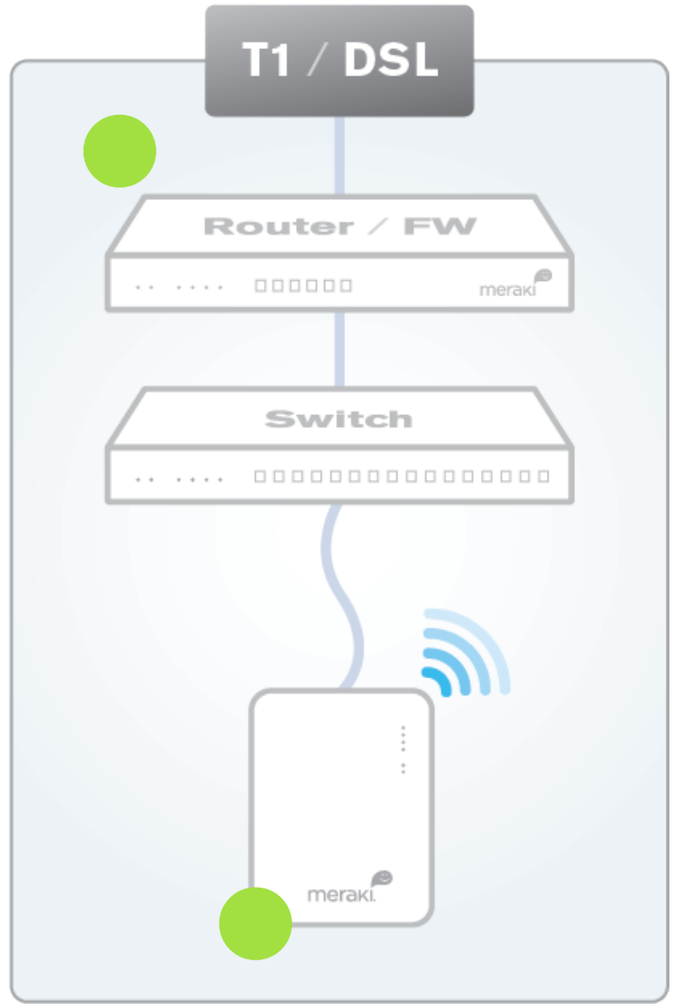

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Points of insight

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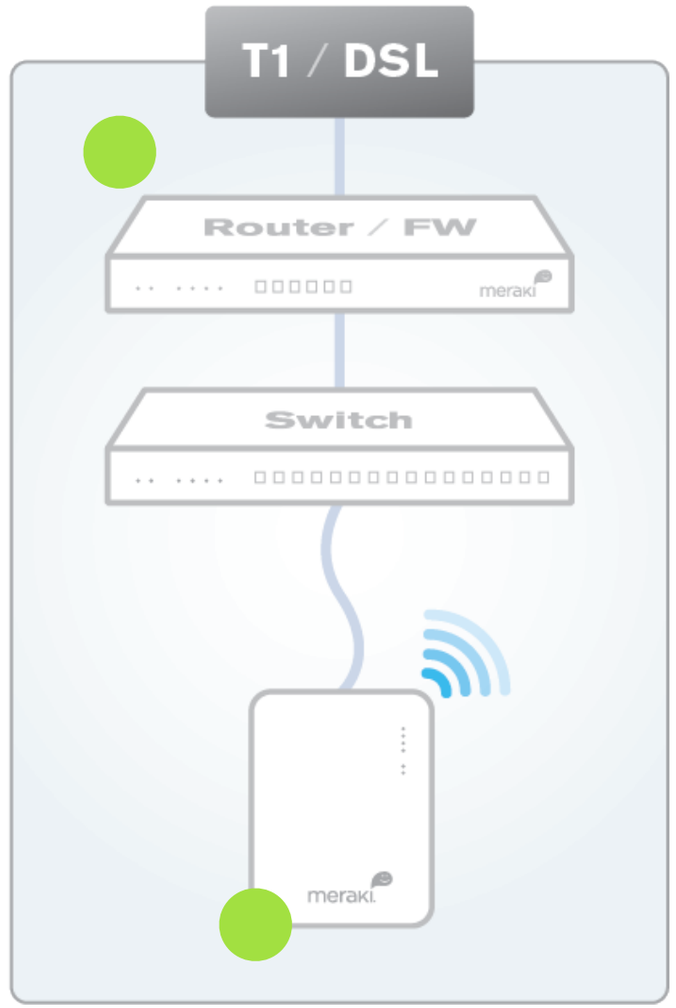

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Restrict recreational traffic

- Throttle undesirable applications
- Throttling still allows access, but creates a less than ideal experience
- Ensures bandwidth isn’t being used primarily for non-critical traffic

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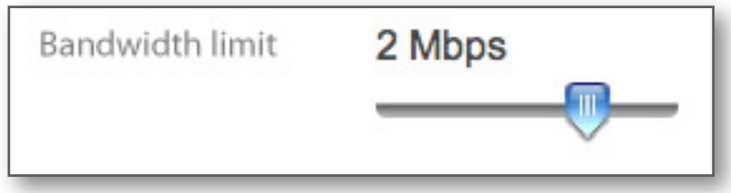

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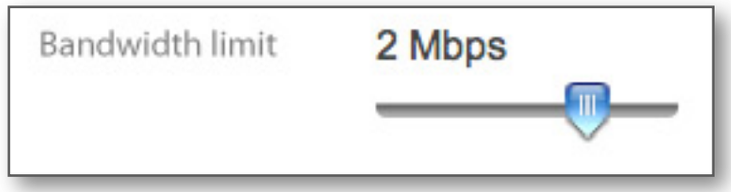

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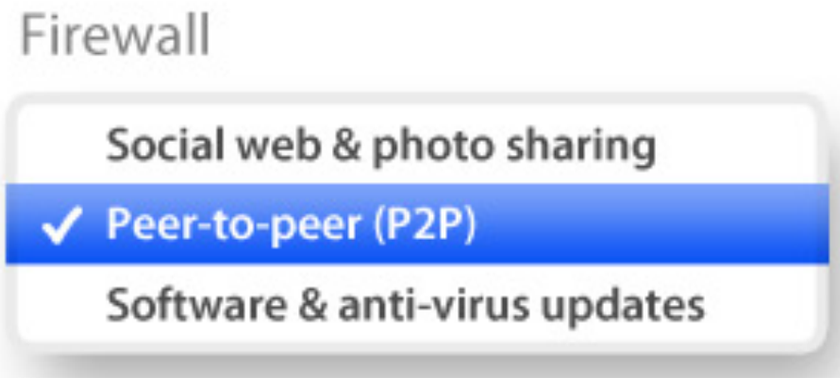
Block unwanted traffic

- Especially important to meet compliance requirements
- Eliminate malicious or destructive applications
- Requires a layer 7 firewall



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  - email
  - VoIP / video conferencing
  - CRM, internal apps

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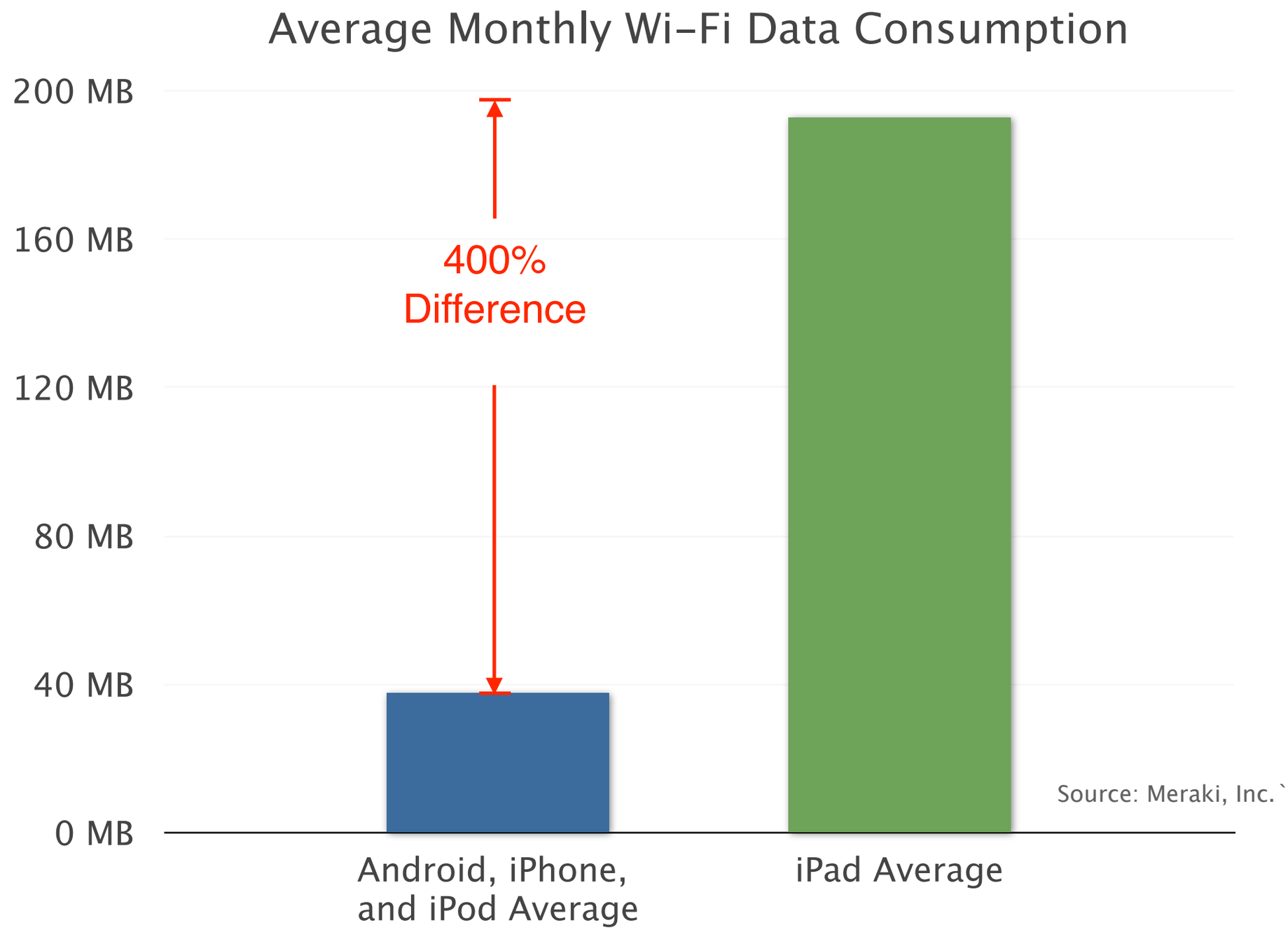
Prioritizing critical apps and throttling undesired ones helps ensure IT serves the business needs

iPad Wireless Data Consumption



Q&A

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Networks that simply work