

Tips, Tricks and Tools for Remote Office Monitoring and Troubleshooting

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whoami

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Introduction

- Enterprise Networks are rapidly becoming:
 - Wider International
 - Hybrid
 - Wired/Wireless
 - More complex

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Network Dimensions - Hierarchy

- User level
- Office level: LAN/WLAN
- Campus level: MAN (Metropolitan)
- Global level: WAN/Internet

Network Dimensions - TCP/IP Layers

- Network Interface: (Ethernet, Wireless, ATM...)
- Internet Layer: (ICMP diagnostics, IGMP multicast)
- Transport Layer (TCP, UDP)
- Application Layer (SSH, SMTP, HTTP, VoIP etc. and DNS, RIP, SNMP, for management)

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Problems

- Type
- Scale
- Source





Problems: What types?

- Wireless client cannot connect to AP
- Very slow application performance
- Cloud application is inaccessible
- Internet blackout
- Search is not working for a directory
- etc.

Problems: Who's affected?

- Single user
- One/Many floor(s)
- One/Many office(s)
- One/Many campuses
- Entire Network
- Entire Internet (public facing services)



Problems: Where?

- Access Point/Controller
- Firewall blocking port
- Router dropping packets
- Line oversubscribed
- Webapp load-balancer is down
- VPN collector is down
- DNS service is not renewing entries



Fault Isolation





UBM



Local vs. Global

- Poll all locations to understand the scale of the problem
 - Remote sessions: ssh, rds, vnc
 - important but highly inefficient
 - User polling: phone :)
 - highly inefficient, not very informative
 - On-site visits: sophisticated testing hardware
 - Extremely inefficient and very expensive

Local: One user vs. All users

- Need have at least 1 controlled point of reference per location and per access type
 - LAN
 - WLAN



Global/Large scale: Network vs. Application

- Use tools to understand the layer of the problem.
 - Network:
 - Reachability: ping, traceroute
 - Performance: ping, Iperf
 - Application:
 - HTTP: curl, selenium
 - DNS: dig
 - TCP port: hping, nmap, telnet



Wouldn't it be nice?





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✓ Active End-to-End Full Stack Tests

✓ Performance Measurement

✓ Distributed Monitoring

✓ Real-time fault detection

Wireless Client Monitoring







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- InteropNet Monitoring
 - 14 FastE, 11 Wifi, 1 GigE, 1 Virtual
 - Monitoring:
 - Internet connectivity
 - Full mesh
 - interopnet.netbeezcloud.net

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Thank you!

May the forth be with you!

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