Resolving the Conflict between Network Login and PC Management

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What's The Issue?

As currently written Network Login has issues with various PC Management standards

- Remote Wakeup
- Peer to Peer Wakeup
- Remote Control
- Alerting

Remote Wakeup

Management console talks to wedge on PC to perform remote maintenance

PC might be powered off

Management Console sends Magic Packet (6xMAC Address embedded in any packet) to target to wake system up

Magic Packet blocked at switch

Peer To Peer Wakeup

Any Windows client can share resources

If client power-managed, resources unusable

Windows passes MAC driver a set of patterns to wakeup on if received (ARP, NetBIOS name lookup…)

Packets blocked at switch

Required for certification of NICs and PCs

Remote Control

ASF (Alerting Standards Forum, under DMTF) proposing standard for remote control (power on, off, reboot…) of clients with authentication.

Similar uses to magic packet, as well as headless or inaccessible servers. Better security.

Management console sends packet to target

Packet blocked at switch

*This standard is under development and can be changed

Alerting

Problem develops with PC (fan stops, machine overheats…) and causes PC to send Alert (SNMP Trap) to management console

Alerts specified by Wired For Management, AOL, and now ASF under DMTF

Alerts blocked by switch

*ASF standard under development and can be changed

Proposal #1: Leaky Ports

- Allow optional lower security level for logged out ports on a per port basis, where inbound traffic is blocked but outbound traffic is allowed
- Allows snooping, but also avoids conflict between network login and PC management
- Solves remote wakeup problems

Proposal #2: Forward Alerts

- Allow optional lower-security level (per port?) where certain multicast frames trapped by switch will be forwarded
- Modify ASF so PC sends alerts with DA=multicast trapped by switch
- Switch selectively forwards trapped packets to destination IP address (reasonable checks: avoid flooding, only SNMP Traps, …)
- Requires allocation of another multicast address

Conclusions

- Conflicts between Network Login and PC Management can be resolved without compromising security, and without any significant changes to Network Login