

Highlights from the IAB Network Management Workshop

Caveats

- **The workshop report isn't written yet**
- **The workshop members haven't seen this presentation, let alone approved it**
- **This presentation is based on what the workshop chair and a few co-conspirators think they saw and heard**
- **If the final workshop report contradicts anything you are about to see and hear, the report is right**

Overview

- **Organized by IAB with a lot of help from IESG (thanks!)**
- **Hosted by CNRI in Reston, VA, USA (thanks!)**
- **About 25 attendees (varied slightly from day to day)**
 - **Many more than 25 qualified participants (thanks!)**
 - **Wanted meeting small enough to be a "workshop"**
 - **Attendance also limited by schedule and budget constraints**
- **Met for 2.5 days, mostly as one big group**
- **Attempted to get a range of expertise among attendees**
 - **Enterprise and ISP operators**
 - **Protocol developers**
 - **SNMP, COPS, CIM, and XML expertise**
 - **Security expertise**
 - **Research and industry backgrounds**

More Caveats

- **A diverse group, but not as diverse as we would have liked**
 - **Enterprise operators were clearly under-represented**
 - **Protocol expertise was heavy on SNMP, light on COPS-PR, CIM, and XML**
- **IAB workshops do not issue edicts**
 - **Typically IAB an workshop makes recommendations to the IETF community**
 - **Sometimes the IETF community even chooses to follow such recommendations**

SNMP today

- **Many operators perceive MIBs as not being implemented by equipment vendors in a timely manner**
 - **This applies both to read-only and to read-write MIBs**
- **Many equipment vendors perceive MIBs as hard to implement**
- **As a result, SNMP is not widely used for equipment configuration management today**
 - **Exceptions exist, eg, DOCSIS cable modems**
- **SNMP is widely deployed for network monitoring today**
- **SNMP is expected to continue to be useful for network monitoring in the future**

Configuration today

- **Many operators use home-brewed scripts to configure and provision equipment via command line interface (CLI)**
 - **Other ingredients: SQL, TCL, Expect, SSH, modems, tin cans, wet string....**
- **Some operators (mostly enterprise?) use shrink-wrapped GUI tools for the same purpose**
- **Many operators would like to believe that there must be a better way to do this stuff**
- **Some operators have started experimenting with XML-oriented configuration tools**

COPS-PR today

- **No operators at workshop use COPS/COPS-PR/PIBs today**
 - **Hardly surprising given that COPS-PR is pretty new**
- **None of the operators at the workshop were very interested in using COPS-PR/PIBs in the future**
- **Some folks at workshop thought that COPS-PR might make a good protocol for use with MIBs, others disagreed**

Some open questions

- **Should there be a single data model for configuration and monitoring?**
- **Might there be different data models for configuration and monitoring?**
- **Is it possible to have a single data model that's suitable for all operators and all networks?**
- **Since there's a lot of configuration being done via CLI, should the IETF define a standard CLI?**

Likely recommendations

- **Eliminating SNMP is not an option, we need it**
- **IETF ought not to require WGs to define MIBs with writable objects**
 - **If WGs want to define MIBs with writable objects, that's fine**
- **IETF should continue work on SNMP evolution**
- **IETF should attempt to streamline the MIB standardization process (publish sooner, with less hassle)**
- **IETF should investigate non-SNMP methods for network device configuration**
- **IETF should investigate XML-oriented methods for network device configuration**
 - **XMLCONF BOF held this week**
- **IETF should not focus on HTTP/HTML/web methods for network device configuration**

What's next?

- **Workshop report being written, for publication as informational RFC**
- **Report will only contain data on what happened at the workshop**
 - **Will include consensus points, non-consensus points, and recommendations**
 - **Will not include commentary by people who were not present at the workshop -- rebuttal is fine, but please write your own document, this one will be a report on the workshop we actually had, by the people who were there**
- **Plan is to have at least an Internet-Draft before 55th IETF**
- **There will probably be a more complete presentation on this topic at an IAB plenary after the report is done**