Call Home Description

Eliot Lear

Motivation

- Many devices sit behind NATs & firewalls
- Many devices move
- Many devices are intermittently connected and that's Okay
- The "other" end cannot expect to be able to contact such devices
- My interest is management of such devices, but this may not be the only applicable use

Simple examples...

- Your employer wants to monitor your PC here at IETF...
- How to find it?
- Suppose your employer's data center manager contracts out for UPS maintenance. There's a MIB [RFC 1628].
  - How much access is needed?

What "Call Home" is NOT

- A data model
- A bootstrap mechanism
- A specific protocol or substrate
- A firewall subversion mechanism

What is "Call Home"

- Nothing more than a connection model
- Traditional "client" and "server" roles are reversed, in terms of who initiates communication

Examples

- UUCP uux
- netconf - agent contacts NMS
- SMTP TURN/ETRN, NNTP "NEWNEWS"
- SNMP (?)
- SSH "session"

Where NOT to use CH

- Because p2p has no "client" or "server" notion of "call home" is redundant
  - Examples: BGP, irc servers
- Multicast / Broadcast mechanisms
  - (at least I couldn't ponder a use)

How to do it...

- A new ssh service, "netconf-turn"
- Use of BEEP profiles plus some indication of role (either within protocol or outside)

Issues to implement CH

- "Agent" must know who to contact to "service"
- each side must know the other's role as well as its own.
- Authentication and authorization may be different from the traditional connection direction
- If you're not using DNS for naming perhaps you need to think about what you ARE using (if anything)

On authentication

- "Client" might authenticate via username and password. Now "server" would do so.
- "Server" might authenticate with host key. Now "client" would do so.
- "Server" will only serve one client, the one it connects to.

Why SNMP & Management?

- Multiple overlapping administrative entities may exist
- Discovery simple through the existence of connection state may be "enough" for many uses
- Intermittent connectivity: why waste effort on a device that is turned off?

For More Information

- draft-lear-callhome-description-03.txt