Kerberos: Some thoughts

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October 26, 2010

Who am I?

- Worked at MIT Project Athena from 1987-1990
- Joined MIT I/S in 1990
- Became technical lead of Kerberos development in 1993 through 1999
- IETF Security Area (1991 – 2004)
  - Telnet security, IPSEC wg chair
- Linux
  - First North American Linux kernel developer, 1991
  - VA Linux Systems (1999-2001)
  - IBM Linux Technology Center (2001-2009)
  - CTO, Linux Foundation 2008-2009

Agenda

- Things I would have done differently, knowing what I know now
- Some thoughts about where Kerberos is today
- Some thoughts about future enviroments

Things I would do differently

- I wish had....
  - not been hung up on providing (only) a reference implementation
  - been willing to make incompatible API changes
  - spent more effort making Kerberos easy to use out of the box
  - put much more emphasis on unit tests
  - willing to abandon legacy platforms/compilers more quickly
  - applied open source development principles

Some Observations of where Kerberos is Today

- Kerberos has been amazingly successful!
- Not enough people know it
- Something for the Kerberos Consortium to address?

Thoughts about future environment

- IPV4 Addresses are about to run out
  - Immediate solution will not always be IPV6
  - Expect NAT and double-NAT's
  - Binding between Names and IP addresses will get more complicated

Thoughts about future environment

- IPV4 Addresses are about to run out
- Cloud is going to be hugely important
  - Utility computing: a matter of scale
  - Be very careful what someone means by “cloud”
    - Software as a Service
    - Platform as a Service
  - How does Kerberos matter in the cloud?
    - Don't just think about client ↔ server-in-the-clouds
    - Back-end authentication between servers

Thoughts about future environment

- IPV4 Addresses are about to run out
- Cloud is going to be hugely important
- Latency kills
  - “Fast is better than slow”
  - Especially true in cloud and SOA deployments
    - If servicing a request requires talking to hundreds of servers in a tree, adding only a few delays can turn into massive UI lag

Thoughts about future environment

- IPV4 Addresses are about to run out
- Cloud is going to be hugely important
- Latency kills
- Mobile is ***In***
  - Slower CPU's, small amounts of memory
  - Spreading from the consumer space outwards
  - Lots of interest in new ways of commercializing the mobile platform – how will Kerberos play a role?

Conclusion

- Kerberos: around for almost a quarter century
  - Kerberos V5 turns 18 next year
- The future of Kerberos is in **your** hands
- I have every confidence it will be great!