Kerberos: Some thoughts

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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
  - 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 environments
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 \textit{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!