ctsyncd
past, current and future

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Past

- kernel implementation
- not in vanilla kernel
- largely unmaintained
- SMP issues
Current

- idea for userspace implementation about 1\textsuperscript{st} half 2006
- encouragement by Kriztian Kovazs :-)
- using libnetfilter-conntrack (version 0.0.30!)
- first commit in April 7\textsuperscript{th} 2006
Current - Goals

• copy of kernel implementation in userspace
  - ACTIVE-PASSIVE
  - possibly multiple passive nodes

• have a working version until end of 2006 (V7)

• performance important
  - existing ASG V6 user base using kernel implementation
  - first prototype ok
  - sync TCP connections only

• protocol
  - TIPC?
Current - Implementation

- MASTER-SLAVE mode
- servant to Astaro HA daemon
- simple but effective ctsync protocol between nodes
  - 8 byte protocol header
- mcast link-local address
- kernel netlink data as payload
- sync TCP established connections
- hardcoded
  - most filtering

struct cts_msghdr {
    uint8_t ver;
    uint8_t type;
    uint16_t data_len;
    uint32_t seq;
    unsigned char data[];
    /* dword aligned netlink data */
};
Current - Caching

Caches

- conntrack refcounted
- tuple cache
  - CT stays there for duration of connection
- sequence cache
  - used to check for dead entries
  - shorter lifetime
- conntrack on either tuple cache or both of them
Current - Conclusion

- simple & straightforward implementation
- few bugs after all
- performance ok
- stable codebase
- room for improvements
Future

Improvements

- generalize protocol (TCP, UDP, SCTP, ...) handling interface
- implement generic filtering capability on top
- make Netlink part better
  - considered libnl
    - implemented halfway through, stopped
  - libnetfilter-queue update
- which filter model?
  - BPF alike?
  - Netlink is different
  - Kernel-side filtering?
- generic HA daemon interface
  - keepalived, ...
- Publish
  - Bazaar: release early and often
  - GPL
Fin

No Timeline :-)

Q&A