**Eternal Sunshine of the Spotless Network (or: Giving a Home Network a Memory)**

As computer networks move out of the workplace and into the home, difficulties arise in from having home users configure, use, and troubleshoot network technologies originally designed for expert systems administrators. Network troubleshooting is often made more difficult because people don’t always have a clear picture of network configuration changes that have occurred over time.

Your task will be to give a home network a memory of its prior configurations, so that if something breaks, users can (a) determine what/why something is broken and (b) possibly roll back their networking configuration to a previous state that worked.

**Your mission, should you choose to accept it…**

Several researchers at the University of Washington created a system called Chronus that allows computers to use historical information about configurations to diagnose problems. Read this paper for inspiration and ideas about how you can use historical information to diagnose/repair NETWORKING problems.


Next, design and implement a system to collect configuration information for each device on a home network. Your system should collect information from devices on either a regular basis or when a configuration change occurs. Be sure to consider how you will deal with permanent addition/removal of devices from the network, and how your system will work if the network is only partially functional or completely broken.

Now that you have a way to collect a history of configuration information, design and implement a system that will automatically roll back changes, help people diagnose and correct problems themselves, or perhaps do a combination of both. Remember that you are developing a system for home network users who probably do not have a deep understanding of networking.

**Project Deliverables**

- System for collecting configuration information
- System for using historical configurations to diagnose/fix problems
- Documentation of your systems