Abstract

One of the common tasks for network administrators is to monitor routers and their error logs for abnormal behavior. Network administrators will on a daily basis investigate these logs for any errors protruding from the every day considered harmless errors. Identifying and attending to failures are most critical to the efficient operation of large computer networks.

In this master thesis troubleshooting assistance for **W**ide **A**rea **N**etworks was studied. Extended WAN troubleshooting in the personnel independent area was implemented by using network error logs. Error information is extracted from the logs that can be of interest in troubleshooting WANs. Investigations and development were made on network error log deviation, link failure, recurring error sequences, error diffusion and low frequent errors. With improved analysis on the historical data malfunctioning network components are easier detected and fixed, thus maintaining high network availability and efficiency. The development in this thesis produced algorithms that isolated certain network behaviors and events. The result is three algorithms that find diffusion, recurring sequences and low frequent errors in the network log data. A theory for link failure detection is presented but not implmented.