

Automation Techniques

ISOC ccTLD Workshop
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Risks

- The basic risk of automation is that machines are stupid
- Not only are machines stupid, but they don't care that they are stupid
- some of them are ugly, too

Risks

- The basic risk of not automating processes is that people are lazy
- Not only are they lazy, but after a while they don't care that they are lazy
- Some of them are stupid, too
 - and ugly

Benefits

- A well-automated process can produce much more reliable results than a manual process
 - (not always better results, though)
- Automation can make things cheaper
- The person who rules the machines is their god

General Advice

- Assume that things will fail, and plan to abort and request manual intervention where necessary
- Check the results of automation through an independent path
- Log everything
- Measure everything

Unexpected Failures

- Disk full
- Table space exhausted
- DNS server unavailable
- Network down
- Timeouts

Nasty Failure Modes

- Truncated zones
 - “domain deletion”
- Authentication failures
- Cascading service failures
- Runaway truck

Log, Measure

- Measurement allows you to identify trends, and characterise normality
 - you can predict failures before they happen if you measure everything you possibly can
- Logging allows you to diagnose and troubleshoot
 - it also allows you to back out or restore transactions, which might pacify customers

Backups

- Move your logs and measurement data away from production servers when possible
- Check your logs, and make sure they are still being written to
- Think hard before throwing away measurement data or logs

Precautions

- Check the exit status of everything
- Write start and end markers in data, maybe with line counts, byte counts or CRCs
- Compare the last-generated data set with the just-generated data set, and abort if there appear to be too many differences

Audit

- Auditing is the process of looking at processed data, and comparing it with source data, and looking for discrepancies
- number of A records in the zone; number of NS records in the zone
- SOA serial number

Script, where possible

- Scripts can be quickly prototyped, modified and understood
 - if they're written properly
 - even if they're in perl
- Write every script as if you plan to keep it for ever

Test

- Even the most trivial script can cause hideous problems
 - test
 - test after making modifications
 - test failure modes

End of Day One