Automated Network Provisioning
Network Robot Mechanic
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Automated device provisioning almost 10 years ago

Job based system with primary interactions over console

Jobs handled all provisioning aspects and failed easily

New devices added over time. Network scaled over time

Provisioning was slow

Past Provisioning Automation
Today we're expanding our site to almost 1 million energy efficient data centers we build are.

Data centers are the physical infrastructure that enables the services you and billions of people around the world use. They're basically giant machines that store and process the data you send us when you use Facebook. With more people going online, we need to help make sure Facebook keeps working when you need it.

We just announced we're building another data center -- in Odense, Denmark. This one will be one of the most advanced and energy efficient data centers we've built yet. It will support thousands of jobs in the Odense area, and the surrounding community.

To grow the market for our data centers, we continue to partner with local energy providers, like Omaha Public Power District (facebook.com/green). Advanced data centers like this one are helping to grow the technical infrastructure necessary to support our online services worldwide.
• Config generation
• Post provisioning audits and checks
• Add devices into inventory and network management systems
• Enabling monitoring of devices
• Kick-off server provisioning

Also need to handle upgrades, reprovisioning, and decoms

Why not just ZTP?
New Solution

Network Device w/ Python "agent"

Status Updates
Logs

ZTP Gateway (REST/HTTP Server)

Thrift

Provisioning Controller

Executors

Zookeeper
Each part of the provisioning process was broken down into steps. Steps are:

- Standalone programs (write in any language)
- Meant to be lightweight and fail fast
- Steps can run in parallel
- Are automatically retried when there is an error or can be bypassed
- Steps are device/role specific but can be shared