Okay, I've Automated. What Now?

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Network Automation Today

- YAML Files
- Templates
- Automation tools like Ansible

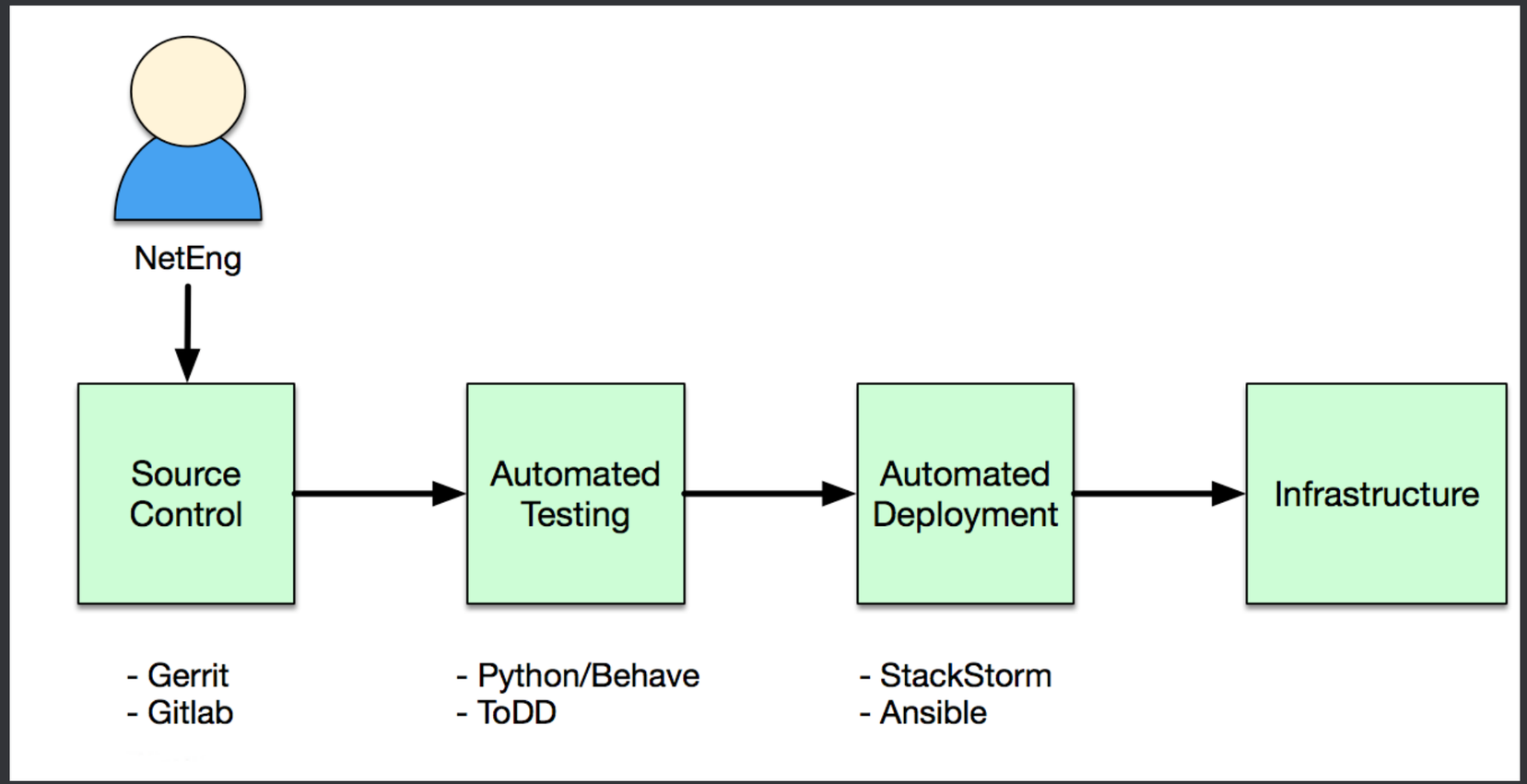
Important Questions

- What determines **success**?
- We've changed our tools, what about process?

Topics

- Test-Driven Network Automation
- Event-Driven Network Automation

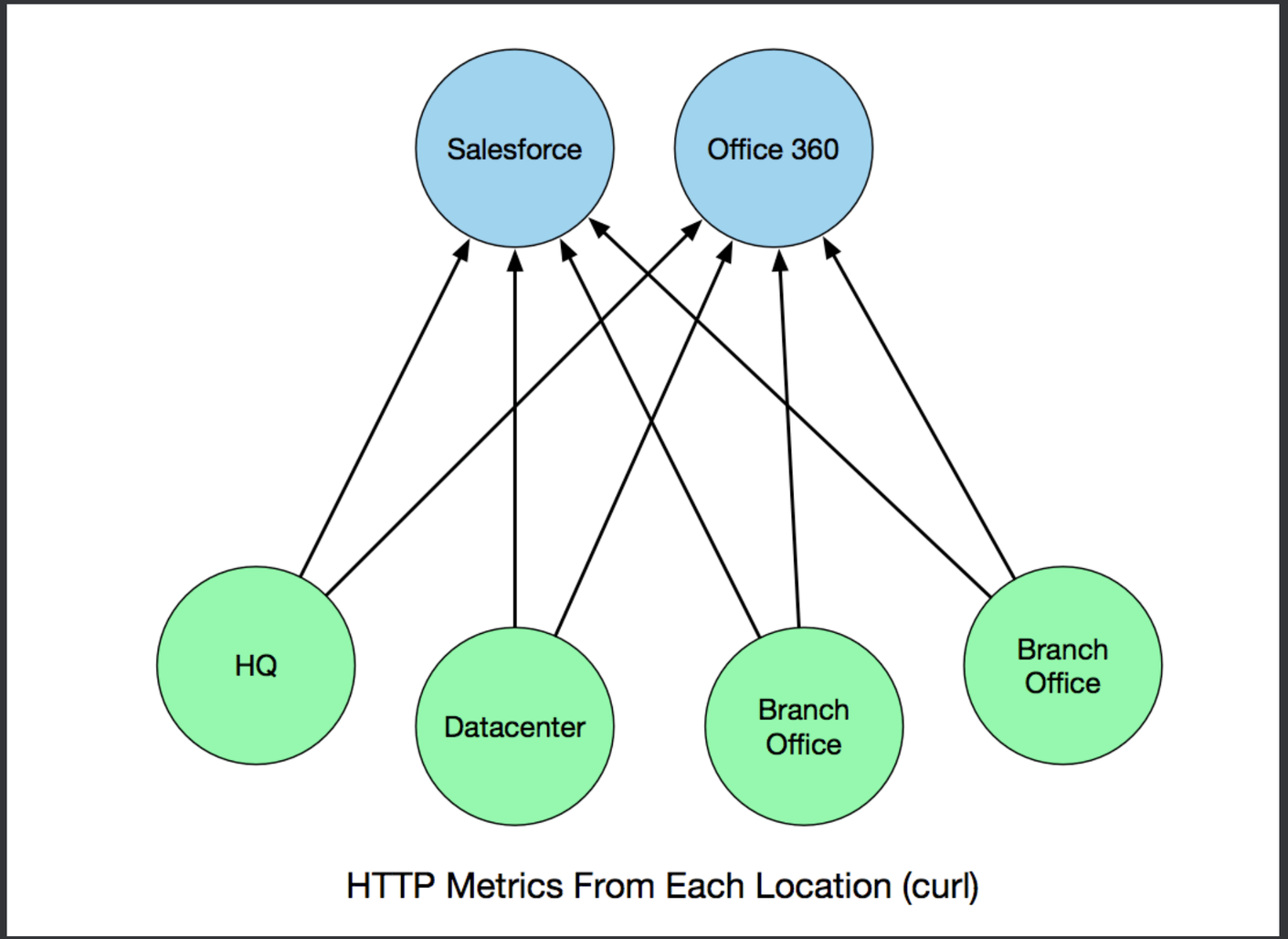
Test-Driven Network Automation



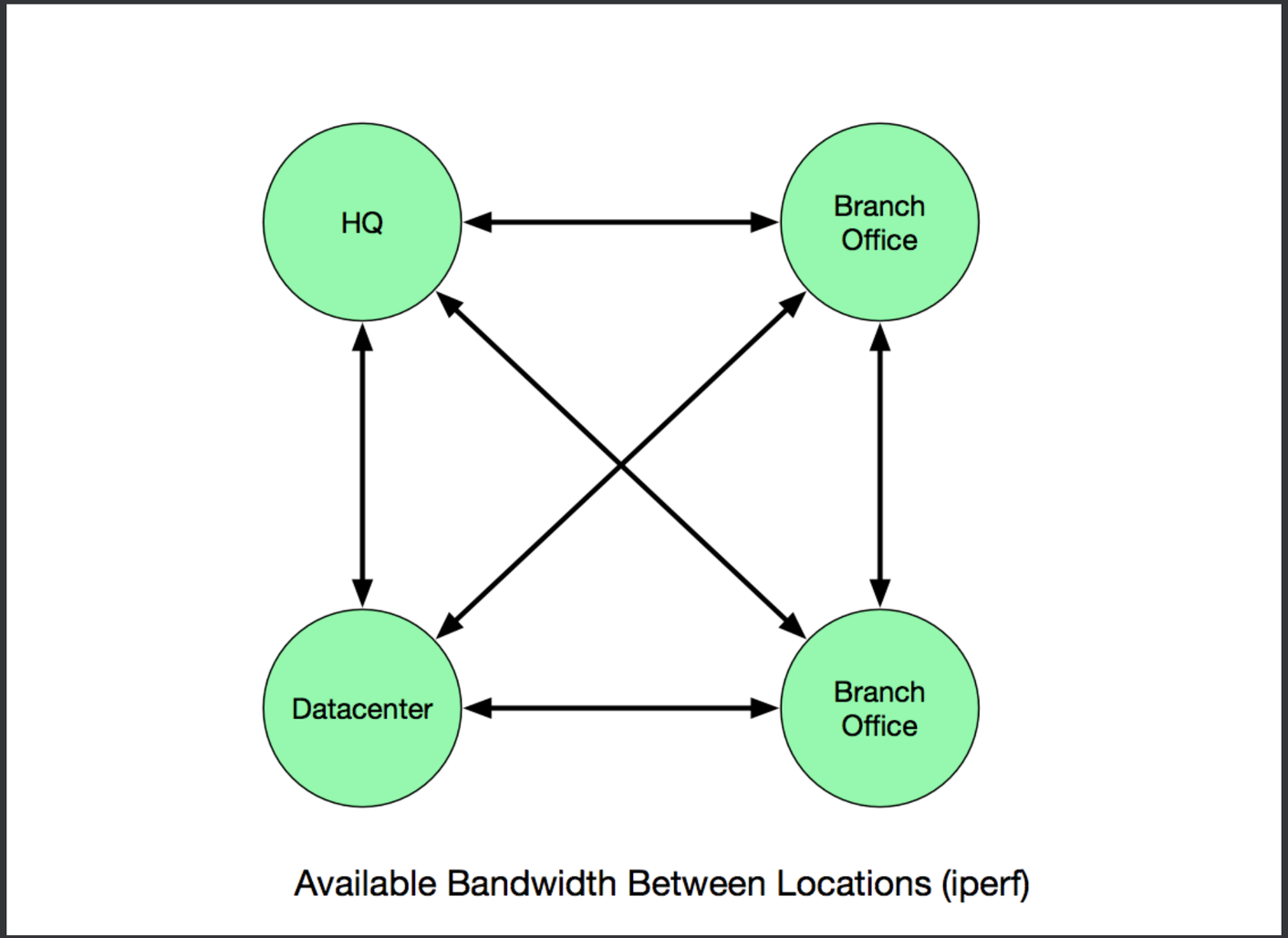
ToDD: High-Level Overview

- Perform tests and gather data from agents distributed throughout your infrastructure
- Highly extensible testing. Could feasibly support any application
- Scale out - testing becomes more powerful by simply spinning up more agents
- Perform testing ad-hoc, or trending over time

Use Case - SaaS Monitoring

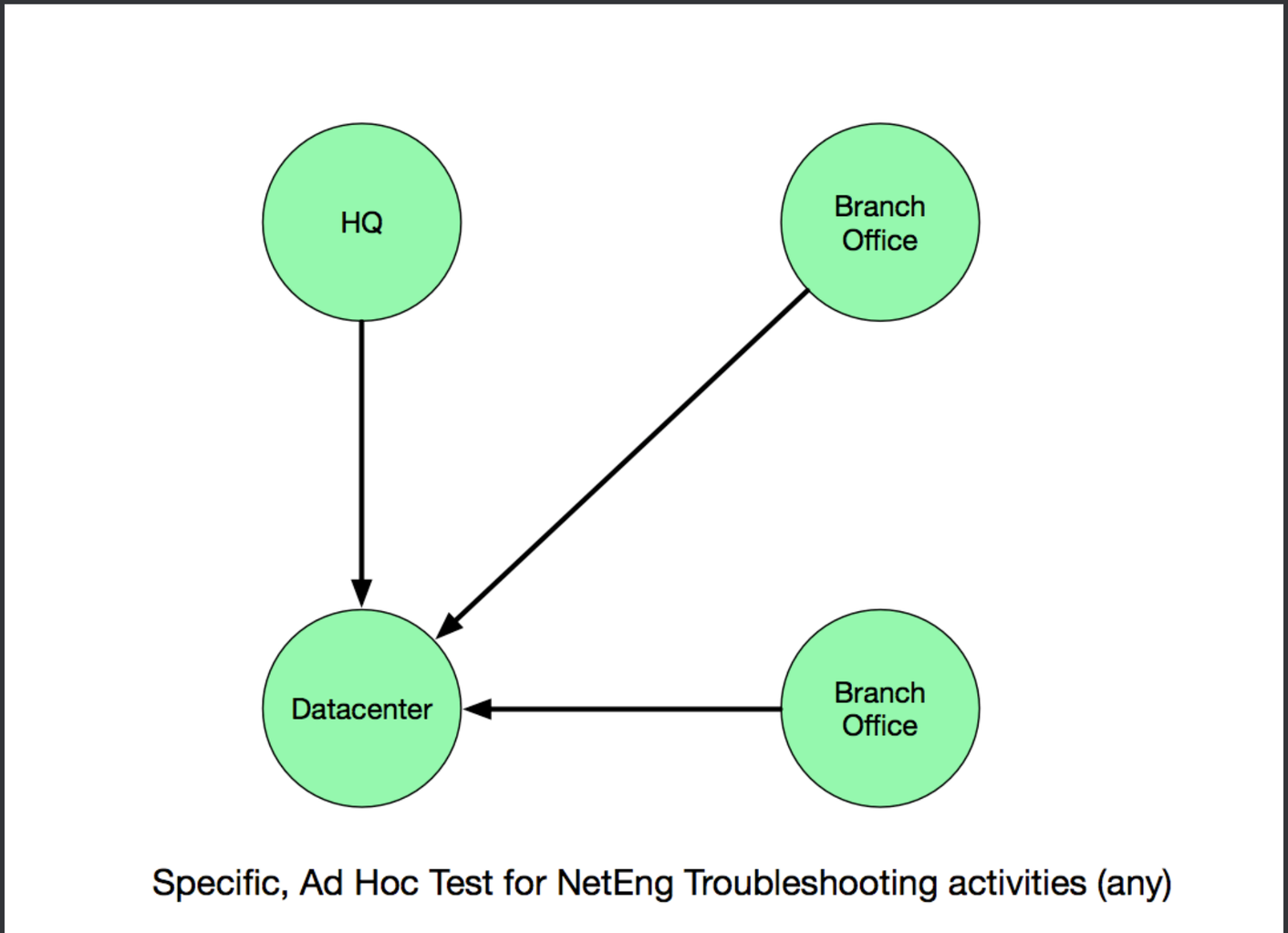


Use Case - "Network Integration Testing"

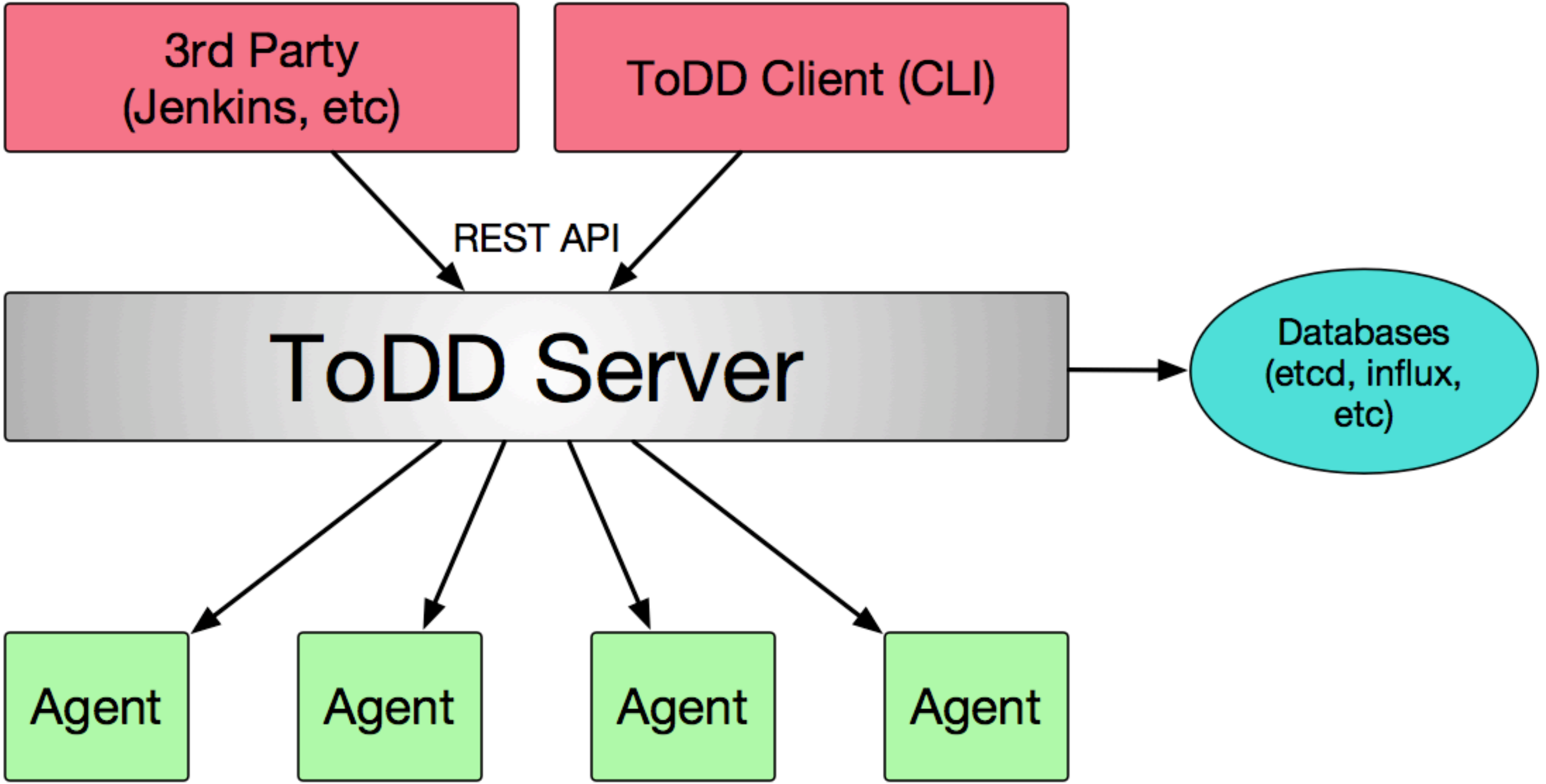


Available Bandwidth Between Locations (iperf)

Use Case - Enhanced Troubleshooting



Specific, Ad Hoc Test for NetEng Troubleshooting activities (any)


3rd Party
(Jenkins, etc)
ToDD Client (CLI)
REST API
ToDD Server
Databases
(etcd, influx,
etc)
Agent
Agent
Agent
Agent

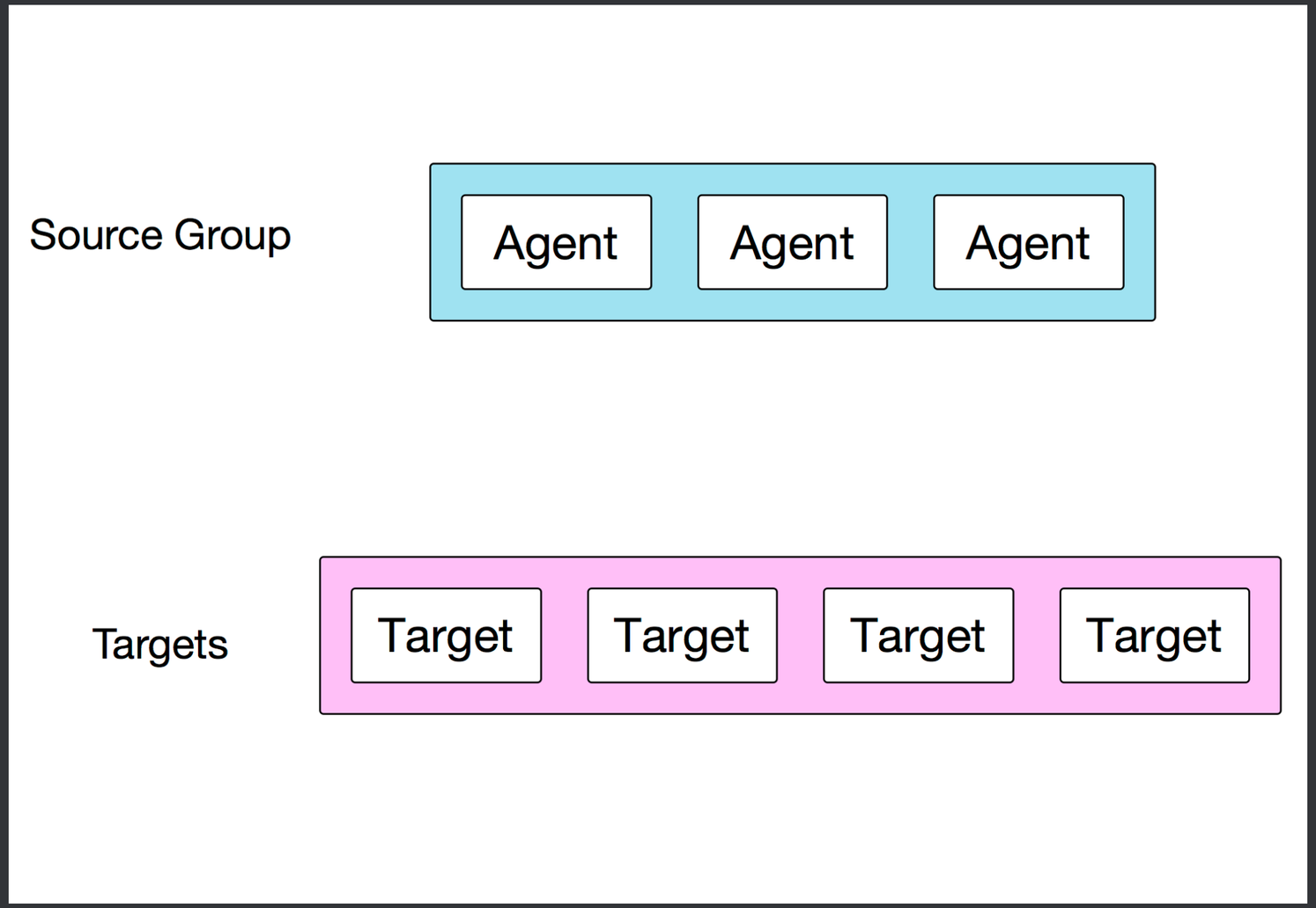
ToDD: Server

- Orchestrates test runs between groups of agents (not part of test)
- Manages agent registration and remediation
- Interacts with databases
- Manages group topology
- Provides HTTP API to the ToDD client and 3rd party software

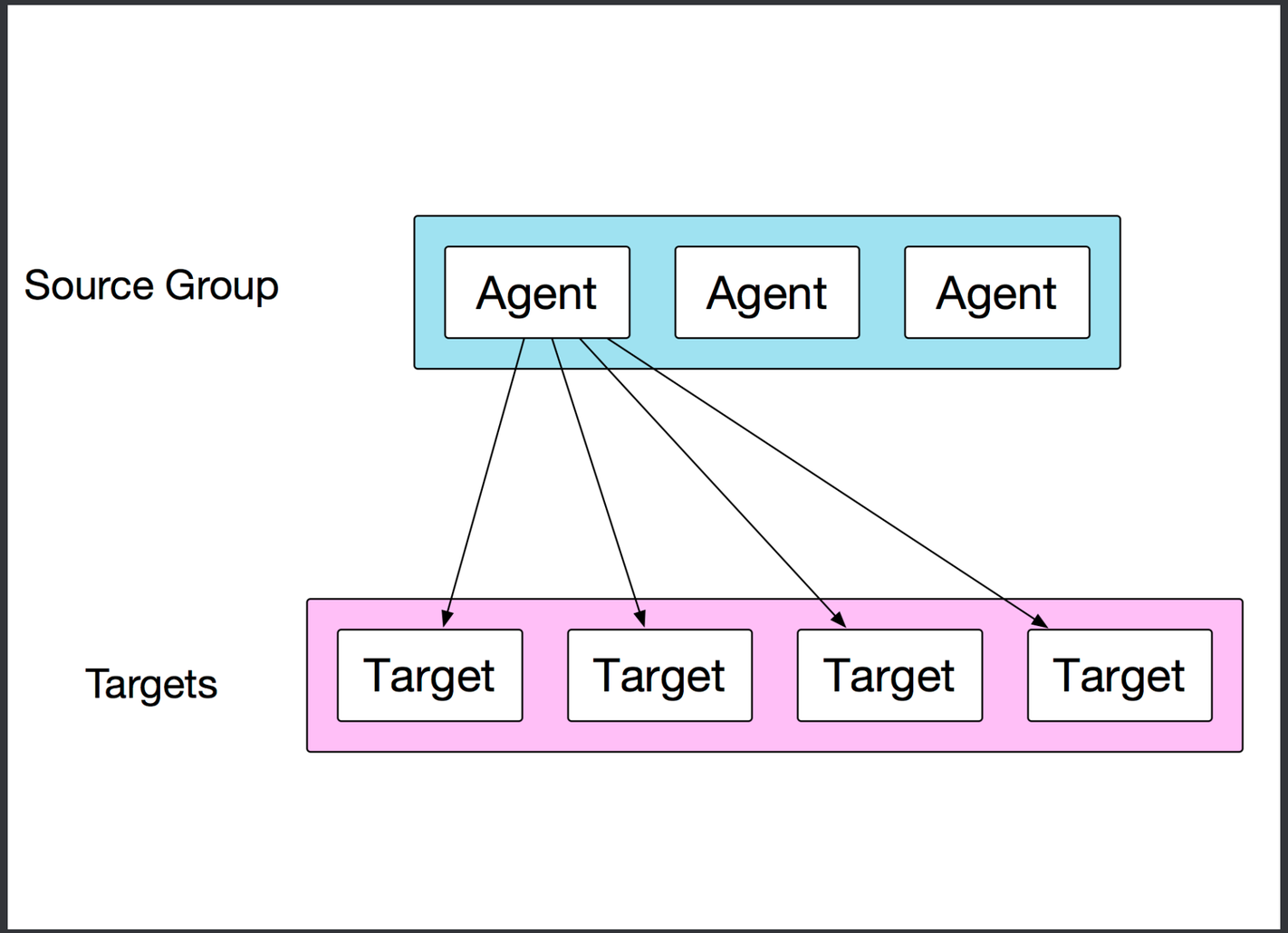
ToDD: Agents

- Provides facts about operating environment back to server
- Receives and executes testrun instructions from server
- Variety of form factors (baremetal, VM, container, RasPi, network switch)

ToDD: Grouping



ToDD: Test Parallelization



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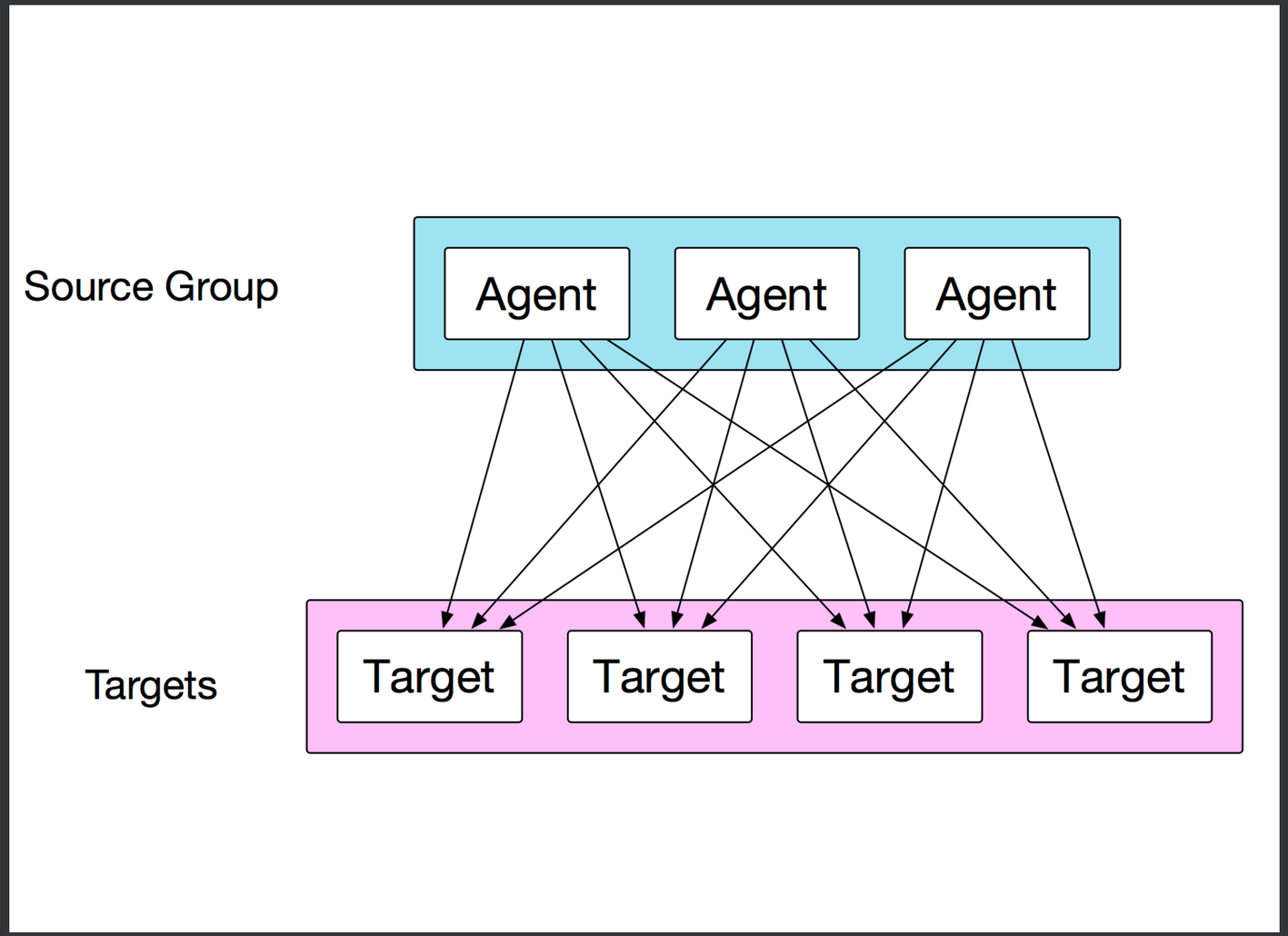
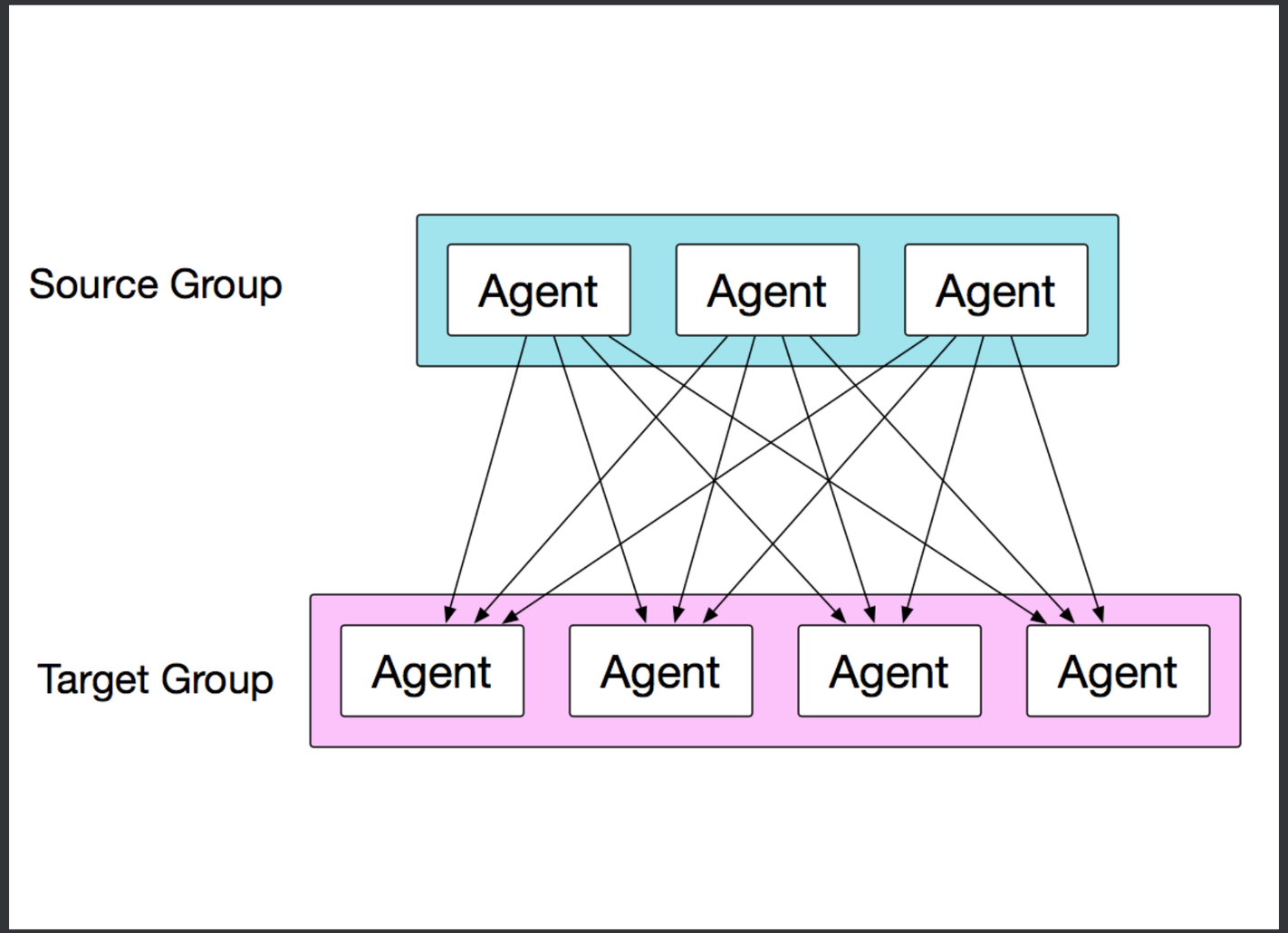
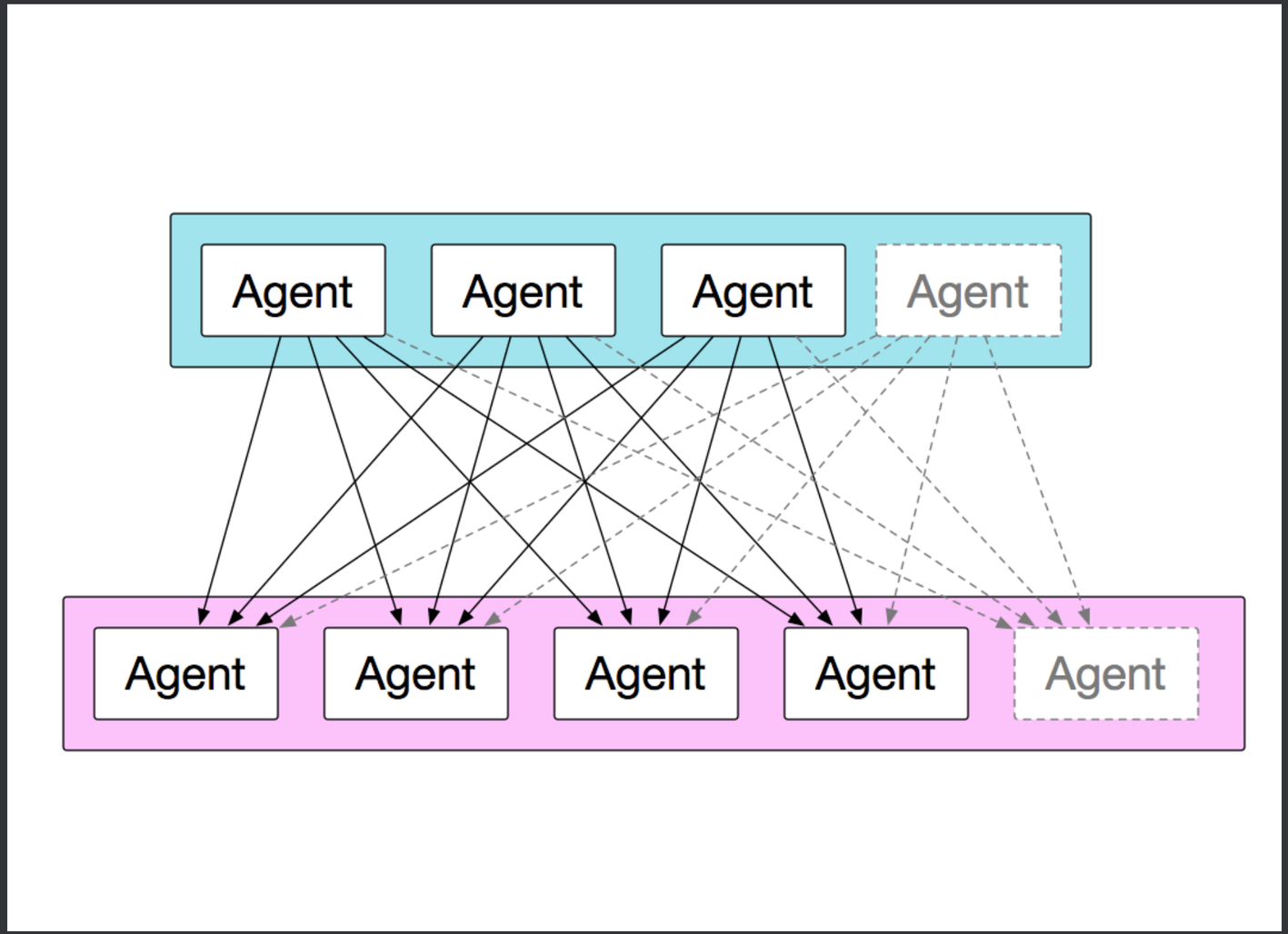


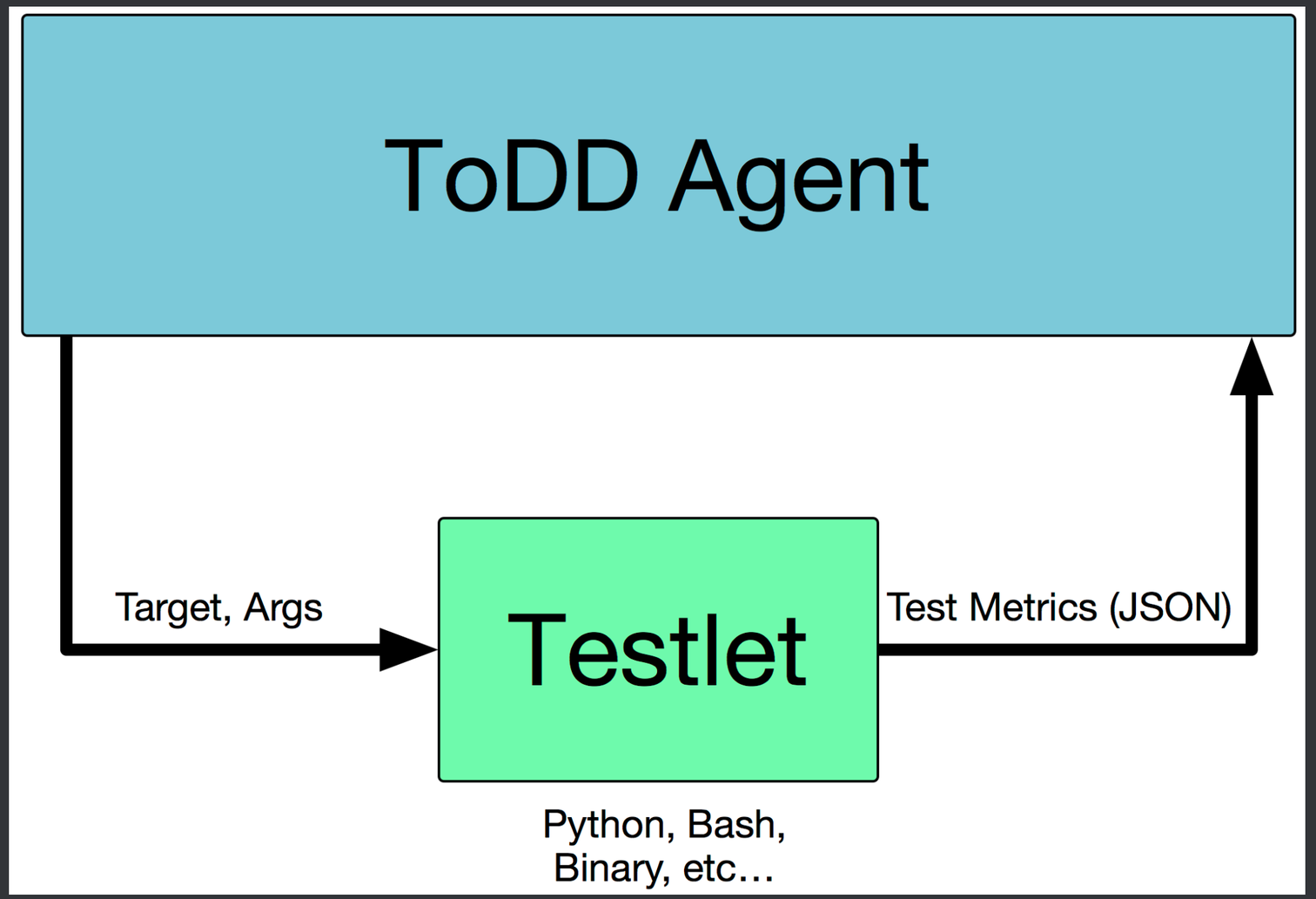
ToDD: Controlled Targets



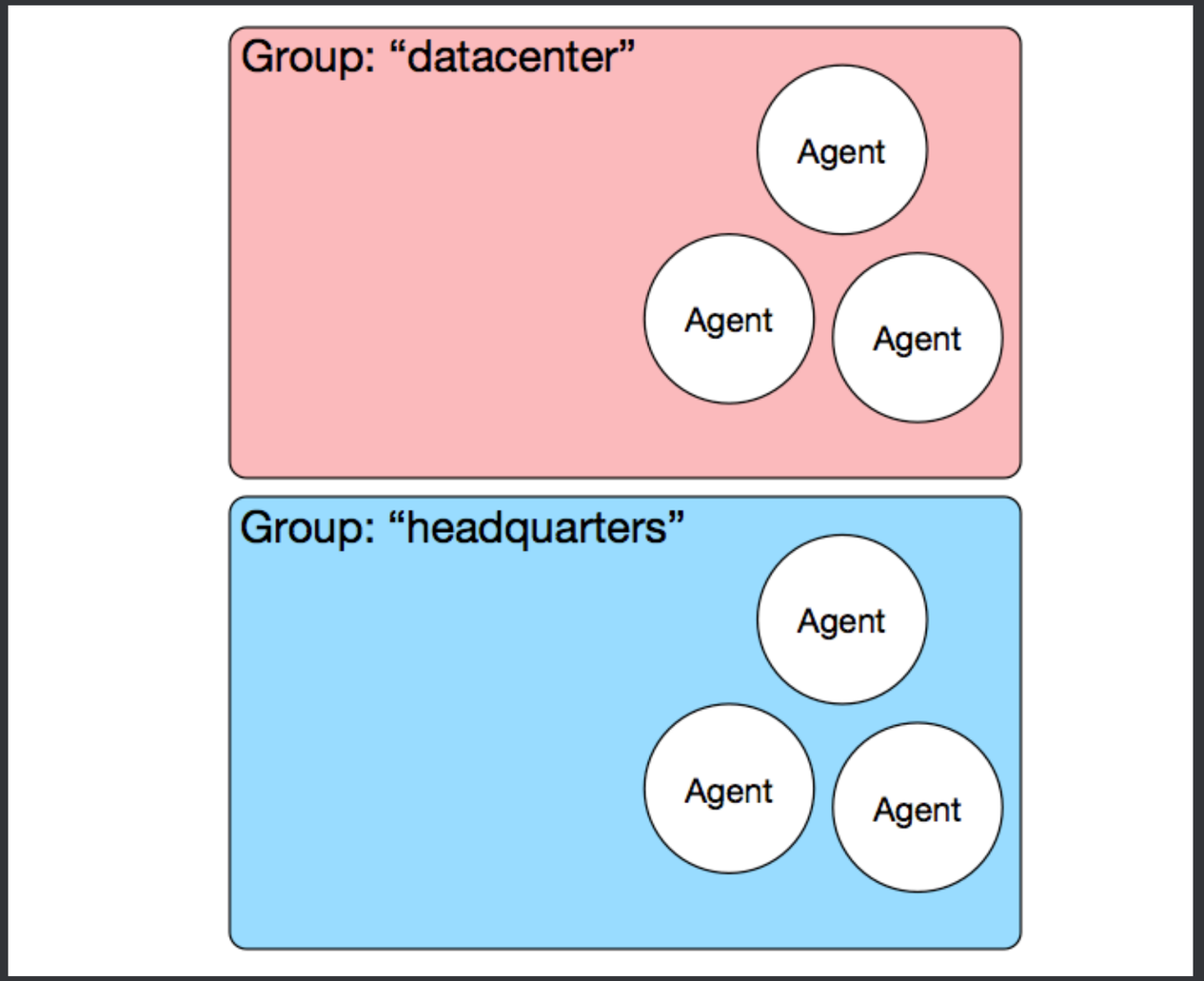
ToDD: Scaling-Out



Extensibility: Testlets



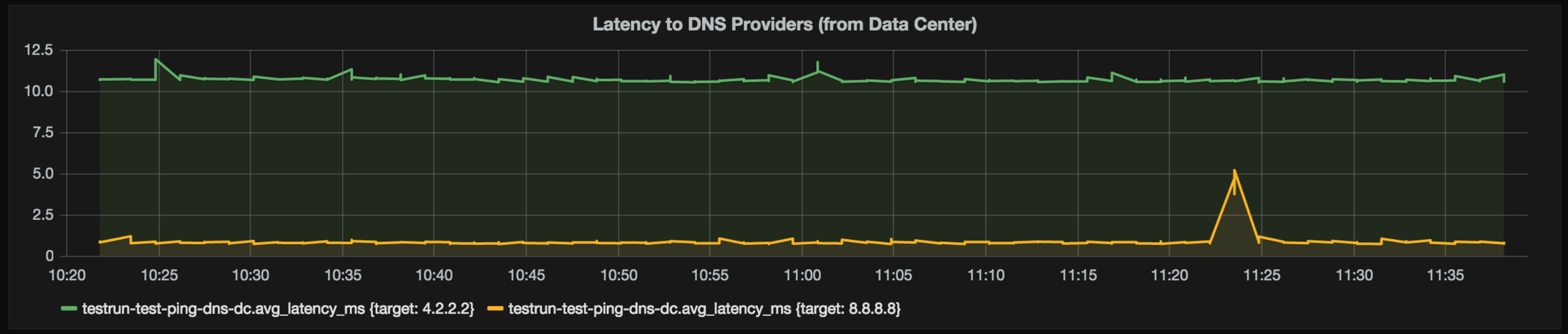
Demo

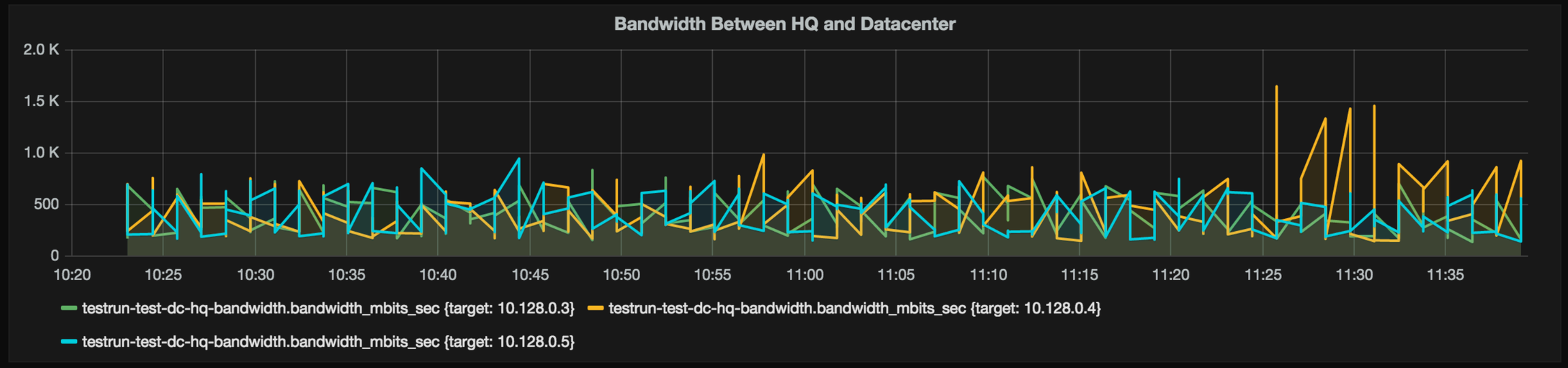

Group: “datacenter”
Agent
Agent
Agent
Group: “headquarters”
Agent
Agent
Agent

ToDD Demo Dashboard

Zoom Out

Mar 7, 2016 10:19:37 to Mar 7, 2016 11:39:29

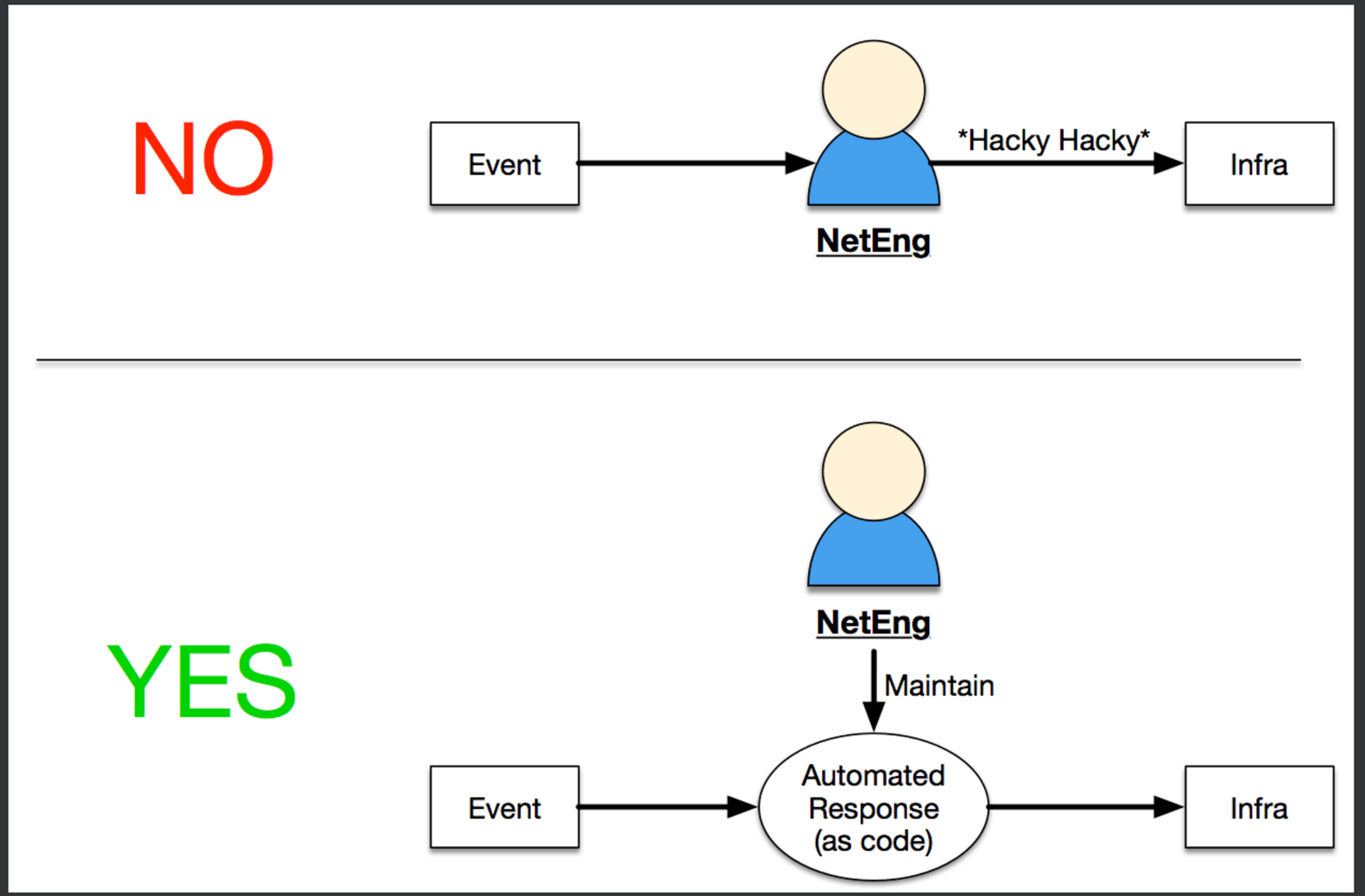




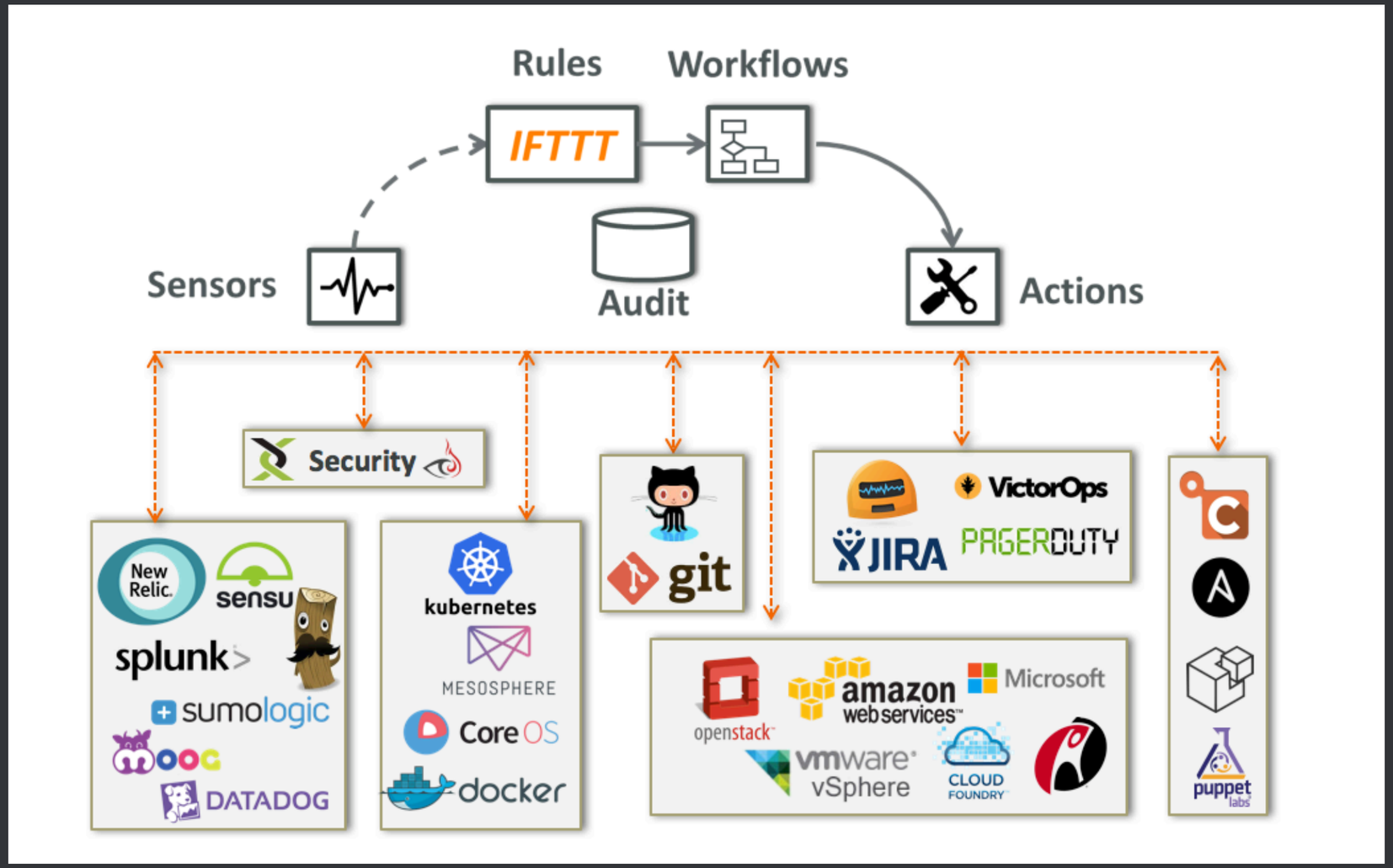
Future of ToDD

- API Improvements
- Release Cadence
- Higher-Level Abstractions

Event-Driven Network Automation



StackStorm


Rules
Workflows
IFTTT
Sensors
Audit
Actions
Security
git
VictorOps
JIRA
PAGERDUTY
New Relic.
sensu
splunk>
sumologic
DATADOG
kubernetes
MESOSPHERE
CoreOS
docker
openstack
amazon web services
Microsoft
vmware vSphere
CLOUD FOUNDRY
puppet labs

Demo

Resources

- StackStorm - https://stackstorm.com/
- ToDD - https://github.com/toddproject/todd
- Blog - https://keepingitclassless.net/
- Twitter - @Mierdin