



How Hot is the OVN?

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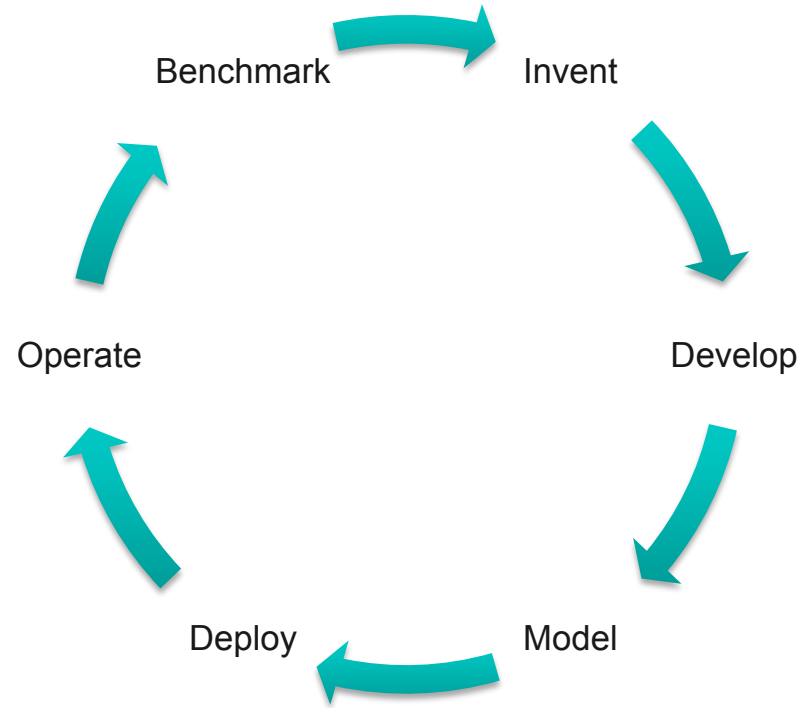
IBM Cloud Innovation Lab

IBM Cloud Innovation Lab

- Spun out of IBM Research
- We're hiring!
 - Search for “cloudlab” in IBM jobs
- Development and operation of next-generation cloud
 - Compute
 - Storage (object and block)
 - Datacenter operations
 - Network services
 - Network virtualization

Network Virtualization

- Current focus: control plane
 - Availability
 - Scalability
- Development
- Operations



Objectives

- Benchmark
 - Startup
 - Steady state
 - Failure conditions
- Contribute improvements upstream
- Implement and operate clouds
 - From small private clouds
 - To hyperscale/hyperconverged
 - 100k+ servers

Goals

- Develop framework for automated benchmarking
- Replicate tests as own code evolves
- Compare performance on different platforms
- Model workloads to forecast limits
- Develop deployment tools
- Operate live networks



Approach

- Initial focus: how to test ovn at scale?
 - Openstack Rally, or something else?
- Requirements
 - Flexibility: bare metal and virtual machines
 - Scalability
 - Automation
 - Replicability
- Sandbox is awesome!
 - Minor modifications allow multiple instances per endpoint
- Majority of work is on orchestration
 - Building code
 - Provisioning testbed
 - Testing
 - Evaluation



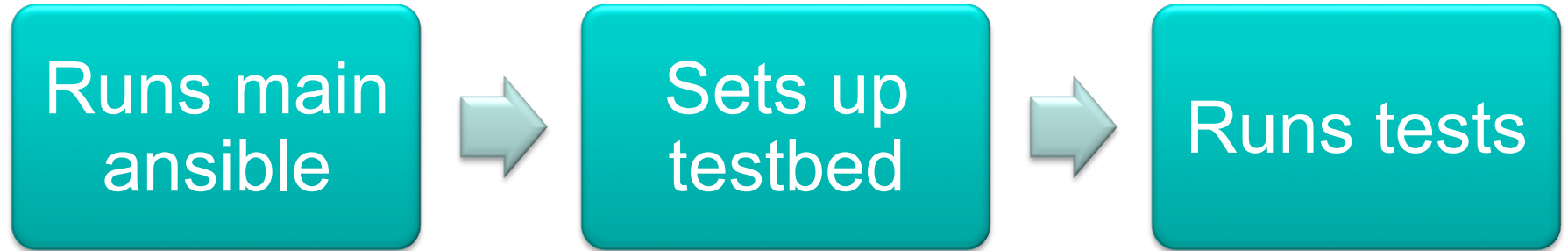
Methodology

- Ansible
 - Orchestration
 - Apply to different testbeds
 - Parameterize
 - Deploy and synchronize
 - Retrieve data
- Scripts (Bash/Python)
 - Run tests
 - Analyze data

Roles

- Master
- Builder
- Distributor

Master



Builder



Distributor

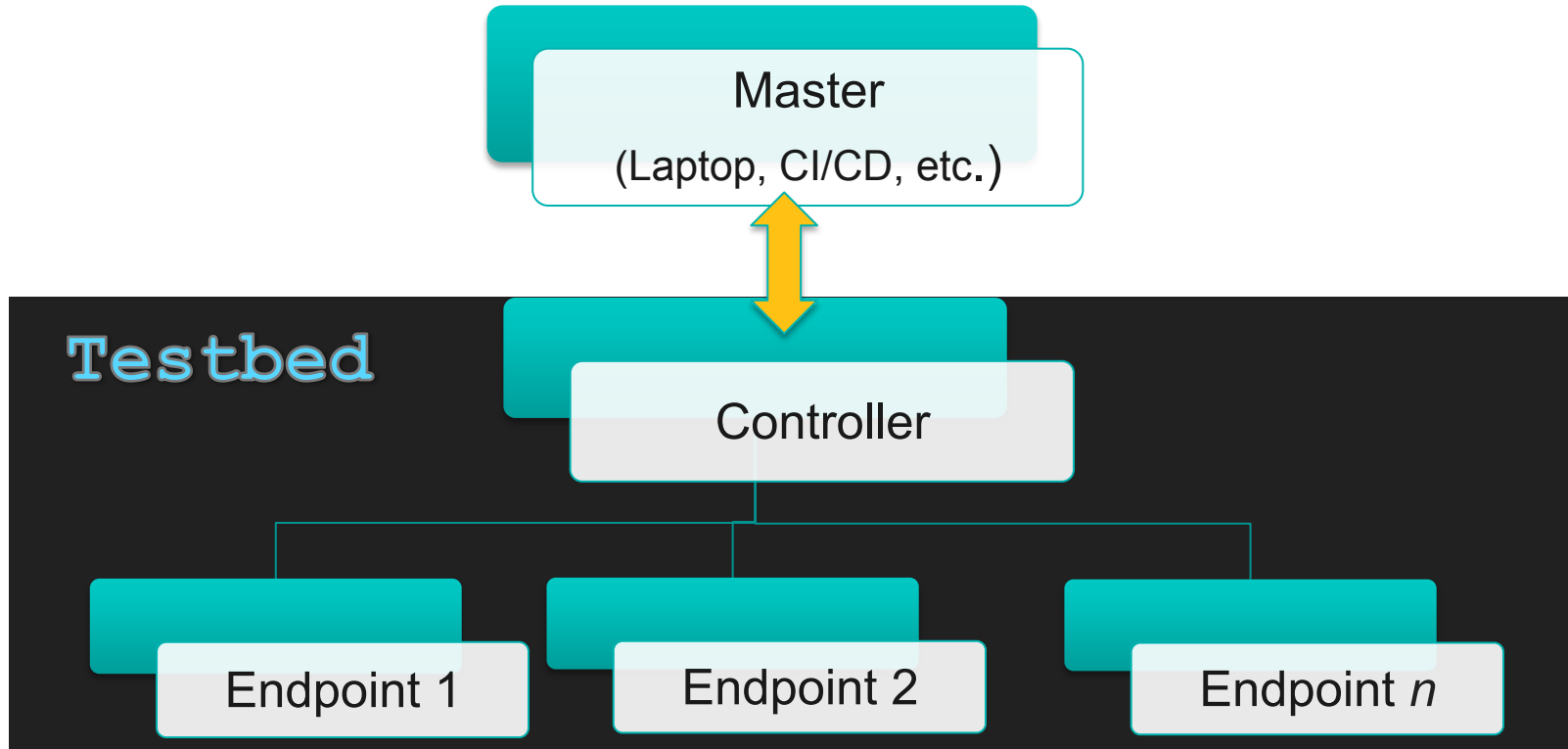
Install needed
packages on lower
level distributors or
endpoints



Deploy code to
lower level
distributors or
endpoints



Testing



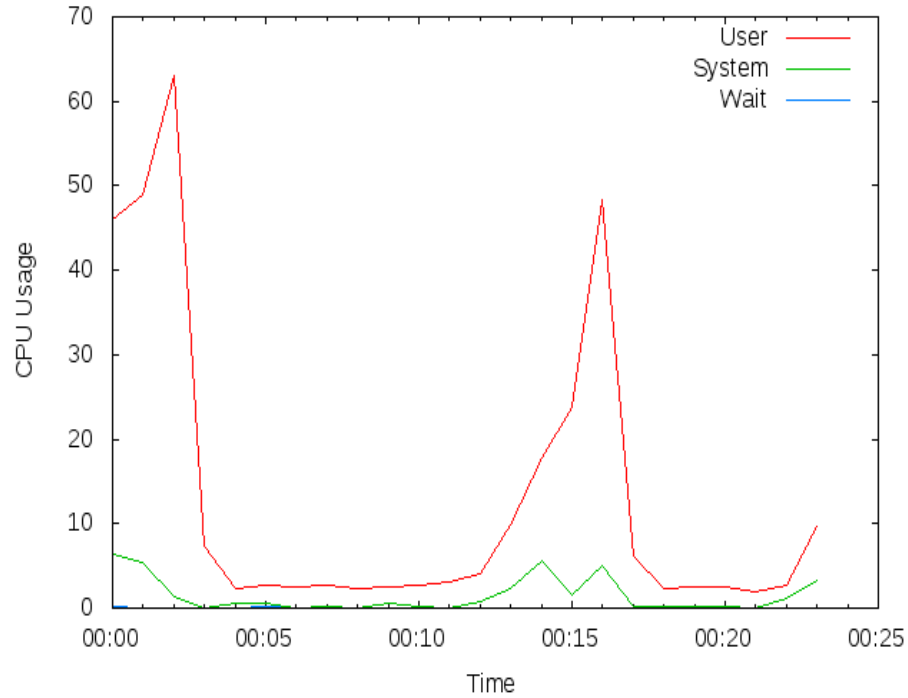
The workings

- `ansible-playbook -i localhost setup_testbed.yml`
 - Sets test machines up
 - Repositories and versions can be parameterized
- `ansible-playbook -i ~/t901 test_network_startup.yml -e "instances=1"`

Preview

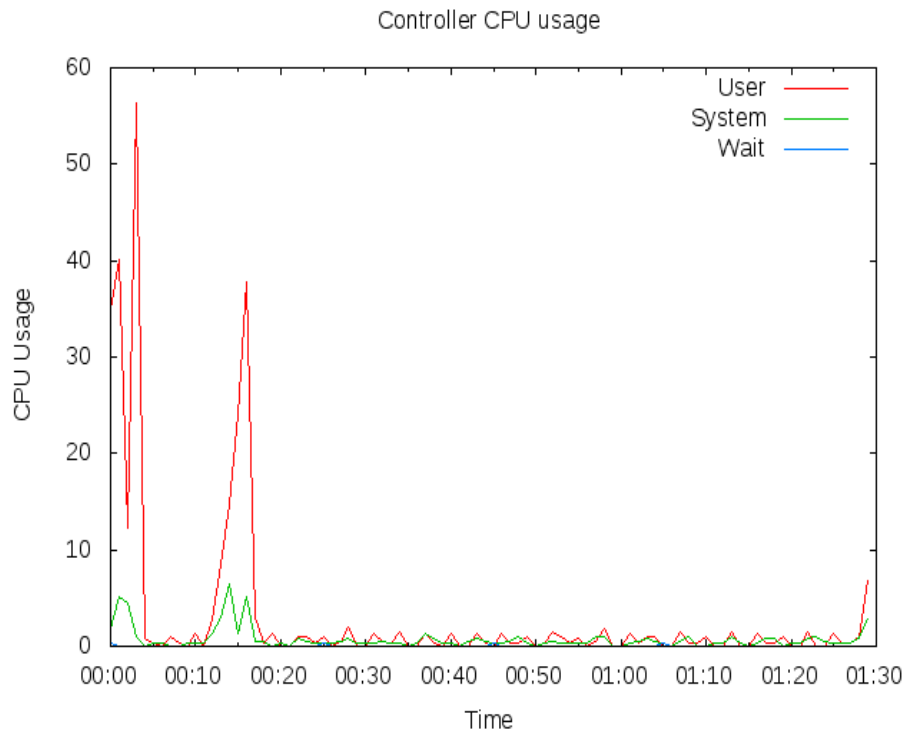
Instances=2

Controller CPU usage



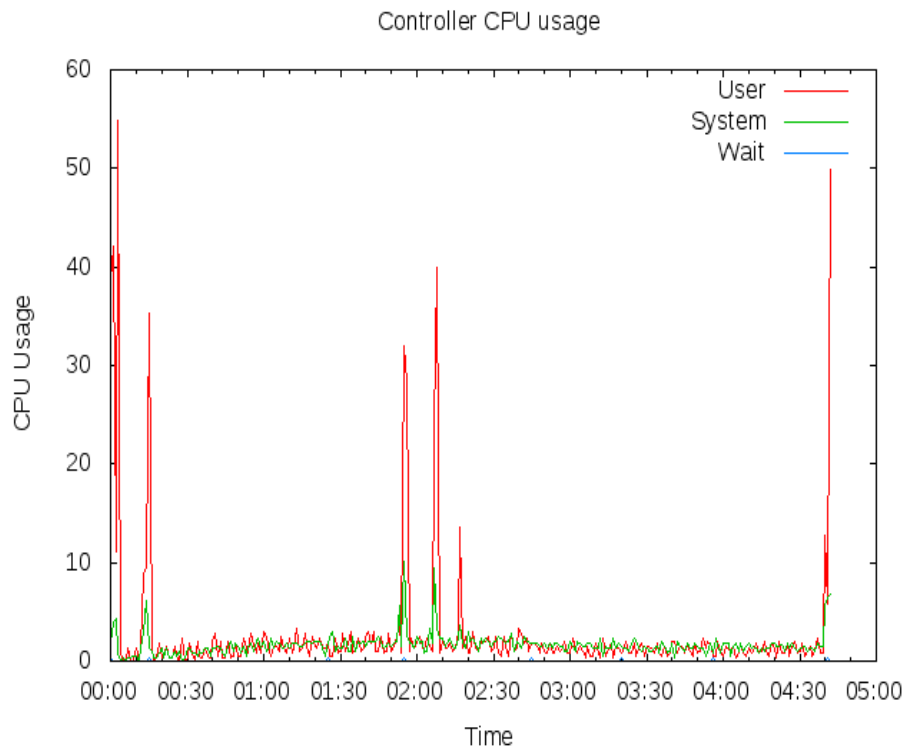
Preview

Instances=100



Preview

Instances=1000



Lessons learned

- Testing ovm at scale not difficult with sandbox
- Ansible is awesome
 - Make sure you understand YAML and Jinja2