# Cloud Sandboxes for Cyber Range Orchestration

## KEY BENEFITS

Deliver cloud efficiencies, scale, and self-service access to your cyber range!

### More Agility

Automate the deployment of even the most complex cyber infrastructure configurations in seconds and scale automatically.

### Less Cost

Optimize the utilization of dedicated equipment, federate labs and data centers, and maximize capital and operating cost efficiencies.

### Higher Reliability and Reuse

Model cyber environments once and ensure they can be quickly redeployed to the same state time and time again.

### Better Security

Capture more accurate threat scenarios and expose security weaknesses earlier.

### More Effective Test & Training

Turn your security test and training centers into self-service clouds. Provision complex cyber test environments faster. Automate the bring-up of real-world, threat environments for running advanced training like "red team / blue team" cyber exercises.

## The Need for Agile and Cost Effective Cyber Ranges

As cyber threats continue to grow, enterprises recognize the need for cyber range security solutions that effectively simulate real-world cyber threat scenarios. But cyber range effectiveness is held back by:

- **High complexity** – environments consist of many components like switches, servers, firewalls, specialized test gear, virtual resources, as well as intrusion prevention and test tools, APIs, and services.
- **Lack of visualization & modeling** – prevents easy access to and reliable reuse of various security / threat environments and reporting.
- **Lack of automation** – prevents rapid provisioning of environments and scaling of infrastructure to meet growing threat scenarios.

## A Complete Cyber Range Solution

Quali's Cloud Sandboxing solution for cyber ranges allows enterprises to rapidly provision full-stack, real-world cyber threat environments in seconds. Easily manage the entire lifecycle of modeling, deploying, monitoring, and reclaiming cyber sandboxes. Cyber range infrastructure blueprints can be published for as-a-service and on-demand consumption by multiple tenancies, groups, and users. Quali gives organizations a scalable and cost–effective solution for running effective cyber threat trainings like Red/Blue Team exercises, performing live response threat mitigation, managing cyber test and validation environments, and speeding cyber-range effectiveness in hardening IT defenses.



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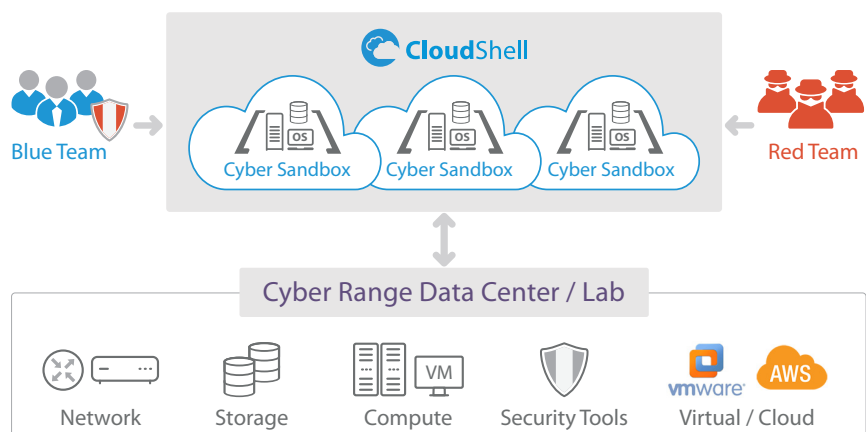
# Key Features

## Full Stack Cyber Environments

Automate the deployment and configuration of all the infrastructure components necessary to replicate any cyber threat scenarios, from physical networking, storage, servers, and test equipment, to virtual resources, cloud components, tools, and applications. Model and provision complex L1, L2, and L3 networking as well.

## Self-Service, On-Demand, Multi-Tenant

Publish cyber range environments for on-demand deployment by IT, QA, and security teams. Complete REST API allows access to cyber environments by DevOps and Test Tools as well. Single tool for managing and automating multiple sites allows federating and consolidating cyber labs and data centers.

## Rapid Blueprint Modeling

Quickly and easily model complex cyber infrastructure blueprints. Drag and drop physical, virtual, cloud, and app components onto a visual canvas; easily model network configurations and quickly set custom attributes and configurations.

## Rich Orchestration

Manage the entire lifecycle of cyber sandboxes with orchestration that supports automated setup, provisioning, teardown, monitoring, and scaling. Snapshot and restore environments to known states for reproducing threat scenarios. Provide custom orchestration commands for specific use cases like security validation, training, and support/remediation.

## Live, Interactive Environments

Give users SSH and RDP access to resources directly from within live cyber sandboxes; live graphs and charting provide compelling visual feedback; custom instructions and guided tours enable faster onboarding of users.

## Resource Optimization

Optimize cyber range infrastructure utilization through intelligent resource sharing, management of resource contention, scheduling, and automated control of physical layer connectivity (L1 and L2 Switching).

## Reporting and Analytics

Provide visibility into environment and infrastructure usage for predictable spend and resource planning. Tie analytics to automation data for valuable insights into cyber scenario behaviors and trends.
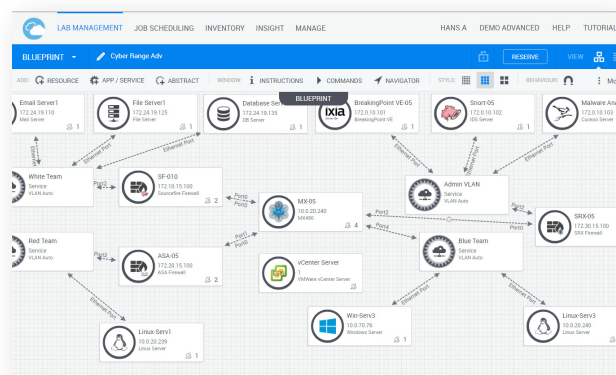


*Full stack, real-world cyber infrastructure environments.*
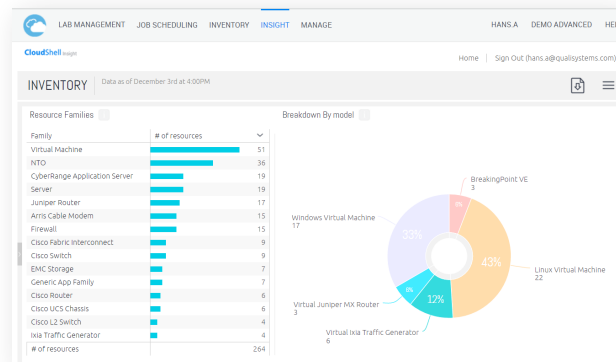


*Rich reporting and analytics for resource planning and threat behavior analysis.*

## Customer Snapshot
### Defense Information Systems Agency

Using Quali, the Defense Information Systems Agency (DISA) was able to consolidate their cyber range data centers into a private cloud to drive significant cost savings and efficiencies.

"DISA is responsible for supporting a critical element of our national defense strategy, which is the sharing of information between joint war fighters, national leaders, and other mission and coalition partners; this fast, simple and cost effective solution provides us with the ability to fulfill our mission without sacrificing performance or security" - DISA Cyber Security Range chief architect

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