



CLOUD
PHYSICS

Collective Intelligence for Data Center Operations Management

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Outline

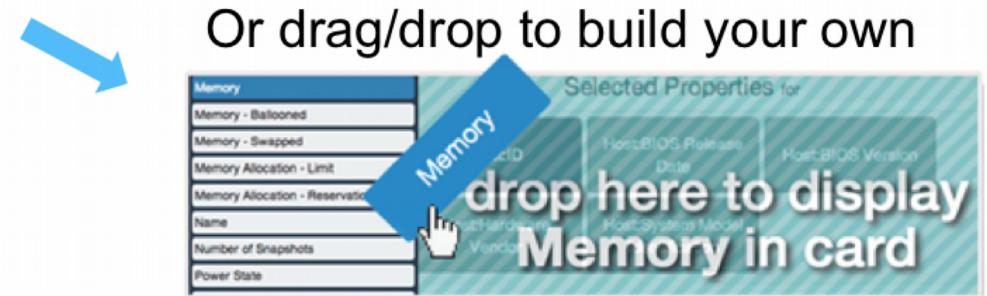
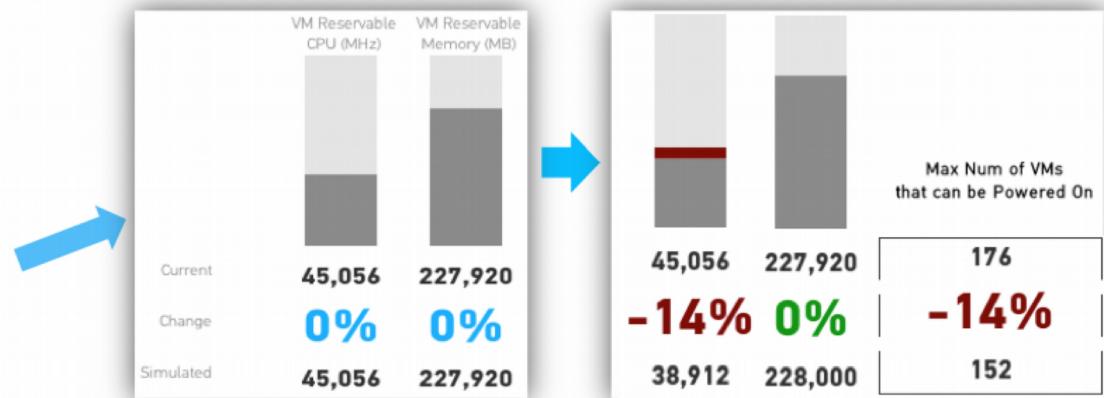
- Operations Management SaaS
- Experiences with Spark
- Ongoing Work

Operations Management SaaS

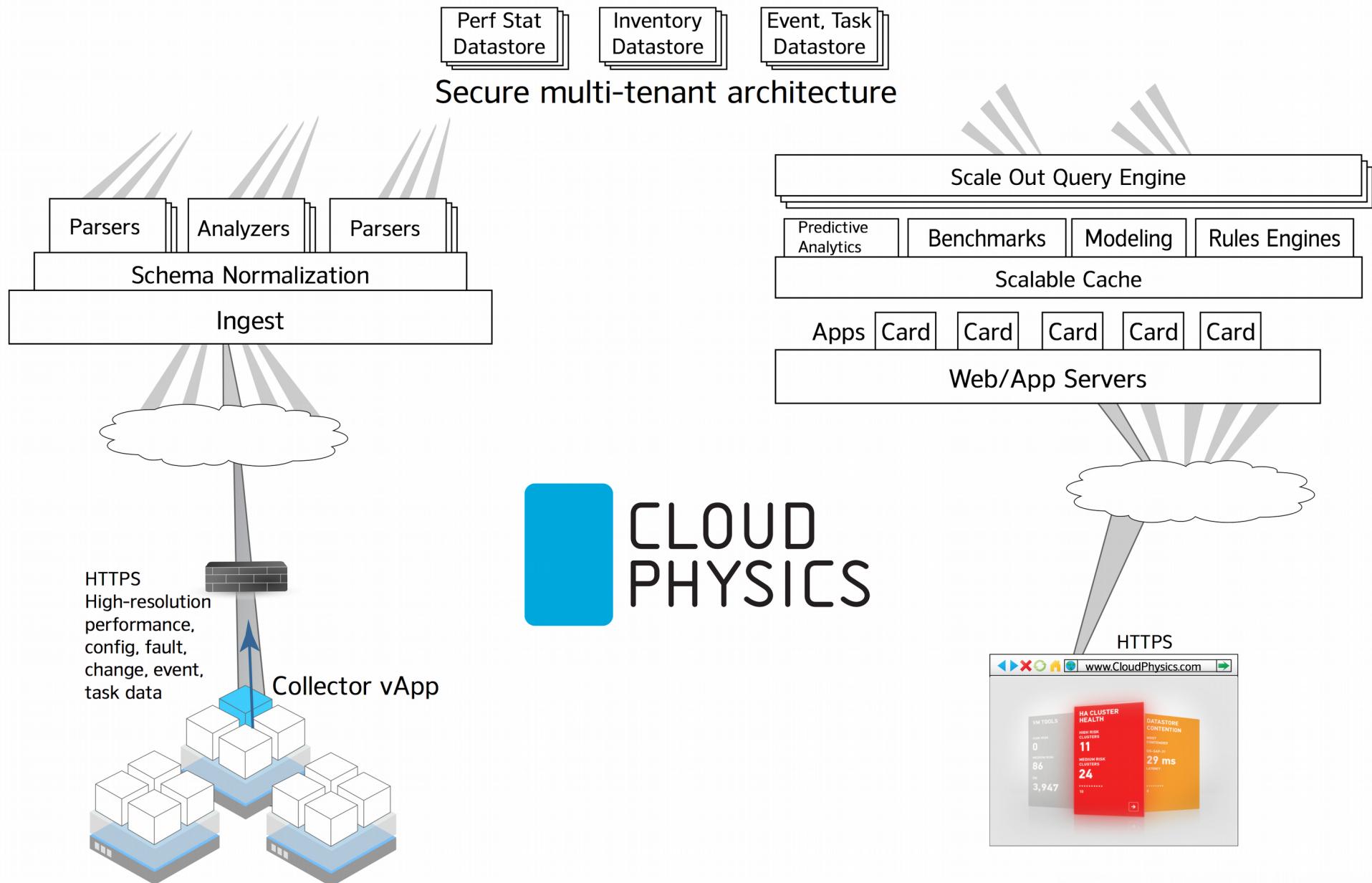
Use an existing card (e.g. HA Sim)

The dashboard displays several cards:

- DASHBOARD**: Shows Datastore Utilization (Lowest % Free: 0%), HA Cluster Health (HA Disabled: 16, Admission Control Disabled: 28), and a **DATASTORE SPACE** card for "SVR-GBC-ESX-01:storage1" (Low Disk Space).
- CARD BUILDER**: A search bar for "Search Cards".
- CARD STORE**: A grid of cards including Host Resource Commitment, VMotions Yesterday, VM Reservations & Limits, Knowledge Base Advisor, Uptime Benchmark, Inventory, Host NTP Settings, Suggested Cards, Shared Cards, Guest Tools Health, HA Simulation, Snapshots Gone Wild, Observer Status (highlighted in orange), Customer Management, and Caching Analytics.



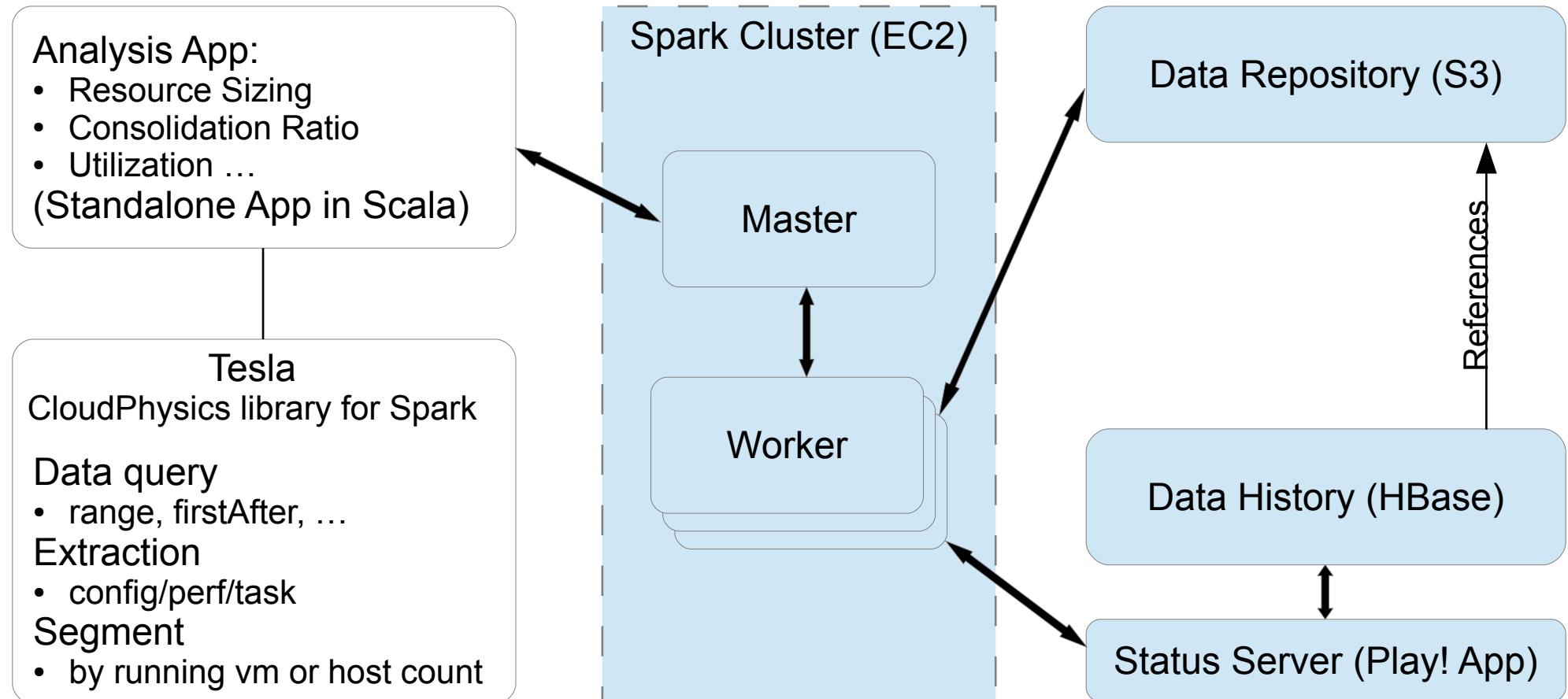
Data Pipeline



The Data We Collect

- Configuration, performance, tasks and more
- From virtual machines, servers, networks and storage
- 100 billion+ metric samples per day
- On average 1.3 million properties per datacenter

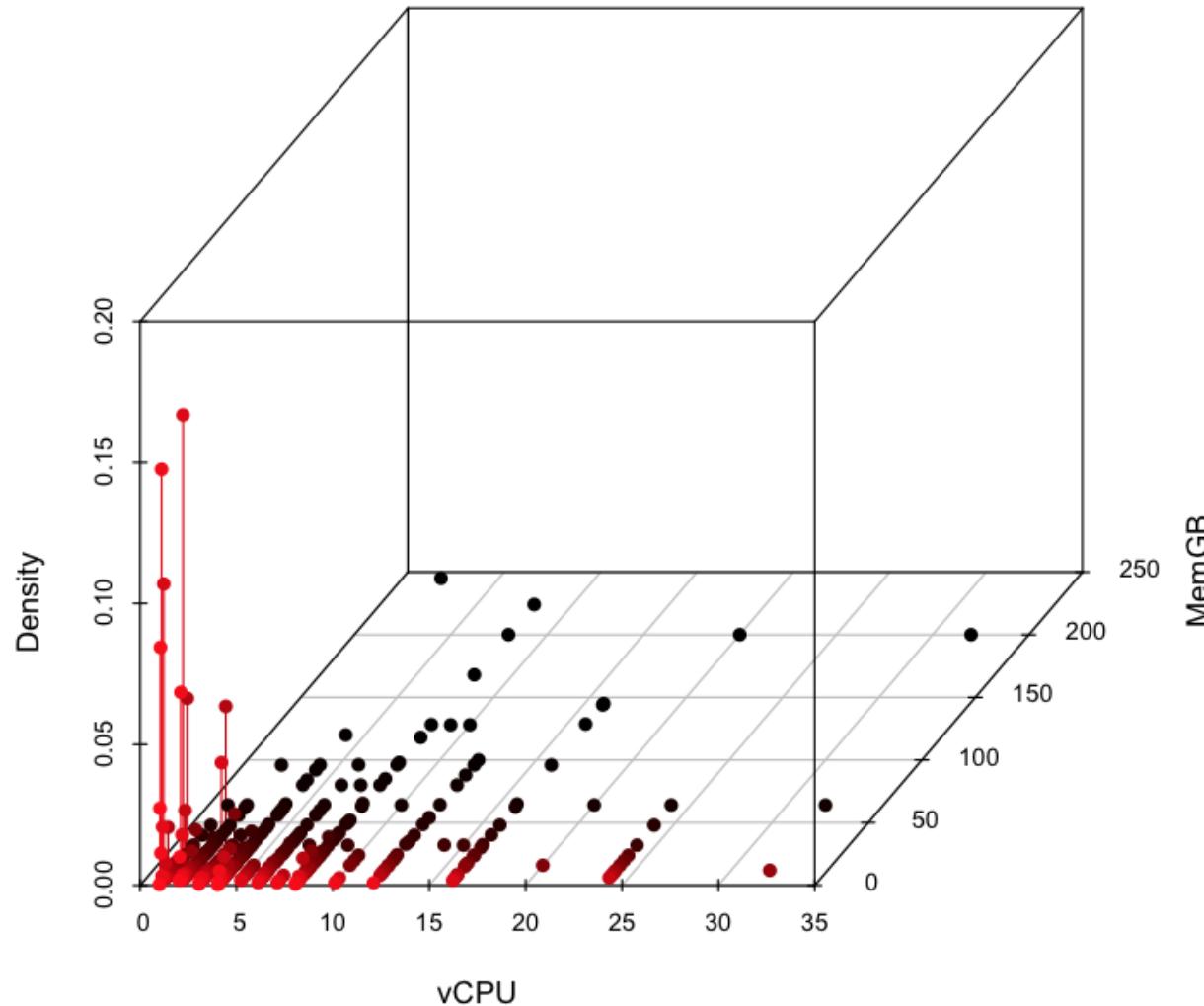
Cross-User Analysis Setup



Analyses We Have Done

- VM configured resources and utilization
- Server CPU and memory utilization distribution
- Storage array and interconnect adoption
- Virtualization product feature adoption

VM vCPU and Memory Size Distribution



Experiences with Spark on EC2

- + Quick getting up to speed
- + Great EC2 support
- + Tolerating variations in task execution time
- Variations in EC2 instance performance

Next Steps

- Create RESTful API for frequently used analyses to make update and consumption easier
- Utilize Shark and MLbase for cross-user data analysis
- Utilize Spark Streaming for near-realtime performance data analysis

Thank You!

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