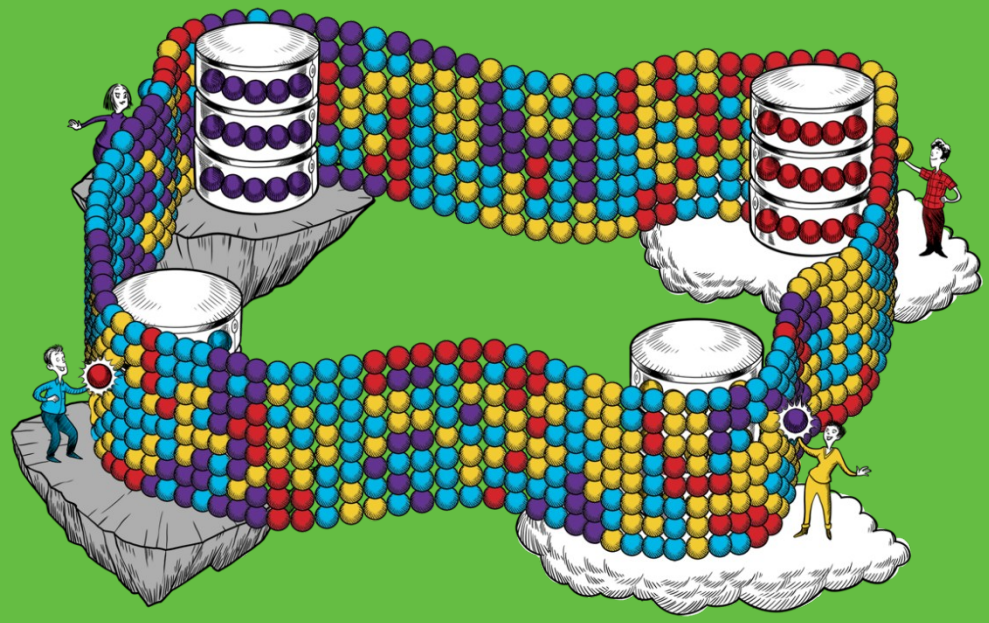
elastifile

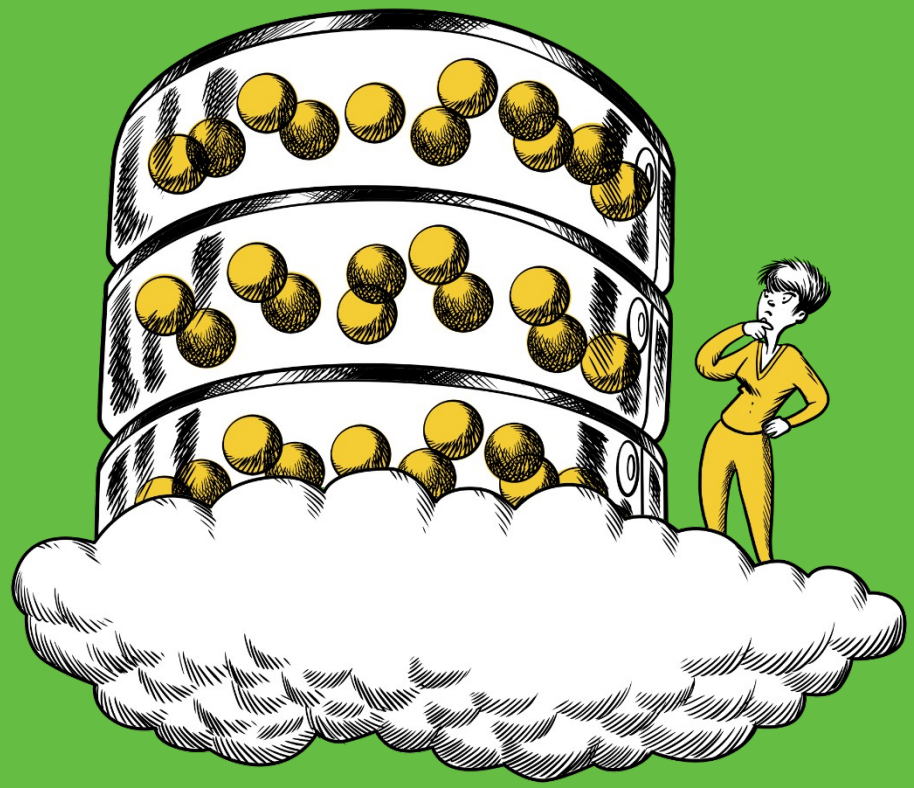
Cloud-Integrated IP Design: *Bursting EDA Workflows to the Public Cloud*



Jerome McFarland, Marketing Director, Elastifile

Agenda

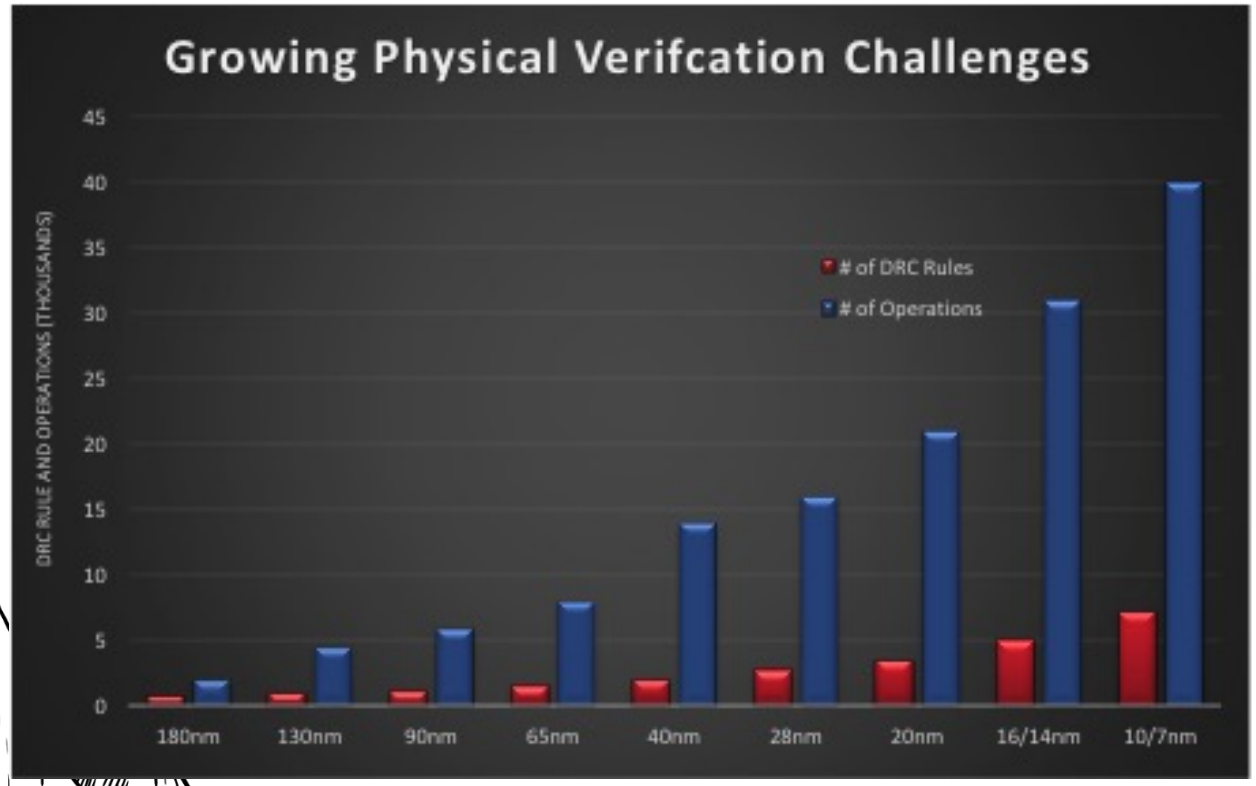
- Why Cloud?
- How Cloud?
- Real-World Example

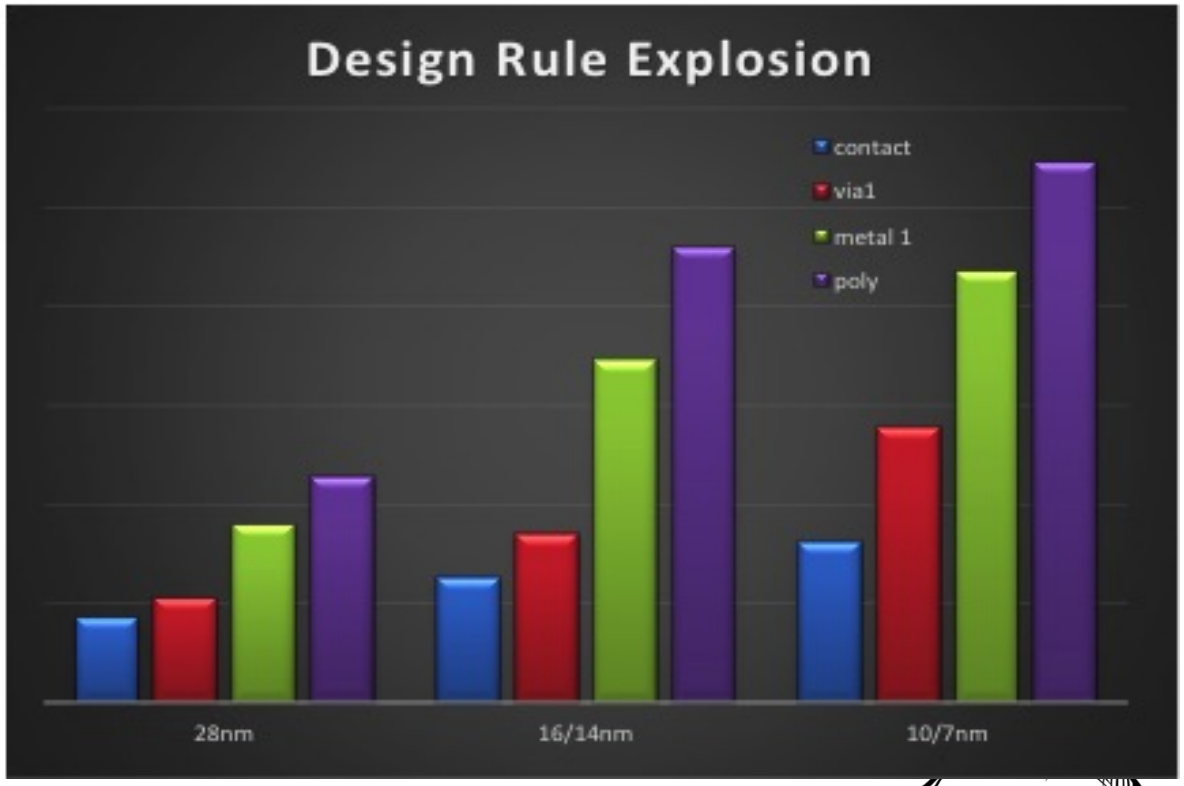


Why Cloud?

IC Design Complexity is Steadily Increasing

Process nodes shrinks require more design rules and complex DRC analyses

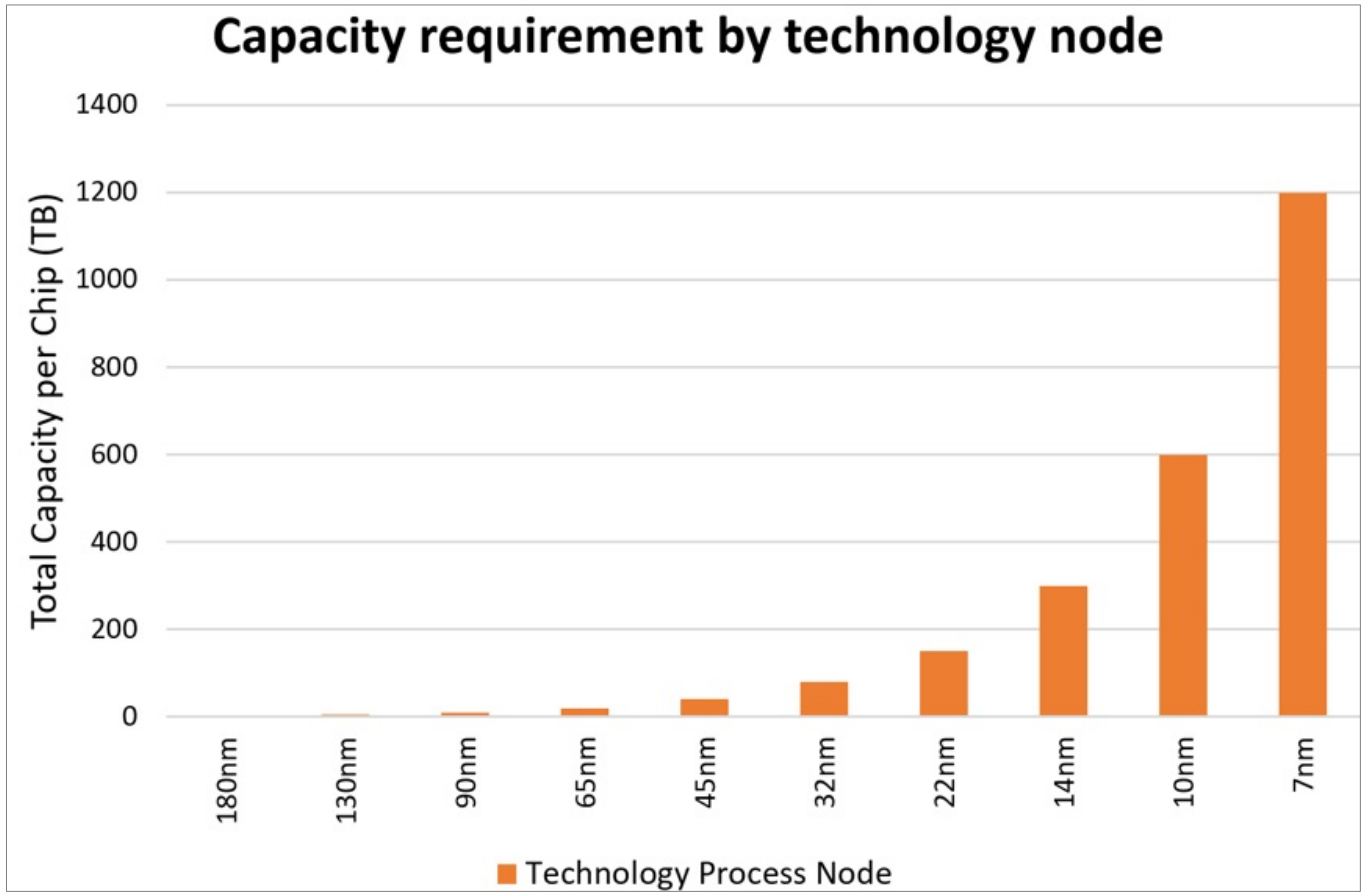




Source: Cadence

Increased Design Complexity Creates Massive Data Sets

Design, Simulation, and Verification processes generate and consume huge amounts of data



Source: Dell-EMC

Infrastructure Needs to "Just Work"

Mindshare allocated towards complex IP and tools…no bandwidth for IT hassles

Critical EDA IT Requirements

Public Cloud Integration offers Best of All Worlds

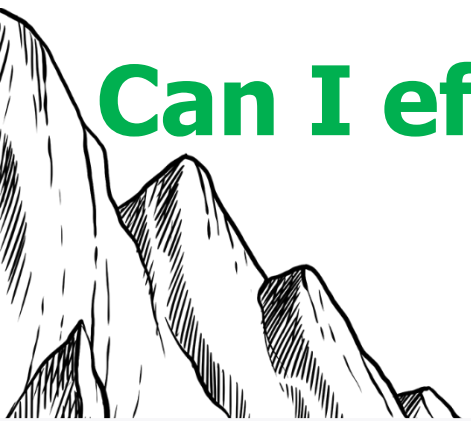
- **Elastic Scalability**
  - Resources can scale to match bursty workload requirements
- **Unlimited Performance**
  - Resources are essentially infinite…capable of high degrees of parallelism
- **Minimal Complexity**
  - "IT-as-a-Service" abstraction layer eliminates low-level IT headaches
    - No more HW upgrades and maintenance
    - Eliminate restrictive CAPEX commitments

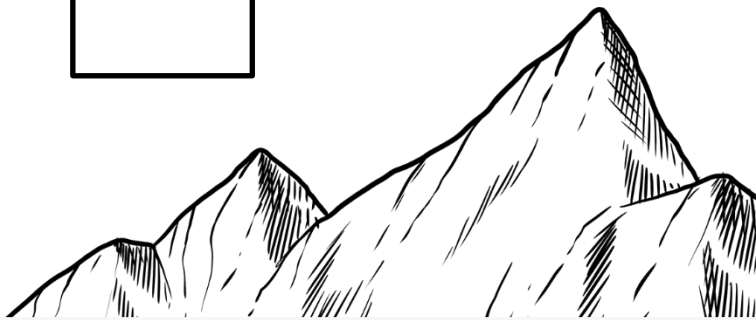
EDA Cloud Bursting Checklist

Scale, Performance, and Simplicity? ☐

Can my tools run in the cloud? ☐

Can I efficiently manage my data? ☐





EDA Cloud Bursting Checklist

Scale, Performance, and Simplicity?

amazon web services

Google Cloud Platform

Azure

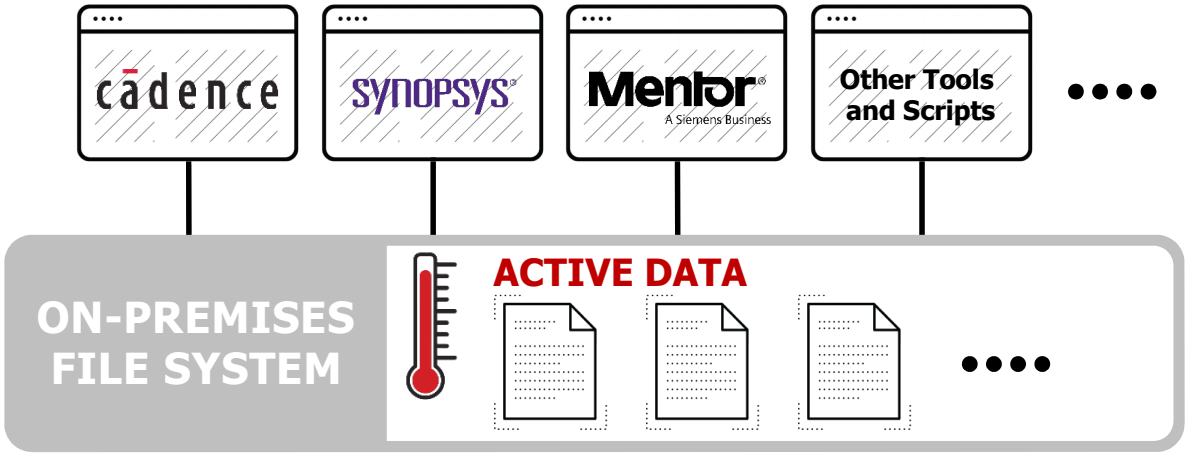
Can my tools run in the cloud?

Can I efficiently manage my data?

How Cloud?

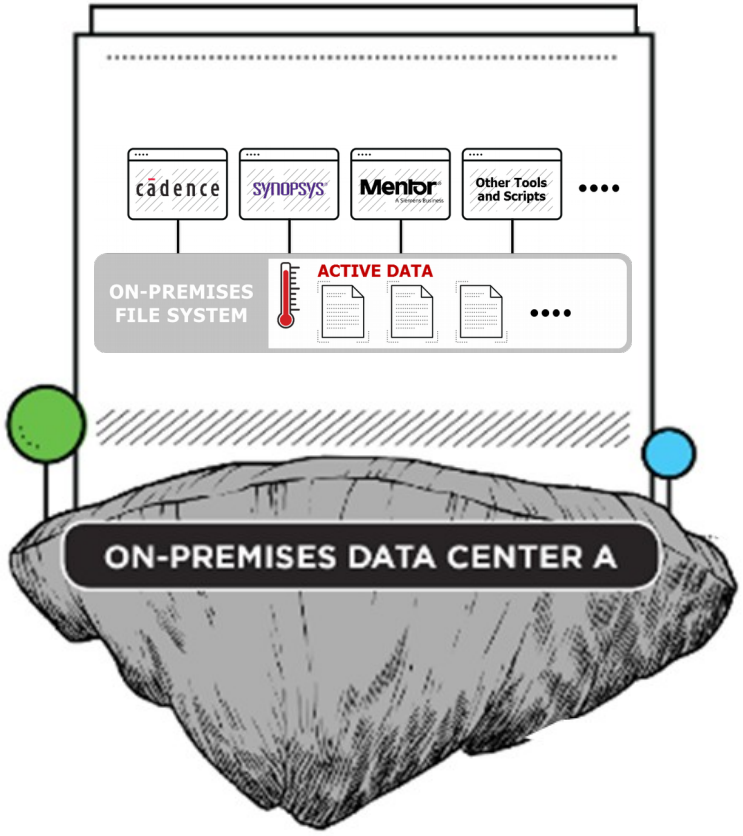
Ok, so now I want to burst…

EDA Applications were designed for File Systems



Tools expect to create and ingest files and directories

Need data sharing, strict consistency, and performance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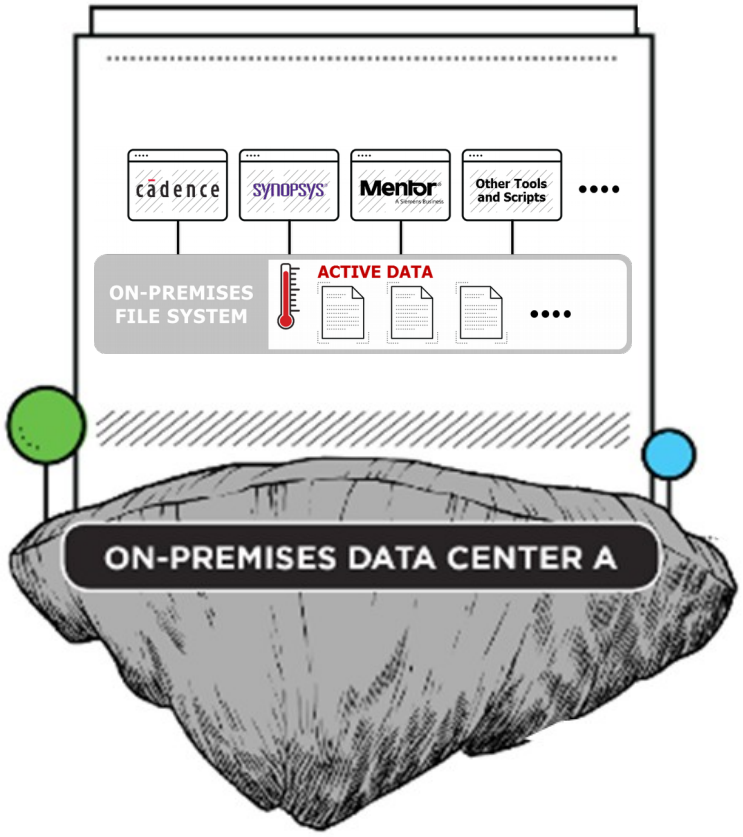
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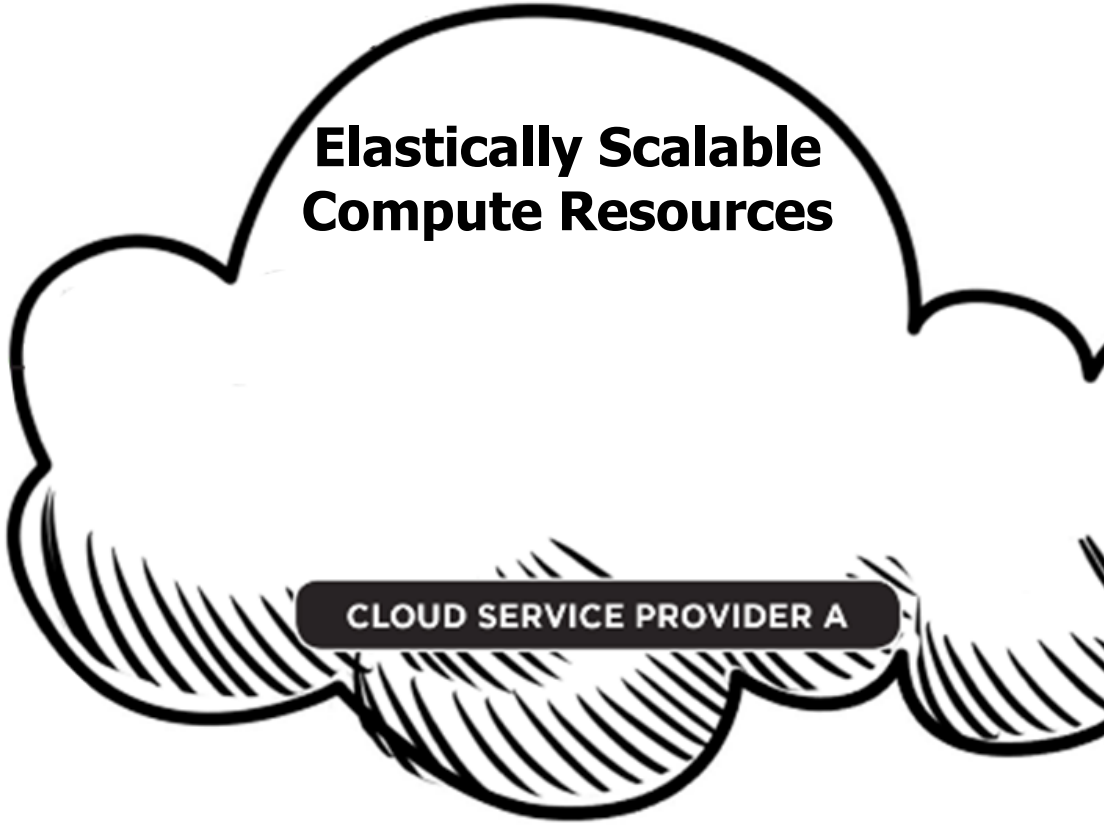
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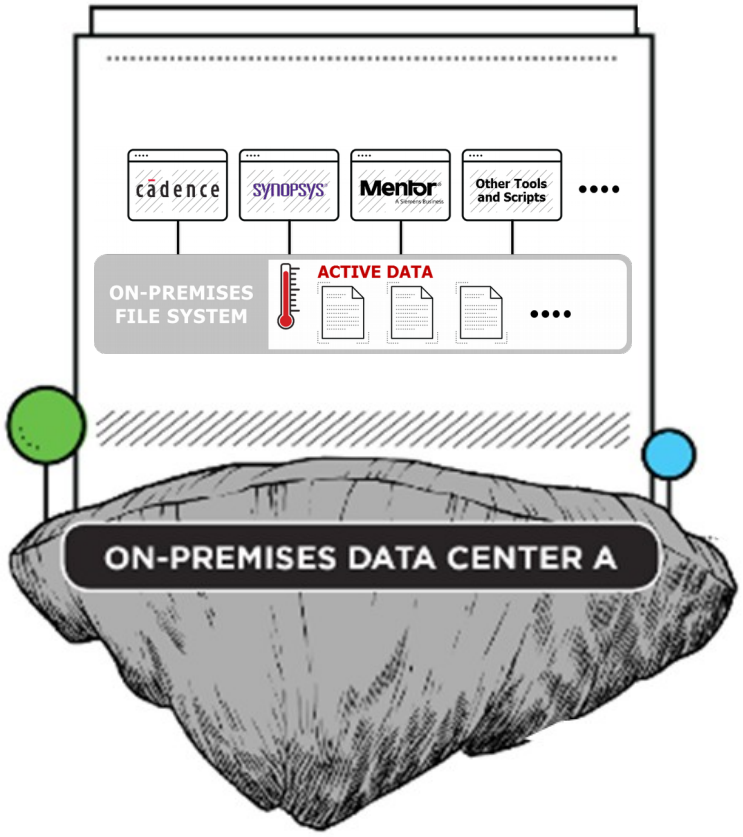
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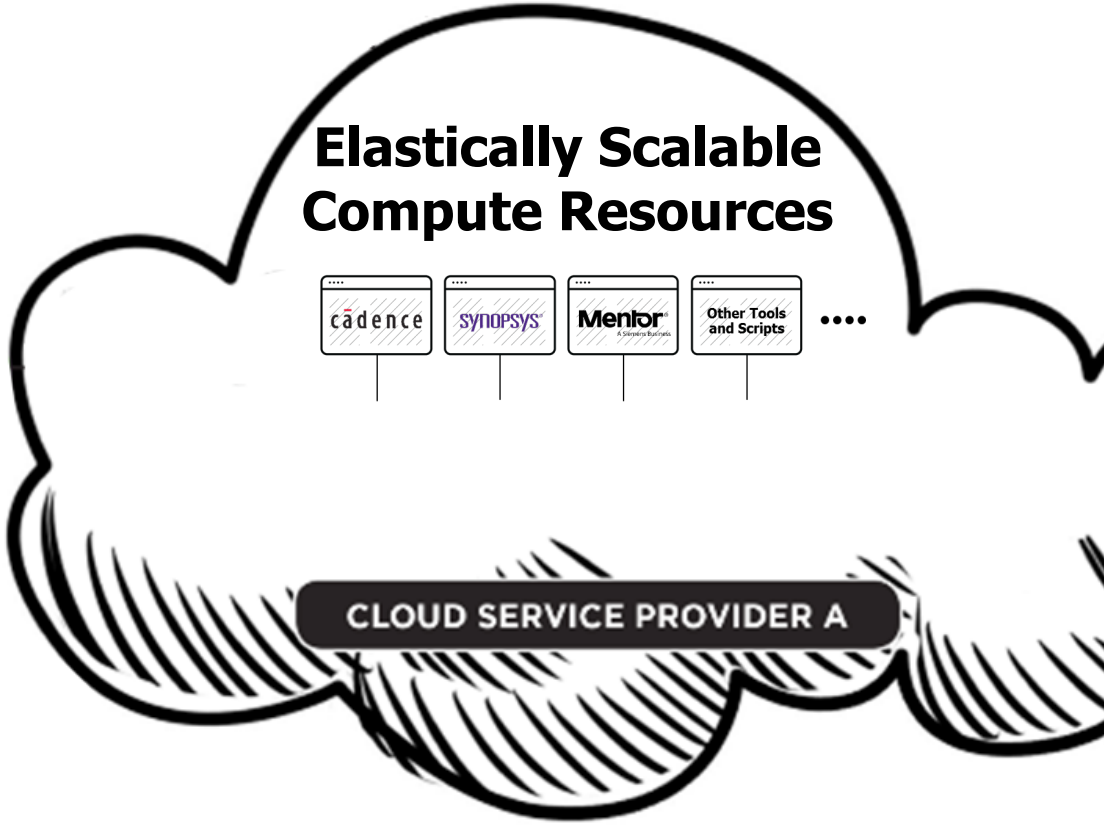
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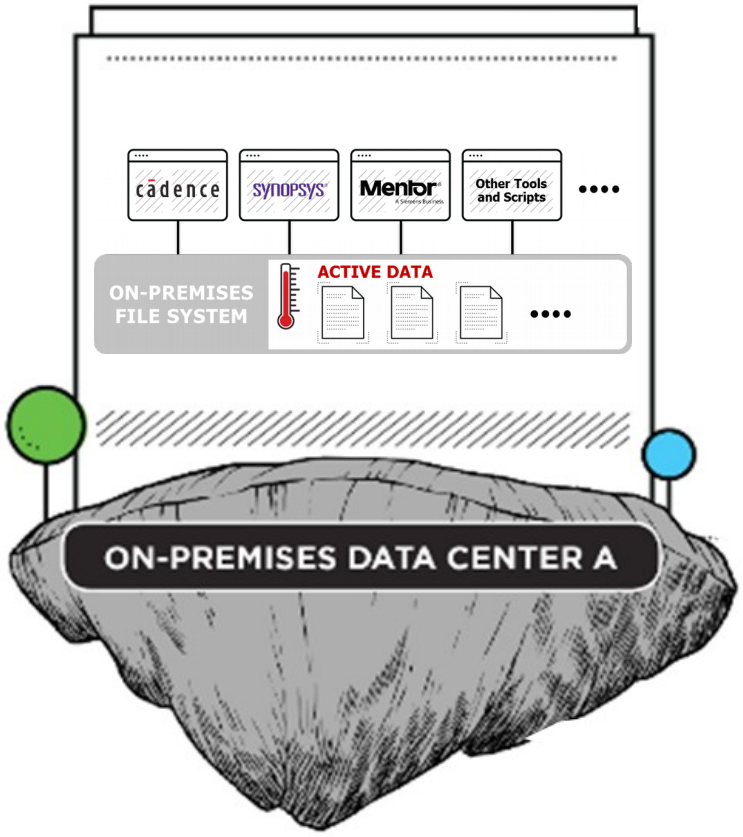
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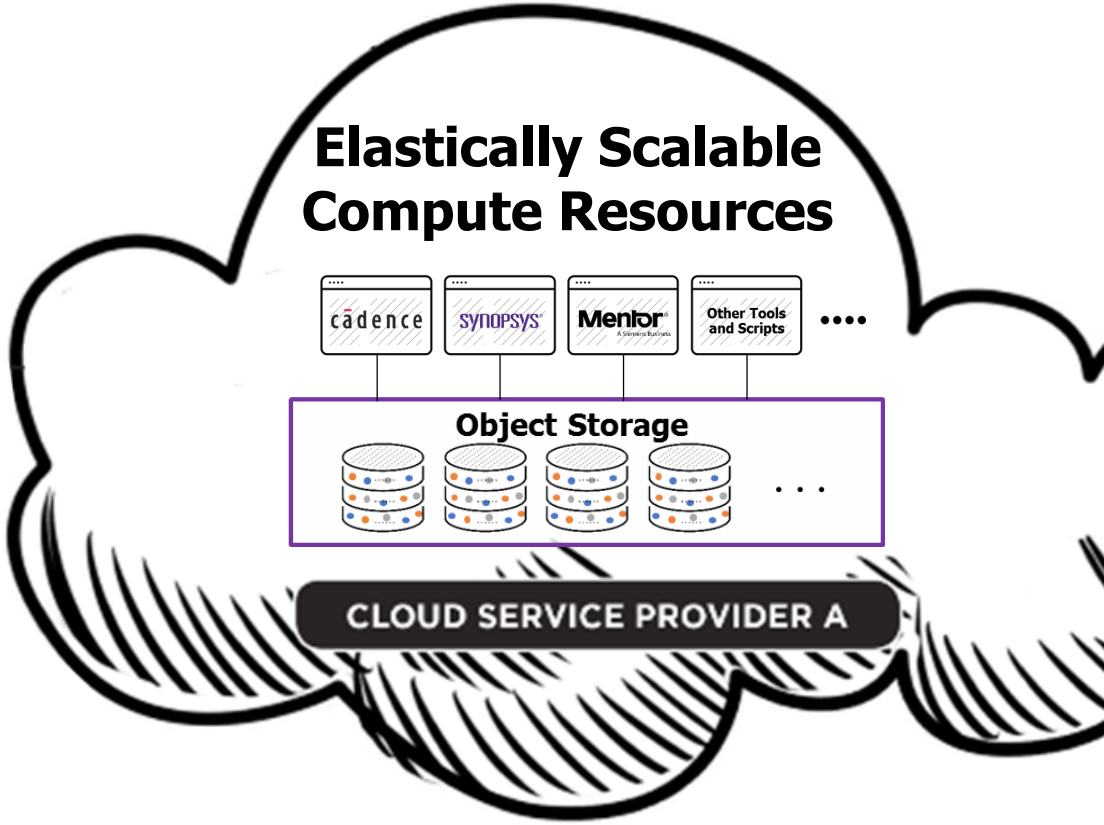
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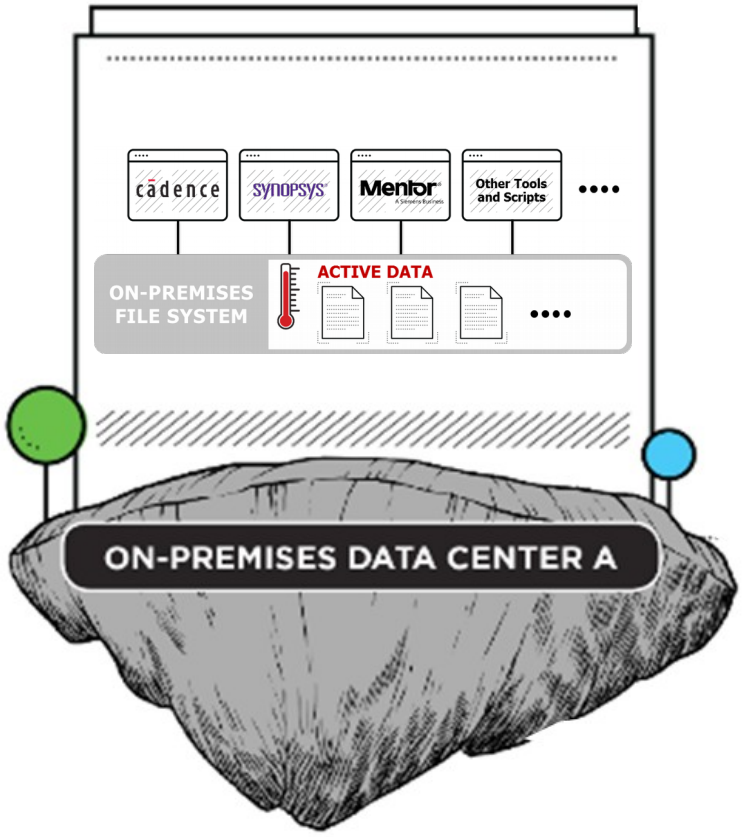
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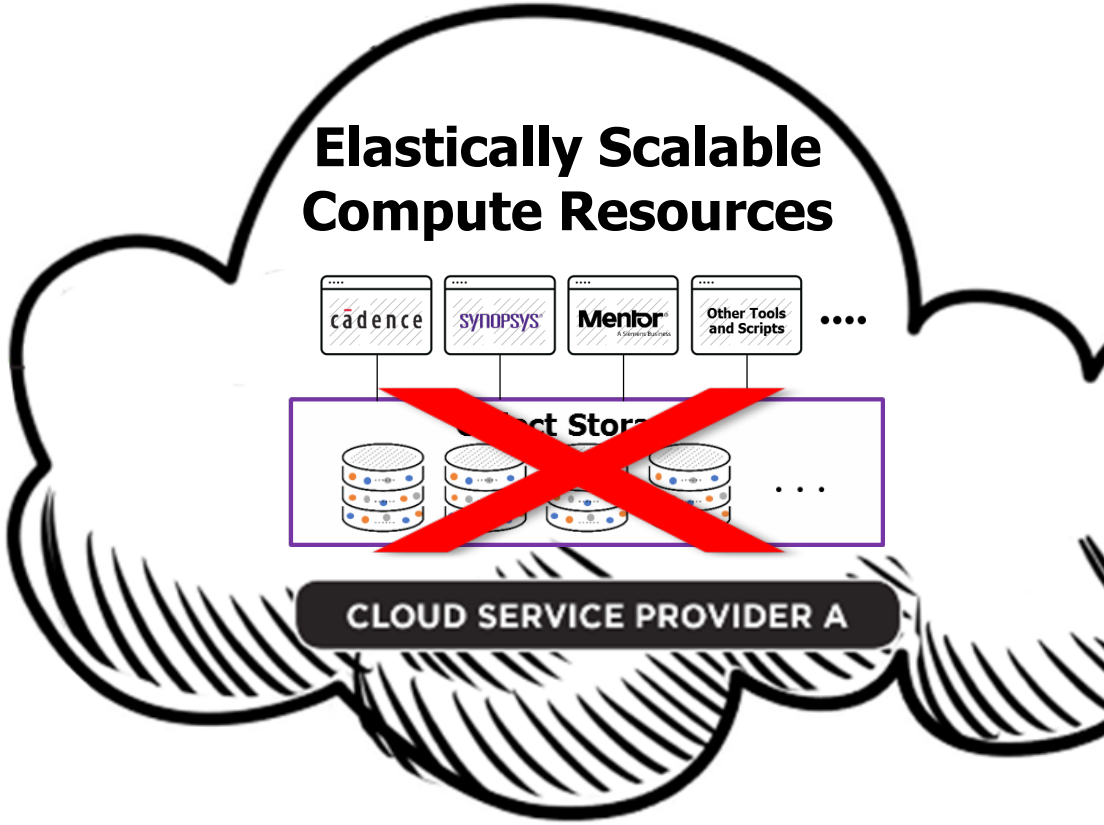
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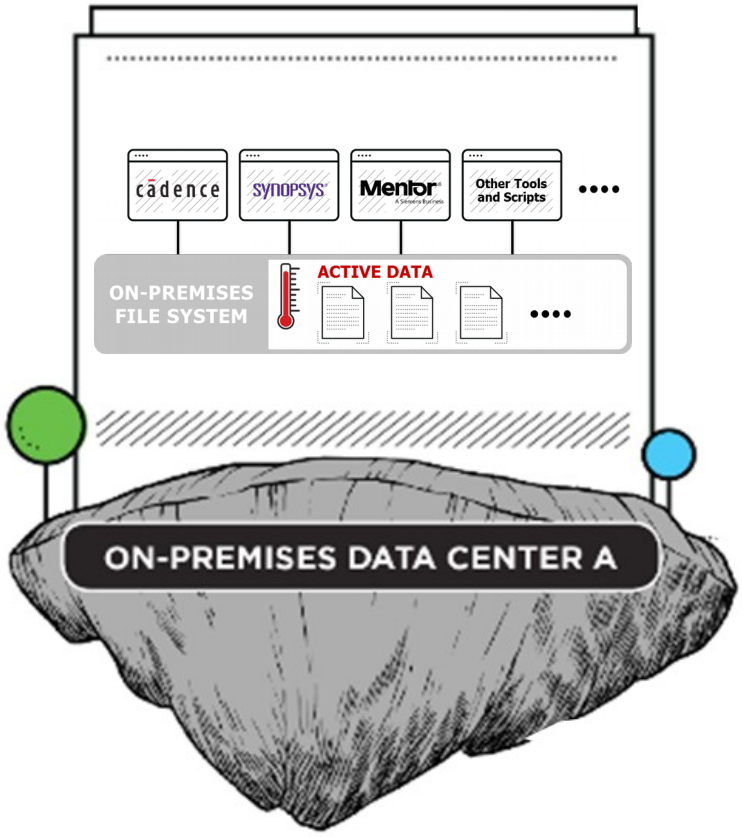
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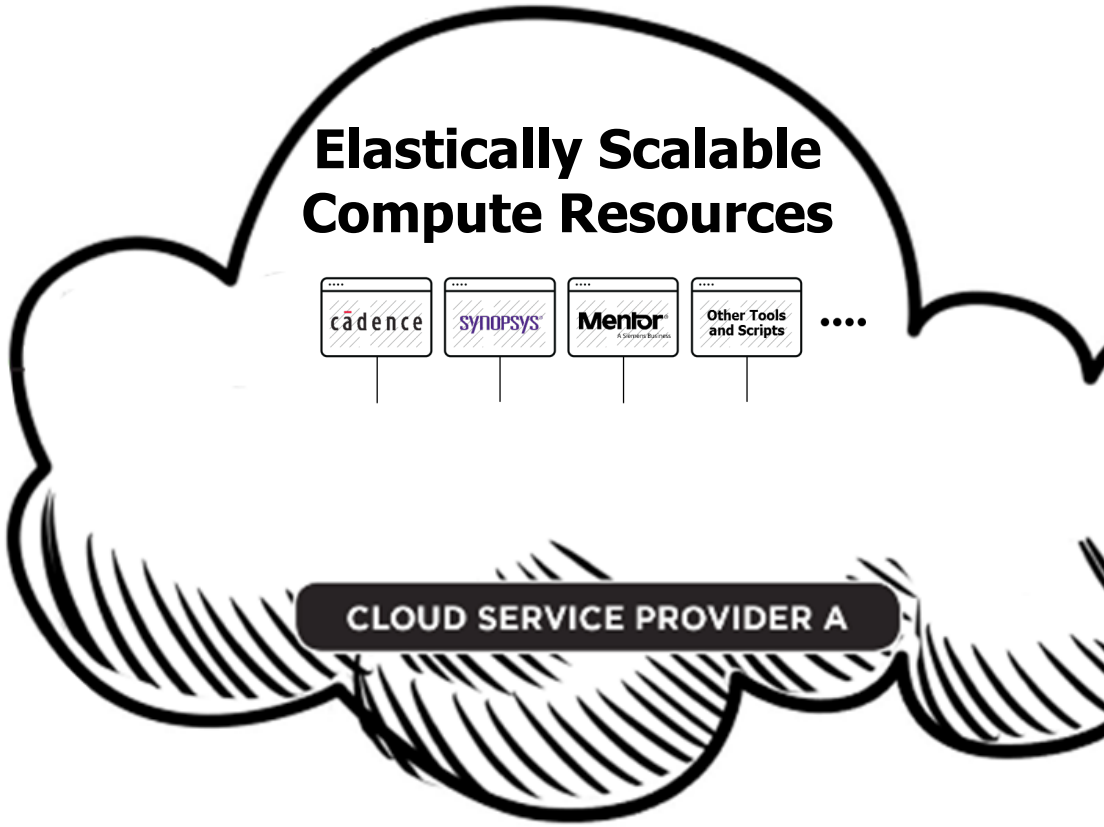
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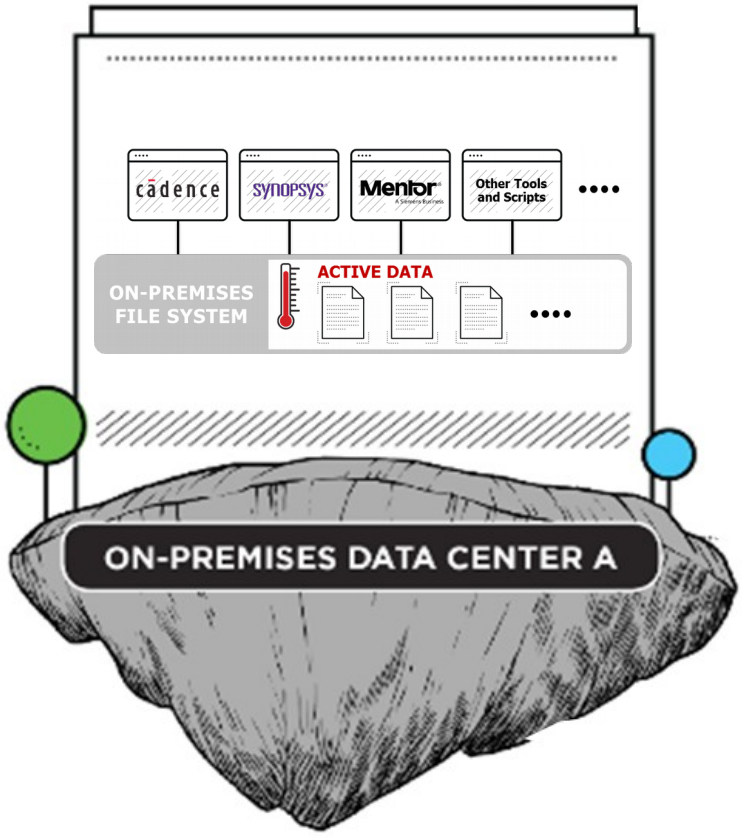
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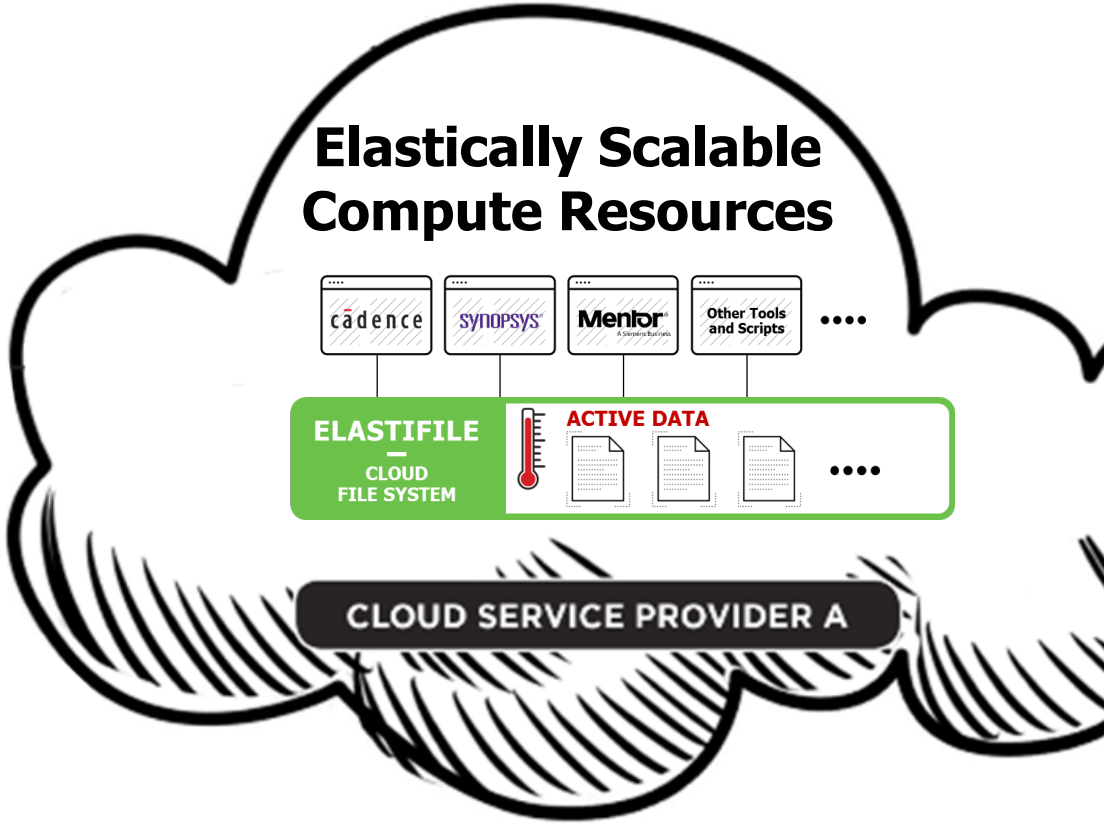
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EDA Cloud Bursting Checklist

Scale, Performance, and Simplicity?

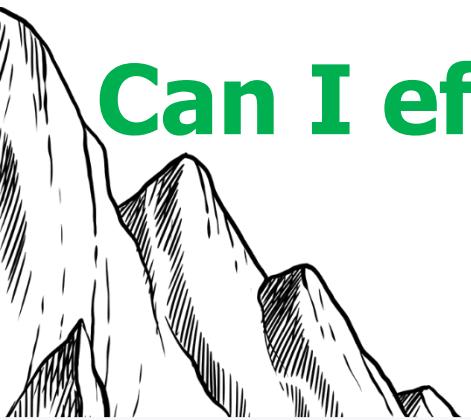
amazon web services

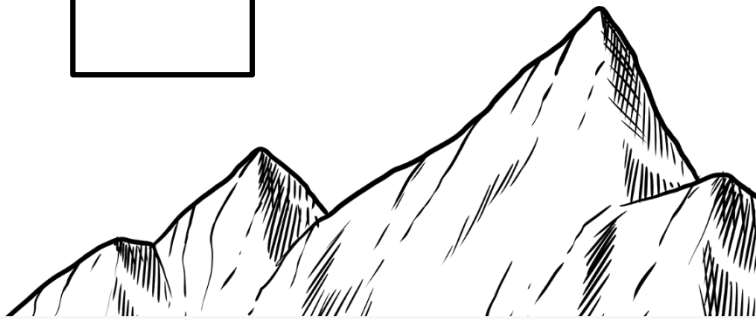
Google Cloud Platform

Azure

Can my tools run in the cloud?

Can I efficiently manage my data?





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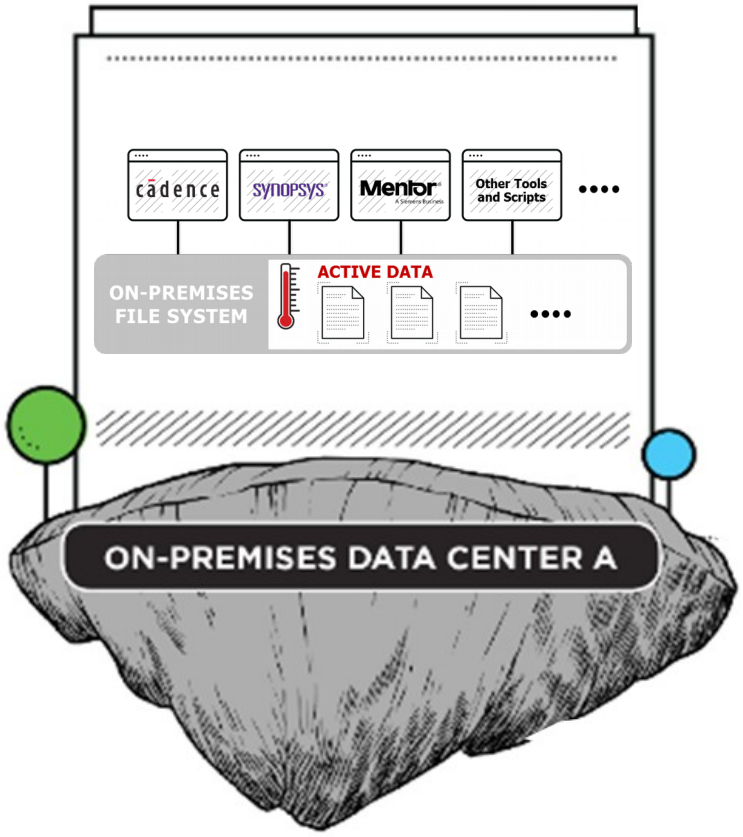
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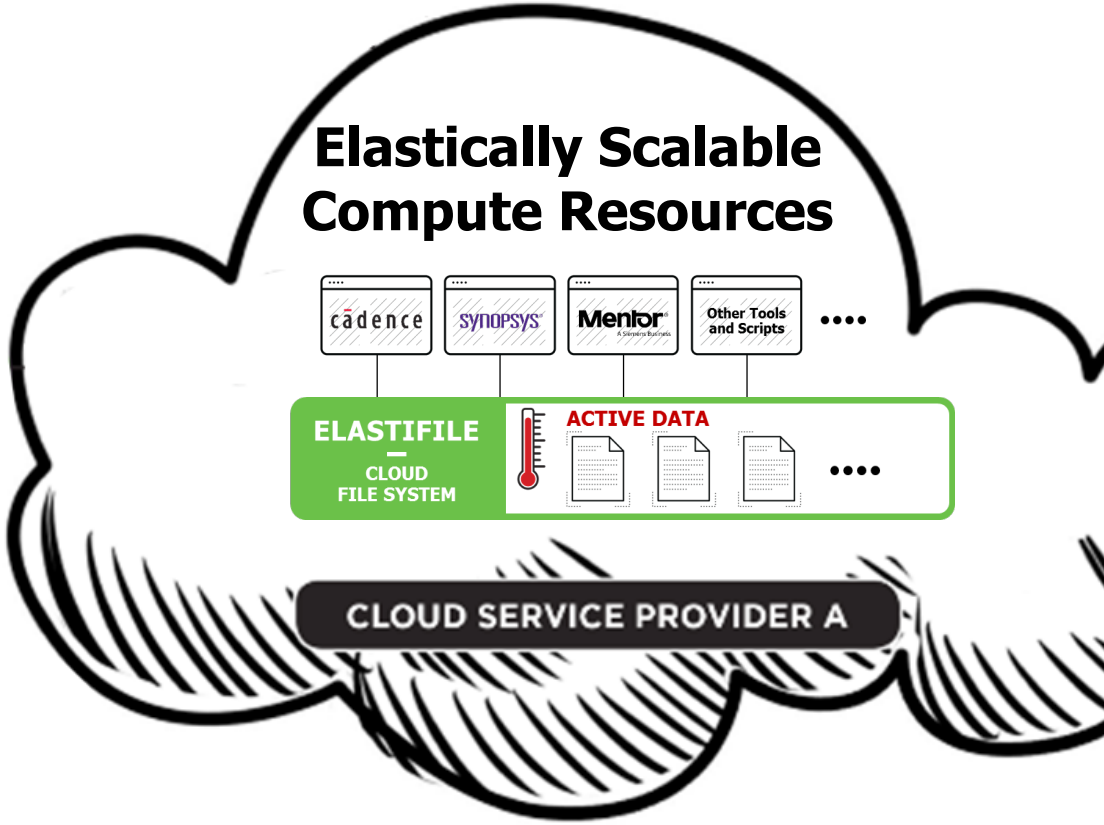
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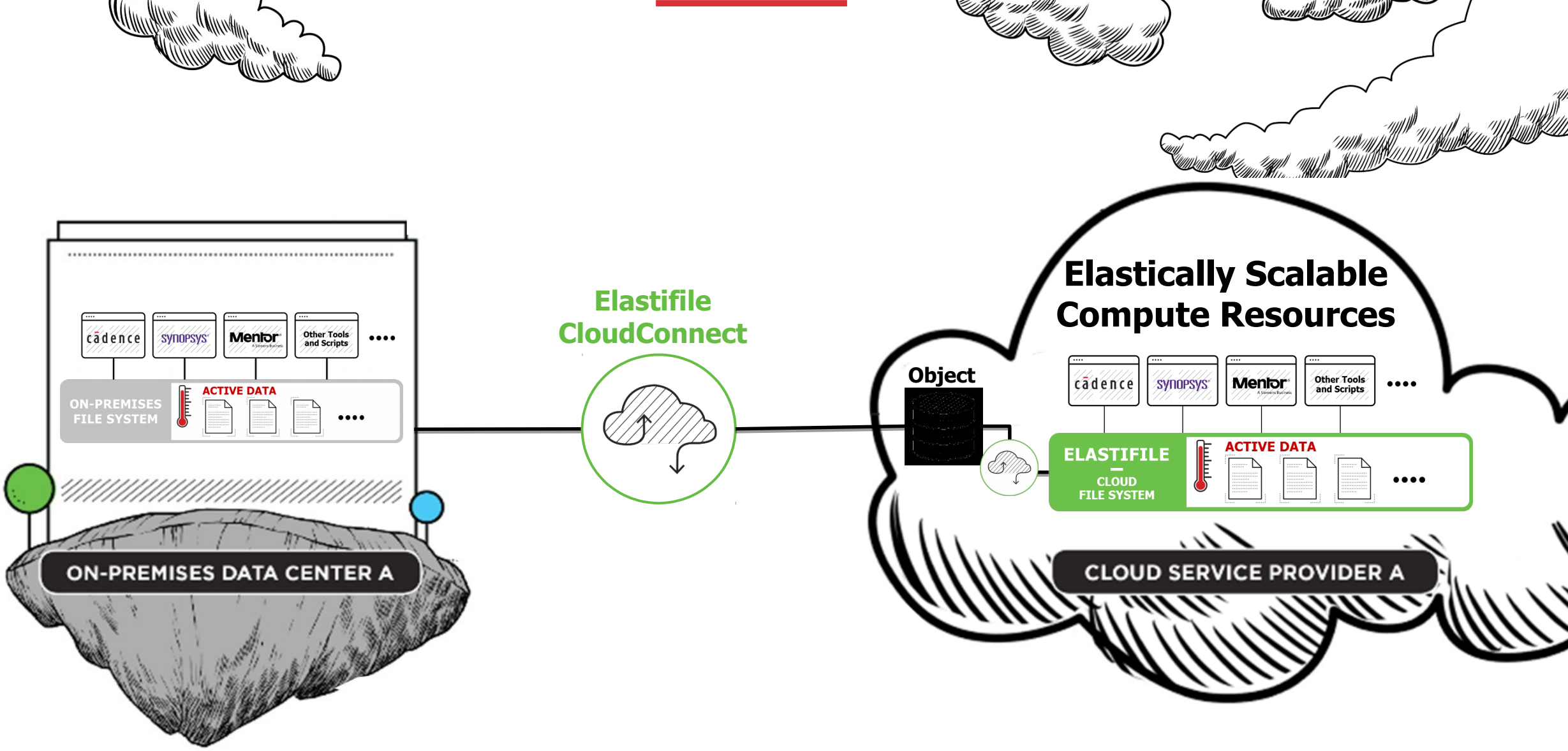
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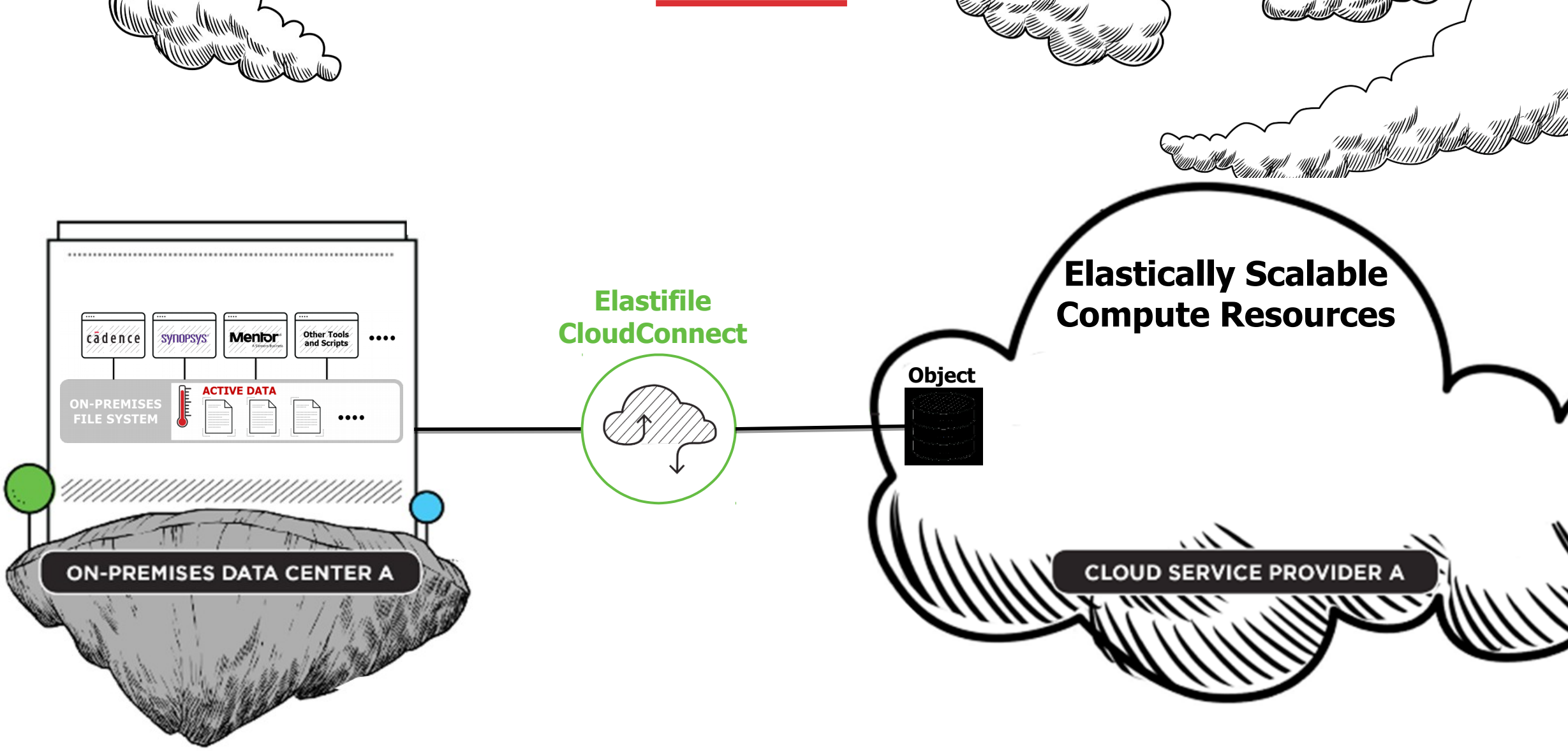
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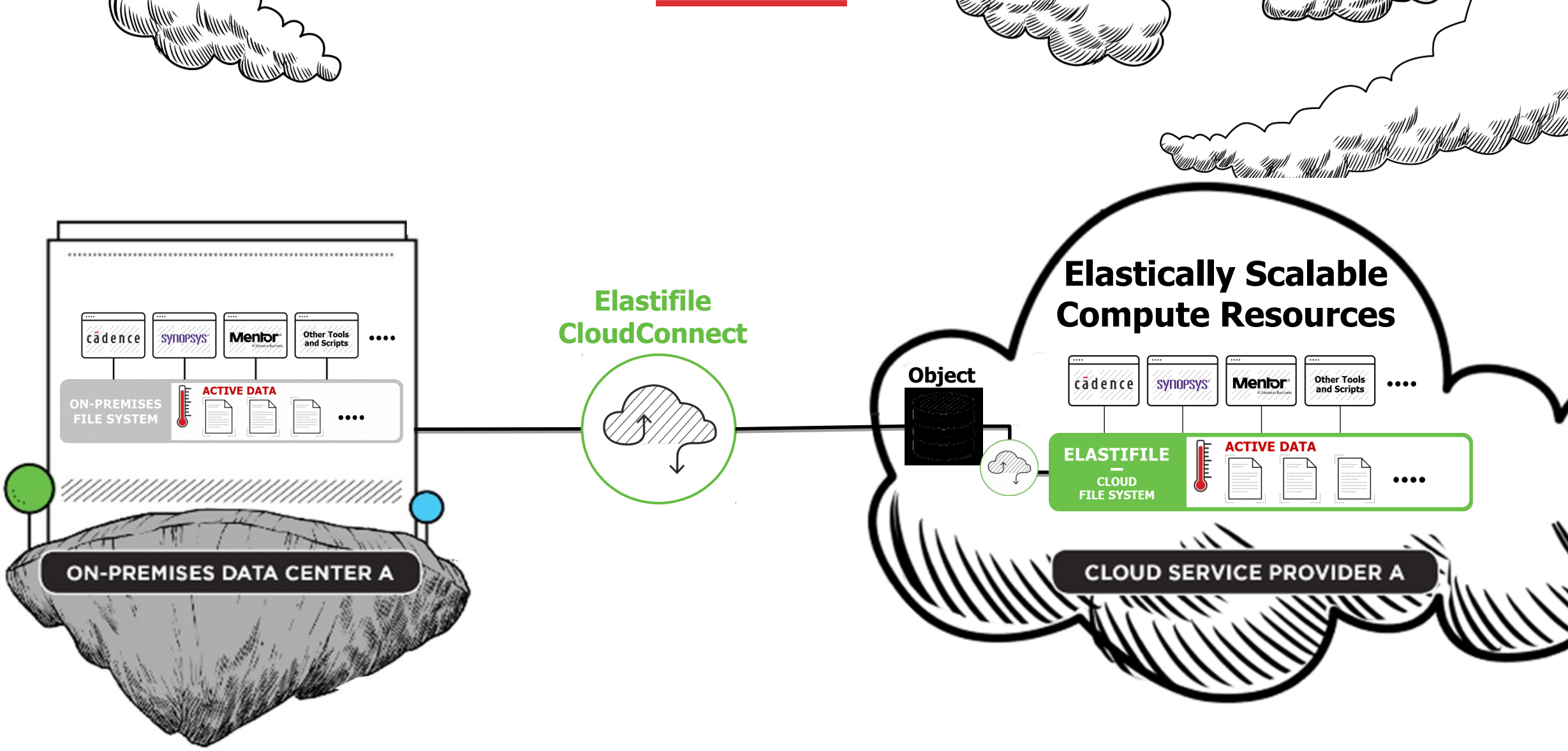
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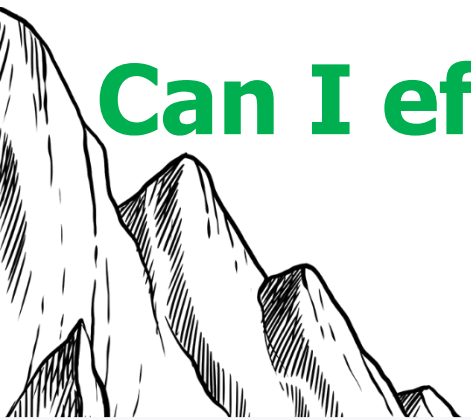

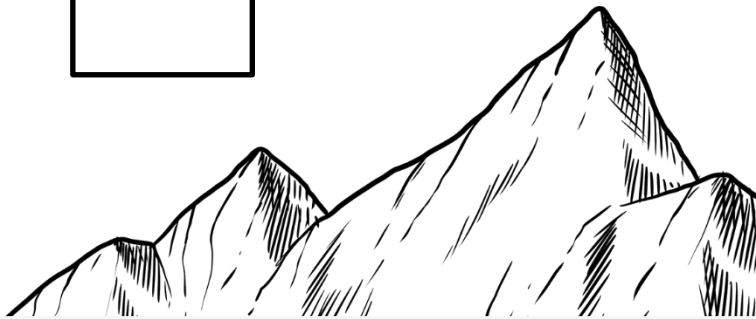

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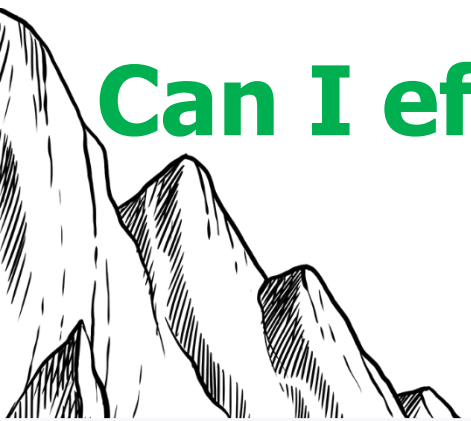


Real-World Example

Bursting Parasitic Extraction to the Public Cloud

IP design firm leverages Elastifile and Google Cloud Platform to maximize verification efficiency

Challenge

Need to offload memory-intensive parasitic extraction jobs

Need to support high-performance, parallel analysis of large data sets

Need to run Synopsys StarRC in-cloud, without refactoring

Need to align IT costs with bursty workload demands

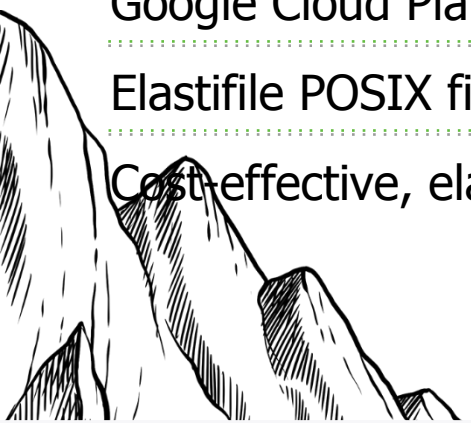
Solution

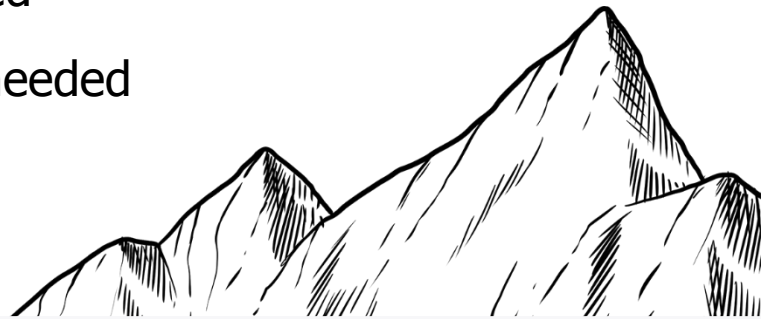
Elastifile and Google Cloud Platform for elasticity, performance, and cost-effectiveness

Google Cloud Platform for scalable Compute…Elastifile for scalable Storage

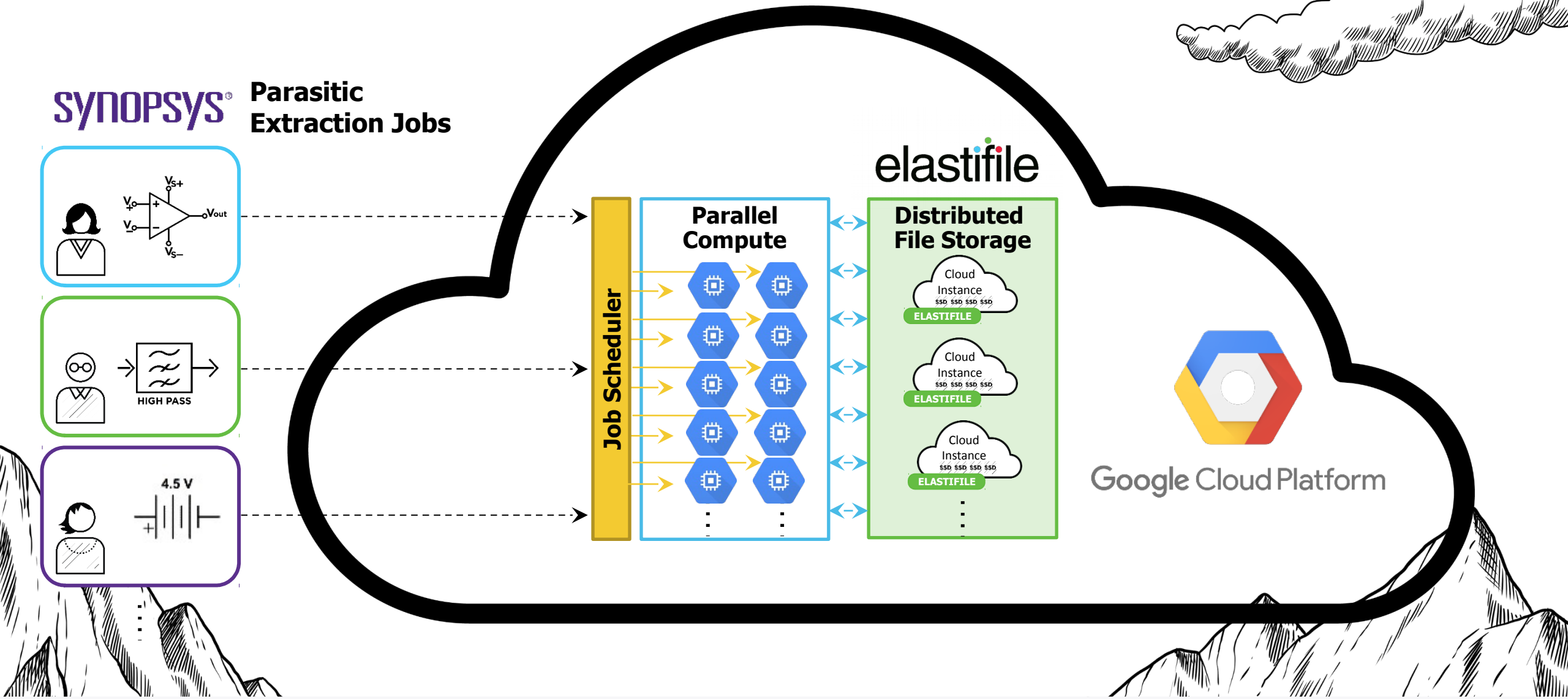
Elastifile POSIX file system supports existing EDA tools, with no changes required

Cost-effective, elastic solution…Spin up Elastifile and GCP Compute only when needed





A Real-World, Cloud-Integrated EDA Solution



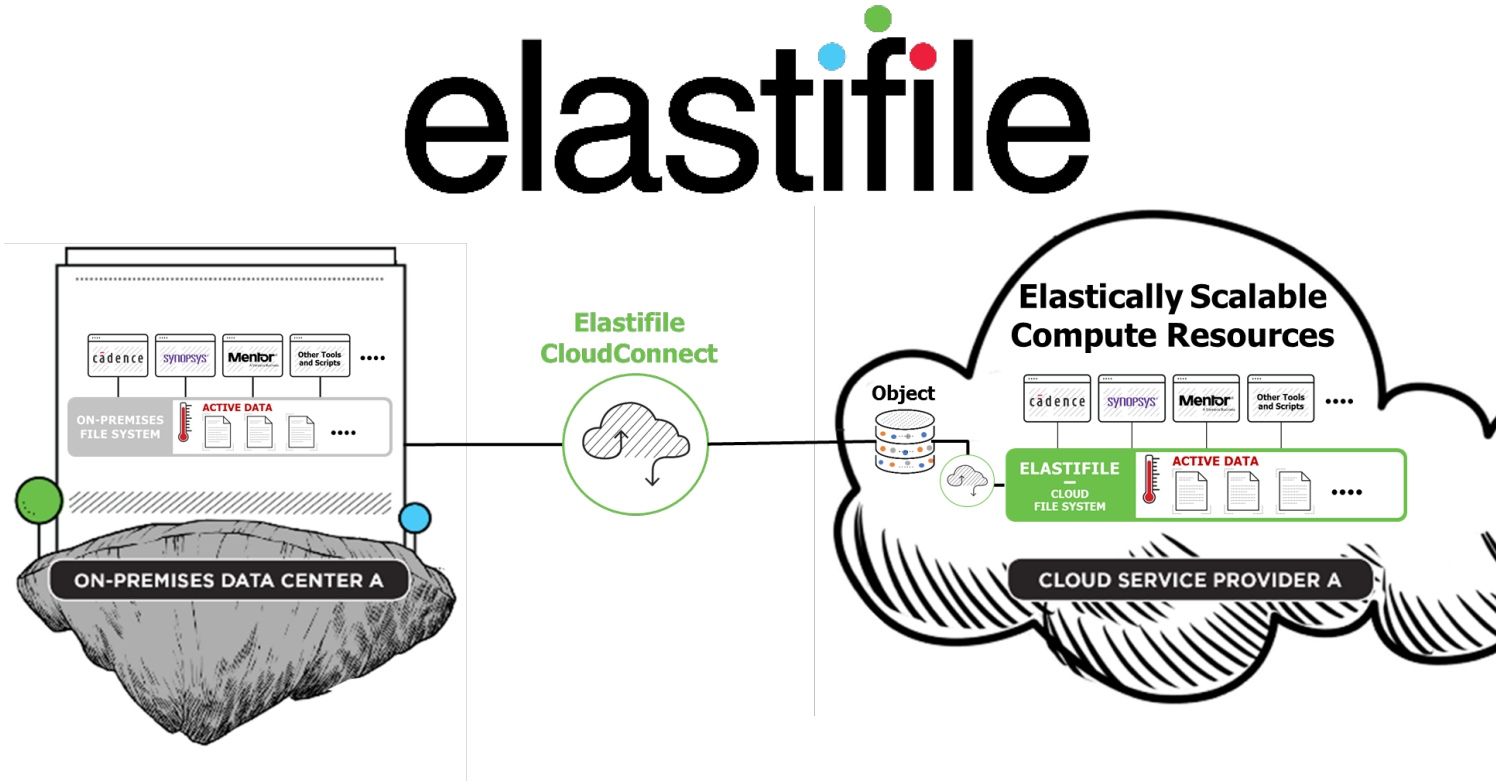
Elastifile: Enabling Cloud-Integrated EDA

Burst to cloud to expand resources or offload on-premises infrastructure

Delivering cloud application compatibility

Delivering in-cloud data management

Delivering hybrid cloud data mobility



Free Your Data,
Free Your Business

THANK YOU!

elastifile

Cross-Cloud Data Fabric