



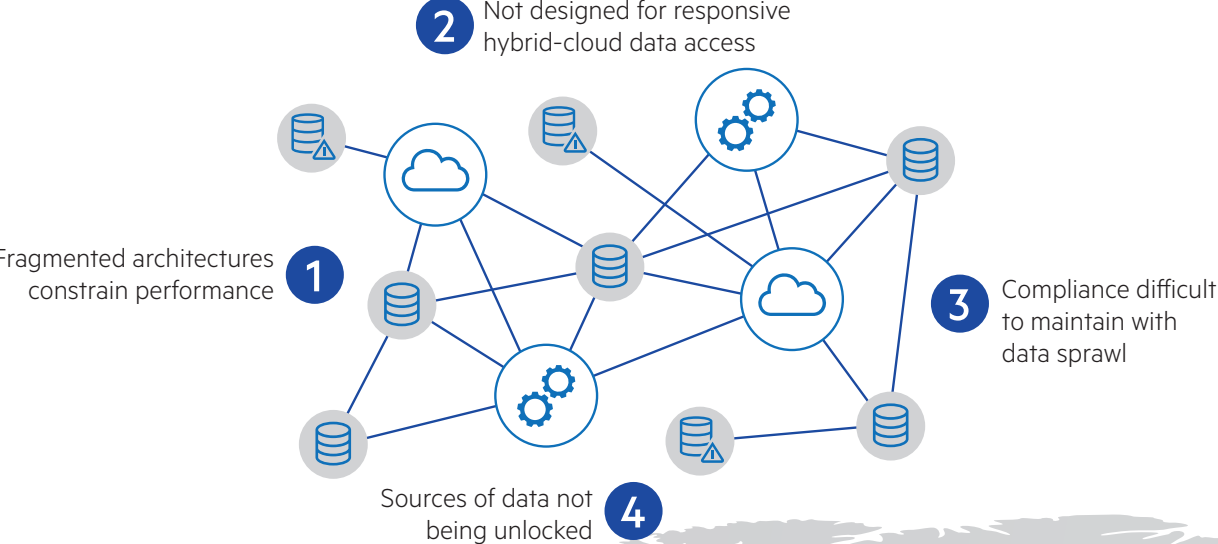
PERVASIVE DATACENTER ARCHITECTURE (PDX™) BLUEPRINT

OPTIMIZE DATA EXCHANGE

PDX™ BLUEPRINT: OPTIMIZE DATA EXCHANGE

INTRODUCTION: Traditional IT architectures are not designed to effectively leverage data. Data is often stored throughout the enterprise in silos, with some elements on premise and some in the cloud. This distribution without intent leads to performance issues, as well as added cost and complexity. Successful digital business requires a new data-centric infrastructure architecture that localizes data aggregation, staging, analytics, streaming and management in centers of data exchange at global points of business presence.

Current State

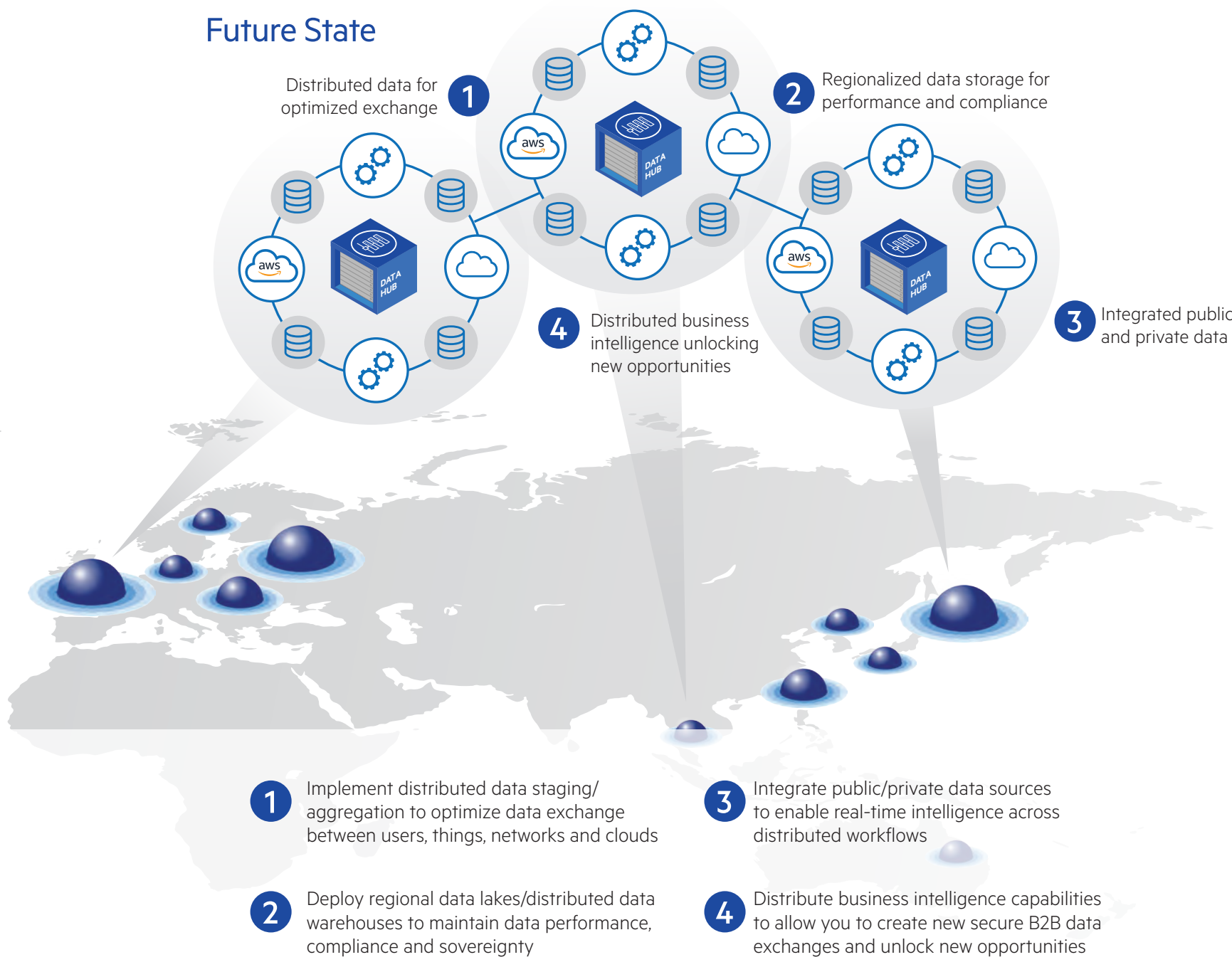


Optimize Data Exchange with AWS Outposts Legend

- Siloed Data
- Data
- Cloud Service Provider
- Data Processing
- Data Gravity Metro
- AWS Cloud
- Data Hub

- 1** Fragmented architectures burdened by technical debt and driven by point solutions lack capabilities and performance required for hybrid IT workflows
- 2** Cloud connectivity and network not optimized, causing poor application performance when leveraging cloud to access local data
- 3** Inconsistent data storage and access methods lead to storage sprawl, cost overruns and compliance issues
- 4** Siloed data prevents the enablement of analytics and new business models centered around data

Future State



- 1** Implement distributed data staging/aggregation to optimize data exchange between users, things, networks and clouds
- 2** Deploy regional data lakes/distributed data warehouses to maintain data performance, compliance and sovereignty
- 3** Integrate public/private data sources to enable real-time intelligence across distributed workflows
- 4** Distribute business intelligence capabilities to allow you to create new secure B2B data exchanges and unlock new opportunities

SOLUTION

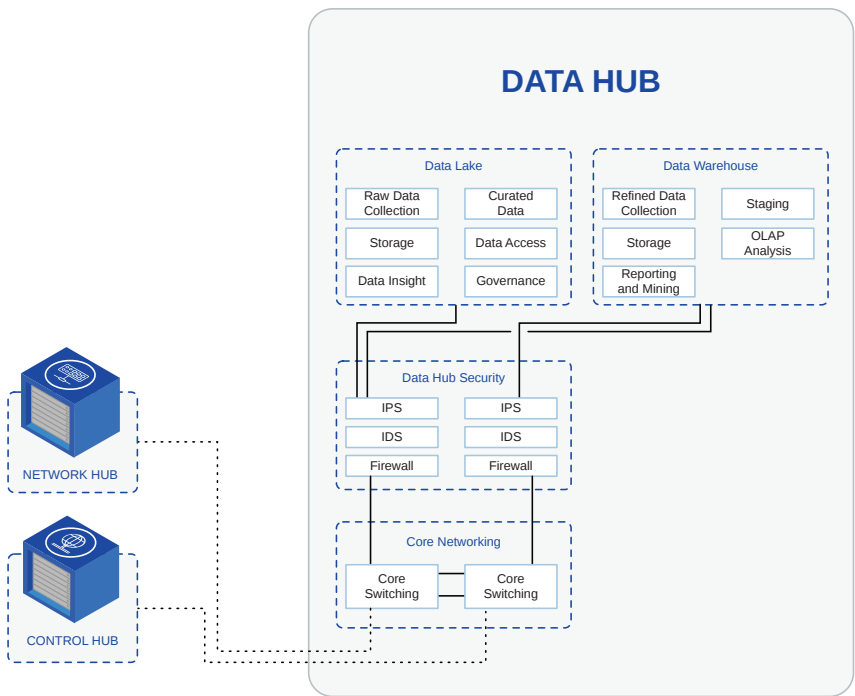


STEP 1 IMPLEMENT DATA STAGING/AGGREGATION

- 1 Distributed Data Staging/Aggregation
- 2 Regionalized Data Storage for Compliance

ACTION

Implement a cohesive data storage strategy at centers of data exchange



- + Deploy regional data lakes and distributed data warehouses at centers of data exchange
- + Solve global coverage and capacity needs

OUTCOME

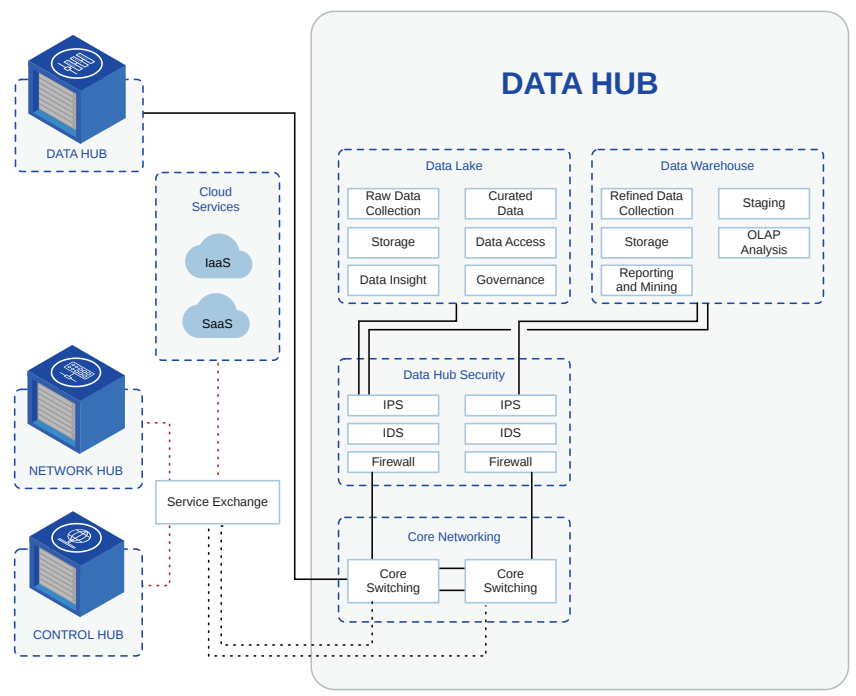
- + Localized data improves application performance and user experience
- + Maintain compliance and data sovereignty

STEP 2 INTEGRATE PUBLIC/PRIVATE DATA SOURCES

- 3 Integrated Public and Private Data Sources

ACTION

Directly interconnect cloud on-ramps to centers of data storage



- + Enable performant data exchange between sources and destinations
- + Operate deployments as a seamless extension of global infrastructure with consistent experience, security and resiliency

OUTCOME

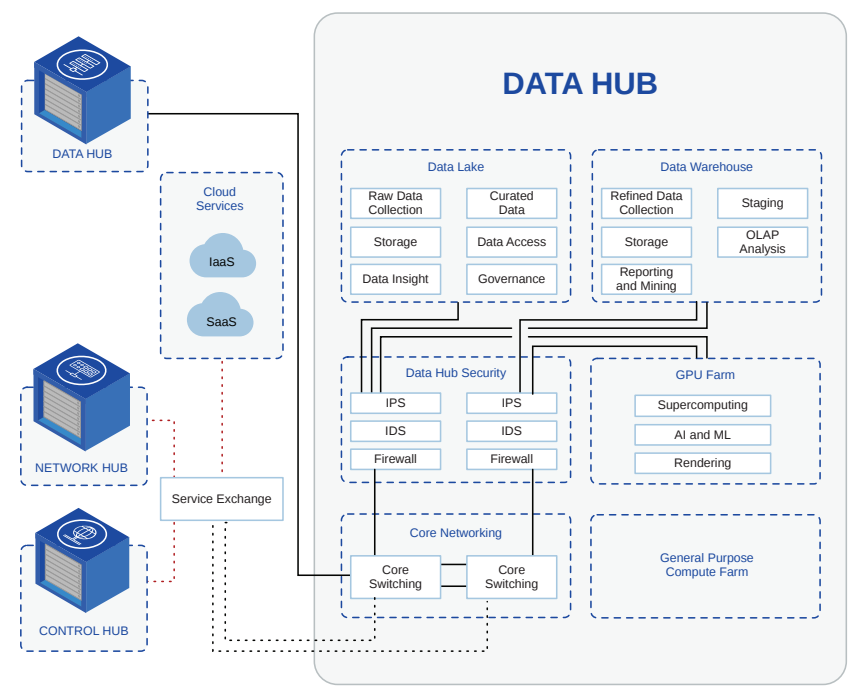
- + Optimize data exchange between users, things, networks and clouds

STEP 3 HOST DATA AND ANALYTICS ADJACENT TO NETWORK INGRESS/EGRESS

- 4 New Business Opportunities Unlocked

ACTION

Distribute business intelligence and connect global data ecosystems



- + Add processing, analytics and streaming capability at global points of business presence
- + Host a B2B meeting place for companies to collaborate and connect their business platforms

OUTCOME

- + Enable real-time intelligence across distributed workflows locally and globally

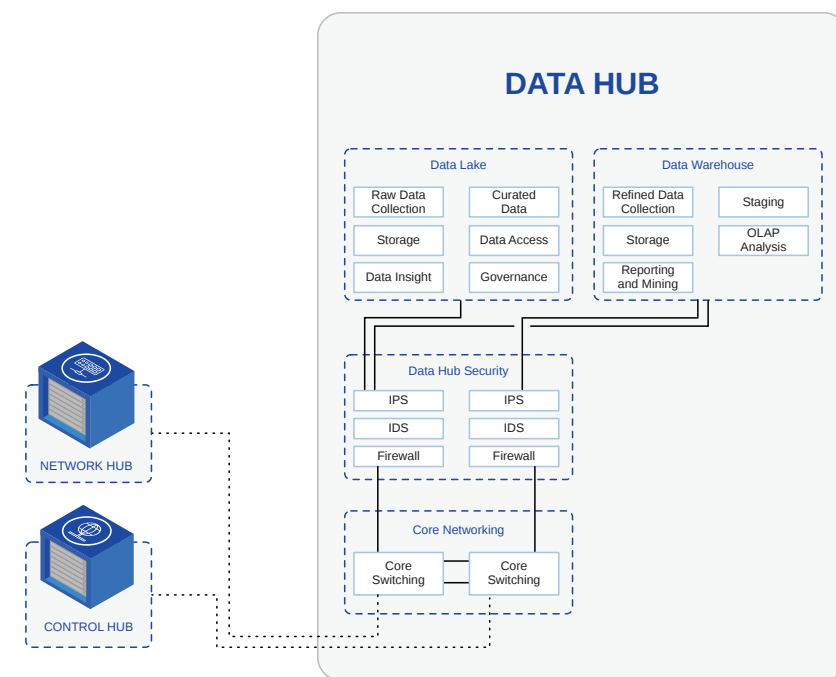
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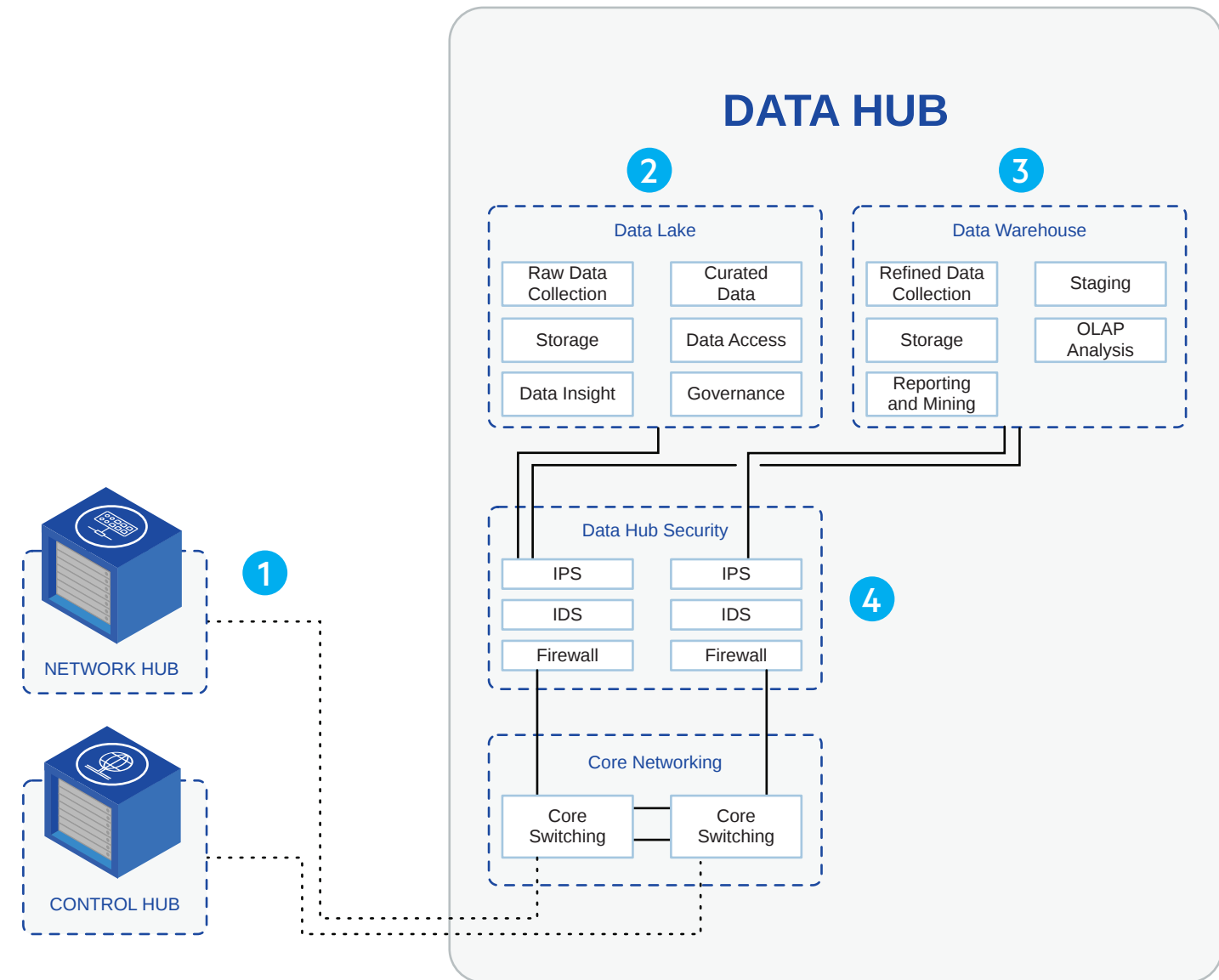
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OUTCOME

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1. Deploy centers of data staging in key locations
2. Data Lakes store raw data to be analyzed and curated by data scientists
3. Refined data sits in the data warehouse for business professionals to use
4. Due to the value and sensitivity of enterprise data, access needs to be strictly controlled and logged

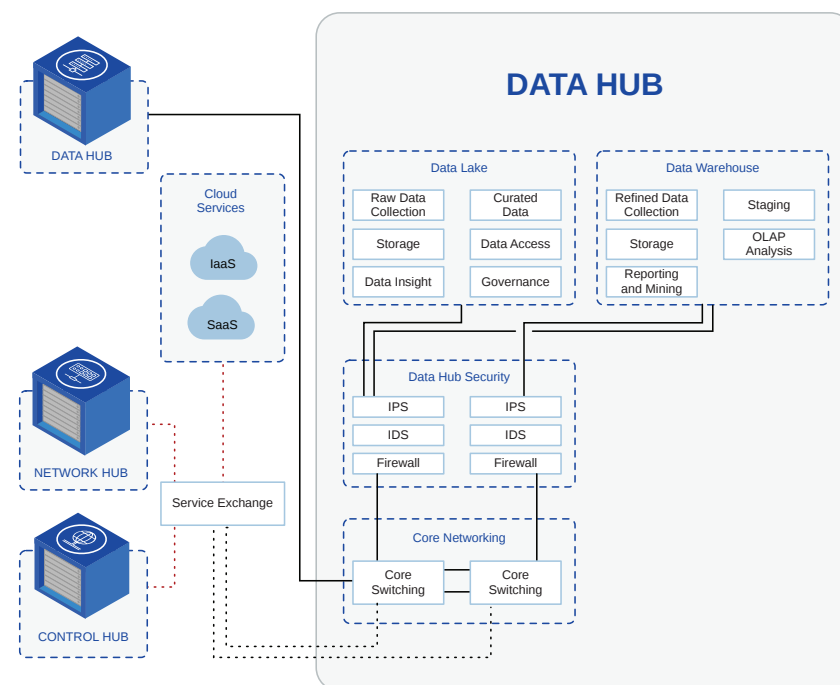
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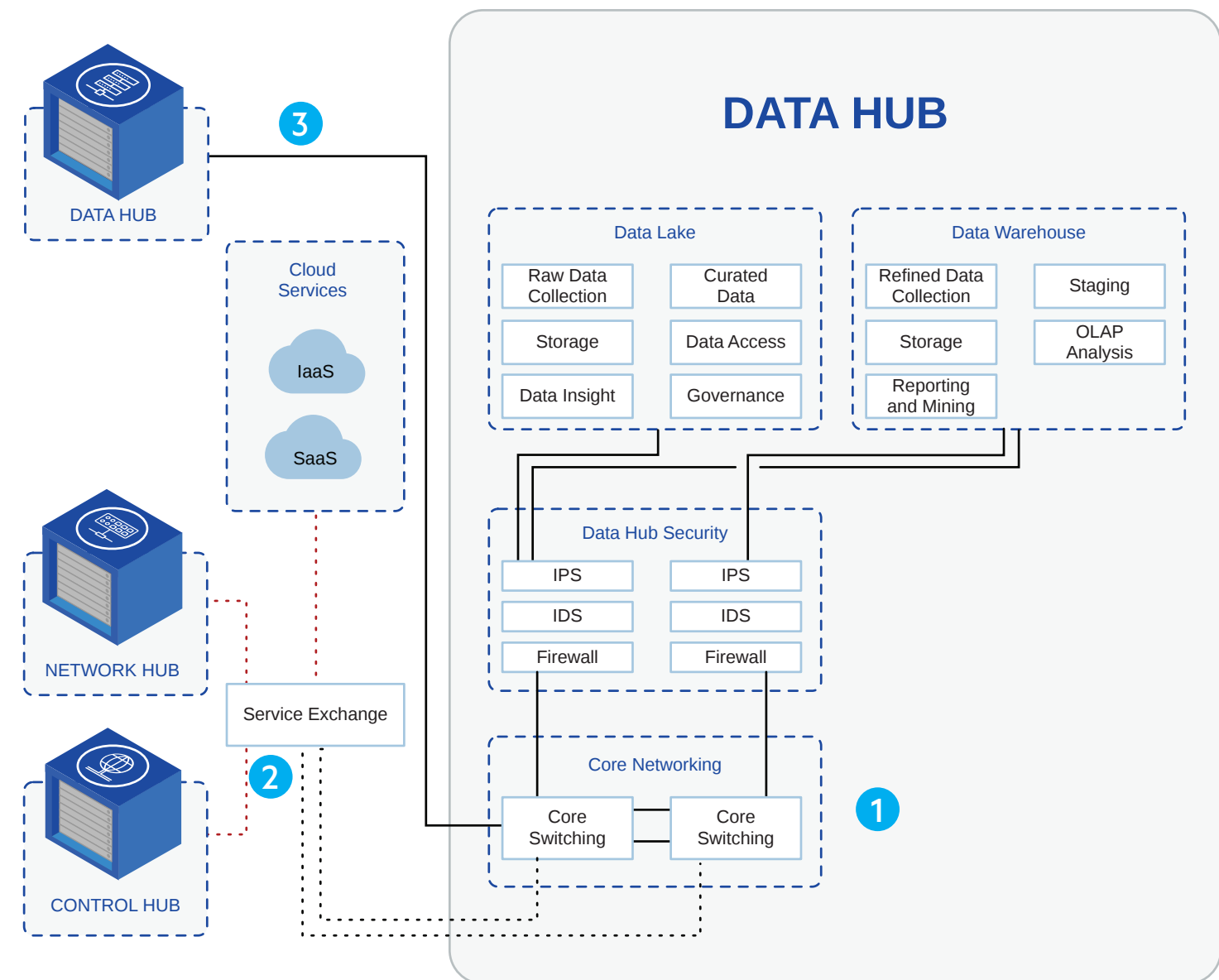
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OUTCOME

- + Optimize data exchange between users, things, networks and clouds



1. The Core Switching Infrastructure terminates connectivity into the Data Hub and enables access to the cloud and other data sources by direct high-performance interconnection
2. Additional connectivity is provided by use of software-defined on-ramps such as Service Exchange™
3. Other data sources can be cloud storage, IaaS environments, SaaS environments or other remote Data Hubs

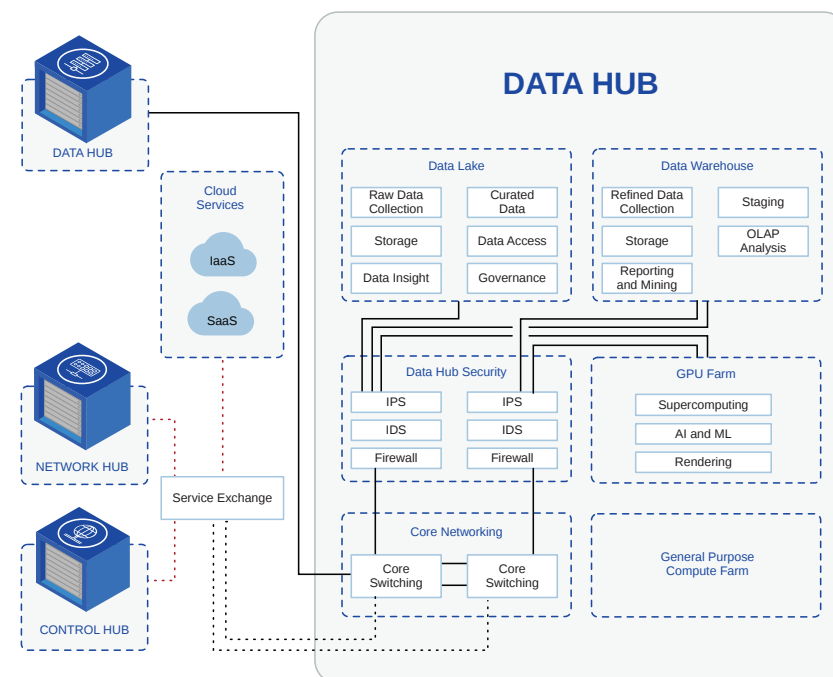
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4 New Business Opportunities Unlocked

ACTION

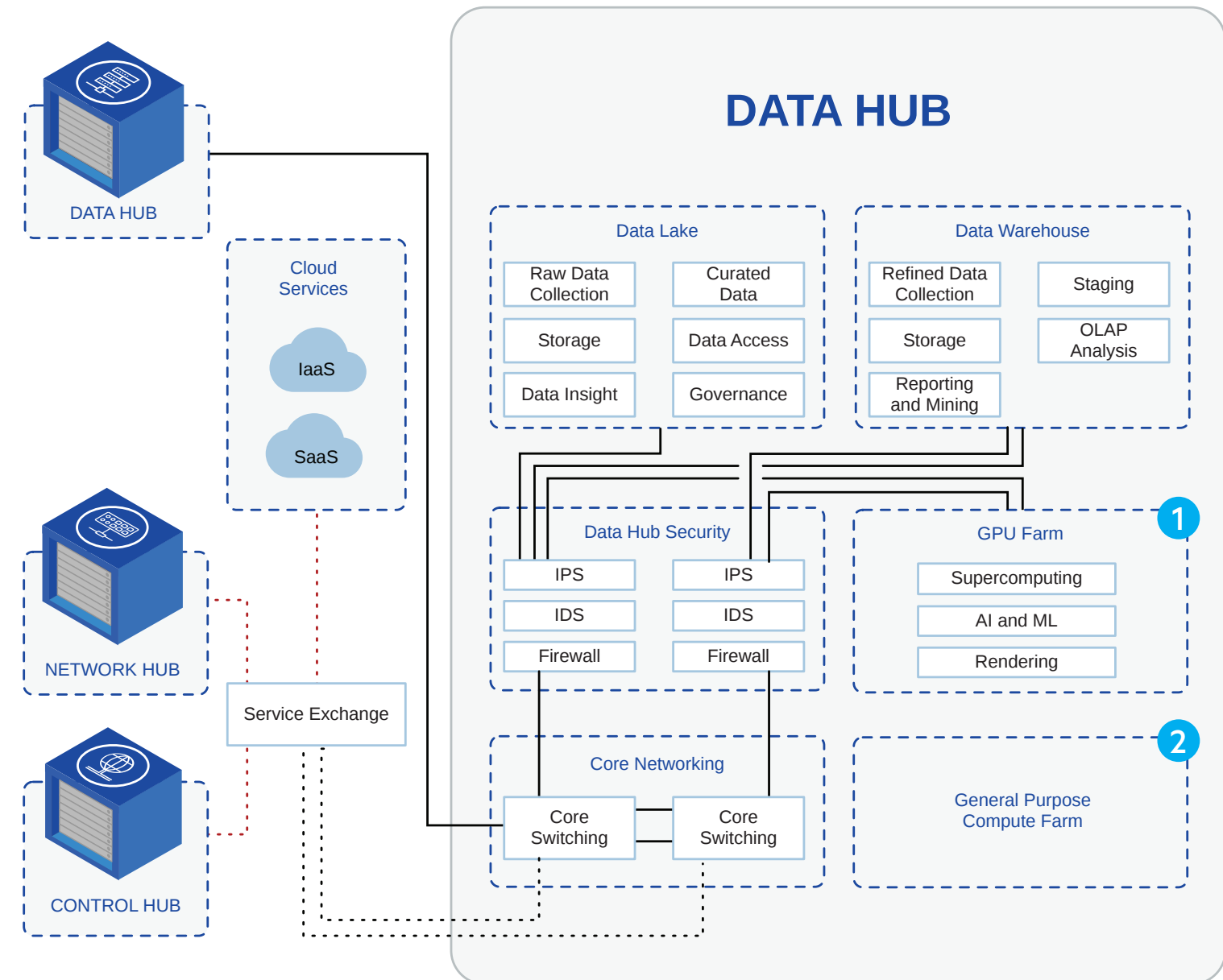
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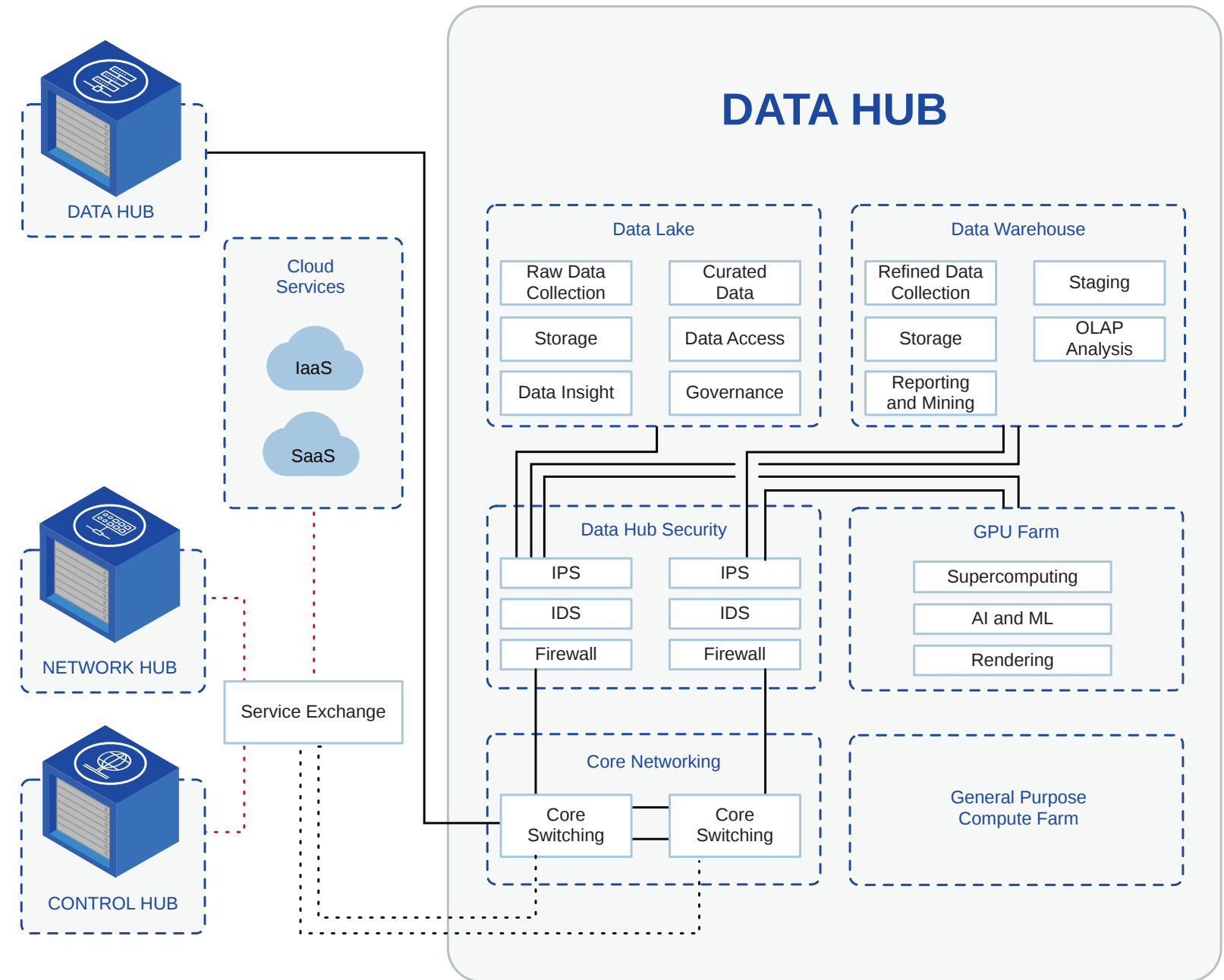
1. GPU Farm is located directly adjacent to data stores for direct access to enable AI Development and workloads
2. Bulk Compute Farm is for media content creation, complex modeling and simulations

TARGET STATE ARCHITECTURE

Summary

A purpose built architecture to optimize data exchange improves performance and provides data compliance and control. This is necessary to support exploding volume, variability and velocity of data creation as well as processing and storage required to accommodate digital business. The strategy brings the users, networks, systems and controls to the data, which removes barriers of data gravity and creates centers of data exchange to scale digital business.

The Optimize Data Exchange Blueprint is part of a library of blueprints and repeatable implementation patterns that make up the Pervasive Datacenter Architecture (PDx™). By practitioners, for practitioners, PDx™ was created by codifying 100's of production deployment combinations to enable companies to accelerate deployment and improve precision of their infrastructure to scale digital business globally. PDx™ provides a step-by-step strategy to enable firms as they architect a decentralized IT infrastructure to remove data gravity barriers and accommodate distributed workflows at centers of data exchange in support of digital business.





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