Teradata IntelliFlex®
Optimized for Scalable Analytics

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Teradata IntelliFlex®
Next Generation All-Flash Architecture
NetApp Enterprise-Grade Storage

Fast
Leading Price/Performance

Simple
Optimized for Integrated Solutions

Reliable
Leading Durability and Reliability
NetApp Flash Leadership and Innovation

*Compares Q2FY17 and Q2FY16

1000+ PB of flash shipped

$1B+ Annual revenue run rate

468% Year-over-year growth (PB)

14,630+ All-flash controllers

210K+ Hybrid controllers

*Compared to Q2FY17 and Q2FY16

Metrics through October 2016
Why NetApp Customers are Running to Flash

**Performance**

- 200 IOPS for a 10k drive vs up to 200,000 for an SSD
- No need to migrate your data “between tiers” in All-Flash environments

**Capacity**

- 16TB SSD vs 1.8TB 10k HDD
- 10 racks to 1 rack in the data center
- Fewer data placement management concerns

**TCO**

- Up to 9x more reliable than HDD
- Lower lifetime support costs and fewer support cases
- Flash Arrays last longer (up to 6 years and beyond for depreciation)
- Simpler environments (fewer shelves, connections, and parts to fail)
- Co-Location or premium space environments magnify the benefit
Teradata IntelliFlex®
Next-Generation MPP Architecture

- Flexible Multi-Dimensional Scalability
- Cloud-Like Performance Elasticity
- Increased Business Agility
- Mission-Critical Availability
- Data Center-Friendly
- On-Premises or the Teradata Cloud
- Foundation for Teradata Analytics Platform
Fabric Architecture Enables Flexibility

IntelliFlex™

Dual Teradata BYNET® Interconnects

Gen-1 Node
Gen-2 Node

Hot Data
Warm Data
Flexible Multi-Dimensional Scalability

- **Fabric-attached** compute and storage enable intelligent, flexible configurations.
- **Independent scaling of nodes and storage** enables fine-grained system growth that matches changing workload profiles.
  - Customers only purchase the processing power and storage capacity they need now.

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**Query Speed**

- Original System

**Begin collecting sensor data:**
  - **add storage**

**Customer-facing app, real-time response:**
  - **increase speed of query**

**Grow your system in balance:**
  - **add more of everything**
• Purchase hardware up front for a **planned elasticity/expansion** at a later date
• A database restart, followed by AMP migration, enables the new nodes
• You will get the benefit of increased CPU, memory, and I/O bandwidth
• TVS enables storage addition to existing AMPs
Multi-Dimensional Elasticity

Dynamic Workload Prioritization
- High: 20%
- Med: 50%
- Low: 30%

Performance on Demand (1% increments)
- 75% to 95%

Double System Size (~10 minutes)
- 1-3 hours Downtime

Rapid Operational Expansion
- 1-3 hours Downtime

Workloads
- Marketing: 10%
- Sales: 70%
- Supply Chain: 20%

Priority
- High
- Med
- Low

Market- ing
Sales
Supply Chain

Performance Software-Based

Growth Hardware-Based
Benefits of Data Resilience

• Extended downtime incidents are greatly reduced
  – Systems are more operational

• Protection against a large set of unexpected failure scenarios
  – Hardware, software, human, zombie

• Greatly increases data redundancy
  – Data loss can cripple business

• Transparent to IT/Users/Applications
  – System is protected without overhead
SSD Trends

Significant Increase in SSD Capacity

SSD Capacity
HDD Capacity

2014  2015  2016  2017
SSD Trends

Reached Cross-Over Point

- SSD
- HDD
  $/Protected TB
  $/Protected TB
All-Flash Appliance

Teradata IntelliFlex®

Extreme Performance
Extreme Density
Extreme Green
100% Memory Based SSD Platform
Only Thing Spinning is the Fan!!!!
Teradata IntelliFlex®
100% Solid State Performance

7.5x Performance for Compute-Intensive Analytics

4.5x Performance for Data Warehouse Analytics

3.5x Data Capacity

2.3x Performance Density

2.0x Performance per kW

Note: comparisons to the previous generation IntelliFlex platform are on a per cabinet basis. Workloads will see up to this amount of benefit.
Hybrid Cloud Environments Are Critical for Our Customers

Companies will deploy both **on-premises** and **in the cloud** by 2020

Companies looking to buy **“as-a-service”**

>90%

85%
Teradata Hybrid Cloud Strategy

IntelliFlex Is Key

- Public Cloud (AWS/Azure Marketplaces)
- Teradata Cloud (IntelliFlex/IntelliBase/AWS)
- Teradata Hardware (IntelliFlex/IntelliBase)
- Commodity Hardware (VMware)
Teradata IntelliFlex®
What’s New for 2018

✓ Teradata Analytics Platform co-processing nodes
✓ Enhanced performance elasticity
✓ Always-on compression for improved performance and more storage space
✓ Multi-Generation Support
Advancing from “Data Warehouse” to “Analytics Platform”

Leverage and Expand your existing Data Warehouse investment

Advanced Analytic Tools and Languages

New Data Sources and Data Types
Fabric Architecture Enables Flexibility
Teradata Analytics Platform
Future Direction

• **Built-In Elasticity**
  – On-demand capacity available through software controls
  – Independent scaling of CPU and I/O
  – Every unit item

• **Compression-Optimized Configurations**
  – Increase performance
  – Increase storage capacity
  – Increase storage density per cabinet

Timing is TBD. Will work with your existing IntelliFlex system