



Build Your Competitive Edge in Big Data with Cisco

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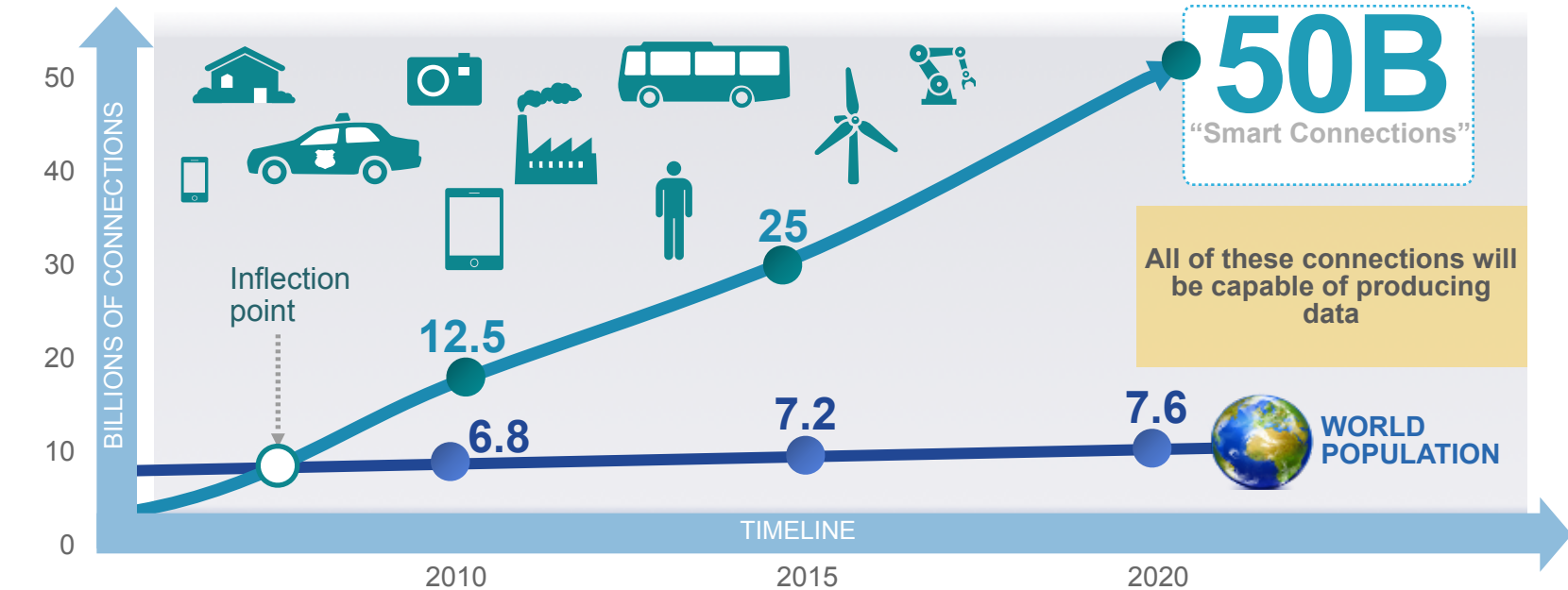


Big Data Trends

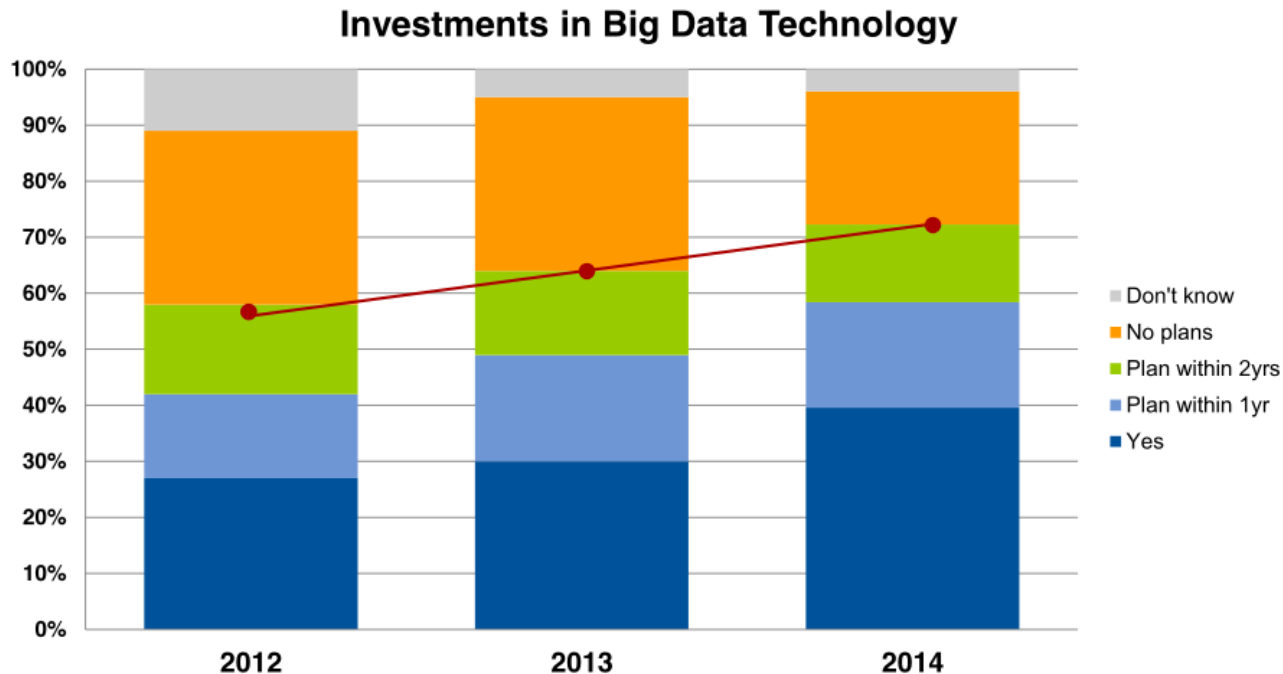
Increasingly Everything will be Connected to Everything

Massive increase in connections between people, process, data, and things

In the Internet of Everything Era, Big Data will Get Much BIGGER!



Big Data Investments Continue to Rise



Data & Analytics Unlock the Value in the Internet of Everything

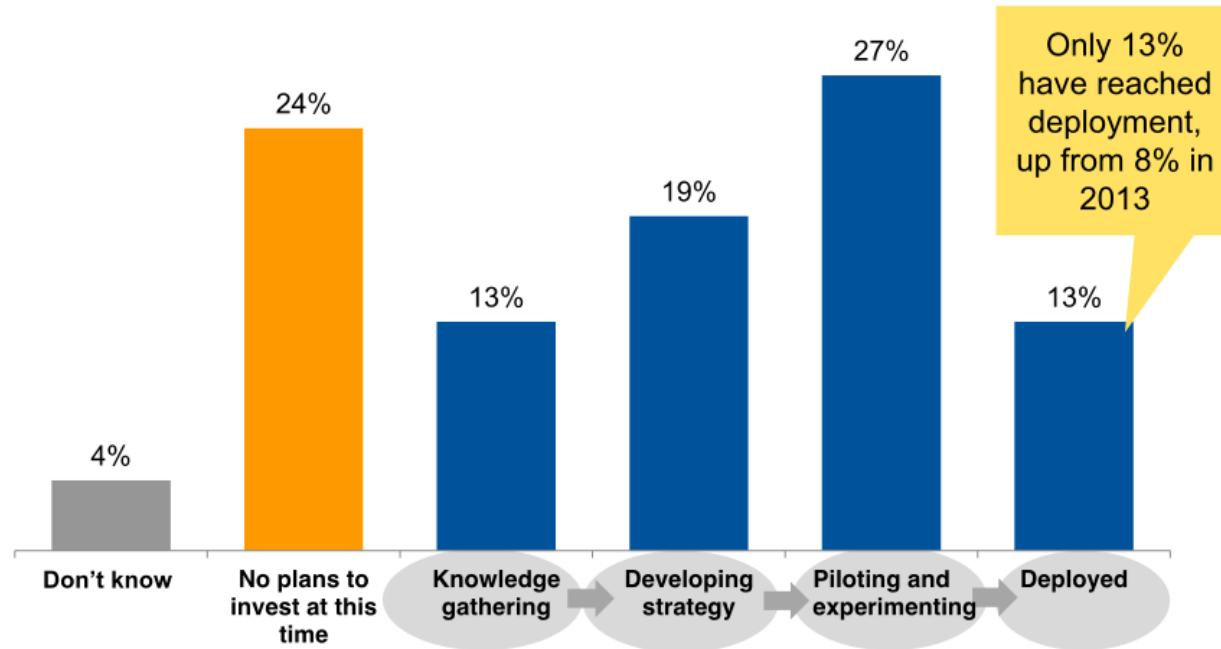


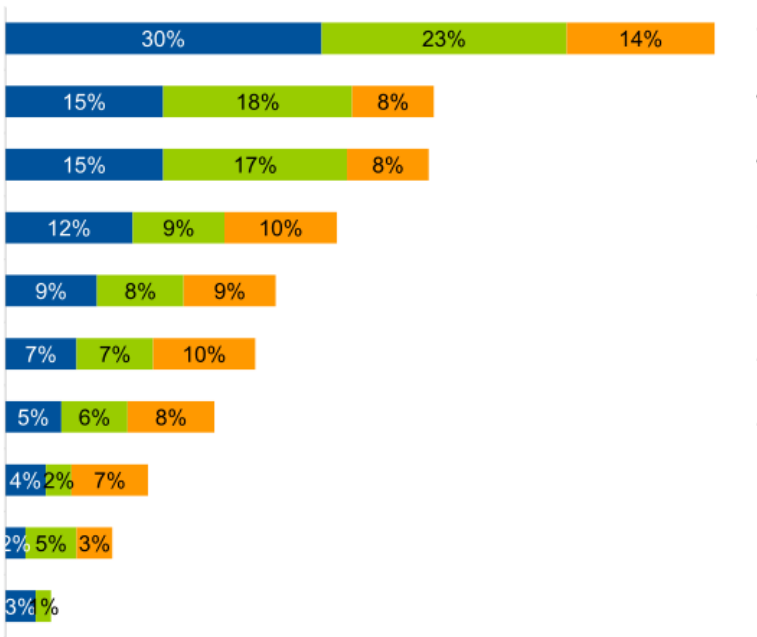
Source: Cisco Consulting Services primary research, 2013

\$7.3T of the \$19T IoE Opportunity over the Next 10 Years will be Realized Through Data & Analytics

Despite the Opportunities, Big Data Adoption is at the Early Stages

Which of the following best describes your organization's stage of big data adoption?







Brave New World

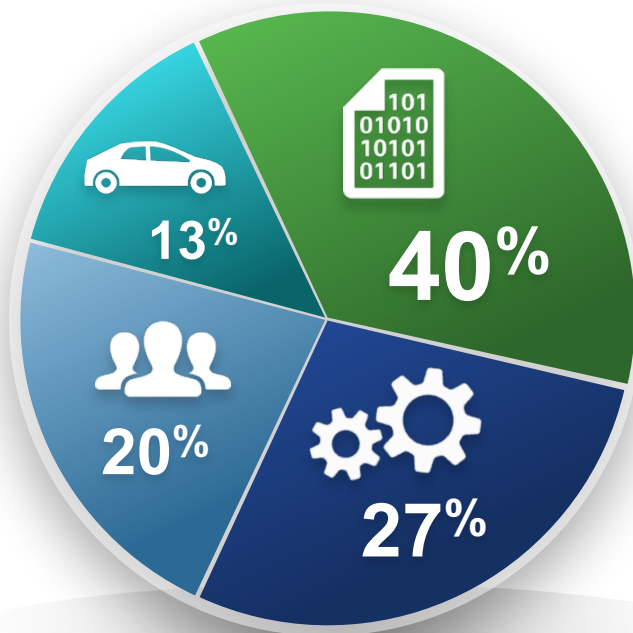
Getting Insight from the Data is the Client's Biggest Challenge

Things

Connecting the right “things”
(e.g., machines, devices, equipment)
to capture useful data

People

Enabling workers to effectively
use IoT solutions through means
such as training and providing
user-friendly systems



Data

Effectively capturing, storing,
and analyzing data generated
by connected “things” (e.g.,
machines, devices, equipment)

Process

Updating our business and
operational processes to
benefit from IoT solutions

A New Approach is Needed to Reach and Analyze That Data

Structured Data



Unstructured Data



Data Streaming at the Edge



Analytics 1.0

Days/Hours

Analytics 2.0

Hours/Minutes/Seconds

Analytics 3.0

Seconds/Milliseconds

Data & Analytics Use Cases



AUTOMOTIVE

Auto sensors reporting location, problems



COMMUNICATIONS

Location-based advertising



CONSUMER PACKAGED GOODS

Sentiment analysis of what's hot, problems



FINANCIAL SERVICES

Risk & portfolio analysis
New products



EDUCATION & RESEARCH

Experiment sensor analysis



HIGH TECHNOLOGY / INDUSTRIAL MFG.

Mfg. quality
Warranty analysis



LIFE SCIENCES

Clinical trials
Genomics



MEDIA/ ENTERTAINMENT

Viewers / advertising effectiveness



ON-LINE SERVICES / SOCIAL MEDIA

People & career matching
Web-site optimization



HEALTH CARE

Patient sensors, monitoring, EHRs
Quality of care



OIL & GAS

Drilling exploration
sensor analysis



RETAIL

Consumer sentiment
Optimized marketing



TRAVEL & TRANSPORTATION

Sensor analysis for optimal traffic flows
Customer sentiment



UTILITIES

Smart Meter analysis for network capacity,



LAW ENFORCEMENT & DEFENSE

Threat analysis - social media monitoring, photo analysis

Growth in Big Data Has Significant Implications for IT



Performance and High Availability

Enterprise-grade performance and high availability become table stakes



Management

Hundreds/thousands of servers and switches will require a large numbers of management tasks



Deployment Speed

As big data grows, IT will need to quickly and cost-effectively scale resources



Scalability

Larger data clusters will require significant increases in capacity, scalability



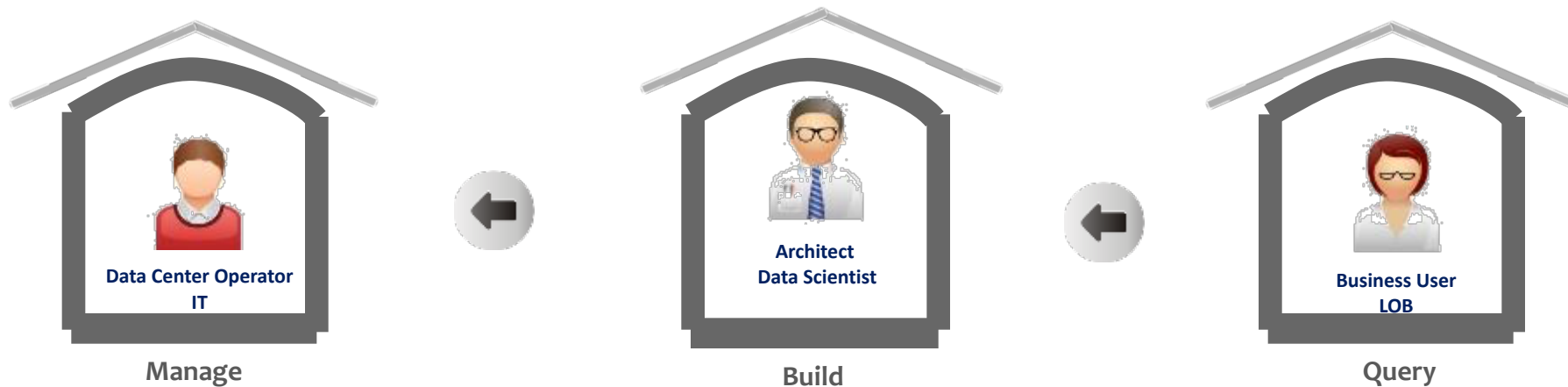
TCO

Overall economics become even more important

It's Important to Choose the Right Big Data Solution from the Outset to Maximize Impact and ROI

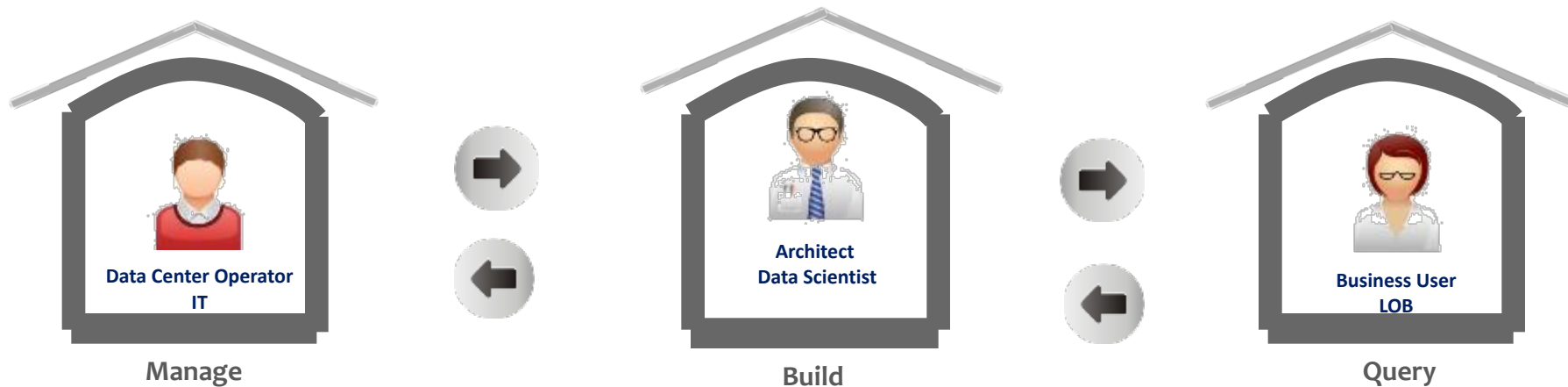
The Old Data Lifecycle

Multiple Silos. Multiple Views. Multiple Goals.



The Old Data Lifecycle

Multiple Silos. Multiple Views. Multiple Goals.



Cisco Big Data and Analytics Partner Ecosystem

Data Management

Hadoop



Massive Parallel Processing



NoSQL



Data Integration



Analytics / Business Intelligence



Financial Services Example

Gaining a 360-Degree Customer View

CHALLENGES

- **Customer experience:** Develop relevant and forward-looking customer solutions that drive a better, more personalized experience for both senders and receivers.
- **Security, risk, and compliance:** Use real-time ingest, processing, and analytic capabilities on multistructured data—streaming from mobile, web, and retail sources—to help reduce risk and enhance anti-money-laundering (AML) compliance at scale.

SOLUTION

- Cisco UCS® Integrated Infrastructure for Big Data (third generation of Cisco UCS Common Platform Architecture for Big Data)
- Red Hat Enterprise Linux
- Major Hadoop distribution

INSIGHTS AND IMPACT

- In real time, the company can now affect transactions and improve customer compliance in a way that results in better conversions for the company's customers
- Queries now execute two orders of magnitude faster than before
- 99% of all queries now execute in less than 15 minutes.
- Data reload times are now 60 times faster than before.



Retail Industry Example

Delivering Market Research to the Retail Industry

CHALLENGES

- Cut costs by decreasing mainframe loads and reducing mainframe support needs
- Build the foundation for a more cost-effective, flexible, and expandable data processing and storage environment.
- Continue to find ways to collect, process, and manage big data efficiently so the company can provide its clients with leading insights and contribute to its business growth.

SOLUTION

- Cisco UCS® Integrated Infrastructure for Big Data
- Red Hat Enterprise Linux
- Leading Hadoop distribution



INSIGHTS AND IMPACT

- Company saves over \$1.5 million per year by using a big data solution incorporating Cisco UCS and Red Hat Enterprise Linux to speed up performance and reduce the mainframe load.
- Hadoop is not only saving the company money, but it also provides a flexible platform that can easily scale to meet future corporate growth.



Telco Industry Example

Wireless Service Provider Gains Powerful Insights and Efficiencies

CHALLENGES

- Improve efficiency of new product development
- Reduce data analysis costs
- Increase efficiency of infrastructure and management
- Improve customer satisfaction

SOLUTION

- Cisco UCS® Integrated Infrastructure for Big Data
 - Cisco UCS C-Series Rack Servers
 - Cisco UCS 6200 Series Fabric Interconnects
 - Cisco Nexus® 2232 Fabric Extenders
 - Cisco Nexus 7000 Series Switches
- Red Hat Enterprise Linux
- Leading Hadoop distribution

INSIGHTS AND IMPACT

- CapEx savings of \$1.2 million, with a significant portion of savings coming from cabling and switching efficiencies
- Reduced management complexity and OpEx, with ability to deploy new systems in minutes, instead of hours or days
- Ability to gain valuable intelligence from processing unstructured data



Insurance Industry Example

Big Data Used to Tailor Products, Improve Customer Satisfaction

CHALLENGES

- Become more competitive and regain market share
- Significantly increase speed of data analysis
- Effectively use vast quantities of structured and unstructured data

SOLUTION

- Cisco UCS® Integrated Infrastructure for Big Data
 - Cisco UCS C240 M3 and C460 M2 Rack Servers
 - Cisco UCS 6200 Series Fabric Interconnects
 - Cisco Nexus 2232 Fabric Extenders
 - Cisco Advanced Services
- Red Hat Enterprise Linux
- Leading Hadoop distribution

INSIGHTS AND IMPACT

- Data analysis is 75 times more accurate, supporting better decision making
- Able to better tailor policies based on improved risk analysis
- Data processing is 500 times faster, speeding timely decisions
- Simplified operations and lowered TCO





Why Cisco

#1 Americas revenue market share in x86 blades ¹

40,000+ UNIQUE UCS CUSTOMERS ²

#1 Networking Vendor

\$10B+ Data Center Annualized Revenue Run Rate ²

More than **85%** of all **Fortune 500** customers have invested in UCS

100+ World record performance benchmarks to date

3,700+ UCS CHANNEL PARTNERS



Cisco and Red Hat Together Help You to Meet Big Data Infrastructure Challenges and Uncertainties



- 30 years of network innovation
- Cisco UCS® server platforms taking the world by storm in just five years
- Industry-leading big data portfolio with Cisco UCS Integrated Infrastructure for Big Data (third generation of Cisco UCS Common Platform Architecture for Big Data)



- Leading innovator of **open-source** solutions
- Red Hat Enterprise Linux is trusted by 90% of **Fortune 500** companies
 - Over a quarter of Red Hat's Enterprise Linux customers deploy for big data applications
- **Enterprise-grade** solutions through community-driven innovation

Industry-Leading Portfolio with Major ISV and Storage Provider Partners

Cisco UCS Integrated Infrastructure for Big Data

- Industry leading solution deployed across major industry verticals
- Areas of focus: Hadoop, NoSQL, MPP Databases and Analytics
- Broad ecosystem partnerships with leading ISVs
- Pre-tested, pre-validated and documented best practice designs optimized for performance and capacity – lowering risk and TCO
- Designed to scale from small to very large as business demands
- Unified and centralized management with seamless Integration with enterprise applications
- ACI: simplify, optimize and accelerate
- Easy to {order, deploy, service}



Single SKU
Big Data
Bundles

Big Data
Starter

High
Performance

Performance
Optimized

Capacity
Optimized

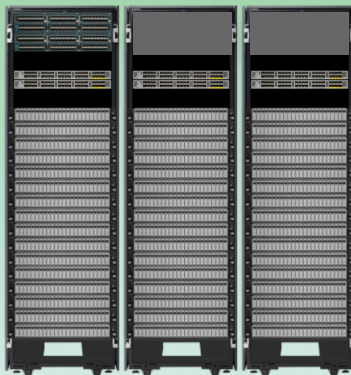
Extreme
Capacity

Easily Scale Cisco UCS for Big Data

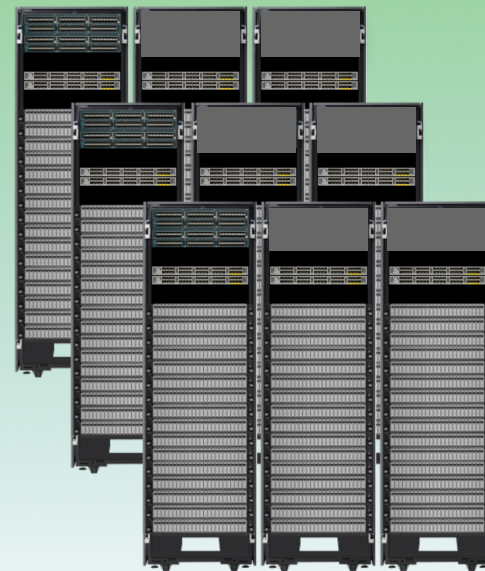
SINGLE RACK
16 Servers



SINGLE DOMAIN
Up to 10 Racks, 160 Servers



MULTIPLE DOMAINS
Up to 10,000 Servers



UCS Manager

UCS Central

Now you can buy Apache Hadoop directly from Cisco

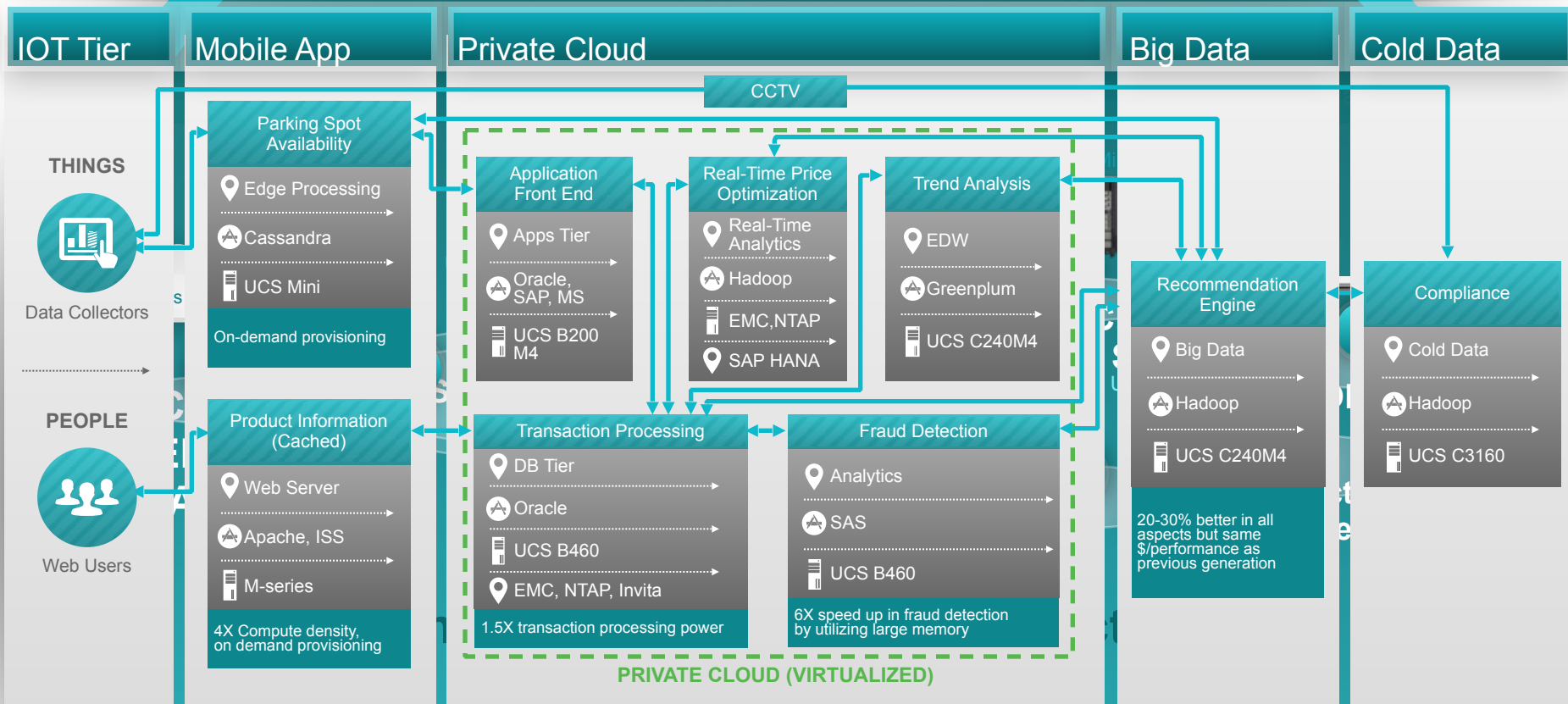
One Stop Shop for Big Data



Cisco now sells and supports all three Hadoop partners, Cloudera, Hortonworks and MapR, directly from Cisco, or from Cisco's channel partners, worldwide

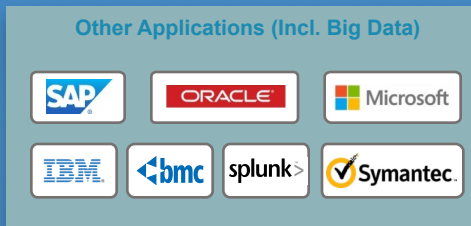
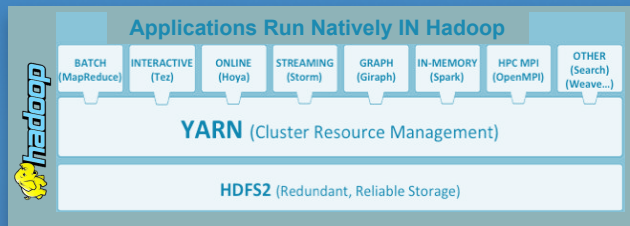
Hadoop Software	Cisco PID
<i>CLOUDERA ENTERPRISE BASIC EDITION</i>	<i>UCS-BD-CEBN=</i>
CLOUDERA ENTERPRISE FLEX EDITION	UCS-BD-CEFN=
<i>CLOUDERA ENTERPRISE DATA HUB EDITION</i>	<i>UCS-BD-CEDN=</i>
HORTONWORKS ENTERPRISE EDITION	UCS-BD-HDP-ENT=
<i>HORTONWORKS ENTERPRISE PLUS EDITION</i>	<i>UCS-BD-HDP-EPL=</i>
MapR M5 EDITION	UCS-BD-M5-SL=
<i>MapR M7 EDITION</i>	<i>UCS-BD-M7-SL=</i>

Cisco Connected Infrastructure Reaches from the Data Center to the Edge



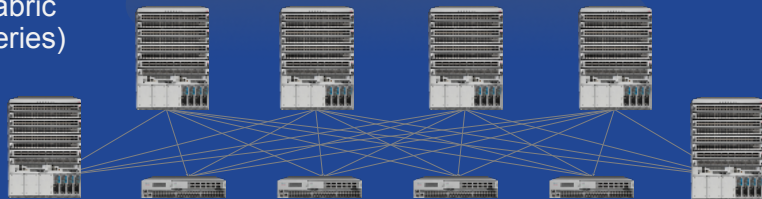
Cisco Application Centric Infrastructure

Rapidly Configure the Data Center Fabric for Dynamic Application Needs



Application Policy
Infrastructure Controller

Data Center Fabric
(Nexus 9000 Series)



Multi-Tenant Isolation

Keep data flows separate by tenant in shared infrastructure

Workload Optimization

Triple digit (%) improvements in workload completion

Workload Prioritization

Rapid re-deployment across multiple application peaks

Business Value As Measured by IDC

ROI Summary for Cisco UCS as a Platform for Mission-Critical Applications



Key Performance Improvements Realized from Customers Who Deployed Cisco UCS



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Business Value Benefits: Average Annual Benefits per 100 Users

Business Productivity
\$3,108

Risk Mitigation and
User Productivity
\$2,580

Infrastructure Cost Reduction
\$701

IT Staff Productivity
\$3,172

