

Mega Data Centers: Market Shares, Strategies, and Forecasts, Worldwide, 2017 to 2023

<https://marketpublishers.com/r/M8194F34F15EN.html>

Date: March 2017

Pages: 418

Price: US\$ 4,200.00 (Single User License)

ID: M8194F34F15EN

Abstracts

The 2017 study has 567 pages, 283 tables and figures. Worldwide, Clos architecture datacenters are being put in place to manage the data from IoT. IoT markets are poised to achieve significant growth with the use of smartphone apps and headsets or glasses that are augmented reality platforms to project digital information as images onto a game image or a work situation.

Mega data centers represent a quantum change in computing. They are building size single cloud computing units that function automatically, representing an entirely new dimension for computing. Each building costs about \$1 billion and works to manage web traffic and applications as an integrated computing unit.

The value of automated process to business has been clear since the inception of computing. Automated process replaces manual process. Recently, automated process has taken a sudden leap forward. That leap forward has come in the form of a mega data center.

Mega data centers replace enterprise data centers and many cloud hyperscale computing centers that are mired in spending patterns encompassing manual process by implementing automated infrastructure management and automated application integration.

In the enterprise data centers mired in manual process, the vast majority of IT administrative expenditures are for maintenance rather than for addressing the long-term strategic initiatives.

Business growth depends on technology spending that is intelligent, not on manual labor spending. The manual labor is always slow and error prone, spending on manual process is counterproductive vs automation spending. So many IT processes have been manual, tedious, and error prone that they have held the company back relative to the competition. Mega data centers get rid of that problem. The companies that invested in mega data centers and automated process for the data centers have had astounding

growth, while the companies stuck with ordinary data centers mired in manual process, be they enterprise data centers or hyperscale cloud data centers with manual process, are stuck in slow growth mode.

The only way to realign IT cost structures is to automate infrastructure management and orchestration. Mega data centers automate server and connectivity management. For example, Cisco UCS Director automates everything beyond the input mechanisms. Cisco UCS automates switching and storage, along with hypervisor, operating system, and virtual machine provisioning.

As this leap forward happened, many companies were stuck with their enterprise data center that has become a bottleneck. There is so much digital traffic that it cannot get through the traditional enterprise data center. The existing enterprise data centers are built with Cat Ethernet cable that is not fast enough to handle the quantities of data coming through the existing enterprise data center, creating a bottleneck. As these key enterprise data center parts of the economy bottleneck the flow of digital data, there is a serious problem. Companies that want to grow need to embrace cloud computing and data center innovation to correct this major problem.

Conventional wisdom has it that cloud computing is the answer, but this does not tell enough of the story, it is that portion of cloud computing that embraces automated process that can provide significant competitive advantage, not all cloud computing works. That new kid on the computing block is mega data centers.

All manner of devices will have electronics to generate digital information. The connected home will provide security on every door, window, and room that can be accessed from a smart phone. The refrigerators and heaters will send info so they can be turned on and off remotely. In industry, work flow is being automated so robots are active beyond a single process, extended to multi process information management.

All this takes a lot of analytics, operation on data in place, and always on access to all the data. Clos architecture mega data centers help implement the type of architecture. That a data center needs in order to operate in an effective, efficient manner.

Robots, drones, and automated vehicles all generate tons of data, with the growth rate for IoT reaching 23% by the end of the forecast period. Trillion dollar markets are evolving in multiple segments. IoT is in the early stages of an explosive growth cycle.

The Pokemon Go phenomenon raid adoption raised awareness and expectation for the vision of augmented reality AR and digital enhancement of the surroundings. Digital enhancement as IoT is just human explanation of our existing surroundings. Digital economic leveraging of data provides better management of the innate natural world and of the machines we use to perform work.

Clos architecture data centers are needed to manage all the data coming from the implementation of automated process everywhere.

IoT is set to become an indispensable part of people's lives. Digital real time

processing using mega data centers is poised to take off as part of the much heralded Mega Data Centers:. Digital images become as much a part of the real world as the things we can touch and feel as they are integrated into everyday life. The reality is augmented by the digital images. Augmented reality is a misnomer to the extent that it implies that reality is somehow has something superimposed on it. Instead the reality exists, and the digital images blend in to enhance the experience of reality, make it more understandable or more interesting. The reality is not changed, it is not made better, it is understood better.

Use-cases for IoT proliferate. Pokemon Go points the way to, illustrates, the huge game market opportunity looming on the ubiquitous smart phones. Adoption of IoT technology in the enterprise is growing. AR headsets and glasses are used in manufacturing, logistics, remote service, retail, medical, and education. One popular AR application is providing 'see-what-I-see' functionality, enabling off-site specialists to provide real-time guidance and expertise to troubleshoot an issue. Others superimpose process steps by step information on dials and switches in workflow situations.

Functional automated vehicles are driving around as Uber cars in San Francisco. This is generating IoT data that is used for navigation and for transaction processing. With 200.8 billion IoT endpoints predicted to be in service by 2023, the time is right to leverage the business value of the IoT by building Clos architecture mega data centers that manage the onslaught of digital data in a manner that is cost effective.”

“Organizations are hampered by siloed enterprise data center systems that inhibit growth and increase costs. Even the components inside the data center are siloed: servers, database servers, storage, networking equipment. Mega data centers function as universal IoT platforms that overcome legacy limitations and simplify device integration, to enable connectivity and data exchange. Industrial end-to-end process automation markets are anticipated to reach \$7 trillion by 2027, growing at a rapid pace, providing remarkable growth for companies able to build new data center capacity efficiently.

Pokémon Go grew to a massive 45 million daily active users per day after two months in the market, with the market reaching \$250 million for the vendor Niantic by September 2016 after two months starting from zero. This kind of growth demands the scalability and economy of a Clos architecture mega data center.

Phenomenal growth is anticipated to come from implementation of step-by-step procedure virtual reality modules that are used to manage systems. Every business executive in the world wants to have an IT structure agile enough to manage phenomenal growth, should that be necessary, the aim is to construct augmented reality modules that address the issues brought by the Mega Data Centers:. IoT takes the data from sensors, superimposes analytics on collected data, turns the data into information, and streams alerts back to users that need to take action.

The Mega Data Centers:: market size is \$459.7 million in 2015 to \$1.6 billion in 2016. It goes from anticipated to be USD \$359.7 billion in 2023. The market, an astoundingly rapid growth for a market that really is not yet well defined. The increasing scope of applications across different industries, manufacturing, medical, retail, game, and automotive, all industries really, is expected to drive demand over the forecast period to these unprecedented levels, reaching into the trillion dollar market arenas soon. IoT technology is in the nascent stage with a huge growth potential, and has attracted large investments contributing to the industry growth.

Contents

MEGA DATA CENTERS EXECUTIVE SUMMARY

Mega Data Center Scale and Automation

Mega Data Centers Have Stepped In To Do The Job Of Automated Process

Cloud 2.0 Mega Data Center Fabric Implementation

Cloud 2.0 Mega Data Center Different from the Hyperscale Cloud

Cloud 2.0 Mega Data Center Automatic Rules and Push-Button Actions

Making Individual Circuits And Devices Unimportant Is A Primary Aim Of Fabric Architecture

Digital Data Expanding Exponentially, Global IP Traffic Passes Zettabyte (1000 Exabytes) Threshold

Google Kubernetes Open Source Container Control System

Google Kubernetes a Defacto Standard Container Management System

Google Shift from Bare Metal To Container Controllers

Cloud 2.0 Mega Data Center Market Driving Forces

Mega Data Center Market Shares

Cloud Datacenter, Co-Location, and Social Media Cloud, Revenue Market Shares, Dollars, Worldwide, 2016

Cloud 2.0 Mega Data Center Market Forecasts

1. MEGA DATACENTERS: MARKET DESCRIPTION AND MARKET DYNAMICS

1.1 Data Center Manager Not Career Track for CEO

1.1.1 Colocation Shared Infrastructure

1.1.2 Power and Data Center Fault Tolerance

1.2 Fiber High Bandwidth Datacenters

1.3 100 Gbps Headed For The Data Center

1.3.1 100 Gbps Adoption

1.4 Scale: Cloud 2.0 Mega Data Center Containers

1.4.1 Data Center Architectures Evolving

1.4.2 High-Performance Cloud Computing Market Segments

1.4.3 Cisco CRS-3 Core Routing Platform

1.5 Evolution of Data Center Strategy

1.6 Cabling in The Datacenter

1.6.1 Datacenter Metrics

1.6.1 Digitalization Forcing Data Centers to Evolve

1.6.2 A One-Stop Shop

1.6.3 Growing With Business

2. MEGA DATA CENTERS MARKET SHARES AND FORECASTS

2.1 Mega Data Center Scale and Automation

2.1.1 Cloud 2.0 Mega Data Center Fabric Implementation

2.1.2 Cloud 2.0 Mega Data Center Different from the Hyperscale Cloud

2.1.3 Cloud 2.0 Mega Data Center Automatic Rules and Push-Button Actions

2.1.4 Making Individual Circuits And Devices Unimportant Is A Primary Aim Of Fabric Architecture

2.1.5 Digital Data Expanding Exponentially, Global IP Traffic Passes Zettabyte (1000 Exabytes) Threshold⁸¹

2.1.6 Google Kubernetes Open Source Container Control System

2.1.7 Google Kubernetes Defacto Standard Container Management System

2.1.8 Google Shift from Bare Metal To Container Controllers

2.1.9 Cloud 2.0 Mega Data Center Market Driving Forces

2.2 Mega Data Center Market Shares

2.2.1 Cloud 2.0 Mega Datacenter Cap Ex Spending Market Shares Dollars, Worldwide, 2016

2.2.2 Amazon Capex for Cloud 2.0 Mega Data Centers

2.2.3 Amazon (AWS) Cloud

2.2.4 Amazon Datacenter Footprint

2.2.5 Cloud 2.0 Mega Data Center Social Media and Search Revenue Market Shares, Dollars, 2016

2.2.6 Microsoft Azure

2.2.7 Microsoft Data Center, Dublin, 550,000 Sf

2.2.8 Microsoft Data Center Container Area in Chicago.

2.2.9 Microsoft Quincy Data Centers, 470,000 Square Feet

2.2.10 Microsoft San Antonio Data Center, 470,000 SF

2.2.11 Microsoft 3rd Data Center in Bexar Could Employ 150

2.2.12 Microsoft Builds the Intelligent Cloud Platform

2.2.13 Microsoft's Datacenter Footprint

2.2.14 Microsoft Datacenter Footprint

2.2.15 Google Datacenter Footprint

2.2.16 Google Datacenter Footprint

2.2.17 Facebook Datacenter Footprint

2.2.18 Facebook Datacenter Footprint

2.3 Cloud 2.0 Mega Data Center Market Forecasts

2.3.1 Market Segments: Web Social Media, Web Wireless Apps, Enterprise / Business

Transactions, Co-Location, And Broadcast / Communications

2.3.2 Cloud 2.0 Mega Data Center Is Changing The Hardware And Data Center

Markets

2.4 Mega-Datacenter: Internet Giants Continue To Increase Capex

2.4.1 Amazon Datacenter Footprint

2.4.2 Service Tiers and Applications

2.4.3 Cloud 2.0 Mega Data Center Segments

2.4.4 Mega Data Center Positioning

2.4.5 Cloud 2.0 Mega Data Centers

2.5 Hyperscale Datacenter Future

2.6 Data Expanding And Tools Used To Share, Store, And Analyze Evolving At Phenomenal Rates¹³³

2.6.1 Video Traffic

2.6.2 Cisco Analysis of Business IP Traffic

2.6.3 Increasing Video Definition: By 2020, More Than 40 Percent of Connected Flat-Panel TV Sets Will Be 4K

2.6.4 M2M Applications

2.6.5 Applications, For Telemedicine And Smart Car Navigation Systems, Require Greater Bandwidth And Lower Latency

2.6.6 Explosion of Data Inside Cloud 2.0 Mega Data Center with Multi-Threading

2.6.7 Cloud 2.0 Mega Data Center Multi-Threading Automates Systems Integration

2.6.8 Fixed Broadband Speeds (in Mbps), 2015–2020

2.6.9 Internet Traffic Trends

2.6.10 Internet of Things

2.6.11 The Rise of the Converged “Digital Enterprise”

2.6.12 Enterprise Data Centers Give Way to Commercial Data Centers

2.6.13 Types of Cloud Computing

2.7 Cloud Mega Data Center Regional Market Analysis

2.7.1 Amazon, Google Detail Next Round of Cloud Data Center Launches

2.7.1 Cloud Data Centers Market in Europe

2.7.2 Cloud Data Centers Market in Ireland

2.7.3 Japanese Data Centers

3. MEGA DATA CENTER INFRASTRUCTURE DESCRIPTION

3.1 Amazon Cloud

3.1.1 Amazon AWS Regions and Availability Zones

3.1.2 Amazon Addresses Enterprise Cloud Market, Partnering With VMware

3.1.3 AWS Achieves High Availability Through Multiple Availability Zones

- 3.1.4 AWS Improving Continuity Replication Between Regions
- 3.1.5 Amazon (AWS) Meeting Compliance and Data Residency Requirements
- 3.1.6 AWS Step Functions Software
- 3.1.7 Amazon QuickSight Software
- 3.1.8 Amazon North America
- 3.1.9 AWS Server Scale
- 3.1.10 AWS Network Scale
- 3.2 Facebook
 - 3.2.1 Dupont Fabros Constructing Second Phase In Acc7 Represents An Expanded Relationship with Facebook
 - 3.2.2 Facebook \$1B Cloud 2.0 Mega Data Center in Texas
 - 3.2.3 Facebook \$300 Million Cloud 2.0 Mega Data Center in Iowa
 - 3.2.4 Fort Worth Facebook Mega-Data Center
 - 3.2.5 Facebook Forest City, N.C. Cloud 2.0 mega data center
 - 3.2.6 Data Center Fabric, The Next-Generation Facebook Data Center Network
 - 3.2.1 Facebook Altoona Data Center Networking Fabric
 - 3.2.2 Facebook Clusters and Limits Of Clusters
 - 3.2.3 Facebook Fabric
 - 3.2.4 Facebook Network Technology
 - 3.2.5 Facebook Fabric Gradual Scalability
 - 3.2.6 Facebook Mega Datacenter Physical Infrastructure
 - 3.2.7 Facebook Large Fabric Network Automation
 - 3.2.8 Facebook Fabric Data Center Transparent Transition
 - 3.2.9 Facebook Large-Scale Network
- 3.3 Google Meta Data Centers
 - 3.3.1 Google Datacenter Network
 - 3.3.2 Google Office Productivity Dynamic Architecture
 - 3.3.3 Google Search Engine Dynamic Architecture
 - 3.3.4 BigFiles
 - 3.3.5 Repository
 - 3.3.6 Google Clos Networks
 - 3.3.7 Google B4 Datacenter WAN, a SDN
 - 3.3.8 Google Programmable Access To Network Stack
 - 3.3.9 Google Compute Engine Load Balancing
 - 3.3.10 Google Compute Engine (GCE) TCP Stream Performance Improvements
 - 3.3.11 Google The Dalles, Oregon Cloud 2.0 Mega Data Center
 - 3.3.12 Lenoir, North Carolina
 - 3.3.13 Google Hamina, Finland
 - 3.3.14 Google Mayes County

- 3.3.15 Google Douglas County
- 3.3.16 Google Cloud 2.0 Mega Data Center St Ghislain, Belgium
- 3.3.17 Google Council Bluffs, Iowa Cloud 2.0 Mega Data Center
- 3.3.18 Google Douglas County Cloud 2.0 Mega Data Center
- 3.3.19 Google \$300m Expansion of Existing Metro Atlanta Data Center
- 3.3.20 Google B4 SDN Initiative Benefits: Not Need To Be A Network Engineer To Control A Network; Can Do It At An Application Level
- 3.3.21 Google Cloud 2.0 Mega Data Center in Finland
- 3.3.22 Google Switches Provide Scale-Out: Server And Storage Expansion
- 3.3.23 Google and Microsoft 25G Ethernet Consortium
- 3.3.24 Google Workload Definitions
- 3.3.25 Google Kubernetes Container
- 3.3.26 Google Optical Networking
- 3.3.27 Google Data Center Efficiency Measurements
- 3.3.28 Google Measuring and Improving Energy Use
- 3.3.29 Google Comprehensive Approach to Measuring PUE
- 3.3.30 Q3 2016 PUE Performance
- 3.4 Microsoft
 - 3.4.1 Microsoft .Net Dynamically Defines Reusable Modules
 - 3.4.2 Microsoft Combines Managed Modules into Assemblies
 - 3.4.3 Microsoft Architecture Dynamic Modular Processing
 - 3.4.4 Microsoft Builds Azure Cloud Data Centers in Canada
 - 3.4.5 Microsoft Dublin Cloud 2.0 mega data center
 - 3.4.6 Microsoft Data Center Largest in U.S.
 - 3.4.7 Microsoft Crafts Homegrown Linux For Azure Switches
 - 3.4.8 Microsoft Azure Cloud Switch
 - 3.4.9 Microsoft Azure CTO Cloud Building
 - 3.4.10 Microsoft Cloud 2.0 Mega Data Center Multi-Tenant Containers
 - 3.4.11 Microsoft Managed Clustering and Container Management: Docker and Mesos
 - 3.4.12 Kubernetes From Google or Mesos
 - 3.4.13 Microsoft Second Generation Open Cloud Servers
 - 3.4.14 Azure Active Directory
 - 3.4.15 Microsoft Azure Stack Platform Brings The Suite Of Azure Services To The Corporate Datacenter
 - 3.4.16 Hardware Foundation For Microsoft Azure Stack

4. MEGA DATACENTERS RESEARCH AND TECHNOLOGY

4.1 Enterprise IT Control Centers

- 4.2 Open Compute Project (OCP),
 - 4.2.1 Microsoft Investment in Open Compute
 - 4.2.2 Microsoft Leverages Open Compute Project to Bring Benefit to Enterprise Customers
- 4.3 Open Source Foundation
 - 4.3.1 OSPF Neighbor Relationship Over Layer 3 MPLS VPN
- 4.4 Dynamic Systems
 - 4.4.1 Robust, Enterprise-Quality Fault Tolerance
- 4.5 Cache / Queue
- 4.6 Multicast
- 4.7 Performance Optimization
- 4.8 Fault Tolerance
 - 4.8.1 Gateways
 - 4.8.2 Promise Of Web Services
- 4.9 IP Addressing And Directory Management
 - 4.9.1 Dynamic Visual Representations
 - 4.9.2 Application Integration
 - 4.9.3 Point Applications
 - 4.9.4 Fault Tolerance and Redundancy Solutions
 - 4.9.5 Goldman Sachs Open Compute Project
- 4.10 Robust, Quality Cloud Computing
- 4.11 Networking Performance

5. MEGA DATACENTERS COMPANY PROFILES

- 5.1 Amazon
 - 5.1.1 Amazon Business
 - 5.1.2 Amazon Competition
 - 5.1.3 Amazon Description
 - 5.1.4 Amazon Revenue
- 5.2 Facebook
 - 5.2.1 Facebook Technology
 - 5.2.2 Facebook Sales and Operations
 - 5.2.3 Facebook Management Discussion
 - 5.2.4 Facebook Revenue
 - 5.2.5 Facebook
 - 5.2.6 Facebook App Draining Smart Phone Batteries
 - 5.2.7 Facebook Messaging Provides Access to User Behavioral Data
 - 5.2.8 Facebook Creating Better Ads

- 5.2.9 Facebook Next Generation Services
- 5.2.10 Facebook Platform
- 5.2.11 Facebook Free Basics
- 5.2.12 Facebook AI
- 5.2.13 Facebook Revenue
- 5.2.14 Facebook Revenue Growth Priorities:
- 5.2.15 Facebook Average Revenue Per User ARPU
- 5.2.16 Facebook Geographical Information
- 5.2.17 Facebook WhatsApp
- 5.2.18 Facebook WhatsApp Focusing on Growth
- 5.3 Google
 - 5.3.1 Google Revenue
 - 5.3.2 Google
 - 5.3.3 Google Search Technology
 - 5.3.4 Google Recognizes World Is Increasingly Mobile
 - 5.3.5 Google Nest
 - 5.3.6 Google / Nest Protect
 - 5.3.7 Google / Nest Safety History
 - 5.3.8 Google / Nest Learning Thermostat
 - 5.3.9 Google Chromecast
- 5.4 Microsoft
 - 5.4.1 Microsoft Builds the Intelligent Cloud Platform
 - 5.4.2 Microsoft Targets Personal Computing
 - 5.4.3 Microsoft Reportable Segments
 - 5.4.4 Skype and Microsoft
 - 5.4.5 Microsoft / Skype / GroupMe Free Group Messaging
 - 5.4.6 Microsoft SOA
 - 5.4.7 Microsoft .Net Open Source
 - 5.4.8 Microsoft Competition
 - 5.4.9 Microsoft Revenue

Wintergreen Research,

WinterGreen Research Research Methodology

List of Figures

Figure 1. Cloud 2.0 Mega Data Center Market Driving Forces

Figure 2. Cloud Datacenter, Co-Location, and Social Media Revenue Market Shares, Dollars, Worldwide, 2016, Image

Figure 3. Cloud 2.0 Mega Datacenter Market Forecast, Dollars, Worldwide, 2017-2023

Figure 4. RagingWire Colocation N+1 Shared Infrastructure

Figure 5. RagingWire Colocation N+1 Dedicated Infrastructure

Figure 6. RagingWire Data Center Maintenance on N+1 Dedicated System Reduces Fault Tolerance to N52

Figure 7. RagingWire Data Center Stays Fault Tolerant During Maintenance with 2N+2 System53

Figure 8. 100 Gbps Adoption

Figure 9. Data Center Technology Shifting

Figure 10. Data Center Technology Shift

Figure 11. IT Cloud Evolution

Figure 12. Facebook Networking Infrastructure Fabric

Figure 13. Datacenter Metrics

Figure 14. Cloud 2.0 Mega Data Center Market Driving Forces

Figure 15. Cloud 2.0 Mega Datacenter Cap Ex Spending Market Shares Dollars, Worldwide, 2016

Figure 16. Large Internet Company Cap Ex Market Shares, Dollars, Worldwide, 2013 to 2016

Figure 17. Cloud 2.0 Mega Data Center Cap Ex Market Shares, Dollars, Worldwide, 2013 to 2016

Figure 18. Cloud 2.0 Mega Data Center Cap Ex Market Shares, Dollars, Worldwide, 2016

Figure 19. Cloud 2.0 Mega Data Center Social Media and Search Revenue Market Shares, Dollars, 2016, Image

Figure 20. Cloud 2.0 Mega Data Center Social Media and Search Revenue Market Shares, Dollars, 201696

Figure 21. 538,000SF: i/o Data Centers and Microsoft Phoenix One, Phoenix, Ariz.

Figure 22. Phoenix, Arizona i/o Data Center Design Innovations

Figure 23. Microsoft Data Center, Dublin, 550,000 Sf

Figure 24. Container Area In The Microsoft Data Center In Chicago

Figure 25. An aerial view of the Microsoft data center in Quincy, Washington

Figure 26. . Microsoft San Antonio Data Centers, 470,000 SF

Figure 27. Microsoft 3rd Data Center in Bexar Could Employ 150

Figure 28. Cloud 2.0 Mega Datacenter Market Forecast, Dollars, Worldwide, 2017-2023

Figure 29. Cloud 2.0 Mega Datacenter Market Shares Dollar, Forecast, Worldwide, 2017-2023115

Figure 30. Cloud 2.0 Mega Datacenter Market Shares Percent, Forecast, Worldwide, 2017-2023116

Figure 31. Market Driving Forces for Cloud 2.0 Mega Data Centers

Figure 32. Market Challenges of Cloud 2.0 Mega Data Centers

Figure 33. Key Components And Topology Of A Mega Datacenter

Figure 34. Datacenter Topology without Single Managed Entities

- Figure 35. Key Challenges Enterprise IT Datacenters:
- Figure 36. Software Defined Datacenter
- Figure 37. Cisco VNI Forecast Overview
- Figure 38. The Cisco VNI Forecast—Historical Internet Context
- Figure 39. Global Devices and Connections Growth
- Figure 40. Average Number of Devices and Connections per Capita
- Figure 41. Global IP Traffic by Devices
- Figure 42. Global Internet Traffic by Device Type
- Figure 43. Global 4K Video Traffic
- Figure 44. Global IPv6-Capable Devices and Connections Forecast 2015–2020
- Figure 45. Projected Global Fixed and Mobile IPv6 Traffic Forecast 2015–2020
- Figure 46. Global M2M Connection Growth
- Figure 47. Global M2M Connection Growth by Industries
- Figure 48. Global M2M Traffic Growth: Exabytes per Month
- Figure 49. Global Residential Services Adoption and Growth
- Figure 50. Global IP Traffic by Application Category
- Figure 51. Mobile Video Growing Fastest; Online Video and Digital TV Grow Similarly
- Figure 52. Global Cord Cutting Generates Double the Traffic
- Figure 53. Fixed Broadband Speeds (in Mbps), 2015–2020
- Figure 54. Future of Wi-Fi as Wired Complement
- Figure 55. Global IP Traffic, Wired and Wireless*
- Figure 56. Global Internet Traffic, Wired and Wireless
- Figure 57. Cisco VNI Forecasts 194 EB per Month of IP Traffic by 2020
- Figure 58. Cisco Forecast of Global Devices and Connections Growth
- Figure 59. Cloud 2.0 Mega Data Center Regional Market Segments, Dollars, 2016, Image
- Figure 60. Cloud 2.0 Mega Data Center Regional Market Segments, Dollars, 2016
- Figure 61. Map of Google's Cloud Data Centers
- Figure 62. Amazon Zones and Regions
- Figure 63. Amazon AWS Global Cloud Infrastructure
- Figure 64. Amazon (AWS) Support for Global IT Presence
- Figure 65. AWS E Tool Functions
- Figure 66. AWS E Tool Supported Sources
- Figure 67. Amazon North America Map
- Figure 68. Amazon North America List of Locations
- Figure 69. Example of AWS Region
- Figure 70. Example of AWS Availability Zone
- Figure 71. Example of AWS Data Center
- Figure 72. AWS Network Latency and Variability

- Figure 73. Amazon (AWS) Regional Data Center
- Figure 74. A Map of Amazon Web Service Global Infrastructure
- Figure 75. Rows of Servers Inside an Amazon (AWS) Data Center
- Figure 76. Facebook DuPont Fabros Technology Ashburn, VA Data Center
- Figure 77. Facebook Altoona Iowa Cloud 2.0 Mega Data Center
- Figure 78. Facebook Cloud 2.0 mega data center in Altoona, Iowa Construction Criteria
- Figure 79. Facebook Fifth Data Center Fort Worth Complex.
- Figure 80. Facebook Altoona Positioning Of Global Infrastructure
- Figure 81. Facebook Back-End Service Tiers And Applications Account for Machine-To-Machine Traffic Growth
- Figure 82. Facebook Back-End Service Tiers And Applications Functions
- Figure 83. Facebook Cluster-Focused Architecture Limitations
- Figure 84. Facebook Clusters Fail to Solve a Networking Limitations
- Figure 85. Facebook Sample Pod: Unit of Network
- Figure 86. Facebook Data Center Fabric Network Topology
- Figure 87. Facebook Network Technology
- Figure 88. Facebook Schematic Fabric-Optimized Datacenter Physical Topology
- Figure 89. Facebook Automation of Cloud 2.0 mega data center Process
- Figure 90. Facebook Creating a Modular Cloud 2.0 mega data center Solution
- Figure 91. Facebook Cloud 2.0 mega data center Fabric High-Level Settings Components
- Figure 92. Facebook Cloud 2.0 mega data center Fabric Unattended Mode
- Figure 93. Facebook Data Center Auto Discovery Functions
- Figure 94. Facebook Automated Process Rapid Deployment Architecture
- Figure 95. Facebook Fabric Automated Process Rapid Deployment Architecture
- Figure 96. Facebook Fabric Rapid Deployment
- Figure 97. Facebook Cloud 2.0 mega data center High Speed Network Implementation Aspects231
- Figure 98. Facebook Cloud 2.0 mega data center High Speed Network Implementation Aspects232
- Figure 99. Google St. Ghislain, Belgium, Europe Data Center
- Figure 100. Google Dynamic Architecture
- Figure 101. Google Clos Multistage Switching Network
- Figure 102. Google Key Principles Used In Designing Datacenter Networks
- Figure 103. Google Andromeda Cloud Architecture Throughput Benefits
- Figure 104. Google Andromeda Software Defined Networking (SDN)-Based Substrate Functions
- Figure 105. Google Andromeda Cloud High-Level Architecture
- Figure 106. Google Andromeda Performance Factors Of The Underlying Network

- Figure 107. Google Compute Engine Load Balanced Requests Architecture
- Figure 108. Google Compute Engine Load Balancing
- Figure 109. Google Cloud Platform TCP Andromeda Throughput Advantages
- Figure 110. Google Meta Data Center Locations
- Figure 111. Google Meta Data Center Locations Map
- Figure 112. Google Dalles Data Center Cooling Pipes
- Figure 113. Google Hamina, Finland Data Center
- Figure 114. Google Lenoir Data Center North Carolina, US
- Figure 115. Google Data Center in Pryor, Oklahoma
- Figure 116. Google Douglas County, Georgia Data Center Facility
- Figure 117. Google Berkeley County, South Carolina, Data Center
- Figure 118. Google Council Bluffs Iowa Cloud 2.0 Mega Data Center
- Figure 119. Google Council Bluffs Iowa Cloud 2.0 Mega Data Center Campus Network Room
- Figure 120. Google Douglas County Cloud 2.0 Mega Data Center
- Figure 121. Google Team of Technical Experts Develop And Lead Execution Of'Global Data Center Sustainability Strategy
- Figure 122. Google Datacenter Manager Responsibilities
- Figure 123. Google Meta Data Center
- Figure 124. Google Server Warehouse in Former Paper Mill
- Figure 125. Google Data Center in Hamina, Finland
- Figure 126. Google Traffic Generated by Data Center Servers
- Figure 127. Google Cloud 2.0 mega data center Multipathing: Implementing Lots And Lots Of Paths Between Each Source And Destination
- Figure 128. Google Cloud 2.0 mega data center Multipathing: Routing Destinations
- Figure 129. Google Builds Own Network Switches And Software
- Figure 130. Google Clos Topology Network Capacity Scalability
- Figure 131. Google Jupiter Network Delivers 1.3 Pb/Sec Of Aggregate Bisectio n Bandwidth Across A Datacenter
- Figure 132. Jupiter Superblock Collection of Jupiter Switches Running SDN Stack Based On Openflow Protocol:
- Figure 133. Google Modernized Switch, Server, Storage And Network Speeds
- Figure 134. Google Container Controller Positioning
- Figure 135. Google Data Center Efficiency Measurements
- Figure 136. Google Data Center PUE Measurement Boundaries
- Figure 137. Google Continuous PUE Improvement with Quarterly Variatiion, 2008 to 2017
- Figure 138. Cumulative Corporate Renewable Energy Purchasing in the United States, Europe, and Mexico, November 2016

- Figure 139. Images for Microsoft Dublin Cloud 2.0 Mega Data Center
- Figure 140. Microsoft Azure Data Center
- Figure 141. Microsoft Dublin Cloud 2.0 mega data center
- Figure 142. Microsoft .Net Dynamic Definition of Reusable Modules
- Figure 143. Microsoft .NET Compiling Source Code into Managed Assemblies
- Figure 144. Microsoft Architecture Dynamic Modular Processing
- Figure 145. Microsoft-Azure-Stack-Block-Diagram
- Figure 146. Microsoft-Azure-Platform Stack-Services
- Figure 147. Figure 175. Microsoft-Cloud Virtual Machine -Platform Stack-Services
- Figure 148. Microsoft-Azure-Core Management-Services
- Figure 149. Microsoft Data Centers
- Figure 150. Multiple Pathways Open To Processing Nodes In The Cloud 2.0 Mega Data Center Functions
- Figure 151. Layer 3 MPLS VPN Backbone
- Figure 152. OSPF Network Types
- Figure 153. Automatic Detection And Recovery From Network And System Failure
- Figure 154. High Performance And Real-Time Message Throughput
- Figure 155. Fault Tolerance Features
- Figure 156. Functions Of An IP Addressing Device
- Figure 157. Benefits Of an IP Addressing Device
- Figure 158. Dynamic Visual Representation System Uses
- Figure 159. Application Integration Health Care Functions
- Figure 160. Application Integration Industry Functions
- Figure 161. CERNE Cloud Architecture
- Figure 162. Cern Cloud and Dev
- Figure 163. CERN Use Cases
- Figure 164. Cern Hardware Spectrum
- Figure 165. Cern Operations Containers
- Figure 166. Open Stack at Cern
- Figure 167. Cern Open Space Containeers on Clouds
- Figure 168. Amazon Principal Competitive Factors In The Online Retail Business
- Figure 169. Amazon Improving Customer Experience Functions
- Figure 170. Amazon Ways To Achieve Efficiency In Technology For Operations
- Figure 171. Google / Nest Learning Thermostat
- Figure 172. Microsoft Productivity and Business Processes Segment
- Figure 173. Microsoft Intelligent Cloud Segment
- Figure 174. Microsoft / Skype / GroupMe Free Group Messaging
- Figure 175. Microsoft Service Orientated Architecture SOA Functions

I would like to order

Product name: Mega Data Centers: Market Shares, Strategies, and Forecasts, Worldwide, 2017 to 2023

Product link: <https://marketpublishers.com/r/M8194F34F15EN.html>

Price: US\$ 4,200.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/M8194F34F15EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970