Smarter infrastructure solutions for The Data-Centered

Smarter technology for all

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Our vision:

To be the most trusted data center partner empowering customers' Intelligent Transformation and helping solve humanity's greatest challenges.



The Data-Centered

Lenovo serves and empowers the Data-Centered.

Because we know data doesn't transform the world. People do.

On its own, data is powerless. It takes smarter, more ambitious, more driven humans to bring it to life. To apply it. To derive its meaning. To give it purpose.

To see its potential to dramatically accelerate their organizations, improve their industries, and solve humanity's greatest challenges. Because numbers add up, but it's the people who make them count.

They are visionaries and tech optimists. Executives and engineers. Researchers and managers alike.

They are The Data-Centered.

Lenovo

Drivers of Data Center Infrastructure Consumption



How Lenovo earns the trust of the Data-Centered



Customer Centric Outcomes and end to end experience

Reliable

Infrastructure and Support

22 CL

Open

Solutions for any organization at any scale

Secure

Manufacturing and Supply Chain



Sustainable Business practices





Customer Centric

Being customer centric means enabling intelligent outcomes

The Data-Centered conserve water with a flood of intelligence.

Smarter Infrastructure is helping NC State University turn a constant flow of data into smarter water management.

Join us at Lenovo.com/TheDataCentered Smarter Water Management North Carolina State University (United States)

The Data-Centered protect eyesight with a bolder vision.

> Smarter Wealth Management Arihant Capital Markets (India)

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Smarter Healthcare

Barcelona Supercomputing Center (Spain)

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The Data-Centered accelerate growth by enhancing mobility.

Smarter Infrastructure brings better performance to Arihant Capital Markets' mobile app, enabling smarter wealth management from anywhere.

Join us at Lenovo.com/TheDataCentered

Being customer centric means delivering smarter infrastructure solutions









Cloud computing

Edge computing

As-a-Service



ng Analytics & Al

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Being customer centric means having a point of view



Confidently accelerate your cloud transformation

Transforming your business from a traditional IT infrastructure to a cloud model enables the business agility you need to compete and thrive in today's instantaneous decisionmaking environment. But there is no cookiecutter, one size fits all approach to the cloud. Whether considering a public, private, or hybrid cloud solution, your cloud strategy must address your unique business requirements and opportunities specific to your industry.

To make the complex decisions - from infrastructure to data migration to data management - you have to understand the variables and interdependencies of the cloud stack. Balancing application and data needs, portability, data security, scalability, and ultimately data management all require specialized insights and knowledge.



cloud platform provider that meets your specific needs and hardware optimized for the cloud framework Still you don't want to get locked into a technology that might not fit your requirements down the road. You want possible disruption. And you want to know that your data is running on the most reliable infrastructure available anywhere, once your transformation is complete.

and AI

data refocuses our most fundamental IT strategies and requirements. It makes data analytics now a transformative science, encompassing data collection, organization, storage, and all the tools and methods for extracting useful insights. Artificial intelligence (AI) is the next step in the evolution of data analytics, and Al's ability to shape the future is well documented. Al has evolved from customized solutions used by data scientists and data engineers into mainstream tools accessed across the enterprise. However, your IT partner should tailor AI and data analytics solutions to your specific needs.

Analytics

Despite dramatic improvements in processing capacity and cloud-based service options, the unique performance requirements of the latest analytics and AI applications highlight the practical limitations of the traditional IT stack. For example, Big Data, analytics, and Al require an order of magnitude increase in computational resources over conventional IT systems.

Don't accept one-size-fits-all when it comes to analytics curve and footprint made them prohibitive for all but the largest The need to derive more value from Lenovo's new HPC technology solves businesses of all sizes with scalable HPC systems that can handle the most leverage hardware and software components such as databases. storage, and graphical processing units (GPUs) as well as high-performance processors uniquely suited to deep learning and machine learning. With advanced cooling and energy efficiency, this hardware can sit within a standard rack and meet size-specific With Lenovo's HPC solutions, the

breakthrough potential of analytics and Al is now within your reach. You can that is modular, adaptable and ready and business problems you are working with today - and you can easily scale those capabilities to meet future requirements.



When real-time insights are critical, bring AI capabilities right where you need it the most - at your network edge

We live in an increasingly data-driven world. People and things generate data outside your data center at the "last mile" of the network

The demand to make mission-critical and time-sensitive decisions at the network edge fuels a growing need to bring powerful compute enabled by Artificial Intelligence (AI) to the edge. Fortunately, this is being made increasingly possible by the increasing availability of high-performance networking and edge computing hardware.

When real-time insights are critical, the latency caused as data travels to data centers or the cloud and then back to the device can be especially problematic. For example, self-driving cars cannot wait for the roundtrip of data to know when to brake or how fast to travel

The growing need for real-time decision making drives the need for intelligence to the edge and complements less timesensitive compute in your data center or cloud.

Wherever you define the edge, lenovo has your edge-computing

With the proliferation of data from IoT devices, smarter networks, and the desire to automate human tasks at scale, edge class capabilities from industry-leading PC Motorola mobile, and innovative data center solutions, to design and deliver an edge-computing portfolio with a 'fit anywhere' form factor. Wireless connectivity, tamperproof security, built-in AI, and zero-touch provisioning add to manageability.

needed to enable the next generation of edge solutions, they looked to Lenovo as their strategic partner. Much of the growth in the smart city market is driven by mission-critical security initiatives, reliant on an array of sensors and databases, in conjunction with video analytics, including provided a solution to centrally manage 3,000 surveillance cameras with faste smaller, space conscious appliances.

As-a-Service

For real flexibility, a pay-peruse consumption model for infrastructure has become a business imperative

It has never been a more challenging and exciting time for an IT Manager. The role has expanded to impact customer service, sales, and even business strategies. Your company is increasingly turning to you as the driving force in all aspects of the business.

You must equip the business with the right technology and tools to support the ongoing digital transformation that can scale based on unpredictable customer demand. Traditional approaches to acquiring

infrastructure with upfront capital expenses and long lead times do not give you the ability to scale up or down on demand without overprovisioning or incurring exponential costs

It would help if you had the flexibility. convenience, and affordability to the point that a pay-per-use consumption model has become a business imperative.

Manage your infrastructure solutions as-a-service with Lenovo Truscale™

In an ever-changing environment, we understand the importance of financial agility your business and not your infrastructure. To address this, Lenovo delivers industry-leading infrastructure solutions as-a-service.

When a significant systems integrator wanted to refresh their data center but could not fund the capital, they chose Lenovo TruScale™. of the customer's data plane for added security. A portal opens viewing of consumption in real-time, enabling the ability to control and Success Manager Lenovo TruScale M allows easy access to any level of detail needed, as well as guidance to drive problem resolution

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Cloud Computing





Confidently accelerate your cloud transformation



Define and implement an end-to-end cloud lifecycle strategy that's best for your business



Accelerate time to value with proven and ready-to-deploy, open cloud solutions



Simplify management of your cloud environment from data migration, data management to fully outsourced services

ThinkAgile ThinkSystem



Define & Implement a Cloud Lifecycle Strategy

Lean on Lenovo's global team Plan, implement and optimize the right approach R

Simplify management of your cloud environment

Lenovo has cloud experts in 165 countries to help design an end-to-end cloud strategy

Accelerate Projects With Ready-to-Deploy Open Cloud Solutions

Customers have the best choice of pretested and pre-configured cloud infrastructure solutions

> Benefit from **simplified deployment** and pre-defined optimization for key workloads

> > Google

Leverage cloud tiering via **ONTAP** to maximize storage options for AWS, Azure, and Since Cloud Cloud Management Management With Lenovo

Intelligent cloud migration

Move data, applications and business elements to the cloud faster and easier

Advanced control and scalability

ThinkSystem servers offer advanced control and scalability through open standards and modular engineering to power the most demanding workloads

Robust cloud data management

Through a combination of industry's most reliable server platforms, partner flexibility and data management delivered via ONTAP



Analytics & Al



Don't accept one-size-fitsall when it comes to Analytics & Al



When it comes to implementing Analytics and AI, you need a strategic partner dedicated to your business results



Time is money and data is the new currency. So for analytics and AI solutions, time-to-value is essential



Analytics and AI demand high-performance computing optimized for your workloads





Lenovo

You need a strategic partner dedicated to your business results

Deep understanding of analytics and AI workloads

> Industry recognized expertise in developing compute solutions for analytics and AI, anchored by four global AI innovation centers

> > Balancing requirements within your existing utility computing infrastructure

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For Analytics and AI - Time-to-Value is Essential



Time is Money

Don't let technology barriers delay your analytics and AI strategies

Leverage Exascale

High performance computing systems that fit within your existing infrastructure



Partner Certified

Solutions for use with SAP, Oracle, MS SQL, Cloudera, DSS for IBM Spectrum Scale



High Performance Computing

The pathway to leveraging critical data for business success

Exascale to Everyscale

High performance computing and data management solutions for the most data intensive workloads with advanced features formerly found only in Supercomputers, now available to you

Component Innovation

High Performance Computing achieved with energy efficient, air-cooled and Neptune[™] liquid-cooled CPUs and GPUs that scale from a single server to hundreds of racks

Most reliable x86 compute platform

Lenovo starts with the industry's most reliable x86 compute platform and adds the performance and optimization required to run analytics and AI on any scale

Neptune™



Edge Computing

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Wherever you define the edge, Lenovo has your edgecomputing



Having 'data-center like' compute performance & 24/7 availability in the field where the data is generated, is critical for real-time insights & actions



Edge environments can be hostile when it comes to temperature, vibration, dust, and even potential tampering. You need a rugged solution designed for demanding environments – inside or outside



Lenovo has the expertise to help you define your IoT Edge strategy, evaluate your analytics & AI requirements, and run proof-of-concepts needed to get started fast



Lenovo

'Data-center like' compute performance is critical at the edge

Perform real-time analytics and run applications on purpose-built edge servers that fit anywhere, designed with high performance CPUs and GPUs for additional AI capabilities

> Choice of integrated storage and data management for a complete edge IT solution

> > **Compact & versatile design** Smaller in size, same performance!

Edge environments can be hostile

You need a rugged solution designed for the varying environments found in the field – inside or outside



No wires

With integrated Wi-Fi / LTE to enable low-touch provisioning and remote management



Tamper-proof physical security and data encryption



Temperature resilient design

Able to operate from 0° to 55°C, as well as locations with high dust and vibration



Expertise to help you define your edge strategy

Automate edge deployments

Lenovo Open Cloud Automation (LOC-A) automatically orchestrate the deployment of your edge platform

Workshops, strategy engagements, and managed services to get started

When you are ready to deploy, we have built highperformance AI inference capability into space-efficient servers for visual compute or other automation tasks.

One place for everything

Edge POCs, Edge storage solutions, ready-to-use tools, and access to experts in AI and edge computing



As-a-Service





Manage Your Infrastructure Solutions As-A-Service With Lenovo TruScaleTM

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Regardless Of Your Business Size, Lenovo Has An As-a-Service Model Right For You



Experience cloud-like financial agility with the advantages of on-premises infrastructure



Lenovo Allows You To Focus On Your Business Instead Of Your Infrastructure

ThinkAgile ThinkSystem Lenovo TruScale™

Regardless of your business size, Lenovo has an As-a-Service model right for you

Lenovo TruScale[™] a new experience in IT consumption

Define your consumption plan No minimum infrastructure capacity commitment - from 0% to 100%

Benefit from the latest technology without initial high investment

Exceptional customer service from a dedicated Customer Success Manager

Experience cloud-like financial agility with the benefits of on-premise infrastructure







Pay only for what you use

Financial agility

Capital freedom

Predictable monthly payments based on your usage

Easily scale up or down to meet changing business needs

To invest in your business with reduced IT budget worries



Focus On Your **Business Instead Of** Your Infrastructure

Speed time to value

Includes hardware installation, deployment, management, maintenance and removal

Free staff to focus on the business

"Hands-off" infrastructure, just plug it in and turn it on. Lenovo Professional Services experts proactively monitor and manage your system 24/7 to ensure maximum uptime.

Control your security policy

At the application layer and above for full control of your company data



Reliable



Relationships built on trust

- Lenovo has one of the industry's most diverse cultures and operating models
- We collaborate to best understand how people, processes and products interact

Being reliable means collaborating with the Data-Centered

Customer focused supplier

- 51 contact centers globally to provide localized support
- Technical support teams in 165 countries
- 4 AI Innovation Centers to assist with POC testing
- 4 Executive Briefing Centers globally, where customers can learn about the latest trends and technology

Trusted partner network

- 23,000 channel partners worldwide, act as an extension of our sales and support teams
- Our channel first commitment empowers us to continually improve the engagement between our partners and Lenovo

Shovo

Being reliable means being wherever the Data-Centered need us



ISG Locations & Manufacturing

Intelligent Device (PC) Manufacturing

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<u>enovo</u>

Being reliable means Lenovo #1 in server reliability - 7 years running



Lenovo ThinkSystem servers consistently achieved the lowest downtime

Being reliable means Lenovo #1 provider of supercomputers in the world



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VOUS

Being reliable means providing deep optimization expertise

Lenovo's tuning scenarios are designed for key workloads from virtualization to AI

Nearly 3X as many #1 results as any other server vendor

242 World records in workload performance

As of April 1, 2021

62

World records

set by servers equipped 3rd Generation Intel® Xeon® Scalable Processors

60 World records

set by servers equipped 2nd Generation Intel[®] Xeon[®] Scalable Processors

32

World records

set by servers using 1st Generation Intel[®] Xeon[®] Scalable Processors

38 World records

set by servers running 3rd Gen AMD EPYC[™]

World records

40

set by servers running 2nd Gen AMD EPYC[™] 10

World records

set by a server using the Intel[®] Xeon[®] D and E Processors Being reliable means having services available worldwide 24x7



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Solution services

services

From the simple to the complex, our experts work with you to find the right solution for your one-of-a-kind strategic and business needs.

Accelerate time to productivity, so you can focus on taking care of your customers and growing your business.



Premier Support services

Around the world and around the clock, our experts are standing by 24x7 to safeguard your investment.



Lenovo TruScale™ infrastructure services

Implementation

The pay-as-you-go infrastructure: cloudbased economics on premises.

Lenovo Services




Being open means offering the Data-Centered a breadth of open infrastructure solutions

Solutions

We work closely with our software partners to provide engineered, tested, and certified IT solutions that are high performance, scalable, and cost-effective.

AI	HPC
Big Data / Analytics	Hyperscale
Cloud	loT / Edge
Database	Client Virtualizati
Back Up & Disaster Recovery	

on



Enterprise Infrastructure

Infrastructure

Open, reliable and secure platforms that seamlessly integrate with your environment.

Servers	Hyperscale
Storage	loT / Edge
lyperconverged	

ThinkAgile

Software-Defined Infrastructure



Being open means being a trusted partner



Being open means a global partnership with Intel

Lenovo and Intel deliver the right High Performance and AI computing solutions to meet your business needs - From Exascale to EveryscaleTM

Get fast insights with HPC innovation Innovate faster by leveraging maximum efficiency and performance using Lenovo's Everyscale innovation, fueled by Intel's latest technologies



PHS D

Discover what's possible before deployment

Achieve breakthrough discoveries using HPC and AI on converged systems through offerings located in the Global Innovations Centers.

> Adopt HPC faster with flexibility Access HPC at Everyscale with Lenovo's flexible consumption models, industryleading portfolio, and Intel Select Solutions

Being open means partnering to deliver award winning solutions



vmware[®]

Partner of the Year Award Value 2020 Global Winner SAP Pinnacle Awards 2019 Winner

Best Infrastructure Partner 2019 Winner





Being secure means owning our manufacturing





Markets

+1000M

Devices shipped



Suppliers

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Being secure means having a resilient supply chain

#4 in Tech

Lenovo Ranked **#4** High Tech Supply Chain by Gartner #15

overall

Lenovo Ranked **#15** World Class Supply Chain Leader by Gartner

We are recognized for our **world class supply chain** which means we can adapt with agility and speed to ensure continuity of supply to the-Data Centered

Being secure means being accountable

Lenovo is open, transparent and accountable to our customers, partners and shareholders

Lenovo is truly independent with two worldwide headquarters in the U.S. and China but not controlled by any government entity in which it operates.

We are proud to count numerous government agencies and their respective departments as our customers around the world.

Lenovo facts

- ✓ Founded in 1984
- Publicly-traded on the Hong Kong Stock Exchange in 1994
- ✓ Acquired IBM PC Division in 2005 to become world's 3rd largest PC company
- ✓ Acquired IBM x86 server business in 2014
- Acquired Motorola Mobility from Google in 2014
- Currently #1 PC provider worldwide, with 1 in every 4 PCs purchased from Lenovo
- Employs 63,000 people worldwide doing business in over 180 markets

Being secure means transparent Business practices

Trusted Supplier Program

- Documented, auditable supply chain program ensures end-to-end security
- Suppliers undergo quarterly compliance and security assessments

Transparent Supply Chain

• Traceability at the component and system level



Sustainable

Being sustainable means being responsible

ControlControlEnvironmentalSocial

Intelligently measure and mitigate climate change and environmental impacts Ensure all people are treated fairly and can succeed in a safe and inclusive environment ΔŢ<u>Λ</u>

Governance

Promote our culture of integrity across Lenovo and our suppliers

Investment and Support from Senior Management

Being sustainable is having a plan

- Climate change & energy management
- Chemical restrictions & recycled content
- Product EOL management & recycling
- Product energy efficiency
- Water resource management
- Product eco-labels & customer unique environmental requirements
- Environmental packaging & global logistics



Social Impact

Governance

& Control

Environmental Leadership Diversity and inclusion

- Human rights
- Labor standards
- Occupational health & safety
- Philanthropy & community involvement
- HR policies & practices
 - Sustainability reporting
 - Ethics & compliance programs
 - Privacy & data security
 - ISO management systems
 - RBA VAP audits
 - Unique customer audits
 - Responsible sourcing
 - Supplier code of conduct
 - Analyst & investor surveys
 - Financial performance & tax

Lenov

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Being sustainable means corporate social responsibility Ecovadis Corporate Social Responsibility rating 2019

92%Corporate CO₂ Reduction

- Environment criteria: 90 / 100
- Lenovo in top
 - 1% of all assessed suppliers and
 - 2% of all computer and peripherals manufacturers globally
- Compared with FY2009/10 baseline
- Including all outsourced production and offset projects
- ThinkSystem recycled packaging reduced CO2 emissions by 2140 ton, equivalent 20 hm2 forest consumed CO2

- Sustainable Infrastructure Solutions
- Introduction of Lenovo Value Recovery refurbished server program
- Lenovo Neptune liquid cooling technology can deliver up to 40% energy savings in data center expenses due to the reduced need for air conditioning and air chillers



Being Lenovo means being committed to the Data-Centered



ARDS

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flexjobs

2019

Chinese Brands

最具价值中国品牌100强







Thank you



Committed to the success of the Data-Centered



The Data-Centered find safety by living on the edge.

Lenovo Smarter Infrastructure

is making Bogotá a smarter and safer city with Lenovo ThinkSystem Servers and Storage — helping security personnel respond faster than ever.

Join us at lenovo.com/the-data-centered **Smarter City** City of Bogotá (Colombia)

The Data-Centered Save energy to put it where it counts.

Lenovo Smarter Infrastructure

is helping Miami Jewish Health reduce energy costs and improve patient experience with Lenovo ThinkSystem Servers and Storage.

Join us at lenovo.com/the-data-centered

Miami Jewish Health Smarter technology for all

Smarter Healthcare

Miami Jewish Health (United States)

The Data-Centered accelerate growth by enhancing mobility.

Lenovo Smarter Infrastructure

is helping Arihant's mobile app perform better with Lenovo ThinkSystem Servers and Storage — making it easier for more customers to manage their investments from anywhere.

Join us at lenovo.com/the-data-centered

Smarter Wealth Management

Arihant Capital Markets (India)

The Data-Centered solve world hunger by focusing on its roots.

Lenovo Smarter Infrastructure

is accelerating research with Lenovo ThinkSystem Servers and Storage at the University of Saskatchewan — eliminating food shortages before they start.

Join us at lenovo.com/the-data-centered Smarter Agriculture University of Saskatchewan

ersity of Saskatchewan (Canada)

The Data-Centered find smarter ways to break new ground.

Lenovo Smarter Infrastructure

is helping LCR Group, a Qube Company, bring the cloud underground with Lenovo ThinkSystem Servers and Storage to prevent safety issues before they happen.

Join us at lenovo.com/the-data-centered **Smarter Mining** LCR Group, a Qube Company (Australia)

Lenovo Smarter Infrastructure

keeps the assembly line at Hero MotoCorp rolling with Lenovo ThinkSystem Servers and Storage, so motorbike riders worldwide can, too.

Join us at lenovo.com/the-data-centered Smarter Manufacturing Hero MotoCorp (India)

The Data-Centered protect eyesight with a bolder vision.

Lenovo Smarter Infrastructure

brought AI to Barcelona Supercomputing Center with Lenovo ThinkSystem Servers and Storage helping them detect eye disease in just minutes, and save patients' sight for a lifetime.

Join us at lenovo.com/the-data-centered **Smarter Healthcare**

Barcelona Supercomputing Center (Spain)

> Smarter technology for all

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The Data-Centered make campus safer by keeping it smarter.

Lenovo Smarter Infrastructure

helps St. John's University campus security protect students with ThinkSystem Servers and Storage that provide faster, easier video analytics.

Join us at lenovo.com/the-data-centered



Smarter Education

St. John's University (United States)