Cloud Computing Fundamentals Overview

SHAN

Speaker

Cloud Computing Fundamentals Introduction

01

Data Storage

Allows users to store vast amounts of data remotely, ensuring easy access and data security.

02

Software Hosting

Enables businesses to run applications on cloud platforms, reducing the need for physical infrastructure.

03

Scalability

Provides on-demand resources that can be scaled up or down based on business requirements.

04

Disaster Recovery

Offers robust disaster recovery solutions, ensuring data integrity and quick recovery in case of failures.

Defining Cloud Computing and Its Importance

01 **Cost-effective**

Reduces hardware costs by using shared resources in the cloud.

02 **Scalable**

Easily scales resources up or down based on demand and needs.

03 **Accessible**

Access data and applications from anywhere with an internet connection.

04 **Secure**

Provides multiple layers of security to protect sensitive data in transit.

05 **Collaborative**

Facilitates teamwork by enabling real-time access to shared documents.

06 **Automatic Updates**

Ensures software is always up to date without manual intervention.

07 **Disaster Recovery**

Simplifies data backup and recovery processes in case of data loss.

08 **Environmentally Friendly**

Reduces energy usage with shared resources and optimized data centers.

Types of Cloud Computing Services

IaaS

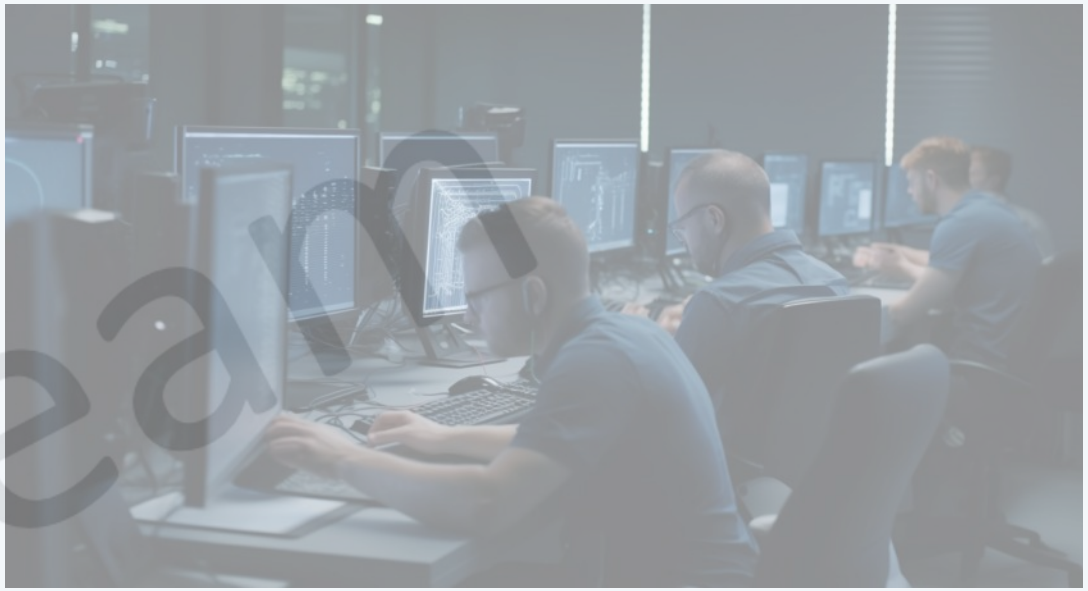
01 Utilize virtualized computing resources via the internet for flexible server setups and digital infrastructure.

PaaS

02 Develop applications without managing underlying infrastructure, speeding up software deployment and development.

SaaS

03 Access fully functional software solutions online, reducing local storage needs and increasing accessibility.



Deployment Models of Cloud Computing

	Cost	Scalability	Security	Flexibility	Accessibility	Management
Public	Low	High	Medium	Medium	High	Low
Private	Medium	Low	High	Medium	Low	High
Hybrid	Medium	High	Medium	High	Medium	Medium
Community	Low	Medium	High	Low	Medium	Medium

Summary Points

01

Public Model

Serves many customers, thereby reducing costs.

02

Private Model

Exclusive access enhances data security significantly.

03

Hybrid Model

Combines benefits of both private and public clouds.

Key Characteristics of Cloud Computing

Scalability

01

Ability to easily adjust resources based on demand allows businesses to efficiently handle varying workloads without physical hardware constraints.

Cost Efficiency

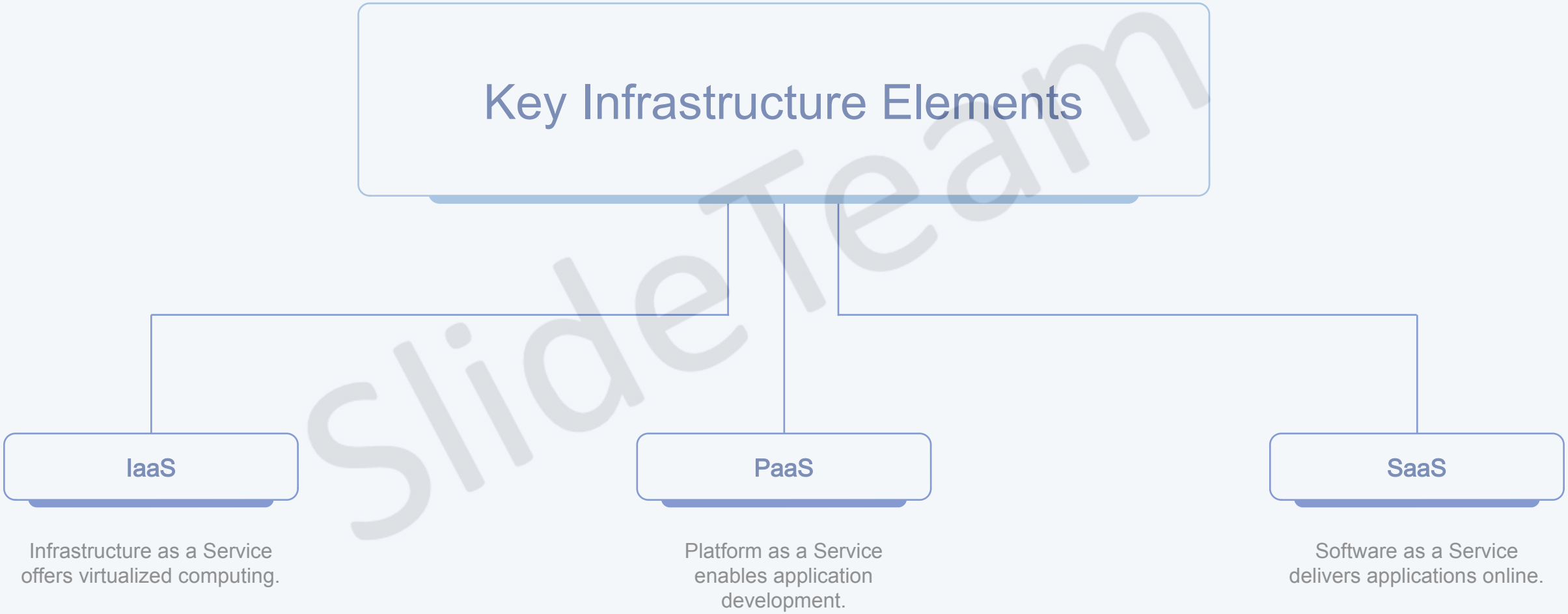
02

Reduces capital expenses by eliminating the need for on-premises hardware and only paying for the resources used, benefiting both startups and large enterprises.

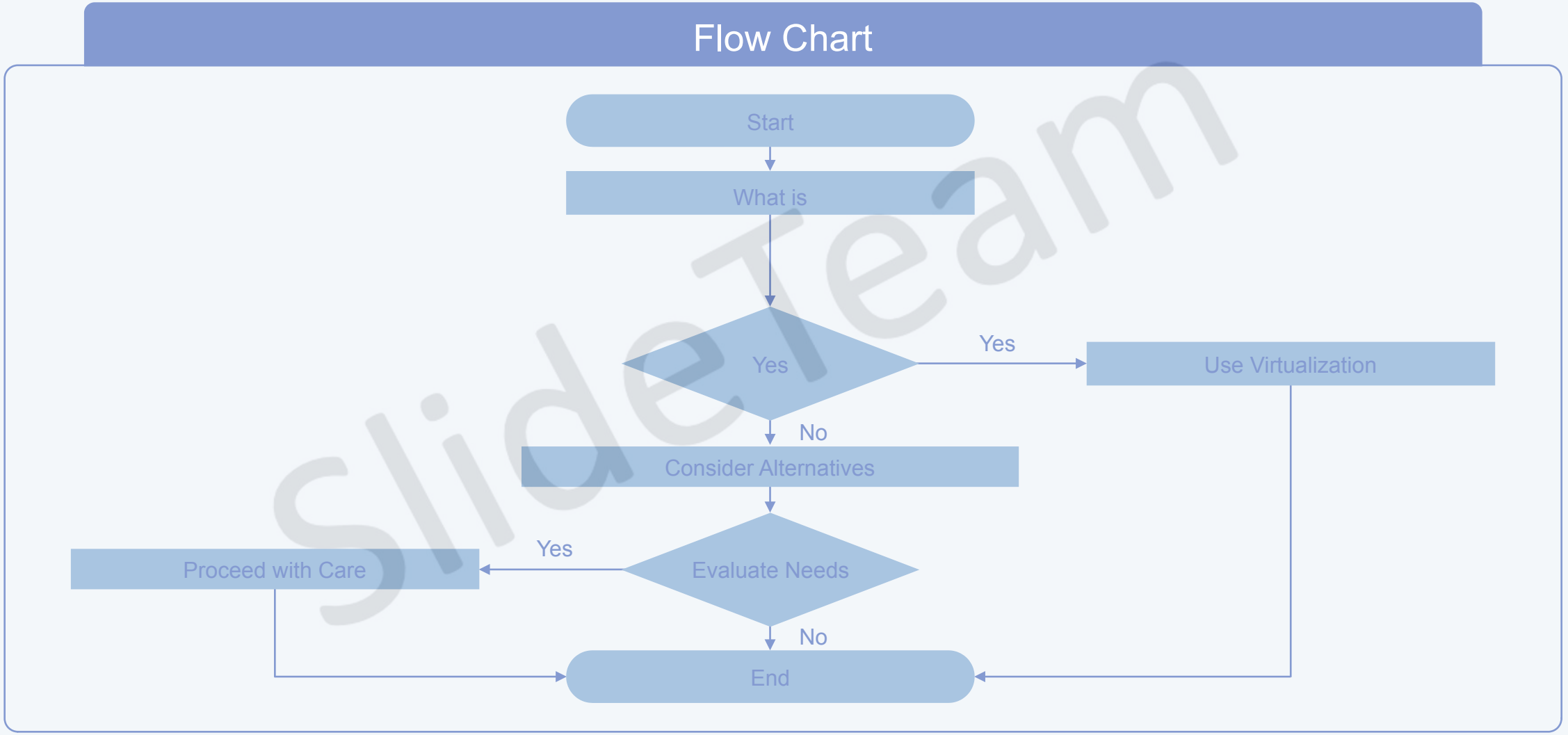
Cloud Service Providers Landscape

Replace with your own product or service image

Cloud Infrastructure Components Explained



Virtualization Technology in Cloud Computing



This is a sample flowchart for this slide. Please rearrange the flowchart to convey your message.

Data Storage Options in the Cloud

	Cloud Storage	Block Storage	File Storage	Object Storage	Database
Storage Type	Text Here	Text Here	Text Here	Text Here	Text Here
Scalability	Text Here	Text Here	Text Here	Text Here	Text Here
Cost-Effectiveness	Text Here	Text Here	Text Here	Text Here	Text Here
Security	Text Here	Text Here	Text Here	Text Here	Text Here

Insights

01

Scalability

Cloud storage scales effortlessly with demand.

02

Cost Savings

Hybrid solutions reduce overall IT costs significantly.

03

Data Access

Cloud enables access from anywhere, anytime.

Security Considerations in Cloud Computing

Data Encryption

Ensure all sensitive data is properly encrypted during storage.

Access Control

Implement strict access controls to limit data exposure.

Regular Audits

Conduct regular security audits to identify potential vulnerabilities.

Compliance Standards

Adhere to relevant compliance standards and regulations consistently.

Incident Response

Develop an incident response plan for quick recovery from breaches.

Secure APIs

Ensure all APIs used are secured against unauthorized access.

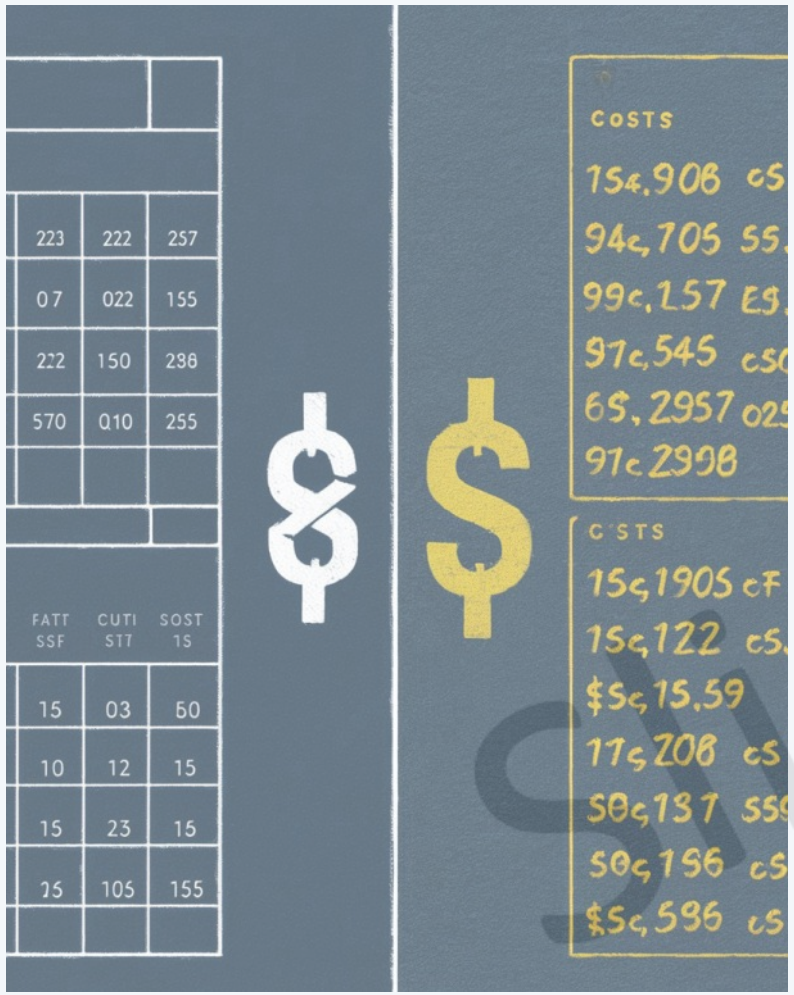
Data Backup

Maintain comprehensive backup solutions for disaster recovery needs.

User Education

Provide training to users on best security practices regularly.

Cost Management in Cloud Services



Cost

$$$

Usage

HH

ROI

10%

Savings

XX

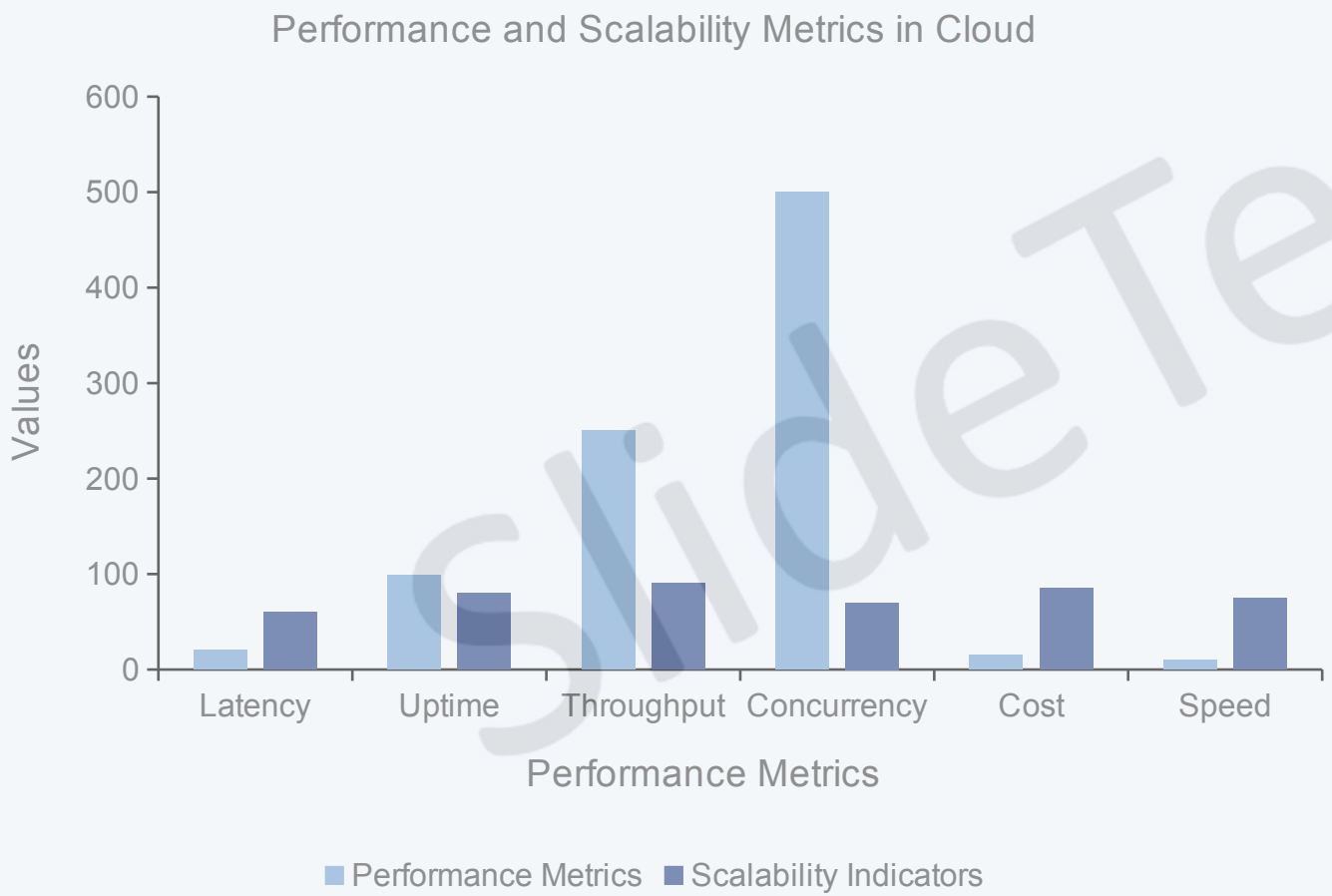
This is a sample dashboard. Please edit the metrics according to your message

Compliance and Regulatory Frameworks

Organizations must ensure adherence to regulations such as GDPR, HIPAA, and PCI-DSS by implementing necessary security measures, conducting regular audits, and maintaining documentation to demonstrate compliance in their cloud computing practices, ultimately protecting sensitive data and minimizing legal risks.

Performance and Scalability in the Cloud

This is a sample graph with some sample data. Replace it with your own graph with your relevant message.



Highlights

01 Uptime Impact

99% uptime leads to customer trust and retention.

02 Cost Efficiency

Cloud reduces hardware costs by 30%.

03 Scaling Flexibility

Elasticity allows resources to scale instantly.

Disaster Recovery and Business Continuity

01

Assess Risks

Identify potential threats to business operations.

02

Develop Plan

Create a recovery plan to handle disruptions.

03

Implement Solutions

Put in place necessary backup and solutions.

04

Test Processes

Regularly test recovery plans for effectiveness.

05

Review and Update

Continuously refine strategies based on changes.

Case Studies of Successful Cloud Implementations

Problem Faced

Limited scalability and high maintenance costs.

Solution Offered

Migrated applications to cloud infrastructure solutions.

Benefits

Improved scalability, flexibility, and cost efficiency.

Approach

01 Assess

Evaluate current infrastructure and identify constraints.

02 Plan

Create a detailed migration strategy and select services.

03 Migrate

Transfer data and applications to the cloud environment.

04 Optimize

Monitor performance and optimize for enhanced efficiency.

Challenges and Solutions in Cloud Adoption

Pros

Scalability

01

Cloud services allow users to scale resources based on demand efficiently.

Cost-Effective

02

Pay-as-you-go model significantly reduces upfront investment in infrastructure.

Accessibility

03

Data can be accessed from anywhere, facilitating remote work and collaboration.

Automatic Updates

04

Services often include automatic software updates, ensuring security and functionality.

Cons

Security Concerns

01

Data breaches and unauthorized access are significant risks in cloud environments.

Downtime Risks

02

Reliance on internet connectivity can lead to service outages affecting business operations.

Compliance Challenges

03

Meeting regulatory compliance can be complex and difficult in cloud environments.

Vendor Lock-in

04

Transferring data between providers can be cumbersome and restricts flexibility.

Future Trends in Cloud Computing

01

Multi-Cloud

Organizations will adopt multiple cloud providers for improved flexibility.

02

Edge Computing

Data processing will take place closer to the source for reduced latency.

03

AI Integration

Cloud services will utilize AI for enhanced automation and intelligence.

04

Serverless Architectures

Developers will focus on applications without managing infrastructure directly.

05

Increased Security

Cloud providers will implement advanced security measures and compliance.

06

Sustainable Solutions

Cloud computing will focus on energy-efficient and eco-friendly practices.

Comparing Public, Private, and Hybrid Clouds

COMPARISON

Public

Accessibility

01

Public clouds are widely accessible to anyone online, ensuring universal service.

Cost-Effectiveness

02

Users pay for resources as needed, significantly reducing infrastructure costs.

Scalability

03

Public clouds can easily scale resources based on demand, allowing flexibility.

Private

Security

Private clouds offer enhanced security since resources are isolated for specific organizations.

01

Control

Organizations have complete control over their infrastructure and data management.

02

Customization

Private clouds can be tailored to meet the specific needs of the organization.

03

Multi-Cloud Strategies for Enterprises

01

Assess

Evaluate current cloud infrastructure and requirements.

02

Select

Choose suitable cloud providers and services needed.

03

Implement

Deploy applications across multiple cloud platforms.

04

Manage

Oversee resources and performance across clouds.

05

Optimize

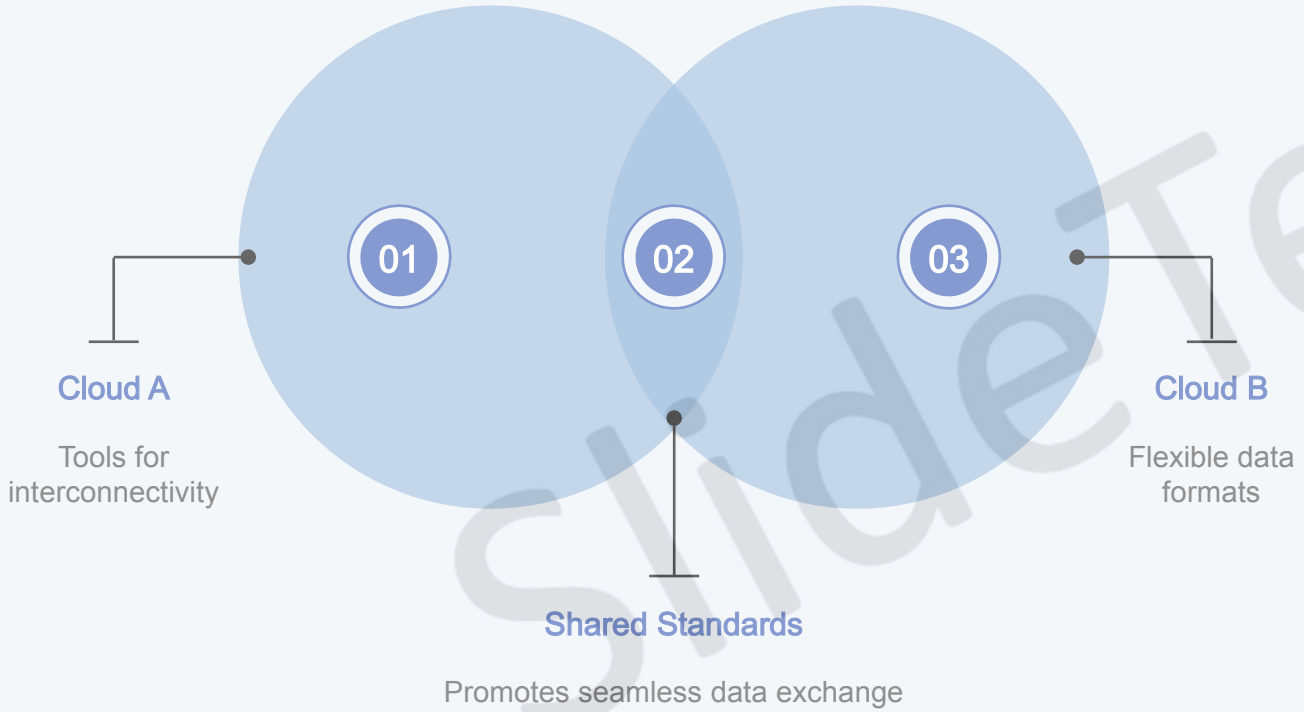
Enhance resource allocation and cost efficiency.

06

Evaluate

Review cloud strategy for continuous improvement.

Interoperability and Portability in Cloud



Quick Learnings

01 Cost Savings

50% reduction in vendor lock-in costs

02 Improved Flexibility

85% of firms leverage multi-cloud strategies

03 Skill Requirements

Expertise in various platforms essential

Integrating Cloud with IoT and Edge Computing

01

Data Processing

Leverage edge devices for real-time data processing and analytics.

02

Reduced Latency

Minimize latency by processing data closer to the source.

03

Scalable Architecture

Utilize cloud facilities to scale IoT operations seamlessly.

04

Enhanced Security

Implement centralized cloud security measures for remote devices.

05

Cost Efficiency

Optimize costs by reducing bandwidth usage in data transmission.

06

Interoperability

Ensure smooth integration of diverse IoT devices and cloud services.

07

Automated Management

Employ cloud-based tools for managing edge devices efficiently.

Cloud-Native Development Practices

CI/CD

01

Implement continuous integration and delivery pipelines for faster applications.

Microservices

02

Develop applications as microservices for better scalability and maintenance.

Containers

03

Utilize containerization to ensure consistent environments across development.

Observability

04

Incorporate monitoring and logging to enhance system performance analysis.

Best Practices for Cloud Governance

01

Define Roles

Clearly outline stakeholders' responsibilities to enhance accountability.

02

Establish Policies

Create guidelines to manage resource usage and cost control effectively.

03

Monitor Compliance

Regularly check adherence to security and regulatory compliance standards.

04

Implement Automation

Utilize automation tools to streamline governance processes and reduce errors.

05

Conduct Training

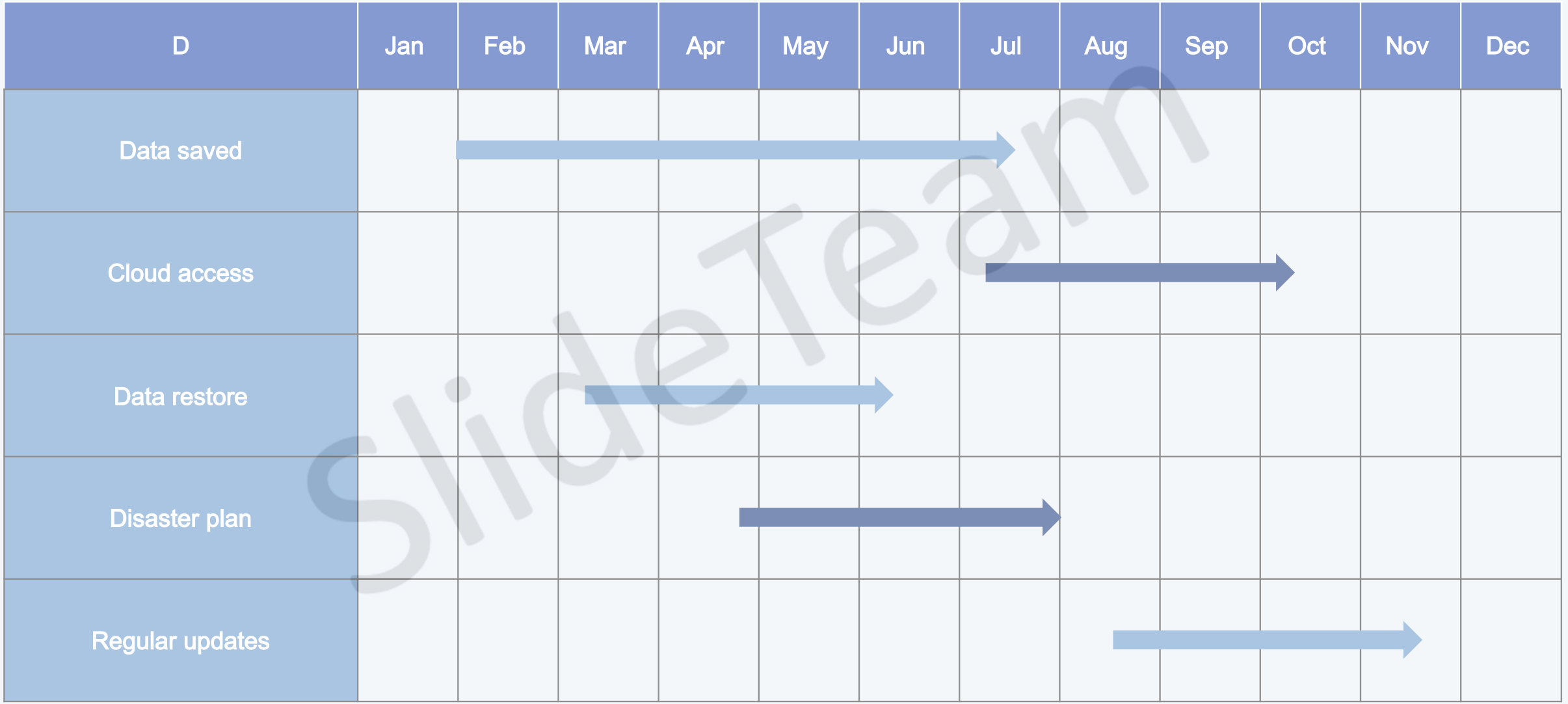
Offer regular training sessions to keep teams updated on cloud governance best practices.

Monitoring and Management Tools for Cloud

Cost $$$	Performance Good	Uptime 99%
Alerts Yes	Scalability High	Support 24/7

This is a sample dashboard. Please edit the metrics according to your message

Data Backup and Recovery in Cloud



This is a sample Gantt Chart. Please edit the timeframe above according to your schedule

User Experience and Cloud Services

Accessibility

01

Cloud services provide seamless access to applications and data from anywhere, enabling users to be productive without being tethered to a specific location or device.

Scalability

02

Users can easily scale their cloud services according to their needs, ensuring optimal performance and resource allocation for applications, regardless of traffic fluctuations.

Collaboration

03

Cloud platforms enable real-time collaboration among users, simplifying the sharing of files and projects, increasing teamwork efficiency, and minimizing version control issues.

Feedback and Lessons Learned from Cloud Users

Alice

"Cloud computing has significantly improved our project efficiency and collaboration."

Bob

"The flexibility of cloud services has transformed our IT infrastructure significantly."

Chad

"Using the cloud has streamlined our operations and reduced costs effectively."

Diana

"Cloud solutions allowed us to scale our resources easily and quickly."

Eve

"Customer support from our cloud provider has been outstanding and very helpful."

THANK YOU

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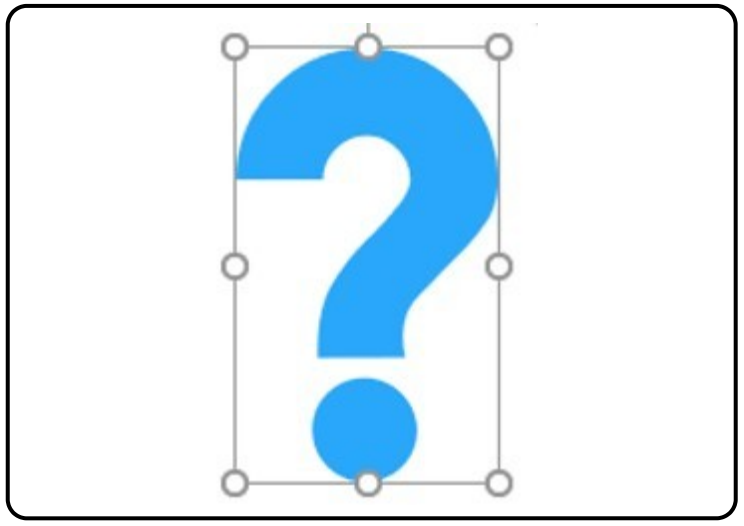
Instructions to Change Color of Shapes

Some shapes in this deck need to be ungrouped to change colors

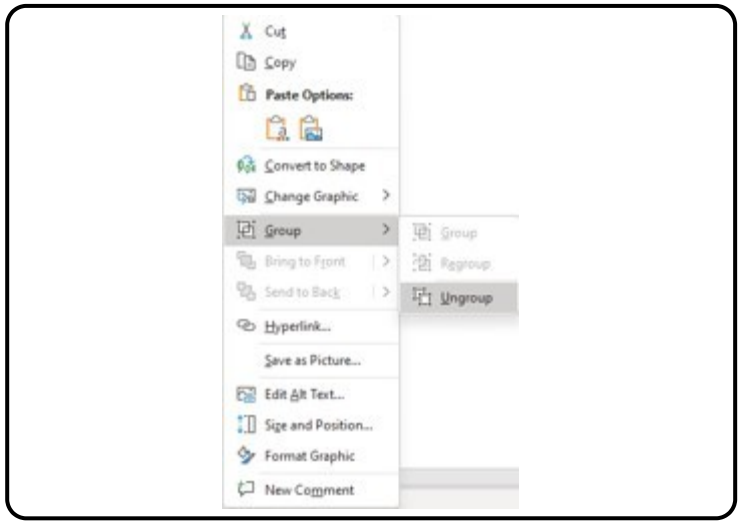
Step 1:

Select the shape, and right click on it



Step 2:

Select Group -> Ungroup.



Step 3:

Once ungrouped, you will be able to change colors using the "Format Shape" option