

Cloud Security

SIRC of ICAI

13th January, 2020

Cloud

Benefits



Cost Efficient



Storage Space



Fault Resilient



Scalability



Lean Management

Market Share of Landing Cloud Service Providers

28%



10%



7%



5%



4%



3%



Concerns



Security



Data Privacy



ROI

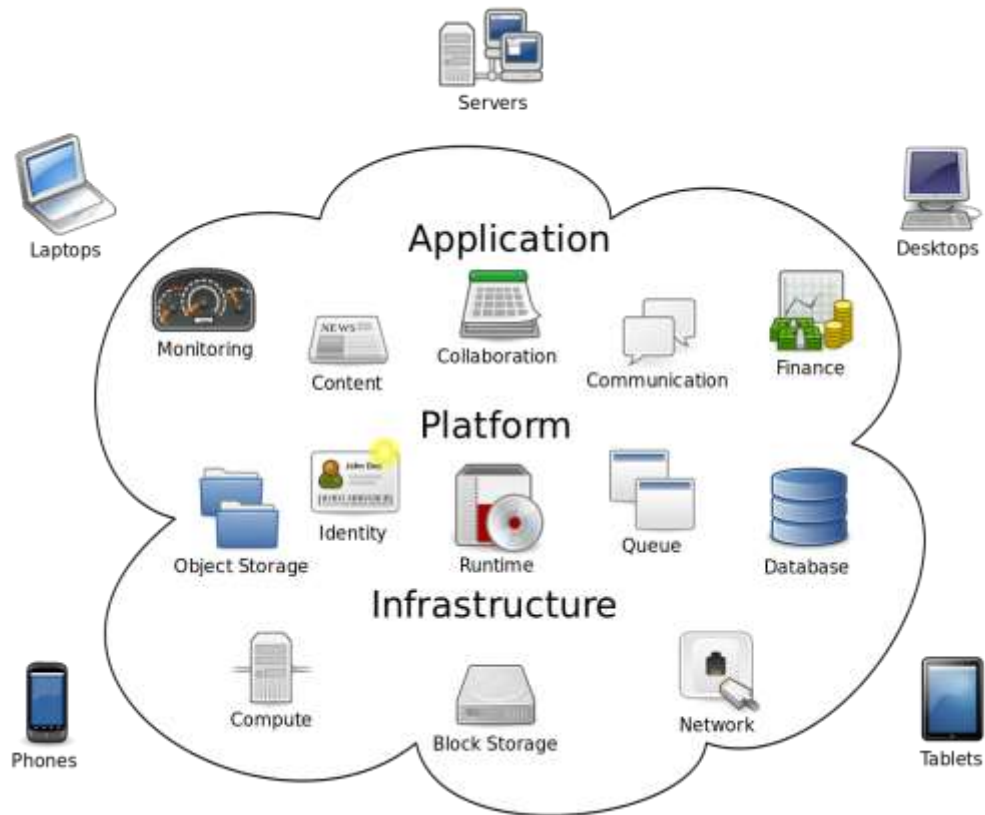


Implementation Cost

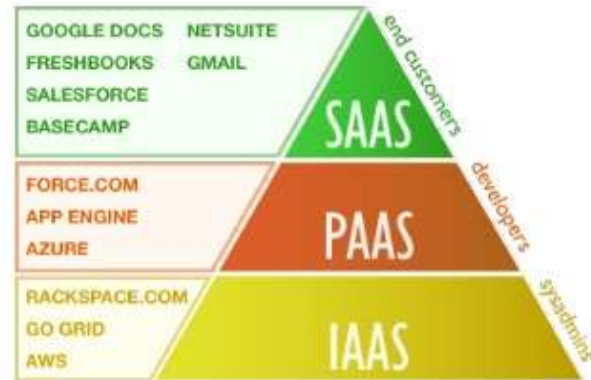
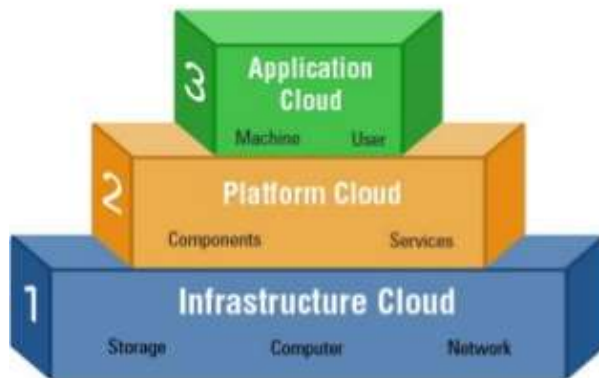


Integration Issues

Cloud



Cloud



Lets test !!

Cloud

- Tally ERP 9
- Gmail
- SAP S4
- HANA
- Expense tracker/To do Lists
- Google apps
- Company hosting their inhouse application at a Third party Data centre

Cloud

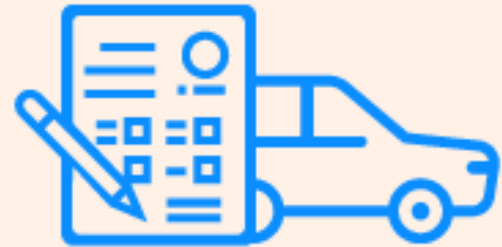
YOUR OWN CAR

On-premises solution



LEASED CAR

IaaS



TAXI

PaaS



BUS

SaaS



A decorative header featuring a red background with white clouds. The word "Cloud" is written in a bold, purple font inside a white cloud shape.

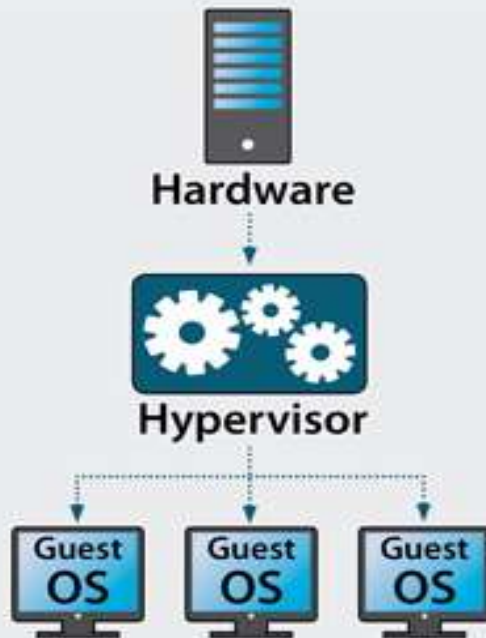
Cloud

Hypervisor

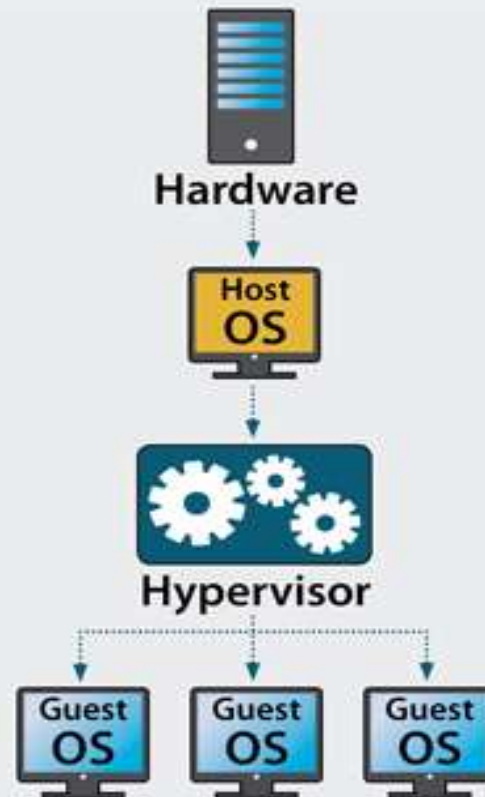
Cloud

Hypervisor or Virtual Machine Monitor (VMM)

Type 1 Native (bare metal)



Type 2 Hosted



Cloud



Security

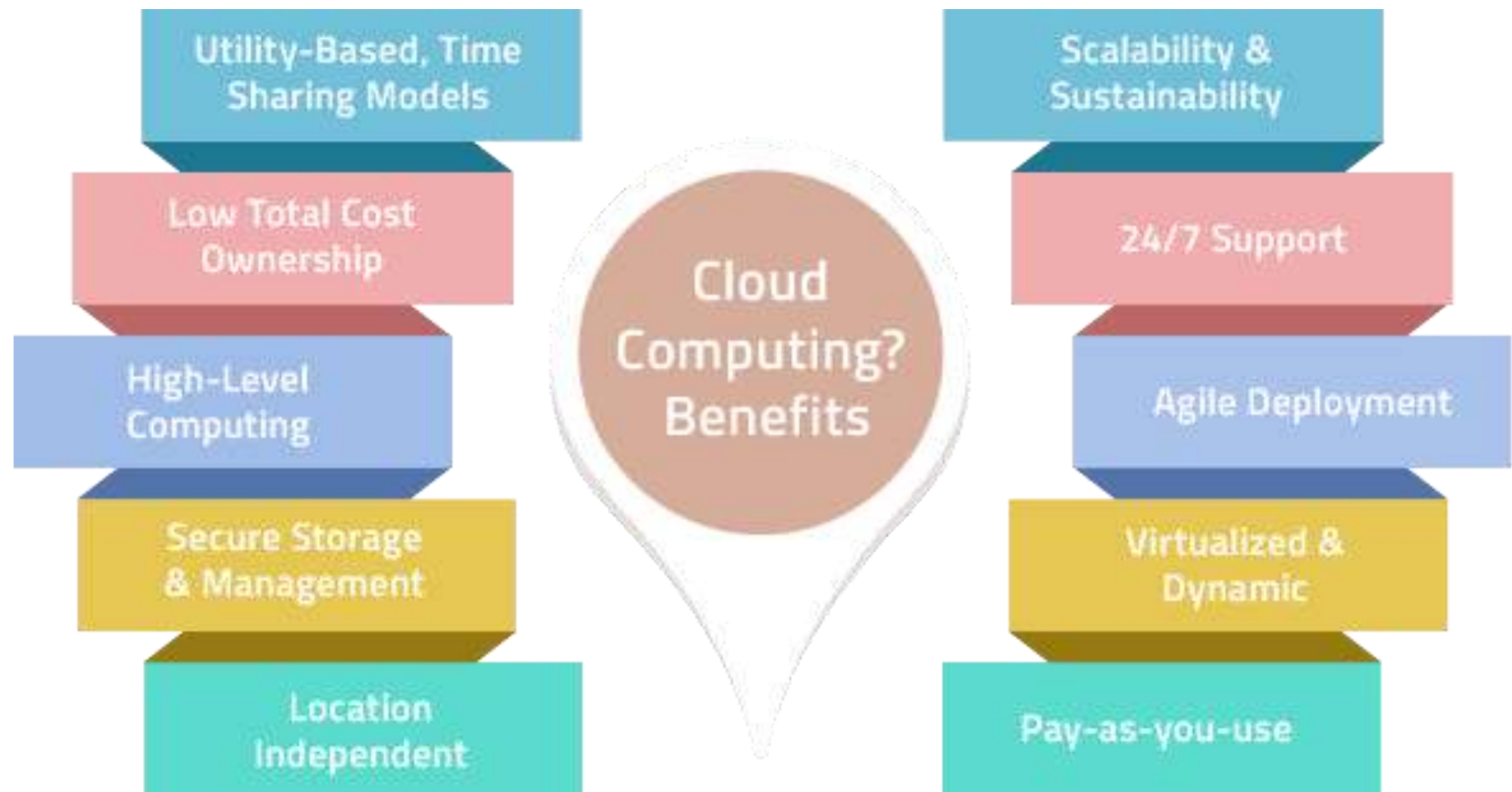
Economical

Flexible transfer of data

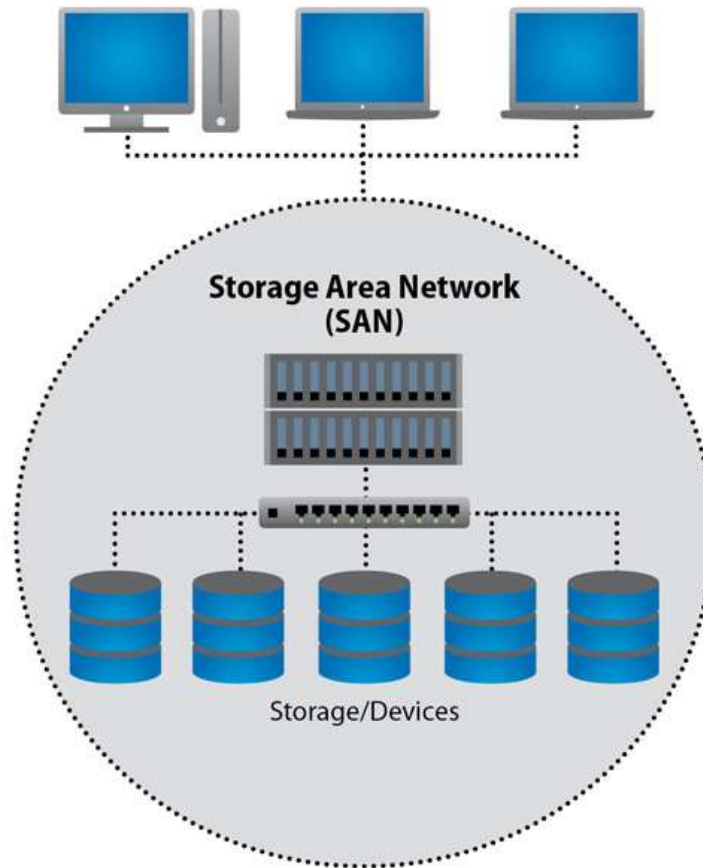
Flexible Operations

Eliminates the risk of
system failure

Cloud



Cloud





Cloud

Cloud Risks

Risks

Cloud

- **Loss or theft of intellectual property**
- **Compliance violations and regulatory actions**
- **Loss of control over end user actions**
- **Malware infections that unleash a targeted attack**
- **Contractual breaches with customers or business partners**
- **Data breach requiring disclosure and notification to victims**

Security

Cloud

- Cloud security is the protection of data, applications, and infrastructures involved in cloud computing.

(Many aspects of security for cloud environments whether it's a public, private, or hybrid cloud are the same as for any on-premise IT architecture)



Cloud

- **Centralized security**
- **Reduced costs**
- **Reduced Administration**
- **Reliability**



Cloud

Is our in house security systems
implemented better than what is
implemented in cloud?

Threats

Cloud

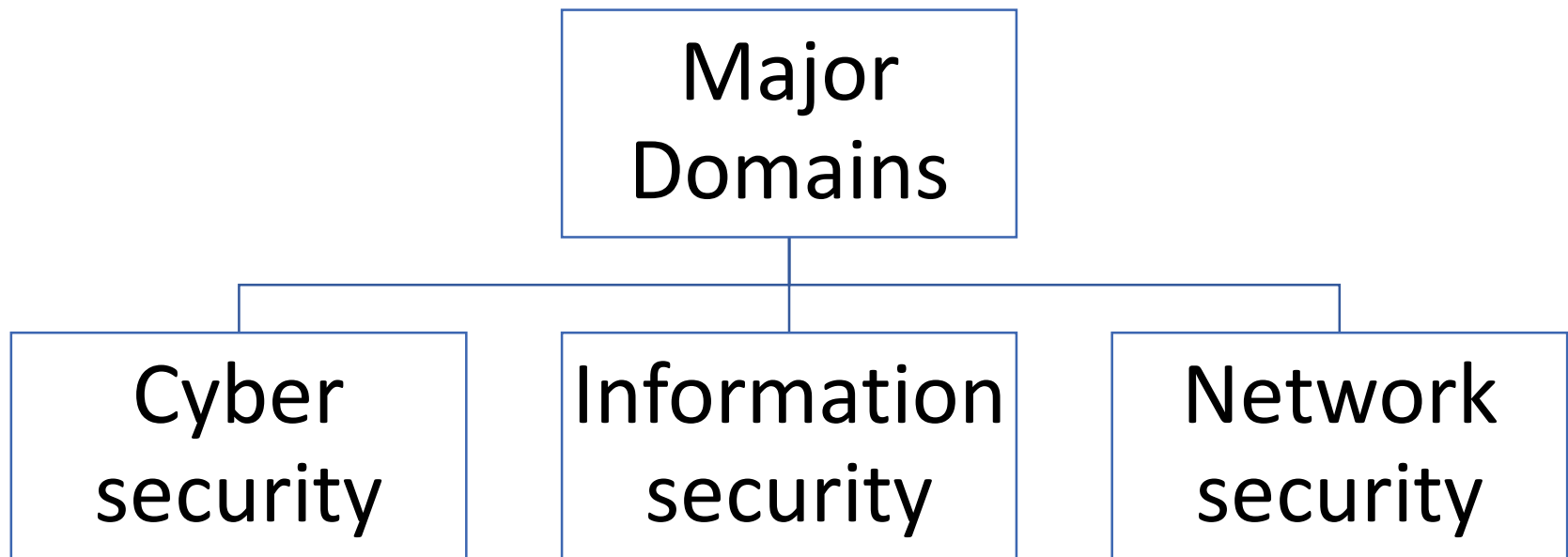
- data breaches
- data loss
- account hijacking
- insecure API's
- denial-of-service
- malicious insiders
- abuse of service
- insufficient due-diligence, and
- shared technology



Cloud

How Cloud Security Works??

Cloud



Cloud

Shared Responsibility Model for Security in the Cloud

On-Premises (for reference)	IaaS (infrastructure-as-a-service)	PaaS (platform-as-a-service)	SaaS (software-as-a-service)
User Access	User Access	User Access	User Access
Data	Data	Data	Data
Applications	Applications	Applications	Applications
Operating System	Operating System	Operating System	Operating System
Network Traffic	Network Traffic	Network Traffic	Network Traffic
Hypervisor	Hypervisor	Hypervisor	Hypervisor
Infrastructure	Infrastructure	Infrastructure	Infrastructure
Physical	Physical	Physical	Physical

 Customer Responsibility

 Cloud Provider Responsibility

Controls

Cloud

Access control

Physical security

Monitoring

Configuration and Change Management

Back up

Contingency Planning and Disaster preparedness

Implementation of Ctrl

A stylized white cloud with a red outline, containing the word "Cloud" in a bold, purple, sans-serif font. The cloud is set against a red background with a pink and yellow gradient at the bottom.

Cloud

- Perimeter security
- Firewalls
- Antivirus
- Data Leak Protection
- Mobile Device Management
- Vulnerability assessment
- Penetration Testing
- Network Operations centre
- Security Operations centre



security



Cloud

- Data Encryption
- Firewalls
- Antivirus
- NOC
- SOC

Frameworks

Cloud

- ISACA – Auditing standards, guidelines and procedures
- COBIT – Control Objectives for information and related technology.
- ISO 27001 – Information security management systems
- ITIL – IT service management

Service org- Guidelines

A stylized white cloud with a red outline, containing the word "Cloud" in a bold, purple, sans-serif font. The cloud is set against a red background with a pink gradient at the bottom.

Cloud

- Standards on auditing 402- type 1 and type 2 reports
- Service organisation controls – type 1 and type 2
- Statement on Standards for Attestation Engagements no. 16 (SSAE 16)



Cloud

Thank you!!