CLOUD SERVICES

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Department of Computer Applications

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Cloud Computing Essentials

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Replication is used to create and maintain multiple copies of the data in the cloud.
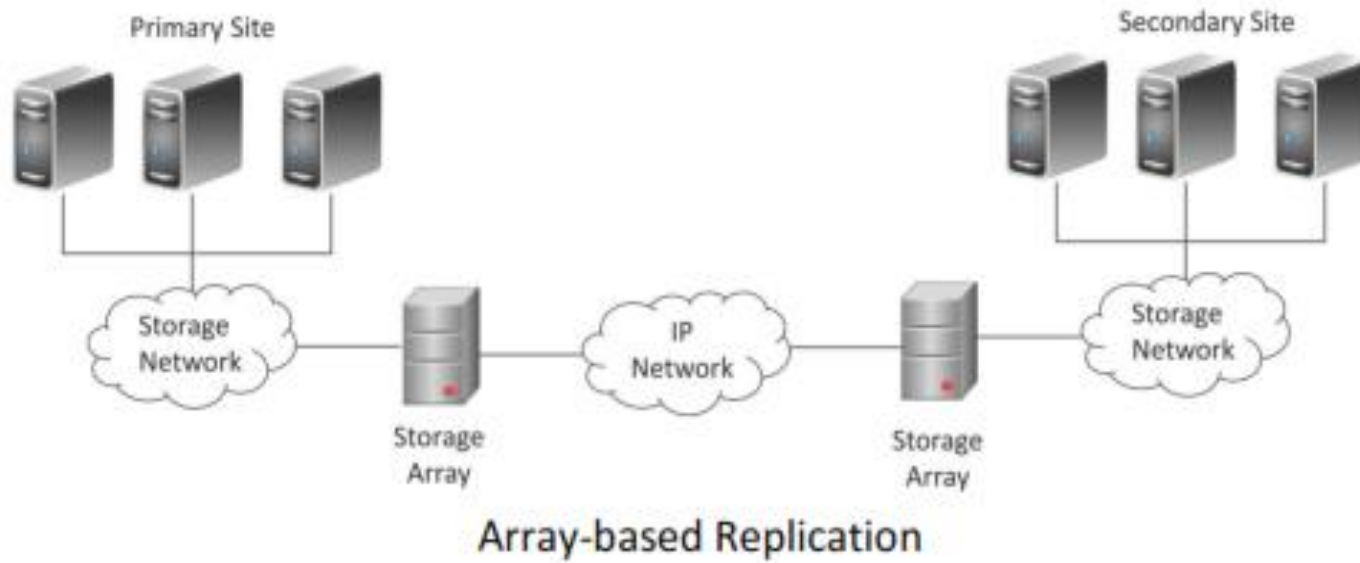
To provide solution for disaster recovery

Organization can plan for disaster recovery without having capital expenditure on purchasing configuring and managing secondary site locations.

Replication - Types

Array Based

- Copy data from a local storage array to remote storage array

- Can work in heterogeneous environments with different OS

- Uses SAN or NAS to replicate

- Similar arrays are required in local and remote locations. Setting up this environment is costlier

Array-based Replication

Replication - Types

Network Based

Uses an appliance that sits between the network and intercepts the packets sent from host and storage arrays
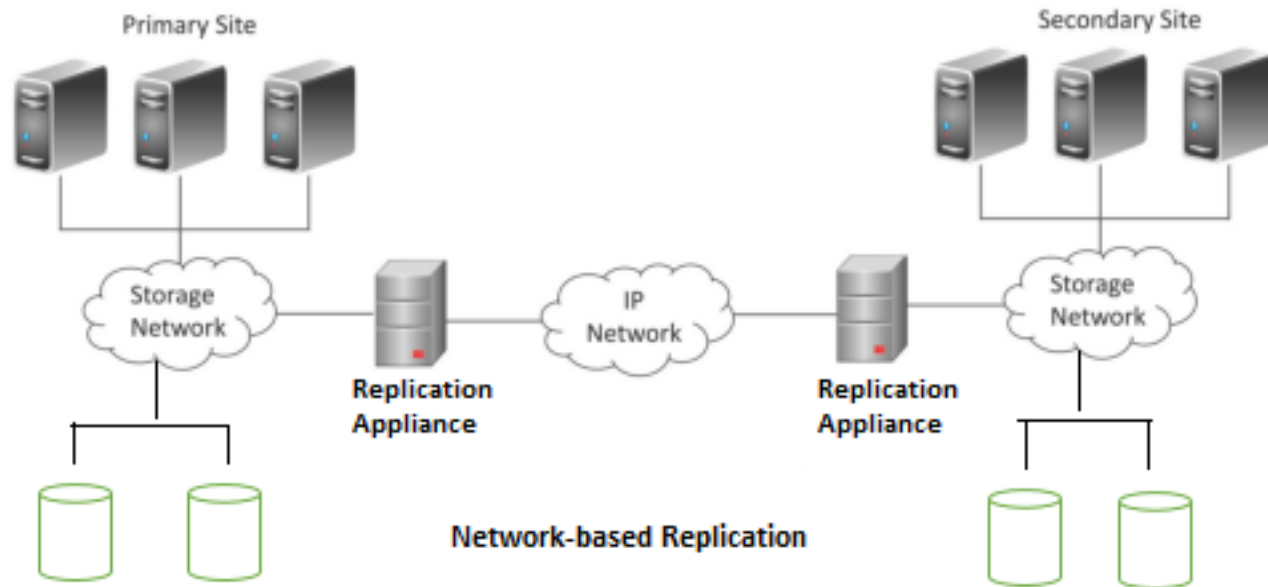
The intercepted packets are replicated to a secondary location

Supports heterogeneous environments and requires a single point management

Involves higher initial costs due to replication hardware and software

Replication - Types

Network-based Replication

Replication - Types

Host-Based

Runs on standard servers and uses software to transfer data from a local to remote location. Host will act as replication control mechanism.
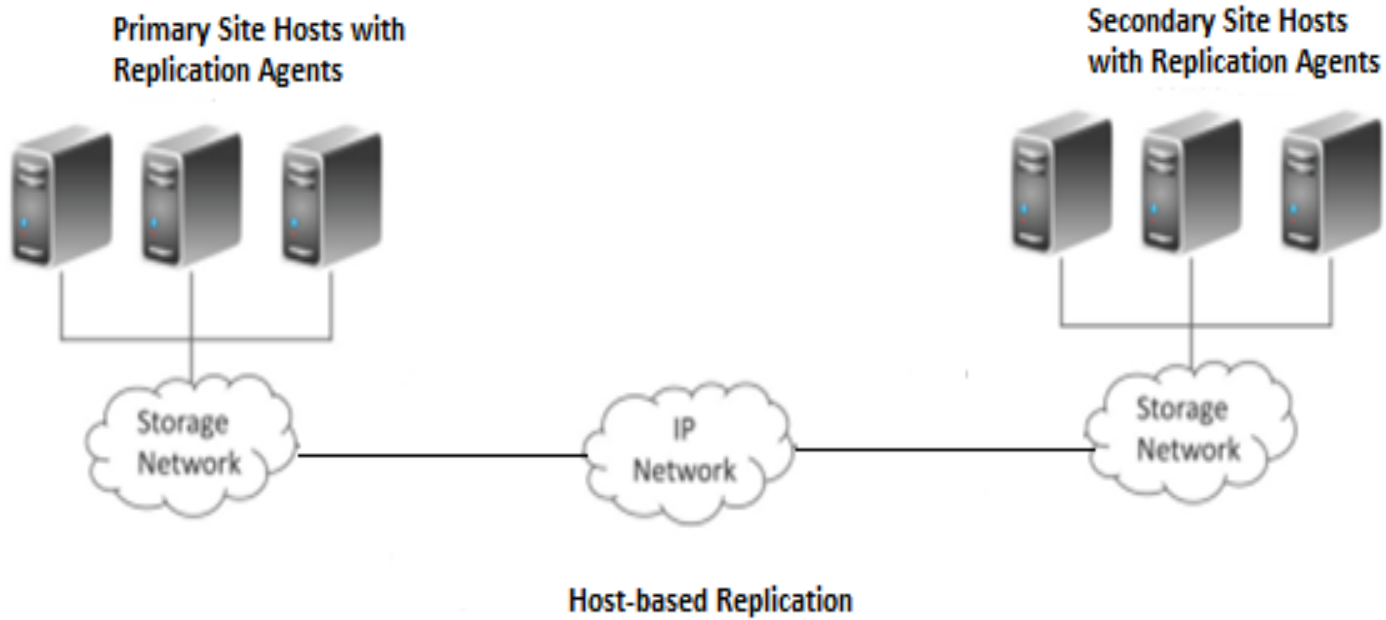
An agent is installed on the host that communicate with the agents on the other hosts

Replication can be block based or file based

Entire VM's can replicated in real-time

Replication - Types

Primary Site Hosts with Replication Agents

Secondary Site Hosts with Replication Agents

Storage Network

IP Network

Storage Network

Host-based Replication

Monitoring services allow cloud users to collect and analyze the data on various monitoring metrics.

A monitoring service collects data on various system and application metrics from the cloud computing instances.

Monitoring of cloud resources is important because it allows the users to keep track of the health of applications and services deployed in the cloud.

Monitoring

Examples of Monitoring Metrics

Type	Metrics
CPU	CPU-Usage, CPU-Idle
Disk	Disk-Usage, Bytes/sec (read/write), Operations/sec
Memory	Memory-Used, Memory-Free, Page-Cache
Interface	Packets/sec (incoming/outgoing), Octets/sec(incoming/outgoing)

THANK YOU

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