The Modern Mainframe – At the Heart of Your Business

Keep Your Business Running When Disaster Strikes

What Are ODI's Needs?

- ODI is a worldwide insurance company

- In times of disaster ODI has to be very visible and reliable

- ODI must have its systems continuously available at all times

I can't afford to lose any data, and I want to be online in one hour after a disaster

On Demand Insurance CIO

Aspects of Availability

Protection of critical business data

Availability

Operations continue after a disaster

High Availability
Fault-tolerant, failure-resistant infrastructure supporting continuous application processing

Continuous Operations
Non-disruptive backups and system maintenance coupled with continuous availability of applications

Disaster Recovery
Protection against unplanned outages such as disasters through reliable, predictable recovery
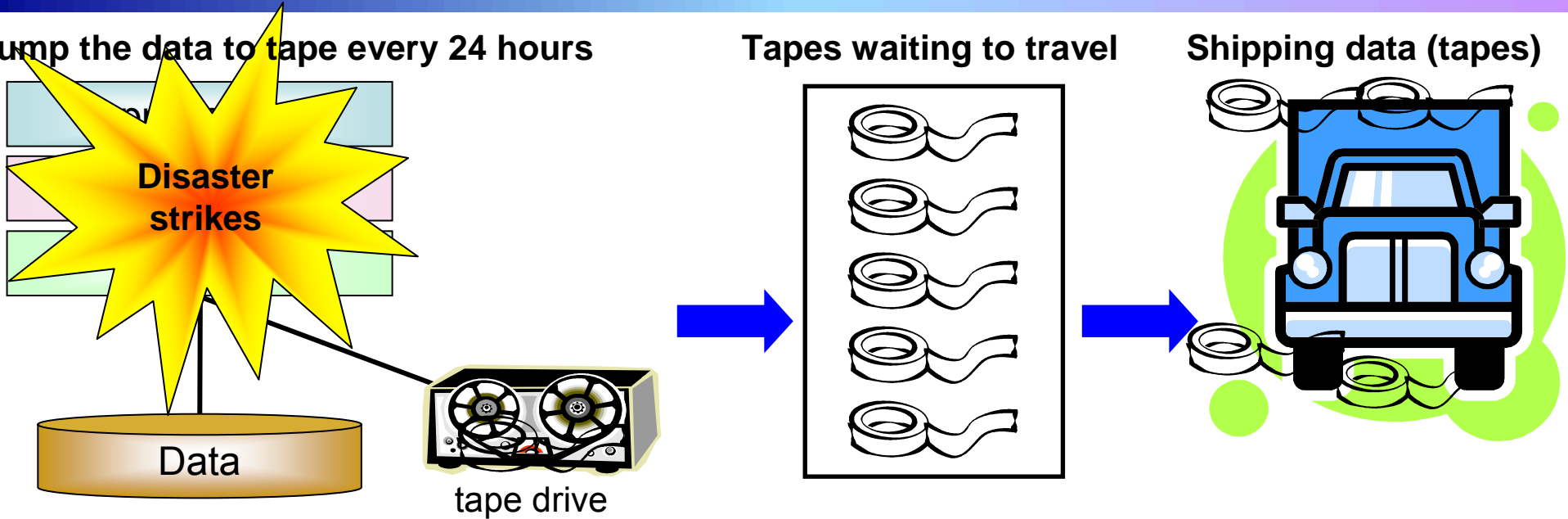
Recovery and costs are predictable, manageable, and reliable

Pick-up Truck Access Method (PTAM)

Dump the data to tape every 24 hours

Tapes waiting to travel

Shipping data (tapes)

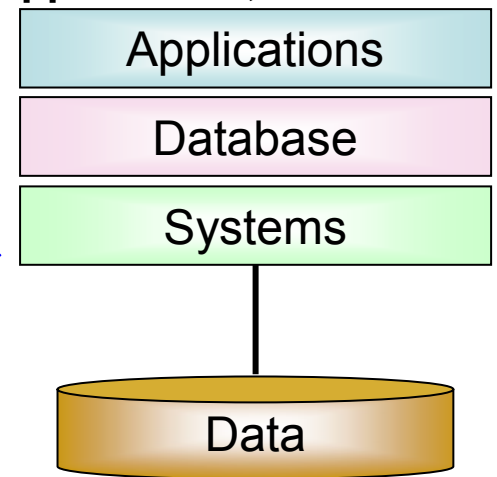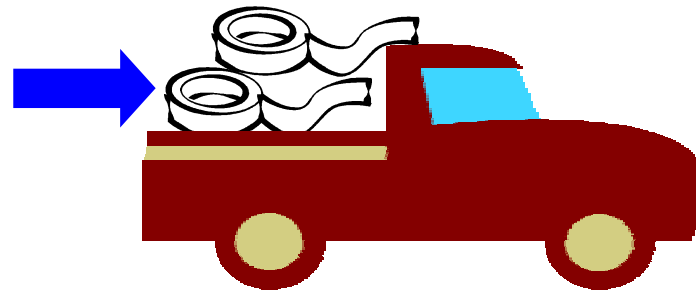Disaster strikes

Data

tape drive

Request the data

Ship the data

Obtain a secure facility, restore the configuration, applications, and data

I've had a disaster, we need our most current backup tapes

Applications

Database

Systems

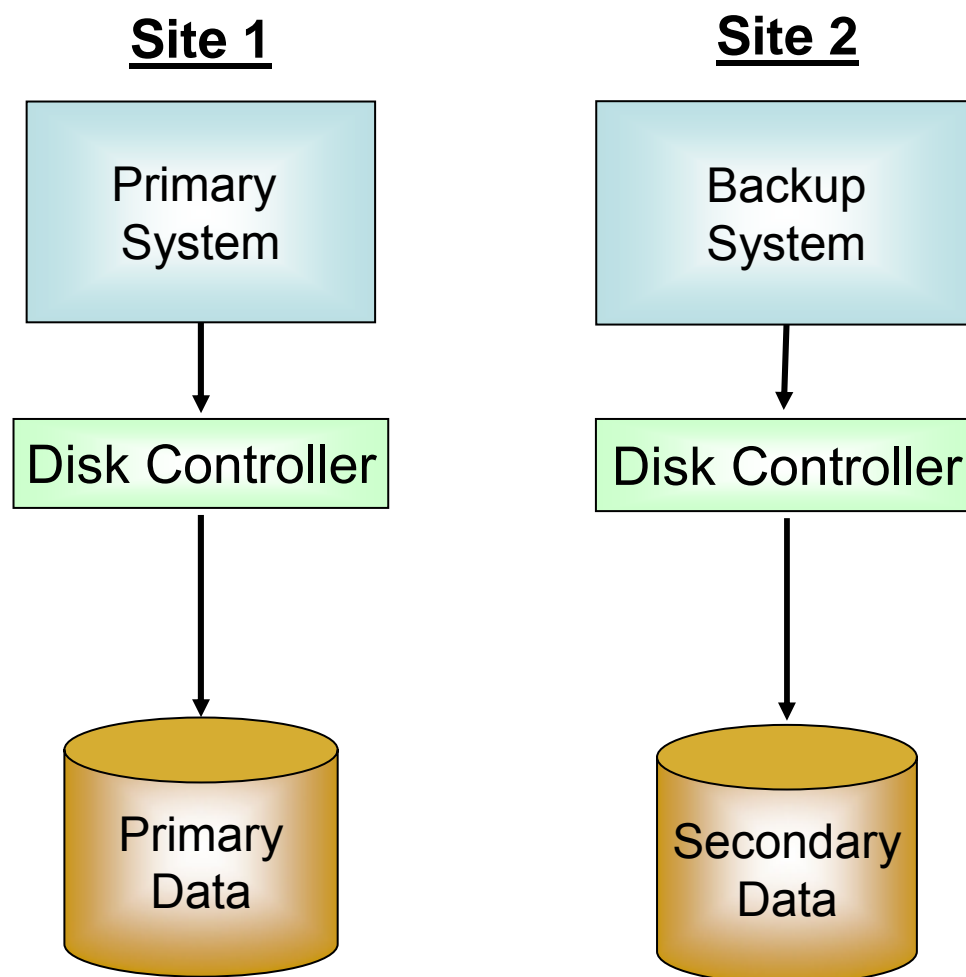Data

0 hrs

>72 hrs

A Better Solution - GDPS

- GDPS is a software capacity to fail over to an alternate (backup) site

- It has been ushered in by an increase in the number of security breaches, regulatory requirements, and unfortunately by the events of 9/11/2001 and others around the world

- With GDPS, customers can be up an running within one hour following a disaster, with no data loss

GDPS

- GDPS manages the application environment, and the consistency of data

- It providing full data integrity (across volumes, subsystems, operating system platforms and sites)

- It provides the ability to perform a normal restart in the event of a site switch, thus minimizing the duration of the outage

Site 1

Primary System

Disk Controller

Primary Data

Site 2

Backup System

Disk Controller

Secondary Data

GDPS Uses Restart to Improve Failover Time

- **Achieve Application and Database <u>Restart</u>**
  - ▶ Consistent, repeatable, fast
  - ▶ Database Restart: To start a database application following an outage without having to restore the database
    - − This is a process measured in minutes
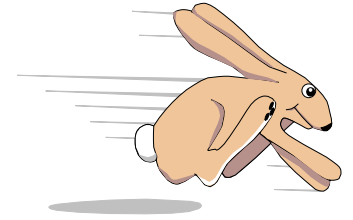
- **Avoid Application and Database <u>Recovery</u>**
  - ▶ Unpredictable recovery time, usually very long and very labor intensive
  - ▶ Database Recovery:
    - − Restore last set of Image Copy tapes and apply log changes to bring database up to point of failure
    - − This is a process measured in hours or even days
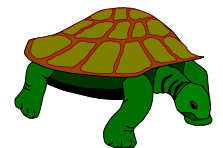
GDPS Disaster Recovery Solutions – Depending on Distance

GDPS/Metro Mirror	GDPS/Global Mirror
Synchronous. Application impact with distance	Asynchronous. No application. impact
Up to 100 km	Virtually unlimited distance
zSeries & Open Data	zSeries Data •z/OS •Linux on zSeries LPAR or Guest •VM, VSE (consistent data if 1 CU)
Single Sysplex spanning configuration	Requires additional MIPS on secondary site to support System Data Mover (SDMs)
Highly Scalable. Unlimited configuration	Highly Scalable. Up to 285 coupled SDMs

Data Centers

NYC

Primary Data Center
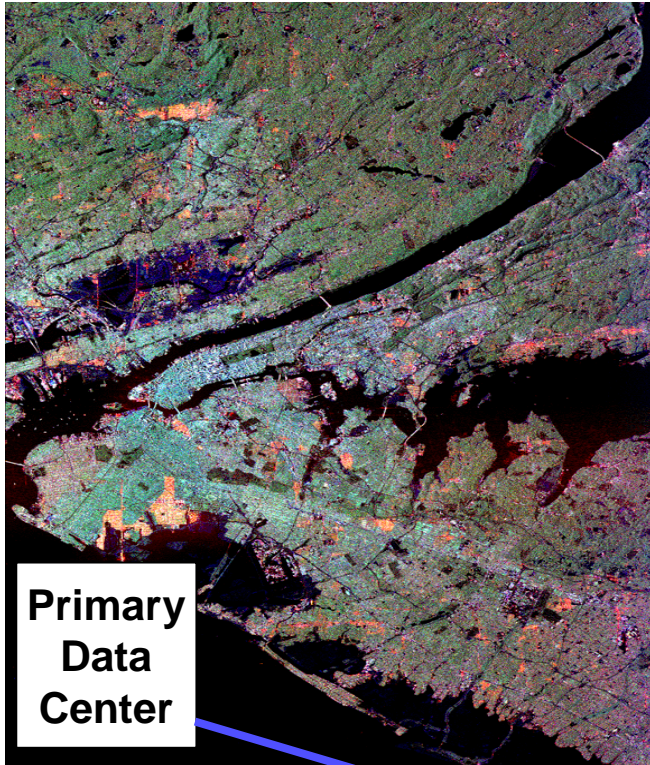
- The heartbeat of the primary system is listened to by the backup system or controlling system

- Remote data center in the Morristown, N.J. area which is approximately 80 kilometers from NYC

Morristown, N.J.

Remote Data Center

GDPS – Switchover

Site 1

Application

Data

Site 2

GDPS Automation

Data

Metro Mirroring

- Site #1 is the Primary running Production and Site #2 is the backup also running Production, but less critical.

- Volumes are being continuously mirrored via the Metro Mirroring component

- When a Disaster strikes, GDPS issues a freeze then resets all production systems

- GDPS will take over and automates all the steps for restart

- Site 2 is the production site

GDPS – A Real Disaster – Fire

Production Site 1

Application
z/OS
Channel Controller

GDPS/Metro Mirroring

Synchronous – 10 Kilometers

Production Site 1

Application
z/OS
Channel Controller

- A European financial services firm
- Regular Metro Mirroring is taking place
- In the middle of the night the remote operator received a **GDPS TAKEOVER** alert
- Repeated calls failed, and real disaster was verified
- A decision was made to execute the site **TAKEOVER.**
- A short time later production applications were up and running in Site 2

Data

Mirror Copy   at   Control File

293 GDPS implementations in 28 countries