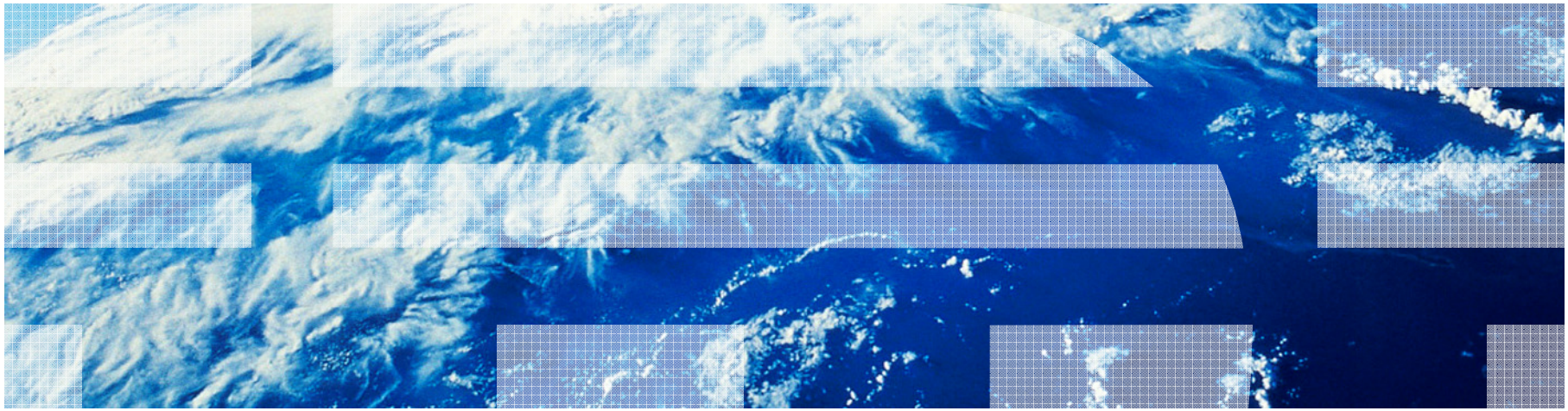
Disaster Recovery Szenarien für z/VSE, z/VM and Linux on System z



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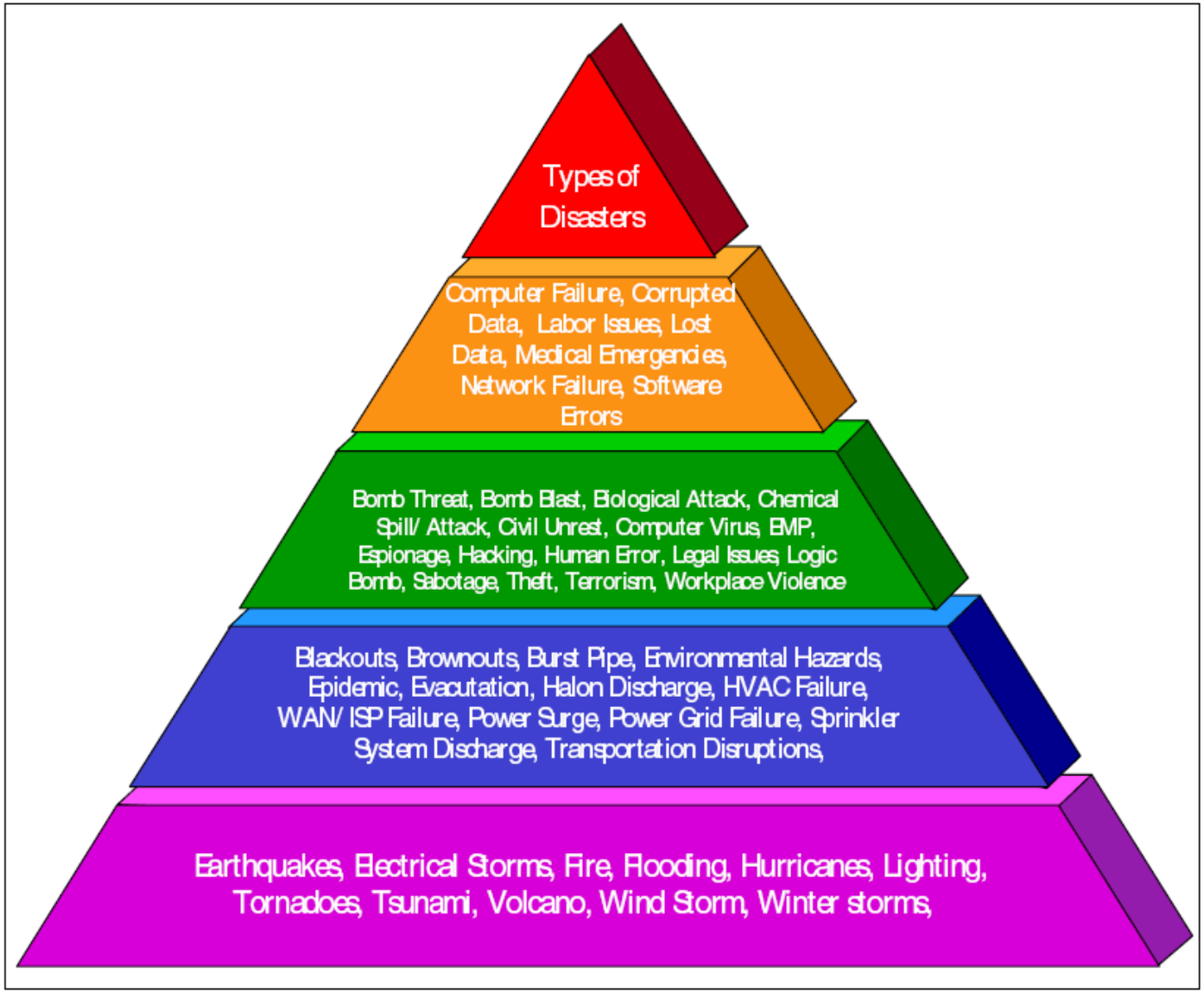
Types of disasters



Objectives for Disaster Recovery

Following Objectives are the same for Systems and Storage

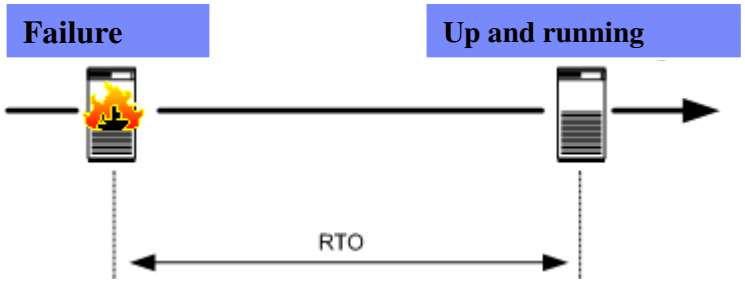
- Minimize time of outage
- Minimize affected systems in case of a disaster
- Minimize effort for a restart

Required knowledge in case of a DR:

- Special Communication hardware for the DR case – to avoid busy lines from users
- Documentation of DR Process

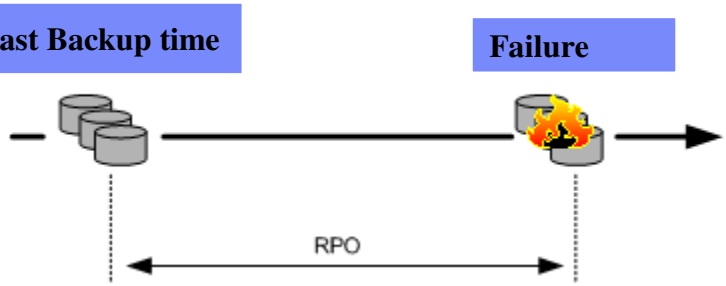
Identify RTO, RPO und NRO

Business Resiliency Plan



Recovery Time Objective (RTO)

What time difference can be between Failure and a total productional run level ?



Recovery Point Objective (RPO)

What is the toleration for data loss?

RPO = "0" means, NULL data loss acceptable
RPO = "5" means, data loss in last 5 min acceptable

TREND: RPO = 0

Network Recovery Objective (NRO)

Time requirements for network availability.

Major discussion areas

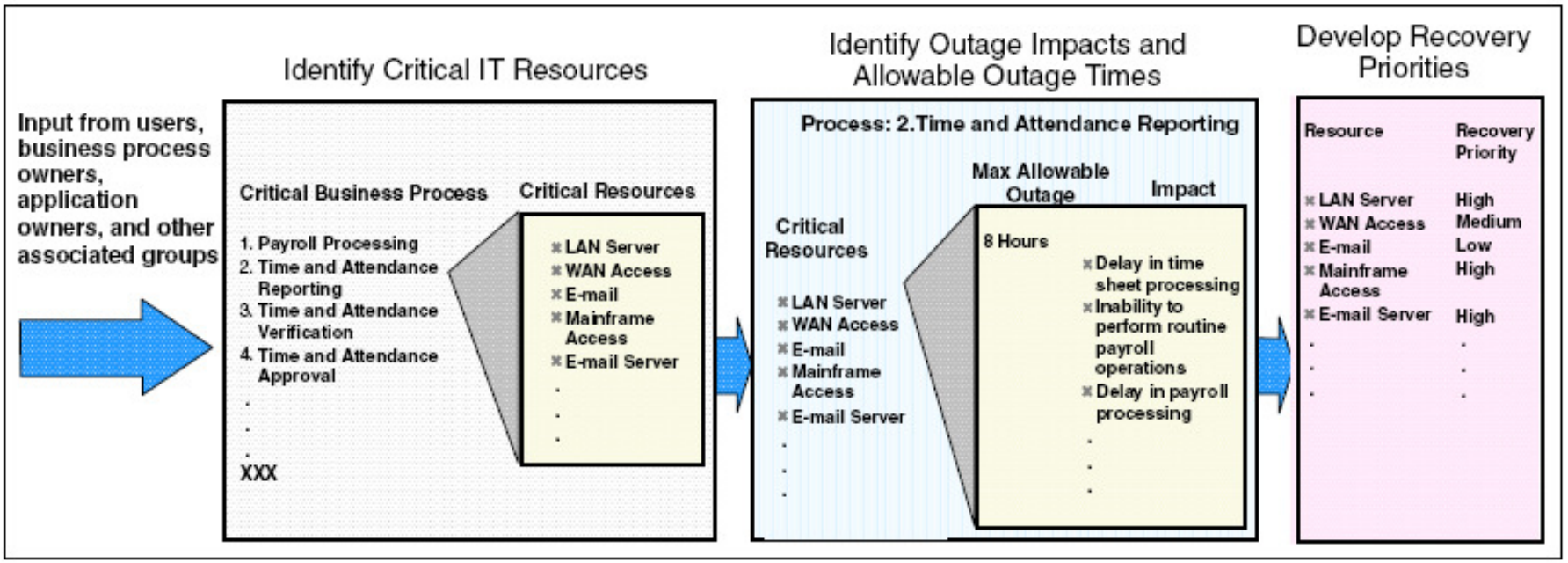
- Possible Systems affected
  - Type of systems, relation, how many systems participate in the DR scenario
- System positions – Geographically
  - Distance between them for data mirroring
- Connectivity and attachments
  - Ability to replace each other w/o application/user adjustments
- Separation of Data Stores
  - Logical connected data should reside on same side
- Network topology
  - Types of networks to be interconnected
- Operating Systems and application Landscape
  - Application execution based on operating systems

Disaster Recovery Planning (DRP)

- functions as a logical subset to the Business Continuity Planning (BCP) process.
- DRP process ensures continuity of operations in the event of a wide variety of disaster scenarios.
- IT operations handles DRP and BCP functions as a closely coupled process.
- The published DRP is typically an IT focused plan
  - designed to provide continuity of:
    - operations for applications,
    - databases,
    - system,
    - networks,
    - telephony,
    - staff,
    - supporting infrastructure (power, cooling, space).

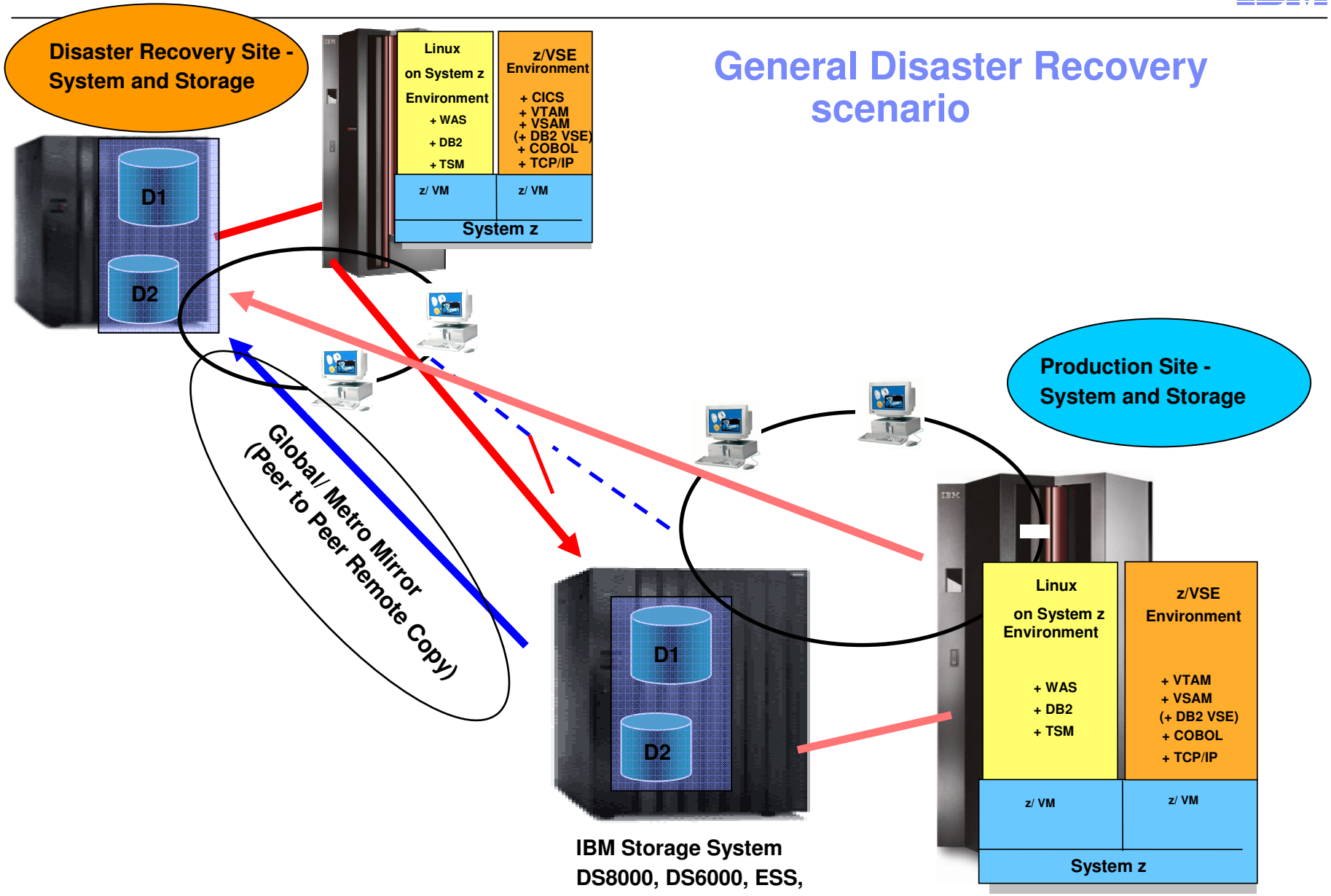
The Business impact analysis (**BIA**)

- IT Resource relation and priorities for DR
- Consider all environments
- Prioritize based on business importance

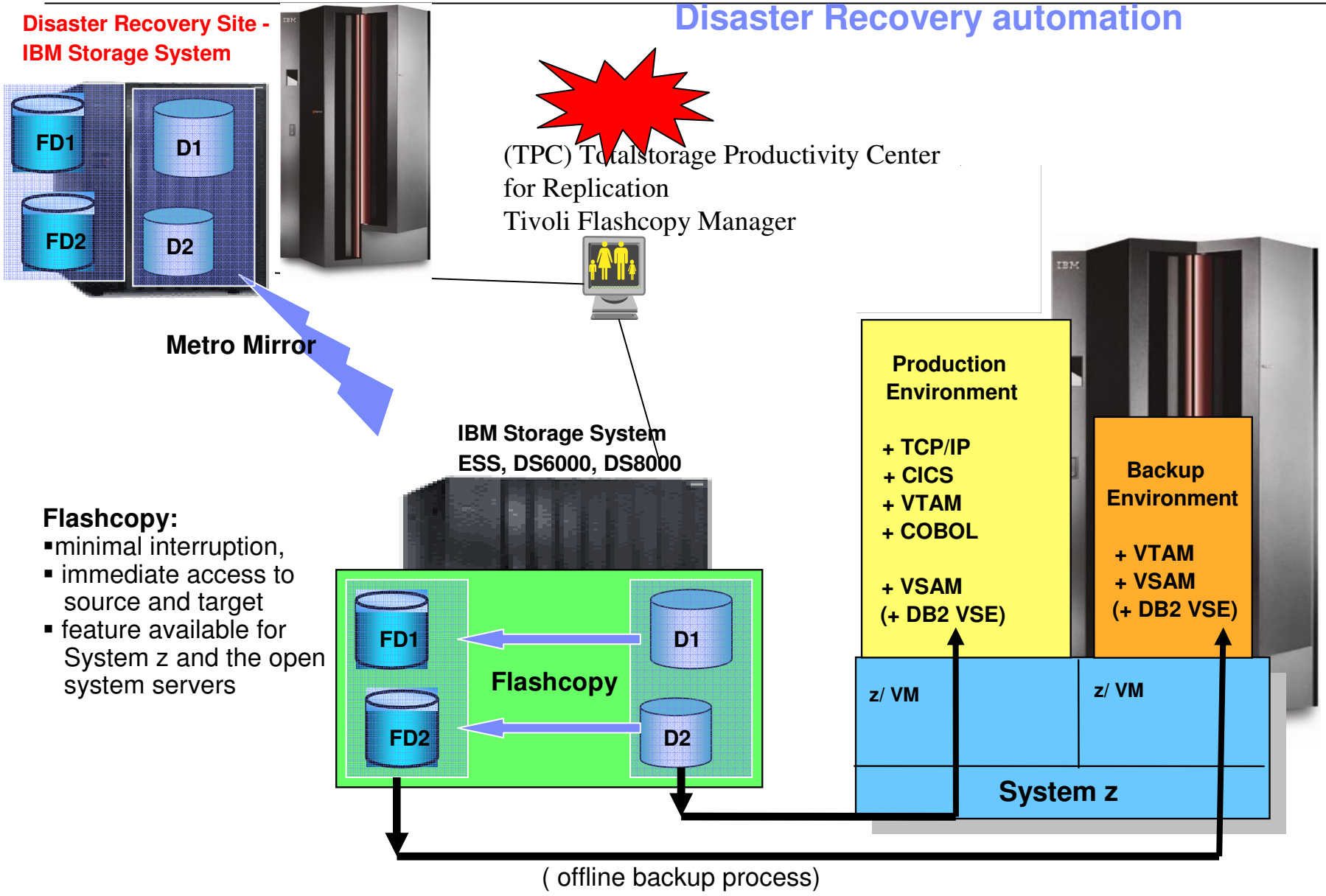


Example of the Business Impact Analysis process

General Disaster Recovery scenario



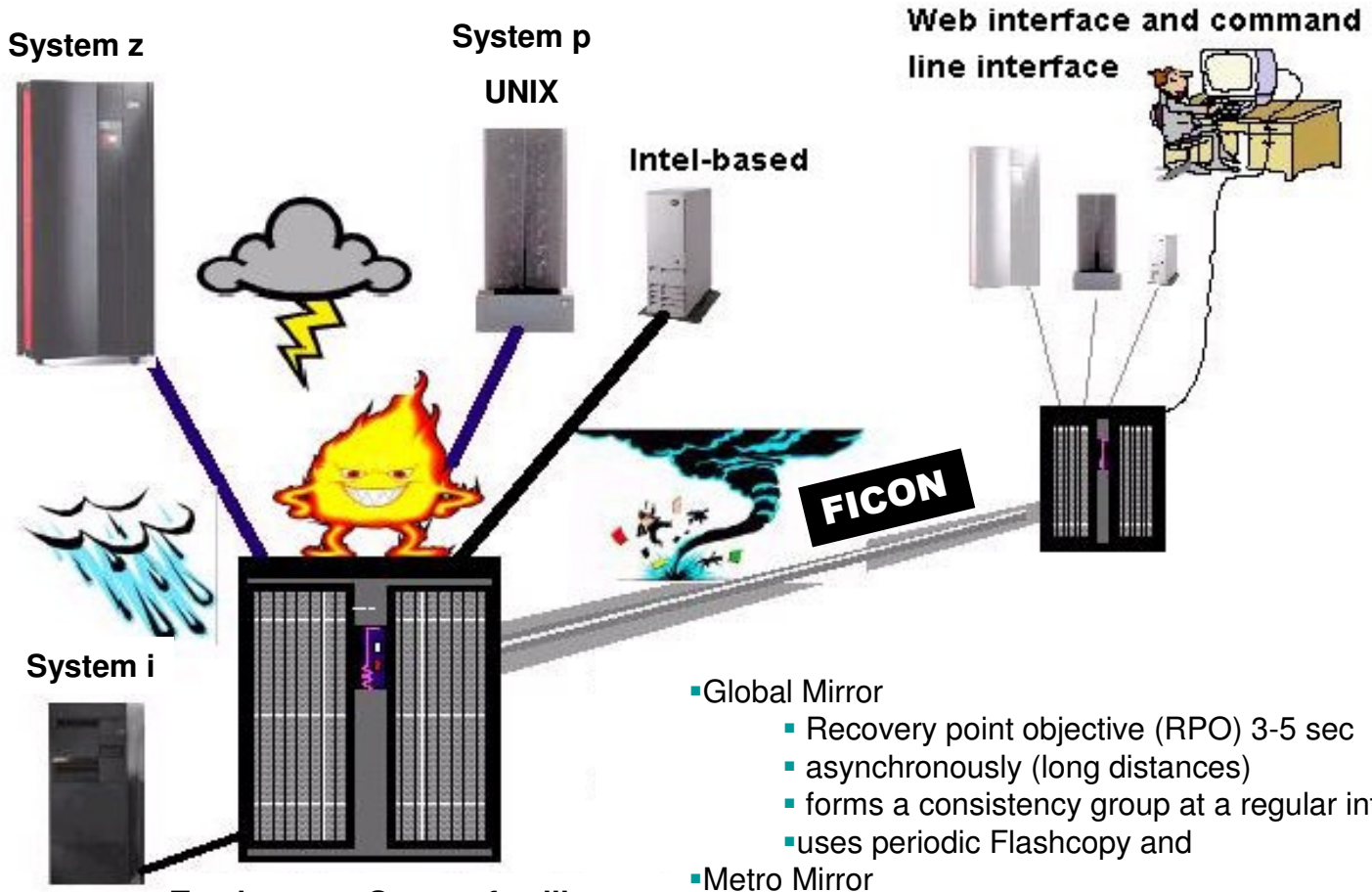
Disaster Recovery automation



Flashcopy:

- minimal interruption,
- immediate access to source and target
- feature available for System z and the open system servers

Enterprise Storage
– DR Mirroring methods and the 'Peer to Peer Remote Copy' (Mirroring)

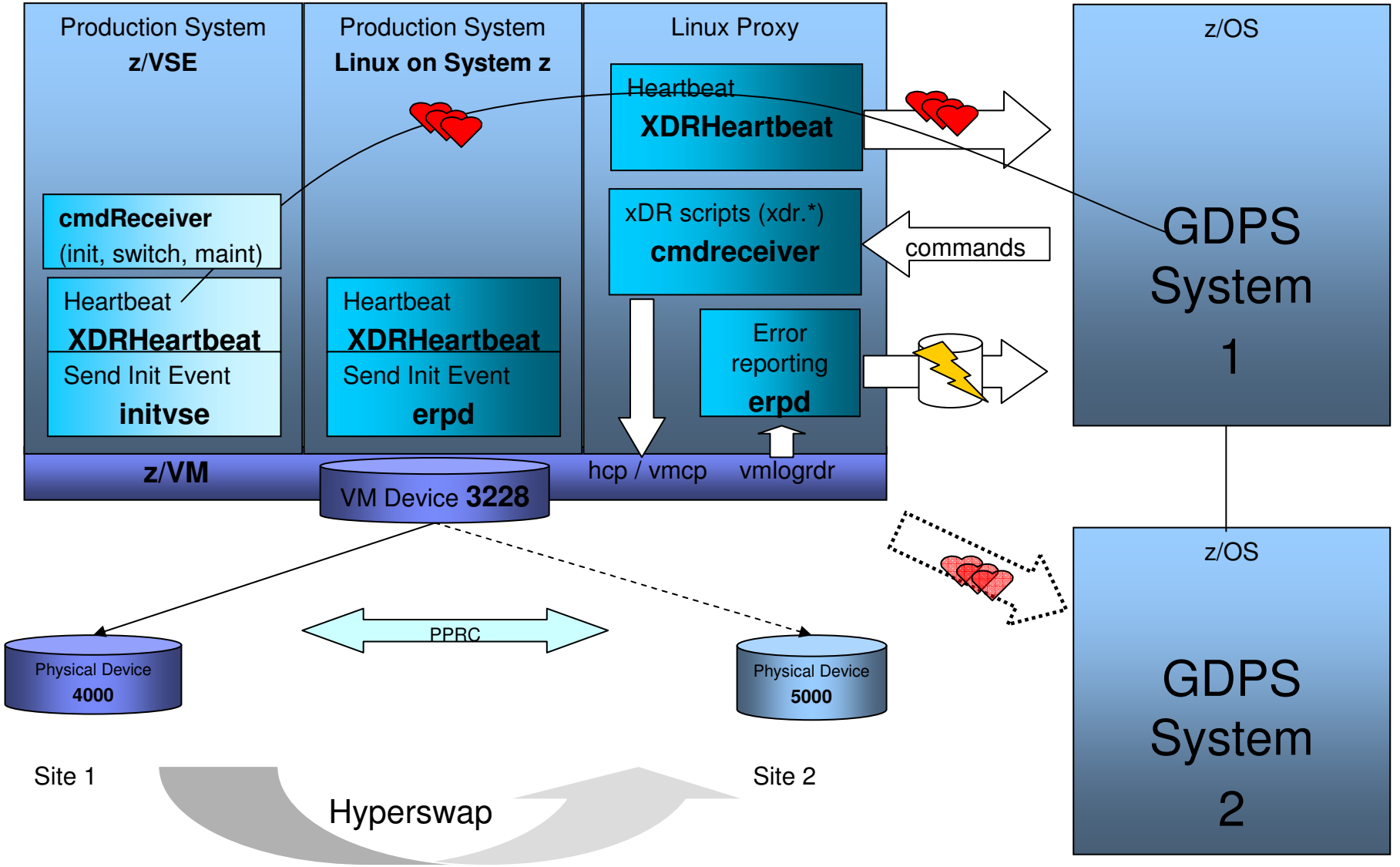


Totalstorage System families:

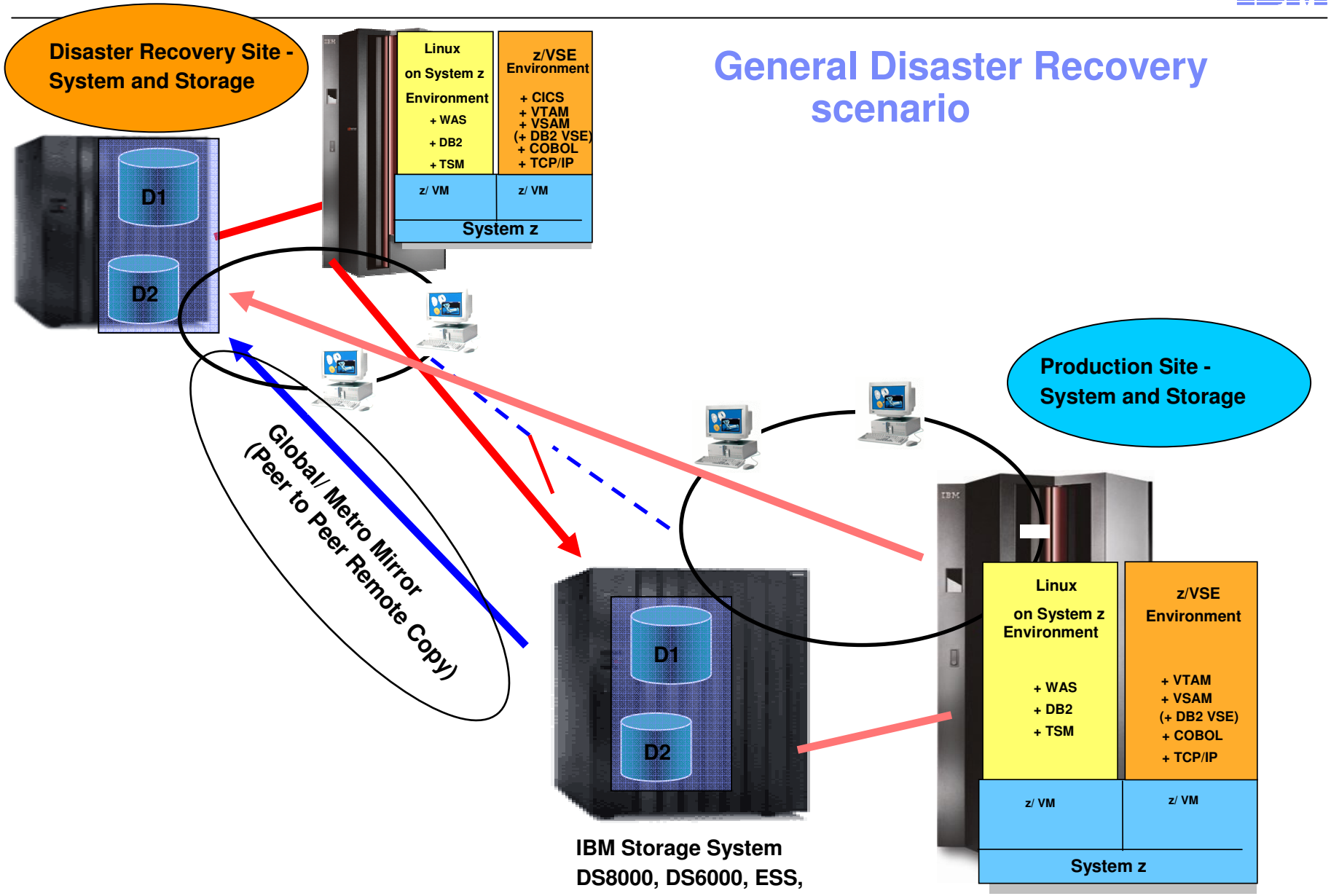
- **DS8000, DS6000, ESS Series**
- **SVC, XIV, Storwise 7000**

- Global Mirror
  - Recovery point objective (RPO) 3-5 sec
  - asynchronously (long distances)
  - forms a consistency group at a regular interval
  - uses periodic Flashcopy and
- Metro Mirror
  - synchronous (< 300 km)
  - instant FlashCopy

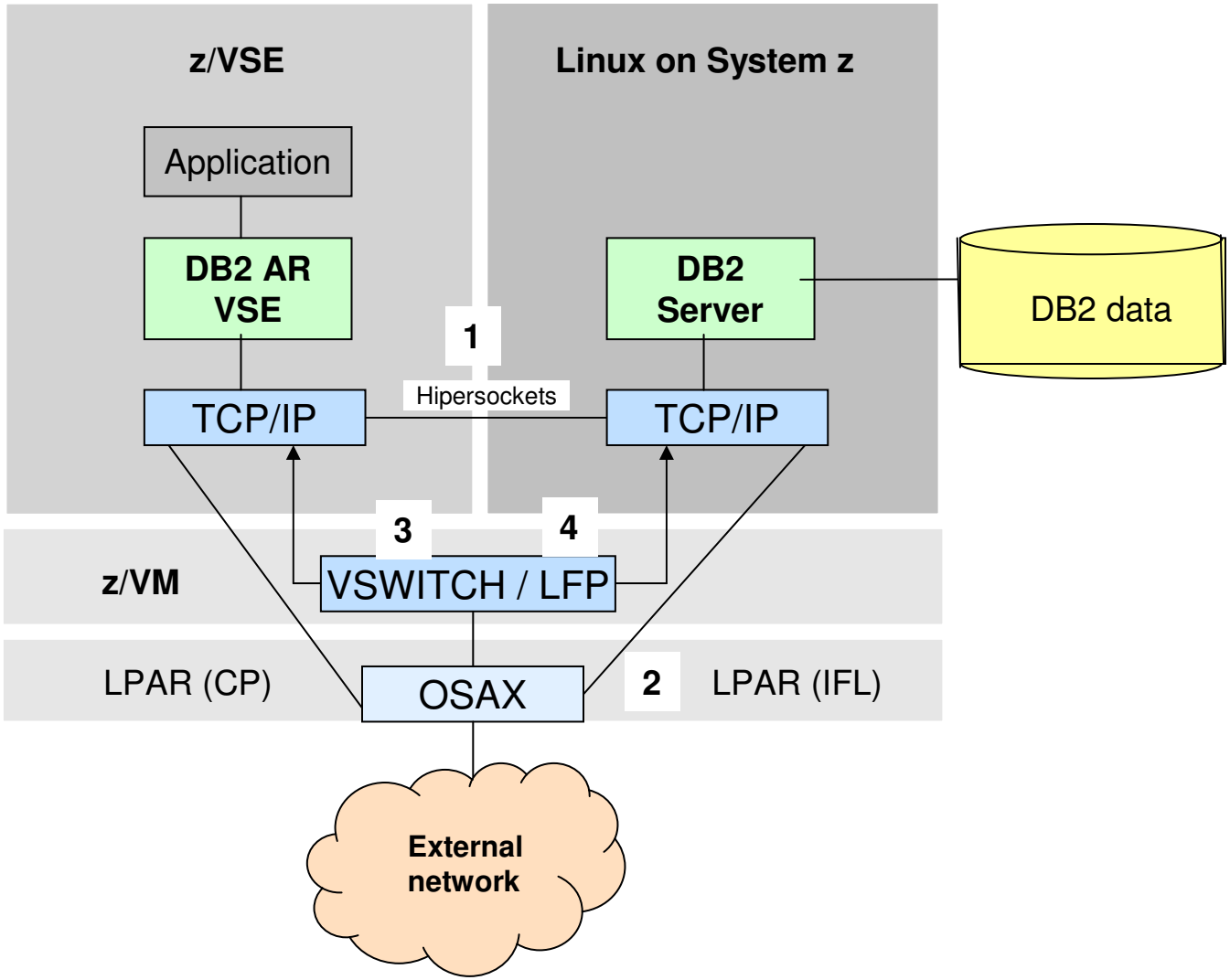
GDPS and xDR Support for z/VSE as active guest under z/VM



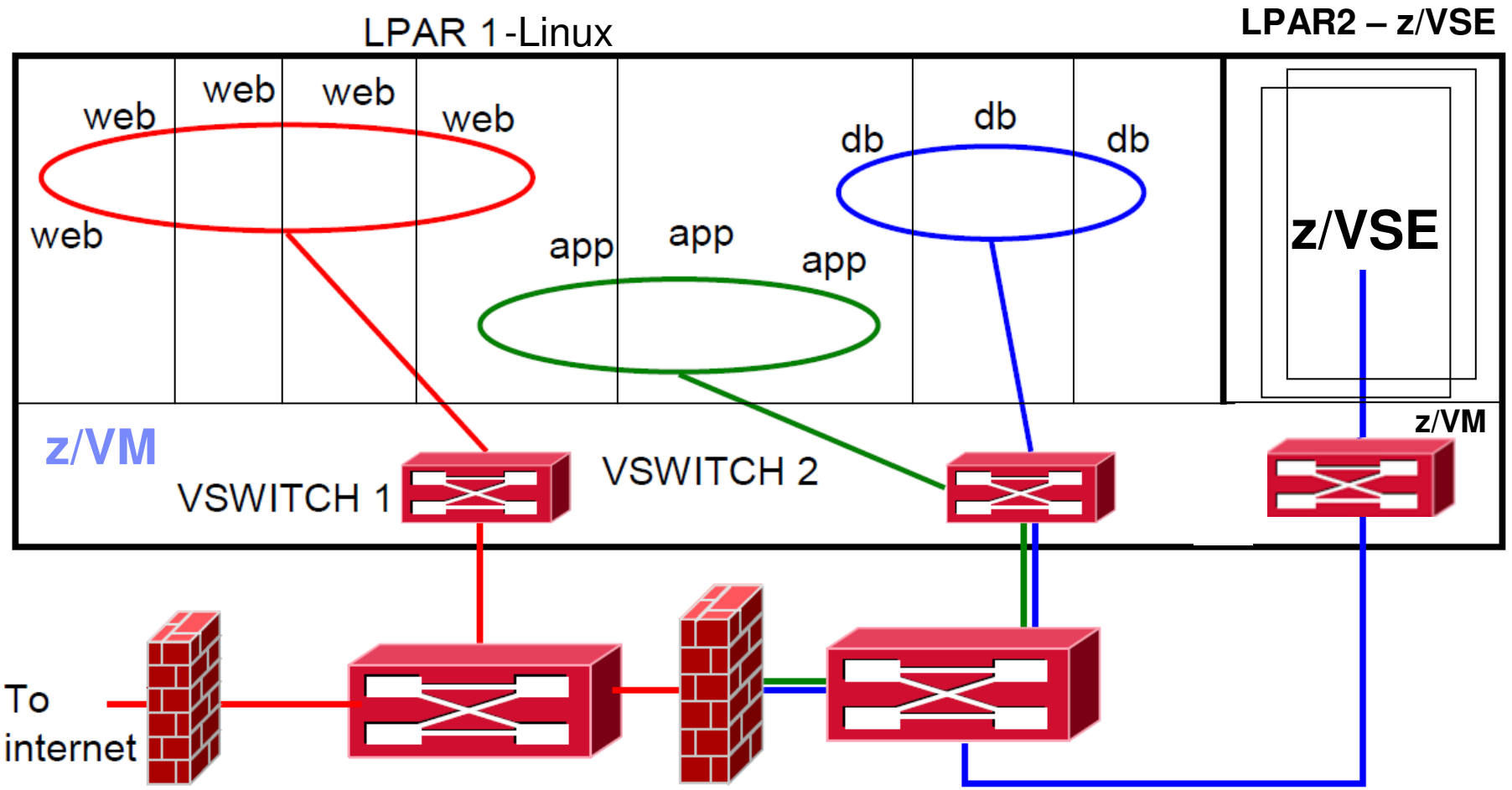
General Disaster Recovery scenario



Network alternatives

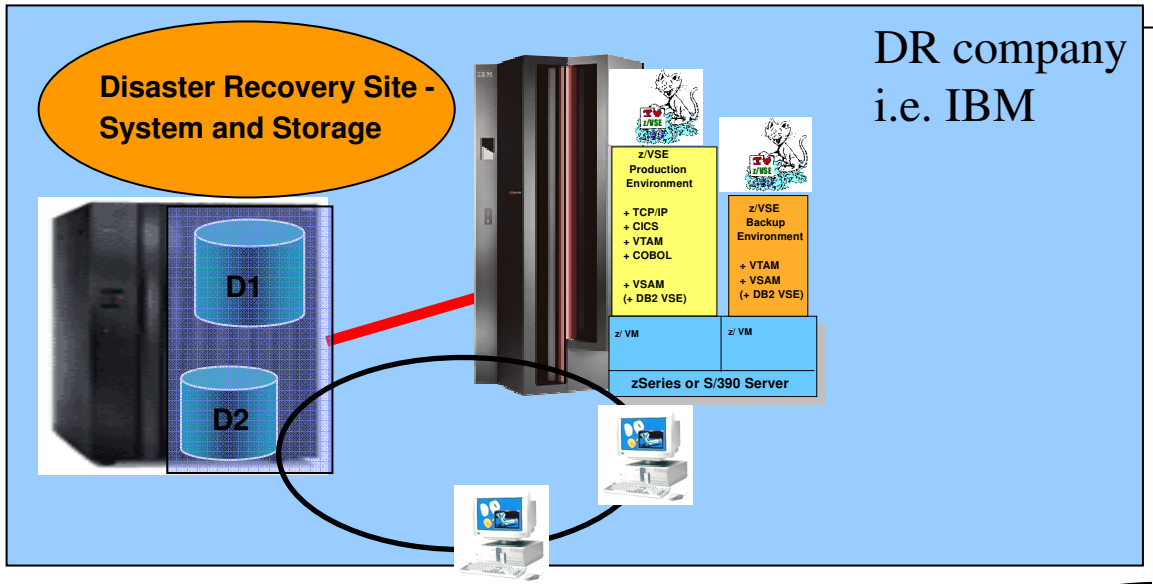


Network Virtualization / Isolation – DR aware
Multi-zone Network VSWITCH (red zone physical isolation)

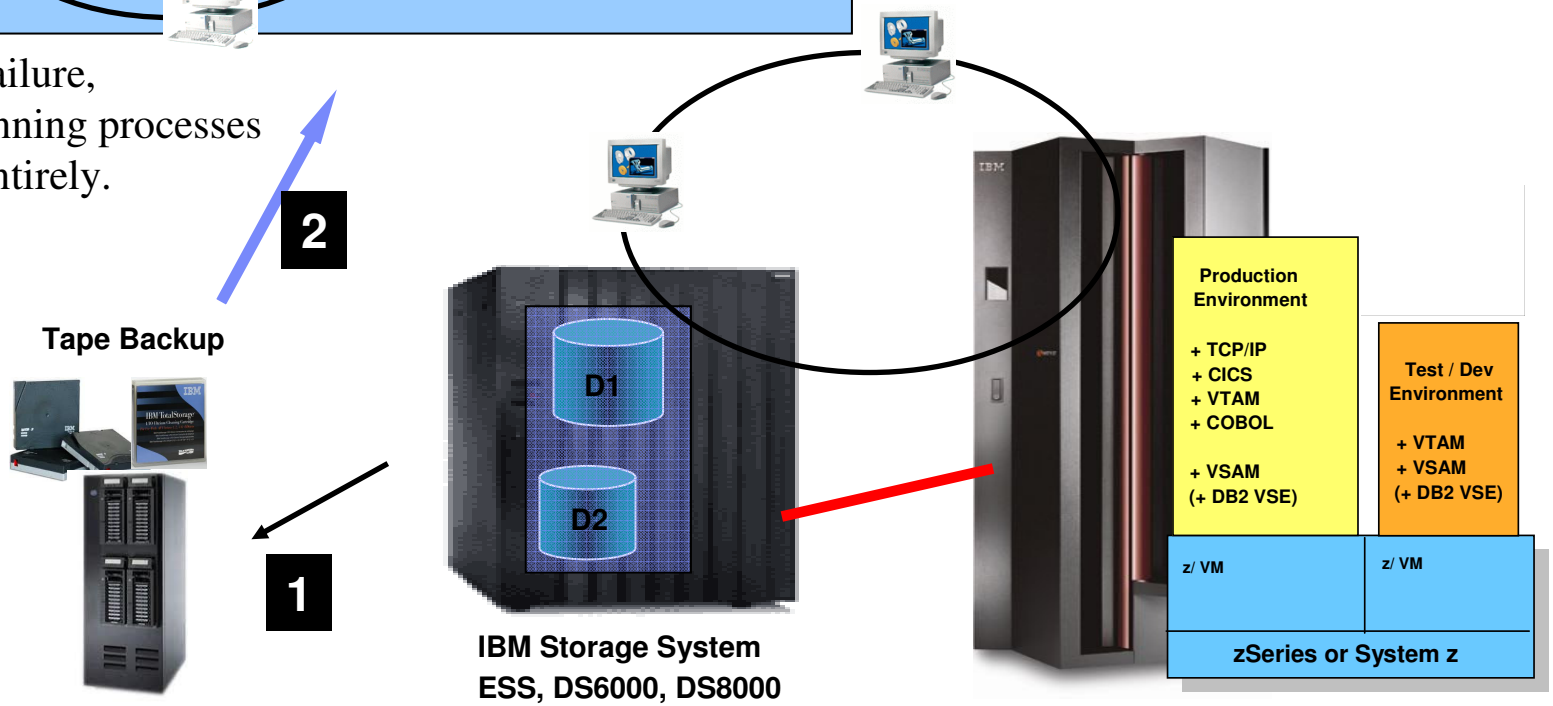


With 2 VSWITCHes, 3 VLANs, and a multi-domain firewall

OFF-Site
Disaster Recovery



Depending on failure,
not all actual running processes
can be redone entirely.



Questions?

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