

# Data Recovery & Business Continuance

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# g4ii, The Company

- Systems & Networking Engineering at its best
- High-end consulting
- Storage solutions and appliances
- Security & compliance
  
- My position: Associate & CTO

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# Introduction

- **Shit** does happen
- ... the problem being **when**
  - **it can't be anticipated!**
- ... and how to **recover**
  - monetary losses are always the result

# Presentation Outline

- Overview
- Passive Approach
- Active Approach
  - Contingency planning
- Pro-Active Approach
  - Business Continuance
- Wrap-up

# Outline

- Overview
- **Passive Approach**
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# Passive Approach

## Intro

- “ I'll simply hope and wait ”
  - the most common approach
- Might be acceptable for domestic users
  - ... I only said “*might*” ...
- Compliance requirements obviated
  - IRS / Sarbanes-Oxley
  - Spain: LSSI

# Passive Approach (II)

## Setbacks

- Cannot anticipate disruption's length
- High probability of definitive data loss
- Only resort: data recovery labs
  - A multi-million industry every year[Gartner]
  - no guarantee whatsoever -- “best effort”

# Passive Approach (III)

## Disaster Causes

- Human error
  - relatively frequent
  - usually small in scope, “easy” recovery
- “The enemy within”
- Viruses, Intrusions
- Hardware failure
- Natural catastrophes



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# Active Approach: Backup

## Intro

- Backup **is** the solution
- Planning is paramount
  - Schedule, backup policy
- Effectiveness depends on proper execution
- Multiple methods / devices
  - understand suitability before deployment

# Active Approach (II)

## Suitability considerations

- Common practice: same-disk **copy**
  - unsuitable: only provides redundancy
  - this is no backup
  - no protection against HW failure
- External (USB/Firewire) disk
  - does not protect against disasters
  - ... unless taken off-site
  - raises privacy concerns; Theft cases

# Active Approach (III)

## Valid solutions

- Backup software
- Add-on Backup device
  - tape/disk
  - no dedicated HW required
- Backup appliance
  - Most flexible and robust
  - Eases processes & security assesment



# Active Approach (IV)

## Disaster Recovery

- Dedicated hardware is most convenient
  - security/privacy concerns
- BMR (Bare Metal Recovery) capabilities
  - reduce downtime to a minimum
  - improve (minimize) burden on IT personnel

# Active Approach (V)

## Strategies & Policy

- Backup strategies: **how**
  - Full
  - Incremental
  - Base
  - Differential
- Policy: **what** to include
  - Define datasets: *hot vs cold* data
  - use optimum approach for each set
- Schedule: **when** to back up
  - Backup windows; Snapshotting

# Active Approach (VI)

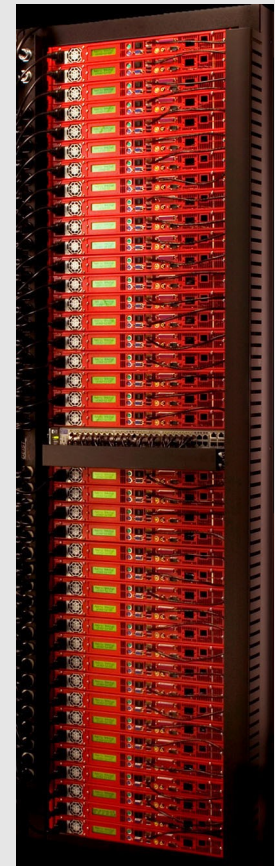
## Contingency Planning

- Prepare **before** it happens
  - Backup; Training; Proc. testing
- Know what to do **when** it happens
  - react upon contingency
  - minimize downtime
- Plan how to recover **after** it happens
  - reduce impact on business
  - re-gain normality ASAP

# Active Approach (VII)

## Implementation

- Storage media
  - nearline vs off-line: TTR
  - tape vs disk; COA vs TCO
- Backup software
  - featureset
- Economical implications
  - TTR (Time To Recovery) vs
  - ROI calculation



# Active Approach (VIII)

## Implementation (II)

- Best protection: offsite backup
  - Pro: counters most disasters
  - Con: Privacy considerations
  - Poor man's solution: employee takes home
  - Optimal solution: offsite vault (e.g.: bank)
- Several alternatives
  - Offsite Datacenter replication
  - On-line “*continuous*” backup

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- **Pro-Active Approach**
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# Pro-Active Approach

## Intro

- When one or more conditions are met:
  - downtime is to be kept to a minimum
  - data-loss is inadmissible
  - (natural) disasters are no excuse
- Business continuance methods
  - when “*show must go on*” by any means

# Pro-Active Approach (II)

## Considerations

- Business continuity is vital
  - 2/5 of businesses didn't survive a disaster
  - out of business after five years [Gartner,2003]
- Some industries can't afford it
  - Banking; HealthCare
  - E-Commerce; E-Governance
  - Online services; Content distribution

# Pro-Active Approach (III)

## Factors

- Need to have duplicated infrastructure
  - Optimally, just a subset
  - Enough to warrant continuity
- Recovery in a (small) delimited time
  - Failover to secondary facilities
- Remote-Site synchronization
  - synchronous: online services
  - asynchronous(cheaper): w/ people involved

# Pro-Active Approach (IV)

## Implementation

- Data is **vital**
  - Replicated storage
  - Off-site location
  - Privacy & Security concerns
- Enough equipment to keep it accessible
  - and usable, too
- Ability to redirect requests
  - and degrade gracefully if needed



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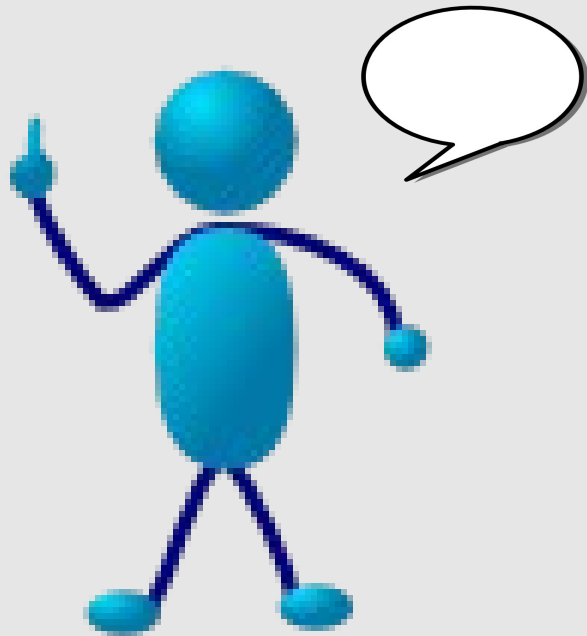
# Wrap-Up

## Summary & final thoughts

- Assess your needs
  - Impact of data-loss in revenue
  - Other factors: customer confidence
- Plan carefully
- Implement and Test

# Questions?




- What we would like to know...



Thanks !

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