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entwickler SUMMIT

TEKTIT CONSULTING

Backup and Disaster Recovery

The Potential Emergency as an Architecture Accelerator

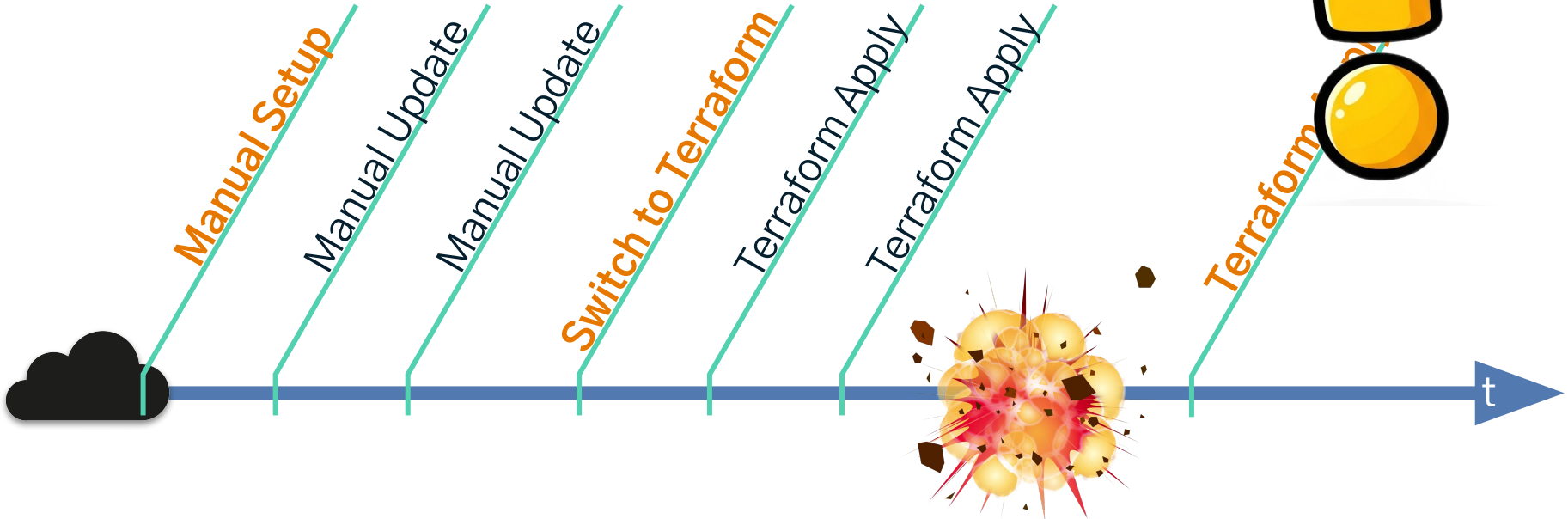
18. September 2025, Entwickler Summit 2025, Berlin

Schlomo Schapiro, Associate Partner / Principal Engineer, Tektit Consulting

Legacy

→ Architecture Rot

→ Recovery Uncertainty



Agenda

1. Introduction to the Basics
2. The Restore Time Objective Challenge
3. Automate, Automate ...
4. Architecture Accelerator
5. Disaster Recovery

Business Continuity

A comprehensive strategy ensuring an organization can continue operating and delivering critical functions during and after unexpected disruptions, minimizing downtime and maintaining essential business processes.

Staying in business, no matter what!

Source: Claude.ai

The Timeline

Recovery Time Objective (RTO)

*How **long** to recover?*

DO

Recovery Point Objective (RPO)

*How **old** is the recovery data?*

HAVE

Backup is not Disaster Recovery

Restore (not just Backup)

- single file
- single mailbox
- single database
- single LUN
- single server
- single …

When we have

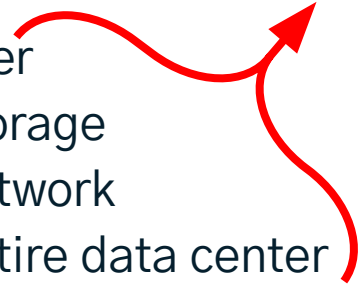
- the file server
- the mail server
- the database server
- the storage

Disaster Recovery

- all files
- all mailboxes
- all databases
- all the LUNs
- all servers
- everything!

When we don't have TIME

- a server
- our storage
- the network
- our entire data center



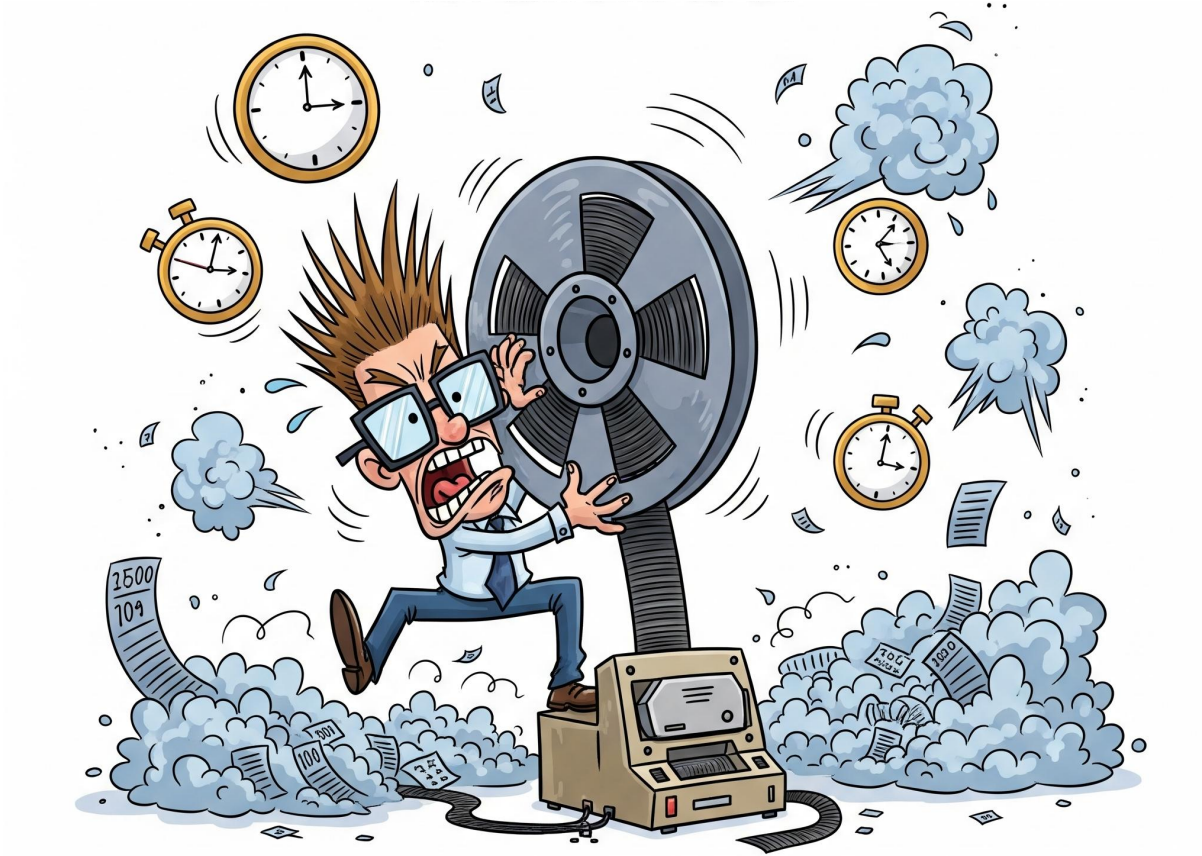
Guiding Principles

Backup is the means to enable Restore

Comprehensive Backup & Restore Automation
is the means to enable
Disaster Recovery and Business Continuity

Use the Same Backup for
Restore and Disaster Recovery

The Restore Time Objective (RTO) Challenge



RTO Example: Catastrophic SAN failure (worst case)

Context:

- 140 TB SAN storage
- LTO-9 tape library
  (400 MB/s = 1.44 TB / hour)

Full Restore:

- 1 day for “fixing” the SAN storage
- 4 days for full restore
- 1 day overhead

→ minimum 5 days to recover SAN

Questions:

- 1 week recovery time from major outage OK?
- how to manage external relationships & communication during 1 week outage? Stop external processes?
- What if all the local hard disks / physical servers where also affected?
- how can we **test this & validate the projected recovery time?**

SLA = RPO + RTO + 🤞 🙏 ❤️ 🩼 🩹 ?

Restore Time = Biggest **Problem & Unknown**

Let's get rid of the restore time!
Let's exercise restore all the time!

Restore **every** backup immediately

Replacement system is **ready** for usage

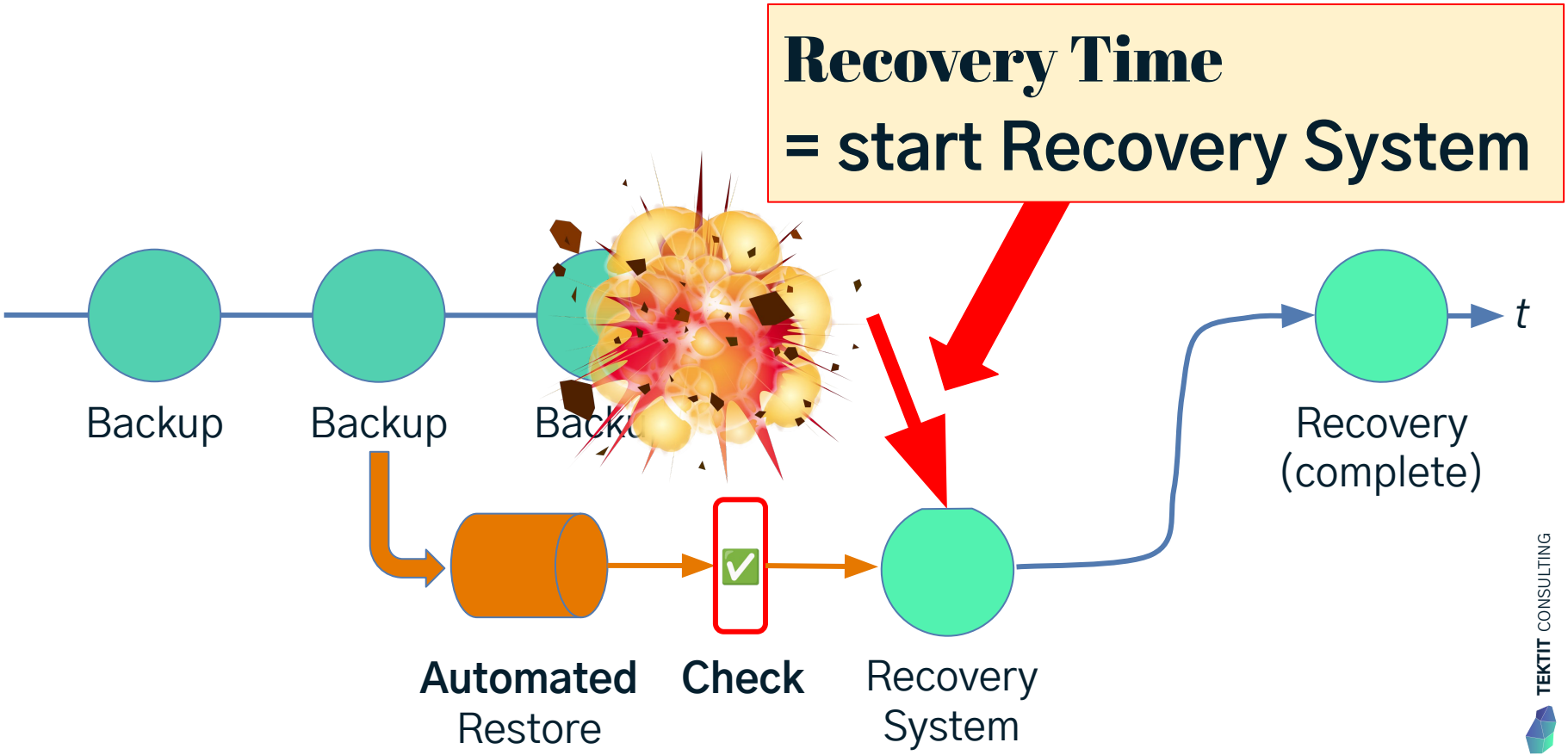
Fixed RTO

Try to **restore** when needed

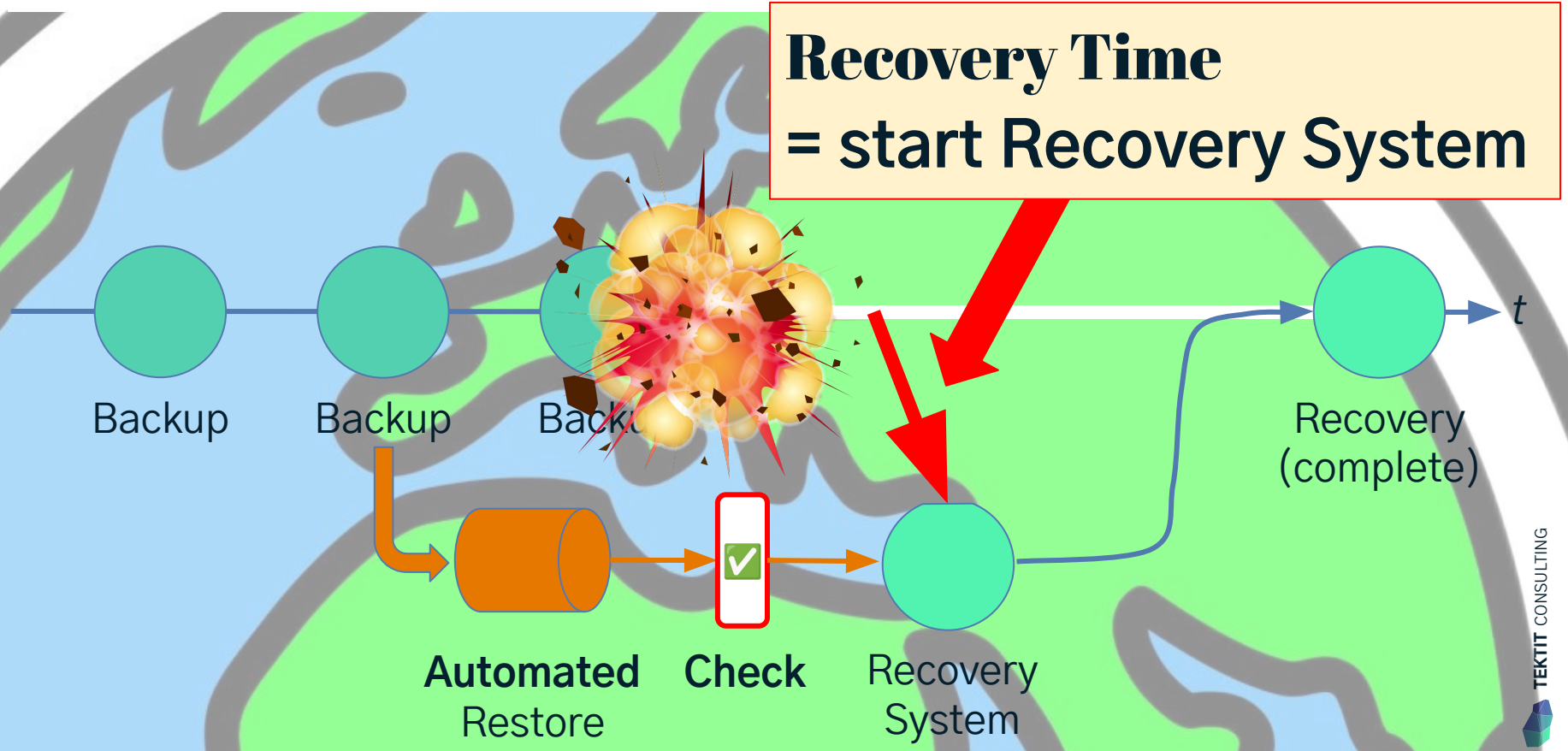
→

Switch to working & verified recovery system

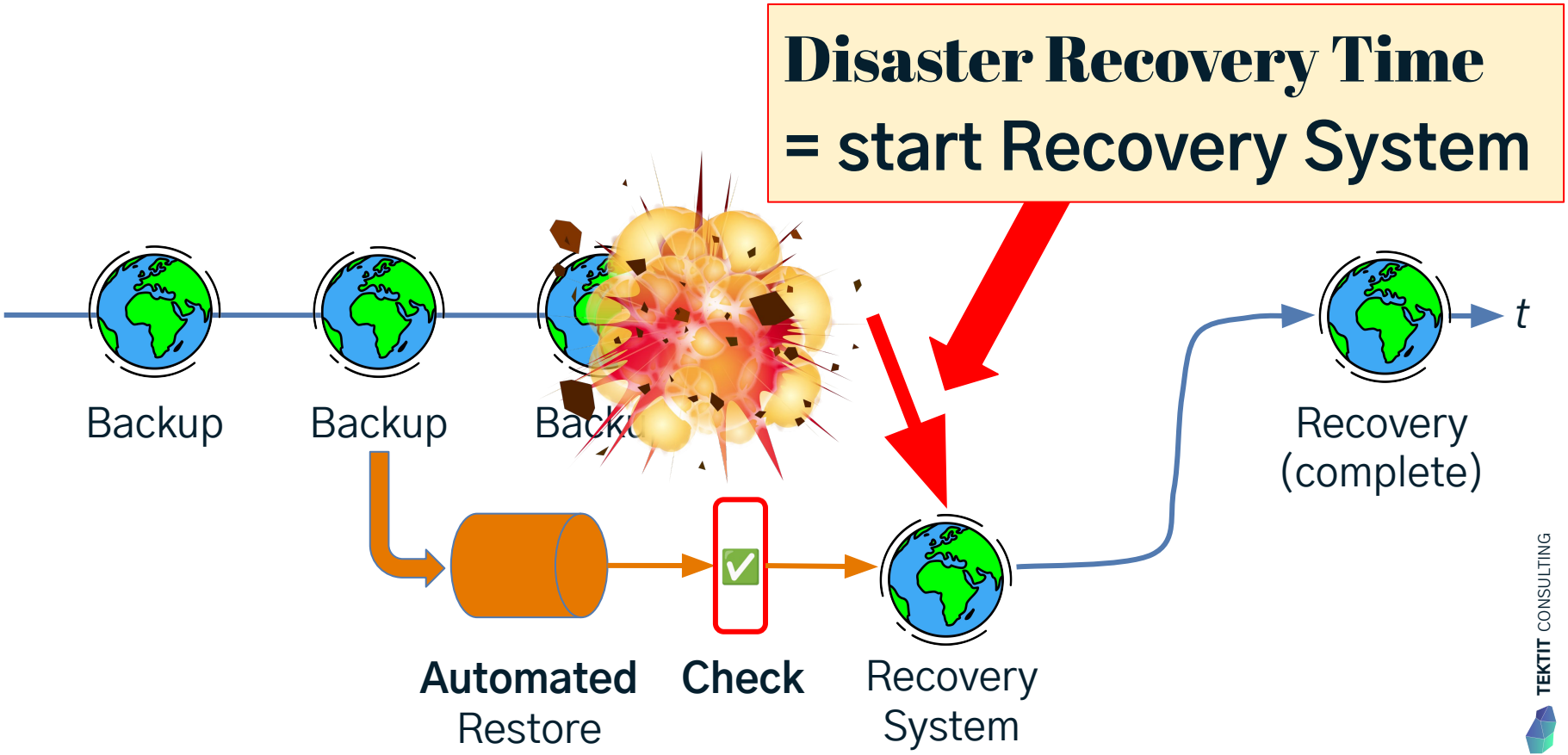
The “No Restore” Solution



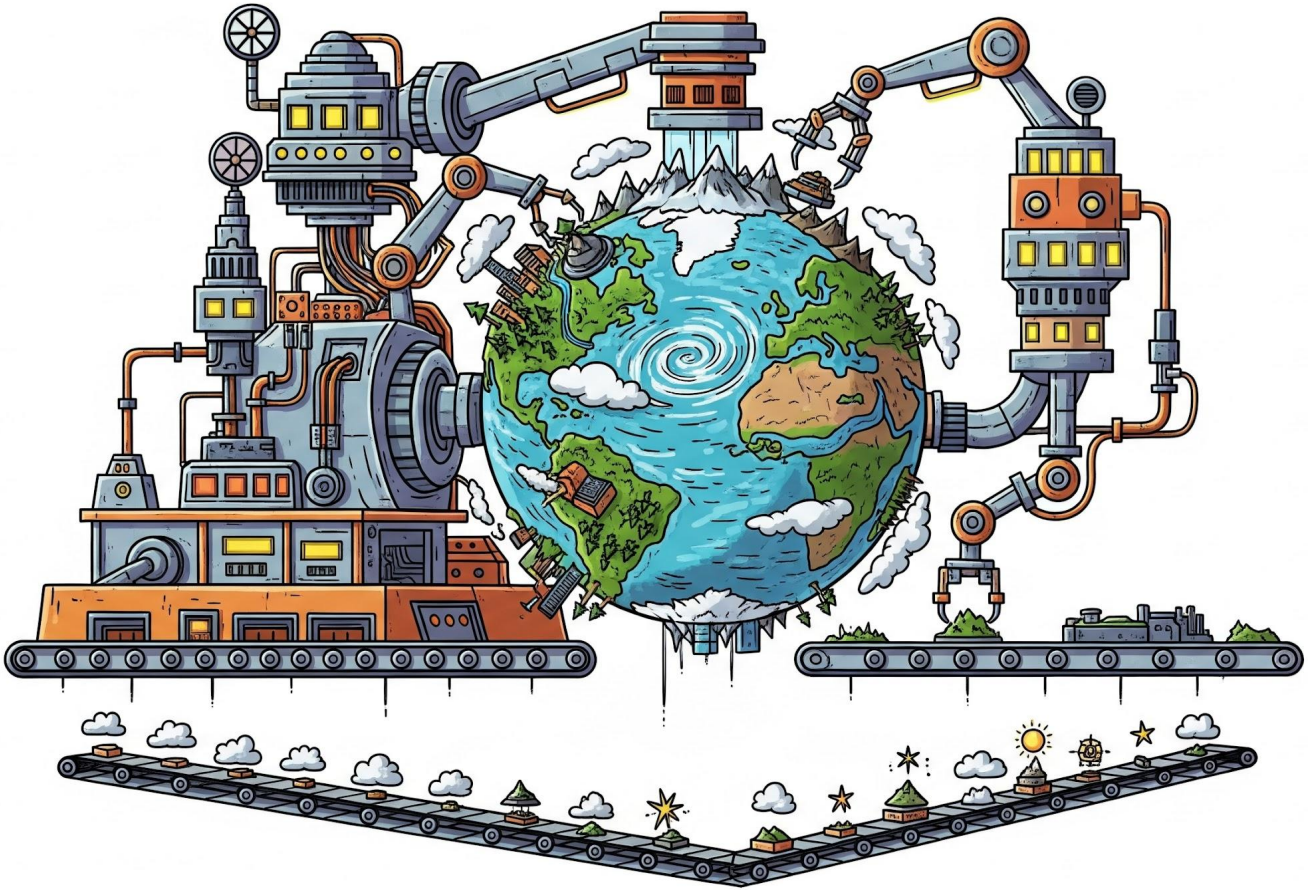
The “No Restore” Solution



The "No Restore" Solution for Disaster Recovery



Automate A Complete Production Environment

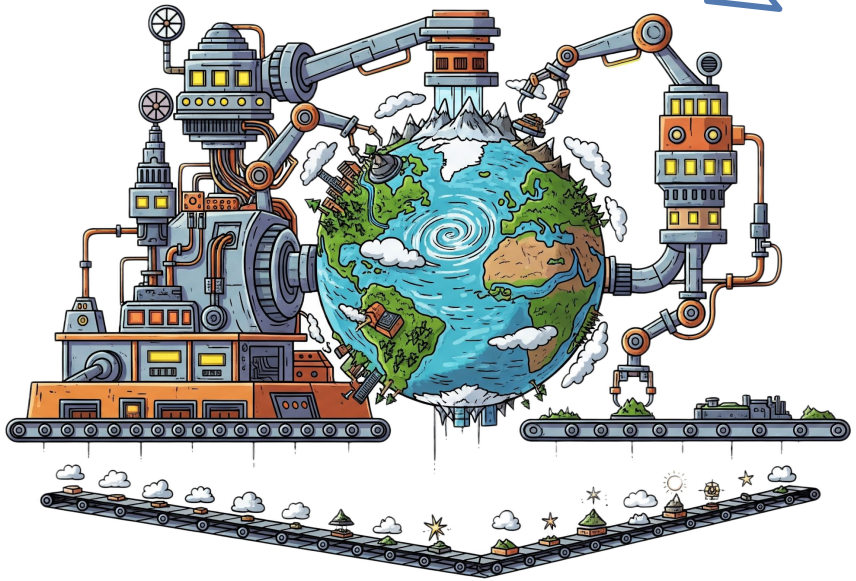


My Disaster Recovery Plan

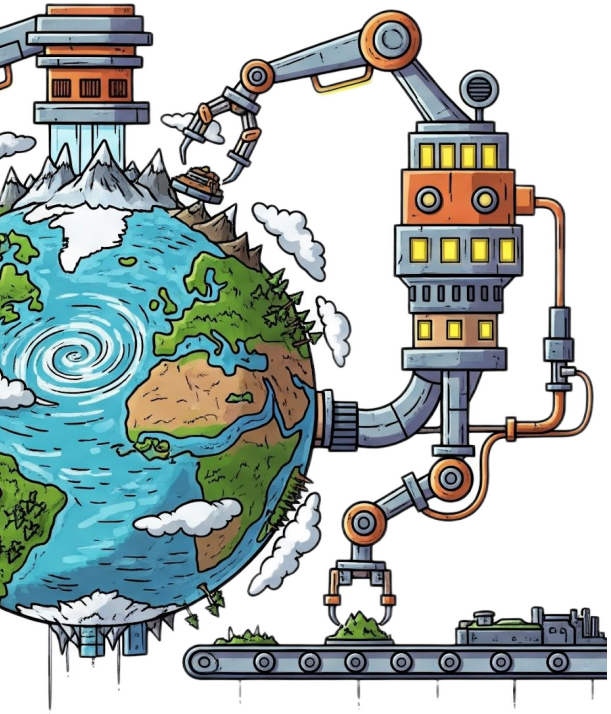
12 h

My task

My Automation

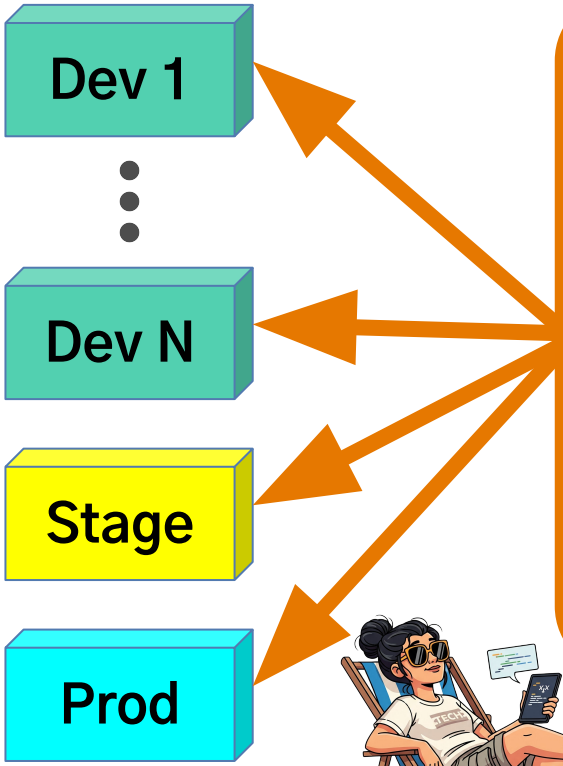


Step by Step: Automate Everything



1. Generate configuration (names, DBs ...)
2. Create new Cloud account
3. `terraform apply <Infrastructure>`
4. `kubectl apply -k dir/ <Applications>`
5. `restore-all-data.sh`
6. `run-smoke-tests.sh`
7. `activate-lb-and-dns.sh`
8. ✅ ✅ ✅

Automate Everything: On-Demand-Environments



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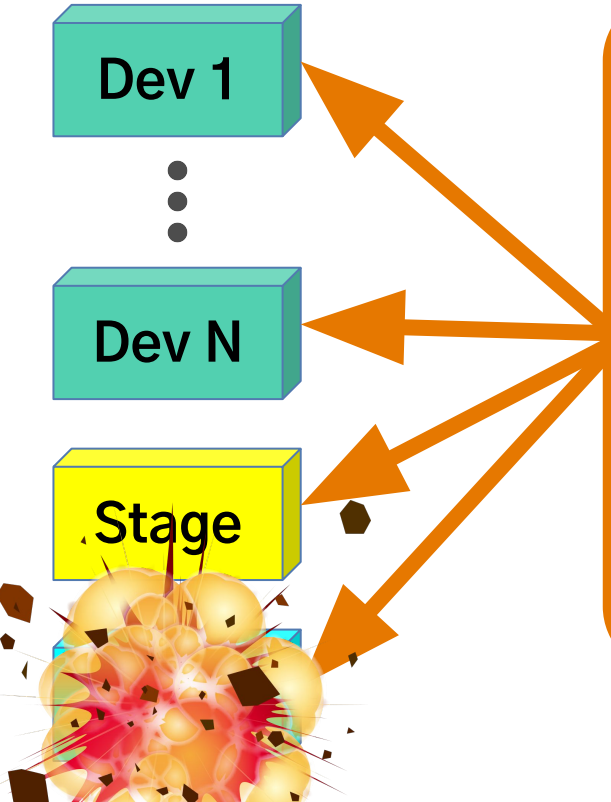
On-Demand-Environments for Prod DR



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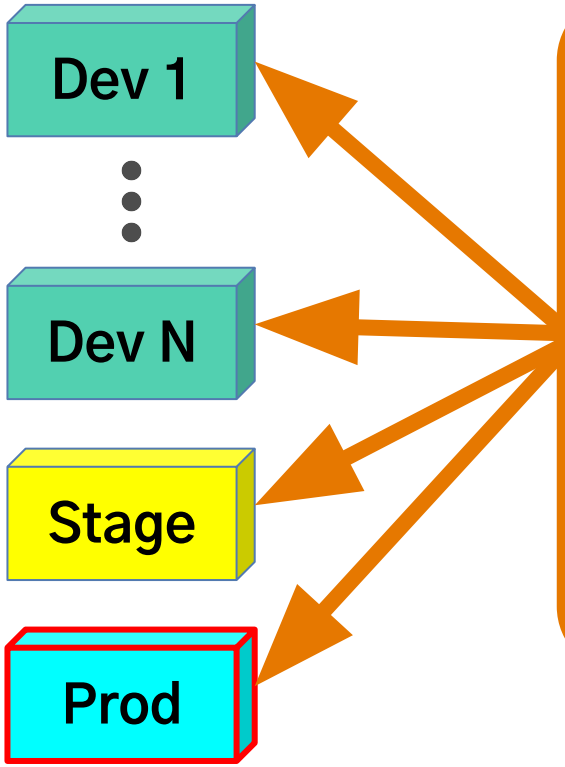
On-Demand-Environments for Prod DR ✅



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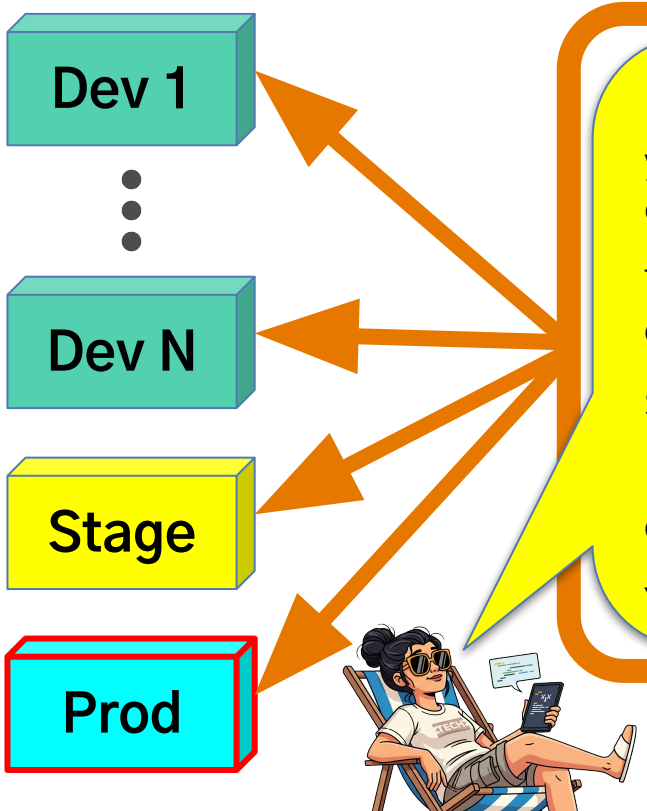
On-Demand-Environments = DR Automation



Dear All,

you might have noticed an outage. Unfortunately our **production** environment was killed by a **ransomware attack** yesterday evening.

Thanks to our solid preparation **we could spawn a new production environment in 1h and restore all our data in the following 4h** 💪.

So now we are **back in business and all is good** 🎉🥳🎉.

Please check your applications for external data consistency after the **outage of 6h**.

Your Platform Engineering team

Some Personal Materials

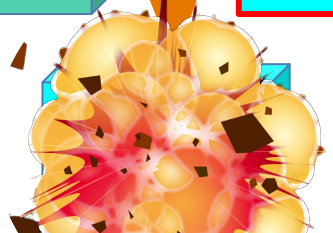
- Relax and Recover (ReaR) Open Source Project (since 2006),
  Automated Linux Disaster Recovery (Video stackconf 2024)
- “easyVCB” Open Source Project, VMware “No Restore Solution” (2008),
  now “VMware Live Recovery” & “Veeam Recovery Orchestration”
- Mission Impossible: Complete Disaster Recovery for Google Workspace
  (Research, Article, Video 2022)
- DevOps Risk Mitigation – Test Driven Infrastructure
  (Video euroPython 2014)
- GitHub Backup App: github.com/schlomo/github-backup-app
- Backup and Disaster Recovery: Business as Usual or What Needs to Change Now?
  (Video DevOpsCon 2025)

Backup & Disaster Recovery:

The Potential Emergency as an Architecture Accelerator

Dev 1

Prod



1

On-Demand-Environments (ODE)

- Automate EVERYTHING
- Make Developers super happy
- Fix Architecture

2

Dev → Stage → Prod

- Migrate Dev, Stage & Prod onto new architecture based on ODEs
- Proven, reliable, fast disaster recovery
- Easily change major parts of architecture
- Easily migrate to new (Cloud) platforms

Q&A — How may I help you?

tkt.dev/schlomo

We are not consultants. We are Partners, Coaches, Humans, Enablers, Catalysts, Sparring Partners, Experts … and sometimes a little annoying.

I focus on **IT strategy**, IT governance, technology and architecture management, security and compliance automation, related organisational changes, business continuity, open source and cloud technologies – and I'm available as a Principal Engineer or Technical Product Owner for short-term / interim support.

Examples:

- **Business-IT alignment & leveraging**, developing required skills and abilities for 21st century IT, leverage AI
- **SaaS compliance & governance**, data possession vs. ownership, IAM, integrations, backup & DR, shadow IT
- **Compliance Automation**, finding the "golden path" to a "golden state" via **Platform Engineering**
- **Secrets Management** for Datacenter, Cloud Infrastructure, IaaS/PaaS/SaaS
- **Open Source**, from usage to contribution, writing policies, using SBOM, establishing Open Source Stewardship
- **Good Engineering Practices**, GitOps, test driven development, good architecture decisions, known tech strategy
- **Business Continuity and Disaster Recovery** for office, Cloud infrastructure, data center & SaaS, with quality assurance, emergency communication & collaboration, hot & cold standby, no-restore solution, ransomware protection, Linux Disaster Recovery / Bare Metal Restore with "Relax and Recover (rear)" Open Source tooling

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