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The Worst Case

Recovery zum Anfassen –
statt PowerPoint, Papier und Panik
bei Cyberangriff

Azure **E**mergency **R**esponse **E**nvironments

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Florian Stöckl

— **Azure Lead**

— Florian.Stoeckl@glueckkanja.com

… / florianstoeckl

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Ransomware

[ˈɹɛnsəmwɛːɐ̯]

Ransomware is a type of malware from cryptovirology that threatens to publish the victim's personal data or permanently block access to it unless a ransom is paid off.

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Sophisticated Attacks vs. Reality

Reality Check

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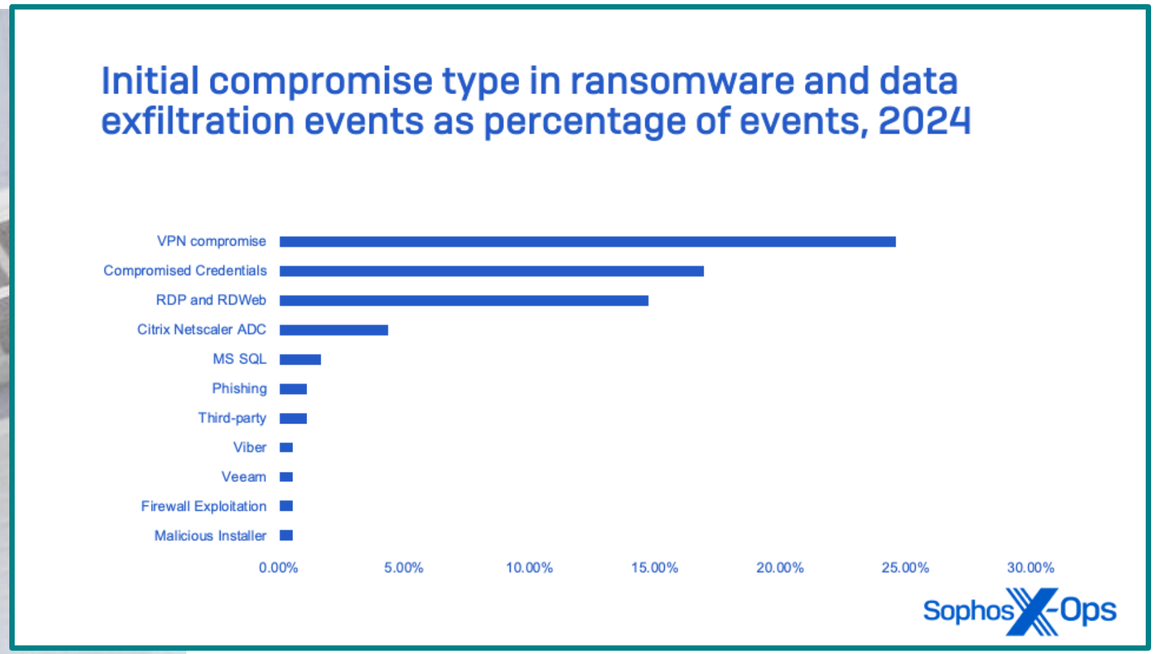
Sophisticated Attacks vs. Reality

Reality Check



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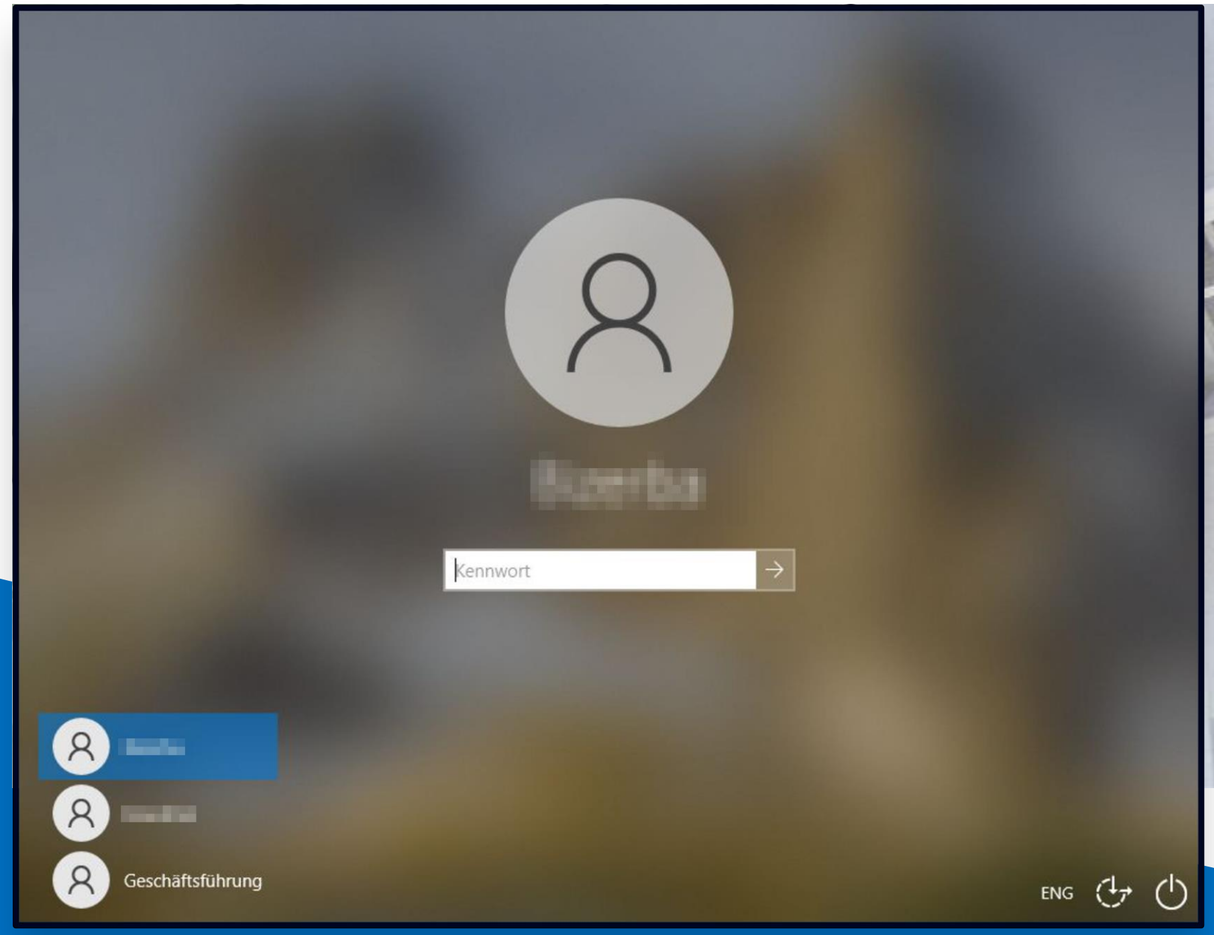
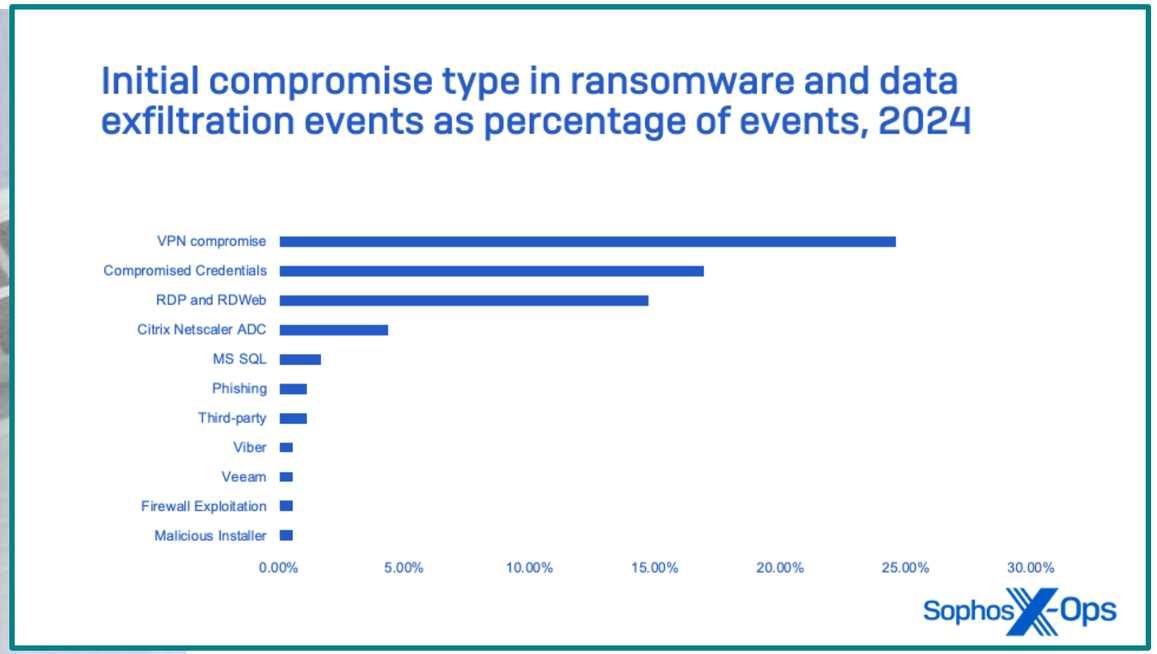
Sophisticated Attacks vs. Reality

Reality Check





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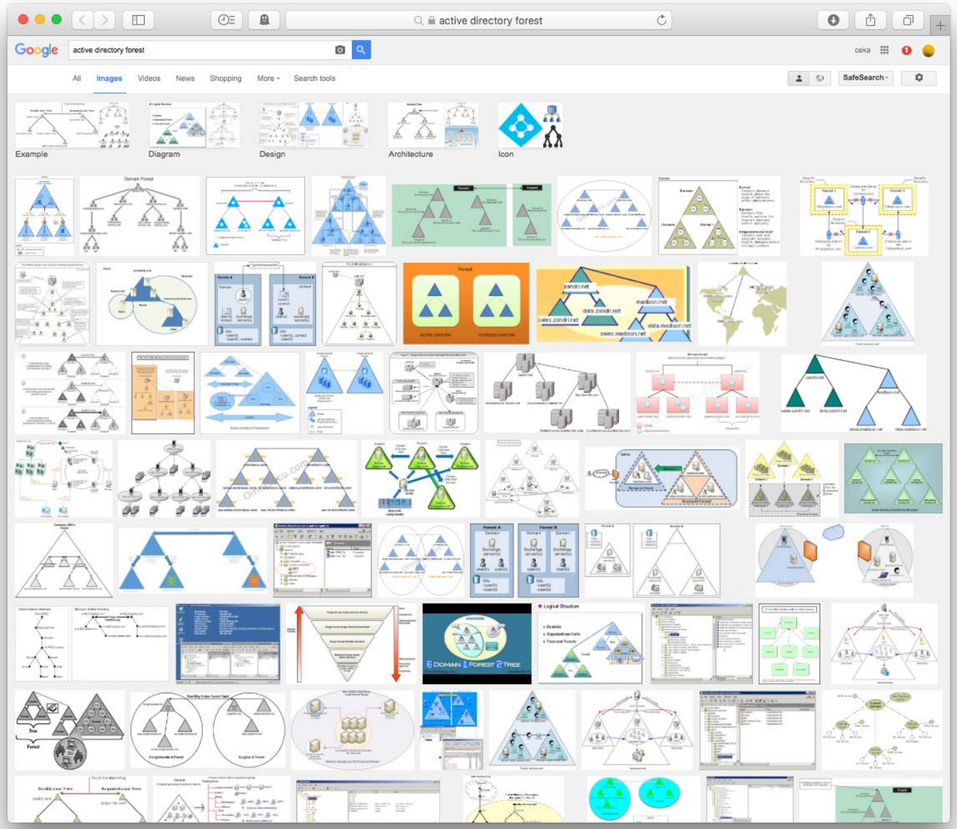
30 Years of Identity: Active Directory



- Initially not developed for Cloud and “Zero-Trust”
- 1001 configuration possibilities
- Historical grown setups: OUs, Trusts, Delegations, Service Principals, ….
- One of the most popular “lateral movement tools”

Surprises @ work

~~0010 SYSTEM FAILURE 0010~~

****

Attention! Your documents, photos, databases, and other important files have been encrypted!

****

The only way to decrypt your files, is to buy the private key from us.

You can decrypt one of your files for free, as a proof that we have the method to decrypt the rest of your data.

In order to receive the private key contact us via email:
getmyfilesback@airmail.cc

CODE:

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Remember to hurry up, as your email address may not be avaliable for very long.
Buying the key immediatly will guarantee that 100% of your files will be restored.

Below you will see a big base64 blob, you will need to email us and copy this blob to us.
you can click on it, and it will be copied into the clipboard.

If you have troubles copying it, just send us the file you are currently reading, as an attachment.

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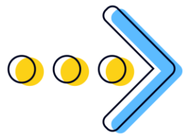
Base64:

uALejkvaX3X1Ywp+Humm7Kz8PyOAgQCFphYLHRMybD600e8Hhn2PZwK2lgAh38jp2PQ/dJFPN6IyDefNk6MTTUZxqWekru0YYSCELyn18FlKrJYt3y0NdkFt57qIlUaI0AQ33EuQAEDfQM8adxRwE1rYNrmM2e/WfaP3NiT31IKeVPe7KZcwA2JqkhYQV7J

Experiences from the field

Digital Communication
is broken

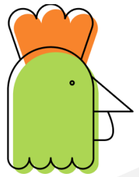


Identities are starting point for restore
Domain Controller is the foundation
for most (legacy) application

Missing trust in existing
infrastructure

External parties delaying restore

Greenfield for AD Domain
is almost impossible



Processes are not in place, time is
running away

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Experiences from the field

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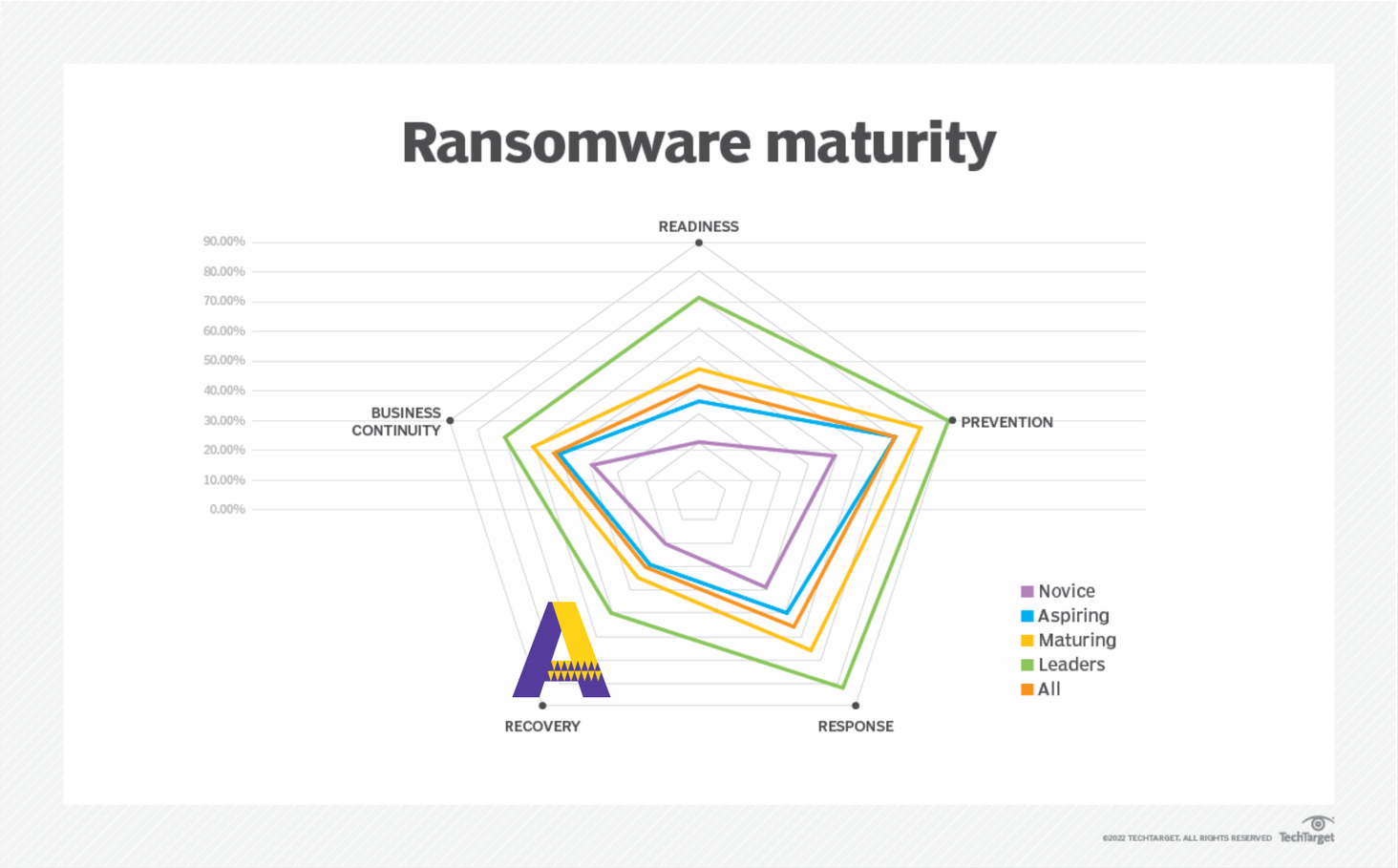
Experiences from the field



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The Idea of a Minimum Viable Company (MVC)

The Minimum Viable Company is not about doing less – it's about doing what matters most.

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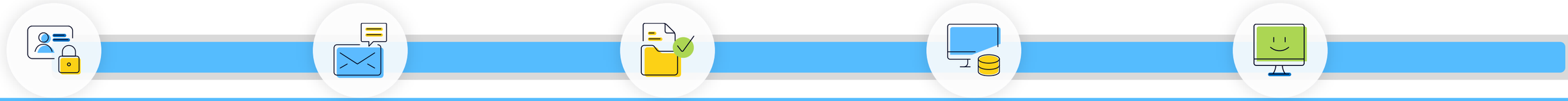
Minimum Viable Company Recovery – From Incident to Operability

PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
0-4 hours	0-1 days	2-4 days	5-7 days	2-4 weeks



MVC Core Process

Access & Control

- Activate Break-Glass accounts
- Disable compromised user identities
- Isolate affected devices or systems
- Begin incident documentation

Communication Channels

- Restore email access
- enable internal communications (Teams, mobile)
- Inform key stakeholders and partners

Minimal Business Continuity

- Access key operational documents, customer and project data
- Support critical business operations manually

Service Readiness

- Bring essential business applications back online
- Restore access to ERP, CRM, and key SaaS platforms
- Reconnect EDI integrations or partner APIs

Full Restoration

- Resume full operations, including finance, HR, and logistics systems
- Restore CI/CD pipelines, monitoring, and reporting platforms
- Conduct forensic review and implement long-term security improvements

AzERE

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Introducing AzERE

Azure **E**mergency **R**esponse **E**nvironments

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Goals of AzERE

Design a solution that protects critical business services and withstands a **successful** ransomware attack.

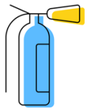
Critical business services consists of

- Active Directory
- Identities
- Critical documents and data
- Optional: A defined set of critical business applications

An automated process to provide a collaboration platform to a subset of users within the first hours after the attack.

Deploy scalable and secured Virtual Desktop Infrastructure

After a successful ransomware attack, the RTO for the most critical services should be only a few hours



Strong focus on REGULAR fire testing

The environment is built with 100% DevOps including Infrastructure as Code with terraform.

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Non-goals of AzERE

The solution is **not a backup replacement**.

This solution is **not a complete business continuity** and disaster recovery (BCDR) strategy. AzERE can be a part of your BCDR strategy to quickly recover from a successful ransomware attack.

In case of disaster AzERE will **not replace your production environments**. It is a temporary environment to support the restore process of your production environments.

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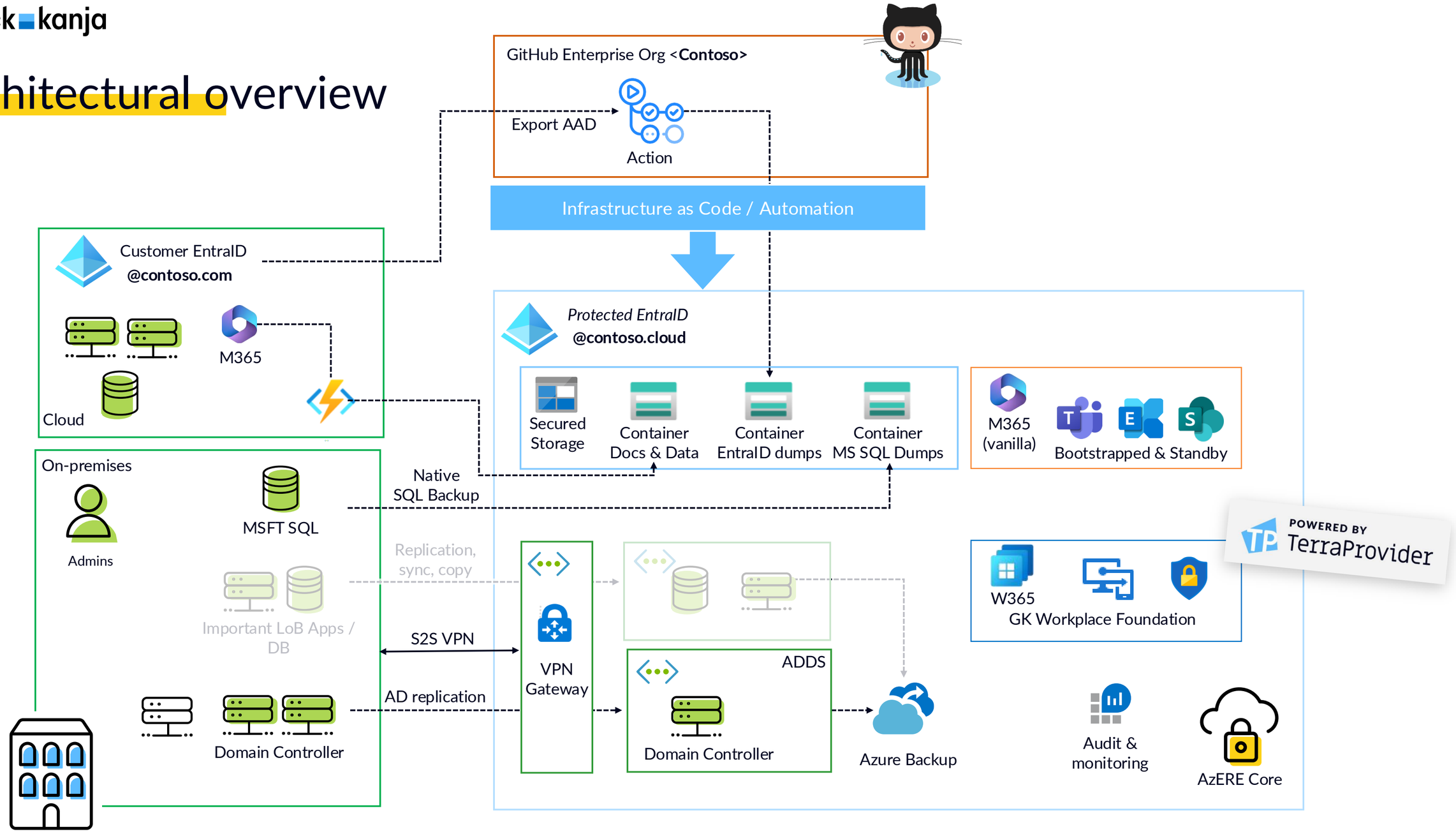
Architectural overview



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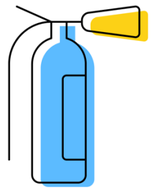
AzERE Services by glueckkanja



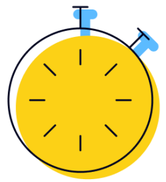
Monthly Fire-Drilling and Emergency Testing

Keep AzERE up-to-date with platform changes (M365 & Azure updates)

Ongoing Development of new AzERE features

24/7 On-call Hotline for Emergency Activation (technical)

24/7 Manager On Duty (organizational)



Fasttrack to APT response services

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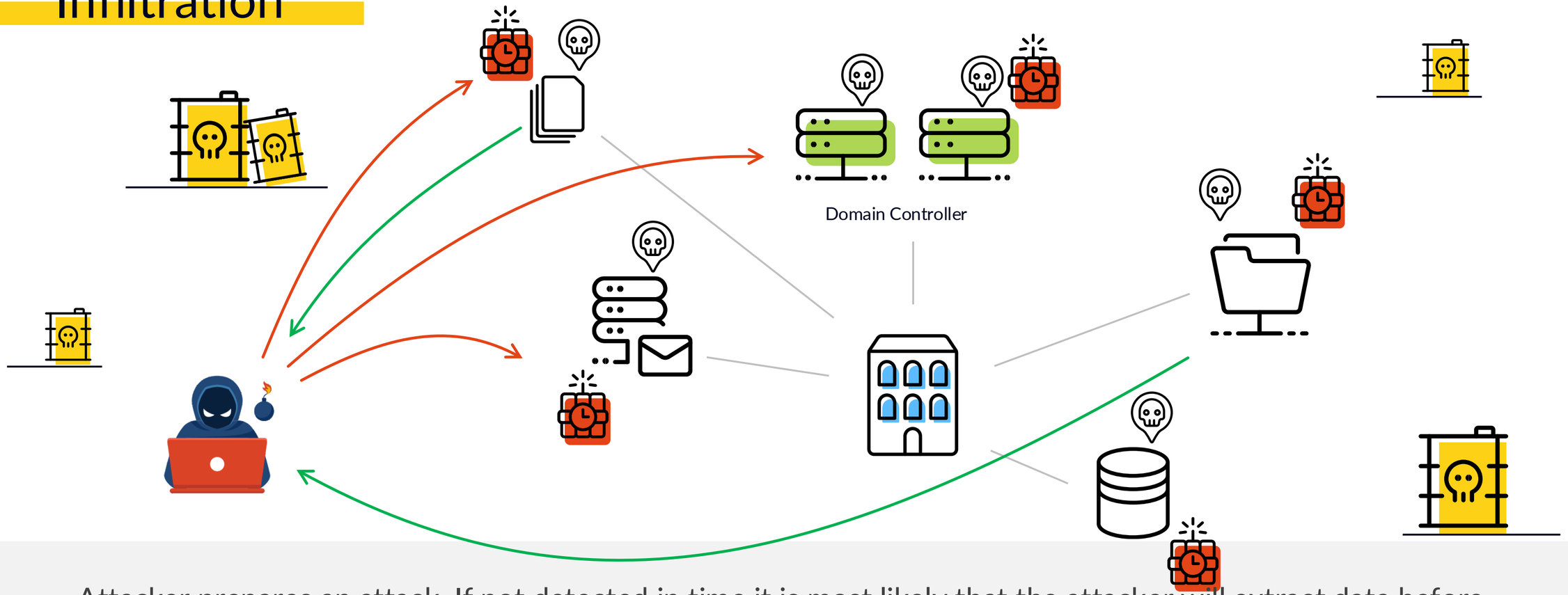
Infiltration



– Attacker prepares an attack. If not detected in time it is most likely that the attacker will extract data before encrypting as much systems as possible

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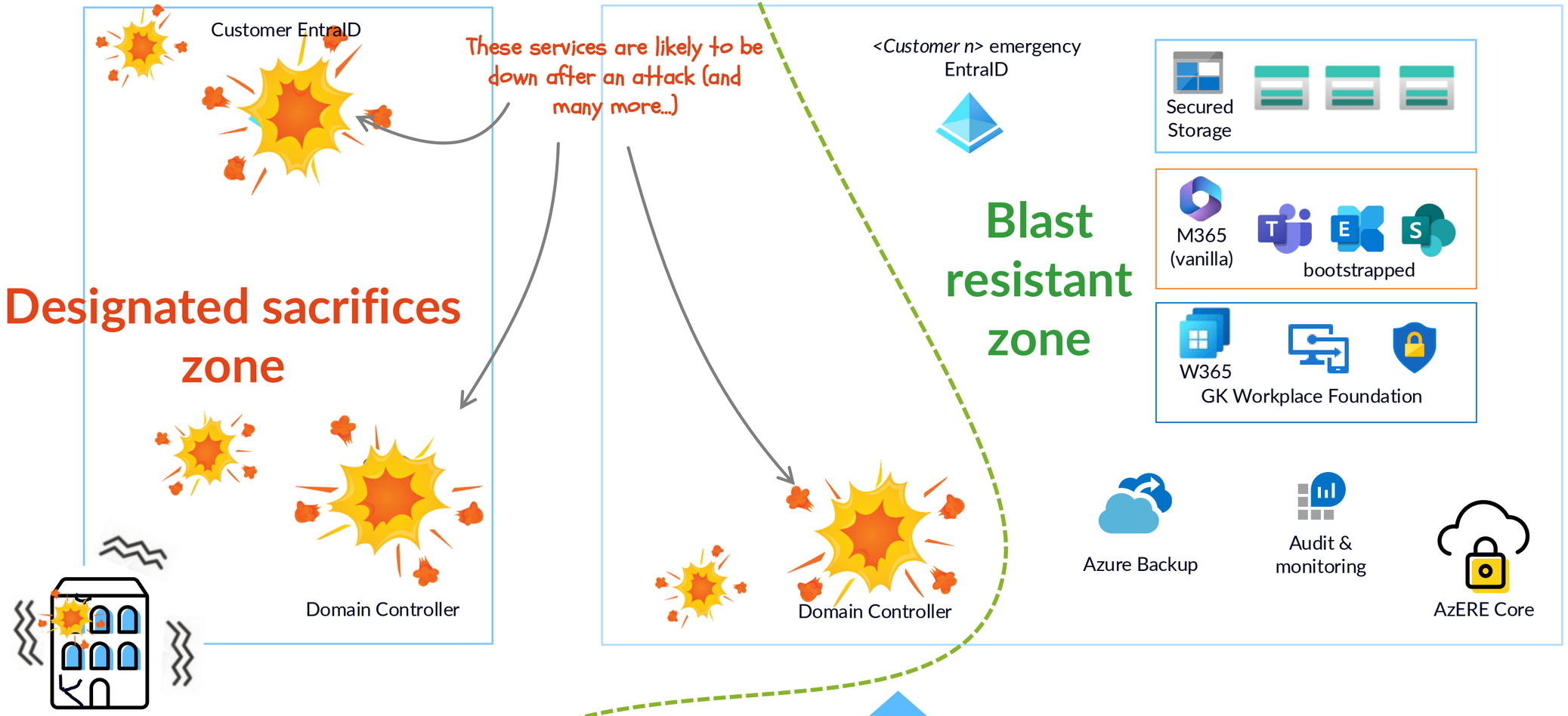
The successful attack



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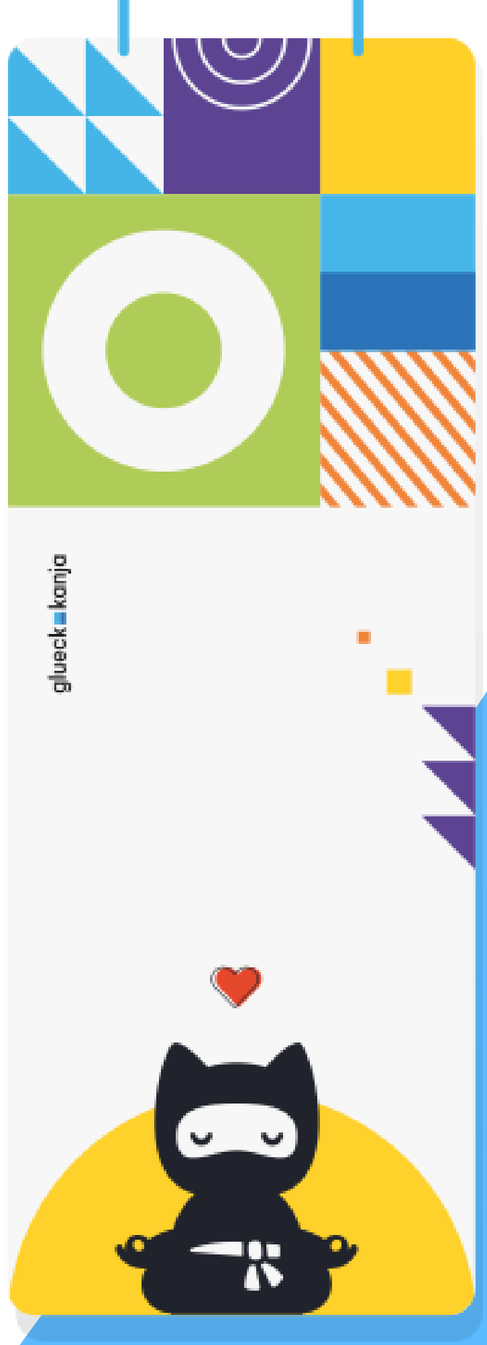
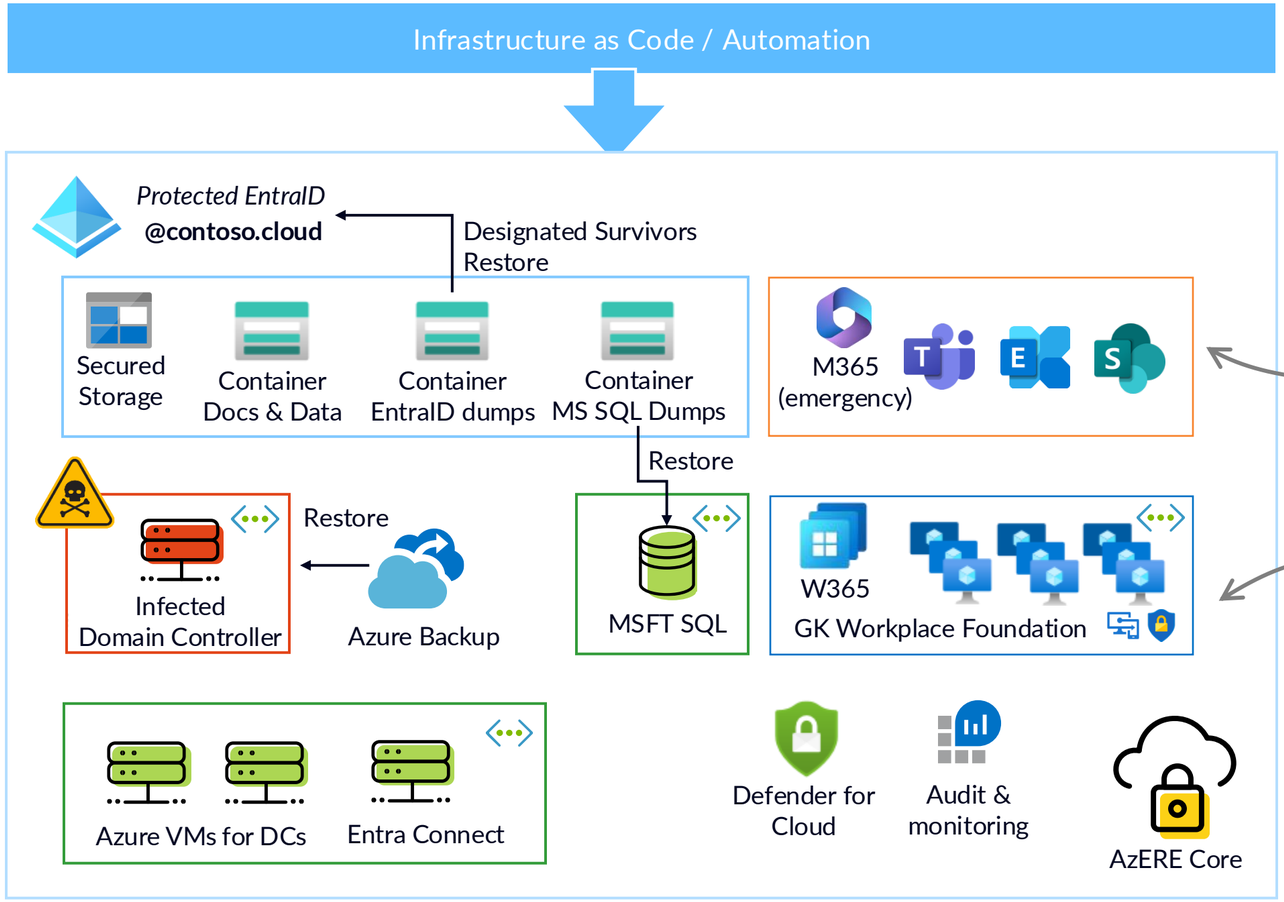
The ZenMat

YES, TAKE ME WITH YOU.



Emergency Response Activation

Ground Zero – First Response



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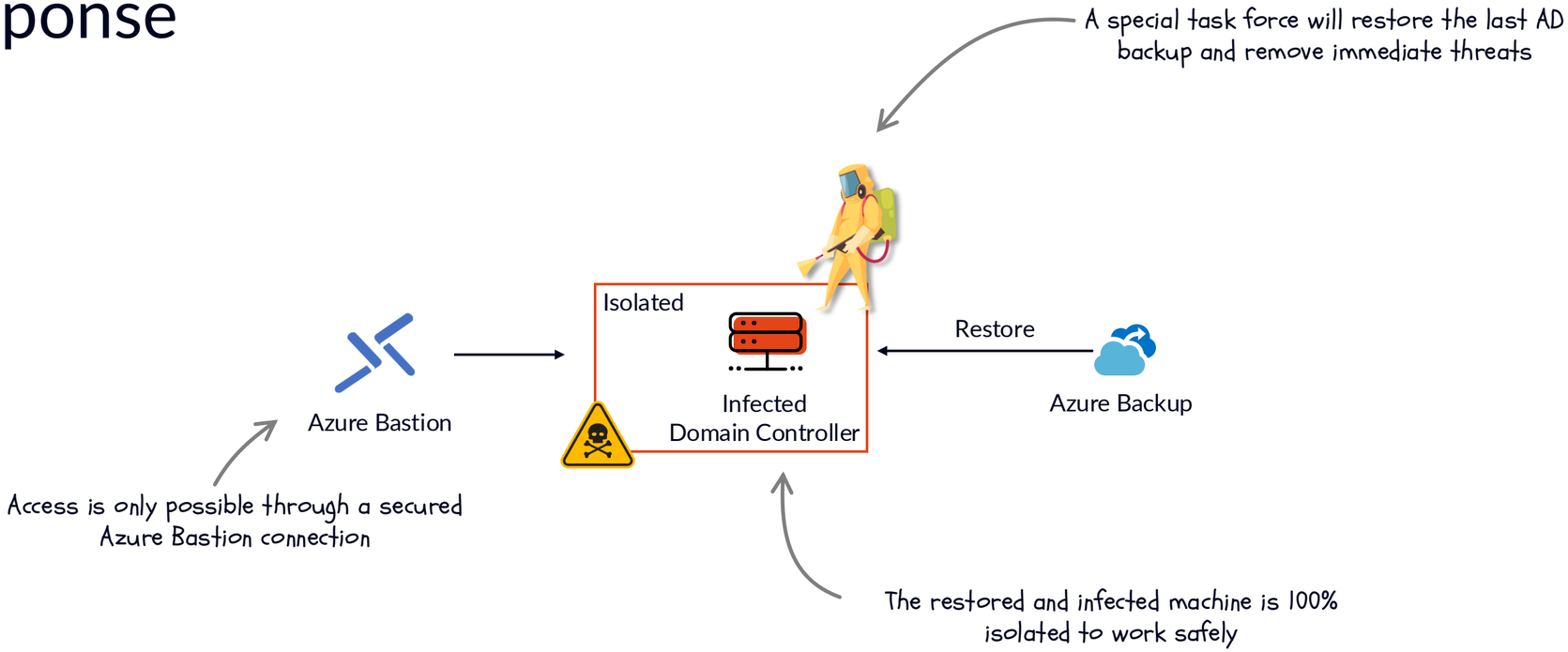
APT response



- Quick start, independent of customer systems. No need for customers Network/Server/Backup teams (and their consultants) to get alerted/up and running again
- Customer provides (BreakGlass)Admin credentials

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The AD cleaning details

APT Playbook

Secrets

Certificates

Group Policies

Other attacker persistence

Toolchain

Forensic scanner tool

Antivirus and Behavior scanning

AD config/hardening scan

- Generic FullForest Recovery first (seize FSMO, remove all other DCs, ...)
- Renew all credentials
- Use tools for Forensic, AV, Hardening
- Check modified configs for persistence

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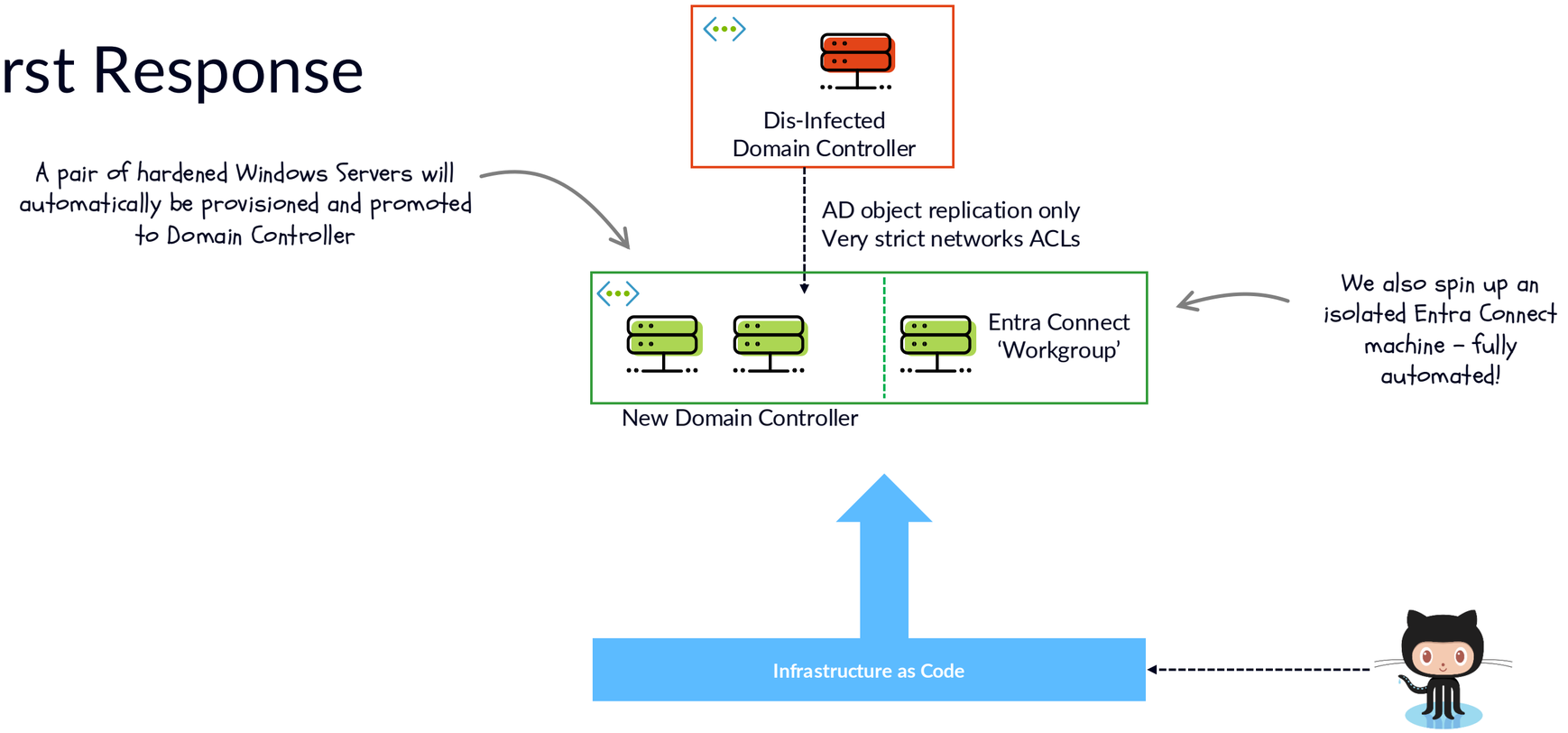
First Response



- A second resource group is created to hold cleaned resources for the rebuild process.
- Two new Windows Servers are created and automatically prepared to get promoted for the ADDS role
- A third server in a dedicated subnet is created and prepared for a fresh Entra Connect instance.
- After successful DC promotion the „disinfected“ Domain Controller will be deleted.

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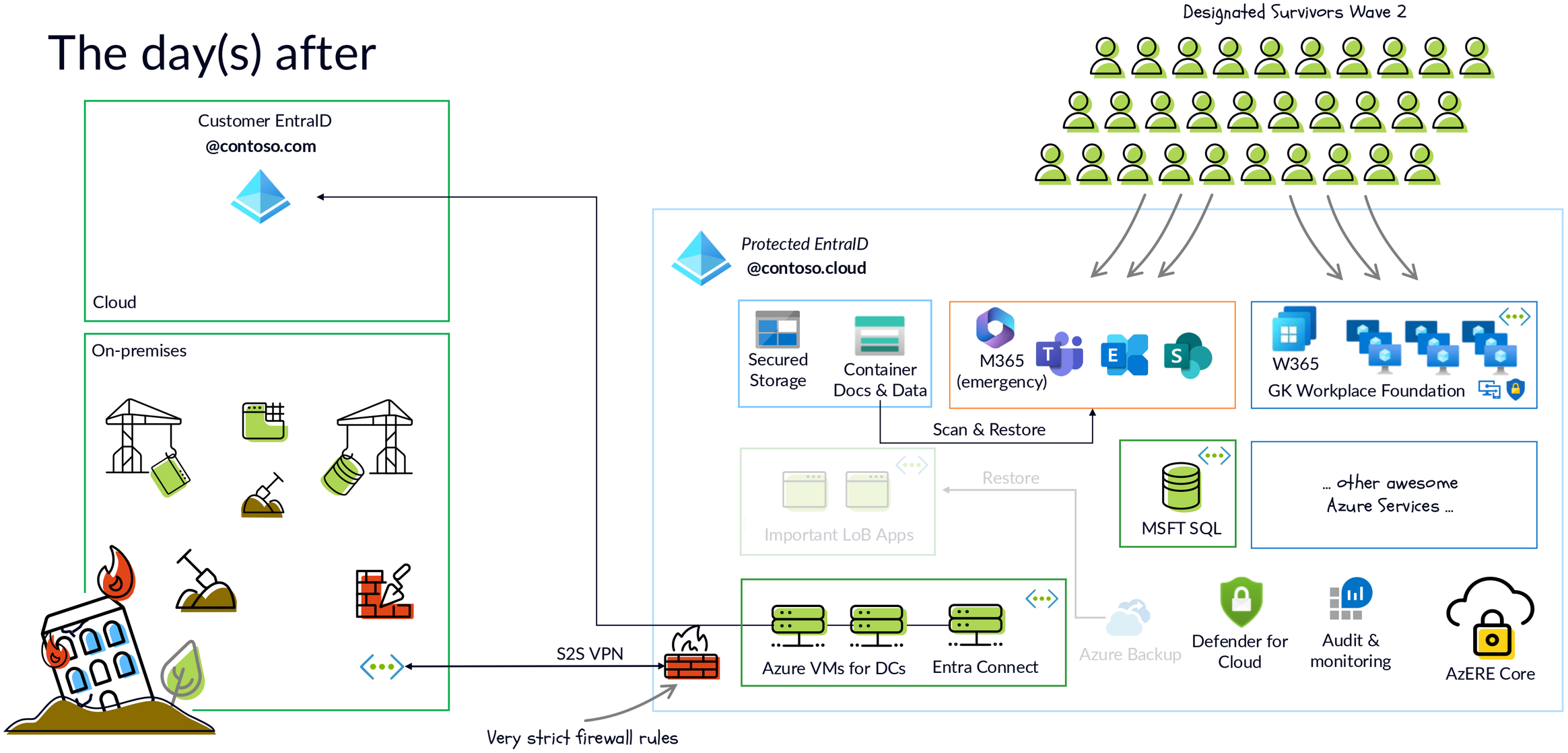
The day(s) after



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Dandy Bräunlich

— **Bereichsleitung IT der igefa**

— dandy.braeunlich@igefa.de

… / dandybraeunlich

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Thank you!

“Prediction is very difficult, especially if it's about the future.”

– Nils Bohr, Nobel Prize in Physics

With

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