HOST BASED IOC VALIDATION

An approach for large networks without an enterprise solution in place

26.01.2016 - Christoph Giese

Deutsche Telekom CDC/CERT

ERLEBEN, WAS VERBINDET.

AGENDA

1. Use Case
2. Requirements: (Agentless) Host Based IoC Validation
3. Development
4. Rollout (e.g. using McAfee ePO) & Data analysis
5. Further steps
6. Summary

USE CASE

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USE CASE
IOC-CHECKS IN DTAG

SPAM E-MAILS | BINARY DATA | TEXT DATA | SHARING

ANALYSIS

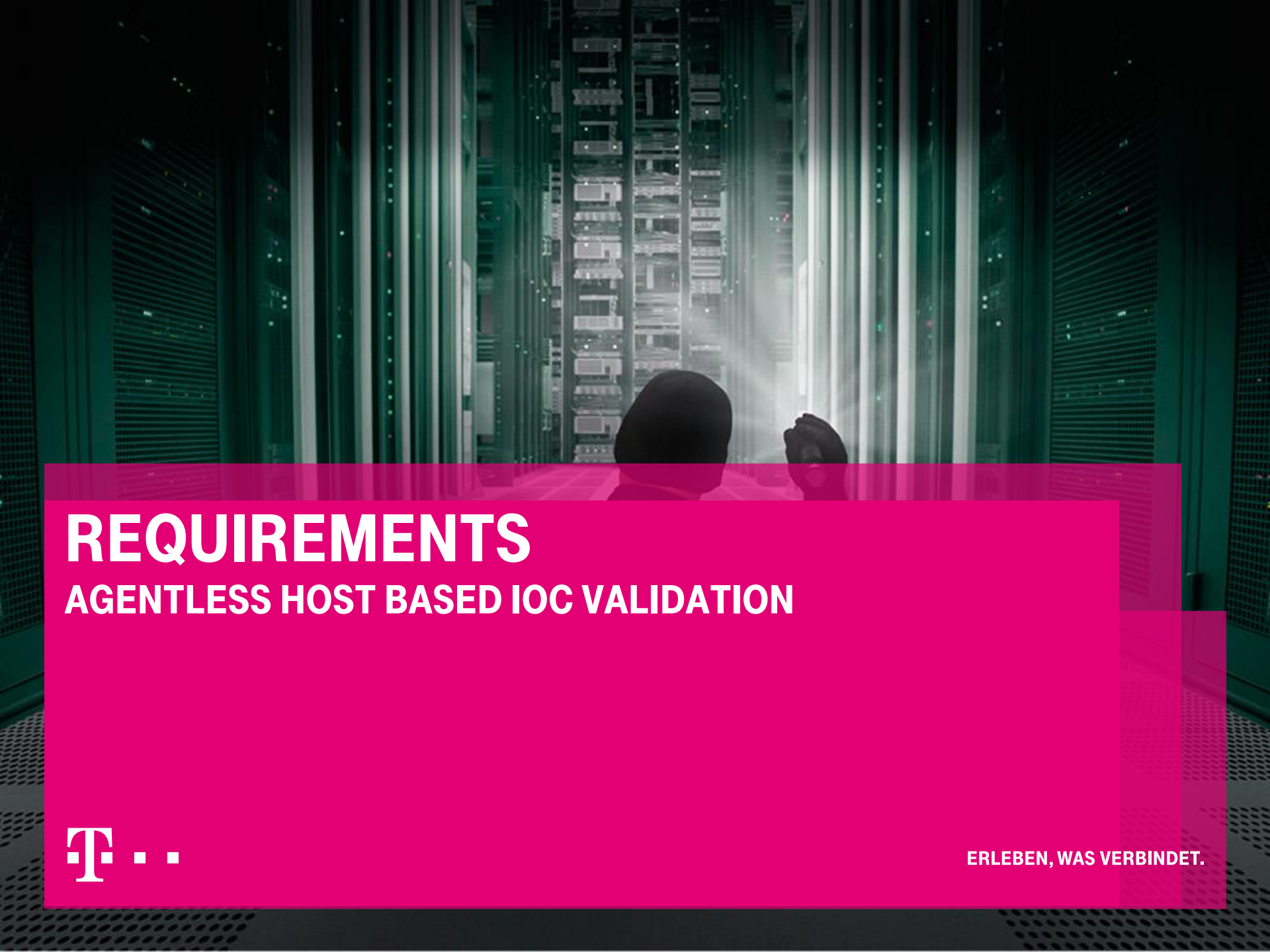
RESULTS: INDICATORS OF COMPROMISE

IPs, FQDNs, Substrings, MD5s, Filenames, Pathinformation,
Registry-Values, Handles, Mutexes, Hooks, (Hidden-) Processes
→ Combinations

IOC-DATABASE

DNS-SERVER	PROXY-SERVER	ID/PS
FIREWALL	FIREEYE	AV

WORKSTATIONS 150K+
SERVER 60K



REQUIREMENTS

AGENTLESS HOST BASED IOC VALIDATION

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REQUIREMENTS

NECESSARY FUNCTIONALITY & OPTIONAL FEATURES

LIVE IOC-SCANNING, REMOTE FORENSICS

- IoC-Types (Strings, Hashes, Parsing binary data, IPs, FQDN, Registry-Values ...)
- Import interfaces (OpenIOC, STIX/CyBox, YARA...)
- Scheduling (Scanning in predefined timeframes, periodically saving files for diffs)
- Status of Collection (System reachable, not reachable, continuously not reachable)

LIVE DATA-ACQUISITION, REMOTE FORENSICS

- General system information (Hostname, HDD, Memory, processes, patches, SW)
- Forensic-Triage
- Full/Selected dump of files, registry hives, RAM
- “Rule based” data acquisition

PORTABLE USAGE

- Fast IoC checks in different networks
- No external dependencies needed
- No installation required
- Multiple operating systems (Windows first)

(OTHER THINGS WITH NO SPECIAL TITLE)

- Privacy / Workers council (approval process, pseudonymization, four-eyes principle)
- Allows execution of self-developed scripts on target system
- Interfaces to existing products (SIEM, FireEye-NX)

DEVELOPMENT

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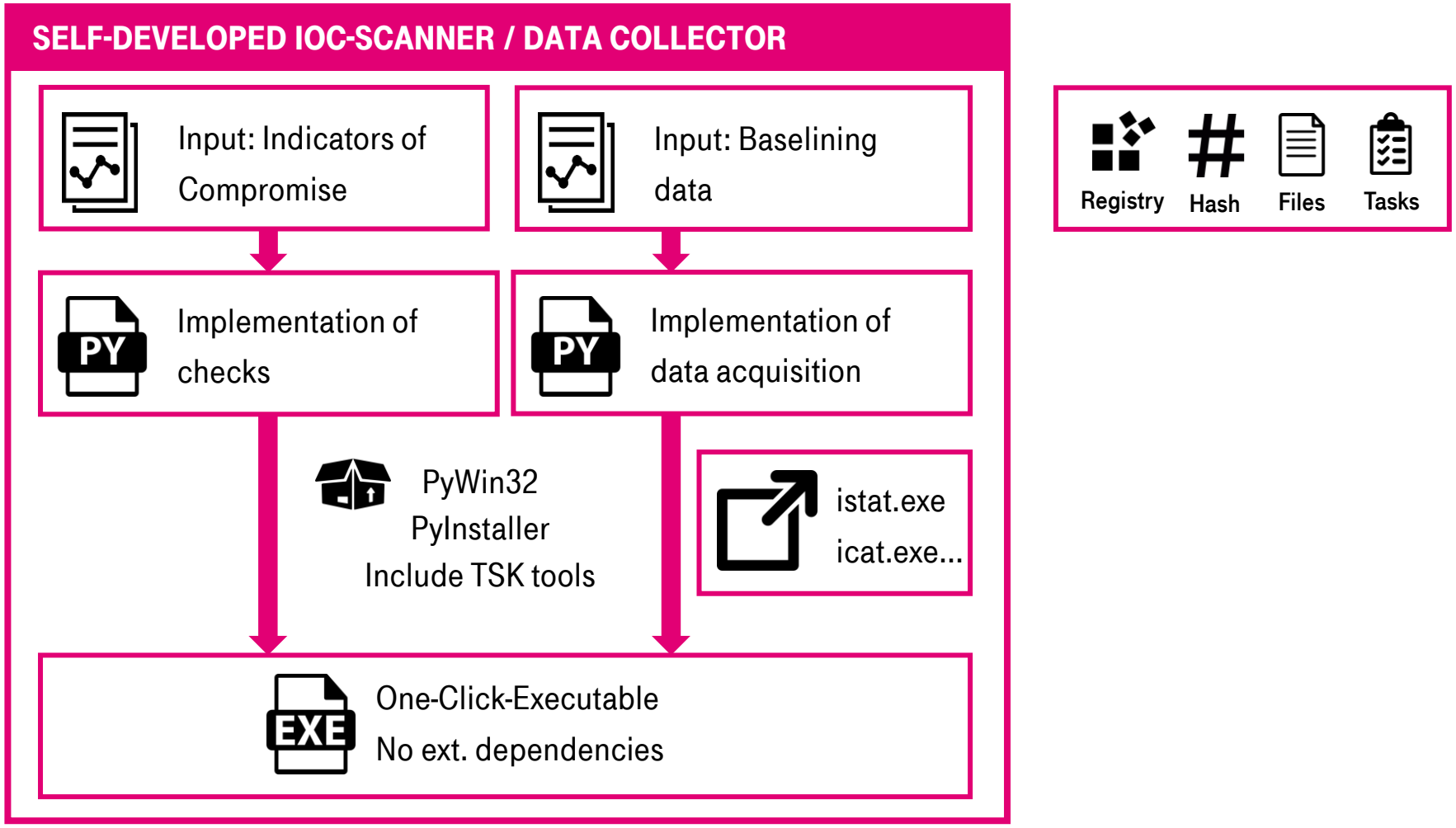
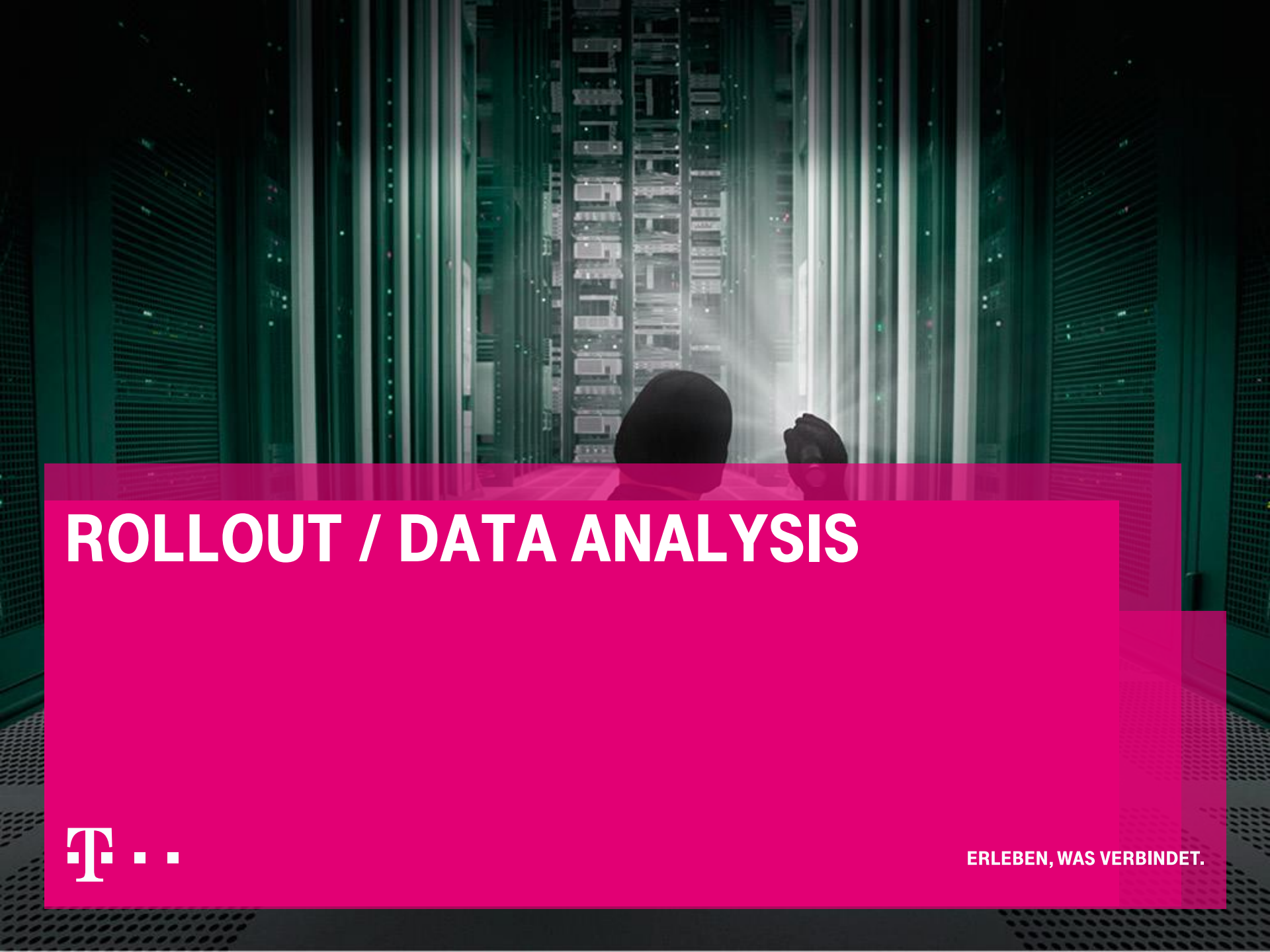
DEVELOPMENT

SELF-DEVELOPED IOC-CHECKERS / DATA COLLECTORS





ROLLOUT / DATA ANALYSIS

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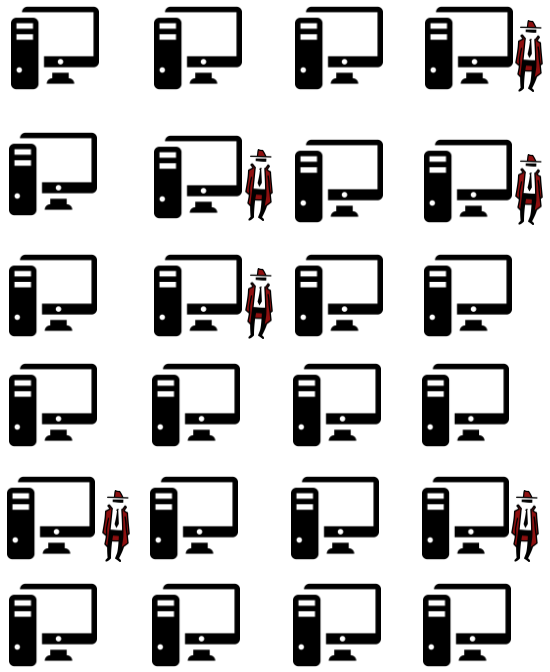
ROLLOUT
EXAMPLE USING MCAFEE EPO

Host Based IoC Validator
Modul usage
Modul development

TEST & DEPLOYMENT
McAfee EPO

OFFICE NETWORK



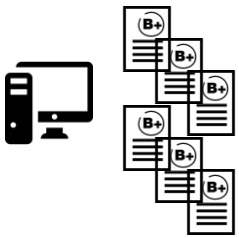
RESULT COLLECTION
Dropzone (SMB, SFTP, ...)

Analysis
1. Follow up alerts on IoCs
2. Analysis of baseling data

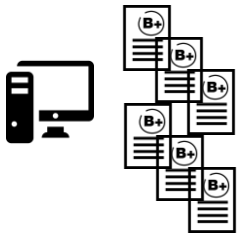
DATA ANALYSIS
USING POSTGRESQL

DROPING ZONE (SMB/SFTP)

RESULTS HOST A



RESULTS HOST B



IMPORT

DATABASE

Alert on IoC-Match

Least existing
Registry-Run-Keys

Least existing
Scheduled Tasks

...

FURTHER STEPS

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FURTHER STEPS

IDENTIFY NEW VEHICLES (ROLLOUT)

- NatCos (european partners)
- Server scans (Auditserver)
- Other (sub-) networks in DTAG / T-Systems

STANDARDIZED INPUT/OUTPUT FORMAT

STIX™

DATA ANALYSIS

- Development of further use cases

FEATURE DEVELOPMENT

Process

Removed pictures

Mutex

Dump

Custom

Removed pictures

Yara-Rule

THANK YOU! QUESTIONS?

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CREDITS / LICENCE

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