Live Correlation of Threat Intelligence with Historical Data

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Outline

1. **Complex Attacks:** the Need for SOCs
2. **Network Forensics:** Retrospective Analysis
3. **Threat Intelligence:** Managing Security Knowledge
4. **Live Correlation:** Adding Value through Automation

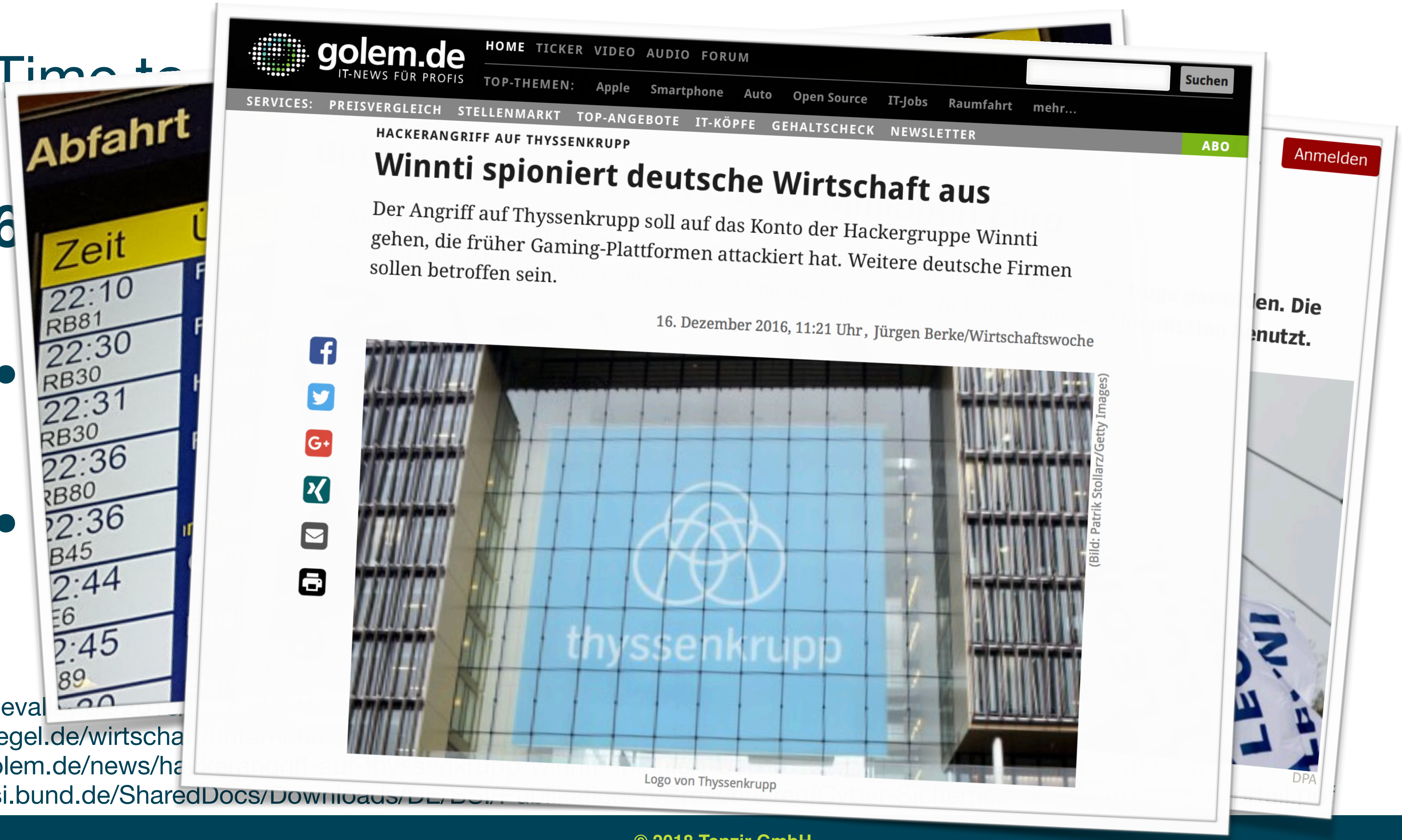
Complex Attacks

The Need for SOCs

Complex Attacks

aka. Advanced Persistent Threats (APTs)

- Ransomware, financial fraud, cyber espionage
- Time to
- 6



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HACKERANGRIFF AUF THYSSENKRUPP

Winnti spioniert deutsche Wirtschaft aus

Der Angriff auf Thyssenkrupp soll auf das Konto der Hackergruppe Winnti gehen, die früher Gaming-Plattformen attackiert hat. Weitere deutsche Firmen sollen betroffen sein.

16. Dezember 2016, 11:21 Uhr, Jürgen Berke/Wirtschaftswoche

(Bild: Patrik Stollarz/Getty Images)

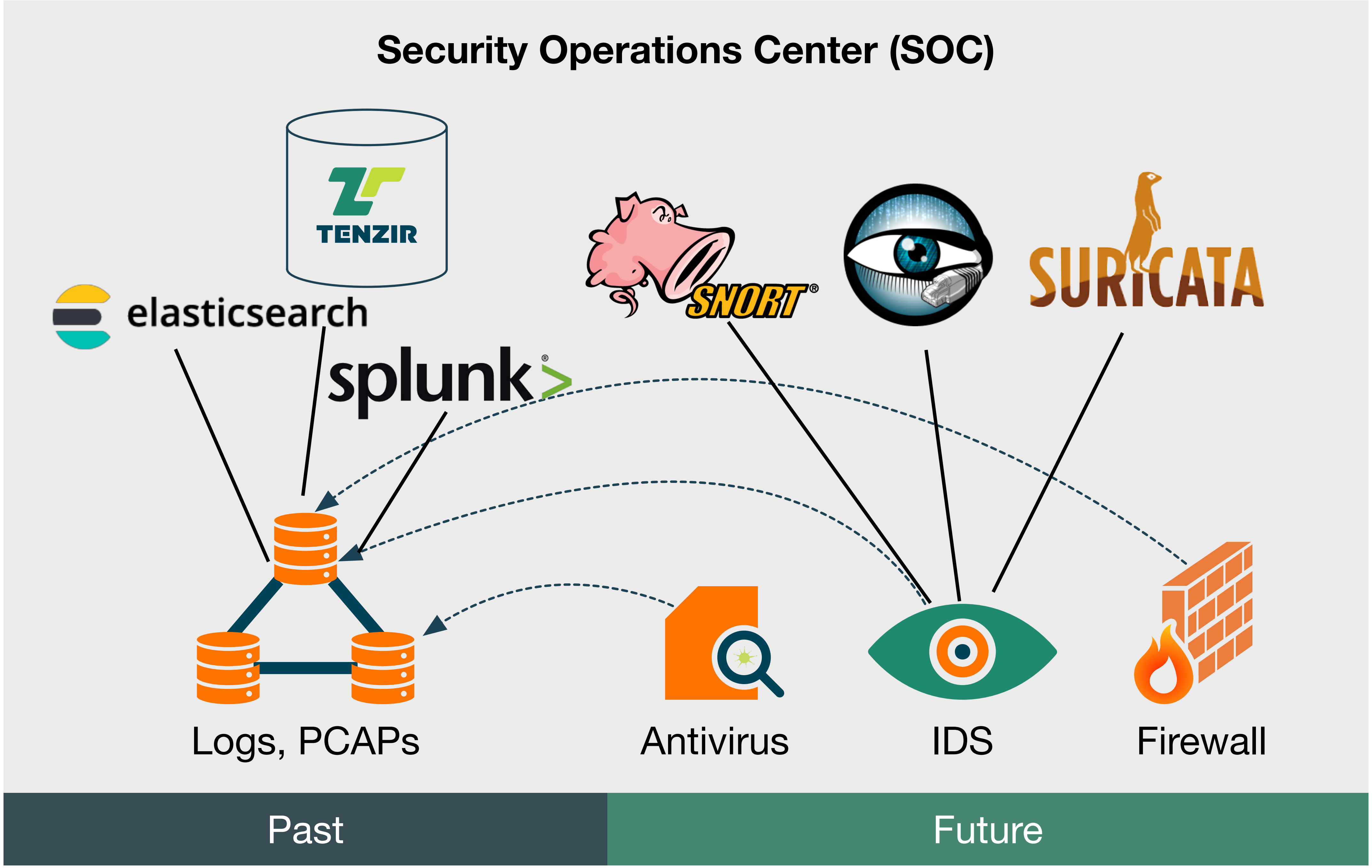
Logo von Thyssenkrupp

https://hh.hanseval
http://www.spiegel.de/wirtscha
https://www.golem.de/news/ha
https://www.bsi.bund.de/SharedDocs/Downloads/DE/BSI/

Infection Vectors

- Commonly
  - **Spear phishing**: personalized email with malware attachment (or link to it)
  - **Drive-by downloads**: visiting websites that install malware automatically
- Rarely
  - **Direct attack** by exploiting software vulnerabilities

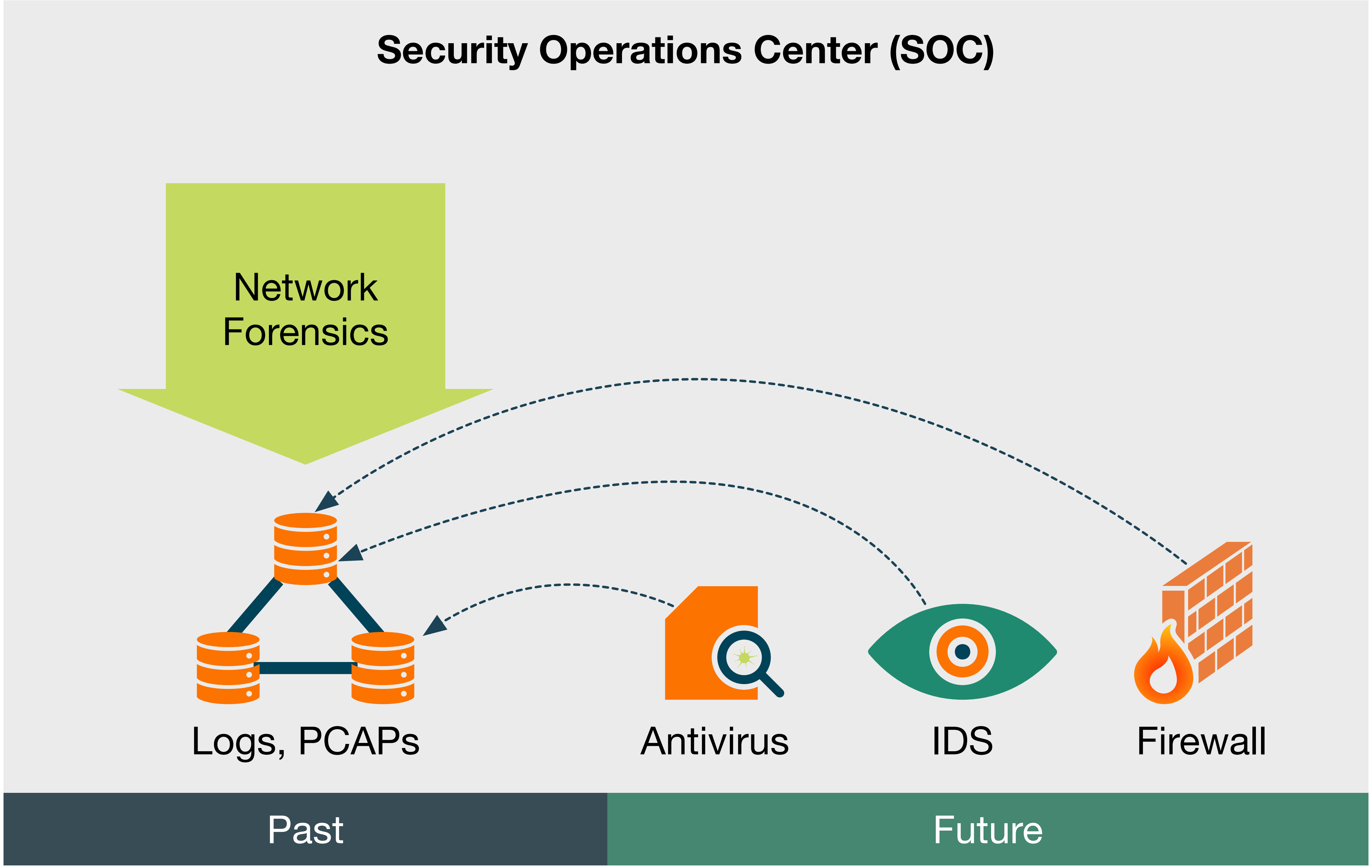
Building Blocks



Network Forensics

Retrospective Analysis

Building Blocks



Demo

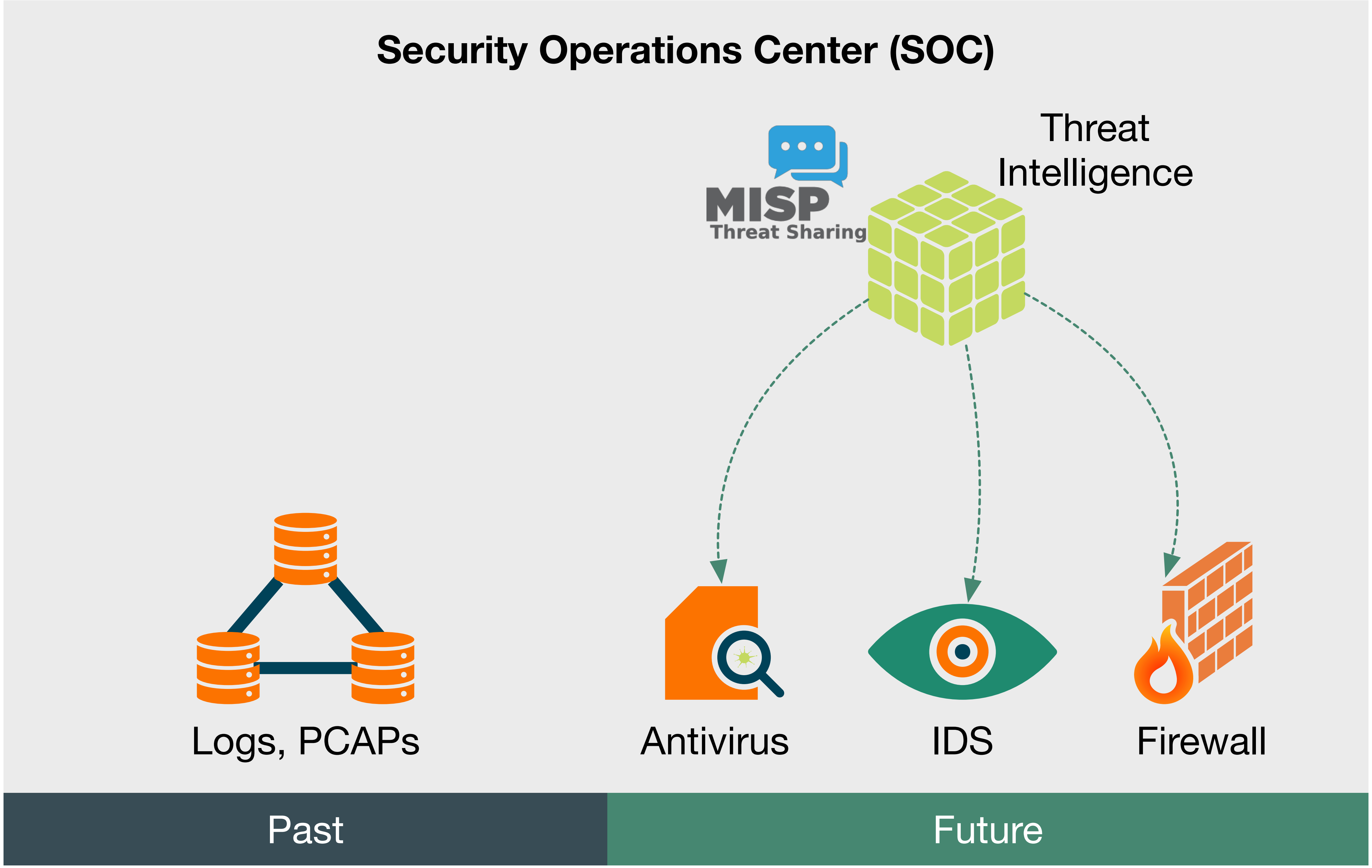
Threat Intelligence

Managing Security Knowledge

Threat Intelligence

- **Knowledge** about:
  - **Intention and capabilities of threat actors**
  - **Tactics, techniques, and procedures (TTPs)**
- **Goal:** improve decisions on risk and effects of threats
- Served as **feeds**: continuously updating **streams of data**
  - **Indicators of Compromise (IoC)**: attack evidence operators can look for

Building Blocks



MISP

Malware Information Sharing Platform

- Tool to **manage threat intelligence lifecycle**
- Enables **automated sharing** of data at fine granularity
- **Stores and correlates** indicators of compromise (IoCs)
- **Data model** to describe events, feeds, and threat actors
- **Import/export** supporting many tools and formats
- **API**: REST & Python

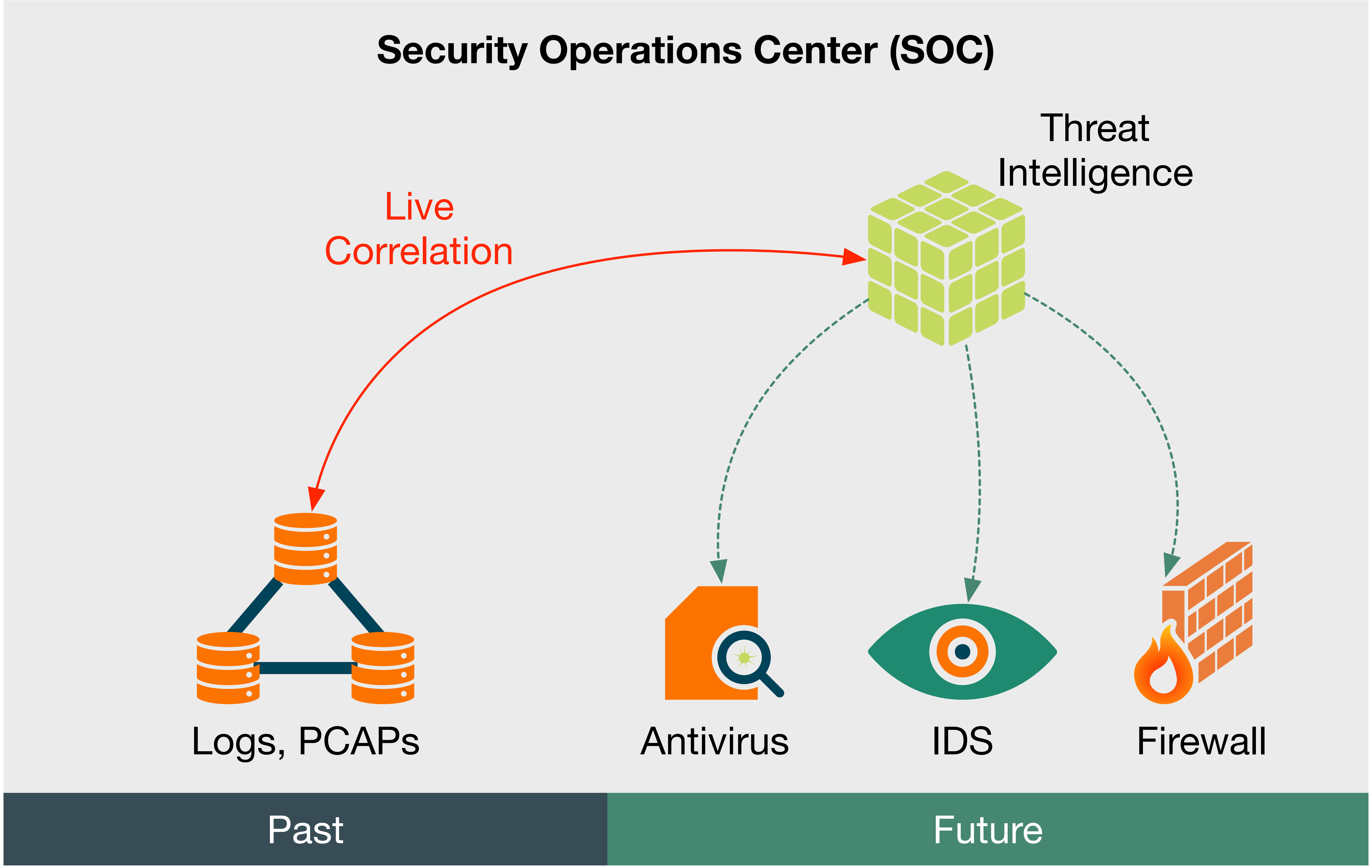
MISP
Threat Sharing

Demo

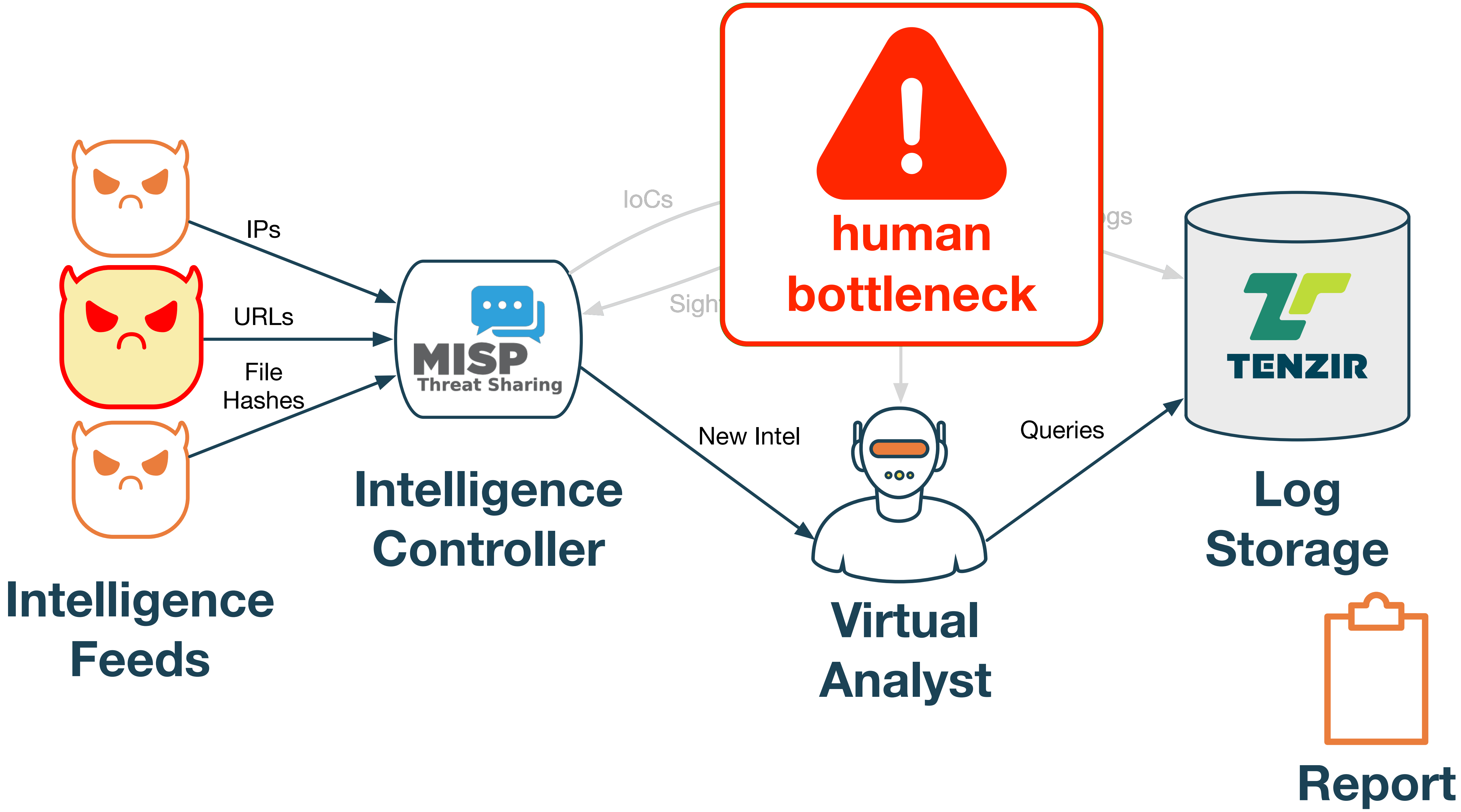
Live Correlation

Adding Value through Automation

Building Blocks



Workflow



human bottleneck

Intelligence Feeds

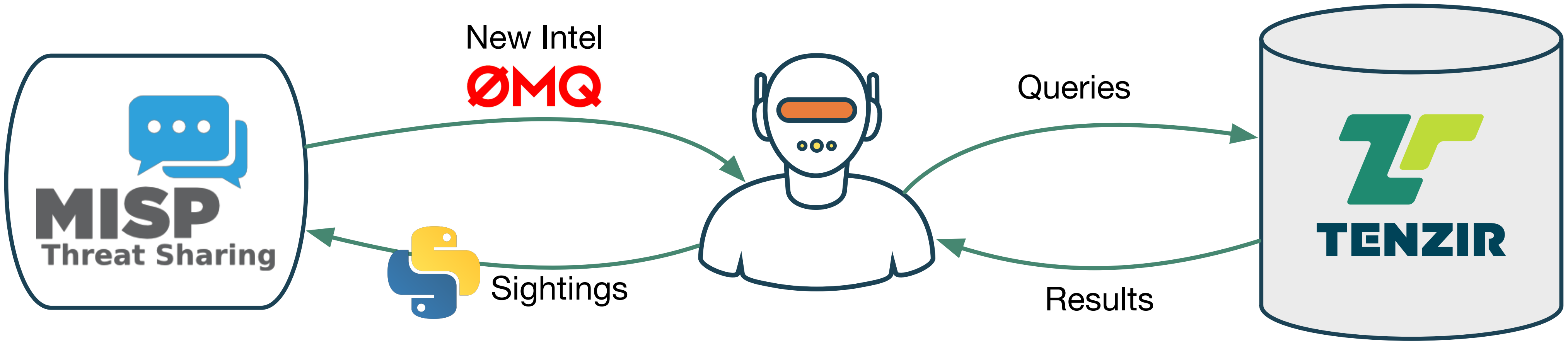
Intelligence Controller

Virtual Analyst

Log Storage

Report

Implementation



Demo

Conclusion

- **Complex attacks** manifest over long time periods

  ➡ **Network forensics** must be first-class citizen in analysis

- **Threat intelligence** is a key component of a modern SOC

  ➡ Today, integration primarily with **detection systems**

- Value in **automating historical intelligence correlation**

  ➡ **Less experts needed** in already understaffed SOC

  ➡ **Automated reporting** consumable by "normal" sys admins

  ➡ Enables **automated data processing** where no humans are allowed

Thanks for Listening!

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Backup Slides

Tenzir CORE

- Scalable **data plane** for network forensics
- Built on top of **open-source engine VAST**
- Features
  - **Interactive search** in typed query language
  - **Native support for Zeek & PCAP** import and export
  - Integration with **R, Python/Pandas, Spark***
- We are looking for alpha testers. Come talk to us!

*under development