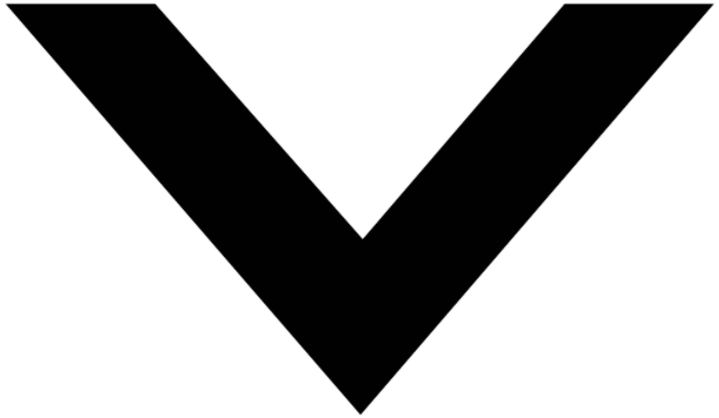

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SAP Situation Report

Q4 2019

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ABOUT US

*WE ARE **VICXER!***

- A company focused on securing the business-critical applications and its adjacent infrastructure (SAP, Oracle Siebel and others)
- All of our customers belong to the Fortune-500 Group
- We offer:

  Oracle & SAP Penetration Testing

  Cyber-Security Trainings

  Vulnerability Assessment and Management

  SAP Forensics & Many More!

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THE AGENDA

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CHAPTER 02

Global Results

CHAPTER 03

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Conclusions

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CHAPTER 01

INTRODUCTION

SAP Situation Report Q4 2019

INTRODUCTION

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Mark of Reference

- This situation report, focuses on understanding the Internet facing SAP systems, and how these systems align to the status of SAP cyber-security in the current global market.

- We have analyzed the **Internet** facing SAP **Netweaver** systems, by applying **passive** discovering techniques, that allowed us to not only discover SAP assets (we only focused on web application servers), but their corresponding versions. It is important to clarify that ***NO active probes were executed on any of the detected systems. The collected information was obtained, by just analyzing the systems' metadata.***

- After the culmination of the data collection phase, our consultants compared the obtained SAP versions against a comprehensive set of SAP vulnerabilities (*disclosed by **SAP**, by **external** security researchers like **Vicxer** and private / semi-private vulnerabilities*)

- The **results** of this study will be divided in two, one section will contain the **worldwide** results, while the other, will outline the results per **continent**.

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CHAPTER 02

GLOBAL RESULTS

Discovering Internet Facing SAP Systems

GLOBAL RESULTS

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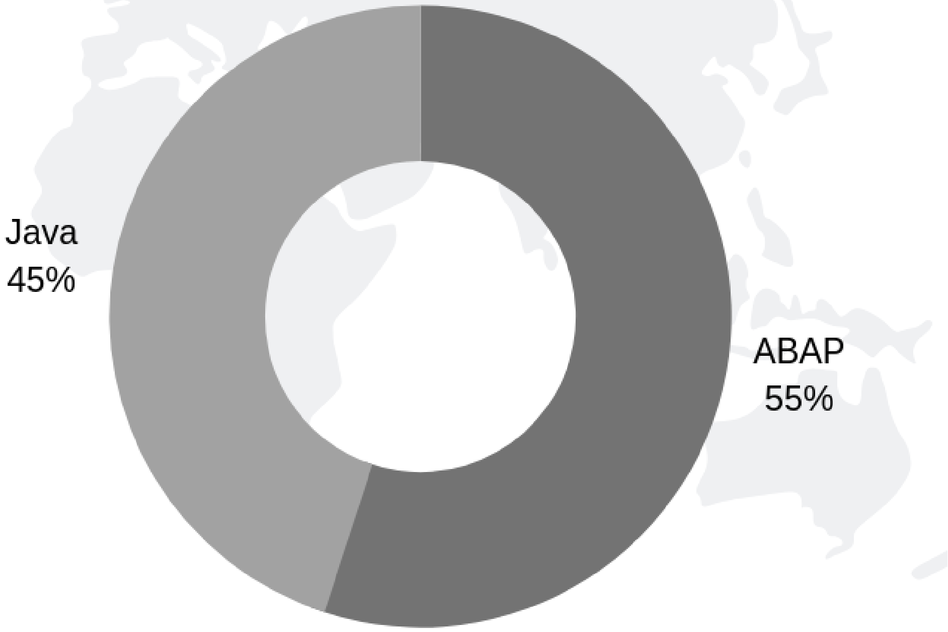
The Big Picture

GLOBAL SAP SYSTEMS

Currently, there are more than **6339** SAP systems exposed to the Internet



** Only SAP Netweaver systems were considered for this statistic. Current ratio might be different for non-Internet facing assets*

GLOBAL RESULTS

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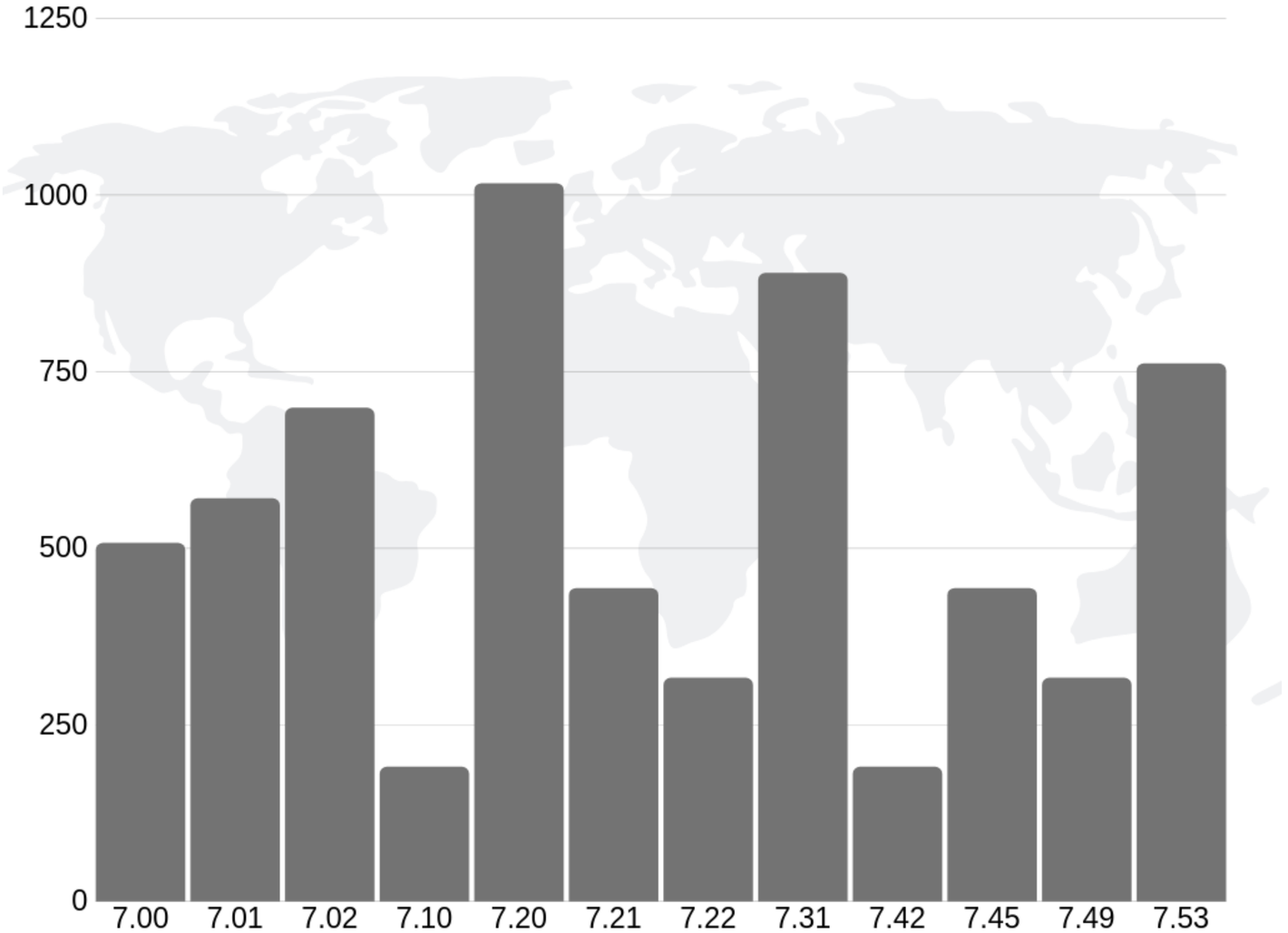
The Big Picture



GLOBAL SAP VERSIONS

Exposed Web Application Servers (WebAS)

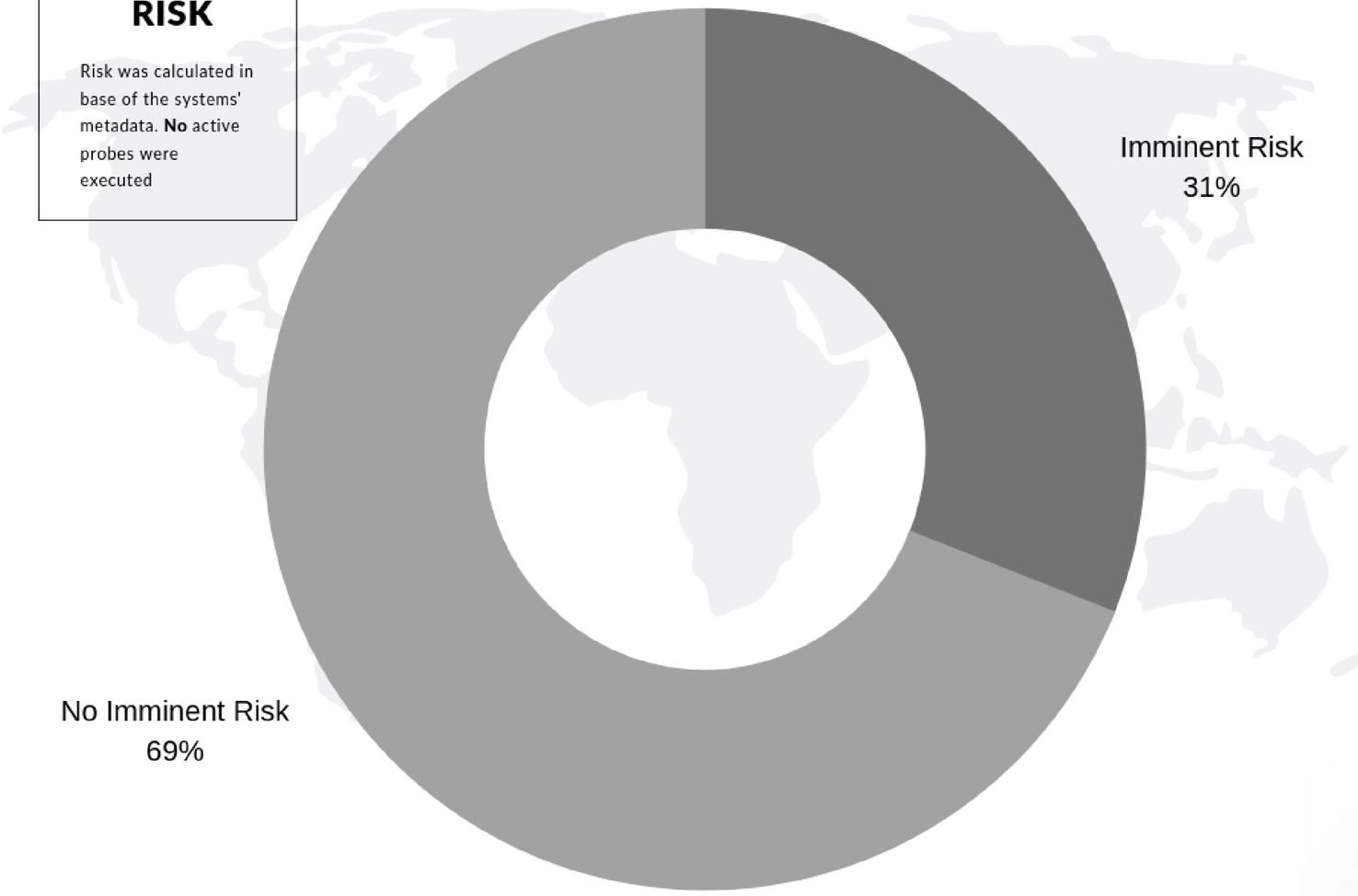
** Versions correspond to SAP WebAS*

GLOBAL RESULTS

The Big Picture

GLOBAL RISK

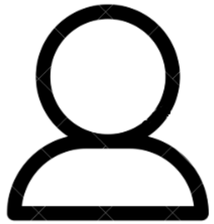
Risk was calculated in base of the systems' metadata. **No** active probes were executed



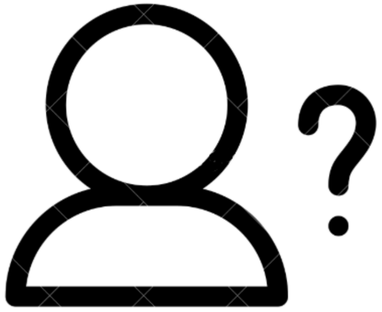
** Only SAP Netweaver systems were considered for this statistic*

GLOBAL RESULTS

The Big Picture



37.86%



62.14%

GLOBAL SAP OWNERS

Identified institutions / companies behind the assets

** To check if your company / institution is on this list and if it is at risk, please visit https://vicxer.com/research/situation.html*

CHAPTER 03

CONTINENTAL RESULTS

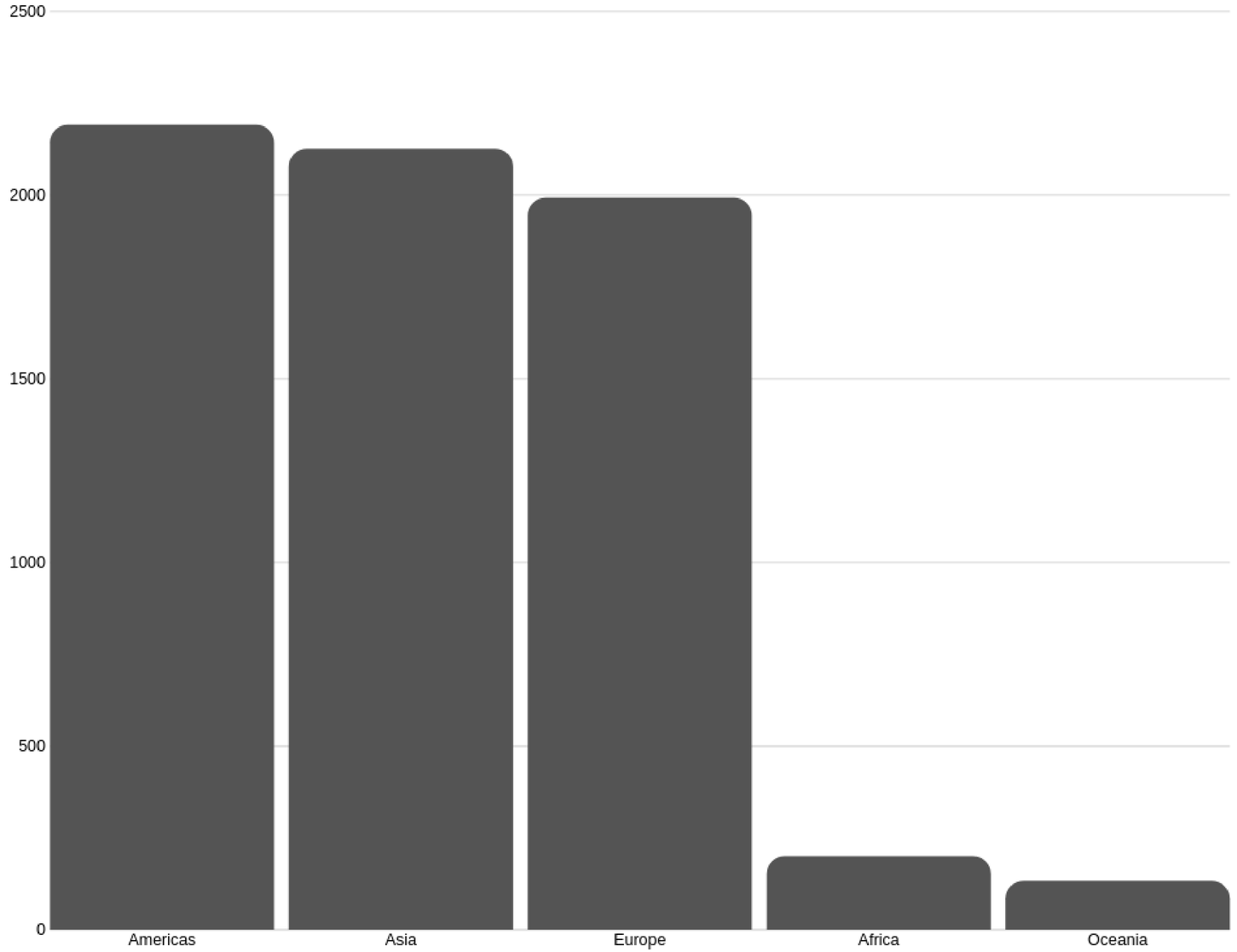
SAP Results Sorted Per Continent

CONTINENTAL RESULTS

The Sum of Everything

SAP MAP

Distribution of SAP Internet facing systems per continent



CONTINENTAL RESULTS

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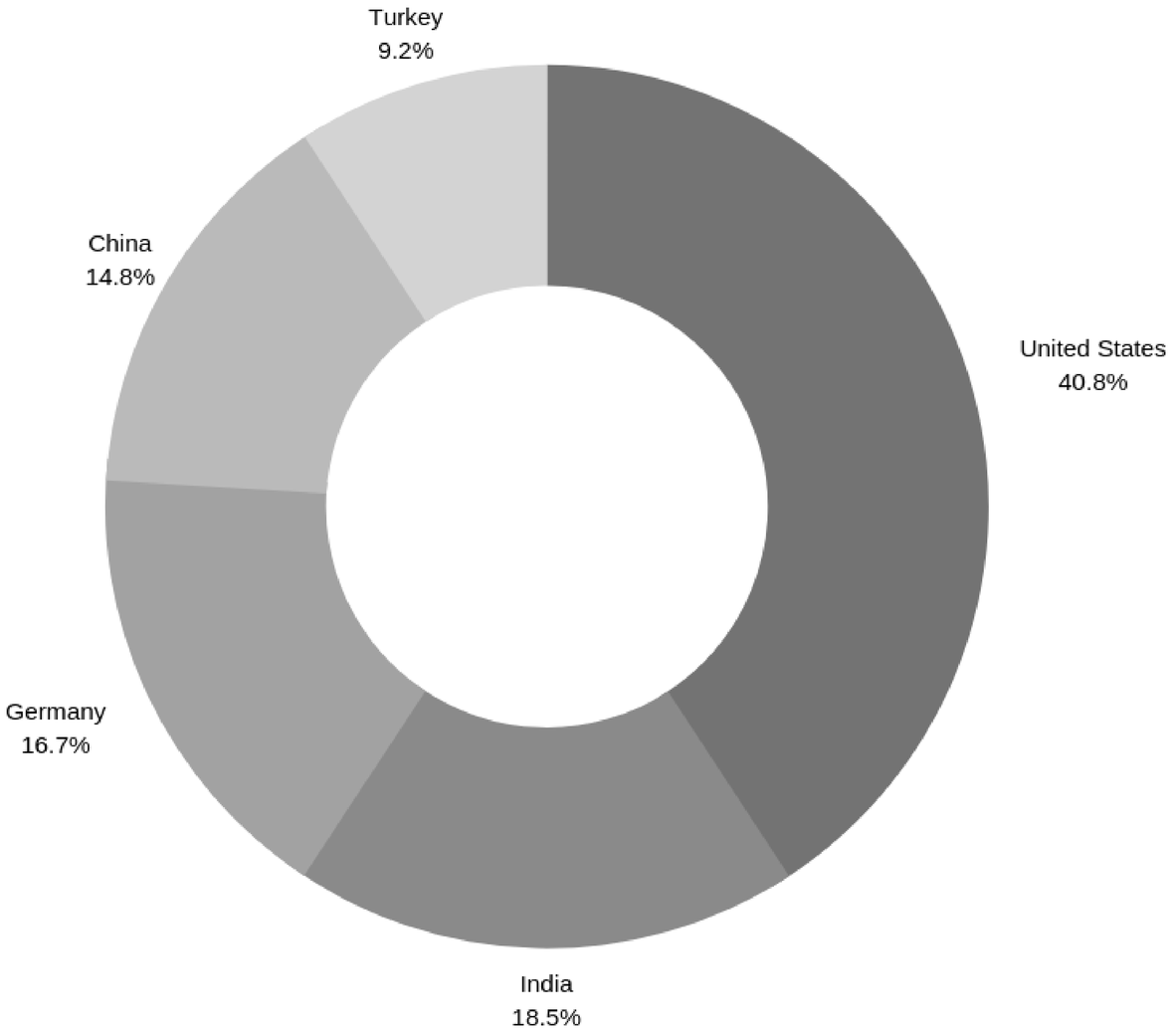
The Sum of Everything



SAP MAP

Top 5 countries with the highest amount of SAP Internet facing systems

CONTINENTAL RESULTS

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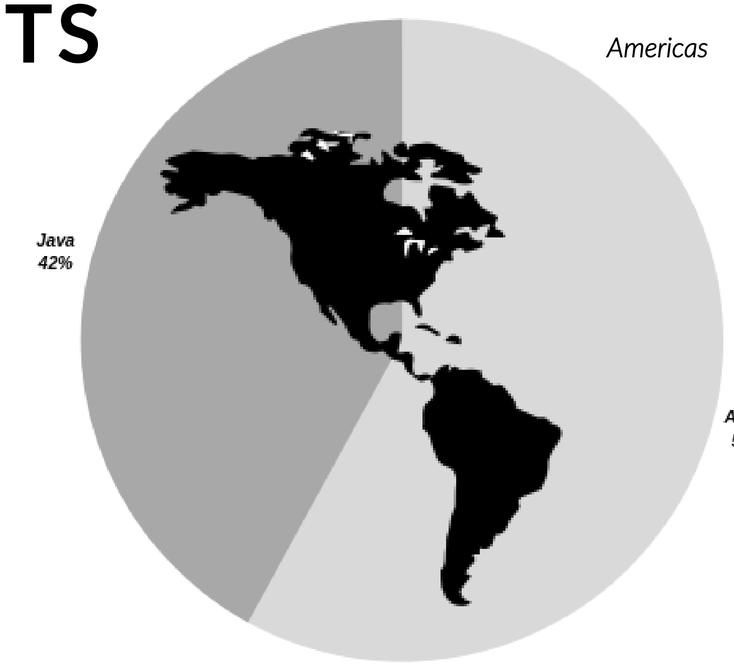
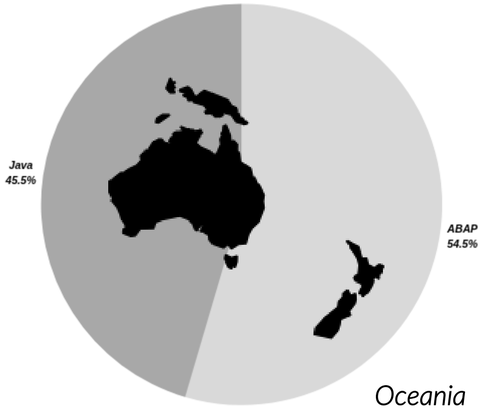
The Sum of Everything



Asia



Oceania

Africa

Europe

SAP MAP

SAP Internet facing stacks per continent

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CHAPTER 04

CONCLUSIONS

*SAP Situation Report at **Q4 2019***

CONCLUSIONS

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Project Results – An Objective View

- One-third of the detected Internet facing SAP systems, are currently affected by serious vulnerabilities that could allow a **remote** and **unauthenticated** attacker, to compromise **the target SAP systems,** and possibly perform lateral movement on the DMZ / adjacent network.
- Our team **could not find any evidence** that, **expensive solutions like IDS** / **IPS** systems would have a **meaningful** impact on stopping and preventing SAP intrusions (specialized SAP solutions will be tested on the next exercise)
- Firewalls **will not stop** most of the specialized attacks either, as the SAP web application server ports need to be open and unfiltered, in order to serve the valid users / customers.
- The main critical factors are caused by the customers inability (technical or political) to upgrade to a modern SAP version, in combination with the lack of a robust and **periodic** SAP patching policy.
- As a side result, it was possible to detect that some organizations are not just exposing **productive** SAP systems to the Internet, but **development** and **quality assurance** as well.

CONCLUSIONS

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Follow Up Actions for SAP Customers

- Know your assets! more often than not, companies cannot tell exactly, how many SAP assets they own.
- If you haven't already, make sure your SAP assets are included in your general patching strategy. Appoint a technical champion to oversee the progress of this task.
- Ensure that all the SAP audit trails are enabled*
- Before investing in expensive SAP security products, perform a quick SAP penetration test, in order to understand where your SAP implementation stands in terms of cyber-security, and how it compares to similar sized organizations.

** https://www.youtube.com/watch?v=ISa8lpSkHH8*

CONCLUSIONS

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Follow Up Actions for Security Researchers

- **We have the obligation** to enrich the security of the organizations with **integrity**, **consolidated knowledge** and **empathy**, while avoiding the spread of misinformation, uncertainty and doubt.
- We need to **contribute more** to open initiatives like local meetups, technical gatherings and conferences, by sharing **novel**, **unbiased** and **relevant technical knowledge**.
- We must take a **unifying** role in the organizations running SAP, by being the nexus between the SAP team and the IT security world.

THAT IS ALL...

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QUESTIONS?

To learn more about **SAP security**, visit us at ***https://vicxer.com*** or follow us on Twitter

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