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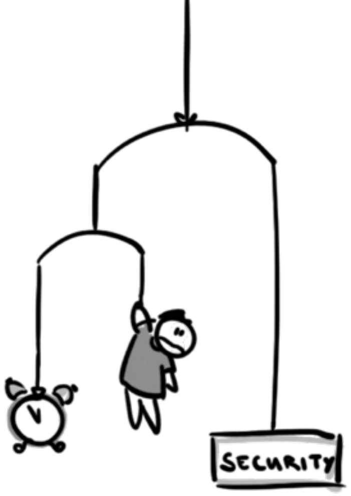


Caught between Security and Time Pressure?

An Empirical Investigation of Operator's Perspective on Security Misconfigurations

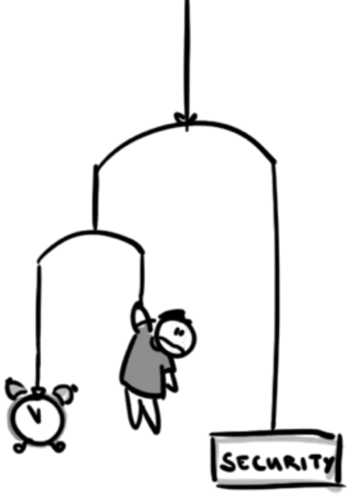
Outline

1 Security Misconfigurations

2 Empirical Approach

3 Preliminary Findings

4 Conclusion



Security Misconfigurations

- Simple errors in deploying an internet service that lead to security issues:
    - Publication of secrets/passwords
    - Missing/disabled authentication
    - ...

Examples

- Running your MongoDB on the Internet

Examples

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- Having your TR-069 publicly reachable

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- Running your MongoDB on the Internet
- Having your TR-069 publicly reachable
- Storing your AES key next to your encrypted backups

Who, what, why?

- Who misconfigures?
- What gets misconfigured (easily)?
- Why does it get misconfigured?

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- What gets misconfigured (easily)?
- Why does it get misconfigured?

How to prevent misconfigurations?

Asking Operators

- Research on Security & Usability mainly focusses on end-users

- Asking people is hard

- Asking the right questions is even harder
  Think: "Please buy a bottle of milk; if they have eggs, bring a dozen."

The Usual Approach

1 Explore the issue

2 Do small focus groups with target audience

3 Do structured interviews with target audience

4 Build a questionnaire to get quantitative insights

The Sysadmin Approach

- Go to the local sysadmin regulars’ table and talk to them

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- Go to the local sysadmin regulars’ table and talk to them
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- 5 Interviews and 1 focus group with 5 participants...
  - Did you ever encounter security misconfigurations?
  - What do you think: Why do they occur?
  - Did a security misconfiguration incident change anything about this?

FINDINGS

What happened?

- Beloved Defaults

user: admin
+
pw: admin
4ever!

What happened?

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- Misleading Conventions

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- Troublesome Accidents

What happened?

- Beloved Defaults
- Misleading Conventions
- Troublesome Accidents
- The Lost, Forgotten and Abandoned

Why did it happen?

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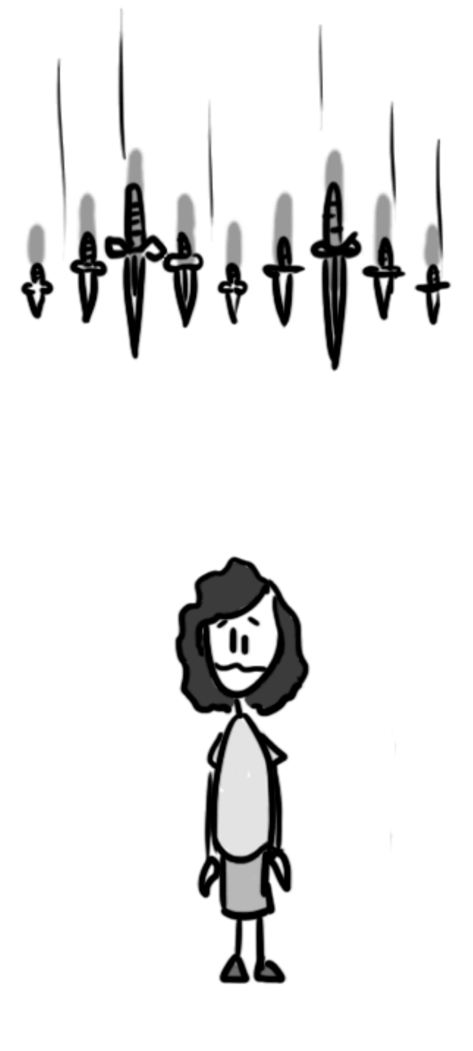
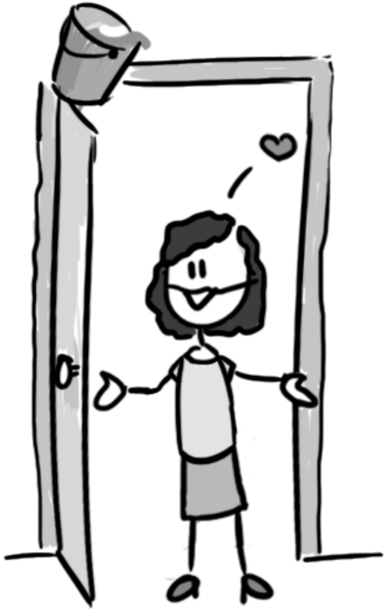
- Betrayed Faith in Suppliers



Why did it happen?

- Lack of Experience
- Non-existing / unspecified / too strict / too loose / too complicated Processes
- Betrayed Faith in Suppliers
- Backfiring Legacy Support



Why did it happen?

- Lack of Experience
- Non-existing / unspecified / too strict / too loose / too complicated Processes
- Betrayed Faith in Suppliers
- Backfiring Legacy Support
- Unwise Budgeting

How to prevent this?

- Provide for Experience
- Voice to management in case of deficient Processes
- Challenge Faith in Suppliers (Make them listen to you, OPS!)
- Ditch Legacy Support
- Budget wisely

Conclusion

- Misconfigurations happen.
- Knowing *how* allows for detecting measures to prevent security incidents.
- We’re not ready…

Questionnaire coming soon to an operations mailing list near you!

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