Ransomware

ATTACK VECTORS, MITIGATION & KILL CHAIN OPPORTUNITIES

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What is Ransomware

Malicious software (malware) designed to encrypt local and network-based files and demand a ransom for decryption. Payment of the ransom is frequently requested in bitcoins (a relatively untraceable currency) via anonymous internet sites.

Encryption now commonly uses a public/private key pair to make brute-force decryption difficult or impossible.

Often only the first 2KB of the file is encrypted to increase speed

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Attack Vectors

- Email
  - Attachments
  - Malicious links
- Web Browsing
  - Legitimate pages with Java-exploit in embedded advertisement
  - Malicious pages

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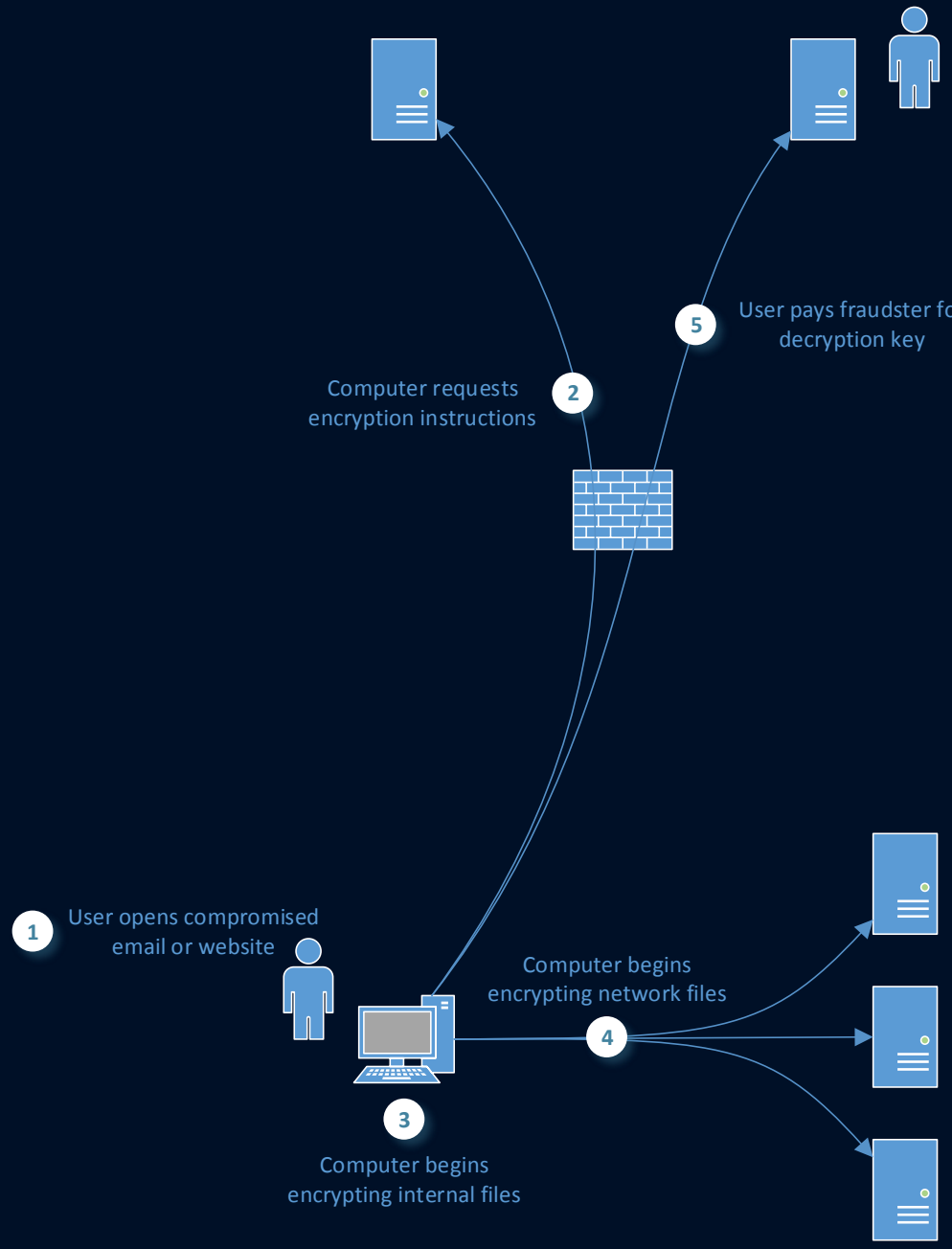
1
User opens compromised email or website
2
Computer requests encryption instructions
3
Computer begins encrypting internal files
4
Computer begins encrypting network files
5
User pays fraudster for decryption key

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Prepare

- Review mapped drives and file shares
  - Ensure only minimum network shares are made
  - Check folder permissions and avoid “Authorized User” and “Everyone” permissions
- Check backups of critical files
  - Confirm nightly backups (or more frequent) are running successfully
  - Ensure enough versions of backups exist to restore from more than “yesterday”

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Prevent

- Mail Gateways & Filters (e.g., ProofPoint)
  - Attachment controls
  - URL defense
- Web Proxies (e.g., Zscaler)
  - Malicious advertisements
  - Malicious pages
- Server Usage Habits
  - No web browsing
  - No mail checking

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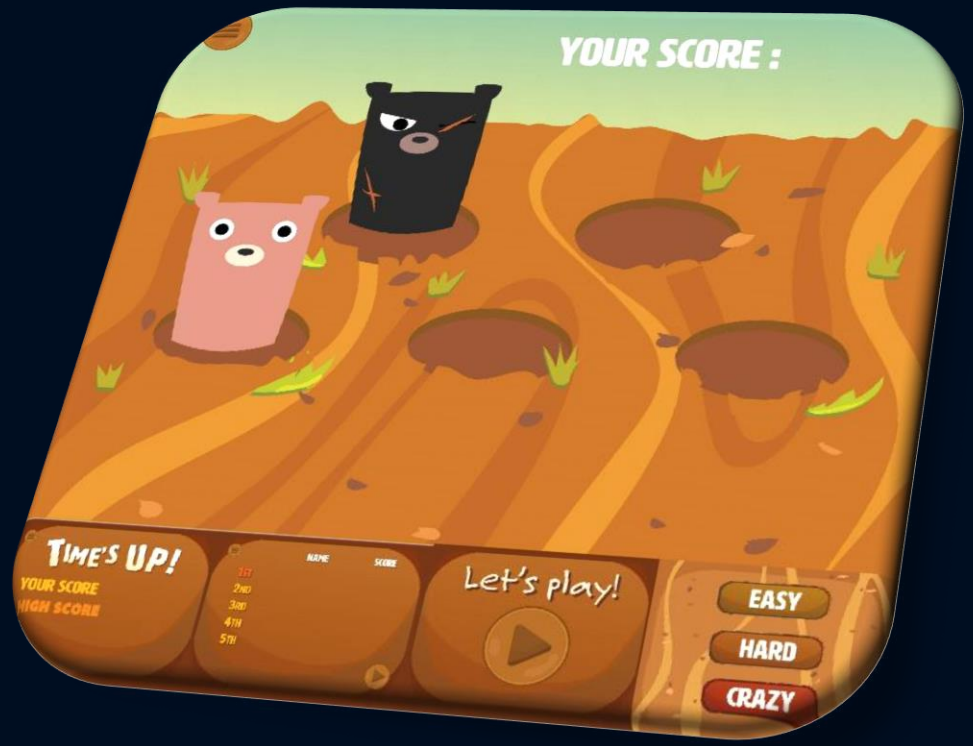
Disrupt

- Web Proxies (e.g., Zscaler)
  - Prevent exchange of encryption keys
- Application Whitelisting (e.g., Bit9)
  - Stop executable from running
- Process Monitoring (e.g., CarbonBlack)
  - Find new malicious processes
  - Identify suspiciously high network connections
- ~~Anti-Virus~~



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Respond

- Active Attack
  - Unmount shared drives
  - Find the root cause
    - Check logs for users with high number of network connections
    - Check for ongoing, broad authentication/access requests
  - Confirm backups won't overwrite good data with bad
  - Engage Insurance, Legal and Cyber-Security teams
- Completed Attack
  - Find the root cause before bringing data back online
  - Determine if ransom payment will be necessary
  - Engage Insurance, Legal and Cyber-Security teams

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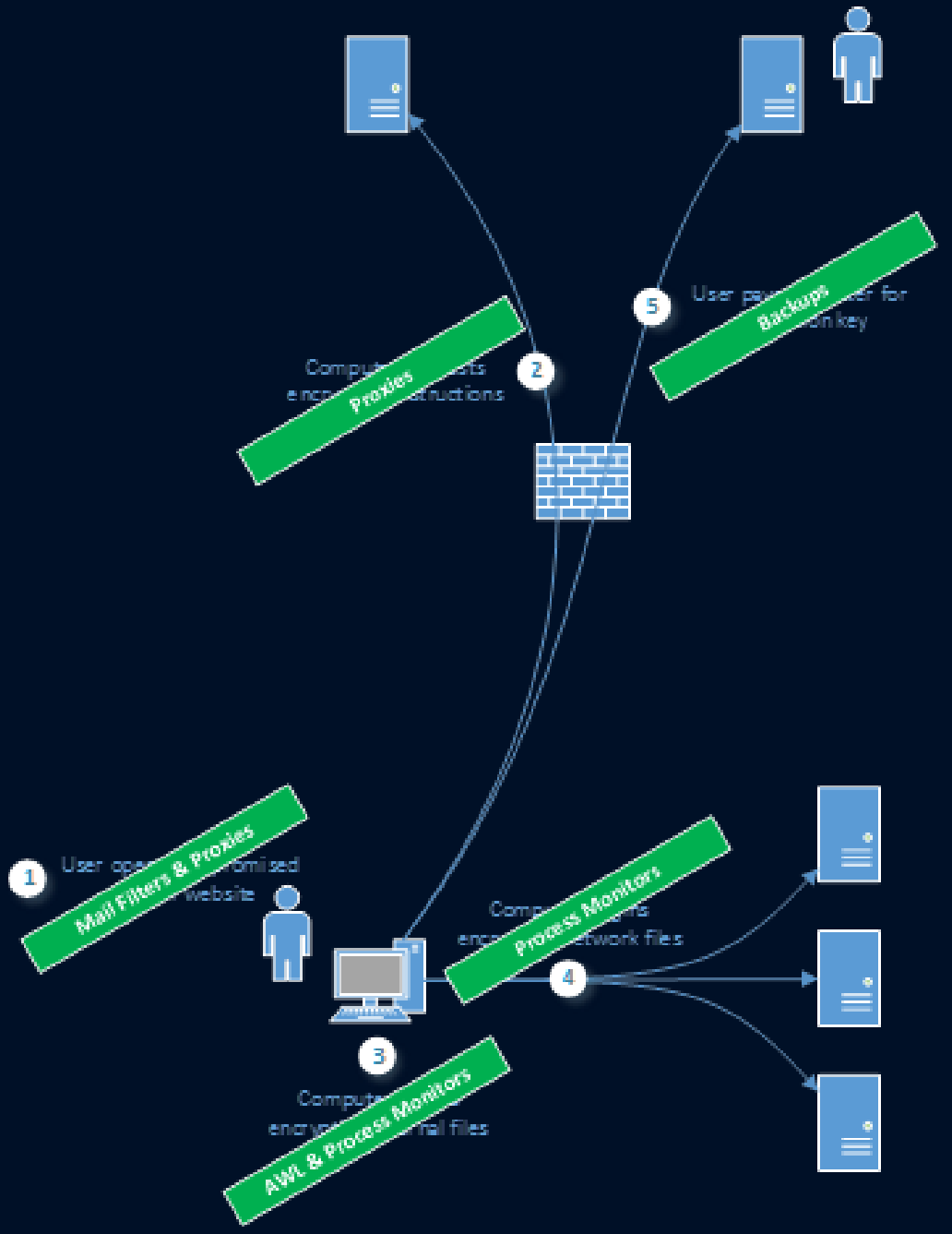
Proxies
2
5
Backups
1
Mail Filters & Proxies
Process Monitors
4
3
AWL & Process Monitors

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