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Your Data Is Everywhere: Your Security Should Be Too

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Menu

Some interesting data

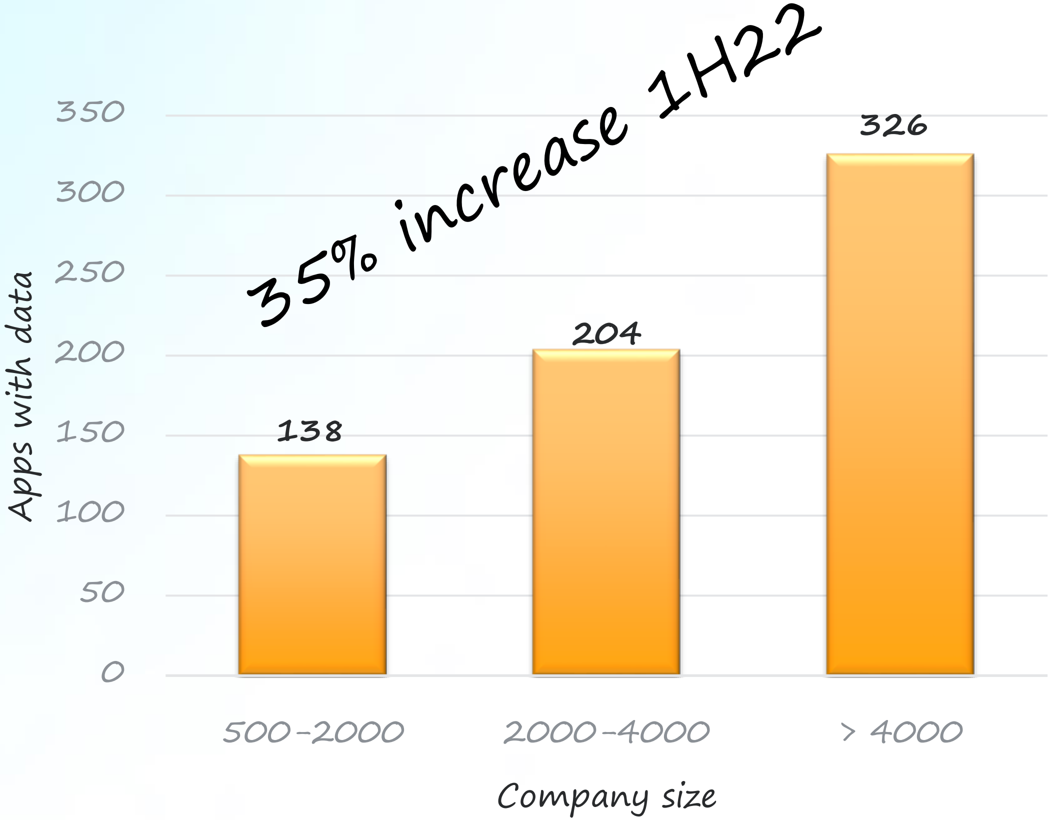
Context is the new perimeter

Dimensions of defenses

Recommendations

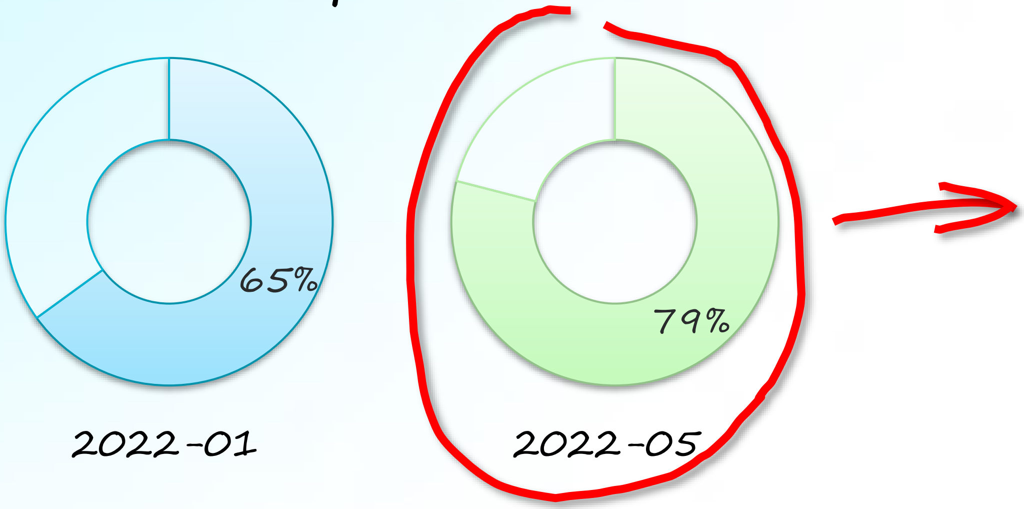
Some Interesting Data

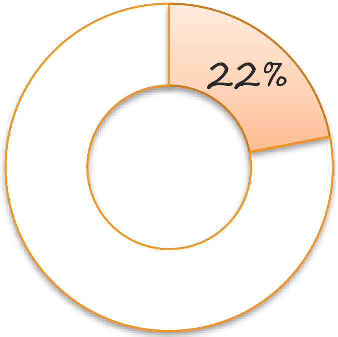
Big surprise: moar cloud everywhere



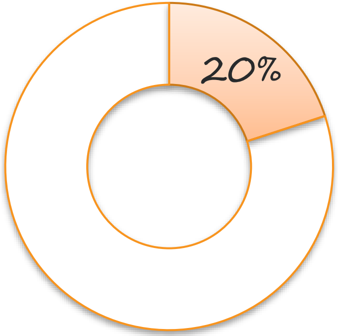
Big surprise: moar people, moar stuff

Population





Personal apps



Personal apps before leaving!

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Context Is The New Perimeter

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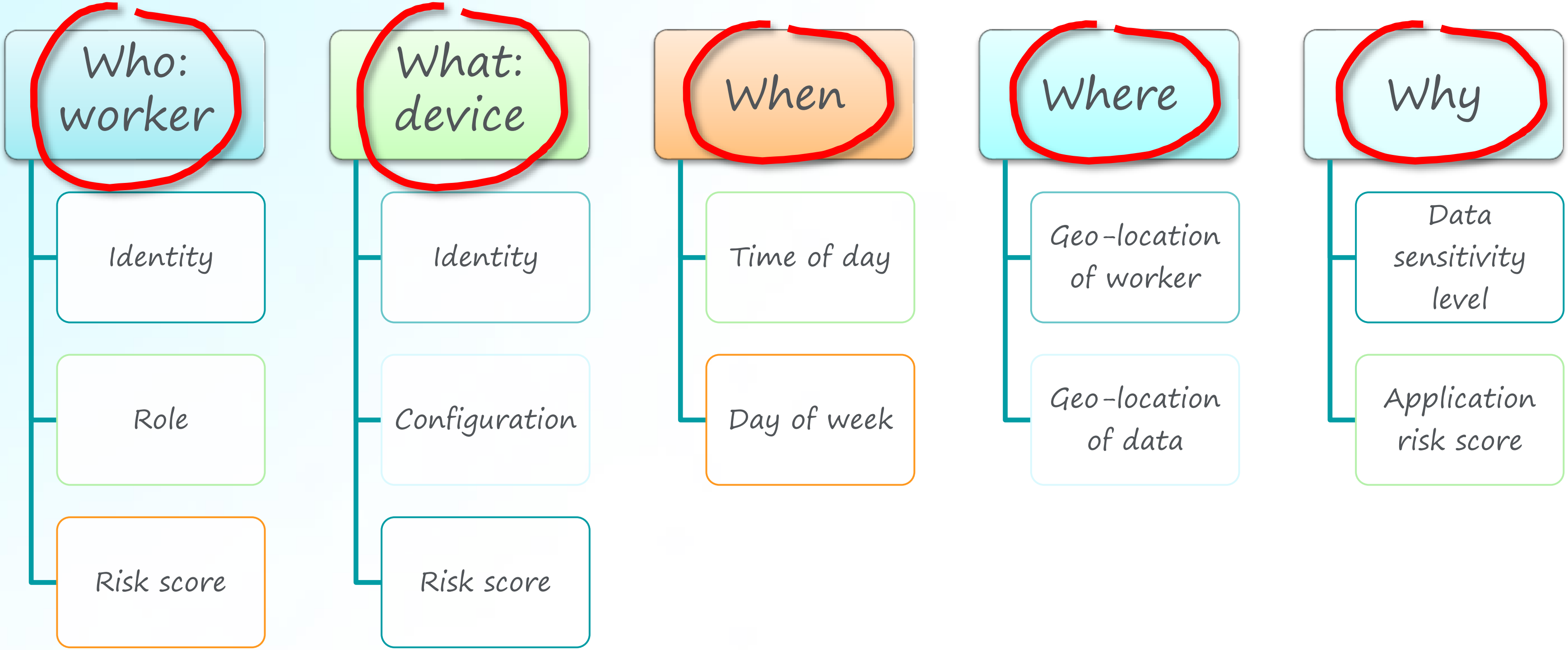
Signals indicating context



- Who: worker
  - Identity
  - Role
  - Risk score
- What: device
  - Identity
  - Configuration
  - Risk score
- When
  - Time of day
  - Day of week
- Where
  - Geo-location of worker
  - Geo-location of data
- Why
  - Data sensitivity level
  - Application risk score

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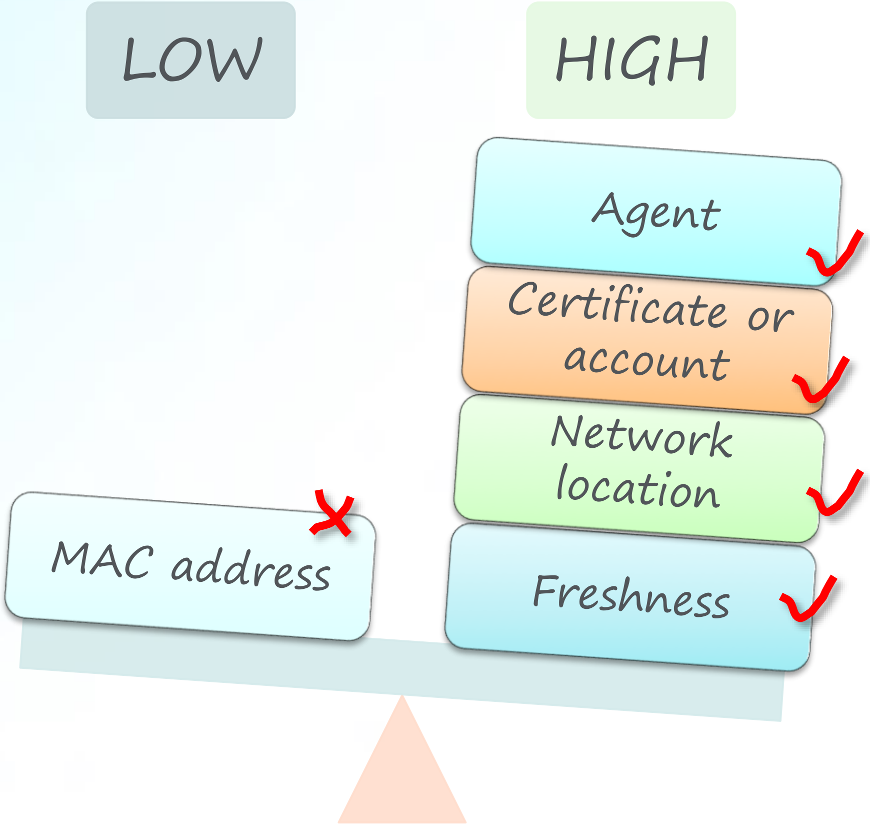
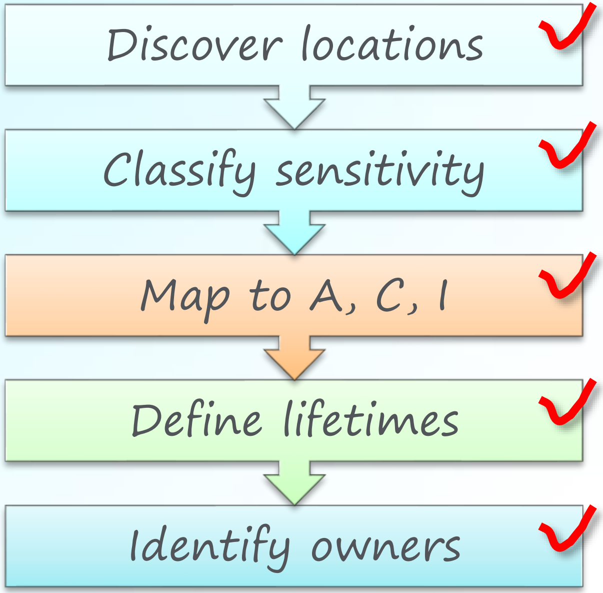
Example: device context



Data context



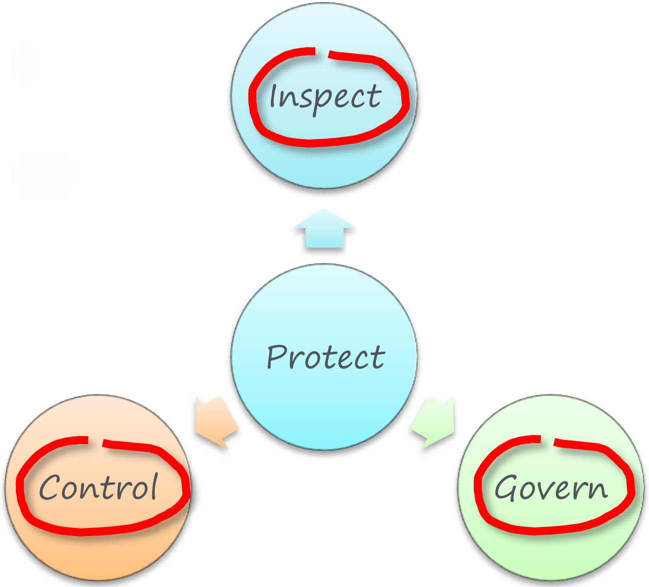
Discover locations ✓

Classify sensitivity ✓

Map to A, C, I ✓

Define lifetimes ✓

Identify owners ✓



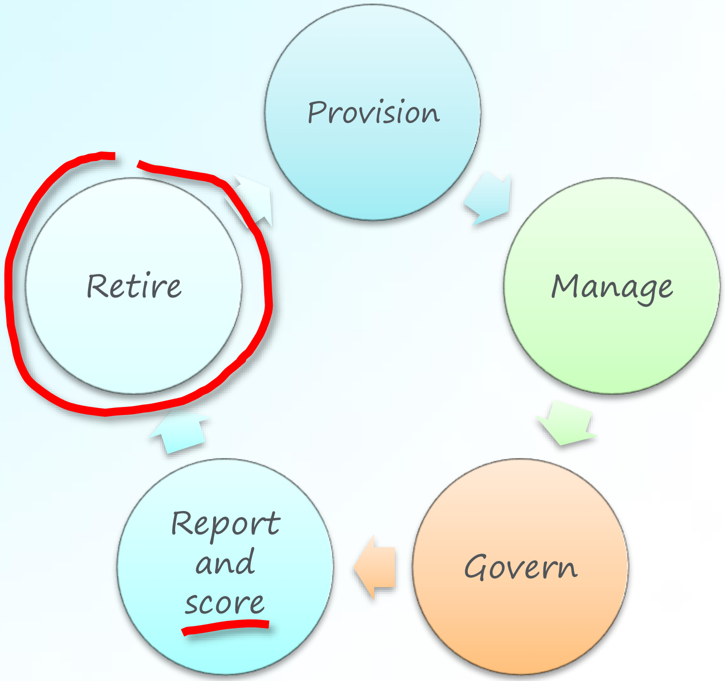
Inspect

Protect

Control

Govern

Identity context



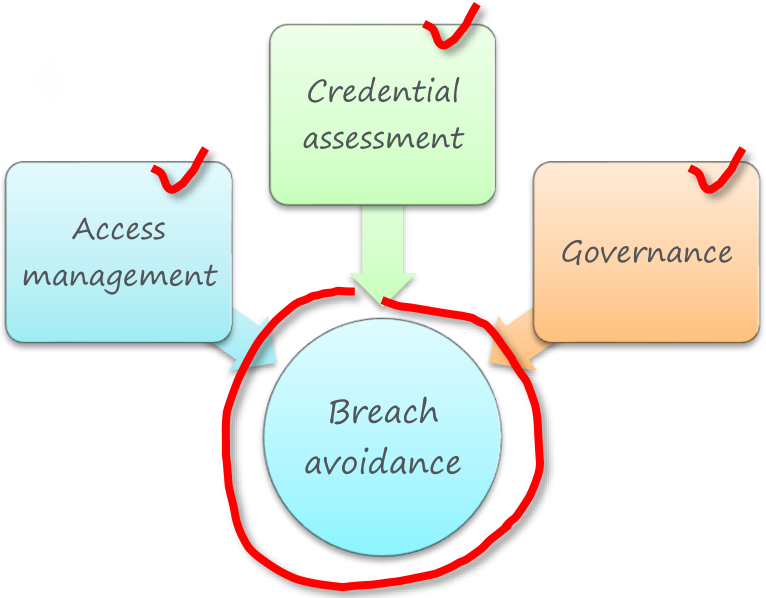
Provision

Manage

Govern

Report and score

Retire



Access management

Credential assessment

Governance

Breach avoidance

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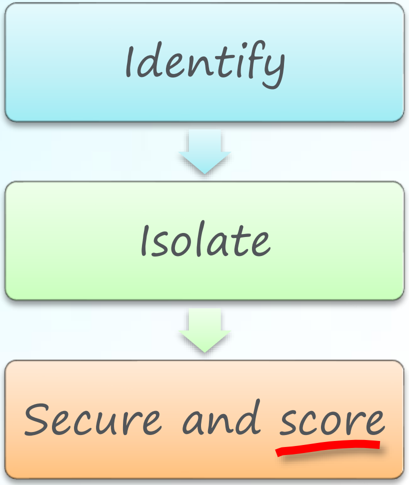
Endpoint context

MANAGED DEVICES



Identify

Isolate

Secure and score

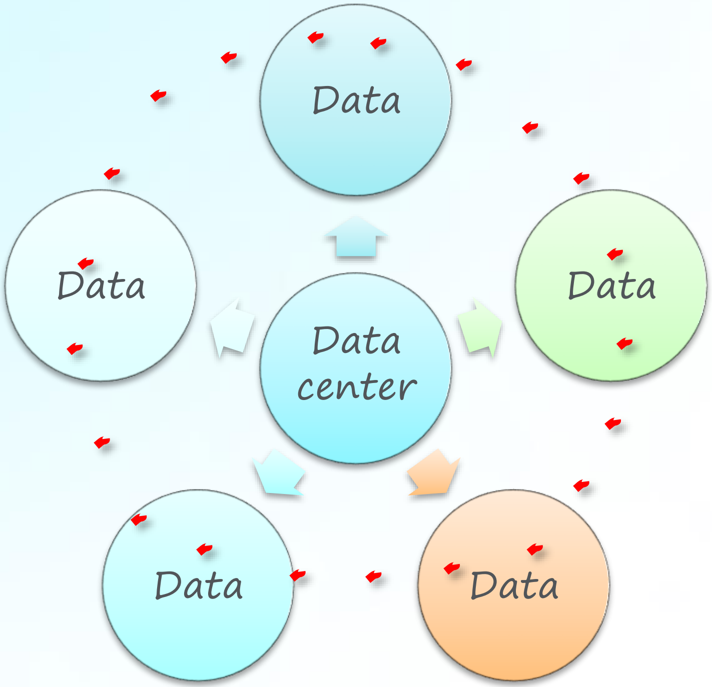
UNMANAGED DEVICES

Public	Private	Confidential
• Full ✓	• Read-only ✓	• None ✓

Application context

- Current inventory ✓
- Preferred/proposed inventory ✓
- Mapping to A, C, I ✓
- Interactions/transaction flows, all directions ✓
- External communications and access ✓
- Risk assessment and score ✓

Network context



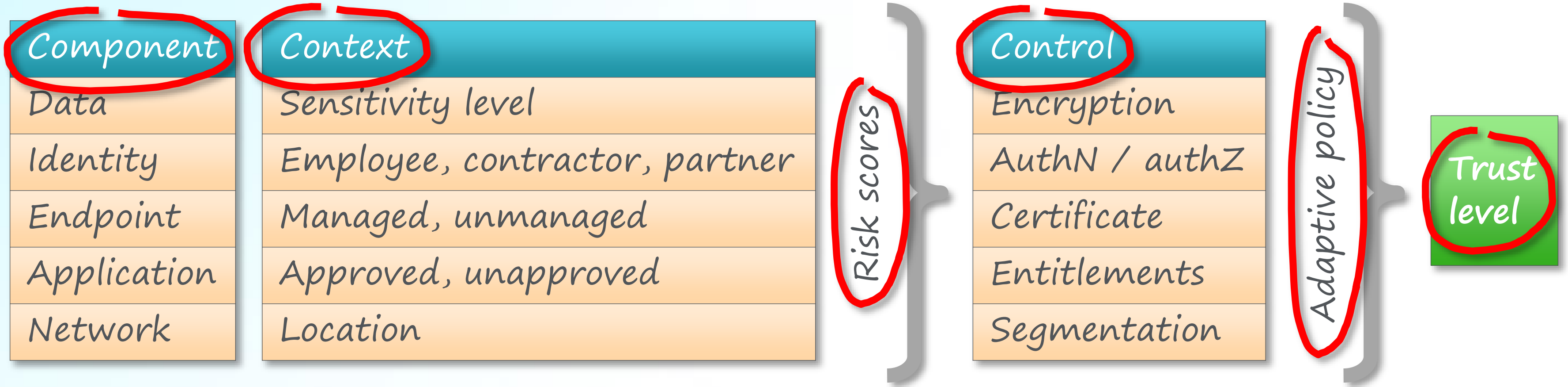
OFF-NET

- Proxies
- Agents

ON-NET

- Default deny
- No trust zones
- Micro-segmentation

context + scores = trust_level



Component	Context
Data	Sensitivity level
Identity	Employee, contractor, partner
Endpoint	Managed, unmanaged
Application	Approved, unapproved
Network	Location

Risk scores

Control
Encryption
AuthN / authZ
Certificate
Entitlements
Segmentation

Adaptive policy

Trust level

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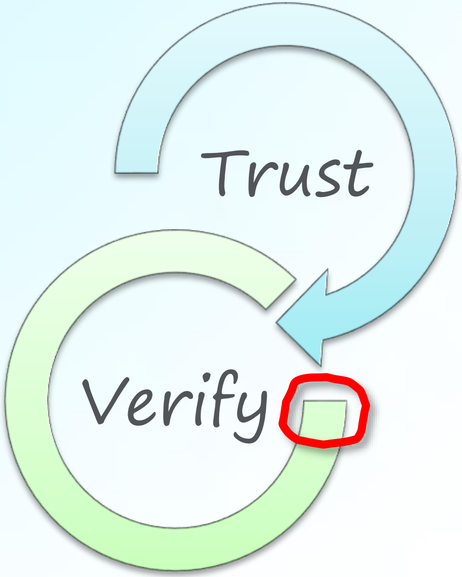
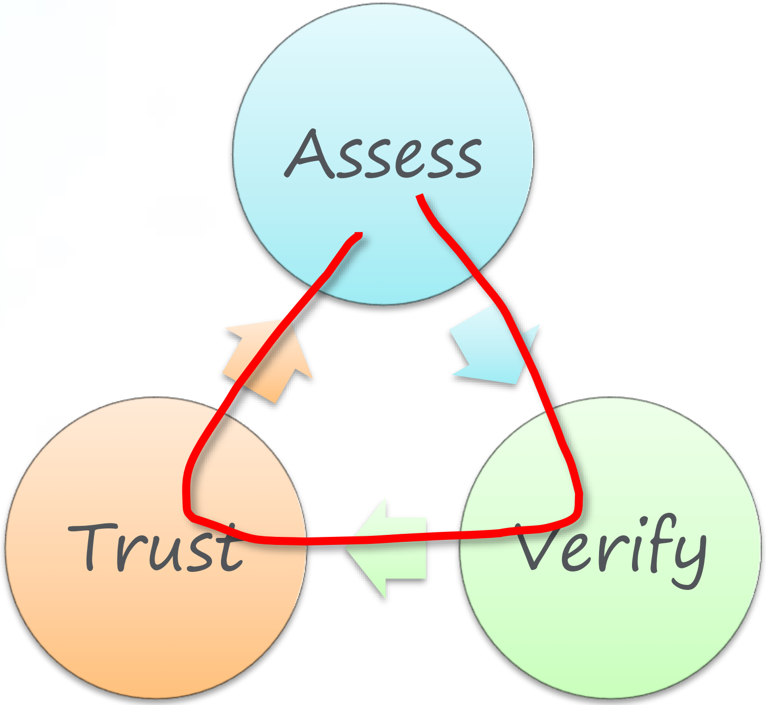
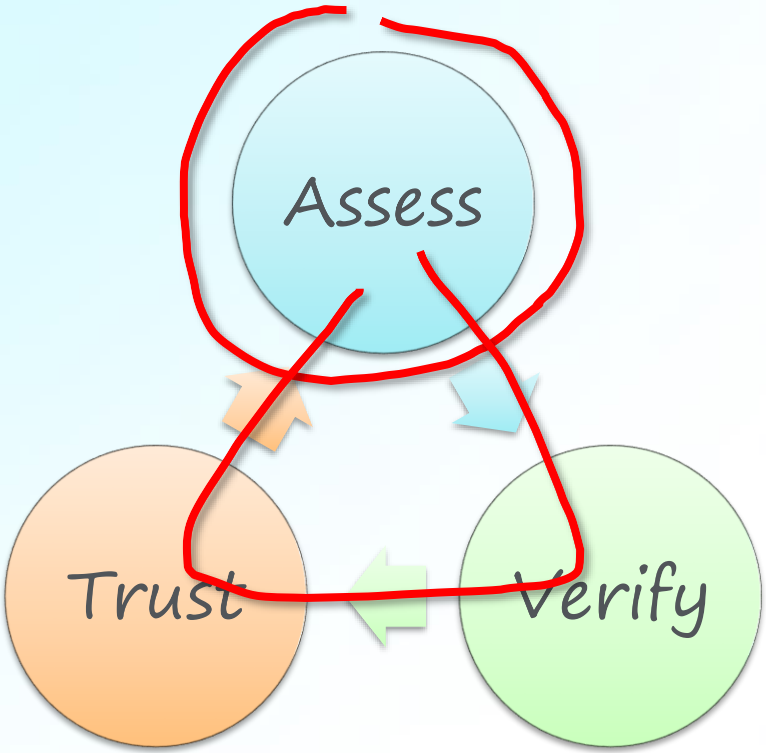
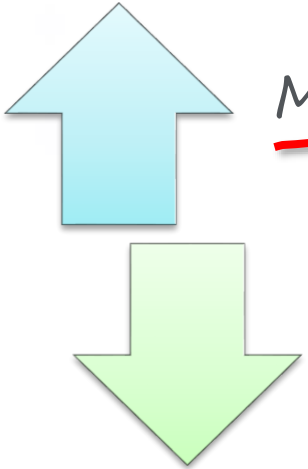
The trust problem





Continuous adaptive trust





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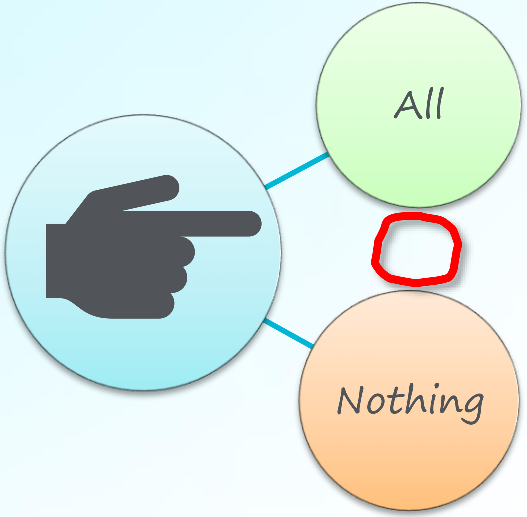
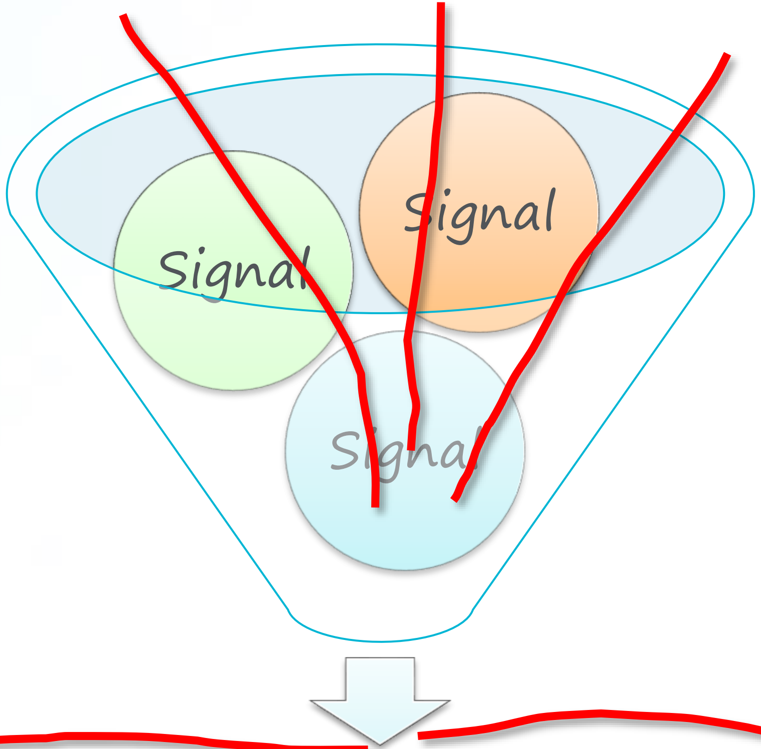
Adaptive access





Permit | Restrict | Redirect | Coach | Deny

Per application

Dimensions Of Defenses and Recommendations

Goals

Neutralize threats

- Deflect attackers from your assets

Protect data

- Control where information goes

Demonstrate good governance

- Provide evidence to boards, auditors, regulators, customers

SaaS Threats

Poor configurations

- Defaults favor ease of use
- Auditing and reporting aren't automatic

Easy to provision

- And therefore easy to overlook

Too much sharing

- Inadvertent > malicious
- Increases when a person plans to quit

Popular among attackers

- Stolen credentials grant access elsewhere

SaaS Protections

Standardize security posture

- Assess, refine, and document configuration (access, audit)
- Define policy for access by unmanaged devices

Monitor unmanaged application use

- Coach users toward approved applications
- Require business justification and business unit risk acceptance
- Limit actions in medium-risk applications; block high-risk applications

Establish sharing policy

- Disable default external sharing
- Implement self-service external sharing provision with expiration
- Detect uncharacteristically excessive downloads and uploads

Move beyond passwords

- Eliminate "attractiveness" to attackers

SaaS Further governance

Compliance

- Provider assessment != compliant usage
- Verify service can be used in ways that allow regulatory compliance, including data residency

Business continuity

- Confirm data and metadata ownership
- Enable retention capabilities
- Determine whether to investigate backup options

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Web Threats

Browser attacks

- Takeovers: cookies, sessions, tokens
- MITM; leaky extensions; local proxies

Risky sites

- Ransomware and malware delivery
- Content that violates policies and laws

Email attacks

- Forged or unauthenticated origins
- Social engineering

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Web Protections

Protect browsers

- Disallow unmonitored access to the non-business web
- Implement forms of isolation

Control destinations

- Verify safety and validity of every domain and URL
- Scan all downloads for presence of malware
- Scan all uploads for presence of sensitive information
- Constrain or block activities on suspicious sites

Harden email

- Quarantine unauthenticated messages
- Limit or block external delivery of sensitive information

Private Threats

Exposed applications and services

- "Open firewall for X" removes most protection for X
- Connect-then-authenticate is a bad internet pattern

Remote entry (implicit trust)

- Full network connectivity facilitates lateral movement
- Third-party access is difficult to govern

Poor configuration

- IaaS defaults are better, but mistakes still happen
- IaaS access management can be confusing

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Private Protections

Hide your assets

- Attackers can't compromise what they can't find
- A better pattern: authenticate (elsewhere) then connect

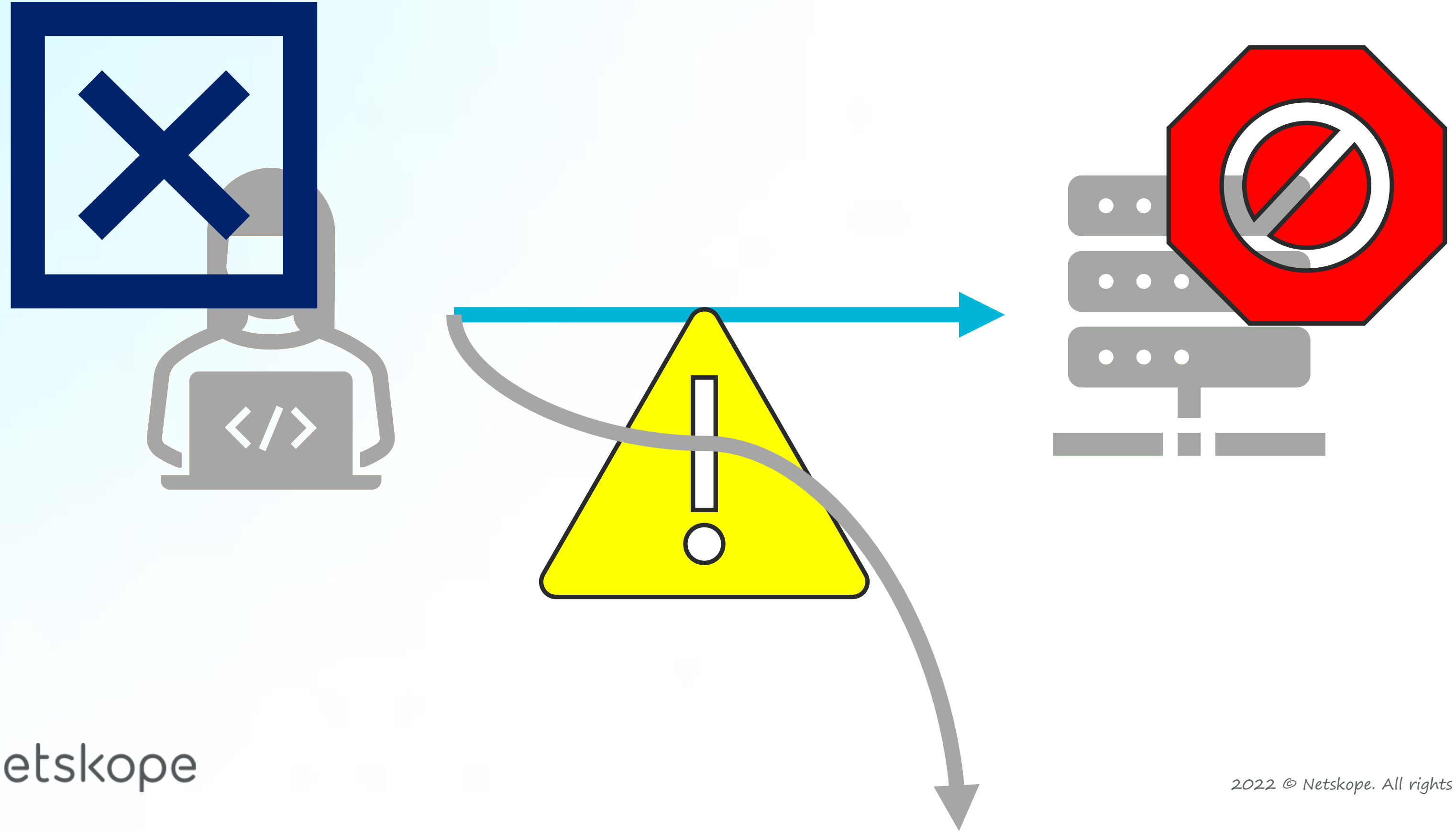
Precise access (explicit trust)

- Connect users to applications, not networks
- Adjust access according to context and content
- Monitor for suspicious activity
- Develop processes for onboarding and offboarding

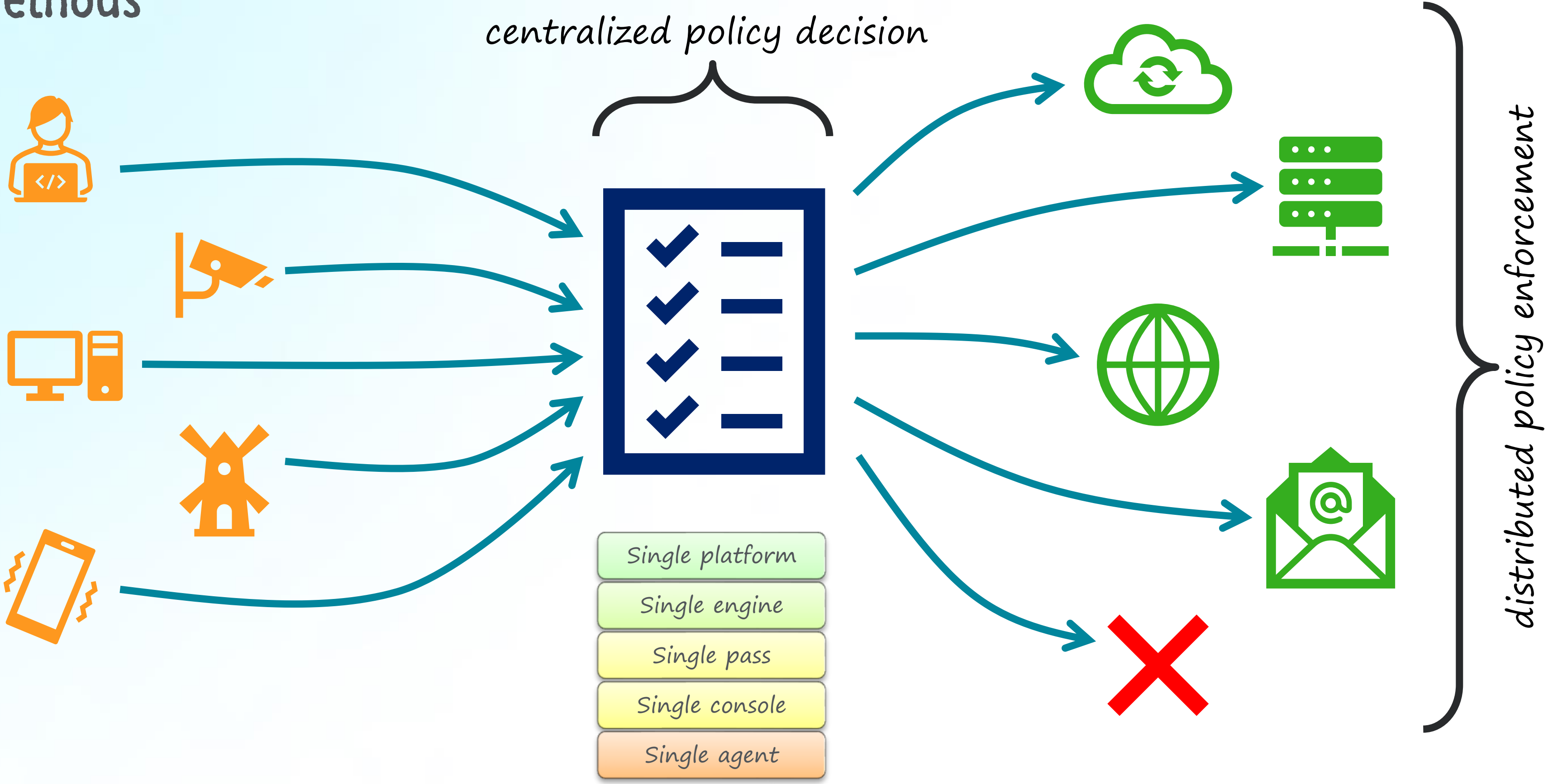
Standardize security posture

- Assess, refine, and document configuration (esp. permissions)
- Routinely scan for sensitive information and vulnerable code

Methods



Methods



Single platform

Single engine

Single pass

Single console

Single agent

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Thank You

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