Google Cloud

Moving to the Cloud: Zero Trust Security Model

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Kristy Patullo

Customer Engineer, Google Cloud SLED

Zero Trust approach to security in two words

Trust Nothing

Core zero-trust principles

1

Connecting from a particular network must not determine which services you can access

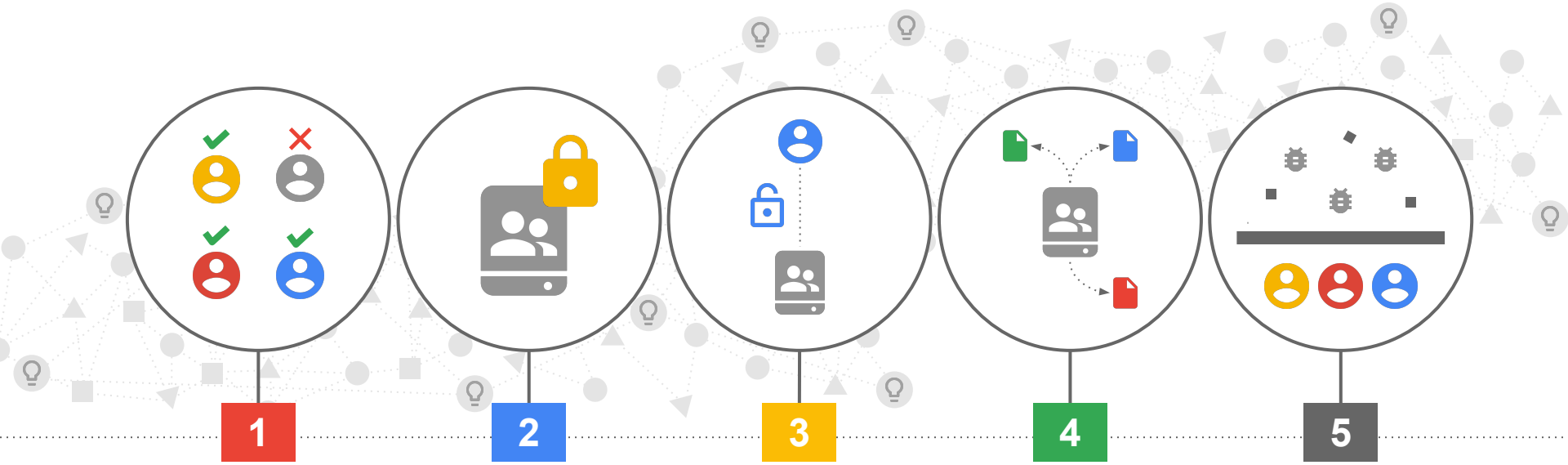
2

Access to services is granted based on context: what we know about you and your device

3

All access to services must be authenticated, authorized and encrypted

Zero Trust is achieved by fully-integrating defense-in-depth layers on turnkey platforms



1. Identity and Provisioning
2. Multifactor Authentication
3. Context Aware Authorization/ Access
4. Encryption (at rest, in transit)
5. End-to-end visibility and security monitoring

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Zero Trust solution components

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Zero Trust platforms incorporate signals from across your ecosystem and provides support for your different environments

User Policies

- Role / group
- MFA / Security key
- Credential strength
- Geographic origin
- Time and date

Device Policies

- OS version
- Encryption status
- Managed devices
- Password enabled
- Network
- Device type
- Alliance partner signals

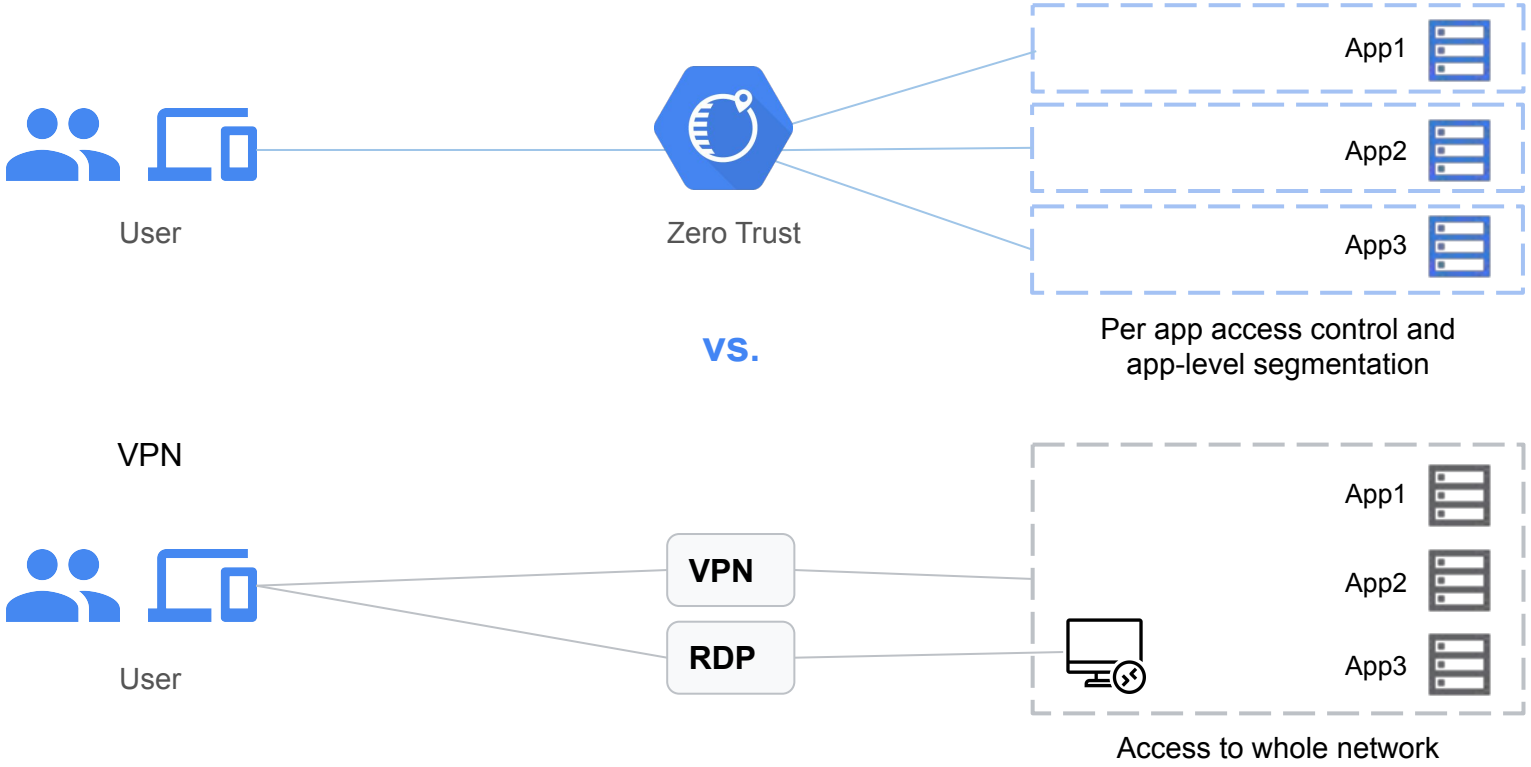
Application Support

- Cloud Applications
- On-Prem Applications
- SaaS (SAML) Applications
- Apps on 3P Clouds

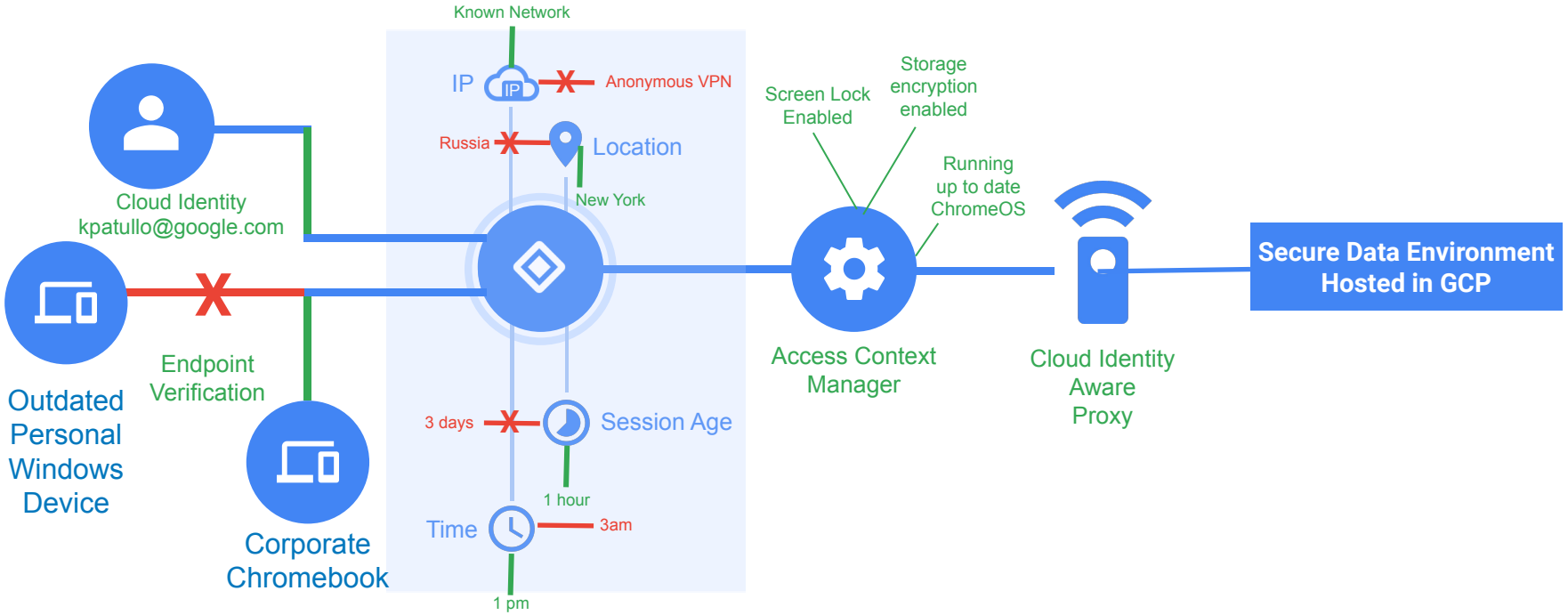
Operating Systems

- Chrome OS
- Windows
- macOS
- Linux

Limit access and lateral movement



Example Architecture: Beyondcorp Enterprise



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Zero-Trust: In Summary

Access becomes Context-Aware:

- Access based on user identity and context
- Shifts controls from network layer to application layer
- Allows users to work more securely from any location
- Allows access without a remote-access VPN

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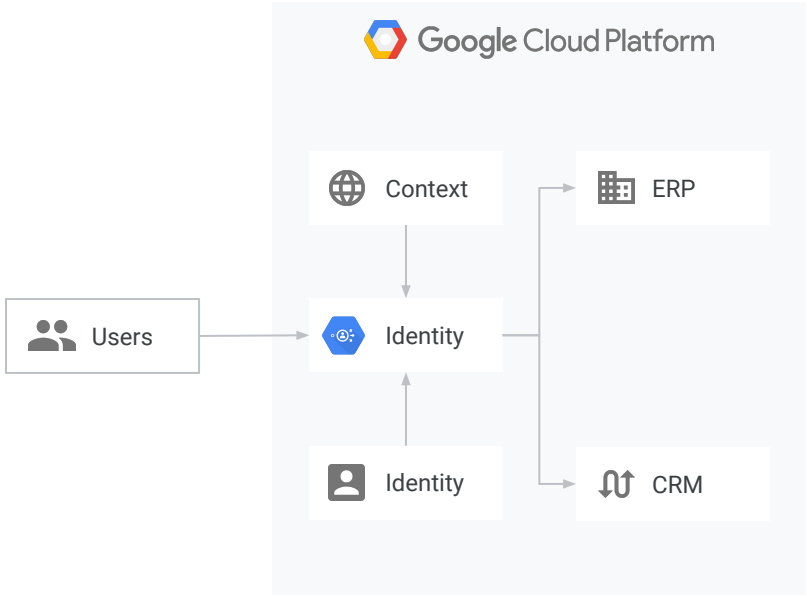
Cloud IAP- for web apps / VMs

A reverse proxy sits in front of every data request.

- Applies context-aware access policies defined in rules engine
- Enforces encryption between user and app/data.
- Protects against DDoS, does TLS termination

The proxy needs to have near zero latency to provide “invisible” security.



cloud.google.com/iap/

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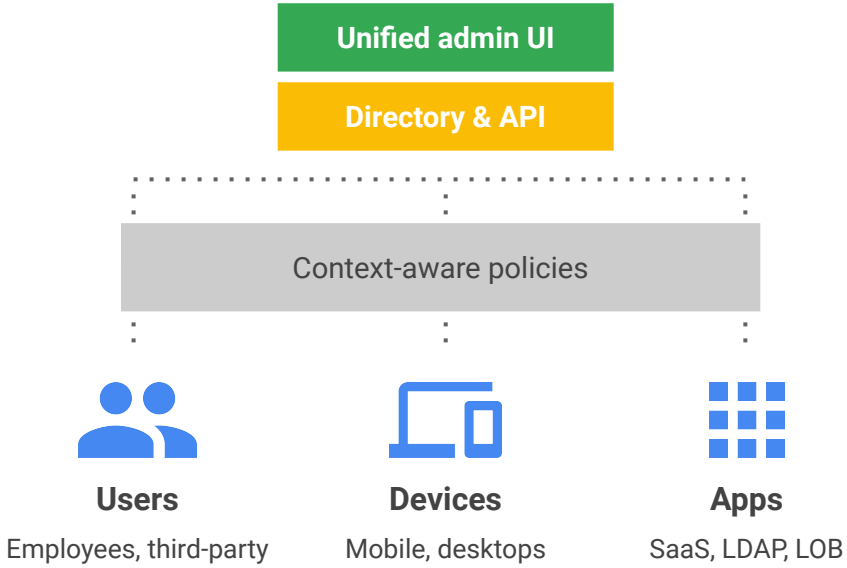
Cloud Identity - for G Suite apps

- Extend Context-aware for gSuite tools
- Enforce access controls for Gmail, Docs, Sheets
- 3rd party solutions via SAML



cloud.google.com/identity/

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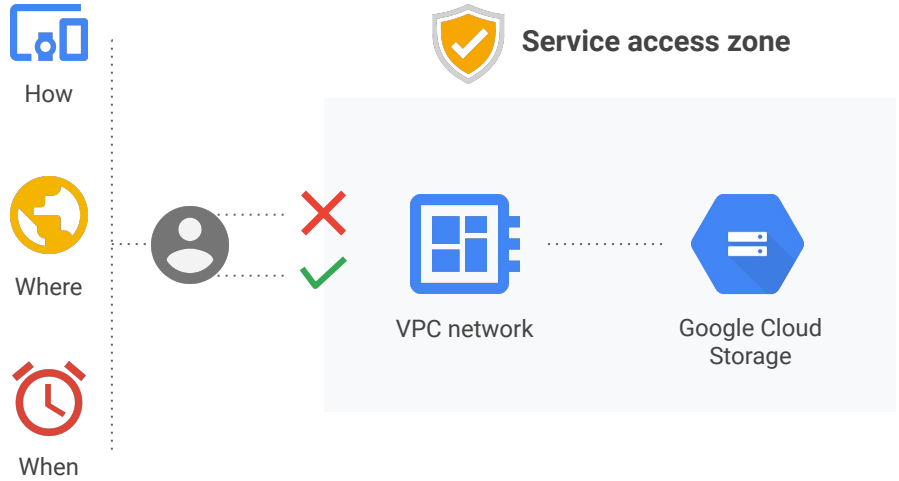
VPC Service Controls - for GCP APIs

VPC Service Controls allow users to define a security perimeter around Google Cloud Platform resources.

With VPC Service Controls, you can:

- Enforce context-aware access.
- Mitigate data exfiltration risks.
- Extend security boundaries across cloud environments.
- Centrally manage security policies.



cloud.google.com/vpc-service-controls

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