



Cloud Customer Architecture for Securing Workloads on Cloud Services

<http://www.cloud-council.org/deliverables/cloud-customer-architecture-for-securing-workloads-on-cloud-services.htm>

Webinar April 19, 2017

The Cloud Standards Customer Council

THE Customer's Voice for Cloud Standards!



- Provide customer-led guidance to multiple cloud standards-defining bodies
- Establishing criteria for open standards based cloud computing

2017 Projects

- Security for Cloud Services Ref. Architecture
- Impact of Cloud Computing on Healthcare
- Hybrid Integration Ref. Architecture
- API Management Ref. Architecture
- Data Residency discussion paper
- Blockchain Ref. Architecture
- Multi-cloud Management whitepaper
- And more!

2015 Deliverables

- Web App Hosting Ref. Architecture
- Mobile Ref. Architecture
- Big Data & Analytics Ref. Architecture
- Security for Cloud Computing, V2
- Practical Guide to Cloud SLAs, V2
- Practical Guide to PaaS

2013/2014 Deliverables

- Convergence of Social, Mobile, Cloud
- Analysis of Public Cloud SLAs
- Cloud Security Standards
- Migrating Apps to Public Cloud Services
- Social Business in the Cloud
- Deploying Big Data in the Cloud
- Practical Guide to Cloud Computing, V2
- Migrating Apps: Performance Rqmnts
- Cloud Interoperability/Portability

2016 Deliverables

- Prac Guide to Hybrid Cloud Computing
- Public Cloud Service Agreements, V2
- Cloud Security Standards, V2
- IoT Ref. Architecture
- e-Commerce Ref. Architecture
- Impact of Cloud Computing on Healthcare, V2
- Enterprise Social Collaboration Ref. Architecture

650+ Organizations participating



<http://cloud-council.org>

This talk introduces the Cloud Customer Architecture for Securing Workloads on Cloud Services

- **What are Cloud Solution Architectures?**
- **CSCC's Cloud Reference Architecture series**
 - **Cloud Customer Architecture for e-Commerce** <http://bit.ly/2camhlz>
 - **Cloud Customer Architecture for IoT** <http://bit.ly/2cLcomc>
 - **Cloud Customer Architecture for Big Data** <http://bit.ly/2crffR2>
 - **Cloud Customer Architecture for Mobile** <http://bit.ly/2cIYtdl>
 - **Cloud Customer Architecture for Web Application Hosting** <http://bit.ly/2cgTVK2>
 - **Cloud Customer Architecture for Enterprise Social Collaboration**
<http://bit.ly/2jDiMPD>
 - **Cloud Customer Architecture for Hybrid Integration** <http://bit.ly/2IHILs0>
 - **Cloud Customer Architecture for API Management** <http://bit.ly/2n59GgY>
 - **Cloud Customer Architecture for Securing Workloads on Cloud Services**
<http://bit.ly/2puolzX>

Cloud Customer Reference Architectures

- **Cloud Customer Reference Architectures are...**
 - straightforward description of elements needed to implement particular application solutions using cloud infrastructure, cloud platforms, cloud software, and cloud services
 - deployment neutral (public, private, hybrid) & implementable via IaaS, PaaS, SaaS
 - general purpose reusable architectures as well as industry specific architectures
 - vendor neutral & open
- **Important because they...**
 - enable cloud customers to understand unique features & advantages of using cloud computing
 - bridge gap between understanding cloud customer needs and cloud provider offerings
 - provide practical guidance on how common business applications can be realized from a cloud customer role perspective
 - are stable anchors in a rapidly innovating cloud landscape
 - save time, effort & money: *be more productive*
- **Useful when...**
 - those planning to build cloud based applications
 - talking with cloud providers about their offerings
 - understanding of the common elements and relationships in relevant solutions
- **Target audience:**
 - those planning on building/purchasing cloud based applications
 - developers, architects, managers
- **Consistent with ISO/IEC 17789 International Standard Cloud Computing Reference Architecture**

Cloud Security Overview

Key Aspects of Security

- Manage identity and access
- Protect infrastructure, data, and applications
- Security monitoring and intelligence
- Optimize cloud security operations

Roles & Responsibilities

- Security responsibilities split between CSP and cloud customer (ISO/IEC 17789)
- Roles and responsibilities should be documented in cloud service agreement (ISO/IEC 27017)

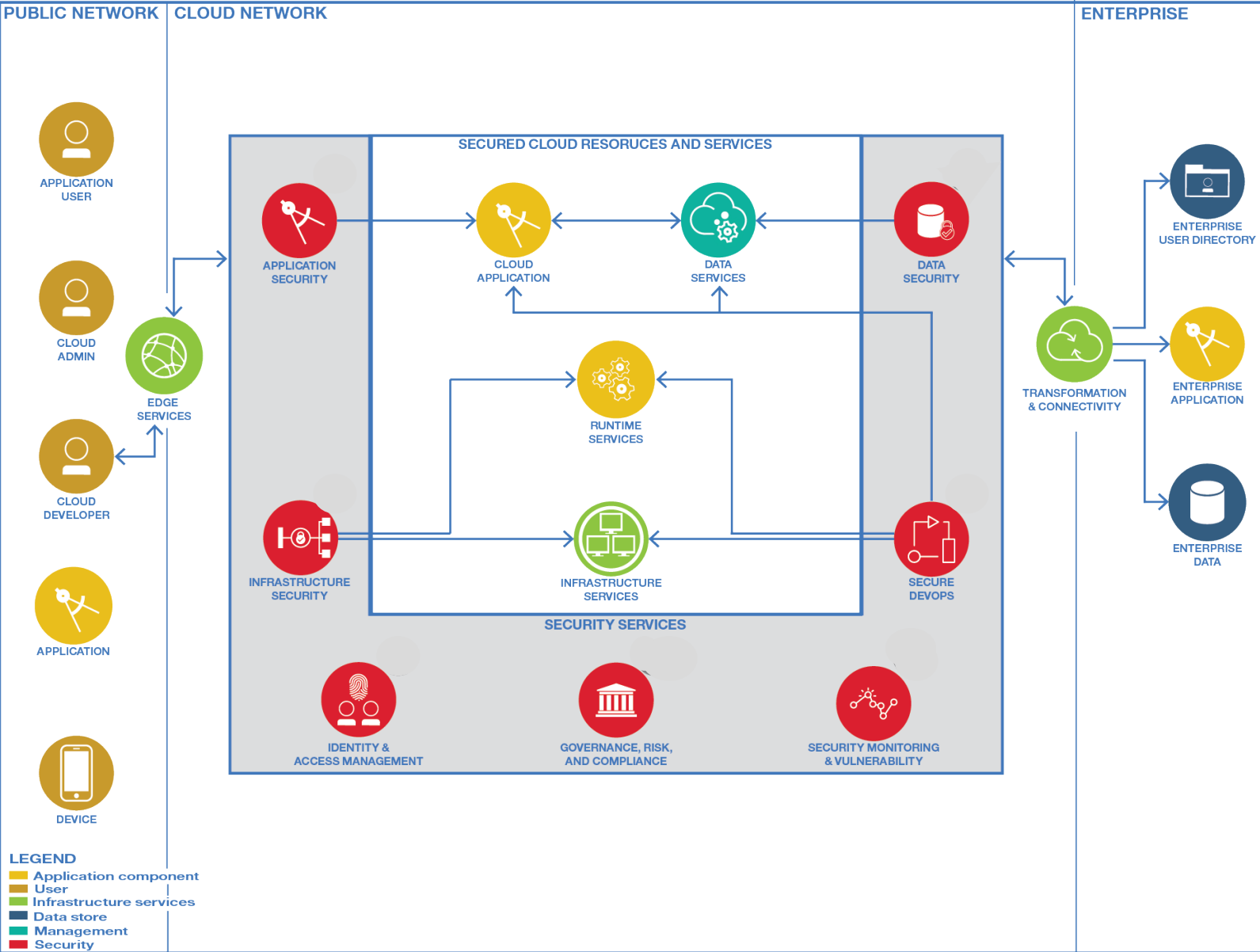
Impact of Deployment Models

- **Public** - resources shared with other tenants; isolation is an issue
- **Private** - no sharing with other organizations; sharing may take place between different parts of customer organization
- **Hybrid** - requires careful analysis of the security elements of each of the connected systems

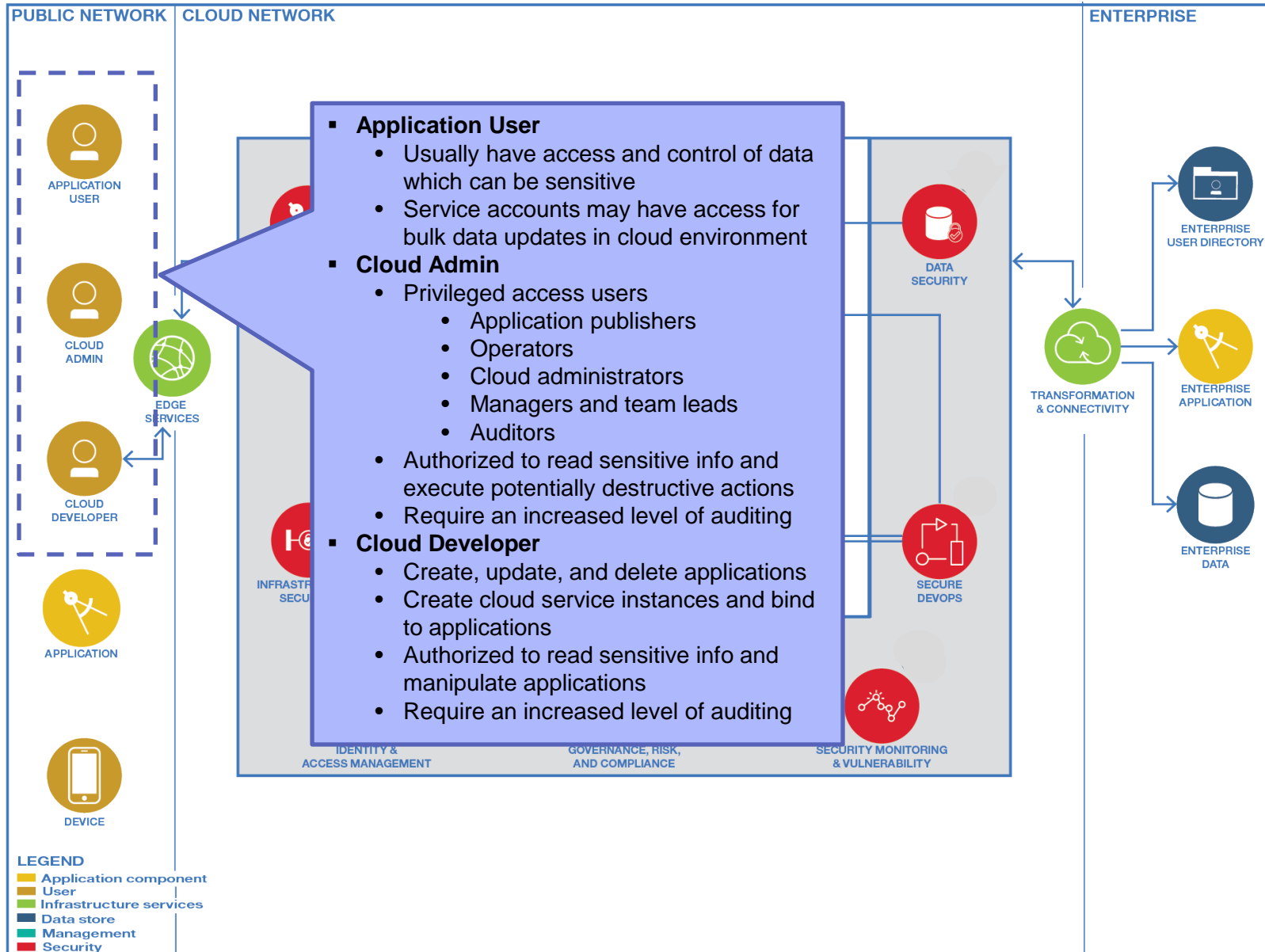
Impact of Service Models

- **IaaS** - customer takes on most responsibility for security of data, applications, systems and networks
- **PaaS** – CSP responsible for security of platform; customer responsible for configuring appropriate security options
- **SaaS** - CSP takes most responsibility for security of cloud services

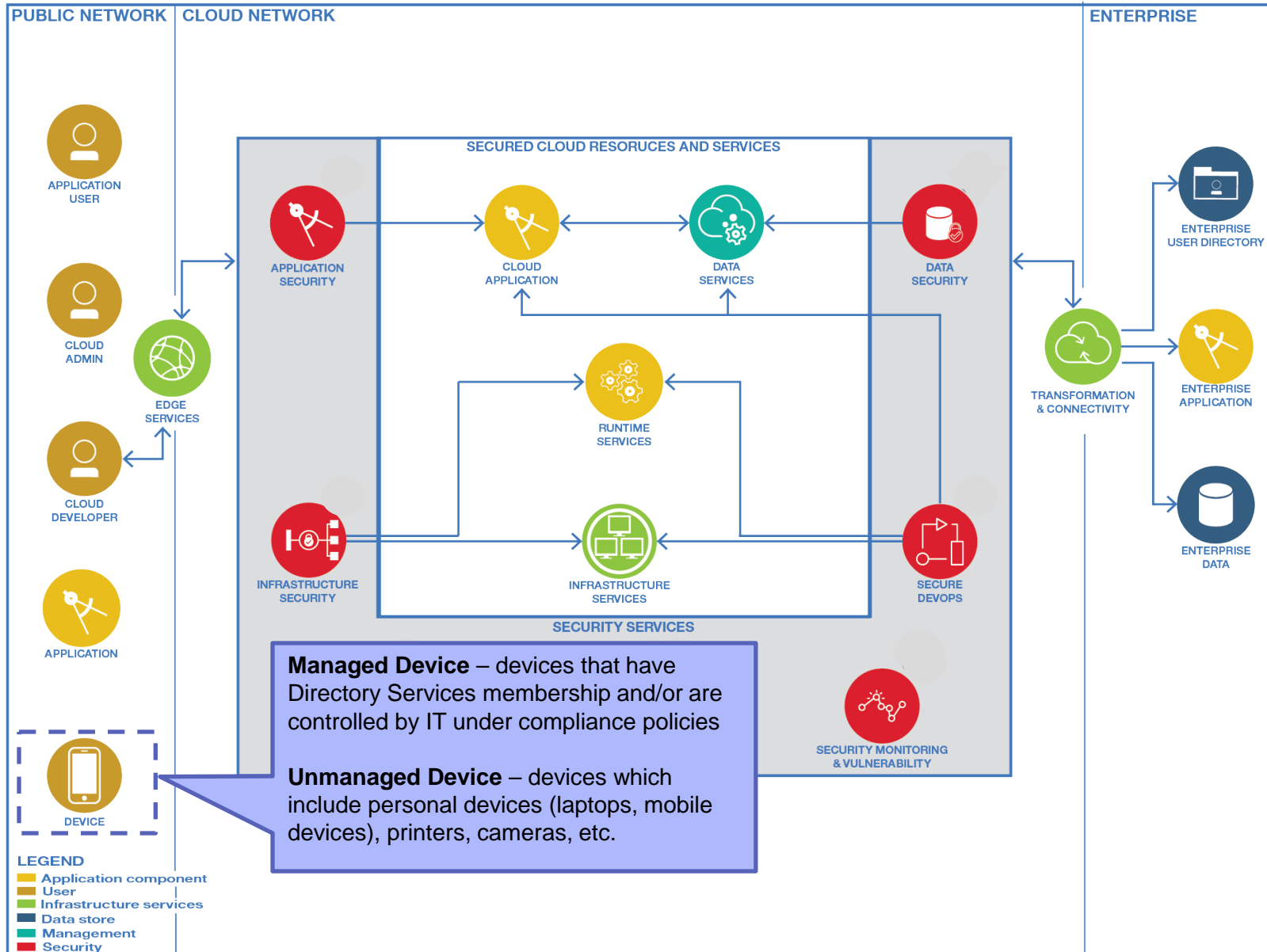
Architecture: Overview



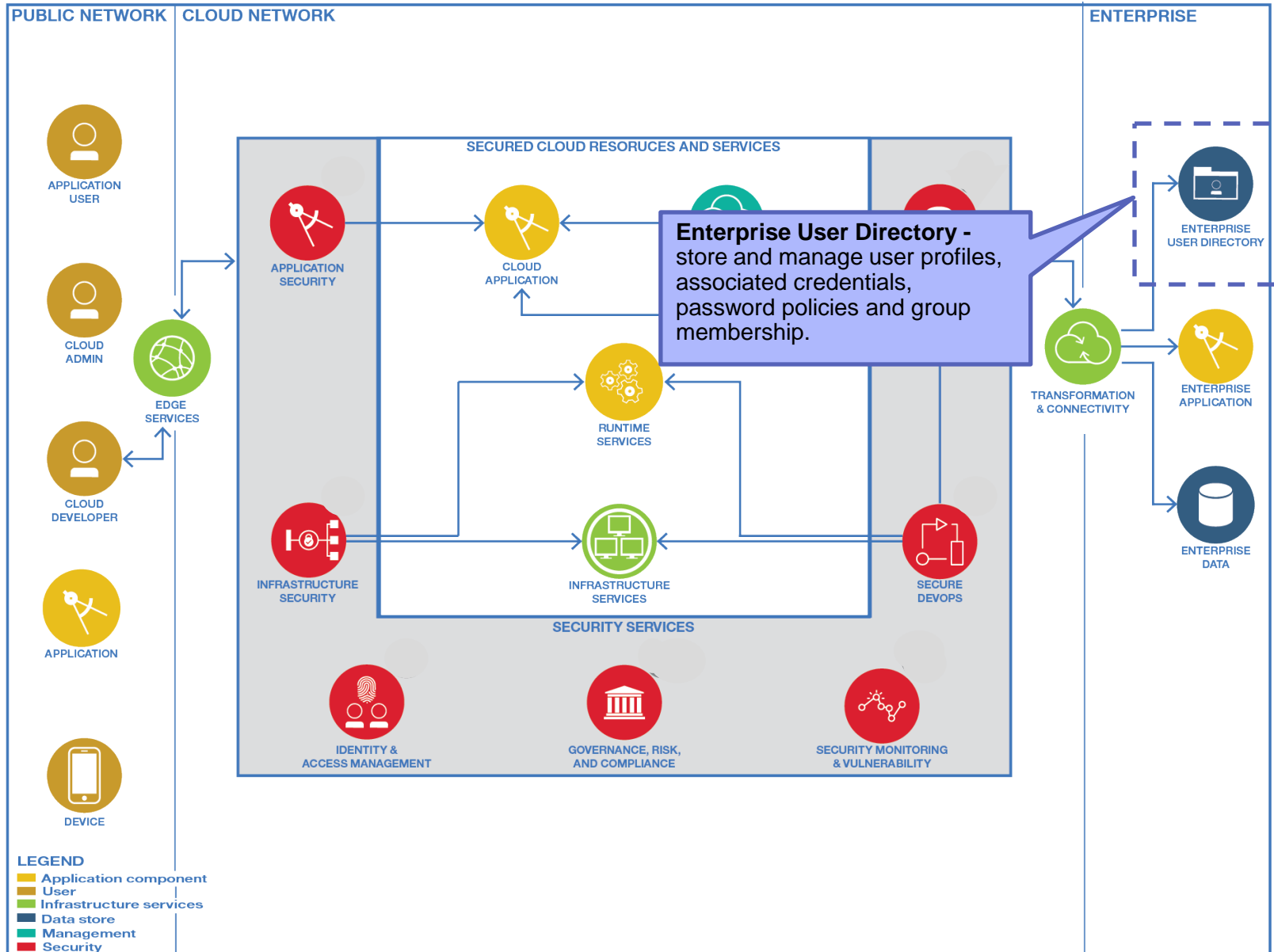
Architecture: User Roles



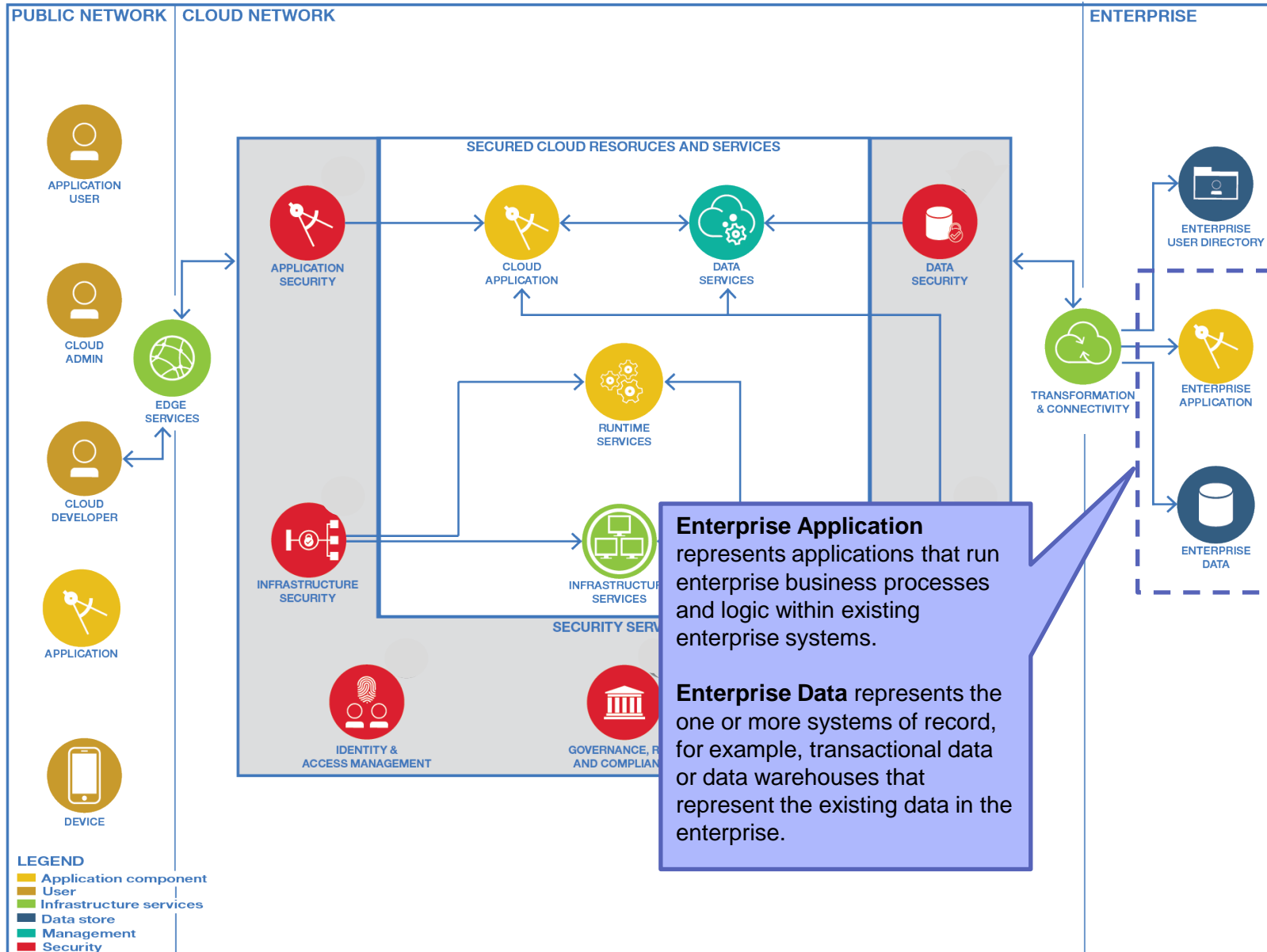
Architecture: Devices



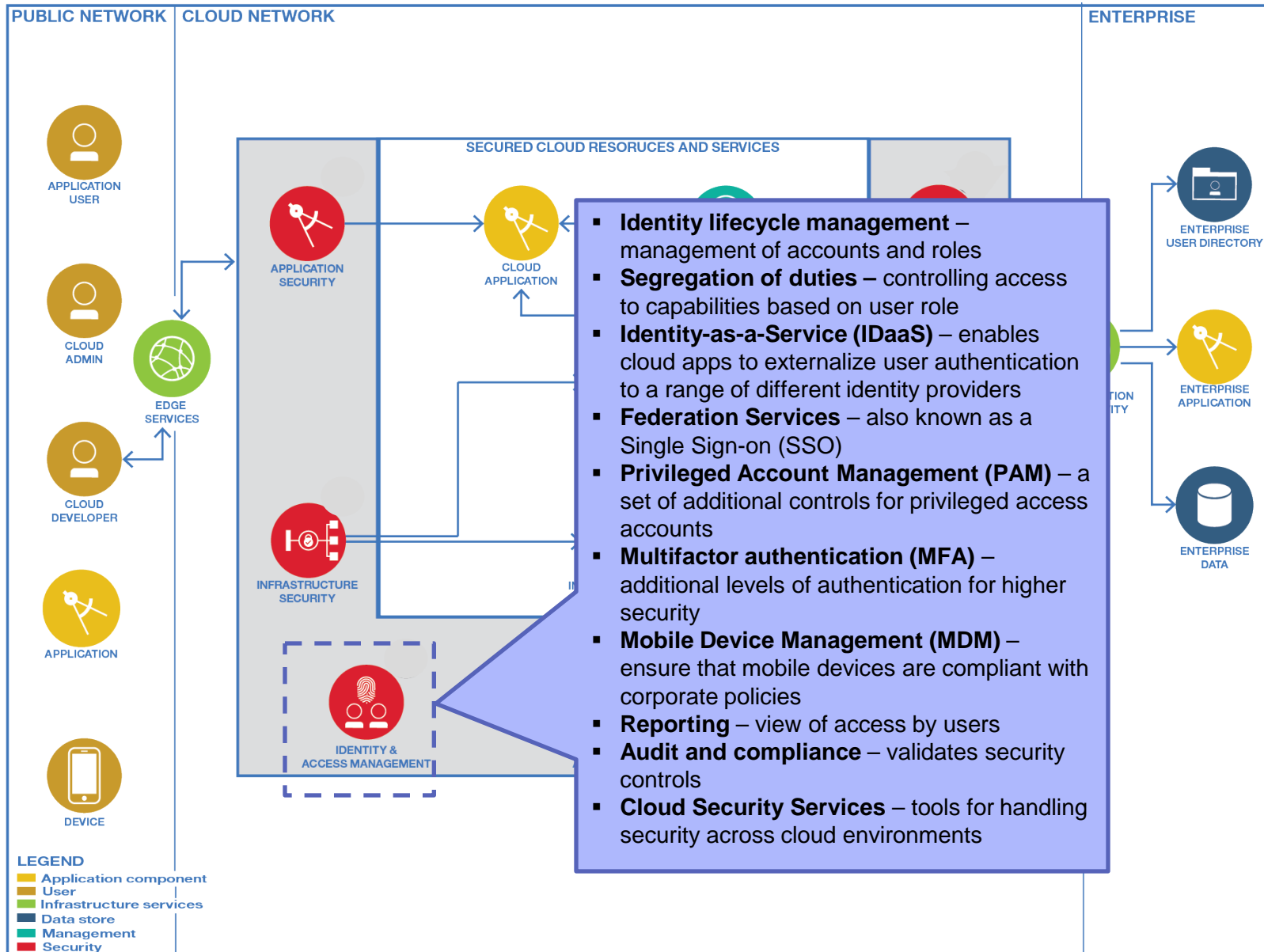
Architecture: Enterprise User Directory



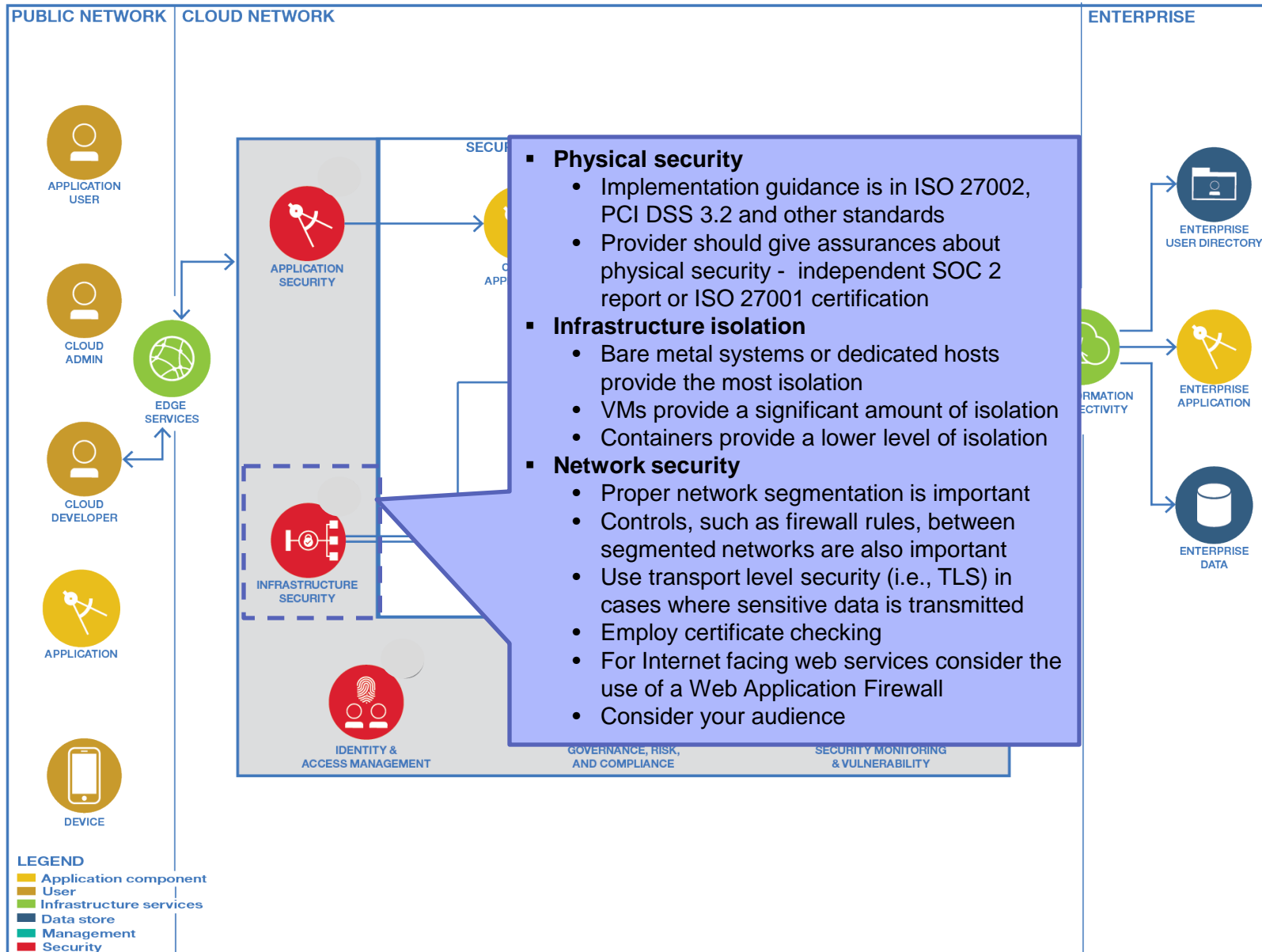
Architecture: Enterprise Applications & Data



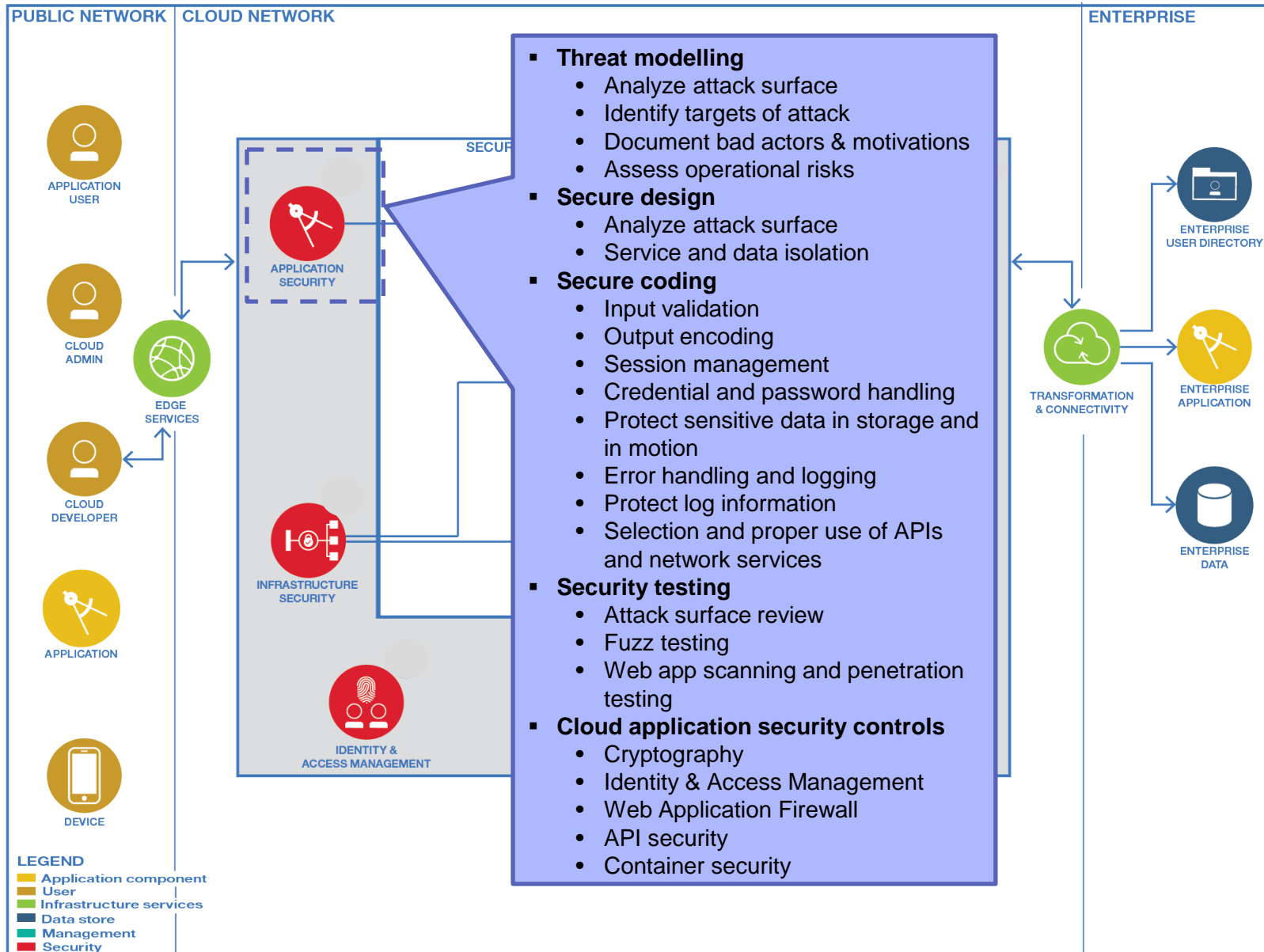
Architecture: Identity & Access Management



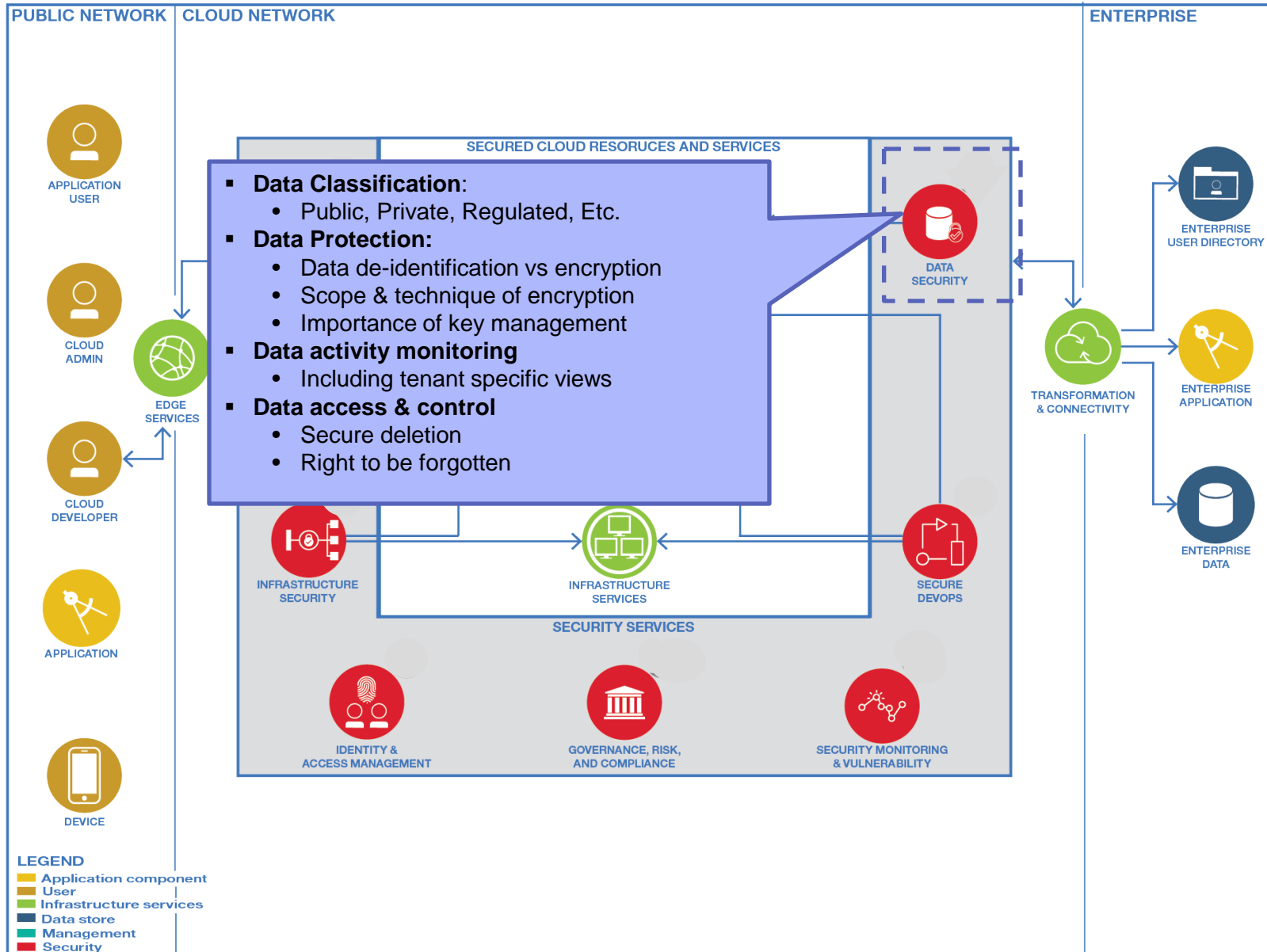
Architecture: Infrastructure Security



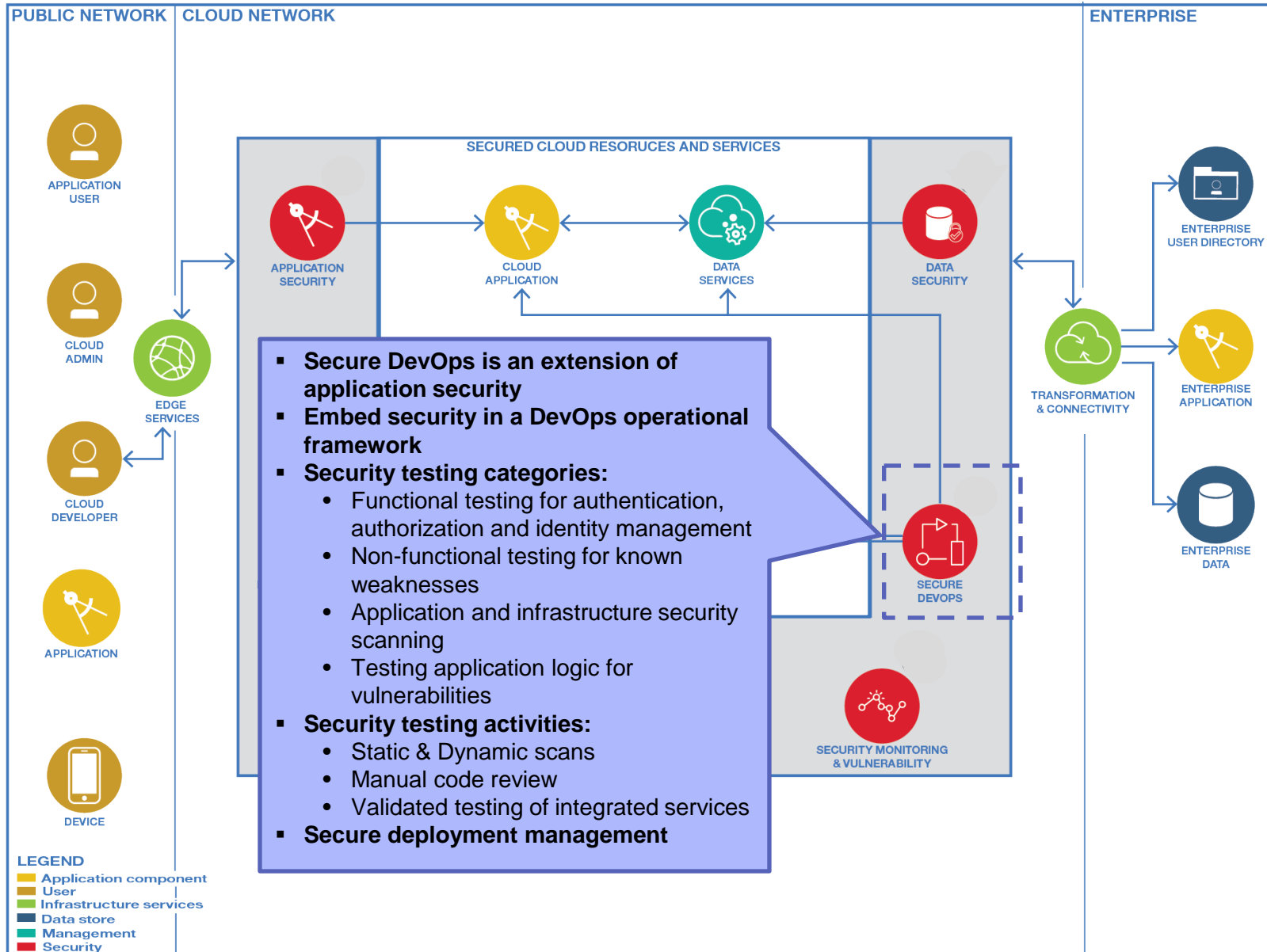
Architecture: Application Security



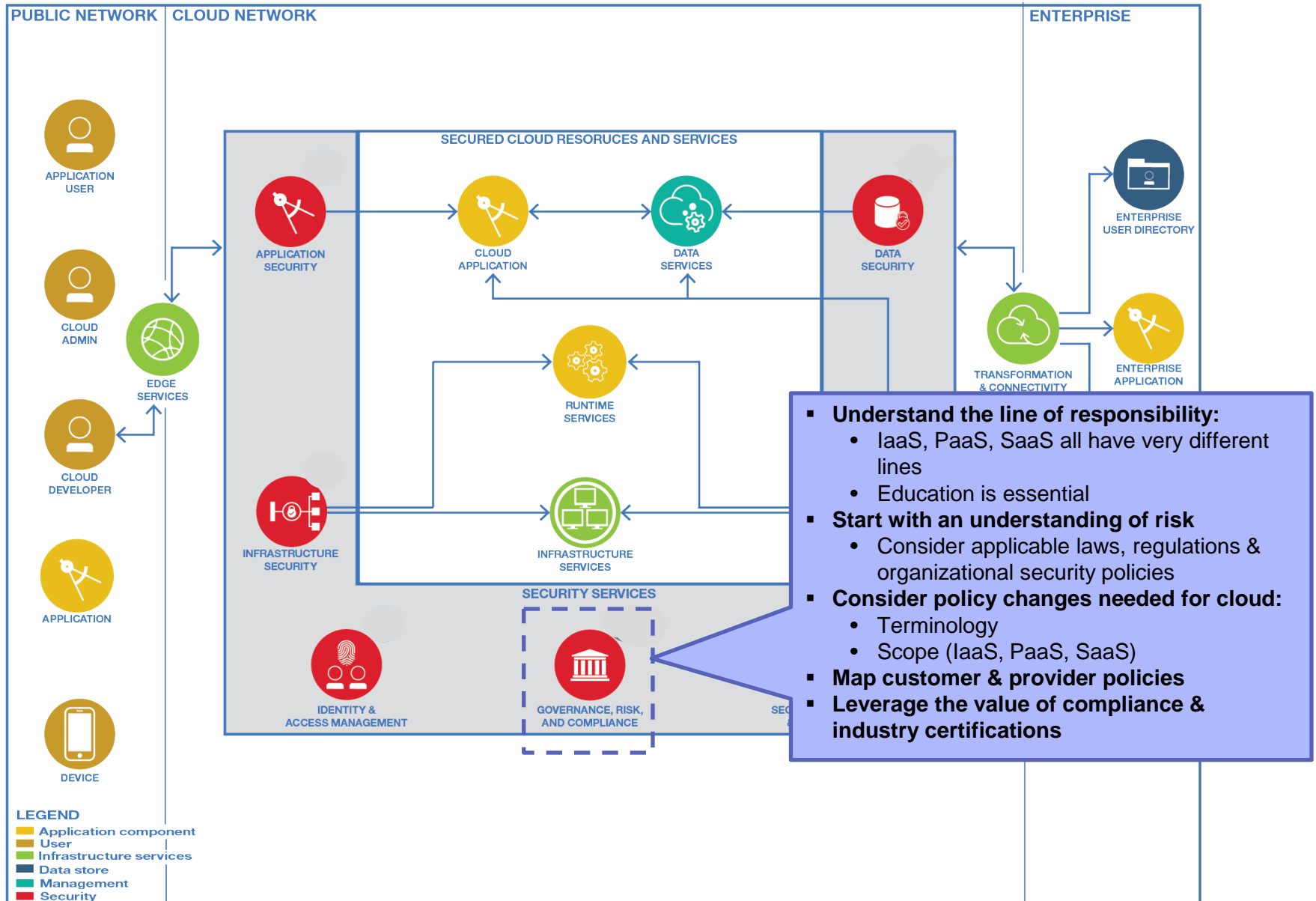
Architecture: Data Security



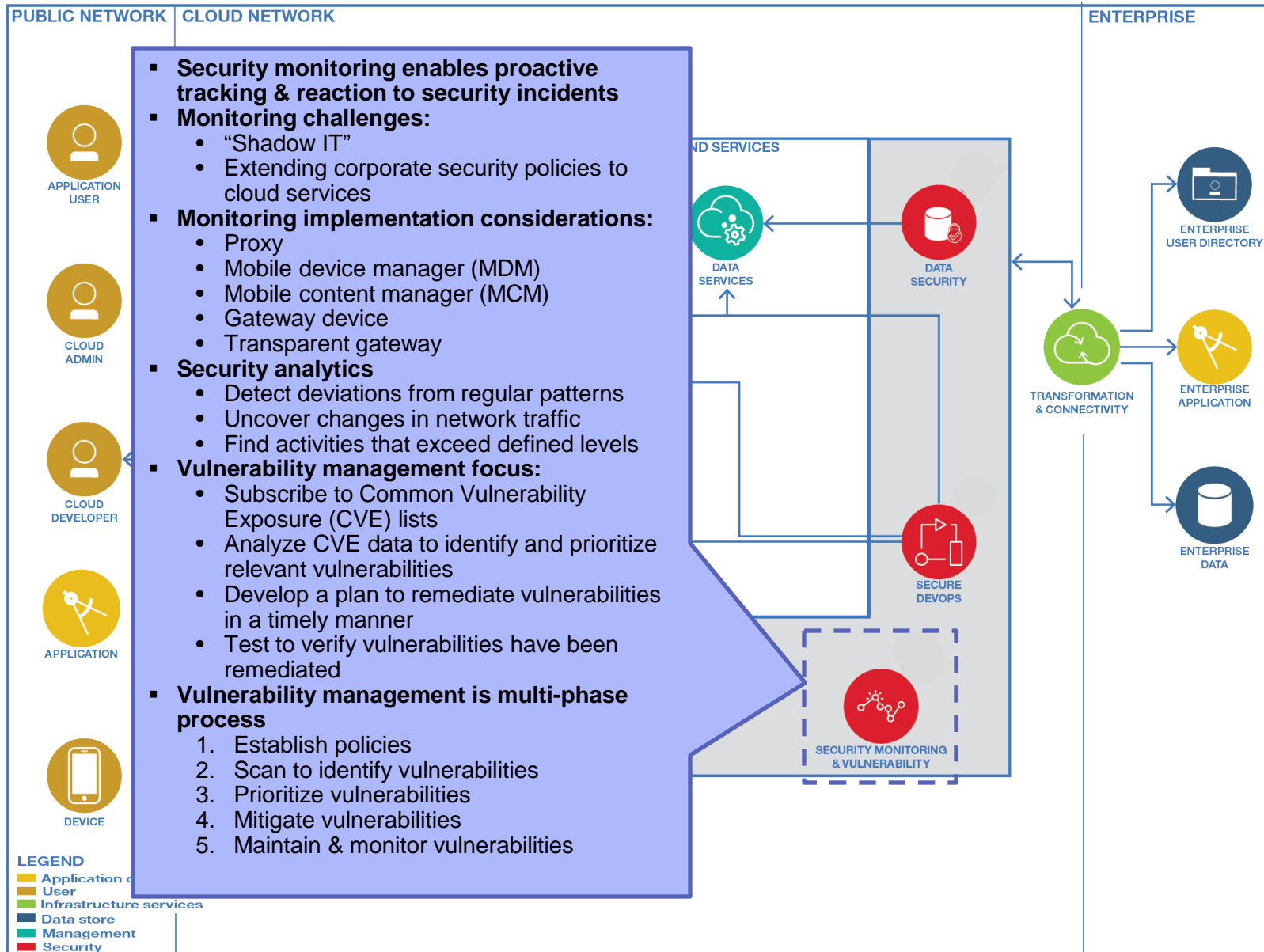
Architecture: Secure DevOps



Architecture: Governance, Risk & Compliance



Architecture: Security Monitoring & Vulnerability



Keys to Success

Key to Success	Considerations
Manage access to cloud applications and resources	<ul style="list-style-type: none">▪ IdAM for use of cloud services and for the applications and resources within those cloud services▪ Seamless IdAM systems covering cloud services and on-premises systems
Protect and secure cloud apps, data & infrastructure	<ul style="list-style-type: none">▪ Ensure boundary controls in place for all assets related to cloud services▪ Encrypt sensitive data▪ Encrypt communications
Gain visibility into all resources on cloud services	<ul style="list-style-type: none">▪ Ensure monitoring of cloud services and the apps/data located on cloud services▪ Integrate cloud service monitoring with monitoring of on-premises resources
Incorporate security into DevOps for cloud services	<ul style="list-style-type: none">▪ Include “Secure by Design” and “Data Protection by Design” principles into all applications destined to run on cloud services▪ Include security elements into DevOps processes and test security elements before and during production deployment
Strong security policy and governance	<ul style="list-style-type: none">▪ Build a comprehensive security policy for all cloud services▪ Ensure compliance with all corporate, industry and government requirements and regulations▪ Enforce security policy through measurable security controls▪ Check cloud service provider compliance through certifications
Automation of security services	<ul style="list-style-type: none">▪ Automated , reusable security services provide best support for security standardization and consistency

Call to Action



▪ *Join the CSCC Now!*

- To have an impact on customer use case based standards requirements
- To learn about all Cloud Standards within one organization
- To help define the CSCC's future roadmap
- Membership is free & easy: <http://www.cloud-council.org/become-a-member>

▪ *Get Involved!*

- Join one or more of the CSCC Working Groups
<http://www.cloud-council.org/workinggroups>

▪ *Leverage CSCC Collateral*

- Visit <http://www.cloud-council.org/resource-hub>

Additional Resources from the CSCC



Whitepapers

- ***Security for Cloud Computing: 10 Steps to Ensure Success v2.0***
<http://www.cloud-council.org/deliverables/security-for-cloud-computing-10-steps-to-ensure-success.htm>
- ***Cloud Security Standards: What to Expect and What to Negotiate v2.0***
<http://www.cloud-council.org/deliverables/cloud-security-standards-what-to-expect-and-what-to-negotiate.htm>

Cloud Customer Reference Architectures

- ***Web Application Hosting***
<http://www.cloud-council.org/deliverables/cloud-customer-architecture-for-web-application-hosting.htm>
- ***Big Data & Analytics***
<http://www.cloud-council.org/deliverables/cloud-customer-architecture-for-big-data-and-analytics.htm>
- ***IoT***
<http://www.cloud-council.org/deliverables/cloud-customer-architecture-for-iot.htm>
- ***Mobile***
<http://www.cloud-council.org/deliverables/cloud-customer-architecture-for-mobile.htm>
- ***And more!***

View all papers www.cloud-council.org/resource-hub and companion webinars www.cloud-council.org/events

The background is a vibrant blue with a complex, abstract pattern. It features a grid of squares, some of which are filled with various geometric shapes like circles, semi-circles, and smaller squares. The colors range from a deep, dark blue to a bright, light blue, creating a sense of depth and movement. The overall effect is a modern, digital aesthetic.

Thank You