

**RISE  
WITH  
SAP**



# **RISE Security Overview**

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# **SAP Security & RISE Overview**

# Key Challenges and Requirements

## General Concerns

- Cyber Attacks
- New Technology
- Exec Order
- Physical Security

## Resiliency

- Remote Work
- Business Continuity
- Disaster Recovery
- Visibility

## IOT/OT Convergence

- Secure OT
- Integration OT/IT
- Reliability

## Standards & Regulatory Compliance

- Data Privacy
- Zero Trust
- DFARS
- CMMC, C2M2



# SAP's Next-Generation Security Strategy

## Strategic commitments and enablers



### People

- Security-minded culture
- Customer-centric sales and enablement
- Workforce initiative



### Processes

- Process and workflow optimization
- SAP Risk Management
- Secure cloud delivery



### Technology

- Secure by construction
- Deny by default
- Reducing the attack surface



### Trust

- Transparency
- Sharing our practices
- Strategic partnership

**Continuity and Resiliency**

# Confidence in SAP Cloud Services through Transparency



### Comprehensive Contracts

Privacy, security framework, and applicable local regulations



### Independent Audits

Service Organization Control reports certifications



### Cyber Defense

Multiple layers of defense  
Holistic: Prevent, detect, and react



### Secure Cloud Model

Holistic approach  
Secure architecture



# SAP Trust Center

[www.sap.com/tc](http://www.sap.com/tc)

## Public

- Provides unified and easy access to cloud and on-premise trust related content
- Users can initiate requests, engage with SAP, and collect all assets and information you need



### Cloud Status

Discover the uptime and availability of SAP's cloud services with access to real-time insights.

[Explore the cloud service status >](#)



### Security

Rest assured that your data is protected with a security foundation based on the highest quality standards.

[Explore our security standards >](#)



### Privacy

Find out how SAP respects and protects the rights of individuals.

[Explore our privacy policies >](#)



### Compliance

Know that our cloud offerings meet the latest compliance and security standards worldwide.

[Explore our compliance standards >](#)



### Cloud Operations

Get insights on cloud delivery processes and hybrid IT operations.

[Explore our cloud operations >](#)



### Data Center

Visit our data centers and see state-of-the-art technologies and rigorous security methodologies.

[Explore our data centers >](#)



### Agreements

Decode SAP agreements for cloud services, on-premise products, partners and more.

[Explore our agreement documents >](#)



### FAQs

Find answers to frequently asked questions on all SAP Trust Center related topics.

[Explore all FAQs >](#)

# My Trust Center

[SAP Support Portal](#)

## For Customers & Partners

- Extension of the public Trust Center with information, documents, and evidence only available to customers and partners
- Ability to subscribe to notifications about content updates



### Incidents & Vulnerabilities

Find links to SAP Security Notes and the SAP Security Patch day for SAP products as well as important known vulnerabilities and their mitigation plans.



### Policies, Frameworks & TOMs

Find SAP Security Policies, Frameworks, and Technical and Organizational Measures (TOMs).



### Sub-processors

Find lists of SAP's sub-processors which provide data processing services on behalf of SAP to its customers.



### Compliance Documents

Find complimentary documentation to SAP Services and Organization evidence, audit reports, and certificates.



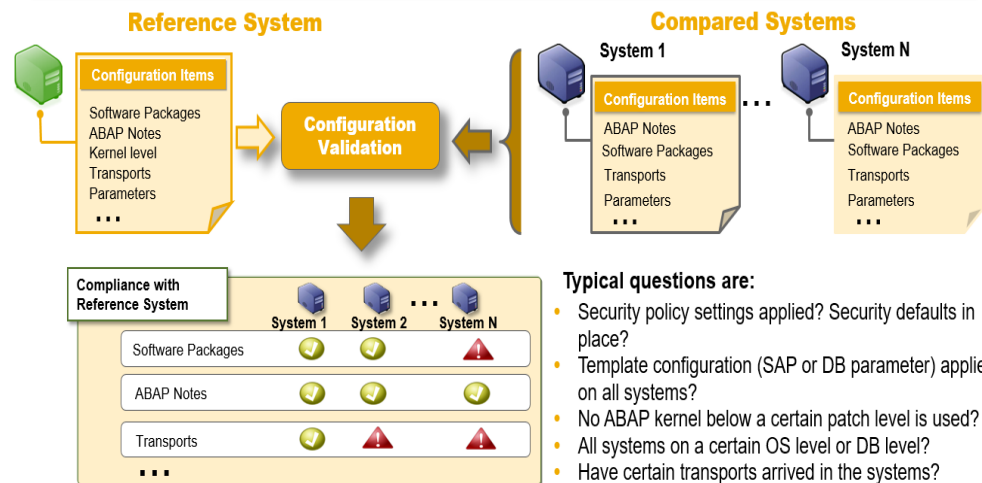
### Tools & Documentation

Find informative documents about Security and Data Protection & Privacy for SAP Products, Cloud Services, Professional Services and Support.



# Secure Maintenance & Operations

## SAP SolutionManager Configuration Validation

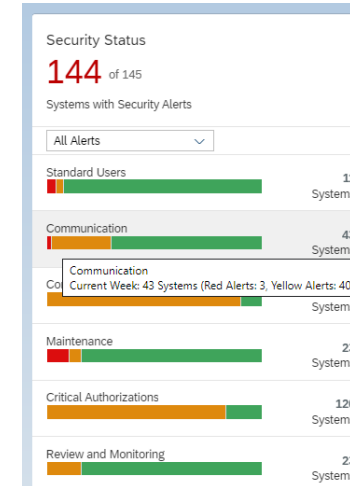


## SAP Security Patch Day:

- Every 2nd Tuesday of the Month
- Focus on security only
- Attention-worthy critical patches

## SAP EWA: Gain overview on your system landscape health

- Shows most critical configuration vulnerability's across prod landscape.



## SAP SOS: Keep security at a high level

- Decrease the risk of a system intrusion
- Ensure the confidentiality of your business data
- Ensure the authenticity of your users
- Substantially reduce the risk of costly downtime

## Security Monitoring

- Log settings configurable for attack detection systems
- Comprehensive informations for correlation analysis

Audit Class	Message ID	Event class	New in release	Message
Dialog Logon	AD0	Critical		Login failed (reason=&B; type=&A; method=&C)
Dialog Logon	AD1	Critical with Monitor Alert		User &B Locked in Client &A After Excessive Password
Dialog Logon	AD2	Critical		User &B in Client &A Unlocked After Being Locked Out
Dialog Logon	BD0	Critical		WS: Delayed logon failed (type &B; WF &C). Refer to I
Dialog Logon	BD1	Critical		SPRego replay attack detected (CPH=&A)
Dialog Logon	CD4	Critical	7&0	OAuth 2.0: Login-on client user &A not same as pass
Dialog Logon	CD6	Critical	7&0	OAuth 2.0: Client ID &A on SAML assertion not same a
Dialog Logon	BD0	Critical with Monitor Alert		Invalid SAP GUI data
Dialog Logon	BD0	Critical	new	OAuth scope &A not assigned to the user
Dialog Logon	BD0	Critical	new	HTTP request not received from trustworthy cloud com
RFC Logon	AD4	Critical		RFC/CRFC logon failed, reason=&B; type=&A; method
RFC Function Call	AD1	Critical		Failed RFC Call &C (Function Group = &A)
RFC Function Call	CD9	Critical		Failed Web service call (service = &A; operation = &B
RFC Function Call	CD2	Critical		Generic table access by RFC to &A with activity &B
RFC Function Call	CD3	Critical		Server &A is not contained in the whitelist
RFC Function Call	CD4	Critical		Connection to server &A failed
RFC Function Call	CD5	Critical		There is no logical file name for path &A
RFC Function Call	CD7	Critical with Monitor Alert		Validation for &A failed
RFC Function Call	CD0	Critical	Note 2128095	RFC callback rejected (destination &A; called &B; call
RFC Function Call	BD0	Critical	Note 2128095	RFC callback in simulation mode (destination &A; call
RFC Function Call	BD1	Critical		Critical JSON RFC call of function module &A (S_RFC
RFC Function Call	BD8	Critical	7&0	Access to UCCW HTTP validator of connect type &A via
RFC Function Call	BD9	Critical	7&0	Content security policy of CSP type &A violated
Transaction Start	AD4	Critical		Start of transaction &A failed (Reason=&B)
Transaction Start	CD2	Critical		Failed to start application &A (reason =&B)
User Master Record Change	AD7	Critical		User &A Created



# Secure SAP S/4HANA Cloud, Private Edition Shared Responsibility Model

## CLASSIC MODEL

### Features for customer without SAP Cloud

- Distributed responsibility for business continuity and errors - Root Cause Analysis? Mutual assignment of blame? Who fixes the error?
- Distributed suppliers - higher process costs, worse conditions?
- Distribution of services - risk of hidden costs and efforts?
- Low flexibility (licenses, hardware,...)
- Low agility - complex systems, contracts, delayed upgrades.
- Often CAPEX
- Varying SLA

Customer and / Provider E



Customer and / Provider D

Customer and / Provider C

Provider B

Provider A

## Services required for SAP solution operation

Proactive Application Services

Proactive Application Support

SAP Software Licences

SAP SW Maintenance Support

SAP Basis Support

SAP Database Management

OS Management

Backup Management

Intra-Datacenter-Connectivity

Infrastructure and Hardware

Datacenter

## RISE WITH SAP

Customer / Provider



Powered by



### Features for customer with SAP Cloud

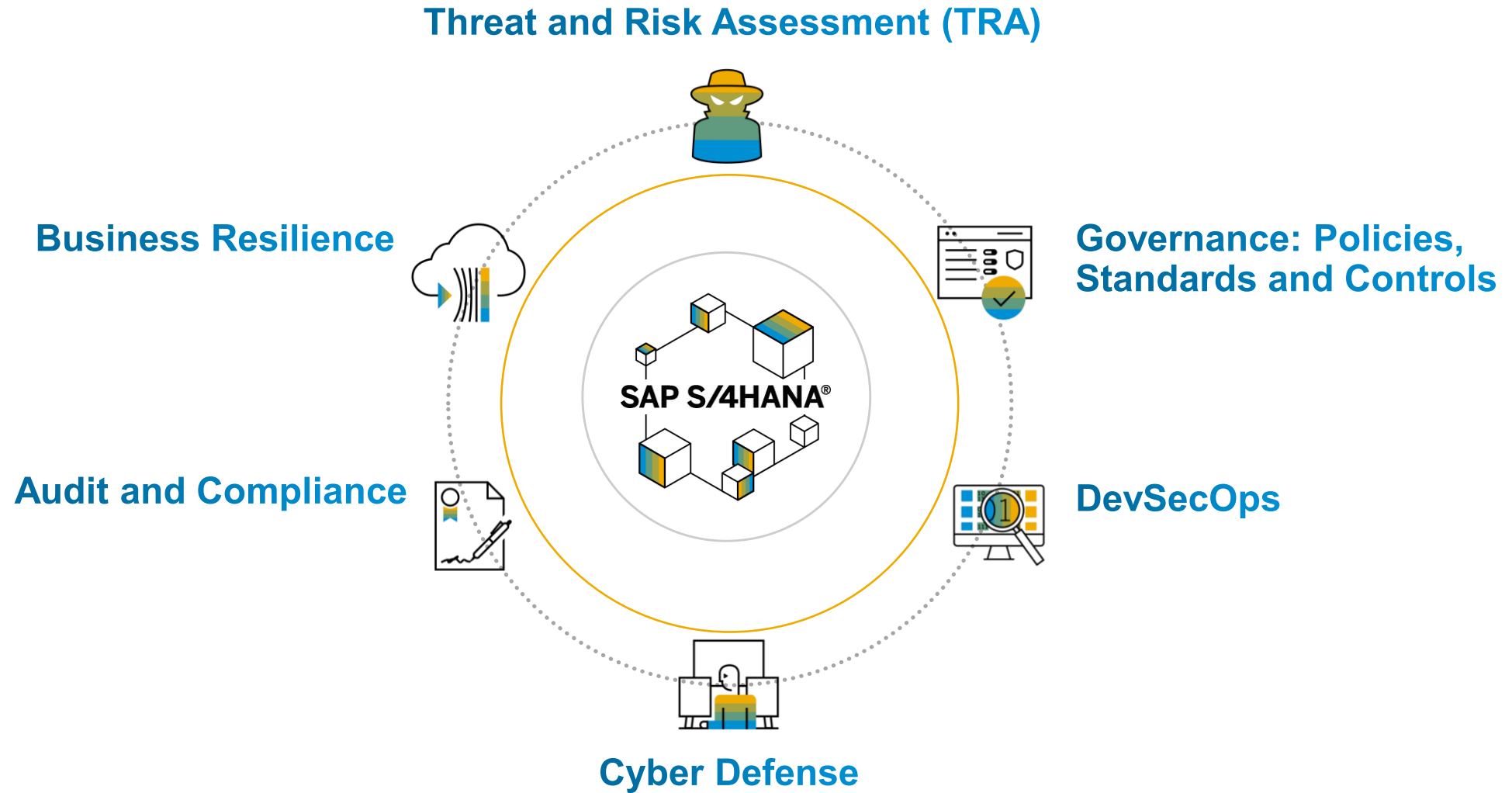
- SAP Managed Private Environment and consistent SLA across the stack.
- Hand over commodity tasks to SAP, with one hand to shake: One contract, one SLA!
- Execute and accelerate Hyperscaler strategy
- Security Compliance and Audit
- Security by Design and Security by Default
- Scalable and cost predictable
- SAP Reference architecture
- Dedicated SAP experts include
- Security Incident management
- 24x7 Security Monitoring

# SAP delivers tangible value by protecting business and managing risk

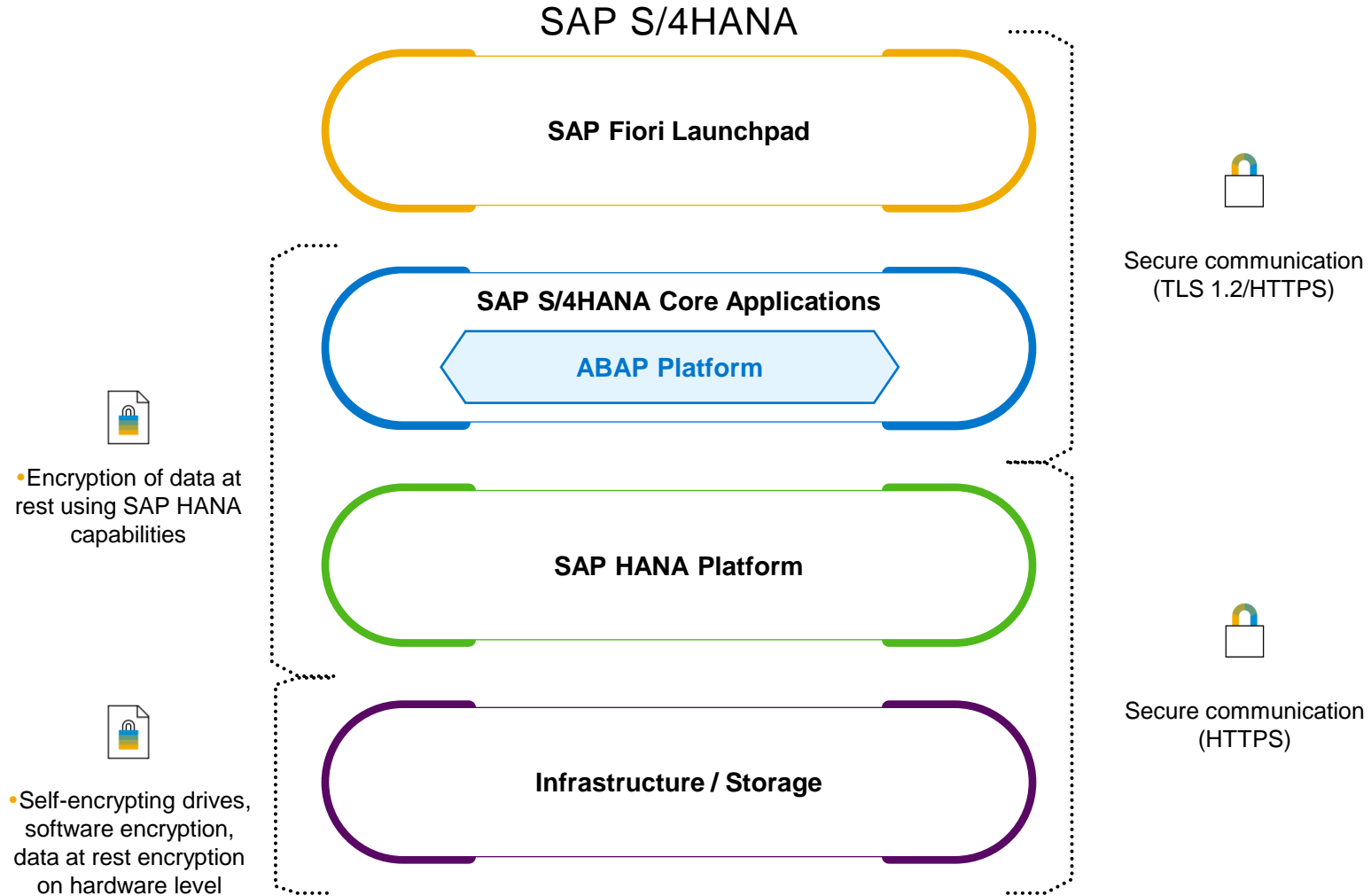
Potential RISE with SAP benefits



# SAP S/4HANA – Trust Model



# S/4 HANA Secure Communication & Encryption



# Holistic SAP S/4HANA Security



## Secure Software Development

Threat Modeling, Code Scans, Internal & External Security Assessment



## Leading Security Features

Security by default and by design at every level



## Leading Data Privacy and Protection

Authorization Concept, Read Access Logging



## Security Products

Holistic approach for prevent, detect, react  
Standardized operations processes

## Secure Operations

# Confidence in **SAP S/4HANA Security** through a holistic approach



## Secure Software Development



## Leading Security Products & Features



## Leading Data Privacy and Protection



## Security Products

- Risk-based approach aligned to ISO 27034
- Threat modelling
- Code scans
- Data Protection & Privacy assessment (DPCE)
- Internal & external security assessment
- SAP Code Vulnerability Analyzer
- SAP S/4HANA Bug Bounty Program
- Continuous security fixes and enhancements
- Digitally signed code
- Security validation

## Secure Operations

# Confidence in **SAP S/4HANA Security** through a holistic approach



## Secure Software Development



## Leading Security Products & Features



## Leading Data Privacy and Protection



## Security Products

### Secure access

- Authentication functions enabled by ABAP platform
- Secure Network Communications (SNC) for advanced authentication functions
- Supports single sign-on with X509, SAML, Two factor authentication, Kerberos
- Supports SAP & 3rd party identity provider

### Manage users and permissions

- Flexibility to maintain business roles and authorizations
- Central User Administration (CUA) capabilities
- Integration possible with LDAP solutions

### Enabled Threat Detection

- Central SAP Security audit logs and various other logs
- Auditing capabilities prepared for attack detection systems
- Auditing capabilities on business and technical level

### Secure communication & encryption

- Secure communication by encryption in transit
- Encryption of data at rest with state of the art crypto libraries

### Flexible security configuration

- Secure by default – Initial security setting as part of installation
- Security settings adjustable to customer security level
- Customer flexible security patch management
- HTTP protection mechanisms (e.g. Click-Jacking Protection)

### Secure maintenance

- Security Chapter in the EarlyWatch Alert (EWA) Report
- Security Optimization Service (SOS)
- Configuration Validation via SAP Solution Manager
- Patch day

### Secure Integration

- Process integration
- User Integration
- Data integration
- IoT integration

### Compliance enablement

- Audit information system (AIS)

# Confidence in **SAP S/4HANA On-Premise Security** through a holistic approach



**Secure Software  
Development**



**Leading Security  
Products & Features**



**Leading Data Privacy  
and Protection**

01011  
11010  
10101  
01101

**Security Products**

## ■ **Data Protection Features**

Mandatory features to support compliance towards data protection:

- Relevant security safeguards (as part of the technical organizational measures)
- Support for fulfilling data subject requests
- Ability to segregate personal data using organizational attributes
- Personal data deletion capabilities
- Inbuilt auditing capabilities
- Advanced authorization concepts

## ■ **Embedded Data Privacy Tools**

- Information Retrieval Framework (IRF)
- Information Lifecycle Management (ILM)
- Read Access Logging (RAL)

**Secure Operations**



# Confidence in **SAP S/4HANA On-Premise Security** through a holistic approach

## Security is integrated into SAP Company Processes



### Secure Cloud Software Development



### Leading Security Products & Features



### Leading Data Privacy and Protection



### Security Products

#### Secure Access

- SAP Single Sign-On
- SAP Identity Authentication Service

#### Manage users and permissions

- SAP Identity Management
- SAP Identity Provisioning Service
- SAP Access Control
- SAP Access Governance

#### Secure Code

- SAP Code Vulnerability Analyzer

#### Detect Attacks

- SAP Enterprise Threat Detection

#### Data Protection & Privacy Tools

- SAP Information Lifecycle Management (ILM)
- Information Retrieval Framework (IRF)
- Read Access Logging (RAL)
- SAP Data Custodian

## Secure Operations

# Confidence in **SAP S/4HANA On-Premise Security** through a holistic approach

## Security is integrated into SAP Company Processes



**Secure Cloud Software Development**



**Leading Security Products & Features**



**Leading Data Privacy and Protection**



**Security Products**

## Secure Operations

### Secure Operations

- Robust technical security architecture ensuring
  - Network Segregation
  - Data Segregation
- Secure design of cloud services
- Hacking simulation (White box)
- Infrastructure Vulnerability Scans (Monthly)
- Secure identify & access management
- Transparency of SAP access
- Backup & Restore
- Disaster Recovery Options

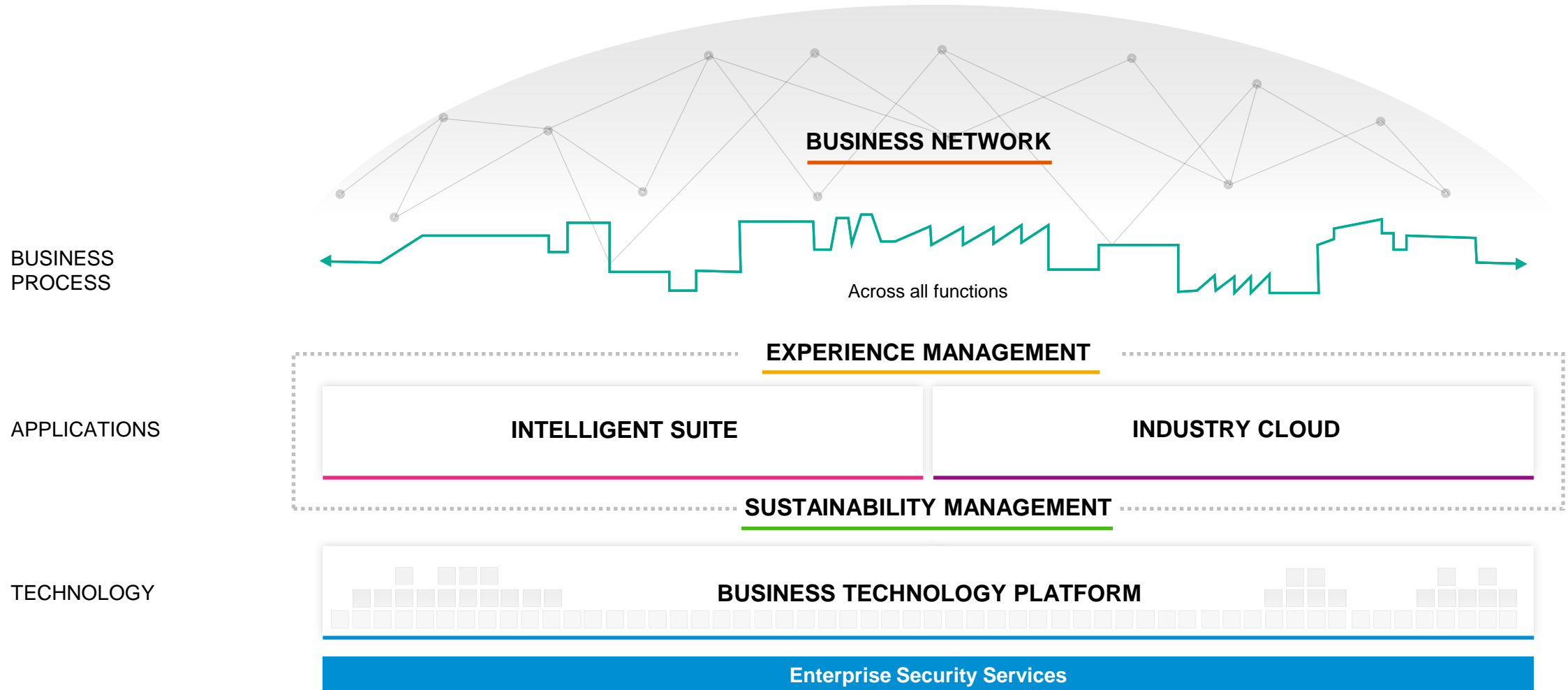
### Detect attacks

- SAP Cyber Defense & Response Center
- Logging and monitoring of security events
- Automated use cases initiate alerts
- Manual extended analysis to identify sophisticated attacks
- Customer Security incident process

### Data Center Security

- Benefit from local regulations (select region of data storage)
- Physical Security and Network Security
- Compliance, Confidentiality & Integrity
- Data Center on Tier-level III or IV
- Low latency speeds-up access

# Intelligent Enterprise



# SAP Discovery Center – Services

**SAP Discovery Center**

Home / Services

## Services

SAP Business Technology Platform services help you integrate and extend your solutions, optimize your business processes, and create an engaging digital experience.

security

Show Filters

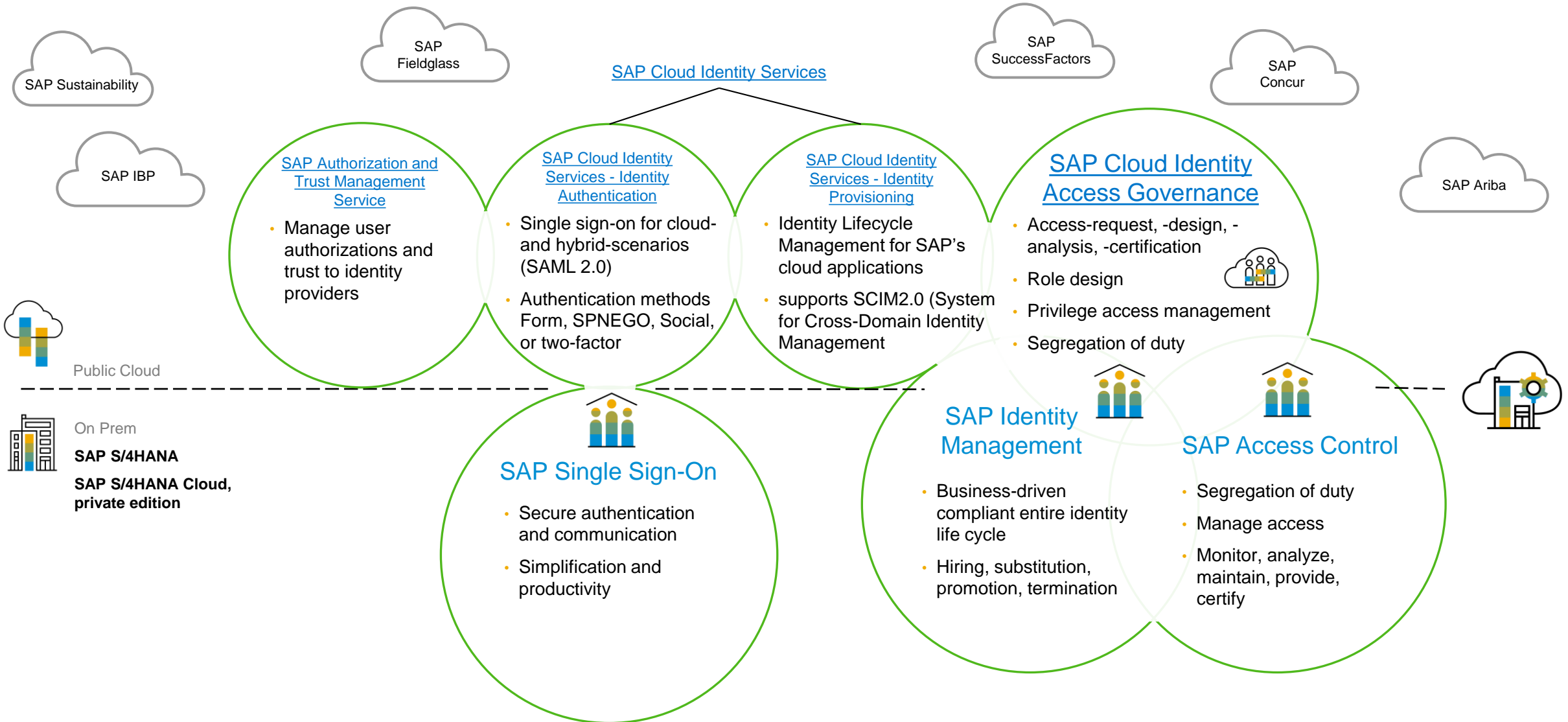
Showing 14 services

Sort By: None

- Identity Authentication**  
Authentication and single sign-on for users in the cloud.  
CPEA SUBSCRIPTION
- Authorization and Trust Management Service**  
Manage application authorizations and connections to identity...  
SUBSCRIPTION
- Data Privacy Integration**  
A reuse service that provides applications with data privacy...  
CPEA BUSINESS SERVICE
- OAuth 2.0**  
Protect applications and APIs with OAuth 2.0.  
SUBSCRIPTION
- Credential Store**  
Store and retrieve credentials such as cryptographic keys and...  
CPEA SUBSCRIPTION
- Keystore Service**  
Manage cryptographic keys and certificates.  
SUBSCRIPTION
- Custom Domain**  
Configure and expose your application under your own domain.  
CPEA SUBSCRIPTION
- Data Retention Manager**  
Manage residence and retention rules to block or delete personal data.  
CPEA SUBSCRIPTION BUSINESS SERVICE
- Identity Provisioning**  
Manage identity lifecycle processes for cloud and on-premise systems.  
CPEA SUBSCRIPTION
- Personal Data Manager**  
Manage requests and inform data subjects about the personal data in...  
CPEA SUBSCRIPTION BUSINESS SERVICE
- SAP Intelligent RPA**  
Business Process Automation
- Advanced Compliance Reporting**  
Compliance and Risk Management
- Integration Suite**  
Developed Integration Applications
- Mobile Services**  
Enable your mobile devices

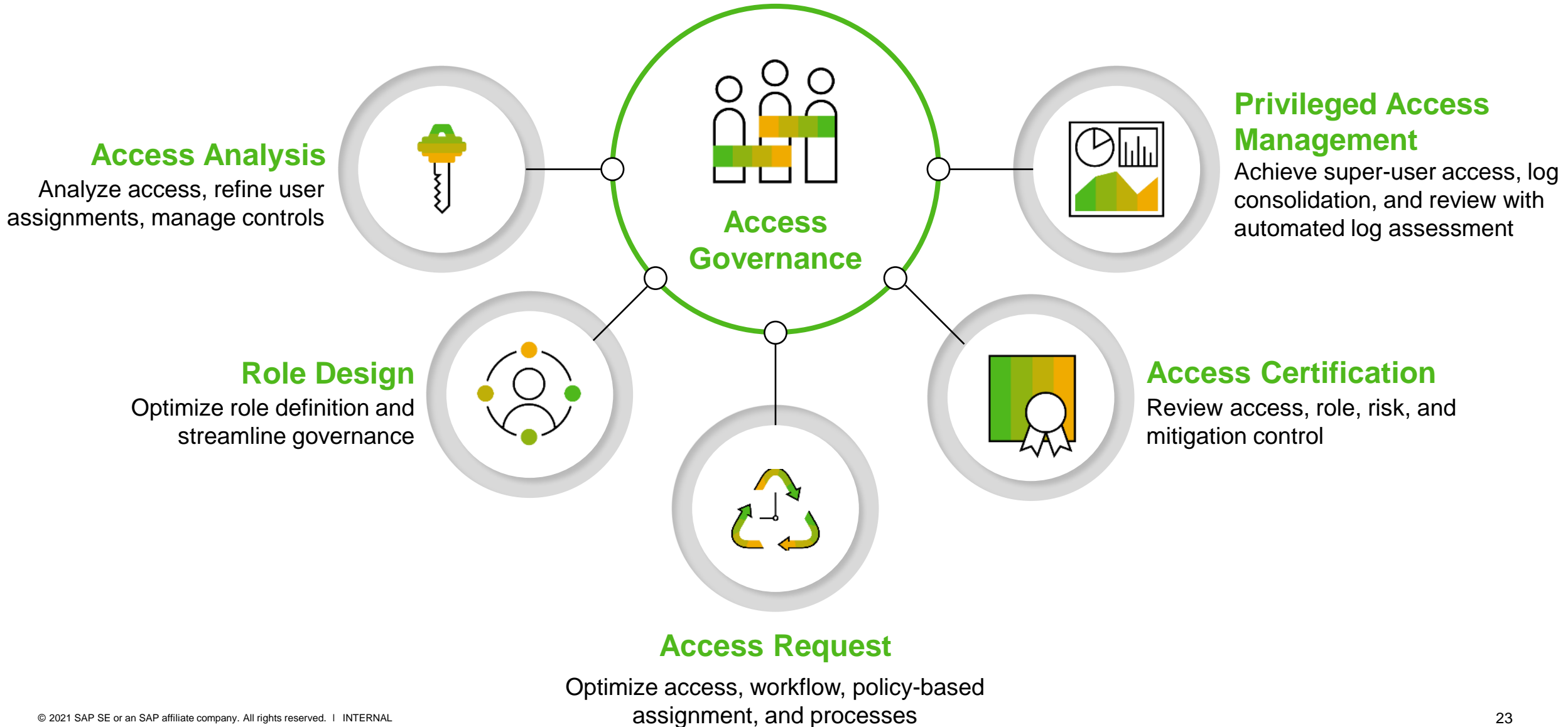
# **SAP GRC and Cybersecurity Products**

# Identity and Access Governance

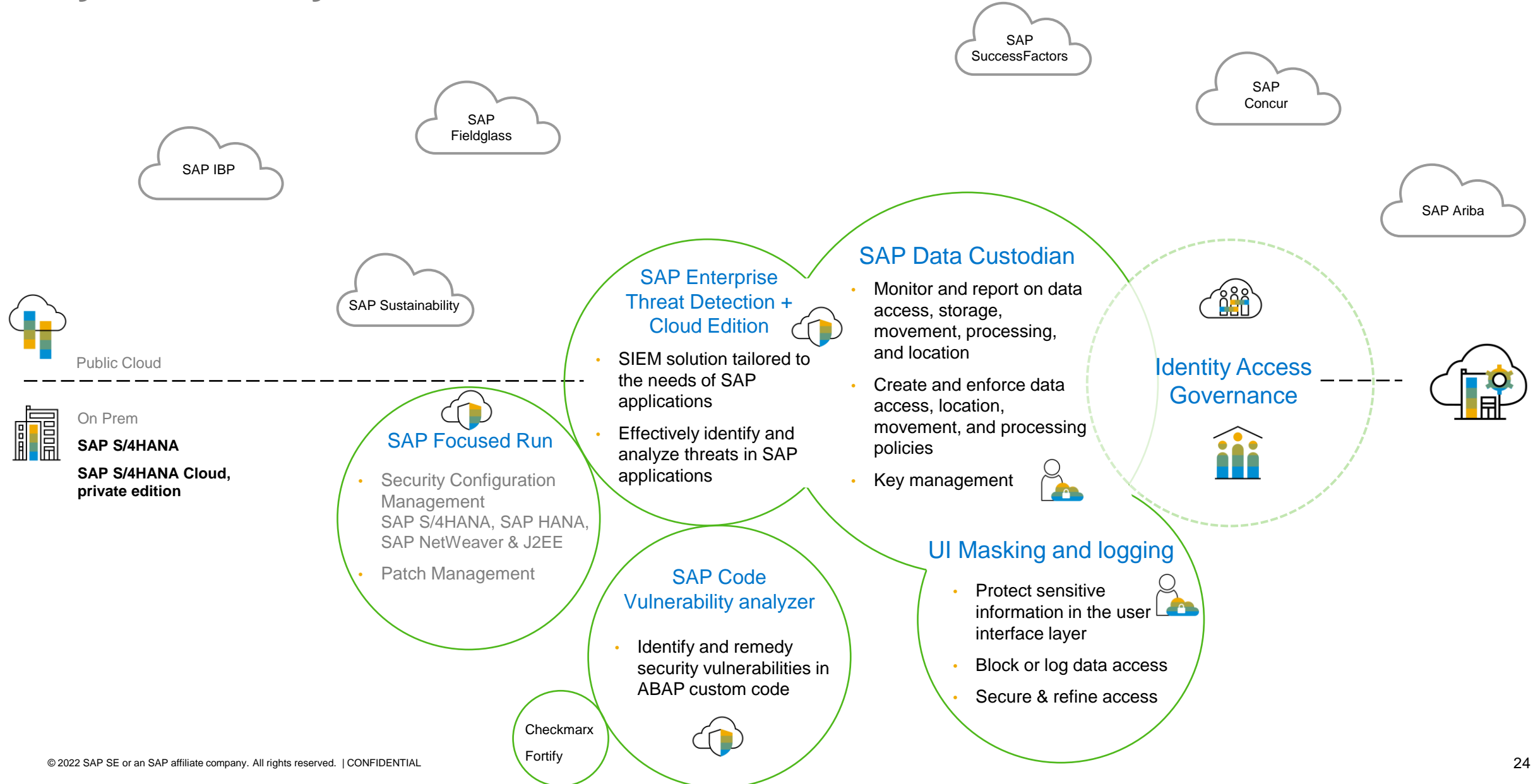


# SAP Cloud Identity Access Governance

Optimize role definition and streamline governance

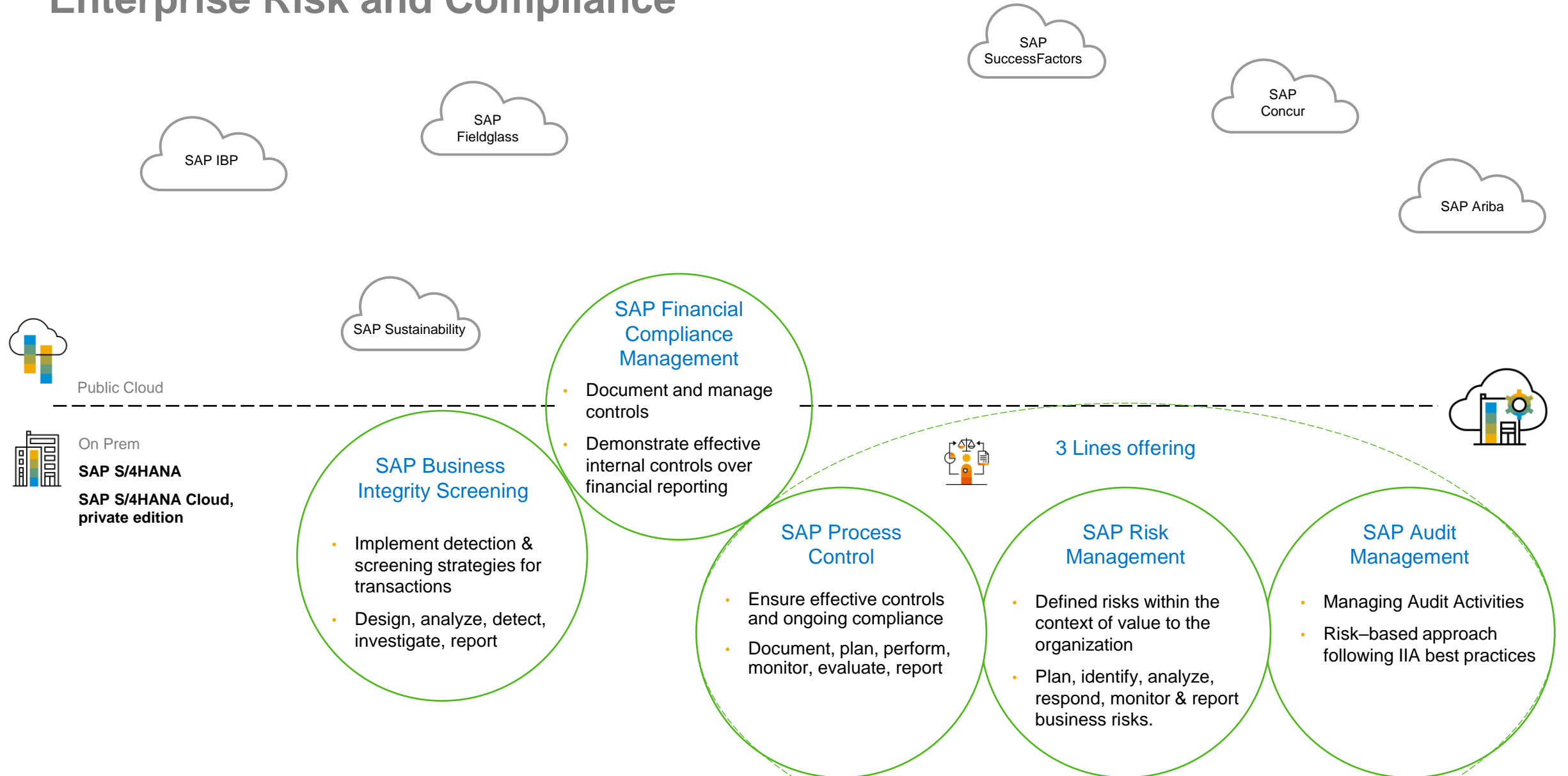


# Cyber Security and Data Protection





# Enterprise Risk and Compliance



## Key Takeaways

- Move to the cloud with confidence in SAP cloud operations
- Partner with SAP to address security challenges in your ERP environment
- Incorporate authentication, authorization and accountability into SAP solutions
- Manage identities across hybrid landscapes with SAP and third party tools
- Control your identity options with the SAP Business Technology Platform
- Monitor for threats and integrate to your IT security tools



# Thank you!

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