

# RSA®Conference2018

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## NCCoE TRUSTED CLOUD: A SECURE SOLUTION



#RSAC

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# Mission

**Accelerate adoption of secure technologies:** collaborate with innovators to provide real-world, standards-based cybersecurity capabilities that address business needs



# Foundations



## Collaborative Hub

The NCCoE assembles experts from businesses, academia, and other government agencies to work on critical national problems in cybersecurity. This collaboration is essential to exploring the widest range of concepts.

As a part of the NIST cybersecurity portfolio, the NCCoE has access to a wealth of prodigious expertise, resources, relationships, and experience.

**NIST**  
**National Institute of  
Standards and Technology**  
U.S. Department of Commerce



# NCCoE Principles



**Standards-based**



**Commercially available**



**Modular**



**Open**



**Repeatable**



**Usable and Transparent**



# Portfolio

## CONSUMER/RETAIL

### Multifactor Authentication for e-Commerce

- Data Integrity: Recovering (SP 1800-11)
- Derived PIV Credentials (SP 1800-12)
- DNS-Based Email Security (SP 1800-6)
- Energy: Identity and Access Management (SP 1800-2)
- Energy: Situational Awareness (SP 1800-7)
- Financial Services: Access Rights Management (SP 1800-9)

## FINANCIAL SERVICES

### Privileged Account Management

- Healthcare: Securing Picture Archiving and Communication Systems
- Healthcare: Securing Wireless Infusion Pumps (SP 1800-3)
- Hospitality: Securing Property Management Systems
- Mitigating IoT-Based DDoS
- Manufacturing: Capabilities Assessment for Securing Manufacturing Industrial Control Systems
- Mobile Device Security: Cloud and Hybrid Builds (SP 1800-4)

## BUILDING BLOCK

### Attribute Based Access Control

- IT Asset Management (SP 1800-5)
- Privileged Account Management (SP 1800-1)
- Securing Records on Mobile Devices (SP 1800-1)
- Mobile Device Security: Enterprise Builds
- Mobile Threat Catalogue
- Privacy-Enhanced Identity Federation
- Public Safety: Incident Responder; Mobile Application SSO
- Secure Inter-Domain Routing
- TLS Server Certificate Mgmt
- Transportation: Maritime: Oil & Natural Gas
- Trusted Geolocation in the Cloud (NISTIR 7904) -- **Trusted Cloud**

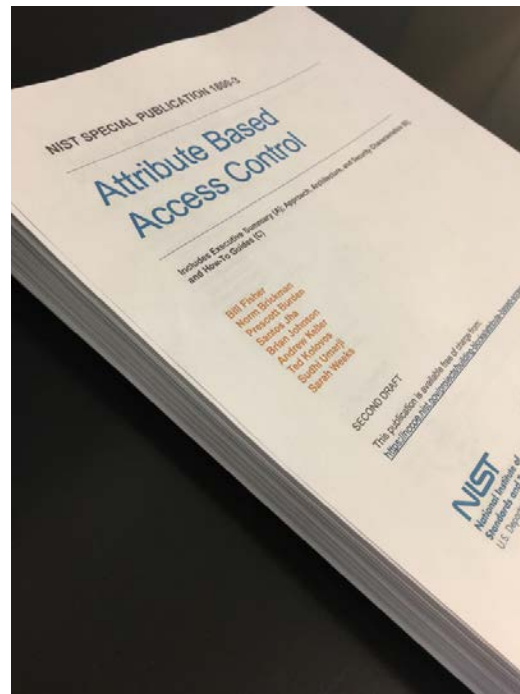
## BUILDING BLOCK

### Trusted Cloud

# SP 1800 Series: Cybersecurity Practice Guides



- Volume A: Executive Summary
- Volume B: Approach, Architecture, and Security Characteristics
- Volume C: How-To Guide



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## **NCCOE TRUSTED CLOUD PROJECT**

**Helping businesses and the government unleash the power of the cloud**

# Opportunity with Cloud Technology



## Cloud Characteristics

- Flexible
- Available
- Resilient
- Scalable

## Benefits to an Organization

- Security
- Efficiency
- Innovation
- Competitiveness





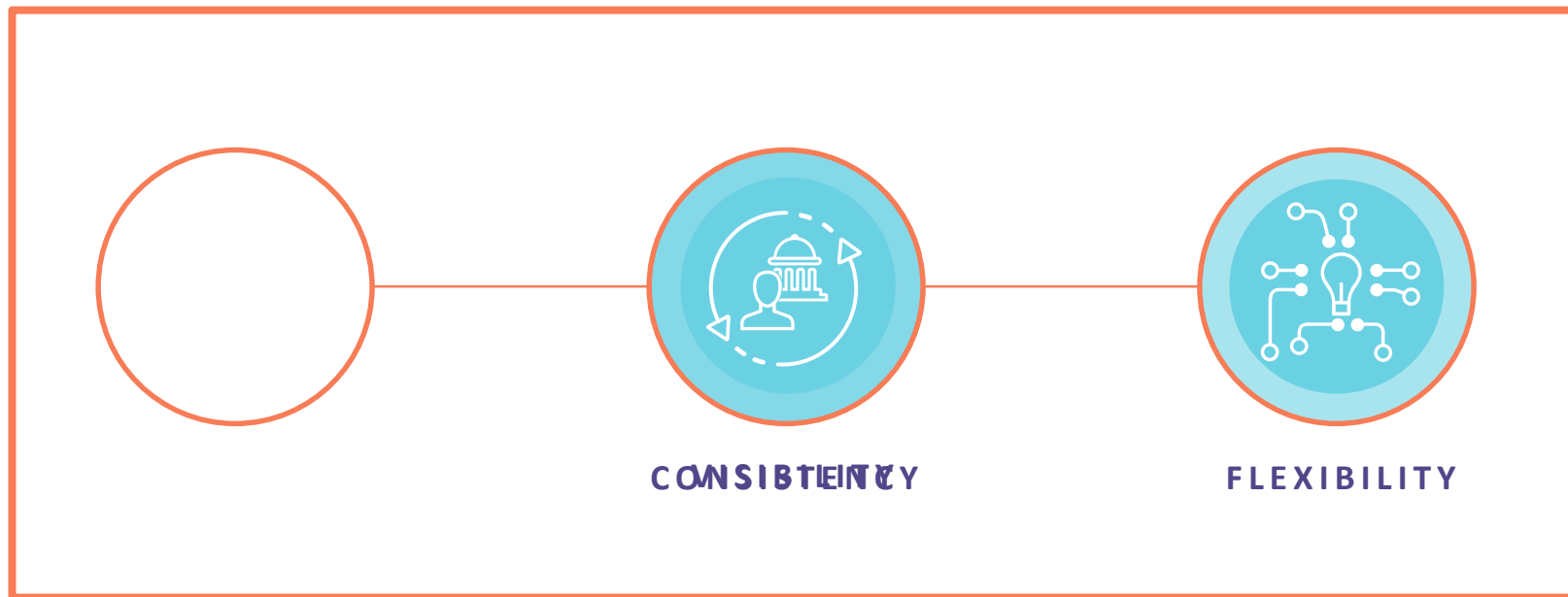
## Organizational Requirements

- Comply with applicable laws
  - Who owns the information?
  - What type of information?
  - Where is the information?
- Meet organization's cybersecurity risk-management policies

# Two Paths to the Cloud



# Security Objectives



# Overview of Trusted Cloud Project



**NCCoE Trusted  
Geolocation in the Cloud  
(aka as Trusted Cloud)  
project**

**Trusted Cloud security  
capabilities across  
different cloud service  
models**

**NIST Special Publication  
(SP) 1800**



# Current Implementations



## Hybrid Cloud IaaS

Lift and shift a multi-tier workload between the NCCoE data center and the IBM cloud and maintain a connected management plane across the Internet



## Private Cloud IaaS

Protect a sensitive high-value workload like an authentication/authorization system that interfaces with an application container workload supporting cloud native applications

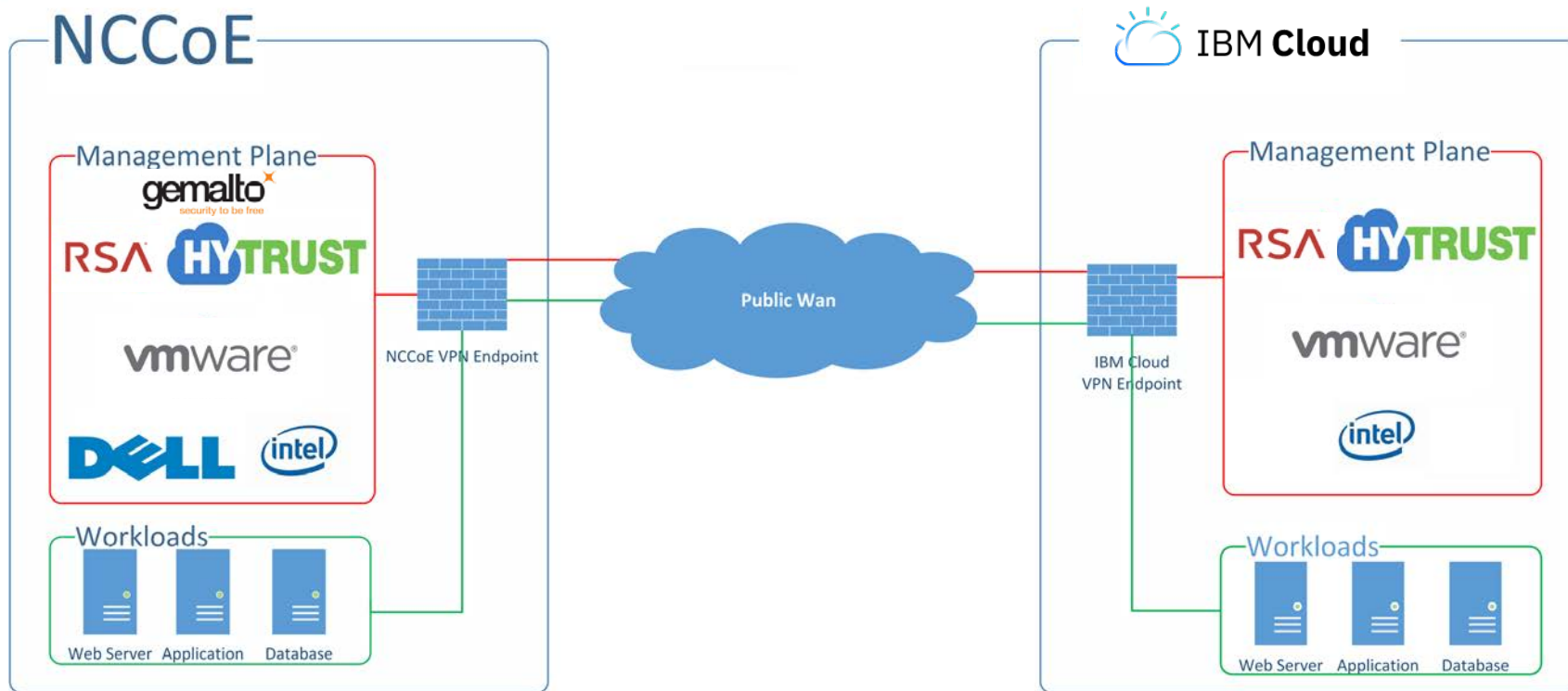


Microsoft



Twistlock.

# Trusted Hybrid Cloud Architecture





# What's Next?

- 1 | Review NCCoE Projects
- 2 Sign-up for NCCoE Updates
- 3 Submit a Project Idea to NCCoE
- 4 Collaborate and Share Best Practices