

Cyber Security for the Digitalized Grids – Elevate your security in the cloud

Speaker : *Sainath Bandhakavi, Sr. Solutions Architect - Utilities,
Amazon Internet Services Pvt Ltd*

3-Mar-22

“Data” in Utilities - Consumer



Postpay/
Prepay
customers

Smart
Home



Data in →

- New connection applications and supporting documents
- Metering/ consumption data
- Online & offline payments
- Smart home device level usage
-



Data processed/
stored

- Consumer master information and PII data (Aadhaar, PAN)
- Consumer contact info
- Bill calculation and printed/ emailed bills
- Payments and accounting



Data accessed →



- Consumption, billing and payment history
- Consumer care and experience
- Regulatory reporting
-



EV Charging
Solutions

- EV charging station monitoring
- EV charging transaction data and events
-

- EV charging transaction history
- Consumer to charging transactions mapping and history
- EV charging asset information
- Payments and accounting

- EV charging station availability monitoring
- EV usage analysis
-

“Data” in Utilities - Grid



On-site
generation



Data in →

- Boundary meter data
- Maintenance activities
- Sensor data from generation assets
-



Data processed/
stored

- Generation asset info & capacity
- Generation capacity
- Long, medium and short term contracts
- Maintenance history and plans
- Asset performance data
- Bidding history in exchanges (volume & prices)



Data accessed →

- Assets monitoring using SCADA/DCS
- Advanced analytics for supply forecasting, asset failure prediction
-



Solar
Installation

- Net metering data
- Generation data
- Net metering connection applications
-

- Panel asset information and associated farm/ consumer data
- Consumer contract information
- Payment and accounting
-

- Generation monitoring and asset monitoring
- Generation forecasting
- Grid integration planning
- Billing and accounting
-



Maintenance
Services

- Asset monitoring data
- Meter health alarms/ events
- Maintenance action taken from mobile devices
-

- Asset maintenance history
- Asset health monitoring history data
- Work orders and workflow
- Crew management

- Work order tracking
- Maintenance planning
- Asset failure prediction
-



Types of “Data”



Data in transit



Data at rest



Data for integration
with internal
systems



Measurement data
from field devices



Structured data
stored in databases



Data for integration
with external
systems

Consumers
accessing data
through internet



Data captured by
utility workforce
using mobile devices



Files with data
stored in file system/
data lake

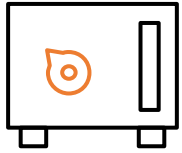


Utility users
accessing data
through VPN



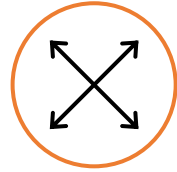
PII data of
consumers

Elevate security posture of cloud based implementation



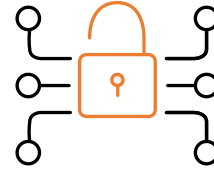
Inherit global security and compliance controls

- Third-party validation for thousands of global compliance requirements



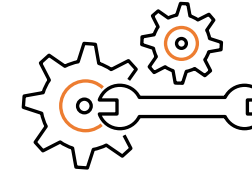
Scale with superior visibility and control

- Control where data is stored and who can access
- Fine grained identity and access controls to resources
- Integrate security services into your solutions



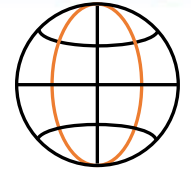
Highest standards for privacy and data security

- Meet data residency requirements
- Encryption at scale using key management
- Control who can access content, its lifecycle and disposal



Automate & reduce risk with deeply integrated services

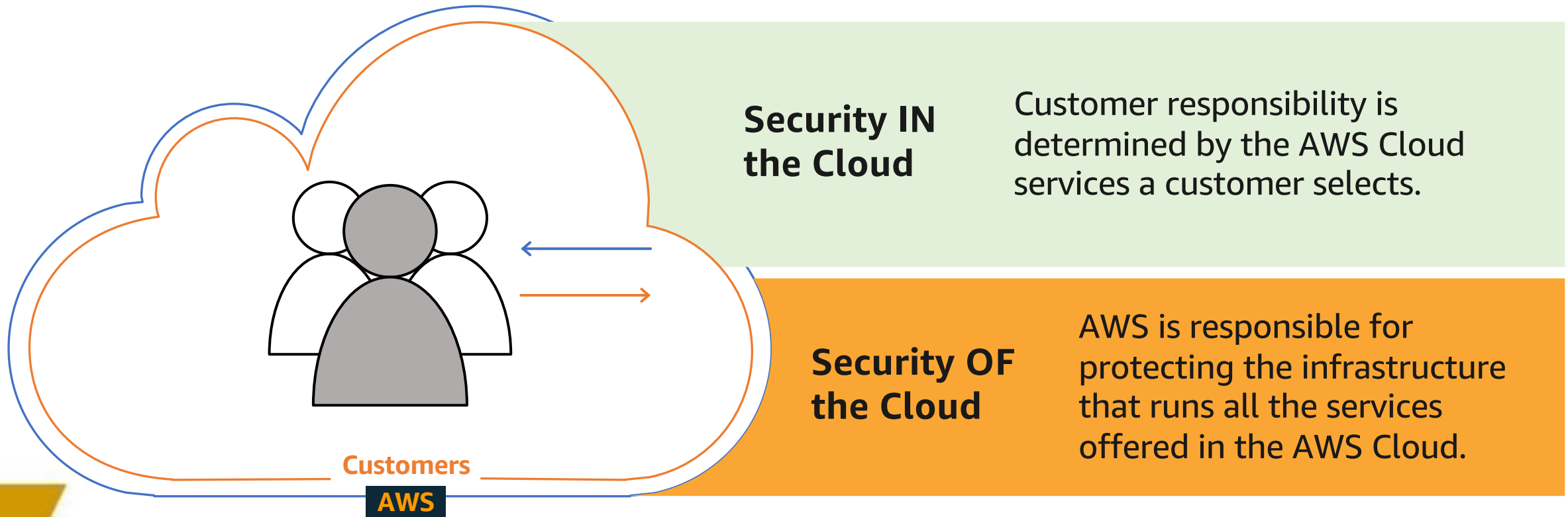
- Continuous monitoring and protection
- Threat remediation and response
- Operational efficiencies to focus on critical issues



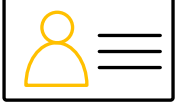

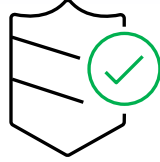
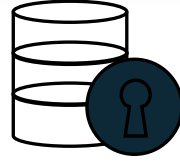


Largest ecosystem of security partners and solutions



Shared responsibility model



AWS security, identity, and compliance solutions

 <p>Identity and access management</p>	 <p>Detective controls</p>	 <p>Infrastructure protection</p>	 <p>Data protection</p>	 <p>Incident response</p>	 <p>Compliance</p>
<p>AWS Identity and Access Management (IAM)</p> <p>AWS Single Sign-On</p> <p>AWS Organizations</p> <p>AWS Directory Service</p> <p>Amazon Cognito</p> <p>AWS Resource Access Manager</p>	<p>AWS Security Hub</p> <p>Amazon GuardDuty</p> <p>Amazon Inspector</p> <p>Amazon CloudWatch</p> <p>AWS Config</p> <p>AWS CloudTrail</p> <p>VPC Flow Logs</p> <p>AWS IoT Device Defender</p>	<p>AWS Firewall Manager</p> <p>AWS Network Firewall</p> <p>AWS Shield</p> <p>AWS WAF</p> <p>Amazon VPC</p> <p>AWS PrivateLink</p> <p>AWS Systems Manager</p>	<p>Amazon Macie</p> <p>AWS Key Management Service (KMS)</p> <p>AWS CloudHSM</p> <p>AWS Certificate Manager</p> <p>AWS Secrets Manager</p> <p>AWS VPN</p> <p>Server-Side Encryption</p>	<p>Amazon Detective</p> <p>Amazon EventBridge</p> <p>AWS Backup</p> <p>AWS Security Hub</p> <p>AWS Elastic Disaster Recovery</p>	<p>AWS Artifact</p> <p>AWS Audit Manager</p>

Take advantage of cloud technologies to protect data, systems, and assets in a way that can improve your security posture. Few design principles to consider:



Implement a strong identity foundation - principle of least privilege



Enable traceability



Apply security at all layers



Automate security best practices



Protect data in transit and at rest



Prepare for security events

Source: <https://docs.aws.amazon.com/wellarchitected/latest/security-pillar/welcome.html>

Thank You

For discussions/suggestions/queries email: www.indiasmartgrid.org
www.isgw.in

AWS Cloud Security - <https://aws.amazon.com/security/>

India Smart Grid Forum
CBIP Building, Malcha Marg,
Chanakyapuri,
Delhi-110021
Website: www.indiasmartgrid.org