STC

# Webinar:

# Designing & Building Futuristic Next Gen Data Center



## AGENDA

# STU

## Introduction

**DC Evolution and Business Drivers Key Design Considerations Review DC Interconnect Design STL** Capabilities Key Takeaways





### Sandeep Dhingra

CTO – Network Service Business He is a recognized technology leader and has several US patents to his name. In his earlier role he held leadership positions with CISCO systems, IBM, and Huawei. Currently he is leading STL technology team



#### Amit Kar

General Manager, Technology Solutions



#### Himanshu Kumar

General Manager, Technology Solutions An Industry expert in telecom with experience in designing & deploying networks for Telcos, Defence, Smart cities, Bharatnet and PSUs. He currently heads the active technology team in STL

A seasoned professional with experience in network planning, engineering, deployment & managing of large scale wired & wireless networks. He earlier worked with DoT, BSNL, Airtel and is currently leading STL's technology team.



## Starting from optical fibres We now build digital networks globally





# **DC Evolution &** Business Drivers



## **Data Center Evolution**



## **DC Market Potential - Global & India**



### India's Data Center Market Size is about ~3% of global market

© 2020-2021 Sterlite Technologies Limited

## **Data Center Market Driver: India**





# Key Design Considerations Review



## **DC Infra Design Building Blocks**

STĽ



## **DC Design Functional Blocks**



## **Key Design Considerations**



## **DC Infrastructure Considerations**



#### HCI and SDDC provide balance between TCO/Time-to-Deploy and Vendor Lock-IN

## **DC Infrastructure Convergence**

# STU







# To build a cloud infrastructure for your enterprise, which will be the most preferred type of DC architecture?



## **DC Network Abstraction**



## **DC Compute Abstraction**

STC



#### Evaluate Application Requirements – Containers generally an optimum choice – Single Cloud Leaning for PaaS

## **DC Storage Abstraction**









Server Based Storage

Dedicated Storage (DAS/SAN/NAS) RAID for Redundancy

Dedicated Storage (SAN) RAID for Redundancy

## **Design Options – Security Abstraction** Micro Segmentation

# STC



Micro segmentation requires highly Skilled resources who understand application level visibility to employ Micro segmentation. © 2020-2021 Sterlite Technologies Limited While medium level of proficiency is required to deploy network based segmentation solution





# Which segmentation will you prefer to achieve "Zero trust" at application level in your Datacenter ?



### 5 DC Design – Multi-Cloud Connectivity Considerations STC



### **Drivers**

- Shadow-IT BU selecting cloud services,
- M&A,
- DR and Business Continuity.

## **Advantages**

- Risk Mitigation Higher Availability
- No Vendor Lock-in
- More Technology Options

### **Disadvantages**

- Increased complexity in cloud provider integration,
- · Service management and
- Higher skill sets.

### **Key Points**

- CoLo- Cloud On-Ramp
- SD-WAN
- Cloud Brokerage
- Orchestration

Careful organization wide strategy for MC | Deep Workload Analysis | Ensure Network Capability Alignment

## **DC DR and BC Considerations**





## **Considerations**

- Optimum Replication
- Recovery requirements (RTOs and RPOs)
- Requirements for active/active applications
- Network bandwidth availability and latency
- Data replication target location support including public clouds or DRaaS providers
- Cloud migration strategy
- Manageability
- Costs

Orchestration/ Automation selection | CDP for App Replication - low RPO | Synchronous for ZDL Apps | Backup- high RTO/RPO

## **Custom Design Considerations**





- High Availability
- Redundancy/ Resiliency
- Agility/ Scalability

### E2E IT Strategy Alignment

- OEM Agnostic
- E2E Integration
- Tailor-made Design

### Capacity Planning and Design

- Models for Cloud Multi-Cloud/ Hybrid Cloud
- Remote/ Movable DC

## DC Design Example: UBL-DC (Ubiquitous Borderless - DC)



#### Secured & reliable access to information for Large Enterprises

## **Design Use: Multitenant DC Solution**





#### **Digitizing & storing information for various Central & State Welfare Schemes**

### **Design Use Cases: DC on Wheel & CCC on Wheel** STC **Cloud Datacentre** As Backup Satellite **Drone with Surveillance Disaster surveillance** LTE/4G using customized drones & CCC Movable Integrated DC & • CCC offerings for **Defence**, **Disaster Response team Command and Control Centre** Threat analysis • on the go DataCenter Datacentre-01 Containerized Datacentre + CCC

#### **Enabling State Disaster Management Authorities in times of distress**

## **Design Use Case: Edge Datacenter**





## **DC Orchestration, Cloud as a Service model**





# STL DC Interconnect [Enterprise Grade/ EDH]



## **DCI Design Requirements and Considerations**

Existing networks are not ideal for data Center inter-connectivity because of...



STĽ

## **DCI Interconnect Design Example**



<sup>© 2020-2021</sup> Sterlite Technologies Limited

## **DCI Interconnect – Customer Case Study**

**Case study for Metro City DC interconnect** 



<sup>© 2020-2021</sup> Sterlite Technologies Limited





## In your opinion, what is the most critical challenge of Data Centre Interconnect ?



## **Our Data Centre Capability Snapshot**







DC Infrastructure is evolving rapidly to a more **hybrid**, **distributed**, **API driven**, **automated model** 

Technology Trends and Design Considerations- Integrated Infrastructure, abstraction, multicloud, DR, Capacity, E2E, Principles

Enterprise Grade DC Interconnect Design

Next Webinar on **Physical Infrastructure** – Stay Tuned

**STL** has the experience and expertise in your **e-2-e** DC Full Life Cycle

