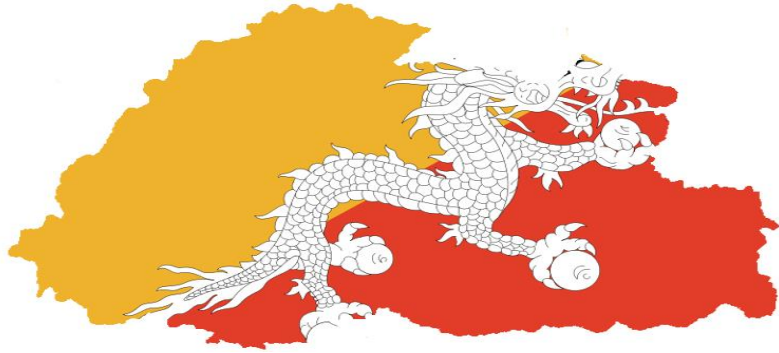# Digital Transformation and Innovation for a Sustainable and Equitable Digital Future:
(Supporting the SDGs)

# Resilience Assessment of Government Data Centre - BHUTAN

Presentation Topics

❖ About the Bhutan Governments' Data Center

  ➢ Key features & services provided

❖ Data Center Resilience Assessment

  ➢ Objective and modality of assessment

❖ Wayforward and Progress on Action items

Government Data Center, Bhutan

The GovTech Agency formerly known as Department of IT and Telecom (DITT) established and operationalized a Government Data Center (GDC) in 2017.

The GDC is co-located within 1000 sq. ft space with 2500 sq. ft leased to Data Center Services (DCS). The GDC currently hosts more than 200+ government systems.
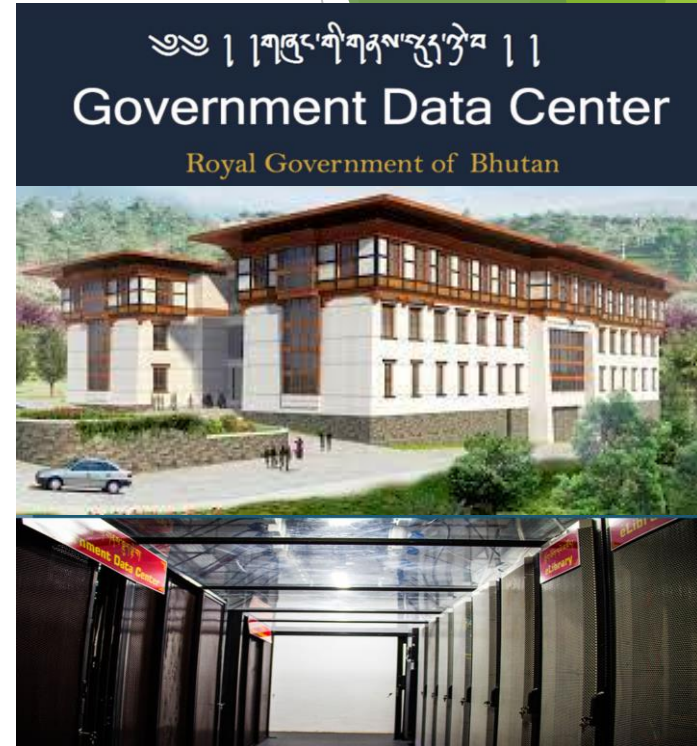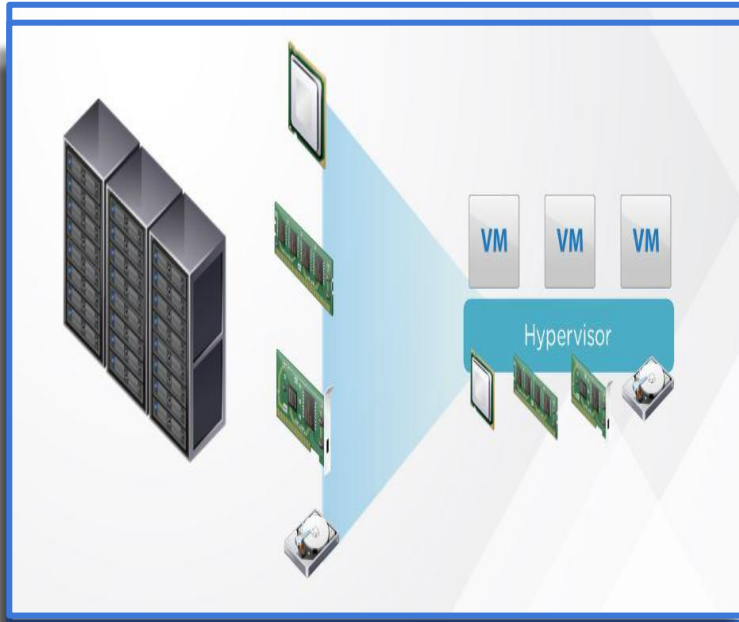
Platform Used

- Vmware vSphere and Vcenter for On... of resources (compute,network,storag...

- NetApp Hardware for storage

- Cisco servers and network devices

CURRENT RESOURCES

800 VIRTUAL MACHINES
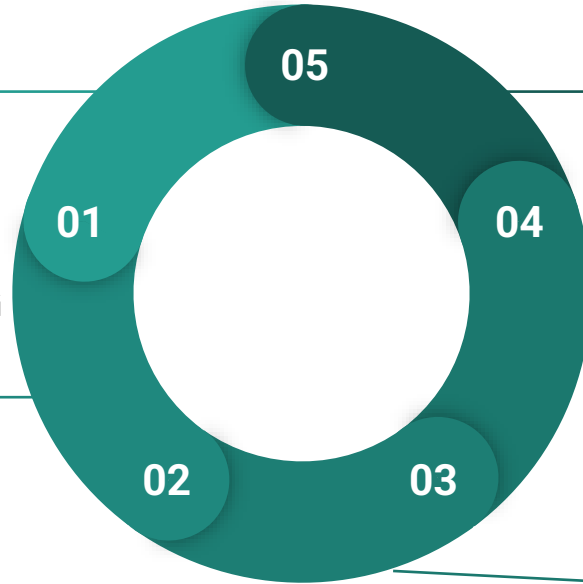
550 TB STORAGE

10.7 TB MEMORY

2.6 THz CPU

Services Provided

VIRTUAL SERVER
VM creation

RESOURCE MONITORING
Vcenter(Compute,storage & network)

01

02

05

04

03

SECURE ACCESS(VPN)
To access the VMs by the system admins/developers

VULNERABILITY ASSESSMENT
Before moving to production environment

BACKUP

Veeam Backup

Roles and Responsibilities - GDC

- Assess the resource requirement submitted by the system/application owner and grant approval.
- Facilitate hosting/migration of approved systems in GDC.
- Monitor the resource utilization by the systems hosted in GDC.
- Provide technical support and guidance to the concerned agencies; Technical support on computing, network, storage, and operating systems.
- Liaise with GDC O&M contractors and government agencies (relevant system/application owners).
- Coordinate and communicate with GDC system owners, as and when required, about the application-level impacts of outages or scheduled maintenance.
- Ensure adequate Internet and GovNet bandwidth is available.
- Maintain system backups as per GDC Backup & Recovery Policy.
- Escalate application's security resolution issues, and suspend system hosting.
- Facilitate in conducting Vulnerability Assessment with BTCIRT.

ITU assistance requested

- Data Center infrastructure assessment to identify gaps
- Network and System security assessment
- Data center disaster recovery and backup site need assessment
- Human resources need assessment
- Data center automation strategy
- Enhanced agility in meeting dynamic demand for IT resources and services

Resilience assessment for a government data center in Bhutan:

The Resilience Assessment of the government data center of Bhutan was received as a part of ITU's technical assistance to RGoB.

The activity is a collaboration between ITU and the Ministry of Internal Affairs and Communications of Japan.

Five Resilience Aspects Evaluated:

DC Topology
Operational Resilience
Organizational Resilience
Disaster Recovery
Business Continuity & Incident Response Management.

Way Forward of GDC

For Strategic Options for an Active-Active Data Centre Infrastructure
GDC did the feasibility study through the World Bank and has planned to achieve an Active-Active Data Center within the next 13th five-year plan.

GovTech Agency has considered each recommendation given by ITU and planned future activities accordingly.

THANK YOU