Space Request and Allocation

Standard Operating Procedure
For
Government Data Center

Prepared by

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Department of IT & Telecom,
Ministry of Information & Communications

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1. Overview

The Department of IT and Telecom (DITT) has established Government Data Center (GDC) project. The GDC is co-located within 1000 sq.ft space with 2500 sq.ft leased to Data Center Services(DCS) run by New Edge Technologies. The GDC is operational currently with 40+ government systems hosted.

With increased online services provided by the government, number of request to host systems/applications in GDC are also increasing. There was a need to have proper procedures to host systems in GDC. Therefore, this document is developed to serve as guiding document to ensure smooth operations of GDC/Government network services. This document is intended is to achieve efficiency, quality output and uniformity of performance, while reducing miscommunication and failure. It will clarify processes by which all current and future stakeholders for GDC shall be mandated to follow and adhere.

2. Services

Following services will be provided by GDC

2.1. Virtual environment for system and applications
2.2. Secure VPN access to the systems
2.3. Storage
2.4. Physical security
2.5. Redundant internet
2.6. Power and cooling facilities
2.7. Network
2.8. Server, networking, and security hardware
2.9. IP address and network
2.10. User and account setup
2.11. Operating system and software licensing

3. Roles and responsibilities

It was important to have clear roles and responsibilities identified for GDC team and stakeholders to operate GDC efficiently. Following defines the respective roles and responsibilities.

3.1. System Owner

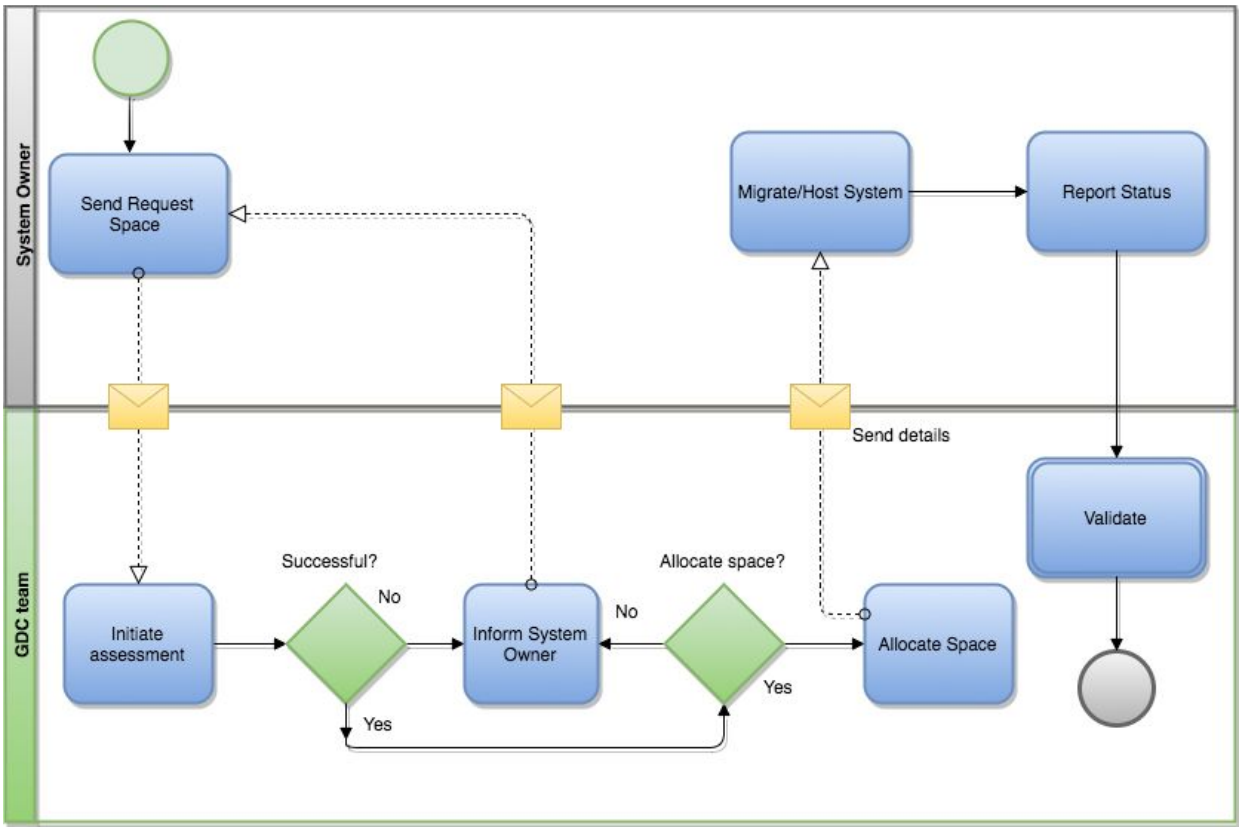
a. Configure, maintain, manage, update application and operating systems (OS) hosted in GDC.
b. Ensure security of application hosted in GDC.
c. Ensure OS/application's compliance with security requirements as per BtCIRT's baseline requirement(Annexure)
d. Seek resources to host application in the GDC.
e. Carry out migration of application to GDC.
f. Consult with GDC and BtCIRT team on security requirement.
g. Mitigate the vulnerabilities notified by the BtCIRT team.

3.2. Government Data Center Team

a. Prepare project scopes based on available resources.
b. Provide technical support and guidance to concerned agencies.
c. Advise management on data center trends.
d. Liaise with O&M contractor and government agencies.
e. Manage and approve GDC service hosting.
f. Forecast and plan GDC resource capacity.
g. Liaise and coordinate with private contractor(if case of outsourcing) and relevant system/application owners.
h. Assess the resource requirement submitted by system/application owners and grant approval.
i. Plan and coordinate change management.
j. Coordinate and communicate with end users, as and when required, about application-level impacts of outages or scheduled maintenance.
k. Ensure adequate Internet and TWAN bandwidth is available.
l. Perform systems ad-hoc backups on special request from applications owners' side.
m. Escalate application's security resolution issues and recommendation to suspend asset's hosting.

4. Procedures

4.1. Process map



4.1.1. Method to Request Space

1. System owner request for space through formal request letter to DITT
2. Fill up the form (Space request form) via www.neyduetewa.gov.bt

4.1.2. Space Allocation and hosting in staging environment

1. Technical requirements/Specification will be assessed based on the request submitted to determine and validate technical requirement of your system.

2. Space will be allocated at the test environment (Staging) and required security assessment of the requested system will be carried out.
3. The credentials will be shared with system admin)only and the system admin will have to manage and maintain the system. The ownership of the system shall remain with the respective agency.
4. Hosting of the system shall be carried out by the respective agency.

4.1.3. Reporting and Validation

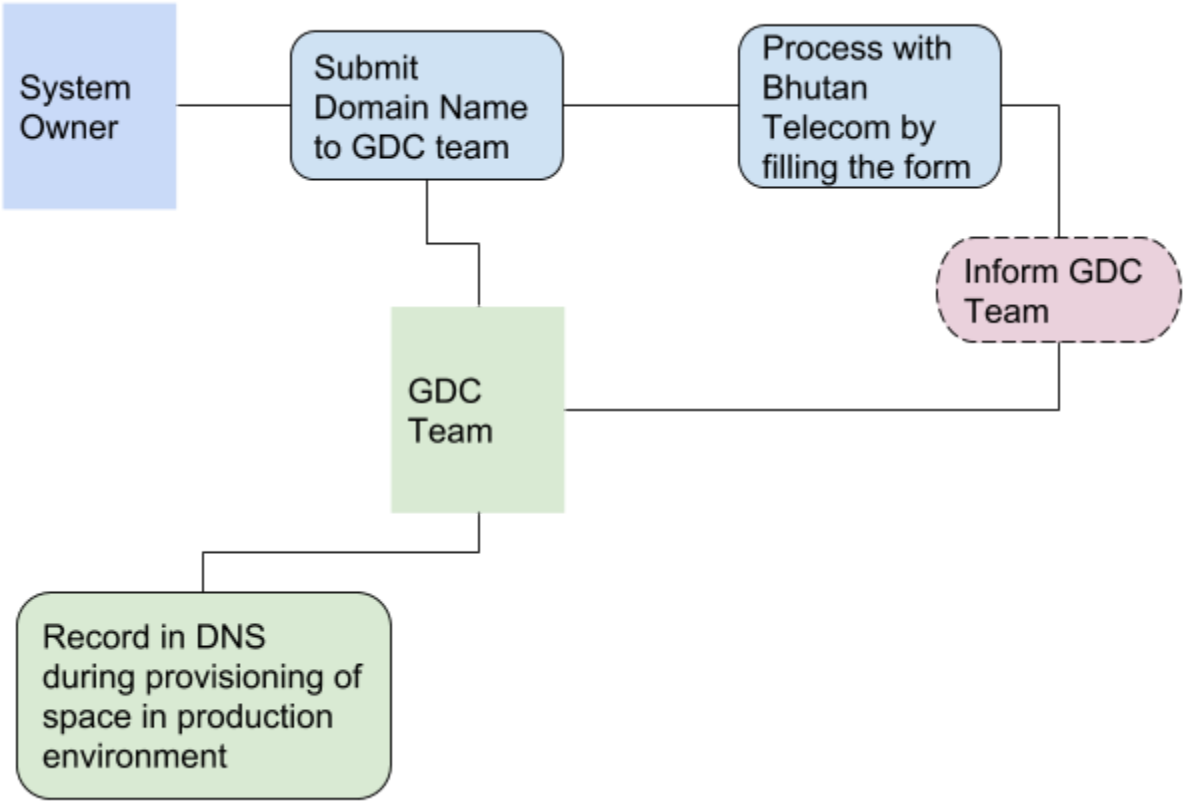
1. After successful hosting in the staging room, system owners shall inform GDC to initiate an assessment
2. GDC will share the report of the assessment for necessary action and changes to be made if any. After the completion of changes, system owners shall inform GDC for validation.

4.1.4. Space allocation and hosting in Production environment

1. With successful testing and security assessment, space will be allocated in production environment with technical specification submitted
2. Technical requirements/specification will be assessed based on the request submitted to determine and validate technical requirement of your system.
3. The credentials will be shared with system admin)only and the system admin will have to manage and maintain the system. The ownership of the system shall remain with the respective agency.
4. Hosting of the system shall be carried out by the respective agency.
5. System to be integrated with GDC NMS. System admins should configure following services (refer annexure 1)
    a. SNMP V3
    b. NTP
    c. Logs service

4.1.5. Global IP assignment

1. After the successful assessment and migration of the system to the production environment, dedicated global IP will be provided.
2. After the successful migration of the system to the production environment, the system owner should process domain forwarding as shown below:



1. System owner should indicate the Domain Name of their system in the technical specification form.
2. GDC team will make an entry of record in DNS while provisioning of space in a production environment.
3. System owner should process domain forwarding with Bhutan Telecom by filling up the form (https://www.bt.bt/forms/Domainforwardingnew.pdf).
4. After successful processing of forwarding, system owner should inform GDC team.

4.2. GDC assessment

#	**Assessment**	**By**
1	Specification/Resources Assessment	GDC Team
2	Security and Vulnerability Assessment	BtCIRT Team

4.3. Timeline

#	**Activity**	**Timeline**	**By**
1	Specification/Resource Assessment	Within 2 days from the request received	GDC Team
2	Space allocation (Staging Environment)	Within 1 day from completion of the assessment	GDC Team
3	Hosting of system	Within 2 weeks. For system that are under development phase(new system), based on the project timeline	System Owner
4	Security Assessment	Within 1 week from completion of assessment request	BtCIRT
5	Resolve as per Assessment Report	Within 1 week from receiving assessment report	System Owner
6	Rescaning/ Assessment	Within 2 days after Reporting to GDC team on action taken	BtCIRT
7	Space allocation (Production Environment)	Within 2 days upon successful security assessment	GDC Team
8	Rescaning/ Assessment, If required	Within 1 week (Based on request and case)	BtCIRT

Revision History

Revision[1] #	**Description [2]**	**Initials [3]**	**Date [4]**
1.0	Initial SOP draft	NG, DZ	03-08-2017
1.1	Updated	NG,DZ	26-04-2018
1.2	Updated (Domain Forwarding Process)	NG,DZ	02-08-2018

Note

The document will be revised bi-annually.

Throughout this document, following norms will be adopted.

1. Numeric value before decimal represents version of document and after represents number of revision undergone (1.1).

2. Denote changes made in the document (e.g. definition update).

3. Changes made by.

4. Format of the date will be day, month, year.

Annexures

Annexure 1 - Server Prerequisite Services

SLNO	Services
1	SNMP V3
2	FIREWALL
3	SSH
4	NTP
5	SSL

Annexure 2 - Checklist

Checklist	✓	Comments
Infrastructure		
UPS and generators to ensure continuity of service in the event of power outage	✓	
One active, one redundant for cooling and power, with redundant (N+1) capacity	✓	
Early detection fire suppression system	✓	
Rack and network devices	✓	Facility available at GDC and external devices are not allowed
Security		
Biometric security measures	✓	
Security of server farm, rack and cage level via locking mechanisms	✓	
24/7 monitoring of security and fire systems	✓	
CCTV surveillance	✓	
Network and Connectivity		
Redundant connections from two ISPs to ensure continuity of service in the event of vendor service outage	✓	with 10mbps each from Tashi Infocomm Pvt Ltd and Bhutan Telecom
24x7 monitoring of dedicated servers and network equipment	✓	Libre NMS
Service and Operations		
Colocation facility		No Facility
Remote services and technical support for immediate attention and early resolution of critical issues	✓	
Documentation and compliance	✓	In place:GDC Standard Operating Procedures, GDC Policies and Procedures, Vulnerability

		Management Process(GDC) , Incident Management Procedure
Maintenance of GDC equipments	✓	
Upgrades and updates	✓	Core network devices and infrastructure. System/service updates by system owners
Backup	✓	Live mirroring and Backup site establishment ongoing. DC is not encouraged to be used as Backup site of a system/server