viettel
IDC

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## Viettel Open Dedicated Private Cloud



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## CONCEPT

Viettel Open Dedicated Private Cloud (oDPC) is a specialized cloud computing service built on the OpenStack platform, offering a fully isolated infrastructure environment with dedicated compute, network, and storage resources for each customer. It empowers enterprises with full architectural control and flexibility to customize their systems, while seamlessly fulfilling stringent requirements for security, compliance, and operation.



## HIGHLIGHTS

Leveraging the open-source OpenStack solution, Viettel IDC maintains **comprehensive control and expertise over the technology, overseeing** and managing the entire virtual machine infrastructure for its clients.

**Proactively design and establish infrastructure** components, including virtual servers, virtual network systems, and high-speed storage solutions.

The system can **automatically scale** based on customer-defined policies (**Autoscale**).

Ensuring **fully dedicated infrastructure resources,** high controllability, robust security, and consistent performance.

Delivering a **comprehensive cloud infrastructure ecosystem** with integrated Virtual Load Balancers (vLB), Virtual Firewalls (vFW), Kubernetes (K8S), and Database Services (DBS) as bundled features at **no additional service cost**

It is the inaugural cloud computing platform to fulfill the technical standards for e-government services as outlined in documents No. 1145 and 2612 from the Ministry of Information and Communications.

Supplying virtualization network components to create a **Level 3 Information Security compliant system.**

Powered by next-generation **Intel Xeon Gold CPUs, NVMe storage**, and **up to 25Gbps network connectivity** to deliver fast, secure inter-VM communications.

Oversee and administer your complete cloud infrastructure via an **intuitive web portal.**
Comprehensive infrastructure automation with Infrastructure as Code (IaC) using **Terraform** eliminates manual operations and minimizes the risk of human error**.**

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# PRIMARY ATTRIBUTES

### SECURE VIRTUAL DATA CENTER PROVISIONING

- Pre-provisioned Resource Pools comprising Compute, Network, and NVMe SSD Storage for instant deployment.
- Secure virtual networking equipped with VPC, Subnets, Router/NAT, Elastic IP, Direct IP, and Security Groups.
- High-performance, flexible infrastructure tailored to meet stringent application connectivity and security requirements.
- Built-in capabilities for seamlessly provisioning and managing Kubernetes (K8s) clusters and Database instances.

### ELASTIC VIRTUAL DATA CENTER SCALING

- Flexible resource pool expansion in blocks (vCPU, RAM, and Storage), supporting hot extension of VM disks without service interruption.
- Automatic VM scaling based on workload via Auto Scaling, ensuring high application availability.
- Enhanced performance and security with vLoad Balancer (Layer 4–7), Virtual Firewall, and IPSec/SSL VPN (site-to-site, client-to-site).

### RAPID SERVICE PROVISIONING

- Provision VMs within 5 minutes, available across two geographic regions with 99.99% uptime SLA.
- Flexible configuration of CPU, RAM, Storage, and Network, with up-to-date OS images.
- Supports VM placement rules (Affinity & Anti-Affinity) with automated infrastructure optimization and load balancing to guarantee high service availability.
- Infrastructure as Code (IaC) with Terraform: Enables customers to define and manage infrastructure resources through code, automate CI/CD pipelines, and consistently and securely replicate and scale environments from Dev/Test to Production. (comming soon)

### USER-FRIENDLY SERVICE MANAGEMENT PORTAL

- Self-service portal for billing (payment, renewal, resource upgrade) and VM lifecycle management (console access, start/stop/reboot).
- Full control over virtual networking, vFirewall, vLoad Balancer, and Auto Scaling configurations.
- Real-time performance monitoring (CPU/RAM/IOPS/Bandwidth), backup management, and role-based access control (IAM).

### ADVANCED SDN ARCHITECTURE

- Flexible Layer 2 switching with scalable connectivity via vRouter/vFirewall across regions and data centers.
- Support for static and dynamic routing (OSPF, BGP) with full IPv4/IPv6 compatibility.

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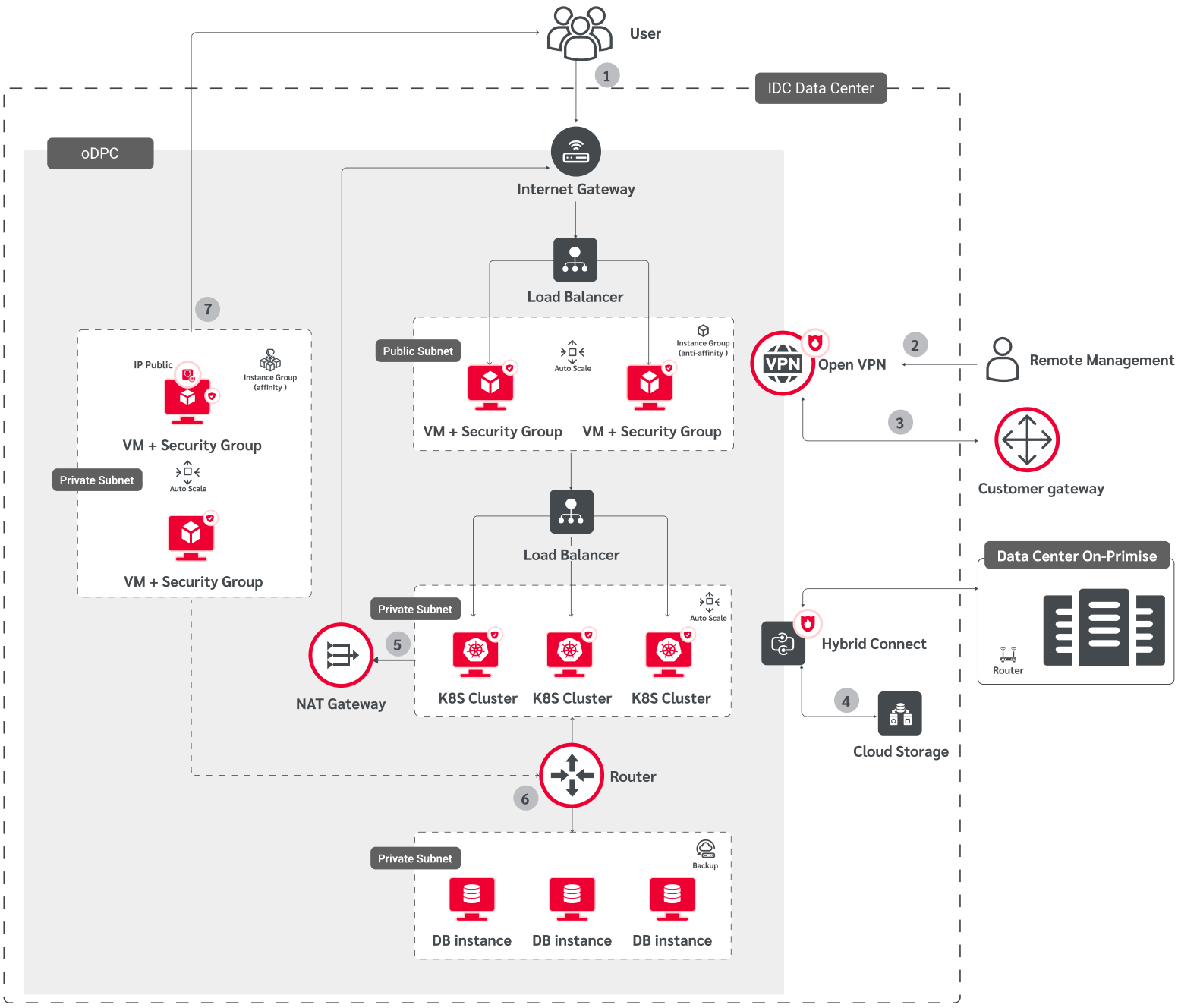
# SERVICE CONNECTIVITY FRAMEWORK



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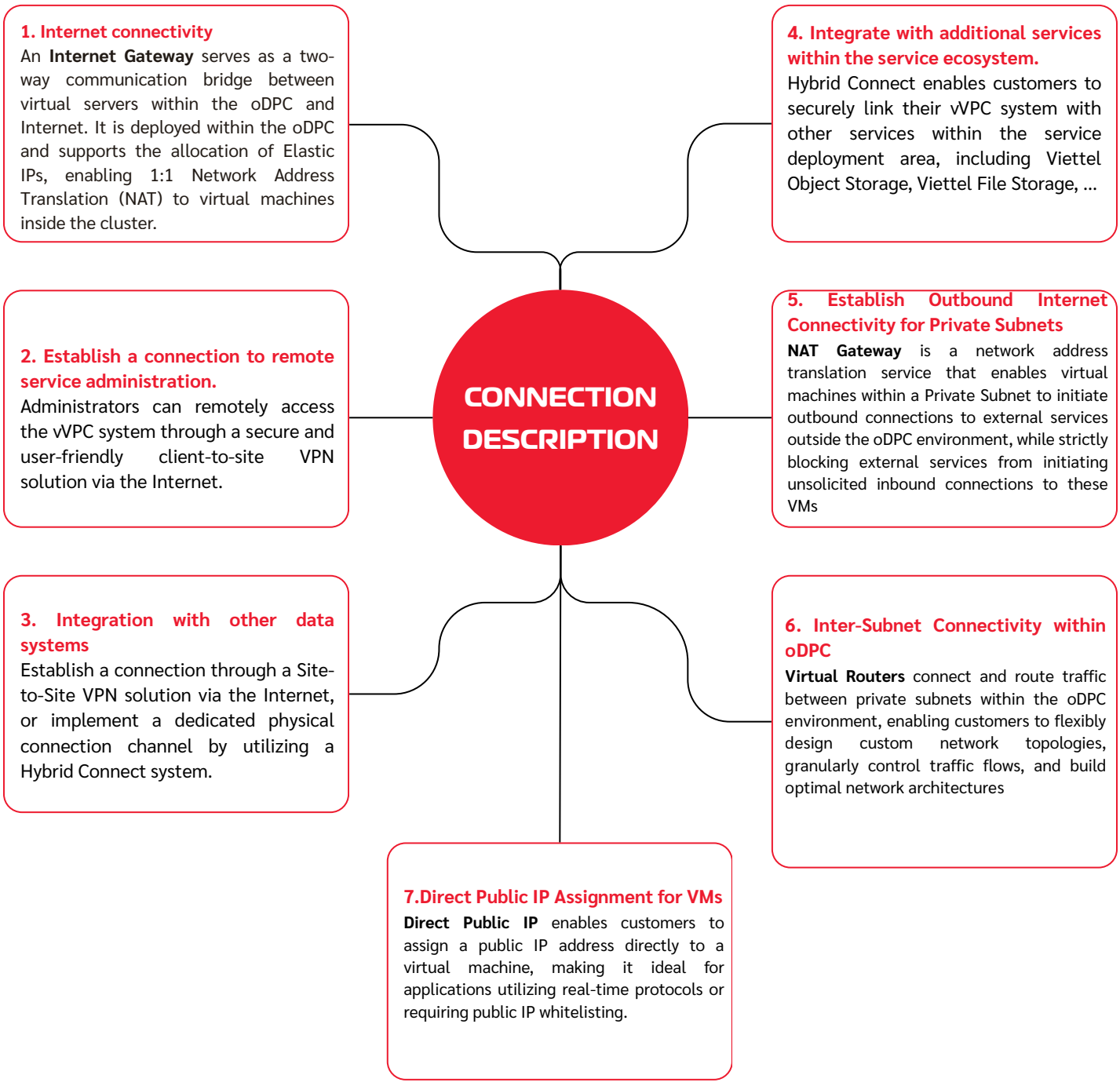
# DESCRIPTION OF THE CONNECTION MODEL



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## SERVICES THAT CAN SUPPLEMENT THE CLOUD ECOSYSTEM

### Viettel Cloud Backup (Backup & Restore)

The system automatically backs up virtual machines based on the number of backup copies and the daily or weekly backup schedule configured by the customer. Customers can choose the number of backup copies according to their needs. The system supports both full and incremental backup mechanisms.

### Viettel Cloud Storage

**Viettel File Storage:** Unlimited file storage capacity, compatible with NFS v3.0/4.0 and SMB/CIFS 2.0 protocols

**Viettel Object Storage**: Enhance data integrity through synchronization capabilities across physical storage partitions.



### Advanced security and information protection services

***Viettel Cloud Firewall:*** Next-Generation Firewall (NGFW) solutions from leading vendors such as Palo Alto Networks and Fortinet, providing deep packet inspection at the application level with advanced analysis, signature matching, IPS/IDS, antivirus, and other security capabilities.

***WAF:*** Web Application Firewall designed to protect against Layer 7 attacks such as Cross-Site Scripting (XSS) and SQL Injection. It provides real-time monitoring and detection of attacks.

***AntiDDoS L4:*** Ngăn chặn các cuộc tấn công lớp 4 dạng volume based băng thông lớn: UDP & TCP Flood, SYN Flood, Volume-based, regardless of protocols...

### Viettel Hybrid Connect L3

Interconnection services via WAN, MPLS, Dark Fiber, and other network connections to on-premises infrastructure or cloud platforms of other providers.

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## SERVICE FEATURES



| Criteria / IaaS | Viettel Open Dedicated Private Cloud |
|---|---|
| **Site** | Phap Van / Binh Duong |
| **Deployment model** | Dedicated Cloud |
| **Delivery method** | Dedicated Virtual Resource Pool |
| **Use cases** | Government public service systems, enterprise applications, ERP systems, CRM systems, core banking systems, etc. |
| **Uptime** | ~99.95% |
| **Infrastructure as Code** | Terraform (comming soon) |

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| | |
|---|---|
| **Default features** | Web-based Administration Interface |
| | Start / Stop / Restart / Rebuild VM |
| | Instance Group (Affinity / Anti-Affinity) |
| | VM Performance Monitoring (Charts) |
| | Scale Up / Scale Down VM Configuration |
| | Authentication & Authorization (IAM) |
| | VM Network Interface Management |
| | Internet Gateway |
| | Operating System Selection |
| | Additional Resource Cluster Expansion |
| | No Limit on the Number of VMs Created within a Cluster |
| | Public IP (Elastic IP, Direct IP) |
| | Block Storage Volume Management |
| | Create / Edit / Delete Virtual Private Network (Subnet) |
| | VM Traffic Access Control (Security Group) |
| | NAT Gateway (Router) |

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| | |
|---|---|
| **Default features** | vFirewall |
| | vLoad Balancer (L4, L7) |
| | Auto Scaling VM (Scale-Out) |
| | Site-to-Site VPN |
| | Client-to-Site VPN |
| | Kubernetes as a Service (K8s) |
| | Database as a Service (DBaaS) |
| | Backup Management (Full, Incremental) |
| **Connection services** | Viettel Cloud Firewall |
| | Viettel Cloud Disaster Recovery |
| | Viettel Hybrid Connect |
| | Viettel Cloud File Storage |
| | Viettel Cloud Object Storage |
| | Viettel Container Registry |
| | Viettel Cloudrity (WAF, AntiDDoS) |

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## SPECIFICATIONS

| Parameters \ Class | oDPC-1 / oDPC-2 |
|---|---|
| **Site** | Phap Van / Binh Duong Data Center |
| **SLA Uptime** | 99,95% |
| **Packages** | Customize |
| **CPU type** | Intel Gold Gen3 |
| **vCPU** | 1 CPU = 1 physical core |
| **Storage** | SSD Gold (NVMe) |
| **IOPS /VM (default)** | 6000 |
| **Domestics internet bandwidth (share)** | 500 Mbps |
| **Subnet (include 1000 Mbps bw internal)** | 3 |
| **International internet bandwidth (share)** | 10 Mbps |
| **Data Transfer** | Unlimited |

Viettel Open Dedicated Private Cloud currently provides the following operating system versions for initialization(*):

| Ubuntu | CentOS | Windows(**) | Debian | AlmaLinux | Fedora |
|---|---|---|---|---|---|
| 25.04 x64 | 8.4 x64 | 2025 Standard | Debian 13 | AlmaLinux 10 | Fedora 34 x64 |
| 24.04 (LTS) x64 | 7.9 x64 | 2019 Standard | Debian 12 | AlmaLinux 9 | |
| 22.04 (LTS) x64 | | 2016 Standard | Debian 11 | AlmaLinux 8 | |
| 20.04 (LTS) x64 | | 2012 R2 Standard | Debian 10 | | |
| 18.04 (LTS) x64 | | Windows 10 Pro x64 | | | |
| 16.04 (LTS) x64 | | Windows 11 Pro x64 | | | |

*(*) We provide support services to create additional images tailored to customer specifications.*
*(**) The operating system lacks an activated license. An additional license must be acquired to enable activation during the initial setup.*

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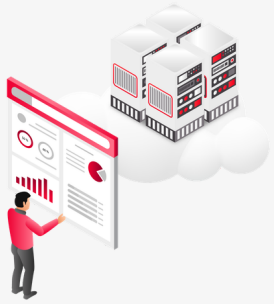
## USE CASE

### HIGH-PERFORMANCE WORKLOADS

Provisioning a fully isolated, single-tenant physical host cluster equipped with high-speed NVMe SSD storage completely eliminates noisy-neighbor issues and performance degradation. This creates an ideal environment for deploying Data Lakes, AI/ML models for Big Data analytics, and real-time workloads requiring exceptional IOPS. Integrated with a comprehensive cloud ecosystem, the solution allows enterprises to seamlessly incorporate advanced data management tools without disrupting existing systems.



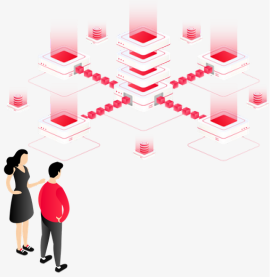
### APPLICATION MODERNIZATION & CLOUD-NATIVE DEVELOPMENT

Provides an optimized environment for containerized architectures (Kubernetes) and automated DevOps workflows. Enterprises can flexibly develop satellite microservices applications to complement core legacy platforms (such as Core Banking and Core ERP) or package high-security Private SaaS solutions. The platform ensures seamless containerization and agile scalability while maintaining absolute, independent infrastructure control.




### SOVEREIGN CLOUD & LEVEL 3 INFORMATION SECURITY

Eliminates the risk of data leakage through Sovereign Cloud capabilities, with the entire infrastructure, data, and encryption processes stored and fully controlled domestically. The combination of three-layer hardware isolation (Compute, Network, and Storage) and next-generation virtual firewalls enables the system to readily comply with Level 3 Information Security standards. This platform is ideally suited to meet the most stringent regulatory requirements of the Government, BFSI, and Healthcare sectors when connecting to sensitive national databases.



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## USE CASE

### DEDICATED DISASTER RECOVERY INFRASTRUCTURE FOR CORE SYSTEMS

A dedicated physical host cluster provides a highly secure, isolated environment delivering 99.99% VM Availability, serving as an independent Disaster Recovery (DR) site for primary customer infrastructure. Built into a comprehensive cloud ecosystem, the service delivers a ready-to-use infrastructure for data backup, replication, and seamless failover activation in the event of primary site disruptions. This model safeguards mission-critical workloads—such as banking data lakes, healthcare databases, and public sector services—while ensuring full Sovereign Cloud compliance and maintaining Business Continuity Plans (BCP).



### DEVOPS ENVIRONMENT & CONTINUOUS INTEGRATION/CONTINUOUS DELIVERY (CI/CD)

With IaC capabilities, vVPC becomes an ideal platform for software development teams. Automating environment provisioning through Terraform code helps shorten the application development lifecycle, ensures complete consistency across environments (Dev, Staging, and Production), and enables rapid system recovery in the event of incidents.



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## WHY CHOOSE VIETTEL IDC?



- **A prominent organization in the realm of cloud computing technology.**
  Viettel - CHT Co., Ltd. (trading as Viettel IDC), established in 2008, is a leading cloud computing service provider with the most diverse ecosystem in Vietnam, dedicated to offering a reliable platform for customers to innovate and excel.

- **Global standard infrastructure**
  The infrastructure is situated within Viettel IDC data centers that comply with TIA-943 Rated 3 Constructed Level standards, as well as international certifications ISO 9001:2015 and 50001:2019, along with security and safety certifications: ISO 27001:2013, 27017:2015 (specifically for cloud services), and PCI DSS certifications guarantee adherence to the highest standards for infrastructure, service quality, and information security.

- **Contemporary technology, aligned with prevailing trends.**
  Viettel IDC is dedicated to utilizing the most advanced and superior technologies for our clients. Through Viettel Virtual Private Cloud, we implement cutting-edge technologies to address the limitless growth and expansion requirements of our customers.

- **A group of seasoned professionals and engineers.**
  Our round-the-clock technical support team, complemented by a group of seasoned engineers and specialists from diverse disciplines, is dedicated to thoroughly addressing our customers' challenges.