

Deployment Proposal for PromisedLand.com Data Center

Executive Summary

PromisedLand.com is growing and needs a new data center to support its operations. This proposal explains how we will set up a secure, efficient, and scalable IT environment at a new 15,000-square-foot facility in Independence, Missouri. This center will support 50 employees and help our call centers in the U.S. and Canada run smoothly.

This proposal includes server installation, network management, cloud integration, security strategies, and user management, ensuring an efficient, scalable, and secure IT environment. The implementation will enhance system performance, data integrity, and remote accessibility, supporting business continuity and future expansion.

1. Managing Roles and Features

The Windows Server 2022 Datacenter edition will be used to deploy critical server roles. These include:

- Active Directory Domain Services (AD DS): Manages user authentication and access control.
- DNS Server: Provides name resolution and network traffic management.
- DHCP Server: Automates IP address allocation to network devices.
- File and Storage Services: Enables secure data storage and sharing.
- Group Policy Management: Enforces security settings and compliance policies.
- Hyper-V: Supports virtualization for server consolidation and testing.
- Network Policy Server (NPS): Implements RADIUS authentication for VPN and Wi-Fi security.

These roles will ensure an organized, secure, and scalable IT environment for PromisedLand.com.

2. Cloud Concepts & Virtualization

To balance performance and cost-efficiency, a hybrid cloud model will be implemented:

- Microsoft Azure AD Connect: Synchronizes on-premises Active Directory with cloud services.
- Hyper-V Virtualization: Enables server consolidation, reducing hardware costs.
- Cloud Backup Solutions: Protects against data loss with offsite replication.

This approach enhances scalability, disaster recovery, and remote access capabilities.

3. Managing IP Addressing

A structured IP addressing scheme will be used:

- Private IP range: 192.168.10.0/24 for internal devices.
- Public IP addresses: Assigned for external services (e.g., VPN, website hosting).
- DHCP Scope: Managed dynamically, reserving static addresses for critical devices.
- IPv6 Configuration: Ensuring future network compatibility.

This ensures efficient network communication and security.

4. Files & Directories Management

A structured file system will be implemented:

- Shared Network Drives: Organized by department with role-based access control.
- Access Permissions: Enforced via NTFS and Active Directory policies.
- Data Retention Policies: Automated backups and archival procedures.

This ensures secure and organized data management.

5. Hardware & Software Installation

Key hardware components:

- Dell PowerEdge R750 Servers with Intel Xeon processors.
- Cisco Catalyst Switches for network backbone.
- SAN Storage with RAID-10 redundancy.
- Uninterruptible Power Supply (UPS) for backup power.

Software installation includes:

- Windows Server 2022 Datacenter for core infrastructure.
- Microsoft 365 & Azure Integration for productivity and collaboration.
- Endpoint Security Solutions to protect against malware and cyber threats.

This ensures reliable, high-performance computing for the data center.

6. DNS Implementation & Management

The DNS Server will be configured to manage name resolution efficiently:

- Primary and Secondary Zones: Redundancy for failover protection.
- Forwarders & Conditional Forwarding: Optimizing external domain resolution.
- DNSSEC Implementation: Protecting against spoofing attacks.

These measures enhance security and reliability.

7. Users & Groups Management

A structured Active Directory Organizational Unit (OU) Hierarchy will be created:

- Department-Based Grouping (IT, HR, Support, Finance).
- Role-Based Access Control (RBAC): Limiting permissions based on job function.
- Multi-Factor Authentication (MFA): Enhancing security for remote logins.

This structure ensures efficient user management and security.

8. Active Directory & Group Policy Objects (GPOs)

GPOs will enforce:

- Password Policies (complexity requirements, expiration rules).
- Audit Policies (logging of login attempts, system changes).
- Workstation Restrictions (disabling USB access, enforcing screen locks).

These policies ensure compliance and security.

9. Managing Servers in a Hybrid Model

- Azure AD Hybrid Join: Synchronizing on-prem users with cloud services.
- Hybrid Exchange Deployment: On-prem email coexisting with Microsoft 365.
- Cloud-Based Monitoring & Alerts: Real-time system health tracking.

This ensures flexibility and business continuity.

10. Managing Storage Services & File Services

- RAID-10 Storage Configuration: Ensuring data redundancy and performance.
- File Deduplication & Compression: Optimizing storage utilization.
- Automated Backups & Disaster Recovery: Implementing Azure Site Recovery.

These strategies protect data and enhance efficiency.

For a visual demonstration of the deployment process, please click [here](#) to watch.

Conclusion

This deployment plan aligns with PromisedLand.com's goals, ensuring security, efficiency, and scalability. By leveraging Windows Server 2022, cloud integration, and virtualization, the data center will provide high availability, secure data management, and reliable IT services.

This proposal is designed to support the current 50 employees and future growth, making PromisedLand.com's IT infrastructure resilient and future-ready.