

Curso de Especialización Administración de Infraestructura de Servidores

I.-GENERALIDADES

Código		Duración del Curso de Especialización	8 meses
Nº de horas	240	Identificación del Ciclo	01 -2015
Horas teóricas semanales	3	Carreras	Ingeniería en Ciencias de la Computación, Licenciatura en Sistemas de Computación Administrativa
Horas practicas semanales	3.6		

II. DESCRIPCIÓN DEL CURSO ESPECIALIZADO

Este curso se encuentra integrado por módulos para el desarrollo del curso de especialización en la administración de un servidor desde su sistema operativo, implementación y manejo del servicio de directorio, diseño de la red y resolución de problemas, para lo cual se les brindará a los egresados todos los conocimientos necesarios que los preparen para poder certificar sus habilidades en herramientas de administración de Servidor Windows Server y administración del directorio activo.

III. OBJETIVO GENERAL

Que el estudiante obtenga los conocimientos necesarios para poder certificarse en el uso de tecnologías de administración del sistema operativo de un servidor, y administrar Active Directory.

IV. MÓDULOS DE ESTUDIO

MÓDULO No. I: FUNDAMENTALS OF A WINDOWS SERVER NETWORK INFRASTRUCTURE AND APPLICATION PLATFORM.

Objetivo

Este curso introduce a los estudiantes a la infraestructura de red y a los conceptos de aplicaciones y configuraciones de Windows Server. Los estudiantes podrán adquirir una comprensión fundamental para lograr temas avanzados disponibles, para la certificación en las áreas de infraestructura de red y aplicaciones.

Contenido

1. **Understanding Network Infrastructure**
 - 1.1. Network Architecture Standards

- 1.2. Local Area Networking
- 1.3. Wide Area Networking
- 1.4. Wireless Networking
- 1.5. Connecting to the Internet
- 1.6. Remote Access
- 2. **Connecting Network Components**
 - 2.1. Understanding the OSI Model
 - 2.2. Understanding Adapters, Hubs, and Switches
 - 2.3. Understanding Routing
 - 2.4. Understanding Media Types
- 3. **Implementing TCP/IP**
 - 3.1. Overview of TCP/IP
 - 3.2. Understanding IPv4 Addressing
 - 3.3. Configuring IPv4
 - 3.4. Understanding IPv6
 - 3.5. Name Resolution
- 4. **Implementing Storage in Windows Server**
 - 4.1. Identifying Storage Technologies
 - 4.2. Managing Disks and Volumes
 - 4.3. Implementing RAID
- 5. **Installing and Configuring Windows Server**
 - 5.1. Installing Windows Server
 - 5.2. Managing Services
 - 5.3. Managing Peripherals and Devices
- 6. **Windows Server Roles**
 - 6.1. Role-Based Deployment
 - 6.2. Deploying Role-Specific Servers
- 7. **Implementing Active Directory Domain Services**
 - 7.1. Introducing AD DS
 - 7.2. Implementing AD DS
 - 7.3. Managing Users, Groups, and Computers
 - 7.4. Implementing Organizational Units
 - 7.5. Implementing Group Policy
- 8. **Implementing IT Security Layers**
 - 8.1. Overview of Defense-in-Depth
 - 8.2. Physical Security
 - 8.3. Internet Security
- 9. **Implementing Windows Server Security**
 - 9.1. Overview of Windows Security
 - 9.2. Securing Files and Folders
 - 9.3. Implementing Encryption
- 10. **Implementing Network Security**
 - 10.1. Overview of Network Security
 - 10.2. Implementing Firewall
 - 10.3. Network Access Protection
- 11. **Implementing Security Software**
 - 11.1. Client Protection Features
 - 11.2. E-Mail Protection
 - 11.3. Server Protection
- 12. **Monitoring Server Performance**

- 12.1. Overview of Server Components
- 12.2. Performance Monitoring
- 13. **Maintaining Windows Server**
 - 13.1. Troubleshooting Windows Server Startup
 - 13.2. Server Availability and Data Recovery
 - 13.3. Applying Updates to Windows Server
 - 13.4. Troubleshooting Windows Server
- 14. **Implementing Virtualization**
 - 14.1. Overview of Virtualization Technologies
 - 14.2. Implementing Hyper-V Role

MÓDULO No. II: INSTALLING AND CONFIGURING WINDOWS SERVER

Objetivo:

Este curso proporciona las habilidades y conocimientos necesarios para implementar una infraestructura básica de Windows Server en un entorno empresarial existente. El curso cubre la implementación, administración, mantenimiento y provisión de servicios e infraestructura en un entorno Windows Server. Si bien hay algunos conceptos en habilidades y tareas a través de los demás cursos, este curso cubre principalmente la implementación inicial y la configuración de servicios básicos, incluidos los servicios de dominio directorio activo (AD DS), redes de servicios y la configuración de Microsoft Hyper-V Server.

Contenido:

Installing and Configuring Windows Server

1. **Deploying and Managing Windows Server**
 - 1.1.1. Windows Server Overview
 - 1.1.2. Overview of Windows Server Management
 - 1.1.3. Installing Windows Server
 - 1.1.4. Post-Installation Configuration of Windows Server
 - 1.1.5. Introduction to Windows PowerShell
2. **Introduction to Active Directory Domain Services**
 - 2.1.1. Overview of AD DS
 - 2.1.2. Overview of Domain Controllers
 - 2.1.3. Installing a Domain Controller
3. **Managing Active Directory Domain Services Objects**
 - 3.1.1. Managing User Accounts
 - 3.1.2. Managing Group Accounts
 - 3.1.3. Managing Computer Accounts
 - 3.1.4. Delegating Administration
4. **Automating Active Directory Domain Services Administration**
 - 4.1.1. Using Command-line Tools for AD DS Administration
 - 4.1.2. Using Windows PowerShell for AD DS Administration
 - 4.1.3. Performing Bulk Operations with Windows PowerShell
5. **Implementing IPv4**
 - 5.1.1. Overview of TCP/IP
 - 5.1.2. Understanding IPv4 Addressing
 - 5.1.3. Subnetting and Supernetting
 - 5.1.4. Configuring and Troubleshooting IPv4
6. **Implementing Dynamic Host Configuration Protocol**
 - 6.1.1. Installing a DHCP Server Role
 - 6.1.2. Configuring DHCP Scopes
 - 6.1.3. Managing a DHCP Database
 - 6.1.4. Securing and Monitoring DHCP
7. **Implementing Domain Name System**
 - 7.1.1. Name Resolution for Windows Client and Servers
 - 7.1.2. Installing and Managing a DNS Server
 - 7.1.3. Managing DNS Zones
8. **Implementing IPv6**
 - 8.1.1. Overview of IPv6

- 8.1.2. IPv6 Addressing
- 8.1.3. Coexistence with IPv6
- 8.1.4. IPv6 Transition Technologies
- 9. Implementing Local Storage**
 - 9.1.1. Overview of Storage
 - 9.1.2. Managing Disks and Volumes
 - 9.1.3. Implementing Storage Spaces
- 10. Implementing File and Print Services**
 - 10.1.1. Securing Files and Folders
 - 10.1.2. Protecting Shared Files and Folders by Using Shadow Copies
 - 10.1.3. Configuring Network Printing
- 11. Implementing Group Policy**
 - 11.1.1. Overview of Group Policy
 - 11.1.2. Group Policy Processing
 - 11.1.3. Implementing a Central Store for Administrative Templates
- 12. Securing Windows Servers Using Group Policy Objects**
 - 12.1.1. Windows Operating Systems Security Overview
 - 12.1.2. Configuring Security Settings
 - 12.1.3. Restricting Software
 - 12.1.4. Configuring Windows Firewall with Advanced Security
- 13. Implementing Server Virtualization with Hyper-V**
 - 13.1.1. Overview of Virtualization Technologies
 - 13.1.2. Implementing Hyper-V
 - 13.1.3. Managing Virtual Machine Storage
 - 13.1.4. Managing Virtual Networks

MÓDULO No. III: ADMINISTERING WINDOWS SERVER

Objetivo

Este curso está dirigido a profesionales de tecnología de la información (TI) con o sin experiencia trabajando en un entorno Windows Server, y que deseen adquirir las habilidades y conocimientos necesarios para poder administrar y mantener la infraestructura básica necesaria para un entorno de Server. El objetivo primordial para los estudiantes en este curso es ampliar el despliegue inicial de Windows Servers sus servicios e infraestructura y proporcionar las habilidades necesarias para administrar y mantener un dominio basado en Windows Server, tales como manejo de usuarios y grupos, y seguridad de datos y acceso a la red.

Contenido

1. Administering Windows Server

- 1.1.1. Overview of Windows Deployment Services
- 1.1.2. Implementing Deployment with Windows Deployment Services
- 1.1.3. Administering Windows Deployment Services

2. Configuring and Troubleshooting Domain Name System

- 2.1.1. Installing the DNS Server Role
- 2.1.2. Configuring the DNS Server Role
- 2.1.3. Configuring DNS Zones
- 2.1.4. Configuring DNS Zone Transfers
- 2.1.5. Managing and Troubleshooting DNS

3. Maintaining Active Directory Domain Services

- 3.1.1. Overview of AD DS
- 3.1.2. Implementing Virtualized Domain Controllers
- 3.1.3. Implementing RODC
- 3.1.4. Administering AD DS
- 3.1.5. Managing the AD DS Database

4. Managing User and Service Accounts

- 4.1.1. Automating User Account Management
- 4.1.2. Configuring Password-Policy and User-Account Lockout Settings
- 4.1.3. Configuring Managed Service Accounts

5. Implementing a Group Policy Infrastructure

- 5.1.1. Introducing Group Policy
- 5.1.2. Implementing and Administering Group Policy Objects (GPOs)
- 5.1.3. Group Policy Scope and Group Policy Processing
- 5.1.4. Troubleshooting the Application of GPOs

6. Managing User Desktops with Group Policy

- 6.1.1. Implementing Administrative Templates
- 6.1.2. Configuring Folder Redirection and Scripts
- 6.1.3. Configuring Group Policy Preferences
- 6.1.4. Managing Software with Group Policy

7. Configuring and Troubleshooting Remote Access

- 7.1.1. Configuring Network Access
- 7.1.2. Configuring Virtual Private Network (VPN) Access
- 7.1.3. Overview of Network Policies
- 7.1.4. Troubleshooting Routing and Remote Access
- 7.1.5. Configuring Direct Access

- 8. Installing, Configuring, and Troubleshooting the Network Policy Server Role**
 - 8.1.1. Installing and Configuring a NPS
 - 8.1.2. Configuring Remote Authentication Dial-In User Service Clients and Servers
 - 8.1.3. NPS Authentication Methods
 - 8.1.4. Monitoring and Troubleshooting a NPS
- 9. Implementing Network Access Protection**
 - 9.1.1. Overview of Network Access Protection
 - 9.1.2. Overview of NAP Enforcement Processes
 - 9.1.3. Configuring NAP
 - 9.1.4. Monitoring and Troubleshooting NAP
- 10. Optimizing File Services**
 - 10.1.1. Overview of FSRM
 - 10.1.2. Using FSRM to Manage Quotas, File Screens, and Storage Reports
 - 10.1.3. Implementing Classification and File Management Tasks
 - 10.1.4. Overview of Distributed File System (DFS)
 - 10.1.5. Configuring DFS Namespaces
 - 10.1.6. Configuring and Troubleshooting Distributed File System Replication
- 11. Configuring Encryption and Advanced Auditing**
 - 11.1.1. Encrypting Files by Using Encrypting File System
 - 11.1.2. Configuring Advanced Auditing
- 12. Implementing Update Management**
 - 12.1.1. Overview of WSUS
 - 12.1.2. Deploying Updates with WSUS
- 13. Monitoring Windows Server**
 - 13.1.1. Monitoring Tools
 - 13.1.2. Using Performance Monitor
 - 13.1.3. Monitoring Event Logs

MÓDULO NO. IV: CONFIGURING ADVANCED WINDOWS SERVER SERVICES

Objetivo

Aprender a configurar servicios avanzados utilizando Windows Server. Este curso proporciona las habilidades y conocimientos necesarios para implementar una infraestructura de base Windows Server en un entorno empresarial existente. El curso cubre la implementación, gestión, mantenimiento y provisión de servicios e infraestructura en un entorno Windows Server.

Contenido

- 1. Implementing Advanced Network Services**
 - 1.1.1. Configuring Advanced DHCP Features
 - 1.1.2. Configuring Advanced DNS Settings
 - 1.1.3. Implementing IPAM
- 2. Implementing Advanced File Services**
 - 2.1.1. Configuring iSCSI Storage
 - 2.1.2. Configuring BranchCache
 - 2.1.3. Optimizing Storage Usage
- 3. Implementing Dynamic Access Control**
 - 3.1.1. Overview of Dynamic Access Control
 - 3.1.2. Planning for Dynamic Access Control
 - 3.1.3. Deploying Dynamic Access Control
- 4. Implementing Distributed Active Directory Domain Services Deployments**
 - 4.1.1. Overview of Distributed AD DS Deployments
 - 4.1.2. Deploying a Distributed AD DS Environment
 - 4.1.3. Configuring AD DS Trusts
- 5. Implementing Active Directory Domain Services Sites and Replication**
 - 5.1.1. Overview of AD DS Replication
 - 5.1.2. Configuring AD DS Sites
 - 5.1.3. Configuring and Monitoring AD DS Replication
- 6. Implementing Active Directory Certificate Services**
 - 6.1.1. PKI Overview
 - 6.1.2. Deploying CAs
 - 6.1.3. Deploying and Configuring CA Hierarchy
 - 6.1.4. Deploying and Managing Certificate Templates
 - 6.1.5. Implementing Certificate Distribution and Revocation
 - 6.1.6. Managing Certificate Recovery
- 7. Implementing Active Directory Rights Management Services**
 - 7.1.1. AD RMS Overview
 - 7.1.2. Deploying and Managing an AD RMS Infrastructure
 - 7.1.3. Configuring AD RMS Content Protection
 - 7.1.4. Configuring External Access to AD RMS
- 8. Implementing Active Directory Federation Services**
 - 8.1.1. Overview of AD FS
 - 8.1.2. Deploying AD FS
 - 8.1.3. Implementing AD FS for a Single Organization
 - 8.1.4. Deploying AD FS in a B2B Federation Scenario
- 9. Implementing Network Load Balancing**

- 9.1.1. Overview of NLB
- 9.1.2. Configuring an NLB Cluster
- 9.1.3. Planning an NLB Implementation
- 10. Implementing Failover Clustering**
 - 10.1.1. Overview of Failover Clustering
 - 10.1.2. Implementing a Failover Cluster
 - 10.1.3. Configuring Highly Available Applications and Services on a Failover Cluster
 - 10.1.4. Maintaining a Failover Cluster
 - 10.1.5. Implementing a Multi-Site Failover Cluster
- 11. Implementing Failover Clustering with Hyper-V**
 - 11.1.1. Overview of Integrating Hyper-V with Failover Clustering
 - 11.1.2. Implementing Hyper-V Virtual Machines on Failover Clusters
 - 11.1.3. Implementing Hyper-V Virtual Machine Movement
 - 11.1.4. Managing Hyper-V Virtual Environments by Using VMM
- 12. Implementing Disaster Recovery**
 - 12.1.1. Overview of Disaster Recovery
 - 12.1.2. Implementing Windows Server Backup
 - 12.1.3. Implementing Server and Data Recovery

MÓDULO NO. V: DESIGNING AND IMPLEMENTING A SERVER INFRASTRUCTURE

Objetivo

Este curso le proporciona las habilidades y conocimientos necesarios para planificar, diseñar e implementar un físico y lógico Windows Server con infraestructura de servicios de dominio de Active Directory (AD DS). El curso también proporciona las habilidades para llevar a cabo la resolución de nombres, integración de aplicaciones, optimización de automatizar la reparación y mantenimiento de servicios de red.

Contenido

- 1. Planning a Server Upgrade and Migration**
 - 1.1.1. Upgrade and Migration Considerations
 - 1.1.2. Creating a Server Upgrade and Migration Plan
 - 1.1.3. Planning for Virtualization
- 2. Planning and Implementing a Server Deployment Infrastructure**
 - 2.1.1. Selecting an Appropriate Server Imaging Strategy
 - 2.1.2. Selecting a Deployment Automation Strategy
 - 2.1.3. Implementing an Automated Deployment Strategy
- 3. Designing and Maintaining an IP Configuration and Address Management Solution**
 - 3.1.1. Designing and Implementing DHCP
 - 3.1.2. Planning and Implementing DHCP Scopes
 - 3.1.3. Planning and Implementing an IPAM Provisioning Strategy
 - 3.1.4. Design and implement DHCP.
 - 3.1.5. Plan and implement DHCP scope configuration and options.
 - 3.1.6. Design and implement an IPAM provisioning strategy.
- 4. Designing and Implementing Name Resolution**
 - 4.1.1. Designing a Domain Name System (DNS) Server Implementation Strategy
 - 4.1.2. Designing the DNS Namespace
 - 4.1.3. Designing and Implementing DNS Zones
 - 4.1.4. Designing and Configuring DNS Zone Replication and Delegation
 - 4.1.5. Optimizing DNS Servers
 - 4.1.6. Designing DNS for High Availability and Security
- 5. Designing and Implementing an Active Directory Domain Services Forest and Domain Infrastructure**
 - 5.1.1. Designing an AD DS Forest
 - 5.1.2. Designing and Implementing AD DS Forest Trusts
 - 5.1.3. Designing and Implementing AD DS Domains
 - 5.1.4. Designing DNS Namespaces in AD DS Environments
 - 5.1.5. Designing AD DS Domain Trusts
- 6. Designing and Implementing an Active Directory Organizational Unit Infrastructure**
 - 6.1.1. Planning the Active Directory Administrative Tasks Delegation Model
 - 6.1.2. Designing the OU Structure
 - 6.1.3. Designing and Implementing an Active Directory Group Strategy
- 7. Designing and Implementing a Group Policy Object Strategy**
 - 7.1.1. Gathering the Information Required for a GPO Design
 - 7.1.2. Designing and Implementing GPOs
 - 7.1.3. Designing GPO Processing

- 7.1.4. Planning Group Policy Management
- 8. Designing and Implementing an Active Directory Domain Services Topology**
 - 8.1.1. Designing and Implementing AD DS Sites
 - 8.1.2. Designing AD DS Replication
 - 8.1.3. Designing the Placement of Domain Controllers
 - 8.1.4. Virtualization Considerations for Domain Controllers
 - 8.1.5. Designing Highly Available Domain Controllers
- 9. Planning and Implementing Storage**
 - 9.1.1. Storage Considerations
 - 9.1.2. Planning and Implementing iSCSI SANs
 - 9.1.3. Storage Spaces in Windows Server
- 10. Planning and Implementing File Services**
 - 10.1.1. Planning and Implementing DFS
 - 10.1.2. Planning and Implementing BranchCache
 - 10.1.3. Planning and Implementing Dynamic Access Control
- 11. Designing and Implementing Network Access Services**
 - 11.1.1. Designing and Implementing Remote Access Services
 - 11.1.2. Designing RADIUS Authentication by Using NPS
 - 11.1.3. Designing a Perimeter Network
 - 11.1.4. Planning and Implementing DirectAccess
- 12. Designing and Implementing Network Protection**
 - 12.1.1. Overview of Network Security Design
 - 12.1.2. Identifying and Mitigating Common Network Security Threats
 - 12.1.3. Designing and Implementing a Windows Firewall Strategy
 - 12.1.4. Designing and Implementing a NAP Infrastructure

V. EVALUACIÓN

Los participantes de la especialización se someterán a una prueba objetiva de evaluación por cada módulo que consistirá en un test de batería que evalúe todos los niveles del conocimiento (cognoscitivo, afectivo y psicomotor).

VI.- ESTRATEGIAS METODOLÓGICAS

Clases prácticas, discusiones, ejemplos y estudio de casos.

VII. BIBLIOGRAFÍA

- FUNDAMENTALS OF A WINDOWS SERVER NETWORK INFRASTRUCTURE.
- INSTALLING AND CONFIGURING WINDOWS SERVER.
- ADMINISTERING WINDOWS SERVER
- CONFIGURING ADVANCED WINDOWS SERVER SERVICES
- DESIGNING AND IMPLEMENTING A SERVER INFRASTRUCTURE.

VIII. CERTIFICACION MICROSOFT

Todos los cursos estructurados en este plan de especialización preparan al estudiante para someterse a los exámenes y obtener la certificación:

“Microsoft Certified Solutions Associate”



Aprobado por: Lic. Rolando Balmore Pacheco.
Dirección de Egresados y Graduados

Fecha: 28 de febrero de 2015.