

active directory designing deploying and running active directory

active directory designing deploying and running active directory is a cornerstone of modern IT infrastructure, enabling secure and centralized management of users, computers, and resources. This comprehensive guide delves into the critical aspects of Active Directory, from the initial conceptualization and architectural planning to the practical steps involved in implementation and ongoing operational management. We will explore best practices for designing a robust and scalable Active Directory environment, the intricacies of a successful deployment, and the essential strategies for running Active Directory efficiently and securely. Whether you're a seasoned IT professional or embarking on your first Active Directory project, understanding these phases is paramount to leveraging its full potential for your organization.

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Designing Your Active Directory Architecture

The foundation of a successful Active Directory implementation lies in meticulous design. This phase involves understanding your organization's current needs and future growth projections to create a scalable, resilient, and secure directory structure. A well-designed Active Directory (AD) environment will streamline user authentication, authorization, and resource access, ultimately improving operational efficiency and reducing administrative overhead. Key considerations include determining the optimal forest and domain structure, planning for sites and subnets, and establishing a clear organizational unit (OU) hierarchy. The choices made during the design phase have long-lasting implications, so investing ample time and expertise here is crucial for long-term success.

Understanding Forest and Domain Structures

The forest is the highest level of logical grouping in Active Directory, and it establishes a security boundary. Within a forest, you can have one or more domains. A single domain model is suitable for smaller organizations with a unified administrative structure. However, larger or geographically

dispersed organizations might benefit from a multi-domain forest to delegate administrative control, manage different security policies, or represent distinct business units. When designing your domain structure, consider factors like administrative autonomy, security requirements, and the need for replication efficiency. The careful selection of your forest and domain topology directly impacts the manageability and scalability of your AD deployment.

Planning for Sites and Subnets

Active Directory Sites and Services is a critical component for optimizing network traffic and logon performance, especially in organizations with multiple physical locations. A site in Active Directory represents a physical location or a group of IP subnets that are well-connected by a high-speed, reliable network. Defining sites accurately allows Active Directory to manage replication traffic efficiently, ensuring that domain controllers exchange information in a timely manner. It also dictates how clients locate the nearest domain controller for authentication and service requests. Proper site and subnet configuration is essential for ensuring a responsive and efficient user experience across your entire network, especially when managing distributed environments. Incorrectly configured sites can lead to increased network latency and a poor user experience.

Establishing an Organizational Unit (OU) Hierarchy

Organizational Units (OUs) are fundamental to the effective administration of Active Directory. They provide a hierarchical structure within a domain that allows administrators to delegate control and apply Group Policy Objects (GPOs). A well-defined OU structure should mirror your organization's operational and administrative structure. This might involve creating OUs for different departments, geographical locations, or types of user accounts and computer objects. The strategic use of OUs simplifies the application of security settings, software deployments, and user environment configurations, making it easier to manage large numbers of users and computers. Planning your OU strategy upfront will prevent administrative headaches down the line and ensure that your GPOs are applied precisely where they are needed.

Planning Your Active Directory Deployment

Once the design is finalized, the next crucial step is comprehensive deployment planning. This phase bridges the gap between the architectural blueprint and the tangible implementation of Active Directory services. Thorough planning minimizes disruptions, reduces the risk of errors, and ensures a smooth transition to the new or updated directory environment. Key elements of deployment planning include hardware and software requirements, network considerations, security protocols, and a phased rollout strategy. Without a well-defined deployment plan, even the best-designed Active Directory can falter during implementation, leading to delays and potential security vulnerabilities.

Hardware and Software Requirements Assessment

Before deploying any domain controllers or related services, it's vital to accurately assess the hardware and software requirements. This includes determining the appropriate server specifications (CPU, RAM, disk space) for domain controllers based on the expected number of users, objects, and authentication requests. Compatibility with your chosen operating system versions is also paramount. Furthermore, consider the need for additional infrastructure components such as DNS servers, DHCP servers, and potentially Certificate Authority services, all of which are closely intertwined with Active Directory functionality. Proper resource allocation prevents performance bottlenecks and ensures the stability of your directory services.

Network Considerations and Readiness

A robust and reliable network infrastructure is the backbone of a healthy Active Directory. During the planning phase, thoroughly assess your network's readiness. This includes ensuring sufficient bandwidth between sites for replication, verifying DNS resolution capabilities, and confirming that necessary ports are open for communication between domain controllers and clients. Network segmentation and security policies should also be reviewed to ensure they align with your Active Directory security model. Proactive identification and remediation of network issues before deployment can prevent significant troubleshooting challenges later on.

Developing a Phased Rollout Strategy

For larger or more complex environments, a phased rollout strategy is highly recommended. This involves implementing Active Directory in stages, perhaps starting with a pilot group or a specific location, before expanding to the entire organization. A phased approach allows for testing and validation of configurations, identification of any unforeseen issues, and provides an opportunity to train IT staff on new procedures. It also minimizes the impact of potential problems on the entire user base. Documenting each phase of the rollout, including rollback plans, is an essential part of this strategy.

Deploying Active Directory Services

The deployment phase is where the theoretical plans are translated into a functional Active Directory environment. This involves the installation and configuration of server roles, the promotion of servers to domain controllers, and the initial setup of critical services. Attention to detail and adherence to best practices are paramount during this stage to ensure a secure and stable deployment. Rushing through this process can lead to critical misconfigurations that are difficult to rectify and can compromise the integrity of your directory services.

Installing and Configuring Domain Controllers

The core of Active Directory is the domain controller (DC). The deployment process typically begins with installing the necessary server roles on designated machines, followed by promoting them to domain controllers. This involves running the Active Directory Domain Services (AD DS) installation wizard, specifying crucial information like the domain name, forest functional level, and replication options. Careful consideration should be given to the placement of your initial domain controllers and the subsequent addition of DCs for redundancy and load balancing. Ensuring that DNS is correctly configured before promoting a server is a critical prerequisite.

Configuring DNS and DHCP Integration

Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) are indispensable services for Active Directory. DNS is responsible for resolving hostnames to IP addresses, a function that domain controllers heavily rely on. It's best practice to install and configure the DNS server role on your domain controllers. Similarly, DHCP provides IP addresses and other network configuration parameters to clients, ensuring they can communicate with domain controllers. The integration between AD DS, DNS, and DHCP needs to be seamless for proper functioning. Incorrect DNS or DHCP configuration can lead to client connectivity issues and an inability to join the domain.

Setting Up Initial Group Policy Objects (GPOs)

Group Policy Objects (GPOs) are powerful tools for managing user and computer settings. During the deployment, it's essential to set up initial GPOs that enforce baseline security settings, configure essential software, and define user environments. This might include policies for password complexity, screen saver lockouts, software installation restrictions, and mapped drives. Organizing these GPOs logically and linking them to the appropriate OUs is crucial for effective management. Starting with a few essential GPOs provides immediate benefits and lays the groundwork for more granular control later on.

Running and Managing Your Active Directory Environment

The deployment is just the beginning; effectively running and managing your Active Directory environment is an ongoing process that requires continuous attention to security, performance, and maintenance. Proactive management prevents issues, ensures the integrity of your data, and maximizes the return on your investment in Active Directory. This involves regular monitoring, diligent patching, robust backup strategies, and swift incident response. A well-managed AD environment is a secure and efficient environment.

Monitoring Performance and Health

Continuous monitoring of your Active Directory environment is vital for identifying potential issues before they impact users. This includes tracking key performance indicators (KPIs) such as replication latency, authentication success rates, domain controller CPU and memory utilization, and disk space. Utilizing built-in Windows Server tools and third-party monitoring solutions can provide valuable insights into the health of your AD. Regular performance tuning can ensure optimal responsiveness and prevent service degradations. Proactive monitoring allows administrators to address issues such as replication failures or domain controller overload before they cause significant downtime.

Implementing a Robust Backup and Recovery Strategy

Active Directory contains the credentials and access rights for your entire organization, making it a prime target for data loss. A comprehensive backup and recovery strategy is non-negotiable. This involves regularly backing up your Active Directory database, ideally performing system state backups or full server backups of your domain controllers. Testing your restore procedures regularly is just as important as performing the backups themselves. In the event of a catastrophic failure or a security incident, a well-tested recovery plan will be the difference between a swift return to operations and prolonged downtime.

Security Best Practices and Patch Management

Securing your Active Directory environment is paramount. This involves implementing strong password policies, enforcing multi-factor authentication where possible, and regularly auditing access logs for suspicious activity. Patch management is a critical component of security. Keeping your domain controllers and related infrastructure patched with the latest security updates from Microsoft is essential to protect against known vulnerabilities. A structured patch management process, including testing patches in a non-production environment before widespread deployment, helps maintain a secure and stable Active Directory.

Ongoing Administration and User Management

Day-to-day administration of Active Directory involves managing user accounts, computer objects, groups, and permissions. This includes creating, modifying, and disabling user accounts, resetting passwords, and assigning users to appropriate groups for resource access. Establishing clear procedures for user and group management, along with a well-defined OU structure, streamlines these tasks and ensures consistency. Regular review of group memberships and permissions helps maintain the principle of least privilege, further enhancing security. Automating routine administrative tasks where possible can free up IT staff to focus on more strategic initiatives.

Frequently Asked Questions

What are the key considerations for designing a hybrid Active Directory (AD) environment to integrate with cloud services like Azure AD?

Key considerations include selecting the right synchronization method (Azure AD Connect is common), planning for identity governance and access management across on-premises and cloud, defining password policies and synchronization, and establishing robust security controls for both environments. It's crucial to understand how authentication and authorization will flow and how to manage user lifecycles consistently.

How can I optimize Active Directory performance and scalability for a growing organization?

Optimization involves several strategies: regular health checks and monitoring of Domain Controllers (DCs), ensuring adequate hardware resources (CPU, RAM, disk I/O), distributing DCs logically across the network and geographically, implementing proper DNS configurations, and regularly reviewing and cleaning up stale objects. Designing an efficient OU structure and Group Policy Objects (GPOs) also plays a significant role.

What are the best practices for securing Active Directory against modern threats like ransomware and sophisticated attacks?

Best practices include implementing Privileged Access Management (PAM) solutions, employing multi-factor authentication (MFA) for administrative accounts, regularly patching DCs and member servers, enforcing the principle of least privilege, segmenting the network, auditing critical changes, using security baselines and GPOs for hardened configurations, and implementing a robust backup and disaster recovery strategy for AD.

What are the advantages and disadvantages of using Read-Only Domain Controllers (RODCs) in a remote or branch office deployment?

Advantages of RODCs include enhanced security by preventing local credential storage, reduced WAN bandwidth usage for authentication, and faster logon times for users in remote locations. Disadvantages are that they cannot host certain FSMO roles, require AD replication from a writable DC, and might have limitations with certain applications or services that require direct DC write access.

How do I plan for and execute a successful Active Directory domain upgrade or migration to a newer Windows Server

version?

A successful upgrade/migration requires thorough planning: assess current AD health, identify all applications and services that rely on AD, plan the new AD structure (e.g., domain/forest functional levels), create a detailed test plan, perform extensive testing in a lab environment, have a rollback strategy, and schedule the migration during a maintenance window with minimal user impact. Phased deployments are often recommended.

What are the key metrics and tools to monitor the health and performance of an Active Directory environment?

Key metrics include DC replication latency, DNS resolution times, authentication success/failure rates, DC CPU and memory utilization, disk I/O, and event log errors (especially security and directory service logs). Essential tools include Performance Monitor (Perfmon), Event Viewer, `repadmin`, `dcdiag`, PowerShell cmdlets for AD management, and dedicated third-party AD monitoring solutions.

Additional Resources

Here are 9 book titles related to Active Directory design, deployment, and operation, along with their descriptions:

1. *Active Directory: Designing, Deploying, and Managing a Complete Solution*

This comprehensive guide offers a deep dive into the entire lifecycle of an Active Directory infrastructure. It covers essential aspects like planning your forest and domain structure, implementing robust security measures, and configuring services like Group Policy and DNS. The book emphasizes best practices for scalability and maintainability, making it ideal for administrators tasked with building and running large AD environments.

2. *Mastering Active Directory: The Definitive Guide to Designing, Deploying, and Managing Microsoft Directory Services*

Billed as definitive, this title delves into the intricacies of Active Directory, moving beyond the basics to advanced configurations and troubleshooting. It explores strategic design considerations for modern IT needs, including cloud integration and hybrid environments. The book provides practical, step-by-step instructions for deployment and offers invaluable insights for day-to-day management and performance optimization.

3. *The Art of Active Directory Administration: Principles for Design, Deployment, and Operations*

Focusing on the "art" of AD management, this book highlights the principles behind effective design and operational excellence. It guides readers through the strategic decisions involved in architecting AD for security, performance, and resilience. The content stresses the importance of proactive management, including monitoring, auditing, and disaster recovery planning, to ensure a stable and reliable directory service.

4. *Designing and Deploying Active Directory for Enterprise Networks*

This title specifically targets the complexities of implementing Active Directory within large-scale enterprise environments. It addresses the unique challenges of multi-site deployments, complex trust relationships, and integration with existing enterprise applications. The book offers practical advice on planning for growth, managing user and computer objects efficiently, and establishing

clear administrative boundaries.

5. Active Directory Cookbook: Practical Recipes for Design, Deployment, and Management

Presented as a "cookbook," this book provides actionable, step-by-step solutions for common and advanced Active Directory tasks. It covers a wide range of scenarios, from initial setup and configuration to more complex deployments like Read-Only Domain Controllers and advanced Group Policy management. The recipe-based approach makes it an excellent resource for administrators looking for quick, practical answers and solutions.

6. Running a Successful Active Directory Environment: Best Practices for Design, Implementation, and Ongoing Management

This book centers on the practicalities of running a healthy and efficient Active Directory environment. It emphasizes best practices for initial design and deployment, but places a strong focus on the ongoing operational aspects. Readers will learn about effective monitoring strategies, security hardening techniques, and methods for maintaining performance and availability over time.

7. Active Directory Design Patterns and Best Practices: Architecting for Scalability and Security

This title delves into the architectural principles and design patterns that contribute to a robust and secure Active Directory. It explores how to structure your AD to accommodate future growth and evolving security threats. The book provides guidance on making informed decisions about forest design, domain naming conventions, and OU structure for optimal manageability and performance.

8. The Complete Active Directory Deployment Guide: From Planning to Production

This book offers a comprehensive, end-to-end guide to deploying Active Directory, covering every stage from initial planning through to a fully operational production environment. It details the crucial steps involved in gathering requirements, designing the logical and physical topology, and executing the deployment process smoothly. The content also touches upon post-deployment best practices for ongoing administration and support.

9. Active Directory Secrets: Advanced Techniques for Design, Deployment, and Troubleshooting

This title aims to uncover "secrets" and advanced methodologies for working with Active Directory. It goes beyond the standard documentation to explore nuanced design considerations and sophisticated deployment strategies. The book also dedicates significant attention to effective troubleshooting techniques for complex AD issues, making it a valuable resource for experienced administrators seeking to deepen their expertise.

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Designing, Deploying, and Running Active Directory: A Comprehensive Guide to Microsoft's Identity and Access Management Solution

This ebook provides a thorough understanding of Active Directory (AD), encompassing its design principles, deployment strategies, and ongoing management, crucial for securing and efficiently managing modern IT infrastructures. We'll cover everything from initial planning and implementation to troubleshooting and optimization, ensuring readers gain the knowledge and skills necessary for successful AD administration.

Ebook Title: Mastering Active Directory: Design, Deployment, and Administration

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Conclusion: Best Practices and Future Trends in Active Directory Management

Detailed Outline Explanation:

Introduction: This section establishes the foundational importance of Active Directory in modern IT, highlighting its role in identity management, access control, and overall network security. It will also briefly introduce the core concepts and benefits of using AD.

Chapter 1: Planning Your Active Directory Deployment: This chapter emphasizes the critical initial steps of planning, including defining business requirements, assessing existing infrastructure, determining the scope of the deployment (single domain, multiple domains, forest), and choosing appropriate hardware. It will cover needs analysis and resource allocation.

Chapter 2: Designing Your Active Directory Structure: This chapter delves into the design considerations for creating an efficient and scalable AD structure. It covers the strategic use of Organizational Units (OUs) for delegation of administration, the creation of Sites for optimal replication and performance, and the decision-making process for single-domain vs. multi-domain environments and forest topologies. Best practices for structuring based on departments, locations, or other organizational needs will be discussed.

Chapter 3: Deploying Active Directory: This chapter provides a step-by-step guide to the installation

and configuration of domain controllers, including DNS server configuration, Active Directory Domain Services installation, and the promotion of domain controllers. It will discuss different deployment models and considerations for high availability and disaster recovery. The importance of proper schema management will also be detailed.

Chapter 4: Managing Users, Groups, and Computers: This chapter covers user and computer account management within AD, including creating, modifying, and deleting accounts. It will cover the creation and management of security groups, distribution groups, and the crucial role of these groups in implementing fine-grained access control. Best practices for password management and account lockout policies will also be covered.

Chapter 5: Securing Your Active Directory Environment: This chapter focuses on securing the AD infrastructure against threats. It will cover topics such as password policies, account lockout thresholds, auditing, and the implementation of security best practices including multi-factor authentication (MFA) integration, privileged account management, and regular security assessments. Recent advancements in AD security will be highlighted, including the use of advanced threat protection tools.

Chapter 6: Group Policy Management: This chapter explains how to leverage Group Policy Objects (GPOs) to centrally manage and enforce settings across the network. It will cover the creation, deployment, and management of GPOs for controlling user configurations, software installations, security settings, and other critical aspects of the computing environment. Best practices for effective GPO management and troubleshooting will be addressed.

Chapter 7: Monitoring and Troubleshooting Active Directory: This chapter details essential monitoring techniques, including using built-in tools and third-party monitoring solutions, to ensure the health and performance of the Active Directory environment. It provides troubleshooting strategies for common AD issues, such as replication problems, account lockouts, and permission conflicts. Effective logging and event analysis will be explained.

Chapter 8: Advanced Active Directory Features: This chapter explores more advanced AD features, such as Read-Only Domain Controllers (RODCs), Active Directory Certificate Services (AD CS), Active Directory Rights Management Services (AD RMS), and integration with other Microsoft services. The use of PowerShell for automation and management will be a key focus.

Chapter 9: Migrating to and Managing Azure Active Directory: This chapter will explain how to plan and execute a migration strategy from on-premises Active Directory to Azure Active Directory (Azure AD) or hybrid deployments which utilize both on-premises and cloud-based AD infrastructure. It will cover the benefits and challenges of cloud-based identity management and the integration of on-premises systems with Azure AD Connect.

Conclusion: This section summarizes key best practices for designing, deploying, and managing Active Directory, emphasizing the ongoing need for monitoring, security updates, and proactive maintenance. It will also briefly discuss future trends and developments in Active Directory technology.

FAQs:

1. What are the key differences between Active Directory and Azure Active Directory? Azure AD is a cloud-based identity and access management service, while Active Directory is an on-premises solution. Azure AD offers greater scalability and integration with other cloud services.
2. How do I choose the right Active Directory structure for my organization? Consider factors like organizational structure, geographical location, and security requirements. A well-planned structure enhances management efficiency and scalability.
3. What are the best practices for securing Active Directory? Implement strong password policies, multi-factor authentication, regular security audits, and robust access control mechanisms.
4. How can I monitor the performance of my Active Directory? Utilize built-in tools like Active Directory Users and Computers, and consider third-party monitoring solutions for comprehensive oversight.
5. What are the common troubleshooting steps for Active Directory replication issues? Check DNS resolution, network connectivity, and the replication status of domain controllers. Review event logs for clues.
6. How can I automate Active Directory management tasks? Utilize PowerShell scripting to automate repetitive tasks, improve efficiency, and reduce manual errors.
7. What are the benefits of using Group Policy Objects (GPOs)? GPOs provide centralized management of user and computer settings, ensuring consistency and simplifying configuration across the network.
8. How do I migrate my on-premises Active Directory to Azure Active Directory? A phased approach using Azure AD Connect is recommended, ensuring a smooth transition and minimal disruption.
9. What are the future trends in Active Directory management? Expect increased integration with cloud services, greater emphasis on security, and further automation capabilities through AI and machine learning.

Related Articles:

1. Active Directory Domain Services (AD DS) Installation Guide: A step-by-step guide to installing and configuring AD DS.
2. Optimizing Active Directory Performance: Tips and techniques for improving the speed and efficiency of AD.
3. Active Directory Security Best Practices: A comprehensive guide to securing your AD environment against various threats.
4. Troubleshooting Active Directory Replication Problems: A detailed guide to resolving common replication issues.
5. Mastering Active Directory Group Policy: Advanced techniques for managing and utilizing Group Policy Objects.
6. Migrating to Azure Active Directory: A practical guide to migrating your on-premises AD to the cloud.
7. Active Directory Schema Management: Understanding and managing the Active Directory

schema.

8. Implementing Multi-Factor Authentication in Active Directory: Secure your environment with robust MFA.

9. Automating Active Directory with PowerShell: Scripts and techniques for automating AD management tasks.

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active directory designing deploying and running active directory: Active Directory For Dummies Steve Clines, Marcia Loughry, 2009-02-18 Your guide to learning Active Directory the quick and easy way Whether you're new to Active Directory (AD) or a savvy system administrator looking to brush up on your skills, Active Directory for Dummies will steer you in the right direction. Since its original release, Microsoft's implementation of the lightweight directory access protocol (LDAP) for the Windows Server line of networking software has become one of the most popular directory service products in the world. If you're involved with the design and support of Microsoft directory services and/or solutions, you're in the right place. This comprehensive guide starts by showing you the basics of AD, so you can utilize its structures to simplify your life and secure your digital environment. From there, you'll discover how to exert fine-grained control over groups, assets, security, permissions, and policies on a Windows network and efficiently configure, manage, and update the network. With coverage of security improvements, significant user interface changes, and updates to the AD scripting engine, password policies, accidental object deletion protection, and more, this plain-English book has everything you need to know. You'll learn how to: Navigate the functions and structures of AD Understand business and technical requirements to determine goals Become familiar with physical components like site links, network services, and site topology Manage and monitor new features, AD replication, and schema management Maintain AD databases Avoid common AD mistakes that can undermine network security With chapters on the ten most important points about AD design, ten online resources, and ten troubleshooting tips, this user-friendly book really is your one-stop guide to setting up, working with, and making the most of Active Directory. Get your copy of Active Directory For Dummies and get to work.

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different tools and techniques Manage users, groups, and devices effectively Design your OU structure in the best way Audit and monitor Active Directory Integrate Azure with Active Directory for a hybrid setup In Detail Active Directory is a centralized and standardized system that automates networked management of user data, security, and distributed resources and enables interoperation with other directories. If you are aware of Active Directory basics and want to gain expertise in it, this book is perfect for you. We will quickly go through the architecture and fundamentals of Active Directory and then dive deep into the core components, such as forests, domains, sites, trust relationships, OU, objects, attributes, DNS, and replication. We will then move on to AD schemas, global catalogs, LDAP, RODC, RMS, certificate authorities, group policies, and security best practices, which will help you gain a better understanding of objects and components and how they can be used effectively. We will also cover AD Domain Services and Federation Services for Windows Server 2016 and all their new features. Last but not least, you will learn how to manage your identity infrastructure for a hybrid-cloud setup. All this will help you design, plan, deploy, manage operations on, and troubleshoot your enterprise identity infrastructure in a secure, effective manner. Furthermore, I will guide you through automating administrative tasks using PowerShell cmdlets. Toward the end of the book, we will cover best practices and troubleshooting techniques that can be used to improve security and performance in an identity infrastructure. Style and approach This step-by-step guide will help you master the core functionalities of Active Directory services using Microsoft Server 2016 and PowerShell, with real-world best practices at the end.

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cloudAutomate security tasks using Active Directory and PowerShellBook Description Active Directory is an administration system for Windows administrators to automate network, security and access management tasks in the Windows infrastructure. This book starts off with a detailed focus on forests, domains, trusts, schemas and partitions. Next, you'll learn how to manage domain controllers, organizational units and the default containers. Going forward, you'll explore managing Active Directory sites as well as identifying and solving replication problems. The next set of chapters covers the different components of Active Directory and discusses the management of users, groups and computers. You'll also work through recipes that help you manage your Active Directory domains, manage user and group objects and computer accounts, expiring group memberships and group Managed Service Accounts (gMSAs) with PowerShell. You'll understand how to work with Group Policy and how to get the most out of it. The last set of chapters covers federation, security and monitoring. You will also learn about Azure Active Directory and how to integrate on-premises Active Directory with Azure AD. You'll discover how Azure AD Connect synchronization works, which will help you manage Azure AD. By the end of the book, you have learned about Active Directory and Azure AD in detail. What you will learnManage new Active Directory features, such as the Recycle Bin, group Managed Service Accounts, and fine-grained password policiesWork with Active Directory from the command line and use Windows PowerShell to automate tasksCreate and remove forests, domains, and trustsCreate groups, modify group scope and type, and manage membershipsDelegate control, view and modify permissionsOptimize Active Directory and Azure AD in terms of securityWho this book is for This book will cater to administrators of existing Active Directory Domain Services environments and/or Azure AD tenants, looking for guidance to optimize their day-to-day effectiveness. Basic networking and Windows Server Operating System knowledge would come in handy.

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Program Manager Vittorio Bertocci shows you how to: Address authentication challenges in the cloud or on-premises Systematically protect apps with Azure AD and AD Federation Services Power sign-in flows with OpenID Connect, Azure AD, and AD libraries Make the most of OpenID Connect's middleware and supporting classes Work with the Azure AD representation of apps and their relationships Provide fine-grained app access control via roles, groups, and permissions Consume and expose Web APIs protected by Azure AD Understand new authentication protocols without reading complex spec documents

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Fully updated for Windows Server 2012 R2! Designed to help enterprise administrators develop real-world, job-role-specific skills - this Training Guide focuses on configuration of advanced services in Windows Server 2012 R2. Build hands-on expertise through a series of lessons, exercises, and suggested practices - and help maximize your performance on the job. This Microsoft Training Guide: Focuses on job-role-specific expertise for advanced configuration tasks Fully updated for Windows Server 2012 R2, including new practices Provides in-depth, hands-on training you take at your own pace Creates a foundation of skills which, along with on-the-job experience, can be measured by Microsoft Certification exams such as 70-412 Topics include: Advanced Active Directory Infrastructure Active Directory Sites and Replication Advanced DHCP and DNS Active Directory Certificate Services Backup and Recovery Advanced File Services and Storage High Availability Site Resilience Dynamic Access Control and Active Directory Rights Management Services Active Directory Federation Services

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quickly.

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users and protecting corporate data, while managing Identities and Access with Microsoft Azure in different environments About This Book Deep dive into the Microsoft Identity and Access Management as a Service (IDaaS) solution Design, implement and manage simple and complex hybrid identity and access management environments Learn to apply solution architectures directly to your business needs and understand how to identify and manage business drivers during transitions Who This Book Is For This book is for business decision makers, IT consultants, and system and security engineers who wish to plan, design, and implement Identity and Access Management solutions with Microsoft Azure. What You Will Learn Apply technical descriptions and solution architectures directly to your business needs and deployments Identify and manage business drivers and architecture changes to transition between different scenarios Understand and configure all relevant Identity and Access Management key features and concepts Implement simple and complex directory integration, authentication, and authorization scenarios Get to know about modern identity management, authentication, and authorization protocols and standards Implement and configure a modern information protection solution Integrate and configure future improvements in authentication and authorization functionality of Windows 10 and Windows Server 2016 In Detail Microsoft Azure and its Identity and Access Management is at the heart of Microsoft's Software as a Service, including Office 365, Dynamics CRM, and Enterprise Mobility Management. It is an essential tool to master in order to effectively work with the Microsoft Cloud. Through practical, project based learning this book will impart that mastery. Beginning with the basics of features and licenses, this book quickly moves on to the user and group lifecycle required to design roles and administrative units for role-based access control (RBAC). Learn to design Azure AD to be an identity provider and provide flexible and secure access to SaaS applications. Get to grips with how to configure and manage users, groups, roles, and administrative units to provide a user- and group-based application and self-service access including the audit functionality. Next find out how to take advantage of managing common identities with the Microsoft Identity Manager 2016 and build cloud identities with the Azure AD Connect utility. Construct blueprints with different authentication scenarios including multi-factor authentication. Discover how to configure and manage the identity synchronization and federation environment along with multi-factor authentication, conditional access, and information protection scenarios to apply the required security functionality. Finally, get recommendations for planning and implementing a future-oriented and sustainable identity and access management strategy. Style and approach A practical, project-based learning experience explained through hands-on examples.

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confidently comprehend the subject matter Targets the MTA 98-365 exam by covering Windows Server installation, server roles, storage, and active directory infrastructure Provides you with a solid foundation of various networking topics so that you can gain a strong understanding of Windows Server administration concepts Includes review questions and suggested labs to further enhance your learning process With this book by your side, you will be armed with the core concepts and technologies needed to administer a Windows Server operating system.

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