Ms server 2016 Access Control

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Outline

Introduction

New Features in Windows Server 2016

Access Matrix

What is Access Control

Windows server 2016 Access Control let you?

Introduction

➢ MS server 2016 is a server operating system developed by Microsoft as part of the Windows NT family of operating systems.

➢ Developed concurrently with Windows 10.

➢ The first early preview version (Technical Preview) became available on October 1, 2014 together with the first technical preview of System Center.

➢ Windows Server 2016 was released on September 26, 2016 at Microsoft's Ignite conference[1] and became generally available on October 12, 2016.

New Features in Windows Server 2016

➢Windows Server 2016 has a variety of new features, including

➢Active Directory Federation Services: It is possible to configure AD FS to authenticate users stored in non-AD directories, such as X.500 compliant Lightweight Directory Access Protocol (LDAP) directories and SQL databases. <u>Windows Defender: Windows Server Antimalware is installed and enabled by default without the GUI, which is an installable Windows feature</u>

➢Remote Desktop Services: Support for OpenGL 4.4 and OpenCL 1.1, performance and stability improvements; MultiPoint Services role (see Windows MultiPoint Server).

New Features in Windows Server 2016

➢Storage Services: Central Storage QoS Policies; Storage Replicas (storage-agnostic, block-level, volume-based, synchronous and asynchronous replication using SMB3 between servers for disaster recovery).

➢Failover Clustering: Cluster operating system rolling upgrade, Storage Replicas.

New Features in Windows Server 2016

❖Web Application Proxy: Preauthentication for HTTP Basic application publishing, wildcard domain publishing of applications, HTTP to HTTPS redirection, Propagation of client IP address to backend applications.

❖IIS 10: Support for HTTP/2

❖Windows PowerShell 5.1

❖Windows Server Containers

New Features in Windows Server 2016

DHCP: As Network Access Protection was deprecated in Windows Server 2012 R2, in Windows Server 2016 the DHCP role no longer supports NAP.

Windows Server Gateway now supports Generic Routing Encapsulation (GRE) tunnels[19]

IP address management (IPAM): Support for /31, /32, and /128 subnets; discovery of file-based, domain-joined DNS servers; new DNS functions; better integration of DNS, DHCP, and IP Address (DDI) Management.

New Features in Windows Server 2016

Network Controller: A new server role to configure, manage, monitor, and troubleshoot virtual and physical network devices and services in the datacenter.

Access Matrix

Any "system" that provides resources to multiple subjects needs to control access among them.

Subjects, Objects, Operations

❖ Can determine

➢ Who can access an object

➢ What objects can be accessed by a subject

➢ What operations a subject can perform on an object?

	O_1	O_2	O_3
S_1	Y	Y	N
S_2	N	Y	N
S_3	N	Y	Y

What is Access Control

Access control refers to security features that control who can access resources in the operating system.

Applications call access control functions to set who can access specific resources or control access to resources provided by the application.

controlling access to Windows objects, such as files, and for controlling access to administrative functions, such as setting the system time or auditing user actions.

What is Access Control

- The Access Control Model topic provides a high-level description of the parts of access control and how they interact with each other.

- ✓ Suppose the private key file for J is object O_1

- ✓ Suppose the public key file for J is object O_2, All can read, only J can modify.

- ✓ Suppose all can read and write from object O_3.

- ✓ What's the access matrix?

	O_1	O_2	O_3
J	?	?	?
S_2	?	?	?
S_3	?	?	?

Secrecy

✓ Protection state ensure the secrecy of J's private key in O_1?

	O_1	O_2	O_3
J	R	R W	R W
S_2	N	R	R W
S_3	N	R	R W

integrity

Access matrix protect the integrity of J's public key file O_2?

	O_1	O_2	O_3
J	R	R W	R W
S_2	N	R	R W
S_3	N	R	R W

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❑ Identify data by using automatic and manual classification of files.

❖ For example, you could tag data in file servers across the organization.

❑ Control access to files by applying safety-net policies that use central access policies.

❖ For example, you could define who can access health information within the organization.

Windows server 2016 Access Control let you?

❑ Audit access to files by using central audit policies for compliance reporting and forensic analysis.

❖ For example, you could identify who accessed highly sensitive information.

❑ Apply Rights Management Services (RMS) protection by using automatic RMS encryption for sensitive Microsoft Office documents.

❖ For example, you could configure RMS to encrypt all documents that contain Health Insurance Portability and Accountability Act (HIPAA) information.

Windows server 2016 Access Control

The Dynamic Access Control feature set is based on infrastructure investments that can be used further by partners and line-of-business applications, and the features can provide great value for organizations that use Active Directory. This infrastructure includes:

❖ A new authorization and audit engine for Windows that can process conditional expressions and central policies.

❖ Kerberos authentication support for user claims and device claims.

❖ Improvements to the File Classification Infrastructure (FCI).

❖ RMS extensibility support so partners can provide solutions that encrypt non-Microsoft files.