AWS FSx for Windows File Server

## Service Overview

***Amazon FSx for Windows File Server*** *provides fully managed Microsoft Windows file servers, backed by a fully native Windows file system. Amazon FSx for Windows File Server has the features, performance, and compatibility to easily lift and shift enterprise applications to the AWS Cloud.*

*Amazon FSx supports a broad set of enterprise Windows workloads with fully managed file storage built on Microsoft Windows Server. Amazon FSx has native support for Windows file system features and for the industry-standard Server Message Block (SMB) protocol to access file storage over a network. Amazon FSx is optimized for enterprise applications in the AWS Cloud, with native Windows compatibility, enterprise performance and features, and consistent sub-millisecond latencies.*

*As a fully managed service, Amazon FSx for Windows File Server eliminates the administrative overhead of setting up and provisioning file servers and storage volumes. Additionally, Amazon FSx keeps Windows software up to date, detects and addresses hardware failures, and performs backups. It also provides rich integration with other AWS services like* [*AWS IAM*](https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html)*,* [*AWS Directory Service for Microsoft Active Directory*](https://docs.aws.amazon.com/directoryservice/latest/admin-guide/directory_microsoft_ad.html)*,* [*Amazon WorkSpaces*](https://docs.aws.amazon.com/workspaces/latest/adminguide/amazon-workspaces.html)*,* [*AWS Key Management Service*](https://docs.aws.amazon.com/kms/latest/developerguide/overview.html)*, and* [*AWS CloudTrail*](https://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudtrail-user-guide.html)*.*

## Use cases / Considerations

*With file storage on Amazon FSx, the code, applications, and tools that Windows developers and administrators use today can continue to work unchanged. Windows applications and workloads ideal for Amazon FSx include business applications, home directories, web serving, content management, data analytics, software build setups, and media processing workloads.*

***Amazon FSx for Windows File Server Resources: File Systems, Backups, and File Shares***

*The primary resources in Amazon FSx are* ***file systems*** *and* ***backups****.*

*A* ***file system*** *is where you store and access your files and folders. A file system is made up of one or more Windows file servers and storage volumes. When you create a file system, you specify an amount of storage capacity (in GiB) and an amount of throughput capacity (in MB/s). You can modify these properties as your needs change after you create the file system. For more information, see* [*Managing storage capacity*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/managing-storage-capacity.html) *and* [*Managing Throughput Capacity*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/managing-throughput-capacity.html)*.*

*Amazon FSx for Windows File Server* ***backups*** *are file-system-consistent, highly durable, and incremental. To ensure file system consistency, Amazon FSx uses the Volume Shadow Copy Service (VSS) in Microsoft Windows. Automatic daily backups are turned on by default when you create a file system, and you can also take additional manual backups at any time. For more information, see* [*Working with Backups*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/using-backups.html)*,*

*A Windows file share is a specific folder (and its subfolders) within your file system that you make accessible to your compute instances with SMB. Your file system already comes with a default Windows file share called \share. You can create and manage as many other Windows file shares as you want by using the Shared Folders graphical user interface (GUI) tool on Windows. For more information, see* [*Using Microsoft Windows File Shares*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/using-file-shares.html)*.*

*File shares are accessed using either the file system's DNS name or DNS aliases that you associate with the file system. For more information, see* [*Managing DNS aliases*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/managing-dns-aliases.html)*.*

***Accessing File Shares***

*Amazon FSx is accessible from compute instances with the SMB protocol (supporting versions 2.0 to 3.1.1). You can access your shares from all Windows versions starting from Windows Server 2008 and Windows 7, and also from current versions of Linux. You can map your Amazon FSx file shares on Amazon Elastic Compute Cloud (Amazon EC2) instances, and on Amazon WorkSpaces instances, Amazon AppStream 2.0 instances, and VMware Cloud on AWS VMs.*

*You can access your file shares from on-premises compute instances using AWS Direct Connect or AWS VPN. In addition to accessing file shares that are in the same VPC, AWS account, and AWS Region as the file system, you can also access your shares on compute instances that are in a different Amazon VPC, account, or Region. You do so using VPC peering or transit gateways. For more information, see* [*Supported access methods*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/supported-fsx-clients.html#access-methods)*.*

***Security and Data Protection***

*Amazon FSx provides multiple levels of security and compliance to help ensure that your data is protected. It automatically encrypts data at rest (for both file systems and backups) using keys that you manage in AWS Key Management Service (AWS KMS). Data in transit is also automatically encrypted using SMB Kerberos session keys. It has been assessed to comply with ISO, PCI-DSS, and SOC certifications, and is HIPAA eligible.*

*Amazon FSx provides access control at the file and folder level with Windows access control lists (ACLs). It provides access control at the file system level using Amazon Virtual Private Cloud (Amazon VPC) security groups. In addition, it provides access control at the API level using AWS Identity and Access Management (IAM) access policies. Users accessing file systems are authenticated with Microsoft Active Directory. Amazon FSx integrates with AWS CloudTrail to monitor and log your API calls letting you see actions taken by users on your Amazon FSx resources.*

*Additionally, it protects your data by taking highly durable backups of your file system automatically on a daily basis and allows you to take additional backups at any point. For more information, see* [*Security in Amazon FSx*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/security.html)*.*

***Availability and Durability***

*Amazon FSx for Windows File Server oﬀers file systems with two levels of availability and durability. Single-AZ files ensure high availability within a single Availability Zone (AZ) by automatically detecting and addressing component failures. In addition, Multi-AZ file systems provide high availability and failover support across multiple Availability Zones by provisioning and maintaining a standby file server in a separate Availability Zone within an AWS Region. To learn more about Single-AZ and Multi-AZ file system deployments, see* [*Availability and Durability: Single-AZ and Multi-AZ File Systems*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/high-availability-multiAZ.html)*.*

## Governance

***Managing File Systems***

*You can administer your Amazon FSx for Windows File Server file systems using custom remote management PowerShell commands, or using the Windows-native GUI in some cases. To learn more about managing Amazon FSx file systems, see* [*Administering File Systems*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/administering-file-systems.html)*.*

## Pricing considerations

*With Amazon FSx, there are no upfront hardware or software costs. You pay for only the resources used, with no minimum commitments, setup costs, or additional fees. For information about the pricing and fees associated with the service, see* [*Amazon FSx for Windows File Server Pricing*](http://aws.amazon.com/fsx/windows/pricing)*.*

## More details

*So, let us recap Amazon FSx for Windows features:*

* *FSx for Windows is a fully managed Windows file system share drive*
* *Supports SMB protocol & Windows NTFS*
* *Microsoft Active Directory integration, ACLs, user quotas*
* *Built on SSD, scale up to 10s of GB/s, millions of IOPS, 100s PB of data*
* *Can be accessed from your on-premise infrastructure*
* *Can be configured to be Multi-AZ (high availability)*
* *Data is backed-up daily to S3*

*For more information, use official Amazon documentation* [*Amazon FSx for Windows File Server User Guide*](https://docs.aws.amazon.com/fsx/latest/WindowsGuide/index.html)