



# **Maximize security**

## **ONTAP 9**

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# Maximize security

The topics in this section show you how to manage cluster security with ONTAP System Manager in ONTAP 9.7 and later releases.

If you are using the ONTAP CLI to manage cluster security, see this content:

- [Administrator Authentication and RBAC Power Guide](#)
- [Antivirus Configuration Guide](#)
- [NetApp Encryption Power Guide](#)

If you are using legacy OnCommand System Manager for ONTAP 9.7 and earlier releases to manage cluster security, see the content for your ONTAP release:

- [Cluster management using System Manager 9.6 and 9.7](#)
- [Cluster management using System Manager 9.5](#)
- [Cluster management using System Manager 9.3 and 9.4](#)
- [Cluster management using System Manager 9.2 and earlier](#)

## Security overview for System Manager

With System Manager, you use ONTAP standard methods to secure client and administrator access to storage and to protect against viruses. Advanced technologies are available for encryption of data at rest and for WORM storage.

### Client authentication and authorization

ONTAP authenticates a client machine and user by verifying their identities with a trusted source. ONTAP authorizes a user to access a file or directory by comparing the user's credentials with the permissions configured on the file or directory.

### Administrator authentication and RBAC

Administrators use local or remote login accounts to authenticate themselves to the cluster and storage VM. Role-Based Access Control (RBAC) determines the commands to which an administrator has access.

### Virus scanning

You can use integrated antivirus functionality on the storage system to protect data from being compromised by viruses or other malicious code. ONTAP virus scanning, called *Vscan*, combines best-in-class third-party antivirus software with ONTAP features that give you the flexibility you need to control which files get scanned and when.

### Encryption

ONTAP offers both software- and hardware-based encryption technologies for ensuring that data at rest cannot be read if the storage medium is repurposed, returned, misplaced, or stolen.

## **WORM storage**

*SnapLock* is a high-performance compliance solution for organizations that use *write once, read many* (WORM) storage to retain critical files in unmodified form for regulatory and governance purposes.

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