



Optimize VMware workloads on FSx for ONTAP

Workload Factory for NetApp Console

NetApp
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Table of Contents

- Optimize VMware workloads on FSx for ONTAP 1
 - Configuration analysis for EVS configurations 1
 - Analysis requirements 1
 - Best practices and recommendations for EVS workloads 1
 - Implement well-architected EVS configurations 2
 - About this task 2
 - Before you begin 3
 - Access the well-architected status tab 3
 - View well-architected assessments 4
 - What's next 5

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Configuration analysis for EVS configurations

Workload Factory analyzes Amazon Elastic VMware Service (EVS) configurations regularly to identify misalignments with best practices. Use the results to improve performance, cost efficiency, and compliance.

Key capabilities include:

- Daily configuration analysis
- Automatic best practice validations
- Proactive observability
- Insights to action

Unresolved directive in fsx-vmware/configuration-analysis.adoc - include::_include/well-architected-workloads.adoc[]

Analysis requirements

For a complete configuration analysis, you must do the following:

- Associate a link. Link connectivity lets Workload Factory analyze all file system configurations like data protection and performance.

[Learn how to associate an existing link or to create and associate a new link.](#)

- Grant *view, planning, and analysis* permissions for VMware workloads.

[Learn how to grant permissions to an AWS account](#)

- You must have at least one discovered Amazon Elastic VMware Service environment in your AWS account.

Best practices and recommendations for EVS workloads

Workload Factory provides best practices and recommendations for operating well-architected Amazon Elastic VMware Service (EVS) workloads. The well-architected analysis assesses EVS configurations to help ensure your VMware environments are optimized for reliability, security, operational excellence, cost optimization, and performance efficiency. From the well-architected status tab in VMware, you'll find insights and recommendations to help implement well-architected best practices for your EVS environments.

The well-architected analysis categorizes configurations in the following pillars of the framework: *reliability* and *security*.

Reliability

Reliability ensures that workloads perform their intended functions correctly and consistently, even when there are disruptions.

- **EVS environment resiliency**

Ensure that your EVS cluster nodes are properly distributed across partition placement groups. All nodes should be members of a single partition placement group configured with four or more partitions. Proper partition placement ensures that your EVS cluster nodes are distributed across multiple fault-isolated hardware partitions within an AWS availability zone. Misalignment can result in significant loss of processing power or downtime if a partition fails.

Security

Security emphasizes protecting data, systems, and assets through risk assessments and mitigation strategies.

- **Cluster node management**

Ensure that your EVS cluster nodes have appropriate EC2 stop and termination protection configured. EVS ESXi nodes should be managed exclusively using vCenter or other VMware-level management tools. Without proper EC2-level protections, nodes could be accidentally stopped or terminated from the EC2 console, which can lead to virtual machine data unavailability or data loss.

What's next

[Implement well-architected configurations](#)

Implement well-architected EVS configurations

Use Workload Factory configuration analysis to review well-architected status for your Amazon Elastic VMware Service (EVS) configurations and remediate issues that affect reliability, security, and cost.

About this task

Automatic daily scans of all discovered EVS environments using AWS APIs analyze your EVS configuration and identify potential issues that could impact availability, resiliency, security, or cost optimization. Findings are organized by configuration area, with each finding including status, severity levels, impacted resource details, and step-by-step remediation procedures.

Key features include:

- **Automatic daily scans:** All discovered EVS environments are automatically scanned once a day to ensure insights remain current.
- **AWS API-based scanning:** Scans use AWS APIs and do not require vSphere credentials or connectivity to your vCenter.
- **Detailed guidance on issue resolution:** Each identified issue includes a clear explanation, severity level, and step-by-step resolution procedures.
- **View-only insights:** Provides detailed findings and recommendations without automated issue resolution options.

Understanding well-architected insights

The Well-architected tab displays the following:

- **Configuration name:** The configuration area being assessed.
- **Tags:** Labels indicating the areas of impact (such as Availability, Resiliency, Security).

- **Status:** Either "Optimized" (no issues found) or "Not optimized" (issues found).
- **Severity:** The importance level of the finding (for example, Warning).
- **Resource type:** The type of AWS resource being assessed.
- **Impacted resources count:** The number of resources affected by the issue.

Scan frequency

Well-architected scans are performed automatically for all discovered EVS configurations. Key details about scan scheduling:

- Scans occur once per day for each EVS configuration.
- Scans for different configurations can occur at different times.
- If a scan fails for one configuration, scans for other configurations in the same account will still be attempted.
- The timestamp card on the Well-architected status tab shows when the last scan was completed for the current configuration.



On-demand execution of well-architected scans is not currently supported. All scans are performed automatically on the daily schedule.

Before you begin

- You must have [added AWS credentials](#) with *View, planning, and analysis* permissions for VMware workloads.
- You must have at least one discovered Amazon Elastic VMware Service environment in your AWS account.

Access the well-architected status tab

Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > VMware**.

The planning center is displayed.
3. From the VMware menu, select **Inventory**.
4. From the **Virtualization environments** list, select the discovered EVS environment you want to view well-architected insights for.
5. Select the **Well-architected status** tab.

The following elements are displayed:

- **Automatic daily analysis timestamp:** Shows when the last scan was performed for this environment.
- **Configurations:** Organizes findings by configuration area and displays their status and details.

View well-architected assessments

Cluster node management

This assesses whether your EVS cluster nodes have appropriate EC2 stop and termination protection configured.

Status:

- **Optimized:** All EVS nodes have both EC2 stop protection and termination protection configured.
- **Not optimized:** At least one EVS node does not have EC2 stop protection or termination protection configured.

Why this matters:

EVS ESXi nodes should be managed exclusively using vCenter or other VMware-level management tools. Without proper EC2-level protections, nodes could be accidentally stopped or terminated from the EC2 console, which can lead to virtual machine data unavailability or data loss.

To view detailed findings:

1. In the Well-architected status tab, locate **Cluster node management**.
2. Select **View** to open the findings dialog.

The dialog displays:

- **Findings summary:** A detailed explanation of the issue discovered in your environment.
- **Resource grid:** A table showing all EVS nodes and their protection status, including:
 - Node identifier
 - EC2 stop protection status
 - EC2 termination protection status
- **Action required:** Step-by-step issue resolution procedures.
- **Recommendation:** Best practice guidance.

Remediation:

To remediate this issue, enable stop and termination protection for your EVS nodes:

- Follow the procedure specified in [AWS documentation for enabling stop protection](#).
- Follow the procedure specified in [AWS documentation for enabling termination protection](#).

EVS environment resiliency

This assesses whether your EVS cluster nodes are properly distributed across partition placement groups.

Status:

- **Optimized:** All nodes are members of a single partition placement group configured with four or more partitions.
- **Not optimized** if any of the following is true:

- Nodes are members of more than one placement group.
- At least one node is a member of a non-partitioned placement group.
- All nodes are members of a partitioned placement group with fewer than four partitions.

Why this matters:

Proper partition placement ensures that your EVS cluster nodes are distributed across multiple fault-isolated hardware partitions within an AWS availability zone. Misalignment can result in significant loss of processing power or downtime if a partition fails.

To view detailed findings:

1. In the Well-architected status tab, locate **EVS environment resiliency**.
2. Select **View** to open the findings dialog.

The dialog displays:

- **Findings summary:** A detailed explanation of the partitioning misalignment.
- **Resource grid:** A table showing EVS environment nodes with:
 - Node identifier
 - Placement group name
 - Placement group type
 - Placement group partitions count
- **Action required:** Step-by-step remediation procedures
- **Recommendation:** Best practice guidance

Remediation:

To remediate partition placement issues:

- When adding new nodes to the EVS environment, provision the new nodes using a partitioned placement group with at least four partitions.
- If cluster nodes are being replaced, ensure that the replacement nodes are provisioned using a partitioned placement group with at least four partitions.
- Try to consolidate all EVS nodes to a single placement group aligned with the above recommendations.

Best practice recommendation:

When creating or expanding an EVS environment, provision all cluster nodes using a single partitioned placement group configured with four partitions or higher.

What's next

After reviewing your well-architected insights and implementing recommended changes:

- Monitor the well-architected status tab daily to stay informed about your environment's status.
- Follow the remediation procedures for any "Not optimized" findings.
- Review AWS and NetApp documentation for additional best practices.

- Consider implementing the recommendations before expanding your EVS environment.

Related links

- [Create a deployment plan for Amazon EVS using the migration advisor](#)
- [Deploy the recommended FSx for ONTAP file system](#)
- [AWS placement groups documentation](#)

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