Implement file system best practices

Amazon FSx for NetApp ONTAP

NetApp
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Configuration analysis for FSx for ONTAP file systems

NetApp Workload Factory analyzes Amazon FSx for NetApp ONTAP file system configurations regularly to determine if any there are any issues. When issues are found, Workload Factory shows you what the issues are and explains what needs to change to ensure your file system storage achieves peak performance, cost efficiency, and compliance with best practices.

Key capabilities include:

- Daily configuration analysis
- Automatic best practice validations
- Proactive observability
- Insights to action
- AWS Well-Architected Framework advisor

Well-architected status

In the Workload Factory console at the file-system level, well-architected status is listed for all FSx for ONTAP file systems. Well-architected statuses are categorized as "issues", "not analyzed", or "well-architected". Selecting the well-architected status redirects you to the well-architected status tab within the file system where you can find the well-architected score, configuration categories, all configurations for the file system.

Well-architected score

The score includes all currently analyzed configurations and appears as a percentage. A 25% score means that 25% of the file system configurations are well-architected.

Configuration categories

The file system configurations are organized into categories aligned with the following five pillars of the AWS Well-Architected Framework.

- *Reliability*: Ensures that workloads perform their intended functions correctly and consistently, even when there are disruptions. An example configuration is FSx for ONTAP backups.
- *Security*: Emphasizes protecting data, systems, and assets through risk assessments and mitigation strategies.
- *Operational excellence*: Focuses on delivering the most optimal architecture and business value.
- *Cost optimization*: Aims to deliver business value while minimizing costs.
- *Performance efficiency*: Focuses on using resources efficiently to meet system requirements and to maintain optimal performance as demands change.

Analysis requirements

For a complete file system 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 in your AWS account.

  Learn how to grant permissions to an AWS account

What's next

Implement well-architected file system configurations

Implement well-architected file system configurations

Using configuration analysis insights and recommendations, leverage Workload Factory to implement best practices for your FSx for ONTAP file systems. You can easily review the well-architected status, learn about issues with your configurations, take action to improve the architecture of any systems that aren't optimized for reliability, security, efficiency, performance, and cost.

You can also dismiss the analysis of specific storage configurations that don't apply to your storage environment to avoid unnecessary alerts and inaccurate optimization results.

Learn about the configuration analysis and well-architected status in Workload Factory.

About this task

Workload factory analyzes Amazon FSx for NetApp ONTAP file system deployment configurations daily. The daily analysis provides the well-architected status, and insights and recommendations with options to automatically fix configuration issues so that your file system meets best practices.

Link connectivity allows Workload Factory to scan for issues with performance, data protection, and configurations. Connect to an FSx for ONTAP file system using a link for the most comprehensive analysis of your file system resources.

You have options to review the recommendations for configuration issues with your file systems and fix the issues from the Storage within the Workload Factory console.

Because requirements for storage configurations vary, you can dismiss the analysis of specific configurations that don't apply to your storage environment. This helps you avoid unnecessary alerts and inaccurate optimization results. When a specific configuration analysis is dismissed, the configuration isn't included in the total optimization score.

What is analyzed

Workload factory analyzes the well-architected status of the following configurations for FSx for ONTAP file systems:

- Reliability: SSD capacity threshold, scheduled local snapshots, FSx for ONTAP backups, remote data replication, and data reliability for long-term retention
- Security: NetApp Autonomous Ransomware Protection with AI (ARP/AI) disabled and unauthorized access to volumes
- Operational excellence: automatic capacity management, volume file capacity utilization threshold, volume utilization nearing full, cache relationship write mode, optimize cache volume size, and volume logical capacity reporting

- Cost optimization: storage efficiencies, data tiering, unnecessary snapshot and backup deletion, and orphaned block devices

Before you begin

- You must grant *operations and remediation* permissions in your AWS account.
- The remediation process may cause instance downtimes or service interruptions. Make sure you review each recommendation carefully before selecting to fix a configuration issue.
- Connect to an FSx for ONTAP file system using a link for the most comprehensive analysis of your file system resources.

Fix a configuration issue

You can fix configuration issues for an FSx for ONTAP file system or for selected volumes in a file system. You can select one or more configurations to fix.

Steps

1. Log in using one of the console experiences.
2. Select the menu and then select **Storage**.
3. From the Storage menu, select **Well-architected**.
4. Select **View issues** for any configuration. Make sure you review the recommendation carefully.

   The recommendation explains best practices and potential pitfalls of unoptimized configurations.

5. Select to **Fix**.

   When **View and fix** is an option, select the impacted volumes to fix.

6. Review the summary and action items that appear in the dialog to learn what will happen if you choose to fix the issue. Some operations may cause instance downtimes or service interruptions.
7. Select **Continue** to fix the configuration issue.

Result

The process to fix the issue initiates. Select the account settings menu and then select **Tracker** to view the status of the operation.

Dismiss a configuration analysis

Dismiss to stop a configuration analysis indefinitely for an FSx for ONTAP file system or for selected volumes in a file system. You can restart the analysis when needed.

Dismiss a configuration analysis for a file system

Steps

1. Log in using one of the console experiences.
2. Select the menu and then select **Storage**.
3. From the Storage menu, select **Well-architected**.
4. Select **View issues** for any configuration. Make sure you review the recommendation carefully.

   The recommendation explains best practices and potential pitfalls of unoptimized configurations.
5. Under Configurations, identify the configuration that doesn't apply to your environment and then select **Dismiss**.
6. In the Dismiss configuration dialog, select **Dismiss** to stop the analysis for the configuration.

Dismiss a configuration analysis for a volume

Steps

1. Log in using one of the console experiences.
2. Select the menu and then select **Storage**.
3. From the Storage menu, select **Well-architected**.
4. Under Configurations, identify the configuration to dismiss for selected volumes and then select **View and fix**.
5. Identify the volume(s) to dismiss from the configuration analysis.
   - For one volume: select the actions menu and then select **Dismiss volume**.
   - For multiple volumes: select the volumes and then select **Dismiss** next to Bulk action.
6. Select **Dismiss** to stop the analysis for the configuration.
7. In the Dismiss volumes dialog, select **Dismiss** to confirm.

Result

The configuration analysis stops for the file system or selected volumes.

You can reactivate the analysis at any time. The configuration is no longer included in the total optimization score.

Reactivate a dismissed configuration analysis

Reactivate a dismissed configuration analysis at any time. You can select one or more configurations to reactivate.

Reactivate a configuration analysis for a file system

Steps

1. Log in using one of the console experiences.
2. Select the menu and then select **Storage**.
3. From the Storage menu, select **Well-architected**.
4. Select **Dismissed configurations**.
5. Identify the configuration you want to reactivate and select **Reactivate**.

Reactivate a configuration analysis for a volume

Steps

1. Log in using one of the console experiences.
2. Select the menu and then select **Storage**.
3. From the Storage menu, select **Well-architected**.
4. Select **Dismissed configurations**.
5. Identify the volume(s) to reactivate from the configuration analysis.
   - For one volume: select the actions menu and then select **Reactivate volume**.
   - For multiple volumes: select the volumes and then select **Reactivate** next to Bulk action.

Result

The configuration analysis is reactivated. A new analysis occurs daily moving forward.

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