Migrate to Amazon Elastic VMware Service

VMware workloads

NetApp
February 02, 2026

Table of Contents

Migrate to Amazon Elastic VMware Service

Explore savings for Amazon Elastic VMware Service with NetApp Workload Factory

Explore potential savings for migrating your VMware workloads to Amazon Elastic VMware Service (EVS). The calculator enables you to compare costs of using Amazon EVS with and without Amazon FSx for NetApp ONTAP as storage.

If the savings calculator determines that the most cost-effective storage is FSx for ONTAP, you can create a detailed assessment, which provides a migration plan that you can review before using. You can then use the Codebox to generate Infrastructure-as-Code templates.

Explore savings for EVS environments

Follow these steps to explore potential savings for a planned migration to an Amazon EVS environment.

> Before proceeding, review the disclaimer at the bottom of the savings calculator to understand more about how the pricing estimates are calculated.

Steps

1. Log in to Workload Factory using one of the console experiences.
2. Select the menu and then select **VMware**.

   The planning center is displayed.

3. From the VMware menu, select **Explore savings**. The savings calculator is displayed.

   In the **Environment preferences** pane, you can select your EVS deployment region and adjust TCO and savings predictions accordingly.

4. From the **Region** drop-down list, select the EVS deployment region to calculate savings.
5. Adjust the following sliders as needed to see real-time savings calculations for the values that you choose. If using a keyboard, you can make small adjustments using the arrow keys:
   - **Required physical CPU (count)**
   - **Required physical memory (GiB)**
   - **Required VM storage (TiB)**
6. Under **EVS billing plan**, select the plan you are on.
7. Do one of the following:
   - To use the migration advisor to create a deployment plan for an Amazon EVS environment, select **Plan EVS migration**.
   - Select **Close** to close the TCO calculator.

Manually create a deployment plan for Amazon EVS

Log in to the NetApp Workload Factory to access the VMware planning center. From

there, you can manually create a deployment plan or migration plan for Amazon EVS that is customized for your needs.

You can manually specify your requirements for virtual machines in Amazon Elastic VMware Service and use customized Amazon FSx for NetApp ONTAP file systems as external datastores.

Requirements

- You must have a user name and password to access Workload Factory. If you don't have access, create an account now. See the instructions here.
- You must have an Amazon Elastic VMware Service subscription.

Steps

1. Log in to Workload Factory using one of the console experiences.
2. Select the menu and then select **VMware**.

   The planning center is displayed.

3. Select **Manually create EVS plan**.
4. Enter the requirements for your VM environment.

   Keep in mind the following VM migration performance requirements and recommendations:

   - A minimum storage capacity of 10TiB is recommended for the VM inventory for performance reasons.
   - A minimum throughput is required for the Amazon Elastic VMware Service datastores, depending on the required number of IOPS you specify for this deployment.
   - Depending on the FSx for ONTAP filesystem configuration, a minimum number of external datastores is required for the Amazon Elastic VMware Service environment to reach optimal performance.

5. When ready, select **Review plan** to review the migration plan.
6. Review the plan. Expand each section to view the plan details.

   By default, Workload Factory saves the migration plan to the planning center. You can deselect this option near the top of the page.

7. Optionally, you can export the migration plan as a PDF or CSV file by selecting **Manage plan** at the top right of the page and then selecting **Download a report (.pdf)** or **Download VM storage deployment (.csv)**.

   The .csv file creates a map of all the VMs included in the migration plan, along with their assigned storage volumes.

8. When you are ready to provision the deployment plan, select **Provision**.

Deploy the VMware workloads recommended FSx for ONTAP file system.

Create a deployment plan for Amazon EVS using the migration advisor

From the VMware planning center, you can launch the Amazon EVS migration advisor to help create a migration plan that is customized for your needs.

You can create a deployment plan to migrate virtual machines to Amazon Elastic VMware Service and use customized Amazon FSx for NetApp ONTAP file systems as external datastores. The options in the migration advisor might differ depending on the tool used to collect the VM inventory data.

Requirements

- You must have a user name and password to access Workload Factory. If you don't have access, create an account now. See the instructions here.
- You must have an Amazon Elastic VMware Service subscription.

Steps

1. Log in to Workload Factory using one of the console experiences.
2. Select the menu and then select **VMware**.

   The planning center is displayed.

3. Select a VM inventory from the list that you want to use to make a deployment plan, and select **Start planning** in that row.
4. Select **EVS** from the drop-down menu that appears.

   The **Prepare for AWS Cloud onboarding** wizard appears.

5. Enter the required information.

Specify

1. In the *VM configuration upload* section, review information about the dataset you are using to create a migration plan. The **VM inventory summary** section is populated from the inventory file to reflect the number of VMs and the total storage capacity.
2. In the *VM inventory considerations* section, select the options to filter the list of VMs that you want to migrate:
   a. **Region**: Select the region where Amazon FSx for NetApp ONTAP file systems will be deployed. For optimal performance and cost efficiency, this is typically the same region as where your existing Amazon EC2 SDDC is deployed.
   b. Choose a predicted performance level for the VMs in this region. We recommend that you begin with a smaller IOPS setting. You can increase your provisioned SSD IOPS after the file system is created as workloads are migrated or deployed:
      - **Standard to high performance**: For VMs with average IO rates between 20 and 5000 IOPS.
      - **Very high performance**: For VMs with average IO rates of greater than 5000 IOPS.
      - **Very low performance**: For VMs with average IO rates lower than 20 IOPS.
3. In the *Target capacity and protection considerations* section, select from a few storage options:

a. **VM Storage to consider**: Select whether the datastores created for each onboarded VM are sized based on their currently utilized size (recommended) or their provisioned size.

   The external datastores will be implemented using Amazon FSx for NetApp ONTAP file system volumes.

b. **Average data reduction ratio**: Choose from among the three common data reduction ratios. Select "1:1 - No reduction", "1:1.25 - 20% reduction", or "1:1.5 - 33% reduction".

   Select **Help me decide** if you're unsure which ratio to choose. The *Data reduction ratio assistant* dialog appears. Select any statements that apply to your VM inventory and storage estate. The assistant will recommend an appropriate data reduction rate. Select **Apply** to use the recommended ratio.

c. **Headroom percentage**: Enter the percentage of capacity growth that is added to the capacity for your FSx for ONTAP file systems.

   Note that if you select an amount less than 20% you won't be able to create volume snapshots for protection and long-term backups.

d. **VM snapshot protection**: Enable this option to protect the VMs with snapshots.

4. Select **Next**.

Select

1. On the **Select virtual machines** page, select the VMs from the list that you want to include in the AWS migration. You can filter the list by the power state of each VM, and which data center and cluster the VM resides in.

   In the VM list, you can select which types of VM information to display as columns. For example, selecting *Peak read IOPS* displays a column with the peak read IOPS for each VM.

2. Optionally, you can choose to optimize the deployment for cost or recoverability.
   - **Cost**: Workload Factory chooses VMs from the list that have lower I/O density. This helps reduce resource requirements.
   - **Recoverability**: Workload Factory chooses VMs from the list that are the easiest to quickly copy locally. This offers quick recovery times in case of disruptions.
3. Select **Next**.

Design

- On the **ClassReview instance storage assignment** page, review the VM information, volume classification rules, volume assignments, and list of volumes that will be migrated as part of deployment, and then select **Next**.

Review plan

1. On the **Review plan** page, review the estimated monthly savings and cost estimates for all the VMs that you plan to migrate.

   The top of the page estimates the monthly savings for FSx for ONTAP file systems and EBS volumes. You can expand each section to view details for the suggested filesystem configuration, estimated savings breakdown, assumptions, and technical disclaimers.

The migration plan is automatically saved in the list of plans in the planning center by default.

2. Optionally, you can export the migration plan as a PDF or CSV file by selecting **Manage plan** at the top right of the page and then selecting **Download a report (.pdf)** or **Download VM storage deployment (.csv)**.

   The .csv file creates a map of all the VMs included in the migration plan, along with their assigned storage volumes.

3. When you are ready to proceed with the plan, select **Provision** to begin deploying the recommended Amazon FSx for NetApp ONTAP file system.

Deploy the VMware workloads recommended FSx for ONTAP file system.

Deploy the recommended FSx for ONTAP file system

After you verify that the recommended FSx for ONTAP file system (or multiple file systems in some cases) meets your exact requirements, you can use Workload Factory to deploy the system in your AWS environment.

Depending on the policy and permissions that you added to your Workload Factory account, you can deploy the FSx for ONTAP file system completely using Workload Factory (using read/write mode). If you have fewer permissions (read-only mode), or no permissions (Basic mode), you'll need to use the CloudFormation template from the Codebox and deploy the FSx for ONTAP file system yourself in AWS.

Requirements

- You must have an Amazon Elastic VMware Service subscription.
- You must have the necessary permissions to create an FSx for ONTAP file system in your AWS account.

Considerations

- You can use the Quick create or Advanced create option. Advanced create offers a few additional storage parameters that you can customize. See what these two options offer.
- In the "Amazon Elastic VMware Service preferences" section, you can choose the EVS virtualization environment to connect to the external datastores. This auto-populates some of the fields with the best-practice options for the deployment. You can change these options as required.

Steps

1. At the bottom of the **Review plan** page, select **Deploy** and the Create an FSx for ONTAP file system page is displayed.

   Most of the fields that define your FSx for ONTAP file system are completed based on the information you provided, but there are a few fields that you need to complete in this page.

2. In the "File system general configuration" section, enter the following information:
   a. **AWS credentials**: Select or add credentials that will give Workload Factory the permissions necessary to create your FSx for ONTAP file system directly. You can also select the CloudFormation code from Codebox and deploy the FSx for ONTAP file system yourself in AWS.
   b. **File system name**: Enter the name that you want to use for this FSx for ONTAP file system.

c. **Tags**: Optionally, you can add tags to categorize this FSx for ONTAP file system.

3. In the "Amazon Elastic VMware Service preferences" section, from the "Environment ID" list, select the EVS environment where the datastores will be connected.

   This auto-populates the following fields:

   - **VPC**
   - **Availability Zone**
   - **Subnet**
   - In the **NFS Datastores access** section, if you have selected the **EVS host management only** option the **EVS host management (CIDR)** field is auto-populated.
   - In the **Datastore mount options** section, if you have chosen to mount datastores to the EVS cluster, the **EVS Cluster VMware vCenter address** and the **vSphere administrator credentials secret ARN** fields are auto-populated.

4. In the "Network & security" section, enter the following information:

   a. **Region & VPC**: Select the region and the VPC where the FSx for ONTAP file system will be deployed.

   b. **Security group** (Advanced create only): When using the **Advanced create** option, you can select the default security group for the FSx for ONTAP VPC so that all traffic can access the FSx for ONTAP file system. You can either create a new security group or select an existing one.

      If you enable the **Adjust security group configuration to EVS NFS datastores** option, Workload Factory configures the security group according to the settings for EVS NFS datastores.

      You can add an inbound rule to the security group that restricts what other AWS services can access the FSx for ONTAP file system. This will reduce the number of services that are open. These are the minimum ports and protocols:

Protocols	Ports	Purpose
TCP, UDP	111	Portmapper (used to negotiate which ports are used in NFS requests)
TCP, UDP	635	NFS mountd (receives NFS mount requests)
TCP, UDP	2049	NFS network traffic
TCP, UDP	4045	Network Lock Manager (NLM, lockd) - Handles lock requests.
TCP, UDP	4046	Network Status Monitor (NSM, statd) - Notifies NFS clients about reboots of the server for lock management.

   c. **Availability zone**: Select the availability zone and the subnet.

      You should select the same availability zone as where your VMware SDDC is deployed if you want to avoid charges for cross-AZ traffic.

   d. **Encryption** (Advanced create only): When using the **Advanced create** option, you can select the AWS encryption key name from the dropdown.

   e. **NFS Datastores access** (Advanced create only): When using the **Advanced create** option, you can select whether all hosts can access the datastores or whether only the EVS management host can

access the datastores.

5. In the "File system details" section, enter the following information:
   a. **ONTAP credentials**: Enter the ONTAP user name password.
   b. **Storage VM credentials** (Advanced create only): Enter and confirm the storage VM password. The password can be specific to this file system, or you can use the same password entered for ONTAP credentials.
6. In the "EVS Cluster attachment" section, enter the following information:
   a. **Datastore mount options**: Optionally, enable the **Mount datastores to EVS cluster** option to automatically connect the datastores to the Amazon EVS cluster. This option also causes Workload Factory to configure VMware ESXi host settings so that they match ONTAP best practice recommendations. Before you deploy the file system, you can review the plan details in the **Summary** section to see the settings that were changed.
   b. **EVS Cluster vSphere console details**: Enter the IP address or FQDN of the VMware vCenter server that should connect to Amazon EVS.
   c. **vSphere administrator credentials secret ARN**: Choose the secret ARN for the vSphere administrator credentials. These credentials are used to mount datastores and configure recommended VMware settings.

      If Amazon EVS is not available in this region, or if your account doesn’t have permissions to retrieve the list of available secret ARNs, you can manually enter a secret ARN value.
7. In the **Summary** section, you can view the FSx for ONTAP file system and datastore configuration that the VMware migration advisor has designed based on your information.
8. Select **Create** to deploy the FSx for ONTAP file system. This process can take up to 2 hours.

   Optionally, in the Codebox window you can select **Redirect to CloudFormation** to create the file system and recommended VM configuration using a CloudFormation stack.

   In either case, you can monitor the creation progress in CloudFormation.

Result

The FSx for ONTAP file system is deployed. You can now use the AWS CloudFormation template in the Codebox to deploy the recommended VM configuration to your Amazon Elastic VMware Service environment.

Copyright information

Trademark information