



Migration Toolkit for Virtualization 2.11

Release notes

Release notes for the Migration Toolkit for Virtualization 2.11 release

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Abstract

Review new features, known issues, and resolved issues for Migration Toolkit for Virtualization 2.11.

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PREFACE

Review these release notes for Migration Toolkit for Virtualization (MTV) version 2.11.

CHAPTER 1. MIGRATION TOOLKIT FOR VIRTUALIZATION 2.11

The release notes describe technical changes, new features and enhancements, known issues, and resolved issues.

1.1. TECHNICAL CHANGES

Review the technical changes in this release of MTV.

Storage copy offload for Infinidat InfiniBox (Developer Preview)

Migration Toolkit for Virtualization (MTV) provides storage copy offload for Infinidat InfiniBox for both cold and warm migrations as a Developer Preview.



IMPORTANT

Storage copy offload for Infinidat InfiniBox is Developer Preview software only. Developer Preview software is not supported by Red Hat in any way and is not functionally complete or production-ready. Do not use Developer Preview software for production or business-critical workloads. Developer Preview software provides early access to upcoming product software in advance of its possible inclusion in a Red Hat product offering. Customers can use this software to test functionality and provide feedback during the development process. This software might not have any documentation, is subject to change or removal at any time, and has received limited testing. Red Hat might provide ways to submit feedback on Developer Preview software without an associated SLA.

For more information about the support scope of Red Hat Developer Preview software, see [Developer Preview Support Scope](#).

Storage copy offload supports VIB version 0.3.0

The vSphere Installation on Bundle (VIB) is updated to version 0.3.0. If you set up storage copy offload by using a VIB, manually install VIB version 0.3.0 or configure your system automation to install it.

[MTV-5321](#)

1.2. NEW FEATURES AND ENHANCEMENTS

Migration Toolkit for Virtualization (MTV) 2.11 introduces the following features and enhancements.

1.2.1. MTV 2.11.7

You can map a single source network to multiple NADs

Currently, **kubevirt** prevents mapping multiple network interface controllers (NICs) to a single network attachment definition (NAD). With this enhancement, you can map a single source network to multiple destination NADs.

When the NICs are created in the target virtual machine (VM), each receives a different NAD from the mapped pool. As a result, you can successfully migrate VMs with multiple NICs on the same source network. The following example shows the **network-21** source network mapped to the **nad-a** and **nad-b** destination NADs:

```
spec:
```

```
map:
  - destination:
      name: nad-a
      namespace: mtv-5511-test
      type: multus
    source:
      id: network-21
  - destination:
      name: nad-b
      namespace: mtv-5511-test
      type: multus
    source:
      id: network-21
```

[MTV-5623](#)

1.2.2. MTV 2.11.5

MTV preserves static IPs on migrated Windows VMs when the DHCP Client service is disabled (Developer Preview)



IMPORTANT

The **feature_windows_registry_network_config** feature flag is Developer Preview software only. Developer Preview software is not supported by Red Hat in any way and is not functionally complete or production-ready. Do not use Developer Preview software for production or business-critical workloads. Developer Preview software provides early access to upcoming product software in advance of its possible inclusion in a Red Hat product offering. Customers can use this software to test functionality and provide feedback during the development process. This software might not have any documentation, is subject to change or removal at any time, and has received limited testing. Red Hat might provide ways to submit feedback on Developer Preview software without an associated SLA.

For more information about the support scope of Red Hat Developer Preview software, see [Developer Preview Support Scope](#).

MTV provides the capability to configure static IP addresses on a source Windows virtual machine (VM) even if the DHCP Client service is disabled. With this enhancement, the network configuration script sets static IPs during a migration without relying on the DHCP service. As a result, MTV preserves static IPs on migrated Windows VMs if you enable the **feature_windows_registry_network_config** feature flag.

[MTV-5245](#)

1.2.3. MTV 2.11.3

Custom **ServiceAccount** object for all MTV pods

You can configure a custom **ServiceAccount** object for all MTV pods, including CDI pods. This enhancement supports migrating workloads that are run under specific service accounts with well-defined RBAC roles. As a result, MTV can access storage backends, pull secrets, or perform API calls requiring a dedicated **ServiceAccount** object with specific permissions.

[MTV-4722](#)

Selective shared disk attachment for VMs in a migration plan

In a single migration plan, you can define which VMs share a disk. This enhancement eliminates the need to create two migration plans when migrating shared disks. Before this update, you had to create one plan where all VMs share a disk and another where none do. As a result, you can streamline the process for migrating shared disks.

[MTV-4978](#)

LUN device mapping for RDM disks in storage copy offload migrations

Storage copy offload migrations support mapping Raw Device Mapping (RDM) disks as either logical unit number (LUN) disks or regular disks. This enhancement ensures RDM disks are mapped appropriately. As a result, you can specify that RDM disks attach as LUN disks during a storage copy offload migration.

[MTV-5020](#)

Storage copy offload migrations are supported for HPE Primera and HPE 3PAR (Developer Preview)



IMPORTANT

Storage copy offload for HPE Primera and HPE 3PAR, for both cold and warm migrations, is Developer Preview software only. Developer Preview software is not supported by Red Hat in any way and is not functionally complete or production-ready. Do not use Developer Preview software for production or business-critical workloads. Developer Preview software provides early access to upcoming product software in advance of its possible inclusion in a Red Hat product offering. Customers can use this software to test functionality and provide feedback during the development process. This software might not have any documentation, is subject to change or removal at any time, and has received limited testing. Red Hat might provide ways to submit feedback on Developer Preview software without an associated SLA.

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MTV supports volume-to-volume copy operations for storage copy offload migrations on HPE Primera and HPE 3PAR arrays. These operations copy the underlying VMware Raw Device Mapping (RDM) or VMware vSphere Virtual Volumes (vVols) volume onto the target volume that the CSI driver creates. With this enhancement, you can perform storage copy offload migrations for HPE Primera or HPE 3PAR storage providers.

[MTV-4717](#)

1.2.4. MTV 2.11.1

Nested virtualization control during migration

You can control nested virtualization behavior during migration with the **enableNestedVirtualization** option. This option accepts three values:

- Not set (default): Nested virtualization is automatically detected from the source VM and preserved on the target.

- **true:** Enables nested virtualization on the target VM regardless of source settings.
- **false:** Disables nested virtualization on the target VM regardless of source settings. This enhancement mitigates performance issues stemming from virtualization-based security (VBS) activation. As a result, you can streamline the migration of Windows VMs that do not need nested virtualization. You can disable VBS on target VMs to avoid potential performance degradation.



NOTE

After you migrate your VMs to OpenShift Virtualization, you can re-enable VBS by applying the following YAML configuration:

```
apiVersion: kubevirt.io/v1
kind: VirtualMachine
metadata:
  name: <vm_name>
spec:
  template:
    spec:
      domain:
        cpu:
          features:
            - name: vmx
              policy: optional
            - name: svm
              policy: optional
```

[MTV-4698](#)

Direct OVA import from local machines to OpenShift Virtualization in the MTV UI

Direct OVA import, available as a Technology Preview before this update, is fully supported in MTV 2.11.1. You can upload Open Virtual Appliances (OVAs) to a Network File System (NFS) by using the web browser in the MTV user interface (UI). As a result, you can import OVAs directly from local machines to OpenShift Virtualization.

[MTV-3698](#)

1.2.5. MTV 2.11.0

Customizable service account for pre-plan and post-plan hooks in Create migration plan pages

You can set a service account name for pre-plan and post-plan hooks in the **Create migration plan** pages. This UI setting provides greater flexibility and control over the service accounts used in these hooks. It ensures that the accounts have the necessary permissions to manage cluster resources.

Because service account information is not stored in the remote cluster inventory, the **Service account** field is a free text field. As a result, you can improve the overall security and customization of your deployment.

[MTV-3681](#)

Enhanced pre-migration issue visibility

This enhancement improves the visibility of pre-migration concerns for individual VMs. It provides a clear taxonomy and visual indicators to distinguish between issue types. These types include critical issues, VM-specific failures, and ignorable warnings.

The updated UI includes new icons, colors, and labels for quick comprehension of validation issue severity. The **Conditions** column of the VM table displays all current concerns impacting the plan. You can use filters for **Name**, **Severity**, **Type**, and **Folder**.

A total of critical alerts is displayed at the top of the page. You can click the **View all alerts** button for detailed analysis. As a result, this improvement increases clarity and simplifies the migration process.

[MTV-3712](#)

Enhanced learning experience in the MTV UI

The **Tips and tricks** section in the MTV UI is significantly expanded. It offers curated learning paths and improved user guidance.

This enhancement simplifies complex workflow steps and reorganizes content for a better learning process. It also integrates with Red Hat OpenShift Lightspeed for dynamic guidance. As a result, you can learn and navigate the system more effectively.

[MTV-3718](#)

Performance metrics during migration (Technology Preview)



IMPORTANT

Performance metrics during migration is a Technology Preview feature only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs) and might not be functionally complete. Red Hat does not recommend using them in production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process.

For more information about the support scope of Red Hat Technology Preview features, see [Technology Preview Features Support Scope](#).

MTV provides performance metrics during migration, including network and storage throughput. This enhancement helps you make informed decisions about system configuration for better performance tuning. Real-time insights into these metrics during migration plans are available in the MTV UI. As a result, you can closely monitor and optimize your migration performance.

[MTV-3636](#)

Descriptive notes for migration plans

You can add descriptive notes to migration plans during creation. With the **Description** field, you can easily differentiate and manage various plans within the web console.

You can identify the purpose, scope, and owner by adding reasons for each migration. This added context is visible in the **Migration plans** table and the **Plan details** page. As a result, you can improve the long-term management and auditing of your migration plans.

[MTV-3748](#)

Unified interaction model for form editing

With this enhancement, a consistent interaction model is available for editing forms and fields across the web console. The design includes an **Edit** button that opens a modal for inputs.

By eliminating varying UI behaviors on different pages, you can increase clarity and reduce configuration errors. As a result, you can manage administrative tasks more efficiently.

[MTV-3742](#)

Enhanced Create provider form for source providers

The **Create provider** form has unique authentication and validation fields for source providers.

These providers include OpenShift, OpenStack, Red Hat Virtualization (oVirt), and VMware vSphere.

As a result, you can securely and accurately configure connections to each specific provider type.

[MTV-3737](#)

Validation alert for VDDK for VMware warm migrations

With this enhancement, visible validation checks for warm migrations from VMware environments are available in the web console. You receive an alert if the VMware Virtual Disk Development Kit (VDDK) is missing or incorrectly configured.

These validation checks prevent silent failures during migration. Updated MTV documentation provides guidance on VDDK installation. As a result, you can save time on your migration plans.

[MTV-3805](#)

Improved data migration error handling and diagnostics

Data integrity during VM migration is enhanced by using features introduced in RHEL 10.1. With this enhancement, MTV performs file system-level consistency checks, improves system error handling, and provides internal diagnostics. As a result, warm migration and features such as storage copy offload minimize downtime with efficient disk migration and data transfer.

[MTV-3906](#)

Storage copy offload for cold and warm migrations

The storage copy offload feature accelerates disk transfer in the storage array by bypassing the network. With this enhancement, you can create snapshots and copy base disks. As a result, you can reduce network usage, improve overall performance, and enhance migration efficiency.

- Storage copy offload for cold migrations, available as a Technology Preview before this update, is fully supported in MTV 2.11.0.
- Storage copy offload for warm migrations is available as a Technology Preview feature. With this capability, you can create snapshots and copy base disks while the VM is running. Delta changes can be copied over the network after the base disk copy. As a result, you can reduce the need for VM shutdowns.

[MTV-3710](#)

Native alerting with the OpenShift monitoring stack

Native alerting integrates with the OpenShift Prometheus-based monitoring stack. With this enhancement, MTV provides notifications for migration plan failures or critical issues, reducing manual monitoring. You can configure alerts for email, Slack, or PagerDuty. As a result, you ensure timely notifications and minimize downtime.

[MTV-2529](#)

Pre-migration test for dual-boot VMs (Developer Preview)



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Pre-migration testing for dual-boot VMs is Developer Preview software only. Developer Preview software is not supported by Red Hat in any way and is not functionally complete or production-ready. Do not use Developer Preview software for production or business-critical workloads. Developer Preview software provides early access to upcoming product software in advance of its possible inclusion in a Red Hat product offering. Customers can use this software to test functionality and provide feedback during the development process. This software might not have any documentation, is subject to change or removal at any time, and has received limited testing. Red Hat might provide ways to submit feedback on Developer Preview software without an associated SLA.

For more information about the support scope of Red Hat Developer Preview software, see [Developer Preview Support Scope](#).

You can perform a pre-migration check for dual-boot VMs. With this enhancement, MTV fetches additional information from guest machines to provide a more accurate conversion assessment before migration. As a result, you can ensure a successful conversion before the migration process begins.

[MTV-2481](#)

VM import from Amazon EC2 (Developer Preview)



IMPORTANT

Importing VMs from Amazon EC2 is Developer Preview software only. Developer Preview software is not supported by Red Hat in any way and is not functionally complete or production-ready. Do not use Developer Preview software for production or business-critical workloads. Developer Preview software provides early access to upcoming product software in advance of its possible inclusion in a Red Hat product offering. Customers can use this software to test functionality and provide feedback during the development process. This software might not have any documentation, is subject to change or removal at any time, and has received limited testing. Red Hat might provide ways to submit feedback on Developer Preview software without an associated SLA.

For more information about the support scope of Red Hat Developer Preview software, see [Developer Preview Support Scope](#).

You can import VMs directly from Amazon EC2. With this enhancement, you can perform cold migrations to ROSA, with storage mapping limited to the same storage. You cannot currently target non-ROSA platforms, different accounts, or different regions, and MTV does not support warm and live migrations for this feature. As a result, you have more migration options.

[MTV-2735](#)

Customizable firstboot scripts for VM migrations (Developer Preview)



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You can specify firstboot scripts for individual migration plans. With this enhancement, MTV uses **virt-customize** to execute the scripts and inject them during VM conversion and startup. This eliminates the need for SSH keys for VM migrations. As a result, you can enhance deployment flexibility and personalization.

[MTV-3638](#)

Enhanced network assignment for **forklift-controller** pods

You can assign a secondary network to **forklift-controller** pods. This capability is similar to Importer and Populator pods.

This enhancement addresses connectivity issues with the Red Hat OpenShift default node network and VMware or RHV providers. The existing CRD flag is reused for network assignment.

As a result, you can simplify the network configuration setup and reduce the need for cluster-wide changes.

[MTV-3644](#)

Direct default gateway configuration in the Network Attachment Definition

You can set the default gateway directly in the Network Attachment Definition (NAD) configuration. If the default route annotation is not set, MTV attempts to fetch the default gateway from the NAD. As a result, you can ensure proper network routing even without a default route annotation.

[MTV-3699](#)

Customizable ephemeral storage for improved migration stability (Technology Preview)

You can customize ephemeral storage during migration. With this enhancement, you can prevent failures due to insufficient node storage in large-scale migrations and Open Virtualization Appliance (OVA) imports.

You can define a **storageClass** for temporary storage, which enables **virt-v2v** pods to mount a temporary Persistent Volume Claim (PVC) on the defined **storageClass**.

As a result, you improve migration stability and reduce the likelihood of migration failures. This capability is available as a Technology Preview feature.

[MTV-3709](#)

Operating system specific VM configuration for improved performance

MTV automatically detects the operating system of the VMs. This enhancement optimizes VM performance in MTV and reduces the need for manual adjustments. As a result, you can save time and reduce potential errors.

[MTV-3963](#)

Enhanced IP address preservation in VM migration

During VM migration, MTV verifies that IP addresses are from the correct subnet before assignment. MTV preserves and assigns IP addresses from the subnet for VMs with explicitly assigned IP addresses during migration to OpenShift Virtualization. As a result, you can ensure accurate IP address assignment and prevent IP address mismatches during migration.

[MTV-3130](#)

virtio-win rebased to 1.9.57

The **virtio-win** package, which provides drivers for Microsoft Windows virtual machines, has been rebased to upstream version 1.9.57. This version provides important fixes and enhancements. For more information, see the following security advisory:

[RHSA-2026:5077 - Security Advisory](#)

1.3. RESOLVED ISSUES

Migration Toolkit for Virtualization (MTV) 2.11 has the following resolved issues.

1.3.1. Resolved issues 2.11.7

Review the resolved issues in this release of MTV.

The libvirt API correctly identifies VM UUIDs, preventing incorrect VM names

Before this update, virtual machine (VM) UUID duplication in VMware caused inconsistent **libvirt** domain name returns. As a consequence, duplicate VM names led to confusion and incorrect selection. With this release, the **libvirt** API correctly identifies VM UUIDs. As a result, **libvirt** no longer returns incorrect VM names.

[MTV-5326](#)

RDM-to-SCSI interface conversion in MigrationPlan is corrected

Before this update, setting **spec.rdmAsLun=true** in a **MigrationPlan** did not correctly convert the RDM disk interface from virtio to SCSI. As a consequence, the logical unit number (LUN) type was incompatible. With this release, the interface type conversion for RDM disks in a **MigrationPlan** is corrected. As a result, RDM disks converted to a LUN have the required SCSI interface type.

[MTV-5387](#)

The GetAllHosts function supports pagination on Infinidat InfiniBox arrays

Before this update, the **GetAllHosts** function on Infinidat InfiniBox arrays used an upstream driver that lacked pagination. Because of this, the function silently returned only the first page. As a consequence, host lookups failed during volume mapping on InfiniBox arrays with many hosts. With this release, the **GetAllHosts** function is updated to use a driver that supports pagination. As a result, MTV prevents host lookup failures during volume mapping on InfiniBox arrays with many hosts.

[MTV-5390](#)

Multiple IP addresses per MAC address are correctly handled in Linux guest migrations

Before this update, the script incorrectly treated configurations with multiple IP addresses on a

single MAC address as duplicate MAC addresses. As a consequence, the script generated an empty `/etc/udev/rules.d/70-persistent-net.rules` file, causing issues like renamed network interface controllers (NICs) and missing IP addresses on boot. With this release, the duplicate MAC address detection logic no longer treats multiple IP addresses per MAC address as an error. As a result, MTV correctly handles multiple IP addresses per MAC address during Linux guest migrations, ensuring persistent network configuration in OpenShift Virtualization.

[MTV-5522](#)

PVCs are cleaned up after XCOPY migration failures

Before this update, MTV failed to clean up persistent volume claims (PVCs) after archiving a failed XCOPY migration. As a consequence, orphaned PVCs remained on the cluster, which caused logical unit number (LUN) utilization issues. With this release, the PVC cleanup process is updated for XCOPY storage copy offload migrations. As a result, MTV automatically cleans up PVCs after a migration failure, which prevents unnecessary LUN utilization and operational issues.

[MTV-5546](#)

PowerShell CLM no longer causes Convert-PrefixToMask failures in MTV migrations

Before this update, the **Convert-PrefixToMask** function failed when PowerShell Constrained Language Mode (CLM) was enabled on the target virtual machine (VM). As a consequence, MTV wrote empty subnet masks to the registry during migration. With this release, the **Convert-PrefixToMask** function is updated to operate correctly under PowerShell CLM. As a result, MTV writes the correct subnet masks to the registry when PowerShell CLM is enabled on the target VM.

[MTV-5555](#)

XFSv5 on RHEL 7 no longer falsely reports corruption

Before this update, when converting a RHEL 7 guest, XFSv5 incorrectly reported file system corruption without actual issues. As a consequence, these false alarms caused migration plans to fail. With this release, as a temporary measure, MTV adds the **feature_xfs_repair_ignore** option to skip the test. As a result, enabling this option allows conversions to continue. If you are unsure whether to use this flag in specific cases, contact Red Hat Support for guidance.

[MTV-5584](#)

A vmID filter in the getPopulatorCrList function prevents CR deletion for active VMs

Before this update, the **getPopulatorCrList()** function filtered only migration user identifiers (UIDs). As a consequence, cleanup deleted custom resources (CRs) of all virtual machines (VMs) that started in previous waves, which caused populator pod failures. With this release, MTV adds a **vmID** filter to the **getPopulatorCrList()** function. As a result, the migration process no longer deletes CRs of active VMs during cleanup, which prevents populator pod failures.

[MTV-5602](#)

Concurrent copy-offload operations no longer cause failures during VM creation

Before this update, unaccounted copy-offload disk operations in the populator flow exceeded the **maxInFlight** limit. As a consequence, excessive concurrent disk operations caused user scale tests to fail. With this release, the new **controller_max_populator_inflight** parameter limits running volume populators per ESXi source host. As a result, **maxInFlight** limits concurrent virtual machine (VM) migrations, which prevents concurrency failures.

[MTV-5621](#)

FC initiator lookups no longer fail on PowerMax storage

Before this update, a Fibre Channel (FC) initiator lookup format mismatch with the PowerMax API caused ID validation errors. As a consequence, unnecessary re-mapping on unchanged volumes

caused failures that prevented MTV from populating PowerMax storage. With this release, MTV uses the correct FC initiator lookup format and removes the unnecessary re-mapping loop. As a result, MTV successfully populates PowerMax storage during storage copy offload migrations.

[MTV-5624](#)

1.3.2. Resolved issues 2.11.6

Review the resolved issues in this release of MTV. Some linked Jira tickets are accessible only with Red Hat credentials.

Migrations no longer fail unexpectedly due to memory issues on ESXi hosts

Before this update, MTV automatically installed a vSphere Installation Bundle (VIB) called **vmkfstools-wrapper** on each clone. This often caused memory issues on ESXi hosts, and migrations failed as a result. This release removes automatic VIB installation, and memory failures no longer occur during clone operations. The **vmkfstools-wrapper** VIB is only needed for storage copy offload migrations. For information about VIB installation, see [Setting up storage copy offload using the VIB](#).

[MTV-5320](#)

Populator pods no longer fail with VIB installation errors during storage offload migrations

Before this update, each populator pod attempted to check and install the VIB on the ESXi host at runtime. When many pods spawned simultaneously for a virtual machine with many disks, the concurrent **esxcli** calls overwhelmed the host. As a consequence, populator pods failed. With this update, the automatic VIB installation is removed from the populator flow. As a result, populator pods no longer fail with VIB installation errors. You must install the VIB on ESXi hosts manually before a migration.

[MTV-5320](#)

1.3.3. Resolved issues 2.11.5

Review the resolved issues in this release of MTV. Some linked Jira tickets are accessible only with Red Hat credentials.

MTV preserves static IPs on migrated Windows VMs when the DHCP Client service is disabled

Before this update, the network configuration script failed to set static IP addresses if the DHCP Client service was disabled in a source Windows virtual machine (VM). As a consequence, MTV did not preserve static IPs during the migration. With this update, a patch was implemented to enable static IP configuration even when the DHCP service is disabled. As a result, MTV preserves static IPs on migrated Windows VMs if the user enables the **feature_windows_registry_network_config** feature flag.

[MTV-5245](#)

MTV blocks a migration plan when a VM has no IP address

Before this update, a user could create a migration plan with the preserve static IP option selected for a VM that had no IP address. As a consequence, MTV allowed the migration to proceed. With this release, the system was modified to verify the presence of an IP address before running the plan. As a result, MTV blocks the migration plan.

[MTV-5244](#)

The MTV UI does not display Hyper-V as a source provider

Before this update, the MTV user interface (UI) displayed Hyper-V as a source provider even though

it is not supported. As a consequence, users could view an unsupported source provider in the UI. With this release, the UI was modified to remove Hyper-V from the list of available source providers. As a result, the MTV UI does not display Hyper-V as a source provider.

[MTV-5174](#)

MTV powers off the correct VM during migration when multiple VMs share a BIOS UUID

Before this update, MTV could not distinguish between multiple VMs sharing the same BIOS UUID. As a consequence, MTV incorrectly powered off the first matching VM during migration, leading to potential data loss and downtime. With this release, the migration process was modified to use **moRef** instead of BIOS UUID. As a result, MTV correctly identifies and powers off the correct VM during migration. While MTV correctly handles the power-off phase, environments with duplicate BIOS UUIDs might still experience migration failures due to a known issue in Libvirt. For more information, see the "Known issues" section.

[MTV-5091](#)

MTV allocates sufficient disk space during RHEL 3, 4, and 5 migrations

Before this update, MTV did not allocate enough disk space when pre-creating output disks during migrations from Red Hat Enterprise Linux (RHEL) 3, 4, or 5. As a consequence, the migrations failed with an error indicating that the destination size was smaller than the source size. With this update, the estimated disk size was increased. As a result, MTV allocates the correct disk space, and the migrations succeed.

[MTV-4872](#)

MTV resolves memory footprint and script truncation issues on ESX and ESXi

Before this update, migration failures occurred due to memory-related issues on more than 30 virtual machines (VMs). Additionally, during storage copy offload migrations that were set up by using SSH, a script was truncated on some uploads, which prevented other tasks from reading it. As a consequence, some VMs remained incomplete during migration, and the system returned a **failed to update task status: failed to get task status: failed to parse status response: failed to parse XML response: EOF** error. With this update, the memory footprint and script truncation issues on ESX and ESXi were fixed. As a result, the migration of more than 35 VMs is successful, improving the stability of the migration process. This fix applies only to storage copy offload migrations that are set up by using SSH; it does not apply to migrations that are set up by using a vSphere Installation on Bundle (VIB).

[MTV-4732](#)

Virtual machines with Sun partition tables and Veritas storage no longer fail to migrate

Before this update, when migrating a virtual machine with a Sun partition table and Veritas storage, the disk cylinder-head-sector (CHS) geometry reported by the operating system did not match the geometry stored on the disk label. As a consequence, the **parted** command could not find the file system type, and the migration failed with a **libguestfs** error. With this update, the migration process correctly handles the geometry mismatch. As a result, virtual machines with Sun partition tables and Veritas storage migrate successfully.

[MTV-5253](#)

1.3.4. Resolved issues 2.11.4

Review the resolved issues in this release of MTV.

Skipping **fstrim** stage improves migration times for **xfsCompatibility** on RHEL 9

Before this update, virtual machine migrations with the **xfsCompatibility** parameter enabled to

RHEL 9-based platforms encountered issues because the **--no-fstrim** option was incorrectly applied to the migration process. With this release, the **--no-fstrim** option is removed for these migrations. As a result, migrations based on RHEL 9 platforms run correctly.

[MTV-5062](#)

1.3.5. Resolved issues 2.11.3

Review the resolved issues in this release of MTV.

Storage copy offload: Unclear error message for PowerMax migrations replaced

Before this update, if an ESXi host's Fibre Channel or iSCSI initiators were not registered as a host object in Dell PowerMax during a storage copy offload migration, the migration proceeded with an empty **hostID** value. As a consequence, the system displayed an unclear **CreateMaskingView** error message.

With this update, the system validates the initiator registration. As a result, if the initiators are not registered, the system displays the following message to help you resolve the problem:

Can't find a host on Symmetrix %s with initiators matching %v. Ensure the ESXi host has a corresponding host object in PowerMax with the correct FC/iSCSI initiators registered.

[MTV-4873](#)

Storage copy offload: Pure Storage FlashArray HTTP client timeout is configurable

Before this update, the timeout for a Pure Storage FlashArray HTTP client was hard-coded to 30 seconds. As a consequence, during migrations of VMs with many disks, simultaneous **CopyVolume** requests to the Pure Storage FlashArray timed out, leaving PVCs stuck in **Pending** status.

With this update, you can configure the timeout by setting the new **STORAGE_HTTP_TIMEOUT_SECONDS** key and value in the Pure Storage FlashArray **Secret**. As a result, migrations complete successfully without timing out. Note that the key's default value is 30 seconds.

[MTV-5004](#)

The **fstrim** stage of **virt-v2v** is now skipped for warm migrations

Before this update, large (multi-terabyte) warm migrations took a long time during the **fstrim** stage of **virt-v2v**.

With this update, MTV uses the **--no-fstrim** option for **virt-v2v**. As a result, large warm migrations run correctly. The converted guest might use more space after the conversion.

[MTV-4941](#)

1.3.6. Resolved issues 2.11.1

Review the resolved issues in this release of MTV.

VM migration prevented with duplicate NAD mappings

Before this update, VM migration succeeded when two Network Interface Controllers (NICs) were connected to the same Network Attachment Definition (NAD). As a consequence, users could not boot the VM after successful migration because both NICs were connected to the same target NAD. This update prevents the assignment of multiple NICs to the same NAD during VM migration, avoiding potential boot failures and failed migrations.

[MTV-3075](#)

Misleading **ConnectionTestFailed** errors for OVA providers now hidden

Before this update, misleading **ConnectionTestFailed** error messages were displayed for Open Virtual Appliance (OVA) providers during creation, due to an issue with the readiness probe in the OVA provider's pod specification. This update hides misleading **ConnectionTestFailed** error messages, allowing for accurate progress visualization during provider creation.

[MTV-3613](#)

Forklift-controller no longer unexpectedly shuts down due to map deletion

Before this update, the deletion of network or storage maps in the **forklift-controller** could cause unexpected shutdowns. With this update, deletion of these maps now results in migration plans moving to a **NotReady** state, instead of actively terminating associated pods.

[MTV-4413](#)

Increased memory limits for **forklift-cli-download** pod to prevent **OOMKilled** errors

Before this update, insufficient memory limits in the **forklift-cli-download** pod caused Kubernetes **OOMKilled** memory errors after an update of the MTV Operator. As a result, the pod entered the **CrashLoopBackOff** state. This update increases memory limits for the **forklift-cli-download** pod to prevent **OOMKilled** errors, improving deployment stability.

[MTV-4482](#)

NetApp ONTAP initiator group filtering for XCOPY consistency

Before this update, VM migrations on ESXi hosts with both FC and iSCSI adapters could experience issues with XCOPY usage because NetApp ONTAP initiator groups contained both FC and iSCSI initiators. With this update, you can filter initiators in ONTAP initiator groups by protocol for XCOPY consistency.

[MTV-4515](#)

Correct LUN path detection during copy offload for PVCs with economy storage class

Before this update, copy offload for Persistent Volume Claims (PVCs) that use the **ontap-san-economy** storage class assumed all PVCs used dedicated FlexVols with a specific LUN path. With this update, MTV detects the economy storage class and extracts the correct LUN path from the PV attributes, ensuring copy offload functionality.

[MTV-4556](#)

Shared PVCs now labeled **Shareable: true** in storage offload migrations

Before this update, shared PersistentVolumeClaims (PVCs) were not labeled **Shareable: true** during migration with storage offload. As a consequence, shareable disks were not automatically attached to VMs. With this release, shared PVCs have the **Shareable: true** label, and shared disks are correctly attached to VMs.

[MTV-4580](#)

SATA CD-ROM disks skipped during warm migration

Before this update, warm migration with SATA CD-ROM and SATA disks failed because of incorrect disk assignment. With this release, the SATA CD-ROM disks are intentionally skipped during warm migration because these disks are not migrated, resulting in successful conversion.

[MTV-4592](#)

Consistent disk order in multi-boot VMs

Before this update, there were disk order inconsistencies in the **virt-v2v-inspector** because of a conflict in how **libvirt** and VMware order the disks. As a consequence, users experienced unpredictable boot failures during VM conversion. With this release, the **virt-v2v-inspector** presents disks in a consistent order, reducing conversion failures in multi-boot VMs.

[MTV-4718](#)

XFSv4 migrations failed

MTV 2.11.0 was rebased to Red Hat Enterprise Linux (RHEL) 10, which does not support XFS version 4 (XFSv4). As a result, a new **spec.xfsCompatibility** option is available on the migration plan. When set to **false**, the default setting, the plan uses the standard conversion image. When set to **true**, the plan uses the XFS-compatible conversion image instead of the standard conversion image.



WARNING

If you enable XFS support for a migration plan, then the plan cannot support Btrfs migration.

[MTV-4685](#) and [MTV-4709](#)

Active blocking of migration when target namespaces lack transfer network permissions

Before this update, during VM migration to Red Hat OpenShift Container Platform with Fibre Channel, migration could stall when target namespaces lacked permission to transfer networks. This update enhances error handling with active blocking of migration when target namespaces lack transfer network permissions.

[MTV-4547](#)

1.3.7. Resolved issues 2.11.0

Review the resolved issues in this release of MTV.

Target cluster namespaces now visible for cross-cluster live migration

Before this update, during cross-cluster live migration, projects were fetched from the host cluster instead of the target cluster. As a consequence, target cluster namespaces were not visible in the UI, causing user inconvenience. With this release, cross-cluster live migration fetches project data from the target cluster, making target cluster namespaces visible in the UI during migration.

[MTV-3915](#)

VDDK image archive upload succeeds in private namespaces

Before this update, VMware Virtual Disk Development Kit (VDDK) image archive upload failure occurred in private namespaces due to incorrect namespace usage. As a consequence, users experienced VDDK image upload failure in private namespaces during source provider creation. With this release, you can upload VDDK tar archives successfully in private namespaces.

[MTV-3618](#)

The user interface correctly displays the migration type after a change

Before this update, if you changed the **Migration type** on the **Plan details** page from warm to cold,

the MTV user interface (UI) did not refresh, even though the YAML file was updated correctly. As a consequence, the UI did not display the updated migration type. With this release, MTV updates the migration type in both the YAML file and the UI. As a result, the UI correctly displays the updated migration type.

[MTV-3476](#)

Correct VM name display in migration progress

Before this update, during the migration of a VM with a non-conformant name in OpenShift, the name was standardized. However, the migration progress in the MTV UI showed the original non-conformant VM name. As a consequence, users saw incorrect VM names in the **Migration progress** list, with links causing **404** errors. With this release, the migration progress now shows accurate VM names and links.

[MTV-4386](#)

Resolved **Unable to retrieve data** error in cold migration plans with static IP preservation

Before this update, users encountered an **Unable to retrieve data** error during VM listing in cold migration plans created with static IP preservation on vCenter7. With this release, cold migration plans now retrieve VM data correctly, eliminating **Unable to retrieve data** errors.

[MTV-3266](#)

Improved **DiskTransfer** warm migration progress indicator

Before this update, the warm migration progress indicator for **DiskTransfer** remained unchecked due to incomplete progress evaluation. As a consequence, users saw incomplete migration progress for the **DiskTransfer** step. With this release, the **DiskTransfer** progress indicator shows a checkmark when all tasks are completed, improving migration visibility.

[MTV-3585](#)

Fetch and populate volumes for storage mappings during plan creation for OpenShift provider

Before this update, you could not fetch and populate volumes for storage mappings from Red Hat OpenShift during plan creation for an OpenShift provider. With this release, plan creation for host-to-host plans includes fetching and populating source storage, improving the selection of storage mappings during plan creation.

[MTV-3574](#)

Improved cluster-to-cluster live migration network mapping in OpenShift

Before this update, incorrect management of network attachments in Red Hat OpenShift target networks during updates led to complications with network mapping during live migration, resulting in inaccurate network configurations. With this release, the target network mapping issue in MTV for an OpenShift source provider is resolved. As a result, cluster-to-cluster live migration now correctly maps networks, improving migration accuracy.

[MTV-3576](#)

Removed misleading VM shutdown message during migrations for OVA providers

Before this update, users received a misleading message about VM shutdown during Open Virtual Appliance (OVA) migration, even though no VMs are sourced for OVA providers. With this release, the incorrect message for OVA providers during plan migration is removed.

[MTV-3572](#)

Adjusted **Tips and tricks** link placement to avoid conflict with reserved UI elements

Before this update, the **Tips and tricks** link placement in the upper-right corner of the MTV UI conflicted with reserved UI elements. As a consequence, UI elements were misaligned, causing

content shift and potential confusion. With this release, the **Tips and tricks** link is displayed to the left side of the reserved UI element. As a result, the UI now has improved consistency.

[MTV-3870](#)

Topic selector consistency improvement

Before this update, the topic selector in the **Tips and tricks** panel in the MTV UI displayed the active topic while it was pointing to the active topic. As a consequence, end users saw duplicate topic headings in the topic selector and the top area of the **Tips and tricks** panel. With this release, the topic selector defaults to **No topic selected**, enhancing the overall UI consistency.

[MTV-3869](#)

Improved Migration plan page visibility for target projects

Before this update, the **Migration plans** page in the MTV UI displayed the **openshift-mtv** project by default, but the target project was not displayed by default. With this update, the default view of the **Migration plans** page now includes the **Target project** column, enhancing visibility and navigation for migration plans.

[MTV-3864](#)

Restoration of Target name column on Virtual machines tab

Before this update, the removal of the **Target name** column during MTV product updates caused the column to disappear from the **Virtual machines** tab on the **Plan details** page in the MTV UI. With this release, the **Target name** column on the **Virtual machines** tab is now restored.

[MTV-4238](#)

Removal of invalid NADs during network map creation

Before this update, the MTV UI became unresponsive when trying to remove an invalid Network Attachment Definition (NAD) during network map creation from YAML. With this release, you can remove network maps with invalid NAD IDs and manage network maps more effectively.

[MTV-3610](#)

Write permission check for OVA upload

Before this update, users encountered permission denied errors during OVA file upload. With this release, there is a check for write permissions before OVA upload. As a result, OVA uploads no longer fail due to permission errors.

[MTV-3634](#)

Warm migration with insecure TLS in RHV provider

Before this update, warm migrations with a Red Hat Virtualization provider failed due to missing support for insecure TLS. As a consequence, warm migration failed with TLS insecure (skip cert validation) in MTV 2.8.5. With this release, **InsecureSkipVerify** is added to CDI for warm migrations with a RHV provider. As a result, warm migration with TLS insecure (skip cert validation) now succeeds.

[MTV-2811](#)

Improved VDDK connection processing for warm migrations from VMware vSphere

Before this update, warm migrations from VMware vSphere intermittently failed during the **Disk transfer** phase with a VDDK connection error. With this release, VDDK connection processing is improved, with warm migrations from VMware vSphere now completing successfully during the disk transfer phase.

[MTV-3514](#)

Improved network interface detection for legacy RHEL 5 32-bit VMs in VMware migration

Before this update, MTV did not recognize the **VirtualPCNet32** network type in VMware during migration. As a consequence, legacy RHEL 5 32-bit VMs were migrated without network interfaces, causing connectivity issues for users. With this release, MTV supports **VirtualPCNet32** NICs and detects 32-bit RHEL5 VMs with the **VirtualPCNet32** network type, enhancing network interface visibility during migration.

[MTV-3796](#)

NVMe disk support for VMware vSphere VM migration validation

Before this update, NVMe disk support was missing for VMware vSphere VM migration, meaning NVMe migration could be successful but not validated. With this update, NVMe disk support is added for successful NVMe migration and validation from VMware vSphere.

[MTV-2444](#)

VM migration stability with multiple interfaces in pod networks

Before this update, VM migration failure occurred when multiple interfaces were connected to a pod network in OpenShift Virtualization. With this release, MTV now supports multiple interfaces per VM.

[MTV-2666](#)

Elimination of orphaned PVCs in OVA migrations

Before this update, OVA migration left orphaned **ova-store-pvc-*** PVCs on target clusters, consuming resources. As a consequence, excess OVA-store PVCs could cause potential resource exhaustion for users. With this update, OVA migration no longer leaves leftover PVCs on target clusters, improving resource utilization and reducing potential data loss.

[MTV-3659](#)

Changes in device identification during OVA to OpenShift migration

Before this update, the migration of VMs with DHCP settings from an OVA provider to an OpenShift cluster resulted in the loss of interface settings in the VM YAML file. This caused only one default interface with a pod network to remain in the VM. As a consequence, users experienced VMs with incorrect interface settings after migration. The issue occurred because the OVA scanner identified NICs and other device types based on the display name, which was unreliable. With this update, device identification is based on the resource type provided in the OVF specification, preserving interface settings during migration and preventing incorrect configurations.

[MTV-3654](#)

1.4. KNOWN ISSUES

Migration Toolkit for Virtualization (MTV) 2.11 has the following known issues.

Migrations fail for VMs sharing the same BIOS UUID due to a libvirt limitation

While MTV correctly handles source virtual machines (VMs), a known issue in libvirt (RHEL-174300) causes conflicts on the target environment if multiple VMs share the same BIOS UUID. As a consequence, the migration fails.

To work around this problem, ensure that all VMs have unique BIOS UUIDs before you initiate the migration.

[MTV-5326](#) and [RHEL-174300](#)

VMware migrations fail when the disk count exceeds the ESXi host LUN ID limit

When VMware migrations involve many disks, the disk count might exceed the host limit for discoverable SCSI LUN IDs. As a consequence, the migrations fail.

To work around this problem, increase the **Disk.MaxLUN** value on each ESXi host to support discovery of a higher number of LUN IDs during migrations.

[MTV-4719](#)

Live migration is limited in custom namespaces with host providers

Host providers in custom namespaces have restricted permissions that prevent MTV from accessing live migration resources. As a consequence, MTV provides limited support for live migration in these namespaces.

To work around this problem, use the default host provider or create a provider with an appropriate access token.

[MTV-3347](#)

Forklift console plugin fails to load on IPv6-only OpenShift clusters

When MTV is deployed on an IPv6-only OpenShift cluster, an incorrect API endpoint prevents the **forklift-console** plugin from serving a valid plugin manifest. As a consequence, the error **Failed to get a valid plugin manifest from /api/plugins/forklift-console-plugins/** is displayed in the MTV extension to the Red Hat OpenShift web console. While the **forklift-ui-plugin** pod runs successfully, the console plugin cannot load, preventing access to the MTV user interface.

This issue applies to all IPv6-only cluster deployments with OpenShift 4.19.7 and CNV 4.19.1. This issue was first observed in MTV version 2.9.1 and continues to exist in MTV version 2.11.

To work around this problem, deploy MTV on dual-stack or IPv4 clusters.

[MTV-3116](#)

Inactive migration plans are incorrectly displayed as Running

When **max_vms_inflight** exceeds the total number of disks per migration, inactive migration plans receive an incorrect status. As a consequence, these inactive migration plans are displayed as **Running** in the user interface.

No known workaround exists.

[MTV-1736](#)

Migration between OpenShift namespaces causes MAC address collisions

During migration between OpenShift namespaces in a cluster, MAC address collisions occur. As a consequence, VM creation fails.

To work around this problem, disable the **KubeMacPool**. For more information, see [Managing KubeMacPool by using the CLI](#) in the OpenShift documentation.

[MTV-2446](#)

VMware vSphere 6 or 7 migration fails on FIPS-enabled clusters

In MTV 2.11.0, an update to Golang 1.25 causes a connection failure on FIPS-enabled clusters with VMware vSphere 6 or 7 due to unsupported TLS 1.2 with Extended Master Secret (EMS). As a consequence, you cannot migrate VMware vSphere 6 or 7 VMs to a FIPS-compliant cluster.

To work around this problem, disable FIPS mode on the cluster. Alternatively, use a VMware vSphere version that supports TLS 1.2 with EMS to migrate VMs.

[MTV-4411](#)

Second migration plan with shared RDM disks fails when shared disk migration is disabled

You might migrate two VMs with shared Raw Device Mapping (RDM) disks by using **copyoffload** in separate migration plans. If you disable shared disk migration after successfully migrating the first VM, the second plan incorrectly creates two populated pods: one for the operating system disk and one for the shared RDM disk. As a consequence, the second migration plan fails at the **ImageConversion** step.

No known workaround exists.

[MTV-4549](#)

VDDK image pulls fail outside theopenshift-mtv namespace

When you upload a VMware Virtual Disk Development Kit (VDDK) init image, the image URL is located in the **openshift-mtv** namespace. If you create a provider in a different namespace, an error occurs. As a consequence, the image pull fails.

No known workaround exists.

[MTV-3673](#)

Fibre Channel protocol VM migration fails to identify existing FC host objects in Infinidat InfiniBox

During Fibre Channel (FC) protocol VM migration, an incorrect adapter ID comparison prevents MTV from identifying existing FC host objects in Infinidat InfiniBox. As a consequence, volume creation fails due to an incorrect **port_name**.

No known workaround exists.

[MTV-4338](#)