vRA 8 / Cloud Bulk Onboarding User Guide

1. Import Package
   Import the latest version of the bulk onboarding vRO package 'com.vmware.pve.vra8.bulkonboarding_vX' where X is the latest available version number. This package will import 9 x vRO workflows, an action, a configuration element and a vRO environment.

   NOTE: The vRO package and workflows requires vRO 8.8 or above to run.

2. Run setup workflow
   To start the onboarding process, we need to first gather all the environment details and save them securely in a vRO configuration element for use during data capture, validation and onboarding. Run workflow configureBulkOnboardingUtility located in the PVE/Onboarding folder

   - vRA 7 Connection tab
     vRA 7 tab is only required if you are onboarding deployments from a vRA 7.x environment. This tab can be skipped if this is not the use case. All inputs on this tab are required for vRA 7 data export.

   - vRA 8 / Cloud Connection tab
     vRA 8 tab is required in all case. Select your environment type and fill in all displayed fields.

     NOTE: If you are onboarding from vRA 8 on-prem to vRA 8 Cloud, initially you are required to provide the vRA 8 on-prem details.

   - vRO 8 Connection tab
     vRO 8 tab is required in all cases. The provided details are required to connect to vRO via SSH. The supplied username needs to have SSH access with password and also requires root access. Ensure to supply the IP address of a specific node and NOT a VIP/Loadbalancer.

   - Onboarding Settings tab
     Onboarding setting specify which projects are to be onboarded, you can run this workflow multiple times so you can perform the onboarding operation in batches of one or more projects at a time. The project names should be specified in a comma separated list. You can also specify to include custom properties and assign cloud templates. The default component name will be used if you do not choose to assign cloud templates or if there are issues determining the component name from the supplied cloud templates. You can also specify if you want to export vRA 7x request history (max 50 requests per deployment)

   - Other Settings tab

Other settings tab is for advance settings and does not need to be modified unless advised to do so to address a specific issue.

3. Run data capture workflow

The package contains three different workflows for data capture.

- Capture machine and deployment data from vRA 7, this will be the use case for the majority of onboarding operations
- Capture machine and deployment data from vRA 8, this workflow will support the use case of onboarding deployments from vRA 8 on-prem to vRA Cloud
- Capture ONLY machine data from vSphere machines discovered by vRA 8, this workflow will address the use case to onboard large numbers of VMs that were not deployed by vRA 7 or 8.

captureMachineDatavRA7x

captureMachineDatavRA7x workflow as mentioned in the summary is designed to extract all vSphere related deployments from a vRA 7 tenant including all machines and their associated custom properties. This workflow also supports a delta input. The delta check box indicates that the data export should append any new deployments that have been deployed in the vRA 7 environment since the last time the workflow had been run. This allows newly deployed content to be included in the process without having to start the entire data extract, review and update process from the beginning. When the workflow is run and it completes successfully it creates two output csv files for review and a detailed log file for troubleshooting. The csv files are located by default in the onboarding resource element folder. The csv file containing all the machine and deployment date will be stored in a file with a name similar to 'machine_data_06-Jul-2022-T141741.csv' . This csv file should be exported from vRO and reviewed/updated. The supported csv updates are covered in more detail in the Review and update exported csv files section. The second csv file that is exported contains a unique list of exported custom properties names that can be refined for onboarding, this is also covered in more detail in later section. The export of data runs at about 500 VMs per minute so it can take some time to complete if you have 10K + VMs in your vRA 7 environment.

captureMachineDatavRA8

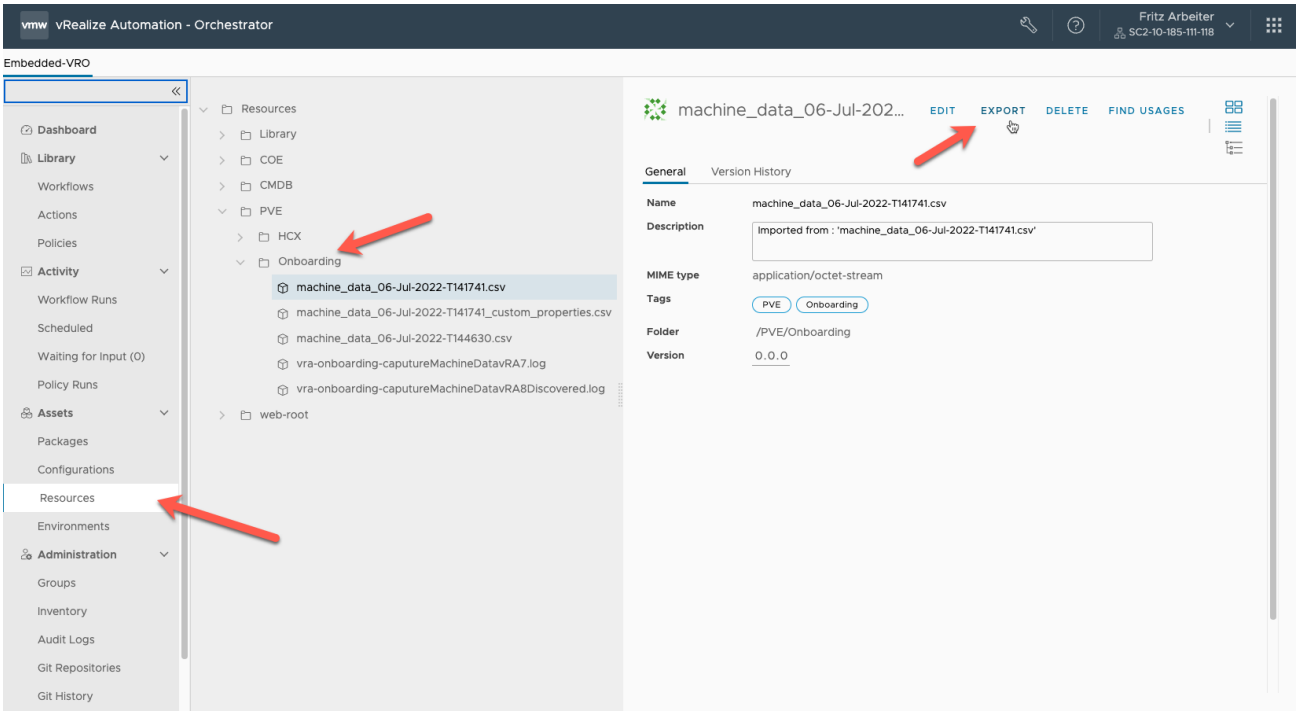
captureMachineDatavRA8 workflow as mentioned in the summary is designed to extract all vSphere related deployments from a vRA 8 including all machines and their associated custom properties. When the workflow is run and it completes successfully it creates two output csv files for review and a detailed log file for troubleshooting. The csv files are located by default in the onboarding resource element folder. The csv file containing all the machine and deployment date will be stored in a file with a name similar to 'machine_data_06-Jul-2022-T141741.csv' . This csv file should be exported from vRO and reviewed/updated. The supported csv updates are covered in more detail in the Review and update exported csv files section. The second csv file that is exported contains a unique list of exported custom properties names that can be refined for onboarding, this is also covered in more detail in later section.

captureDiscoveredMachineDatavRA8

captureDiscoveredMachineDatavRA8 workflow is designed to extract all vSphere related machine data that has been discovered by vRA 8 or vRA Cloud. This data will be exported into a csv file. The csv files are located by default in the onboarding resource element folder. The csv file containing all the machine and deployment date will be stored in a file with a name similar to 'machine_data_06-Jul-2022-T141741.csv' . This csv file should be exported from vRO and reviewed/updated. The supported csv updates are covered in more detail in the Review and update exported csv files section.

4. Review and update exported csv files

Extracted data stored in csv files can be reviewed and updated. The csv files generated from running the data capture workflows are located in the Onboarding resource element folder by default. Select the csv file you want to export from the list of available csv files and click on EXPORT



Open the machine_data…….csv in a suitable editor.

The file will need to be updated with the following changes, all changes are optional.

- The import column can be modified to omit a machine from the onboarding process, set the value to no and the machine will be skipped during onboarding

NOTE: If import column is set to NO the machine is completely removed from the onboarding process during the validation run. In order to include any machines marked with NO at a later stage you will need to run a full data collection again.

Running the workflow metadataDump will create an updated csv file that reflects what is currently in the backend metadata database.

- The newOwner column can be updated with the desired owner of the deployment/machine in vRA 8. This column can be left blank and the existing owner in vRA 7 will be assumed as the owner in vRA 8.
- The project column can be updated with the desired target project for the deployment/machine in vRA 8. This column can be left blank and the Business Group name in vRA 7 will be assumed as the project name in vRA 8.
- The endpointFQDN column can be updated with the FQDN that is configured on the corresponding cloud account in vRA 8. This is optional and is only required for a particular set of use cases where the fqdn in 7 does not match the fqdn in vRA 8.
- The cloudTemplateName column can be updated with a specific cloud template to be associated with each deployment. If this column is left blank the defaults specified in the onboarding.ini file will be used. If you do not want to associate cloud templates this can also be specified in the onboarding.ini file

Once all changes have been completed you can save and close the file.

2. Open the machine_data_...._custom_properties.csv in a suitable editor.
Note: if you do not want to include any custom properties with the onboarded machine you can ignore this step. Ensure you set the Import Custom Properties check box to false when running the configureBulkOnboardingUtility workflow.

The custom properties csv file can be updated as follows.
- Remove any properties that you do not want to be included in the onboarding process
- Populate the newPropertyName column if you want a property in 7 to have a new name in vRA 8 once onboarding is completed. The associated value will be the same as per vRA 7

Any properties that remain in this file will be set as custom properties during the onboarding process.

Once you have made all required changes you can save and close the file.

5. Run data validation workflow
Running the validateOnboardingCSV workflow will verify all updates to the CSV file are inline with infrastructure configuration in vRA 8 / vRA Cloud.

NOTE: If you are onboarding from vRA 8 on-prem to vRA 8 Cloud, you should run the setup workflow configureBulkOnboardingUtility again prior to running validation and set the vRA 8 / Cloud Connection tab setting to vRA Cloud. All displayed fields should be populated.

When running the workflow you can select the machine data and custom properties csv files that you have updated earlier. The validation workflow also support input of

a delete delta list of machine names. This is to allow machines that have been removed in vCenter through normal VM lifecycle events (lease expired in vRA 7, vRA 7 deployment deleted) to be excluded from both the validation and onboarding process. If validation fails due to missing VM in vCenter the workflow will output a comma separated list of VMS that caused the validation to fail. This list can be provided as input for the VMs to remove for onboarding dataset input field if the VMs are correctly identified as no longer being present.

Once the workflow completes review the output and address any validation errors. There is a guide included that can provide some troubleshooting tips Troubleshooting_validation_error_for_bulk_onboarding.txt. There is also a more detailed log available in the resource element folder vra-onboarding-validateOnboardingCSV.log. This file can be exported for additional troubleshooting.

NOTE: the captureMachineDatavRA7x workflow can be run at any time with the delta check box ticked to add additional vRA 7 deployments to the dataset for validation and onboarding. If you re-run captureMachineDatavRA7x you will also need to review and update the newly appended data to the csv files and run validation workflow again.

NOTE: you can run the metadataDump workflow in the helper folder to create an updated csv file that reflects what is currently in the backend metadata database. It is recommended to run this from time to time as various operations can remove large numbers of entries from the backend metadata database.

6. Run onboarding workflow
   To onboard deployments into vRA 8 / Cloud you need to run onboardMachines workflow. By default the workflow will perform a dry run. This means the workflow will validate all the data again and create the corresponding onboarding plans with onboarding deployments, machines and custom properties for each project specified in the projects section when running the setup workflow (workflow configureBulkOnboardingUtility, this workflow can be run as often as required to modify projects to process). The newly created onboarding plans can be inspected in the vRA web UI in the Onboarding section of the Infrastructure section. There should be one onboarding plan per project processed. Once reviewed you can run the vRO workflow again and check the box Run Onboarding Plans. The workflow will create another set of onboarding plans and run them. This will result in all deployments for a specific project being onboarded into vRA 8 / Cloud platform.

7. Run post onboarding workflow
   The post onboarding workflow postOnboardingOperations should only be run when all deployments onboarded during the previous run of onboardMachines is completed and the deployments do not show any operations in progress in the vRA UI.
   Post onboarding supports the following functionality.
   - Configure Leases on Deployments
   - Add vRA 7 Historical Requests

Add Cloud Template Icon to Deployments
Generate Metadata

Run the workflow and check the box related to the operation/s you would like to perform on the onboarded deployments. Depending on choice of operations to be performed this workflow can take some time to complete.
The Generate Metadata operation supports a custom name that you can supply at run time. The operation will create a json file containing all deployment ids and machine ids that were onboarded and they will be stored per project. The metadata file will enable users to do additional customization of the onboarded machines and deployments by using the file as an input to any additional customization you want to perform. e.g. add tags to some or all onboarded machines.

Troubleshooting Tips and Tricks

- Dump metadata
  The metadataDump workflow can be used to generate a new csv file that reflects the current contents of the metadata database used for onboarding. This can be helpful as various operations can remove entries from the database and it can be easy to lose track of what is left in the database.

- Restore initial data capture.
  The restoreInitialDataCapture workflow can be used to restore a backup of the metadata database as it was immediately after the initial data capture. This can be helpful if you have removed large amounts of entries in the database for processing later. Restoring the initial metadata database can save time if your data capture is for 10K + machines/deployments