Virtualization Migration

Technical Discovery & Risk Assessment Questionnaire Guide

This guidance is provided to assess the customer responses to the Virtualization Migration Technical Discovery & Risk Assessment. The responses help us better determine where a customer is on The Risk Line prior to entering a Virtualization Migration Assessment (VMA). Keep in mind, the "risk" described in the Considerations column should not be shared directly with the customer.

Current State Environment - Sizing

Keep in mind, this is only an approximation, as a more detailed analysis will happen during the VMA.

Platform Sizing	
How many VMware clusters do you have running?	
How many physical locations?	
How many hypervisors?	
How many hypervisors per cluster?	
Are there any variations in hardware configurations across hypervisors within the same cluster(s)?	
How many VMs are you running in your cluster(s)?	
How many total CPU sockets are occupied on those servers?	
How many total CPU Cores (physical!) do those CPUs have?	
How many sockets per hypervisor?	
What is the total number of virtual CPUs allocated to these VMs?	
What is the total RAM allocated to these VMs? (Size MiB)	

Current State Environment - Operating Systems

Keep in mind, this is only an approximation as a more detailed analysis will happen during the VMA.

Most software vendors only certify to the operating system (see Supported Guest Operating Systems). However, some vendors do require specific hypervisors as well. In some cases, support for KVM will apply to OpenShift Virtualization as it is based on KVM. Please check with the software vendor for more information.

Operating Systems	
What's the approximate percentage of VMs running WINDOWS ?	
What's the approximate percentage of VMs running RHEL?	
What's the approximate percentage of VMs running Debian/Ubuntu?	
What's the approximate percentage of VMs running OTHER?	

Current State Environment - Products

In this section we want to explore the products the customer has acquired from VMware as well as any other third party vendor which may be needed for a complete virtualization solution.

Question	Components / Features	Considerations
VMware Products Used? List products owned	vSphere edition(s)/version	*Older VMware versions may not be supported by MTV impacting the ability to use our migration tooling. Please reference the MTV prerequisites for compatible versions and required privileges.*
	NSX	*NSX features beyond microsegmentation may require a 3rd party networking plug-in. Check Networking section*
	- Aria Suite Enterprise (bundle) • Aria Automation • Aria Operations • Aria Operations for Logs - Aria Automation Orchestrator and Aria Automation - SaltStack / Aria Automation Config	*For Aria Suite Enterprise: No equivalent bundle* • *Approximately Ansible* • *No equivalent* • *No equivalent* *Some functionality exists in OpenShift Logging and ACM. Important to explore the use cases* *For the others, there are possible solutions using ACM, Ansible, Pipelines and GitOps*
	SRM	*SRM-like features require 3rd party integrations* *Refer to the OpenShift Disaster Recovery Guide for more information*
Incumbent Storage Vendor? (Brand, product type, version, protocol, known storage array limitations – like number of LUNs)		*OpenShift Virtualization requires a supported CSI driver, preferably explicitly tested for OpenShift Virtualization and not just OpenShift. Please reference Ecosystem Catalog and/or confirm with your storage vendor, via documentation or directly, of the status of support and required versions.*

Incumbent Backup and Disaster Recovery Vendor(s)? (Brand, product type, version, do they support backup and DR of VMs specifically?)	*Please reference Ecosystem Catalog or contact the vendor directly for supported backup and DR options.*
Incumbent 3rd party network vendor? (Routers, switches, load balancers, firewalls, DNS etc)	*If using a software defined networking solution, it will require a supported CNI driver to integrate with OpenShift. Please reference Ecosystem Catalog for supported SDNs or contact the vendor directly.*
Target Hardware for Installation? (Make, model)	*Server hardware that is certified to run Red Hat Enterprise Linux is also certified to run Openshift and as part of that this includes Red Hat Enterprise Linux CoreOS. Please reference Ecosystem Catalog for server hardware certified for RHEL.*
Current non-OS Workloads (e.g. SAP, VDI, Oracle DB, etc)	

Current State Environment - Features and Use Cases

In this section we explore the features the customer may be using that can be a problem for migration.

mportant: Do not ask directly about these features one by one. Instead, focus on the specific use cases for the customer and think about how we could implement those. Going through the list, one by one, may give a negative impression about OpenShift Virtualization capabilities.

Question	Features	Consideration
VMware Features Used? List features used and the use case for each one of them	**Storage**	
	Storage vMotion	*GA in 4.19. There is support from Engineering in PoCs and in production via support exception*
	Storage DRS	*Native migration between storage classes*
	RDM (Raw Device Map)	*No full parity. Check for the use case, as it may be covered with PVCs with block access mode. Can be replaced with direct LUN.*
	Storage IO control (SIOC)	*Common QoS for workloads, we don't have a good equivalent. Would be responsibility of the CSI driver. Check vendor details*
	Networking - *Only if the customer has NSX. If not, do not go deep into this*	
	Routing	*There is no L2 gateway feature to provide routing between overlay networks.*

VPN	*Could be managed by Skupper/Submariner*
Port mirroring	*Not available*
Network IO Control (NIOC)	*There is no equivalent in OpenShift. However, pod level bandwidth limits apply to VMs as well. Additionally, Service Mesh can provide more fine grained control*
Reliability and Flexibility	
Fault Tolerance	*Proprietary technology, not available in Virt. Explore use case. Very few VMs use this, but those VMs are of the highest criticality. There is no equivalent in OpenShift Virtualization.*
DRS (Dynamic Resource Scheduling)	*Depending on the use case it can be done with eviction policies and the descheduler. Track progress in JIRA.*
CPU Overcommit	*Virt has a maximum of 10:1, check customer requirements*
Memory Overcommit	*There is safe memory overcommit by using swap.*
Backup, DR and Protection	
VM Snapshot	*Snapshots are supported, but not with memory*

Customer's Current Commitment Level to Migrate

In this section we want to explore the customer's level of commitment to do a migration to OpenShift Virtualization.

Question	Consideration
Timeline to deploy VMware alternative into production? Timeline, including the total number of VMs to be migrated. Assumption: Customer will run VMware alternative and VMware side by side for at least 12-months to de-risk	*Please identify how many data centers, heavy edges and or cloud environments are supported. Additionally please indicate the customer's common practice for use of Production and Non-Production environments such as Prod, Pre-Prod, Test, Development etc.* *Most of the sizing information will be available if the customer has provided rvtools output.*
Financial Budget?	*For things like:* - *VMware alternative TCO analysis* - *Investing in a Proof of Value*

Would you allocate people resources to work with Red Hat to advise on evaluation & implementation? (Are those resources cross functional – networking, platform, etc)	*Red Hat is positioned to support customers to achieve their desired outcomes. This includes providing presales and implementation support for customers and consulting partners that support end customers.*
Are you open to a solution that requires the addition of a 3rd party Software Defined Storage vendor?	*Red Hat is differentiated by our ability to provide customers with Choice while they implement their Alternative Virtualization suite. We support the ability to integrate with existing investments in 3rd parties such as Storage, DR, Backup, Networking, and Hardware. Link to Catalog*
Are you using OpenShift today?	*If a customer is already using RH OpenShift successfully then leveraging that customer's knowledge / skill can help accelerate opportunities for positioning OpenShift Virtualization. Be aware the team running OpenShift today is likely different from the team operating VMware.*
Are you using Ansible today for datacenter automation? (Windows/Linux configuration mgmt, network automation, capacity planning, SNOW integrations etc)	*If a customer is already using RH Ansible successfully then leveraging that customer's knowledge / skill can help accelerate opportunities for positioning OpenShift Virtualization. However, its also good to uncover what other automation tooling is being used such as VMware Aria, or other ISV product specific tooling*
Are you currently seeking to modernize (refactor) applications?	