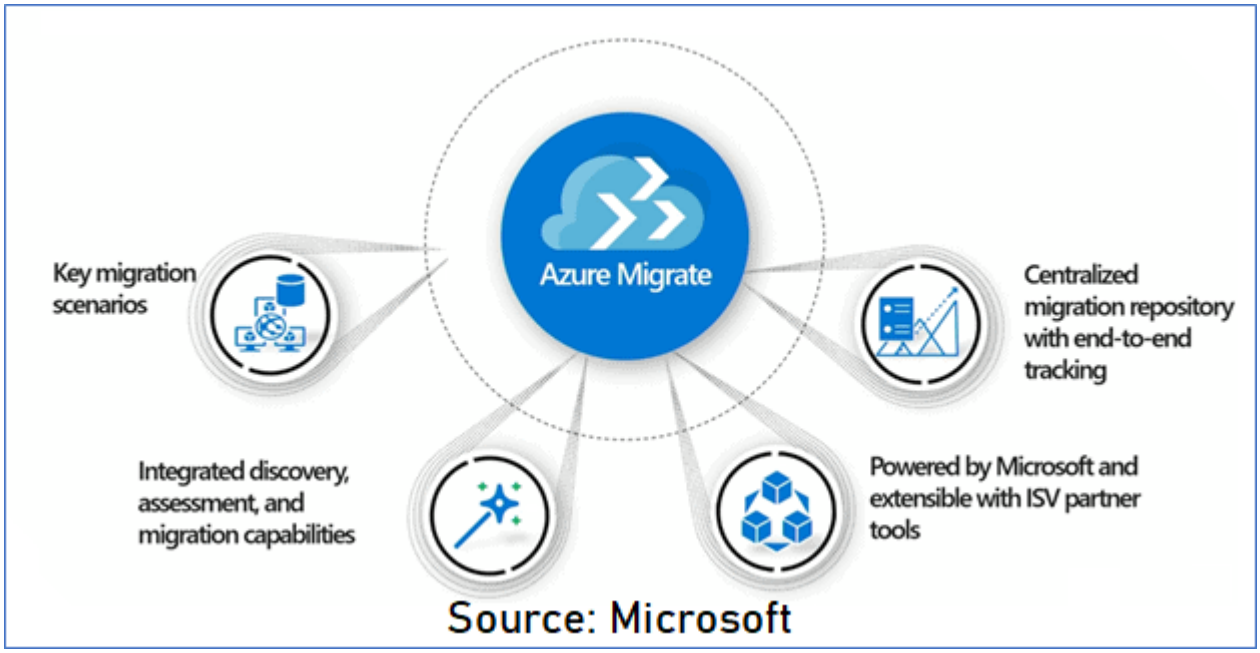
Manage Workloads in Azure Backup

Azure Migrate

Azure Migrate is a Microsoft service that helps an enterprise assess how its onpremises **workloads will perform**, and how much they will **cost to host**, in the Azure public cloud.
Azure Migrate can:

- Assess if your on-premises servers are **ready for migration** to Azure.
- **Estimate the size of Azure VM required** for your workloads, the recommended Azure SQL configuration, or the number of Azure VMware Solution nodes after migration.
- Estimate the cost of **running** an existing local server in Azure.
- Determine **cross-server dependencies** and **optimization strategies** for moving interdependent servers to Azure.



Q1: Can I use the same Azure Migrate to migrate to multiple subscriptions? Ans: **Yes,** you can migrate to **multiple subscriptions** (same Azure tenant) in the same target region for an Azure Migrate project.

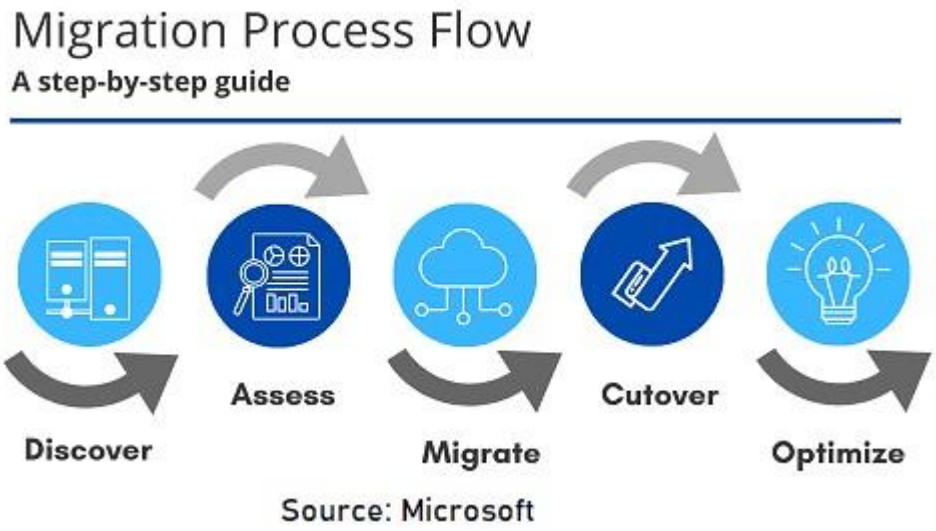
Q2: Does Azure Migrate have an ISV offering with its Integrated tools? Ans: Azure Migrate integrates with several **ISV(Independent software vendors)** offerings. Some of them are:

- **Carbonite**, which is used for Migrate servers.
- **Cloudamize** is used to Assess servers.
- **Corent Technology** is used to Assess and migrate servers.

Azure Migration Planning

Microsoft recommends a **four-step migration** process for migrating to Azure:

- **Discover:** Catalog your software and workloads
- **Assess:** Categorize applications and workloads
- **Migrate:** Make the actual move
- **Cutover:** During data sync, ensure that all changes on the source are captured and applied to the target during the migration process.
- **Optimize:** After migrating your services to Azure, includes a review of the implementation. During this phase, you look for possible optimization areas.



Q3: Can I select the Virtual Network and subnet to use for test migrations?
Ans: **Yes,** You can select a Virtual Network for test migrations. The **subnet** is **automatically selected** based on the following logic:

- If a target subnet (other than default) was specified as an input while enabling replication.
- If the subnet with the same name is not found, then Azure Migrate selects the first subnet available alphabetically that is not a Gateway/Application Gateway/Firewall/Bastion subnet.

Azure Migrate: Server Migration

You can migrate **machines as physical servers** to Azure, using the **Azure Migrate: Server Migration tool**. Migrating machines by treating them as physical servers is useful in a number of scenarios:

- Migrate on-premises **physical servers.**
- Migrate **Hyper-V** or **VMware VMs**.
- Migrate VMs running in **private clouds.**
- Migrate VMs running in **public clouds** such as **Amazon Web Services (AWS)** or **Google Cloud Platform (GCP).**

The Azure Migrate: Server Migration tool offers two options for migrating your source servers and virtual machines to Azure:

Agentless migrations: Agentless migrations **do not require** any software (agents) to be **deployed on the source VMs/servers** being migrated. The agentless option orchestrates replication by integrating with the functionality provided by the virtualization provider.

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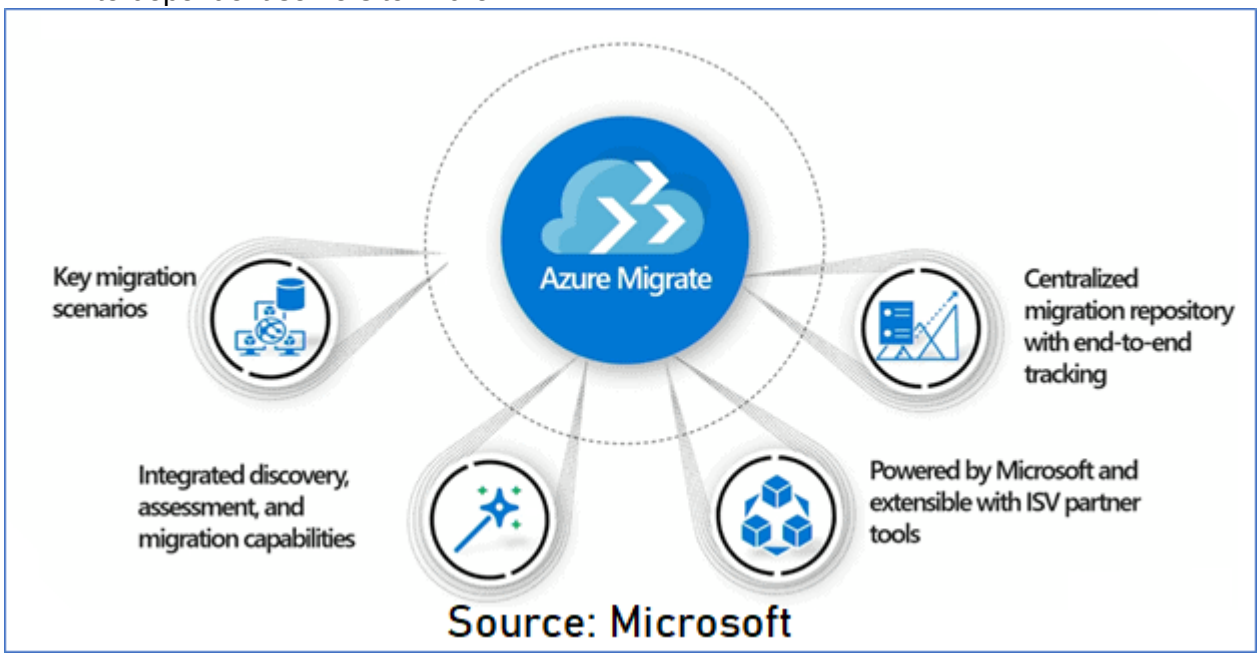

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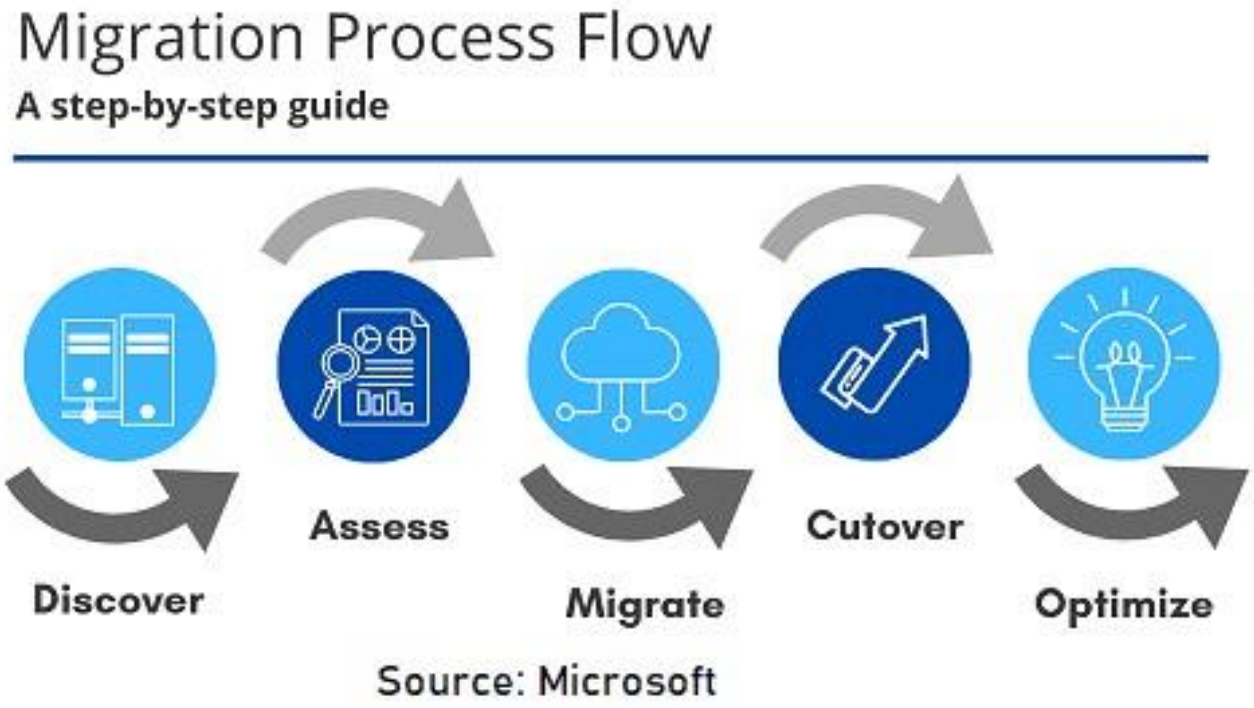

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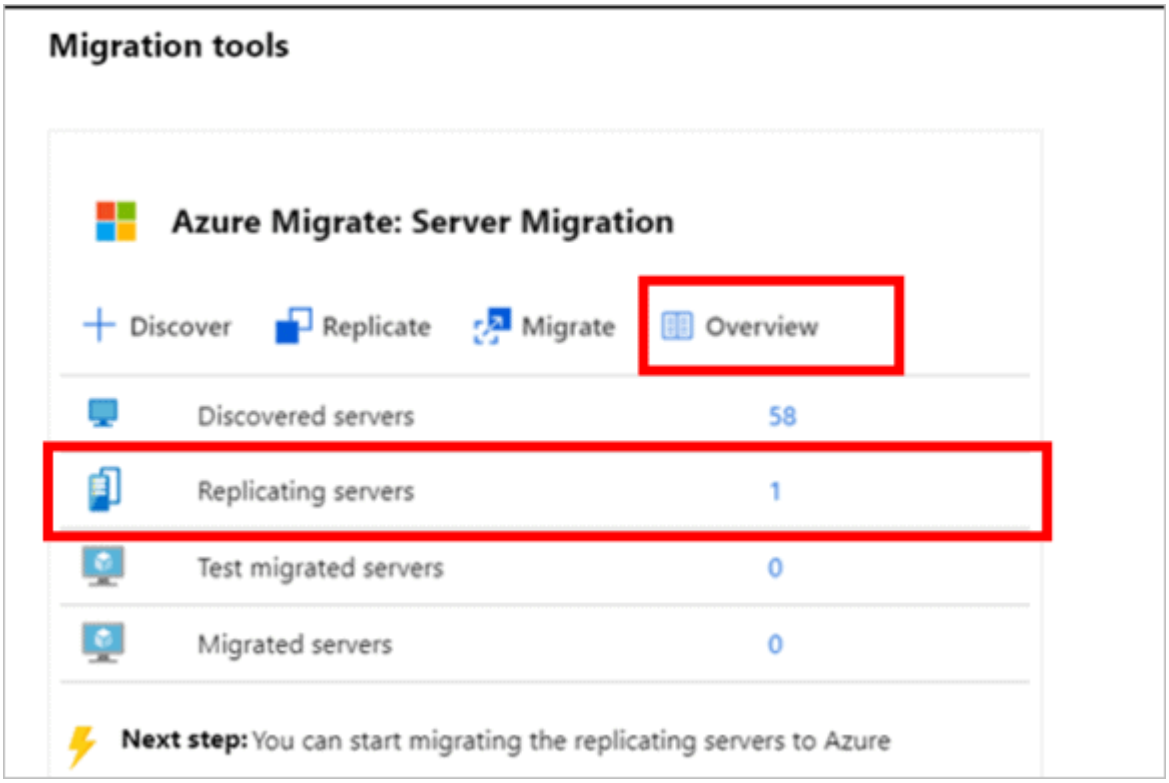
Workloads that can be migrated using Agentless replication are :

- VMware VMs
- Hyper-V VMs.

Agent-based migrations: Agent-based migrations require **Azure Migrate software (agents)** to be **installed** on the **source VMs/machines** to be migrated. The agentbased option doesn't rely on the virtualization platform for the replication functionality.
Workloads that can be migrated using Agent-based replication are :

- VMware VMs
- Hyper-V VMs
- Physical server
- VMs running on AWS
- VMs running on GCP,
- VMs running on a different virtualization provider.



Q4: How does agentless replication affect VMware servers?
Ans: Agentless replication results in some **performance impact** on VMware vCenter Server and VMware ESXi hosts. Because agentless replication uses **snapshots,** it consumes **IOPS(Input/Output operations per second)** on storage, so some IOPS storage bandwidth is required.
Q5: How do I know if my VM was successfully migrated?
Ans: Once you have migrated your **VM/server successfully**, you can view and manage the VM from the Virtual Machines page. **Connect** to the **migrated VM to validate**. Alternatively, you can review the **'Job status'** for the operation to check if the migration was successfully completed.

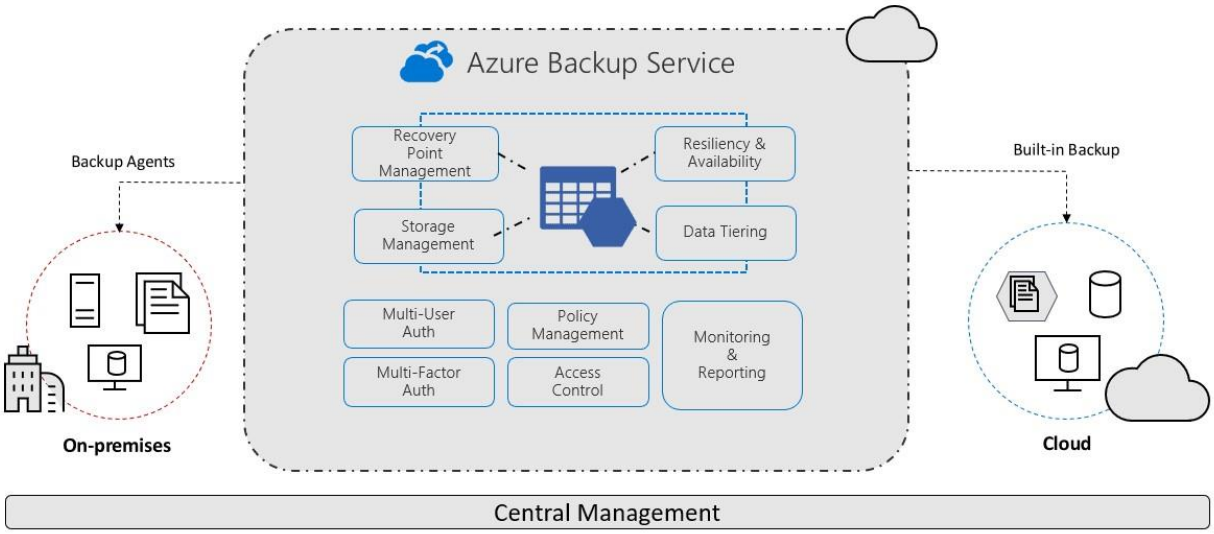
Azure Recovery Services

Every organization need to adopt a **business continuity** and **disaster recovery (BCDR) strategy** that keeps your data safe, and your apps and workloads online, when planned and unplanned outages occur. In Azure we have these Azure Recovery Services:

- **Backup service:** The Azure Backup service keeps your data safe and recoverable.
- **Site Recovery service:** Site Recovery helps ensure business continuity by keeping business apps and workloads running during outages.

Azure Backup

The Azure Backup service provides **simple**, **secure**, and **cost-effective** solutions to **back up your data** and **recover it** from the Microsoft Azure cloud. Backup is often used in **combination** with Azure Site Recovery. Together, Backup and Site Recovery can help you create a **comprehensive data loss protection plan.**



Source: Microsoft

Q6: Does the backup cost included in the VM cost?
Ans: **No**, Backup costs are separate from a VM's costs.

Q7: Which permissions are required to enable backup for a VM?

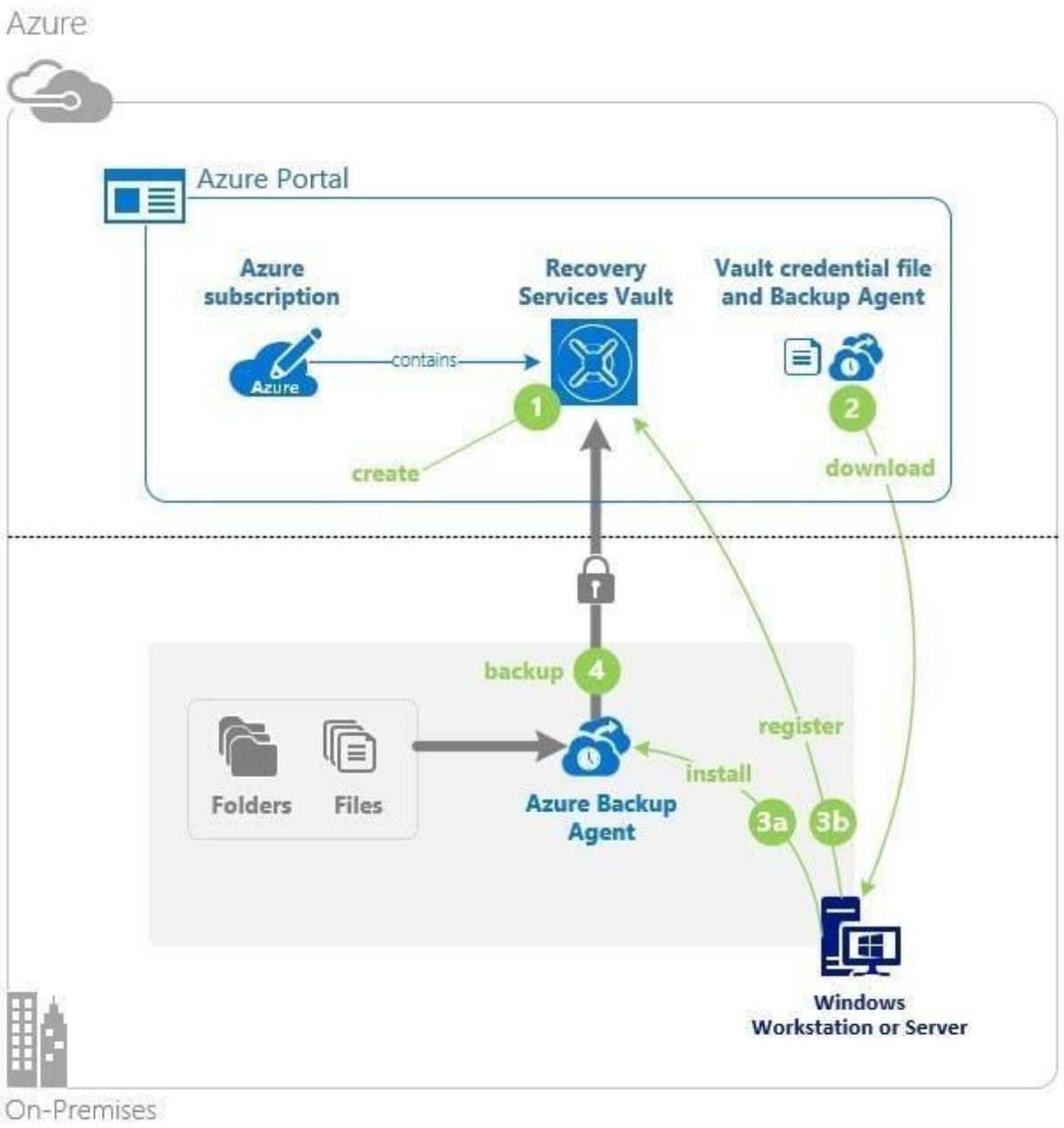
Ans: If you're a **VM contributor**, you can enable backup on the VM. If you're using a **custom role,** you need the following **permissions** to enable backup on the VM:

- Microsoft.RecoveryServices/Vaults/write
- Microsoft.RecoveryServices/Vaults/read
- Microsoft.RecoveryServices/locations/*
- Microsoft.RecoveryServices/Vaults/backupFabrics/protectionContainers/protectedItems/*/read
- Microsoft.RecoveryServices/Vaults/backupFabrics/protectionContainers/protectedItems/read
- Microsoft.RecoveryServices/Vaults/backupFabrics/protectionContainers/protectedItems/write
- Microsoft.RecoveryServices/Vaults/backupFabrics/backupProtectionIntent/write
- Microsoft.RecoveryServices/Vaults/backupPolicies/read
- Microsoft.RecoveryServices/Vaults/backupPolicies/write

MARS agent

Azure Backup uses the **MARS agent** to back up data from on-premises machines and Azure VMs to a backup Recovery Services vault in Azure. The MARS agent can:

- Run-on **on-premises Windows machines** so that they can back up directly to a backup Recovery Services vault in Azure.
- Run-on **Windows VMs s**o that they can back up directly to a vault.
- Run-on **Microsoft Azure Backup Server (MABS)** or a **System Center Data Protection Manager (DPM) server**. In this scenario, machines and workloads back up to MABS or to the DPM server. The MARS agent then backs up this server to a vault in Azure.

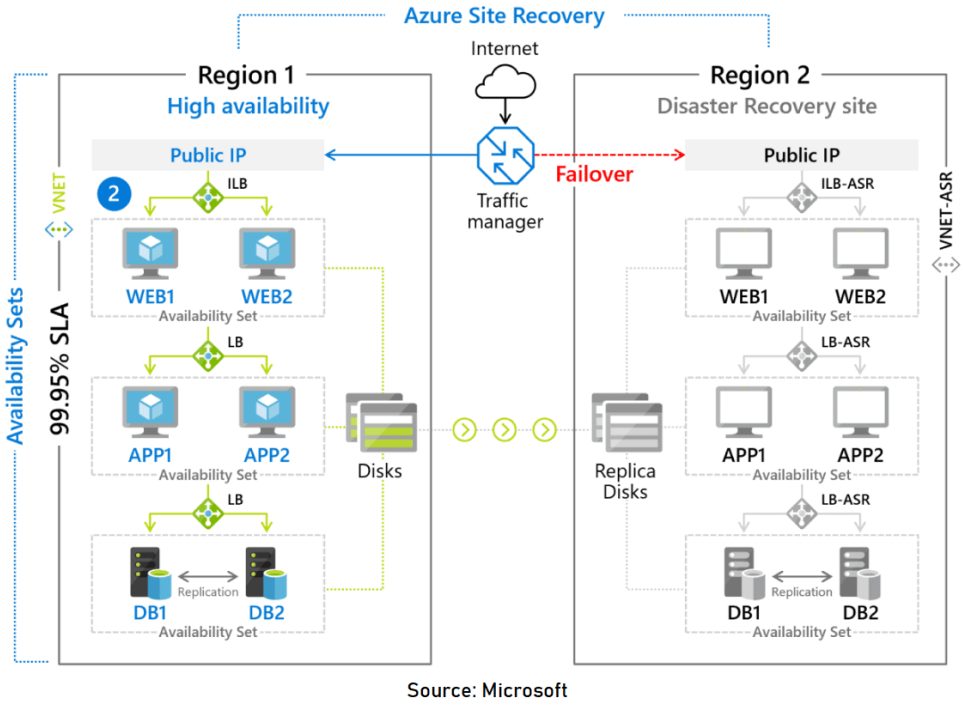


Q8: Can I use the MARS agent to back up files and folders on temporary storage for the Azure VM?

Ans: **Yes,** Install the MARS agent, and back up files and folders on the guest Windows operating system to temporary storage.

Azure Site Recovery (ASR)

Azure Site Recovery (ASR) is a **DRaaS(Disaster Recovery as a Service)** offered by Azure for use in cloud and hybrid cloud architectures. A **near-constant data replication** process makes sure copies are in sync. This service enables customers to use **Azure as a disaster recovery site** on a pay-as-you-go model without having to invest in additional infrastructure.



Source: Microsoft

Q9: What's the difference between Azure Migrate and Azure Site Recovery?
Ans: Azure Migrate provides a **centralized hub** for **assessment** and **migration to Azure** where Azure Site Recovery should be used for **disaster recovery only.**
The Azure Migrate: Server Migration tool uses some back-end Site Recovery functionality for **liftand-shift** migration of some on-premises machines.

Q10: What does Site Recovery do to ensure data integrity?
Ans: There are various measures taken by Site Recovery to **ensure data integrity.** A **secure connection** is established between all services by using the **HTTPS protocol**. This makes sure that any malware or outside entities can't tamper with the data.