

Virtual Machine

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Discussion

A Virtual Machine is a software-defined computing subject that operates through virtualized processor, memory, storage, network, and other computing resources supplied by a virtualization platform.

A Virtual Machine may include:

- Virtual processors
- Virtual memory
- Virtual storage devices
- Virtual network interfaces
- Firmware or boot configuration
- An operating system
- Installed software
- Runtime configuration
- Attached persistent storage
- Security and identity configuration

A virtualization platform creates a Virtual Machine from an applicable configuration and may use a [Machine Image](#) to initialize its software and filesystem content.

A Virtual Machine differs from a Machine Image:

- A Machine Image is an [Image](#) used to instantiate a Virtual Machine
- A Virtual Machine is the instantiated computing subject

Multiple Virtual Machines may be instantiated from the same Machine Image while maintaining separate runtime state.

A Virtual Machine differs from a physical machine:

- A Virtual Machine uses virtualized computing resources
- A physical machine uses directly associated physical computing resources

A Virtual Machine differs from a container:

- A Virtual Machine generally includes or executes its own guest operating system
- A container generally shares operating-system kernel capabilities supplied by its host environment

The exact boundary depends on the virtualization and container technologies used.

Definition

software-defined computing subject that operates through virtualized computing resources supplied by a virtualization platform

Source

Dido Solutions, Inc. and Jackrabbit Consulting, Inc.

Note

A Virtual Machine may be:

- Created
- Started
- Stopped
- Suspended
- Resumed
- Reconfigured
- Replaced
- Migrated
- Snapshotted
- Retired

A Virtual Machine does not by itself establish that the subject is:

- Authorized for operation
- Compliant with an applicable [Baseline](#)
- Securely configured
- Free from vulnerabilities
- Connected to a network
- Persistent
- Suitable for a specified purpose

Separate requirements govern those determinations.

The term does not prescribe a particular hypervisor, virtualization platform, processor architecture, operating system, cloud provider, or [Provider Implementation](#).

Example

[Crucible](#) deploys a Virtual Machine by selecting a Machine Image, allocating virtual processors, memory, storage, and network interfaces, and instructing the target virtualization platform to instantiate the computing subject.

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