

Cloud Infrastructure Management Interface (CIMI)

CMWG Work Group



CMWG Current Work

A new computing paradigm has emerged called Cloud Computing. Vendors and service providers have embraced the need to provide interoperability between enterprise computing and cloud service providers.

Virtualization technology and the evolution from software packages that can be created and deployed as a collection of virtual images is becoming the primary focus for delivering and managing software solutions into enterprise customers today. As these customers look to also take advantage of cloud computing, extensions are needed to enable interactions between private clouds within enterprises and between private and public cloud providers to exploit this emerging business model.

The Cloud Management WG is focusing on addressing the management interfaces between the cloud service consumer / developer and the cloud service provider.

Virtualization & Cloud Management Forum

The goal of the VCM Forum is validation and interoperability of the virtualization, OVF, and cloud management standards.



Relevant Websites

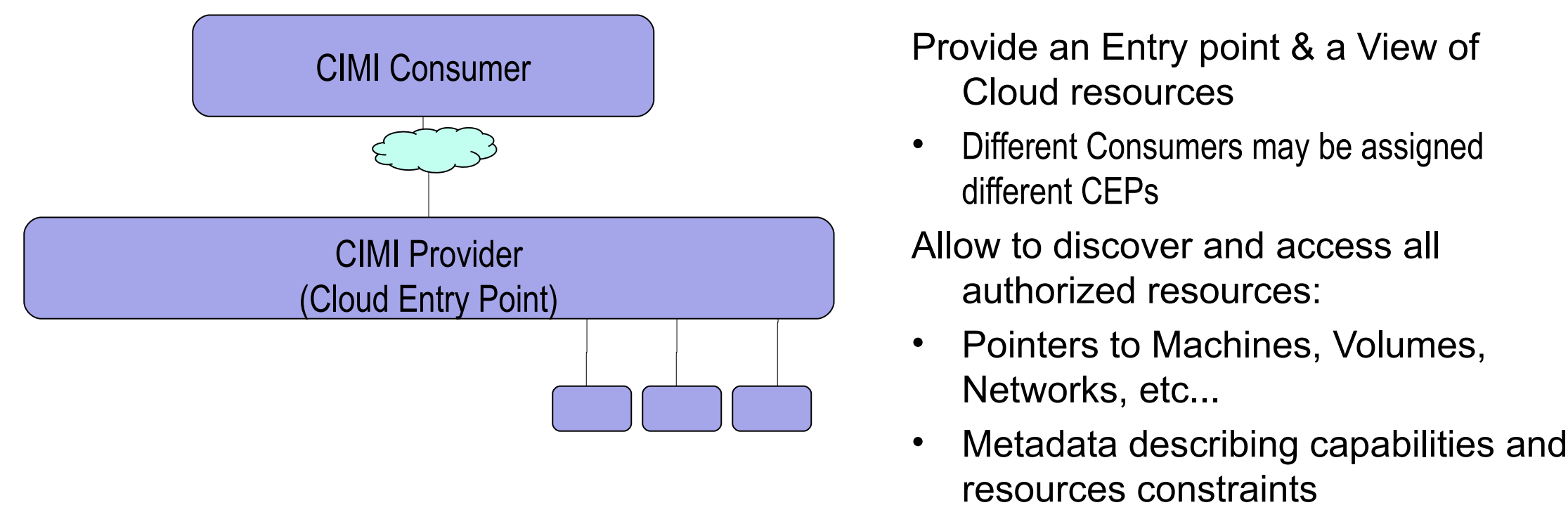
DMTF Published Standards
http://dmtof.org/standards/published_documents

DMTF Cloud Specifications
<http://dmtof.org/cloud>

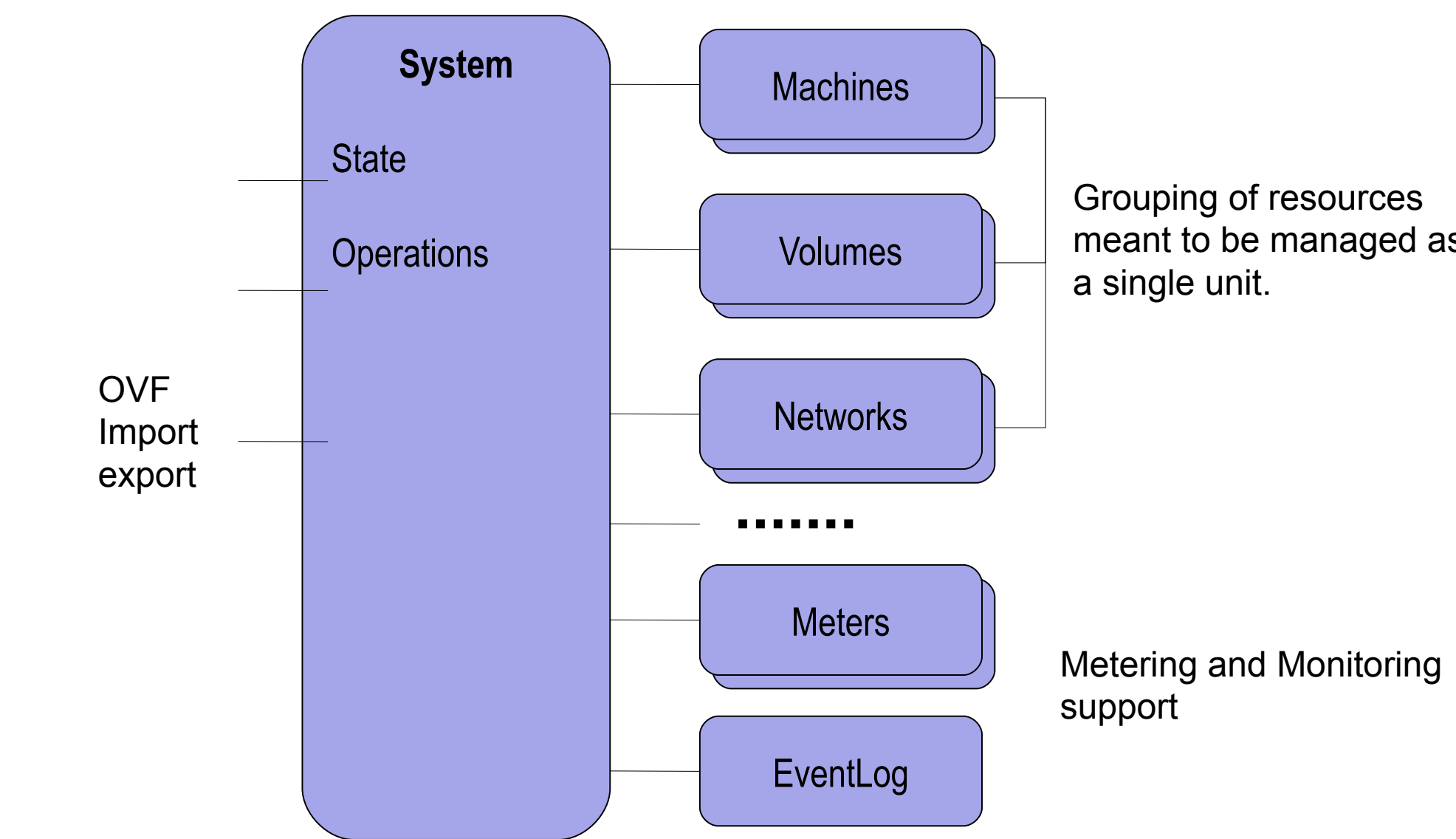
Published Documents	
DSP#	Title
DSP0263	Cloud Infrastructure Management Interface (CIMI)
DSP0264	Cloud Infrastructure Management Interface – CIM (CIMI-CIM)
DSP2027	CIMI Primer

Cloud Infrastructure Management Interface Model

Start Here: Cloud Entry Point



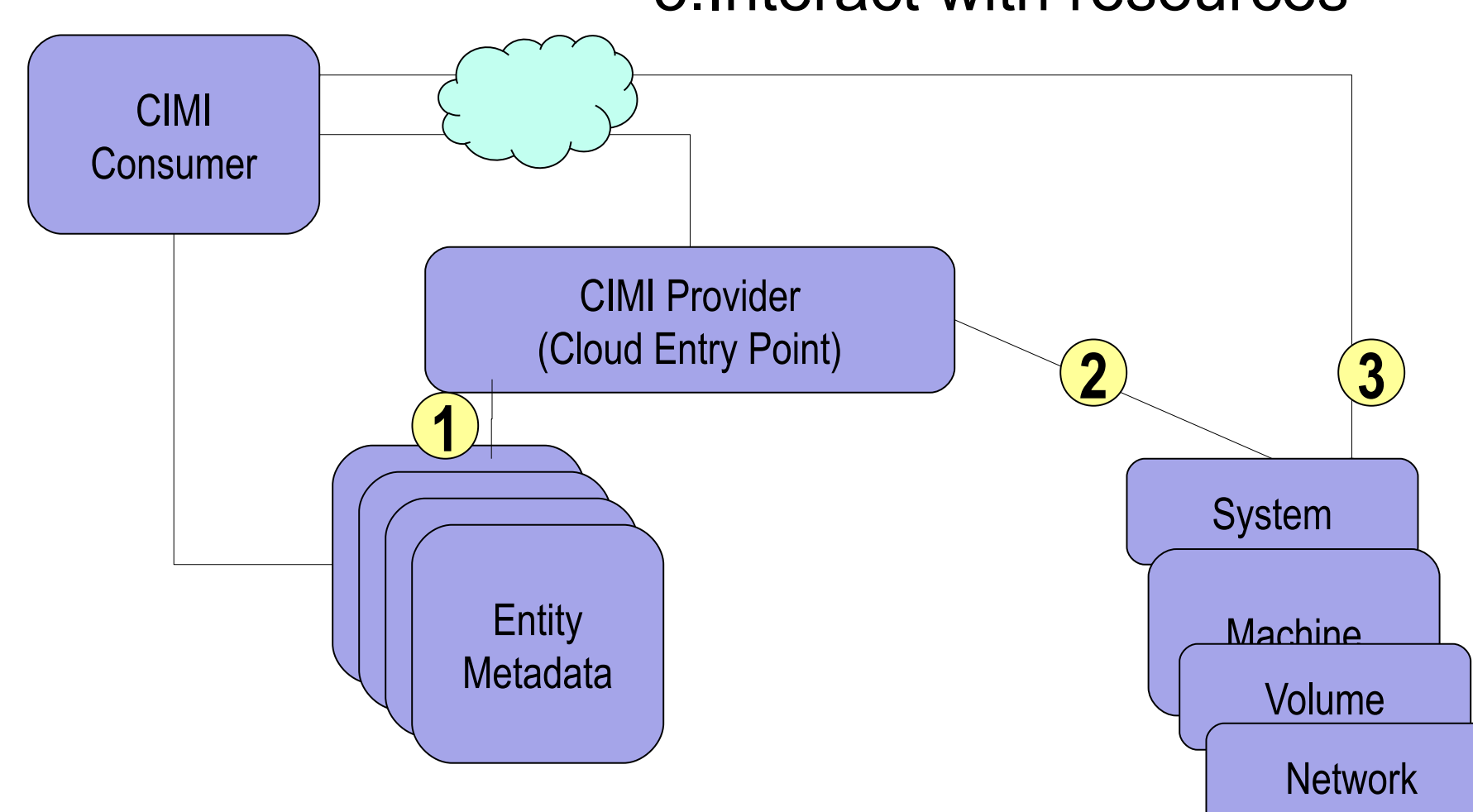
System Resources



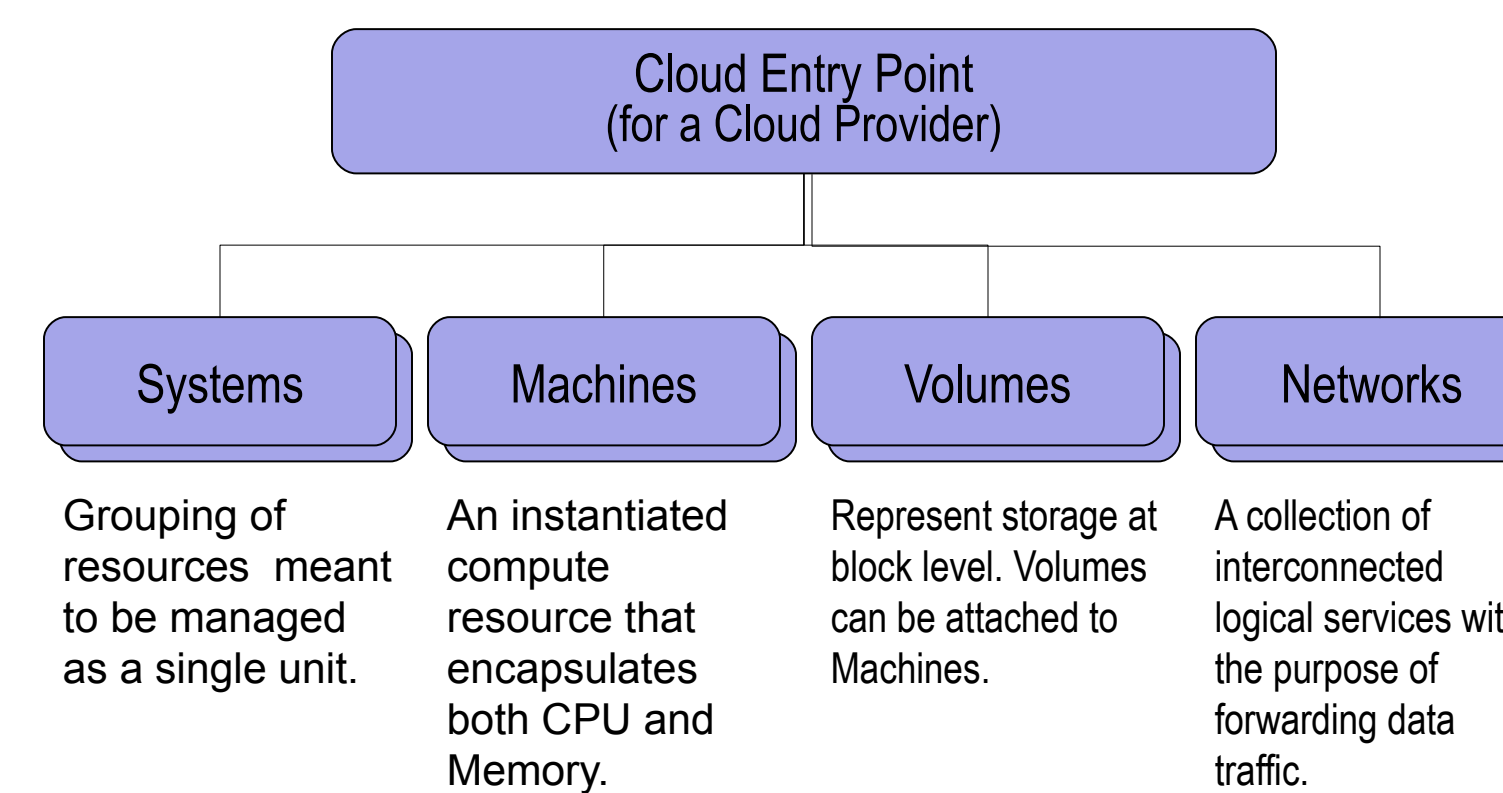
- Meters**
 Represents an available Meter of some property associated to a given entity.
 Can take continuous or interval driven samples.
 Realized resources may have multiple Meters.
- Events & Event Logs**
 Event Logs are registries of Events.
 Persistence duration is configurable.
 Provides a summary (# of high, medium, low...) Events in the log
 Events are notifications of useful information from the Provider
 Have time, type (error, warning...), severity (high, medium, low), contact info, ...
- Jobs**
 Represent a process/action performed by the Provider
 If supported, all operations (sync & async) generate Jobs

Resource Metadata

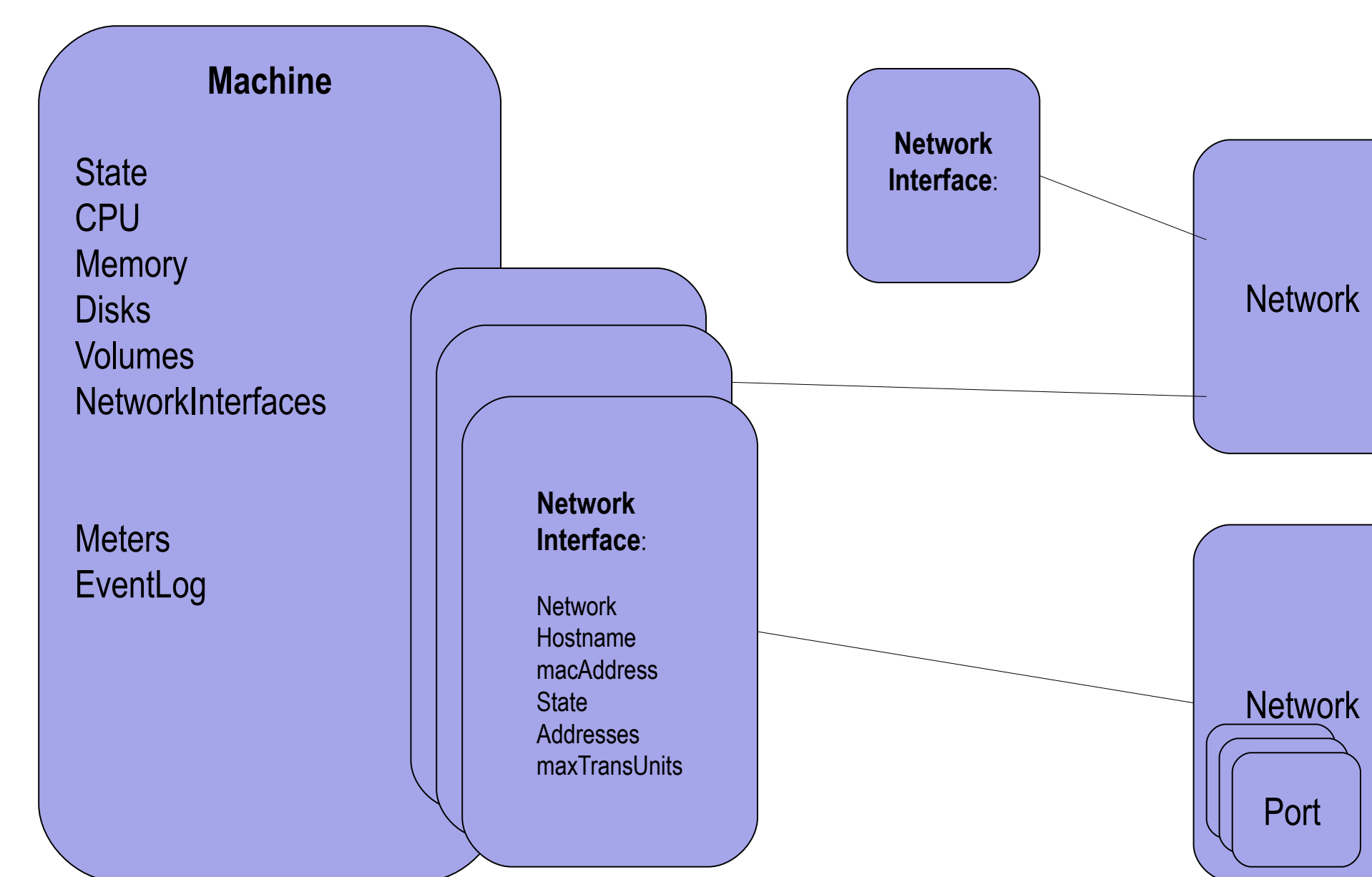
1. Get metadata
2. Get resource URLs
3. Interact with resources



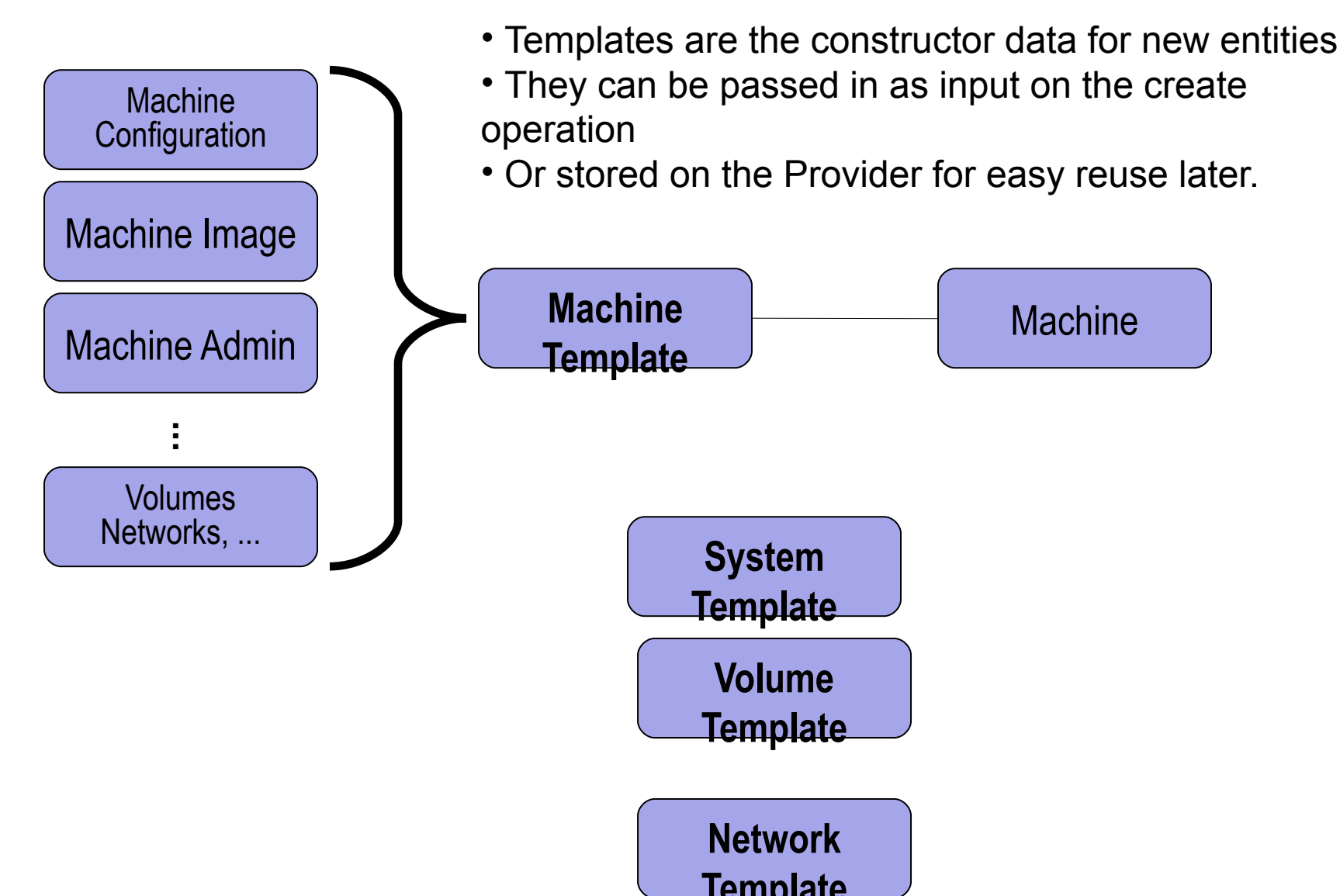
Core Resources



Network of Machines



Resource Creation Pattern



Cloud Infrastructure Management Interface Protocol

- The CIMI specification currently describes a REST/HTTP binding to the model.
 - Other bindings are anticipated.
- This protocol binding follows REST principles and describes mapping of the HTTP protocol verbs to operations on the model.
- Standard HTTP status codes are used to convey the results of the operations.
- Serialization formats for the message body include JSON and XML
- CIMI-CIM describes the model in CIM
 - Allows future use of this model from other protocol bindings (i.e. WS-Man, etc.)

CIMI HTTP/REST Protocol Security

here are many security mechanisms that can be used in conjunction with this specification. This specification does not mandate any particular mechanism(s). Providers shall provide enough information about their security mechanisms so that the Consumer can implement the necessary algorithms to successfully communicate with the Provider.

Moving Workloads from Cloud to Cloud

MI allows the import of an OVF package to create multiple CIMI resources. Support for OVF import and export is optional for a Provider and it is an implementation choice as to how many of the attributes in the OVF package are exposed through CIMI resources. Support for the actual import and export of OVF packages will typically be handled by a hypervisor under the management of the CIMI implementation, and thus the CIMI resources that are created reflect what the hypervisor did upon import.

Contact information

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