

Cloud Layers

Layer -1: The host hardware and OS

Layer 0: Creating and controlling VM's and connecting all the needed services to them

Layer 1: Cloud level clustering

Layer 2: Enterprise level clustering

Layer 3: Vertical industry level clustering

Layer 4: Horizontal sector level clustering

Each layer possesses its own challenges and opportunities for making the layers above it more stable and robust. For example, if the host OS and hardware are constantly crashing, they are clearly not stable or robust enough to build any sort of cloud computing on. At the same time, controlling a site like Google (and all its associated sub-sites and services) clearly requires nothing less than layer 2.

PetiteCloud is designed to live at layer 0 and the minimum amount of layer 1 needed to make layer 1 stable and robust.

Just so the reader can tell what service is being offered at what layer and by whom, here is a random sampling of what is available at each layer:

Layer	Types of Services	Examples
-1	N/A	Physical hardware, FreeBSD, Linux, MacOSX, Windows, etc.
0	IaaS	HyperVisors, NAS's/SAN's, PetiteCloud, network infrastructure, etc.
1	IaaS, PaaS	OpenStack, CloudStack, AWS, Google public cloud, etc.
2	SaaS	Google (not including public cloud), MSN/Bing, etc.
3,4	BPaaS	Healthcare.gov ¹

¹ Even though very badly implemented, Healthcare.gov is the only well-known example of layers 3 and 4.