Cloud Vs Freedom?

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What is the "cloud"?

A vague term usually referring to one or all of the following:

- IaaS
  - AWS
  - OpenStack providers
- PaaS
  - Google App Engine
  - Heroku
- SaaS (SaaSS?)
  - Google Apps (e-mail, word processor, spreadsheets, chat)
  - DropBox

Why do these technologies matter?

- Cheaper: pay only for the resources you require (in theory).
- Cleaner: consolidation of hardware reduces carbon emissions through efficiency.
- Convenience:
  - IaaS: No need to deal with hardware or a fast Internet connection.
  - PaaS: No need to deal with configuration of server software.
  - SaaS: No need to install software. Data becomes available from any computer.

IaaS

- Generally geared towards administrators. Basically renting hardware.

- You get a VM, and can generally run and do whatever you want with it.

- The possibility exists for the host to do the same.

- Provider can kill your access. eg. Recall AWS and WikiLeaks

- Danger level: low-medium, depending on implementation and precautions taken.

PaaS

- Generally geared towards developers who hate sysadmin duties (ie. often you do not even get a shell).

- Usually requires investing time to have your application support the specific target platform.

- Possible problems with vendor lock-in. Provider can change platform specifications, making this even more serious.

- Do not have full control over your software stack. Provider can kill your access.

- Provider has full access to data.

- Danger level: high

SaaS

- Generally geared towards end users.

- Provider has full access to your data.

- Provider can change the software however and whenever they wish.

- Say goodbye to privacy - provider can see *who*, *what*, *when* and *where* regarding application usage – no need for DRM and spyware!

- Vendor lock-in, it may be difficult to get your data back out – to the point of being impractical to do so. Interfaces are usually proprietary and unique to a particular provider.

- Provider can limit or kill your access.

- Danger level: extreme

IaaS alternatives

- The safest way to ensure that a provider cannot access your data is to not use a provider.

- OpenStack, Eucalyptus, etc. are options to most directly replace an IaaS provider interface, but may be overkill for personal use.

- Various tools can manage Xen and KVM virtual machines directly.

PaaS alternatives

- Docker.io

- Otherwise, a configuration management system (Salt Stack, Puppet, Chef, etc.) with provided templates would reduce the work considerably, however this may require a time investment greater than other PaaS providers if new to these technologies.

SaaS alternatives

- Depends on the application

- Can you host it yourself?

- If not, can you run it using existing free software, and upload the data to ownCloud?