

OPEN CLOUD

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Seyed Abolfazl Hoseini  
Tampere University of Technology  
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# OUTLINE

- Definitions
- Cloud Briefly
- Cloud Computing Briefly
- Advantages of Cloud
- Open Cloud (OC)
- OC Goals
- OC Characteristics
- OC Principles
- OC Requirements
- Open Computing Standards
- OC Initiatives

# DEFINITION: CLOUD

- Cloud is recently become a center of attention
- Is platform lets developers write applications that run in the cloud, or use services provided from the cloud, or both
- The other name of this platforms names is: on-demand platform

# DEFINITION: COMPUTING

- It is about to change: your applications and documents are going to move from the desktop into the cloud

# DEFINITION: CLOUD COMPUTING

- Applications and files are hosted on a “cloud” consisting of thousands of computers and servers, all linked together and accessible via the Internet
- Cloud computing facilitates group collaboration
- If you are using:
  - Gmail or Hotmail
  - Google Calendar or Apple MobileMe
  - Flickr or Picasa Web Albumsthen, you are computing in the cloud

# DEFINITION: CLOUD COMPUTING

- But technically, cloud computing refers to applications and services that run on a distributed network using virtualized resources and accessed by common Internet protocols and networking standards

# WHAT IT IS...

- Internet becomes large enough that a diagram no longer wishes to differentiate between individual physical systems
- Encompasses multiple companies, multiple servers, and multiple networks
- Connecting hundreds or thousands of computers together
- Simply a metaphor for the internet, based on the symbol used to represent the worldwide network in computer network diagrams

# WHAT IT IS...

- Resources are available to be accessed from the cloud at any time, and from any location via the internet
- 'IT on demand' or 'utility computing': you simply purchase the IT service you require as you would any other utility
- Web-based tasks instead of being desktop-based



# WHAT IT IS NOT...

- Internet given a different name
- Applications running in the Internet
- Network computing (documents are stored in one network only)
- Traditional outsourcing (company farms out its computing services to outside firms)

# WHAT Google™ SAYS

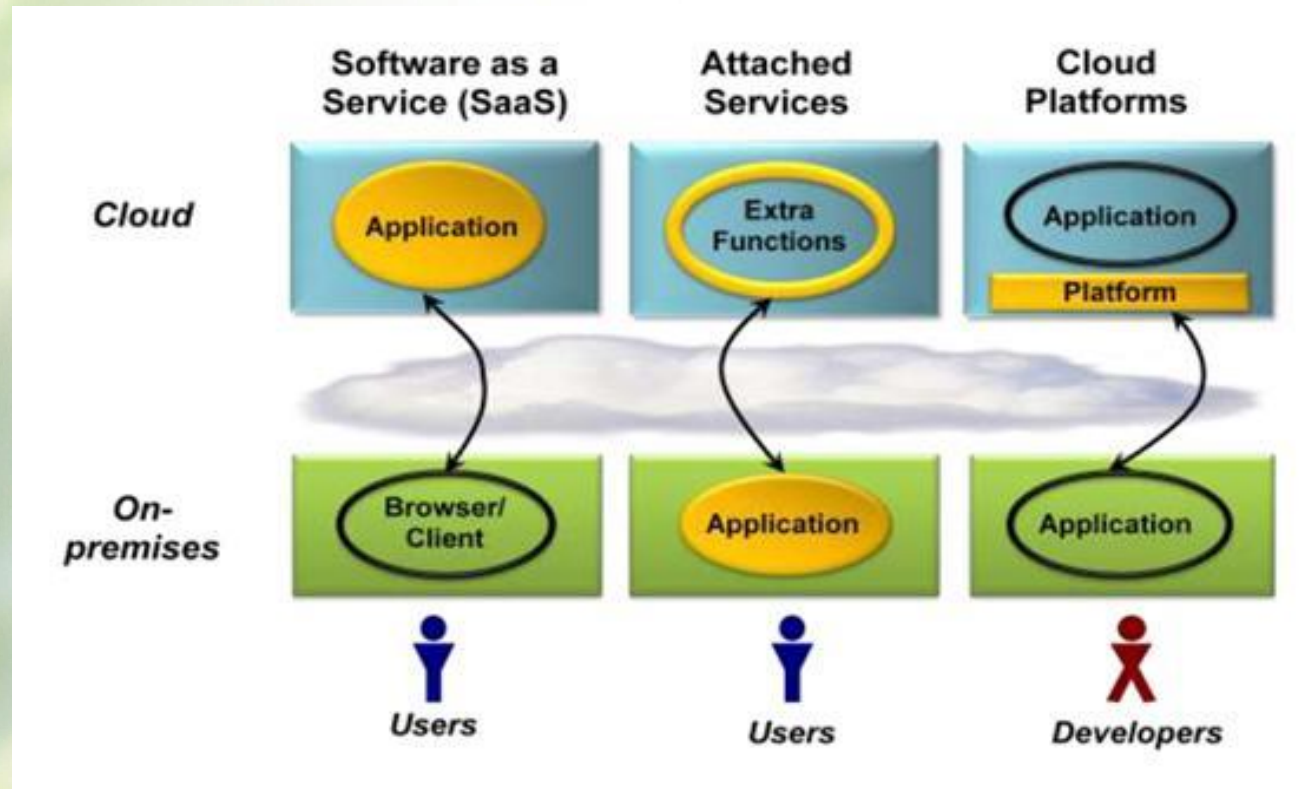
Cloud computing is user-centric: Once you as a user is connected to the cloud, whatever is stored there. Data is yours, storage is yours and you can even share it with others.

# WHAT Google™ SAYS

- Cloud computing is task-centric: Instead of focusing on the application and what it can do, the focus is on what you need done and how application can do it for you. Traditional applications like word processing, spreadsheets, email, and so on are becoming less important than the documents they create.

# CLOUD PLATFORMS IN CONTEXT

## THREE KINDS OF CLOUD SERVICE



Software as a service (SaaS)

Attached services

Cloud platforms

# WHAT DOES IT COMPRISE

- Cloud Application

Where applications are run and interacted with via a web browser, hosted desktop or remote client

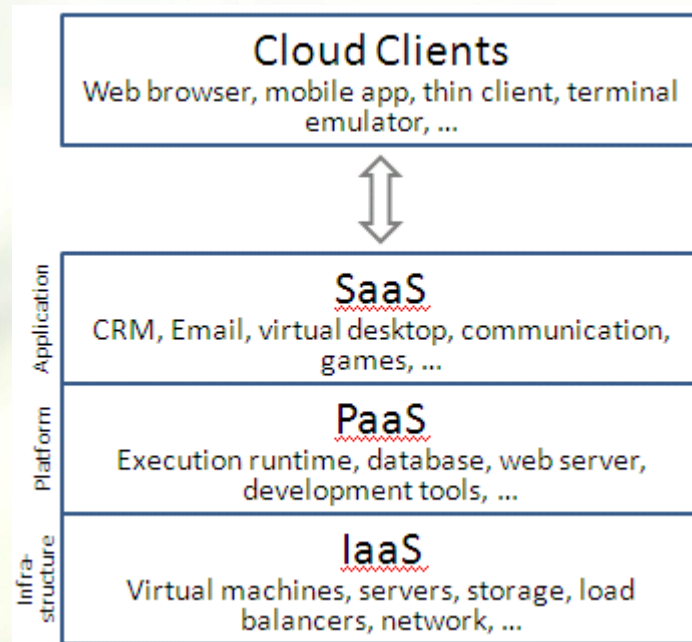
- Cloud Platform

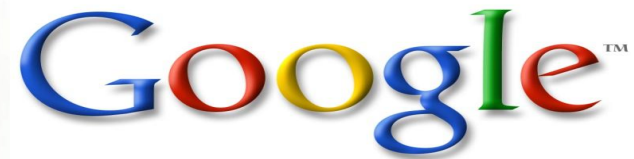
The middle layer of the cloud pyramid, which provides a computing platform or framework as a service.

# WHAT DOES IT COMPRISE

- Cloud Infrastructure

The foundation of the cloud pyramid is the delivery of IT infrastructure through virtualization.





Google offer free software to users  
Google has market for user-facing software  
This is the classic Software as a Service



Windows Azure is an open and flexible  
cloud platform built for you.



One of the most successful cloud-based businesses  
Infrastructure as a Service  
Lets you rent virtual computers on Amazon's own infrastructure

# TYPE OF CLOUD COMPUTING

- **Public Cloud ('external')**

Often virtualized resources available over the Internet from an off-site third-party provider, which divides up resources and bills its customers on a 'utility' basis

- **Private Cloud ('corporate' or 'internal')**

Used to denote a proprietary computing architecture providing hosted services on private networks



# TYPE OF CLOUD COMPUTING

- Hybrid Cloud

Combining resources from both internal and external providers will become the most popular choice for enterprises.

# FROM IT TO CLOUD

- Removal / reduction of capital expenditure
- Reduced administration costs
- Improved resource utilization
- Economies of scale
- Scalability on demand
- Quick and easy implementation
- Quality of service
- Improve document format compatibility

# FROM IT TO CLOUD

- Anywhere Access
- Technical Support
- Disaster recovery / backup
- Reliability
- Outsourced IT management
- Simplified maintenance and upgrade
- Increased data safety
- Easier group collaboration

# WHY OPEN CLOUD?

- As the cloud provider typically has to store data in order to provide the service, it is not simply possible to start consuming services from another provider — you need to first export the data from the first provider in an open standard format and import it into the second.

# OPEN CLOUD

- By using **open standards** in this fashion it is possible to guarantee important user freedoms while also allowing businesses to make money — this is what we mean when we say "**Open Cloud**".

# THE GOALS OF OPEN CLOUD

## BUSINESS PERSPECTIVES

**\*Cloud services will be as open as possible\***

### 1. Choice

Open cloud will make it easy for us to use a different provider or architecture as the business environment changes.

If the organization deploys a private cloud, they can choose between providers as they extend their capacity and/or functional capabilities. Resources that would have been spent on a difficult migration can instead be spent on innovation.

# THE GOALS OF OPEN CLOUD

## BUSINESS PERSPECTIVES

### 2. Flexibility

No matter which cloud provider and architecture an organization uses, an open cloud will make it easy for them to work with other groups, even if those other groups choose different providers and architectures.

An open cloud will make it easy for organizations to interoperate between different cloud providers.

# THE GOALS OF OPEN CLOUD

## BUSINESS PERSPECTIVES

### 3. Speed and Agility

One of the value propositions of cloud computing is the ability to scale hardware and software as needed.

Using open interfaces allows organizations to build new solutions that integrate public clouds, private clouds and current IT systems.

As the conditions of the organization change, an open cloud will let the organization respond with speed and agility.



# THE GOALS OF OPEN CLOUD

## BUSINESS PERSPECTIVES

### 4. Skills

A side effect of an open cloud is the availability of skilled professionals. If there are many proprietary programming models, a given IT professional is unlikely to know more than a few of them.

With an open cloud, there will be a smaller set of new technologies to learn (especially when existing technologies are utilized), greatly enhancing the chances that the organization can find someone with the necessary skills.

# OPEN CLOUD CHARACTERISTICS

- Is open source

Allows adopters to control their particular implementation

- Has a viable, independent community

It is not only about codes and licenses, the community associated with the code and how it's governed is important

- Is based on open standards

Explained in the later slides

# OPEN CLOUD CHARACTERISTICS

- Intellectual property rights owners offer freedom to use the technology
- Is deployable on your choice of infrastructure
- Is pluggable and extensible with an open API
- Enables portability to other clouds

# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

As cloud computing matures, there are several key principles that must be followed to ensure the cloud is open and delivers the choice, flexibility and agility organizations demand:

# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

1. Cloud providers must work together to ensure that the challenges to cloud adoption (security, integration, portability, interoperability, governance/management, metering/monitoring) are addressed through open collaboration and the appropriate use of standards.

# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

2. Cloud providers **must not** use their market position to lock customers into their particular platforms and limit their choice of providers.

# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

3. Cloud providers **must use** and **adopt existing standards** wherever appropriate.

The IT industry has invested heavily in existing standards and standards organizations; there is **no need to duplicate** or reinvent them.

# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

4. When new standards (or adjustments to existing standards) are needed, **we must** avoid creating too many standards.

**We must** ensure that standards promote innovation and do not inhibit it.



# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

5. Any community effort around the open cloud **should be** driven by customer needs, **not** merely the technical needs of cloud providers, and **should be tested or verified** against real customer requirements.

# PRINCIPLES OF AN OPEN CLOUD

## 6 Ps

6. Cloud computing standards organizations, advocacy groups, and communities **should work** together and stay coordinated, making sure that efforts do not conflict or overlap.

# OPEN CLOUD PRE-REQUIREMENTS

*\*Open Cloud must meet the following requirements\**

- Open Formats: All **user data** and metadata **must** be represented in Open Standard formats.
- Open Interfaces: All **functionality** **must** be exposed by way of Open Standard interfaces.

# OPEN STANDARDS PRE-REQUIREMENTS

*\*Open Standards must meet the following requirements\**

- Copyrights: The standard **must** be documented in all its details, published and both accessible and [re]usable **free of charge**.
- Patents: Any patents possibly present on [parts of] the standard **must** be irrevocably made available on a **royalty-free basis** \*.

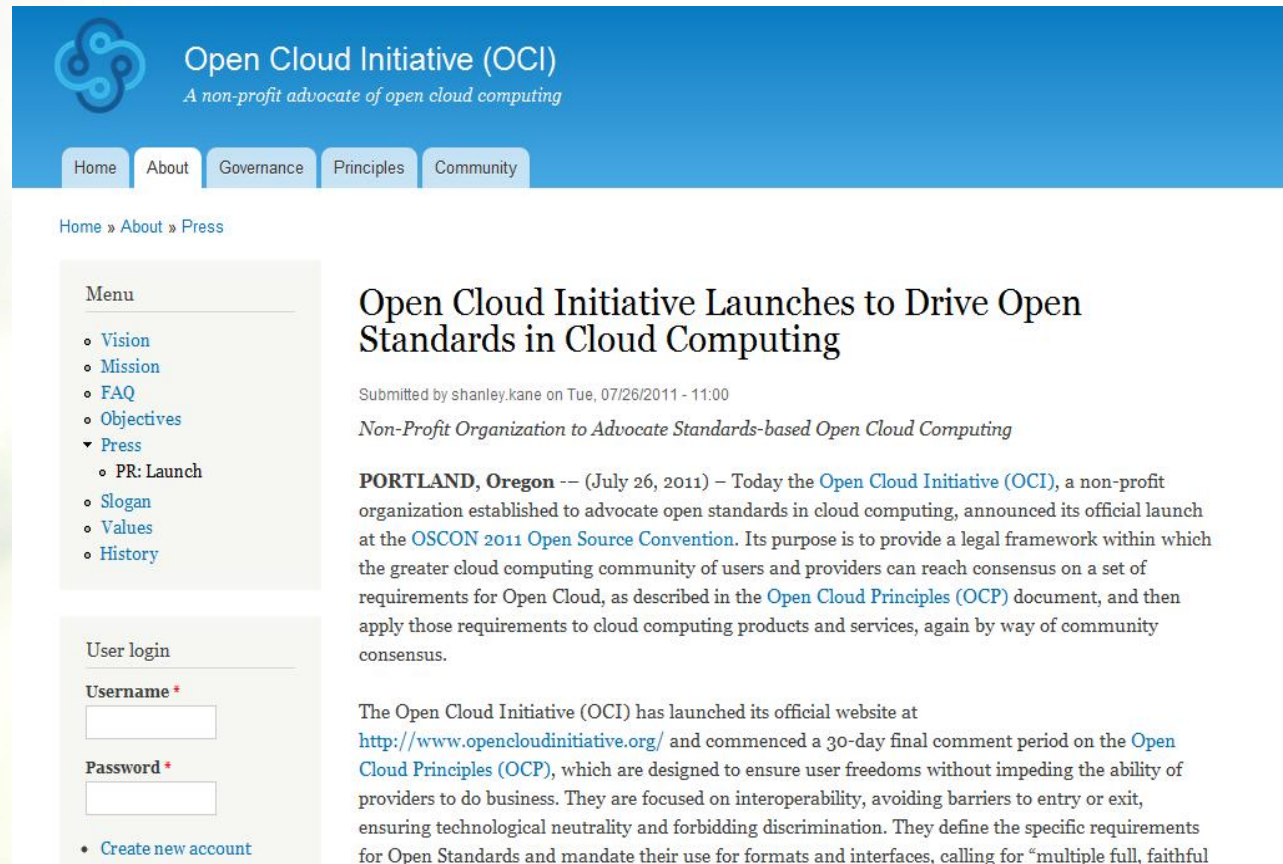
\* royalty-free, or RF, refers to the right to use copyrighted material or intellectual property without the need to pay royalties for each use or per volume sold, or some time period of use or sales.

# OPEN STANDARDS PRE-REQUIREMENTS

- Trademarks: Any trademarks possibly present on identifier(s) **must** be used for **non-discriminatory enforcement of compliance only**.
- Implementations: There **must** be multiple full, faithful, independent and interoperable implementations (for both client and server where applicable) and at least one such implementation **must** be **licensed** in its entirety under an Open Source Initiative (OSI) approved license or placed into the public domain.

# OPEN CLOUD INITIATIVE OCI

A non-profit organization established to advocate open standards in cloud computing, announced its official launch at the [OSCON 2011 Open Source Convention](#)



The screenshot shows the Open Cloud Initiative (OCI) website. The header features the OCI logo and the text "Open Cloud Initiative (OCI) A non-profit advocate of open cloud computing". Below the header is a navigation menu with links for Home, About, Governance, Principles, and Community. The main content area displays a news article titled "Open Cloud Initiative Launches to Drive Open Standards in Cloud Computing". The article is dated July 26, 2011, and is attributed to shanley.kane. The article text describes the OCI's mission to provide a legal framework for open standards in cloud computing. On the left side of the page, there is a "Menu" section with links for Vision, Mission, FAQ, Objectives, Press, Slogan, Values, and History. Below the menu is a "User login" section with fields for Username and Password, and a link to "Create new account".

Open Cloud Initiative (OCI)  
A non-profit advocate of open cloud computing

Home About Governance Principles Community

Home » About » Press

Menu

- Vision
- Mission
- FAQ
- Objectives
- ▼ Press
  - PR: Launch
- Slogan
- Values
- History

User login

Username \*

Password \*

• [Create new account](#)

## Open Cloud Initiative Launches to Drive Open Standards in Cloud Computing

Submitted by shanley.kane on Tue, 07/26/2011 - 11:00

*Non-Profit Organization to Advocate Standards-based Open Cloud Computing*

**PORTLAND, Oregon** -- (July 26, 2011) – Today the [Open Cloud Initiative \(OCI\)](#), a non-profit organization established to advocate open standards in cloud computing, announced its official launch at the [OSCON 2011 Open Source Convention](#). Its purpose is to provide a legal framework within which the greater cloud computing community of users and providers can reach consensus on a set of requirements for Open Cloud, as described in the [Open Cloud Principles \(OCP\)](#) document, and then apply those requirements to cloud computing products and services, again by way of community consensus.

The Open Cloud Initiative (OCI) has launched its official website at <http://www.opencloudinitiative.org/> and commenced a 30-day final comment period on the [Open Cloud Principles \(OCP\)](#), which are designed to ensure user freedoms without impeding the ability of providers to do business. They are focused on interoperability, avoiding barriers to entry or exit, ensuring technological neutrality and forbidding discrimination. They define the specific requirements for Open Standards and mandate their use for formats and interfaces, calling for “multiple full, faithful

# OCI PURPOSE

Its purpose is:

to provide a **legal framework** within which the greater cloud computing community of users and providers can reach consensus on a set of requirements for Open Cloud .

Then **apply those requirements** to cloud computing products and services, again by way of community consensus.

# THE MAIN OCI PURPOSE

The **primary purpose** of the **Open Cloud Initiative (OCI)** is to define “**Open Cloud**” by way of community consensus and advocate for universal adoption of Open Standard formats and interfaces.





# SAM JOHNSTON

Sam Johnston, founder and president said:

“Inspired by the [Open Source Initiative \(OSI\)](#),  
we aim to find a balance between  
protecting important user freedoms  
and enabling providers to build successful businesses.”

# OCI PASSPORT

- Legal Name: *Open Cloud Initiative*
- Slogan: *A non-profit advocate of open cloud computing*
- Vision: *A global cloud of clouds (“Intercloud”), interconnected by open standard interfaces exchanging open standard formats (“Open Cloud”).*
- Mission: *To find a balance between cloud computing users and providers by deriving a community consensus “Open Cloud” definition and advocating its universal adoption.*

# OBJECTIVES OF OCI

- Educate the public about open cloud
- Develop and maintain a set of open cloud principles by way of an open community consensus process
- Encourage the computing industry to participate in development of open cloud products & services
- Persuade organizations and vendors to comply with the open cloud principles

# OBJECTIVES OF OCI

- Provide resources for sharing information about open cloud products & services
- Manage a certification program to allow use of one or more certification marks in association with open cloud products & services that satisfy the open cloud principles, as determined by way of an open community consensus process
- Advocate for open cloud principles

# THE CORE VALUE OF OCI



*Integrity*

*Equality*

*Community engagement*

*Transparency*

*and*

*Accountability*

# OPEN CLOUD MANIFESTO



The graphic features a dark grey background with a large orange rounded rectangle in the center. At the top left of the orange area is a blue cloud icon. To its right, the text 'list of supporters' is followed by a white icon of two people. Below this, the main title 'open cloud manifesto' is written in a large, dark font. Underneath the title, the text 'dedicated to the belief that the cloud should be open' is displayed in a smaller, white font. At the bottom of the orange area, the text 'view the manifesto!' is followed by a black arrow pointing to a circular icon containing a document symbol. To the left of the orange area, three white icons are stacked vertically: an information icon labeled 'about', a question mark icon labeled 'faqs', and a circular arrow icon labeled 'blogs, wikis, and more'. At the bottom left of the dark grey area, there is a white icon of a person with a plus sign, followed by the text 'sign up to be added to the supporters list'. On the right side of the orange area, a red sticky note is pinned, containing the text 'Check out the latest version of the Cloud Computing Uses Cases White Paper - V4. It includes updates on SLAs!!' and a 'Link' label.

list of supporters

open cloud manifesto

dedicated to the belief that the cloud should be open

view the manifesto!

sign up to be added to the supporters list

about

faqs

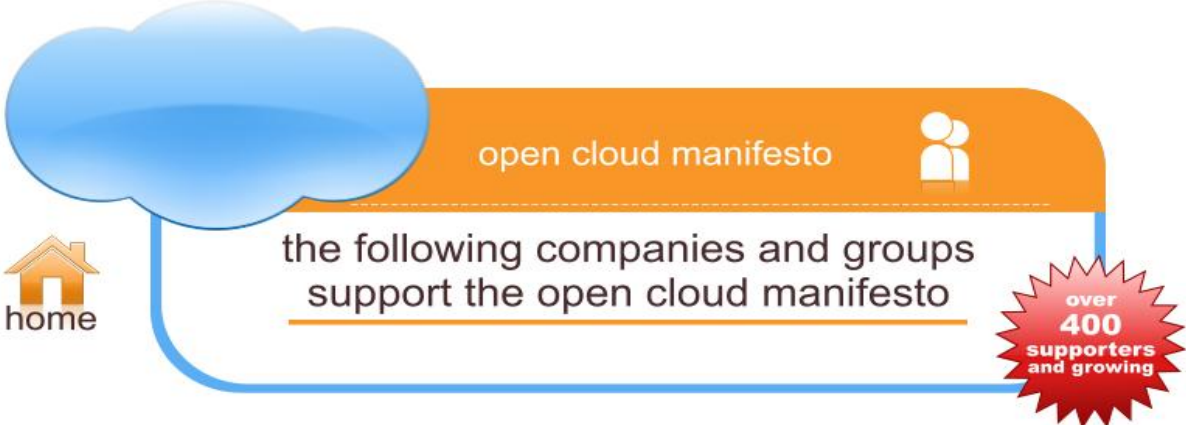
blogs, wikis, and more

Check out the latest version of the Cloud Computing Uses Cases White Paper - V4. It includes updates on SLAs!!

Link

<http://www.opencloudmanifesto.org>

# OPEN CLOUD MANIFESTO



home

open cloud manifesto

the following companies and groups support the open cloud manifesto

over 400 supporters and growing

<a href="#">1-800-HOSTING</a>	<a href="#">enStratus</a>	<a href="#">Parallels</a>
<a href="#">21vianet</a>	<a href="#">Enteros</a>	<a href="#">Patni</a>
<a href="#">7ITCorp</a>	<a href="#">ERISS</a>	<a href="#">PC-Remedies.com</a>
<a href="#">8KMiles</a>	<a href="#">ESSEX</a>	<a href="#">PDS Tech</a>
<a href="#">A10 Networks</a>	<a href="#">EURid</a>	<a href="#">Pentaho</a>
<a href="#">A65.cat</a>	<a href="#">EuropaDev</a>	<a href="#">PHC Software</a>
<a href="#">Abacus Translation Services</a>	<a href="#">eveOS</a>	<a href="#">Pirinea &amp; Company CPA's PC</a>
<a href="#">Abandio</a>	<a href="#">F5</a>	<a href="#">Platinum Solutions</a>
<a href="#">Ability</a>	<a href="#">fastweb.com.cn</a>	<a href="#">PointStar</a>
<a href="#">Abiquo Corp.</a>	<a href="#">FirstMile.US</a>	<a href="#">Powershock</a>
<a href="#">AbetInternational University</a>	<a href="#">Fireworks Software</a>	<a href="#">Prqmr.com</a>

Complete list is available at website:  
<http://www.opencloudmanifesto.org>



# MY POINTS

- Open Cloud is not yet well-known
- Few information sources on the topic
- Few service companies take an approach "from balance sheet to space"
- More research is highly essential and required



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- Manifesto. 2012. Advocate Standards-based Open Cloud Computing. Available at: <http://www.opencloudinitiative.org/> Accessed on February 23, 2012



THANK YOU FOR YOUR KIND ATTENTION