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# Practical Cloud Adoption

For ISVs



**Mahesha Pandit**

**Managing Director – Xilcion**

**Scalable and Cloud Computing Consultant to ICT KTN**

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# Current Trends

- Cloud ~ Cosmic Microwave Background Radiation
  - *Uniform, Faint, glow around everything*
- Adoption is on the rise
  - *And so are the offerings and the noise*
  - *No clear process, standard or approach*
    - “Go with the trusted CSV” seems to be the popular approach
- CIOs “must deal with cloud”
  - *Whether they choose to adopt it or not*
- SaaS building process is still haphazard
  - *No clear process, standard or approach*
  - *Application migration myths*
  - *Who is educating the developers about scalability and system design?*

# Current Needs

- **Methodology for Cloud Adoption**
  - Iterative, Customisable, Practical method
  - Specific guidelines, checklists
  - Maturity and performance assessment models
  - Candidate standards
- **High Level Process for SaaS**
  - Architecture and Design principles based on SOA
  - Reusable in non-cloud environment
- **Tools for application exploration and modernisation**
  - Understand existing applications
    - Sub-systems, boundaries, dependencies, complexity
  - Specific methods for SaaS enabling existing applications



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# A Few Random Myths

- You can “port” the software to cloud
- Legacy applications cannot be taken to the cloud
- SaaS development needs a separate life cycle
- There are no tools that help SaaS development
- All SaaS providers are at same maturity
- SOA and Cloud are different paradigms
- On-premise software use will dwindle significantly very soon



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# Ten Steps to Cloud Enable ISV Software



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# Expectation Setting - 1



## ■ What to Expect?

- **Business:** End of “Business As Usual” for ISVs.
  - There is no maintenance revenue
  - Welcome to the service culture
  - Increased responsibility for security
  - Shared Security Risks
  - Equal focus on both ends of SaaS? “Service” not “Software”
- **Product**
  - Context Aware, Dynamic, Multi-Tenant Architecture
  - Performance challenges as software runs on virtualised resources
  - Sustained focus on rich features and usability
  - Plenty of meta data
  - Explosion in number of users
  - Licensing constraints

# Expectation Setting - 2



## ■ What Not To Expect?

- Automatic performance/scalability
- Automatic Acceptance by end users
- Low risks
- Validity of usual business metrics such as P&L, Revenue etc.
  - How many are joining? Leaving? QoS?
- Sales incentives to remain the same

# Requirements Gathering and Modelling



## ■ Challenges

- Need to understand existing application
- Extended stakeholders
  - Other service providers, even your lawyer
- Elevated expectations from end users
- Modelling

## ■ Dos

- Understand impact of the cloud on the enterprise
  - ... And plan an answer for each
- Go beyond UML for modelling requirements
  - E.g. Use HOOMT for analysing security requirements – Use Cases + Misuse Cases + Mal Activity Swim lane diagrams
- Try innovative tools for *gaining insight* from existing apps

## ■ Don'ts

- Under-estimate requirements from PaaS, IaaS layers and other service providers



# Partners & Dependencies



## ■ Challenges

- Increased dependency on partners

## ■ Dos

- Research into your partner's history, technical and non-technical capabilities
  - And also their product roadmap
- Look for mash-up partners

## ■ Don'ts

- Under-estimate impact of “shared risks”
- Under-estimate the need for internal partners
  - Executive support is still a significant factor

# Platform Selection



## ■ Challenges

- Need for layers of externally procured services

## ■ Dos

- Compare PaaS offerings
  - Run “PaaS Selection Checklist”
  - Choose the platform that comes with many pre-built service layers
- Select “Service” not “Server”
- Consider analytical models for performance evaluation
  - One is available for evaluating server utilization

## ■ Don'ts

- Re-invent underlying layers. Consume external services
- Underestimate impact of “shared risks”

# Design For The Cloud - 1



## ■ Challenges

- Reusing existing software components
- Design for “Availability”, “Scalability”, “Interoperability”, “Performance”
- End user experience design
  - End users are “used to” the best features
- Service Design
  - Not all ISVs are experts in service design
- Integration with on-premise and/or legacy applications
- Proving “Reliability”
- Limitations to customisations
- Data Integrity

# Design For The Cloud - 2



## ■ Partial List of Solutions

- Embrace best practices of SOA
- Adopt open standards
- Understand your “legacy”
  - Even the badly written, most recent application is a legacy
- Try HOOMT: Helps tackle several types of abstractions and NFRs
- Try model driven development methods
- Invest in thorough understanding of scalability and performance design
- Try shared database-shared schema models, clustering and database segmentation as appropriate
- Choose data solution based on value-volume analysis
- Consume other’s services and expose your services
- Allow end users to customise your SaaS based on tools that work on meta data
- Outsource service design to competent external service providers

# Design For The Cloud - 3



- Watch status of Standards
  - National Institute of Standards and Technology
    - Defined Cloud Service Models (IaaS, PaaS, SaaS) and Deployment models (Public, Private, Hybrid, Community)
  - Cloud Computing Interoperability Forum
    - Unique ID for cloud resource: Semantic Cloud Data Model: OWL (Web Ontology Language)/Resource Description Framework
      - WIP, no draft
  - Open Grid Forum
    - Interface existing IaaS – OCCI (Open Cloud Computing Interface)
      - API is available, UML model is pending

# Development



## ■ Challenges

- Faster time to market
- Complex deployment environment
- Lack of skills – design and development
- Lack of tools, methodologies and standards

## ■ Partial List of Solutions

- Go agile
- Develop your developers
  - Teach “Computer Science”, “Art of Scalability”, “OOAD”, “Model Driven Development”, HOOMT
  - Amazon Machine Image, MapReduce, Java, Python, Ruby, C++, PHP, Pearl, .NET, Hibernate, Axis2 ...

# Testing



## ■ Challenges

- Too many scenarios of end user usage
- Several things to test: Application, Infrastructure, Network
- Mandatory “stress test”
- Simulating virtualised environments
- Expensive

## ■ Dos

- Test unit test scripts before coding
- Profile your applications before running performance tests
- Use “Staging Environments” to simulate clouds
- Test Security, Multi-users, Mobile Users, Upgradability, Remote Access, Disaster Recovery, Localisation

## ■ Don'ts

- Don't ignore unit testing. It is still important.
- Don't expect mature SaaS testing tools to arrive any sooner
  - There are a few SOASTA, Gomez, uTest
- Don't under-estimate impact of SaaS testing on shared infrastructure

# Packaging



## ■ Motivators

- Free trials
- “Easy to consume” packages
- Automated payment tools
- Renewal incentives

## ■ Inhibitors

- Complex package combinations
- Package re-configuration, re-branding

## ■ Differentiators

- Smart entitlement management.
  - Get paid for your value addition
- Try Innovative concepts
  - E.g. Cloud Brokering Services



# Deployment



## ■ Challenges

- Continuously live environment
- End user personalisation
- Piloting subsequent releases

## ■ Dos

- Strong response plan for expected/unexpected issues
- Clearly inform end users about new features, releases
- Support adoption with a separate support service
  - Paid/Unpaid. But it should be lead by a *business change management* expert
- Support data migration, master data setup

## ■ Don'ts

- Don't surprise the end user
- Don't ignore end user's learning curve.
  - It might be short but it is still there



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# Maintenance



## ■ Challenges

- SaaS testing isn't easy. Higher number of defects?
- Continuously live environment
- Accountability for defects, issues, outages
- Outages are more expensive

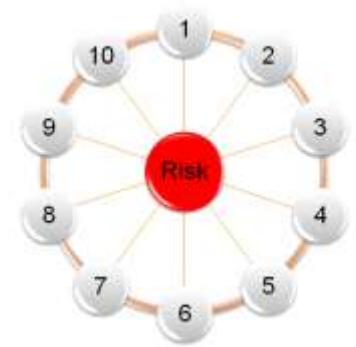
## ■ Dos

- Have a strong and unambiguous roadmap for your product
- Collect and study usage patterns and meta data
  - Use it enhance your SaaS (of course!)
- Provide incentives for your end users to influence the next version of your SaaS

## ■ Don'ts

- Don't ignore end user's learning curve
- Don't ignore your internal users

# Risk Assessment



- **Application Performance Reliability**
  - Delivering the promise
- **Integrated Business Functionality**
  - Ensuring that whole machinery works .... Continuously
- **Compliance Risks**
  - Legal, Financial, Technical
- **Data Security Related Risks**
  - Integrity, Confidentiality, Privacy
- **IPR Related Risks**
  - Ownership, protection
- **Contractual Risks**
  - Service quality, liabilities, penalties
- **Governance Risks**
  - Provisioning, Licensing, Billing



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# In Summary

- SaaS enabling your software needs effort
  - A lot of preparation
  - And a practical, iterative methodology
- Xilcion's Ten Steps Process
  - Expectation Setting -- Requirements Gathering and Modeling -- Partners & Dependencies -- Platform Selection -- Design For The Cloud -- Development -- Testing -- Packaging -- Deployment – Maintenance
  - At each step – Consider Risks and Mitigation
  - Lather, Rinse, Repeat



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# By the way, Who Are “We”?

- **Industry knowledge and updates**  
What’s real? List of service providers, Contacts
- **Independent, Practical Advice**  
About managing technology inspired change including cloud, tool based legacy modernisation
- **Process Assets**  
Procedures, guidelines, checklists, models, metrics
- **Hands-on Technical Service**  
Software design, development, integration, testing, deployment
- **Innovative Training**  
Cloud, non-cloud, management topics

## To-Cloud or Not-to-Cloud Isn’t The Question



### Find answers through our solutions

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <b>Day In the Cloud Workshop</b><br/>Analyse possibilities, benefits, risks and draft architecture and roadmap for cloud adoption</li> <li>• <b>Ten Steps to Cloud Adoption</b><br/>Unique, Multi-Dimensional, Risk Bashing, Repeatable, Stoppable Process</li> <li>• <b>Tool Based Legacy Exploration</b><br/>Gain insight from your Cobol, RPG, VB, FoxPro, C, C++ apps and cookie-cut code for modernisation or SaaS enabling</li> <li>• <b>Adopt a Chosen Cloud</b><br/>Technical Support for implementing any chosen cloud solution</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Migrate Apps To Cloud</b><br/>Re-engineer for scalability, performance and introduce innovative metering and entitlement-management solutions</li> <li>• <b>Manage Cloud Journey</b><br/>Cloud Adoption Project Management</li> <li>• <b>Cloud Training:</b> <ul style="list-style-type: none"> <li>• Cloud Computing Essentials</li> <li>• Ten Steps to Adopt The Cloud</li> <li>• Designing and Developing Cloud Apps</li> <li>• Theory of Cloud Computing</li> <li>• Cloud Services For Entrepreneurs</li> <li>• SOA and the Cloud</li> <li>• Other bespoke topics</li> </ul> </li> </ul> |
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<http://www.Xilcion.com>  
info@xilcion.com  
+44 (0) 78998 41817



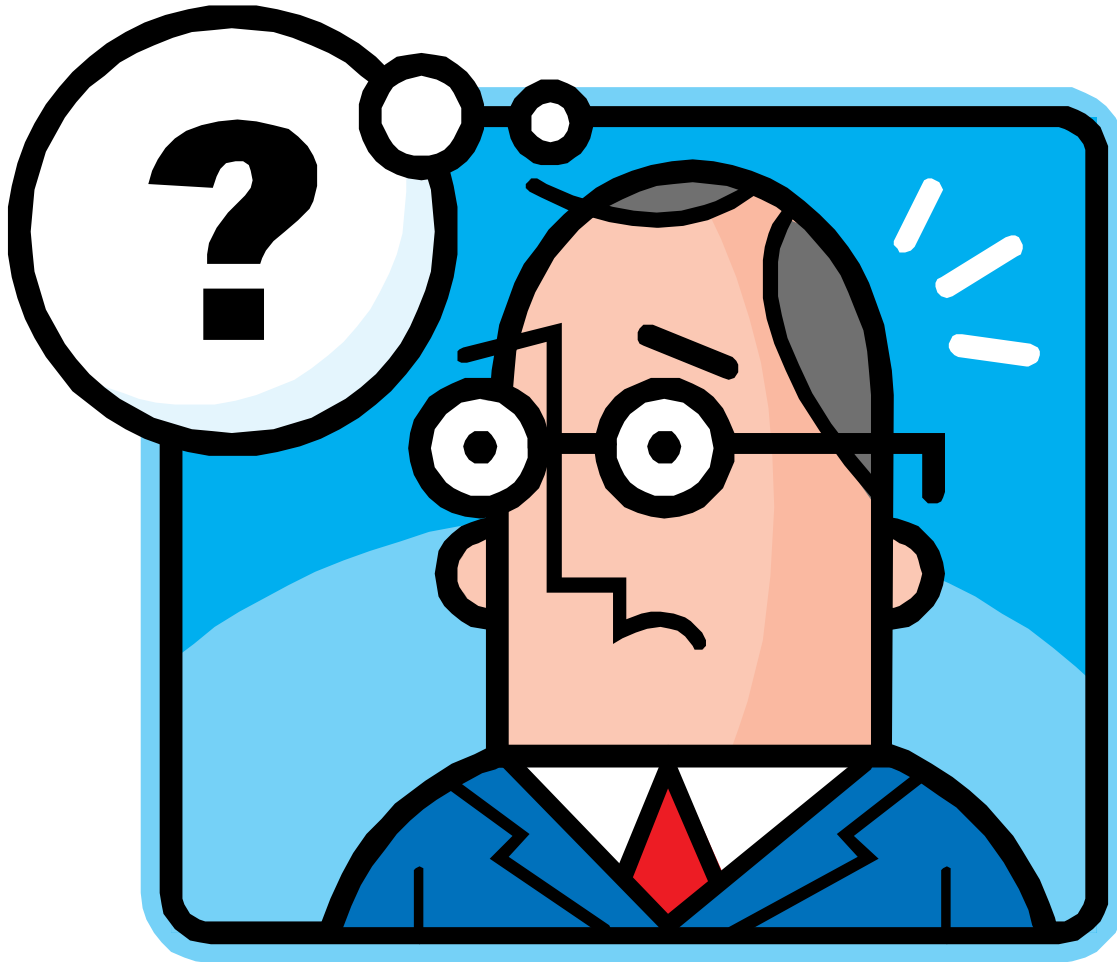
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Technology Strategy Board  
Driving Innovation



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# Cloud Services: A Partial List

## **Calendar and Schedulers:**

Calendars on Google, Yahoo, Microsoft Live, Apple MobileMe, AOL– AppointmentQuest – hitAppoint – Schedulebook – CalendarHub – Hunt Calendars – Famundo – eStudio Calendar – 30Boxes – Trumba – Calendars Net – Jotlet – Jiffle – Presdo – Diarised – Windows Live Events – Schedulebook – Acuity Schedule – iPrioritize – Bla-Bla List – Hiveminder – Remember the Milk – Ta-da List – Tudu List – TaskTHIS – Vitalist – TracksLife – Voo2Do – HiTask – Zoho Planner

**Event Management:** 123 Signup – Acteva – Conference.com – Cvent – Event Wax – eventsbot – RegOnline – Setdot – Tendenci

**CRM:** Salesforce.com – BigContacts – HighRise – bConnections – eStudio Contact Manager – AppleMobileMe Contacts – MyEvents – Plaxo – People Matrix – PipelineDeals – SalesBoom – SalesJunction.com – SalesNexus – Zoho CRM

**Project Management:** @task – AceProject – Basecamp – CopperProject – eStudio TaskTracker – onProject – ProjectDrive – Vertabase – Wrike – Project Insight – Zoho Projects

**Collaborative Editing, Reporting:** Google Docs – Adobe Buzzword – ajaxWrite – Docly – Glide Write – iNetWord – KBdocs – Peepel WebWriter – ThinkFree Write – WriteBoard – Zoho Writer – EditGrid – eXpresso – Glide Crunch – Num Sum – Peepel WebSheet – Sheetser – ThinkFree Calc – ZohoSheet

**Presentations:** Google Docs – Preezo – Zoho Show – BrinkPad – Empressr – Presentation Engine – PreZentist – SlideRocket – ThinkFree Show – Thumbstacks

**Web-based desktops:** ajaxWindows – Deskjump – Desktoptwo – eyeOS – g.ho.st – Glide – Nivio – StartForce – YouOS

**Cloud Storage:** Amazon S3 – Egnyte – ElephantDrive – Microsoft Office Live Workspace – Mosso – myDataBus – Nirvanix – StrrkR – Windows Live SkyDrive

**Databases:** Blist – Cebase – Dabble DB – Lazybase – MyWebDB – QuickBase – TeamDesk – Trackvia – Zoho Creator – Zoho DB & Reports

**Expense Management:** Concur – ExpensAble – ExpensePoint – TimeConsultant

**Budgeting, Financial Statements:** Host Budget – Host Consolidator

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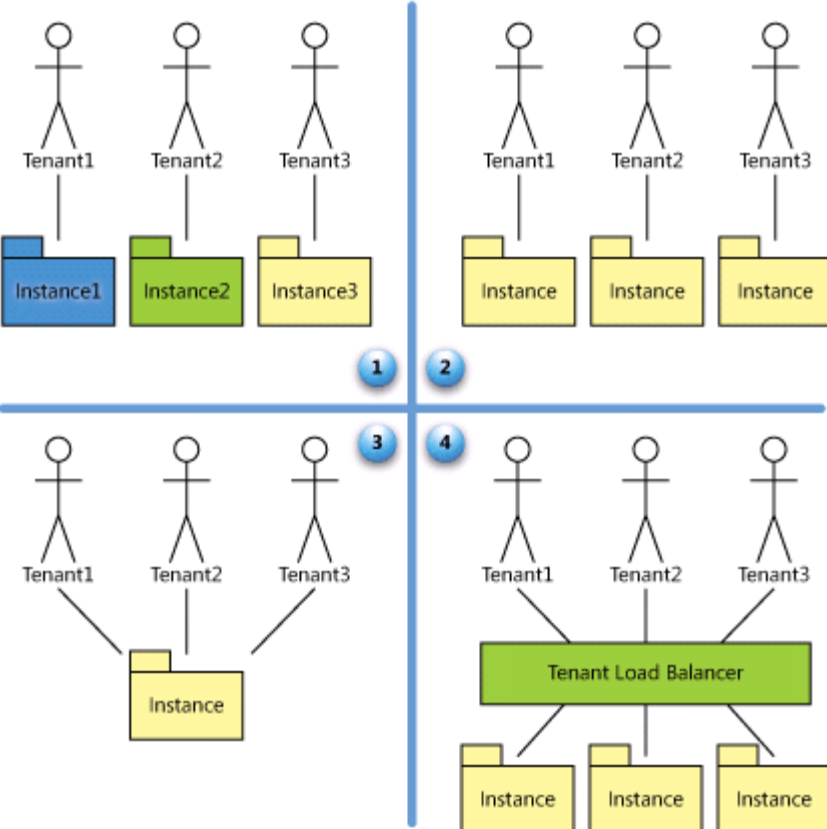


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# MS Four Level SaaS Maturity Model

Adhoc/Custom

Configurable



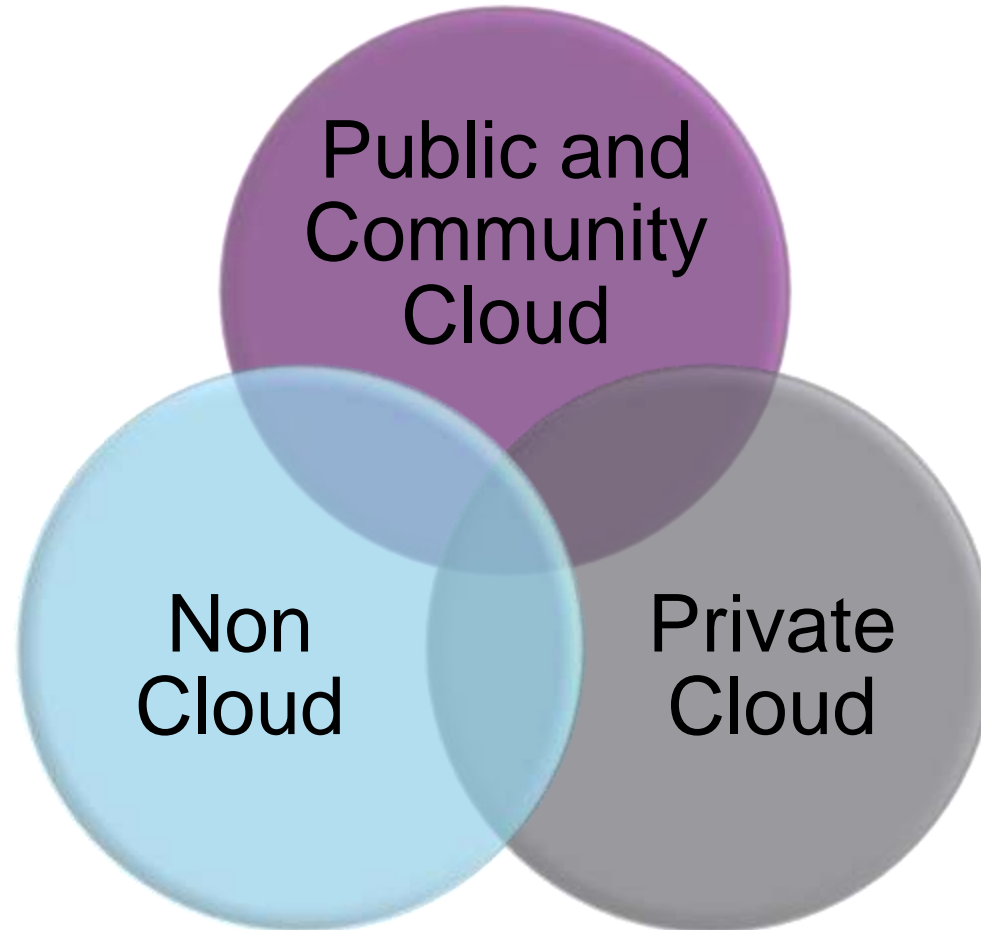
Configurable,  
Multi Tenant  
Efficient

Scalable,  
Configurable,  
Multi Tenant  
Efficient



# Complex Hybrid Environment

Guess where will you be!



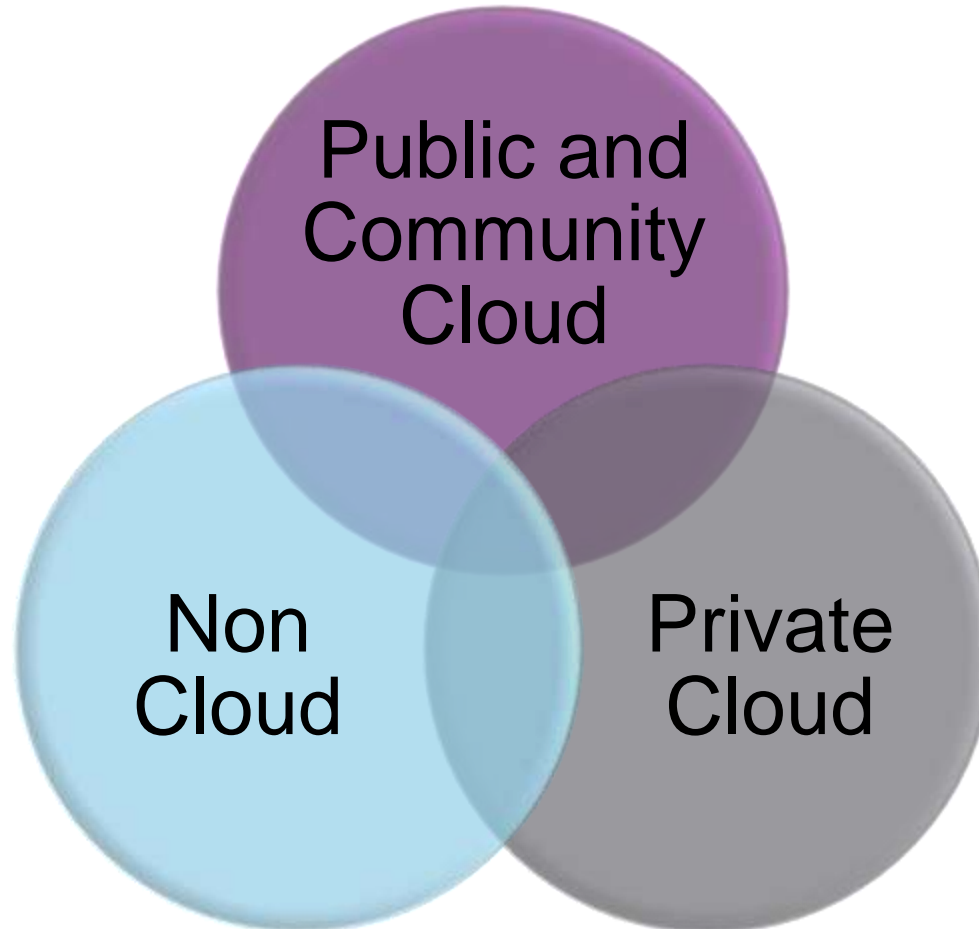
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# Complex Hybrid Environment

Guess where will you be!



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