Cloud Storage Framework – An Integrated Technical Approach and Prototype for Breast Cancer

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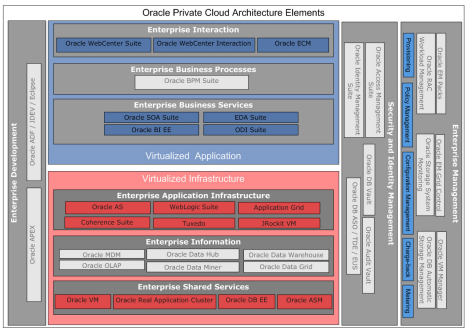
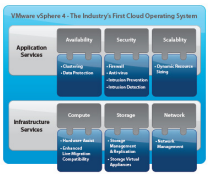
Abstract: Breast cancer is the most common cancer in women and has a worldwide annual incidence of over 1 million cases. Despite current technologies improve the diagnosis and treatment, newer and better forms of technologies are welcome to improve on existing analysis and techniques. Therefore, we are exploring and proposing an integrated technology platform approach based on cloud computing technologies, which would offer a working and collaborative solution for databases, security, storage/backup, bioinformatics, biostatistics and virtualization, and the working prototype is known as Cancer Cloud Computing (CCC). A particular area in CCC, Cloud Storage, is discussed in more details focusing on core technologies and how we arrive at our framework. This is based on integration between Oracle, VMware, HP, Ubuntu and EMC solutions, as well as a number of in-house development.

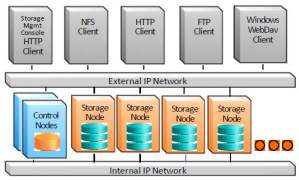
Private Clouds and its Development

Private clouds: In-house, bespoke type of clouds designed and implemented for suiting organisational needs. There are concerns for data security in public clouds, and on contrast, private clouds do not have such an issue and this is suitable for healthcare.

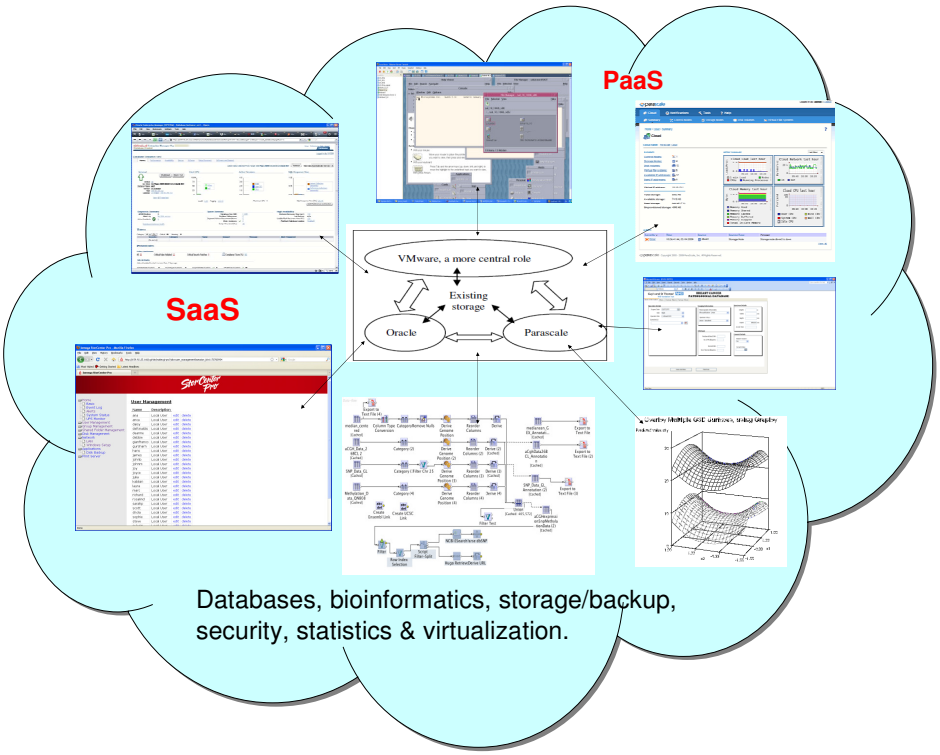
- Stage 1: Exploring available technologies, understanding strength and weaknesses for each key technology, as well as capturing user requirements and fitting requirements into technical plans.
- Stage 2: Proposing a framework based on the outcomes in Stage 1, and carrying out plans for building, experimenting and testing the framework.
- Stage 3: Proposing service oriented architecture for Cloud Storage Framework. Continue for improvement and integrations with other services.

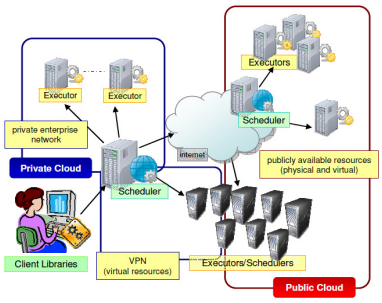






Cloud Storage Framework





- Automation
- Easy backup and archiving
- Snapshots, mirroring
- Replication
- Recovery
- Data Migration
- Test-bed / test environments
- Heterogeneous network & OS support
- Proof of concepts
- Some services are offering user support

Original concepts keep expanding and continuous improvements.

Thank you.