



Curtin University: Cloud Infrastructure Strategy

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 #questnet #52ccis
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Curtin University: Who are we?

- Curtin University of Technology is Western Australia's largest university. Around 44,000 students attend a total of 16 Curtin locations, including campuses in Sydney, Singapore and Sarawak, East Malaysia.

Vision

- To be an international leader shaping the future through our graduates and research, and positioned **among the top 20 universities in Asia by 2020.**

Mission

- Curtin is committed to **innovation** and **excellence** in teaching and research, for the benefit of our students and the wider community.

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Strategic Partnerships



Microsoft®



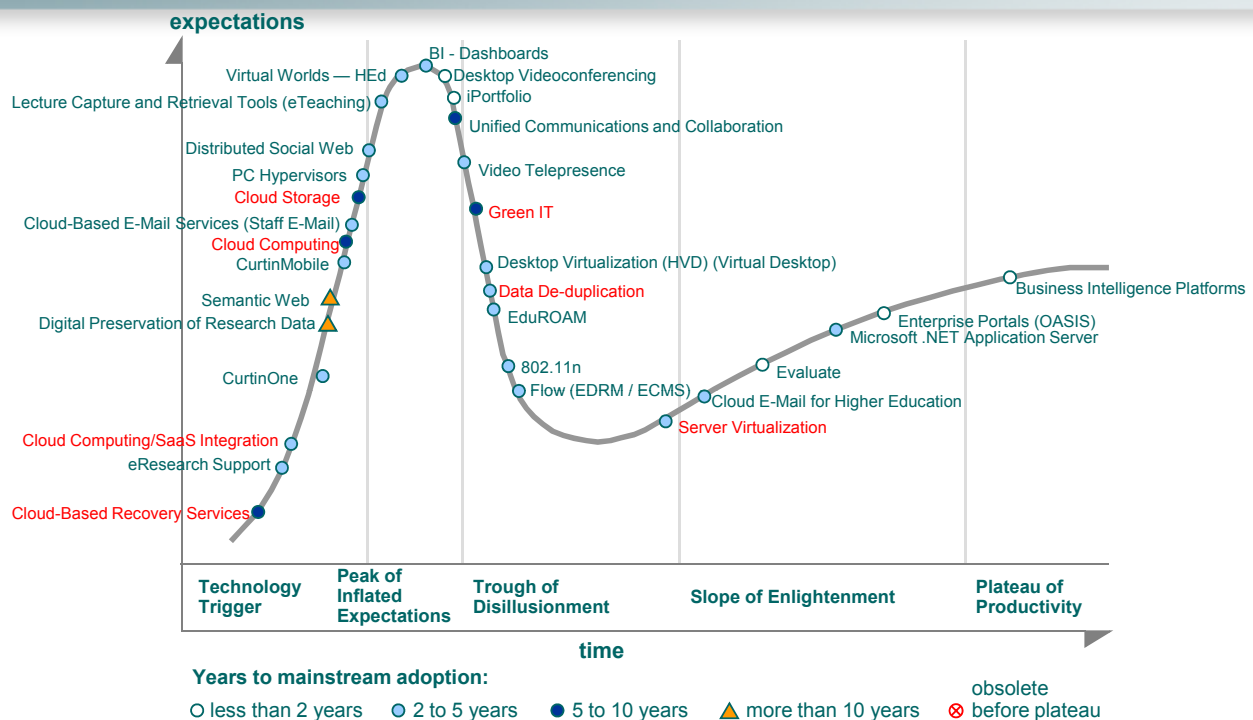
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Curtin Hype Cycle

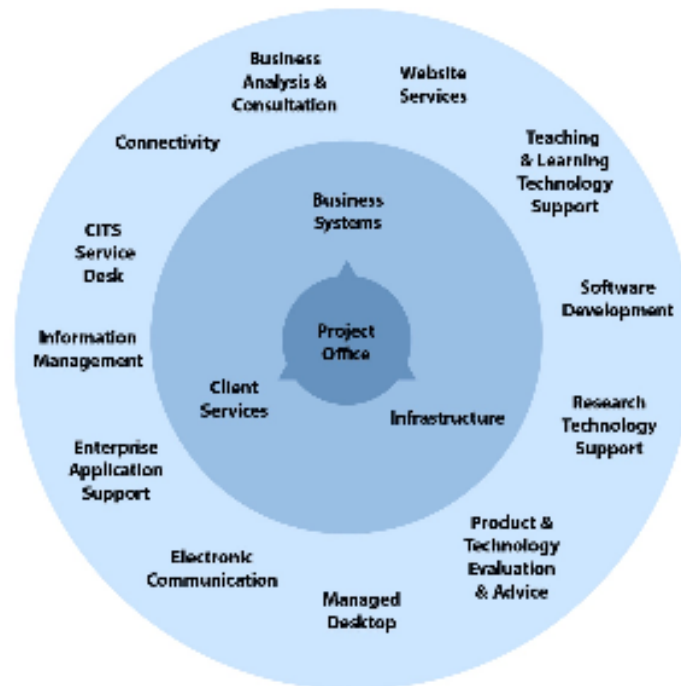


DRAFT MODEL OF CURTIN ICT HYPE CYCLE (BASED ON GARTNER MODEL)

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CITS Service Portfolio



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Curtin Environment

- OS Types:
 - NetWare (unstructured)
 - OSX (digital media)
 - Windows (structured and unstructured)
 - VMware ESX (structured and unstructured)
 - Solaris/unix (structured and unstructured)
- Application types:
 - Microsoft Exchange
 - Databases: Oracle and SQL
 - Digital lectures
- Total size: Approx 150+TB data (Inc VMDKs)

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Cloud Readiness Assessment

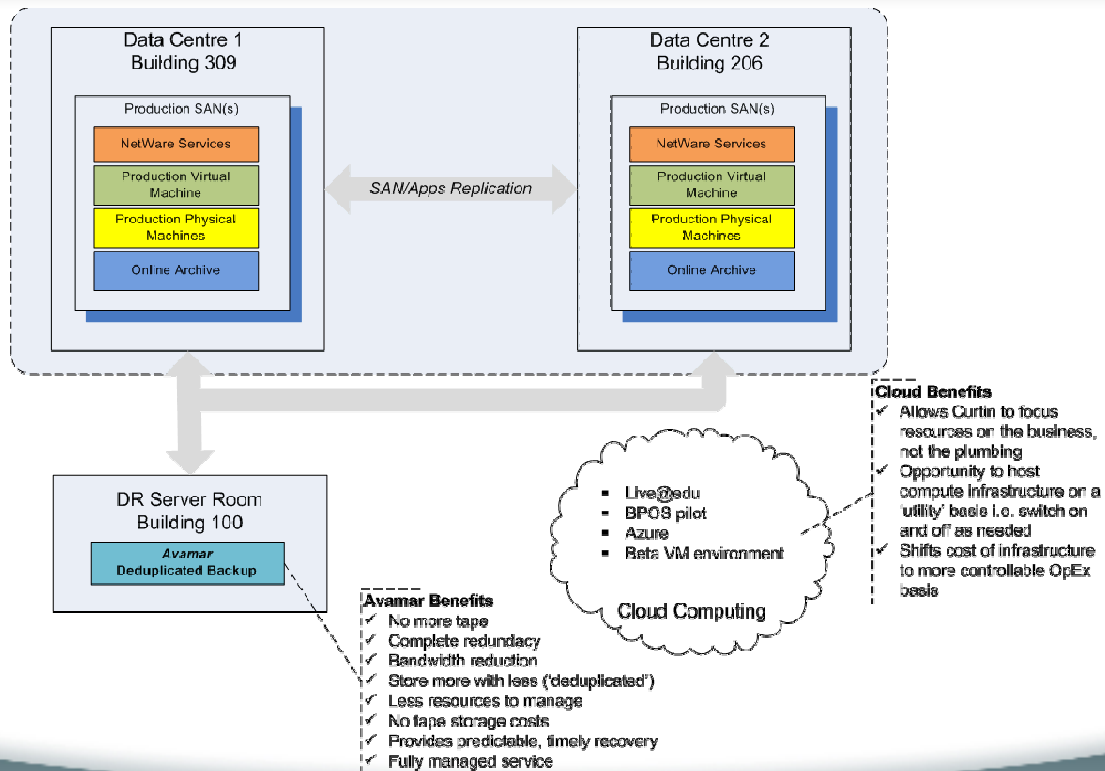
Want to go Cloud but don't know what to do?

- What are the challenges
- What are the goals
- What are the steps
- Who can help you

Curtin's Challenges and Goals

- Business Focus
- Costs
- Backups
- ILM
- Technical Architecture
 - Virtualisation
 - File Services

Current State – Q2 2010



Previous Backup Configuration

- Server backup to tape count approx 300 servers.
- Server backup data transferred over network each week: 15 TB, which is not even a true representation due to failure to complete full backups.
- Separate backup products for Virtual Machine images, with flat file SQL and Oracle backups.
- Not meeting backup window, large backups failing.
- Restores > 30 days old taking min 2 days

Now under Avamar...

- New Avamar server backup count 550+ every night.
- New Avamar backup data transferred over network each week: 2.5 TB due to deduplication.
- New Avamar controls backups for all Operating systems and integrates with all application types.

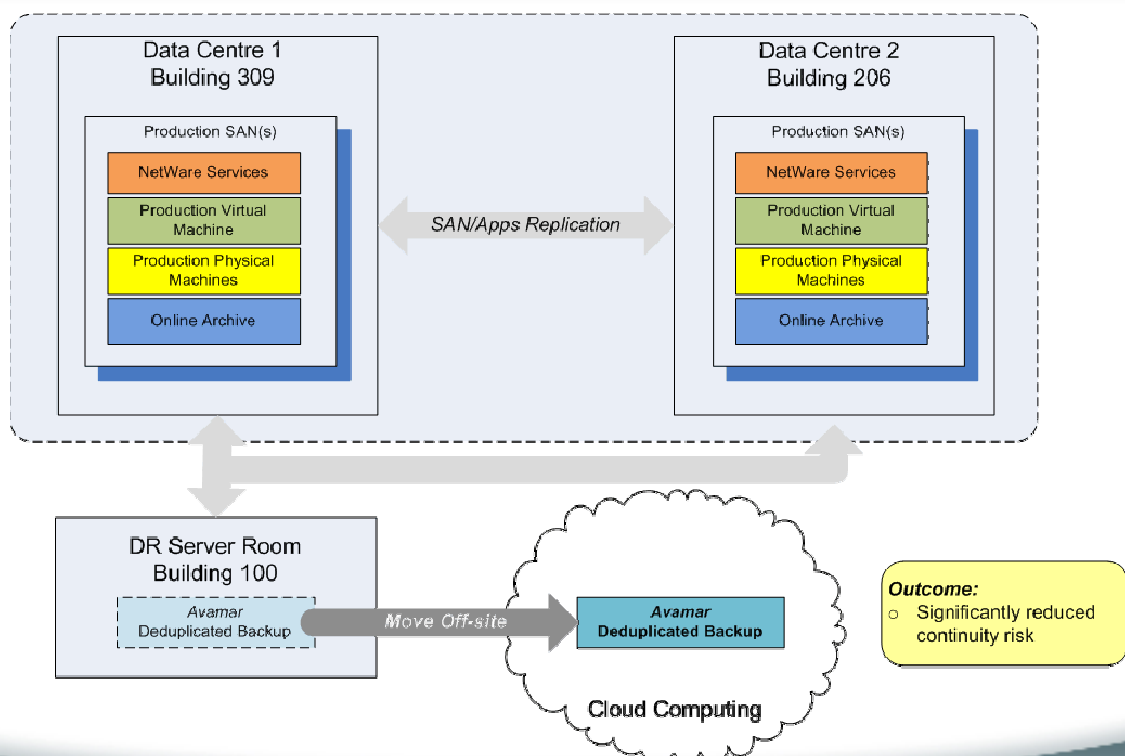
Success Stories

- 5 Remote site backups and replication to head office: takes between 15 min to 2 hours every night.
- No need for tape handling and tape storage.
- Previous attempted WAN backup solution taking 5 days to complete backups.
- More timely restores performed
 - Exchange mailbox recovery < 30 minutes

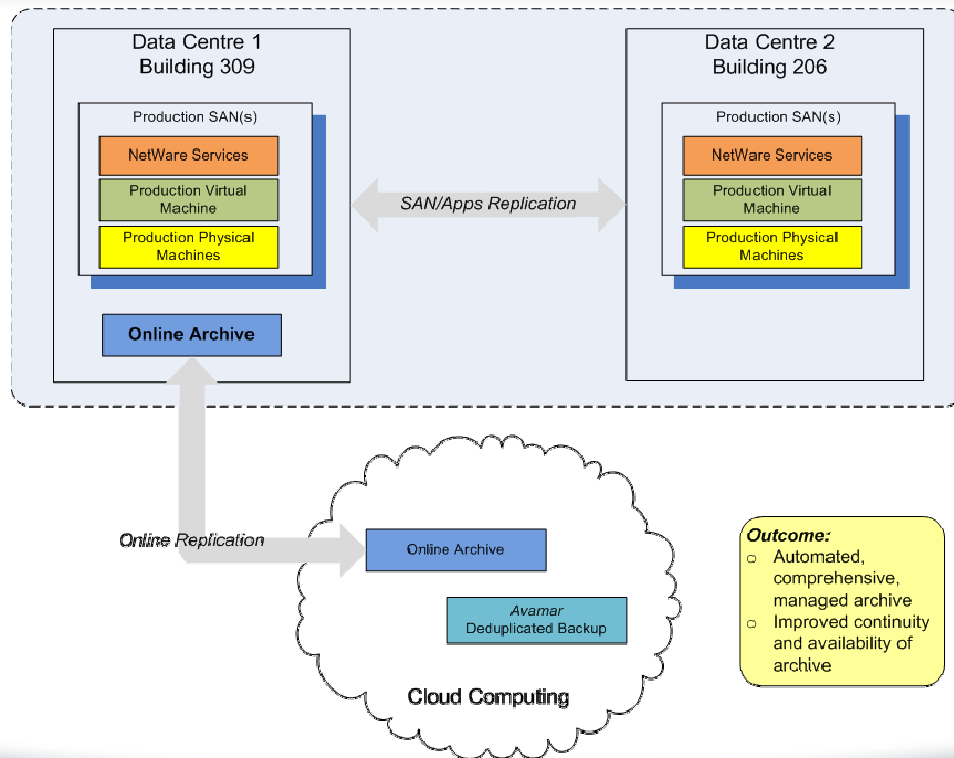
De-Duplication Summary

- Exchange server : 98-99%
- Oracle server : 95-100%
- SQL Server : 97-100%
- File Server : 93-100%
- **Total average : 98.7%**

Avamar to Cloud – Q3 2010



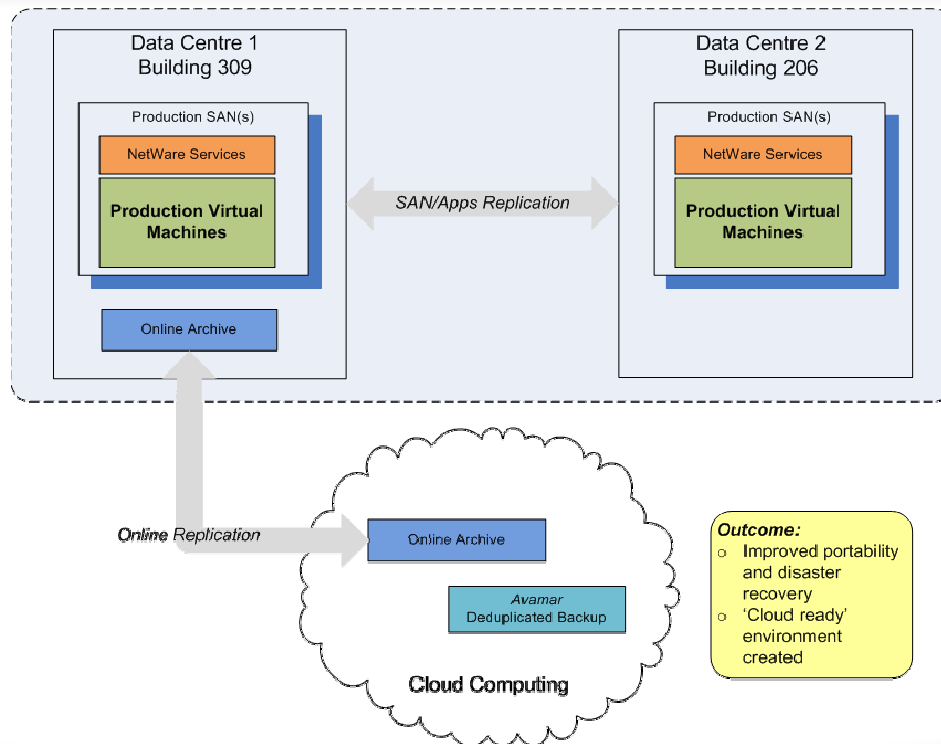
Implement ILM – Q4 2010



Technical Architecture

- Largest VMware site in Perth
- Performed Avamar Implementation parallel to vSphere upgrade
- Upgraded from ESX 3.5 to the very lite 4i
 - Enabling DVS
 - Introduced CBT capability
- Upgraded network core to Nexus 1000V
- Introduced Cisco UCS

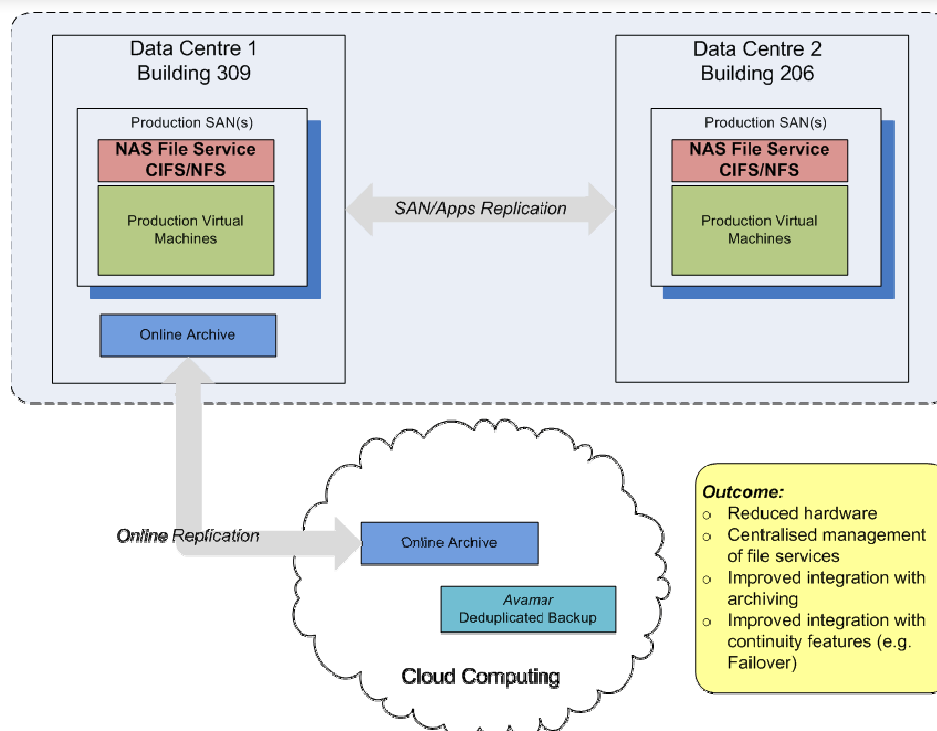
Convert Physical to Virtual



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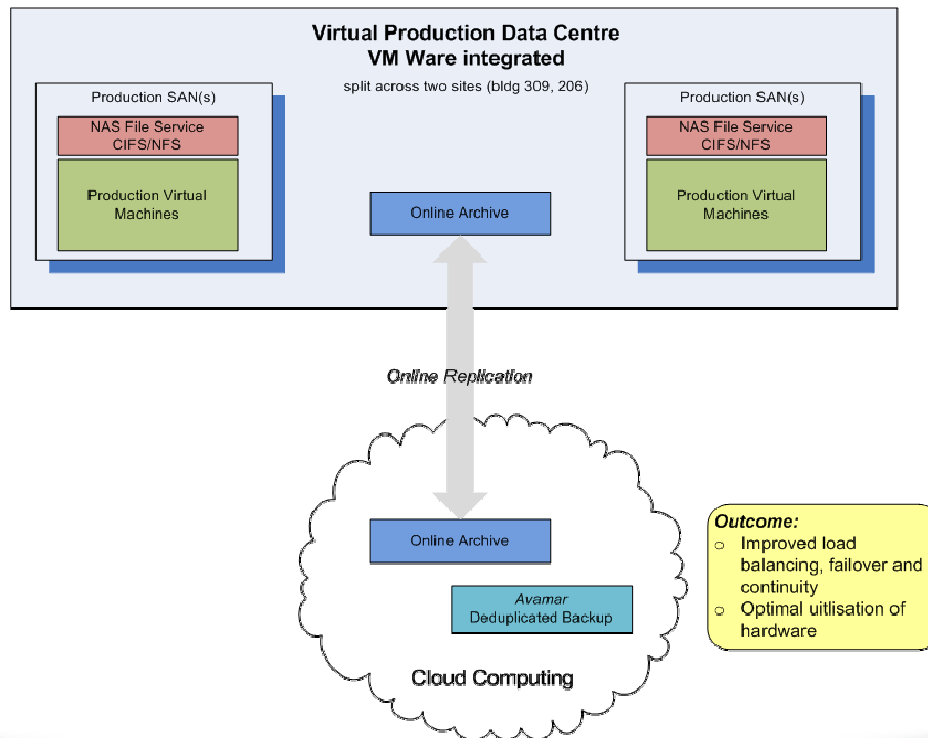
FileServer to NAS – Q1 2011



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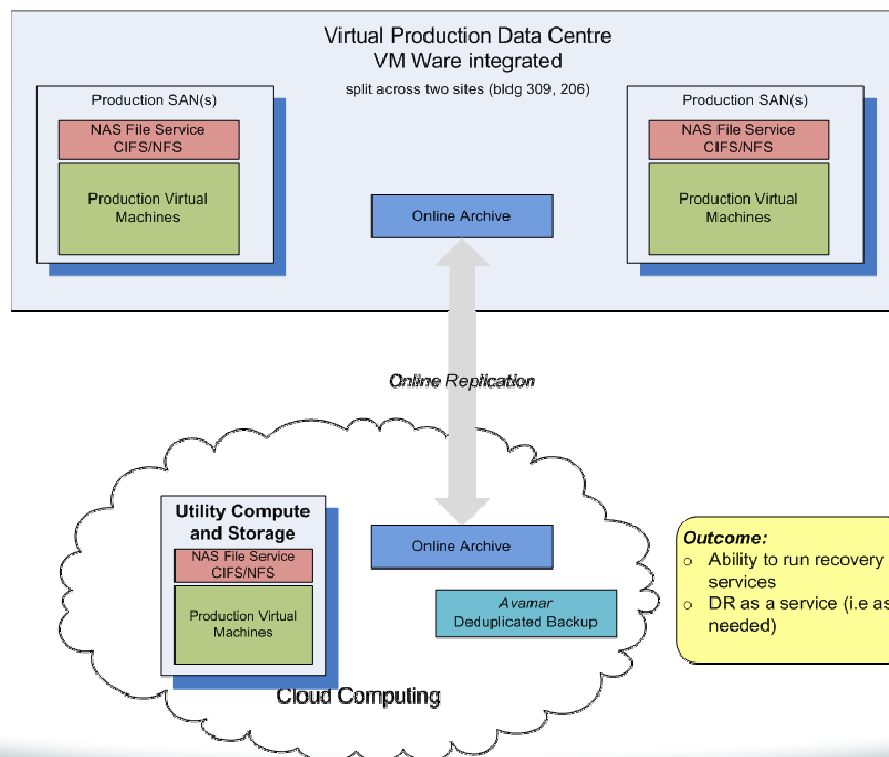
Active/Active DC – Q3 2011



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+ Offsite 'DR as a Service' – 2012



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THANK YOU

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