


### Agenda

- 'The Cloud': Characteristics
- Benefits of Cloud Adoption
- The Cloud: Is it just hype?
- Cloud Implementation Inhibitors
- Case Study
- Summary



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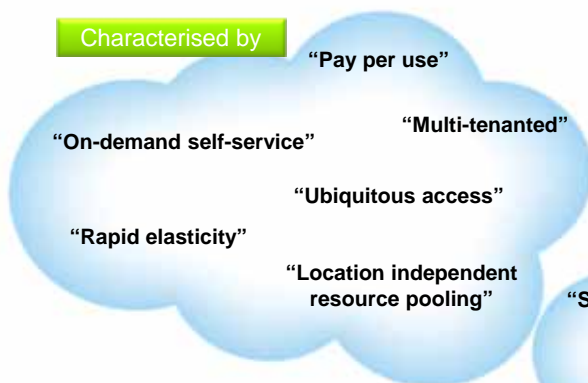
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# Cloud Computing: Characteristics

Cloud Computing represents a major change in IT service architecture, delivery and consumption

It is a computing paradigm that abstracts the provision, operation and management of IT from consumer of IT through web technologies.

Characterised by



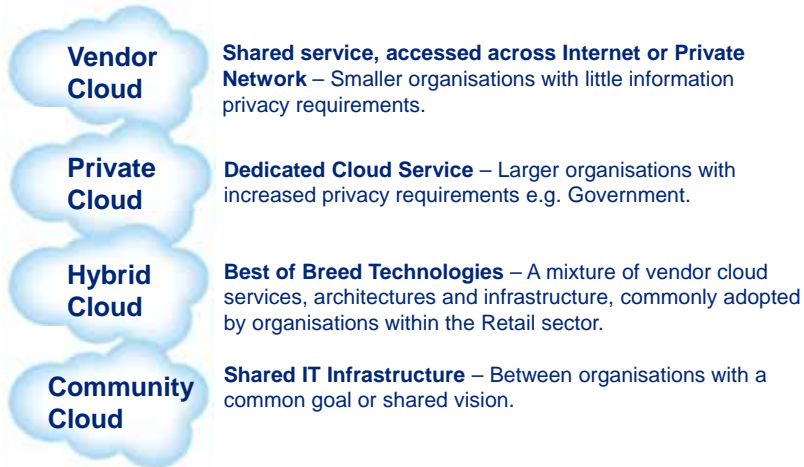
Enabled by



*“Server Virtualisation and Outsourcing is NOT Cloud Computing”*

### Cloud computing Implementation

Cloud computing technology is deployed in different ways, with varying internal or external ownership and technical architectures.

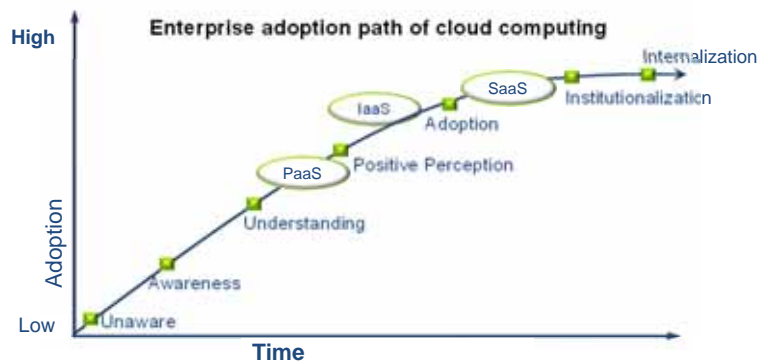


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### Potential path to Cloud Adoption

Software as a Service (SaaS) is the most widely adopted external service category. Cloud infrastructures are close followers.



**Key considerations to remember for any cloud adoption strategy:**  
Economic return, Technical feasibility, Risk and control

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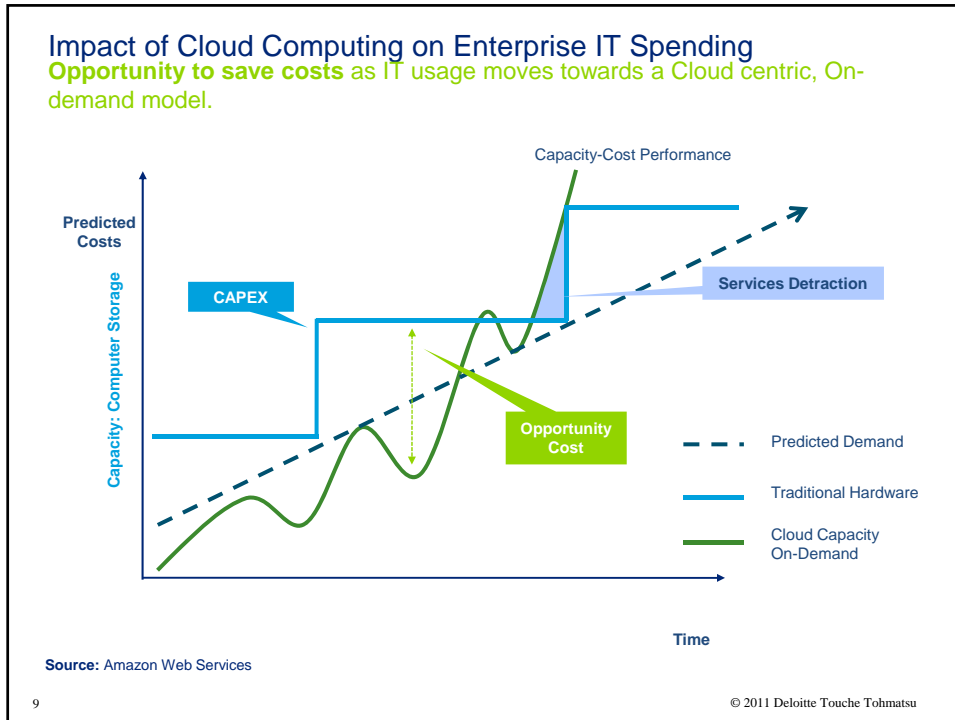
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## Cloud Computing: Benefits of Cloud Adoption

### Why will Enterprises use Cloud Computing?

Organisations are adopting cloud computing to gain economic advantages, and operational efficiency and effectiveness.

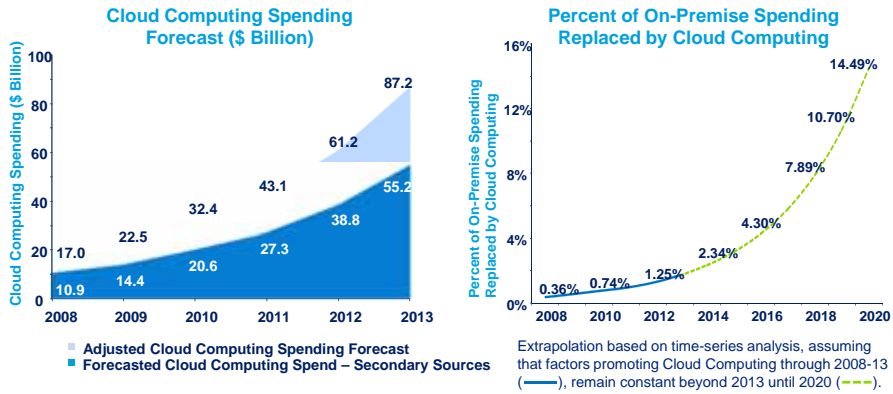




Cloud Computing:  
Is it just hype?

### Impact of Cloud Computing on Enterprise IT Spending

Enterprise spending for on-premise solutions will fall, as cloud computing reduces the need for licenses, hardware and software.



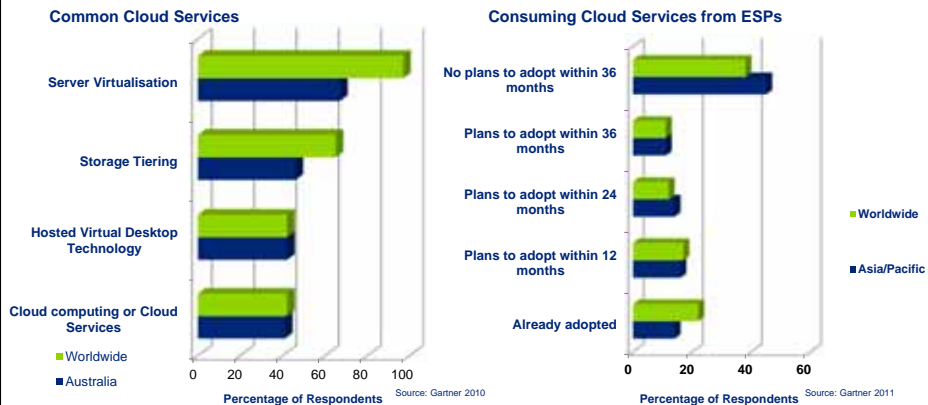
The cloud computing market is forecast to grow at a rate of 36.6 percent during 2008-13 to \$55.2 billion in 2013. It will probably reduce overall technology spending by \$30.0-\$39.4 billion in 2013, replacing 14.5 percent of global on-premise spending in 2020.  
Source: Research and Innovation Estimates

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### Cloud Computing

What Technologies are being considered as key by management, moving into the future?

What will organisations be investing in before 2011 year end?



Gartner: Cloud computing represents 10 percent of external IT spend

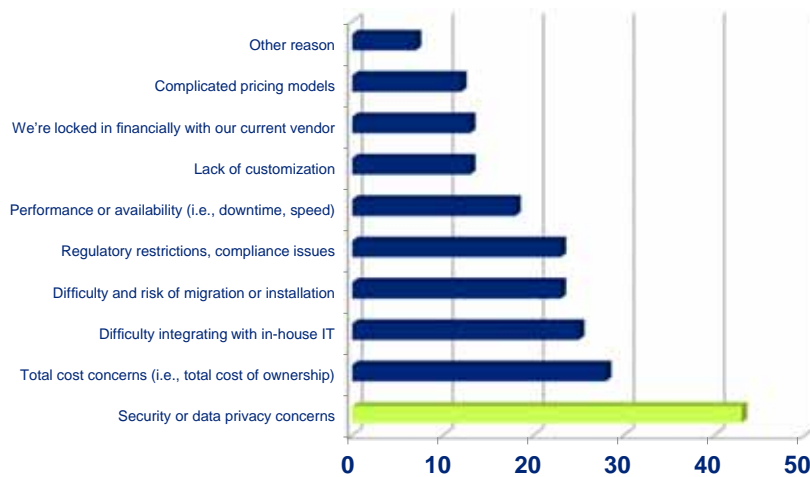
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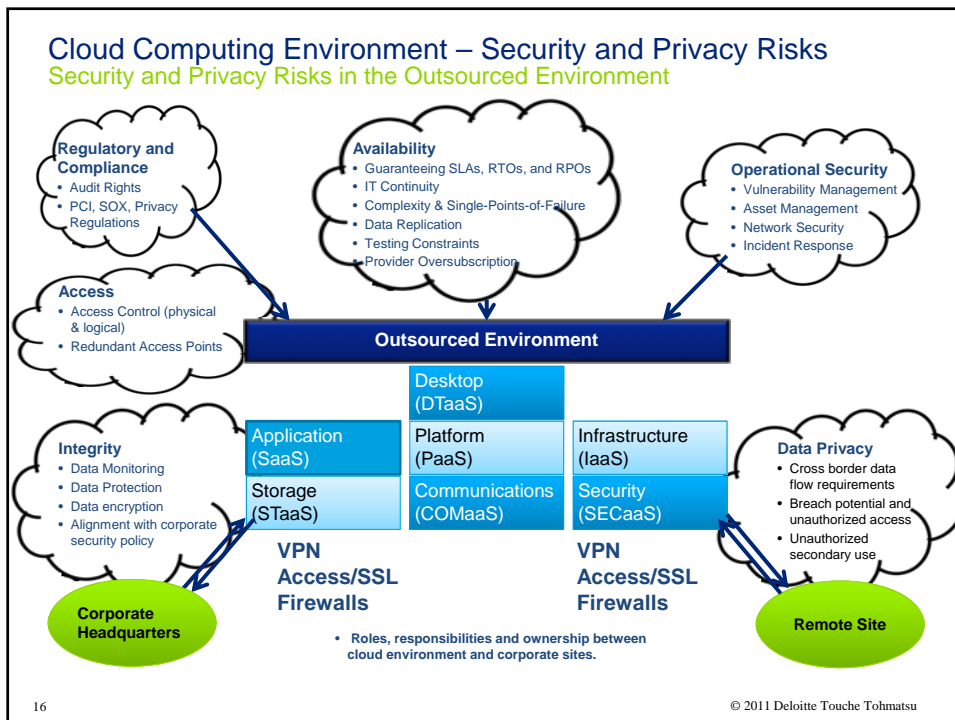
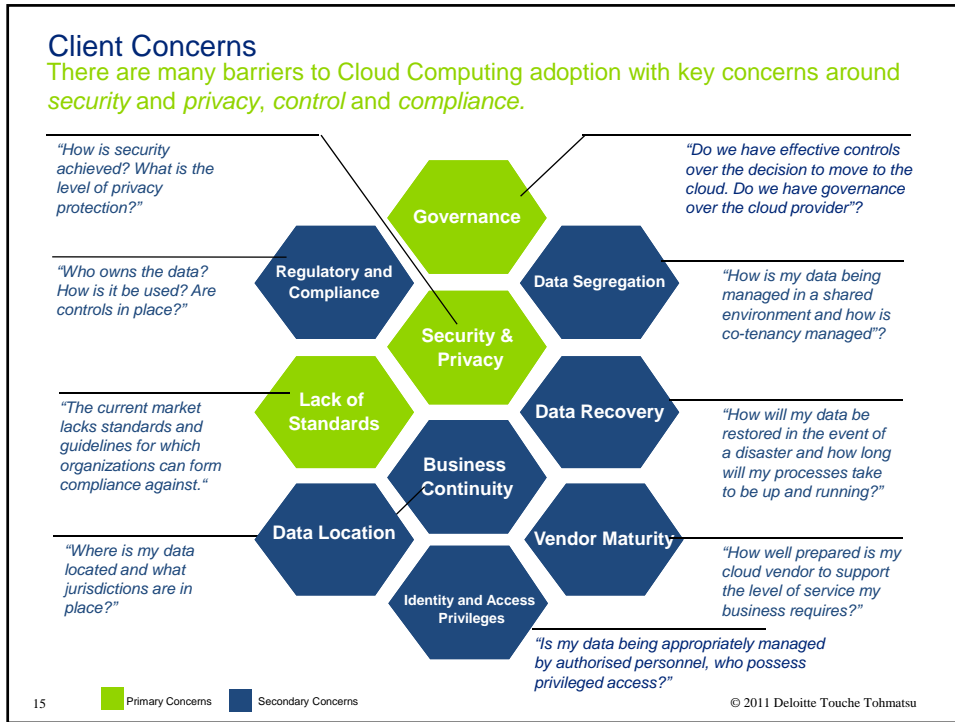
# Cloud Computing: Cloud Implementation Inhibitors

## Cloud Computing Inhibitors What is preventing organisations from implementing the cloud?

Source: Aberdeen Group 2011



**Evidence demonstrates that Security and Privacy concerns are the primary inhibitor delaying Cloud Implementation within organisations.**



## Lack of Auditing Standards

A shortage of auditing standards is causing a lack of direction and guidance in the implementation of appropriate security and privacy measures across Cloud environments.

- Lack of a specific cloud computing standard
  - May not meet existing standards or regulatory requirements (ie PCI Level 1)
  - ASAE3402 (which replaces the now discontinued SAS70s - type I and II) focus on financial statement assertions
  - The ASAE3402 US equivalent is SSAE16 and the international counter part is the ISAE3402.
  - The ASAE3402 has its limitations, e.g. the provider has control over what the scope of the report is and there may be ECCs (End User Consideration Controls) that customers need to be aware of.
  - Systrust focuses are for web based systems
  - ISO 27000 covers only the ISMS system
  - NIST 800-144 (Guidelines of Security and Privacy in Public Cloud Computing)
- Changes are currently being made to the Australian Privacy Act which may impact the security requirements for Cloud Implementation

## CloudAudit

A6 - The Automated Audit, Assertion, Assessment, and Assurance API



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## Role of IT Auditors

The role of internal auditors within cloud adopters

- Engage business stakeholders at an executive level to understand core and non-core systems and data
- Identification, assessment of new risks (both external and internal) relating to moving towards the cloud – this may result in revisiting the audit scope and resourcing requirements
- Support strong governance activities over cloud adoption
- Establish and agree responsibilities for security and controls (including security, privacy, compliance, e-discovery etc.)
- Understand and assess the security controls in place at provider
- Assess whether the controls at provider are sufficient to meet adopter's needs
- Establish additional controls or SLA's where gaps could exist.

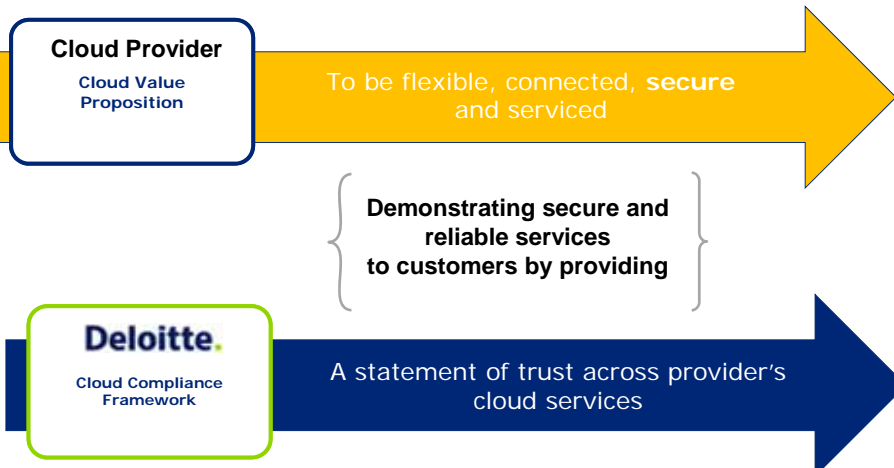
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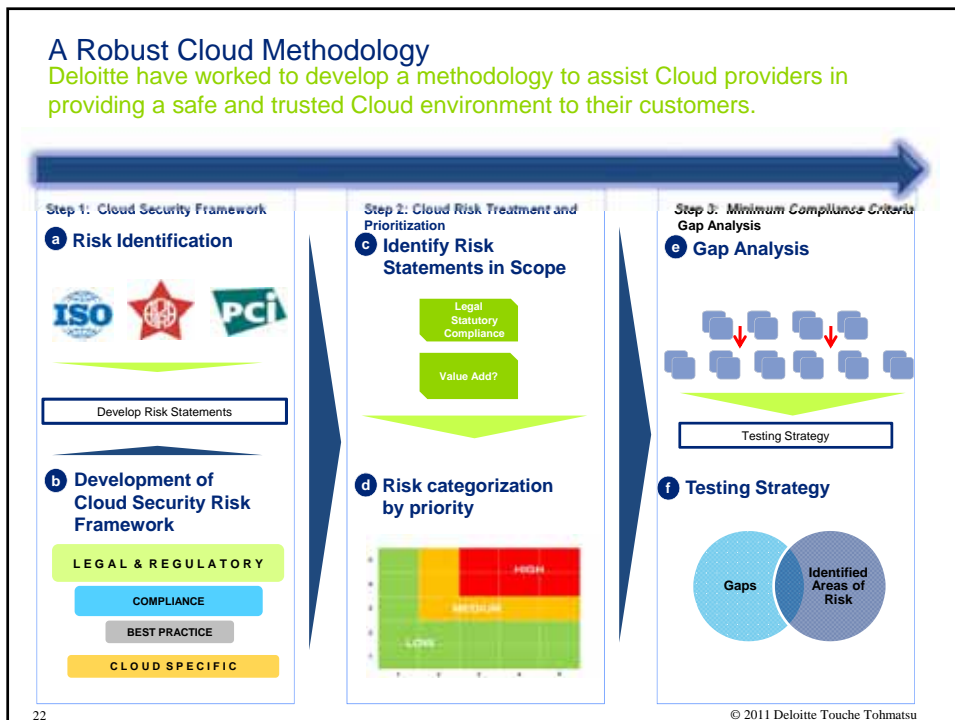
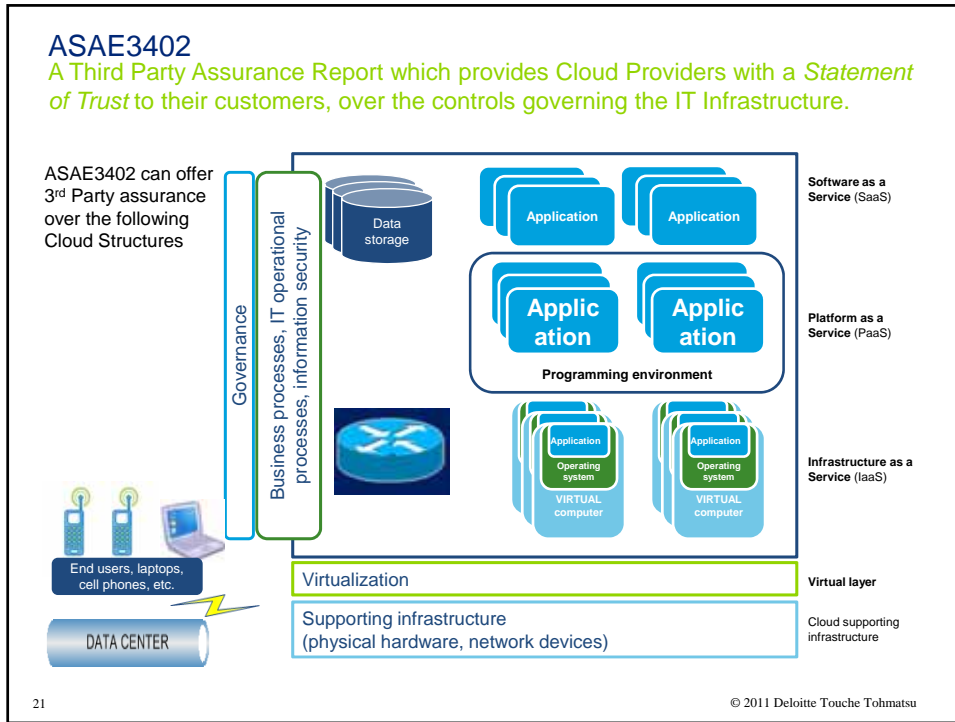
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# Cloud Computing: Case Study

## Challenge

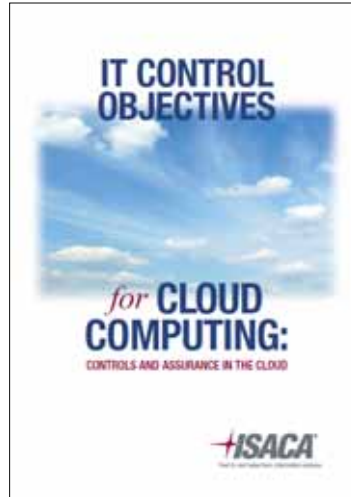
Provide customers with independent assurance regarding their technical implementation and practices used to secure cloud solutions.





Publication

IT Control Objectives for Cloud Computing: Controls and Assurance in the Cloud



Cloud Computing:  
Summary

## Summary

- Cloud computing has significant potential to transform IT and enterprises from traditional structures to more **nimble, flexible, and affordable architectures**
- Enterprises should prepare to take advantage of new computing architectures and service offerings, **aligned with their operational environments and risk profiles**
- Rather than an inhibitor, security is an opportunity for the business to **rethink data sensitivity, protection strategies and improve overall security**
- There is no one single security solution that meets all organisations' needs and therefore a risk-based approach is required
- Auditors need to be pro-active to help the organisation overcome the challenges.

The real power of cloud computing is in the potential to re-think and re-design IT architectures at a fundamental level.

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