Service Level Agreement in Cloud Computing

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Coming up..

- SLA's in clouds

  - Need more than a checkbox !

- Learning from the Web Service World

  - WSLA

- Issues and research opportunities

SLA's in Cloud

- Service Level Agreements
  - Negotiation between service consumer and service provider
  - Records common understanding about services, priorities,guarantees
- Right now
  - Just a checkbox in most providers !!

SLA's in Cloud(Cont)

- Why is this important ?

    - Amazon puts the burden of proving SLA violations on the consumer (i.e. YOU)

    - Need formal SLA's to effectively use the cloud and not get "ripped off" !

Lessons learned from the SOA World

- SOA - "they thought of everything" :)

- WSLA – Web Service Level Agreements

  - Spec from IBM

  - Covers an architecture and a formal language for enabling SOA on a Service environment

Guess what -
Current clouds *are* a service environment !

Why WSLA ?

- Consumers don't trust the cloud providers for ***everything.***

    - Need support to plug-in third parties

        - Measuring parameters
        - Enforcing rules etc.

- WSLA is built with third parties in mind.

Why WSLA ? (Cont)

- Need dynamic measuring / evaluations support

  - Most violations are likely to happen during load fluctuations.

- WSLA has provisions to enable such capabilities.

Why WSLA ? (Cont)

- What happens when the SLA's are violated ?

  - Financial Penalties ?

- WSLA has provisions to enable automated penalty / compensation management.

A Quick Look at WSLA

- Three main components
  - Parties [Who are involved]
  - Service Definitions [What to measure and evaluate]
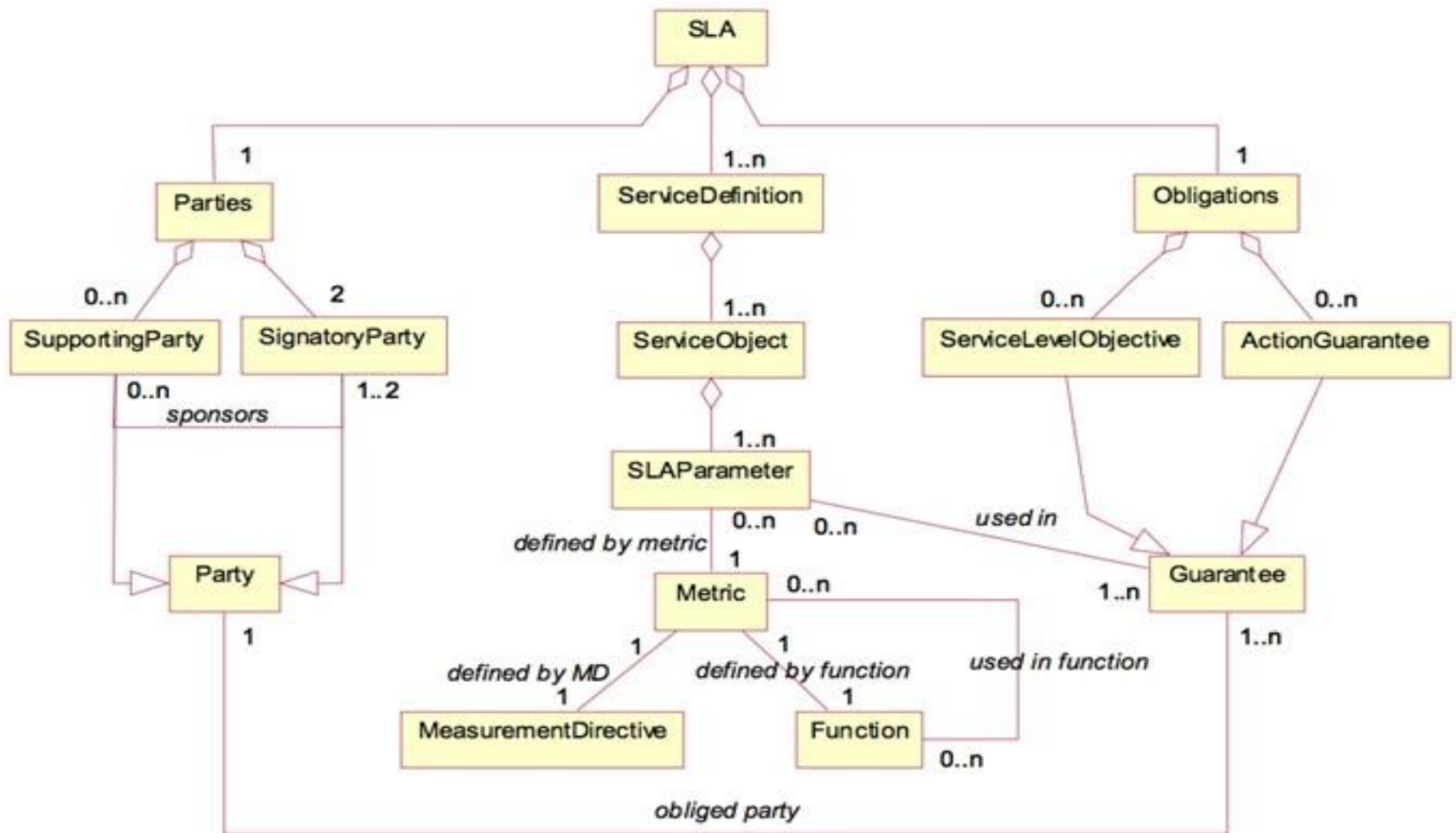 - Obligations [What to do if certain guarantees are not met]

Image courtesy : WSLA specification

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What we suggest..

- Several guidelines to adopt WSLA to a Cloud environment

  - Use dynamic schedulers for measuring parameters

  - Enable measuring through third parties

  - Model penalties as financial compensations

    - Enable third parties for financial matters
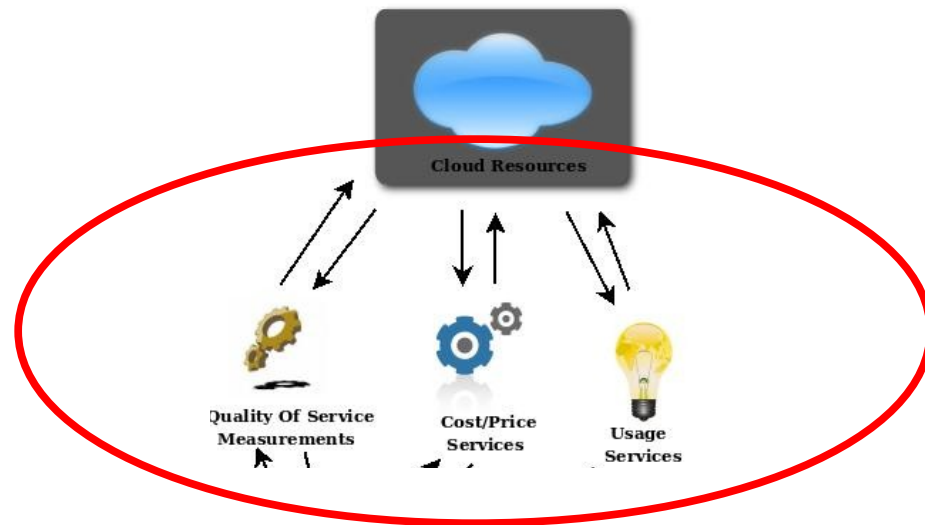
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Overview
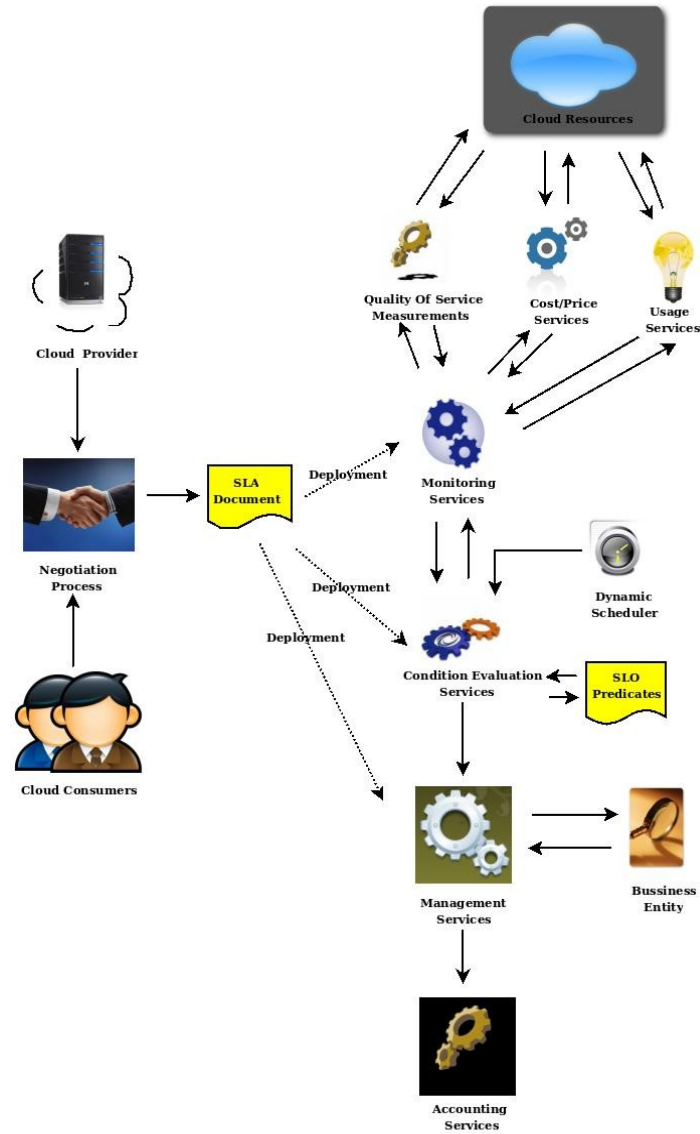
What is in and out ?

- In scope
  - Enforcement and violation handling
- Out of scope
  - Negotiation and SLA creation
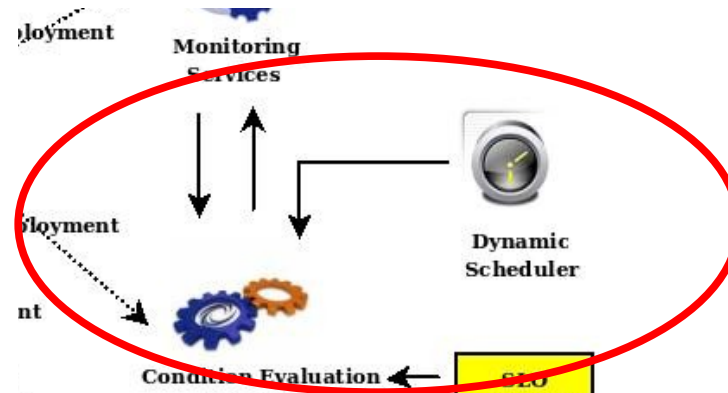   - Assume the SLA is already made / accepted

Third Party Services

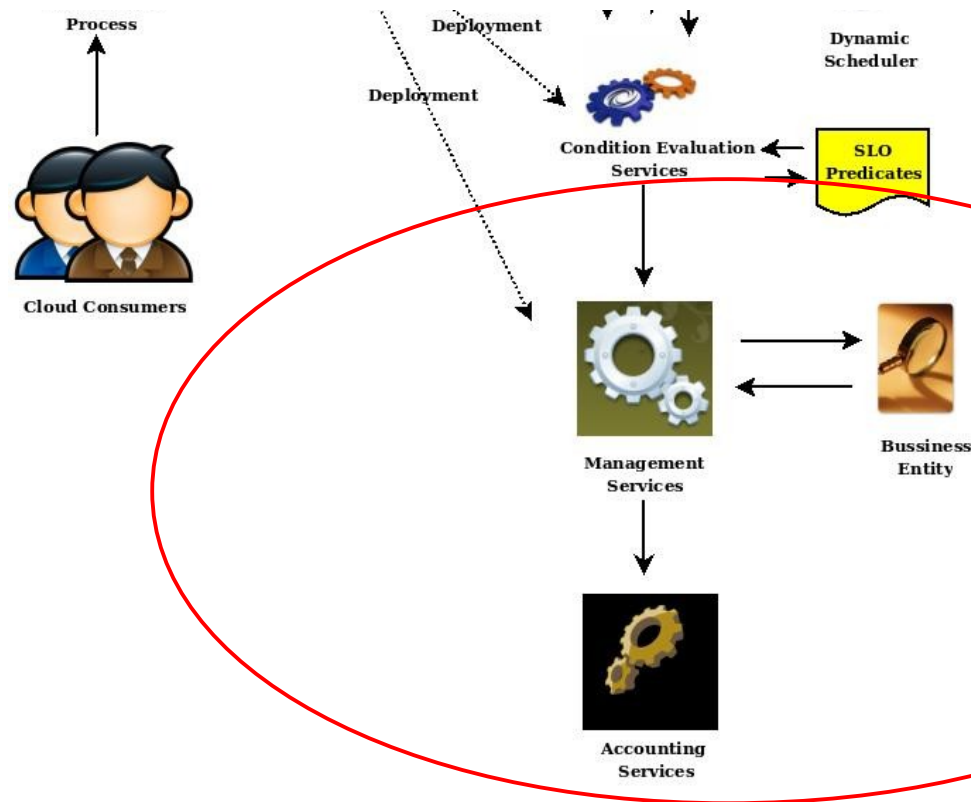- There is no standardizes services from Cloud providers yet.

Dynamic Schedulers

- WSLA does not support dynamic scheduling yet. However it can be plugged in

Plugging in the financial handler

Some Observations

- Value comes when this is integrated to a middleware like Altocumulus

    - Altocumulus ?

- The basic measurement data feeds should be part of the standard (?) interfaces.

    - Take note standardization groups :)

What More ?

- Utilize research in agreement / negotiation to for the SLA creation process ?
  - Can we remove the human from the loop ?
    - Should we ?

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Questions ?

Thank you