WHITE PAPER

Caveat Emptor when procuring Infrastructure-as-a-Service
The importance of Service Level Agreements

- Sophie Jarvis

Abstract

During a recent sourcing initiative undertaken by Infosys Portland on behalf of a large client, the Infrastructure-as-a-Service (IaaS) market indicated that, on average, typical industry-wide savings achieved by organisations that have successfully implemented IaaS solutions are in the double digit range. Given the significance of potential savings and the increasing number of organisations moving to an 'as-a-service' model for ICT, we thought prudent to share lessons learned with regards to the importance of Service Level Agreements (SLAs) and how they can protect the at-risk buyer.

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Background

We define IaaS as a standardised, automated service, where compute, network and storage resources are owned and hosted by a vendor and offered to customers on-demand. Customers are able to self-provision these services, using a web-based graphical user interface that serves as an IT operations management console for the overall environment. Application Program Interface access (a set of routines, protocols, and tools for building software applications, etc.) may also be offered as an option. There are a number of considerations to be aware of when procuring IaaS, including but not limited to:

A well-defined spec *(public vs private cloud)*	Security and privacy requirements	Transitioning	Service Level Agreements (SLAs)

In this paper, we will outline the importance of SLAs, the method of capturing relevant information surrounding each SLA in a market engagement process and also detail the typical SLAs being offered by the market today.

Why are SLAs important

An SLA is the contract between Customer and Supplier that guarantees a specified level of service. The IaaS market is growing and rapidly updating service offerings. The various and constant changes in market conditions means the buyer must beware of risks and conduct due diligence to ensure their business critical functions are being supported by a quality IaaS provider. While IaaS providers fight to increase market share, the true underlying quality of offerings can be lost behind sales jargon and buyers can be blinded by the headline 'typical savings' figures. Procuring the correct solution is key to a successful transition and implementation of IaaS and the SLAs are one of only a few ways a buyer can protect themselves.

The SLA is what a customer uses to ensure services are being delivered to their required standard, and to enforce a penalty if the supplier fails to meet their required standard. Understanding SLAs when procuring IaaS is important as they align the supplier target levels with the customers' expectations. Suppliers offer varying tiers of services (i.e. Gold, Silver and Bronze) and the SLAs applicable to each tier are a useful way for buyers to validate that they are selecting the tier that is fit for their purpose.

Capturing the right information

IaaS providers use varying terminology in their published SLAs. During the market engagement process it is important that, at a minimum, the buyer captures all of the information detailed in *Table 1* for each SLA. By capturing this information buyers will discover which SLAs are meaningful and which are merely for promotional purposes.

> **Beware** Some suppliers will propose a very attractive SLA target level and measurement; however it will not apply any fees at risk.

This raises questions; does the supplier have good intentions to achieve this target level? If the supplier doesn't have enough faith in their own solution to apply a 'fees at risk' component, why should the buyer believe the supplier will meet the target levels?

#	Field required for each SLA
1	SLA Description
2	Calculation/Measurement Basis
3	Ongoing Service Level (Target Level)
4	SLA Effective Date
5	Fees at Risk (% of Invoice Performance at Risk)
6	Frequency of Measurement
7	Claim process for service violation

Table 1: *SLA Determinants*

An example of the type of information captured by these fields for a single SLA is shown below in *Table 2*. The prescriptive 'Field Required' allows for an easier comparison between suppliers and a better understanding of how the SLA level is calculated and what is required should the target level not be met.

Field required	Supplier Response
SLA Description	Service Availability
Calculation/Measurement Basis	% Service Availability = (1 - Unavailable Hrs ÷ Hrs per month) x 100
Ongoing Service Level (Target Level)	99.99%
SLA Effective Date	Immediately upon formation of contract
Fees at Risk (% of Invoice Performance at Risk)	50%
Frequency of Measurement	Monthly
Claim Process for Service Violation	Onus is on the customer to submit a claim within 30 days of the billing period in question should the ongoing service level not be met for the billing period

Table 2: *Representative Example: Service Availability SLA*

The claims process is particularly important as the majority of suppliers leave responsibility with the customers to make a claim for service violations.

Beware The claims process should be explored further with each individual supplier as some may appear burdensome to the point where it may affect the buyer's choice of supplier.

The measurement calculation also needs to be displayed in full in order to ensure SLAs between suppliers are able to be compared.

Different SLAs may apply to different tiers of service, to facilitate fair comparison it is important to ensure that you are comparing the SLA relevant to the corresponding tier of service. Suppliers may quote the most favourable SLAs usually only reserved for their premium tiered service and an unfortunate assumption may be made that these SLAs are applicable to all its service tiers, premium through to standard which may not be the case.

Beware The SLA description also needs to be read closely as some suppliers may decide to quote the SLA of their premium tiered service (which generally has a more attractive SLAs but is more expensive) which may not be aligned with the scope of the market engagement.

Typical SLAs being offered by the IaaS market today

Generally suppliers only offer SLAs on a few specific measures; however our recent sourcing experience has shown that some suppliers are willing go beyond the one or two standard SLAs of availability and latency. Instead of prescribing all SLAs we permitted suppliers to also nominate their own SLAs, calculation pertaining to the SLA and relevant 'fees at risk'. This allowed those suppliers who really wanted to get the buyer's attention, to input a wider range of SLAs than might be included if SLAs were prescribed in the market engagement document. (Do not expect all suppliers to participate in this way, as obviously an increased number of SLAs makes for a more onerous accountability and delivery for the supplier).

SLA's offered by the market today are shown below in *Table 3*. The most common are the first four; Availability, Latency, Storage and Maintenance, where the others are suggested additional SLAs to prescribe in the market engagement process.

Service Level Agreement (SLA) Categories			
1	Availability	6	Continuous Improvement
2	Latency	7	Reporting
3	Storage	8	Issue Resolution
4	Maintenance	9	Compliance
5	Elasticity	10	Security

Table 3: *Representative Examples: IaaS SLAs*

Defining Service Level Agreement (SLA) categories

1. Availability

Refers to the level of uptime of services. Perhaps the most common of the IaaS SLAs, the SLA sets a target level % of uptime

2. Latency

Measure of the responsiveness of a network, that is, the time between initiating a network request and receiving a response. The SLA targets the speed of responsiveness

3. Storage

Refers to the level of uptime of storage services. The SLA targets the level of uptime and of data processing accuracy

4. Maintenance

Refers to the operational maintenance events that affect the underlying infrastructure of cloud. The SLA targets the amount of time maintenance affects the underlying infrastructure

5. Elasticity

Is the speed ability to increase or decrease the amount of system capacity (for example, CPU, storage, memory and input/output bandwidth). The SLA targets the lead time to increase or decrease services

6. Continuous improvement

Supplier's ability to deliver continuous improvement during the term. The SLA targets the number of opportunities identified by the supplier

7. Reporting

Is the means through which a supplier regularly presents data and recorded information to the customer (e.g. Utilisation reports) the SLA targets a supplier's ability to provide complete, accurate and timely reports

8. Issue resolution

Is the ability of a supplier to resolve issues for the customer within a specified timeframe. The SLA targets the number of issues and the speed within which issues are resolved

9. Compliance

Is the level of compliance to agreed terms and procedures. The SLA targets any slippage in compliance to these terms and procedures

10. Data Security

Security in terms of protection of data and maintaining agreed levels of security i.e. multi factor authentication and segmentation of duties in data centres. The SLA targets number of recorded/ reported issues per month

While the majority of IaaS providers offer SLAs for similar services, there is a vast difference in the levels of fees at risk and the nominated target level. The key to overcome this variance in the market is to identify what is most important to your organisation. There is value in negotiating SLAs using benchmarking across each target level in isolation of the fees at risk, and vice versa. The result can be higher target levels being guaranteed as well as higher fees at risk which will ensure the suppliers are correctly incentivised to meet the target service levels.

We have observed that large industry leaders often do not negotiate on SLAs as their aim is to provide a one-for-all, reliable, low cost, commoditised, repeatable offering devoid of expensive customisations and bespoke offerings. Higher levels of care can be obtained by licensed resellers, often professional services firms that help customers of all sizes design, architect, build, migrate, and manage their workloads and applications on another organisation's infrastructure. These professional services partners include system integrators, strategy consultancies, managed service providers and other value-added resellers who will gain access to a range of resources and training material to support their customers deploy, run, and manage applications in the Cloud.

Conclusion

As IaaS is becoming increasingly common place, the understanding of SLAs is crucial to ensure the buyer is protected and aware of the risks involved with transitioning to an as-a-service model. The market engagement process is an opportunity to capture all relevant information required to compare SLAs between suppliers, attempt to widen the coverage of SLAs across services and to then negotiate higher target levels and/ or higher fees at risk to increase the level of protection for the customer. While there are a few considerations to beware of in SLA information and the claims processes as identified in this paper, the better a buyer understands the SLAs, the more likely they will be of successfully transitioning and implementing IaaS to capture the indicative industry-wide average of double digit savings.

About the Author

Sophie Jarvis
ANZ ICT Practice Lead - Infosys Portland

Sophie has over 15 years' procurement services experience in industry and a further 6 years in Consultancy Advisory. Sophie is a highly regarded procurement professional, an expert in sourcing, category management and supplier relationship management across all ICT and business services categories across a range of client industries.

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