



On Cloud Nine

A NetEvidence White Paper on monitoring your Cloud network and applications

“Visibility into the performance of IT services remains one of the top concerns for end-user organizations when deploying public cloud computing services. In order to address this concern, organizations cannot rely solely on performance data supplied by their cloud providers and need to develop capabilities for independently monitoring the performance of services that are being hosted in the cloud.”

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Cloud Buzz

Remember the halcyon childhood days when you used to lie relaxing looking up at the sky and see the clouds form into recognisable shapes? Clouds in the shape of favourite cartoon characters, animals, flowers and people. Did anyone see clouds become the shape of technology to come? Probably not but that is where it's going.

The hype around cloud is everywhere, practically every website or magazine that reflects the technology industry is carrying information about cloud. Cloud is the latest technology buzz but, not dissimilar to adoption of the Internet, it has been available for years and is just being picked up by the masses.

So what is Cloud?

The term 'Cloud' refers to centralising business functionality away from the business premises and own servers onto infrastructure held at a trusted supplier's location. The key word here is 'trusted'. Cloud promises simplicity and real cost savings to customers. Let's go back a few steps.

Computer usage, storage and sharing have been evolving since the 1960s. Prior to the innovation of the mainframe computers were very large and required a large number of personnel to pull out information into a format that could be understood by others.



Then in the 1970s the mainframe was born. These massive machines brought processing power to the forefront. Forward to the 1980s and 1990s and the growth of the personal computer; lowering costs of networking and infrastructure for computing in general that led to the way to greater agility. Companies still have the need for servers based locally and under their control. Now, since the turn of the century into the Noughties, data storage requirements are growing exponentially and the need for better, faster and cheaper ways to share, store and use data are demanded by organisations whatever their size.

Cloud is the answer to this demand. It is a paradigm shift for the industry as we come back to the trust issue. It is an easy to use option; it is self-service in terms of choosing the amount of service wanted and removing the need for onsite staff thus reducing costs. However, trust is still paramount.

Knowing me, knowing you

OK. So we've gone from gargantuan servers taking up an enormous amount of expensive office space in your business, to potentially no servers at all at your offices. All your data, applications and shared information are now all to be accessed through the Cloud on a subscription basis.

You no longer need staff just to look after and maintain server farms or to pay the cost of keeping them cool or taking up valuable floor space at your office. You just need to find a supplier that you trust..... This is a whole new world and feels a bit like handing over your child with all the emotional attachments that that entails.

Now you are not buying a product that has an installation process, which can take months. Signing a contract for Cloud services and using Software-as-a-Service (SaaS) or Infrastructure-as-a-Service (IaaS) or indeed any of the other acronyms invented for the Cloud phenomena is an ongoing subscription service. Once the contract is signed there is no installed product and ongoing debateable maintenance but a monthly relationship – and one that needs to be based on trust. It is based on the trust that the SaaS vendor will deliver the service as promised whilst protecting all the data just as you would yourself and providing support 24/7/365. You should also expect the service to be enhanced regularly. You are now entering a long-term relationship that will span the life of the subscription contract.

Cloud promises, the industry expects

Cloud is where it's all going, so what will this do for you? Does the whole Cloud issue raise more questions than answers? Let's elaborate.

What's good about Cloud?

1. Cost.

Having the ability to use an ongoing operational expense (OPEX) budget rather than the hassle-factor requisite in raising a capital expenditure (CAPEX) cost in your business means being able to do what you want now. There is a huge reduction in the overhead requirement of convincing. There is also a cost-saving in overhead as you will not be paying to keep the server-room cool or warm.

2. Cut cost maximise value.

3. Space.

You have space at your office. Valuable floor space that you can use to enhance your business.

4. Back to basics.

You can now concentrate on your own business needs rather than worry about the peripheries of technology. Let someone else do the worrying for you.

5. Elasticity.

Scale your requirements up and down to meet your business needs.

6. No legacy.

You no longer have the worry about upgrading to the latest packages or technologies. Your service provider can do that for you.

7. Deployment.

Rapid deployment of new business services by avoiding costly procurement and red-tape issues.

8. Agility.

Develop or keep mission-critical applications on internal private Clouds and move important but bulk-standard applications to SaaS running on public Clouds.

What's scary?

We're back to trust! You wouldn't hand over your most precious possession without being absolutely sure that the person with whom you are entrusting will keep their end of the contract

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What's scary?

We're back to trust! You wouldn't hand over your most precious possession without being absolutely sure that the person with whom you are entrusting will keep their end of the contract and so it is with Cloud. There are legitimate concerns over security in particular. Storage of data that is accessed via the Internet – through the Cloud – is the top of the agenda for companies beginning to think about the move to a Cloud-based IT infrastructure. This is in terms of how it is going to be stored, who has access, getting access 24/7/365 and so on.

Vendors that have been using SaaS as the only delivery mechanism for their products for a number of years have security protocols in place, which tend to be a great deal higher than an individual company could implement for themselves. This is due to the knowledge and skills garnered over the years. Regulatory compliance and guarantees of quality of service are also daunting issues.

Cloud sounds good but there need to be provisos in place. Where do we go from here?

Is your Service Provider in the Cloud?

So you need to find someone you can trust, has been doing this for some time and is therefore not going to inflict their mistakes on you, has the infrastructure in place, can provide to you all that you want when you need it and guarantee good service. There are numerous service providers who all offer like-sounding products but there will be huge differences in the delivery of that service and how they report this back to you.

- **What you need to know is answers to questions like:**
- **What security is in place to protect my data?**
- **If there's an outage what is the planned recovery process?**
- **How do you have access to your data 24/7/365 and, if there should be a problem such as data being inadvertently deleted, how do you go about getting this restored? Will there be additional cost?**
- **What infrastructure is in place? What economies of scale is the service provider reaping by being able to offer a number of customers a solution through the Cloud and – more importantly – what does that mean to you in terms of cost-savings? If several customers are using the shared infrastructure how is your data securely isolated?**
- **What happens to my data if the service provider shuts down its service?**

So the key challenge for the cloud industry is to find a way to guarantee service levels to customers whilst keeping that information understandable and manageable. The last thing you want to do is drown in paperwork, measurements, figures and statistics. You are, after all, outsourcing this service to save you time not increase it!

Simplicity – that's the key to creating meaningful customer relationships. Customers shy away from complexity, so Service Providers must provide straightforward service levels and deliver full visibility of the network. Stop using old and complex tools and show customers this brave new world of SaaS and cloud computing.



For many years, the concept of a service level has been very straightforward - it's basically about the level of availability. At the end of each month, the Service Provider supplies a figure to the customer and if the level is higher than agreed, then all's well and you get on with life for another month. However, several things are now happening. Just when everyone thought they had that nailed down, service levels are getting more intricate. Users are starting to run more complicated applications over the network and are asking for service levels that are more multifaceted.

There are likely to be a number of different parameters that require guarantees and customers are getting their own ideas about what those parameters should be, what the min/max targets are and what their goals are. And these may well be unique to that customer. Suddenly the Service Provider has to cope with unique service levels for that customer.

Technology analyst and consulting firm Gartner lists seven security issues to bear in mind when considering a particular vendor's services:

1. **Privileged user access—enquire about who has access to data and about the hiring and management of such administrators.**
2. **Regulatory compliance—make sure a vendor is willing to undergo external audits and/or security certifications.**
3. **Data location—ask if a provider allows for any control over the location of data.**
4. **Data segregation—make sure that encryption is available at all stages and that these "encryption schemes were designed and tested by experienced professionals".**
5. **Recovery—find out what will happen to data in the case of a disaster; do they offer complete restoration and, if so, how long that would take.**
6. **Investigative Support—enquire whether a vendor has the ability to investigate any inappropriate or illegal activity.**
7. **Long-term viability—ask what will happen to data if the company goes out of business; how will data be returned and in what format.**
8. **However, not all vendors will offer the same level of security.**

Above all, SaaS solutions should be easy to use, deploy, configure and renew. Ensure that your service provider can meet these obligations.

Network Management through the Cloud

So, you've seen that Cloud is just the next stage of technology and are getting excited about how this can help you with your business aspirations, you've also been able to judge the vendors and cut through the rhetoric by asking the right questions and now you need to ensure that the service you're buying is what you expect. Moving to Cloud should not cost you more time and definitely no more money than you agree upfront with your vendor.

You want to ensure you're getting what you've paid for. So how do you do that?

With cloud applications, it's far more difficult to define what you want to measure. In the old days, a Service Provider delivering a network connection between London and Boston would have a single connection to measure. Now, if you push an application into the cloud, you may potentially be trying to measure the experiences of five, 50 or 5000 separate individuals using an application. This is a much harder and intangible measurement.

It's far more important to deliver visibility of an application's performance. If a provider breaches its service levels or if service levels don't hit the mark, as long as customers have good visibility of when,

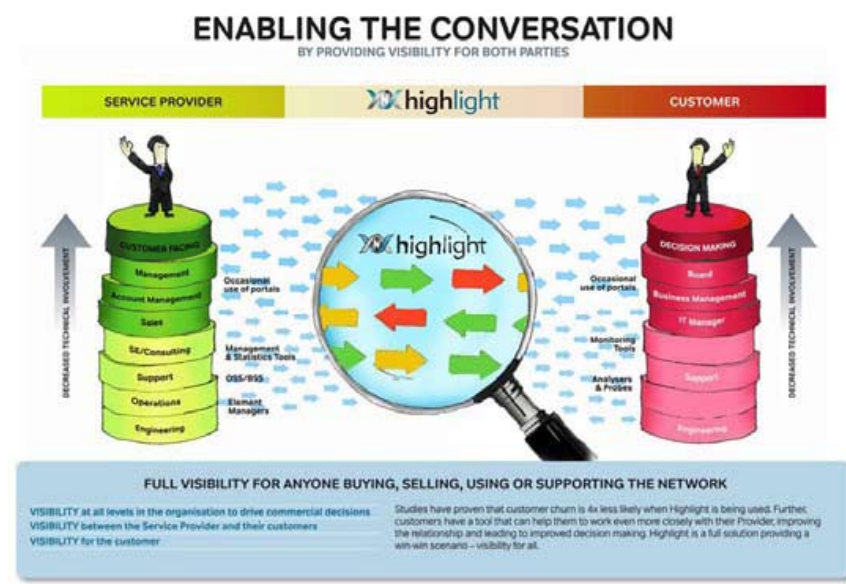
where and how the service levels missed that mark, they can be surprisingly tolerant of problems. It's like when you complain and someone apologises, the complaint doesn't seem to matter as much.

A whole new range of metrics requires reports that have never been done before; possibly ones that the engineering teams aren't even ready to monitor. The goalposts move wider. And, unfortunately, the mission becomes impossible - they don't have the tools, the internal processes, policies or mechanisms that allow them to guarantee these service levels.

From a marketing point of view Service Providers have little choice but to offer this new level of service monitoring. Competitors are already doing it and it's what customers are demanding. So somehow they have to scabble together a solution that offers this kind of sophisticated and flexible service agreement.

With visibility, you can look back over the month and you can see what the response time of the application was, you can see where there may be spikes and work out when they were and resolve that. Visibility is a lot more important and makes customers feel more comfortable. It also helps the development of a good relationship between a provider and customer.

There are so many network options - and they all seem to be pretty much of a muchness.



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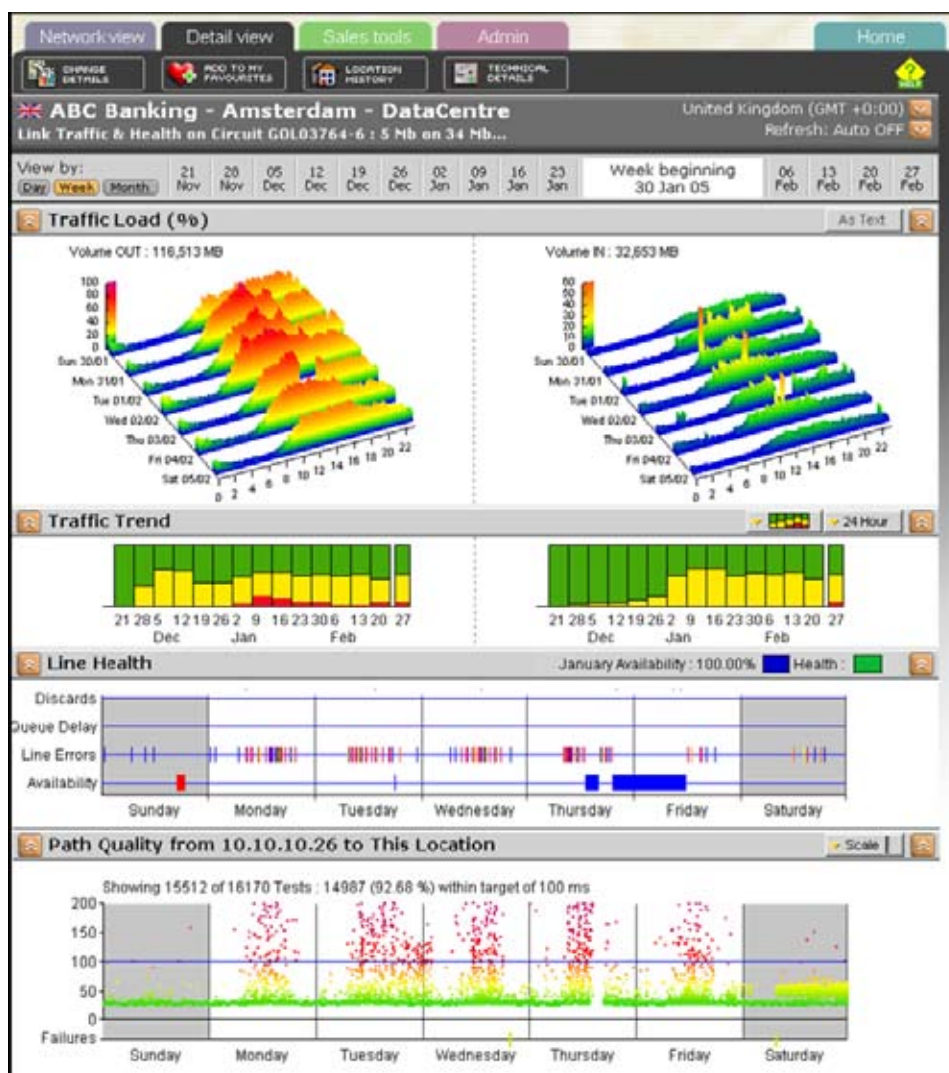
Solutions for IT are abundant and all shouting for your attention. Because there are so many products they can all start to merge and sound the same. There are major differences, of course, but how do you find these differences and make the right decision for your business?

We've been using Cloud for 10 years.....

Our solution, Highlight, enables the conversation between the service provider and the customer to stop dead the monthly heated conversation. The customer has full visibility of what is happening in their network so they can properly see if there are any problems – and so can the service provider.

What's more this information can be seen by everyone in the organisation in a graphical and very visual way so that it is easily and immediately understood. There is no requirement here for engineers to gather together the data over a number of days

that then requires manual analysis before forests of paperwork are circulated to management – all of which happens sometimes weeks after any network events. The reports in Highlight are instant, can be circulated easily without further need for number-crunching and will be understood by everyone in the organisation – even if not everyone can actually sort out the problem it is instantly obvious what that problem is.



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The Aberdeen Group conducted a study of Network Managers, four out of five of whom said they'd spent hard cash on network management tools in the last two years. The same study revealed that only two out of five felt they now had a better understanding of their network as a result. The report's conclusion: it's easy to get more performance data from your network – but getting useful information is way harder.

It's because of difficulties like this that testing and measurement of enterprise networks has, if not a bad press, a poor reputation amongst those who have responsibility for their smooth running. It's too easy to drown in the volume of data such tools produce, and so they're often left in a corner and only brought out when there's a fire to fight!

This is completely the wrong mindset. Testing and Measuring your network should be something that's going on all the time, establishing a baseline 'feel' for how things are during normal operation. Only then will you be able to spot differences when there's a problem: a new application appears, or a relocated group of users suddenly reshape your traffic patterns. These may sound obvious, but more recent research proves that most enterprises simply don't know the basics about their network: what applications are running over it, who's using it, or what sort of performance they're getting. Think about your network for a moment, and see if you could give a 60-second briefing, right now, to your management on the above points.

The reason so many organisations get away with this is simple. Like users, Network Applications have an annoying habit of just getting on with things. Engineered to cope with unpredictable performance, they don't break, but just gradually get slower and slower. Over a long period, users get accustomed to poor performance: no-one benchmarked it, so no-one spots the deterioration - and there's always more pressing tasks to be thinking about.

When things do finally grind to a halt, the situation is likely to be really bad. Asking a management team to invest in new technologies like WAN Acceleration, or MPLS, from this position of ignorance is a sure recipe for wasted time and money. How can you fix a problem when you don't really know what the problem is? In this environment, new technology becomes the equivalent of a weight-loss video or

self-improvement book - it looks like you're doing something about the problem, but actually all you're doing is spending money.

In defence of network managers, having to deploy monitoring and measurement tools is doubly irritating when you consider that most businesses would like to be thinking about their networks less and less, not more and more. They'd really like to get on with running their business, and use the network as a simple utility, like power or water.

Viewed in this light, though, simple monitoring makes more sense. Most people keep a highlevel picture of their utility usage such as power consumption (increasingly so, thanks to 'green' initiatives) or the number of phone lines they use and the average time to answer an incoming call. It makes sense to start thinking about your network in the same way, and define some very simple metrics that you can benchmark against. Start to view Test and Measurement as a continuous, but most importantly, a simple activity that doesn't drown you in data. You'll get to know your network in peacetime - and you'll be much better equipped to catch those inevitable fires when they're small.

Get with the programme

Cloud services are expected to hit \$68.3 billion this year, states Gartner, a 16.6% rise compared to 2009 cloud services revenue. This means that many of your peers are already making the move to Cloud to meet their high growth challenges and enable them to concentrate solely on their own business without needing to be concerned with IT. Service providers and cloud vendors are all gearing up to do this, the benefits far outweigh the negatives and, anyway, you know that if that is the way the industry is going love it or hate it you will eventually be there too! Move on your own terms – but make sure you know what they are and what you're getting for them.





About

netEvidence

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NetEvidence has been in operation for 10+ years and works with T1 Service Providers through to boutique VARs. 6000 enterprise networks representing 40% of the FTSE100 across 63 countries rely on Highlight to give unprecedented levels of visibility into the performance of their networks and applications.

Highlight is a telco-grade solution reporting on the things customers actually care about, such as expensive, heavy-weight applications that support the business in a way they can properly understand in management level reporting. This enables trust and a solid relationship to be built that gains and retains customers – Highlight reduces customer churn by 4x.