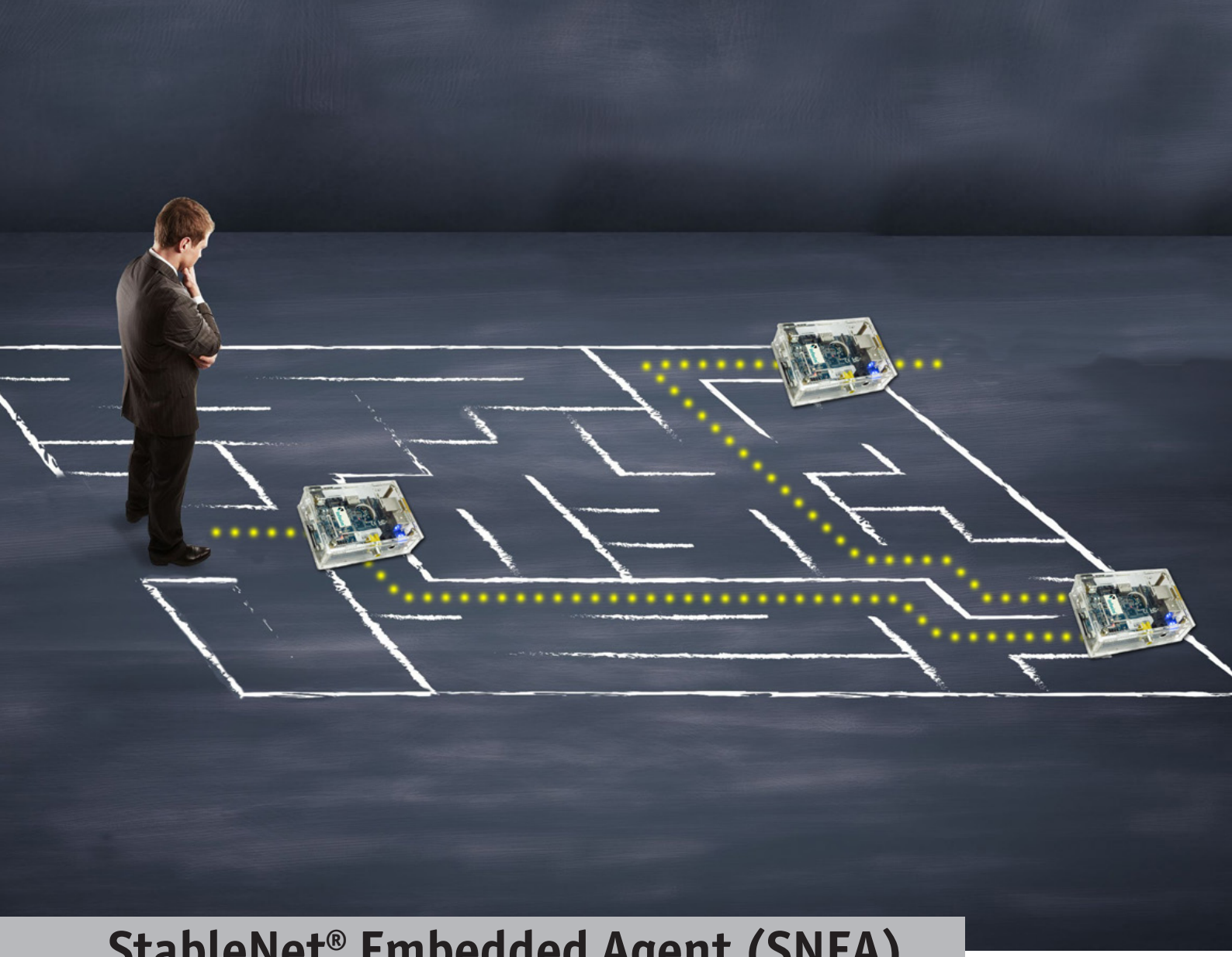


StableNet® Embedded Agent (SNEA)

SNEA enabled,
highly distributed measurements

infosim®

Increasing complexity of distributed IT services

Nowadays, IT services tend to be more and more complex. This heavily relates to the fact that the underlying infrastructure and interplay between different components get more and more complex. It starts with the datacenter, cloud, or server infrastructure where the applications are running, continues with the network and all its different subnetworks and devices, and also includes the end-user devices that in times of Smart TVs, tablets, notebooks, etc. get more and more diverse.

With the increasing complexity of the services also the monitoring of the services becomes more and more complex. This is in particular true wherever different services and network providers interact. In this case, for each of them at least one puzzle piece is missing and one part of the service cannot be monitored. None of the providers is able to obtain a real holistic view of the network. The result is that as soon as any customer complains about "bad quality", the interacting parties are blaiming each other to be the reason for the quality loss.

Classical network monitoring situation

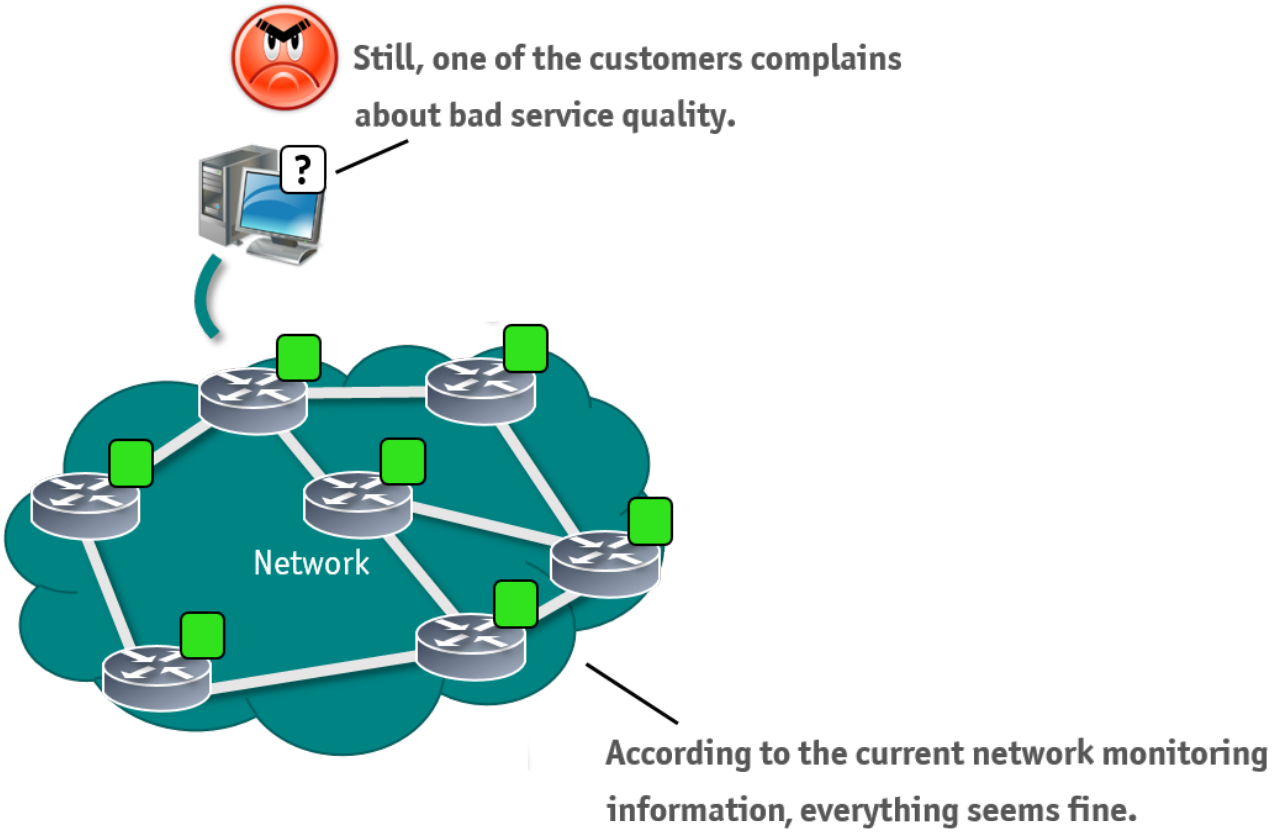


Figure 1: Illustration of a classical network monitoring situation. A lot of "blind spots", i.e., unmonitored service components.

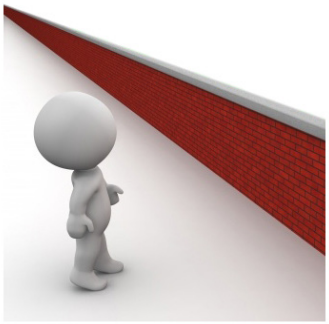
Figure 1 illustrates an example from a network provider's perspective. The network provider monitors its network, and all monitoring states indicate a good quality of the service. Still, a customer complains about bad quality of his service. Due to the limited view on the service from the network provider's side, there is a large problem to verify the customer's problems and to show their own innocence. As indicated in the example, the network provider usually has only very limited information on the service itself, has no reference measurements from other customers if the service currently works at good quality for them, and also cannot quantify if the quality is really "as bad" as described by the complaining customer. Some of the main problems arising in this context are discussed in more details in the following.

Typical problems of today's network administrators

The situation explained before reveals several pain points of today's network administrators that are briefly discussed in the following.

Missing or incomplete monitoring information from the service side

Network administrators usually only have monitoring information from their own "territory", i.e. the network itself. An increasingly large zoo of different services is running in the network and the number of these services steadily increases. Each of the services has its own requirements, SLAs and KPIs. Without adequate tools, a monitoring of the services can therefore be very complicated and time-intensive. Therefore, except for the rather small percentage of services offered directly by the network provider itself, there are usually only very limited possibilities to adequately monitor the services and to recognize performance problems or outages on the service side.



Missing reference measurements from other locations or end points

The second problem is somewhat related to the first one. Since the network administrators monitoring scope normally focuses on the network itself, they in general do not have any possibility to look at the quality of the same service at a different customer and/or location. The piece of information that is the closest to such measurements in a classical monitoring setup, could be availability or bandwidth measurements from different locations. However, due to the vast amount of services, as stated before, distributed reference measurements for particular services are typically not available.

No possibility for an objective quantification of subjectively bad quality

With the unavailability of service monitoring information from an end point perspective, it is impossible to get more objective information whether the measurable service quality is actually as bad as the user-perceived quality indicated by the customer complaint. The correlation between user-perceived quality also referred to as QoE (Quality of Experience) and QoS is by far not trivial. Various research studies in this field have revealed that the happiness with the same given level of service can strongly vary between different users. Quantitative reference measurements are therefore a "sine qua non" for getting an opinion of how severe particular problems are.

Only reactive but no proactive intervention possible

One of the crucial points of the classical network monitoring situation explained before is that until the point when the customer actually complains, nobody even recognized that anything was wrong. Evidently, once the complaint has arrived, time is running short and each additional minute or hour spent on locating and solving the actual problem is already causing further unhappiness of the customer, and in consequence a possible loss of money. This problem – that is successfully avoided in the network context by adequate monitoring – needs to be solved also in case of service problems.

After all, two open questions remain for the administrators. It is very difficult to locate the actual problem the customer is complaining about. Therefore, it is in particular also difficult to prove their own innocence.

Shedding light into the darkness – extending monitoring with highly distributed SNEA measurements

With the StableNet® Embedded Agent (SNEA) black box like "Plug&Play" device, Infosim® can overcome the problems mentioned before.
Being distributed to different locations of the network, these boxes with the smallest foot print on the market can shed light into the darkness and reveal new information to the service provider that has not been present before.

Figure 2 illustrates the new monitoring situation with SNEAs being added to distributed locations of the network.

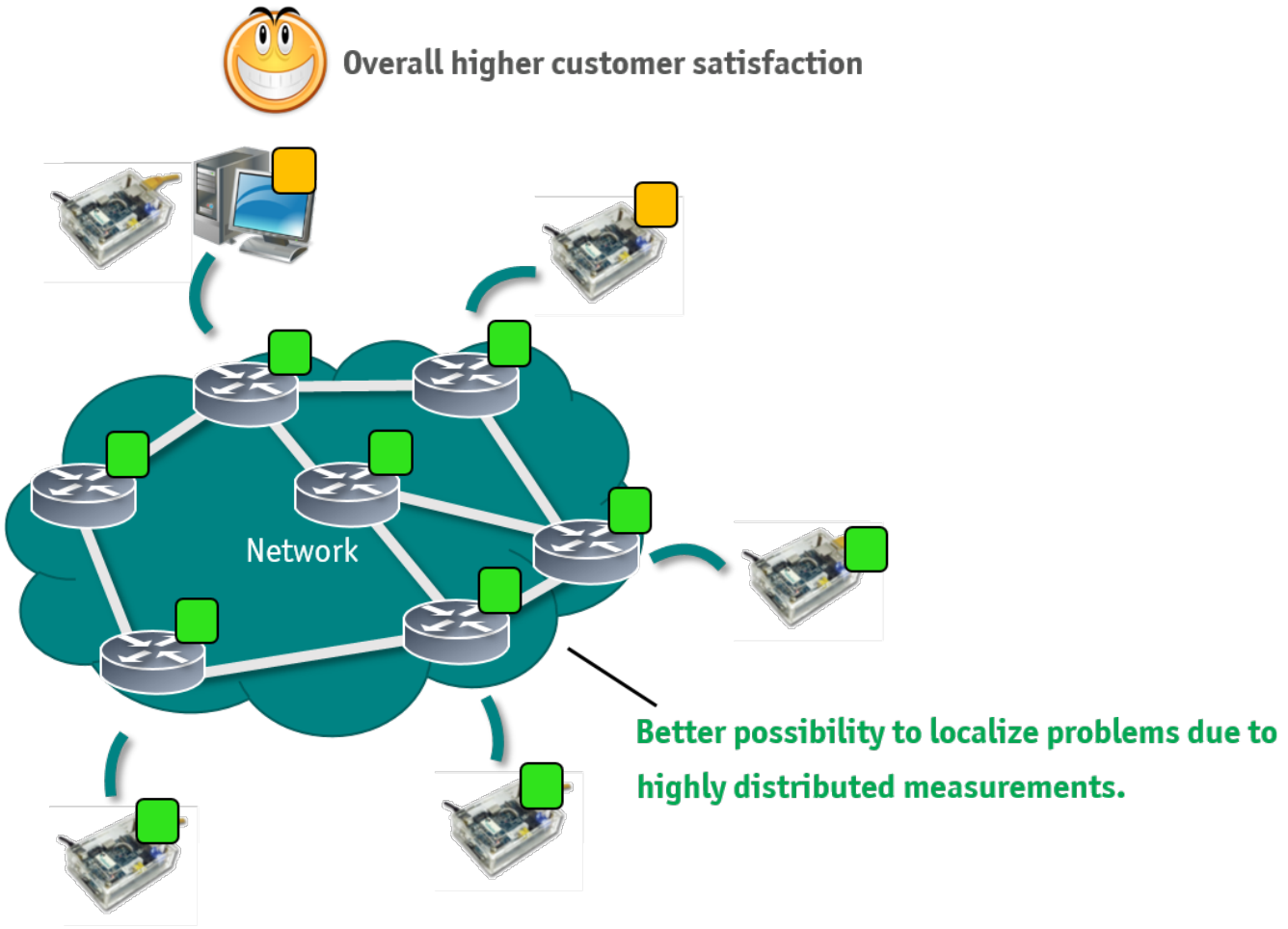


Figure 2: illustrates the new monitoring situation with SNEAs being added to distributed locations of the network

SNEAs feature full StableNet® Agents and can be controlled from a central place. This way, various simple and more complex measurements can be run continuously or on demand from any place in the network where a SNEA has been connected.

Due to the availability of a full StableNet® Agent on the SNEAs, the measurements can reach from simple network and server measurements, such as RTTs and CPU load, to complex business scripts emulating particular services.

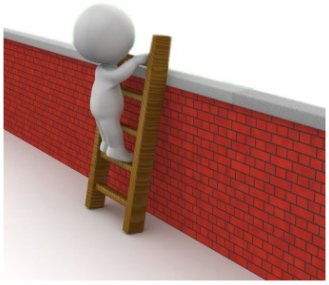
Furthermore, as known from normal StableNet® Agents, the SNEAs cannot only do measurements towards a central server/service in the network but also measurements between different SNEAs. Typical examples are VoIP or IPTV measurements.

Key Benefits revealed by highly distributed SNEA measurements

By offering the possibility for highly distributed End-to-End SNEA measurements, Infosim® StableNet® reveals several key benefits.

Better server monitoring information using on-demand measurements

As mentioned before, each of the SNEAs contains a full-featured StableNet® Agent and can be controlled centrally. This allows for a highly flexible reconfiguration of the devices on demand to measure all necessary information that is most important at a given point of time, starting from simple "black box" service availability tests to inside "white box" KPI measurements and SLA compliance checks. Depending on the importance of a given service, parameters can either be measured continuously or on demand in case of first indications of a service level decrease.



Increased monitoring efficiency (number of locations, correlations)

The cheap cost of the SNEA devices allows for the installation of very large numbers of them. This, in return significantly increases the number of reference measurements. Due to the universal applicability of the SNEAs, not only more different services can be monitored on a regular basis, but also the coverage of different locations can be significantly increased. Furthermore, existing "classical" network monitoring information and the new information gathered by the SNEAs can be correlated to further increase the monitoring efficiency. Altogether, this can significantly increase the possibility to detect and localize problem root causes.

Increase the objectivity of KPI measurements

The increase of the number of objective, technically conducted measurements that are independent of any human apprehension also increases the objectivity of any quality level estimations. While in a classical situation the subjective quality reported by users of a service was the only source of service quality information, this has now changed. Having access to a continuous source of measurement data from various locations and with a high number of reference values, helps to much better estimate how severe a customer complaint actually has to be treated.

Increased tranquility through the anticipation of upcoming problems

Continuous, distributed SNEA measurements help to reach a state that is already best practice in the network monitoring area. The interruption-free availability of measurement information helps to analyze current trends and to recognize early warnings in case of slight quality decreases. This way, instead of conducting urgent actions under high time pressure in case of outages, administrators can anticipate approaching problems and solve many of the problem's causes before any problem actually appears (and/or is recognized by the customers).

In summary, the highly distributed SNEA measurements allow for a simpler identification of problem sources and an increased credibility of the administrators.

StableNet® Embedded Agent (SNEA)

With the StableNet® Embedded Agent (SNEA), Infosim® now offers all the powerful features the customers appreciate from the StableNet® Agent in a Plug&Play "black box" appliance. The SNEA is shipped preconfigured and completely ready to deploy. Only Ethernet and power need to be connected. An example of the SNEA is shown below.

Exemplary picture of the SNEA v1 – other versions available upon request

Capabilities

- Typically more than 1000 measurements
- More than 200 MBit/s VoIP traffic with Multimedia Script
- Availability of all Java business processes
- Availability of all measurement types

Main SNEA benefits: Reduction of

- initial setup costs (no need to buy expensive hardware)
- space requirements (“on the rack”, not “in the rack”)
- complexity (Plug&Play)
- maintenance effort (no mechanical parts)
- power requirements (powered over USB)
- setup time (just 3 easy steps)

SNEA Setup - It’s as easy as 1-2-3

1. Order

Order the desired number of pre-installed devices from Infosim® or one of its certified partners.

2. Scan Barcode

Register all devices at the StableNet® Server by scanning each device’s individual barcode.

3. Plug & Play

Distribute the devices to the desired locations and have them plugged in. Done!

Additional SNEA Use Cases

Besides the use case of StableNet® Monitoring out of the cloud, the StableNet® Embedded Agent is also an ideal enabler for other use cases. One example could be to deploy a large number of SNEAs to conduct highly distributed measurements of a service from various geographical locations. Another one could be detailed hop-by-hop monitoring by placing SNEAs at each hop of a certain connection. Having your SNEA use case in mind and looking for more information? Please contact us to discuss more details!

About Infosim®

Infosim® is a leading manufacturer of automated Service Fulfillment and Service Assurance solutions for Telcos, ISPs, Managed Service Providers and Corporations. Since 2003, Infosim® has been developing and providing StableNet® to Telco and Enterprise customers. Infosim® is privately held with offices in Germany (Würzburg - Headquarter), USA (Austin) and Singapore.

Infosim® develops and markets StableNet®, the leading unified software solution for Fault, Performance and Configuration Management. StableNet® is available in two versions:

- Telco (for Telecom Operators and ISPs) and
- Enterprise (for Corporations)

StableNet® is a single platform unified solution designed to address today´s many operational and technical challenges of managing distributed and mission-critical IT infrastructures.

Many leading organizations and Network Service Providers have selected StableNet® due to its rich set of features and reduction in OPEX & CAPEX. Many of our customers are well-known global brands spanning all market sectors.

At Infosim®, we place paramount focus on customer satisfaction. We uphold an indomitable spirit for innovation and high quality products.

Why Infosim®?

- Quality software design you can trust and rely on
- Proven solution with a large number of installed sites
- Unified solution which covers Configuration, Fault/RCA and Performance Management in a single product
- Reduction in OPEX & CAPEX via product consolidation, step-by-step migration and retirement of existing legacy element management solutions
- Automated Service Delivery directly from your Integrated Service Catalogue
- Configuration & Policy Governance that maximizes Service Availability and reduces MTTR
- Rapid ROI by reduction in OPEX & CAPEX and customer service credits realized via greater Service Availability
- SOA-based technology, meaning it is highly integrable and flexible

Differentiation

StableNet® is a 3rd generation highly automated Network Management System. The key differentiation of StableNet® to other legacy type Operational Support Systems (OSS) is that StableNet® is a unified OSS system with three integrated functionalities that focus on Fault, Performance and Configuration Management, with automated Root-Cause-Analysis (RCA). StableNet® can be deployed on a Multi-Tenant, Multi-Customer, or Dedicated platform and can be operated in a highly flexible and dynamic environment like a Cloud or dynamic flex-compute environment.

We look forward to hearing from you!

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