VIPRINET IN BUSINESS-CRITICAL APPLICATIONS

EXECUTIVE SUMMARY

Whenever a truly reliable broadband connection is needed, conventional service provider offerings are inapplicable at all or at least too narrowly considered. This is the reason why many customers often don't get the availability, reach, security, and bandwidth they need – especially when different kinds of application have to be covered by only one connectivity solution. The following whitepaper demonstrates how Viprinet can give you a true advantage over conventional offers on the market for many different areas and applications. Examples from retail, broadcasting, transportation, and many other branches show the spectrum you can cover with real WAN bonding from Viprinet.

INTRODUCTION

Today's business applications require 100% uptime driven by cloud computing, machine-to-machine interaction, voice and video communications and the digital transformation of nearly all business processes. Business customers often rely on one service provider offering with a given service level agreement which determines bandwidth, availability, and reach.

Unfortunately, like in real life one size doesn't fit all business requirements. This is where Viprinet's WAN bonding technology comes in. Viprinet enables connectivity in order to deliver a resilient communication infrastructure which Viprinet customers are using to deploy different applications.

Retail

Retailers constantly demand higher bandwidth and uptime since more and more applications are digitized, e.g. customer programs, pricing, logistics, or accounting. Previously, retailers could cope with 98% or 99% availability and DSL bandwidths. Today, they are demanding 100% uptime and more upload bandwidth due to the existence of digital signage applications, customer loyalty programs, and online electronic payments. Each disruption or bottleneck is going to impact cash register transactions and customer satisfaction.

In 2012, Detailresult B.V., a Dutch supermarket chain, migrated towards a Viprinet-based solution using DSL and 4G/LTE as a seamless back-up and upstream booster. They've realized 100% uptime since then with 12 times the bandwidth for the same cost as the previous solution.

Broadcasting

Broadcasters have realized several applications via Viprinet. The first application is to provide Internet research for the reporters and their staff in broadcasting vehicles. Previously, Internet research could only be done when the vehicle was parked and the satellite antenna was extended and then aligned with the satellite in line of sight. Whenever the vehicle had to move (e.g. parking violation), the process needed to be started all over again. The result was an inflexible and expensive Internet connection with a high latency. With Viprinet, broadcasters now use vehicle-mounted 3G bonding of different providers in order to replace the satellite connection. As a result, they achieve flexibility in location without the need for line of sight, way lower latency, and way lower cost.

2-way live audio has high demands in terms of packet loss and latency. In order to keep the interactivity of the conversation, the latency must stay below 250ms with hardly any packet loss. This requirement doesn't come cheap. Normally, broadcasters are working with business level ISDN lines or multiple DSL lines in location-static environments. In mobile scenarios, broadcasters are using relay helicopters or even airplanes like during the Tour de France. In that case, audio is being transmitted via VHF to the intermediate from which you would leverage high-quality leased lines. With Viprinet, a 3G bonding router simply combines the networks of different service providers to enable a very low-latency connection with high quality (no packet loss) at a fraction of the cost. The question is: How can you achieve such a low latency? The answer is: by sending each packet across each of the different provider networks and always taking the one which arrives first. That also answers the question how to achieve such a great audio quality without any packet drops: by simply replicating each packet across each of the different provider networks. In case a packet will be lost on one network, it is going to show up shortly after on a different provider's network. Today, hundreds of Viprinet systems are being used in broadcasting. One Viprinet partner – Wired Broadcast – even developed a battery-powered Viprinet 3G bonding router version that can be operated up to 8 hours without external power.

Digital Movie Distribution

Previously, cinemas were supplied with 35mm tapes by the distribution. Due to recent upgrades, more and more cinemas went digital: The distribution replaced the 35mm tape with a 300 GB hard disk that contained the Digital Cinema Package (DCP). In order to respond to customer demands more quickly and to drive down the cost, distribution centers are sending the DCP files today via their networks. However, in many cases, the cinemas' access networks are insufficient in terms of availability and bandwidth. This is where Viprinet comes into place: It bonds several broadband lines to enable real high-speed broadband connections, and at the same time increases the availability of the networks.

Ferries, Cruise Ships

Tourists and travelers demand Internet regardless of the location. Imagine a tourist on a river cruise or a business traveler on a ferry. They definitely need to access the Internet for travel plans or business communications. Previously, connectivity was delivered by one 3G/4G provider, which led to very poor performance in terms of bandwidth and latency. Also, poor coverage, especially in rural areas such as river shores and sea shores, led to frequent disconnects.

With Viprinet's bonding technology, ship, cruise, and ferry operators have been able to deliver great services for travelers enhancing the overall bandwidth while, at the same time, reducing the latency and disconnects due to better coverage by combining different provider networks.

Law Enforcement

Law enforcement agencies require Internet access at the point of need regardless of the coverage of a single service provider. Previously, they depended on satellite communications with the need for line of sight and fixed location or 3G/4G coverage of a single provider. Both approaches didn't work well for first responders where coverage and line of sight don't correspond with the point of need. Viprinet has been adopted by many of the major law enforcement agencies and SWAT teams owing to the fact that the technology is able to bond several 3G/4G signals of different providers. Therefore, location becomes nearly irrelevant since the sum of all providers' coverage is way bigger than the coverage of one provider alone could ever be. Secondly, bonding several 3G/4G providers also provides you with the ability to move from fixed locations to mobile environments (e.g. cars in motion). And last but not least, the use of 3G/4G vs. satellite is also cheaper.

Tele-Homecare

Chronic diseases (heart, lung, diabetes, etc.) consume ~75% of healthcare budgets in developed countries. In Denmark, an important focus area is to drive down these costs since they are not sustainable with longer life expectancy and changing demographics. A number of pilot projects have been conducted where Viprinet routers enable patients to be admitted from hospital to home with a tele-homecare kit. This kit enables the patient to submit data such as blood oxygen level, pulse, blood pressure, ECG, and others once or several times a day to the central database. In case one or several parameters are out of pre-set levels, a video conference between a tele-nurse and the patient at home is triggered to understand why these levels changed so much. It was discovered that the personal discussion between patient and nurse leads to a change in lifestyle and that the group at home compared to the group at the hospital had 70% less readmissions after 90 days of leaving the hospital early. Viprinet ensures connectivity regardless of the location where the patient lives.

High Speed Trains / Busses

Travelers are expecting reliable Internet services wherever they are. However, in some environments such as high-speed trains, this can be very challenging due to the frequent change between cells, low coverage in rural areas, and the high amount of traffic generated by business travelers. Viprinet has a unique approach to bond several service providers into one high-speed connection. Even when a single link fails, the users won't notice it. In addition, administrators can fine-tune certain parameters to deliver a stable link over highly unstable connections.

Construction

Construction companies oftentimes operate in areas where infrastructure is simply not yet available or they only need it for a certain amount of time which conflicts with long-term contractual agreements of carriers.

However, they need access to communicate with architects, contractors, and clients to ensure smooth operations at the construction site. A number of large construction companies are using Viprinet to enable construction sites with connectivity. The idea is simply to leverage Viprinet's modular approach and deploy the best mix of modules (e.g. DSL, 3G/4G) for each location. By that, workers are provided the maximum of bandwidth by WAN bonding and smooth communication between site, architect, contractors, and headquarters can be ensured.

Energy Grid

The electrical grid is undergoing massive change. There's the need to reduce the waste of energy loss during transmission, which leads to more and more IT use throughout the grid. In addition, we see the use of alternative power sources (such as wind, sun, and sea) increasing quickly across the globe. Due to the nature of power stations and alternative energy generators, these are located in rural areas where wired connectivity is often unavailable. Therefore, many grid providers are using Viprinet to connect to remote stations for monitoring of energy generators and the management of energy plants.

Service Providers – New Services

Carriers have been dependent on a single technology's capabilities to define a service (e.g. ADSL, VDSL, SDSL, E1/T1, 3G, or cable). The downside of this approach is that services could only be scaled based on the standardized technology determining bandwidth and the granularity of upgrades. This made offerings of different providers very comparable and left carriers with low margins.

Viprinet enables carriers to provide new services which couldn't be realized without WAN bonding. WAN bonding allows carriers to define new services with way better service level agreements in terms of availability, bandwidth, and security. In the Netherlands, Viprinet is being used to deliver 100% uptime with a mix of ADSL and 4G. With Viprinet, customers can to use the best of both worlds in DSL and 4G: the high download speed of DSL and the high upload speed of 4G – creating a symmetric high-speed broadband connection.

Insurance Claims

The business of filing and processing insurance claims hasn't changed much over the past years. With Viprinet technology, a company in the UK revolutionizes this industry. 360Global provides a crowd-sourcing service for handling insurance claims. This is the idea: A claim is filed. Then, it is put on a platform for the first freelancer to grab. The freelancer calls the customer and arranges a meeting which normally takes place the same day with convenient hours for the customer (e.g. in the evening). Once there, the freelancer establishes a live video feed via Viprinet from the place of the damage towards the claim manager sitting in a video call center. The claim manager assesses the damage and directly submits orders to contractors to fix the damage.

The benefits of this approach are manifold: at least 20% cost of claims, less fraud, high customer satisfaction due to the responsiveness, and flexibility of the freelancers.

CONCLUSION

Viprinet builds the foundation for many of the above application scenarios. Customers and partners have chosen Viprinet since only by that they are able to achieve close to 100% uptime with close to 0% packet loss by mixing and matching different technologies and service providers. This enables them to deliver new applications which were previously un-thought of or were not possible due to the restrictions of specific technologies and service providers. Viprinet enables you to achieve high availability, bandwidths, and reach where you need it.

You can get started with Viprinet by taking a look at your current availability and cost. This data should be compared with your availability and bandwidth requirements for the future. We can offer you a workshop to discuss how you can migrate towards 100% uptime and the bandwidth you need for the same or even less cost.