



Pay-as-You-Grow: Flexible Capacity in the Datacenter with On-Demand Licensing



Executive Summary

Today's organizations routinely experience both temporary spikes and longer term increases in the demands placed on their application delivery infrastructure. Accounting for these situations typically involves the substantial expense of proactively over-provisioning at the outset and/or reactively responding with costly and highly disruptive hardware upgrades.

Recognizing the need for an alternative approach, Citrix created NetScaler Pay-as-You-Grow, a simple, on-demand licensing model that provides investment protection, avoids costly hardware upgrades, and reduces the TCO of associated network and application infrastructure. With NetScaler Pay-as-You-Grow, datacenter managers can purchase an application delivery solution that is optimally sized to meet their current needs without having to worry about scaling to meet the demands of tomorrow. They also obtain a solution that is particularly well-aligned with server virtualization, cloud computing, and other technologies and initiatives that are helping enterprises transform their static datacenters into highly dynamic IT delivery centers.

The Dynamic Datacenter Dilemma

Today's datacenters are highly dynamic. Ongoing trends and common events that routinely lead to increases in network load include:

- **Server and site consolidation** – Many organizations continue to pursue consolidation as a means to cut costs. One outcome of this trend is that central-site bandwidth and network capacity requirements are steadily on the rise for these enterprises.
- **Introduction of new applications** – Deploying new e-commerce, enterprise 2.0, and other applications that help automate key business processes is what allows businesses to enhance productivity and remain competitive. Each application, in turn, introduces a new and sometimes substantial load to the network.
- **Introduction of new technologies** – Some technology solutions, such as application and desktop streaming, have the potential to substantially increase network load at headquarters locations. Others, such as VoIP and video, are more equitable in that they typically drive traffic volumes up across all corners of the network.
- **Introduction of new users** – Mergers and acquisitions, geographic expansion, product line/demographic expansion, and organic growth are inherent activities for virtually any business, and can result in anything from a steady increase in traffic levels to a major, overnight change.
- **The dynamic datacenter** – Widespread adoption of infrastructure virtualization technology and other related solutions are intended to modernize enterprise datacenters, transforming them into centers for the dynamic delivery of IT as a service. The impact, even while the transformation is still taking place, is a computing environment that can rapidly, if not automatically, account for new/changing business needs as they arise—and a capability that translates into the potential for dramatic shifts in the demand for network and application resources.

Traffic patterns and overall network load can also be unpredictable due to a wide variety of externalities, or factors outside the immediate control of IT. New marketing campaigns, special offers, and all kinds of other business initiatives can spark a multiple of 10 to 20 times, or even greater, in demand for a given application. There's also no telling when a new technology, service, or piece of content will "go viral."

All of these are legitimate, business driven events. The challenge for IT is not one of being able to prevent them—as is the case with many other types of threats to today's computing environments. Rather it is one of being able to ensure the capacity of their network and application infrastructure is sufficient to account for these and other scenarios like them.

The Reactive Approach is Too Risky

One approach CIOs can take is to respond to increases in demand reactively, that is, after they have already materialized. Upfront costs are minimized in this case, but at what price? IT is faced with a recurring scenario that is not only costly but also disruptive to ongoing operations. For each occurrence, precious time must be taken to assess the situation, and then to design, plan, and implement hardware upgrades, forklift replacements, and/or additional systems. In the meanwhile, employees, customers, prospects, and constituents continue to suffer diminishing performance and an increasingly poor user experience. The net result is invariably damaging to the business and its reputation.

The Proactive Approach is Too Costly

The approach at the other end of the spectrum is not much better. Being proactive with regard to the capacity of networking and application infrastructure has historically involved over provisioning those systems that would otherwise require costly and disruptive hardware upgrades. In this case, the business pays for more than it really needs at any given time in order to have additional capacity at the ready. However, this too is an expensive approach.

- Many organizations can't really afford the substantial, up-front expense and additional support costs involved, particularly given current economic conditions
- It consumes scarce resources that could be used for investments that more directly contribute to revenue generation or otherwise improve the organization's competitive standing in the market
- It depends on complex and time-consuming forecasting exercises that, in the best case, lead to over over-provisioning and, in the worst, revert to the reactive scenario described earlier

NetScaler Pay-as-You Grow Licensing is Just Right

Citrix NetScaler is an all-in-one web application delivery controller. Available on a purpose-built hardware platform or as a virtualized appliance, NetScaler helps today's organizations quickly deploy web applications, while reducing TCO, optimizing the user experience, providing security, and ensuring application availability.

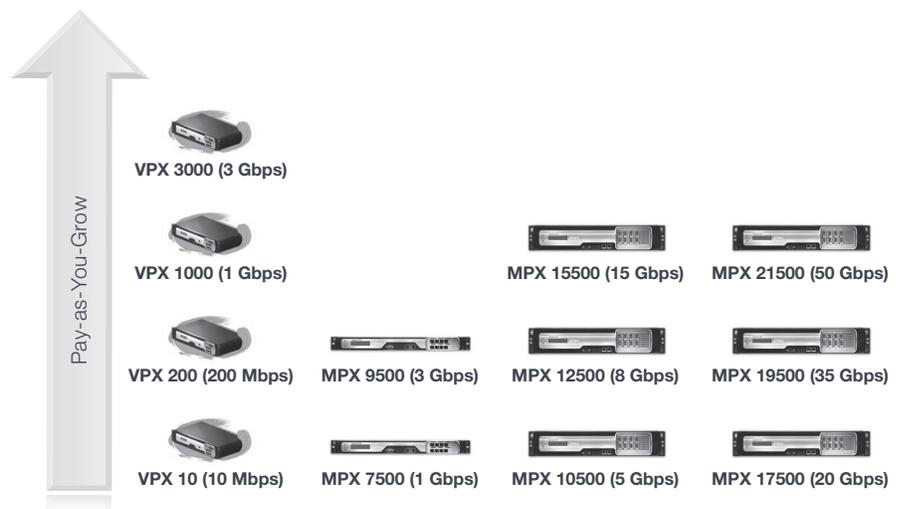


NetScaler Pay-as-You-Grow is an innovative licensing model created by Citrix to help organizations ensure they always have the capacity they need for the essential application delivery capabilities provided by NetScaler without having to absorb too much risk or incur too great of an up-front expense.

Application Delivery Capacity Available On-Demand

NetScaler Pay-as-You-Grow is a simple, on-demand licensing model that provides investment protection, avoids costly hardware upgrades, and reduces TCO. With Pay-as-You-Grow licensing, customers can purchase a NetScaler solution that meets their near-term performance and capacity requirements, with the confidence that they can easily and quickly scale their implementation in the future without costly hardware replacements. When the need for more capacity arises, all it takes is a simple software license upgrade to unlock additional levels of performance. Applicable to both high-performance NetScaler MPX hardware appliances as well as the new software-based NetScaler VPX virtual appliances, Pay-as-You-Grow licensing puts the full range of NetScaler performance levels—from 10 Mbps to 50 Gbps per unit—in the hands of today’s IT managers.

Figure 1: Virtual and Physical Options for NetScaler



NetScaler Pay-as-You-Grow licensing delivers several cost advantages and other significant benefits to NetScaler customers. These include:

- **Simplification of initial hardware provisioning processes** – When initially designing their application delivery infrastructure, IT managers can avoid complex traffic forecasting and sizing exercises. Neither do they need to over-provision in advance. Simple, straightforward estimating techniques and models sized to meet current requirements are all that’s needed given the ability to increase capacity whenever the need arises. In addition, scarce resources remain available for other investments and initiatives.

- **Elimination of poor performance and disruptive upgrades** – Diminishing performance and less-than-ideal user experiences can rapidly be remedied without having to design, schedule, and implement a major overhaul of existing application delivery infrastructure—only to be faced with doing the same thing again the next time a strategic business initiative results in a step-function change in demand.
- **Alignment with server virtualization** – Server virtualization and related orchestration solutions are two keys to increased datacenter agility and dynamic scalability of essential IT services. NetScaler Pay-as-You-Grow licensing is highly complementary to server virtualization initiatives in that it also allows datacenter capacity to be scaled in the most efficient way possible.
- **Alignment with cloud computing** – Flexible licensing is a boon for providers of public cloud services and IT departments that take advantage of private and hybrid cloud solutions as well. It enables them to quickly and affordably expand their infrastructure as performance and capacity requirements dictate, without incurring the heavy fixed costs and service interruptions of hardware upgrades. Because Pay-as-You-Grow licensing applies to both MPX hardware appliances and VPX virtual appliances, it also supports per-tenant—that is per-customer and/or per-application—customization and optimization at the lowest possible cost and with the greatest degree of flexibility and scalability.

NetScaler Pay-as-You-Grow changes how IT departments plan for network capacity and how they purchase corresponding application networking solutions, allowing them to reduce upfront effort and expenditures yet still be highly responsive to changing conditions and requirements.

Burst Licensing Delivers Elasticity, Even Greater Savings

The core Pay-as-You-Grow licensing option is an ideal solution for permanent increases in network load. However, it is sub-optimal for scenarios where temporary spikes in demand later subside. Examples of this type of situation can be found in just about every organization across every industry. They include e-commerce sites over the holiday shopping season, the launch of a hot new product—such as the Apple iPad or latest version of iPhone—or the kickoff of a new marketing program, advertising campaign or special offer.

What organizations need in these scenarios is elasticity—not just the ability to scale up on-demand, but to later scale back down as well so they can avoid paying for capacity that isn't needed under normal conditions. This is where an extension of the NetScaler Pay-as-You-Grow model, burst licensing, comes into play.

Burst Pack licenses allow datacenter managers to easily expand the capacity of an existing NetScaler system for a 90-day period to allow for seasonal peaks or any other event that causes an unexpected traffic surge. As with the core Pay-as-You-Grow offering, burst capacity can be applied to both MPX hardware appliances and software-based VPX virtual appliances. In addition, a convenient, self-service capability facilitates license generation, enabling rapid “deployment” of additional, temporary capacity on-demand.

NetScaler Pay-As-You-Grow

The product cost savings alone can be considerable with NetScaler Pay-As-You-Grow.

Consider an IT department with an initial throughput requirement of 500 Mbps and an expected traffic growth rate of 15 percent annually that initially purchases a redundant pair of web application delivery controllers with 1 Gbps capacity. Using a soft limit of approximately 75 percent steady-state utilization, this organization will need to upgrade its solution within 3 to 4 years.

With NetScaler Pay-As-You-Grow licensing the total investment required is \$64,000 for the initial purchase and \$25,000 for the upgrade to 3 Gbps. A competing solution costs \$61,000 initially and \$85,000 for replacement units capable of only 2 Gbps.

The net result: NetScaler Pay-As-You-Grow saves this organization nearly \$57,000 in product costs alone, delivers greater overall throughput, and completely avoids the need for a disruptive hardware upgrade.



Datacenter managers can take advantage of a burst period to further assess the needs of the organization and to plan for longer-term capacity upgrades if necessary. Otherwise, capacity will revert to pre-burst levels once the associated traffic surge has subsided. The net result with Pay-as-You-Grow burst licensing is an elastic response capability that further optimizes an organization's networking spend by allowing IT to safely navigate spikes in network demand without getting locked into needless, long-term and expensive extra capacity. Once again, there is no need to conduct complex forecasting exercises, over-provision and under-utilize essential resources, or execute expensive, time-consuming, and potentially disruptive hardware upgrades.

Conclusion

Pay-as-You-Grow licensing is just the latest capability that enhances the flexibility, dynamic scalability, and overall agility of the NetScaler web application delivery solution. For example:

- Availability of the NetScaler VPX virtual appliance enables datacenter managers to automatically add application delivery controller capacity, better accommodate multi-tenant arrangements, and cost-effectively deploy NetScaler services more thoroughly in their environment, all while re-using available server hardware.
- Active-active clustering allows multiple NetScaler instances to operate as a single, unified pool, effectively boosting capacity and availability of essential application delivery services.
- Global server load balancing (GSLB) spillover automatically re-directs application traffic from an overloaded site to an alternate site or a cloud-based implementation based on configurable parameters, thereby mitigating issues that could lead to a poor user experience and facilitating "cloud-bridging" arrangements.
- Fleet management capabilities allow multiple NetScaler instances to be managed as a single, logical group, easing administration for high-capacity deployments and distributed implementations featuring numerous, global policies and settings.

Along with these features, NetScaler Pay-as-You-Grow licensing provides both peace of mind and powerful investment protection. Datacenter managers can purchase an application delivery solution that meets their needs now without having to worry about scaling to meet the demands of tomorrow. On-demand capacity increases and burst pack licensing change how companies plan for network capacity and how they purchase application networking solutions. With Pay-as-You-Grow licensing, IT can optimize the cost and utilization of its application delivery infrastructure while avoiding the need for disruptive hardware upgrades and inefficient over-provisioning tactics.



Worldwide Headquarters

Citrix Systems, Inc.
851 West Cypress Creek Road
Fort Lauderdale, FL 33309, USA
T +1 800 393 1888
T +1 954 267 3000

Americas

Citrix Silicon Valley
4988 Great America Parkway
Santa Clara, CA 95054, USA
T +1 408 790 8000

Europe

Citrix Systems International GmbH
Rheinweg 9
8200 Schaffhausen, Switzerland
T +41 52 635 7700

Asia Pacific

Citrix Systems Hong Kong Ltd.
Suite 3201, 32nd Floor
One International Finance Centre
1 Harbour View Street
Central, Hong Kong
T +852 2100 5000

Citrix Online Division

6500 Hollister Avenue
Goleta, CA 93117, USA
T +1 805 690 6400

www.citrix.com

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