jetNEXUS V4 Release Features Update Report

A Broadband-Testing Report
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EXECUTIVE SUMMARY

- Load-Balancing has long been considered something of a technical black art, requiring Systems Engineer (SE) and consultant expertise to deploy and manage, but it needn't be like that.

- In an increasingly application-oriented world, the traditional roles of networking and application specialists have moved on. Now you are more likely to find an applications administrator in charge of a Load-Balancer deployment than a networking hardware technician. This, in turn, is reflected in the number of virtual software deployments of Load-Balancers, rather than the traditional, hardware-based appliance.

- With its new release of the ALB-X v4 Load-Balancer, jetNEXUS has re-engineered the usability and manageability of the Load-Balancer, designed to now enable an applications administrator to take ownership of the Load-Balancer domain, removing the need for higher level technicians to perform deployment and management tasks.

- The feature sets are the same, regardless of whether the product is in hardware, (integrated jetNEXUS hardware or ISO software image on industry standard x86) or virtual form.

- A wide range of enterprise applications are now directly supported in v4, in addition to complete flexibility when it comes to creating custom configuration for in-house applications and other scenarios.

- Clustering is a fundamental but often complex feature of Load-Balancers, as it provides both performance scalability and redundancy. In v4, jetNEXUS has removed the complexity surrounding clustering and turned it into a point and click exercise. You don't even need to be logged into an appliance (physical or virtual) in order to add it into a cluster and the entire cluster can be managed by a single appliance.

- jetPACKs are a short-cut to configuring the ALB-X for specific applications. You simply download the appropriate jetPACK template and the appliances are automatically configured appropriately. This is both a great time saver and cuts out the human error element.

- flightPATH provides rule-based flexibility so that complex Layer 7 operations can be set up without any programming requirement. In association with jetPACKs, this further dramatically reduces the complexity and time required to create intricate configurations.

- The jetNEXUS pricing model is one of life's great joys - WYSIWYG, no hidden license fees, add-on this, add-on that, making budgeting very simple. Pricing is also extremely competitive by market standards.

- With v4, jetNEXUS could rightly describe its product as Load-Balancing for the masses. Given the current mass deployment of complex, distributed and virtualised networks, the timing could not be better.

INTRODUCTION: DE-TECH'ING LOAD-BALANCER MANAGEMENT

The days of expensive, over-engineered hardware solutions that lock you into a particular technology are surely all but gone now.

End-of-lifeing, forklift upgrades and costly maintenance models have seen a switch to software-oriented solutions; add in extremely high performing and cost-effective "vanilla" server technology and virtualisation and it's easy to see why networking is now primarily a software technology.

Load-Balancing is no exception. Broadband-Testing's early experiences of Load-Balancing products involved proprietary hardware with six figure price tags and still fundamental performance limits that were simply not scalable. Contrast this with the jetNEXUS technology we are looking at here, where you can start small and scale on an as-needed basis, using standard server hardware technology (though support for hardware-based SSL acceleration also included) and virtualisation techniques and the cost effectiveness of this approach is immediately obvious.

At the same time, jetNEXUS has also focused on removing the complexities associated with Load-Balancing. In all, over 50 new features and over 100 enhancements with an emphasis on ease-of-use, scalability and power have been made during the creation of the new release. The focus has been all about usability. After all, just because a Load-Balancer might be complex "beneath the skin" why should it have to be so from a user interface perspective? Gone are the days when every company could afford a large team of technical staff in order to handle every aspect of IT. Instead, now the person charged with administering elements of the network such as the Load-Balancers are more likely to be application administrators - which makes sense after all, given the role of Load-Balancers, where the focus is often on specific applications such as Microsoft Exchange, or Oracle.

There is now far more of a self-service orientation to enterprise networking and computing in general, rather than relying on SEs and consultants to set up and manage network elements. Another important point is the companies are not buying into large, expensive hardware-based solutions any longer. Instead Load-Balancers are being fired up on virtual servers - the technology has moved on and into the modern, virtualised world.

It therefore makes sense for a Load-Balancer to be manageable in the same way as any other virtual appliance and this is something jetNEXUS has enabled - see later for more details. In other words, Load-Balancing technology is now essentially another application (at least in the jetNEXUS world) rather than a "black-box" hardware solution requiring lots of custom training and understanding in order to be deployable and usable.

So just how successful has the company been in transforming a formerly over-complex technology into something that is administrator-friendly, without losing any functionality? Read on and find out...

ALB-X V4 - WHAT'S NEW, WHAT'S DIFFERENT?

The primary aim with v4 is to take the concept of Load-Balancing and Application Delivery Control (ADC) and to provide a 100% comprehensive set of features while, at the same time, simplifying access to, and use of, that feature set. jetNEXUS itself is finding that, increasingly, Load-Balancing is the remit of the administrator level employee, not a Systems Engineer. V4 has therefore been designed to reflect this trend.

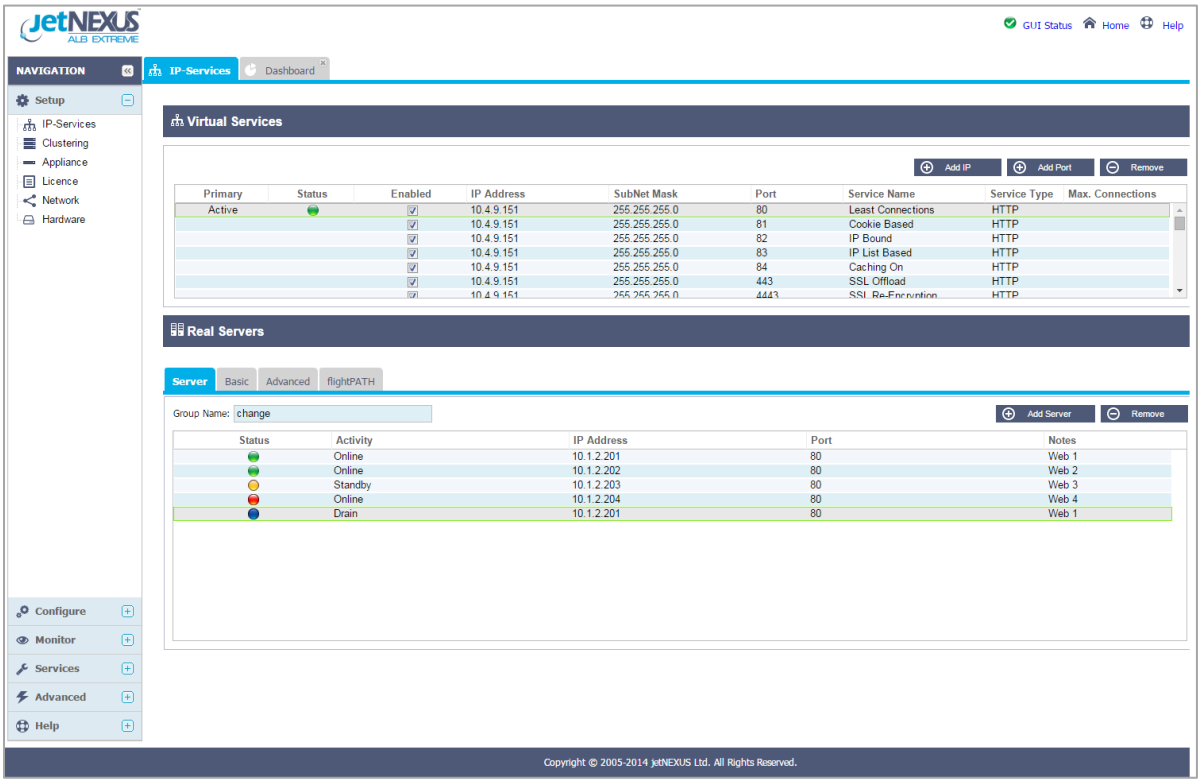


Figure 1 – v4 User Interface Much Simplfied

A menu of options is clearly laid out on the left hand side of the user interface (UI) and all options can be seen from the one screen. Clicking on an option brings up specific configuration choices for that option - very simple. Primary options are basically limited to Setup, Configure, Monitor, Services and Advanced (as well as Help), so there is no steep learning curve required here with pages and pages of options to learn and understand, as has been the case with some other L-B products we've looked at in the past.

jetNEXUS is continually adding more and more direct application support; something we notice every time we review an updated version. The aim here is for the company to reuse its acquired knowledge across a broad range of applications - everything from classic Microsoft apps, such as Exchange and Lync, to those falling outside of the traditional "Enterprise" remit, such as specialist vertical applications in the health, education and other industries. Tied in with jetPACKS - see next section - jetNEXUS is making specific application configurations and management as simple as possible.

In terms of online support for application-specific deployments, a wide range of guides, studies and video tutorials are available directly from the website. We looked at a couple of Microsoft-related videos and it adds to the simplicity of the configuration while only taking five minutes of your time.

Beyond the "ease of use" angle in v4, it is important to understand that the platform itself is also more powerful than ever. The focus here is four-fold:

- Resilience
- Acceleration
- Scalability
- Control

In addition to support for standard Intel-based platforms, jetNEXUS has also extended its capabilities to include hardware-based SSL acceleration. The idea is that, in a clustered environment (see next section) performance scalability is effectively unlimited without the need for any proprietary hardware that has a limited lifespan. That clustering also adds resilience, while the flightPATH (see next section) rules allow very finite traffic control. All operations are supported at Layer 7 and SSL offload is provided for added performance and optimisation benefits - again without any specialist hardware modules being required.

Finally the introduction of external API support offers significant integration into customer's existing infrastructure management and provisioning tools.

Load-Balancing Microsoft Applications

One stand-out element of the jetNEXUS offering is its direct support for Microsoft's Enterprise applications. Microsoft informs its customers that, for deploying enterprise applications such as Exchange and Lync, a Load-Balancing solution is an essential part of the deployment. It is logical, therefore, for part of the jetNEXUS focus to be on supporting the Microsoft family of applications and is a fully certified supplier.

For example, support for Exchange (2010/2013) includes auto-configuration via jetPACKS (see later), so deployment becomes a plug–n-play scenario, though all types of traffic profiles are supported, so it's not a "one size fits all" solution. The support includes a full reverse proxy solution (very popular among deployments observed by jetNEXUS), Layer 7 health-checking/monitoring for individual Exchange services (OA, OWA, EWS, OAB etc) and is available on the hardware or virtual appliances. Equally importantly, licensing is straightforward and simple.

Day to day management is really restricted to simply monitoring traffic as required, since the initial configuration will typically not need to be changed for long periods. The UI has a stats monitor that shows, per virtual server, what the connection status and performance is, what the cache hit rate is and other metrics.

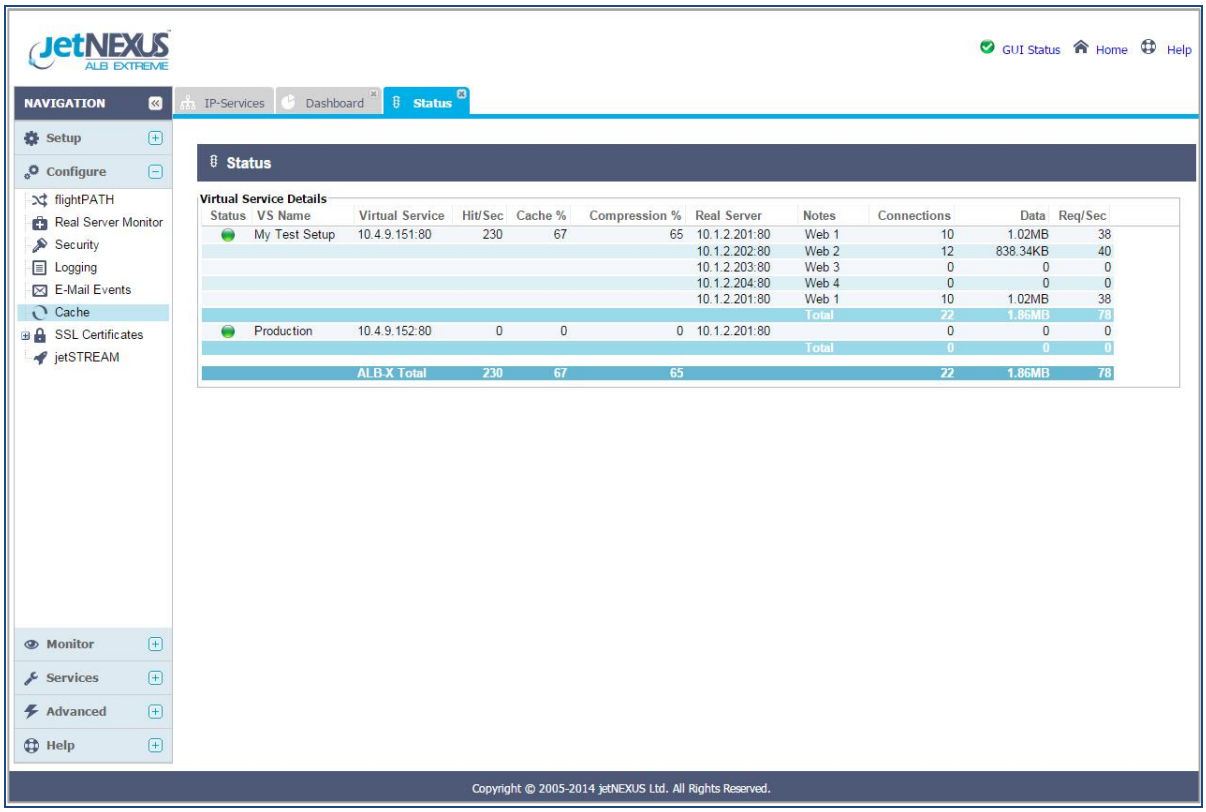


Figure 2 – Monitoring Performance

Other primary features of the Load-Balancer include content caching, content compression and TCP connection management.

Market-Specific Product Design

One thing that is often overlooked in the global IT market - and somewhat less obvious than the technical perspective - is about product relevance to its target markets.

jetNEXUS, unlike the US-based networking solution providers, is a UK-based company, focusing primarily on the UK (and European) market. This might not sound relevant, yet both technically and terminology wise, the UK market is quite specific from its US counterpart. Speeds and feeds, and the costs thereof, are dramatically different in many cases between the two markets. A product should be designed to optimise its target market specifically, which is precisely what jetNEXUS is focusing on.

Equally, from a GUI perspective, having menus that are not US-oriented in terms of terminology, but are designed for UK users is not simply a "nice to have" feature but can help reduce error and initial training requirements - optimisation of a kind again.

JETNEXUS ALB-X V4 FEATURE FOCUS - HANDS ON...

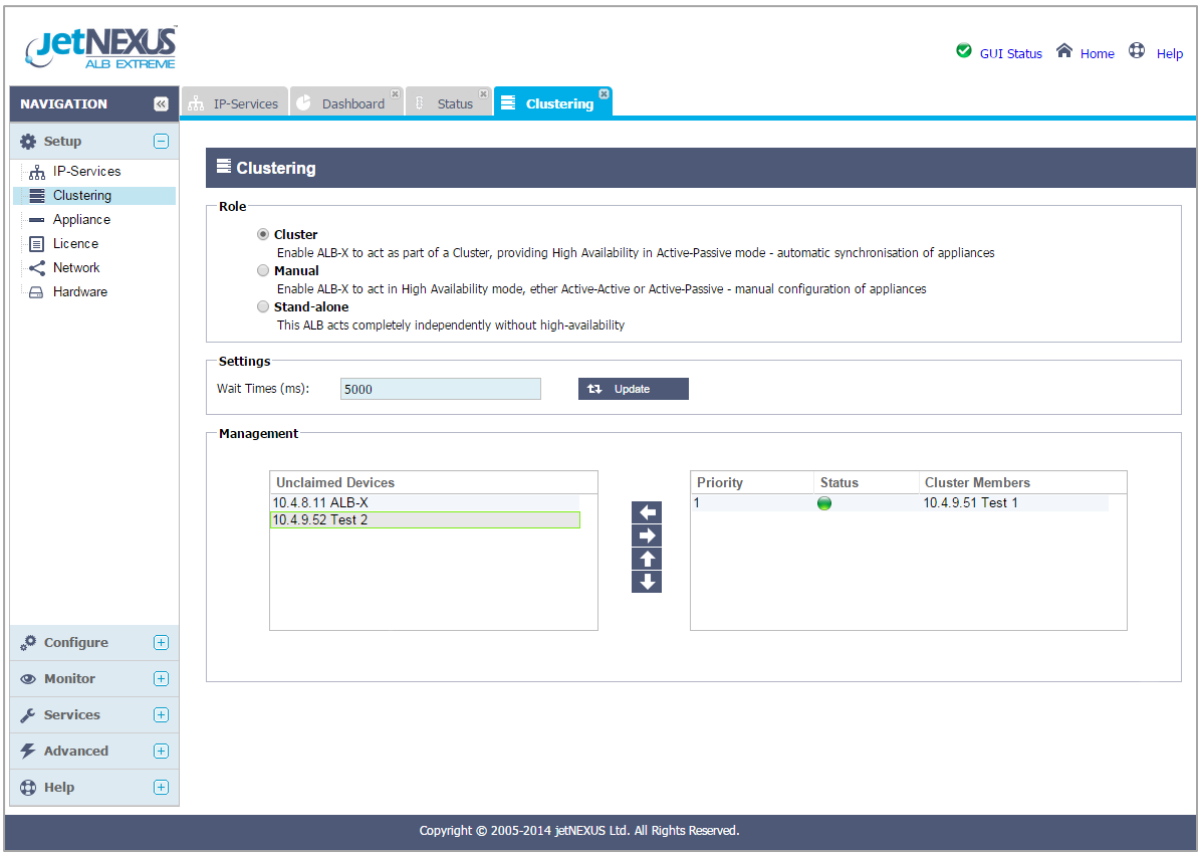
Among the many features of v4, three key elements of the technology are our focus here, the latter two being jetNEXUS specific:

- Clustering
- jetPACKS
- flightPATH

Clustering

Clustering, generally seen as a complex - but essential - feature of Load-Balancing, has been made into a very simple process with this new release by jetNEXUS. It literally is now as simple as dragging and dropping two or more devices into a cluster. A single IP address fronts an entire cluster, so it can be managed via any of the physical or virtual devices making up the cluster.

For our "hands-on" clustering example, our aim was to deploy two virtual Load-Balancers to give us redundancy, as well as improved performance, for a pair of web servers.



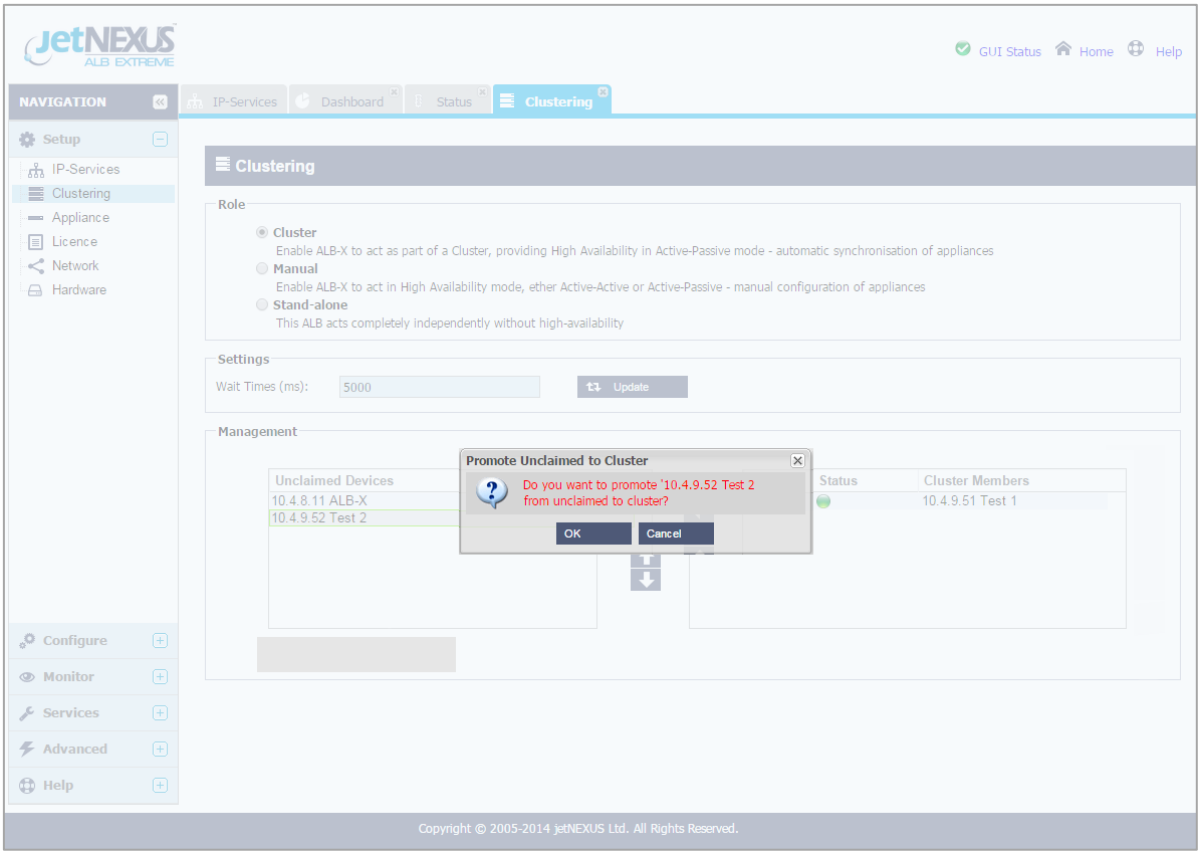


Figure 3 – Setting Up Clustering

The Clustering screen gives you three options - Cluster (where High Availability defaults to an Active-Passive pairing, Manual - which provides support for Active-Active in addition, or Stand-alone, which the appliance acts completely independently, without High Availability.

By logging into just one virtual appliance, we were able to drag and drop a second appliance into our cluster - job done, total time spent? Around 60 seconds from naming the appliances to completing the clustering (note cluster in bottom right of illustration below)!

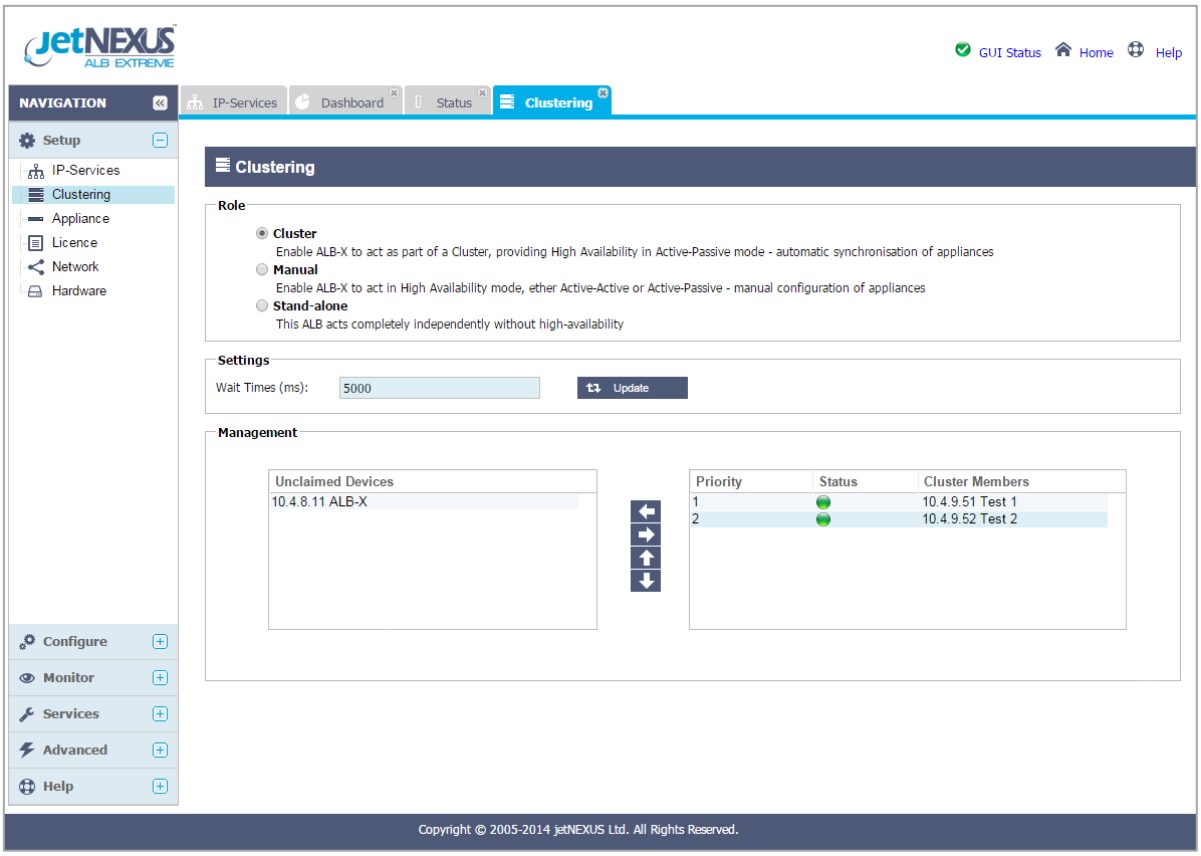


Figure 4 – Completing Clustering

The software automatically detected the second virtual appliance and made it available. Once clustered, the appliances are automatically synchronised in real time; this includes all aspects such as SSL certificates (historically a real pain to manage in this type of environment). With the virtual service and cluster established we added the real servers and our solution was complete - total time spent? Two minutes! This is the kind of feature that is very auto-provision friendly.

jetPACK

jetPACKS are application-specific templates that allow you to instantly configure a Load-Balancer for business applications. For example, jetPACKS currently include templates for Microsoft Exchange 2010 & 2013, Microsoft Lync, VMware View and Oracle E-Business Suite, but these are being added to constantly.

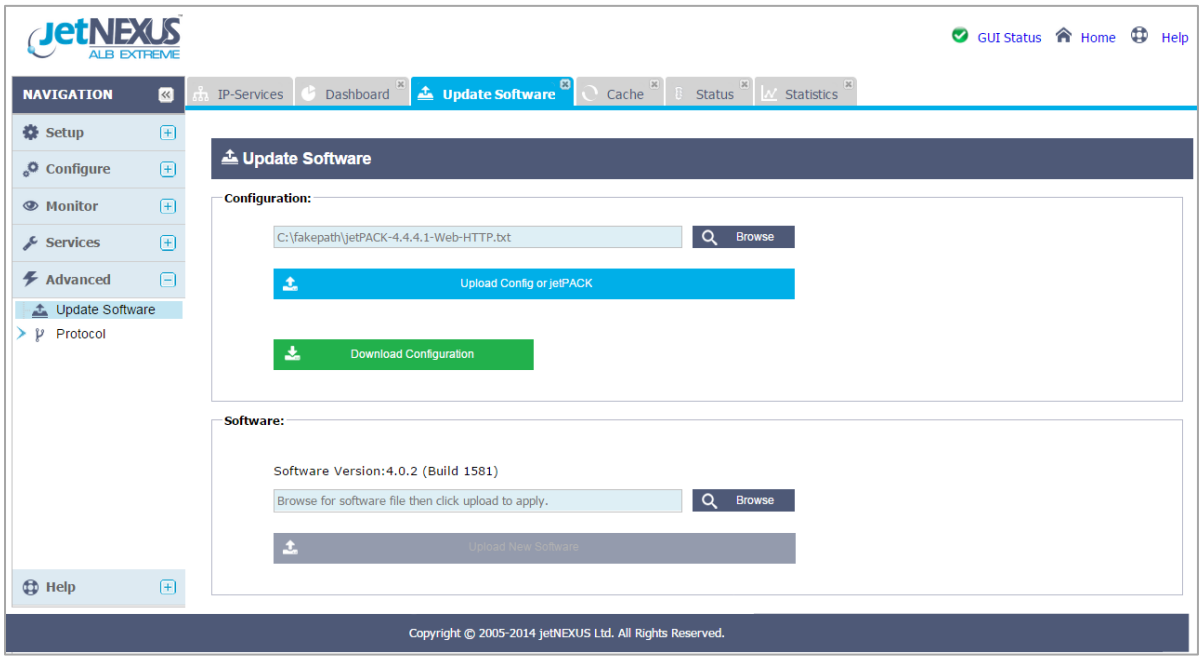


Figure 5 – Uploading a jetPACK

We chose MS Exchange for our "hands-on" example. It is possible to build your own wizards with jetPACK but in many cases - like this one - it really is as simple as choosing and uploading the application-specific jetPACK and the appliances - cluster-wide - are auto-configured. It even auto-adds any required flightPATH rules - see next example.

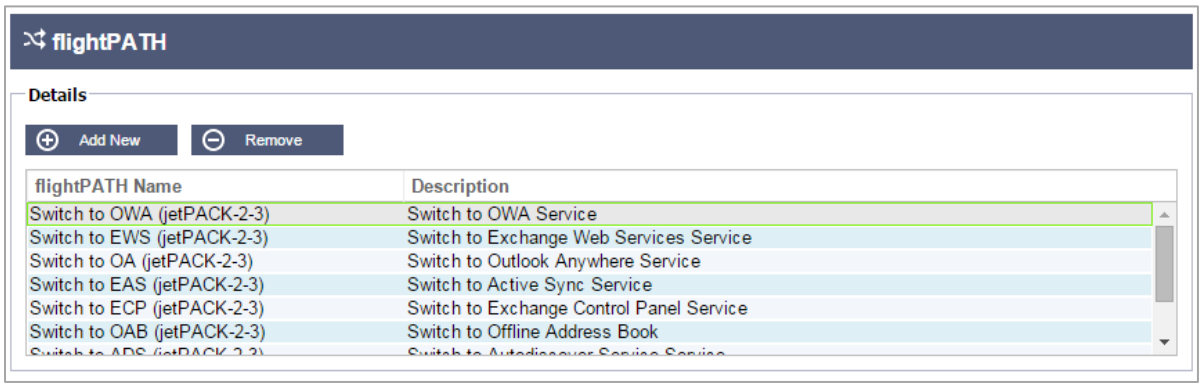


Figure 6 –jetPACK Auto-Adding flightPATH Rules

flightPATH

The jetNEXUS ALB-X includes a web-traffic manipulation engine called "flightPATH" which allows you to inspect incoming requests and outgoing responses in order to make intelligent decisions and take dynamic actions.

flightPATH is a powerful traffic manipulation feature, designed to be completely customisable so you can solve the real world application delivery challenges unique to each application and environment.

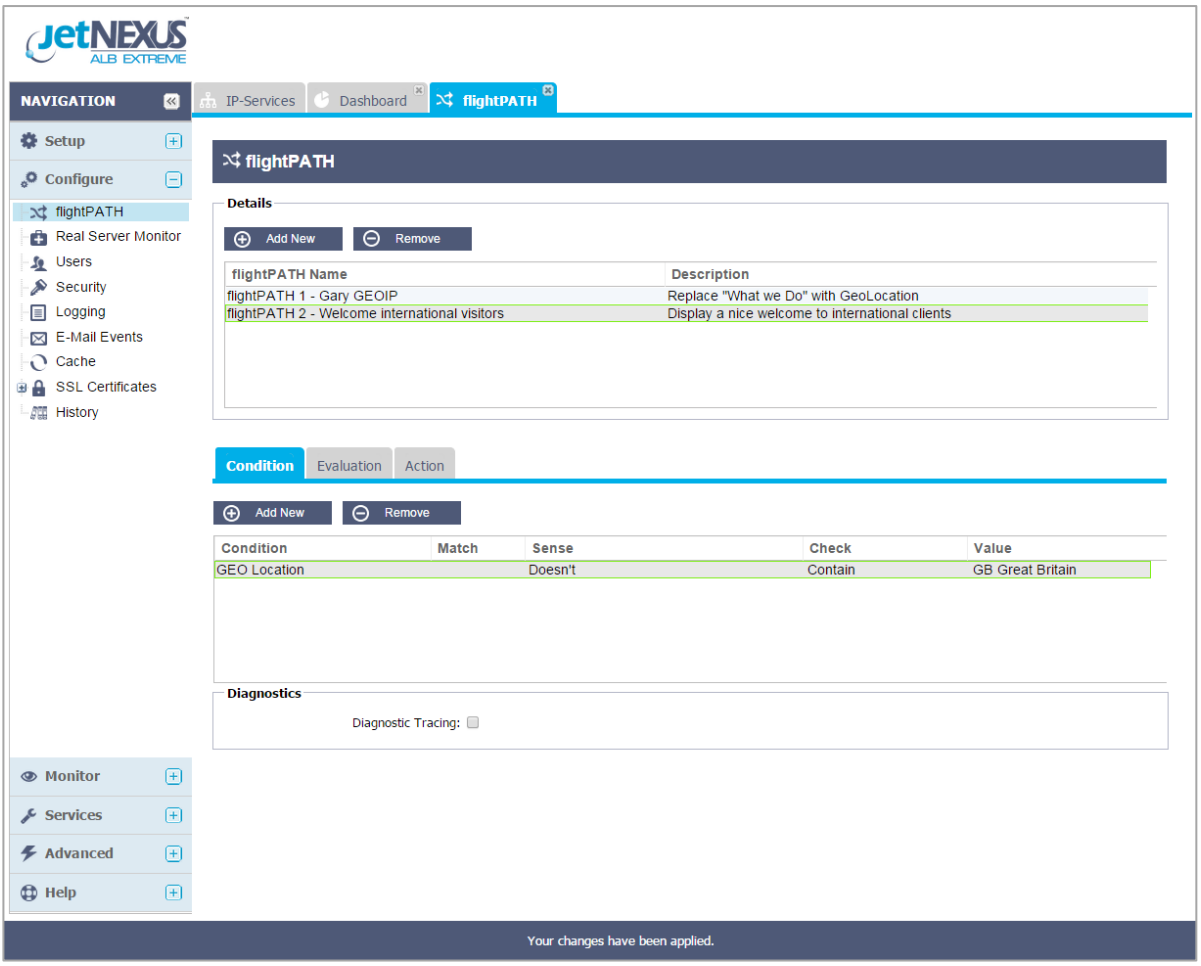


Figure 7 –flightPATH Adding Country Code Specific Page For GB

For our "hands-on" example with flightPATH, we chose an application that also shows that jetNEXUS is geo-aware.

In this case we wanted to change webpage titles, based on the country code. As a real-world example here, think in terms of customised welcome messages for different nationalities of users. So, in the case where the geo-location does not contain GB then, with flightPATH we can establish the country code regardless, for each web page, matching IP address against country code and even having multiple rules contained within a single flightPATH rule.

Using flightPATH is very simple - it is all based around creating rule sets from dropdown "actions" and "conditions" menus. So you decide on the actions relating to the content you are managing and then the conditions - see latter example below for the aforementioned GB rule.

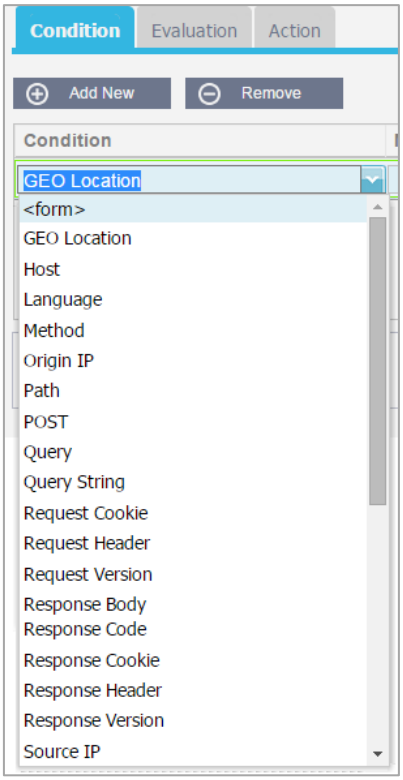


Figure 8 –flightPATH Conditions/Actions Dropdown Menu: Adding Country Code Specific Page For GB

Another example is where we might want to add some Google analytics to a webpage, using flightPATH to insert the appropriate code required by Google for the analytics.

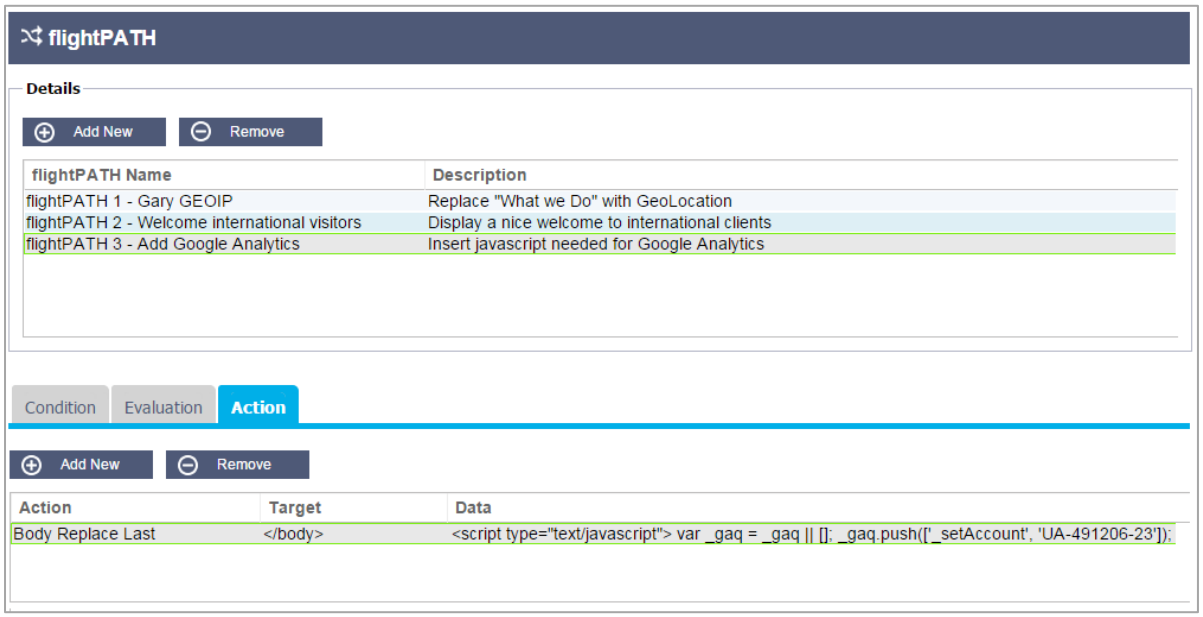


Figure 9 –flightPATH Inserting Google Analytics Code

Note in each case that flightPATH and jetPACK are working in tandem - everything is automatically synchronised between the two.

SUMMARY & CONCLUSIONS

With the introduction of v4, jetNEXUS has simplified the whole deployment and management of Load-Balancing, while adding both more functionality and flexibility and unprecedented scalability.

This is a perfect example of de-teching technology in line with both the new wave of computer-savvy, but non-technical, users and the handover of tasks such as Load-Balancer deployment and management to administrator-level employees rather than trained Systems Engineers.

An added bonus is that jetNEXUS pricing is very competitive and licensing is as uncomplicated as it's possible to be. Highly recommended...