Enabling line of business managers to choose best of breed solutions definitely helped bring new products and services to market quickly, but the footprint of heterogeneous systems that resulted made their monitoring overly complex. With companies now embracing new technologies in support of Big Data and Clouds, it is only going to get more complex.

In this white paper find out about the new plight of IT management, in particular data center managers, and solutions capable of meeting the challenges of monitoring today’s heterogeneous...
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Executive Summary

In the January 21, 2013, issue of the Australian publication the “Rust Report” by former regional Managing Director of IDC, Len Rust, there is a short editorial *Stability, capability, and accessibility will be the key words of IT buyers in 2013*. According to the Rust Report, Jens Butler, Principle Analyst, IT Services at Ovum, observed that, “In 2013, the push to fill out portfolios, especially across some newer technology arenas such as mobility, analytics, social and cloud, will continue to grow and a multitude of vendors will look to take advantage of this desired technology adoption, even if it means looking to a single supplier to deliver these services.”

Butler then adds, “Enterprises (should) ensure that bundled services do not become yet another black box style engagement” and recommends that these enterprises “invest in governance experience and solid vendor management models.” What could be so easily added to this last statement, of course, would be a recommendation to invest just not just in models but in the monitoring of what is today becoming an extraordinarily complex IT world.

Within the data centers where NonStop systems are present, much of this complexity can be traced back to when line of business (LoB) managers were empowered to pursue best-of-breed solutions with little consideration paid to just how widespread the proliferation of systems would become. Furthermore, large vendors such as IBM, Oracle and HP would themselves develop product portfolios ensuring no one system on offer would be capable of doing it all. And when it came to monitoring it all, one vendor’s executive suggested that rather being able to monitor it all clearly it was becoming more like looking at a kaleidoscope with the landscape getting messy!

However, in the case of IR, investments in monitoring multiple systems were made early such that Prognosis was well positioned to monitor the complexity that has appeared with hybrid systems and heterogeneous data centers. NonStop may not be the only system deployed within the data center nor is NonStop today just a single operating system image – new controllers for storage I/O as well as communications are based on Linux – and yet the NonStop community has been able to rely on Prognosis to monitor it all.

With as much discussion today about the future impact of Mobility, Social Media, Big Data (and the analytics that comes with it) and Clouds, there is even more complexity on the horizon but even here, Prognosis has already embraced many of these new technologies. And yet, avoiding black box solutions, silo-ed applications, and systems from multiple vendors will prove difficult even as data center managers would welcome the return to simplicity. Fortunately, Prognosis provides at simplified solution for monitoring complexity and with the oversight it provides routinely and in a timely manner, perhaps the mess that many encounter may just be cleared away. For just providing that, the NonStop community will be grateful and the more productive – a virtue for every business today!
After years of watching a rich variety of systems being deployed in support of the business, there is no escaping just how complex operations monitoring and management have become and that to get a really good view of what is happening takes a staff of trained experts working well together. Furthermore, even as these data center managers reach a level of understanding of all that they oversee, new technologies are being introduced that is adding further layers of complexity with little apparent consideration given to how best to integrate these new technologies with all else that has been deployed.

Complexity has been an integral part of data center operations for many years. For many within IT, complexity originated as we empowered business managers to select best of breed products and platform “silos” came about. As a result of decisions made by these business managers it is giving cause for some data center managers to question the wisdom of ever having gone down this path. The onset of Service Oriented Architecture (SOA) and Web services have made it easier to externalize each product via a standardized set of interfaces but as one recent blog post asked “Do you choose LoB solutions (best-of-breed) or bite the bullet and try to find an all-in-one solution that can run at least 80% of your entire business?”

The sense of desperation coming from the blogger reflects how many within business feel today; it’s not quite gone according to plan. Should they review decisions of the past, knowing full well dismantling all that they have deployed is not a realistic option, there are even more resource options becoming available to add to the complexity they already have. Among the biggest enterprise users the success of companies, such as Amazon.com and SalesForce.com, have introduced the world to the benefits of cloud computing. The “elasticity of provisioning” demonstrable by these cloud providers that can meet almost any business demand more cheaply than companies can do themselves is proving to be an attractive proposition. However, pursuing such an option in the near term only adds to the complexity these companies face.

Perhaps nowhere else has this been better expressed than when, in the June 06, 2012, Cloud section of the trade publication, InformationWeek, contributor, Ray Solnik, published the feature Cloud Management Through a Single Pane of Glass, Not a Kaleidoscope - Achieving a single pane view across applications and environments requires consistent metrics measuring and capturing across varied resources...

Ray Solnik
InformationWeek, 2012
single pane view across applications and environments requires consistent metrics measuring and capturing across varied resources. Solnik, who is the President of Appnomic Systems, a performance monitoring vendor, observed how “Instead of a single pane of glass for viewing a portfolio of IT operations, sometimes it feels more like a kaleidoscope! As we all proceed - cautiously or aggressively - toward the proliferation of new applications and cloud platforms that promise infinite scalability, elasticity, employee productivity gains, and business changing benefits ... it’s getting messy.”

As dramatic as this may sound, and many may disagree with just how big a mess they are managing, this message isn’t lost on all those within the data center. Heterogeneous systems, each is a platform silo, running an application for a particular business unit, have become the norm and this too is not lost on anyone within the NonStop community. Almost no enterprise has deployed solely NonStop systems; there’s always been something else present. Today, IBM mainframes, high-end Unix systems and racks of commodity servers running Linux and Windows can be found in almost every data center. Furthermore this complexity is proving challenging to all involved in their oversight. It may not be messy, but to many industry observers, it’s difficult to draw any other conclusion.
The complexity within HP and NonStop
The appearance of hybrid systems

The systems we continue to deploy are as different as the business users’ requirements themselves. Human resources, sales and marketing, plant operations they are all different when it comes to which solution best meets their needs. In the January 9, 2013 post to the web publication, realtime.ir.com, “Data centers with hybrid systems; challenges persist for all who monitor...” I suggested that many of us are envious of the giant data centers operated by Amazon and SalesForce. Dark, cavernous rooms housing endless miles of cables connecting tens of thousands of ubiquitous servers providing almost unlimited resources is the stuff of dreams for data center managers. Unfortunately, for the majority of data center managers the situation is removed far cry from what these pioneers have achieved as they continue to wrestle with the eclectic mix of components that remain. If we were ever to revisit one decision CIOs made in the previous millennium, it would be the empowering of line of business managers to purchase best of breed solutions without constraint. Left unguided and without comprehending the challenges their decisions will present when it came to integrating these solutions under a common monitoring solution, it’s now being left to data center managers to bring order out of chaos.

The challenge for the data center ultimately falls back on decisions taken about the vendor chosen to support the rich variety of systems firmly entrenched within the company. While it is easy to rue the day we elected to pursue best-of-breed, even as we recognized the initial upside in terms of reducing the costs of acquiring solutions, the decisions taken all those years ago are unlikely to be reversed any time soon. Rather, expectations are that they will remain deployed even as newer technologies are embraced and that a degree of parallelism will remain for the rest of the decade. As much as vendors such as Microsoft, Oracle and SAP champion enterprises that have standardized on their offerings, there are many more enterprises concerned about the potential lock-in that this often creates and who will continue to keep their options open when it comes to choice of platform. After all, even as IBM appeared to have had it all in the 1980s, companies were looking for ways out of such single vendor reliance.

However, the challenges being faced by data center managers aren’t just about the types of systems selected. There are now many new challenges to be faced with the explosion in social media networking with business wanting to know more about what is being said about their products and services. Furthermore, the majority of the social media networking is being performed from mobile smartphones and tablets where instantaneous gratification has become the norm for users.

This is fueling an even bigger need to collect data; structured transactional data but just as importantly, the unstructured data arising from the messages, pictures and videos we share. Given the sheer volume of data streaming into the data center, this in turn is fueling the need to look where to best store information that for the most part may...
never be referenced. The emergence of clouds, private and public is proving to be a god-send for many within the data center. These are all new challenges and data center managers see little relief in sight even as they continue to juggle often-competing priorities.

Is the application running on the most appropriate platform in terms of costs? Right now, later tonight, or even over the weekend? Will the events captured be candidates for pushing into a cloud? Have we configured databases too far from the business logic referencing the data? Might a solution come with equipping LoB managers with monitoring tools they can use including the use of smartphones and tablets? The challenges for today’s data center managers are escalating where new investments must be made to ensure that the business needs of all can be met and, equally as important, the choices being made will likely be dependent on the vendor chosen to monitor and manage the data center.

None of this is lost on the NonStop community. The ease with which NonStop applications have been able to embrace SOA and Web services, as well as the growing customer acceptance of SQL is widely known. This has ensured that NonStop continues to be a major presence in support of mission critical transaction processing applications. For many of the companies, the business of their business runs on NonStop. Yes, it certainly matters if these applications cannot be accessed and the price that can be paid for any untimely outage is too high to trust in platforms apart from NonStop. Availability continues to be as an important attribute as performance or cost or even access to applications ensuring longevity for NonStop systems.

Even as IBM had tried to be the sole provider of all systems for many businesses in the 1980s only to lose long term to open systems such as Unix, they helped foreshadow the arrival of system heterogeneity. With a portfolio of products that includes proprietary and open systems, relying on just a single vendor doesn’t imply that less heterogeneity will prevail. For middleware and infrastructure vendors this has mandated the development of products that span multiple platforms even as they all try to embrace open systems. Cross-platform support has become important and those vendors making early investments in cross platform support, particularly of monitoring, will be well-placed to meet the growing demands of data centers as they wrestle with the complexity from the many platforms deployed in the data center.

In the post of December 2, 2012, to the web publication, realtimeir, “A bigger pane of glass – a case of event greater monitoring integration!”, John Dunne, IR’s global product strategy head said “Investments we made in cross-platform solutions that led to our Unified Communications and Payments product offerings will put us in good standing with those NonStop users”. This is particularly the case given that Dunne anticipates “a future where transactions running today on NonStop may end up being processed in the cloud.” NonStop systems will remain important platforms for many enterprises and a resource that is part of a much larger enterprise play. However, even as NonStop remains important it too is becoming a heterogeneous system demanding even more from monitoring solutions.

“The challenges for today’s data center managers are escalating where new investments must be made to ensure that the business needs of all can be met...”
Cluster I/O Modules, or CLIMs as HP refers to them, are the controllers connecting storage and networks to the NonStop server and as such, are configured with middleware running on top of a Debian Linux distribution. Multiple CLIMs are present in NonStop server configurations and it’s become imperative for the NonStop users to have visibility into these controllers. Overseeing large networks of client devices without insight into the network controllers themselves could leave businesses blind to imminent problems. Among the few vendors that provide such monitoring software is IR, and again, it was a part of Prognosis’ early support of Blade servers that the monitoring of CLIM disks, followed by monitoring of CLIMs deployed as communications controllers, was developed.

IR was at the forefront in recognizing the inherent heterogeneity of NonStop systems once HP turned to utilizing their blades packages and in so doing, saw the value in providing something equivalent to their existing TCP/IP monitoring, for instance, when the subnets were hosted on CLIMs. Furthermore, IR ensured the support that Prognosis provided for CLIMs included visibility into what was happening on the CLIM itself and to track CLIM specific configuration and status information including CLIM-CLIM ‘failover configurations’. Perhaps the combination of NonStop processors with Linux controllers for I/O is all that we will see from HP when it comes to building NonStop systems but should there be more occurrences in the future I have every confidence that Prognosis will be among the very first to support. At some point, many industry analysts argue, HP will transition away from its proprietary ServerNet interconnect technology, the only remaining proprietary component of the NonStop hardware, and should HP ever elect to do so, then the addition of even more heterogeneity into the NonStop system will escape the attention of IR or prove unmanageable.

For many within the NonStop community, heterogeneity inside the NonStop system is just a start in terms of what future HP server offerings will look like. While there’s been considerable speculation on just how diverse a server supporting NonStop may become, in the near term, the current mix of NonStop and Linux is just a first step towards what could eventually become the data center in a box. However, no matter where HP takes NonStop in the future, we will continue to see diversity in the data center and this will not be a situation we walk away from but rather increasingly embrace as the new reality persists – companies see better value from systems favoring different attributes and capabilities as the era of general purpose computing gradually fades from memory.

While HP builds hybrid systems that include NonStop and Linux, and in doing so, may meet the needs of data center managers trying to extricate themselves from the mess that many believe that they are in, it further highlights the importance of partnering with a vendor already knowledgeable in monitoring and managing such diversity. With the investments already made by IR in Prognosis, it has already positioned itself to be a strong candidate for such a responsibility and these capabilities are already finding traction within the NonStop community.

One management solution from the metal to the cloud....
that delivers real-time business insight to the performance of multi vendor hybrid platforms.
Heterogeneity? Hybrid platforms?
Prognosis addresses complexity with single pane performance management!

There will be many within the NonStop who, even as they sympathize with those suggesting that we are in a mess, do not suffer from the symptoms we know contribute to such a state. Just as important for them, they are well prepared for trends that are overtaking all in IT. It was during her keynote presentation at HP Discover 2012 this past June that HP CEO, Meg Whitman, unveiled her new message for HP – Make it Matter. It was also during this keynote presentation that Whitman talked openly about how she was pursuing a goal of making the digital tangible. A reference to big data and to some extent clouds, Whitman then introduced the simple message of the total experience HP provides and of it being an experience that is greater than the sum of all of the parts. “A seismic shift is occurring,” Whitman then acknowledged, “Yes, we had the shift from Client /Server to the Internet; Web 1.0 to Web2.0 and now, Clouds, Social, Mobile and Big Data are all contributing to further shifts in the tectonic plates underpinning IT and this shift is changing the model for IT and how technology is being consumed.”

In the post of January 09, 2013, to realtime.ir, “Data centers with hybrid systems; challenges persist for all who monitor...” it was forecast that the likely mix of technologies within the data center by 2020 would include modern iterations of NonStop systems. Driving the inclusion of NonStop systems would be a mix of requirements originating with Big Data and real time Analytics, the leveraging of an amorphous private Cloud within the data center that has paths to more popular public / managed Clouds. And, of course, a need for enterprises to beef-up the way they monitor and manage transactions, given that we will all be mobile, working from anywhere. Just another way to explain the connections, having listened to HP’s Whitman of course, between social media, mobility, Big Data and Clouds!

While HP championed its awareness, and indeed support, of trends contributing to a seismic shift as HP’s Whitman called it, they stopped short of proposing that HP would provide an answer for data center managers in just one server. Even as HP has aggressively promoted industry standards along with commodity technologies, they remain a portfolio company in much the same way as IBM has become today. With little evidence coming from HP that there will be any lessening of the heterogeneity of systems on offer even as the forecasted seismic shifts come about. HP may elect to package combination of systems as hybrids or deliver resources from clouds, but either way, homogeneous systems were not a part of HP’s vision as articulated in mid-2012.

HP is committed to making it matter even as it provides solutions in support of social media, mobility, Big Data and Clouds and there have been a number of major announcements from HP during the later half of the year surrounding these key contributions to the shifts occurring within IT. While this message may not have been lost on the NonStop user community, just as importantly, it hasn’t been lost on the NonStop vendor community, including IR. “Having taken the initial steps to ensure Prognosis would support platforms apart from NonStop and having seen the business apart from NonStop flourish these past couple of years”, explained Jonathan DeVeaux, Head of Payments and HP NonStop at IR. “However we aren’t expecting a rush to these hybrid configurations but rather a careful weighing of the value
proposition from moving transactions off NonStop. With various price offerings for NonStop systems, as we have seen with the just released NS2100 system, there would be many NonStop users who would simply continue to stay with NonStop. The most important message we want to convey is that no matter how big the pane of glass becomes as the diversity of systems being monitored grows, Prognosis will be capable of monitoring it all!”

What makes these statements all the more impressive is the commitment IR has made to a number of the shifts occurring in technology! In particular, mobility and Big Data! In the post of November 5, 2012, to realtime.ir “On the move; the world is a mobile place; you’re either connected or very much alone!” Jonathan DeVeaux observed that, “It was very soon after the first Apple iPad arrived that we knew there was a major technology shift about to happen,” DeVeaux said, adding how at IR “we thought it would likely prove to be an unstoppable trend, simply because of the user interface and how easy it was to be connected, and almost immediately, customers began making inquiries of us about our likely support of Apple iPads.” The first release of their mobile app focused on VoIP monitoring but with support for NonStop likely to appear early in 2013. “It’s an important beginning and a step we have taken to demonstrate to our clients that we are right there with them in terms of understanding the capabilities of modern smartphones and tablets and in communicating the message to our clients that we are fully onboard when it comes to supporting today’s mobile manager.”

When it comes to Big Data, this is technology that IR is now working to leverage for its own products. In an earlier opinion paper made available in 2012, “Big changes coming as monitoring turns to Big Data!” I wrote of how IR has focused its attention on embracing Big Data concepts rather than just the Big Data framework, and in so doing, is staying very close to the NonStop user community. What IR has implemented to date, I then observed, is not monitoring of Big Data frameworks per se as much as IR is making sure vast amounts of data can be processed by off-the-shelf, industry applications. “We will satisfy a number of our customers immediately with the value provided at the reporting level,” acknowledged DeVeaux, “but working backwards from the reporting needs of our customers it became very obvious to all at IR of how we needed a solution that would not only handle very large volumes of transactional data, but be implemented in an extensible and flexible way where the scope of what is being logged in the database can be easily modified.”

In attendance at HP Discover 2012 to hear the message directly from HP CEO Whitman was IR CEO, Mark Brayan. When asked his opinion about the keynote presentation, Brayan said “Overall it was good to be part of a broader family of products and showcase our CI-ready, cross-platform products. While NonStop is a big part of our product range we’ve been supporting other platforms and applications for many years.” Supporting the many platforms that are a part of HP today and supporting the key initiatives in response to what HP views as major shifts of focus within
IT are important aspects of how IR does business. Additionally, the value Prognosis provides when it comes to providing a unified, integrated view of all that is running within the data center aligns well with the messages coming from HP. To the casual user it would be nice if business could get by with just one system but to those with more than just a few years of IT experience, this is not a circumstance likely to happen any time soon. In the meantime, it will remain a heterogeneous world inside of IT with the prospect of even more complexity to come as businesses seek better ways to know exactly what their customers want and how to make that matter, as Whitman so succinctly expressed it.

Yes, there will be challenges for all data center managers even as the amount of mess they may have will vary considerably, business to business. HP has declared where its investment bets will be placed and already products have begun shipping. Enjoying the partnership of someone aligned with HP is important and when it comes to IR, not only
Heterogeneity of systems within company data centers today is nothing new; we have lived with it for several decades as seismic shifts have generated significant changes in the way technology supports business. With the emergence of Client / Server computing that in turn was a precursor to what followed with the Internet and with the appearance of the ubiquitous browser interface, and now the rise of Cloud Computing, there’s very little likelihood of ever seeing a time where just one system does it all. What has changed in recent times, however, is that companies are anticipating that more data will be moving around within the data center, resources will be tapped on an unscheduled basis as cloud-bursting proves popular, and transactions themselves may run on different platforms depending upon their value at the time – exploitation of virtualization at the application level.

HP’s stated vision, even as it acknowledges seismic shifts will continue to occur, is not with less heterogeneity even as it pursues convergence on several fronts. There’s no denying just how much progress HP has made in ensuring that the same commodity hardware is available to all systems. Furthermore, upcoming robust support for Java on NonStop, is also an encouraging step forward as well. When it comes to the all-important mix of operating systems, middleware, tools and utilities, customers demand support of the very same mix of products on HP NonStop systems. HP has made sure industry standard software runs on NonStop and it has become as eligible for consideration as any other system made by HP. Solutions vendors still drive the technology industry and their diversity in preferences will ensure heterogeneity persists and that the demands on data center managers will remain an ever constant and highly visible challenge.

“We expect to see even our least sophisticated users looking for greater integration of the business solutions they run no matter the choice of platform involved,” remarked IR’s DeVeaux in a recent email exchange. “Simply put, it would be foolish for any user large or small to hold out hope for there being just a single solution to all their business needs; major hardware vendors have their own problems and scaling back on what they provide isn’t a part of their strategy as we have seen presented of late. IR does have the jump on many in the monitoring space as we were among the earliest to invest in cross-platform support, in making sure the NonStop community could monitor I/O controllers running Linux, and in ensuring complete visibility of all that runs on NonStop to other enterprise monitoring solutions. In this way we have ensured that NonStop remains as relevant today within the enterprise as it ever has been and as the demands on application availability continue to rise, then we see a very bright future for all that we have pursued.”

“It’s getting messy” may be an oversimplification, but the message rings true for many associated with the technology industry today. Perhaps the better message is one of how with the heterogeneity of systems being overseen, it’s getting even more challenging. True too, it’s getting complicated but for many that doesn’t come as a surprise. However, no matter how best we express what we are witnessing the encouraging news is that there are vendors like IR who continue to invest in getting as much