

Network management for the modern data centre

Simon Cooper takes a candid look at how Darwinian forces allow only the strongest companies with the best products to survive in a highly-competitive environment – and takes a look at one such product.

Let's be honest. We paid to place an advertisement and write an article for the Arcati Mainframe Yearbook to promote our company and its products. It gives us an opportunity to tell you how good our software is and perhaps try to persuade you to take a look. There's nothing wrong with that. Other vendors do it all the time. Except that we don't. The multi-billion dollar organizations that we compete with have marketing budgets that dwarf our turnover, so we tend to re-invest our resources and focus on product development. We think this approach is more effective for us, especially when it comes to keeping customers happy. Our loyal customer base of blue-chip companies includes some of the largest and busiest System z sites in the world, so we must be doing something right!

Competition is good for you

Healthy competition between vendors is good, especially for the customer. It promotes innovation and forces vendors to 'up their game'. As Henry Ford said: "Competition is the keen edge of business, always shaving away at costs".

It could be argued the Enterprise Licence Agreements (ELAs) promoted by very large vendors as a one-stop-shop for all your Enterprise software needs are the very antithesis of healthy competition. By signing 'all-you-can-eat' licences for mainframe software, a company may well end up with some best-of-breed products at a very competitive price. However it is equally possible that amongst the "bargains" there will be some very mediocre software too; software that can't be

removed or replaced, even if it's not fit for purpose, until such time as the agreement lapses.

While the drive to rationalize suppliers is completely understandable and by itself shouldn't be a problem, it's probably fair to say that no single vendor has a monopoly on innovation. It could be argued that all-encompassing agreements can stifle access to more innovative software by shutting out specialist vendors who are able to rapidly react to changing customer requirements. Where is the motivation to develop new and better software, or enhance existing products if you have no competition? Perhaps more pertinent in the current economic climate; how does the customer know they're getting best value for money if the supplier doesn't have to compete on price? Where is the motivation to generate best value?

As a smaller, independent software vendor in an industry dominated by very large corporations pitching all-encompassing software solutions for multiple platforms, we have focused our efforts on developing best-of-breed mainframe network systems software for the past 18 years. We are experts in our field and dedicated to this market. We have seen our innovations copied, repackaged, and then introduced as new by our competitors, which is entirely to be expected in a free-market economy.

Whether the practice of ELAs are in the spirit of a free-market economy is a moot point, but we have seen companies so hampered by such agreements that they do not even look at alternatives to their current systems software tools, even though they're crying out for better solutions. Without question, they are not using competition to their advantage in the way that Henry Ford envisaged.

Software companies and their products are Darwinian in nature in the sense that only the strong survive. Products that are outdated, no longer relevant, or too expensive in comparison to the competition will become extinct as rival,

Reducing Software Costs

Enhancing Business Services

Simplifying Network Management

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“ZEN has given us greater visibility, flexibility and control over our network monitoring and management, while significantly increasing our overall end-user satisfaction.”

Alerting IP Sysplex Distributor SNA
FTP Automation Console z/OS
Security REXX Mobile device support
Enterprise Extender Real-time syslogd
Tracing USS **COST SAVING**
OSA Linux NetView® Replacement
Monitoring APPN/HPR Reporting
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stronger products supersede them. The fact that smaller vendors in the System z eco-system flourish is a testament to the quality of their software and support. We all have to be really good at what we do.

Less is more

So how does the “keen edge” of Henry Ford’s competition drive down the cost of doing business? How have our customers and prospects taken advantage of competition in the marketplace and how do they benefit from this?

There is no doubt that we all find ourselves operating in exceptional times. At William Data Systems (WDS) we understand as well as anybody that our customers are under continual pressure to do more with less. Providing a better service without increasing head count or costs is hard. Maintaining existing service levels while reducing IT spend is even harder. We set ourselves the objective of doing both; helping you improve service delivery and reduce IT expenditure. Over the past few years we have helped many customers achieve these seemingly conflicting goals of reducing their software bill at the same time as improving the service they offer to their users and customers. One of the ways we have achieved this is by enabling customers to replace expensive, outdated incumbent software with modern alternatives at a fraction of the cost.

Old and blue

In 1986 Ronald Reagan was in the White House, Microsoft were adding 720kb floppy drive support into MS-DOS, Ferris Bueller took a day off, and IBM released NetView for MVS. NetView V1R1 was an amalgamation of NCCF, NPDA, NLDM, and VNCA. 25 years and 14 releases later, the product has morphed into a huge conglomeration of utilities and facilities, providing a “comprehensive set of tools for maintaining complex, multivendor, multiplatform networks, and systems from a single point of control”.

NetView’s breadth of scope, which is positioned as its strength, can also be a weakness. It can be seen as complex, expensive, and requiring heavy customization. If the needs of your organization are straightforward – first class monitoring and automation of your mainframe network systems – then NetView may be seen as the proverbial nut-cracking sledgehammer.

Let’s not take anything away from NetView. It has an array of powerful facilities that can be configured to cater for just about every eventuality and it remains an important component for other system facilities that you may, or may not, be utilizing. But there are two important points to consider here:

- 1 If you’re not utilizing the broad range of facilities in NetView, you may be paying significant fees for a product that you could actually replace for a fraction of the cost. The disadvantages of an ELA may become apparent if you’re tied in.
- 2 Getting the most out of NetView can require a significant investment in time from skilled mainframe technicians; skills that are in short supply. If those skills are no longer present, maintaining NetView can become a serious challenge.

Managing modern mainframe networks effectively and efficiently requires a modern, cost-effective solution; a solution where you only pay for the components that you need. ZEN, from William Data Systems, is such a solution.

Now and ZEN

As a network management tool for the 21st century, ZEN can be deployed rapidly, maintained simply, and its browser-based user-interface used with ease by all, no matter what the level of experience. ZEN improves upon the ability to manage any remaining SNA networks while providing state-of-the-art capabilities for managing IP, APPN/HPR and Enterprise Extender, OSAs, and FTP traffic.

Innovate or fade away

In 1995 Version 1 of our first product, EXIGENCE, was released. EXIGENCE was a revelation that turned the complex world of tracing mainframe networks from a last-resort tool for experts to a first-level diagnostic tool for all. In doing so, this innovative product allowed customers to improve business continuity by accelerating problem identification and reducing the impact of outages.

In common with all mainframe products of that era, the user-interface (UI) was 3270-based, accessed either via a physical 3270 terminal or a PC using 3270 emulation. How times have changed.

The desire to keep pace with technology and innovate is pervasive through everything we do: the first dedicated trace analysis tool; first dedicated security and monitoring product for FTP on z/OS; first genuinely real-time IP monitor; first dedicated APPN/HPR and EE monitor; first product to provide SSL authentication and encryption for EE; first dedicated OSA monitor; first direct browser GUI (no webserver required)... the list goes on.

With the increasing reliance we all have on mobile devices, delivering a mobile mainframe network management solution became the next obvious challenge for us to tackle.

With Apple selling over 9 million iPads in the third (fiscal) quarter of 2011 and reporting it in use at 80 of the Fortune 100, it is clear the device has great appeal for business users. In August 2010 WDS demonstrated another first when we debuted ZEN being used on Apple's ubiquitous iPad.



We have continued to champion the mobile computing theme with core functions of ZEN now available on the iPhone, as well as Blackberry and Android devices too. Recent development enhancements mean ZEN's mobile facilities can be made available for all popular smart-phone and tablet platforms.



Business agility is a key element of staying ahead of your competitors. As organizations change shape, lose elements, add others, there will be a knock-on effect on your network. The constant changes such agility demands means a need for regular planning meetings, but being away from your desk doesn't mean you have to be out of touch.

ZEN MOBILE means that you can stay in touch and in control of your System z network wherever you are/whenever you like, by still monitoring the network, receiving alerts, and staying on top of the situation. But we save the best news until last...

ZEN MOBILE facilities are included at no additional cost for all licensed customers of ZEN, proving once again that WDS really is trying to help you do more but spend less.

At the same time truly significant cost savings can be made over the costs of incumbent software.

ZEN makes it possible to display data from several components and/or display multiple panels from the same component, simultaneously. This means that you have a very flexible display environment that you can configure and manipulate in any way you choose. You can even save your favourite panel configuration as 'Home' and these panels will be automatically opened whenever you sign on to ZEN.

But ZEN is more than just a display engine for the network management components. ZEN provides core services for all components, has several additional network management features included, plus some powerful optional automation facilities. The ZEN Automation component, with REXX

interface and ZEN REXX Function Pack, is particularly powerful since it enables you to totally automate your z/OS network environment. You can build business-service oriented ZEN applications tailored to your own unique requirements, displaying customizable information from a variety of sources of your choosing.

Replacing NLDM

One example of how ZEN improves over existing NetView facilities is in the area of "Session Awareness". Although most IBM mainframe data centres have implemented IP backbones, SNA traffic, whether native, via TN3270, DLUR/DLSw, or increasingly from the 'SNA-over-IP' solution provided by IBM's Enterprise Extender, is still commonplace, as are the problems associated with managing large numbers of SNA sessions.

FEATURES INCLUDED IN ZEN	
Reference Data	Glossary of terms, RPL return and feedback codes, sense codes, SNA node or session status, all ZEN component messages
IP Tools	A selection of IP tools, including PING, QuickPING, NS Lookup, TraceRoute, QuickTraceRoute
CSM/ECSA/USS displays	Detailed CSM/ESCA & USS usage and historical information and graphs
Operator tools	Command facility System Log Network Logs MVS Console SyslogD filtering
	Log facilities for displaying ZEN, USS, REXX, VTAM, TCP/IP, MVS and SyslogD messages, with color-coding, filtering and command line functions Enhanced System and Network Logs (Operations functions)
Reporting	Produce reports for any ZEN component that writes SMF records Batch Reporting for automating the production of reports Local PC download facility for reports built as CSV files Create, display, print and download reports in PDF format
Alerting	Alerting & Incident Reporting for all ZEN components

ZEN NETWORK MANAGEMENT COMPONENTS	
AUTOMATION	Automated Message Commands Automated Timer Commands Alert-driven commands Rexx interface and ZEN Rexx Function Pack User-definable ZEN menus, ZEN panels and associated Help User-definable alerts
IP MONITOR	Identify network issues instantly to minimize down time. Focus your recovery efforts easily with intelligent reporting and real-time IP monitoring.
OSA MONITOR	Optimize the operation of your Open Systems Adapters (OSA), ensuring the throughput of these strategic communications devices is maximized.
LINUX MONITOR	Monitor the performance and availability of all your Linux systems from ZEN, whether running under VM, natively in an IFL or on Intel servers.
EE MONITOR	Implement and manage Enterprise Extender (EE) with ease and improve APPN/HPR network operations and performance.
EE SECURITY	A simple solution to fill the security gaps existing on networks linking your business partners' legacy applications to yours.
FTP CONTROL	Monitor and audit all FTP file transfers in real time with this efficient tool which ensures compliance with statutory, regulatory requirements.
TRACE and SOLVE	Minimize network outage and get back to business quickly. Diagnose all network and application issues with this easy to use tracing tool.

IBM's Network Logical Data Manager (NLDM) is a component of NetView that allows users to perform problem determination and response time measurement for SNA sessions. VTAM Session Awareness (SAW) data provides information about all VTAM sessions and is used by NLDM to report on logical unit (LU) session status, session partners, and configuration data.

Why is SAW data still important?

VTAM commands can provide information about active sessions, but details about failed sessions and the reasons why they failed are not so easy

to determine, especially after the event. SAW data provides comprehensive information about session failures, including sense codes.

With very large numbers of these types of sessions still in daily use, their efficient management is obviously important. The ability to retain this information for long-term trend analysis and network consolidation purposes is equally vital.

NLDM was written in the early 1980s. The amount of historical SAW data NLDM can retain is restricted by the file access methods it uses. Its reliance on legacy VSAM KSDS file access

methods is not consistent with best practice today of using VSAM data-in-virtual (DIV) and data space technology. This becomes a problem if there is a need to delete old and unused SNA resources, since it's not possible to look back far enough to determine if a resource is really redundant. Furthermore, such access methods compromise its efficiency in terms of MIPS consumed.

- Direct access to session failure INIT sense codes via the ZEN UI
- Manager reference data look-up
- Access to up to 20 million connection records
- Improved CPU utilization with memory-to-memory Dataspace technology
- Access to detailed history available via DIV or SMF records.

By utilizing the latest DIV and data space technologies, the SAW data feature of ZEN EE MONITOR removes all the restrictions previously associated with NLDM SAW data management and provides:

- Sophisticated indexing for improved speed of search
- Advanced filtering for manageable search result size

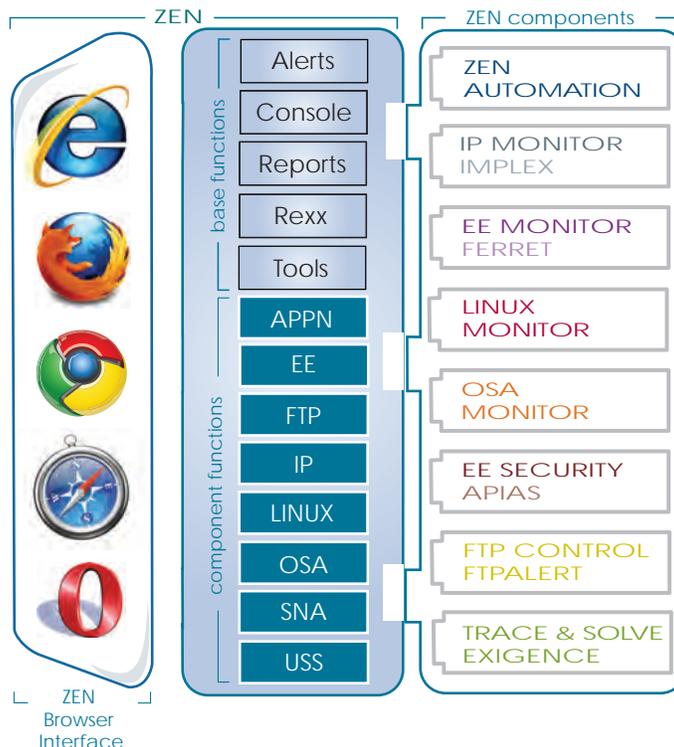
The SAW data support in ZEN is an example of a best-of-both-worlds solution that allows you to save CPU cycles, save money by replacing existing legacy software, and benefit from a state of the art monitor for the 21st century data centre.

Perhaps we should leave it to one of our customers, a global financial services company with data centres in Europe and the USA, to have the last word:

Innovative two-tier user interface

ZEN's user-interface utilizes a two-tier presentation architecture, with no dependencies on third party hardware or software, additional web-servers, browser plug-ins or anything else. Not only does this eliminate additional costs for implementing and running our software, it reduces the costs of maintaining it, reduces the number of people involved in supporting it and simplifies the overall systems architecture.

All you need is your z/OS system, a WDS product and a web browser.



“Compared to NetView, ZEN presents information in a better, more friendly way and without having to use lots of commands. We all know that you have a great product, now our finance people have seen the cost savings as well.”

efficiently and securely. ZEN, the WDS network management suite, offers a selection of user-friendly and cost-effective solutions to meet your unique needs.

Simon Cooper has worked in the Independent Software Vendor market for nearly twenty-five years and has held a variety of technical, sales, and marketing roles in addition to his current position as head of business development at WDS.

To help customers overcome both business and technology challenges, WDS provides customers with licensing and pricing terms that are as flexible as our solutions.

William Data Systems (WDS) is a pioneer of specialized IBM System z network management solutions. Established in 1993, we are an independent global company that provides innovative solutions to run mainframe networks

WDS supports customers worldwide across all vertical markets and our client list includes Fortune 100 companies and government agencies. WDS is an IBM Business Partner and a member of the IBM PartnerWorld for Developers program. We are committed to the global z/OS networking market and to leading the way with innovative solutions through the latest advances.

The future – gamification and augmented reality?

How about if you could hold up your phone in front of the mainframe or some x86 server, and on screen would appear statistics about usage and performance? You could then take appropriate action to resolve hot spots and capacity issues. All just a dream? Apparently not.

It seems that BMC is exploring how it can harness gamification and augmented reality techniques in the next generation of its systems management tools. Suhas Kelkar, a chief technology officer for BMC, has described the server example I gave above. Suhas adds: “If someone comes across an intelligent solution they should add it to the knowledge base. But hardly anyone does it. But what if you gamify the system and reward people for doing that?”

So there we have it... Augmented reality is the appearance on your phone of information about server capacity. And it could be about anything else. Wouldn't it be great to hold your phone over a cable and read off the upstream and downstream broadband speeds?

Gamification – a new word – is the fun part of using software. The part that is all too often missing! It's basically applying game mechanics (the elements that make games fun, engaging, and in some cases competitive) to things that aren't typically considered a game, or even fun!

Wouldn't it be great to have software on your smartphone that not only identifies what you're looking at (the Web server, or the z/Linux LPAR, or whatever) and provides current performance information. And then makes it fun to resolve any problems that might have been identified. Perhaps the only green screens you'll ever see will mean 'game over'!