

# Sean Donnellan

Sean Donnellan

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## Introduction & Background

I am an IT architect with 25+ years experience and passion working in technology. I have primarily had the responsibility of working as an IT infrastructure architect and have also led teams and managed projects. I have worked across a broad range of technologies thereon: Cisco, ACI, Juniper, AIX, Linux, Ansible, DC infrastructure, and most recently NEO4J and data science. As well as spending a reasonable amount of time building Cloud Network Infrastructure. I am a principal and voting member of the IBM Global Shared Network Infrastructure architecture governance board.

I have had lead roles in large scale data center migration, management, and governance roles across Europe and globally.

I have worked in the IT industry since 1995. I started as a specialist for UNIX and networking. I quickly moved on to parallel computing, enterprise firewall design, and automation, as an architect and consultant. Initially working for an IBM business partner I was involved in both large and small projects across a wide spectrum. Activities included planning and providing training to customers, architecture, consulting, delivery of architectures, automation, team lead, and last level support for more complex problems. Notable achievements are over 5 Extranet firewalls for large corporations and SMB aswell as automated HA solutions before 2000.

In 2000 I left the business partner to start up my own consulting company. During which time I developed and used a documentation system which fully integrated changes made in the customer environment into versioned documents. Other achievements during this time are customer aquisition and numerous

small projects such as highly available DHCP infrastructures or Intranet firewalls.

In late 2000 I decided to start working for IBM in the official job role of an IT Architect. I have since used the possibilities I was given to expand my knowledge and my network and to become one of the go to people for infrastructure related questions within IBM globally. I have driven data centre design, network design, security design, Virtualization design, and systems management. Amongst other things I have worked with international teams to further Linux on z, data centre design, firewall design, virtualization, and IDS design. I have lead teams, managed projects and supervised implementations across a wide range of projects and technical platforms as well as taking the occasional deep dive into topics like penetration testing or data analysis. My wants - - work with a young team - work in an innovative environment - pass experience on - simple processes - work efficiently and sustainably.

## Languages

Bilingual    English    German

## Areas of experience & interest

IT Architect    IT Network Architect    IT Security Architect    IT Infrastructure Architect    Innovation    New Technologies    Analytical thinking    Deep technological understanding    Cross technology thinking    Teaching    Wild duck    Mentoring    Guidance    Governance    Trusted advisor    Network segregation    Weakness analysis    Threat mitigation    Data Center Architecture    security governance    security policy    automated documentation    CISSP    AIX    Advanced Technical Expert    Linux    FOSS    NEO4J    MQTT    IOT    Juniper    Jupyter    Cisco    IBM Cloud    IBM    travis    docker    Mentor    Teacher    Project management    Team lead    python    shell scripting    docker compose    openscad    git    UML    CI/CD    Raspberry Pi    ESP8266/ESP32    Arduino    IPv6    IPv4    penetration testing    slack    agile    ansible    Cloud Computing    Risk Management    Data Center Relocation    Virtualization    Network Security    Virtual Teams    Data Center    IT Service Management    ITIL    IT Management    Disaster Recovery    Patents    Solution Architecture    Enterprise Architecture    High Availability    Storage Area Networks    VMware    Firewalls    3D printing (FDM)    Laser cutting

## Employer History

2000

**IT infrastructure architect**

**IBM**

2000

**System Engineer**

**Self Employed**

1995

**Senior Engineer**

**Sysdat GmbH**

1991

**Translator**

**Self employed**

1990

**Leaving Certificate**

**Sutton Park**

**IT infrastructure architect - IBM**

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10/2000 - To date

IBM, Germany

IT Architect

Achievements-

Patent application on a Method and system to enable and accelerate live and near-live migration of virtual machines and their associated storage across networks and numerous further patent applications and granted patents,

Author of Redbook and redpiece on iDataPlex,

On Demand Data Center Services (ODCS)- Universal Mgmt. infrastructure (UMI) Dual data center design,

Firewall looking glass design,

Universal web hosting server farm (USF) firewall mgmt. and improvement,

Extranet design,

Enterprise data centre firewall placement,

Cloud Virtualization Design and security.

Roles- IT Architect

Managers- Reiner Lauster from 15/10/2000 to 28/2/2004

Mark Dietrich from 1/3/2004 to 31/8/2004

Peter John from 1/9/2004 to 31/8/2006  
Joerg Hess from 1/9/2006 to 30/6/2007  
Peter John from 1/7/2007 to 28/4/2009  
Antonio Aliatakis 1/5/2009 to 31/12/2009  
Nicola Nicolic 1/1/2010 to 31/1/2010  
Gerhard Eikmeier 1/2/2010 and on.

### **System Engineer - Self Employed**

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04/2000 - 10/2000  
Self Employed Consultant, Germany  
Freelance IT Security and Network Consultant  
Achievements- Diverse customer projects and firewalls.  
Roles- Consultant.

### **Senior Engineer - Sysdat GmbH**

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02/1995 - 04/2000  
SYSDAT GmbH, Germany  
Senior Consultant IT Security  
Achievements-  
Corporate firewall design,  
Unix Automation,  
High Availability,  
Creation of Firewall Dept.  
Roles-  
Head of firewall team,  
Consultant,  
3rd level support for- AIX/UNIX,  
Internet protocol (IP),  
and Internet related issues.  
Manager- Michael Brueckner.

### **Translator - Self employed**

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German English and English German translations related to the automotive industry.

### **Leaving Certificate - Sutton Park School Howth Dublin Ireland**

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Sutton Park

## Some projects I am Working On

### Additional Information

**Cloud platforms:** I have primarily used IBM/CMS and IBM/Softlayer. I have experience setting up, configuring and running the network intra- and inter-connectivity and security. From underlay, through LAN and WAN, to overlay.

**Data analysis:** Through experience with multiple DC builds, relocations, merges, out and in-sourcing, and closures, I have learned the importance of having good data. In the last few years I have built an extensive set of tools including graph databses and visulaization tools. Examples are cabling analysis graphs, data based 2 and 3d Rack visualisations, Security policy graphs, network analysis graphs, and general data analysis, transformation, integration, import and export tools. Including Airflow checking and automated interfaces to vendor DBs.

**IPv6 Planning:** In the past years I have been involved in a number of IPv6 projects ranging from simple, Internet connectivity, to complex, Enterprise planning reports to the IBM board. I worked as a lead architect in the planning phase for IBM's migration to IPv6. I also worked as an architect for some of the address space planning for the IBM Global Shared Network Infrastructure. In addition I also drove the planning for the IPv6 single and dual stack for the CMS cloud Infrastructure, which was no implemented and instead has flowed into other internal infrastructure architectures.

**Development Control:** I have a good knowledge of application life-cycle management and have worked primarily with Git and Travis. I have experience with an array of testing tools and CI/CD technologies and methods.

**Internet Of Things (IOT):** I have also gained experience and knowledge of other technologies from several side projects and research that I have undertaken in my free time, including MQTT, NEO4J, a selection of micro controllers (esp8266, esp32, arduino), Raspberry Pi, KNX/EIB, LORAWAN, ISM Band communications, and many other related topics.

**Diploma thesis supervisor:** Supervised two Bsc. diploma thesis  
4Q 2004 - Logfile Analysis,  
1Q 2002 - Network Intrusion Detection System.

### Patents

**Enablement and acceleration of live and near-live migration of virtual machines and their associated storage across networks Patent ID:**

US8429651B2 **Abstract:** A virtual machine is migrated between a source cloud and a destination cloud. A temporary storage is mounted to a partition manage-

ment firmware of the source cloud and to a partition management firmware of the destination cloud. A first storage location migration migrates the virtual machine from the source cloud to the at least one temporary storage. A second storage location migration migrates the virtual machine from the at least one temporary storage to final destination storage of the destination cloud. The temporary storage is then unmounted from the partition management firmware of the source cloud and from the partition management firmware of the destination cloud.

**Communications between virtual machines that have been migrated**

**Patent ID:** US8448171B2 **Abstract:** A method, apparatus, and computer program product for managing communications between a plurality of applications are presented. A determination is made as to whether an address in a message is a prior address for a second application in the plurality of applications in response to receiving a message from a first application in the plurality of applications. The message is sent onto a virtual network configured to handle prior addresses for the plurality of applications in response to the address in the message being the prior address for the second application being located on another virtual machine from the first application.

**Method and apparatus for providing a test network as an IP accessible cloud service**

**Patent ID:** US9286103B2 **Abstract:** A method and structure for a cloud service includes an API (application programming interface) as tangibly embodied in a set of computer-executable instructions and selectively executable on a computer on a network. The API provides a user interface for a cloud environment comprising one or more virtual machines to be selectively instantiated on at least one computer in the network upon a user request. A library is accessible via the API, the library providing definitions of components available to be instantiated in the cloud environment. The API automatically instantiates an image of a virtual network of components, as defined by a user input request and provides at least one cloud portal providing the user an access to exercise the instantiated virtual network image.

**Deploy a secure customer domain in a virtualized multi-tenant environment**

**Patent ID:** DE112014002799T5 **Abstract:** To provide a secure customer domain in a virtualized multi-tenant environment, a virtual machine (VM) is configured in a customer domain. A first, a second, and a third network interface (VNICs) are configured in the VM. The first VNIC has a first network address in a first address range for a customer domain and allows an application in the VM to access a second application in a second VM in the customer domain. The second VNIC allows a third application outside the customer domain to access the VM in the customer domain. The second VNIC is configured to utilize an address specification used by the server and the third application. The third VNIC allows access from the first application to a fourth application running outside the customer domain. The third VNIC is configured to use an address specification used by the server of the fourth application.

## Publications

**Implementing an IBM System x iDataPlex Solution Publication ID:**

IBM Technical Support Organization, 2009, ISBN/ISSN 0738432520 **Abstract:** David Watts, Srihari Angaluri, Martin Bachmaier, Sean Donnellan, Duncan Furniss, Kevin Xu.

in: IBM Redbooks > Infrastructure Solutions. Describes scale out server deployments for both traditional and new deployment modes. Includes designs of alternative cooling methods, and 40 foot container deployments etc.

**Building an Efficient Data Center with IBM iDataPlex Publication ID:**

IBM Technical Support Organization, 2008, REDP-4418-00 **Abstract:** David Watts, Srihari Angaluri, Martin Bachmaier, Sean Donnellan, Duncan Furniss, Kevin Xu.

in: IBM Redbooks > Infrastructure Solutions Describes scale out server deployments for both traditional and new deployment modes.

**Dual Data Center - Shared converged PoD Publication ID:** IBM, 2005, Internal IBM ICM AssetWeb - e-business Infrastructure & Solutions **Abstract:** Sean Donnellan

Solution architecture for automated, multi tenant, multi tier, dual site, highly available, data centre.

Would be called cloud today.

**Firewall clustering with FabricPath Publication ID:** 2014-Jan-02,IP.com

Disclosure Number IPCOM000233937D **Abstract:** Disclosed is a method to combine firewall clustering with FabricPath to overcome asymmetric routing, ingress path optimization, and Spanning Tree Protocol (STP) problems. This unique design provides a consistent security layer across more than two physical sites working in a stretched data center model.

## Badges (View profile)

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Gärtringen, Germany