

The Policy Driven Data Center With Aci

Issues in Networks Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Networks Research and Application. The editors have built Issues in Networks Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Networks Research and Application in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Networks Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Continuous improvements in data analysis and cloud computing have allowed more opportunities to develop systems with user-focused designs. This not only leads to higher success in day-to-day usage, but it increases the overall probability of technology adoption. Advancing Cloud Database Systems and Capacity Planning With Dynamic Applications is a key resource on the latest innovations in cloud database systems and their impact on the daily lives of people in modern society. Highlighting multidisciplinary studies on information storage and retrieval, big data architectures, and artificial intelligence, this publication is an ideal reference source for academicians, researchers, scientists, advanced level students, technology developers and IT officials.

"This reference presents a vital compendium of research detailing the latest case studies, architectures, frameworks, methodologies, and research on Grid and Cloud Computing"--

The complete guide to provisioning and managing cloud-based Infrastructure as a Service (IaaS) data center solutions. Cloud computing will revolutionize the way IT resources are deployed, configured, and managed for years to come. Service providers and customers each stand to realize tremendous value from this paradigm shift—if they can take advantage of it. Cloud Computing brings together the realistic, start-to-finish guidance they need to plan, implement, and manage cloud solution architectures for tomorrow's virtualized data centers. It introduces cloud "newcomers" to essential concepts, and offers experienced operations professionals detailed guidance on delivering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). This book's replicable solutions and fully-tested best practices will help enterprises, service providers, consultants, and Cisco partners meet the challenge of provisioning end-to-end cloud infrastructures. Drawing on extensive experience working with leading cloud vendors and

integrators, the authors present detailed operations workflow examples, proven techniques for operating cloud-based network, compute, and storage infrastructure; a comprehensive management reference architecture; and a complete case study demonstrating rapid, lower-cost solutions design. Cloud Computing will be an indispensable resource for all network/IT professionals and managers involved with planning, implementing, or managing the next generation of cloud computing services. Venkata (Josh) Josyula, Ph.D., CCIE® No. 13518 is a Distinguished Services Engineer in Cisco Services Technology Group (CSTG) and advises Cisco customers on OSS/BSS architecture and solutions. Malcolm Orr, Solutions Architect for Cisco's Services Technology Solutions, advises telecoms and enterprise clients on architecting, building, and operating OSS/BSS and cloud management stacks. He is Cisco's lead architect for several Tier 1 public cloud projects. Greg Page has spent the last eleven years with Cisco in technical consulting roles relating to data center architecture/technology and service provider security. He is now exclusively focused on developing cloud/IaaS solutions with service providers and systems integrator partners.

- Review the key concepts needed to successfully deploy clouds and cloud-based services
- Transition common enterprise design patterns and use cases to the cloud
- Master architectural principles and infrastructure designs for "real-time" managed IT services
- Understand the Cisco approach to cloud-related technologies, systems, and services
- Develop a cloud management architecture using ITIL, TMF, and ITU-TMN standards
- Implement best practices for cloud service provisioning, activation, and management
- Automate cloud infrastructure to simplify service delivery, monitoring, and assurance
- Choose and implement the right billing/chargeback approaches for your business
- Design and build IaaS services, from start to finish
- Manage the unique capacity challenges associated with sporadic, real-time demand
- Provide a consistent and optimal cloud user experience

This book is part of the Networking Technology Series from Cisco Press®, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers. Category: Cloud Computing Covers: Virtualized Data Centers

Use ACI fabrics to drive unprecedented value from your data center environment With the Cisco Application Centric Infrastructure (ACI) software-defined networking platform, you can achieve dramatic improvements in data center performance, redundancy, security, visibility, efficiency, and agility. In *Deploying ACI*, three leading Cisco experts introduce this breakthrough platform, and walk network professionals through all facets of design, deployment, and operation. The authors demonstrate how ACI changes data center networking, security, and management; and offer multiple field-proven configurations. *Deploying ACI* is organized to follow the key decision points associated with implementing data center network fabrics. After a practical introduction to ACI concepts and design, the authors show how to bring your fabric online, integrate virtualization and external connections, and efficiently manage your ACI

network. You'll master new techniques for improving visibility, control, and availability; managing multitenancy; and seamlessly inserting service devices into application data flows. The authors conclude with expert advice for troubleshooting and automation, helping you deliver data center services with unprecedented efficiency. Understand the problems ACI solves, and how it solves them Design your ACI fabric, build it, and interface with devices to bring it to life Integrate virtualization technologies with your ACI fabric Perform networking within an ACI fabric (and understand how ACI changes data center networking) Connect external networks and devices at Layer 2/Layer 3 levels Coherently manage unified ACI networks with tenants and application policies Migrate to granular policies based on applications and their functions Establish multitenancy, and evolve networking, security, and services to support it Integrate L4–7 services: device types, design scenarios, and implementation Use multisite designs to meet rigorous requirements for redundancy and business continuity Troubleshoot and monitor ACI fabrics Improve operational efficiency through automation and programmability

Financial markets are witnessing an unprecedented explosion in the availability of data, and the firms that survive will be able to leverage this information to increase their profit and expand their opportunities in a global world. Financial firms have two options: to build their own data centers or to outsource them to hosting services such as Google and Amazon 'cloud' services. While outsourcing data centers is a trend for small firms, it is not applicable to bigger firms who want more control over their huge amounts of data. Large firms thus build their own data centers. In such an environment, the CIO's ability is crucial to lead an effective data strategy to capture, process and connect data to all the relevant lines of business. At the core of this strategy lies the data center – the repository of all information. In recognition of the importance of information, firms are rushing to invest in data centers, but they are finding that just throwing technology at the problem is not good enough. Despite the investments, data centers prove frustrating in terms of inefficiencies and rising costs, directly cutting into the profitability of lines of business that they serve. While there are books that discuss the mechanics, hardware and technicalities of data centers, no book has yet made the connection between enterprise strategy and data center investment, design and management. This book is a solution driven book for management demonstrating how to leverage technology to manage the seemingly infinite amount of data available today. Each chapter offers cutting-edge management and technology solutions to effectively manage data through data centers. • Feature: Presents cutting-edge technology solutions not available in one place until now • Benefit: Saves time going to numerous websites, calling vendors, going to conferences • Feature: Includes step-by-step instructions on how to implement a data center strategy based on the author's recent success with Wachovia's data center • Benefit: Readers can follow these steps with confidence that they will work and not have to re-invent the wheel • Feature: Demonstrates

how business and IT can be aligned in financial services • Benefit: Demonstrating this alignment is crucial for any proposal for IT related resources today

The inside guide to the next generation of data storage technology VMware Software-Defined Storage, A Guide to the Policy Driven, Software-Defined Storage Era presents the most in-depth look at VMware's next-generation storage technology to help solutions architects and operational teams maximize quality storage design. Written by a double VMware Certified Design Expert, this book delves into the design factors and capabilities of Virtual SAN and Virtual Volumes to provide a uniquely detailed examination of the software-defined storage model. Storage-as-a-Service (STaaS) is discussed in terms of deployment through VMware technology, with insight into the provisioning of storage resources and operational management, while legacy storage and storage protocol concepts provide context and demonstrate how Virtual SAN and Virtual Volumes are meeting traditional challenges. The discussion on architecture emphasizes the economies of storage alongside specific design factors for next-generation VMware based storage solutions, and is followed by an example in which a solution is created based on the preferred option identified from a selection of cross-site design options. Storage hardware lifecycle management is an ongoing challenge for IT organizations and service providers. VMware is addressing these challenges through the software-defined storage model and Virtual SAN and Virtual Volumes technologies; this book provides unprecedented detail and expert guidance on the future of storage. Understand the architectural design factors of VMware-based storage Learn best practices for Virtual SAN stretched architecture implementation Deploy STaaS through vRealize Automation and vRealize Orchestrator Meet traditional storage challenges with next-generation storage technology Virtual SAN and Virtual Volumes are leading the way in efficiency, automation, and simplification, while maintaining enterprise-class features and performance. As organizations around the world are looking to cut costs without sacrificing performance, availability, or scalability, VMware-based next-generation storage solutions are the ideal platform for tomorrow's virtual infrastructure. VMware Software-Defined Storage provides detailed, practical guidance on the model that is set to transform all aspects of vSphere data center storage.

For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

IBM® Spectrum Virtualize is a key member of the IBM Spectrum™ Storage portfolio. It is a highly flexible storage solution that enables rapid deployment of block storage services for new and traditional workloads, whether on-premises, off-premises, or a combination of both. The initial release of IBM Spectrum Virtualize™ for Public Cloud is now available on Amazon Web Services (AWS). This IBM Redpaper™

Read Book The Policy Driven Data Center With Aci

Redbooks publication gives a broad understanding of the IBM Spectrum Virtualize for Public Cloud on AWS architecture, and provides planning and implementation details of the common use cases for this new product. This publication helps storage and networking administrators plan, implement, install, modify, and configure the IBM Spectrum Virtualize for Public Cloud on AWS offering. It also provides a detailed description of troubleshooting tips.

This IBM® Redbooks® publication is an IBM and Cisco collaboration that articulates how IBM and Cisco can bring the benefits of their respective companies to the modern data center. It documents the architectures, solutions, and benefits that can be achieved by implementing a data center based on IBM server, storage, and integrated systems, with the broader Cisco network. We describe how to design a state-of-the-art data center and networking infrastructure combining Cisco and IBM solutions. The objective is to provide a reference guide for customers looking to build an infrastructure that is optimized for virtualization, is highly available, is interoperable, and is efficient in terms of power and space consumption. It will explain the technologies used to build the infrastructure, provide use cases, and give guidance on deployments.

The Art of Network Architecture Business-Driven Design The business-centered, business-driven guide to architecting and evolving networks The Art of Network Architecture is the first book that places business needs and capabilities at the center of the process of architecting and evolving networks. Two leading enterprise network architects help you craft solutions that are fully aligned with business strategy, smoothly accommodate change, and maximize future flexibility. Russ White and Denise Donohue guide network designers in asking and answering the crucial questions that lead to elegant, high-value solutions. Carefully blending business and technical concerns, they show how to optimize all network interactions involving flow, time, and people. The authors review important links between business requirements and network design, helping you capture the information you need to design effectively. They introduce today's most useful models and frameworks, fully addressing modularity, resilience, security, and management. Next, they drill down into network structure and topology, covering virtualization, overlays, modern routing choices, and highly complex network environments. In the final section, the authors integrate all these ideas to consider four realistic design challenges: user mobility, cloud services, Software Defined Networking (SDN), and today's radically new data center environments.

- Understand how your choices of technologies and design paradigms will impact your business
- Customize designs to improve workflows, support BYOD, and ensure business continuity
- Use modularity, simplicity, and network management to prepare for rapid change
- Build resilience by addressing human factors and redundancy
- Design for security, hardening networks without making them brittle
- Minimize network management pain, and maximize gain
- Compare topologies and their tradeoffs
- Consider the implications of network virtualization, and walk through an MPLS-based L3VPN example
- Choose routing protocols in the context of business and IT requirements
- Maximize mobility via ILNP, LISP, Mobile IP, host routing, MANET, and/or DDNS
- Learn about the challenges of removing and changing services hosted in cloud environments
- Understand the opportunities and risks presented by SDNs

Effectively design data center control planes and topologies

Professional MOM 2005, SMS 2003 and Microsoft Update provides a single source for IT administrators to understand how these systems and operations management technologies can be used in their environments. It also serves as a comparative tool that helps readers understand which tool is right for which job. It is designed and written for anyone who is involved with implementing, supporting, or managing a set of tools for systems and operations management, including IT operators, IT administrators, IT infrastructure managers and system architects. The readers that have some background in systems and operations management will probably get the most of this book, however

Read Book The Policy Driven Data Center With Aci

no specific level of skill or knowledge is assumed. The writing is aimed at readers who have a basic understanding of IT infrastructure on the Windows platform and have familiarity with Windows XP (and earlier) client deployments and Windows Server technologies. Some of the topics covered include: basics of operations management how the MOM 2005, SMS 2003 and other update technologies fit together installing and deploying MOM installing and deploying SMS installing and deploying MU and WSUS configuring and administering the MOM environment with MOM and alert tuning MOM and SMS agents Deploying and using MOM management packs Third party management packs Security and patching with MOM and SMS Monitoring and security MOM and SMS deployments MOM and SMS reporting Microsoft System Center Solutions Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

In the light of better and more detailed administrative databases, this open access book provides statistical tools for evaluating the effects of public policies advocated by governments and public institutions. Experts from academia, national statistics offices and various research centers present modern econometric methods for an efficient data-driven policy evaluation and monitoring, assess the causal effects of policy measures and report on best practices of successful data management and usage. Topics include data confidentiality, data linkage, and national practices in policy areas such as public health, education and employment. It offers scholars as well as practitioners from public administrations, consultancy firms and nongovernmental organizations insights into counterfactual impact evaluation methods and the potential of data-based policy and program evaluation.

Make the most of software-defined data centers with revolutionary VMware technologies About This Book Learn how you can automate your data center operations and deploy and manage applications and services across your public, private, and hybrid infrastructure in minutes Drive great business results with cost-effective solutions without compromising on ease, security, and controls Transform your business processes and operations in a way that delivers any application, anywhere, with complete peace of mind Who This Book Is For If you are an IT professional or VMware administrator who virtualizes data centers and IT infrastructures, this book is for you. Developers and DevOps engineers who deploy applications and services would also find this book useful. Data center architects and those at the CXO level who make decisions will appreciate the value in the content. What You Will Learn Understand and optimize end-to-end processes in your data center Translate IT processes and business needs into a technical design Apply and create vRO workflow automation functionalities to services Deploy NSX in a virtual environment Technically accomplish DevOps offerings Set up and use vROPs to master the SDDC resource demands Troubleshoot all the components of SDDC In Detail VMware offers the industry-leading software-defined data center (SDDC) architecture that combines compute, storage, networking, and management offerings into a single unified platform. This book uses the most up-to-date, cutting-edge VMware products to help you deliver a complete unified hybrid cloud experience within your infrastructure. It will help you build a unified hybrid cloud based on SDDC architecture and practices to deliver a fully virtualized infrastructure with cost-effective IT outcomes. In the process, you will use some of the most advanced VMware products such as vSphere, vCloud, and NSX. You will learn how to use vSphere virtualization in a software-defined approach, which will help you to achieve a fully-virtualized infrastructure and to extend this infrastructure for compute, network, and storage-related data center services. You will also learn how to use EVO:RAIL. Next, you will see how to provision applications and IT services on private clouds or IaaS with seamless accessibility and mobility across the hybrid environment. This book will ensure you develop an SDDC approach for your datacenter that fulfills your organization's needs and tremendously boosts your agility and flexibility. It will also teach you how to draft, design, and deploy toolsets and software to automate your datacenter and speed up IT delivery to meet your lines of businesses demands. At the end, you will build unified hybrid clouds that

Read Book The Policy Driven Data Center With Aci

dramatically boost your IT outcomes. Style and approach With the ever-changing nature of businesses and enterprises, having the capability to navigate through the complexities is of utmost importance. This book takes an approach that combines industry expertise with revolutionary VMware products to deliver a complete SDDC experience through practical examples and techniques, with proven cost-effective benefits.

The book deals with the most recent technology of distributed computing. As Internet continues to grow and provide practical connectivity between users of computers it has become possible to consider use of computing resources which are far apart and connected by Wide Area Networks. Instead of using only local computing power it has become practical to access computing resources widely distributed. In some cases between different countries in other cases between different continents. This idea of using computer power is similar to the well known electric power utility technology. Hence the name of this distributed computing technology is the Grid Computing. Initially grid computing was used by technologically advanced scientific users. They used grid computing to experiment with large scale problems which required high performance computing facilities and collaborative work. In the next stage of development the grid computing technology has become effective and economically attractive for large and medium size commercial companies. It is expected that eventually the grid computing style of providing computing power will become universal reaching every user in industry and business. * Written by academic and industrial experts who have developed or used grid computing * Many proposed solutions have been tested in real life applications * Covers most essential and technically relevant issues in grid computing

This IBM® Redbooks® publication documents how IBM Platform Computing, with its IBM Platform Symphony® MapReduce framework, IBM Spectrum Scale (based Upon IBM GPFS™), IBM Platform LSF®, the Advanced Service Controller for Platform Symphony are work together as an infrastructure to manage not just Hadoop-related offerings, but many popular industry offerings such as Apache Spark, Storm, MongoDB, Cassandra, and so on. It describes the different ways to run Hadoop in a big data environment, and demonstrates how IBM Platform Computing solutions, such as Platform Symphony and Platform LSF with its MapReduce Accelerator, can help performance and agility to run Hadoop on distributed workload managers offered by IBM. This information is for technical professionals (consultants, technical support staff, IT architects, and IT specialists) who are responsible for delivering cost-effective cloud services and big data solutions on IBM Power Systems™ to help uncover insights among client's data so they can optimize product development and business results.

This book combines the three dimensions of technology, society and economy to explore the advent of today's cloud ecosystems as successors to older service ecosystems based on networks. Further, it describes the shifting of services to the cloud as a long-term trend that is still progressing rapidly. The book adopts a comprehensive perspective on the key success factors for the technology – compelling business models and ecosystems including private, public and national organizations. The authors explore the evolution of service ecosystems, describe the similarities and differences, and analyze the way they have created and changed industries. Lastly, based on the current status of cloud computing and related technologies like virtualization, the internet of things, fog computing, big data and analytics, cognitive computing and blockchain, the authors provide a revealing outlook on the possibilities of future technologies, the future of the internet, and the potential impacts on business and society.

As organizations drive to transform and virtualize their IT infrastructures to reduce costs, and manage risk, networking is pivotal to success. Optimizing network performance, availability, adaptability, security, and cost is essential to achieving the maximum

benefit from your infrastructure. In this IBM® Redbooks® publication, we address the requirements: Expertise to plan and design networks with holistic consideration of servers, storage, application performance and manageability Networking solutions that enable investment protection with performance and cost options that match your environment Technology and expertise to design and implement and manage network security and resiliency Robust network management software for integrated, simplified management that lowers operating costs of complex networks IBM and Brocade have entered into an agreement to provide expanded network technology choices with the new IBM b-type Ethernet Switches and Routers, to provide an integrated end-to-end resiliency and security framework. Combined with the IBM vast data center design experience and the Brocade networking expertise, this portfolio represents the ideal convergence of strength and intelligence. For organizations striving to transform and virtualize their IT infrastructure, such a combination can help you reduce costs, manage risks, and prepare for the future. This book is meant to be used along with "IBM b-type Data Center Networking: Design and Best Practices Introduction," SG24-7786. This book is intended for server administrators and storage administrators who would like to successfully build and scale a VSAN-backed vSphere infrastructure. A basic understanding of vSphere concepts and storage fundamentals will be helpful. Understand the fundamental factors of data storage system performance and master an essential analytical skill using block trace via applications such as MATLAB and Python tools. You will increase your productivity and learn the best techniques for doing specific tasks (such as analyzing the IO pattern in a quantitative way, identifying the storage system bottleneck, and designing the cache policy). In the new era of IoT, big data, and cloud systems, better performance and higher density of storage systems has become crucial. To increase data storage density, new techniques have evolved and hybrid and parallel access techniques—together with specially designed IO scheduling and data migration algorithms—are being deployed to develop high-performance data storage solutions. Among the various storage system performance analysis techniques, IO event trace analysis (block-level trace analysis particularly) is one of the most common approaches for system optimization and design. However, the task of completing a systematic survey is challenging and very few works on this topic exist. Block Trace Analysis and Storage System Optimization brings together theoretical analysis (such as IO qualitative properties and quantitative metrics) and practical tools (such as trace parsing, analysis, and results reporting perspectives). The book provides content on block-level trace analysis techniques, and includes case studies to illustrate how these techniques and tools can be applied in real applications (such as SSHD, RAID, Hadoop, and Ceph systems). What You'll Learn Understand the fundamental factors of data storage system performance Master an essential analytical skill using block trace via various applications Distinguish how the IO pattern differs in the block level from the file level Know how the sequential HDFS request becomes "fragmented" in final storage devices Perform trace analysis tasks with a tool based on the MATLAB and Python platforms Who This Book Is For IT professionals interested in storage system performance optimization: network administrators, data storage managers, data storage engineers, storage network engineers, systems engineers Designing Networks and Services for the Cloud Delivering business-grade cloud applications and services A rapid, easy-to-

understand approach to delivering a secure, resilient, easy-to-manage, SLA-driven cloud experience Designing Networks and Services for the Cloud helps you understand the design and architecture of networks and network services that enable the delivery of business-grade cloud services. Drawing on more than 40 years of experience in network and cloud design, validation, and deployment, the authors demonstrate how networks spanning from the Enterprise branch/HQ and the service provider Next-Generation Networks (NGN) to the data center fabric play a key role in addressing the primary inhibitors to cloud adoption—security, performance, and management complexity. The authors first review how virtualized infrastructure lays the foundation for the delivery of cloud services before delving into a primer on clouds, including the management of cloud services. Next, they explore key factors that inhibit enterprises from moving their core workloads to the cloud, and how advanced networks and network services can help businesses migrate to the cloud with confidence. You'll find an in-depth look at data center networks, including virtualization-aware networks, virtual network services, and service overlays. The elements of security in this virtual, fluid environment are discussed, along with techniques for optimizing and accelerating the service delivery. The book dives deeply into cloud-aware service provider NGNs and their role in flexibly connecting distributed cloud resources, ensuring the security of provider and tenant resources, and enabling the optimal placement of cloud services. The role of Enterprise networks as a critical control point for securely and cost-effectively connecting to high-performance cloud services is explored in detail before various parts of the network finally come together in the definition and delivery of end-to-end cloud SLAs. At the end of the journey, you preview the exciting future of clouds and network services, along with the major upcoming trends. If you are a technical professional or manager who must design, implement, or operate cloud or NGN solutions in enterprise or service-provider environments, this guide will be an indispensable resource.

- * Understand how virtualized data-center infrastructure lays the groundwork for cloud-based services
- * Move from distributed virtualization to “IT-as-a-service” via automated self-service portals
- * Classify cloud services and deployment models, and understand the actors in the cloud ecosystem
- * Review the elements, requirements, challenges, and opportunities associated with network services in the cloud
- * Optimize data centers via network segmentation, virtualization-aware networks, virtual network services, and service overlays
- * Systematically secure cloud services
- * Optimize service and application performance
- * Plan and implement NGN infrastructure to support and accelerate cloud services
- * Successfully connect enterprises to the cloud
- * Define and deliver on end-to-end cloud SLAs
- * Preview the future of cloud and network services

Gain Critical Insight into the Parallel I/O Ecosystem Parallel I/O is an integral component of modern high performance computing (HPC), especially in storing and processing very large datasets to facilitate scientific discovery. Revealing the state of the art in this field, High Performance Parallel I/O draws on insights from leading practitioners, researchers, software architects, developers, and scientists who shed light on the parallel I/O ecosystem. The first part of the book explains how large-scale HPC facilities scope, configure, and operate systems, with an emphasis on choices of I/O hardware, middleware, and applications. The book then traverses up the I/O software stack. The second part covers the file system layer and the third part discusses middleware (such as

Read Book The Policy Driven Data Center With Aci

MPIIO and PLFS) and user-facing libraries (such as Parallel-NetCDF, HDF5, ADIOS, and GLEAN). Delving into real-world scientific applications that use the parallel I/O infrastructure, the fourth part presents case studies from particle-in-cell, stochastic, finite volume, and direct numerical simulations. The fifth part gives an overview of various profiling and benchmarking tools used by practitioners. The final part of the book addresses the implications of current trends in HPC on parallel I/O in the exascale world.

Cloud Enterprise Architecture examines enterprise architecture (EA) in the context of the surging popularity of Cloud computing. It explains the different kinds of desired transformations the architectural blocks of EA undergo in light of this strategically significant convergence. Chapters cover each of the contributing architectures of EA-business, information, application, integration, security, and technology-illustrating the current and impending implications of the Cloud on each. Discussing the implications of the Cloud paradigm on EA, the book details the perceptible and positive changes that will affect EA design, governance, strategy, management, and sustenance. The author ties these topics together with chapters on Cloud integration and composition architecture. He also examines the Enterprise Cloud, Federated Clouds, and the vision to establish the InterCloud. Laying out a comprehensive strategy for planning and executing Cloud-inspired transformations, the book: Explains how the Cloud changes and affects enterprise architecture design, governance, strategy, management, and sustenance Presents helpful information on next-generation Cloud computing Describes additional architectural types such as enterprise-scale integration, security, management, and governance architectures This book is an ideal resource for enterprise architects, Cloud evangelists and enthusiasts, and Cloud application and service architects. Cloud center administrators, Cloud business executives, managers, and analysts will also find the book helpful and inspirational while formulating appropriate mechanisms and schemes for sound modernization and migration of traditional applications to Cloud infrastructures and platforms.

This edited volume covers essential and recent development in the engineering and management of data centers. Data centers are complex systems requiring ongoing support, and their high value for keeping business continuity operations is crucial. The book presents core topics on the planning, design, implementation, operation and control, and sustainability of a data center from a didactical and practitioner viewpoint. Chapters include: · Foundations of data centers: Key Concepts and Taxonomies · ITSDM: A Methodology for IT Services Design · Managing Risks on Data Centers through Dashboards · Risk Analysis in Data Center Disaster Recovery Plans · Best practices in Data Center Management Case: KIO Networks · QoS in NaaS (Network as a Service) using Software Defined Networking · Optimization of Data Center Fault-Tolerance Design · Energetic Data Centre Design Considering Energy Efficiency Improvements During Operation · Demand-side Flexibility and Supply-side Management: The Use Case of Data Centers and Energy Utilities · DevOps: Foundations and its Utilization in Data Centers · Sustainable and Resilient Network Infrastructure Design for Cloud Data Centres · Application Software in Cloud-Ready Data Centers This book bridges the gap between academia and the industry, offering essential reading for practitioners in data centers, researchers in the area, and faculty teaching related courses on data centers. The book can be used as a complementary text for traditional courses on

Computer Networks, as well as innovative courses on IT Architecture, IT Service Management, IT Operations, and Data Centers. As organizations drive to transform and virtualize their IT infrastructures to reduce costs, and manage risk, networking is pivotal to success. Optimizing network performance, availability, adaptability, security, and cost is essential to achieving the maximum benefit from your infrastructure. In this IBM® Redbooks® publication, we address these requirements: Expertise to plan and design networks with holistic consideration of servers, storage, application performance, and manageability Networking solutions that enable investment protection with performance and cost options that match your environment Technology and expertise to design and implement and manage network security and resiliency Robust network management software for integrated, simplified management that lowers operating costs of complex networks IBM and Brocade have entered into an agreement to provide expanded network technology choices with the new IBM b-type Ethernet Switches and Routers, to provide an integrated end-to-end resiliency and security framework. Combined with the IBM vast data center design experience and the Brocade networking expertise, this portfolio represents the ideal convergence of strength and intelligence. For organizations striving to transform and virtualize their IT infrastructure, such a combination can help you reduce costs, manage risks, and prepare for the future. This book is meant to be used along with "IBM b-type Data Center Networking: Product Introduction and Initial Setup," SG24-7785.

Using the policy driven data center approach, networking professionals can make their data center topologies faster to configure and more portable. They can also build cloud infrastructure faster than before. All of this can be achieved by using REST and python together with the latest Cisco technology called Application Centric Infrastructure (ACI). The Policy Driven Data Center with ACI helps Architects, IT administrators, Network Administrators and Engineers to build and troubleshoot multipurpose cloud architectures. Cisco data center experts Lucien Avramov and Maurizio Portolani thoroughly explain the architecture, concepts, and methodology of the policy driven data center. The authors cover the key technology concepts, the tools for modern data centers including python scripting and REST, the design consideration and methodology of modern fabrics including VXLAN-based forwarding, the policy model theory and concepts, how to build a multi-hypervisor and bare-metal infrastructure including OpenStack, the service integration, and advanced telemetry capabilities for troubleshooting. The book concludes by discussing universal data center switch architecture concepts in order to clearly understand switching concepts and the newer trends in the Nexus 9000 product portfolio. Drawing on their extensive experience in enterprise engagements, the authors present effective solutions for virtualized data centers, high performance computing, ultra-low latency environments, and large-scale data centers. In addition to discussing relevant concepts and methodologies, the authors address design considerations associated with hardware, topologies, automation, and scalability. Technical professionals will find invaluable guidance on migrating

current data center environments to a policy driven data center.

This book constitutes the proceedings of the 30th International Conference on Architecture of Computing Systems, ARCS 2017, held in Vienna, Austria, in April 2017. The 19 full papers presented in this volume were carefully reviewed and selected from 42 submissions. They were organized in topical sections entitled: resilience; accelerators; performance; memory systems; parallelism and many-core; scheduling; power/energy.

Information Security professionals today have to be able to demonstrate their security strategies within clearly demonstrable frameworks, and show how these are driven by their organization's business priorities, derived from sound risk management assessments. This Open Enterprise Security Architecture (O-ESA) Guide provides a valuable reference resource for practising security architects and designers explaining the key security issues, terms, principles, components, and concepts underlying security-related decisions that security architects and designers have to make. In doing so it helps in explaining their security architectures and related decision-making processes to their enterprise architecture colleagues. The description avoids excessively technical presentation of the issues and concepts, so making it also an eminently digestible reference for business managers - enabling them to appreciate, validate, and balance the security architecture viewpoints along with all the other viewpoints involved in creating a comprehensive enterprise IT architecture.

The recent explosion of digital media, online networking, and e-commerce has generated great new opportunities for those Internet-savvy individuals who see potential in new technologies and can turn those possibilities into reality. It is vital for such forward-thinking innovators to stay abreast of all the latest technologies. Web-Based Services: Concepts, Methodologies, Tools, and Applications provides readers with comprehensive coverage of some of the latest tools and technologies in the digital industry. The chapters in this multi-volume book describe a diverse range of applications and methodologies made possible in a world connected by the global network, providing researchers, computer scientists, web developers, and digital experts with the latest knowledge and developments in Internet technologies.

Software Networks describe new concepts for the Internets next generation. This architecture is based on virtual networking using Cloud and datacenter facilities. The main problems to be dealt with are the placement of virtual resources for opening a new network on the fly, and the urbanization of virtual resources implemented on physical network equipment. The digital architecture also deals with mechanisms capable of automatically controlling the placement of all virtual resources within the physical network. This book describes how to create and delete virtual networks on the fly. Indeed, the system is able to create any new network with any kind of virtual resource (e.g. switches, routers, LSRs, optical paths, firewalls, SIP-based servers, devices, servers, access points, etc.). Software Networks

shows how this architecture is compatible with new advances in SDN (Software Defined Networking), new high-speed transport protocols such as TRILL (Transparent Interconnection of Lots of Links) and LISP (Locator/Identifier Separation Protocol), NGN, IMS, new generation Wi-Fi, and 4G/5G networks. Finally, the author introduces Clouds of security and the virtualization of secure elements (smartcards) that could certainly transform how to secure the Internet. For this second edition, the author addresses in five new chapters the importance of open source software for networks, mobile edge computing, fog networking, tactile internet – a network environment allowing remote access, and security – the use of Cloud of security, secure elements and the emergence of the blockchain.

This publication provides a comprehensive compendium of the current state of Germany's research infrastructure in the social, economic, and behavioural sciences. In addition, the book presents detailed discussions of the current needs of empirical researchers in these fields as well as of opportunities for future development.

This IBM® Redpaper publication provides an update to the original description of IBM Reference Architecture for Genomics. This paper expands the reference architecture to cover all of the major vertical areas of healthcare and life sciences industries, such as genomics, imaging, and clinical and translational research. The architecture was renamed IBM Reference Architecture for High Performance Data and AI in Healthcare and Life Sciences to reflect the fact that it incorporates key building blocks for high-performance computing (HPC) and software-defined storage, and that it supports an expanding infrastructure of leading industry partners, platforms, and frameworks. The reference architecture defines a highly flexible, scalable, and cost-effective platform for accessing, managing, storing, sharing, integrating, and analyzing big data, which can be deployed on-premises, in the cloud, or as a hybrid of the two. IT organizations can use the reference architecture as a high-level guide for overcoming data management challenges and processing bottlenecks that are frequently encountered in personalized healthcare initiatives, and in compute-intensive and data-intensive biomedical workloads. This reference architecture also provides a framework and context for modern healthcare and life sciences institutions to adopt cutting-edge technologies, such as cognitive life sciences solutions, machine learning and deep learning, Spark for analytics, and cloud computing. To illustrate these points, this paper includes case studies describing how clients and IBM Business Partners alike used the reference architecture in the deployments of demanding infrastructures for precision medicine. This publication targets technical professionals (consultants, technical support staff, IT Architects, and IT Specialists) who are responsible for providing life sciences solutions and support.

Master Cisco's ACI and become an expert NOW! About This Video This course will help you get from zero to hero and master the policy-driven Data Center approach that ACI offers ACI involves a big learning curve and you'll learn to change your traditional network design mentality, which will be crucial to mastering ACI We will work with ACI APIC version 3.x. which provides the current SDN feature set you

Read Book The Policy Driven Data Center With Aci

need to perform all data center functions and requirements In Detail Automation, objects, and policies are replacing traditional networks as we know them. North-to-South or East-to-West traffic flows-do you know the difference between the two? Don't worry if you don't: this course will remedy that! Traditional campus networks are static, and won't change much because they can't scale up. Data centers are not meant to be static. Today's Data Center architecture requirements are: scalability, geo-redundancy, security, multi-tenancy, and speed! Data center traffic flow should be highly available and predictable. As the demand for talented ACI engineers and architects is rapidly increasing, knowing the foundational aspects of SDN-based architectures and being able to implement and support them are crucial for your career development. This fast-paced course uses a whiteboard-based approach with hand written explanations. We start with an introduction to fabric data center designs, Spine and Leaf architectures, and ACI. We then start to implement them and deploy a fabric from the ground up. Then we build a multi-tenant environment. After completing this video training course, you will have gained a solid understanding of how to administer an Application Centric Infrastructure.

The enterprise data center has evolved dramatically in recent years. It has moved from a model that placed multiple data centers closer to users to a more centralized dynamic model. The factors influencing this evolution are varied but can mostly be attributed to regulatory, service level improvement, cost savings, and manageability. Multiple legal issues regarding the security of data housed in the data center have placed security requirements at the forefront of data center architecture. As the cost to operate data centers has increased, architectures have moved towards consolidation of servers and applications in order to better utilize assets and reduce "server sprawl." The more diverse and distributed the data center environment becomes, the more manageability becomes an issue. These factors have led to a trend of data center consolidation and resources on demand using technologies such as virtualization, higher WAN bandwidth technologies, and newer management technologies. The intended audience of this book is network architects and network administrators. In this IBM® Redbooks® publication we discuss the following topics: The current state of the data center network The business drivers making the case for change The unique capabilities and network requirements of system platforms The impact of server and storage consolidation on the data center network The functional overview of the main data center network virtualization and consolidation technologies The new data center network design landscape

The Policy Driven Data Center with ACI Architecture, Concepts, and Methodology Cisco Press

Data Center Virtualization Fundamentals For many IT organizations, today's greatest challenge is to drive more value, efficiency, and utilization from data centers. Virtualization is the best way to meet this challenge. Data Center Virtualization Fundamentals brings together the comprehensive knowledge Cisco professionals need to apply virtualization throughout their data center environments. Leading data center expert Gustavo A. A. Santana thoroughly explores all components of an end-to-end data center virtualization solution, including networking, storage, servers, operating systems, application optimization, and security. Rather than focusing on a single product or technology, he explores product capabilities as interoperable design tools that can be combined and integrated with other solutions, including VMware vSphere. With the author's guidance, you'll learn how to define and implement highly-efficient architectures for new, expanded, or retrofit data center projects. By doing so, you can deliver agile application provisioning without purchasing unnecessary infrastructure, and establish a strong foundation for new cloud computing and IT-as-a-service initiatives. Throughout, Santana illuminates key theoretical concepts through realistic use cases, real-world designs, illustrative configuration examples, and verification outputs. Appendixes provide valuable reference information, including relevant Cisco data center products and CLI principles for IOS and NX-OS. With this approach, Data Center

Read Book The Policy Driven Data Center With Aci

Virtualization Fundamentals will be an indispensable resource for anyone preparing for the CCNA Data Center, CCNP Data Center, or CCIE Data Center certification exams. Learn how virtualization can transform and improve traditional data center network topologies Understand the key characteristics and value of each data center virtualization technology Walk through key decisions, and transform choices into architecture Smoothly migrate existing data centers toward greater virtualization Burst silos that have traditionally made data centers inefficient Master foundational technologies such as VLANs, VRF, and virtual contexts Use virtual PortChannel and FabricPath to overcome the limits of STP Optimize cabling and network management with fabric extender (FEX) virtualized chassis Extend Layer 2 domains to distant data center sites using MPLS and Overlay Transport Virtualization (OTV) Use VSANs to overcome Fibre Channel fabric challenges Improve SAN data protection, environment isolation, and scalability Consolidate I/O through Data Center Bridging and FCoE Use virtualization to radically simplify server environments Create server profiles that streamline “bare metal” server provisioning “Transcend the rack” through virtualized networking based on Nexus 1000V and VM-FEX Leverage opportunities to deploy virtual network services more efficiently Evolve data center virtualization toward full-fledged private clouds

Security and Policy Driven Computing covers recent advances in security, storage, parallelization, and computing as well as applications. The author incorporates a wealth of analysis, including studies on intrusion detection and key management, computer storage policy, and transactional management. The book first describes multiple variables and index structure derivation for high dimensional data distribution and applies numeric methods to proposed search methods. It also focuses on discovering relations, logic, and knowledge for policy management. To manage performance, the text discusses contention management for transactional structures, buffer tuning, and test environments. It then illustrates search optimization using truncated functions with paralleled techniques. The final chapters present structures, recovery, message conflicts, and test coverage of quantum policies and explain methods of quantum protection for intrusion prevention. An overview of security and policy applications for systems and computing, this book explores the latest R&D, emerging technology, and state-of-the-art technical studies of security and policy issues. It also looks to future research and technologies that will propel the innovation of next-generation systems.

[Copyright: 546ff51057573d72b5cfd7dbeb34d92f](https://www.amazon.com/dp/546ff51057573d72b5cfd7dbeb34d92f)