Data Center Virtualization Fundamentals: Understanding Techniques and Designs for Highly Efficient Data Centers with Cisco Nexus, UCS, MDS, and Beyond

Gustavo A. A. Santana

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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 Virtualization Fundamentals will be an indispensable resource for anyone preparing for the CCNA Data Center, CCNP Data Center, or CCIE Data Center
certification exams.

Gustavo A. A. Santana, CCIE® No. 8806, is a Cisco Technical Solutions Architect working in enterprise and service provider data center projects that require deep integration across technology areas such as networking, application optimization, storage, and servers. He has more than 15 years of data center experience, and has led and coordinated a team of specialized Cisco engineers in Brazil. He holds two CCIE certifications (Routing & Switching and Storage Networking), and is a VMware Certified Professional (VCP) and SNIA Certified Storage Networking Expert (SCSN-E). A frequent speaker at Cisco and data center industry events, he blogs on data center virtualization at gustavoaasantana.net.

- 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

-Reviews -

"The variety of material that Gustavo covers in this work would appeal to anyone responsible for Data Centers today. His grasp of virtualization technologies and ability to relate it in both technical and non-technical terms makes for compelling reading. This is not your ordinary tech manual. Through use of relatable visual cues, Gustavo provides information that is easily recalled on the subject of virtualization, reaching across Subject Matter Expertise domains. Whether you consider yourself well-versed or a novice on the topic, working in large or small environments, this work will provide a clear understanding of the diverse subject of virtualization."
-- Bill Dufresne, CCIE 4375, Distinguished Systems Engineer, Cisco (Americas)

"..this book is an essential reference and will be valuable asset for potential candidates pursuing their Cisco Data Center certifications. I am confident that in reading this book, individuals will inevitably gain extensive knowledge and hands-on experience during their certification preparations. If you're looking for a truly comprehensive guide to virtualization, this is the one!"
-- Yusuf Bhaiji, Senior Manager, Expert Certifications (CCIE, CCDE, CCAr),
Learning@Cisco

"When one first looks at those classic Cisco Data Center blueprints, it is very common to become distracted with the overwhelming number of pieces and linkages. By creating a solid theoretical foundation and providing rich sets of companion examples to illustrate each concept, Gustavo's book brings hope back to IT Professionals from different areas of expertise. Apparently complex topics are demystified and the insertion of products, mechanisms, protocols and technologies in the overall Data Center Architecture is clearly explained, thus enabling you to achieve robust designs and successful deployments. A must read... Definitely!"
-- Alexandre M. S. P. Moraes, Consulting Systems Engineer — Author of "Cisco Firewalls"

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From reader reviews:

James Vazquez:

Precisely why? Because this Data Center Virtualization Fundamentals: Understanding Techniques and Designs for Highly Efficient Data Centers with Cisco Nexus, UCS, MDS, and Beyond is an unordinary book that the inside of the guide waiting for you to snap the idea but latter it will distress you with the secret the item inside. Reading this book beside it was fantastic author who have write the book in such wonderful way makes the content interior easier to understand, entertaining way but still convey the meaning totally. So , it is good for you because of not hesitating having this ever again or you going to regret it. This unique book will give you a lot of benefits than the other book include such as help improving your skill and your critical thinking technique. So , still want to postpone having that book? If I have been you I will go to the book store hurriedly.

Mary Redus:

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