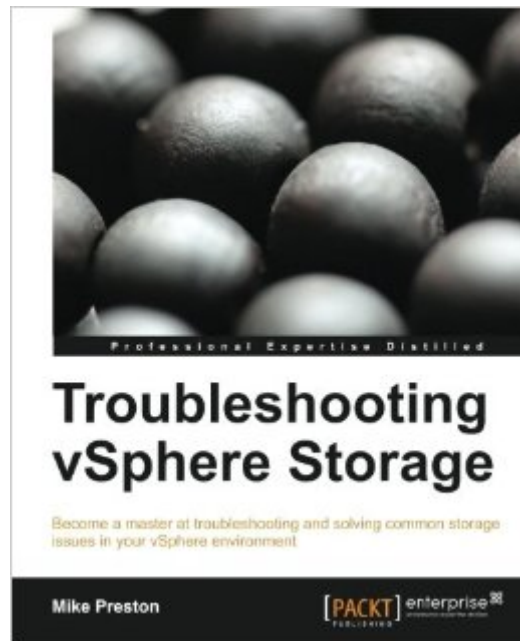


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Troubleshooting vSphere Storage



Synopsis

All vSphere administrators will benefit big-time from this book because it gives you clear, practical instructions on troubleshooting a whole host of storage problems. From fundamental to advanced techniques, it's all here.

Overview Identify key issues that affect vSphere storage visibility, performance, and capacity

Comprehend the storage metrics and statistics that are collected in vSphere Get acquainted with the many vSphere features that can proactively protect your environment

In Detail Virtualization has created a new role within IT departments everywhere; the vSphere administrator. vSphere administrators have long been managing more than just the hypervisor, they have quickly had to adapt to become a "jack of all trades" in organizations. More and more tier 1 workloads are being virtualized, making the infrastructure underneath them all that more important. Due to this, along with the holistic nature of vSphere, administrators are forced to have the know-how on what to do when problems occur. This practical, easy-to-understand guide will give the vSphere administrator the knowledge and skill set they need in order to identify, troubleshoot, and solve issues that relate to storage visibility, storage performance, and storage capacity in a vSphere environment. This book will first give you the fundamental background knowledge of storage and virtualization. From there, you will explore the tools and techniques that you can use to troubleshoot common storage issues in today's data centers. You will learn the steps to take when storage seems slow, or there is limited availability of storage. The book will go over the most common storage transport such as Fibre Channel, iSCSI, and NFS, and explain what to do when you can't see your storage, where to look when your storage is experiencing performance issues, and how to react when you reach capacity. You will also learn about the tools that ESXi contains to help you with this, and how to identify key issues within the many vSphere logfiles.

What you will learn from this book Identify the root cause of storage issues within vSphere Understand where to look when storage is suddenly not available Use esxtop to monitor and discover pain points in your infrastructure Diagnose and resolve SCSI reservations and queuing issues Design storage properly based on workloads Monitor and alert on your thinly provisioned disks and data store capacity Utilize Storage DRS to proactively balance your capacity and workload on your data stores Maintain compliance in terms of placement with Profile Driven Storage Grant VMs the performance they need with Storage I/O Control Decipher storage-related error entries in the vSphere logfiles

Approach This is a step-by-step example-oriented tutorial aimed at showing the reader how to troubleshoot a variety of vSphere storage problems, and providing the reader with solutions that can be completed with minimal effort and time in order to limit damage to work.

Who this book is written for If you are a vSphere

administrator, this is the book for you. This book will provide you with 'need to know' information about the various storage transports that ESXi utilizes, the tools and techniques we can use to identify problems, and the fundamental knowledge and steps to take to troubleshoot storage-related issues. Prior knowledge of the VMWare environment is assumed.

Book Information

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Customer Reviews

In my 10+ years of managing and designing vSphere environments, I have come across a few books that should be on the desks of every vSphere Administrator. You should not be caught without a copy of *Mastering VMware vSphere* by Scott Lowe and Nick Marshall, *VMware vSphere Design* by Scott Lowe and Forbes Guthrie, and *vSphere Clustering Deepdive* by Duncan Epping and Frank Denneman. Mike Preston's *Troubleshooting vSphere Storage* could easily be added to the list. While the book is only 5 chapters long, it is organized in a logical fashion that not only allows for easy reading, but quick bookmarking. The first chapter gives an overview of how storage is organized within virtual environments. It lays out the framework of storage organization within vSphere and how it relates to the physical world of servers, networks, and shared storage. Some basic information is introduced for the novice, followed by more detailed explanations of how the pieces interact. The usual 'alphabet soup' of acronyms doesn't detract from the layout and keeps the reader on track. With this foundation in place, it allows for the other chapters to flow in an organized fashion. The following chapters outline which tools to use to analyze your storage, where

to look for problems and how to identify them. Common problems such as contention, capacity, and overcommitment are identified for the reader and several tips are given to show not only what these problems will look like in your environment but also how to identify and resolve them. The three appendices are the 'Crown Jewels' of the book. Appendix A contains a list of your most common storage troubleshooting steps, followed by the commands and procedures you will need to take in order to eliminate each one.

Storage is one of the most important key area in the virtualization, so it is essential and significant to know how it connected to another areas, understand how it works, how can you troubleshoot storage related availability, performance, space, other issues. The author Mike Preston did a great job with his book "Troubleshooting vSphere Storage". The five main chapters covers the most important areas. In the 1st section describes the storage technologies, file systems, PSA, PSP, SATP: the base knowledge. The 2nd chapter has the tools which can be used during an issue investigation: esxtop, charts, reports, maps, logs, views. 3rd chapter writes about LUN masking, numbering, resignaturing, FC/iSCSI/NFS visibility, permissions, authentication, storage related esxcli commands. The 4th chapter covers the contention and performance issues: DAVG/KAVG/GAVG latency (and thresholds), IOPS+RAID (how to design), OS/HBA/LUN queues. The last 5th chapter is about the capacity, and overcommitment: think/thick VMDKs, thin provisioning on SAN (LUN) level, snapshots, swap, monitoring VMFS usage, sDRS. There are three more appendices, which are really useful toolkit for analyzing storage issues: troubleshoot steps, esxtop in-depth, and interpreting iSCSI error codes. The book is not a long one, has only 150 pages. easy-to-understand, logical, has many screenshots, diagrams, charts for illustrating. One problem: the book is a bit short, it could have been longer. There are several topics which would deserve more. And a second: When I was preparing to my VCAP5-DCA exam, the book was not yet exists, it would have helped to me a lot at that time.

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