

Table of Contents

| | |
|---|-----------|
| Introduction and System Requirements | 9 |
| VMware Server: Product Overview | 10 |
| Features in VMware Server | 11 |
| Support for 64-bit Guest Operating Systems | 11 |
| Two-Way Virtual SMP (Experimental Support) | 11 |
| Connect to GSX Virtual Machines and GSX 3 Hosts | 11 |
| Upgrade and Use GSX Virtual Machines | 11 |
| Move Existing Virtual Machines | 11 |
| Compatible with Workstation 5.x Virtual Machines | 12 |
| VMware Server C API Technology Preview | 12 |
| Configure Virtual Hardware Devices to be Automatically Detected | 12 |
| Host System Requirements | 13 |
| Server Requirements | 13 |
| Remote Client Requirements | 19 |
| Virtual Machine Specifications | 21 |
| Supported Guest Operating Systems | 24 |
| Hardware Requirements for 64-bit Guest Operating Systems | 24 |
| Technical Support Resources | 29 |
| Self-Service Support | 29 |
| Online and Telephone Support | 29 |
| Support Offerings | 29 |
| Reporting Problems | 29 |
| Log Files | 31 |
| Creating a New Virtual Machine | 35 |
| Setting Up a New Virtual Machine | 36 |
| What's in a Virtual Machine? | 36 |
| Creating a New Virtual Machine with the New Virtual Machine Wizard | 38 |
| Installing a Guest Operating System | 52 |
| Example: Installing Windows Server 2003 as a Guest Operating System | 52 |
| Using VMware Tools | 55 |
| About VMware Tools | 56 |
| Installing VMware Tools | 58 |
| Installing VMware Tools in a Windows Virtual Machine | 58 |
| Installing VMware Tools in a Linux or FreeBSD Virtual Machine | 67 |

| | |
|--|-----------|
| Installing VMware Tools in a NetWare Virtual Machine _____ | 70 |
| Executing Scripts When the Virtual Machine's Power State Changes _____ | 72 |
| Issues to Consider _____ | 73 |
| Configuring VMware Tools _____ | 74 |
| Configuring VMware Tools in a Windows Virtual Machine _____ | 74 |
| Configuring VMware Tools in a Linux or FreeBSD Virtual Machine _____ | 78 |
| Configuring VMware Tools in a NetWare Virtual Machine _____ | 81 |
| About the VMware Tools Service _____ | 86 |
| Synchronizing the Time in the Guest with the Host Operating System _____ | 87 |
| Executing Commands After You Power Off or Reset a Virtual Machine _____ | 88 |
| Passing a String from the Host Operating System to the Guest Operating System _____ | 88 |
| Passing Information Between the Guest Operating System and a VMware Scripting API Script _____ | 90 |
| Running Virtual Machines _____ | 91 |
| Overview of the VMware Server Console Window _____ | 93 |
| Using the Home Tab _____ | 95 |
| Using Tabs _____ | 96 |
| Configuring a Virtual Machine _____ | 97 |
| Using the Virtual Machine Inventory _____ | 97 |
| Displaying Hints _____ | 98 |
| Checking the Status of VMware Tools _____ | 98 |
| Creating a Screen Shot of a Virtual Machine _____ | 99 |
| Connecting to Virtual Machines and VMware Server Hosts _____ | 100 |
| Connecting to a Virtual Machine from a Windows Host or Client _____ | 101 |
| Connecting to a Virtual Machine from a Linux Host or Client _____ | 103 |
| Connecting to a Virtual Machine from the VMware Management Interface _____ | 104 |
| Connecting to a Different VMware Server Host _____ | 105 |
| Connecting to GSX Server and Older Virtual Machines _____ | 106 |
| Changing the Power State of a Virtual Machine _____ | 110 |
| Using Power Options for Virtual Machines _____ | 110 |
| Suspending and Resuming Virtual Machines _____ | 113 |
| Shutting Down a Virtual Machine _____ | 113 |
| Powering Virtual Machines On and Off When the Host Starts and Shuts Down _____ | 114 |

| | |
|---|------------|
| Controlling the Virtual Machine Display _____ | 117 |
| Using Full Screen Mode _____ | 117 |
| Using Quick Switch Mode _____ | 117 |
| Taking Advantage of Multiple Monitors _____ | 118 |
| Fitting the Console Window to the Virtual Machine _____ | 119 |
| Fitting a Windows Guest Operating System's Display to the VMware Server Console Window _____ | 119 |
| Simplifying the Screen Display _____ | 120 |
| Running Virtual Machines from DVDs or CD-ROM Discs _____ | 121 |
| Using PXE with Virtual Machines _____ | 123 |
| Installing Software in a Virtual Machine _____ | 125 |
| Cutting, Copying and Pasting Text _____ | 126 |
| Using Devices in a Virtual Machine _____ | 127 |
| Adding, Configuring, and Removing Devices in a Virtual Machine _____ | 127 |
| Connecting and Disconnecting Removable Devices _____ | 129 |
| Command Reference _____ | 130 |
| Startup Options on a Linux Host _____ | 130 |
| Startup Options on a Windows Host _____ | 131 |
| Using Keyboard Shortcuts _____ | 132 |
| Preserving the State of a Virtual Machine _____ | 133 |
| Suspending and Resuming Virtual Machines _____ | 134 |
| Setting the Suspended State File Directory _____ | 135 |
| Taking Snapshots _____ | 137 |
| What Is Captured by a Snapshot? _____ | 138 |
| Ways of Using Snapshots _____ | 139 |
| Snapshots and a Virtual Machine's Hard Disks _____ | 140 |
| Snapshots and Other Activity in the Virtual Machine _____ | 140 |
| Settings for Snapshots _____ | 141 |
| Removing the Snapshot _____ | 141 |
| Snapshots and Legacy Disk Modes _____ | 142 |
| Snapshots and Repeatable Resume _____ | 142 |
| Snapshots and Legacy Virtual Machines _____ | 142 |
| Using Disks in a Virtual Machine _____ | 143 |
| Configuring Hard Disk Storage in a Virtual Machine _____ | 144 |
| Disk Types: Virtual and Physical _____ | 144 |
| Additional Information about Disk, Redo-Log, Snapshot, and Lock Files _____ | 146 |
| Defragmenting and Shrinking Virtual Disks _____ | 150 |

| | |
|---|------------|
| Configuring Optical and Floppy Drives _____ | 153 |
| Configuring Virtual DVD/CD-ROM Drives _____ | 153 |
| Configuring Virtual Floppy Drives _____ | 156 |
| Adding Drives to a Virtual Machine _____ | 157 |
| Adding Virtual Disks to a Virtual Machine _____ | 157 |
| Adding Physical Disks to a Virtual Machine _____ | 160 |
| Adding DVD/CD-ROM Drives to a Virtual Machine _____ | 163 |
| Adding Floppy Drives to a Virtual Machine _____ | 165 |
| Using VMware Virtual Disk Manager _____ | 166 |
| Running the VMware Virtual Disk Manager Utility _____ | 167 |
| Shrinking Virtual Disks with VMware Virtual Disk Manager _____ | 170 |
| Examples Using the VMware Virtual Disk Manager _____ | 170 |
| Installing an Operating System onto a Physical Partition from a Virtual Machine _ | 173 |
| Configuring a Windows Host _____ | 174 |
| Configuring a Linux Host _____ | 176 |
| Disk Performance in Windows NT Guests on Multiprocessor Hosts _____ | 178 |
| Improving Performance _____ | 178 |
| Networking _____ | 179 |
| Components of the Virtual Network _____ | 181 |
| Common Networking Configurations _____ | 183 |
| Bridged Networking _____ | 183 |
| Network Address Translation (NAT) _____ | 184 |
| Host-Only Networking _____ | 186 |
| Custom Networking Configurations _____ | 187 |
| Changing the Networking Configuration _____ | 191 |
| Adding and Modifying Virtual Network Adapters _____ | 191 |
| Configuring Bridged Networking Options on a Windows Host _____ | 193 |
| Enabling, Disabling, Adding and Removing Host Virtual Adapters _____ | 198 |
| Advanced Networking Topics _____ | 201 |
| Selecting IP Addresses on a Host-Only Network or NAT Configuration ____ | 201 |
| Avoiding IP Packet Leakage in a Host-Only Network _____ | 204 |
| Maintaining and Changing the MAC Address of a Virtual Machine _____ | 206 |
| Controlling Routing Information for a Host-Only Network on a Linux Host | 207 |
| Other Potential Issues with Host-Only Networking on a Linux Host ____ | 208 |
| Setting Up a Second Bridged Network Interface on a Linux Host _____ | 209 |

| | |
|---|------------|
| Configuring Bridged Networking When Using Teamed Network Interface Cards on Your Host | 210 |
| Setting Up Two Separate Host-Only Networks | 212 |
| Routing Between Two Host-Only Networks | 215 |
| Using Virtual Ethernet Adapters in Promiscuous Mode on a Linux Host | 218 |
| Understanding NAT | 220 |
| Using NAT | 220 |
| The Host Computer and the NAT Network | 221 |
| DHCP on the NAT Network | 221 |
| DNS on the NAT Network | 221 |
| External Access from the NAT Network | 222 |
| Advanced NAT Configuration | 223 |
| Custom NAT and DHCP Configuration on a Windows Host | 226 |
| Considerations for Using NAT | 227 |
| Using NAT with NetLogon | 228 |
| Sample Linux vmnetnat.conf File | 229 |
| Using Samba for File Sharing on a Linux Host | 231 |
| Configuring Devices | 239 |
| Using Parallel Ports | 240 |
| About Parallel Ports | 240 |
| Adding a Parallel Port in a Virtual Machine | 240 |
| Configuring a Parallel Port on a Linux Host | 241 |
| Special Notes for the Iomega Zip Drive | 244 |
| Using Serial Ports | 245 |
| Using a Serial Port on the Host Computer | 245 |
| Using a File on the Host Computer | 247 |
| Connecting an Application on the Host to a Virtual Machine | 248 |
| Connecting Two Virtual Machines | 250 |
| Special Configuration Options for Advanced Users | 252 |
| Examples: Debugging over a Virtual Serial Port | 253 |
| Keyboard Mapping on a Linux Host | 256 |
| Quick Answers | 256 |
| The Longer Story | 256 |
| V-Scan Code Table | 260 |

| | |
|--|------------|
| Using USB Devices in a Virtual Machine _____ | 265 |
| Notes on USB Support _____ | 265 |
| Adding a USB Controller _____ | 266 |
| Connecting USB Devices _____ | 267 |
| Using USB with a Windows Host _____ | 267 |
| Replacing USB 2.0 Drivers on a Windows 2000 Host _____ | 268 |
| Using USB with a Linux Host _____ | 268 |
| Who Has Control over a USB Device? _____ | 268 |
| Disconnecting USB Devices from a Virtual Machine _____ | 270 |
| Human Interface Devices _____ | 270 |
| Connecting to a Generic SCSI Device _____ | 271 |
| Device Support in Guest Operating Systems _____ | 271 |
| Adding a Generic SCSI Device to a Virtual Machine _____ | 272 |
| Generic SCSI on a Windows Host Operating System _____ | 274 |
| Generic SCSI on a Linux Host Operating System _____ | 277 |
| Using Two-Way Virtual Symmetric Multiprocessing (Experimental) _____ | 278 |
| Video and Sound _____ | 281 |
| Setting Screen Color Depth in a Virtual Machine _____ | 282 |
| Changing Screen Color Depth on the Host _____ | 282 |
| Changing Screen Color Depth in the Virtual Machine _____ | 283 |
| Using Full Screen Mode on a Linux Host _____ | 284 |
| Configuring Sound _____ | 285 |
| Installing Sound Drivers in a Windows Server 2003 Guest Operating System _____ | 285 |
| Installing Sound Drivers in Windows 9x and Windows NT Guest Operating Systems _____ | 285 |
| Performance Tuning for Virtual Machines _____ | 287 |
| Allocating Memory to a Virtual Machine _____ | 288 |
| Configuring Virtual Machine Memory from a Console _____ | 289 |
| Improving Performance for Guest Operating Systems _____ | 290 |
| Windows 2000, Windows XP and Windows Server 2003 Guest Operating System Performance Tips _____ | 290 |
| Windows 95 and Windows 98 Guest Operating System Performance Tips _____ | 291 |
| Linux Guest Operating System Performance Tips _____ | 293 |
| Glossary _____ | 295 |