



Windows® 2000 Routing and Remote Access Service

New
Riders

Kuckie Charles

Contents

I	Installation and Configuration	1
1	Overview, Features, and Benefits	3
	Remote Access Components	4
	Routing Components	6
	Other Features	8
	Summary	9
2	Remote Access Server	11
	RAS Overview	12
	Authentication and Authorization	21
	User Access Configuration	39
	Summary	46
	References	46
3	Dial-Up Networking	47
	Dial-Up Networking Overview	47
	Hardware Installation	53
	Configure Dialing Parameters	56
	Configuring a Dial-Up Connection	59
	Incoming Connections	64
	Summary	66
	References	66
4	Routing Protocols	67
	Routing Concepts	69
	Unicast Routing	73
	Multicasting	74
	IP Routing	78
	Other Routing Protocols	109
	Demand-Dial Routing	113
	Summary	118
	References	119

VI Configuring the Windows 2000 Router 121

- Configuration Basics 121
- IP Routing 125
- IPX Routing 139
- Demand-Dial Routing 143
- AppleTalk Routing 153
- Filtering 154
- Conclusion 156

II Advanced Administration 157

6 Routing Tools 159

- Netsh 159
- mrinfo 166
- pathping 167
- Scheduling Tools 169

7 Virtual Private Networks 173

- VPN Defined 174
- New Features of Windows 2000 VPNs 175
- Anatomy of a VPN Connection 176
- Types of VPNs 178
- VPN Tunneling Protocols 180
- VPN Routing 185
- VPNs and Firewalls 189
- VPN Configuration 191
- References 212

8 Windows 2000 Connection Services 213

- Connection Point Services 214
- Connection Manager 219
- References 228

9 Internet Authentication Service 229

- Overview of IAS 229
- Planning Your IAS Deployment 233
- Installation and Configuration 236

IAS Scenarios 242

References 243

III RRAS Planning 245

10 Bandwidth and Telecommunications 247

Bandwidth and Usage Statistics 248

Telecommunication Services 254

References 259

11 Shared Internet Connectivity 261

Network Address Translation Protocol 262

Internet Connection Sharing 270

References 273

12 Network Design 275

Small Office/Home Office Networks 276

Medium-sized Networks 279

Large Networks 282

References 284

IV Appendixes 287

A Technical Overview of RAS Communications 289

Windows 2000 Security 290

Internet Protocol Security 297

References 312

B Troubleshooting 313

Remote Access Server and Dial-Up Networking 314

Virtual Private Networks (VPNs) 317

Routing Problems 319

Demand-Dial Routing 323

C Glossary 327

Index 341