Professional
Live Communications Server

Professional
Live Communications Server

Joe Schurman
Randy Thomas
Bob Christian

Wiley Publishing, Inc.

Professional Live Communications Server

Published by
Wiley Publishing, Inc.
10475 Crosspoint Boulevard
Indianapolis, IN 46256
www.wiley.com

Copyright © 2006 by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

ISBN-13: 978-0-471-77321-4
ISBN-10: 0-471-77321-2

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

1MA/RT/QW/QW/IN

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Legal Department, Wiley Publishing, Inc., 10475 Crosspoint Blvd., Indianapolis, IN 46256, (317) 572-3447, fax (317) 572-4355, or online at www.wiley.com/go/permissions.

LIMIT OF LIABILITY/DISCLAIMER OF WARRANTY: THE PUBLISHER AND THE AUTHOR MAKE NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF THE CONTENTS OF THIS WORK AND SPECIFICALLY DISCLAIM ALL WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. NO WARRANTY MAY BE CREATED OR EXTENDED BY SALES OR PROMOTIONAL MATERIALS. THE ADVICE AND STRATEGIES CONTAINED HEREIN MAY NOT BE SUITABLE FOR EVERY SITUATION. THIS WORK IS SOLD WITH THE UNDERSTANDING THAT THE PUBLISHER IS NOT ENGAGED IN RENDERING LEGAL, ACCOUNTING, OR OTHER PROFESSIONAL SERVICES. IF PROFESSIONAL ASSISTANCE IS REQUIRED, THE SERVICES OF A COMPETENT PROFESSIONAL PERSON SHOULD BE SOUGHT. NEITHER THE PUBLISHER NOR THE AUTHOR SHALL BE LIABLE FOR DAMAGES ARISING HEREFROM. THE FACT THAT AN ORGANIZATION OR WEBSITE IS REFERRED TO IN THIS WORK AS A CITATION AND/OR A POTENTIAL SOURCE OF FURTHER INFORMATION DOES NOT MEAN THAT THE AUTHOR OR THE PUBLISHER ENDORSES THE INFORMATION THE ORGANIZATION OR WEBSITE MAY PROVIDE OR RECOMMENDATIONS IT MAY MAKE. FURTHER, READERS SHOULD BE AWARE THAT INTERNET WEBSITES LISTED IN THIS WORK MAY HAVE CHANGED OR DISAPPEARED BETWEEN WHEN THIS WORK WAS WRITTEN AND WHEN IT IS READ.

For general information on our other products and services or to obtain technical support, please contact our Customer Care Department within the U.S. at (800) 762-2974, outside the U.S. at (317) 572-3993 or fax (317) 572-4002.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Cataloging-in-Publication Data:

Professional Live Communications Server / by Joe Schurman ... [et al.].
p. cm.
Includes index.
ISBN-13: 978-0-471-77321-4 (paper/website)
ISBN-10: 0-471-77321-2 (paper/website)
1. Microsoft Office live communications server. 2. Client/server computing. I. Schurman, Joe, 1977-
QA76.9.C55P753 2006
005.2'768—dc22
2006011850

Trademarks: Wiley, the Wiley logo, Wrox, the Wrox logo, Programmer to Programmer, and related trade dress are trademarks or registered trademarks of John Wiley & Sons, Inc., and/or its affiliates, in the United States and other countries, and may not be used without written permission. All other trademarks are the property of their respective owners. Wiley Publishing, Inc., is not associated with any product or vendor mentioned in this book.

I would like to dedicate this book to my wife, Christy, and our kids, Paige, Bailey, and Davis, who have been so patient with me throughout this whole process. I have traveled most of the world during the writing of this book and they have been so awesome, even during my really busy days, and I couldn't be happier to have them in my life.

— Joe Schurman

About the Authors

Joe Schurman

Joe Schurman is the co-founder of Connected Innovation and is a member of the Microsoft Unified Communications Readiness team for Microsoft. As a Microsoft Most Valuable Professional for Live Communications Server, Joe is deployed globally to provide training for Microsoft employees, partners, and customers in each region of the world. Joe has authored several whitepapers, has developed many Live Communications Server 2005 SP1 readiness kits, provides global speaking engagements, sales and technical training world tours, Microsoft TechNet webcasts, and has developed the Microsoft Live Communications Server 2005 SP1 certification program, due out later this year. Joe's articles and comments have been featured in *Pocket PC Magazine*, *Waggener Edstrom*, *AMR Research*, *Wainhouse Research*, and several other publications. Joe is also a black belt in Chinese Kung Fu as well as a United States National Kung Fu judge.

Randy Thomas

Randy Thomas started his IT career as a support person for a company in Houston, and then was blessed enough to get an opportunity to become a consultant for a content management company during the tech boom. He traveled around the world for them for a long time, thanks to an incredibly understanding spouse and children. He thanks his wife, Abbie, and two daughters, Samantha and Emma, for being so gracious while he was always gone. After moving to Washington, D.C., he was granted some very nice government projects building CM and Portal solutions with high security. He had pretty much lost all passion for the IT industry until the day he started working with Live Communications Server and all that goes with it. He then began traveling around the world speaking about and training people on Live Communications Server and unified communications. Randy also spends a lot of time on the newsgroup sites where he tries to help as many people in the community as possible. Currently, he lives in The Woodlands, Texas, where baby number 3 is on the way.

Credits

Executive Editor
Chris Webb

Development Editor
Sydney Jones

Production Editor
William A. Barton

Copy Editor
Luann Rouff

Editorial Manager
Mary Beth Wakefield

Production Manager
Tim Tate

Vice President and Executive Group Publisher
Richard Swadley

Vice President and Publisher
Joseph B. Wikert

Project Coordinator
Michael Kruzil

Graphics and Production Specialists
Jonelle Burns
Denny Hager
Jake Mansfield
Barbara Moore
Shelley Norris
Lynsey Osborn
Heather Ryan

Quality Control Technician
Brian H. Walls

Media Development Specialists
Angela Denny
Kit Malone
Travis Silvers

Proofreading and Indexing
Techbooks

Contents

Acknowledgments xix
Introduction xxi

Chapter 1: Introducing Microsoft Unified Communications 1

Introducing Microsoft Office Live Communications Server with SP 1 2
Microsoft Office Communicator 2005 3
Microsoft Office Live Meeting 2005 3
The Business Value of Presence 4
Providing Secure Communications 4
Live Communications Server 2005 SP1 Server Roles 6
Live Communications Server Access Proxy 6
Live Communications Server Proxy 8
Live Communications Server Director 9
Live Communications Server Front-End Servers 9
Live Communications Server Back-End Servers 11
Live Communications Server IM Archiving 13
Live Communications Server SIP/PSTN Gateway 13
Introducing Session Initiation Protocol 16
SIP Architecture 16
SIP Methods 17
SIP Messages 19
Introducing Transport Layer Security 20
MTLS 21
Introducing Microsoft Office Communicator 2005 22
Communicator 2005 Features 22
Public Instant Messaging Connectivity Integration 26
Telephony Integration 28
PBX Integration 28
PSTN Integration 28
Microsoft Office Communicator 2005 Web Access 28
Microsoft Office Communicator 2005 Mobile 28
Summary 29

Chapter 2: Live Communications Server 2005 SP1 in the Enterprise 31

Understanding the Live Communications Server Pre-Sales Process 31
Deploying for an Enterprise Customer 32
Setting Down Requirements 33
Planning Your Schedule 34
Scheduling Additional Deliverables 36
Deployment Schedule Summary 37
Building the Team 41
Entering the IBM Sametime Domain 42
IBM Attrition Scenarios 43
Cost Comparisons 43
Features and Functionality 44
Understanding Microsoft's Integrated Platform 44
Access Anytime, Anywhere 44
Integrated Public Instant Messaging Connectivity 44
Understanding the Benefits of Real-Time Security 45
Meeting Compliance Regulations 45
Scalability and Availability 46
Understanding the User Interface 48
Understanding Telephony and VoIP Integration 48
Understanding the Development Platform 48
Summary 50

Chapter 3: Microsoft Office Integration 51

Microsoft Office Outlook 2003 51
Microsoft Office Word 2003 54
Microsoft Office Excel 2003 55
Microsoft Office PowerPoint 2003 56
Microsoft Office SharePoint Portal Server 2003 57
Microsoft Office Live Meeting 2005 59
"Better Together" Scenario 61
Summary 62

Chapter 4: Preparing Your Environment for Live Communications Server 2005 with Service Pack 1 **63**

Live Communications Server 2005 and Microsoft Active Directory **63**
Active Directory Schema 64
Active Directory Groups 66
Local Server Groups 67
User Authentication 68
Preparing Active Directory for LCS 2005 SP1 69
Understanding Administration Tools 69
Implementing Prep Schema 70
Implementing Prep Forest 72
Implementing Prep Domain 73
Implementing Domain Add to Forest Root 74
Working with Resource Forest and Multi-Forest Scenarios 74
Live Communications Server 2005 SP1 and DNS **75**
DNS Host A Records 75
DNS SRV Records 78
Deploying LCS in Multiple Domains 80
LCS DNS Best Practices 81
Understanding Live Communications Server 2005 GPO Settings **82**
Using the rtcclient.adm Administrative Template 82
Understanding the Windows Messenger Feature Policies 85
Understanding the SIP Communications Service Policies 86
Understanding the RTC Client API Policies 88
Implementing a Group Policy Template for Testing 89
Communicator.adm Administrative Template 91
Understanding LCS and Certificates **96**
Certificate Types 97
LCS Certificate Properties 97
Common Name or Subject Name 98
Enhanced Key Usage 98
Validity Period 99
Certificate Deployment 99
Certsrv Website 99
Certificate Automatic Enrollment 102
Certificate Templates 103
Certificate MMC Console 103
Public Certificates 110

Understanding Live Communications Server and SQL Server **113**
Installing LCS with SQL Server 114
Understanding Permissions 115
Understanding the LCS Databases and Database Functions 115
rtc Database 116
rtcconfig Database 117
LcsLog Database 117
Exporting the LcsLog Archiving Database 117
Understanding User Replicator 118
Understanding Software Requirements **118**
Recommended Hardware Configurations **119**
Processors and RAM 120
Hard Drives 121
Virtual Machines 122
Network Infrastructure 122
Summary **122**

Chapter 5: Installing Live Communications Server 2005 **125**

Live Communications Server: Standard or Enterprise Edition **125**
Other Components Needed for the Install **126**
Installing Live Communications Server 2005 Standard Edition **127**
Installing Live Communications Server 2005 Enterprise Edition **131**
Installing Live Communications Server 2005 SP1 Additional Components **137**
Installing the Live Communications Server 2005 IM Archiving Service 138
Installing a Live Communications Server Access Proxy 138
Installing a Live Communications Director Server 139
Installing a Live Communications Server Proxy 140
Installing Live Communications Server 2005 SP1 Client Applications **140**
Installing Microsoft Office Communicator 2005 141
Installing Windows Messenger 141
Summary **142**

Chapter 6: Configuring Live Communications Server 2005 **143**

Live Communications Server 2005 Microsoft Management Console Snap-in **143**
Configuring Messaging Ports **145**
Configuring Routes **147**
Enabling Remote Access **148**

Enabling Federation **151**
Integrating Live Communications Server with VoIP **154**
Configuring Microsoft Office Communicator **159**
Configuring Windows Messenger **165**
Summary **166**

Chapter 7: Live Communications Server 2005 Configuration Management **167**

The Live Communications Server 2005 Administration Console **167**
Microsoft Operations Manager for Live Communications Server 2005 **172**
Summary **175**

Chapter 8: Enterprise Implementation Lessons Learned **177**

Active Directory Concerns **177**
Extending the Active Directory Schema 178
Active Directory Multi-Forest Organizations 178
Deploying LCS in a Multi-Operating System Environment 180
IT Security **181**
Database Administrators **182**
Remote Access Best Practices **182**
Using a Virtual Private Network 182
Using Direct Access 183
Additional Recommendations 183
International Deployments **183**
IBM Sametime Migration **185**
Requirements 185
Schedule 186
Exchange IM Migration **186**
Immediate Migration without Importing Users' Contacts and Permissions 187
Immediate Migration with Importing Users' Contacts and Permissions 187
Gradual Migration Importing Users' Contacts and Permissions 188
Gradual Migration without Importing Users' Contacts and Permissions 188
Scripts Provided by Microsoft **189**
lcsish.wsf 189
lcsmon.wsf 189
lcssipen.wsf 189
lcsimpac.wsf 190
Further Information 190

Implementing LCS for Military and Private Sector Environments **190**
Satellite Connectivity 191
Locate and Communicate-Mapping Solutions 192
Protecting Communications 192
Logging of Instant Messaging Conversations 192
Deploying LCS for a Limited Duration 192
Mobile Communications 193
Summary **193**

Chapter 9: Troubleshooting **195**

General Troubleshooting (FAQs) **195**
Enabling LCS When AD Permissions Inheritance Is Blocked **198**
Authenticated Users ACE Removed 198
Custom Organizational Unit 198
Using LcsCmd.exe with CreateLcsOuPermissions 200
LCS Certificate Troubleshooting **201**
There was a problem verifying the certificate from the server. 201
Error Message: The certificate you selected is issued for a subject that differs from the fully qualified domain name (FQDN) of this pool. If you continue, clients and other servers may not be able to connect to this server. Do you wish to proceed with this certificate? 202
IM Archiving FAQs **202**
Live Communications Server 2005 Support Resources **205**
Live Communications Server Resource Kit 205
LCS Diagnostics Tool 206
Certificate Request Tool 206
LCS Ping Utility 206
Flat File Logging Tool 207
Resources **207**
Summary **208**

Appendix A: Live Communications Server 2005 Test Plan **209**

Test Objectives **209**
Test Strategy 210
Responsibilities 210
Test Environment 211
LCS Architecture: Production Environment 211
LCS Architecture: Pre-Production Environment 212
LCS Architecture: Test Environment 213

Test Procedures 215
Verifying Active Directory Configuration 215
Verifying Configuration of Live Communications Server Environment 225
Verifying Live Communications Server Security 232
Validating Certificate Configuration 232
Assessing the Live Communications Server Management Environment 234
Microsoft Office Communicator 2005 Client Testing 236
Testing Connectivity 237
Testing Features and Functionality 248
Live Communications Server Back-End Testing 264
Verifying That the SQL Server Databases Are Populated with Data from the LCS Service 264

Appendix B: Live Communications Server and Communicator Design 273

Test Domain Environment 273
Live Communications Server Active Directory Design 273
Live Communications Server Environment 275
Live Communications Server Forest 275
Live Communications Server Pools 275
Live Communications Server Pool Servers 275
Live Communications Server Back-End Server 276
Live Communications Server Address Book Service 276
Test Domain DNS 277
Microsoft Office Communicator Clients 277
Live Communications Server Detailed Architecture 277
Pre-Production Environment 279
Live Communications Server Active Directory Design 279
Live Communications Server Environment 279
Live Communications Server Forest 279
Live Communications Server Pools 279
Live Communications Server Pool Servers 281
Live Communications Server Back-End Server 281
Live Communications Server Address Book Service 282
Microsoft Operations Manager Server 282
BIG-IP Load Balancer 282
Pre-Production DNS 283
Microsoft Office Communicator Clients 283
Live Communications Server Detailed Architecture 283

Index 285

Acknowledgments

I would like to thank a bunch of people who assisted me in the writing of this book. To start, I would like to thank Debbie Davis, who gave me my first job in the IT industry, starting out at Compaq those many years ago. I would like to thank God for giving me the patience and determination to complete what has been one of the most tedious tasks of my entire career. I am forever in His grip! I would like to thank Jerry Smith for believing in me, and Eyal Inbar for the same, as well as helping me keep our delivery dates on time. Thanks, also, to the entire LCS product development team—all are truly stellar individuals. I would like to thank my co-authors, Randy and Bobby, for all of their help. I can't count how many times Randy helped me reviewing the chapters, and aided in the daunting task of all of our product image placements and naming. I would like to thank the Microsoft Unified Communications team, which is directed by Anoop Gupta and Gurdeep Singh Pall, for creating such an awesome product and inspiring so many of us. Microsoft Unified Communications will change the world and I'm glad to be a part of this exciting time. I want to thank the Microsoft gurus whom I have worked with on this book and on other projects. I would also like to thank my MVP leads, Kevin Engman and Mike Sampson, for inspiring me to put forth as much effort to help others as possible. The program has been so good to me and I am forever grateful!

— Joe Schurman

Introduction

The purpose of this book is to provide a real-world understanding of Microsoft Office Live Communications Server 2005 SP1. The book begins by providing an introduction to this technology and the suite of Unified Communications products offered by Microsoft, including a business introduction. Starting with Chapter 4 until the end of the book, we cover the lower level technical details of Live Communications Server and Communicator configuration, and provide notes from the field, which include troubleshooting information and where to find additional resources.

Who This Book Is For

This book is targeted for those who want to understand Microsoft Unified Communications products or are looking for an enterprise collaboration and communications solution, as well as those who need technical information related to Live Communications Server 2005 SP1 that cannot be found in existing technical whitepapers.

What This Book Covers

This book provides an introduction to and overview of Microsoft Unified Communications products, which include Live Communications Server 2005 SP1, Live Meeting 2005, and Communicator 2005. In addition, it offers technical configuration and troubleshooting information for Live Communications Server 2005 SP1 and Communicator 2005. This material covers Live Communications Server 2005 with Service Pack 1 and Communicator 2005 as part of the Microsoft Unified Communications product suite, which has recently been updated to the Microsoft Unified Communications group.

How This Book Is Structured

The chapters have been organized to begin with an introduction and overview of Microsoft Unified Communications products. Subsequent chapters explain how to introduce this technology to the enterprise. The heart of the book covers the technical configuration of Live Communications Server 2005 SP1 and Communicator 2005 for those who are deploying this technology or are reviewing this technology for deployment within their own infrastructure. We end the book by providing troubleshooting information, answers to frequently asked questions, resources, and templates for test plans and design guides.

What You Need to Use This Book

If you would like to follow along with some of the steps outlined in this book, we recommend that you deploy Live Communications Server 2005 SP1 on a physical or virtual server running Microsoft Windows Server 2003. To run Communicator 2005, you will need a physical or virtual PC running Windows XP or Windows Server 2003. To fully test Microsoft Office integration with Communicator 2005, you need to be running Microsoft Office 2003 with Service Pack 2.

Errata

We make every effort to ensure that there are no errors in the text or in the code. However, no one is perfect, and mistakes do occur. If you find an error in one of our books, such as a spelling mistake or faulty piece of code, we would be very grateful for your feedback. By sending in errata you may save another reader hours of frustration and at the same time you will be helping us provide even higher quality information.

To find the errata page for this book, go to `www.wrox.com` and locate the title using the Search box or one of the title lists. Then, on the book details page, click the Book Errata link. On this page you can view all errata that has been submitted for this book and posted by Wrox editors. A complete book list including links to each book's errata is also available at `www.wrox.com/misc-pages/booklist.shtml`.

If you don't spot "your" error on the Book Errata page, go to `www.wrox.com/contact/techsupport.shtml` and complete the form there to send us the error you have found. We'll check the information and, if appropriate, post a message to the book's errata page and fix the problem in subsequent editions of the book.

p2p.wrox.com

For author and peer discussion, join the P2P forums at `p2p.wrox.com`. The forums are a web-based system for you to post messages relating to Wrox books and related technologies, and to interact with other readers and technology users. The forums offer a subscription feature to e-mail you topics of interest of your choosing when new posts are made to the forums. Wrox authors, editors, other industry experts, and your fellow readers are present on these forums.

At `http://p2p.wrox.com` you will find a number of different forums that will help you not only as you read this book, but also as you develop your own applications. To join the forums, just follow these steps:

1. Go to `p2p.wrox.com` and click the Register link.
2. Read the terms of use and click Agree.
3. Complete the required information to join as well as any optional information you wish to provide and click Submit.
4. You will receive an e-mail with information describing how to verify your account and complete the joining process.

You can read messages in the forums without joining P2P but in order to post your own messages, you must join.

Once you join, you can post new messages and respond to messages other users post. You can read messages at any time on the Web. If you would like to have new messages from a particular forum e-mailed to you, click the Subscribe to this Forum icon by the forum name in the forum listing.

For more information about how to use the Wrox P2P, be sure to read the P2P FAQs for answers to questions about how the forum software works as well as many common questions specific to P2P and Wrox books. To read the FAQs, click the FAQ link on any P2P page.

Professional
Live Communications Server