

Index

- Abstract Factory pattern, 180
 - implementing, 181–183
 - using, 184
- AcceptChanges** method, 101
- ActivateAfterSync** method, 335–336
- Activator** class, 54
- ActiveSync, 115, 193–194
 - application deployment using, 322–325
 - application development based on, 203–215
 - architecture of, 200–201
 - backup and restore using, 196–197
 - and connection notification, 199
 - described, 195–196
 - file conversion using, 199
 - file synchronization using, 203
 - issues in using, 202–203
 - partnership creation using, 201–203
 - providers of, 201, 203
 - remote communication using, 199
 - software installation using, 197–198
 - and Windows Explorer, 198
- ActiveX Data Object Extensions for Data Definition Language and Security (ADOXCE), 155
- ActiveX Data Objects for Windows CE (ADOCE), 155
- AddSubscription** method, 243, 256, 257
- ADO.NET, 99–100
 - data readers in, 132–134
 - DataSet** of, 100
 - definition of data providers by, 128
- allocator, 43
- antivirus protection, 290
- Apollo, 18
- Appear Provisioning Server, 325
- Apple Newton, 13
- application configuration files, 45
- applications
 - creation of, 52
 - data flow in, 207–208
 - deployment of, 312, 322–330
 - for desktop, 208–209
 - development of, 203–215
 - device, 210
 - device notification, 209
 - horizontal, 7
 - line-of-business, 7–8
 - measuring and improving performance of, 347–352
 - packaging of, 312, 318–322
 - pass-through, 214–215
 - property setting for, 319–320
 - and remote data access, 114
 - using file synchronization, 204–208
 - using RAPI in, 212–214
- Array** type, 48
- ArrayList** class, 107, 108, 109
- AskDotNet, 127
- ASP.NET Mobile Controls, 22
 - compared to Compact Framework, 24–25
 - role of, 24–25, 44
- assemblies
 - binding of, 314
 - private, 313–314
 - shared, 314–318
- Assembly** class, 50
- asynchronous
 - delegates, 44–45
 - file access, 83–87
 - network communication, 147–151
 - processing, 150–151

356 Index

- `Atomic.SqlCeUtils.RDA` class, 231
- `AtomicPublishers` class, 294
- authentication
 - and application, 291–298
 - and device, 288–290
- auto PCs, 13
 - operating systems for, 18
- auto-ranged identity columns, 250
- autodeployment, 327–330

- back end connection, 114
 - credentialing for, 291–292
- backup, using ActiveSync, 196–197
- bar chart, drawing, 62–64
- Base Class Libraries (BCL), 33
- base classes, 180
- battery power, 118
- `BeginRead` method, 77
- `BeginTransaction` method, 178
- `BeginWrite` method, 77
- `BinaryReader` class, 78
- `BinaryWriter` class, 78
- Binding objects, 104
- `BindingContext` property, 104–105
- `Bitmap` class
- blittable, 337
- Bluetooth technology, 5, 115
- BMW, telematics of, 13
- Boolean type, 48
- build actions, 319
- Byte type, 48

- C# language, 29
 - support in Compact Framework, 55
- CAB files, 312
 - creating, 320–322
 - on Web site, 325
- `CallingConvention`, 336
- Callisto, 18
- `CanRead` property, 77
- `CanSeek` property, 77
- `CanWrite` property, 77
- Casio E-200, 11
- CDMA (Code Division Multiple Access), 116, 117
- CDPD (Cellular Digital Packet Data), 116, 117
- CEDB (Windows CE database), 155
- Char type, 48
- `CheckBox` control, 56, 65
- `CheckForNetworkConn`, 147
- Clarion AutoPC, 13
- class libraries, 43–44
 - creation of, 52
- class loader, 40–41
- `ClientCertificates` property, 127
- clipboard, 342
- `Close` method, 83
- code access security (CAS), 302–303
- Code Red, 241, 285, 286
- collector, 43
- color super-twisted nematic (CSTN)
 - displays, 20
- COM Interop, 44
- `ComboBox` control, 56, 65, 105
- `CommandBehavior.CloseConnection`
 - argument, 134
- communication dependencies, 121, 122
- communication hardware
 - detachable, 120
 - integrated, 119
 - two body, 119–120
- communications security, 286
 - SSL, 303–304
 - VPNs, 304–305
- compact HTML (cHTML), 11
- Compact Framework, 5, 21, 30
 - advantages of, 8, 22–23, 30
 - architecture of, 38–48
 - asynchronous options in, 147–151
 - augmentation of, 331–353
 - class libraries in, 43–48
 - compared to ASP.NET Mobile Controls, 24–25
 - compatibility with Pocket PC Phone Edition, 21
 - component creation in, 61–62
 - debugging in, 70–71
 - design guidelines for, 62–64
 - differences from desktop Framework, 336–337

- drawing in, 62–64
 - emulation in, 66–69
 - exception handling in, 42
 - GC in, 42–43
 - goals of, 36–37
 - host system for, 38
 - indications for use of, 22–23
 - infrared support by, 153–156
 - I/O support of, 53
 - interfaces and base classes in, 180
 - language support of, 53–55
 - and localization, 261–283
 - measuring and improving performance of
 - applications, 347–352
 - NSLs of, 39
 - object orientation of, 54
 - omissions of, 44–46
 - packaging and deployment of solutions
 - using, 311–330
 - PAL of, 38–39
 - portability of, 36–37, 49–51
 - and remote applications, 111–112
 - and remote data, 121–151
 - SDP of, 51–71. *See also* SDP
 - security of, 285–309
 - and smart devices, 30–36
 - and SQLCE, 154, 156
 - thread support of, 42
 - types supported in, 48
 - UI support of, 55–66, 76, 77
 - versioning system of, 311–318
 - virtual machine in, 40–43
 - and XML Web Services, 31–32, 36
- complex binding, 105
 - of strongly typed collections, 107–108
 - complex types, passing, 340–341
 - components, creation of, 61
 - ConfigurationSettings** class, 45
 - connected mode, 8–9
 - connection
 - to back end, 114
 - speed and distance of, 114–117
 - console application, creation of, 52
 - Consumer IR, 143
 - ContextMenu** control, 56
 - Control** class, 104
 - controls
 - custom, 57–61
 - extending, 58–61
 - loading of, 351
 - supported by Compact Framework, 55–57
 - CORBA (Common Object Request Broker Architecture), 31
 - Cordbg.exe**, 71
 - coredll.dll**, 91
 - cradling, 5, 212, 214
 - RDC and, 331
 - CreateCeReplication** method, 254
 - CreateCommand** method, 184
 - CreateDatabase** method, 165
 - CreateDb** method, 165
 - CreateSubscription** method, 256
 - Credentials** property, 127
 - cryptography, 342
 - CultureInfo** class, 266–267, 268
 - cultures
 - names of, 265
 - identifiers for, 265–266
 - retrieving and setting, 266–269
 - understanding, 264
 - using, 267–269
 - currency, localizing, 275–277
 - CurrencyManager** object, 104, 105
 - custom functionality, calling, 341–342
 - customer relationship management (CRM), 7
- data
 - capture, 225
 - connected manipulation of, 225
 - displaying of, 104–110
 - file I/O, 77–91
 - flow, 207–208
 - loading, 224–225
 - local, 75–110
 - localization of, 269–277
 - merge replication and, 246
 - modifying, 176–178
 - partitioned, 225
 - persistence of, 76
 - programmatically access to, 76

358 **Index**

- data, *continued*
 - querying, 168–174
 - relational, 99–103
 - remote, 111–151
 - robust caching of, 156–158
 - security of, 298–300
 - synchronization of, 217–259
- data binding, 104
 - complex, 105–108
 - manual, 108–110
 - performance testing of, 350–351
 - simple, 104–105
- data providers, 128
 - abstracting of, 179–184
 - interfaces for, 179–180
 - .NET, 99, 129
- data readers
 - creating, 170–171, 173–174
 - distinguished from `DataSet`, 132, 133, 132–134
- data synchronization
 - merge replication, 217, 242–257
 - RDA, 217–218, 222–242
- Data Transformation Services (DTS), 247
- databases, 155
 - compacting of, 188–189
 - creation of, 164–166
 - deployment of, 190
 - encryption of, 298–299
 - indexing, 174–176
 - maintenance using `SqlCeEngine`, 187–189
 - querying, 168–174
 - SQLCE and, 156, 159–160
- `DataGrid` control, 56, 104, 105, 106–107
- `DataRelation`, 106
- `DataSet` class
 - of ADO.NET, 100
 - distinguished from data readers, 132, 133
 - populating, 169–170
 - role of, 101
 - using, 130–132
- `DataTable` class, 101, 104, 106
- `DataGridView` class, 104
- dates, localizing, 269–272
- `DateTime` type, 48
- DCOM (Distributed Component Object Model), 31
- debugging
 - of Compact Framework application, 70
 - error messages in, 71
 - runtime, 71
 - using emulator for, 70
- `Decimal` type, 48
- delayed signing, 316
- `Delegate` type, 48
- delegates, 44–45
- deployment of application, 312
 - autodeployment, 327–330
 - custom setup, 323–324
 - using `ActiveSync`, 322–325
 - using file share, 327
 - using storage card, 326–327
 - using Web site, 325
- desktop application, creation of, 208–209
- development tools, 20
 - ASP.NET Mobile Controls, 22
 - eMbedded Visual Basic, 21
 - eMbedded Visual C++, 20–21
- device application, creation of, 210
- device notification application, creation of, 210
- DiffGram format, 102–103
- direct connection, 115
- `Directory` class, 79, 87, 88
- `DirectoryInfo` class, 79, 87, 88
- `DirectorySeparatorChar` property, 88
- DISCO technology, 124
- disconnected mode, 8
- `DiscoverDevices` method, 144
- DOM, XML handling using, 92–94
- `DomainUpDown` control, 56
- `Double` type, 48
- `DrawRectangle` method, 64
- `DrawString` method, 64
- dummy file filter, 204–205
- dynamic data flow, 207–208
- dynamic filters, 245, 248, 250
 - creating, 249
 - selecting, 249

- embedded operating systems, 17
- eMbedded Visual Basic (VB), 21, 51
- eMbedded Visual C++, 20–21, 51
- empty project, creation of, 52
- emulators, 66
 - configuration of, 67–69
 - execution of, 69
 - limitations of, 66–67
 - using, 67, 70
- encryption, 186–187, 288
 - of databases, 298–299
 - of files, 299–300
 - types of, 299
- EndRead method, 77
- EndWrite method, 77
- enterprise resource planning (ERP), 7
- euro, use of, 277
- exception handling, 42
 - localization of, 282
- ExecDataReader, method 173, 184
- ExecuteNonQuery, 168
- ExecuteReader method, 134, 171
- Exit method, 84
- Extensible Authentication Protocol (EAP), 306

- Fast IrDA (FIR), 143
- File class, 79, 87, 88
- file conversion, using ActiveSync, 199
- file encryption, 299–300
- file I/O, 77–91
 - asynchronous, 83–87
 - direct manipulation of files and folders, 87–91
 - for relational data, 99–103
- file synchronization, 203
 - enabling, 204
 - process of, 210–212
- FileInfo class, 79, 87, 88
- FileStream class, 77, 79–83
- FileSystem class, 91
- FileSystemInfo class, 88
- FileWebRequest, 136
- FileWebResponse, 136
- FillRectangle method, 64
- filters, 199

- folder scheme, creating, 206–207
- folders
 - finding, 89–91
 - manipulation of, 87–88

- GC, 42
 - components of, 43
- GDI+, 62
- generic serialization, 44
- GetCurrentDirectory method, 88
- GetExecutingAssembly method, 91
- GetFiles method, 87–88
- GetManifestResourceStream method, 168
- GetSpecialFolderPath method, 91
- global assembly cache (GAC), 311
 - benefits of, 318
 - using, 317–318
- Global System for Mobile Communication, 9
- globalization
 - guidelines for, 263–264
 - need for, 262–263
 - support for, 264–282
- GPRS (General Packet Radio Service), 9, 116, 117
- Graphics class, 62, 64
- Gryphon, 18
- GSM (Global System for Mobile), 116, 117

- handheld devices, 11–12
 - operating systems for, 18
- HDML (Handheld Device Markup Language), 10, 11
- Hopper stress tester, 346
- horizontal applications, 7–8
- HP Jornada, 12
- HScrollBar control, 56
- HTTP-GET, 124
- HTTP-POST, 124
- HttpRequest, 136
 - asynchronous version of, 149–150
- HttpResponse, 136

- I-Mode, 11, 12
- IBindingList interface, 104
- icon, displaying in system tray, 342

360 **Index**

- IDataReader interface, 132
- IDataRecord interface, 132
- identity columns, 250, 251
- iDrive, 13
- IEEE 802.11 specifications, 5, 9
- IL Disassembler, 313
- IList interface, 104
- IListSource interface, 133
- ImageAttribute, 62
- ImageList control, 56
- inactivity, tracking, 296–298
- indexes
 - seeking a row using, 174–175
 - in SqlServerCe, 174–176
- .inf files, 321
- information
 - accessibility of, 6–7
 - horizontal applications, 7–8
 - line-of-business applications, 7
- infrared
 - communicating by, 142–143
 - Compact Framework and, 143–146
- inheritance, of interfaces, 180
- InitialDirectory property, 91
- InputPanel class, 49
- InputPanel control, 56
- Int16 type, 48
- Int32 type, 48
- Int64 type, 48
- IntelliSense, 56
- interfaces
 - vs. base classes, 180
 - for data providers, 179–180
 - inheritance of, 180
- IntPtr type, 48
- Invoke method, 87
- Invoker class, using, 86–87
- iPAQ, 11
- IrDA, 115, 142–143
 - Compact Framework and, 143–146
- IrDACharacterSet, 144
- IrDAClient class, 144
- IrDADeviceInfo object, 144
- IrDAHint, 144
- IrDAListener class, 144
- IrSock, 143
- ISerializable interface, 44
- Isqlw20.exe, 160
- Java 2 Micro Edition (J2ME), 23
- JIT compiler, 41–42
- Jupiter, 18
- Label control, 56
- laptops, as mobile devices, 9–10
- late binding, 54
- LCD displays, 20
- LCID (locale/culture identifier), 265
- line-of-business applications, 7
- ListBox control, 56, 104, 105
- ListView control, 56, 108, 109–110
- Load method, 92
- LoadFromCSV method, 83, 85
- LoadUI method, 85
- LoadXml method, 92
- local data handling, 75–76
 - file I/O, 77–91
 - need for, 76–77
 - using SQLCE, 157–158
- localization
 - culture-specific settings, 261–262
 - of currency and numbers, 275–277
 - of data, 269–277
 - of dates and times, 269–272
 - of exception strings, 282
 - guidelines for, 263–264
 - need for, 262–263
 - string handling, 272–275
 - support for, 264–282
 - testing for, 282–283
 - using resource files, 277–282
- lock statement, 84
- lockdown, 290
- logging, 232–233
- LScript, 346
- MainMenu control, 56
- managed string pointers, 341

- manual binding, 108–110
- MapPoint .NET, 127
- marshaling, 340
 - custom, 341
- MemoryStream** class, 77
- Mercury, 18
- merge replication, 217
 - advantages of, 244–246
 - architecture of, 244
 - bidirectionality of, 245–246
 - configuration of, 246–256
 - conflict resolution in, 245
 - dynamic filters in, 248–250
 - indications for, 246
 - limitations of, 250–251
 - and multiple tables, 245
 - and partitioning, 245
 - security settings for, 251–254
 - subscription management, 242–243, 247–248, 250
 - topologies for, 254–256
 - using, 256–257
- Merlin, 19
- Microsoft
 - commitment to mobility, xv
 - early mobile efforts of, 13–14
 - mobile operating systems of, 14–17
 - mobile platforms of, 18–20
- Microsoft Intermediate Language (MSIL), 33, 34
- Microsoft Message Queue Server (MSMQ), 46
- Microsoft.VisualBasic.dll**, 53
- Microsoft.WindowsCE.Forms**
 - namespace, 47
- Mira, 19
- MMIT, 25
 - Quilogy use of, 26
- MML (Mobile Markup Language), 11
- Mobile Controls. *See* ASP.NET Mobile Controls; MMIT
- mobile devices
 - accessing data using, 113–118
 - adaptation to use of, 6–13
 - advantages of, 6, 8–9
 - battery power of, 118
 - communications hardware for, 119–120
 - future of, 26
 - integration with networks and Internet, 112–113
 - language choice for, xvii
 - loss of, 287
 - Microsoft and, xv, 13–22
 - modes of, 8–9
 - need for, 3–4
 - number of, 4–5
 - security of, 285, 288–290
 - throughput of, 118
 - types of, 9–13
- Mobile Information Server (MIS), 7
- Mobile IP, 5
- Monitor** class, 84
- Mono project, 35
- MoveNext** method, 133
- Mscoree.dll**, 40
- Mscoree1_0.dll**, 40
- Multimedia Messaging Service (MMS), 5
- multimodule assemblies, 47
- NEC MobilePro, 12
- network
 - asynchronous capabilities in, 147–151
 - checking for a connection, 146–147
 - file sharing on, 327
 - types of. *See* specific types of network
- NetworkCredential** object, 295
- NetworkStream** class, 78, 141
- Next Generation Windows Services (NGWS), 30
- Nimbda, 241, 285, 286
- notification, 342
- NSLs, 39
- NumberFormatInfo** class, 277
- numbers, localizing, 275–277
- NumericUpDown** control, 56, 65
- Object declaration, 54
- Object type, 48
- occasionally connected mode, 9

362 Index

- Offutt Systems, 247
- OLE DB CE, 155
- OleDb access, 44
- OpenFileDialog class, 91
- OpenFileDialog control, 56
- Orange Sounds Picture Video (SPV), 12

- packaging of application, 312, 318
 - creating CAB files, 312, 320–322
 - .inf files and, 321
 - setting project and file options, 319
- PAL, 38–39
- PalmPilot, 11
- palm-size devices, 11
 - operating systems for, 18
- PAN (personal area network), 115
- Panel control, 56
- Parse method, 276
- partitioning, 245
- pass-through applications, 214–215
- password protection, 185–186
 - in SQLCE, 298–299
- Path class, 79
- PDA, 4
 - and the Compact Framework, xvii–xviii
 - PDA phones, 12
 - types of, 11–12
- Pegasus (SQLCE 1.0), 155
- Peregrine, 19
- performance
 - improving, 352
 - issues in, 350–352
 - logging, 349–350
 - measuring, 347–349
- PerfTimer class, 347–349, 350
- PictureBox control, 56
- PInvoke, 331
 - described, 333–334
 - differences between Compact and desktop versions, 336–337
 - passing complex types in, 340–341
 - passing strings in, 337–338
 - passing structures in, 338–339
 - techniques of, 341–344
 - using, 335
- platform, checking, 342
- Pluggable Protocols, 111
 - using, 136–137
- Pocket Access, 155
- Pocket InnoVia, 247
- Pocket PC, 5, 11
 - emulators of, 53
 - growth of, 23
 - Phone edition, 12, 13, 342–344
 - SDK for, 346
 - 2000 edition, 19
 - 2002 edition, 19, 23
 - 2003 edition, 19
 - voice recorder function of, 342
- Pocket PC RDC, 331, 345
- PopulateCommand method, 173
- portability
 - desktop-device, 49–50
 - device-device, 49
 - device-desktop, 50–51
- portable executable files (PE), 33
- printing, 45
- private assemblies, versioning of, 313–314
- ProgressBar control, 56
- properties, setting, 319–320
- PropertyManager object, 104
- Protected Extensible Authentication Protocol (PEAP), 306
- ProviderFactory class, 183
- ProviderType, 182
- Proxy property, 127
- Pull method, 233
 - calling, 234–236
 - limitations of, 237
- Pulsar, 13
- Push method, 237
 - calling, 238–239
 - tips for using, 239
- PushAll method, 240–241

- Query Analyzer, 160–161
- QueryPerformanceCounter function, 347
- QueryPerformanceFrequency function, 347
- Quilogy, use of MMIT, 26

- RadioButton control, 56, 65
- RAPI, 193–194, 199
 - using, 203
 - using in managed application, 212–214
 - utilities for using, 346
- Rapier, 19
- RDA (Remote Data Access), 217–218, 222
 - architecture of, 223
 - configuration of, 226–233
 - features of, 222–223
 - indications for, 224–225
 - limitations of, 223–224
 - logging of, 232–233
 - security of, 226–232
 - using, 233–242
- Read method, 77, 133
- Reader class, 78
- ReadXml method, 103
- ReadXmlSchema method, 103
- RecordSet object, 133
- reflection emit, 45
- RegEx class, 301
- registry, PInvoke and, 342
- ReinitializeSubscription method, 256, 257
- relational data
 - ADO.NET and, 99–100
 - reading and writing, 100–103
- remote data access
 - ActiveSync and, 199
 - application factors in, 114
 - battery power issues, 118
 - Compact Framework and, 121–151
 - connection characteristics and, 114–117
 - cost issues, 120
 - SQL Server and, 128–136
 - throughput and, 118
 - XML Web Services and, 121–128
- remote display control (RDC), 331, 345
- remoting, .NET, 45
- ReplicationFactory class, 252–254, 256
- republishing servers, 256
- resource files, 277
 - creating, 278–279
 - editing, 278
 - retrieving, 279–282
- ResourceManager class, 277, 280–281
 - exposing, 281–282
- restore, using ActiveSync, 196–197
- RFC 1766, 264
- RuntimeAssemblyAttribute, 60
- satellites, and WANs, 116–117
- SaveFileDialog control, 56
- SaveToCSV method, 82, 83–84
- Sbyte type, 48
- screen
 - sizing, 264
 - technology, 20
- SDP
 - controls supported by, 55–57
 - creating, 51–52
 - debugging in, 70–71
 - designing controls in, 57–61
 - emulation in, 66–69
 - language support of, 53–55
 - targeting support in, 58
 - testing of, 67
 - Windows Forms designer in, 57
 - and XML Web Service, 125
- Secure Sockets Layer (SSL), 303–304
- security, 154, 156
 - antivirus, 290
 - of application, 285–286, 291–303
 - authentication, 288–290
 - CAS, 302–303
 - of communications channel, 286, 303–308
 - data protection, 298–300
 - of databases, 298–299
 - of device, 285, 288–290
 - encryption, 186–187, 288, 298–300
 - of files, 299–300
 - importance of, 185
 - of IIS server, 226–227
 - issues in, 286–287
 - lockdown, 290
 - for merge replication, 251–254
 - password protection, 185–186

364 **Index**

- security, *continued*
 - principles of, 287–288
 - property setting, 229–232
 - of proxy server, 226
 - of RDA, 226–229
 - SOAP extensions, 306–308
 - SOAP headers and, 292–295
 - of SQL Server, 227, 229
 - SSL, 303–304
 - time-outs and, 295–298
 - of user input, 300–303
 - VPNs, 304–305
 - WEP, 305–306
- Seek method, 77
- SELECT statement, 177–178
- SendIrDA function, 144
- Serial IrDA (SIR), 143
- Serializable attribute, 44
- serialization, 44
- server-side programming models, 46
- Service Manager, of ActiveSync, 200–201
- Services Framework, 33
- shared assemblies, versioning of, 314–318
- SHGetSpecialFolderPath, 91
- simple binding, 104–105
- Single type, 48
- Slammer, 285
- Smart Device Application Wizard, 51–52
- smart devices, connection of, 117
- smart phones, 12
- Smart Display Monitor, 19
- SmartPhone SDK, 12
- SmartPhone 2002, 19
- SOAP (Simple Object Access Protocol), 29
 - characteristics of, 31–32
 - components of, 124
 - extensions to, 306–308
 - headers, 292–295
- SoapHeader class, 292–293, 294, 295
- SoapHttpProtocol class, 126
- sockets
 - direct communication with, 137–141
 - implementation of UDP and TCP in, 112
 - steps required in implementing, 138, 139
- software installation, using ActiveSync, 197–198
- Solution Explorer, 125
- Space Needle, 19
- SQL injection attacks, 241
- SQL Server, 128, 224
 - conflict resolvers on, 243
 - security of, 227–229
 - Windows CE Edition. *See* SQLCE and RDA, 222–223
- SQLCE (SQL Server CE), 130, 136, 217
 - accessing, 156, 161–185
 - administering, 185–190
 - advantages of, 153–154, 221
 - architecture of, 158–161
 - Compact Framework and, 154, 156
 - connectivity architecture of, 219–221
 - data caching in, 156–158
 - data integrity in, 156
 - data modification in, 176–178
 - database access using, 156, 190
 - database creation using, 164–174
 - database engine of, 159–160
 - database maintenance using, 187–189
 - distribution of, 154
 - encryption in, 298–299
 - history of, 154–155
 - installation and deployment of, 189–190
 - local data handling in, 157–158
 - Query Analyzer of, 160–161
 - and real estate, 247
 - role of, 154–158
 - running scripts in, 166–168
 - security of, 154, 156, 186–187
 - synchronization in, 156, 218–221
- SqlCeCommand objects, 168, 171, 175
- SqlCeCommandBuilder class, 163
- SqlCeConnection object, 163
- SqlCeDataAdapter, 162, 176–177
- SqlCeDataReader, 163, 169, 171
- SqlCeEngine class, 153, 162
 - using, 164–166
- SqlCeError object, 163
- SqlCeException object, 163

- SqlCeParameter objects, 163, 171
- SqlCeRemoteDataAccess class, 163, 217, 218, 226, 227, 229, 232
- SqlCeReplication class, 163, 217, 242, 252, 256
 - wrapping, 252–254
- SqlCeTransaction object, 163, 178, 179
- SqlClient
 - architecture of, 129
 - error handling in, 134–135
 - issues in using, 134–136
 - limitations of, 130–131
 - performance testing of, 351
 - use on smart device, 130–132
 - vs. SQLCE, 130
- SqlCommand class, 163
- SqlDataReader class, 132
 - using, 133
- SqlException class, 134, 135
- SqlServerCe, 136, 161
 - abstracting data providers by, 179–184
 - data manipulation using, 163–184
 - indexes in, 174–176
 - provider architecture, 162–163
 - transaction handling by, 178–179
- SqlServerCeFactory class, 183
- SSCE. *See* SQLCE
- static data flow, 207
- StatusBar control, 56
- Stinger, 19
- storage cards, application deployment on, 326–327
- Stream class, 77
- StreamReader class, 79, 81
- StreamWriter class, 79, 82, 83
- StringReader class, 79
- strings
 - concatenation of, 352
 - handling of, 272–275
 - passing, using PInvoke, 337–338
 - sizing of, 264
- StringWriter class, 79
- strong name, creating, 315–317
- strongly typed collections, 107–108
- structures, passing, 338–330
- SubmitSql method, 242
- synchronization
 - ActiveSync, 193–215
 - data, 217–259
 - distinguished from transferring and caching, 194
 - file, 203–204, 210–212
 - grouping, 240–241
 - importance of, 194–195
 - of resources, 84
 - in SQLCE, 156
- Synchronize method, 243, 256
- SyncLock statement, 84
- System.ComponentModel namespace, 61
- System.Configuration namespace, 45
- System.Data namespace, 128
- System.Data.dll, 47, 50
- System.Data.OleDb namespace, 44
- System.Data.SqlClient namespace, 47, 99, 111
- System.Data.SqlServerCe namespace, 47, 99, 128, 155, 162
- System.Drawing namespace, 62
- System.Drawing.Printing namespace, 45
- System.EnterpriseServices, 46
- System.Globalization namespace, 266
- System.IO namespace, 77, 78, 79
- System.Management, 46
- System.Messaging, 46
- System.Net namespace, 45, 47, 111
- System.Net.Sockets namespace, 47, 112
- System.Reflection namespace, 45
- System.Runtime.Remoting namespace, 45
- System.SR.dll, 42, 71
- System.Text.RegularExpressions namespace, 301
- System.Text.StringBuilder class, 338
- System.Threading namespace, 83
- System.Threading.ThreadPool, 42
- System.Web namespace, 44
- System.Windows.Forms namespace, 55, 104
- System.Xml namespace, 75, 92
- System.Xml.Schema namespace, 92
- System.Xml.Schemas namespace, 92

366 Index

- `System.Xml.Serialization` namespace, 44, 92
- `System.Xml.XPath` namespace, 92
- `System.Xml.Xsl` namespace, 92
- `TabControl` control, 56, 110
- tablet PCs, 5, 9–10, 19
- targeting, SDP support for, 58
- TCP
 - communicating with, 141–142
 - socket implementations of, 112
- `TcpClient` class, 141–142
- `TcpListener` class, 141, 142
- TDMA (Time Division Multiple Access), 116, 117
- telematics, 13
- text files
 - reading, 81–83
 - writing to, 79–81
- `TextBox` control, 56, 105
 - extending, 58–60
- `TextReader` class, 78
- `TextWriter` class, 78
- thin film transistor (TFT) displays, 20
- `Thread` class, 42
- throughput, 118
- thinking layer, defined, 340
- time-outs, 295–298
- `Timeout` property, 127, 135
- `Timer` control, 56
- times, localizing, 269–272
- `TimeSpan` type, 48
- `ToolBar` control, 56
- `ToolBoxItemFilterAttribute`, 61
- `TrackBar` control, 56
- `TreeView` control, 56, 108
- triggers, 239
- Trustworthy Computing, 286
- TTML (Tagged Text Markup Language), 10
- Tunneled Transport Layer Security (TTLS), 306
- type checker, 41
- UDDI (Universal Description Discovery and Integration), 123–124
- UDP
 - advantages of, 142
 - communicating with, 141–142
 - socket implementations of, 112
- `UdpClient` class, 142
- UI
 - Compact Framework support of, 55–66, 76, 77
 - isolation of, 264, 277
 - single or dual implementation, 58
- `UInt16` type, 48
- `UInt32` type, 48
- `UInt64` type, 48
- UltraPad, 13
- unsafe string pointers, 340–341
- `Url` property, 127
- USB (universal serial bus), 8
- user input
 - security of, 300–301
 - validation of, 301–303
- `Validate` method, 105
- `Validating` method, 105
- `Variant` type, 48
- versioning, 311, 312–313
 - numbering of, 316
 - of private assemblies, 313–314
 - of shared assemblies, 314–318
- Very Fast IrDA (VFIR), 143
- virtual machine (EE), 33
 - functionality of, 40–43
- Visual Basic (VB), support in SDP, 53–54
- Visual Studio .NET, 21, 29
 - Add-on Pak for, 345
 - advantages of, 34–36
 - IntelliSense feature of, 56
 - SDP creation in, 51–53
 - Solution Explorer of, 125
 - using, 33
- voice recorder, Pocket PC, 342

- VPNs (Virtual Private Networks), 304
 - configuration of, 305
- VScrollBar control, 56
- WAN (wide area network)
 - and data access, 116
 - satellites and, 116–117
- WAP (Wireless Application Protocol), 5, 11
- WCESMgr.exe, 196
- Web, application deployment on, 325
- Web phones, 10–11
- Web Services Enhancements, 293
- WebRequest, 136
- WebRequest.Create method, 136, 137
- WebResponse, 136
- WebService class, 293
- WEP (Wired Equivalent Privacy), 305–306
- Windows CE, 14
 - design principles of, 14–15
 - enhancements to, 16–17
 - platform builder of, 20
 - release of, 15–16
 - versions of, 16, 18
- Windows CE .NET, 13
 - emulators of, 53
 - platform builder of, 20
- Windows CE Utilities for VS .NET 2003
 - Add-on Pak, 345
- Windows Management Instrumentation (WMI), 46
- Windows .NET Compact Framework with SDP for Visual Studio .NET. *See* Compact Framework
- Windows .NET Framework, xv, 35
 - advantages of, xvii, 34–36
 - calling conventions in, 336
 - components of, 33
 - desktop and Compact versions compared, 336–337
 - language support, 34, 35–36
 - release of, 29, 32
 - types supported in, 48
- Windows NT Embedded, 17
- Windows 2000 Server Appliance Kit (SAK), 17
- Windows XP Embedded, 17
- WinPad, 13
- wireless Internet, 4–5
- WLAN (wireless LAN) technology, 5
 - and data access, 116
- WML (Wireless Markup Language), 9, 10, 11
- word order, 264
- WPA (Wi-Fi Protected Access), 306
- WPAN (Wireless Personal Area Network), 5
- Wrapper class, 335
- Write method, 77
- Writer class, 78
- WriteXml method, 100–101, 102
- WriteXmlSchema method, 103
- WSDL, 124
- XML
 - handling of, using DOM, 92–94
 - handling of, using XML readers, 94–97
 - handling of, using XML writers, 97–98
 - performance testing of, 351
 - sample document, 93
- XML Stylesheet Language (XSL)
 - transformations, 46
- XML Web Services, 5, 29
 - advantages of, 31–32, 121–123
 - architecture of, 123–124
 - to create proxy class, 125–127
 - integration into Compact Framework, 36, 127–128
 - origins of, 31
 - performance testing of, 351
 - and SDP, 125
- XmlDocument class, 46
- XmlNodeReader class, 95
- XmlReader class, 46, 94, 95–97
- XmlSchema class, 92
- XmlSchemaException class, 92
- XmlSchemaObject class, 92
- XmlSerializer class, 44
- XmlTextReader class, 95–96
- XmlTextWriter class, 97–98, 102
- XmlValidatingReader class, 96–97
- XmlWriter class, 46, 94, 97–98
- XPath queries, 46
- XSLT (XML Stylesheet Transformations), 92