## Index

A	architecture of typical cloud, 8–9, 8
Access permission, 15	archive files, 68
access to consoles, PureApplication System	asset managers, 142
platform and, 22	auditor, 136–138, <b>136</b>
accounting/billing models, chargeback and, 104–105	authorization levels, in PureApplication System, 14–15
actors in the PaaS discipline, CCRA, 137–138, <b>137</b>	average cloud group, 16 Azure, 64, 92, 113, 167
add-on scripts, 86	_
Administrator roles	В
cloud, 140	bandwidth, 2
network, 141	Bash Hello cloud, 64
security, 142	billing models, chargeback and, 104–105.
system, 141	See also Chargeback
advantages of cloud computing, 1, 10	Bluemix, 64, 92, 111, 113, 114–134, 135
Amazon, 2	add a service with, 120, 122, <b>122</b>
Amazon EC2 Container Service, 105, 150	app menu in, for actions with, 120
Amazon Web Services (AWS), 2, 92, 99,	app selection in, 122, 122
111, 113	app starter code instructions in, 124, 124
monitoring in, Amazon CloudWatch, 103	application navigation pane in, 123, <b>123</b>
Apache Stratos, 130	Boilerplate template in, 115
APIs, 140	Business Analytics template, 116
OpenStack, 159	catalog/categories of services available
application patterns, 32, 39	through, 114, <b>115</b>
Apprenda, 130, 167	Cloud Foundry and, 114, 116, 117, 124,
Architect roles	126
cloud, 140	command-line interface (CLI) in, 124,
pattern, 142	126, <b>126</b>

containers and, <b>115</b> , 133, <b>133</b>	pattern, 41, 44
dashboard in, 118, <b>119</b>	BPM Advanced Clustered Process Server
Data & Analytics template, 116	pattern, 41, 44
Dedicated version of, 130, 131–132, <b>132</b> ,	Brocade, 180
165, 168	Broker Archive, 68
deploying the app using, 119, 126	broker/partner of cloud services, 136-138,
details of app, using APP HEALTH, 119	136
DevOps, <b>116</b> , 129	Business Analytics template, 116, 116
directory assignment in, 125	Business Process as a Service (BPaaS), 7
Docker and, 114	Business Process Manager (BPM) pattern,
Eclipse framework for, 117	40–51, 150, 173
free trial of, 114	BPM Advanced Clustered Pattern in, 41,
hybrid clouds and, 165, 168	44
Integration template, 116	BPM Advanced Clustered Process Center
Internet of Things template, 116	pattern in, 41, 44
Java app creation and deployment using,	BPM Advanced Clustered Process Server
117–120, <b>117–120</b>	pattern, 41, 44
Liberty Profile in, 116	catalog listing for, 41, 42
Local version of, 130	configuring parts of, 46
log of activity in, 122, 123	consoles for, 49–50, <b>50</b>
Mobile template, 116	deploying, 44–48, <b>45</b>
private PaaS and, 129-130, 130	details of, 52, <b>52</b>
push command in, 126	IBM Cloud Orchestrator (ICO) and, 150
"pushing an app" in, 116	IBM HTTP Server (IHS) in, 49
redeployment/restaging of apps in, 122, 124	instances in, 47–48, <b>47</b>
Runtimes template, 115	Integrated Solutions Console for, 48–49,
Security template, 116	49
services available with, 120-126, 121	licensing for, 42, 42
SoftLayer and, 114, 130	number of VMs in, 46
starter app selection in, 118, 118	Process Servers in, 46–47, 47
template selection in, 117, 117	resource details for, 52, <b>52</b>
using a service with, 127–129	topology of, 43, <b>43</b>
Watson template in, 115	virtual parts of, 44, <b>45</b> , 46
Web and Application template, 116	virtual system classic pattern in, 51-54
welcome page for app in, 124, 125	
working with, 116–120	C
WSO2 and, 130, <b>130</b>	Capgemini, 150
Boilerplate template, Bluemix, 115	Capture, 32
born on the cloud, 5, 9–10	catalog listing of pattern, 41, <b>42</b>
BPM Advanced Clustered Pattern, 41, 44	Catalog menu, 21
BPM Advanced Clustered Process Center	Catalog Illella, 21

categories/catalog of services available	environment profiles associated with, 28
through Bluemix, 114, 115	external routing for, 27, 27
cbscript.json, 77–82	naming, 26
CCRA. See Cloud Computing Reference	non-IBM software pattern creation and, 56
Architecture (CCRA)	PureApplication System platform and, 22,
characteristics of cloud computing, 2	25–27, <b>25</b>
chargeback, 43	virtual CPU ratio in, 16
accounting tool selection for, 104	workload isolation and, 96, 97
accounting/billing models for, 104-105	Cloud menu, 21
"all you can eat" approach and, 104	Cloud Security Alliance, 3
IBM Cloud Orchestrator (ICO) and, 158	cloud-centric applications, 9–10
services/services layer and, 102-105	cloud-ready vs. cloud-centric applications,
standardization/regulation of, 104	9–10
tiered services, 104	command-line arguments, UNIX shell script
Chef, 150, 154, 160–163, <b>161</b>	example of, 75–77
Cinder, 150, 153	command-line interface (CLI)
CipherCloud, 98	Bluemix and, 124, 126, <b>126</b>
Cisco, 180	PureApplication System, 83–86, <b>84</b> , <b>85</b> , 175
classic. See Virtual system classic pattern	command window, open, 59
Clone, 32, 33	comments, pound sign (#) delimiter for, 64
Cloud Computing Reference Architecture	community clouds, 10
(CCRA), 8–9, <b>8</b> , 135	compute nodes, 5
actors in the PaaS discipline, 137–138,	infrastructure map of, <b>34</b> , 35
137	PureApplication System platform and, 15
security and, 98	connection for hybrid clouds, 166, 167
Cloud containers, 105	console access, PureApplication System
Bluemix and, 115, 133, 133	platform, 22
Docker as, 108–111	console menus and submenus,
installation of, 108	PureApplication System platform,
operation of, 108	20–21, <b>21</b>
IBM Containers Extension (ICE) and, 133	consoles, Business Process Manager (BPM)
individual components in, 106, <b>107</b>	pattern and, 49–50, <b>50</b>
lifecycle of, 107–108, <b>107</b>	Consultant, cloud, 140
operating systems and, 107	consumer of cloud services, 136–138, <b>136</b>
shared components in, 106, 107	containers. See Cloud containers
virtualization and, 105–106, 106	converged systems, 11
Cloud Foundry, 113–117, 124, 126, 130, 133	cookbooks, 160
cloud groups, 16–17, <b>17</b> , <b>97</b>	cost of cloud computing, 1
creating, 26, <b>26</b>	Create New, 32, 33
dedicated vs. average, 16	cURL, 64, 70, 73
defining, 22	Hello cloud example, 65–66

D	elasticity of nardware/services, 2
Data & Analytics template, 116	Engine Yard, 113
databases, 4, 5	Enterprise Archive, 68
dedicated cloud group, 16	environment creation. See orchestration of
definition of cloud computing, 2	the cloud
Delete, 32, 33	environment profiles
Deploy, 33	cloud groups associated with, 28
deploying a pattern, 37–38, 43, 44–48, <b>45</b> ,	creating, 28–29, <b>29</b>
53, <b>53</b>	defining, 22
multiple system, 61–62, <b>62</b>	non-IBM software pattern creation and, 56 PureApplication System platform and,
deployment models, 137	17–18, <b>18</b> , 22, 27–29, <b>28</b>
public cloud, 92–93, <b>93</b>	script development and, 72
Developer role	environment variables, keys in, 79–80
cloud, 140	ESX server, 154
pattern, 142	execution engine, 4
development process transformation, 145	expert integrated/converged systems, 11
development tools, 5	Export, 32
DevOps, 90, <b>116</b> , 140	Extend, 32
Bluemix and, 129	Entona, 32
DICT, 66	_
directories, Bluemix and, 125	F
disadvantages of cloud, 10	Flexiant Cloud Orchestrator, 150
disaster recovery and resiliency, 143–144	form factors, PureApplication System,
Disaster Recovery as a Service (DRaaS), 144	169–170, <b>169</b>
distributed systems vs. PaaS, 6	Forrester Research survey of cloud
Docker, 84, 105, 108–111, 133	computing, 10
Bluemix and, 114	FTP/FTPS, 65
boot2docker.info, 109–110	scripting and, 83
boot2docker.ssh in, 110	Full permission, 14 fully qualified host name, Network interface
default username/password in, 109 installation of, 108	field information in, 50
operation of, 108	fully qualified naming, scripting and, 83
ports for, 110	functions/actions
Docker file, 84	virtual images, 31, <b>32</b>
dos2unix, in scripting, 69	virtual system classic pattern, 33
Download Tooling menu, 22	
<del>-</del>	G
E	Gartner survey of cloud computing, 10
Eclipse framework, 117	gateway switch, 15–16
Edit, 33	getting started with PureApplication, 19–32

Glance, 153	topologies for, 168–169, <b>168</b>
Gmail, 2	Hypervisor Edition (HVE), virtual images
Google, 2, 108	and, 29, 30
App Engine, 113	
Container, 105	1
Gopher, 66	IaaS. See Infrastructure as a Service (IaaS)
	IBM Cloud Orchestrator (ICO), 150
Н	Chef and, 160–163, <b>161</b>
hardware. See also Infrastructure as a	components of, <b>151–152</b> , 153
Service (IaaS), 1	deploying a pattern with, 155–156, <b>155</b>
infrastructure map of, 34–35, <b>34</b>	deploying a pattern with, 155–156, <b>155</b> deploying services with, 155, <b>155</b>
orchestration of the cloud and, 149	editions of, 151
Hardware administration, PureApplication	IBM Business Process Manager (BPM)
System platform, 14	and, 150
Hardware menu, 21	installation of, 154
Heat, OpenStack, 152, 153	instance details about patterns deployed
Hello cloud scripting example, 64–67	in, 156–157, <b>156</b>
Heroku, 64, 92, 113	metering and chargeback in, 158
high-availability pattern deployment, 61–62,	OpenStack and, 152, 153, 158–160,
62	159–160
hosting a cloud environment, 1	pattern engines and, 150, <b>152</b>
HTTP/HTTPS, 65, 67, 70	patterns in, 157, <b>157–158</b>
hybrid clouds, 10, 140, 165–181	platform compatibility of, 150, <b>151</b>
advantages and disadvantages of, 169	PureApplication System and, 150, 152,
Bluemix Dedicated and, 165, 168	157, <b>157–158</b>
IBM Integration Bus (IIB) and, 165,	IBM Cloud Orchestrator (ICO) and,
175–179, <b>176–179</b>	157, <b>157–158</b>
IPSec VPN setup in, 180–181, <b>180</b>	self-service catalog in, 154, <b>154</b>
Layer 2 connection in, 166, <b>167</b>	topology of, with VMware, 153–154, 153
layers of OSI model in, 167	IBM Containers Extension (ICE), 133
on- and off-premises services in, 166	IBM HTTP Server (IHS), 49
overview of, 166–167, <b>167</b>	IBM Integration Bus (IIB), 165, 175–179,
patterns and, 165, 169	176–179
patterns of expertise and, 165	IBM OS Image for AIX Systems, 29
providers of, 167–168	IBM OS Image for Red Hat Linux, 29
PureApplications System and, 165, 168,	Image Construction and Composition Tool
169	(ICCT), virtual images and, 30
security and, 169	IMAP/IMAPS, 65
SoftLayer and, 165, 168, 169–175,	infrastructure
169–175	map, in PureApplication System platform

and, 34–35, <b>34</b> , 34	opportunities in cloud computing,
patterns for, 32, 38	139–144, <b>140</b>
transformation of, 146	process transformations, 146
Infrastructure as a Service (IaaS), 1, 3–4, <b>3</b> ,	retooling and re-skilling, 145-146
111, 140	roles in cloud computing, 135–138, 136,
responsibility hierarchy within, 7–8, 7	139–144, <b>140</b>
services offered in, 91-92, 91. See also	
Services/Services layer	J
SoftLayer in, 99–102, <b>100–101</b>	Jacl, 67
installISSFS.sh script sample, 80–82	Java, 129
instances	app creation and deployment using
Business Process Manager (BPM) pattern	Bluemix, 117–120, <b>117–120</b>
and, 47–48, <b>47</b>	Java Archive, 68
non-IBM software pattern creation and,	Java Message Service, 68
58, <b>58</b>	JavaScript, 63
pattern, 38	JBoss Application Server, 55–61. See also
Instances menu, 21	non-IBM software patterns
Integrated Solutions Console, 48–49, <b>49</b>	JDBC, 68
Integration architect, cloud, 140, <b>141</b>	JSON, 65
integration of components, in	Jython, 63, 64, 67
PureApplication System platform, 11	Hello Cloud example, 66
Integration template, 116	1 /
International Organization for	K
Standardization (ISO), 135	
Internet of Things template, 116	kernel-based virtual machines (KVM), 150
IP addresses, 16	keys, 79–80
IP groups and, 23	_
Network interface field information in, 50	L
virtual machines, 59	languages for scripting, 63
IP groups, 141	layers of the OSI model, 167
creating, 24, <b>24</b>	LDAP/LDAPS, 65
defining, 22 IP addresses for, 23	Lenovo RackSwitch, 15
naming, 24	Liberty for Java Starter Application, 116
ports for, 18	licensing for patterns, 42, 42, 43
PureApplication System platform and, 16,	lifecycle of a container, 107–108, <b>107</b>
18, 22, 23–25, <b>23</b>	LinuX Containers (LXC), 105
virtual LAN (VLAN) and, 23	loading a pattern, 41, 170
isolation levels, 95–99	Lock, 32, 33
T	lock-in, 6
operations and cloud computing 138–139	log-in screen, PureApplication System

platform, 19, <b>19</b>	Neutron, 150, 153
logging and scripting, 83	NFS, scripting and, 83
logical isolation, 96	NIST, 66
logical partitioning, 3	Node.js, 63, 64, 129, 140
logical-to-physical mapping, 38, <b>38</b>	Hello Cloud example, 66–67, 66
Looking Glass portal for, 101, <b>101</b>	nodes, patterns and, 43
Looking Glass portar for, 101, 101	non-IBM software patterns, 55–61
	•
M	capturing an image in, 60, <b>60</b> , <b>61</b>
maintenance and support, 5	cloud groups for, 56
PureApplication System platform and, 11	environment profile selection for, 56
Manage permission, 14	new instance in, 58, <b>58</b>
managed vs. unmanaged services, 94–95, <b>95</b>	server download for, 58
management nodes, PureApplication System	testing startup of, 59
platform and, 15	virtual image/system creation for, 55–56,
memory, 2	56, 57
menus and submenus, PureApplication	Nova, OpenStack, 150, 152
System platform and, 20–21, <b>21</b>	
metered services, 2, 43	0
IBM Cloud Orchestrator (ICO) and, 158	on-boarding a pattern, 41, 170
Microsoft, 64, 108, 113	on-demand self-service, 2
middleware, 5	on-demand software, 6
MKS Console IP group, 18	Open Systems Interconnection (OSI) layered
Mobile template, <b>116</b>	model, 167
modules, importing, sample script for, 74–75	Open Virtualization Archive (OVA), virtual
monitoring, services/services layer and,	images and, 29
102–105, <b>103</b>	Open Virtualization Format, virtual images
MQ queue manager, 68	and, 29
multi-tenant model, 2, 3	OpenStack, 150, 152, 153
	IBM Cloud Orchestrator (ICO) and,
N	158–160, <b>159–160</b>
naming conventions	services in, 159, <b>159–160</b>
cloud groups and, 26	operating systems, 3–5
PureApplication System platform and, 24	cloud containers and, 107
scripting and, 83	scripting and compatibility, 83
National Institute of Standards and	virtual images and, 29
Technology (NIST), 2	virtualization and, 106
network access, 2, 5	operational transformation, 135–148. See
network administrators, 141	also IT
Network interface field information, 50	opportunities in cloud computing, 139–144,
network topology, public cloud, 93–94, <b>94</b>	140
, representation, reserve	

orchestration of the cloud, 149–164	IBM Cloud Orchestrator (ICO) and,
hardware in, 149	155–156, <b>155</b> , 157, <b>157–158</b>
IBM Cloud Orchestrator (ICO) in,	IBM HTTP Server (IHS) in, 49
150–160. See also IBM Cloud	IBM Integration Bus (IIB), 165, 175–179,
Orchestrator (ICO)	176–179
importance of, 150	infrastructure, 32, 38
patterns and, 150	instances in, 38, 47–48, <b>47</b>
process of, 149	Integrated Solutions Console for, 48–49,
recipes and cookbooks in, 160	49
services in, 149	licensing for, 42, 42
software in, 149	loading or on-boarding, 41, 170
tools for, 150	logical to physical mapping in, 38, 38
workflows in, 149	multiple deployment of, 38, 61–62, <b>62</b>
	multiple patterns within, 41
Р	Network interface field information in, 50
PaaS. See Platform as a Service	new instance in, 58, <b>58</b>
passwords, 56	node numbers for, 43
pattern architect, 142	non-IBM software and, 55-61
pattern developers, 142	number of VMs in, 46
pattern editor or builder, 53–54, <b>54</b>	of expertise, 37
pattern engines, IBM Cloud Orchestrator	orchestration of the cloud and, 150
(ICO) and, 150, <b>152</b>	pattern editor or builder for, 53–54, <b>54</b>
patterns, 31, 37–62	Patterns menu for, 35
application, 32, 39	platform, 32, 38
Business Process Manager (BPM), 40–51	Process Servers in, 46–47, 47
capturing an image in, 60, <b>60</b> , <b>61</b>	PureApplication System, on SoftLayer,
catalog listing for, 41, 42	32–34, 173–174
configuring parts of, 46	Quick Deploy for, 55
consoles for, 49–50, <b>50</b>	resource details for, 52, <b>52</b>
creating, 32–33, <b>33</b>	server download for, 58
customizing, with scripts, 62. See also	sources for, 37
Scripting	testing startup of, 59
deploying, 34, 37–38, 43, 44–48, <b>45</b> , 53,	topology of, 43, 43
53	uploading, with the command-line
description/definition of, 37	interface (CLI), 41
details of, 43, 52, <b>52</b>	variations of virtual system classic, 51
functions/actions available for, 33	virtual application, 39–40, <b>40</b>
high availability, 61–62, <b>62</b>	virtual image/system creation for, 55–56,
history of deployment for, 48	56, 57
hybrid clouds and, 165, 169	virtual machine (VM) details in, 54
,	virtual parts of, 44, <b>45</b> , 46

hybrid clouds and vs. 166-167, 167
private PaaS, 129–130, <b>130</b>
Process Center pattern, 44
Process Server pattern, 44
Process Servers, 46–47, 47
process transformation caused by cloud
computing, 145–146
processing, 2
production environment process
transformation, 145
project managers, 143
Promote, 33
properties file, storage of, 70
proprietary services/products, 6
provider of cloud services, 136–138, <b>136</b>
public clouds, 10, 92–94, <b>93</b> , <b>94</b>
characteristics of, 92–94, <b>94</b>
deployment models for, 92–93, 93
hybrid clouds and vs. 166–167, <b>167</b>
network topology of, 93–94, <b>94</b>
services/services layer and, 92–94
Puppet, 150
PureApplication Systems, 11–36, <b>12</b> , 135,
142
access to consoles, 22
architecture of, on SoftLayer, 172, 172
authorization levels for, 14–15
building blocks of, 13
Catalog menu in, 21
cloud groups in, 16–17, <b>17</b> , 22, 25–27, <b>25</b>
Cloud menu in, 21
command-line interface (CLI) for, 83-86,
<b>84</b> , <b>85</b> , 175
compute nodes in, 15
configuration of, on SoftLayer, 171, 171
console for working with, 20–21, 21,
174–175, <b>174</b>
Download Tooling menu in, 22
environment profiles in, 17-18, 18, 22,
27–29, <b>28</b>
expert integrated/converged systems in, 11

expertise, support, maintenance in, 11	Workload Console and menus in, 21–22,
form factors in, 169-170, <b>169</b>	35
getting started with, 19–32	PureSystems Manager, 15
Hardware menu in, 21	push command, in Bluemix, 126
hybrid clouds and, 165, 168, 169	"pushing an app," 116
IBM Cloud Orchestrator (ICO) and, 150,	Python, 63, 64, 67, 73, 140, 163
152	Hello cloud example, 65
infrastructure map in, 34–35, 34	OpenStack and, 159
Instances menu in, 21	operating system compatibility for, 75
integration of components in, 11	script example, 74–75
IP groups in, 16, 18, 22, 23–25, <b>23</b>	
loading or on-boarding a pattern in, 170	Q
log-in screen, 19, 19	qpid, 153
maintenance in, 11	Quick Deploy, 55
management nodes in, 15	Quick Deploy, 55
patterns available in, 31, 32–34, 173–174	Б
Patterns menu in, 21	R
platform basis and (Intel-, Power-, Service	Rackspace, 92, 99, 100, <b>101</b>
on SoftLayer), 22	monitoring in, Rackspace Cloud
PureApplication system in, 12, <b>12</b>	Monitoring, 103
relationship of hardware and cloud	Read permission, 15
resources in, 14–15, <b>14</b>	recipes, 160
Reports menu in, 21	Recovery as a Service (RaaS), 144
resources and components in, 12–19	recovery point objective (RPO), 143
scripting packages in, 68–73	recovery time objective (RTO), 143
services of, 172, <b>173</b>	Red Hat, 108
simplicity of use in, 11	redeployment/restaging of apps, in Bluemix,
storage devices in, 15	122, 124
support in, 11	reference architecture of cloud, 8–9, <b>8</b>
System Console and menus in, 21–22, 35	Refresh, 32, 33
System menu in, 21, 22	relationship of hardware and cloud
system resources table for, 13	resources, in PureApplication System,
tooling options for, 175	14–15, <b>14</b>
top-of-rack (gateway) switch in, 15–16	Reports menu, 21
user/client accounts in, 170–171, <b>171</b>	Representational State Transfer (REST), 140
users/user groups in, 19	resiliency, resiliency centers, 143–144
virtual CPU (vCPU) in, 15	resource pooling, 2
virtual images in, 29–32	Resource-level administration, in
virtual machines in, 14, 15, 18	PureApplication System, 15
Welcome menu in, 21	resources, Business Process Manager (BPM)
welcome screen for 20 20	pattern and, 52, <b>52</b>

responsibilities in the cloud, 7–8, 7	complex contents of, 70
Rocket, 105	contents of, 69, <b>69</b>
roles for IT professionals in cloud	uploading, 70–73, <b>71–73</b>
computing, 135–138, <b>136</b> , 139–144, <b>140</b>	PHP Hello cloud example, 64–65
Ruby, 63, 64, 160	Python Hello cloud example, 65
Hello cloud example, 65	platform compatibility and, 63–64
Ruby on Rails, 65	platform/operating system compatibility
Runtimes template, Bluemix, <b>115</b>	in, 83
Runtimes template, Diuemix, 113	plug-in development kit for, 86–90, <b>86–90</b>
_	
S	properties file storage in, 70
SaaS. See Software as a Service (SaaS)	Python for, 64, 74–75
Salesforce.com, 64, 113	recommended practices for, 83
Salt, 163	Ruby Hello cloud example, 65
SCP, 65, 70	runtime testing, 90
scripting, 63–90	timeout values in, 78
add-ons, 86	trace and logging in, 83
Bash Hello cloud example, 64	UNIX for, 63, 64, 75–77
cbscript.json, 77–82	uploading, 70–73, <b>71–73</b>
command-line interface (CLI) for, 83–86,	user context for, 72
84, 85	virtual image files for, 72–73, <b>73</b>
comments in, (pound sign) delimiter for,	wsadmin and, 64, 67–68
64	SecureCloud, 98
cURL Hello cloud example, 65–66	security, 142
description of, using cbscript.json, 77–82	CipherCloud and SecureCloud in, 98
developing your own, dos2unix in, 69	Cloud Computing Reference Architecture
environment variables, 72	and, 98
plug-in development kit for, 86–90,	Cloud Security Alliance, 99
86–90	Disaster Recovery as a Service (DRaaS),
DevOps and, 90	144
FTP connections and, 83	external routing for cloud groups in, 27,
fully qualified names in, 83	27
importing modules example, in Python,	hybrid clouds and, 169
74–75	Recovery as a Service (RaaS), 144
installISSFS.sh sample, 80–82	resiliency and, 143–144
Jython Hello Cloud example, 66	sensitive data and, 98
language selection for, 63–64	services/services layer and, 95-99
naming conventions for, 83	threats to, 97–98, 99
NFS in, 83	virtualization and, 98
	workload isolation and, 95-99
Node.js Hello Cloud example, 66–67	Security administrators, 142
packages of, in Pure Application System, 68–73	Security template, 116
00-13	

segmentation, physical network	skills for IT personnel in cloud computing,
segmentation, 96	145–146
self-service portal, SoftLayer, 99–100, <b>100</b>	SkySight, 150
sensitive data security, 98	slices, 3
server download, non-IBM software pattern	SMTP/SMTPS, 65
creation and, 58	SoftLayer, 92, 99–102, <b>100–101</b> , 113
servers, 4	Bluemix and, 114, 130
SoftLayer, 170	hybrid clouds and, 165, 168, 169
server-side scripting, 5	IBM Integration Bus (IIB) and, 165,
Service Integration Bus (SIBus), 68	175–179, <b>176–179</b>
service-level agreements (SLAs), 146	Looking Glass portal for, 101, 101
services/services layer, 91–111	PureApplication System and
auditors of, 136–138, <b>136</b>	architecture on, 172, 172
Bluemix and, 120–126, <b>121</b> , 127–129	configuration in, 171, 171
broker/partner in, 136-138, <b>136</b>	console for, 174–175, <b>174</b>
chargeback and, 102-105	patterns in, 173–174
cloud containers and, 105	services and, 172, <b>173</b>
consumer of, 136–138, <b>136</b>	self-service portal in, 99–100, 100
customization of, 94	server instances in, 170
hybrid clouds and, 166	user/client accounts in, 170–171, 171
IaaS vs. PaaS, 91–92, <b>91</b>	VPN setup in, using IPSec, 180–181, <b>180</b>
IBM Cloud Orchestrator (ICO) and, 154,	software
154	orchestration of the cloud and, 149
managed vs. unmanaged, 94–95, 95	recipes and cookbooks for configuration
monitoring of, 102–105, <b>103</b>	of, 160
on- vs. off-premises, 166	Software as a Service (SaaS), 1, 6–7, 111,
OpenStack, 159, <b>159–160</b>	130, 140
orchestration of the cloud and, 149	Business Process as a Service (BPaaS)
ownership of, 94	and, 7
physical network segmentation and, 96	on-demand software in, 6
physical vs. logical isolation in, 96	responsibility hierarchy within, 7–8, 7
portability of services in, 138	software development, 5
private vs. public cloud, 92	process transformation, 146
providers in, 136–138, <b>136</b>	software through the cloud. See Software as
public cloud characteristics and, 92–94,	a Service (SaaS)
94	"spheres of influence" in IT and cloud
PureApplication System, 172, <b>173</b>	computing, 139, <b>139</b>
Rackspace in, 99, 100, <b>101</b>	Splunk, 68
SoftLayer in, 99–102, <b>100–101</b>	Stackato, 130
tiered, 104	standardizations, 10, 135
workload isolation and security in, 95-99	storage, 2, 3, 5

PureApplication System platform and, 15	user context and scripting, 72
storage area networks (SANs), 15	user groups, PureApplication System, 19
Storwize V7000, 15	
subscribing to a cloud, 1	V
support, PureApplication System, 11	-
System administrators, 141	vCenter Orchestrator, 150
System Console and menus,	View All permission, 15
PureApplication System, 21–22, 35	virtual application patterns, 39–40, <b>40</b>
System-level administration,	virtual CPU (vCPU) cloud group ratio to, 16
PureApplication System, 15	PureApplication System platform and, 15
System menu, 21, 22	virtual images
System z, 150	capturing, 60, <b>60</b> , <b>61</b>
	creating, 55–56, <b>56</b>
Т	_
technology upgrades, 1	functions/actions that can be performed on, 31, <b>32</b>
Telnet, 66	Hypervisor Edition (HVE), 29, 30
templates. See Patterns	Image Construction and Composition Tool
test environment process transformation,	(ICCT) for, 30
145–146	Open Virtualization Archive (OVA) and, 29
test tools, 5	operating systems and, 29, 30
TFTP, 66	patterns and, 31
thin clients, 6	Power-based, <b>30</b> , 30
tiered services, 104	PureApplication System platform and,
timeout values, scripting and, 78	29–32
top-of-rack (gateway) switch, 15–16	scripting and, 72–73, <b>73</b>
topologies	sharing, 57
hybrid clouds and, 168–169, <b>168</b>	WebSphere Application Server and, 29,
pattern, 43, <b>43</b>	30–31, <b>31</b>
trace, in scripting and, 83	virtual LAN (VLAN), 141
training and education for cloud computing,	hybrid clouds and, 166, 167
145–146	IP groups and, 23
	virtual machines (VMs), 2
U	details of, 54
UNIX, 73	IP address for, 59
scripting in, 63	kernel-based, 150
shell script example in, command-line	Network interface field information in, 50
arguments, 75–77	patterns and, number of, 46
unmanaged services, 94–95, <b>95</b>	PureApplication System platform and, 14,
upgrades to technology, 1	15, 18
use of cloud computing, 10	scripting and, 72–73, <b>73</b>
ase of croad companies, to	virtual application patterns for, 39–40, <b>40</b>

## IBM Cloud Platform Primer

virtual system patterns for, 39–40, <b>39</b>	Web and Application template, 116
virtualization and, 106	Web Archive, 68
workload isolation and, 97	web browsers, 6
virtual private network (VPN)	web servers, 4
hybrid clouds and setup, 180–181, <b>180</b>	WebSphere Application Server (WAS), 77,
virtual system classic pattern, 32–33, <b>33</b> ,	160, 173
51–54	virtual images and, 29, 30-31, <b>31</b>
Business Process Manager (BPM) pattern	wsadmin scripting and, 67-68
as, 41	WebSphere Extreme Scale APIs, 128
deploying, 53, <b>53</b>	WebSphere Liberty profile, 116
information about, 54	WebSphere Message Broker. See IBM
pattern editor or builder for, 53–54, <b>54</b>	Integration Bus (IIB)
variations of, 51	Welcome menu, 21
virtual system patterns, 39–40, <b>39</b>	welcome screen, 20, 20
virtualization, 1, 4, <b>106</b>	WGET, 70
containers and, 105–106, <b>106</b>	Wily, 68
security and, 98	workflows, orchestration of the cloud and,
Virtualization System Manager, 15	149
Virtuozzo, 105	Workload Console and menus,
VMware, 150, 154	PureApplication System, 21–22, 35
IBM Cloud Orchestrator (ICO) and,	workload deployment, 1
153–154, <b>153</b>	workload isolation
Vyatta, 180	cloud groups and, 96, 97
	services/services layer and, 95-99
W	virtual machine (VM) instance and, 97
Warden, 105	Write permission, 15
Watson template, Bluemix, 115	wsadmin scripting, 64, 67-68
watson template, Diucinix, 113	WSo2, 130, 130