Answers to Additional Exercises

Chapter 1

- Answer will vary because cloud services are rapidly expanding. Some more familiar services would include user suite applications, backup services, file sharing, email, and image sharing services.
- Answer will vary but will commonly include both thick client/workstations and mobile client devices.
- Cloud computing services are provider-managed, flexible resources, network accessible, sustainable, self-service, and on demand.

Chapter 2

Answer will vary based on illustrations, but they should include the four primary types of clouds as specified by the NIST standards (private, public, hybrid, community) and examples of both local and managed hosting for models involving private cloud elements.

The advantages of hybrid clouds are as follows:

- Cloud bursting, which is the ability to fail over to public clouds when private cloud resources are overwhelmed
- The ability to span both vertical and horizontal models to construct applications layered atop an organization's various needs or to support multiple forms of access and consumption by various groups.
- Easier application development in local private clouds due to lower latency and control over networking.

Chapter 3

- Cloud service models vary by the number of available providers and service options, the number of available application development languages, and the level of control available to consumers at each level of the pyramid formed by SaaS, PaaS, and IaaS cloud services.
- Cloud application development includes the following cloud service models:
  - Software as a Service — SaaS applications have limited client customization and are consumed as presented by their provider.
  - Platform as a Service — Custom application development occurs in the PaaS category of cloud offerings, but it's limited by the tools or languages supported by the provider.
  - Infrastructure as a Service — IaaS application development follows traditional models and is tied only to the operating system and development tools selected by the organization licensing IaaS cloud resources.

Chapter 4

- Cloud services exist as in-browser alternatives to common installed workstation applications, from antivirus to user productivity suite and creative audiovisual production solutions.
- Many mobile functions are based in cloud services, leveraging cloud hosted resources to support complex functions on limited-resource mobile devices.

Chapter 5

- Many traditional jobs will be transitioned away from dedicated IT staff into business units, allowing greater alignment between business needs and operational capability.
- Depending on the organization, good examples might include email, customer relations management, or web hosting.

Chapter 6

- Solutions will vary based on student's areas of employment but may include common regulations such as Sarbanes-Oxley or the Payment Card Industry Data Security Standards (PCI-DSS) for someone who works with financial data.
- Layer 2 networks are easier to manage but more limited in the number of devices that can be integrated before network saturation, while Layer 3 networks require more understanding of locational and network address information. VXLAN enables Layer 2–like management within Layer 3 network segments, at the cost of additional data overhead for the tunneling of data connections between network segments.

Chapter 7

- Solutions will vary based on students' areas of employment but may include common regulations such as Sarbanes-Oxley or the Payment Card Industry Data Security Standard (PCI DSS) for someone who works with financial data.
- Layer 2 networks are easier to manage but more limited in the number of devices that can be integrated before network saturation, while Layer 3 requires more understanding of location and network address information. VXLAN enables Layer 2–like management within Layer 3 network segments, at the cost of additional data overhead for the tunneling of data connections between network segments.

Chapter 8

- Several types of applications might be included, such as accounting applications, full customer relationship management (CRM) applications, email applications, and so on.
- Depending on the organization, good examples might include internal users, departments, or customers.

Chapter 9

- A good example of migration from on-premises to SaaS would be migrating a custom-built CRM solution to Salesforce.com or Microsoft Dynamics. Some of the challenges would include data migration, service desk integration, user training, and custom features.
- A good example of migration from on-premises to IaaS would be migrating a public-facing e-commerce website to Amazon or Windows Azure. Some of the challenges would include data migration, cloud-based monitoring, and dealing with scalability.

Chapter 10

- Many processes will be used, depending on the type of organization. Most commonly, service desks (or help desks), vendor relationship management, and release management will be used.
- Depending on the organization, and type of cloud-based service, answers will vary. But most will include synchronizing the existing service desk with the support provided by cloud vendors, concentrating on adoption and training more than actual development for SaaS applications, among others.

Chapter 11

- Answers vary based on selection. When differences are noted, attention should be given to the possible reasons, such as differences based on industry or governmental regulations.
- Answers vary based on selection. Guidelines that do not specifically address cloud computing may be sufficient, depending on the industry, provided they address outsourcing. If guidelines do exist, they may be in the form of white papers, best practice recommendations, or standards.

Chapter 12

- Answers will vary based on the student's country and the legislation under consideration at the time.
- Answers will vary based on the status of various standards at the time of review.