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Chapter 3: BlackBerry Infrastructure

In this lab, you explore the different components of the BlackBerry® Enterprise Solution and the BlackBerry® Internet Service. The intent of these step-by-step exercises is to reinforce your knowledge of how data flows through the BlackBerry® Infrastructure. You also gain more knowledge about the BlackBerry Infrastructure by conducting research on the BlackBerry® Developer Zone.
3.1 Explore the BlackBerry Infrastructure

In this exercise, you explore the BlackBerry Infrastructure by examining diagrams and conducting research to answer questions. Use your textbook, along with the BlackBerry Developer Zone website, to research the questions in this exercise.

1. Examine the following diagram to see how the BlackBerry Enterprise Solution functions and describe the purpose of each component in your own words.

![Diagram of BlackBerry Infrastructure]

- a. BlackBerry Administration Service
- b. BlackBerry Attachment Service
- c. BlackBerry Collaboration Service
- d. BlackBerry Configuration Database
e. BlackBerry Controller
f. BlackBerry Dispatcher
g. BlackBerry MDS Application Console
h. BlackBerry MDS Connection Service
i. BlackBerry MDS Integration Service
j. BlackBerry Messaging Agent
k. BlackBerry Monitoring Service
l. BlackBerry Monitoring Service Database
m. BlackBerry Policy Service
n. BlackBerry Router
o. BlackBerry Synchronization Service
p. BlackBerry Web Desktop Manager
q. Organization’s application server or content server
r. Instant Messaging Server
s. Messaging Server
t. User’s computer with the BlackBerry® Device Manager
u. Which component can you use to configure updates?
2. Examine the following diagram. Using the diagram, along with your textbook and the BlackBerry Developer Zone website, answer the questions below.

![BlackBerry Infrastructure Diagram]

a. At what point of the BlackBerry® Enterprise Server does the BlackBerry® Browser break out to the Internet?

b. At what point does the BlackBerry Internet Service break out to the Internet?

c. How do the BlackBerry Enterprise Solution and the BlackBerry Internet Service differ?

d. A BlackBerry smartphone user is unable to browse using the BlackBerry Browser. Which component permits this functionality on the BlackBerry smartphone?

e. Under what conditions can you use the BlackBerry MDS Connection Service network gateway?

f. Under what conditions can you use the BlackBerry Internet Service Browsing network gateway?

g. Under what conditions can you use the WAP network gateway?

h. When you create BlackBerry applications, you can customize code to choose a preferred gateway. What advantage, if any, does this give the BlackBerry smartphone user?

i. Research the BlackBerry Developer Zone and find a code snippet that shows a preferred gateway has been chosen. Explain the code line by line.

3. An IT policy is a collection of one or more IT policy rules. An IT administration command is a function that you can send over the wireless network to immediately control access to a BlackBerry smartphone or change ownership information on a BlackBerry smartphone. Given
the following scenarios, conduct research using the BlackBerry Developer Zone to determine how you can control unsecured wireless messaging.

a. Prevent applications from initiating external connections on a BlackBerry smartphone.

b. Require a user to confirm that they want to send a message before they send it.

c. Prevent a user from forwarding or replying to a message using a BlackBerry Enterprise Server that did not deliver the original message.

d. Limit the number of BlackBerry smartphones in an organization’s environment that can receive BlackBerry Internet Service messages.
3.2 Explain BlackBerry Infrastructure process flow

In this exercise, you examine diagrams that display the process flow through the BlackBerry Enterprise Solution and the BlackBerry Internet Service. You can use these diagrams to guide you through your exploration of BlackBerry Infrastructure process flow.

1. Joe creates an email message for Henry on the BlackBerry smartphone and sends it to the wireless network using the BlackBerry Enterprise Solution. The email message is compressed and encrypted. What type of encryption is being used?

2. How does the BlackBerry smartphone locate the BlackBerry Infrastructure?

3. What uniquely identifies the BlackBerry smartphone to the BlackBerry Infrastructure?

4. What is assigned to the email message to coordinate email management tasks between the messaging server and the BlackBerry smartphone?

5. The wireless network sends the email message to the Internet through the ________?

6. What does the BlackBerry Infrastructure use to send the email message to the appropriate BlackBerry Enterprise server?

7. When the email message reaches the firewall of Henry’s organization, on what outbound-initiated, two-way connection to the BlackBerry Enterprise Server does the email message pass through?
8. What decrypts and decompresses the email message and sends it to the messaging server?

9. Where does the messaging server place the email message?

10. What format does the messaging server that hosts Joe’s mailbox use to send the email message to the firewall?

11. What port does the messaging server use to send the email message?

12. What monitors Henry’s mailbox and retrieves the new email message?

13. What part of the email message is encrypted before queuing it for delivery?

14. What does Henry’s BlackBerry smartphone do to the email message?

15. What does Henry’s BlackBerry smartphone send to the BlackBerry Enterprise Server to indicate that it has successfully received the email message?

16. How does Henry’s BlackBerry smartphone know if the email message has been opened previously?

17. If the email message has been opened previously, what happens to it?

18. Sarah creates an email message on her BlackBerry smartphone to send to Emma using the BlackBerry Internet Service. Does the email message get encrypted?
19. What format does the email message take before being sent to the wireless network?

20. What does the BlackBerry smartphone use to locate the BlackBerry Infrastructure?

21. Where does the wireless network send the email message?

22. What happens if the BlackBerry smartphone has been provisioned for use with the BlackBerry Internet Service?

23. What decompresses the email message and delivers it to the appropriate messaging server for Emma?

24. What does the BlackBerry Internet Service do to the Send Items folder on the messaging server for Emma?

25. What monitors the email accounts listed in Emma's user profile and retrieves the new email message?

26. What is the new email message applied against to verify that it is approved for delivery to Emma's BlackBerry smartphone?

27. How much of the email message gets compressed before it is queued for delivery?

28. How does the BlackBerry Internet Service interact with third-party email accounts?

29. How does the BlackBerry Internet Service interact with POP and IMAP accounts?

30. What does the BlackBerry Internet Service do for accounts that support IMAP IDLE?

31. What sends the email message to the wireless network?

32. What does the wireless network do when it receives the email message?

33. What does the BlackBerry smartphone do when it receives the email message?