Administration of IBM DataPower Gateway V7.6

WE761 (Classroom)

ZE761 (Self-paced)

Course description

IBM DataPower Gateway Appliances are network devices that help secure, integrate, and optimize access to web, web services, mobile, and API workloads. Through instructor-led lectures and hands-on lab exercises, you learn how to run various administrative procedures, from initial installation and setup through ongoing maintenance of the appliances in production. You learn about the available management interfaces, such as the command-line interface (CLI), Web Management graphical interface, and XML Management Interface. You also learn how to use these interfaces to run various administrative tasks, such as upgrading firmware, running backup and restore operations, and configuring user accounts and domains. The course includes some information on upgrading firmware and working with DataPower hardware appliances.

This course exercises uses the following appliances:

* DataPower Gateway Virtual Edition

Information in the course units also applies to other DataPower appliances.

The lab environment for this course uses the Ubuntu Linux Operating System on an ESX image that runs on the IBM Remote Lab Platform.

For information about other related courses, see the IBM Training website:

**ibm.com**/training

General information

Delivery method

Classroom or self-paced virtual classroom (SPVC)

Course level

ERC 1.0

Product and version

IBM DataPower Gateway version 7.6

Audience

This course is designed for administrators who install, manage, and monitor IBM DataPower Gateway Appliances. The course is also relevant for developers who administer appliances.

Learning objectives

After completing this course, you should be able to:

* Configure an appliance for its initial deployment
* Download and upgrade the firmware on the DataPower appliances
* Create and manage user accounts, groups, and domains
* Configure Secure Sockets Layer (SSL) to and from DataPower Appliances
* Troubleshoot and debug services by using the problem determination tools, logs, and probes that are provided with the DataPower appliance
* Configure logging of messages to external locations

Prerequisites

Before taking this course, you should successfully complete course VW700, *Technical Introduction to IBM WebSphere DataPower Gateway Appliances V7*. You should also be familiar with:

* Security-based concepts and protocols
* Ubuntu Linux
* Networking protocols

Duration

2.5 days

Skill level

Intermediate

Notes

The following unit and exercise durations are estimates, and might not reflect every class experience. If the course is customized or abbreviated, the duration of unchanged units will probably increase.

This course is an update of the following previous courses:

* WE720, *Administration of IBM WebSphere DataPower Gateway V7*

Course agenda

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| Course introductionDuration: 15 minutes |

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| Unit 1. DataPower deployment environmentsDuration: 30 minutes |
| Overview | This unit presents the various environments that a DataPower gateway can be deployed into. A DataPower gateway can still be deployed as a physical appliance, although there are many options for deployment of a virtual edition of the gateway. The VMware, Citrix, Linux, Docker, and cloud possibilities are listed. The Software Product Compatibility Report is reviewed, which lists the specific operating environments for DataPower, and the other products and versions that DataPower interacts with. |
| Learning objectives | After completing this unit, you should be able to:* Identify the different editions of the Virtual Edition, and how they differ
* Describe the DataPower deployment options
* List some of the physical characteristics of the DataPower hardware
* Describe the Ethernet interface options for the physical and virtual gateway
* List the supported runtime environments for the Virtual Edition
* List the basic steps for deploying a virtual gateway in the VMware, Citrix, Linux, and Docker environments
* List the supported cloud environments for the virtual gateway
* Describe the Docker support for DataPower
* Describe how to request and use a Software Product Compatibility Report
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| Unit 2. Initial setupDuration: 1 hour and 15 minutes |
| Overview | This unit introduces you to the initial process of setting up the DataPower appliance. It covers both physical and virtual appliances. You learn how to use the serial interface to connect to the CLI interface to complete the initial box setup. You also learn about some of the other appliance settings. |
| Learning objectives | After completing this unit, you should be able to:* Describe how to start the DataPower Gateway on the various deployment types
* Identify the Ethernet connections for physical and virtual appliances
* Use the console connector or console view for initial configuration
* Deploy a virtual appliance on various hypervisors
* Describe the minimal steps that are done during the initial configuration
* Access the Web Management graphical interface
* Configure the Ethernet interfaces for an appliance
* Configure RBM, DNS, NTP, and System Settings
* Configure user interface settings
* Prepare the appliance auxiliary storage
* Enable support for other languages for the Web Management graphical interface logs and messages
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| Unit 3. Managing firmwareDuration: 30 minutes |
| Overview | This unit shows you how to download and upgrade firmware for a DataPower appliance. |
| Learning objectives | After completing this unit, you should be able to:* Describe the actions that you can take to manage the DataPower firmware
* Download the appropriate firmware for the appliance configuration
* Describe the add-on modules for the DataPower Gateway
* Describe the tenant feature that is available for a physical DataPower Gateway
* Use the web management interface to install firmware upgrades
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| Exercise 1. Upgrading image firmwareDuration: 30 minutes |
| Overview | In this exercise, you upgrade the firmware level of the gateway by using the Blueprint Console capabilities. You also practice switching the installation image firmware to the other level on the gateway. |
| Learning objectives | After completing this exercise, you should be able to:* Identify the current firmware level on the gateway
* Upgrade the firmware level on the gateway
* Switch the installation image between the current and the previous version of the firmware
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| Unit 4. DataPower administration overviewDuration: 1 hour and 15 minutes |
| Overview | This unit shows you how to manage the DataPower appliance by using the various management interfaces, such as the CLI, SOAP, and the WebGUI. You learn how to manage resources on the DataPower flash memory. You also learn good practices for securing the DataPower appliance. |
| Learning objectives | After completing this unit, you should be able to:* List the methods that can be used to administer the DataPower appliance
* Work with files on the DataPower appliance
* Determine the status of various aspects of the appliance
* Run secure backup and restore
* Quiesce traffic to the appliance
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| Unit 5. Using CLI and the XML Management Interface to configure appliance accessDuration: 1 hour and 30 minutes |
| Overview | This unit focuses on the non-browser approach to defining appliance and service resources. It begins with the traditional text-based approach, the command-line interface (CLI). It reviews basic syntax and commands, provides examples of resource configuration, and explains several of the ways to control CLI access. The unit then reviews the SOAP configuration management (SOMA) approach, explaining basic syntax and providing examples of XML Management Interface requests and responses. Lastly, the unit explains Appliance Management Protocol (AMP) and its syntax. |
| Learning objectives | After completing this unit, you should be able to:* Compare and contrast the DataPower management approaches: CLI, XML Management Interface, and the WebGUI
* Use CLI to configure domains, user groups, and users
* Configure administrative and development access to the appliance and resources
* Issue CLI commands to define and manage network resources
* Construct SOAP configuration management (SOMA) requests
* Use SOMA requests to configure resources and perform management functions
* Construct Appliance Management Protocol (AMP) requests
* Use AMP requests to run management functions
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| Exercise 2. Using the CLI and the XML Management Interface to manage DataPower appliancesDuration: 1 hour and 30 minutes |
| Overview | In this exercise, you learn how to manage user resources and domain configuration, run simple network testing, and retrieve appliance status information. You use the CLI, SOMA, and AMP administrative interfaces. |
| Learning objectives | After completing this exercise, you should be able to:* Create DataPower resources by using the CLI
* Create DataPower resources by using SOMA requests
* Send appliance management requests by using AMP
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| Unit 6. DataPower services overviewDuration: 30 minutes |
| Overview | This unit describes the service types that are supported on the DataPower gateway. You examine, at a high level, what a service is and what it can communicate with. You also review the characteristics of each service type, and examine the relationships between the XML-based services. |
| Learning objectives | After completing this unit, you should be able to:* Define what a DataPower service is
* List the supported services on the DataPower gateway
* Describe the similarities and differences in the features that each DataPower service supports
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| Unit 7. Using the Web Management Blueprint Console to configure appliance accessDuration: 30 minutes |
| Overview | This unit shows you how to create new user accounts, user groups, and domains. You also learn how to obtain domain configuration from external resources and manage domain resources remotely. The unit describes the Blueprint Console approach to resource definition, and explains how to complete Web Management authentication by using external Directory Services such as LDAP. |
| Learning objectives | After completing this unit, you should be able to:* Use the Web Management Blueprint Console to create user accounts, user groups, and domains
* Use the role-based management (RBM) policy builder to restrict access to objects within a domain
* Use the Blueprint Console to configure authentication with the Lightweight Directory Access Protocol (LDAP)
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| Unit 8. TroubleshootingDuration: 45 minutes |
| Overview | This unit describes the troubleshooting tools that are available for debugging problems on the DataPower gateway. Several tools are available for various problems, ranging from low-level networking tools to probes that aid in debugging service policies. The logging utilities are available for capturing information that the DataPower objects generate. |
| Learning objectives | After completing this unit, you should be able to:* Identify the troubleshooting tools that are available on the DataPower appliance
* Capture information by using system logs for messages that pass through the DataPower gateway
* Configure the default system log for debugging
* Configure a multi-step probe to examine detailed information about actions within rules
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| Exercise 3. Using the troubleshooting tools to debug errorsDuration: 1 hour |
| Overview | The exercise introduces you to the most commonly used troubleshooting tools that are available on DataPower appliances. |
| Learning objectives | After completing this exercise, you should be able to:* Set up and analyze the default system logs
* Configure a multi-step probe to conduct message-level process debugging
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| Unit 9. DataPower cryptographic tools and SSL setupDuration: 1 hour |
| Overview | This unit describes how to use the cryptographic tools to create keys and certificates. You learn how to set up the DataPower objects that are used to validate certificates and configure certificate monitoring to ensure that only valid certificates exist on the appliance. Finally, you learn how to secure connections by using SSL to and from the DataPower appliance. |
| Learning objectives | After completing this unit, you should be able to:* Explain how to use the DataPower tools to generate cryptographic keys
* Create a cryptographic identification credential object that contains a matching public and private key
* Create a cryptographic validation credential to validate certificates
* Set up certificate monitoring to ensure that certificates are up-to-date
* Configure an SSL server profile that accepts an SSL connection request from a client
* Configure an SSL client profile that initiates an SSL connection from a DataPower service
* Configure an SSL SNI server profile that supports SNI requests
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| Exercise 4. Securing connections with SSLDuration: 1 hour |
| Overview | This exercise shows you how to create cryptographic keys by using the DataPower crypto tools. You create a crypto identification credential that stores certificate-key pairs that are used in securing SSL connections. You also create a validation credential object for validating certificates. These objects are used as part of a crypto profile. Finally, you modify a crypto profile to use the new key and certificate. |
| Learning objectives | After completing this exercise, you should be able to:* Use the DataPower cryptographic tools to generate cryptographic keys
* Use a cryptographic key and certificate object to create a cryptographic identification credential
* Use a validation credential object to validate certificates
* Create an SSL proxy profile to accept SSL connections from a client
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| Unit 10. Logging and log targetsDuration: 30 minutes |
| Overview | This unit shows you how to capture information that can be generated by DataPower events by using the logging utilities, such as the log target and log action. You learn how to configure a log target to limit the messages to specific severities, categories, and event codes. You also learn how to send log messages off the box to a remote system. Finally, the unit describes SNMP support within the appliance. |
| Learning objectives | After completing this unit, you should be able to:* Describe the publish/subscribe model of log targets and log events
* Define log levels, event categories, and event codes
* Create a log category to capture messages that objects on the appliance generate
* Generate a test message for the log category
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| Exercise 5. Logging to an external systemDuration: 1 hour |
| Overview | This exercise shows you how to capture log messages and move them off the DataPower appliance. The DataPower appliance has limited memory capacity, and the on-box system logs can quickly become full. As a logging good practice, log messages that are generated on the appliance should be moved off the appliance. Most enterprises already have a logging system such as syslog, and the DataPower appliance supports many mechanisms for integrating with these systems. |
| Learning objectives | After completing this exercise, you should be able to:* Use the Generate Log Event action to test the log target configuration
* Create a log target that subscribes to specific log categories
* Create a log target that sends log messages to an external logging system
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| Unit 11. Course summaryDuration: 5 minutes |
| Overview | This unit summarizes the course and provides information for future study. |
| Learning objectives | After completing this unit, you should be able to:* Explain how the course met its learning objectives
* Access the IBM Training website
* Identify other IBM Training courses that are related to this topic
* Locate appropriate resources for further study
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For more information

To learn more about this course and other related offerings, and to schedule training, see **ibm.com**/training

To learn more about validating your technical skills with IBM certification, see **ibm.com**/certify