

VMware Aria Automation: Orchestration and Extensibility

Course Overview

During this five-day course, you focus on using VMware Aria Orchestrator to extend the functionality of VMware Aria Automation. You learn how to provide XaaS (Anything as a Service) and implement Machine Lifecycle Extensibility using the VMware Aria Automation Event Broker. You also learn how to create Aria Orchestrator workflows and Aria Automation ABX actions. You learn about various features, including basic scripting implementation along with logic processing to implement a variety of functions to use in your environment. This course teaches implementing debugging, loops, conditions, and user interactions in Aria Orchestrator.

The course introduces the new Aria Orchestrator HTML 5 interface, along with API calls and REST functions, to give you the groundwork to implement a variety of plugins and scripts. This course is designed to give you the tools to craft custom solutions in the product.

Course Objectives

By the end of this course, you should be able to meet the following objectives:

- Describe the features, benefits, components, and integration of Aria Orchestrator and Aria Automation
- Describe the role of Aria Orchestrator workflows and content elements in automation
- Use the Aria Orchestrator client to access and navigate the Aria Orchestrator platform, and to import and run library Aria Orchestrator workflows
- Design, develop, and run custom reusable Aria Orchestrator workflows
- Use VMware APIs in the Aria Orchestrator workflow
- Integrate Aria Automation with Aria Orchestrator instances to extend infrastructure as a service (IaaS) system life cycle processes and to enhance and deliver custom IT services
- Use anything as a service (XaaS) to extend Aria Automation into other enterprise systems
- Use the Aria Automation event broker service to trigger specific Aria Orchestrator workflows
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Target Audience

- Experienced VMware administrators, automation and orchestration specialists, system integrators, and private cloud and public cloud administrators
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Prerequisites

Before taking this course, you should have completed the following course(s):

- [VMware Aria Automation: Install, Configure, Manage \[V8.1x\]](#) course or equivalent knowledge

You should also have the following understanding or knowledge:

- Knowledge of VMware vSphere
- Working knowledge of scripting or programming using JavaScript, Windows PowerShell, Perl, Java, Python, or similar languages. All code is provided during class.

Course Delivery Options

- Classroom
- Live Online
- Private Training

Course Modules

- 1 Course Introduction
 - Introductions and course logistics
 - Course objectives
- 2 Overview of Aria Automation and Aria Orchestrator
 - Explain the features of Aria Automation
 - Identify the differences between Aria Automation 8 and Aria Automation Cloud
 - List the services provided by Aria Automation
 - Explain the purpose of the cloud template designer
 - Explain the features of Aria Orchestrator
 - Explain the architecture of Aria Orchestrator
 - List the Aria Orchestrator plug-ins
 - Run a Aria Orchestrator workflow
 - Use a workflow run
- 3 Using Schema Elements
 - Explain the scriptable task
 - Specify the programming language that is used in scriptable tasks
 - Compare using a scriptable task with an action
 - List the schema elements used to start workflows
 - Supply the inputs and capture the outputs of a workflow
 - Explain modular programming
 - Call an action from a workflow
 - Supply inputs to an action
 - Rename the actionResult variable
- 4 Working with Variables
 - Determine when to use an input, output, or variable
 - List the different data types supported by Aria Orchestrator
 - Select valid JavaScript identifiers
 - Adhere to the camel case naming convention
 - Explain the purpose of binding
- 5 Handling Exceptions, Logging, and Debugging
 - Determine whether to use an inward or outward binding
 - Pass data between schema elements in a workflow
 - Use wrapping to simplify an overly complex workflow
 - Use wrapping to add functionality to a workflow
 - Use wrapping to protect your workflow and infrastructure from users
 - Describe an API
 - Consult the API documentation for VMware APIs
 - Use Aria Orchestrator API Explorer
 - Define the inputs and output of a Aria Orchestrator action
 - Organize Aria Orchestrator actions into modules
 - Apply good modular programming habits when creating Aria Orchestrator actions
 - Customize a workflow's input form
 - Make an input mandatory
 - Ensure that end users supply a valid input
 - Explain the use cases for User Interactions
 - Specify the approvers for a User Interaction
 - Respond to a User Interaction
- 6 Branching and Looping
 - Identify the function of exception handling
 - Create an exception handler
 - Use various methods to throw an exception within a workflow
 - Configure the logging level in Control Center
 - Access Aria Orchestrator logs
 - Send logging messages from a workflow
 - Set debugging breakpoints
 - Run a workflow through the Aria Orchestrator debugger
 - Monitor variable values
 - Use the decision element in a workflow
 - Use the decision activity element in a workflow



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- Use the switch element in a workflow
 - Create a looping workflow by using a Foreach element
 - Create a looping workflow by using a decision element
- 7 Working with Assets
- Create a configuration element and add variables to it
 - Create a workflow that uses variables to link to the configuration element
 - Use a ConfigurationElement type variable and JavaScript to extract the values from a configuration element
 - Create a resource element
 - Create a workflow that uses a resource element
 - Import a package
 - Create a package
 - Export a package
- 8 Working with Plug-Ins
- Understand what Aria Orchestrator plug-ins do
 - Download the Aria Orchestrator plug-ins
 - Locate the plug-in configuration workflows
 - Configure the SSH plug-in
 - Remotely execute a command on an SSH server
 - Copy files from the Aria Orchestrator server to an SSH server
 - Copy files to the Aria Orchestrator server from an SSH server
 - Add a REST server to Aria Orchestrator
 - Add REST operations to Aria Orchestrator
 - Invoke a REST operation
 - Add the Aria Automation hosts to the inventory
 - Run the workflows to manage Aria Automation
 - Run the REST operations to manage Aria Automation
 - Search the Aria Automation API
- Add Windows PowerShell hosts to the inventory
 - Invoke scripts on Windows PowerShell hosts
 - Create Windows PowerShell workflows
- 9 Working with Versioning and Git
- List when new versions are created
 - Increase the version number
 - Compare two versions
 - Revert to a version
 - Create a Git Repository
 - Push Changes to a Git Repository
 - Pull Changes from a Git Repository
- 10 Working with Time-Related Schema Elements
- Schedule a workflow manually or programmatically
 - Cause a workflow to sleep using JavaScript code
 - Cause a workflow to sleep using a pre-defined schema element
 - Cause a workflow to wait until a specific time and date
 - Cause a workflow to wait upon an event
- 11 Introduction to Extensibility
- Explain what VMware means by the term extensibility
 - Explain the Event Broker Service
 - Explain Life Cycle Integration
- 12 Using the Event Broker
- Explain what the Event Broker Service does
 - Explain what an event subscription is
 - List the supported event topics
 - Explain what an event subscription does
 - Create an event subscription
 - Monitor invocations of runnable items
 - Explain what a payload is
 - Explain what a event topic parameters are
 - Extract the contents of a payload



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13 Using ABX Actions

- Describe an ABX action
- Describe Function As A Service (FaaS)
- Explain when to use an ABX action and when to use a Aria Orchestrator workflow
- Transmit information between Aria Automation and an ABX action script
- Create an ABX action that is called by a Aria Automation Subscription

14 Working with Services, Resource Actions, and Custom Resources

- Describe the Service Broker service cloud templates
- Create Content Source from the Aria Orchestrator workflows

- Share content from the new Content Source
- Request the shared content from Catalog
- Create custom resources
- Create resource actions

15 vSphere Client Code Capture

- Recognize how to capture code in the vSphere Client
- Use code in a Aria Orchestrator workflow or PowerCLI script



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