



**Enterprise Computing Solutions - Education Services**

## **TRAINING OFFERING**

---

**You can reach us at:**

Arrow Enterprise Computing Solutions Ltd, Part 1st Floor, Suite 1D/1, Central House, Otley Road, Harrogate, HG3 1UG

Email: [educationteam.ecs.uk@arrow.com](mailto:educationteam.ecs.uk@arrow.com)  
Phone: 0870 251 1000



# Citrix Virtual Apps and Desktops Advanced Administration (2402 LTSR)

CODE:	LENGTH:	PRICE:
CTX_CVAD-301	40 Hours (5 days)	£3,095.00

## Description

### **This course replaces the outdated CWS-322**

Designed for experienced IT professionals, this course expands the foundational administrative skills by introducing scalability, redundancy, and security configurations as well as troubleshooting techniques for common issues. You will learn to build and combine App Layers to optimize management of your app and desktop images. You will learn how to implement Workspace Environment Management to improve logon times, centralize user settings management, and optimize the performance of machines. You will leave this course with a good understanding of how to manage more complex solutions such as multi-location environments with configurations around StoreFront, the Delivery Controllers, App Layering, and Workspace Environment Management.

Product Versions Covered: Citrix Virtual Apps and Desktops 2402 LTSR, App Layering 2403, and WEM 2407

**This course replaces the discontinued courses "CWS-315: Citrix Virtual Apps and Desktops 7.1x Advanced Administration" as well as "CWS-322: Citrix Virtual Apps and Desktops 7.x Advanced Configuration and WEM Administration".**

## Objectives

### Learning Objectives

- How to implement advanced administration concepts such as troubleshooting, backups, disaster recovery, scalability and redundancy for a Citrix Virtual Apps and Desktop Site
- Security considerations and configurations including multi-site management using zones.
- Create, administer, and manage App Layering OS, platform, application, elastic, and user layers.
- Integrate Citrix App Layering Into a Citrix Virtual Apps and Desktop deployment.
- Install and initialize WEM and integrate into Citrix Virtual Apps and Desktops and Citrix DaaS.
- Configure WEM features to improve the end user environment and virtual resource consumption.
- Migrate an on-premises WEM deployment to WEM service.

## Prerequisites

Strong foundational knowledge of:

- Windows Server and Desktop operating systems.
- Active Directory, Policies, Profiles, Networking and Hypervisors.

## Programme

### **Module 1: Introduction to Citrix Virtual Apps and Desktops Advanced Config, Redundancy, and Scalability**

- Citrix Virtual Apps and Desktops Redundancy and Scalability
- StoreFront and NetScaler Gateway
- Site Infrastructure Redundancy and Scalability
- Machines Running the Virtual Delivery Agent

### **Module 2: Manage CVAD Multiple Locations**

- Zones
  - VDA Registration in a Multi-Zone Environment
  - Zone Preference
  - Optimal Gateway Routing and Zones
  - StoreFront Resource Aggregation
  - Managing StoreFront Store Subscriptions in a Multi-Location Environment
- Module 3: Backups and Disaster Recovery**

- Backups
  - Disaster Recovery Considerations
  - Disaster Recovery Process
- Module 4: Advanced Authentication Methods**

- Multi-factor Authentication - RADIUS and One Time Passwords (OTP)
  - Multi-factor Authentication – Smart Card Authentication
  - Federated Authentication
- Module 5: App and Data Security**

- Introduction to Application Security
  - Preventing Jailbreak Attacks
  - Minimizing the Impact of Attacks
- Module 6: Secure VDAs**

- Transport Layer Security (TLS) Virtual Delivery Agent (VDA) Encryption
  - Microsoft Group Policy Objects (GPOs) and Citrix Policies
  - Image Management
- Module 7: Introduction to Troubleshooting**

- Troubleshooting Methodology
  - Resource Tools and Utilities
  - Introduction to PowerShell
  - Troubleshooting StoreFront
  - Troubleshooting NetScaler Gateway
  - Troubleshooting Access and Authentication
  - Troubleshooting App/Desktop Launch
- Module 8: Troubleshoot Access Issues**

**Module 9: Troubleshoot Delivery Controller Issues** • Validating FlexCast Management Architecture (FMA) Services  
**Module 10: Troubleshoot Virtual Delivery Agent (VDA) Registration Issues**

- Troubleshooting Virtual Delivery Agent (VDA) Registration
- Module 11: Troubleshoot HDX Connection Issues**

- Troubleshooting HDX Connections
- Module 12: Intro to App Layering and Architecture Overview**

- Citrix App Layering Introduction
  - Architecture
- Module 13: OS Layers** • OS Layer **Module 14: Platform Layers** • Platform Layers

- Elastic App Layers

**Module 15: App Layers** • App Layers **Module 16: Elastic App Layers and User Layers** • User Layers

**Module 17: Deploy a Layered Image** • Using Layered Images with CVAD  
**Module 18: Layer Priority and Maintaining an App Layering Environment**

- Layer Priority
- Updating Layers
- Maintaining and Updating the App Layering Environment
- Common Citrix App Layering Considerations and Additional Resources

- WEM Features and Benefits
- WEM On-Premises Components and Deployments
- WEM Service Components and Deployments
- WEM Component Communication Workflows

**Module 19: Intro to WEM and Architecture Components** • WEM Service Component Communication Workflows

- On-premises WEM: Leading Practice Installation Prerequisites and Steps
- Creating the WEM Database
- Running the WEM Infrastructure Service Configuration Utility
- WEM On-Premises vs WEM Service
- WEM Service: Leading Practice Installation Prerequisites and Steps
- ADMX Template Configuration

**Module 20: WEM Deployment Install** • WEM Agent Installation

- On-Premises WEM and WEM Service Consoles
- WEM Web Console
- WEM Initial Setup

**Module 21: WEM Consoles and Initial Setup** • Migrating GPO settings to WEM

- WEM System Optimization Overview
- WEM CPU Management
- WEM Memory Management
- Additional System Optimization Features
- WEM Log On Optimization Overview
- WEM Assigned Actions
- WEM Environmental Settings

**Module 22: WEM System and Log On Optimization** • Citrix Profile Management In WEM

- WEM Security Management Features
  - Privilege Elevation and Process Hierarchy Control
- Module 23: WEM Security and Lockdown Features** • WEM Transformer

- WEM Settings Processing and WEM Agent Caches

**Module 24: Planning - The WEM Agent** • WEM Agent Integration with Citrix Virtual Apps and Desktops and Citrix DaaS

- WEM Monitoring and Reporting
- WEM On-Premises Troubleshooting
- WEM Service Troubleshooting

**Module 25: WEM Monitoring, Reporting, and Troubleshooting** • WEM Agent Troubleshooting

- Upgrading Workspace Environment Management

**Module 26: Upgrading WEM and Migration to WEM Service** • WEM On-Premises Migration to WEM Service

## Follow on courses

CWS-415: Citrix Virtual Apps and Desktops 7 Architect Design Solutions

## Test and Certification

This course prepares for the certification "**Citrix Certified Professional- Virtualization**" (CCP-V).

## Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
22 Sep 2025	Virtual Classroom	BST	English	Instructor Led Online		£3,095.00
13 Oct 2025	Virtual Classroom	BST	English	Instructor Led Online		£3,095.00
24 Nov 2025	Virtual Classroom	GMT	English	Instructor Led Online		£3,095.00
08 Dec 2025	Virtual Classroom	GMT	English	Instructor Led Online		£3,095.00

## Additional Information

[This training is also available as onsite training. Please contact us to find out more.](#)