

Solutions to Improve VDI Adoption Rates



More companies than ever have moved to a virtual desktop infrastructure. The reasons are simple and compelling: VDI is easy and cost effective for most enterprises.

However, some companies have struggled to overcome user resistance to adopting VDI. The primary and oft-heard complaint is that virtual desktop users must endure poor user experiences compared to physical desktop users. Most notably, slow login times and slow desktop and application responses are often associated with VDI.

Optimizing the user workspace and proper data management can eliminate these concerns, speeding up the responsiveness of VDI so users can take full advantage of the benefits.

This solution guide discusses several challenges to VDI adoption and how Citrix, Ivanti and Avanite can help companies take advantage of the cost-saving, productivity-enhancing benefits offered by virtual workspaces. It also provides guidance for deploying Avanite and Ivanti solutions in a Citrix infrastructure.

Business Challenge and Need for Bundled Solution

Organizations that have moved into the VDI space face a number of challenges. These include:

- **Resistance to VDI adoption due to user experience and performance shortfalls:** Virtual desktops may not always match the performance of the old physical desktops. Certain aspects of VDI performance such as slow responsiveness and login times have led to increased user resistance to VDI implementation in many organizations. User resistance is the number one cause of VDI implementation failure.¹
- **Browser data in desktop provisioning:** Administrators may not have full control over users' browser data, potentially leading to a range of security and productivity issues. Excessive or insecure web data, for example, can slow login times to VDI sessions and leave the data center exposed to vulnerabilities.
- **Need for managed data:** Unmanaged data can create bottlenecks in storage and transmission of data. This may slow down login times and responsiveness, further increasing user resistance to VDI deployments.
- **The need for secure remote access to VDI:** In today's threat-laden business landscape, security must transcend the physical. Though VDIs may be less susceptible to certain threats than physical desktops, virtual desktops are susceptible to many cyberthreats – including ransomware. This is especially the case for non-persistent VDI configurations.

A bundled solution will secure VDI access, keep track of user data and provide a better user experience without compromising productivity. Specifically, the bundle addresses these challenges by focusing on three key areas:

1. Providing a unified experience for users
2. Enhancing data security
3. Enabling the context-driven automation of common chores

The specific benefits provided by this bundled solution, grouped within the vital areas of need noted above, are as follows.

- **Providing a unified experience:**
 - Customized VDI to satisfy any use case
 - Secure remote PC access
 - Simplified app management across VDI
 - On-demand personalization and data
 - Context aware workspaces
 - CPU/memory control
 - Application control
 - Policy controlled web data
- **Enhancing data security:**
 - FIPS 140-2 compliant and common criteria certified to meet the highest industry security standards
 - Prevention of installation or execution of unauthorized apps
 - Provision for user lockdown based on verified user variables
 - Prevent access to specific application or OS content based on user context
 - Privacy protection enforced by handling and removing known advertising and tracking cookies
 - Removal of potentially compromising data (such as browsing history)

- Blacklist or whitelist data related to certain internet sites and web applications
- Data management of Chrome, Firefox, IE and Edge
- Granular cookie management
- **Context-driven automation:**
 - Enablement of contextual access
 - Persistent Windows or Linux virtual desktops that can be fully customized to meet the needs of the most demanding users, anywhere on any device
 - Automated logins
 - Automated access to the nearest printers, icons, drives etc., based on user profile
 - Removal of full admin rights and the elevation of a user's privileges based on the application or OS component being accessed

Products Included in This Bundle

This bundled solution teams up products from Citrix, Avanite and Ivanti. These products work in perfect symbiosis in eliminating common stumbling blocks to VDI adoption:

- **Citrix Virtual Apps and Desktops, formerly XenDesktop and XenApp:** Citrix VDI provides a complete virtual application and desktop solution that meets all user and administrator needs from a single, easy-to-deploy platform. It gives employees the freedom to work from anywhere while cutting IT costs. Citrix VDI can deliver Windows, web, and SaaS applications or full virtual desktops to workers on any device, anywhere.
- **Avanite WebData Control:** Avanite WebData Control is the only software that can provide businesses with a complete solution around the management of web data. It gives administrators full control over whether to keep or remove data downloaded to machines based on a series of centrally configured rules. Offering complete cookie management and more, customers have found WebData Control an essential part of their business solution.
- **Ivanti User Workspace Manager:** User Workspace Manager is a suite of workspace management solutions that helps simplify desktop deployment and administration, reduce IT costs and secure endpoints. User Workspace Manager includes the following products:

- Application Control: Provides application control, ransomware protection and privilege/policy management
- Environment Manager: Delivers on-demand personalization and context-aware policy controls
- Performance Manager: Helps IT teams maximize user density and deliver an optimal user experience

Technical Overview

Deployment of this bundled solution will be simple to implement for virtually all business organizations. Key deployment considerations for each component of this bundle include the following:

Citrix: Deploying Citrix Virtual Apps and Desktops begins with installing the following components. This process prepares for delivery of applications and desktops to users inside your firewall.

- One or more Delivery Controllers
- Citrix Studio
- Citrix Director
- Citrix StoreFront
- Citrix License Server
- One or more Citrix Virtual Delivery Agents (VDAs)
- Optional components and technologies such as the Universal Print Server, the Federated Authentication Service, and Self-Service Password Reset

System requirements for Citrix Virtual Apps and Desktops Install can be found [here](#).

With Citrix Virtual Apps and Desktops Service on Citrix Cloud, you can now deliver virtual apps and desktops to any device, and leave most of the product installation, setup, configuration, upgrades and monitoring to Citrix. You maintain complete control over applications, policies, and users while delivering the best user experience on any device, under any network condition.

You connect to the Citrix Virtual Apps and Desktops Service through Cloud Connector, which serves as a channel for communication between Citrix Cloud and your resource locations. Cloud Connector enables cloud management without requiring any complex networking or infrastructure configuration such as VPNs or IPsec tunnels. For the Citrix Virtual Apps and Desktops Service, resource locations contain the machines and other resources that deliver applications and desktops to your subscribers.

Ivanti: User Workspace Manager products – Application Control, Environment Manager, Performance Manager – are installed and run on endpoints using a lightweight agent. The agent must be deployed on the endpoint.

Ivanti’s optional three-tier architecture includes IIS Web Server and SQL Server for user personalization and/or agent and configuration deployment and centralized auditing.

User Workspace Manager software functions perfectly in Citrix virtual environments. A full list of compatible Citrix solutions is available [here](#).

Additionally, Environment Manager Configurations can be deployed from the Ivanti Management Center without being wrapped inside an MSI file and delivered to a custom configuration location. This can be used to support non-persistent Citrix Virtual Desktops, formerly XenDesktop, VDI environments by PVS.

The Ivanti Deployment Agent can pause computer (or VDI image) startup until an Environment Manager configuration is available, allowing Citrix Virtual Desktops non-persistent VDI images to leverage the latest available Environment Manager configuration. Finally, image preparation enables persistent settings to be removed prior to the image being sealed.

Ivanti licensing is based upon the number of users. Licenses can easily be viewed and downloaded through the [Ivanti Licensing Portal](#).

Avanite: Avanite agents are also deployed on endpoints. The only prerequisite for WebData Control is Microsoft .Net version 4.5 or greater. WebData Control may be installed either manually or through an automated process.

Avanite licensing is based upon the number of users.

Solution Description

Teaming Ivanti and Avanite with Citrix in creating a unified bundled solution is a simple process. Following are step-by-step overviews of the installation process for Ivanti User Workspace Manager and Avanite WebData Control.

Ivanti User Workspace Manager Installation

The Deployment Agent must be installed on all endpoints that are to be managed through the Ivanti Management Center — a centralized deployment and auditing solution. The Agent then does all the work on the endpoint. User personalization is saved to a SQL database, and can be provided to individual endpoints as needed.

User Workspace Manager components can be installed using either the User Workspace Manager Installer or manually by using the individual MSIs. Products can then be installed with the Management Center — either to create integrated enterprise-scale solutions or installed as a standalone product aimed at evaluations.

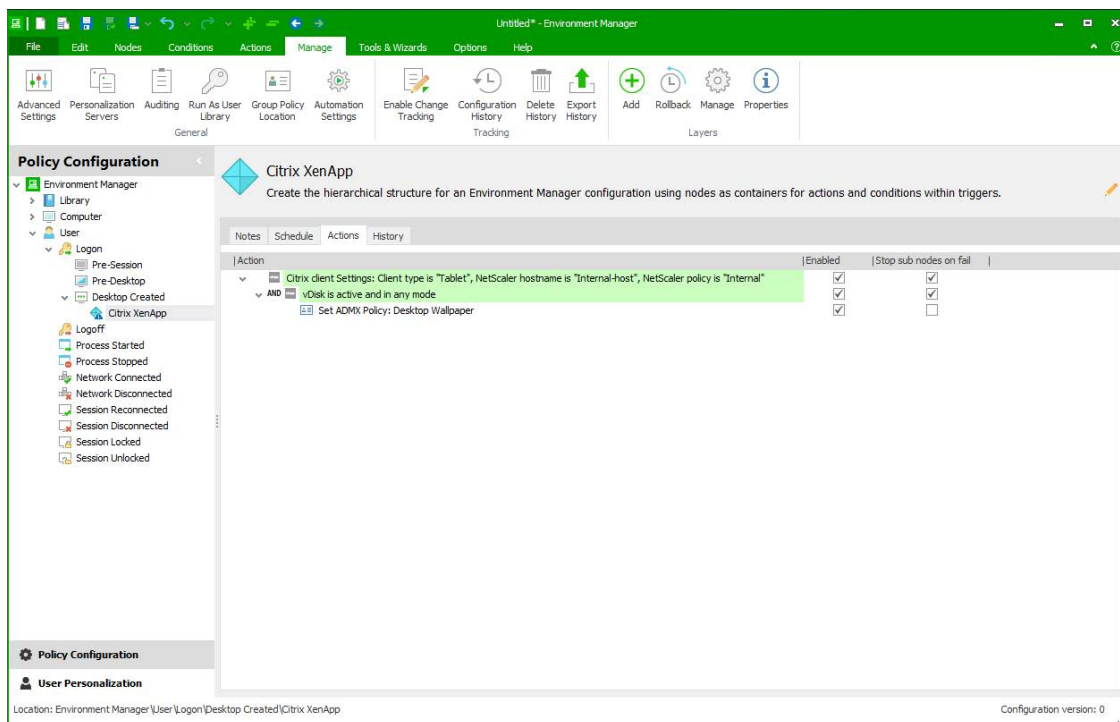
The User Workspace Manager Installer provides a comprehensive process for installing any combination of User Workspace Manager products in a single fully integrated sequence. The installer performs a complete check for system prerequisites and provides the option of installing required technologies automatically.

There are three types of User Workspace Manager installations: Evaluation, Clients & Consoles Only and Advanced. This solution guide discusses the Advanced installation:

- Run the User Workspace Manager Installer by executing setup.exe from the installation media.
- The Welcome screen displays.
- Click Next.
- The License Agreement screen displays.
- Read the company End User License Agreement. If you agree to the terms, select 'I accept the terms in the License Agreement' and click Next.
- The Installation Type screen displays.
- Select Advanced and click Next.
- The Product Selection screen displays.
- Expand the Products to see all the product components that may be selected for installation.
- The Server components do not display if the Operating System is not compatible. Only the Product Consoles can be selected for install.
- Select all the product components to be installed.
- To install multiple instances of the Personalization Server or Management Server:

- i. Select Add new Personalization/Management Server instance.
 - ii. The Add New Instance dialog displays.
 - iii. Enter the name of the additional instance.
 - iv. Click OK. All instance names must be unique.
 - v. The server instance now displays in the list of components for selection. You can add up to 16 instances.
- If you select Back on the Installer a message displays: Remove Pending Instance [instance name]?. Click OK to continue going back and to remove the instance, or click Cancel to remain on the Product Selection screen and keep the instance.
 - Click Next to display the Summary screen.
 - A summary of the products selected to install displays. Click Next.
 - The SQL Server Installation screen displays.
 - Select whether a local SQL instance is to be installed. The default selection is No.
 - If Yes is selected, the Microsoft Software License Terms display. Read the terms and if you accept them, select 'I accept the terms' in the License Agreement.
 - Alternatively, to use a remote SQL instance, accept default selection No and click Next.
 - If there are any prerequisites missing, the Prerequisites screen displays.
 - The Prerequisites screen lists the prerequisites that are not currently installed. Select Install All to automatically install all missing prerequisites.
 - Once all of the components are successfully installed, the Installation Directory screen displays.
 - The default installation directory is C:\Program Files\AppSense. To continue the installation to the default location click Install. Alternatively, browse to select a new installation location. Once you have selected the installation, click Install.
 - The Product Install screen displays the progress of the installation.
 - If there are missing server prerequisites the Server Prerequisites screen displays. Click Install All to install all the components listed.
 - Once all product components have been installed, the Install Complete screen displays.

- Click on the server hyperlink; <http://<SERVER>:7750>, to display the Server Configuration Portal in a web browser.
- Use the portal to configure the Management and Personalization servers, server instances and databases.
- Click Finish to exit the Installer and open the Product Documentation.
- See figure below to see how User Workspace Manager and Environment Manager interact with Citrix Virtual Apps and Desktops.



Avanite WebData Control Installation

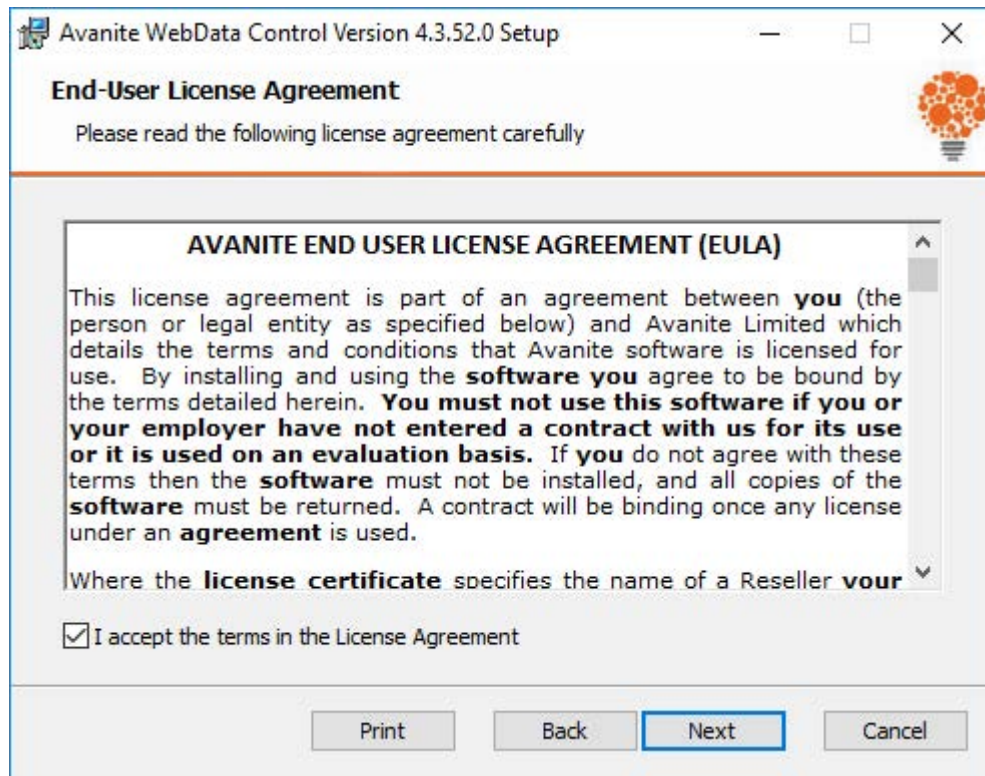
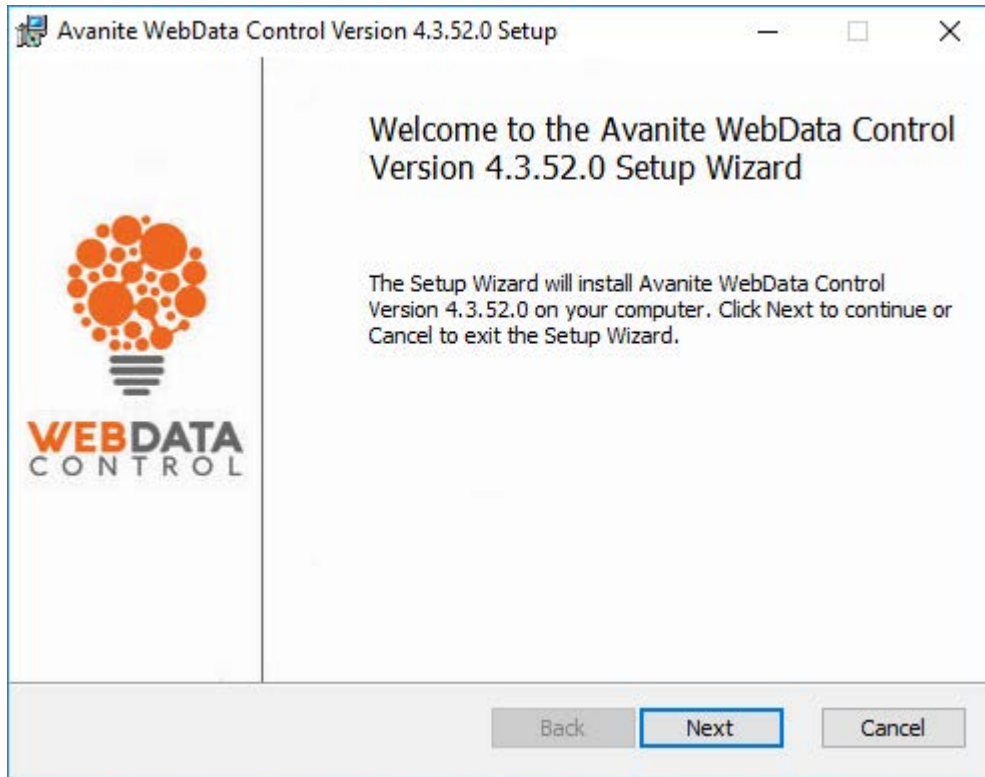
WebData Control may be installed either automatically or manually as an agent on the endpoint; both automated and manual processes are quite simple. WebData Control may then be configured as desired using the ADMX templates supplied. It is recommended that ADMX-based policies are delivered via Ivanti User Workspace Manager.

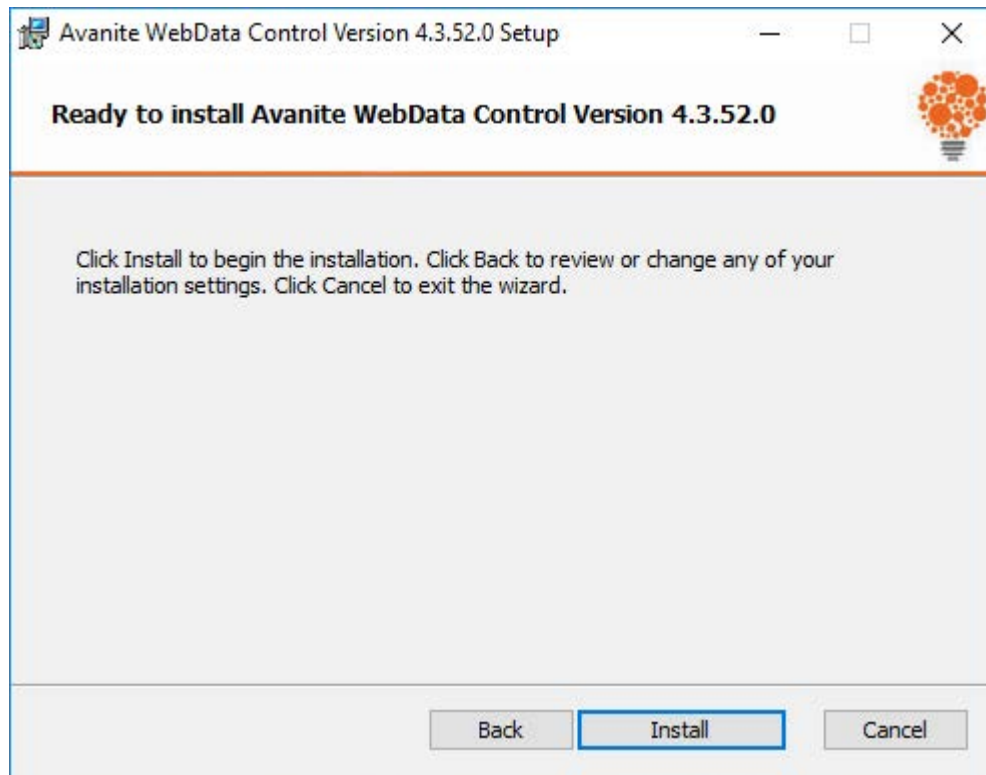
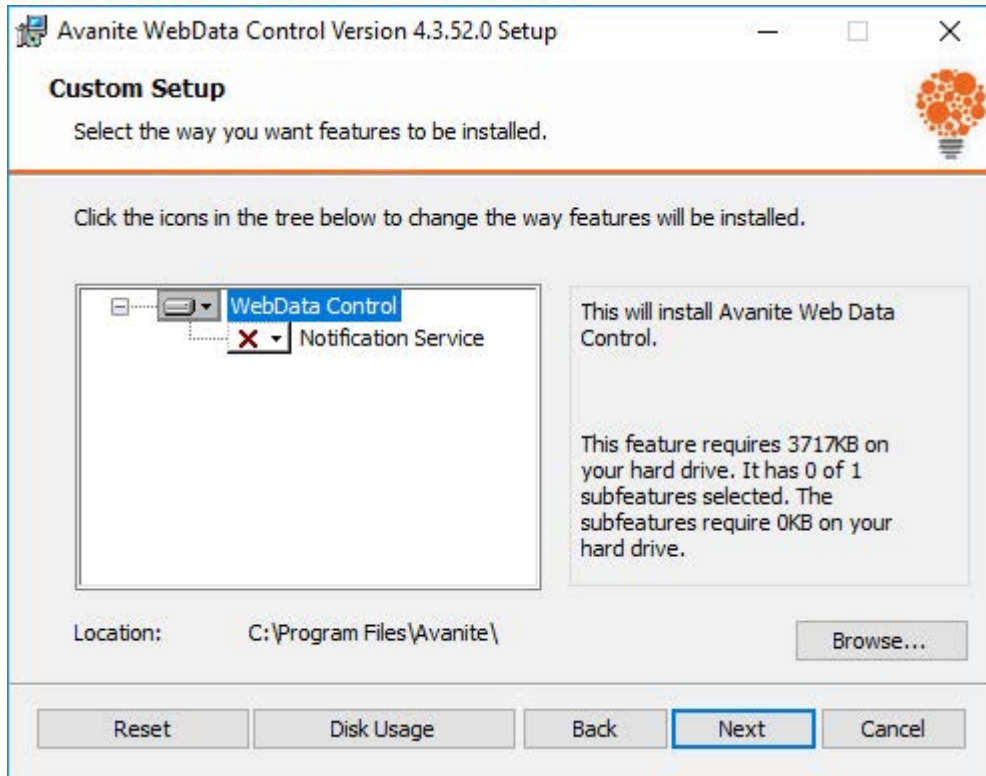
The installation steps are as follows:

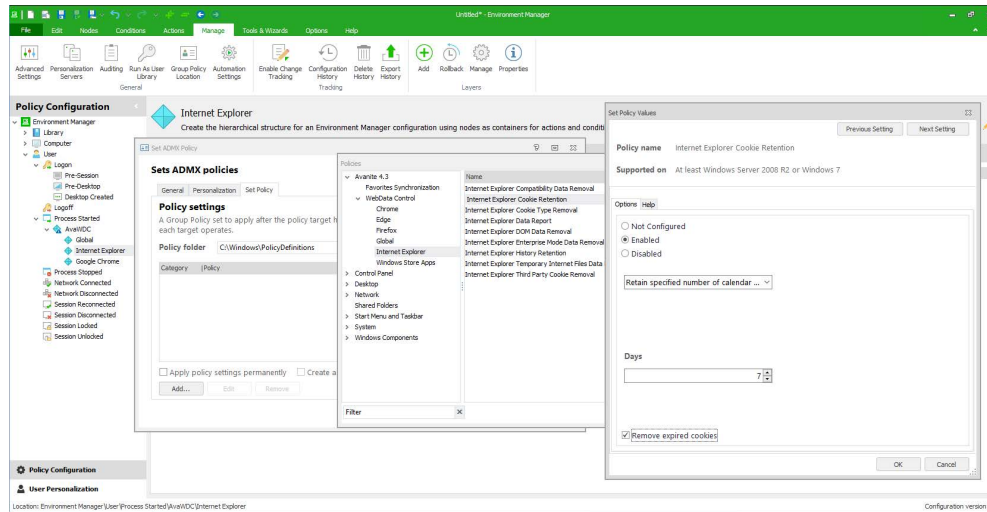
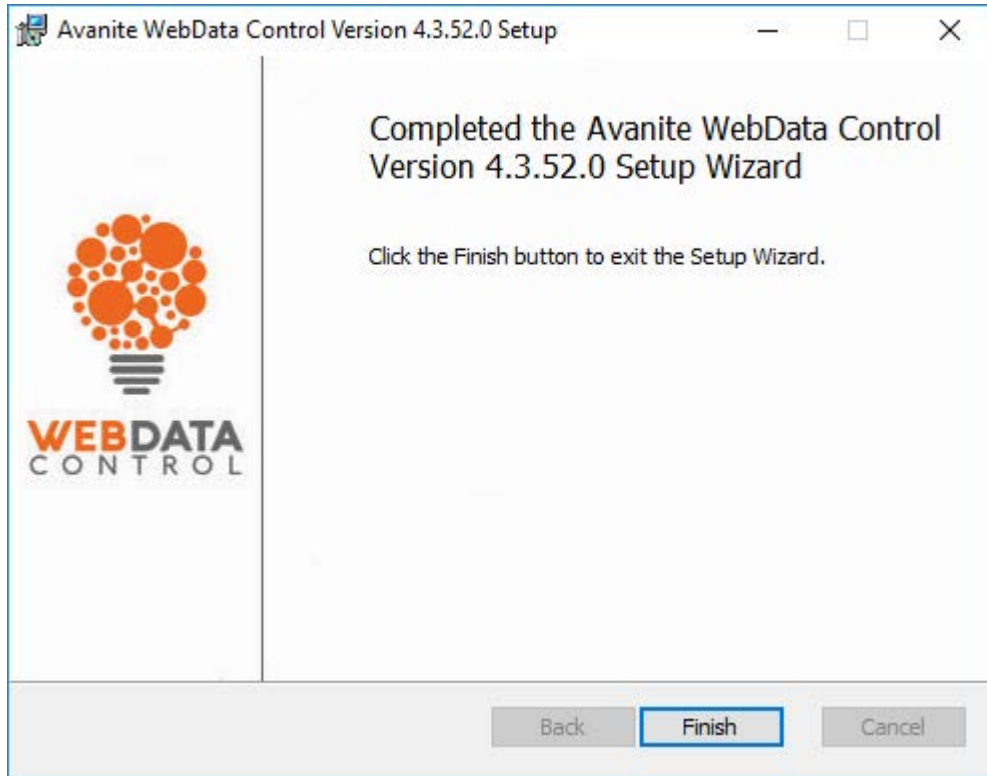
- Manual Installation:
 - Run AvaWDCx86.msi or AvaWDCx64.msi, depending on system architecture. Click Next to continue to the installation.
 - Read the EULA and check the 'I accept the terms in the License Agreement' box if you agree. Click Next to continue the installation.
 - Select the destination folder where the application will be installed and click Next. Installing into the default folder is recommended.
 - Click Install.
 - After the installation is complete, click Finish.

See screenshots below.

- Automated installation: Automated installations may be performed using an existing software deployment solution, such as Microsoft System Center Configuration Manager or Ivanti Endpoint Manager. Further information can be found on the Avanite website in the [documentation](#) section.







A Proven Bundled Solution That Eliminates User Resistance to VDI Adoption

The use of virtual desktops has grown steadily in recent years, and there's no end in sight to the growth of VDI deployment. Through the next several years VDI adoption rates are forecast to remain strong, exceeding more than 10 percent growth annually.

But despite of the cost-saving and productivity benefits provided by VDI, users are sometimes resistant to transitioning from physical machines to virtual desktops. Users new to VDI sometimes complain of slow login times, along with slow desktop and application responses. As a result, companies have sometimes been faced with an uncomfortable choice: deploy VDI in the face of user dissatisfaction, or forgo the substantial financial and productivity benefits enabled by VDI.

This bundled solution provided by Citrix, Avanite and Ivanti eliminates the need to make that choice. Companies that deploy this bundled solution can elevate the VDI user experience to one that equals, or exceeds, the user experience provided by traditional, physical machines – a true win-win for both organizations and employees.

For more information about Citrix Ready solutions and partners, visit [Citrix Ready Marketplace](#).

For more information about Avanite WebData Control, visit [Avanite's webpage](#).

For more information about the Ivanti User Workspace Manager suite of products, visit [Ivanti webpage](#).

¹<https://www.ivanti.com/solutions/needs/consolidate-vdi-images>

About Citrix Ready

Citrix Ready identifies recommended solutions that are trusted to enhance the Citrix Delivery Center infrastructure. All products featured in Citrix Ready have completed verification testing, thereby providing confidence in joint solution compatibility. Leveraging its industry-leading alliances and partner ecosystem, Citrix Ready showcases select trusted solutions designed to meet a variety of business needs. Through the online catalog and Citrix Ready branding program, you can easily find and build a trusted infrastructure. Citrix Ready not only demonstrates current mutual product compatibility, but through continued industry relationships also ensures future interoperability. Learn more at citrixready.citrix.com.