

# XenApp and XenDesktop 7.8

## AppDisk & AppDNA for AppDisk technology

### Frequently Asked Questions

March 2016

## Revision History

Revision	Change Description	Updated By	Date
1.1	Initial FAQ	Windows App Delivery PM & PMM	March 2016

## Executive Summary

With the XenApp and XenDesktop 7.8 release in February 2016, Citrix introduced new AppDisk app layering technology for all editions of XenApp and XenDesktop. This exciting new technology lets you manage applications independently from the underlying operating system (OS) golden (master) desktop or server image. In most scenarios, large enterprises create a base operating system image and then this base image is then replicated multiple times to create different departmental golden images. Associated departmental applications are installed in their respective golden image resulting in multiple golden images for each respective department such as human resource, finance, engineering, etc. As the complexity of the departmental application set grows, the number of golden images increases and the benefits of centralization decrease as IT is challenged with managing a multitude of golden images.

With AppDisk technology, you can manage departmental applications in an independent storage layer that can be dynamically associated with a base operating system golden image. AppDisk alleviates the management complexity of multiple, departmental-based images by instantly layering applications onto your golden image, making it easier than ever to deliver, install or update an application without changing or impacting the pristine, master image.

In addition, XenApp and XenDesktop Platinum customers have the benefit of integrating AppDNA compatibility reporting with AppDisk to instantly assess the compatibility of the AppDisk applications for the associated golden image without performing extensive testing. If AppDNA identifies a potential compatibility issue, AppDNA will provide step-by-step remediation guidance on how to resolve such compatibility issues with the associated golden operating system image alleviating the need for extensive user acceptance testing. AppDNA for AppDisk can also reordering multiple AppDisk layers for peak performance. Only Citrix XenApp and XenDesktop power of AppDNA compatibility reporting with the AppDisk application layer to simplify the on-going management and delivery of applications and desktops.

## AppDisk & AppDNA for AppDisk FAQs

In this document, you will find answers to many of the Frequently Asked Questions (FAQs) regarding both AppDisk and AppDNA for AppDisk now available in the XenApp and XenDesktop 7.8.

### Entitlement & Compatibility

#### **Is AppDisk available in all versions of XenApp and XenDesktop?**

Yes, AppDisk is available in XenApp Advanced, Enterprise and Platinum edition as well as XenDesktop VDI, Enterprise and Platinum edition. Refer to the [feature matrix on citrix.com](#) for more information on features by edition.

#### **Is AppDNA for AppDisk available in all versions of XenApp and XenDesktop?**

No, AppDNA for AppDisk is only available in the Platinum editions of XenApp and XenDesktop. Refer to the [feature matrix on citrix.com](#) for more information on features by edition.

#### **Which hypervisors can be leveraged for AppDisk?**

The XenApp and XenDesktop 7.8 release of AppDisk supports vSphere ESXi and XenServer. The 7.8 release does not currently support Hyper-V or Nutanix Acropolis, but support for Hyper-V and Acropolis may come in a future release.

#### **Can AppDisk be associated with both desktop and server operating systems?**

Yes, an AppDisk can be created and attached to both desktop OS and server OS virtual machines. In fact, the same AppDisk could be associated with both a XenApp (published app) and XenDesktop (published desktop) Delivery Group. Admins can also leverage AppDNA for AppDisk to ensure all applications in the AppDisk are compatible with the base desktop and/or server operating system image, as well as with other AppDisks.

## **Does AppDisk integrate with the existing XenApp and XenDesktop centralized image management technologies?**

Yes, AppDisk can be deployed using Citrix Provisioning Services (PVS) 7.8 or higher, or Machine Creation Services (MCS) included in release 7.8 or higher. AppDisks with either PVS or MCS supports pooled, random images – where users may get a different machine from a pool of machines, each time they login. In addition, AppDisk with MCS supports pooled assigned images - where users are assigned the same image from a group of pooled resources every time they access the environment.

## **Will AppDisk be supported on a physically installed server environment (non-MCS/non-PVS environment)?**

No, AppDisk is only supported with Machine Creation Services or Provisioning Services integration.

## **Can AppDisk and Personal vDisk (PvD) be utilized together?**

No, in this release, AppDisk and Personal vDisk cannot be used together on the same image.

## **Is AppDisk replacing Personal vDisk (PvD)?**

No, AppDisk provides a better way for IT to manage applications across centralized master, golden images. Personal vDisk (PvD) enables users to install and manage applications on their virtual desktop via a writeable volume that can persist settings outside of the user profile. Therefore they are different in nature and intent.

## **Can AppDisk be purchased or utilized independently of XenApp and XenDesktop?**

AppDisk is only available as a feature of XenApp and XenDesktop and is not sold separately. Therefore, AppDisk can only be used on a Citrix XenApp or XenDesktop workload.

## **Can you use AppDisk in 7.8 with our current XenApp 6.5 farm?**

AppDisk is only available as part of XenApp and XenDesktop 7.8; therefore, you would need to [upgrade your XenApp 6.5 farm to a 7.8 site](#) in order to leverage AppDisk. However, it should be mentioned that you could uninstall XenApp 6.5 from your 2008R2 server and install the 7.8 VDA (same OS, same applications) and you could leverage your 2008R2 server within the 7.8 architecture.

## **Could a non-Platinum edition customer purchase AppDNA for AppDisk without upgrading to Platinum?**

No, AppDNA is a Platinum only feature of XenApp and XenDesktop; therefore, customers need to upgrade to the Platinum edition if they are looking to utilization AppDNA for AppDisk.

## **Does DesktopPlayer support AppDisk?**

No, AppDisk is currently not supported with DesktopPlayer.

## **Do Linux virtual desktops (Hosted Shared or VDI) support AppDisk?**

No, AppDisk is currently only supported on Windows operating systems.

## **Architecture & Performance**

### **Are AppDisk layers ‘merged’ with the base operating system image at boot time?**

Yes, to the user and to the operating system all AppDisk applications appear as if they are installed on the local volume (example, C: drive).

### **Does the hypervisor (XenServer or vSphere) control the process of attaching the AppDisk to the base image?**

Yes, AppDisk layers are attached just like any other virtual disk that has been attached to the virtual machine via the hypervisor.

### **Is there application isolation with AppDisk?**

There is no application isolation in AppDisk. Apps in one AppDisk can talk to apps in another AppDisk. The operating system will treat all apps installed in all associated AppDisk layers like a locally installed app. If application isolation is required, the preferred solution is to isolate individual apps using App-V.

**Can each AppDisk and its associated applications be moved as a single unit?**

Yes, an AppDisk is a virtual disk (VHD or VMDK) and operates on the same premise as any other virtual disk when being moved. Therefore, yes, the AppDisk and its installed applications will act as a single unit when being moved from machine to machine.

**Can one AppDisk be assigned to different operating system images?**

Yes, as long as applications within the AppDisk support the target operating systems. Some applications might have special install methods or requirements that vary by operating system. Use AppDNA to help navigate application compatibility for such applications, and determine if a separate AppDisk is required for each potential combination.

**Is the server or desktop image performance impacted when an AppDisk is attached?**

In early testing, we saw negligible impact on a single OS image. The AppDisk filter driver had a less than 6-8% total impact on the CPU at the hypervisor, which is not noticeable within a single OS instance. However, the performance impact will vary according to the number of AppDisk layers being attached and number of users.

**Are there limitations to the number of AppDisk layers that can be attached to a single image?**

There is no hard-limit on the number of AppDisk layers per virtual machine, any AppDisk limitations are based on resource availability and the capabilities of the underlying hypervisor. At the time of the 7.8 release, Citrix had tested up to 16 AppDisk on both XenServer 6.5 SP1 (90233c) and vSphere 6.0 Update 1a.

**Can an AppDisk be attached while a VM is running?**

In this 7.8 release, an AppDisk can only be attached at boot time; therefore, an AppDisk cannot be attached while a VM is running.

**Can an AppDisk created for a 64-bit OS be attached to a 32-bit VM or vice versa?**

No, you will need to create an AppDisk for x86 and a separate AppDisk for x64. They are not interchangeable.

**Is the full AppDNA infrastructure required for AppDNA for AppDisk?**

Yes, an installation of AppDNA is required. Citrix Studio will connect to the AppDNA installation and automatically trigger AppDNA analysis when using AppDisk and display the AppDNA reports for AppDisk within the Studio console.

**Does this 7.8 release of AppDisk have versioning?**

Yes, AppDisk will have versioning as well as rollback capabilities.

**Is shared storage required for hosting AppDisk or can the AppDisk utilize local storage?**

AppDisk can be stored on local storage if the hypervisor connection is leveraging local storage. In the 7.8 release AppDisks are managed in Citrix Studio and stored on the hypervisor storage as identified by the hypervisor hosting connection.

**Is it possible to have an AppDisk follow a user?**

No, The 7.8 release of AppDisk will not follow a user; however, an AppDisk is machine centric meaning it will be assigned to a Delivery Group, so a user that access to any machine in the group will have access to the associated AppDisk.

**Can I update an application on an existing AppDisk?**

Yes, you can edit an AppDisk and create a new version.

**Can I use the same virtual machine to create multiple AppDisk instances?**

Yes, you may use the same VM or different VMs. It is best to create the AppDisk using the oldest OS that the AppDisk will be shared amongst. For example, if you are sharing an AppDisk across Windows Server 2008 R2, 2012 R2 and Windows 10, then create the AppDisk using 2008 R2.

**Does the AppDisk work if I delete the host VM after it is created?**

AppDisk has no attachment to the VM used to create it. In fact, you can edit an existing AppDisk to create a new version and use a completely different VM.

### **How much storage do I need for an AppDisk on the hypervisor?**

Exact sizing will need to be based on the number of applications assigned to that individual AppDisk. However, AppDisk are attached to other VMs using a clone and consumes a fraction of the space consumed by the actual AppDisk.

### **Can you provision full clones using AppDisk?**

No, AppDisk integrates with Machine Creation Services (MCS) or Provisioning Services (PVS) pooled, random server/desktop images or MCS can also support pooled assigned server/desktop images. AppDisk cannot be used to create full clones.

### **Will AppDisk be supported on a physically installed server environment (non-MCS/non-PVS environment)?**

No, AppDisk is only supported with Machine Creation Services or Provisioning Services integration, which requires hypervisor integration.

## **Recommendations & Best Practices**

The XenApp and XenDesktop 7.8 release is the first release of AppDisk and the recommendations in this section are based on internal Citrix testing, technical preview feedback and overall AppDisk architecture. Additional scalability and performance optimizations recommendations will be added to this section as that content is released.

### **Should the Virtual Delivery Agent (VDA) be installed in the AppDisk?**

The VDA should be installed in the base desktop or operating system image and not in the AppDisk.

### **Are there any restrictions on the types of applications that can be installed within an AppDisk?**

Yes. Certain applications that require drivers to be loaded before the AppDisk drivers load (also known as Phase 0 boot activities) should not be installed within an AppDisk. Typically, these are anti-virus applications or VPN software. Any application driver that loads in Phase 1 or later of the boot process is supported.

### **Are there any recommendations or best practices for grouping applications into common AppDisk layers to optimize performance?**

The recommendation is to group related applications together and to minimize the overall number of layers associated with a single image. Hypervisors do have limits on the number of virtual disks that may be attached, so having one app per AppDisk may have issues if you tried, for instance, to attached 200 AppDisks to one base image. Citrix will be testing the performance of AppDisk with multiple disks/volumes being attached to different operating systems on different hypervisors to develop more optimized performance guidance. At the time of the 7.8 release, Citrix had tested up to 16 AppDisk on both XenServer 6.5 SP1 (90233c) and vSphere 6.0 Update 1a.

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### **Hypothetically, will it be easier to manage 2-3 golden images using 50 AppDisks versus just managing 15 golden images?**

This is the fundamental environment design question that is best determined by evaluating the applications, the business objectives of the deployment and overall change management processes. In a large percentage of use cases, the simplicity of delivering apps using XenApp may be better than the administrative overhead of maintaining “layers” on top of a desktop/server image. In other cases, it may be more convenient to decouple updates from the base OS virtual machine via updating an application hosted in an AppDisk.

In addition, AppDisk with integrated AppDNA analysis has the potential to become an enterprise ready change management platform. It provides a solid basis for managing applications, packaging applications and managing change. When any change is implemented, proactive knowledge of what will break in the environment, the scope of impact for that change and the appropriate remediation ahead of time, is critical for success. This is a significant differentiator between Citrix AppDisk and other layering technologies like VMware App Volumes.

## How many applications can be part of AppDisk?

There is no hard limit to the number of applications that can be contained within a single AppDisk as application size and storage/system requirements vary. Therefore, it's important to determine which applications should be grouped together within a single AppDisk and ensure that disk is sized appropriately.

## Is it possible to do updates via Windows Updates to Microsoft Office in an AppDisk?

If Office is installed within an AppDisk the admin would need to unseal the AppDisk to apply Windows Updates, i.e. automatic Windows Updates would not be possible as AppDisk is a read-only disk once it is sealed.

## Is there any option of using AppDisk as a profile disk?

AppDisk is a read-only disk, so it is not ideal for the user profile as the profile changes wouldn't propagate across instances. Personal vDisk, which is a writeable disk, is more optimal for changing user profiles.

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