



**ProfileUnity™  
with FlexApp™ Technology**

***FlexApp Packaging  
Console Manual***

## Introduction

This guide has been authored by experts at Liquidware in order to provide information and guidance concerning the ProfileUnity FlexApp Packaging Console.

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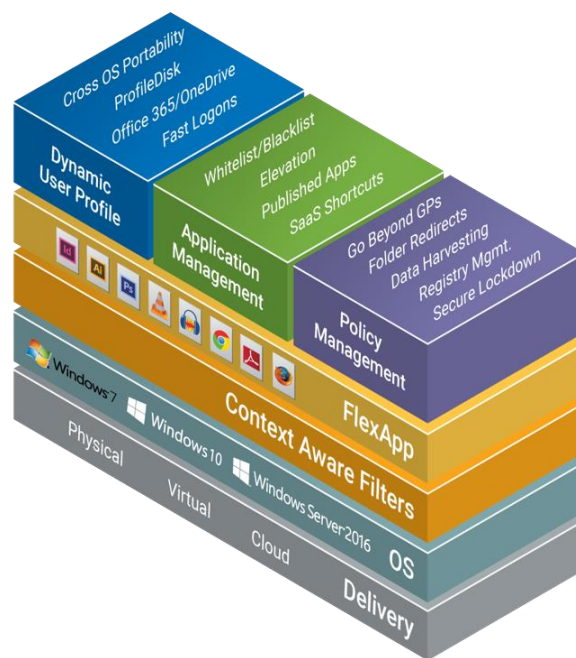
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## ProfileUnity with FlexApp Technology Overview

ProfileUnity™ with FlexApp delivers feature-rich, yet affordable, User Environment Management and Application Layering for both virtual desktop deployments and physical PCs. ProfileUnity decouples user profiles, settings and data from the operating system thus ending the user migration cycle to new Windows desktops, including Amazon Workspaces, Citrix Virtual Apps and Desktops, VMware Horizon, and Microsoft RDSH or WVD. ProfileUnity's ongoing User Environment Management features centralized user and policy management with context aware settings that are only limited by your imagination.

ProfileUnity delivers a flexible universal profile that is compatible across multiple Windows versions. ProfileUnity boasts a lightweight agent and no complex software package to install on end-points. This cost-effective solution separately stores and dynamically applies user profiles, configurations, data, and select layered applications to a Windows OS in seconds at login, enabling organizations to be more flexible than ever before with their desktops.



ProfileUnity's FlexApp technology is designed to allow administrators to deploy corporate or department installed applications (DIA) without the burden of tedious base image management. FlexApp enables a potentially limitless number of applications to be stored separately from the Windows operating system yet 'snapped-in' in only seconds at login or, alternatively, at boot or on demand. Applications look native to the operating system, enabling compatibility of thousands of more applications than with other methods of application virtualization.

ProfileUnity offers these key advantages:

- ProfileUnity retains profiles in native Windows® formats, which keeps them backward and forward compatible across Windows operating systems. ProfileUnity is the perfect solution to harvest user profiles and user data from an older Windows OS and deliver it to a newer Windows OS just in time. Profiles can also co-exist across multiple Windows versions.
- ProfileUnity runs as a standalone system. No proprietary databases are used for user profiles or data. The lightweight client installs to endpoints without the need for software distribution or user downtime.

ProfileUnity is priced an average of 40 to 50 percent less than other user virtualization offerings, for faster ROI and a lower overall budget.

- ProfileUnity offers sophisticated features including Context-Aware Filters, Integration with Microsoft® Active Directory, Advanced Folder Redirection options, and more.
- ProfileUnity includes Application Rights Management for no added cost. These features enable you to elevate privileges for select users to run or install select applications and restrict users from running select applications in the base image.

Innovative FlexApp technology provides key benefits to customers, including:

- Simplifies management of non-persistent Windows environments dramatically because fewer master images must be maintained
- Promotes greater desktop virtualization ROI and economies of scale because more workers can use virtual or cloud desktops
- Reduces desktop administrator time on maintenance and troubleshooting activities
- Significantly lowers TCO as organizations realize optimal license use and reduce storage requirements
- Layers the application in the native locations throughout the Windows OS without application isolation
- Enables multi-cloud staging of applications from Amazon, Google, or Microsoft cloud storage

The top reasons that customers deploy ProfileUnity include:

- Speed up overall user login times
- Migrate or co-exist Windows Operating Systems – seamless onboarding to new desktops – physical, virtual, or cloud
- Fast profile handling – Office 365, OneDrive, and similar large profiles are easily handled with ProfileDisk
- Application Layering by group, department, or user – streamline image management
- Application Rights Management – restrict or elevate users to run select apps
- Replace Roaming Profiles – solving profile portability, granular, faster, dependable
- Lower costs of delivering VDI – lower storage and management costs
- Make more users compatible with virtual or cloud desktops – knowledge workers and power users can have the customizations and apps they demand even in VDI
- Deliver context aware desktop experience – printer management, settings, shortcuts, etc. all based on custom filters
- Disaster Recovery - persona, data, apps restored in seconds to any Windows desktop (multi-cloud strategies are supported)
- Ongoing management of the desktop – provision settings, standards, registry modifications, desktop lockdown, and more
- One central user management console – Persona, Applications, Configurations, and central migration settings – for any and all Windows desktops

## Software Requirements

ProfileUnity is available as a standalone product and consists of three parts: the Management Console, the FlexApp Packaging Console, and the Client. The ProfileUnity Management Console provides one central location where administrators can configure persona management and user and machine policies. The FlexApp Packaging Console allows administrators to configure and prepare any applications that will need to be configured for users and made available as a department installed application (DIA). The Client manages each user's settings and persona during their session.

The ProfileUnity standalone installer will guide you through the setup of the Management Console. The FlexApp Packaging Console and the Client are installed from the Administration area of the Management Console. Please see our *Installation & Configuration Guide* for more information about installing the Management Console and the Client.

### FlexApp Packaging Console Requirements

The ProfileUnity FlexApp Packaging Console requires the following for installation:

Component	Requirements
<b>Platforms Supported</b>	Windows 7/10 and Windows Server 2008 R2/2012/2012 R2/2016/2019. Both 32-bit and 64-bit versions where applicable are supported. The packaging console should be on a Windows operating system that can be reset after each package is created. Using a non-persistent pool or a virtual machine with a snapshot that can be rolled back is fully acceptable. Do not install the packaging console on the same machine where the ProfileUnity Management Console was installed.
<b>Additional Software</b>	Microsoft® .NET Framework 4.6.2 or higher
<b>CPU</b>	2 CPUs at 1 gigahertz (GHz) or faster
<b>Memory</b>	8 GB RAM
<b>Storage</b>	200 MB available hard disk space (32-bit) or 20 GB (64-bit)

The FlexApp Packaging Console has an additional bit-level requirement. The bit-level of the operating system on which you package applications with the FlexApp Packaging Console needs to match the operating system of the desktop to which you deploy applications. If you are packaging applications to be used in a 32-bit environment, you must use the Packaging Console on a 32-bit OS. If you are packaging applications to be used in a 64-bit environment, you must use the Packaging Console on a 64-bit OS.

## How Does ProfileUnity's FlexApp Technology Work?

ProfileUnity's FlexApp technology provides an alternative way of delivering applications to just the users who need them. FlexApp enables organizations to create a single base image for all users and add in extra applications as needed thus reducing storage requirements to maintain multiple base images for different departments or segments of users.

With the enhanced functionality that ProfileUnity already delivers, approximately 80% of what an application needs to run is already delivered by the base solution. So, what else do we need to make an application function in a 'floating' state with FlexApp?

In the case of FlexApp, applications are stored inside a virtual hard disk (VHD) on the network or a VMware virtual machine disk (VMDK) on storage visible to the ESXi host. A VHD looks like a local file system but can be mounted from anywhere on the network that we want to host our applications. VMDKs also look like a local file system but are mounted from the storage visible to the ESXi host where the desktop is running. Using a virtual disk has a number of benefits including IOPS reductions, file system compression, and application portability.

ProfileUnity's FlexApp technology applies to both user installed applications (UIA) and department installed applications (DIA). This manual covers how to prepare applications for distribution to end users through FlexApp DIA.

Department installed applications include those that are still managed by IT staff or desktop administrators and delivered to users but are not included in a master image. Before delivering applications to specific users or departments, administrators package applications using the FlexApp Packaging Console. When packaging an application using the FlexApp Packaging Console, each application gets its own virtual disk. Once the packages have been created, the admin assigns the packages to users from within the ProfileUnity Management Console. The FlexApp DIA Configuration Module is used for assigning VHDs and local disk packages to users while the FlexDisk Management section is used for assigning VMDKs to users. When a user logs in to their desktop, ProfileUnity breaks down which applications have been assigned to the user by the administrator. The virtual disk for each application is attached to the OS to a directory. These applications are then played back into the OS and are available for use.

## Licensing Considerations

Application licensing is done on the FlexApp Packaging Console. If your application binds itself to any information tying it back to the FlexApp Packaging Console, your application's license will fail once the application is opened on your target OSs. To work around this scenario, you would move to a centralized licensing model where the application license can be staged into the base image of your OS and the FlexApp Packaging Console. The other option if your application can silently auto-register licensing on startup would be to not disrupt the user each time with licensing.

## Application Playback Considerations

ProfileUnity's FlexApp Technology layers in application packages in parallel to the user login process without impacting user login speeds. It generally takes 2-4 seconds to layer in each package and make it ready for use. In cases where 10 or more FlexApp packages are assigned to a user, it is possible for the login process to finish and the desktop to be ready before all the FlexApp packages have been layered in leaving a user waiting for their applications to appear. ProfileUnity's Click-To-Layer feature allows admins to delay selected FlexApp packages and layer them in on an as-needed basis only when a user clicks on the icon to open that application. Heavily used or large applications



can still be configured to be layered in during the user login process. ProfileUnity's default action is to layer in applications in parallel to the user login process.

*Note: If the desired application has been packaged prior to FlexApp Packaging Console v6.7, the package can be automatically updated for Click-to-Layer compatibility by opening the FlexApp Packaging Console version 6.7 or higher, selecting 'Edit the package's metadata' for the desired package and clicking OK.*

## What's New for FlexApp in ProfileUnity?

### Version 6.8.x

**Cloud Storage Support:** ProfileUnity and the FlexApp Packaging Console now support using FlexApp packages that are stored on cloud storage. The following cloud storage platforms are supported: Amazon S3, Microsoft Azure Blob Storage, and Google Cloud Storage. FlexApp Packages can be created and stored on cloud storage. In addition, FlexApp Streaming allows applications to start while they are still downloading from cloud storage.

**Cached Mode Support:** FlexApp Packages can be configured to replay using a cached mode on user desktops which is particularly helpful with inconsistent network connections, SMB shares behind firewalls, and routers that have many hops. In cached mode, ProfileUnity will request blocks of the FlexApp package and store them locally so the next time the block is referenced, it is read from local storage. This can be set in the FlexApp DIA Configuration Module by checking the "Cache Blocks Locally" option.

**Liquidware Apps:** Liquidware has pre-packaged some popular applications and made them available to all users for immediate use via cloud storage. If a FlexApp package is a Liquidware App, the Liquidware Drop icon will be added to the application's icon on the lower right. Liquidware Apps can be cloned and edited for use in your own environment. As a general rule, the Liquidware Apps are intended for deployment to desktops running a 64-bit operating system.

### Version 6.7.x

**Application Session Isolation:** FlexApp has enhanced application delivery support for Citrix XenApp and Microsoft RDSH environments by providing session-based layering. Before, all applications published on a server were visible to all connected users whether they need them or not. Now when FlexApp applications are delivered to a user's published desktop, other users are not automatically exposed to those applications. Every user's desktop can remain unique, even for users on the same Windows Server environment.

**Click-To-Layer:** FlexApp now offers the option to decide which application packages are automatically layered into a user's desktop environment. Packages can be layered in during the login process or later upon the user's request. Enabling Click-To-Layer for a package improves desktop readiness times since applications aren't mounted until a user actually opens the application to use it. Click-to-Layer extends to published application environments as well with the added benefit that once one user opens an application, that application will only need to be layered into the server environment once for all users. Any subsequent demands to use the application will not experience any delays since the application will have already been mounted in the server environment.

**Automatic Reboot Handling:** The FlexApp Packaging Console now fully supports packaging applications that need a reboot during the installation process. As part of the packaging process, the FlexApp Packaging Console executes the application's installer. If an application needs a reboot as part of the installation process, the packaging process is put on hold, the reboot occurs, and then the FlexApp Packaging Console starts back up to seamlessly finish the packaging process.

**Package Dependencies:** The FlexApp Packaging Console offers the ability to designate dependencies between other application packages in order to control the layering process. There may be cases where

independent FlexApp packages relate to one another. For example, Microsoft Outlook uses Microsoft Word to create and edit emails. Ideally, Microsoft Word would need to be in place before using Microsoft Outlook. Setting FlexApp package dependencies helps to control how FlexApp packages are layered into the user environment at login. A package will not be made available for use until its dependencies are first layered in and active.

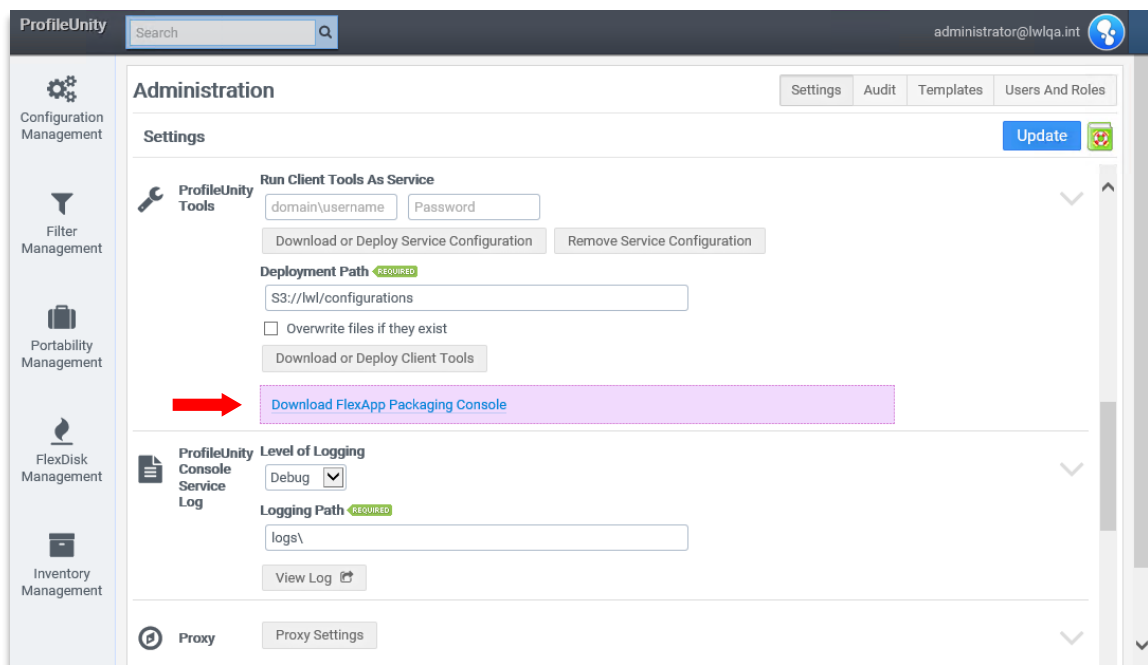
**Integrated Cap File Editor:** Starting in version 6.7.5, the former, standalone Cap Editor has been fully integrated into the FlexApp Packaging Console. The original Cap Editor allowed administrators to make registry changes to FlexApp packages or layers created with version 6.5.0 and higher. With version 6.7.5, the editor's functionality has been expanded to include file system editing capabilities in addition to the ability to edit registry settings.

## Installing the FlexApp Packaging Console

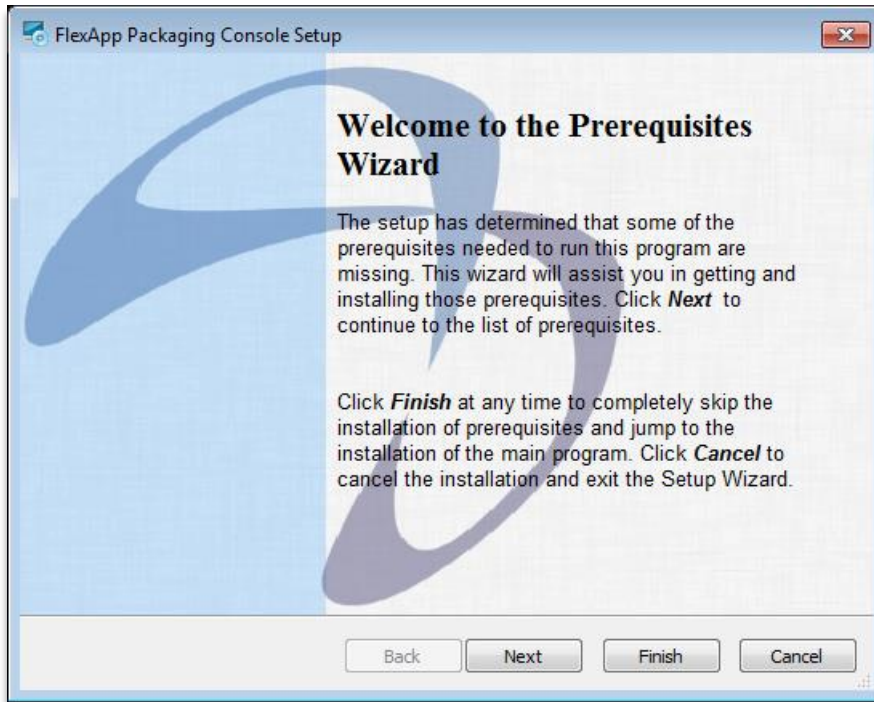
The FlexApp Packaging Console allows administrators to configure and prepare any applications that will need to be configured for users and made available as a department installed application (DIA) from within the ProfileUnity Management Console. The FlexApp Packaging Console installer can be downloaded from the Administration area of the ProfileUnity Management Console. Installation is easy and straightforward.

*Note that the FlexApp Packaging Console has an additional bit-level requirement. The bit-level of the operating system on which you package applications with the FlexApp Packaging Console needs to match the operating system of the desktop to which you deploy applications. If you are packaging applications to be used in a 32-bit environment, you must use the Packaging Console on a 32-bit OS. If you are packaging applications to be used in a 64-bit environment, you must use the Packaging Console on a 64-bit OS.*

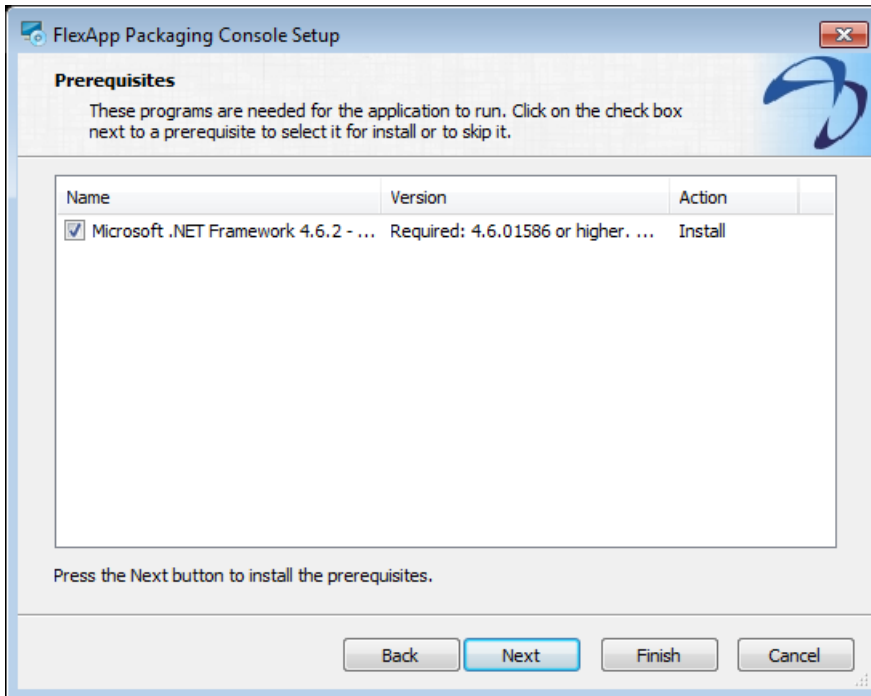
1. Download the FlexApp Packaging Console installer. Inside the ProfileUnity Management Console, go to your user name at the top right of the Management Console and select **Administration** from the drop-down list. Scroll down the Settings list and go to the **ProfileUnity Tools** section. Click on **Download FlexApp Packaging Console**. Copy the file, **fpcsetup.exe**, to the 32-bit or 64-bit machine on your network where you plan to package your applications. This should be installed on a virtual machine that is not the same machine where the ProfileUnity Management Console was installed. Please review the system requirements at the beginning of this document for more information.



2. Run the installer. The installer checks to see if any prerequisites need to be installed. If so, the **Prerequisite Wizard** welcome screen dialog displays a shown. Click **Next** to proceed.



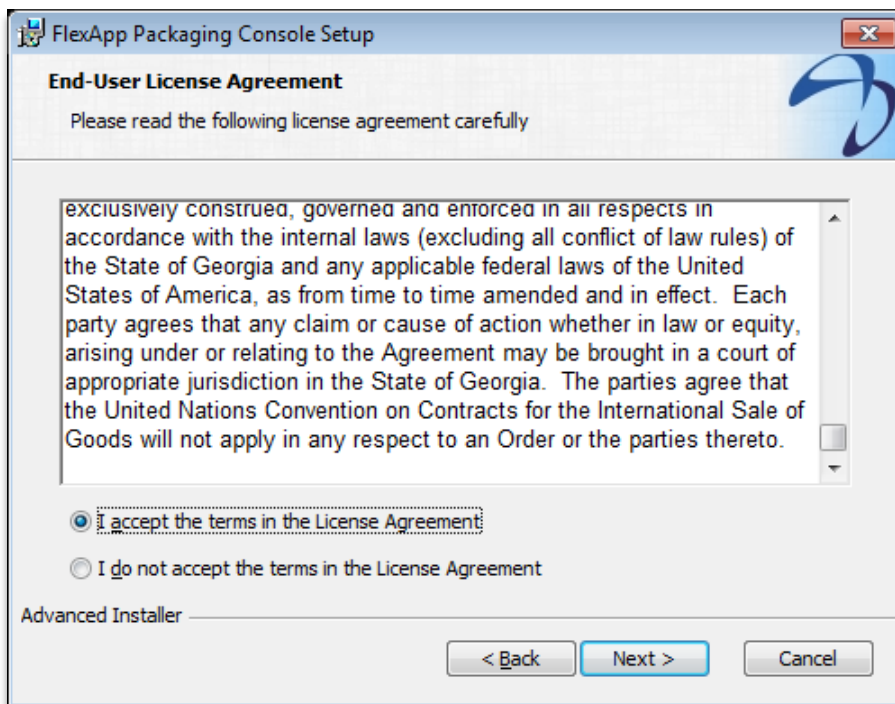
3. Any prerequisite software that is needed will automatically be checked. Click **Next** to install the prerequisite software.



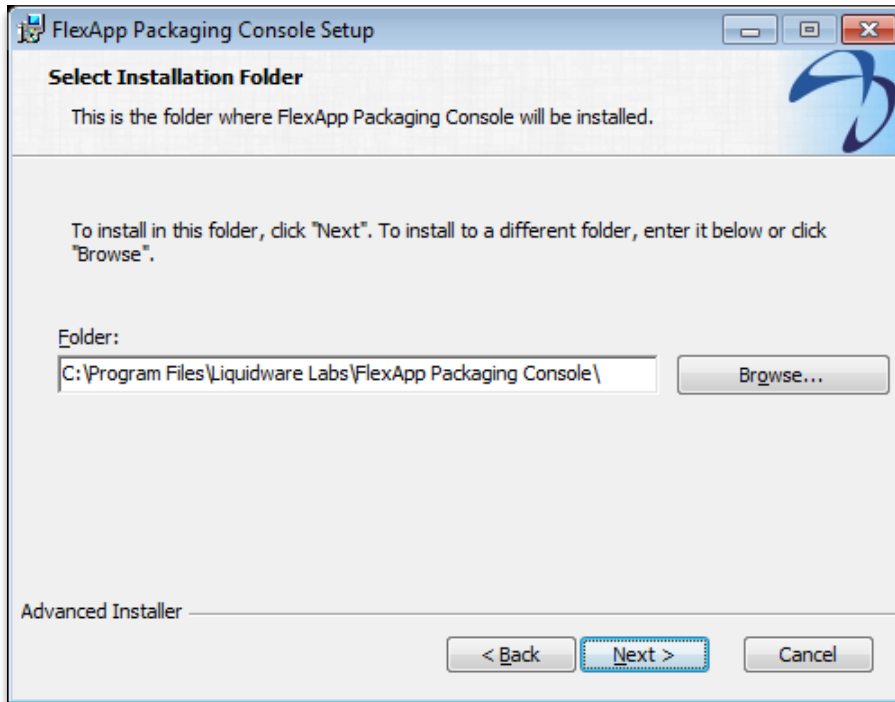
- Once the prerequisite software is installed, you will see the FlexApp Packaging Console Welcome Screen dialog displays as shown. Click **Next** to proceed.



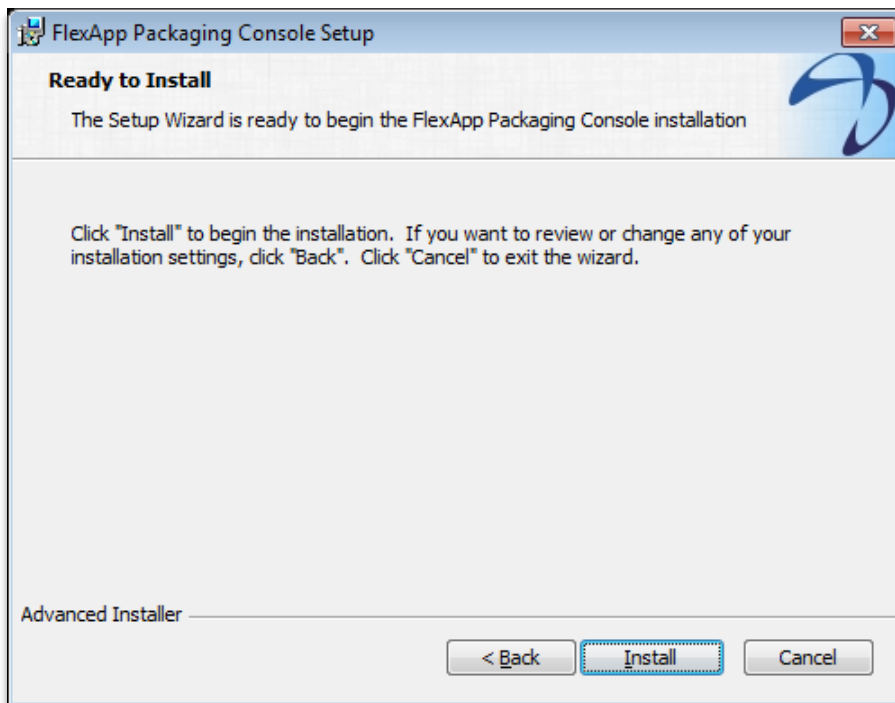
- The License Agreement displays as shown. Please read the agreement and choose the "**I accept...**" option if you accept the terms of the agreement. Click **Next** to proceed.



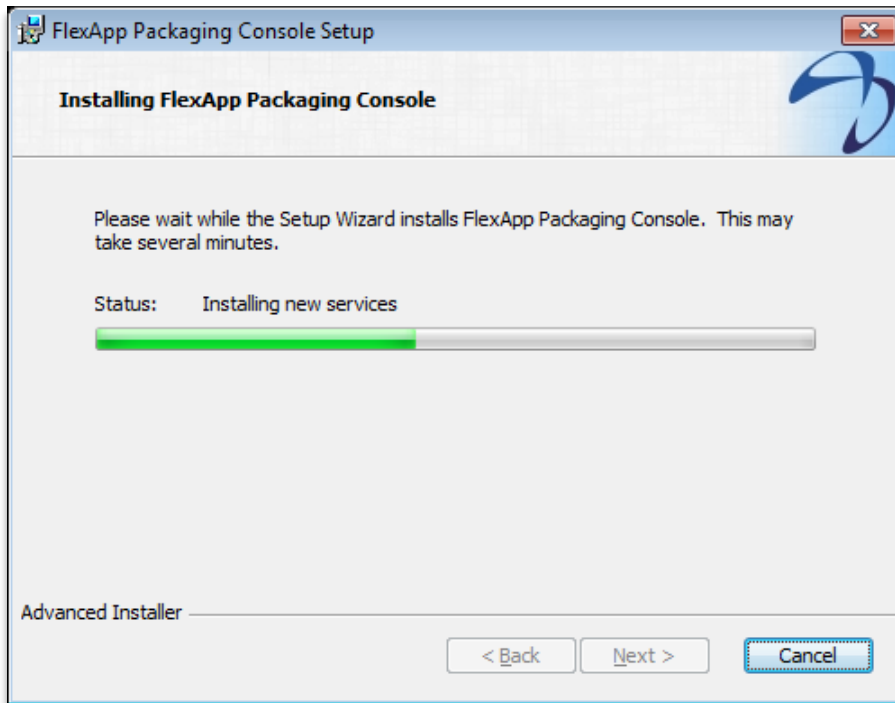
- Please enter the folder on your local machine where you would like the FlexApp Packaging Console installed then click **Next**.



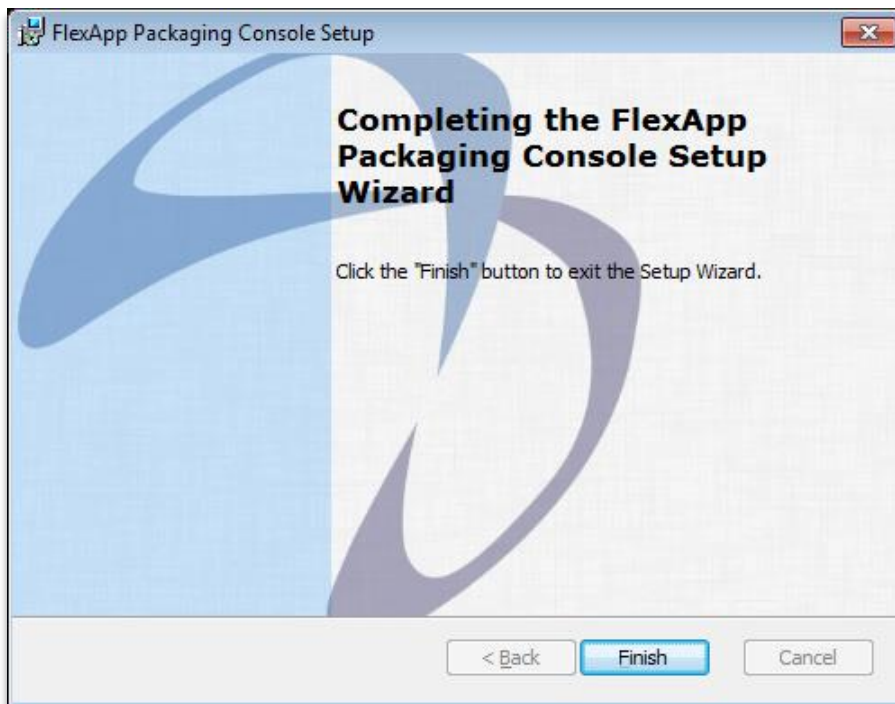
- The FlexApp Packaging Console is ready to install. Click **Install** to install the software or **Back** to change any of your installation settings.



8. The setup wizard installs your files.

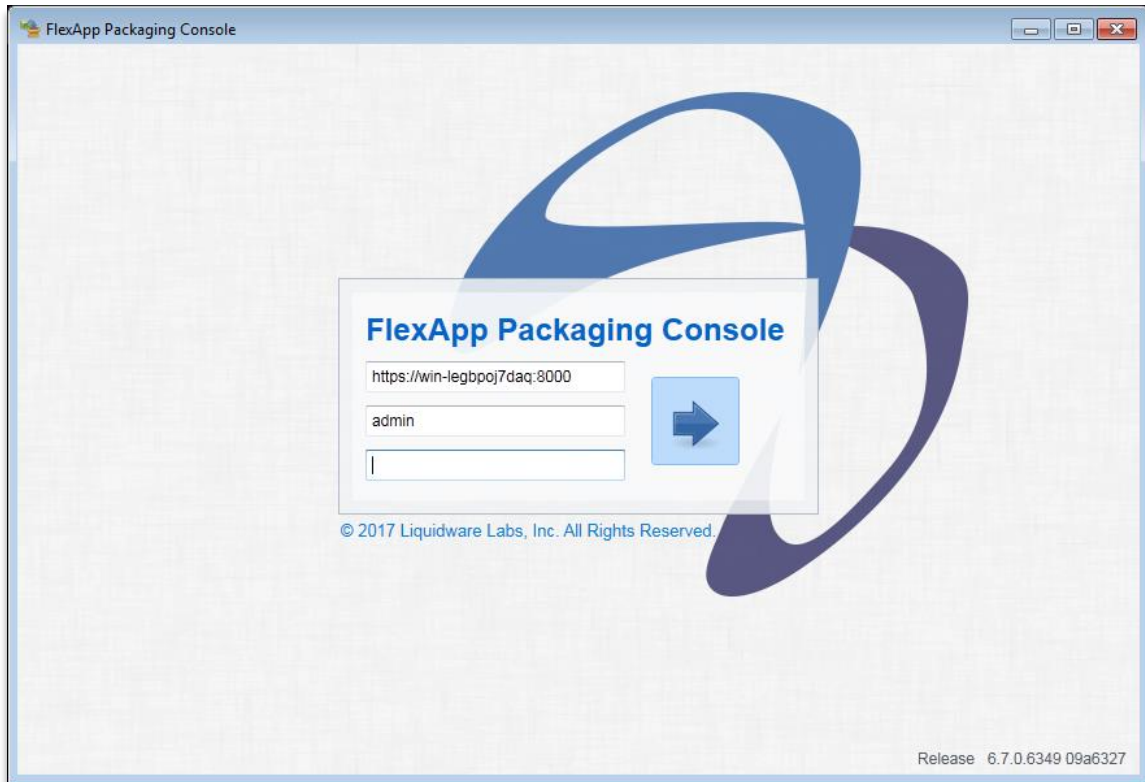


9. Once the installation is completed, click **Finish**.



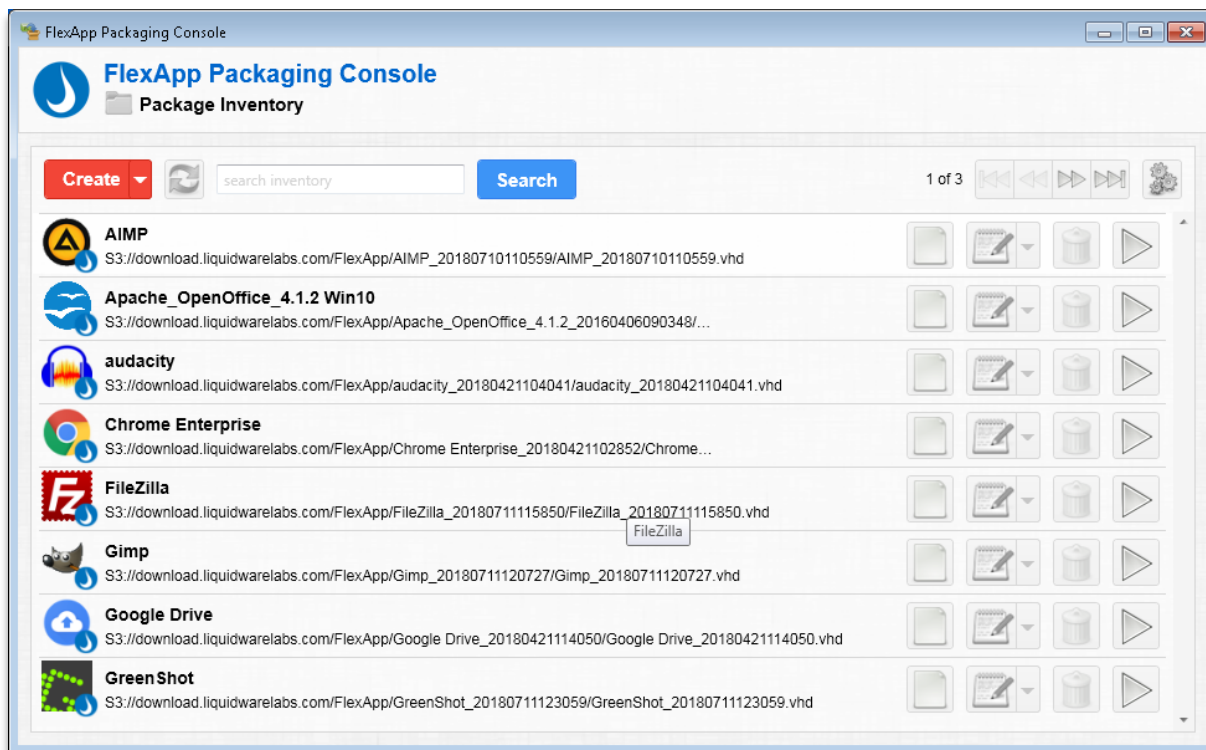


10. Before starting the FlexApp Packaging Console to package your application layers, be sure your packaging virtual machine can be reset to its original state. You can either take a snapshot or set your machine to a non-persistent state. Taking a snapshot after the FlexApp Packaging Console has been installed but before packaging any applications, allows you to revert to a “clean” machine state before packaging your next application. Rolling back settings prevents any cross-contamination of configuration settings or software dependencies in your packaging environment that can occur after running multiple installers. If the virtual machine is configured to be non-persistent, a simple reboot should restore it to its original state.
11. To login to the FlexApp Packaging Console, enter the **URL** of the ProfileUnity Management Console and your **username** and **password**. You can use the same credentials you created for the ProfileUnity Management Console account.



## Glancing at the Initial Package Inventory

After logging in to the FlexApp Packaging Console, you will see the Package Inventory which lists all available FlexApp Packages. Starting with version 6.8.0, you will notice several FlexApp packages are automatically included in your inventory list. Liquidware has pre-packaged some popular applications and made them available to all users for immediate use via cloud storage. If a FlexApp package is a Liquidware App, the Liquidware Drop icon will be added to the application's icon on the lower right. Since the original packages were created and are owned by Liquidware, these FlexApps are subject to be updated, changed, or removed at any time. Therefore, it is recommended that the Liquidware Apps be cloned before extensive use in your own environment. As a general rule, the Liquidware Apps are intended for deployment to desktops running a 64-bit operating system.

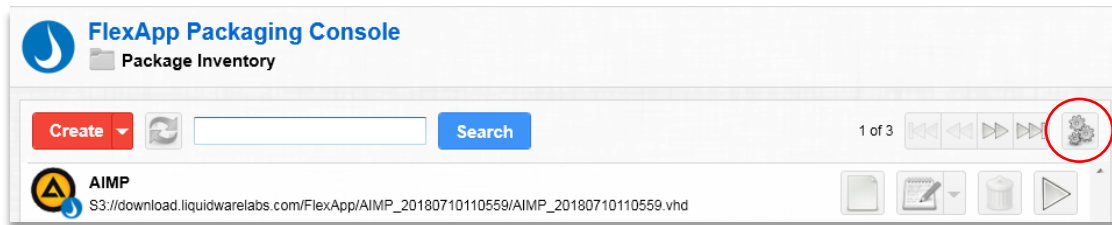


To remove all Liquidware Apps from the Package Inventory, go to the ProfileUnity Management Console. Check the **Hide Liquidware App Catalog** option in **Administration Settings > Miscellaneous** and press the **Update** button. Back in the FlexApp Packaging Console, click on the **Refresh** button to update the Package Inventory list which will now show only FlexApp packages you have created.

## Modifying Application Settings

To change any FlexApp Packaging Console settings, click on the gears icon in the upper right-hand corner of the interface.

*To save time when packaging applications, initially set the default installer location, VHD location, local install locations and/or cloud settings.*



**Settings**

Use this screen to configure the FlexApp Packaging Console. When you're done, click OK.

**General Information**

Release	6.8.3.7460 1683c38f
Version	6.8.3.7460

**Basic Settings**

**Default Installer Location**  
  
The default installer location to be used when creating a new package

**Default VHDX Location**  
  
The default location to be used when creating a new VHDX package

**S3 Cloud Credentials**  
  
The default credentials to be used when accessing the Cloud on S3

**S3 Cloud Location**  
  
The default location to be used when creating a new Cloud package on S3

**Azure Cloud Credentials**  
  
The default credentials to be used when accessing the Cloud on Azure

**Azure Cloud Location**  
  
The default location to be used when creating a new Cloud package on Azure

**Google Cloud Credentials**  
  
The default credentials to be used when accessing the Cloud on Google

**Google Cloud Location**

### Release:

Shows the software release number for the FlexApp Packaging Console. Please provide this number along with any questions you have about the software.

### Version:

Shows the full software version number for the FlexApp Packaging Console. Please provide this number along with any questions you have about the software.

### Default Installer Location:

Enter the default installer location to use when creating a package.

**Default VHD/VHDX Location:**

Enter the default VHD/VHDX storage location to use when creating a package. VHD is the default on Windows 7/Windows Server 2008 R2. VHDX is compatible with Windows 8.1/Windows Server 2012 R2 and higher.

**S3 Cloud Credentials:**

Enter the default credentials to be used when accessing Amazon S3 cloud storage.

**S3 Cloud Location:**

Enter the default location to be used when creating a new package on Amazon S3 cloud storage.

**Azure Cloud Credentials:**

Enter the default credentials to be used when accessing Microsoft Azure Blob cloud storage.

**Azure Cloud Location:**

Enter the default location to be used when creating a new package on Microsoft Azure Blob cloud storage.

**Google Cloud Credentials:**

Enter the default credentials to be used when accessing Google cloud storage.

**Google Cloud Location:**

Enter the default location to be used when creating a new package on Google cloud storage.

**Default Local Install Location:**

Enter the default VHD storage location to use when creating a package.

**Temp VHD/VHDX Mount Path:**

Enter the location where the VHDs will be mounted. VHD is the default on Windows 7/Windows Server 2008 R2. VHDX is compatible with Windows 8.1/Windows Server 2012 R2 and higher.

**Log Level:**

Set the logging level for the Packaging Console. The default level is **Debug**.

**Log Location:**

Enter the location of the FlexApp Packaging Console log file.

**Command Line Log Path:**

Enter the location where the FlexApp tools will write to their log file.

**LwlUserApp XML Location:**

Enter the location of the lwluserapp.xml file.

**LwlUserApp XML Log Path:**

Enter the location of the logfile for lwluserapp.xml.

**LwlUserAppPlayer XML Location:**

Enter the location of the lwluserappplayer.xml file.

**LwlUserAppPlayer XML Log Path:**

Enter the location of the logfile for lwluserappplayer.xml.

**Active Package Path:**

Enter the location of the activepackage.xml file. This file is used to keep track of any currently activated packages.

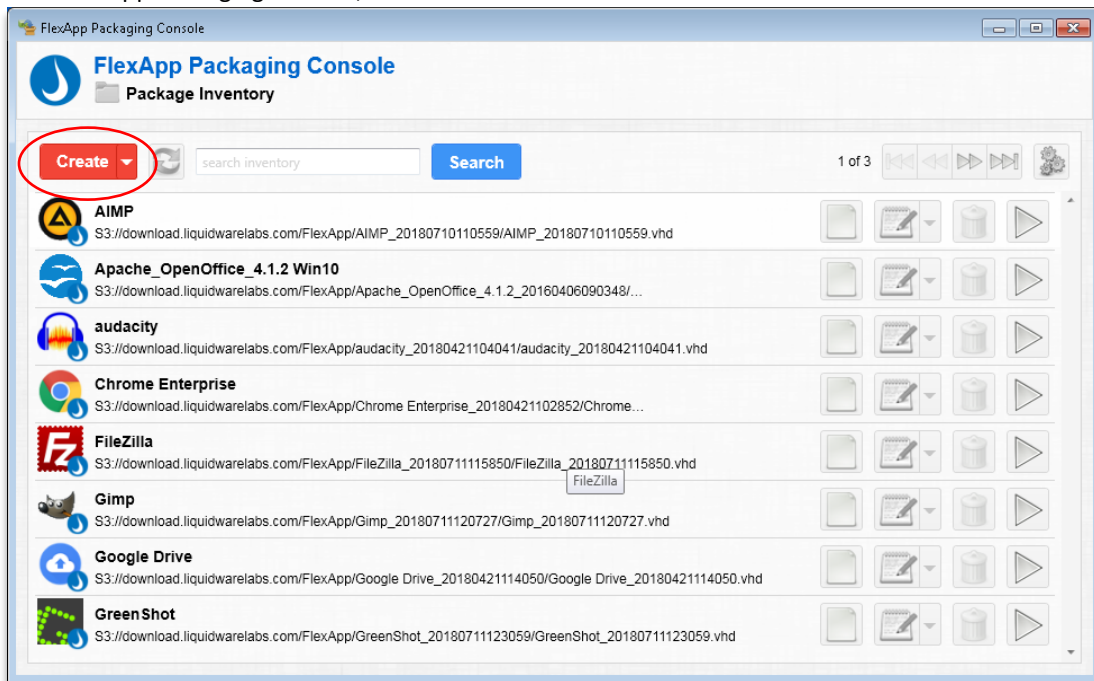
## Creating a DIA Package from an Application Installer

The first step in delivering additional applications that are outside of the base image to select users inside your environment is to package the application by running its installer and capturing any initial settings.

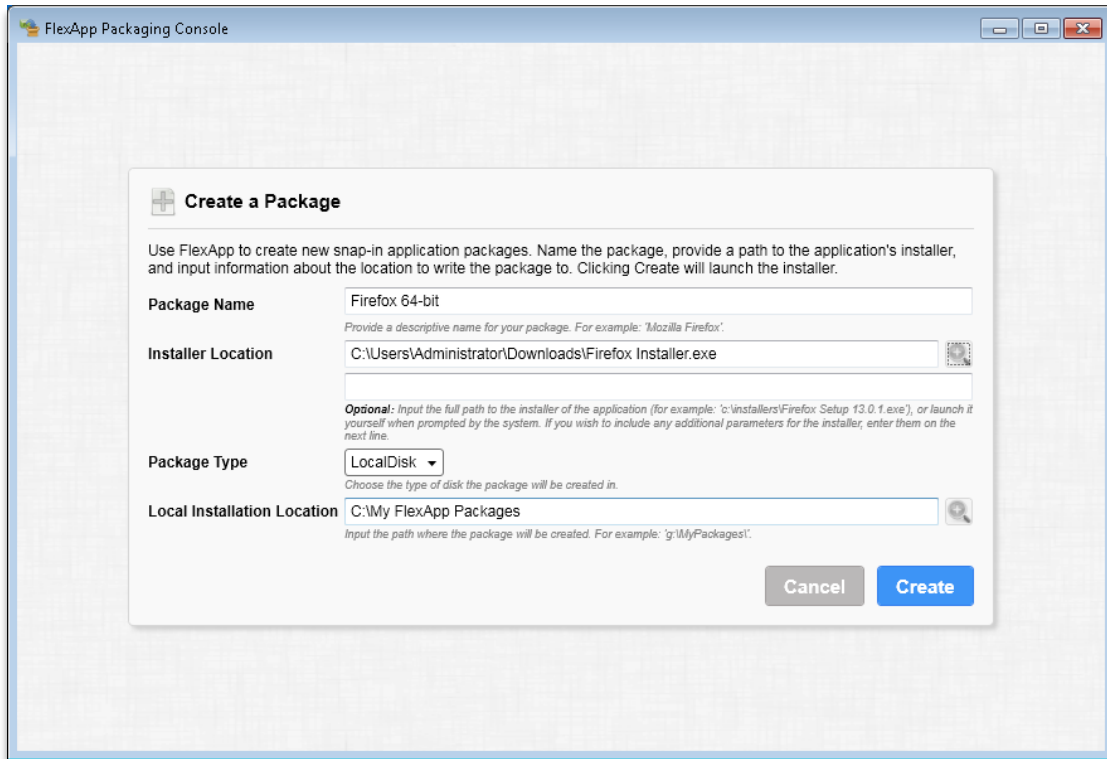
*After capturing every DIA package it is best practice to revert the virtual machine to the initial snapshot. This will ensure that any testing is done with a clean system and that further packages will not be 'polluted' with leftover settings and software from previous packages.*

To create a new application package:

1. In the FlexApp Packaging Console, click on the **Create** button.



2. Enter basic information for FlexApp to create an application package.



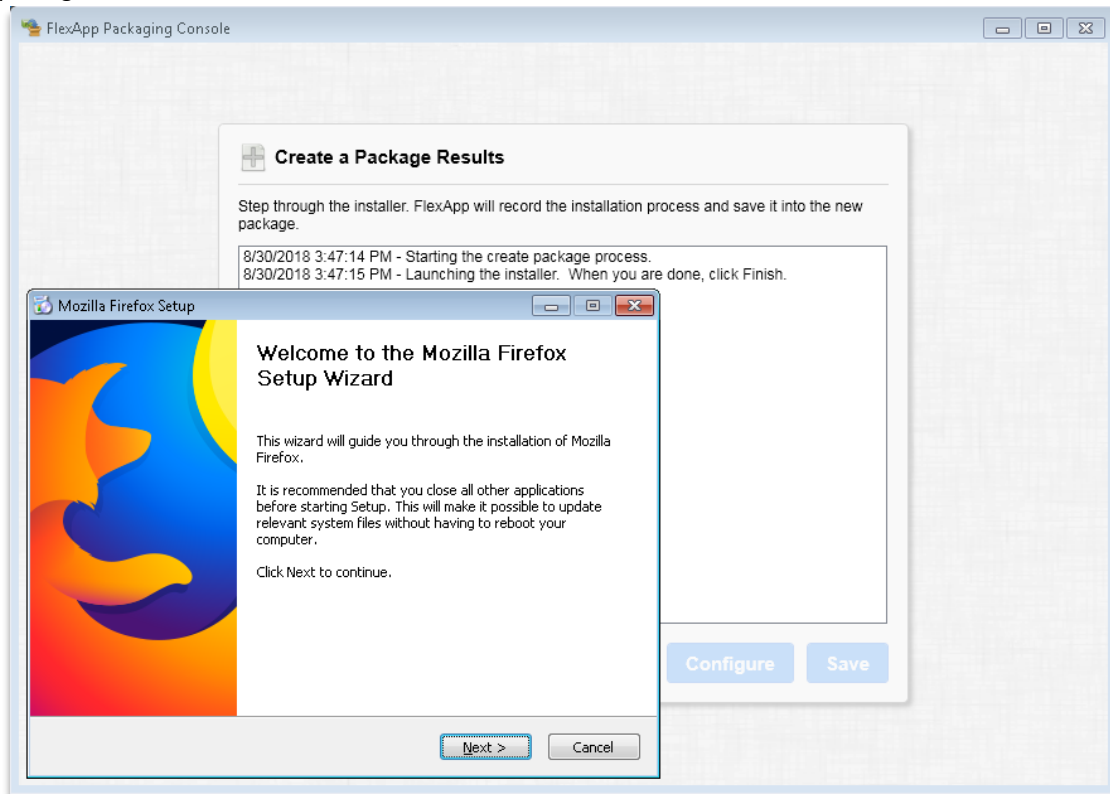
- a. Enter a descriptive name for the **Package Name**.
- b. Browse to or enter the full path of the application's setup program in **Installer Location**. Any additional parameters for the installation program can be entered on the second line just below **Installer Location**.  
Select the type of disk on which the package will be created. Choose from **FlexDisk**, **Cloud**, **VHD/VHDX**, or **Local Disk**.

*One of the most powerful features of ProfileUnity is the filters that can be leveraged during the assignment of FlexApp Layers. Please note that filters apply only to VHD-based, cloud, or local disk FlexApp packages/layers. VMDK-based FlexApp layers currently support user, group, and basic machine assignments. The primary reason for the difference in VHD vs. VMDK package types centers on architecture. The ProfileUnity Configuration INI-based workflow does not apply to the VMDK-based assignments controlled by vCenter.*

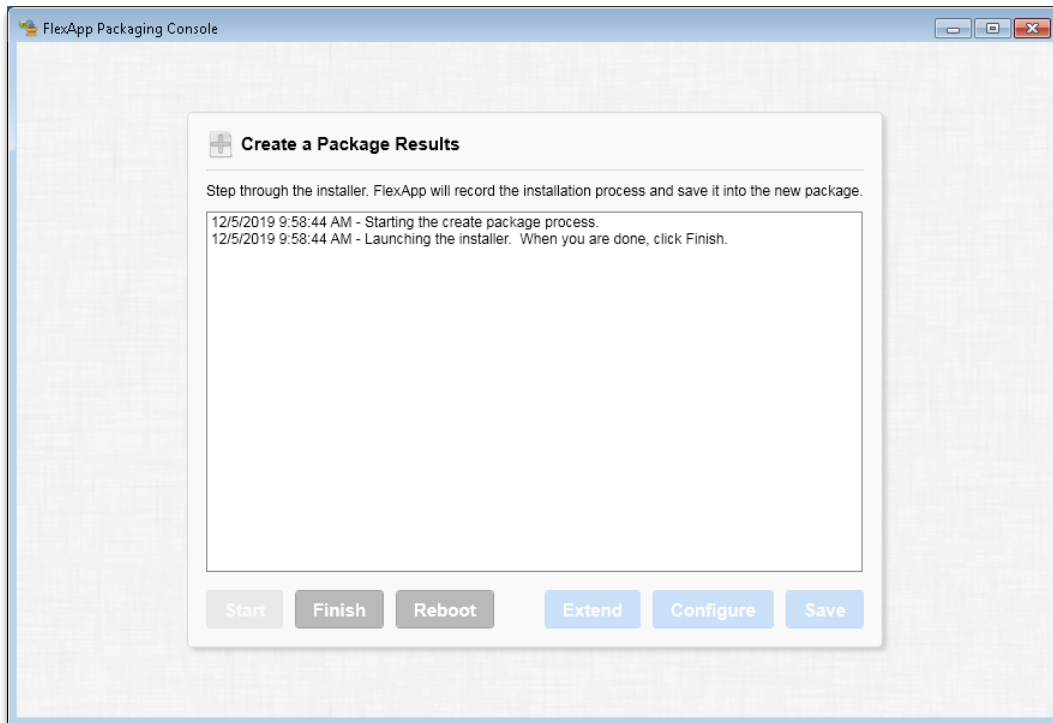
- d. Enter the full path where the package will be created. If you choose the following **Package Type**:
  - i. "FlexDisk", choose the datastore to hold the FlexApp package from **FlexDisk Datastore**.
  - ii. "VHD/VHDX", enter the path in **VHD/VHDX Location**.
  - iii. "Local Disk", enter the path in **Local Installation Location**.

iv. "Cloud":

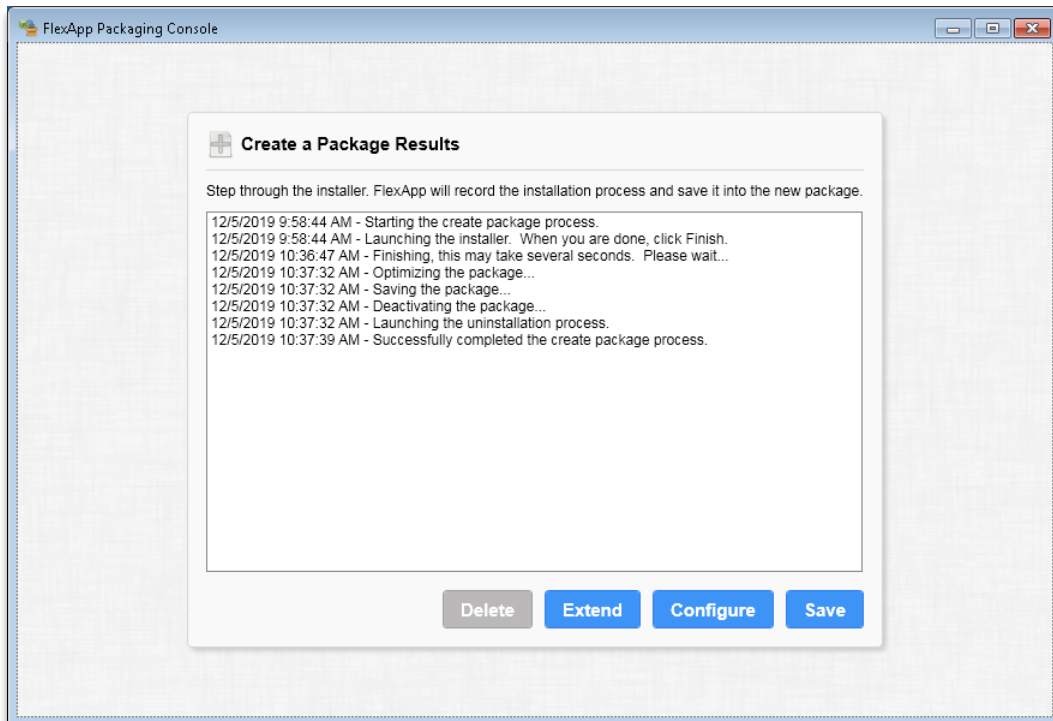
1. Select the proper **Cloud Credentials** which are configured in the ProfileUnity Management Console **Administration > Cloud Storage** section.
  2. Select the **Cloud Storage Location** that pairs with your selected **Cloud Credentials**. Valid cloud storage path prefixes are as follows:
    - a. **S3://** - for Amazon S3
    - b. **AZ://** - for Azure Blob
    - c. **GS://** - for Google Cloud Storage
  - e. If you have selected to place the package on a virtual disk (VHD/VHDX or FlexDisk VMDK), configure any remaining options such as virtual disk size, compression and whether the virtual disk is expandable or not.
3. Click **Create** to launch the application installer and follow any instructions in the application's installer. While the installer is running, FlexApp is recording the entire installation process and saving it to the package.



- After the application installation is complete, you can choose to add a reboot to follow the package installation by clicking the **Reboot** button. After rebooting, the FlexApp Packaging Console will automatically re-open allowing you to complete the packaging process. Finally, click **Finish** to stop the capture of the entire installation sequence.

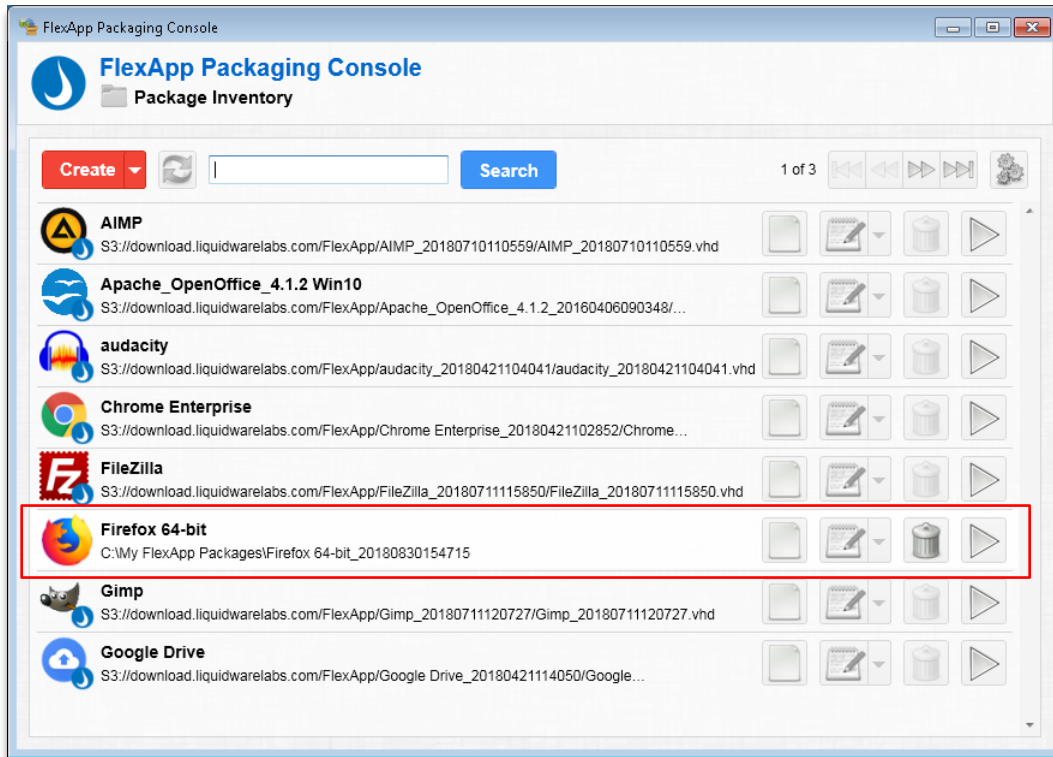


- Once the finishing process is completed, you can click on the **Save** button to save the new FlexApp package. If the installation failed or you do not wish to keep the newly created package, click **Delete**.





6. After clicking Save, the application package can be seen in the FlexApp Package Inventory list.



## Enabling FlexApp DIA for Users in the Management Console

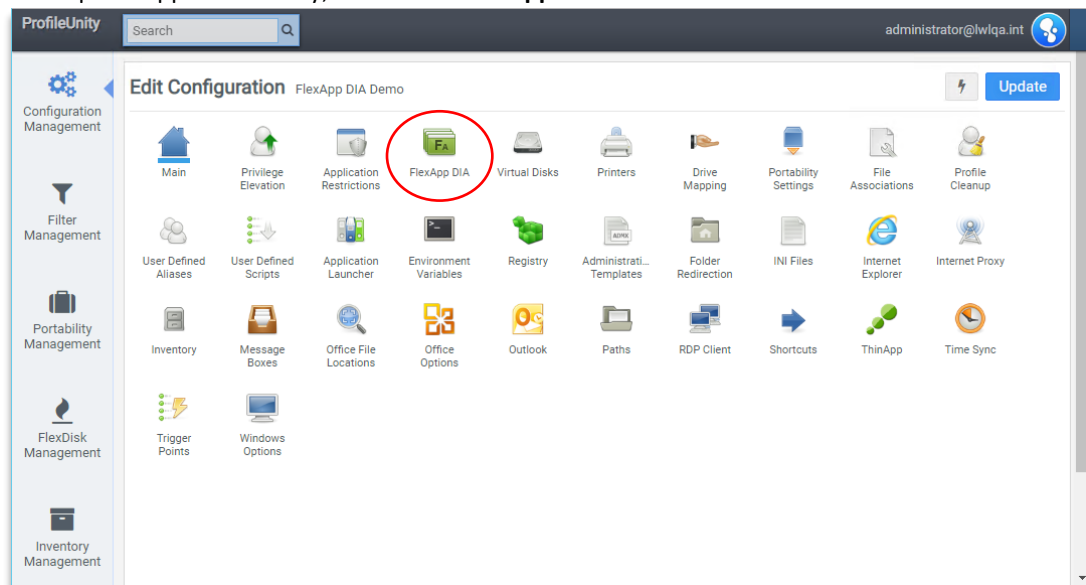
After applications have been packaged on the appropriate 32-bit or 64-bit OS platform using the FlexApp Packaging Console, admins switch back to the ProfileUnity Management Console for application delivery. The last step in delivering additional applications that are outside of the base image to users inside your environment is to use the power of ProfileUnity's configurable user environment management to selectively deploy your FlexApp application packages to just the users who need them.

There are two methods for deploying FlexApp application packages or layers depending on the type of package chosen. The first method is for deploying cloud, VHD-based or local disk type packages. The second method is for VMDK-based packages.

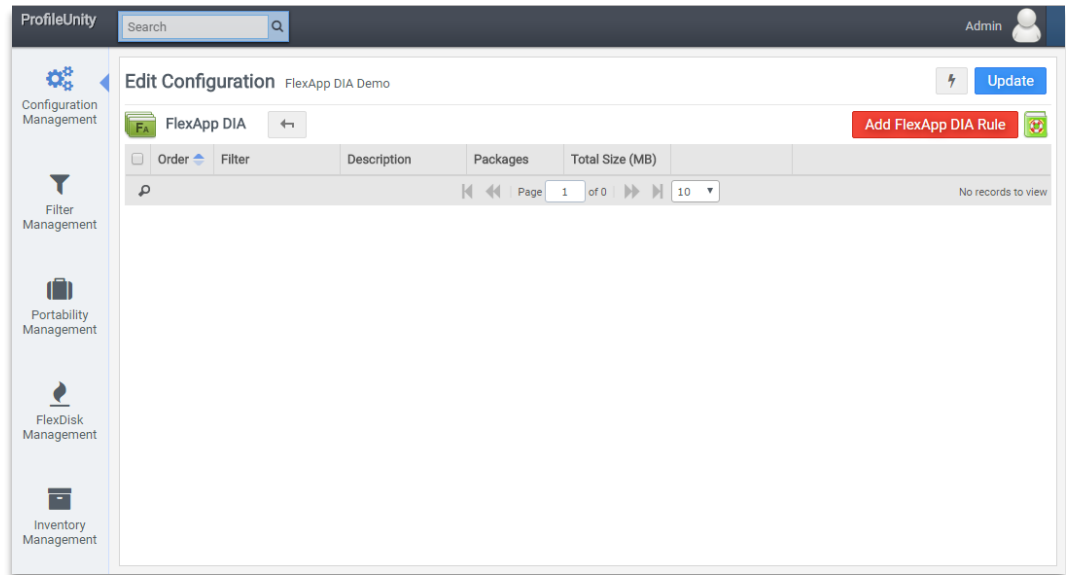
### Deploying Cloud, VHD-based and Local Disk FlexApp Packages

To deploy cloud, VHD-based or local disk DIA packages:

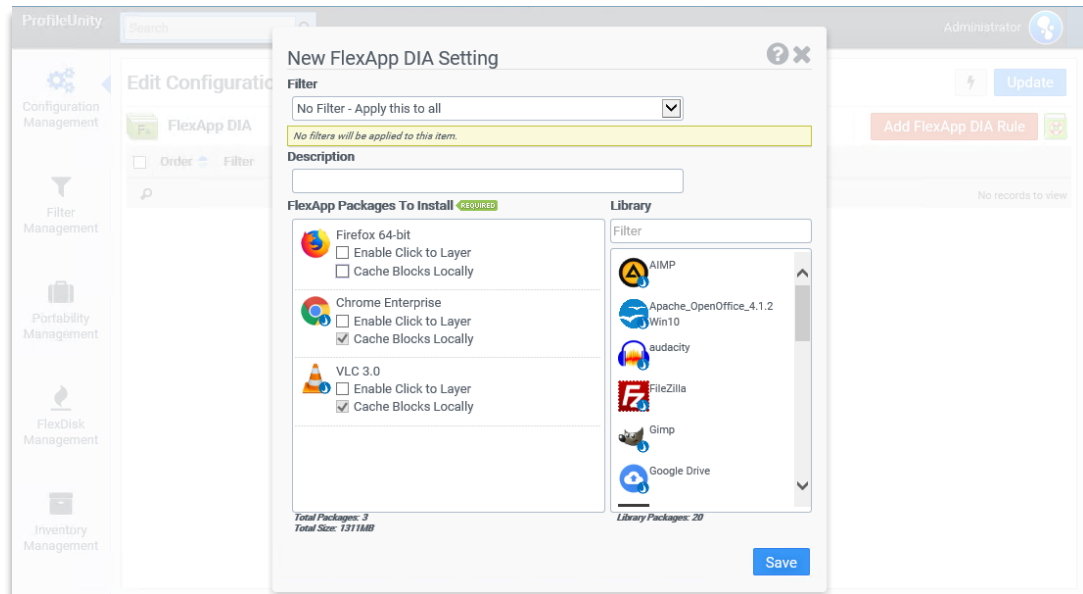
1. Login to the ProfileUnity Management Console.
2. Select **Configuration Management** from the navigation tree on the left-hand side of the ProfileUnity Management Console.
3. Either create a new configuration or choose the configuration you wish to edit and click on the **Edit** icon to the right of the configuration name.
4. To setup FlexApp DIA delivery, click on the **FlexApp DIA** icon.



5. Click on the **Add FlexApp DIA Rule** button.



6. Remember that the original login to the FlexApp Packaging Console asked for the URL of the ProfileUnity Management Console. This connected the two consoles together, so that all the application packages created by the FlexApp Packaging Console are listed in the ProfileUnity Management Console's FlexApp DIA library and made available for deployment.

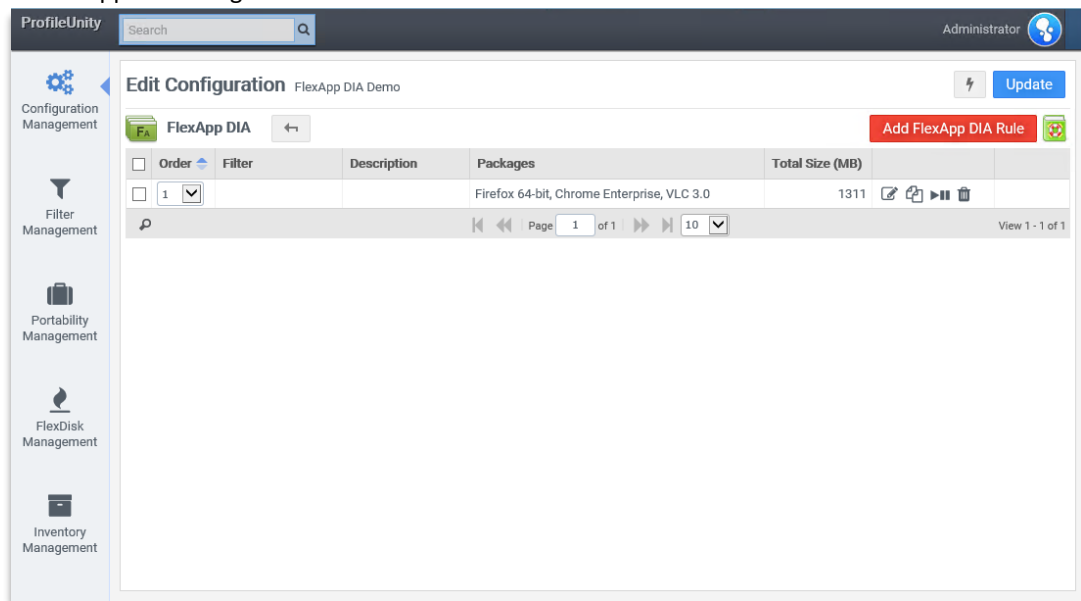


- a. Optionally, select a **Filter** for this configuration element to apply this FlexApp DIA rule to certain users or groups.
- b. Then drag over the applications listed in the library that you want to layer in when the user logs into his session.
- c. Check **Enable Click To Layer** if you wish to delay the layering of this application from user login to upon user request after clicking on the application icon on the desktop. For large applications that can take a longer amount of time before they are ready for use, we

recommend that you do NOT select **Enable Click To Layer** and instead layer those applications during the user login process to decrease any user wait time.

*Note: If the desired application has been packaged prior to FlexApp Packaging Console v6.7, the package can be automatically updated for Click-to-Layer compatibility by opening the FlexApp Packaging Console version 6.7 or higher, selecting 'Edit the package's metadata' for the desired package and clicking OK.*

- d. Check **Cache Blocks Locally** if desired. FlexApp Packages can be configured to replay using a cached mode on user desktops which is particularly helpful with inconsistent network connections, SMB shares behind firewalls, and routers that have many hops. In cached mode, ProfileUnity will request blocks of the FlexApp package and store them locally so the next time the block is referenced, it is read from local storage. **Cache Blocks Locally** is enabled by default for FlexApps on cloud storage and is optional for FlexApps on SMB storage.
7. Click **Save**.
  8. Click on the blue **Update** button in the upper right-hand corner to update the configuration with the FlexApp DIA changes.



9. To activate your changes for any subsequent user logins, remember to download or deploy a new INI file after you have made all changes to your configuration.

The screenshot shows the ProfileUnity Configuration Management interface. The top navigation bar includes the ProfileUnity logo, a search bar, and the user role 'Administrator'. The main content area is titled 'Configuration Management' and features a 'Create' button and an 'Import' button. A table lists configurations with columns for Name, Comments, Created, and Modified. A tooltip 'Download Configuration' is visible over the table. The bottom of the interface shows pagination controls for 'Page 1 of 1' and 'View 1 - 4 of 4'.

Name	Comments	Created	Modified	
Default		2018-08-28 13:12:15	2018-08-28 13:27:34	
FlexApp DIA Demo		2018-08-30 16:12:53	2018-08-30 16:27:49	
Windows 7, 10 or 2016 as a...	Created with Template: Window...	2018-08-22 12:57:34	2018-08-22 12:57:34	
Windows 7, 10 or 2016 as a...	Created with Template: Window...	2018-08-28 10:53:35	2018-08-28 10:53:35	

## Deploying VMDK-based FlexApp Packages

To deploy VMDK-based DIA packages:

1. Select **FlexDisk Management** from the navigation tree on the left-hand side of the ProfileUnity Management Console, and select the FlexApp DIA tab at the top.
2. Click on **Assignments** for each FlexApp VMDK that needs to be assigned to users.

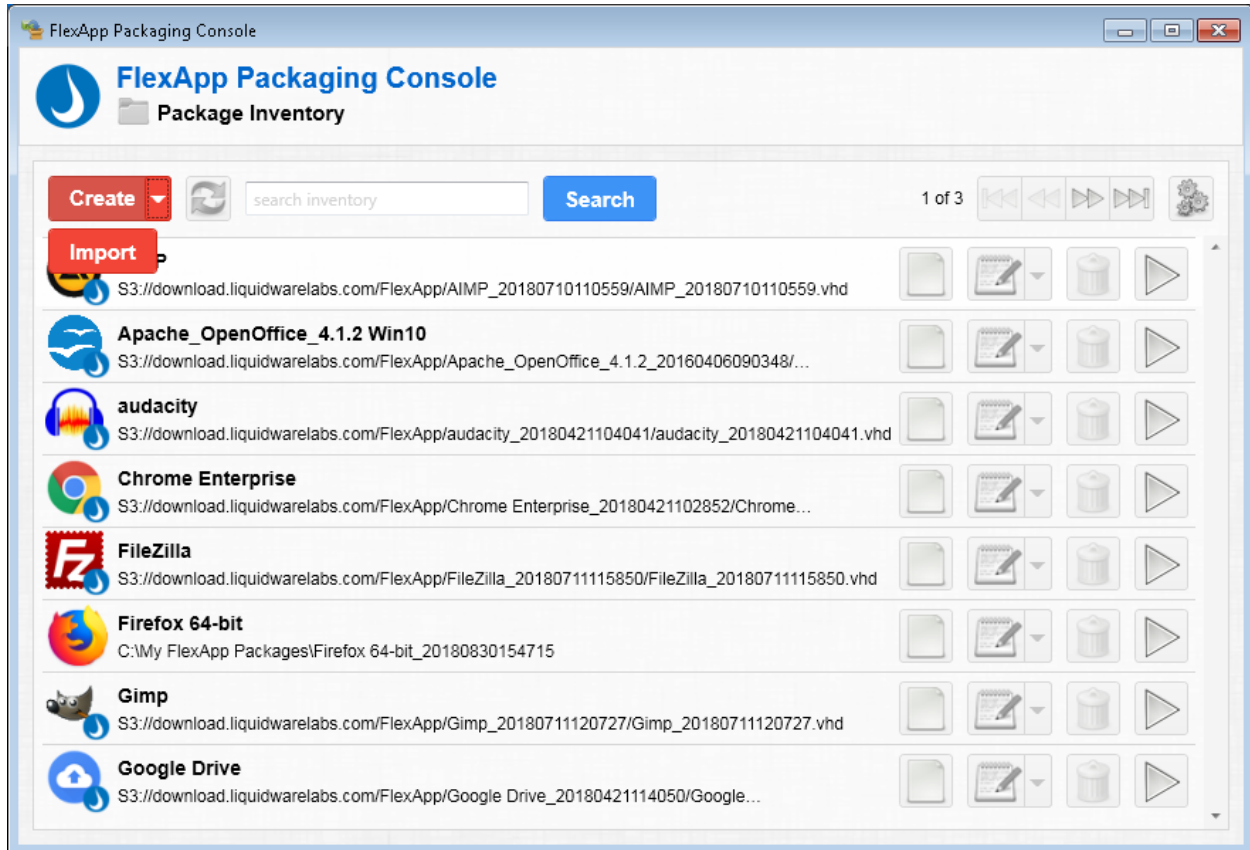
The screenshot shows the ProfileUnity FlexDisk Management console. The left navigation pane includes Configuration Management, Filter Management, Portability Management, FlexDisk Management, and Inventory Management. The main area is titled 'FlexDisk Management' and has tabs for FlexApp DIA, User Data Disk, Provisions, Connections, and Event Monitor. The 'FlexApp DIA' tab is active, displaying a table with columns: Name, Mount Weight, Assignees, Pools, Mirrors, Size (MB), Created, and Modified. Three applications are listed: Firefox Browser, Chrome Browser, and VLC Player. Each row has an 'Assignments' button. Below the table is a 'Task Manager' section with a table showing task details like Start Time, Completion Time, Description, Status, Completed, and Result.

3. Select a user or group from the list. If you have VMware View and have installed the Connection Service Monitor, you will get the option to limit the application to the user/group and or the pool. Click on **Add Assignment** to add it to the list of current assignments. When done click on the 'X'.

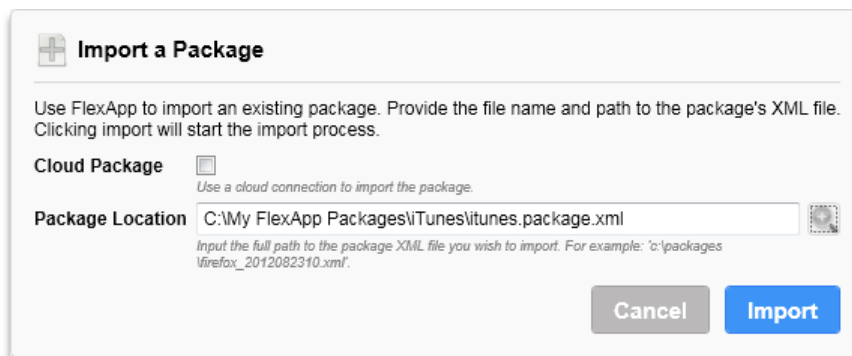
The screenshot shows the 'Assignments' dialog box. It has a close button (X) in the top right. Under 'Select Assignee', there are two options: 'Search Active Directory' (selected) and 'Computer Pattern: ex. Accounting-\d+'. Below this is a 'Pools' section with a message 'No pools were retrieved'. A red 'Add Assignment' button is present. At the bottom, there is a 'Current Assignments' table with columns: Name, Domain, Kind, and Pools. The table is currently empty. At the very bottom, there is a pagination control showing 'Page 1 of 0' and 'No records to view'.

## Importing Packages

You may also import other packages that were previously created by the FlexApp Packaging Console rather than re-creating them. Click on the down arrow next to the red **Create** button. Then click on the **Import** button to enter the location and filename of any additional package.



If the package is located on cloud storage, check **Cloud Package** to select the **Cloud Credentials** to use to access it.

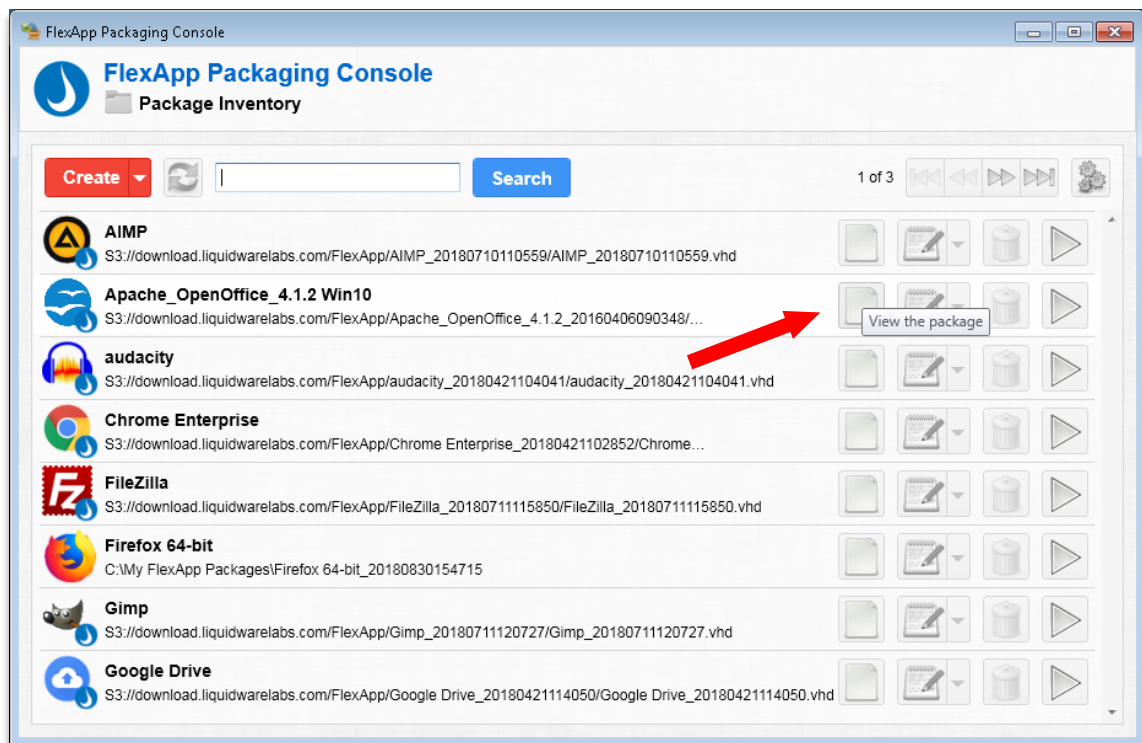


## Managing Application Packages


Once application packages are created by the FlexApp Packaging Console, they are placed in the package list. Using this console, administrators can make additional modifications to their FlexApp DIA packages and manage their package list.

### Viewing Package Information

To view more information about a package including its creation date and storage location, click on the **View the Package** button next to the package name in the list. All Liquidware Cloud FlexApp Packages are denoted by the Liquidware Drop added to the icon in the Package Inventory list.






 **View a Package**

Use this screen to view information about the package you selected.

**Package Name** Apache\_OpenOffice\_4.1.2 Win10

**Package Icon** 

**Package Size** 396.82 MB

**Applications Installed**

**Package History**

2016-04-06T09:06:51.4534847-05:00	create package by administrator
Version 6.5.2.5878, 2.1.5829.870	
2016-04-06T09:07:14.3172347-05:00	edit package metadata by administrator

**Package Dependencies**

**Package Type** Liquidware App

**Cloud Storage Location** S3://download.liquidwarelabs.com/FlexApp/...

**File Name** Apache\_OpenOffice\_4.1.2\_20160406090348.vhd

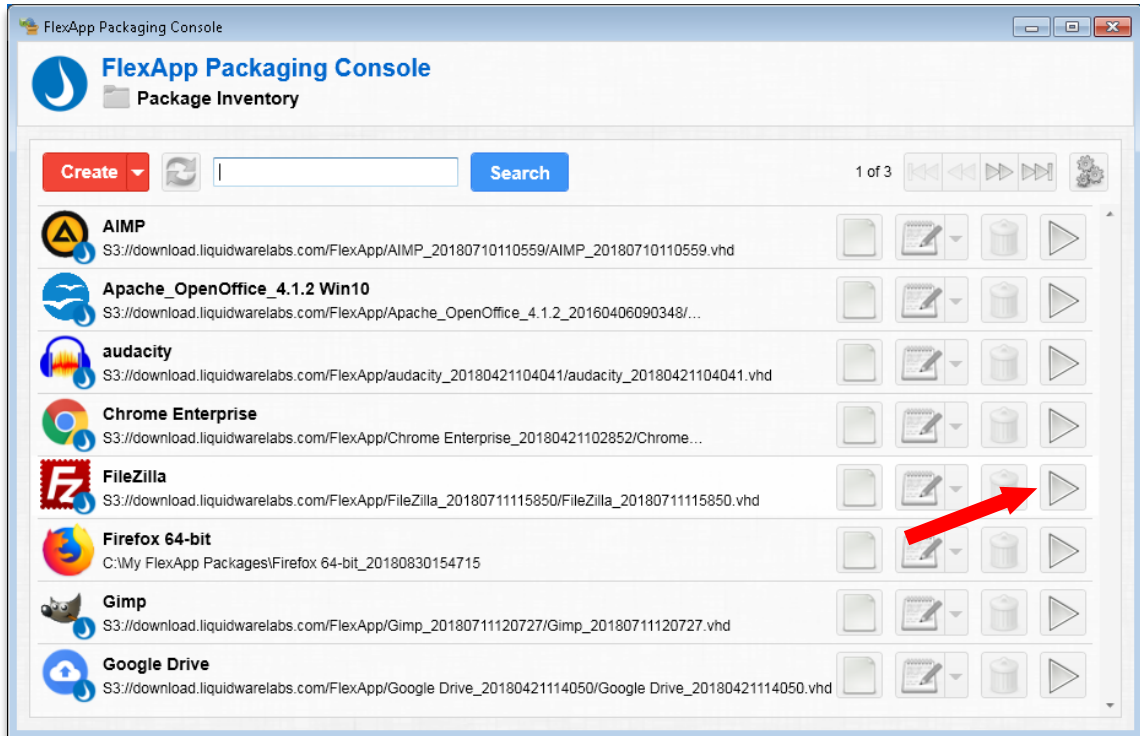
**Size** 20 GB

**Compression** No

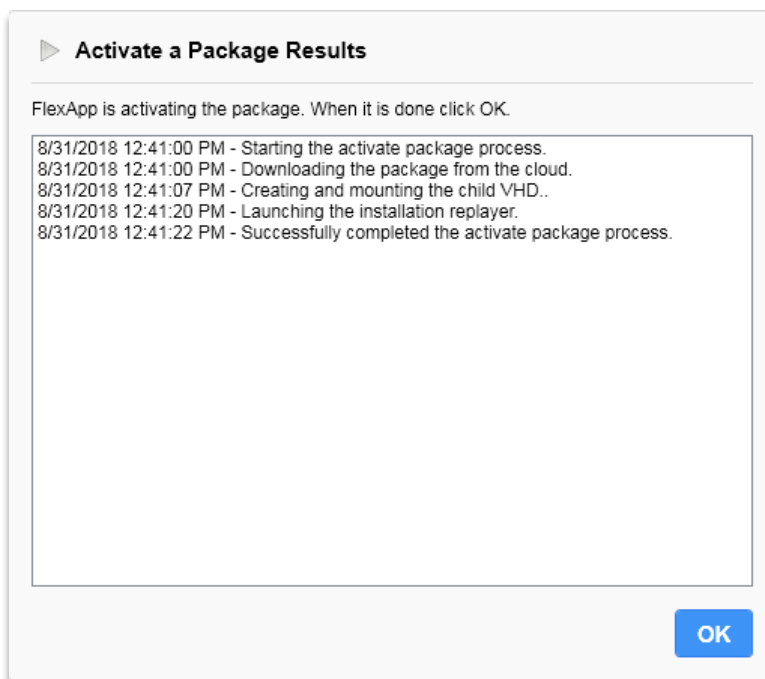
**Disk Type** Expandable

## Activating and Deactivating Application Packages

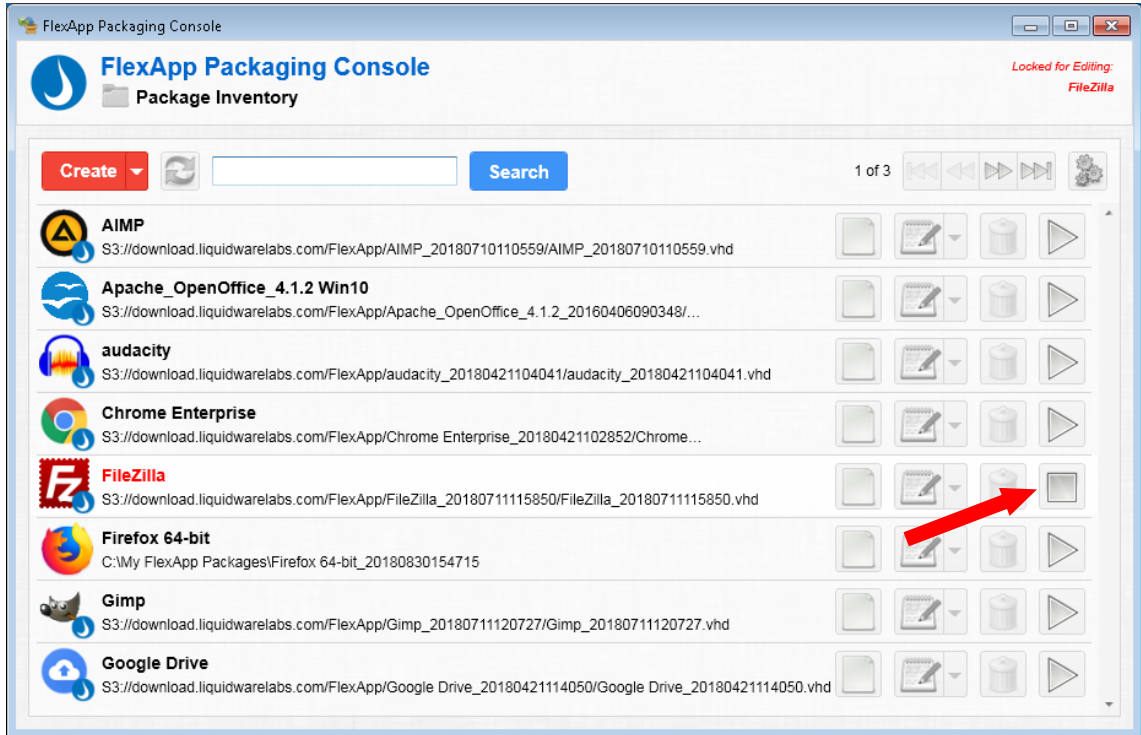
To activate an application package, click on **Activate the package**. Packages must be activated in order to configure their application settings, add scripts to the package, and configure package dependencies.



The Packaging Console will show its progress on activation. Click **OK** when it is finished.



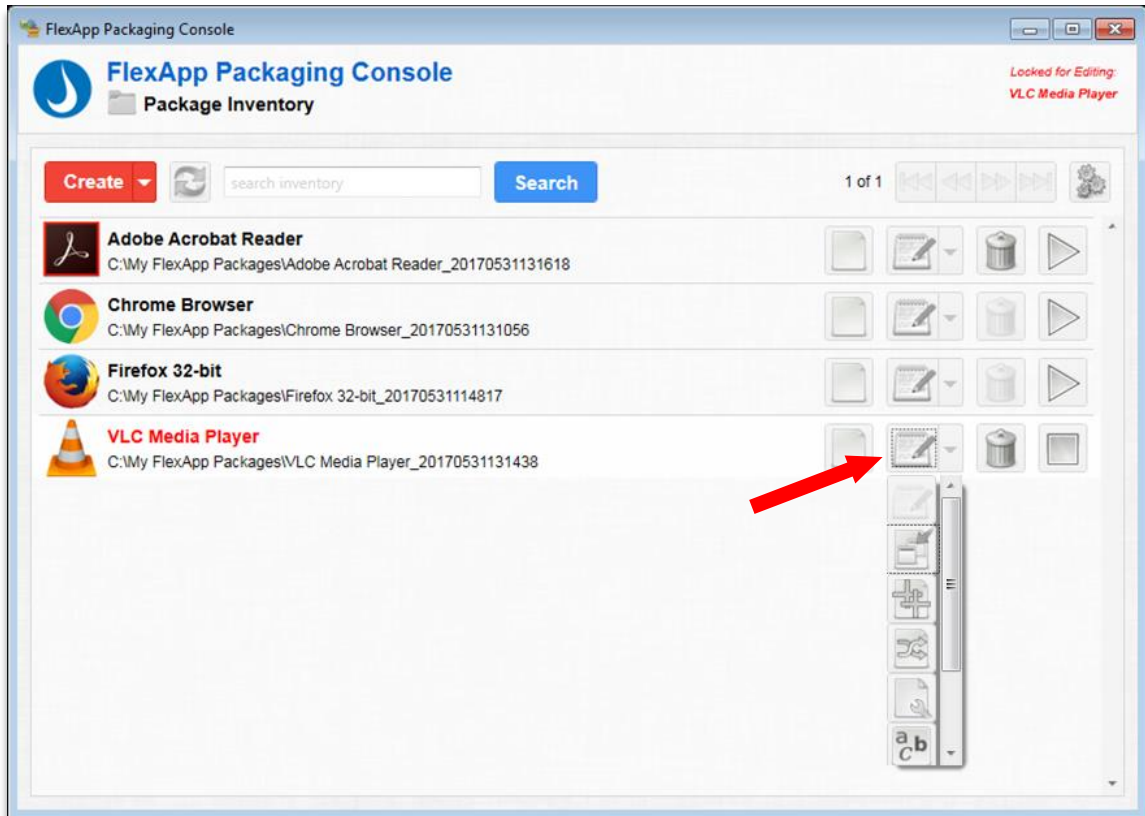
The Activate triangle icon will be replaced by the Deactivate square icon.



To deactivate an application, click on **Deactivate the Package**. Again, the Packaging Console will show its progress towards deactivation. Click **OK** when it is finished.

## Editing Package Settings

Once an application package has been created, the package settings can be changed in order to customize the application for running in your environment. Note that some editing functions require the package to be activated first while other editing functions work with the package deactivated. In addition, some editing functions are disabled if a FlexApp Package is currently configured for use in the ProfileUnity Management Console. Removing those packages from use in the Management Console and refreshing the FlexApp Packaging Console will enable them for editing again. The only editing function available for Liquidware Apps, which are provided by Liquidware, is cloning.



*Note: If you are making changes to the FlexApp DIA module in the ProfileUnity Management Console at the same time you have the FlexApp Packaging Console open, click on the "Refresh" button at the top of the FlexApp Packaging Console to update the Package Inventory list and update access to editing functions.*

## Edit the Package

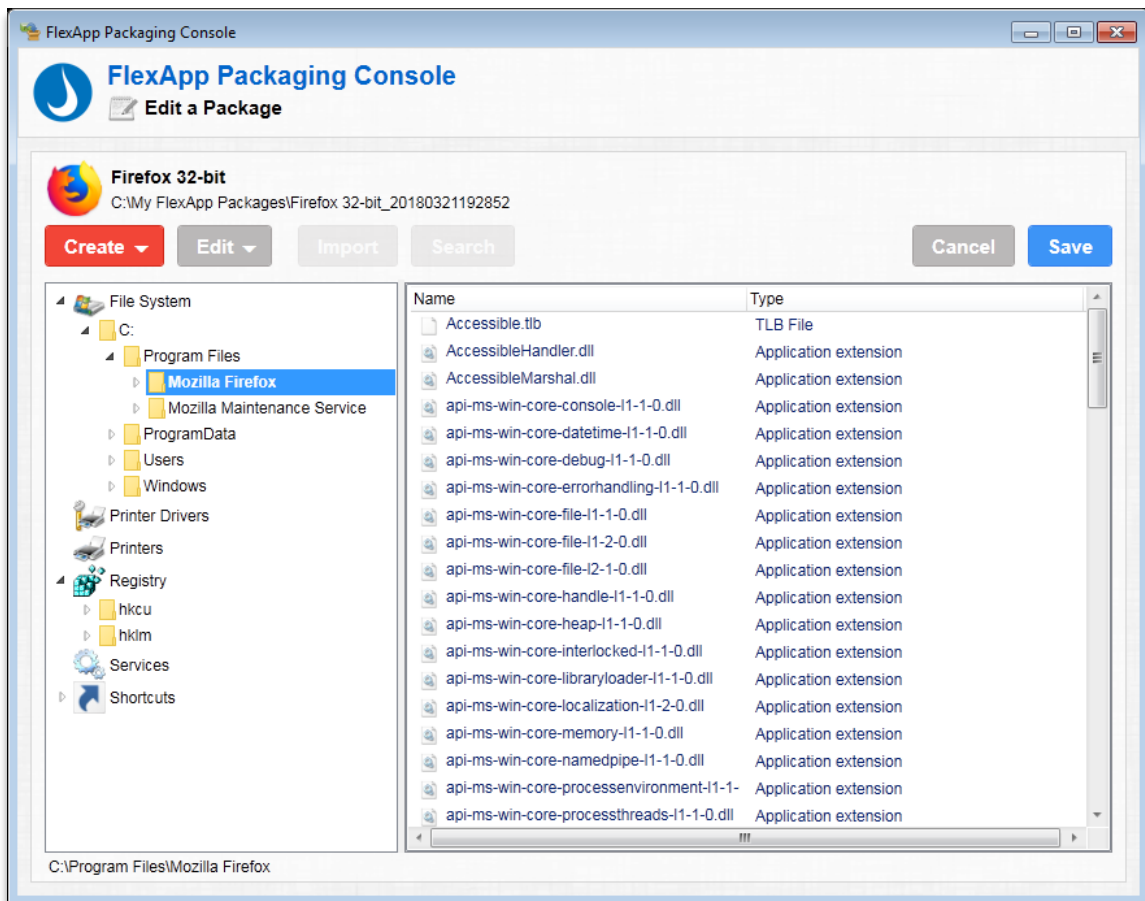
All VHD-based, cloud, or local disk FlexApp DIA packages created with version 6.5 onward contain a .cap file within. This Cap file can be edited to tweak and improve playback of a package. Prior to 6.7.5, the FlexApp Cap Editor was available as a standalone application. Now this feature has been integrated into the FlexApp Packaging Console.

Because you CANNOT mount VHDs that are currently in use by users, this option is only available while the FlexApp package is deactivated and not being used in a FlexApp DIA Configuration Module rule.

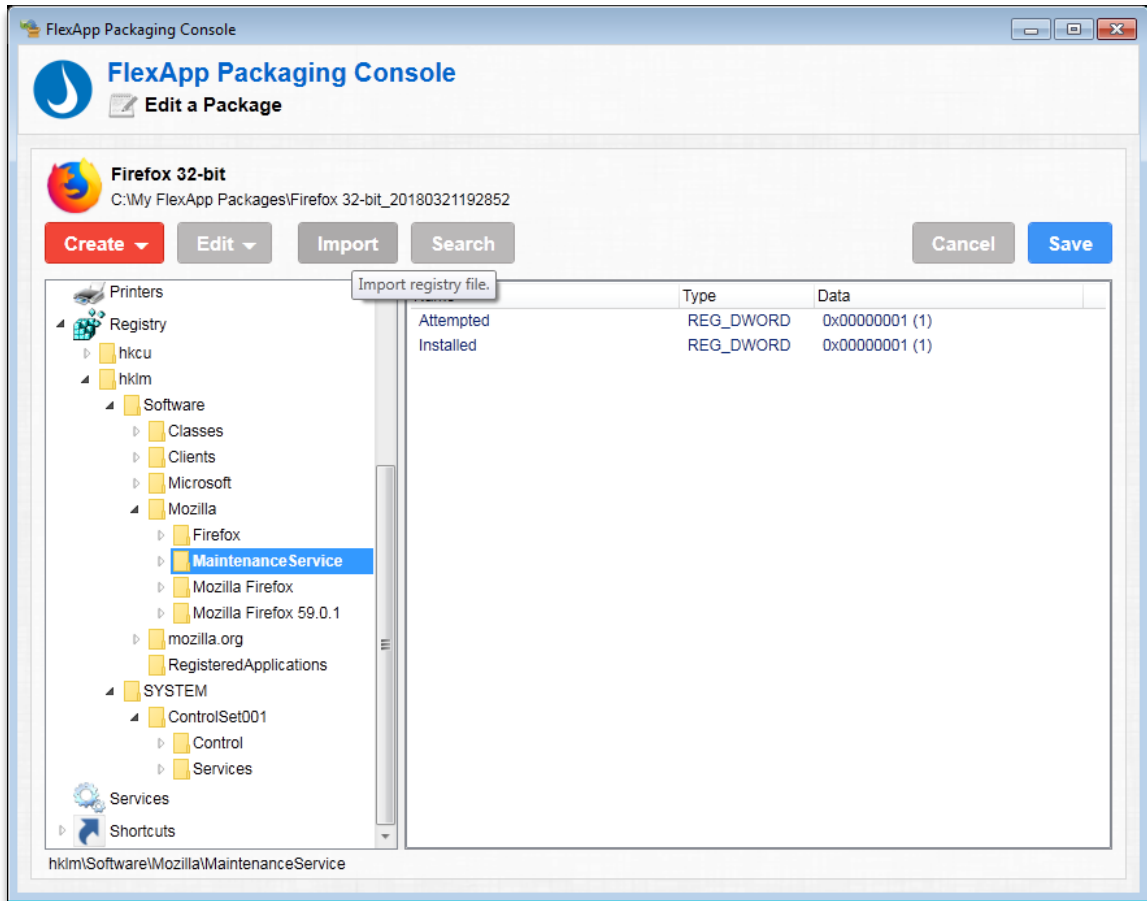
Be sure to follow standard backup procedures or Clone a FlexApp package BEFORE editing in the event you make inadvertent changes that could render the package useless.

From the FlexApp Packaging Console, click on **Edit the package** button to make changes to the package's file system or registry settings. The console will load the application's FlexApp package. Click **Ok** to continue to the editor.

Once the .cap file is opened, file system, registry entries, and shortcuts can be viewed, deleted, created, or modified. Settings for printers, printer drivers, and services are read only and cannot be edited.



A registry file can also be imported by clicking the **Import** button and browsing for the .reg you wish to use.



Once all changes have been made, click the **Save** button in the upper right-hand corner. Alternatively, click the **Cancel** button to discard any changes. The editor will unload the package and you can return to the FlexApp Packaging Console.

You have successfully edited a .cap file. Changes will take effect the next time the package is played back.

## Edit a Package's Metadata

Click on **Edit the package's metadata** button to make changes to the package name or the default icon it uses. This option is only available while the FlexApp package is not being used in a FlexApp DIA Configuration Module rule.

**Edit a Package's Metadata**

Use FlexApp to update a packages metadata. Clicking OK will save changes to the package.

**Package Name**   
If desired, update the name of your package. For example: "Firefox for Accounting Department".

**Package Icon**

**New Icon Location**   
If desired, input the full path to an executable or shortcut that contains the icon you wish to save to the package. For example: "c:\users\user1\desktop\FireFox.lnk".

*Note: If the desired application has been packaged prior to FlexApp Packaging Console v6.7, the package can be automatically updated for Click-to-Layer compatibility by opening the FlexApp Packaging Console version 6.7 or higher, selecting 'Edit the package's metadata' for the desired package and clicking OK.*

### **Package Name:**

Enter a descriptive name for the application package.

### **Package Icon:**

Displays the current package icon being used

### **New Icon Location:**

Enter the full path name or browse to the icon you wish to use for the application package.

## Extend a Package to Include More Than One Application


By extending an application package, you can create a single package that includes multiple applications which is useful in application dependency situations. The original package will be replaced with the result of the extension. If you want to keep the original package, consider cloning the package before extending it. For more information on cloning packages, please see the next section. This option is only available while the FlexApp package is not being used in a FlexApp DIA Configuration Module rule.

If applications in an extended package are dependent on one another because one is a prerequisite for another, you will need to package these applications in the correct order. The prerequisite applications need to be packaged before the applications that depend on them. As an example, let's say you wanted to package Eudora, but it is dependent upon Java. First, you would create a package containing the prerequisite app which is Java in this example. However, go ahead and make the Package Name reflect the main app that you are deploying, like "Eudora". Then you would extend the package to include the Eudora installer.

**Extend a Package**

Use FlexApp to extend an existing package and add additional applications into the package. Provide a path to the next application's installer. Clicking Extend will launch the installer.

**Package Name**   
If desired, update the name of your package to better reflect the additional items it contains. For example: "Browsers: Mozilla Firefox and Chrome"

**Installer Location**  

Optional: Input the full path to the installer of the application (for example: "c:\installers\Firefox Setup 13.0.1.exe") you wish to add to the package, or launch it yourself when prompted by the system. If you wish to include any additional parameters for the installer, enter them on the next line.

### Package Name:

Change your application package name to include all the applications that will be in the package.

### Installer Location:

Enter the path or browse to the location of the installer for the application that you are adding to this package.

### Additional Parameters:

(Optional) Please enter any additional parameters for the installer to use as it adds the new application to the package on the line following the **Installer Location**.

Once you have entered the information to extend the application package, click on **Extend** to launch the new application's installer. Follow the directions given in the installer allowing FlexApp to capture the entire installation process. When the installer is finished, click **Finish** in the FlexApp Packaging Console. When the packaging process is finished, click **Save** to accept the newly extended package.




## Clone a Package

Click on **Clone the package** to copy an existing application package. While cloning packages, the FlexApp Packaging Console also offers the ability to extend the new application package by adding an additional application at the same time. For more information on extending packages, please see the preceding section.

**Clone a Package**

Use FlexApp to clone an existing package. If you wish to also extend the package during cloning, provide a path to the application's installer. Clicking Clone create a copy of the package and launch the installer if one is provided.

<b>Old Package Name</b>	Firefox 64-bit
<b>New Package Name</b>	Firefox 64-bit Copy
	<small>Provide a descriptive name for your new package. For example: 'Mozilla Firefox'.</small>
<b>Installer Location</b>	
	<small><b>Optional:</b> If you wish to Extend your cloned Package, input the full path to the installer of the application (for example: 'c:\installers\Firefox Setup 13.0.1.exe') you wish to create a package for, or launch it yourself when prompted by the system. If you wish to include any additional parameters for the installer, enter them on the next line.</small>
<b>Package Type</b>	LocalDisk ▾
	<small>Choose the type of disk the package will be created in.</small>
<b>Local Installation Location</b>	C:\My FlexApp Packages
	<small>Input the path where the package will be created. For example: 'g:\MyPackages\'.</small>

**Cancel** **Clone**

### Old Package Name:

Displays the name of the original application package name

### New Package Name:

Enter a new name for the copy of the application package.

### Installer Location:

(Optional) If you are extending the package with an additional application at the same time you are cloning it, enter the path or browse to the location of the installer for the application that you are adding to this package.

### Additional Parameters:

(Optional) If you are extending the package with an additional application at the same time you are cloning it, please enter any additional parameters for the installer to use as it adds the new application to the package on the line following the **Installer Location**.

### Package Type:

Select the type of package to create. Choose from **FlexDisk**, **Cloud**, **VHD/VHDX**, or **Local Disk**.

### FlexDisk Datastore:

If "FlexDisk" is selected for the **Package Type**, select the FlexDisk datastore on which to store the new package.

### Cloud Credentials:

Select the proper **Cloud Credentials** which are configured in the ProfileUnity Management Console **Administration > Cloud Storage** section.

### Cloud Storage Location:

Enter a **Cloud Storage Location** that pairs with your selected **Cloud Credentials**. Valid cloud storage path prefixes are as follows:

- **S3://** - for Amazon S3
- **AZ://** - for Azure Blob
- **GS://** - for Google Cloud Storage

**VHD/VHDX Location:**

If “VHD” or “VHDX” is selected for the **Package Type**, browse to or enter the path for the new VHD-based package file.

**Local Installation Location:**

If “Local Disk” is selected for the **Package Type**, browse to or enter the path where the new Local Disk package will be located.

After you have entered the information to clone the application package, click on **Clone** to start the process. When the cloning process is finished, click **Finish** in the FlexApp Packaging Console. When the packaging process is finished, click **OK** to accept the new package or **Discard** to cancel out the cloning of the package.

## Patch Existing FlexApp Packages

In preceding sections, we covered how to clone packages and how to extend packages to include more than one application. We can now combine these two concepts to patch applications deployed using ProfileUnity's FlexApp technology.

To patch an existing FlexApp package:

1. Click the **Clone** the package button under the package's editing options.
2. Enter a **New Package Name** for the cloned copy of the package that will include the patch.
3. In the **Installer Location** text box, enter the path or browse to the location of the application's patch installer. If any additional parameters are required, enter those in the text box below the **Installer Location**.
4. Click **Clone** to start the Process.
5. Click **OK** to accept the newly patched FlexApp package.
6. In the package list, click on the arrow to activate the new package.
7. In the ProfileUnity Management Console, create or modify a FlexApp DIA rule to distribute the patched application to your users. Remove the old package from any DIA rules. Don't forget to download a new INI configuration file after all configurations have been made.
8. In the FlexApp Packaging Console, click on the square icon to deactivate the old package without the patch.

## Configure Application Settings for Users

Administrators can change and configure default application settings on FlexApp DIA packages for users by clicking **Configure the Package**. In order to configure a package, the application package must be activated, which is indicated by the activation icon to the right of each application package name in the list of packages. Also, activated packages will have their package name show in red.

**Configure a Package**

Use FlexApp to configure an existing package's application. Provide a path to the application's executable or shortcut. Clicking Configure will launch the executable.

**Package Name**

If desired, update the name of your package to better reflect how you have configured it. For example: 'Excel with 5 minute auto-save.'

**Application Location**

Optional: Input the full path to the executable or shortcut for your package's application (for example: 'C:\Program Files\Microsoft Office\Office14\excel.exe'), or launch it yourself when prompted by the system. If you wish to include any additional parameters, enter them on the next line.

### Package Name:

This will display the current package name but give you an opportunity to rename the package including a more descriptive name relating to any special configuration settings.

### Application Location:

Enter the full path or browse to the executable's location.

### Additional Parameters:

(Optional) Please enter any additional parameters on the line following the **Application Location**.

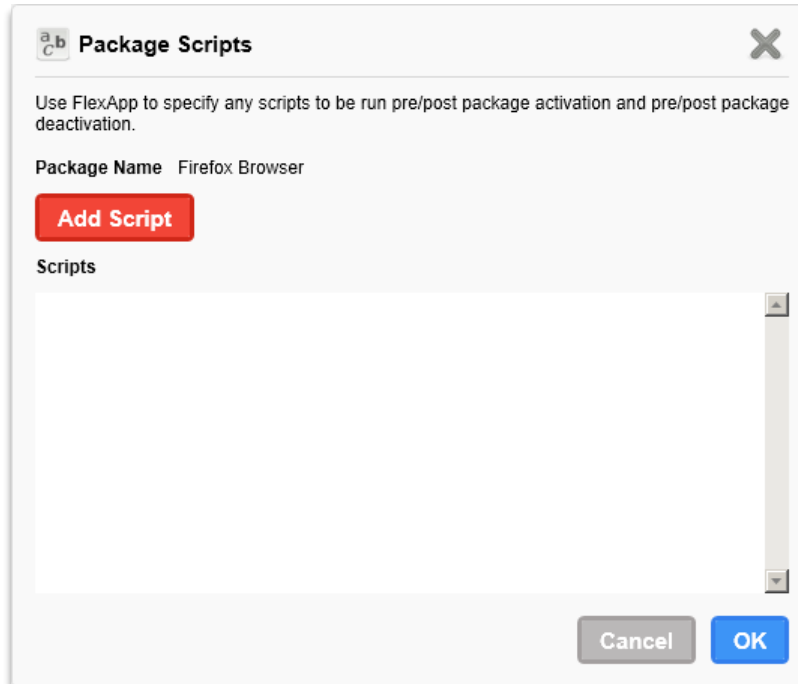
Once you have entered the information to configure the application package, click on **Configure** to launch the application's executable. Configure the application by making changes to its settings. The FlexApp Packaging Console will record these changes to the application. When the process is finished, choose **Save** to accept the application changes to the package or **Discard** to cancel out the setting changes. Then click **OK** to finalize the process.

## Add Package Scripts

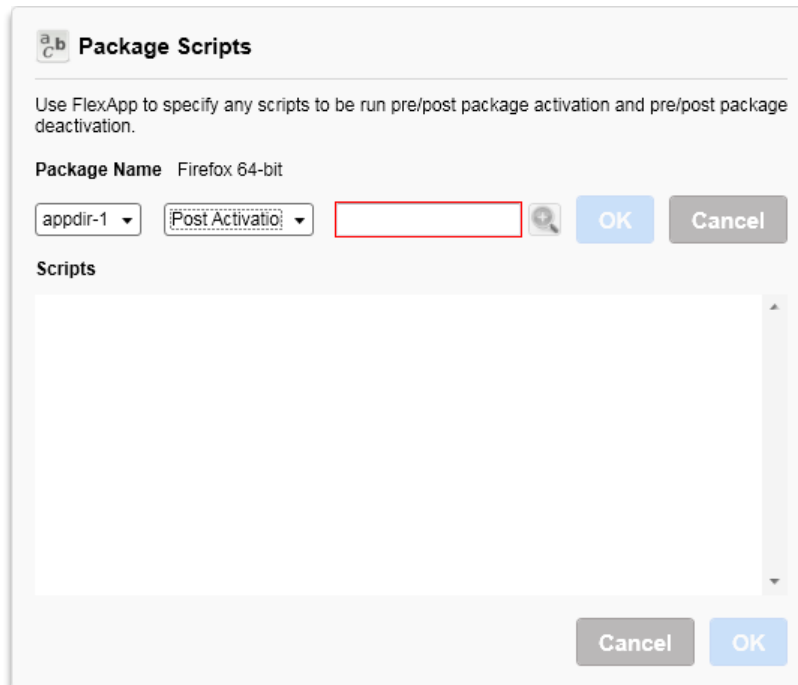
Administrators can add scripts to run with FlexApp DIA packages either pre/post package activation or pre/post package deactivation by clicking **Add Scripts to the Package**. In order to specify which scripts to run, the application package must be activated, which is indicated by the activation icon to the right of each application package name in the list of packages.

To configure a script to run with a package:

1. Click on **Add Script**.



- Specify the following settings:



**Package Scripts**

Use FlexApp to specify any scripts to be run pre/post package activation and pre/post package deactivation.

**Package Name** Firefox 64-bit

appdir-1 | Post Activation |  | Search | OK | Cancel

**Scripts**

Cancel | OK

**Package Script App:**

Select “appdir-1”.

**Package Script Execution Time:**

Select the time when the script should run based on either the package activation or deactivation. Choose from **Pre Activation**, **Post Activation**, **Pre Deactivation**, or **Post Deactivation**.

**Package Script Path:**

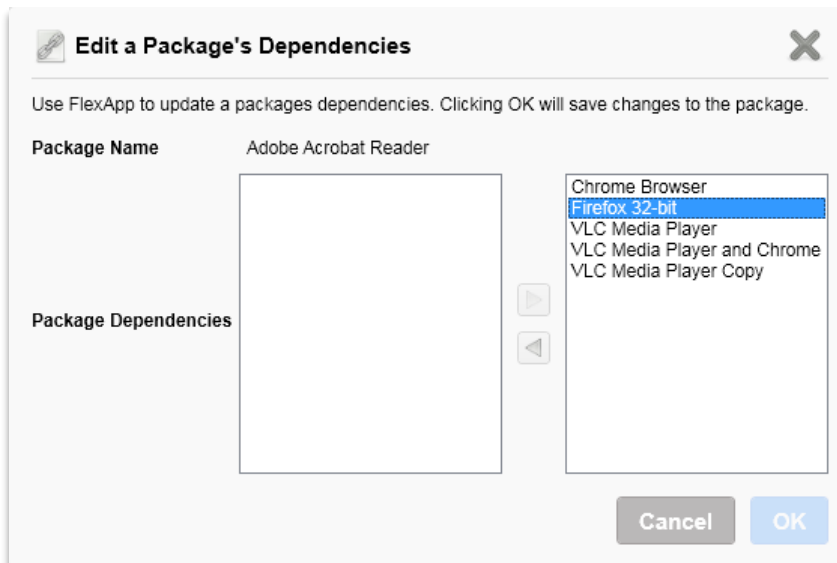
Browse to the location of the script to be run, select it, and click **OK**.

- Click **OK** to make the script part of the package.

## Edit Package Dependencies

Configuring package dependencies between one or more individual FlexApp DIA packages can be done by clicking **Edit dependencies of the package**. In order to configure dependencies for a package, the application package must be activated, which is indicated by the activation icon to the right of each application package name in the list of packages.

There may be cases where independent FlexApp packages relate to one another. For example, Microsoft Outlook uses Microsoft Word to create and edit emails. Ideally, Microsoft Word would need to be in place before using Microsoft Outlook. Setting FlexApp package dependencies helps to control how FlexApp packages are layered into the user environment at login. A package will not be made available for use until its dependencies are first layered in and active.



### Package Name:

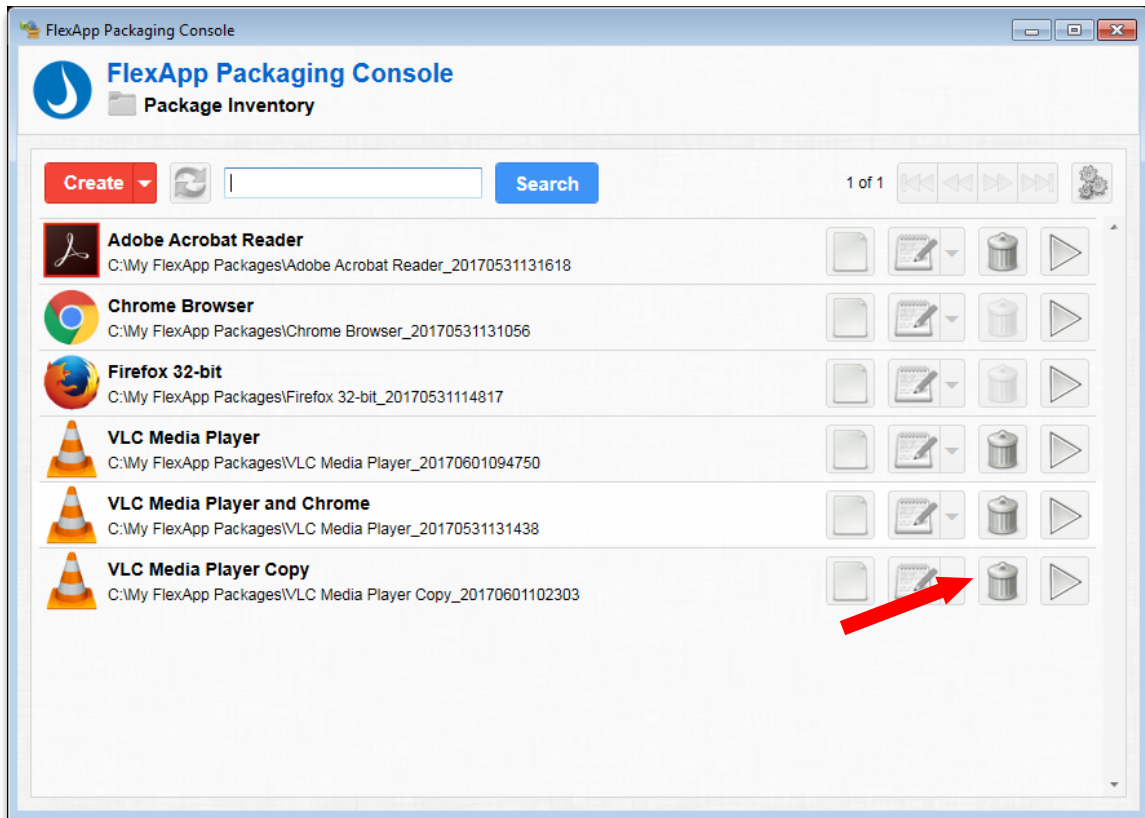
This will display the current package name.

### Package Dependencies:

Lists all other FlexApp packages that the named FlexApp package is dependent upon. You can add packages from the list on the right that holds all FlexApp packages from which to select. Select a package dependency and click the **Remove** button to remove a dependency.

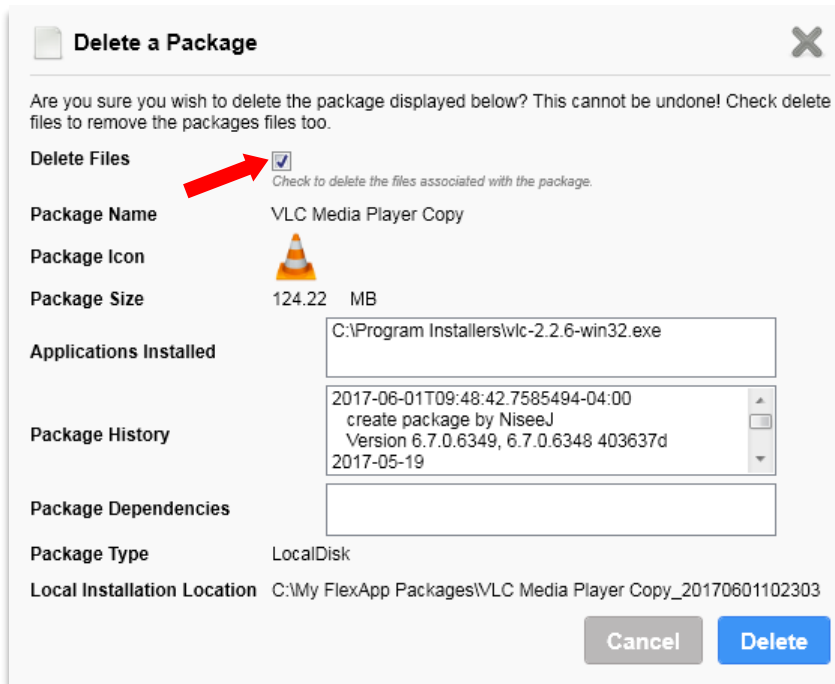
## Deleting Application Packages

To delete an application package that is no longer needed, click on **Delete the package**. Liquidware Apps that are automatically included in the inventory are not available for deletion.





Before deleting a package, the FlexApp Packaging Console displays the package information and asks for a confirmation. Check **Delete Files** and click the **Delete** button to remove the package from the list.



## Getting Help with ProfileUnity

If you have questions or run into issues while using ProfileUnity with FlexApp, Liquidware Labs is here to help. Our goal is to provide you with the knowledge, tools, and support you need to be productive.

### Using Online Resources

Liquidware Labs maintains various kinds of helpful resources on our [Customer Support Portal](#). If you have questions about your product, please use these online resources to your full advantage. The Support Portal includes product forums, a searchable Knowledge Base, documentation, and best practices among other items. You can visit our website at <https://www.liquidware.com/support>.

### Troubleshooting with the Software

ProfileUnity with FlexApp provides full logging capabilities to track activities. Once you have tried to duplicate the issue with full logging turned on, the logfile details can be used to help pinpoint the source of the problem you are experiencing. To turn logging on, go to your login user ID at the top right of the Management Console interface and select **Administration**. At the top of the Administration area, select **Settings**. As you scroll through the list you will see the ProfileUnity Console Service Log category. Set the **Level of Logging** to **Debug** to provide the most information. To view the log file, click on **View Log**. If you are still experiencing issues and need to contact technical support for additional help, the logfile can be sent to support for further evaluation.

Not sure about your configuration settings? Don't forget that ProfileUnity offers summary reports for all your configurations, filters, and portability settings. Simply click on **Report** next to the name of the configuration, filter, or portability setting for which you need a report. You can download and save the report in either a Portable Document Format (PDF) or text format. These summary reports can also be very helpful in troubleshooting issues.

### Contacting Support

If you wish to contact our Support staff for technical assistance, please either log a request on the [Liquidware Labs Customer Support Portal](#) or give us a call. Prior to Logging a Case you may want to review these helpful tips:

- Check the online help included with your Liquidware Labs Product.
- Check the Product Documentation included with your Liquidware Labs Product.
- Try to see if the problem is reproducible.
- Check to see if the problem is isolated to one machine or more.
- Note any recent changes to your system and environment.
- Note the version of your Liquidware Labs product and environment details such as operating system, virtualization platform version, etc.

To speak directly with Support, please use the following numbers:

<b>Main Line:</b>	1-678-397-0460
<b>Toll Free in US &amp; Canada:</b>	1-866-914-9665
<b>Europe/Middle East/Africa:</b>	+44 800 014 8097

**Toll Free in Europe**

**UK:** 0800 014 8097

**Netherlands:** 0800 022 5973

**Switzerland:** 0800 561 271