

SAM Monthly Best Practices Webinars

Session 23: Management of Streamed Applications



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PRINCIPAL PRODUCT MANAGER

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Previous sessions [\(see in SAM Best Practice Hub\)](#)

- [July 21 session : FNMS 2021R1 content and Oracle Optimization](#)
- [September 21 session : RedHat, Microsoft Windows and SQL server optimization](#)
- [October 21 Session : Everything about Oracle](#)
- [November 21 session : Metering in FlexNet Manager: collection, management and optimization](#)
- [February 22 session : Java and Windows Server Optimization report](#)
- [March 22 session: Managing unrecognized applications](#)
- [April 22 session: Managing Hybrid Applications in SaaS Manager and Flexera One ITAM](#)
- [May 22 session: Customization and creating automations in Flexera One ITAM and FlexNet Manager Cloud](#)
- [June 22 session: Integrating ITAM & FlexNet Manager on Premise with a CMDB](#)
- [July 22 session: Management of Dockers and Kubernetes containers in Flexera One ITAM / FlexNet Manager](#)
- [August 22 session: Reporting in ITAM: Web, Cognos, Dashboards customization, next steps...](#)
- [September 22 session: Managing SAM Operations in project and run phase in ITAM / FlexNet Manager](#)
- [October 22 session: ITAM & SAM - Vision and next steps](#)
- [November 22 session: Flexera One ITAM / FlexNet Manager 2022R2 features deep dive](#)
- [December 22 session: Managing IBM PVU and VPC Licensing](#)
- [January 23 session: A full optimal license position for Windows Server and CIS in one hour!](#)
- [February 23 session: Using allocations and exemptions for an optimal license position](#)
- [March 23 session: the SAM Optimization Hub](#)
- [April 23 session: the SAM Operations Hub](#)
- [May 23 session: Keep Java under Control with Flexera ITAM!](#)
- [June 23 session: Flexera Business Adapter Studio for integrations and automations!](#)
- [July 23 session: FlexNet Manager 2023R1 and the new Applications Publishers screen](#)

Agenda

1. Last session's pointers and answers to questions
2. News
 1. Updates in the Best Practice Hub
 2. ITAM 2023R1.2.
3. Management of streamed Applications

Last Session: FlexNet Manager 2023R1 and the New Applications Publishers screen (2023R1.1)

- Useful pointers
 - Recording and PowerPoint: [here](#)
- Answers to questions
 - No question for this session!

News

- ITAM 2023R1.2
 - July 19th.
 - Bug fixes only
- The “[Best practice Hub](#)”
 - Gives many pointers to existing best practice and visibility on the 3 coming Hubs.
 - Information on the coming SAM Publisher Hub
- Please check if you received the
 - Flexera July ITAM Newsletter?

KPI	Explanation	Value	Total scope	%age of scope	Performance
Number of failed tasks in run (Details)	A system task that file leads to inaccurate / not up to date information and must be fixed (More info)	1	7	15%	Red
Beacons that don't report correctly (Details)	All inventory files transit through beacons (More info)	0	0	0%	Green
Number of orphan VMs (Details)	Non cloud VMs without host are the sign of decommissioning process issue or eCenter import issue (More info)	400	10,000	4%	Green
Number of merged devices (different sources) (Details)	Big cause of false positives (More info)	4,000	20,000	20%	Orange
Number of merged devices (same source) (Details)	(More info)	300	6,000	5%	Orange
Unlicensed Commercial Installations (Details)	These installations are under the radar (More info)	20,000	200,000	10%	Orange
Unprocessed Purchases (Details)	(More info)	20	100	2%	Green

Operations KPI (Trend)

Can I trust my inventory?
Are my inventory import system tasks successful?
This should be the first check of the day. The system tasks screen shows on failing task. This requires a fix.

Flexera ITAM Best practice information available in Flexera Community

 nrousseau1
Level 8 Flexeran

Apr 19, 2022 02:40 AM

👍 13 💬 20 👁 7,687

This is all about sharing and applying best practices

You may have seen here and there interesting KB articles, using the powerful customizations possibilities of FNMS to provide extensions to the out of the box value for reporting or automations... The issue is that the articles are spread and unless you know what you look for you may miss some interesting information.

The purpose of this post, that will be extended over the time, is to provide you with a "SAM Best Practices Hub", a single pane of glass to understand and use the published solutions and the coming features: SAM Optimization Hub in 2022 Q3, SAM Operations Transparency Hub in Q4 2022, a SAM Data Transparency Hub in 2023... where these best practices will be progressively incorporated.

The solutions are addressing both ends of the "SAM Maslow Pyramid" (from bottom to top) and are anticipating where Flexera goes with SAM:

- Provide data and KPIs to monitor the health of your SAM Project. The custom reports will gradually be included in the **SAM Operations Transparency Hub**... Planned for 2023 Q1
- Provide transparency on your SAM data (usage, Oracle instances and options details, overview on SAP inventory...). The **SAM Data Transparency Hub** is planned for 2023 Q2
- Provide the high end value that does beyond compliance, with a focus on Optimization. Most of reports have been productized in 2021/2022. The **SAM Optimization Hub** delivered in 2022 Q4 summarizes and articulate these reports.

Management of streamed applications

Agenda

- Concept of streamed applications
- Managing the license consumption for the streaming technologies
 - Importing Microsoft RDS license servers' data
 - Importing Citrix Management Console data
- Managing the license consumption for the streamed applications
 - Integrating inventory (multiple technologies, multiple connectors)
 - Analyzing the “remote usage” with the streamed application usage
 - Making sur licenses take into account all consumptions

Introduction: streamed applications technologies

- To simplify deployment of applications
- And make governance more centralized (who can use what?)
- Technologies have emerged in the last 2 decades to stream applications
- Three approaches
 - Persistent VDIs: the user from a “thin client” can access a desktop (this is like a computer, data is persisted)
 - Non-persistent VDIs: each new session kicks off a new virtual desktop
 - Streamed applications: by clicking on an icon, and application is run on a streaming server and rendered on the user’s devices (in a web browser).
- The big players
 - Citrix (XenApp, XenDesktop)
 - On premise, cloud
 - VMWare (Horizon)
 - Microsoft (RDS servers, App-V)

Example of Citrix

1. XenApp

1. Based on AD Groups
2. “Packages” are assigned to users
3. Packages are imported as “remote applications”

2. Xen Desktop

1. Access through VDI groups defined in AD
2. VDI templates exist
 1. That are persistent
 2. Or not persistent

Licensing implications of application streaming

- Using an application requires license entitlements
- Having the right to use an application (just like having an application installed on a physical computer) requires license entitlements
- Depending on license metric multiple situation may occur
 - Per user: this is simple, users with applications assignments need to be licensed
 - Per device:
 - “All accessing devices should be licensed”
 - This is a trap that Microsoft is using with Office Professional (to force customers migrate to M365 that is per user (and a subscription))
- We need a way to track remote usage and reflect it accordingly in the license consumption

Flexera design on Application streaming

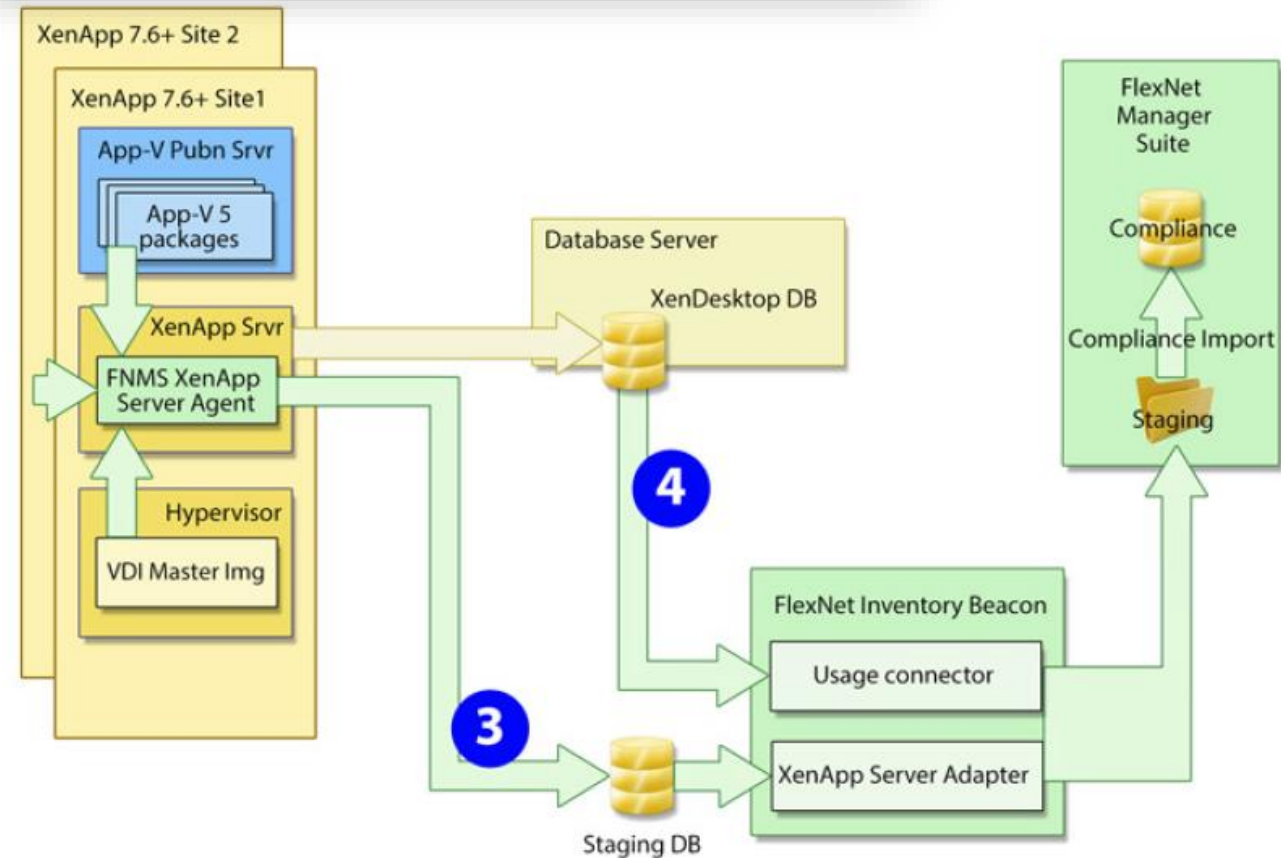
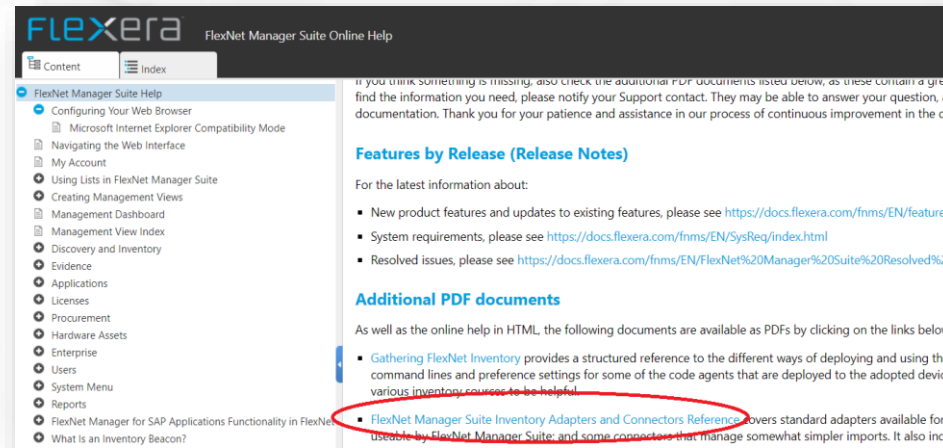
- Persistent VDIs
 - Are managed as a virtual machines and will consume as such.
- Non persistent VDIs:
 - Templates are inventoried, along with their applications.
 - Users to template access rights are captured in AD.
 - Templates' applications are duplicated to ALL devices of the assigned users.
 - Access mode:
 - Citrix Virtual Desktops.
 - Horizon Virtual Desktops.
- Streamed Applications
 - User applications assignments are collected (AD Groups, Microsoft API).
 - Streamed applications package are duplicated as (non raw) installer evidences to ALL devices of the assigned users.
 - An application package to ARL application(s) mapping may be necessary.
 - Access mode:
 - Citrix Virtual Apps.
 - VMware View (Horizon).
 - Office 365.
 - App-V (**exclusively collected from SCCM**)

Tracking the licensing requirements for these technologies

- Tracking Microsoft RDS CAL or Citrix license consumption is not trivial as these are not “Visible for installations” consumptions
 - Assigned RDS CALs for Microsoft
 - Concurrent access for Citrix
- However, querying the “License server” or “console” bring information that can be reflected (but not calculated) in ITAM / FlexNet Manager
- Two integrations are published as KB articles
 - [RDS CALs integration and Optimization](#)
 - [Citrix Console integration](#)
- Same approach
 - Read the data from the licensing servers with PowerShell script
 - Collect and store the data in a staging table to rework it (this SQL step must be re adapted for RDS as optimization approaches defer from customer to customer)

Integration Flow

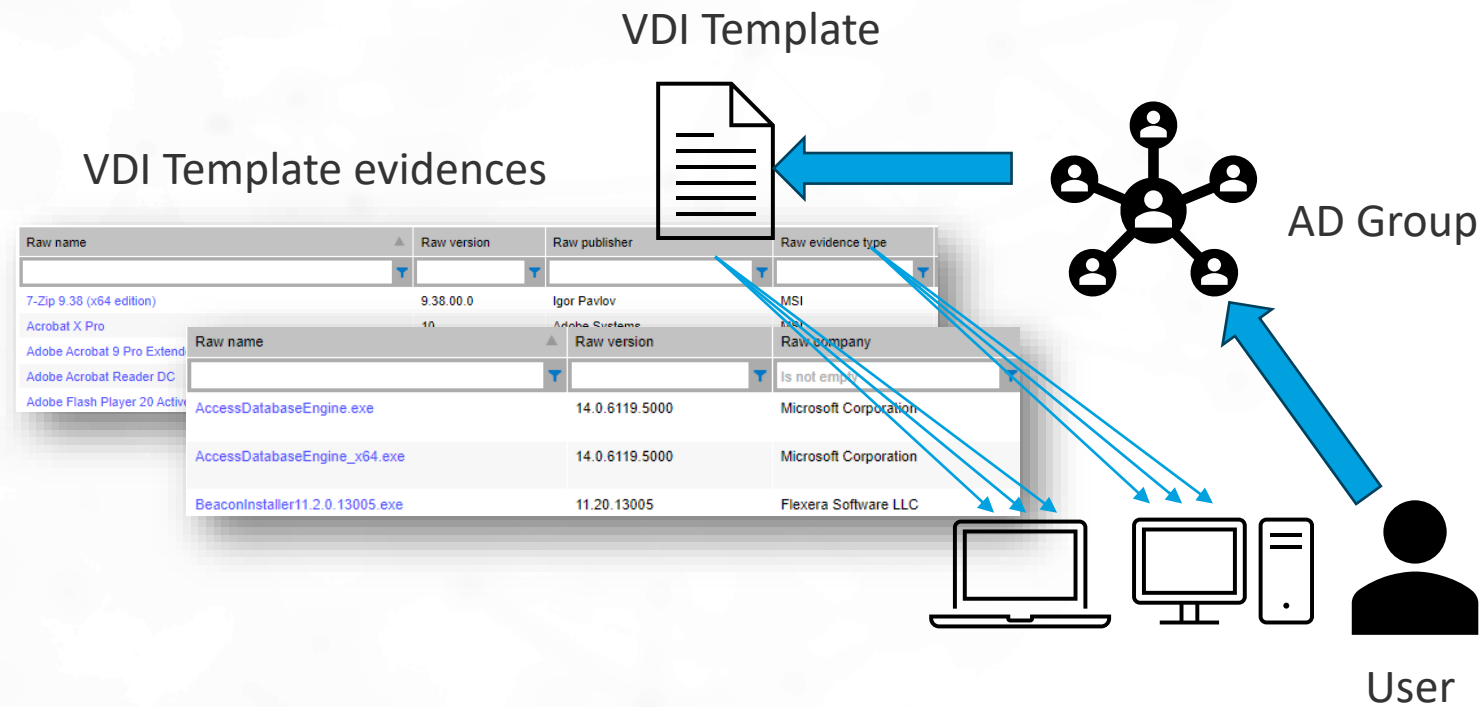
- Described in the [FNMS Inventory Connector Reference](#)
- Varies on versions: >7.6 diagram
 - One Citrix Agent per site
 - A staging DB is fed by the Citrix Agent
 - Optional collection of usage
 - Data is imported into FNMS tables
 - ImportedRemoteApplicationAccess
 - ImportedRemoteUserToApplicationAccess
 - ImportedVDIs (incl groups, templates information)
- In addition:
 - VDI templates must be inventoried by the FNMS agent
 - Persistent VDIs must be inventoried too



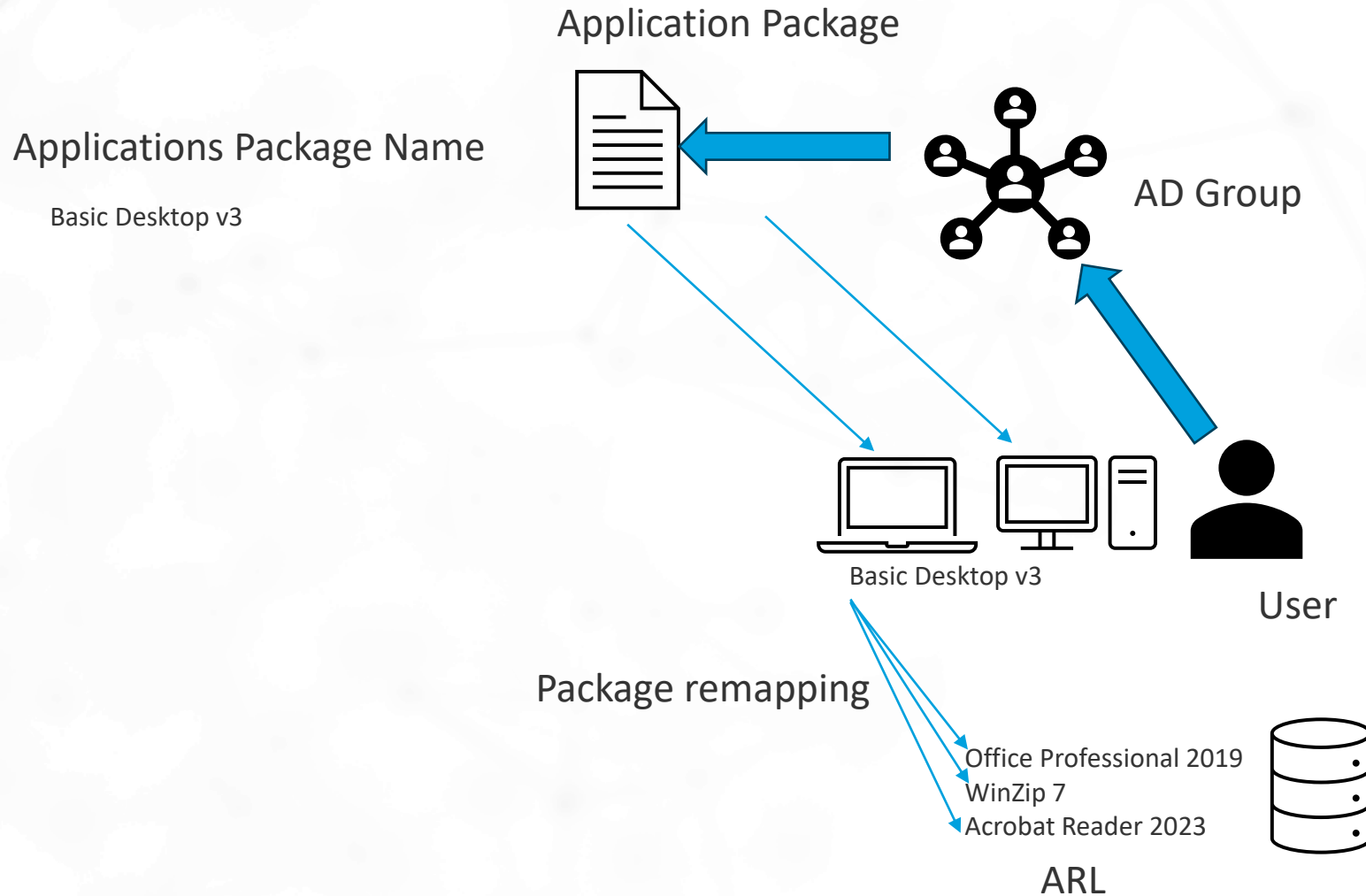
How the data is managed in ITAM (Demo)

- XenApp
 - XenApp File and installer evidences are created
 - These evidences are linked to the users' main machine(s) or remote machine, based on users' applications assignments of remote applications
- VDI Groups, VDIs, VDI templates are imported
 - Persistent VDIs
 - Are created as Virtual Machines
 - Can consume licenses
 - Non persistent VDIs
 - Are not even created in FNMS (not in all inventory)
 - Only VDI Templates are created as a special computer type
 - Cannot consume licenses
 - Replication of non persistent VDI templates into Users "Remote" evidences
 - The replication is based on user VDI groups allowing access to VDI templates
 - Each user's applications is the union of the templates' applications used by non-persistent VDIs he can access to

Non-persistent VDI evidence duplications



Streamed Application



What happens in ITAM

1. VDI templates and links to user can be accessed
 1. In the Discovery & Inventory/Virtual Desktop Templates screen
 2. Shows the links (combinations) between users, templates, and eventually accessing device
2. Non-persistent VDI templates are available in the “All Inventory” screen
3. Persistent VDIs just appear as normal VMs
4. Installations are created as “XenApp or XenDesktop” access mode

<input type="checkbox"/>	Pooled073	Pooled073	w7ru0073vg002	001570509674
<input type="checkbox"/>	Pooled073	Pooled073	w7ru0073vg002	001570509674

Inventory device type is VDI Template

<input type="checkbox"/>	Name	Host	Last inventory source	Status	Inventory device type
<input type="checkbox"/>				All	VDI Template
<input type="checkbox"/>	Pooled073		FlexNet Manager Suite	Ignored	VDI Template
<input type="checkbox"/>	PooledCatalog006		FlexNet Manager Suite	Active	VDI Template
<input type="checkbox"/>	PooledCatalog008		FlexNet Manager Suite	Active	VDI Template
<input type="checkbox"/>	PooledCatalog010		FlexNet Manager Suite	Ignored	VDI Template

XenApp / Xen Desktop Installations (NR)

this report shows installations with a XenApp Access mode

Search

▼ Add filter

1,000,000 results returned 20 rows per page

Access mode ▲

<input type="checkbox"/>	Installation	Inventory device	Assigned license
<input type="checkbox"/>	Application name	Inventory device name	Name
<input type="checkbox"/>	Installation - Access mode: Local, XenApp (177)		
<input type="checkbox"/>	Installation - Access mode: Local, XenDesktop (267,394)		
<input type="checkbox"/>	Installation - Access mode: XenApp (4,010)		
<input type="checkbox"/>	Acrobat Reader XI	W7FR30001980	
<input type="checkbox"/>	Notepad 6.1	VMNFR99700052	
<input type="checkbox"/>	Snipping Tool 6	W7FR30001980	
<input type="checkbox"/>	Windows Script Host 5	VMNFR99700052	
<input type="checkbox"/>	Snipping Tool 6	WXFR10041297	
<input type="checkbox"/>	Notepad 6.1	WXFR10041297	

On the licensing side

1. Applications access remotely or locally must be licensed
2. FNMS creates remote installations
3. But Licenses must be set up to include remote usage
 1. Access granted... consumed
 2. Consume one entitlement for user
 3. Check the online help!

License consumption rules

Consumption per device, user or access

These rules set whether license entitlements will be consumed because of installations, allocation, access or usage technologies.

Installations always consume license entitlements.

This license does not have contracts with license consumption rules

Allocations consume license entitlements

Access granted to users, or usage, consumes license entitlements

Consume one entitlement for each user

Consume one entitlement per device owned by each user

Consume entitlements based on: Access

Clients accessing servers that consume this license will be exempted from CALs (No CALs required)

Access granted to users, or usage, consumes license entitlements

- For most licenses, the default setting (the check box is clear) is correct.
- For licenses covering virtualized applications, set this check box to expose additional controls. (Here virtualized applications includes those streamed from an application server, or deployed from such a server for local installation, or delivered through a virtual desktop solution.) In short, select this check box to allow license consumption for App-V, Citrix Virtual Apps, and Citrix Virtual Desktops applications (the "whether or not" setting for consumption for virtualized applications).

Tip: The choice between access or usage is made by the last of the newly-exposed controls, described below.

Consume one entitlement for each user or Consume one entitlement per device owned by each user

This group of radio buttons determines, once consumption is triggered, exactly what quantity is consumed (the "what" of consumption).

- One entitlement per user: some licenses (more typically for application virtualization) require a device-based calculations, but make the concession that all the devices "owned" by a single user may be grouped together and counted as one. This sounds rather like user-based licensing, but meets the publishers' requirements for device-based licenses that can allow such grouping of devices.

Tip: Some licenses (for example, in VDI environments) allow a right of "roaming use", where a single user may access the application from any number of end points (devices). For this right, select **Consume one entitlement for each user**.

- One entitlement per device: other licenses require that every device is separately licensed, and further require that if a user can access the virtualized application on any device, then they are deemed to have access through each of their devices, all of which must be licensed. In this case, a device is "owned" by a user when the user is either:
 - the **Assigned** user for a device
 - the **Calculated** user for a device (both of these are visible in the **Ownership** tab of the inventory device properties).

Restrictions: These radio buttons are only visible for the license types listed above the table.

Special case on Streamed “per device” applications

Remote Usage For Streamed Commercial Applications

Save as

Returns the commercial applications used (On last 90 days) by end users on Windows Server streaming servers, joined with remote client usage (over 90 days, a local application needs to be created, see online help) and gives a worst case on used applications and accessing computers.

Products Applications covered by device license Remote access applications Receiver 4

23 results returned 20 rows per page

Search...

Export

Refresh, Stop, Filter, Sort, View

Streaming server	User	Remote device			Application						Streaming server
Device name	Full name	Device name	Substitution device	Already consumes a license for product	Licensed by device license	Licensed	Name	Product	Publisher	Operating system	
<input type="checkbox"/> Computer006965	AdriaWiley	No Device Found For AdriaWiley	Computer006965		No	No	SharePoint Online for 365	SharePoint Online for 365	Microsoft	Microsoft Windows Standard	
<input type="checkbox"/> Computer006965	AdriaWiley	No Device Found For AdriaWiley	Computer006965		No	No	OneDrive Online for 365	OneDrive Online for 365	Microsoft	Microsoft Windows Standard	
<input type="checkbox"/> Computer006965	AdriaWiley	No Device Found For AdriaWiley	Computer006965		No	Yes	Exchange Online for 365	Exchange Online for 365	Microsoft	Microsoft Windows Standard	
<input type="checkbox"/> Computer006984	CameronClayton	No Device Found For CameronClayton	Computer006984		No	Yes	Skype for Business Online for 365	Skype for Business Online for 365	Microsoft	Microsoft Windows Datacenter	
<input type="checkbox"/> sql2014ctp2	ActonWatkins	No Device Found For ActonWatkins	Computer008303		No	No	Yammer Online for 365	Yammer Online for 365	Microsoft	Microsoft Windows Standard	
<input type="checkbox"/> sql2014ctp2	ActonWatkins	No Device Found For ActonWatkins	Computer008303		No	No	OneDrive Online for 365	OneDrive Online for 365	Microsoft	Microsoft Windows Standard	
<input type="checkbox"/> sql2014ctp2	ActonWatkins	No Device Found For ActonWatkins	Computer008303		No	Yes	Exchange Online for 365	Exchange Online for 365	Microsoft	Microsoft Windows Standard	
<input type="checkbox"/> VirtualMachine005385	KellyGolden	No Device Found For KellyGolden	VMHost00473		No	Yes	Exchange Online for 365	Exchange Online for 365	Microsoft	Microsoft Windows Enterprise	

Known challenges

1. 10 groups x 100 templates x 50,000 users = 50 millions combinations!
2. Complexity of data (n-n links) is high, and analysis is really challenging.
3. XenApp file evidences get lost in the mass of « not for recognition file evidences » but installer evidences can be used
4. But packaging leads to unrecognized evidences (150 max)
5. Some customers seem to be in a “mixed” mode
 1. Persistent VDIs
 2. Users based on their group will access any of the VDIs
 3. Need a non-persistent-like evidence duplication
 4. Can be customized (on premise)

Virtual Desktop Templates The virtual desktop templates listed here include applications that are not licensable. (Inventory from instantiated virtual desktops is collected separately.)

56,504,520 results returned 20 rows per page

Template	Group	VDI device	User name
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	0015704915d9
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	0015705091e9
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	001570509674
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368a40689
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368d1f596
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368d1f5d3
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368d20783
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368d20856
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368d2654c
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368edca05
<input type="checkbox"/> Pooled073	Pooled073	w7ru0073vg002	002368edcee1



Tuning XenApp
Recognition



Thank you!

About Flexera

Flexera delivers SaaS-based IT management solutions that enable enterprises to accelerate digital transformation and multiply the value of their technology investments. We help organizations ***inform their IT*** with definitive visibility into complex hybrid IT ecosystems, providing unparalleled IT insights that allow them to seize technology opportunities. And we help them ***transform their IT*** with tools that deliver actionable intelligence across an ever-increasing range of dimensions to effectively manage, govern and optimize their hybrid IT estate.

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