



Independent, technical advice
for virtualization pros



Application Packaging Smackdown

events.techtarget.com



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Session Goals

- Describe the different packaging capabilities being offered by each vendor
- Provide guidance as to how these tools can be assessed for your environment
- Show some insight into features that make certain tools unique
- Give high level recommendations about tooling a packaging environment

History

- SetupAPI – INF
- No toolset – a framework / engine
- Windows Installer 1.0 – Office 2000
 - Database that interacts with service to ensure stability
- Other: WiseInstaller / Wisescript, InnoSetup NSIS, InstallShield, Oracle Universal Installer
- Windows Installer 5.0 – Windows 8
- WiX
 - XML format
 - Command-line toolset
 - VS 2012 recommends WiX

Why Repackage?

- TCO reduction
- Automated
 - Large deployment cost reduction
- Standardized delivery
 - Improve user experience
 - Lower troubleshooting costs

Example Cost Model

# of Installs	Manual Install Time (hrs)	Automated Man Hours	Hours Saved	Manual Cost	Automated Cost	Cost Savings
1	1	10	-9	\$ 65.00	\$ 975.00	\$ (910.00)
2	2	12	-10	\$ 130.00	\$ 1,170.00	\$ (1,040.00)
4	4	14	-10	\$ 260.00	\$ 1,365.00	\$ (1,105.00)
8	8	16	-8	\$ 520.00	\$ 1,560.00	\$ (1,040.00)
16	16	18	-2	\$ 1,040.00	\$ 1,755.00	\$ (715.00)
32	32	20	12	\$ 2,080.00	\$ 1,950.00	\$ 130.00
64	64	22	42	\$ 4,160.00	\$ 2,145.00	\$ 2,015.00
128	128	24	104	\$ 8,320.00	\$ 2,340.00	\$ 5,980.00
256	256	26	230	\$ 16,640.00	\$ 2,535.00	\$ 14,105.00
512	512	28	484	\$ 33,280.00	\$ 2,730.00	\$ 30,550.00
1024	1024	30	994	\$ 66,560.00	\$ 2,925.00	\$ 63,635.00
2048	2048	32	2016	\$ 133,120.00	\$ 3,120.00	\$ 130,000.00
4096	4096	34	4062	\$ 266,240.00	\$ 3,315.00	\$ 262,925.00
8192	8192	36	8156	\$ 532,480.00	\$ 3,510.00	\$ 528,970.00
16384	16384	38	16346	\$ 1,064,960.00	\$ 3,705.00	\$ 1,061,255.00

*Remember this is initial deployment costs. Add / Removes can lower the threshold to ROI.

Product Capabilities Group 1

MSI Packaging Tools

MSI Factory

- Builds MSI packages based on WiX
- No Enterprise database
- Not a repackaging tool
- Straight forward
 - Advanced options

MSI Factory

Files

- Add Files
- Remove Files
- File Properties

Project

- Settings
- Components
- Features
- Folders
- Media

Requirements

- Launch Conditions
- Searches
- Merge Modules

Custom Actions

ID	Type	Summary	Schedule
----	------	---------	----------

Add

- Call DLL
- Run Executable
- Run VBScript
- Run JScript
- Run LuaScript
- Set Folder
- Set Property
- Terminate Installation

User Interface

- Dialogs
- Languages
- Styles

System Editors

- Registry
- INI Files
- Shortcuts
- File Operations
- Environment Variables
- Services
- ODBC
- XML
- Custom Actions

Extensions

- IIS

InstallAware

- Installation suite
- Virtualization capabilities (AVE as an editor)
- Easy to use
 - Extensive prereq
 - Easy to use for everything
 - Intended for developers
 - Repackaging only available in Admin edition (\$\$)

InstallAware

Application Information

Describe your application, assign unique identifiers to your setup.

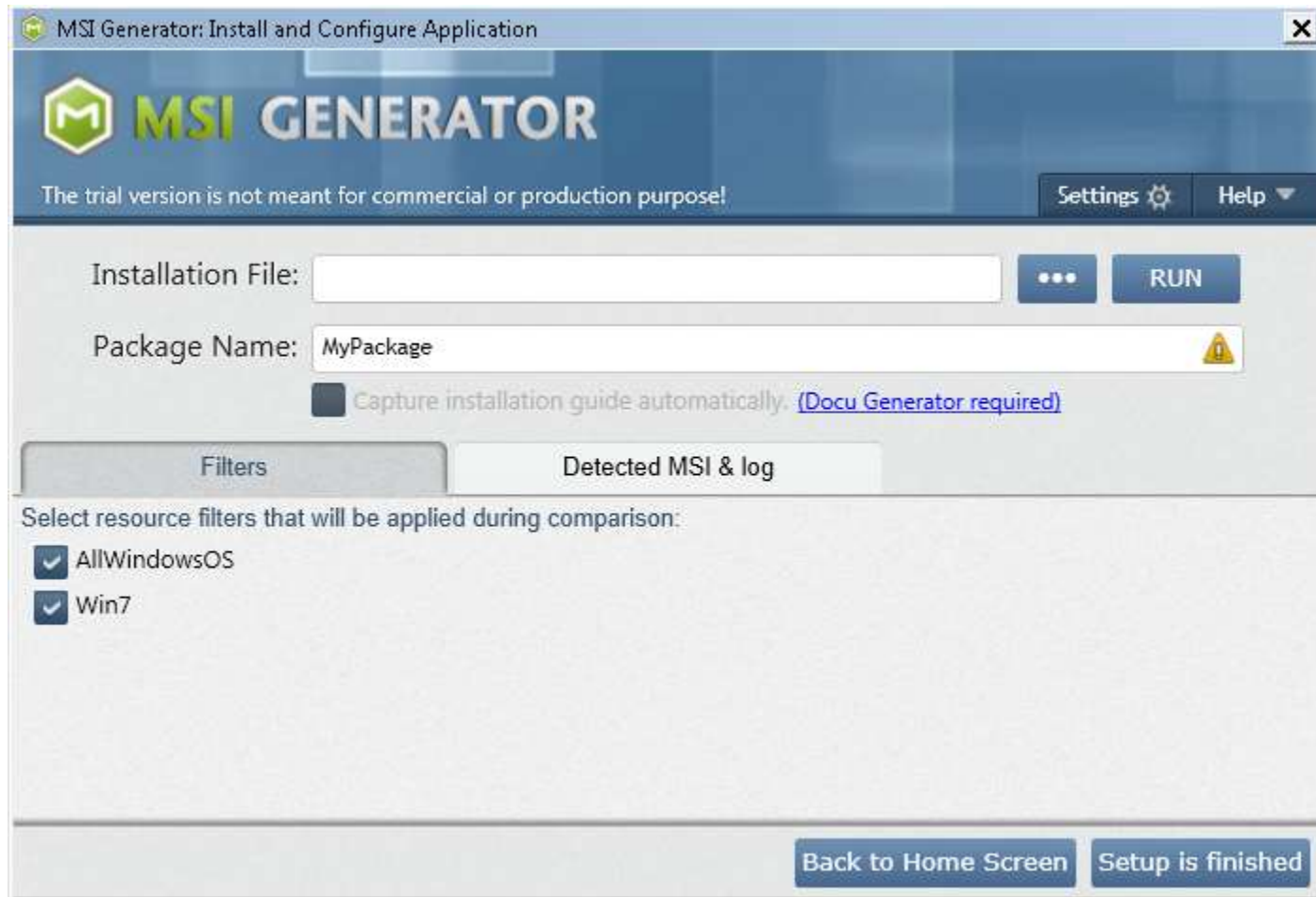
- Project Properties**
Enter product information. Generate unique setup identifiers. Choose default setup fold
- Summary, UAC, and ISO**
Set Windows Installer database summary properties. Request UAC elevation. Set ISO 1
- Add-Remove Programs**
Control the appearance of your product in the Control Panel. Choose a custom setup icc
- Application Requirements**
Set minimum software and hardware requirements for your product. Assign global setup
- Application Runtimes**
Choose the technologies and frameworks to be installed alongside your product.

[See Also](#)

InfoPulse Packaging Accelerator Center

- Suite of tools
- Automated Packaging Self Center - cloud
- MSI / App-V / Documentation
- Basic snapshot
- Private / public cloud
- Docu Generator – PSR-lookalike

Infopulse MSI Generator



Infopulse MSI Editor

The screenshot shows the MSI Editor application window. The title bar reads "MSI Editor". The menu bar includes "File", "Edit", "View", "Tools", "Transform", "Validation", "Plugins", and "Help". The main window title is "MSIEditor_v2.7.0.msi".

On the left side, there is a tree view under the heading "_Columns". The items listed are: "_Streams", "_Tables", "_Validation", "AdminExecuteSequence", "AdminUISequence", "AdvtExecuteSequence", "Binary", "CheckBox", "Component", "Control", and "ControlCondition". Below this list is a checkbox labeled "Show empty tables".

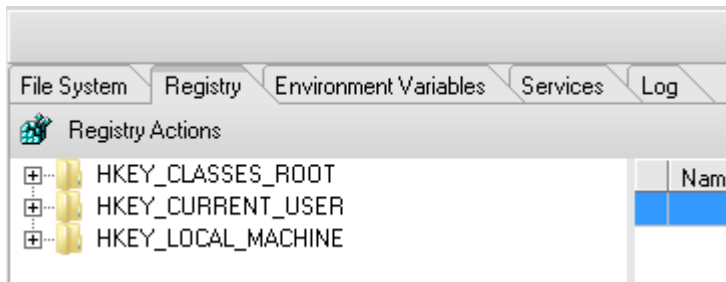
The main area contains a table with the following columns: "Table", "Number", "Name", and "Type". The table lists various validation rules:

Table	Number	Name	Type
_Validation	1	Table	11552
_Validation	2	Column	11552
_Validation	3	Nullable	3332
_Validation	4	MinValue	4356
_Validation	5	MaxValue	4356
_Validation	6	KeyTable	7679
_Validation	7	KeyColumn	5378
_Validation	8	Category	7456
_Validation	9	Set	7679
_Validation	10	Description	7679
AdminExecuteSequence	1	Action	11592
AdminExecuteSequence	2	Condition	7679
AdminExecuteSequence	3	Sequence	5378

At the bottom of the main window, there are tabs for "ICE Validation" and "Operations". The "ICE Validation" tab is active, showing a table with columns: "ICE", "Type", "Description", "Help", "Table", "Column", "Key", and "Cub". The table is currently empty. The text "Rows: 167" is displayed in the bottom right corner of the main window.

EMCO MSI Package Builder

- Simple snapshot tool
- Simplified view of the MSI
- Barely suffice for novice
- No CustomAction



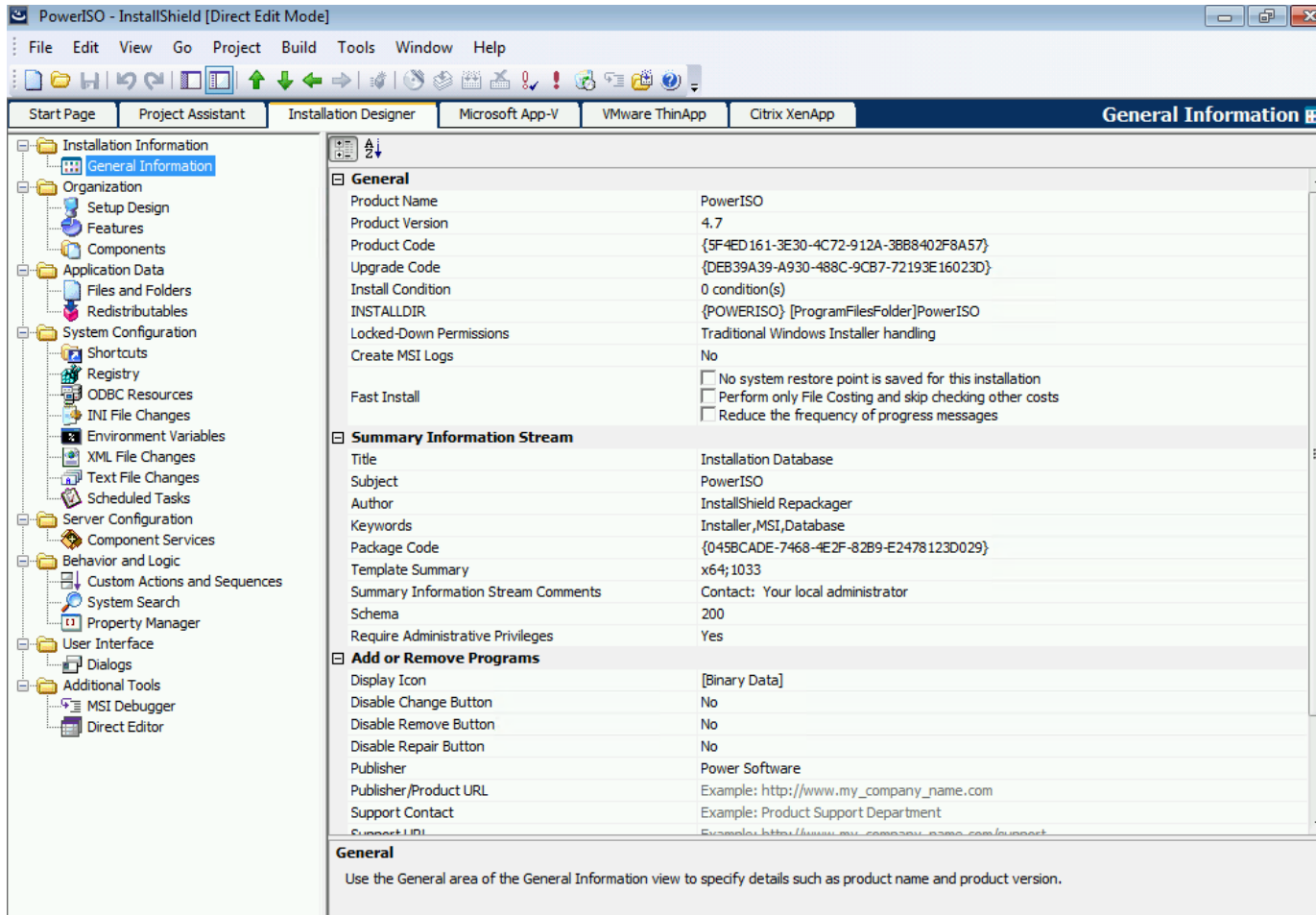
AppDeploy Repackager

- Simple snapshot tool
 - Slow
- Packaging Recipes
- Run from network
- Novice friendly
 - Lacking advanced options
- Free!

AdminStudio

- One of the longest standing repackaging tools.
- Extensive packaging toolset with application compatibility toolset
 - Also includes workflow
- Can scale up to multiple packaging teams within an organization
- Can automate application compatibility and packaging of applications (also supports PowerShell)
- Requires a good amount of training to be proficient
- Some feature overlap between tools in the suite (can be confusing to develop workflows)

AdminStudio



DEMO

Adminstudio

Trends

- Tools trying to expand beyond Windows Installer
- App-V integration seems to be the preferred virtualization format to adopt
- Enterprise vendor's such as Flexera adopting application compatibility features
- Competition does not really exist when comparing against Adminstudio*
- Smaller install authoring vendors are entering the repackaging space

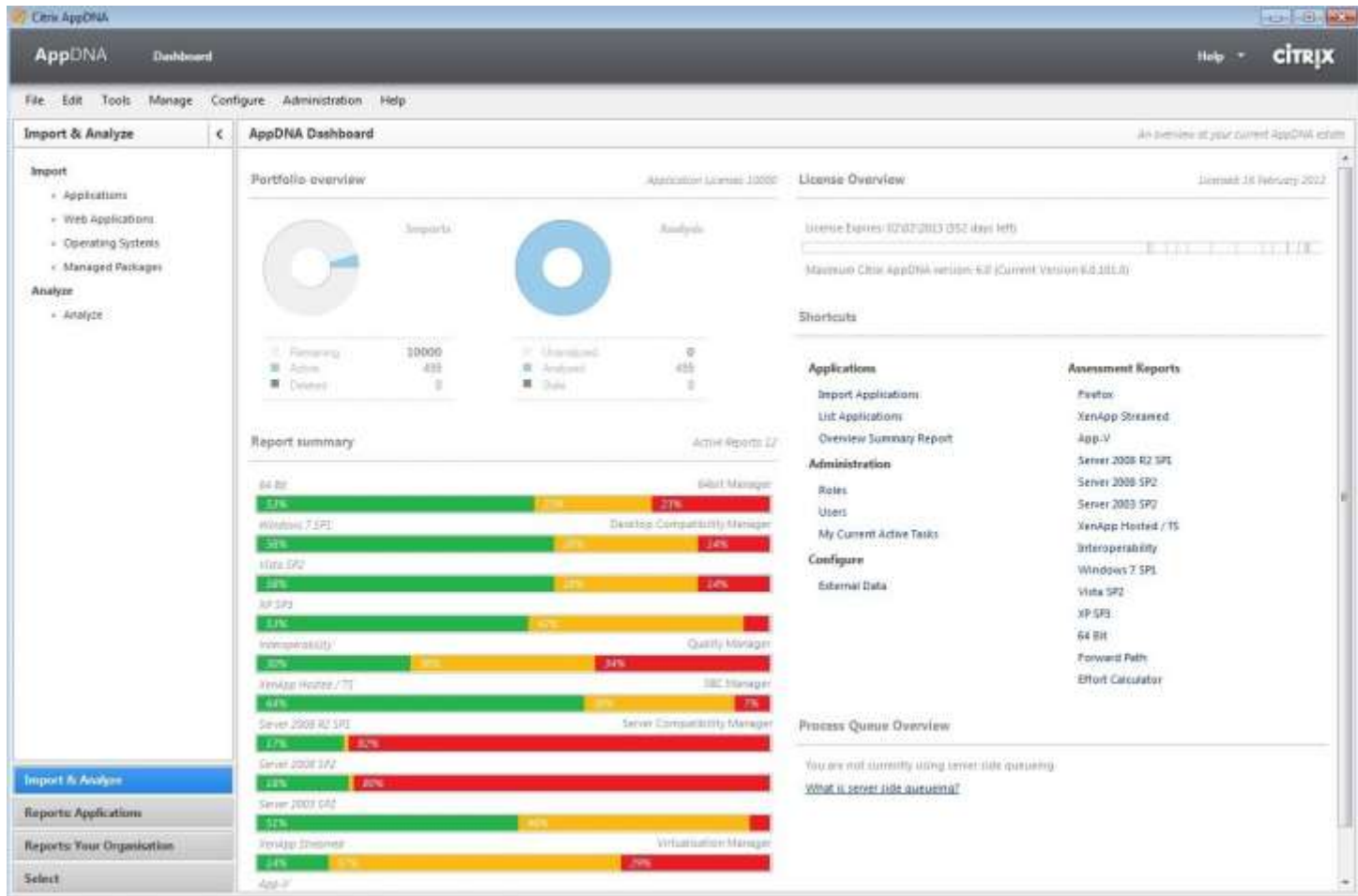
Product Capabilities Group 2

Application Compatibility

AppDNA

- Automated application, packaging testing and remediation
- Static analysis of applications through MSIs
- Virtual application support

AppDNA



ChangeBase

- Automated application packaging, testing and remediation
- Dell MSI studio included for Windows Installer editing
- Static analysis of applications through MSI technology
- Patch impact analysis
- Virtual application support

ChangeBase

The screenshot displays the ChangeBASE Evaluation interface. The main window shows a list of reports under the 'Windows 8' package. The interface includes a sidebar with navigation options and a summary table.

ChangeBASE Evaluation

Quest ChangeBASE

ChangeBASE Evaluation

Search: []

Packages Reports New Project Wizard

Portfolios Summary

Name	AppID(s)	Fix/Comment
Reports		
<input checked="" type="checkbox"/> Best Practice Manager		
<input checked="" type="checkbox"/> Office 2013		
<input checked="" type="checkbox"/> Windows 64-bit		
<input checked="" type="checkbox"/> Windows 8		
<input checked="" type="checkbox"/> Active Directory GPO Settings Analysis (v3.31)		
<input checked="" type="checkbox"/> Common Dialog Compatibility Analysis (v1.06)		
<input checked="" type="checkbox"/> Custom Action Security Scan (v3.18)		
<input checked="" type="checkbox"/> Deprecated API Analysis (v3.29)		
<input checked="" type="checkbox"/> Elevated Privileges Detection (v1.04)		
<input checked="" type="checkbox"/> GINA Deprecated Component (v3.18)		
<input checked="" type="checkbox"/> Hard Coded File References Scan - Files (v1.04)		
<input checked="" type="checkbox"/> Hard Coded File References Scan - MSI Tables (v4.04)		
<input checked="" type="checkbox"/> Install Logic Scan (v1.16)		
<input checked="" type="checkbox"/> IPv6 Networking Scan (v3.14)		
<input checked="" type="checkbox"/> IPv6 Strong Host Check (v3.14)		
<input checked="" type="checkbox"/> Legacy Control Panel Applet Scan (v3.18)		
<input checked="" type="checkbox"/> Legacy Help File Scan (v3.27)		
<input checked="" type="checkbox"/> Microsoft Message Queue Analysis (v1.06)		
<input checked="" type="checkbox"/> Named Pipe Hardening Analysis (v3.14)		
<input checked="" type="checkbox"/> Nested Install Scan (v3.14)		
<input checked="" type="checkbox"/> NETDDE Deprecated Component Scan (v3.18)		

ChangeBase.ChangeBaseDemo

Summary

Category	Count
Packages	0
Reports	43
Rules	39802
Scanned Rules	39802
Issues	0
Upgrades Available	645

ChangeBase: Dell / Quest / ScriptLogic MSI Studio

- MSI Repackaging tool comes with Changebase
- Enterprise database
- Straight forward
 - Advanced options

ChangeBase: MSI Studio

Project Details

- Product Details
- Add Remove Programs
- Upgrades
- Application Requirements
- Installation Properties

Project Organization

- Features
- Components

Files And Registry

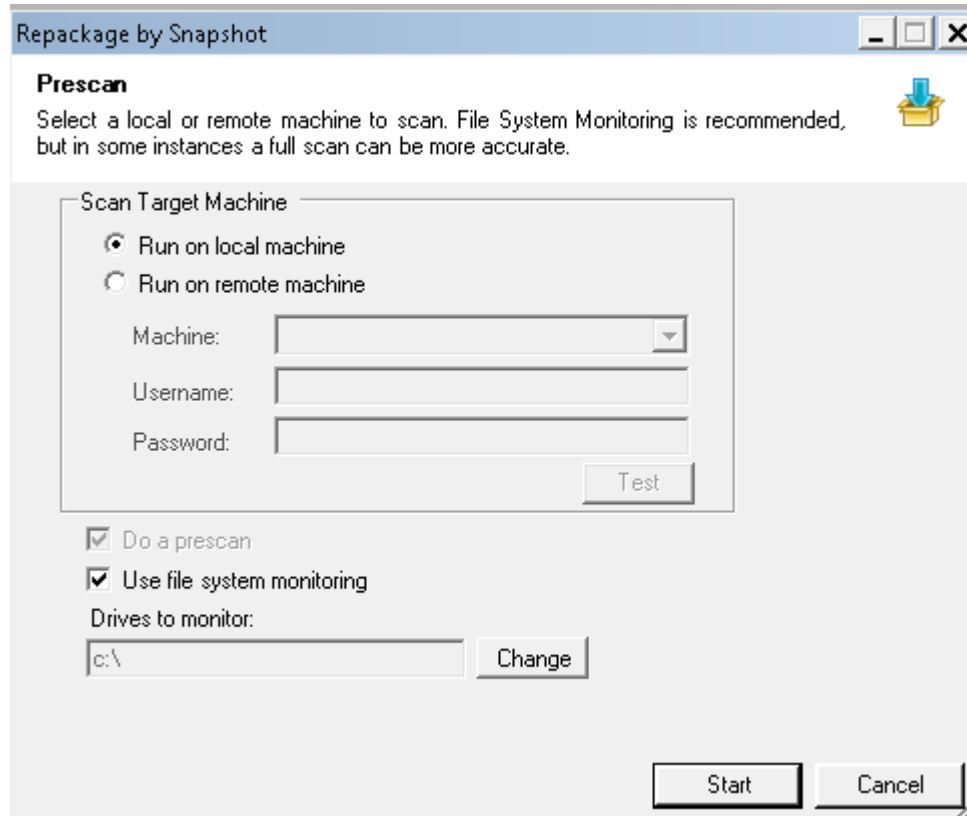
- Files
- Registry
- Merge Modules
- Permissions
- Path Variables

Shortcuts and Other Items

- Shortcuts
- INI Files
- ODBC
- Environment Variables
- Service Management
- File Extensions
- COM Advertising

Dialogs And Actions

- Dialogs
- Dialog Sequencing
- Event Sequencing
- Custom Actions



DEMO

MSI Studio

Application Compatibility Toolkit

- Runtime application analysis
- Software inventory compared with the compatibility community (static analysis)
- Easy shim generation for user permission issues (Standard User Analyzer)
- Full application compatibility shim editor
- Free!

Analyze - Microsoft Application Compatibility Manager

File Go Actions Tools Window Help

Send and Receive

Analyze

Open Reports

Quick Reports

- Windows 8 Reports
 - Applications
 - Computers
 - Devices
 - Internet Explorer Add-ons
 - General Feedback
- Windows 7 Reports
 - Applications
 - Computers
 - Devices
 - Internet Explorer Add-ons
 - General Feedback
- Internet Explorer
 - Web Sites

Customize this view...

Analyze

Collect

Windows 8 Reports

Inventory

Computers	1
Applications	9
Devices	31

Compatibility Assessment - Applications

	My Assessment		Vendor Assessment	
Applications that do not work	32 0	64 0	32 0	64 0
Applications that have minor issues	32 0	64 0	32 0	64 0
Applications with no known issues	32 0	64 0	32 6	64 6
Applications with no data	32 9	64 9	32 3	64 3

Compatibility Assessment - Devices

Devices that do not work	32 0	64 0
Devices that have minor issues	32 0	64 0
Devices known to work	32 30	64 30
Devices with no data	32 1	64 1

Trends

- Application compatibility vendors entering the package creation space
- Application compatibility tools are generally expensive to license aside
- Changebase going as far as providing a Windows Installer packaging tool
- ACT is still a staple but runtime analysis does crash some applications
- Compatibility tools don't replace user acceptance testing
- Will Changebase be an alternative to Adminstudio?

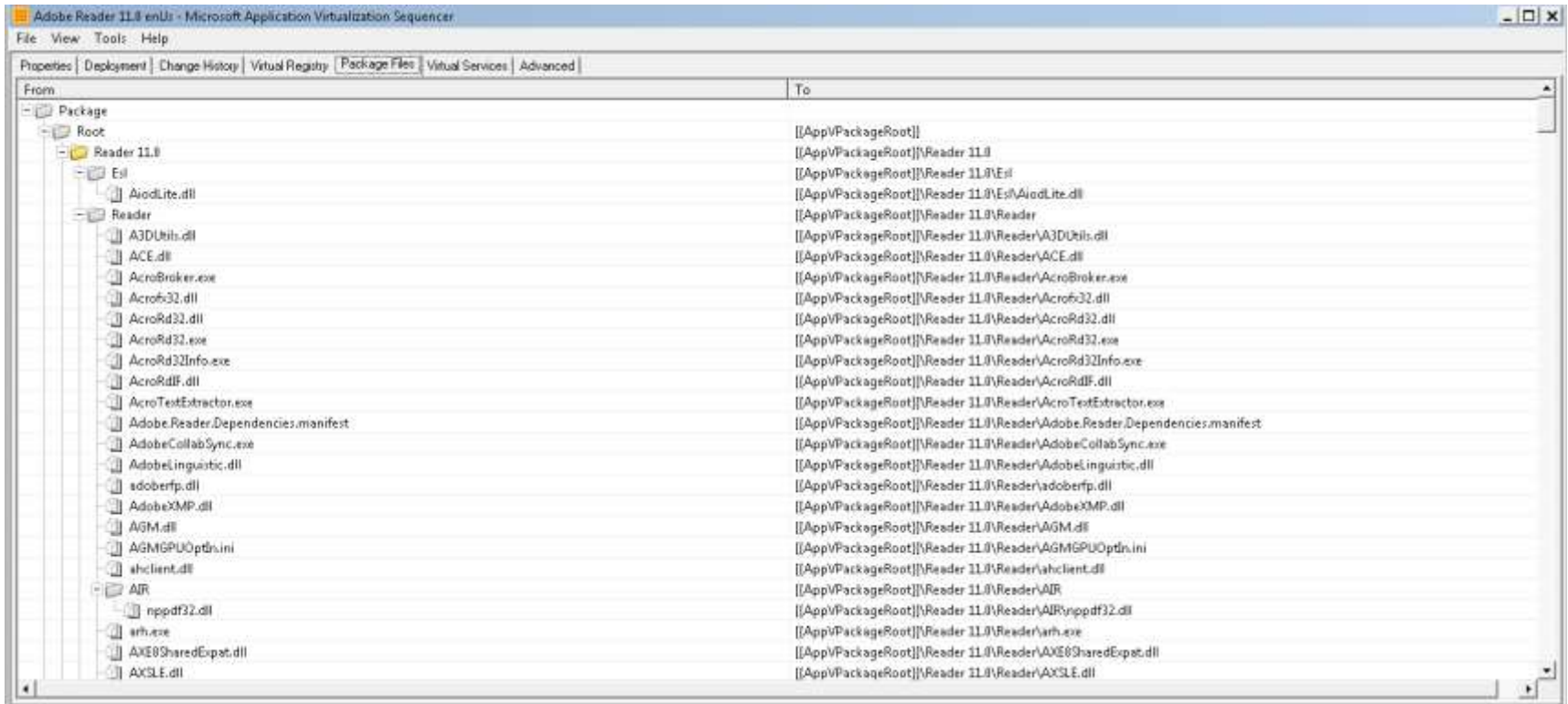
Product Capabilities Group 4

Virtual Application Packaging

App-V Sequencer

- App-V Monitoring tool
 - Enforces App-V best practices
 - Reports of potential App-V suitability issues
- Has post sequencing (packaging) editors
- Limited advanced options from GUI
 - No scripting support
 - Minimal cleanup of virtual extensions

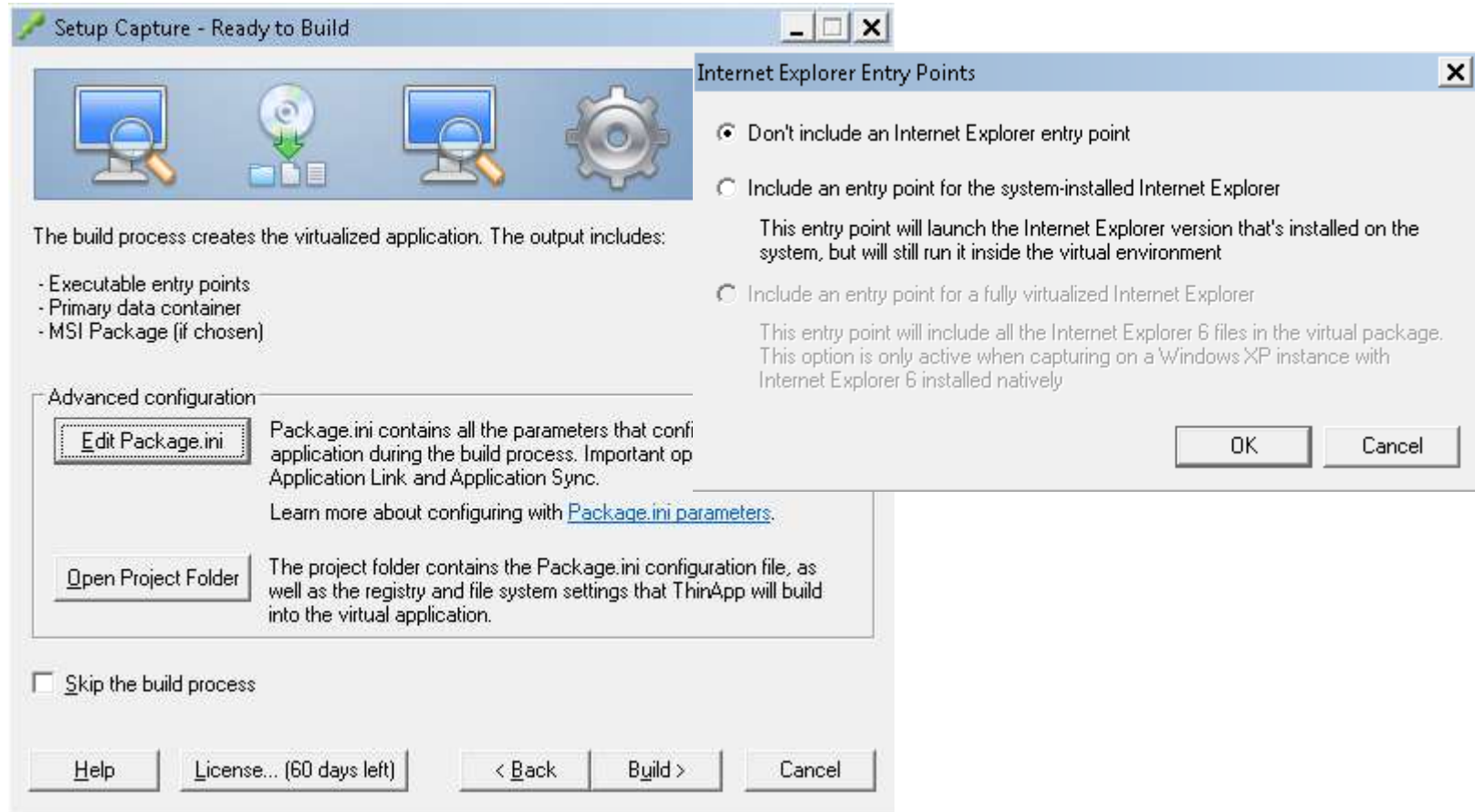
App-V Sequencer



Thinapp Setup Capture

- Pre-scan / Post-scan based tool
- Easy to use wizard
 - Allow for easy Internet Explorer capture
 - Save Project
 - Compile project
- Advanced configuration possible outside of tool
 - All configuration performed via Package.ini

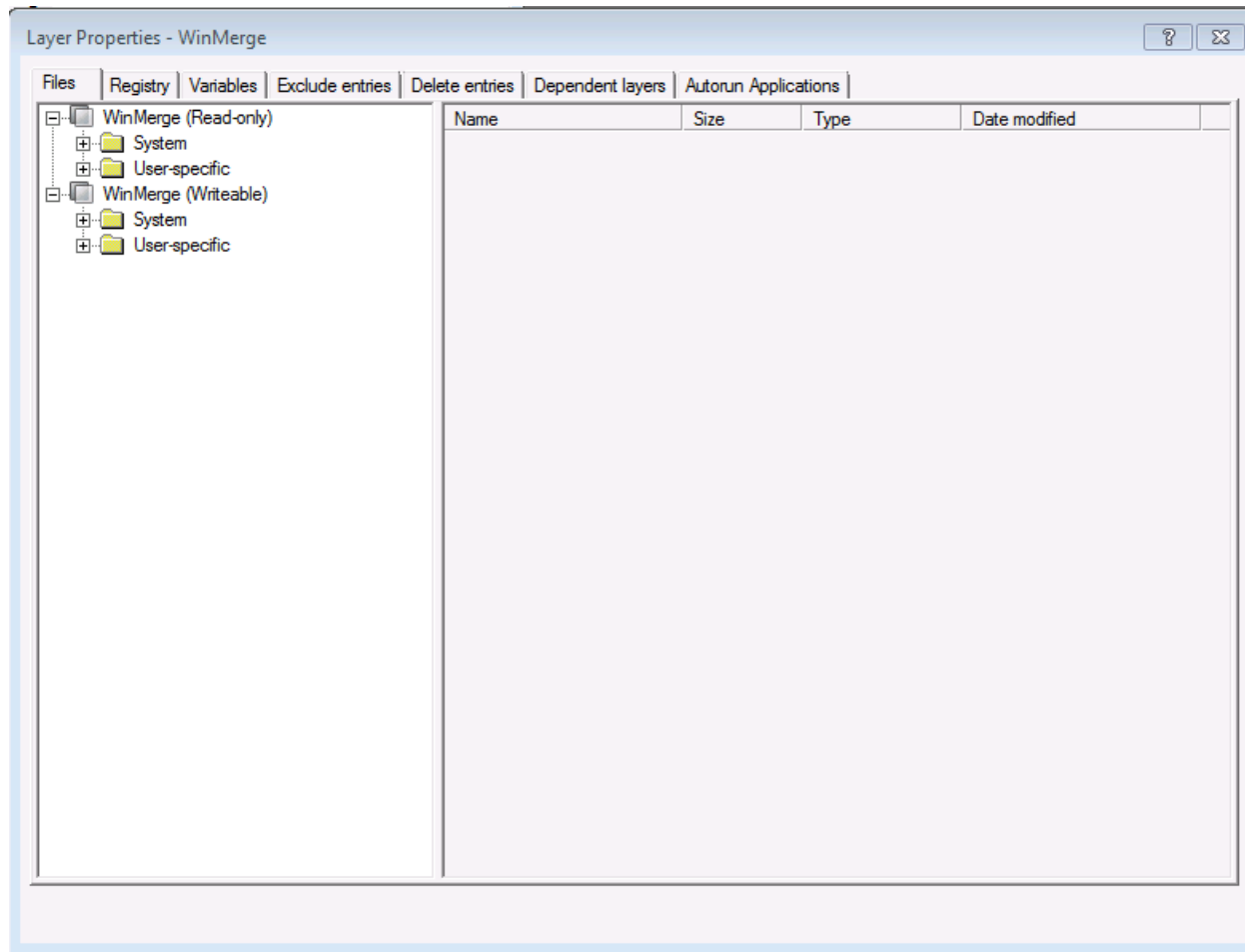
Thinapp Setup Capture



Symantec Workspace Virtualization

- One of the first application virtualization platforms
- Focus is more on redirection and layering of applications than isolation

Symantec Workspace Virtualization



Trends

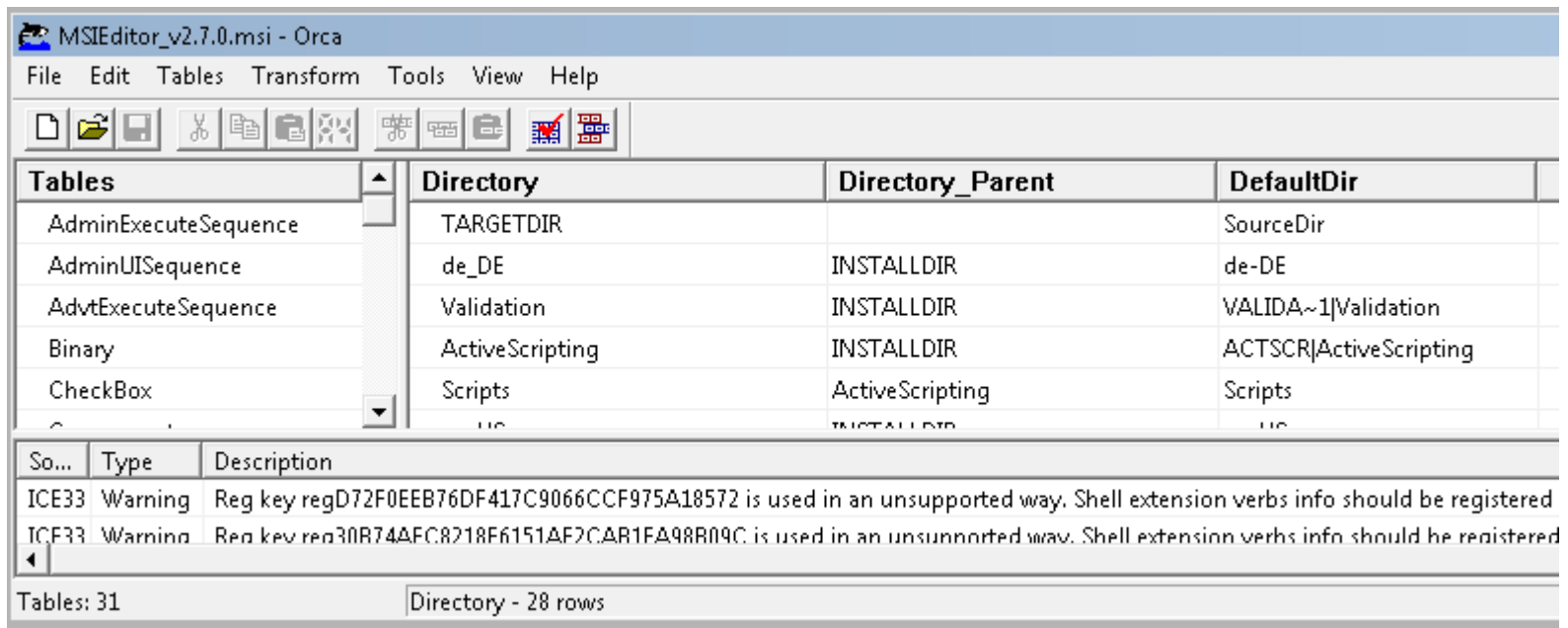
- App-V Sequencer is the most frequently updated vendor tool and has the most feature additions
- Other vendors supply enough tooling to make packages
- Symantec is still in the game but Citrix is out

Niche Products

Specialized Products to Optimize Packaging

Orca

- Table editor
- Locks files
- Overlay MST files
- Win8 SDK (Free!)



SuperOrca

- Easy to download
- Table editor
- Does not lock MSI / MST files
- Overlay MST files
- Search capabilities
- Free!

SuperOrca

SuperOrca (11.0.0.0) - C:\Users\sequencer\Desktop\InstEd-1.5.15.26.msi

File Edit Table Tools Help

_Validation	*Table (s32)	*Column (...)	Nullable (s4)	MinValue (I4)	MaxValue ...	KeyTable (...)	KeyColumn...	Cat
_Validation	AdminExecuteS	Action	N					Ide
AdminExecuteSequence	AdminExecuteS	Condition	Y					Cor
AdminUISequence	AdminExecuteS	Sequence	Y	-4	32767			
AdvtExecuteSequence	AdminUISequer	Action	N					Ide
Binary	AdminUISequer	Condition	Y					Cor
CheckBox	AdminUISequer	Sequence	Y	-4	32767			
Class	AdvtExecuteSe	Action	N					Ide
Component	AdvtExecuteSe	Condition	Y					Cor
Control	AdvtExecuteSe	Sequence	Y	-4	32767			
ControlCondition	Binary	Name	N					Ide
ControlEvent	Binary	Data	N					Bina
CustomAction	CheckBox	Value	Y					For
Dialog	CheckBox	Property	N					Ide
Directory	Class	Description	Y					Tex
EventMapping	Class	CLSID	N					Gui
Extension	Class	Context	N					Ide
Feature	Class	Component_	N			Component	1	Ide
FeatureComponents	Class	ProgId_Default	Y			ProgId	1	Tex
File	Class	AppId_	Y			AppId	1	Gui
Icon	Class	FileTypeMask	Y					Tex
InstallExecuteSequence	Class	Icon_	Y			Icon	1	Ide
InstallUISequence								

Tables: 38 Rows: 230 www.pantaray.com

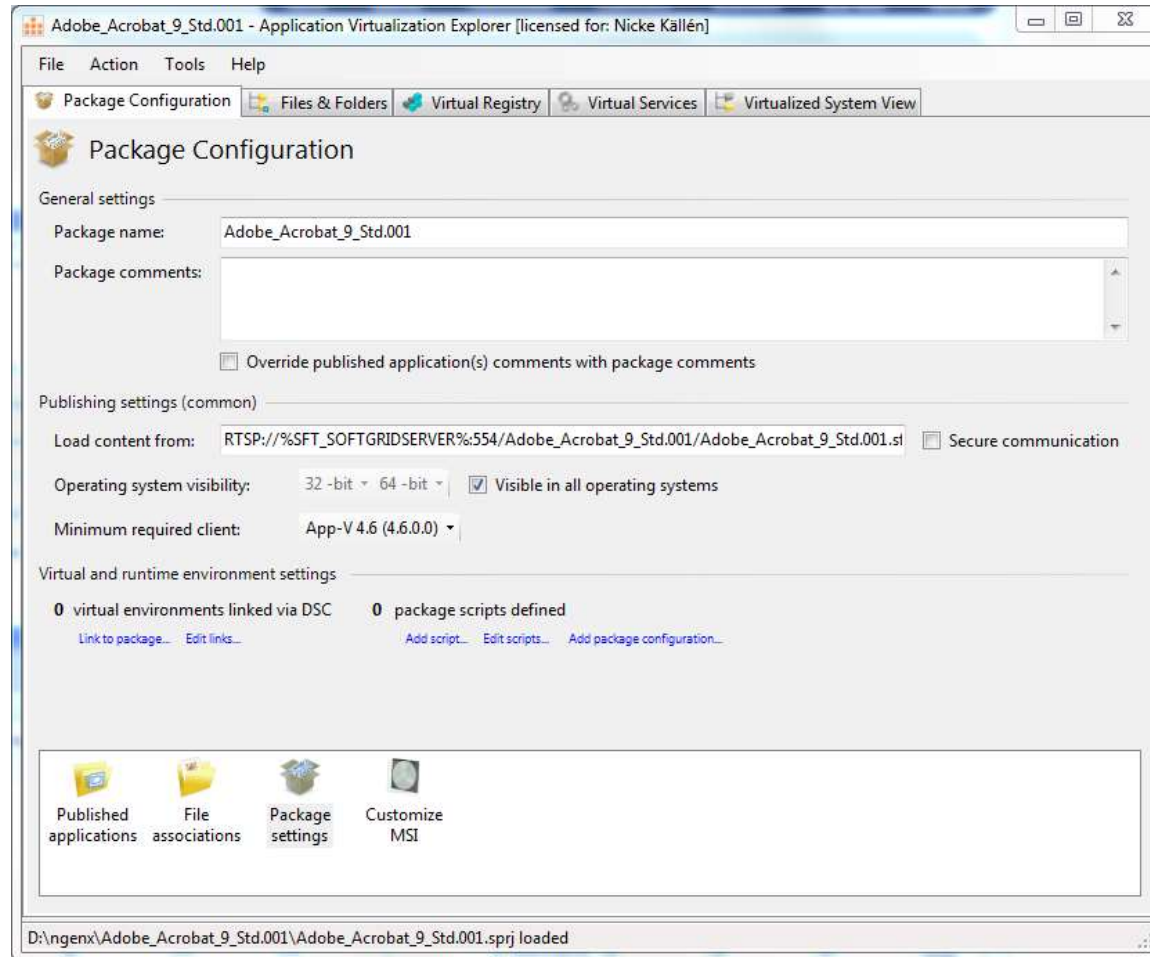
DEMO

Orca, Super Orca and InstEd

Application Virtualization Explorer

- Only for App-V 4.X packages
- Allows for advanced editing of packages
 - All potential options
- Pre-defined script templates
 - GUI for common tasks
 - Can use a RunAs account

Application Virtualization Explorer



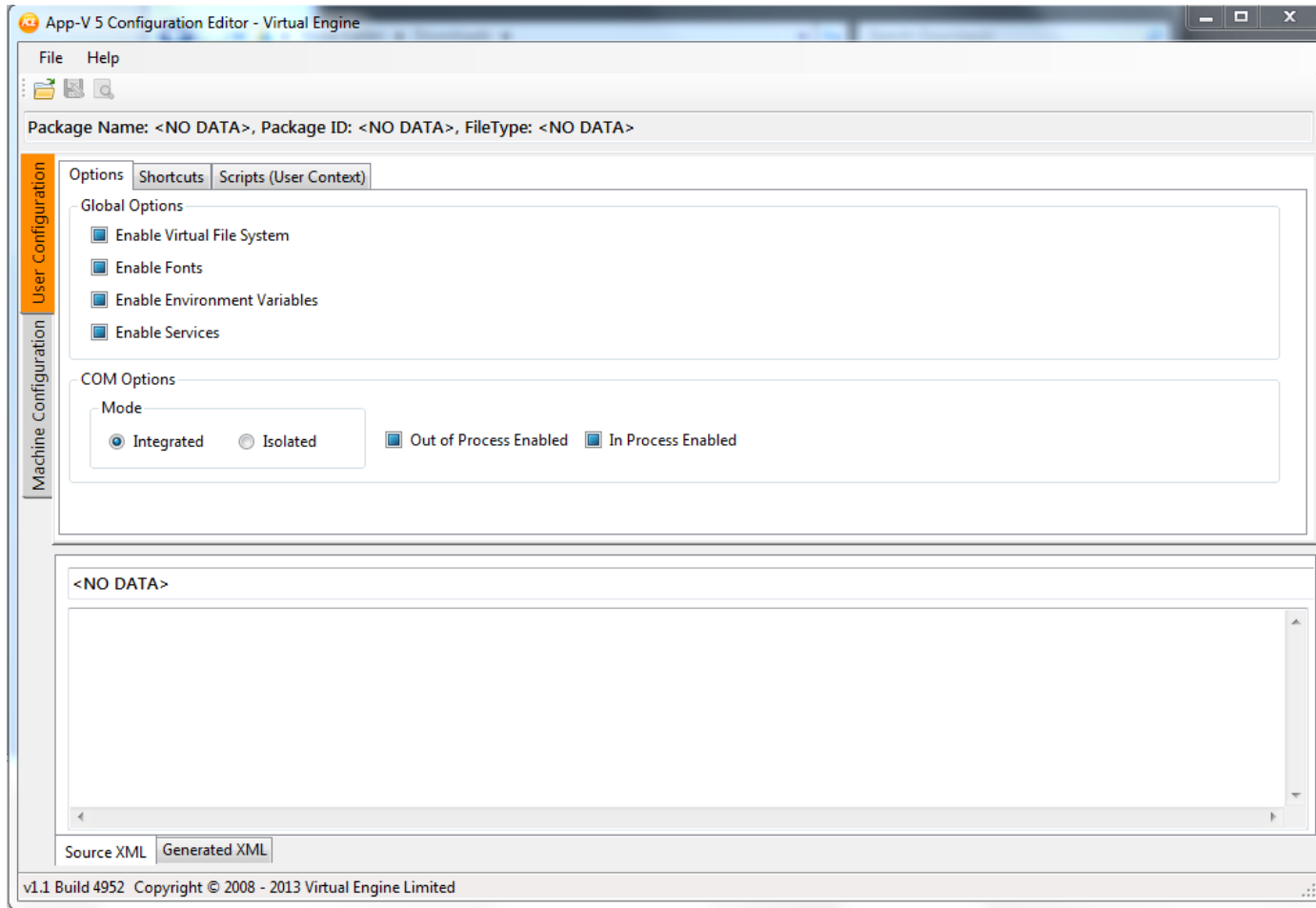
DEMO

Application Virtualization Explorer

App-V 5 Configuration Editor

- GUI for creation of XML-based configuration files
- Easy to use
- Raw edit, no wizard or pre-defined templates

App-V 5 Configuration Editor



Trends

- MSI and App-V have add-on tools
- Windows Installer has the largest tool ecosystem followed by App-V then WIX

Overall Trends

- Changebase may be the only enterprise alternative to Adminstudio
- Packaging suites can be built by selecting different tools from different vendors though selecting an alternative MSI repackaging tool is difficult (i.e. ACT + EMCO or AdminStudio (STD) + InstED + App-V Sequencer)
- Application Virtualization Explorer is money well spent if looking to buy an enhancement for App-V



TechTarget

Where serious technology buyers decide