

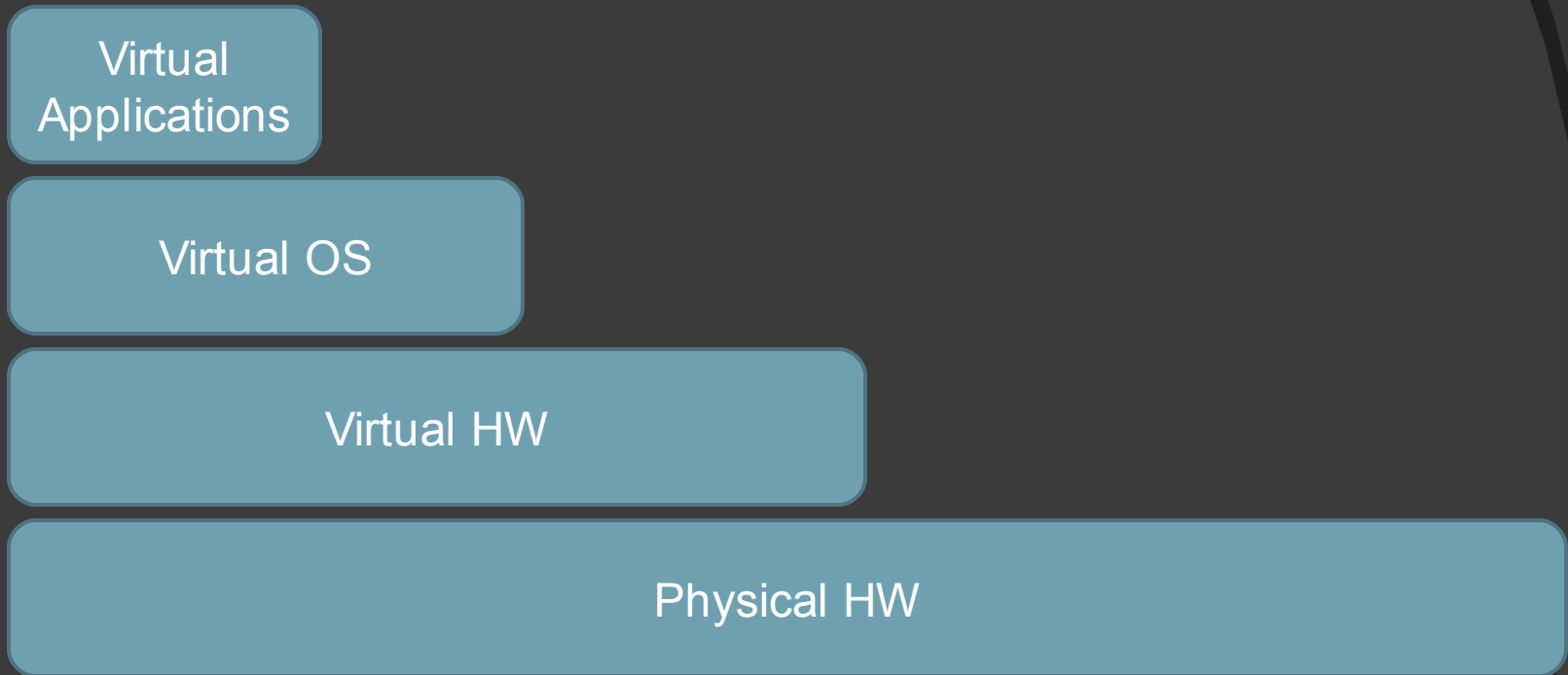
Martin Zugec

# APPLICATION VIRTUALIZATION

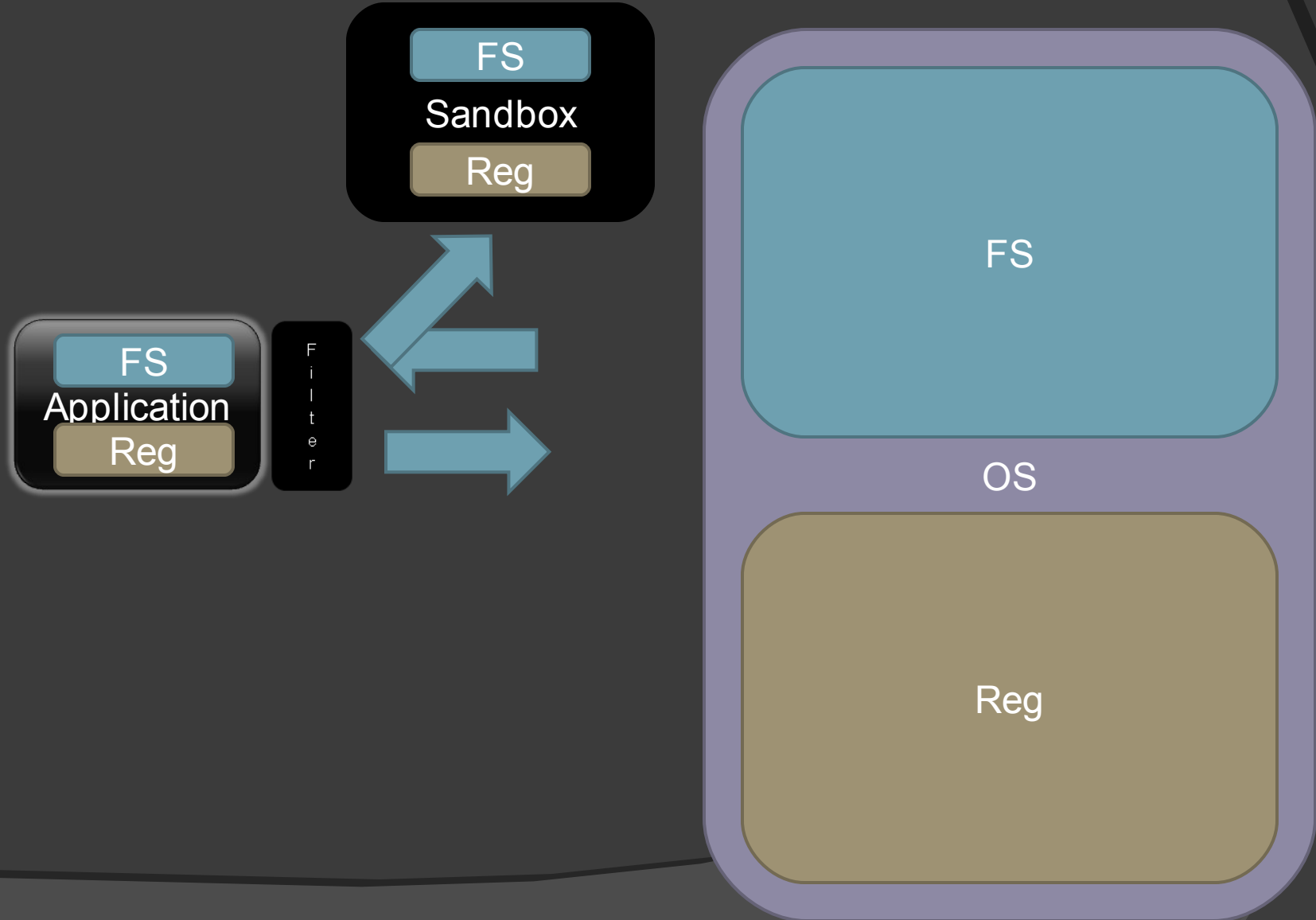
# Agenda

- ⦿ Virtualization overview
- ⦿ Application virtualization introduction
- ⦿ Solutions
  - SoftGrid
  - Citrix
  - Thinstall
  - Altiris SVS
  - Etc.
- ⦿ Best practices
- ⦿ Future

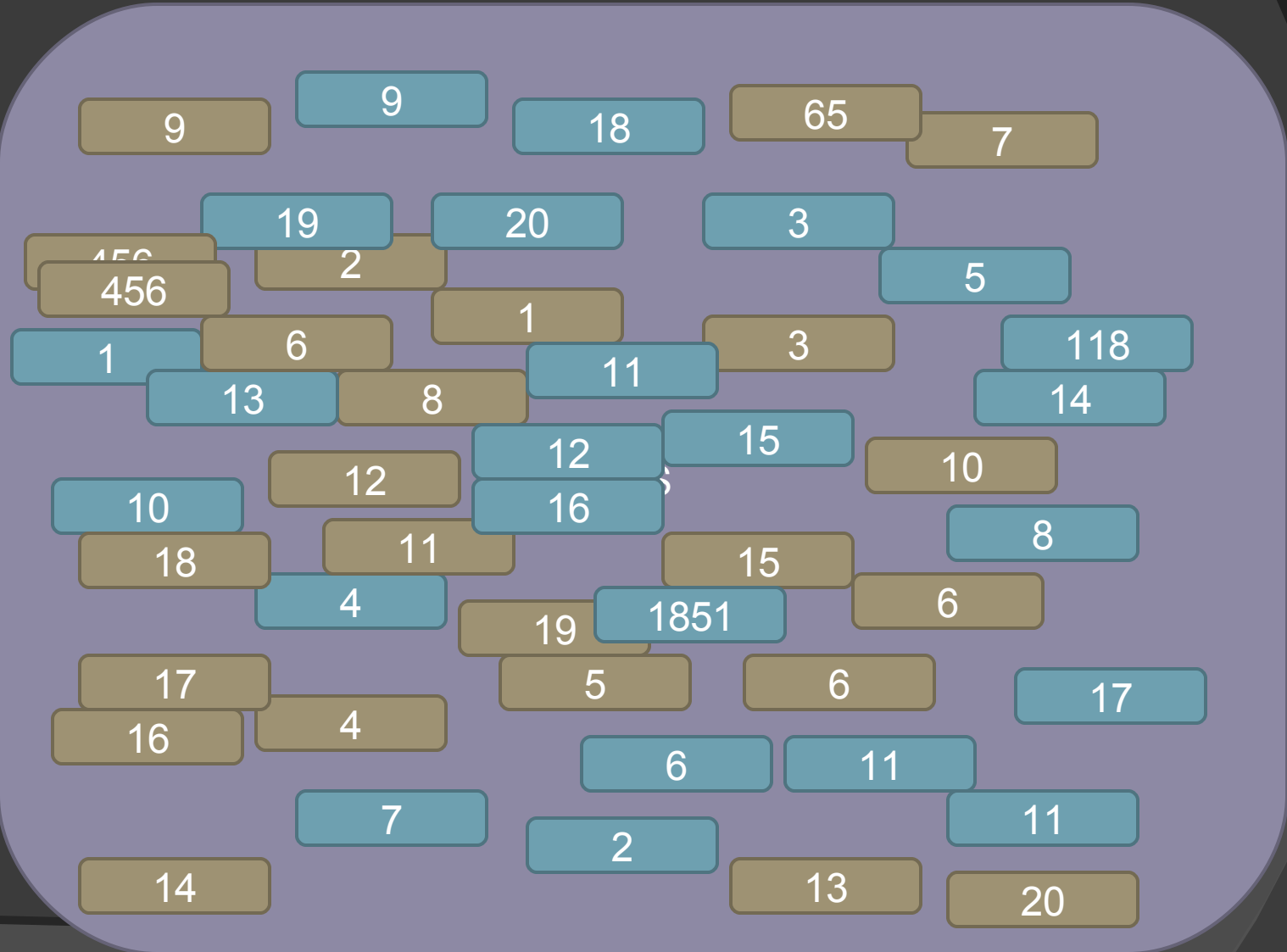
# Virtualization overview



# Application isolation overview



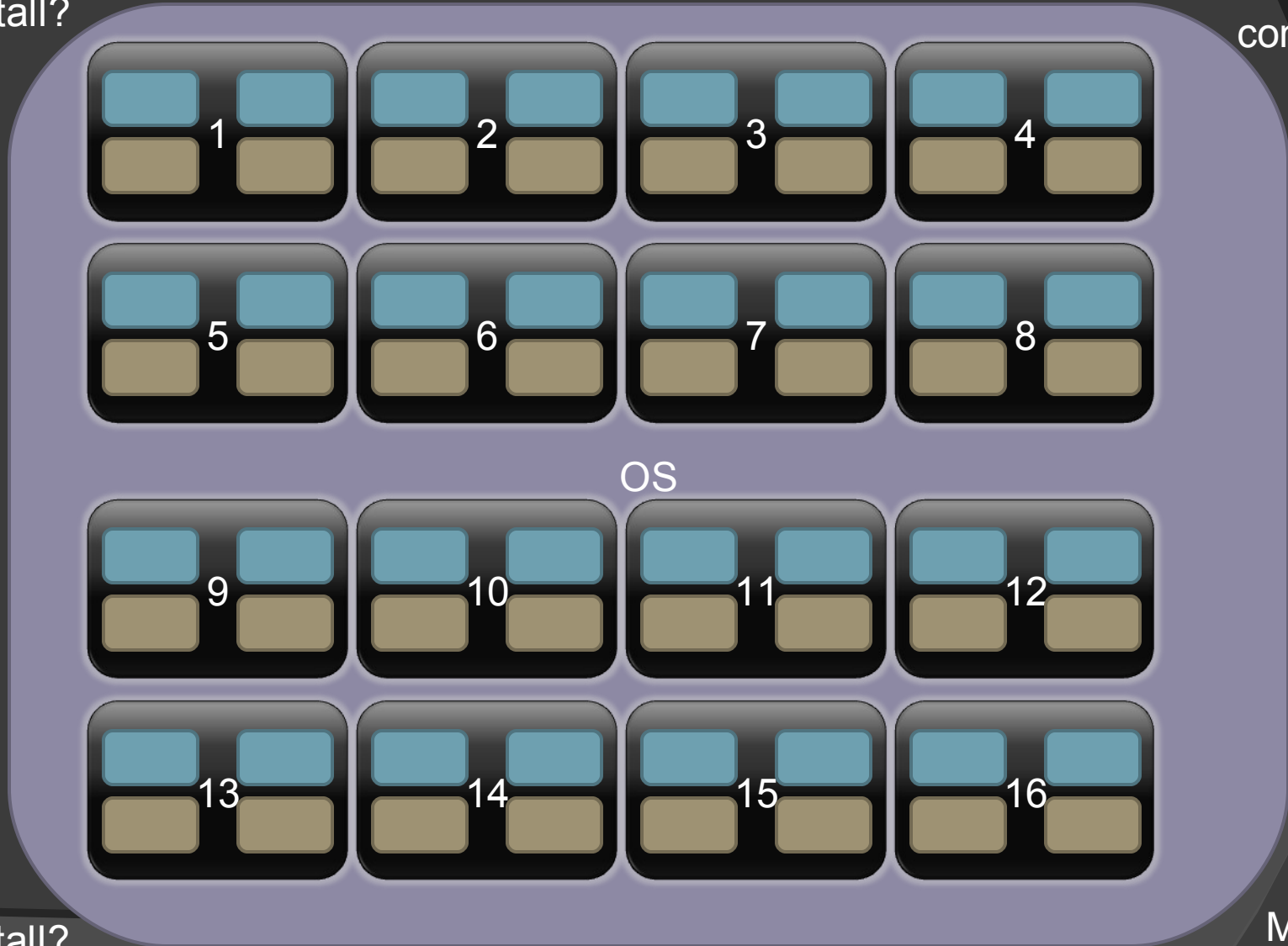
# Typical OS



# ...now with virtualized applications

Uninstall?

Corrupted  
configuration?



Reinstall?

Migration?

# Advantages?

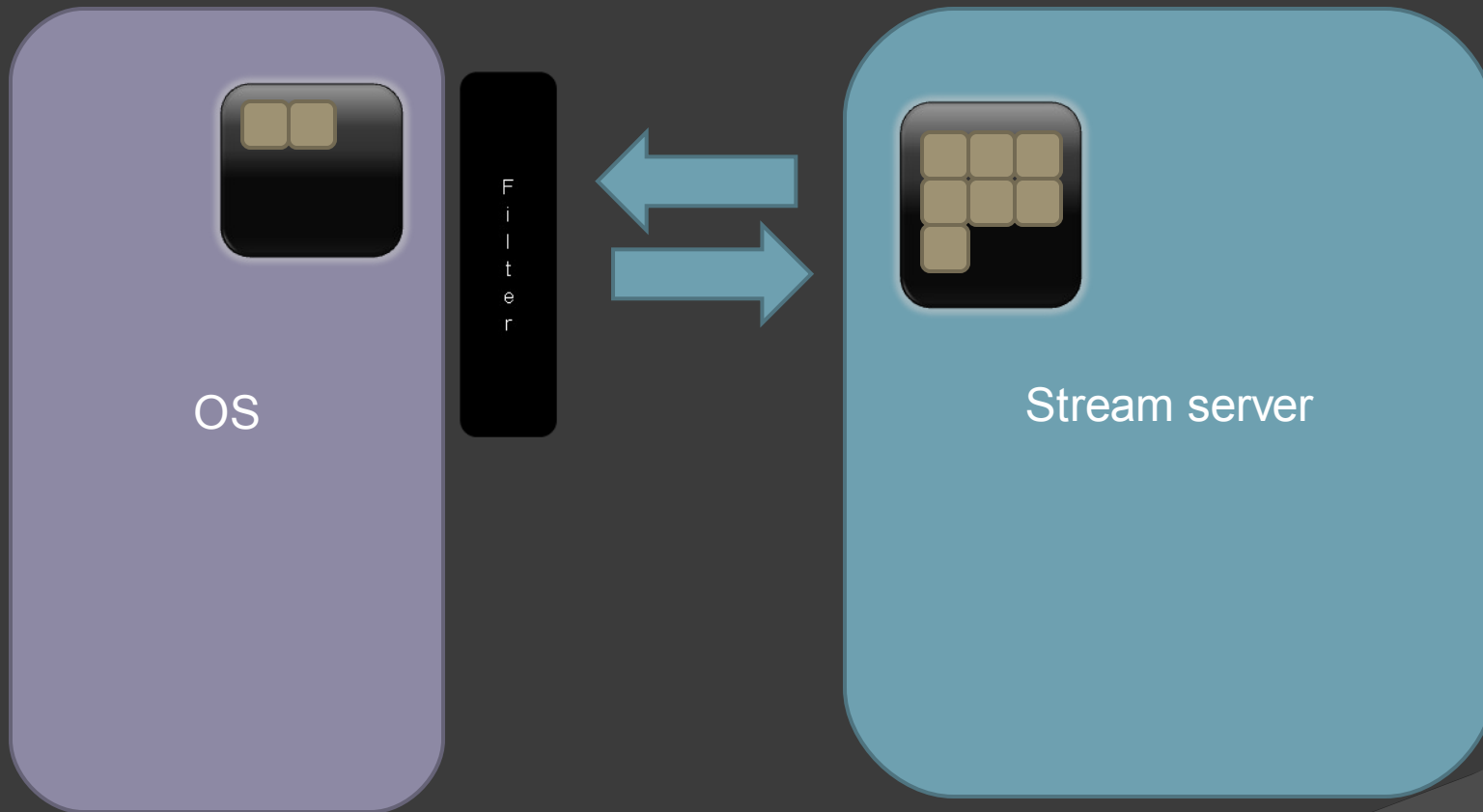
- ⦿ No application installations
- ⦿ No application conflicts
- ⦿ WYSIWYG applications
- ⦿ Fix some security problems
- ⦿ Silo consolidation in SBC environment
- ⦿ Multiple versions of same application
- ⦿ Simple upgrade, rollback, deployment...
- ⦿ Easy troubleshooting

# Limitations & problems

- ⦿ No applications with drivers (VPN, Antivirus...)
- ⦿ No application with HW bindings (HW keys)
- ⦿ Problems with services
- ⦿ Problems with international settings
- ⦿ OS-layer applications (OS hotfixes)
- ⦿ Inter-process communication
- ⦿ Introduces new problems
- ⦿ Security concerns



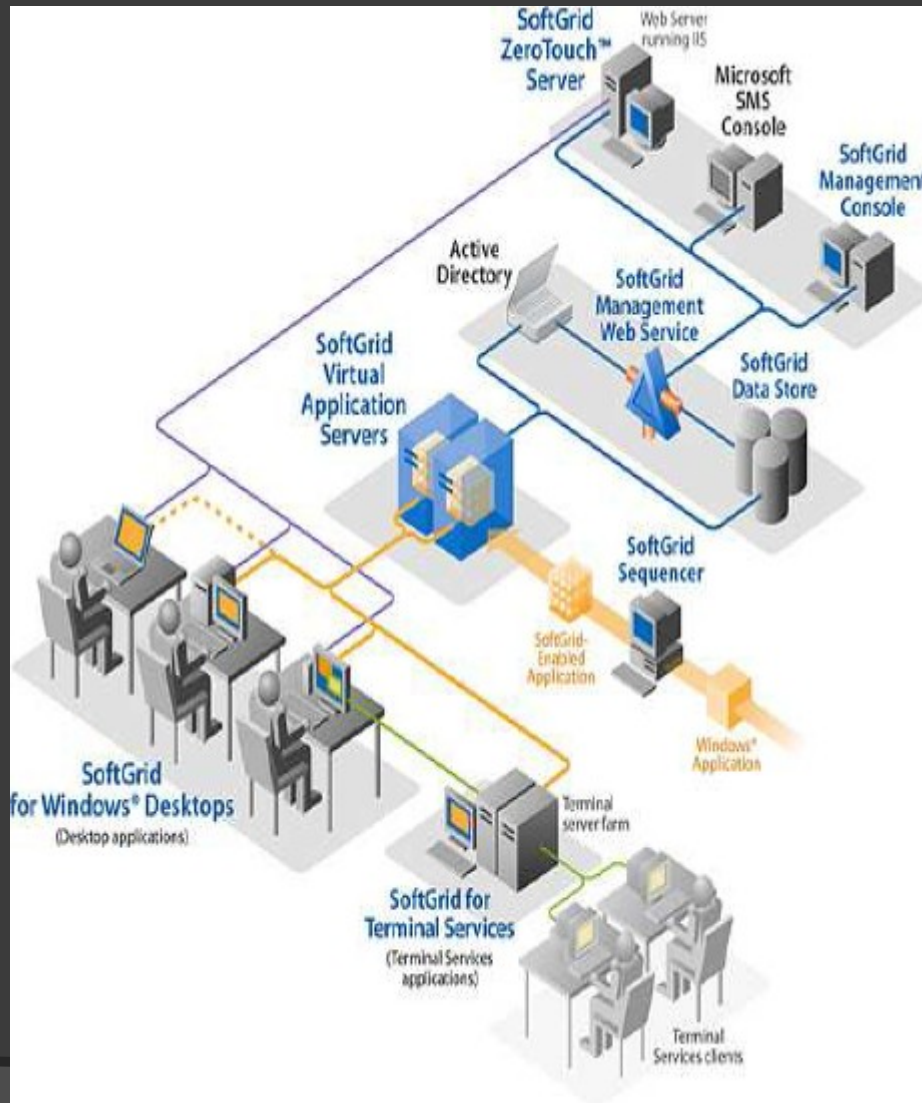
# Streaming?



# Primitive isolation

- ⦿ XP – VirtualRegistry, LUA shims
- ⦿ Vista - native
- ⦿ Security sandboxes (Sandboxie)

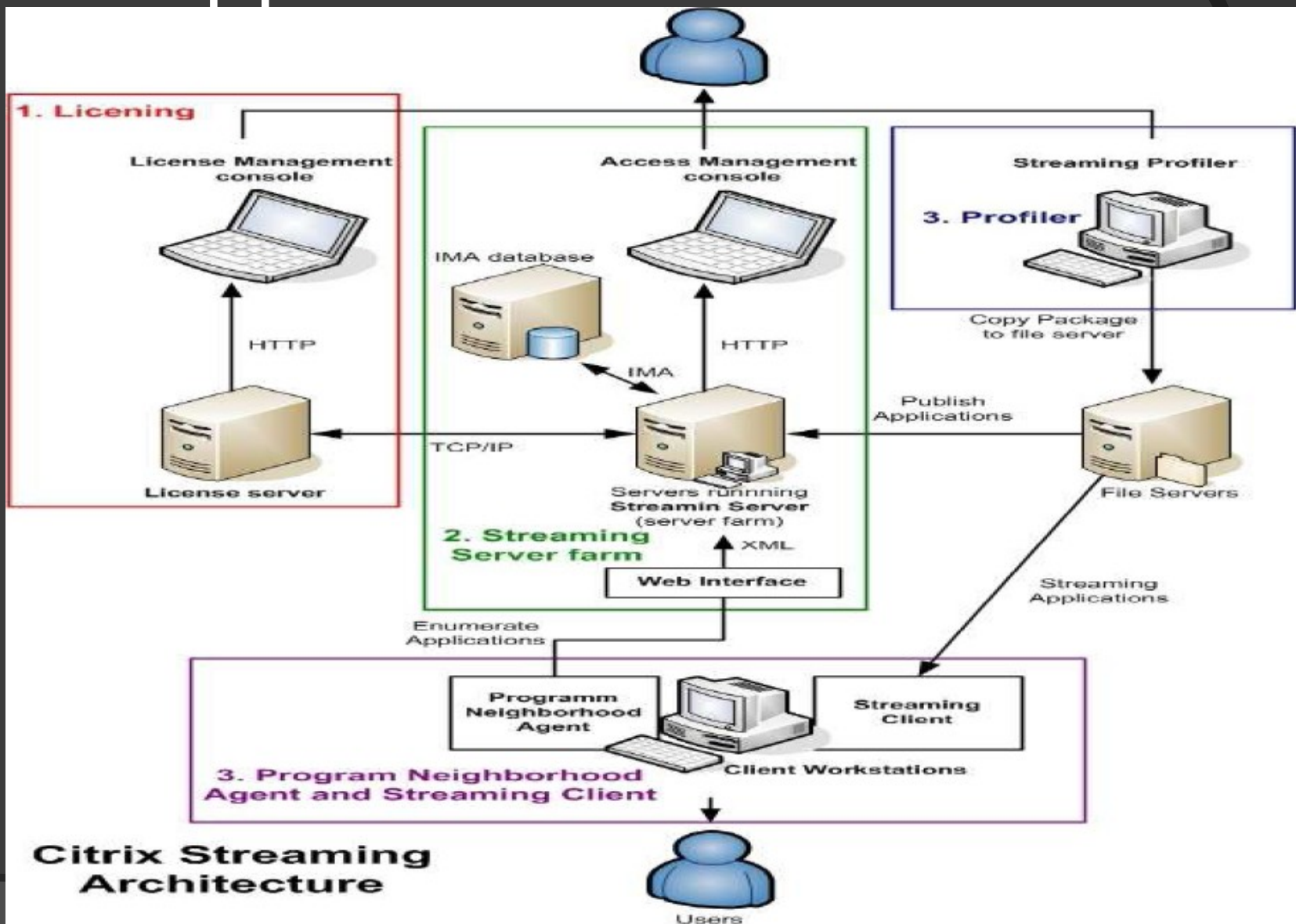
# Microsoft Application Virtualization Architecture



# Microsoft Application Virtualization Architecture

- ⦿ Enterprise ready solution
- ⦿ Integrated streaming
- ⦿ Most mature product
- ⦿ Complex infrastructure (4.5)
- ⦿ No inter-bubble communication (4.5)
- ⦿ Requires Software Assurance
- ⦿ .NET virtualization

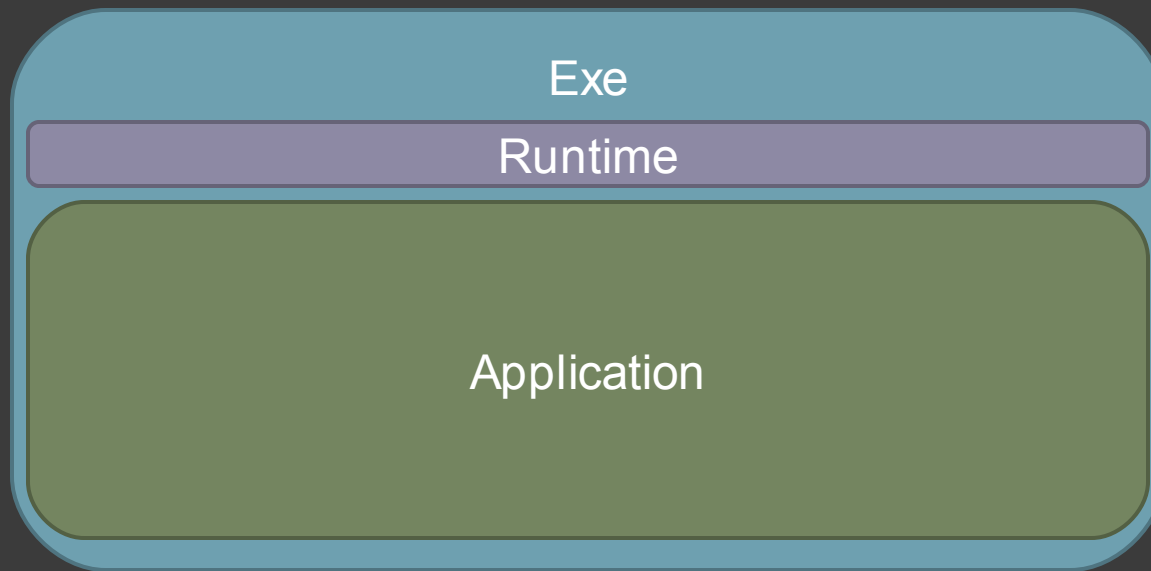
# XenApp architecture



# XenApp

- ⦿ Build on AIE (Application Isolation Environment) technology
- ⦿ End to end delivery (VDI, PS...)
- ⦿ Integrated streaming
- ⦿ Still feels like beta
- ⦿ Complex infrastructure
- ⦿ Doesn't support services

# Thinstall architecture

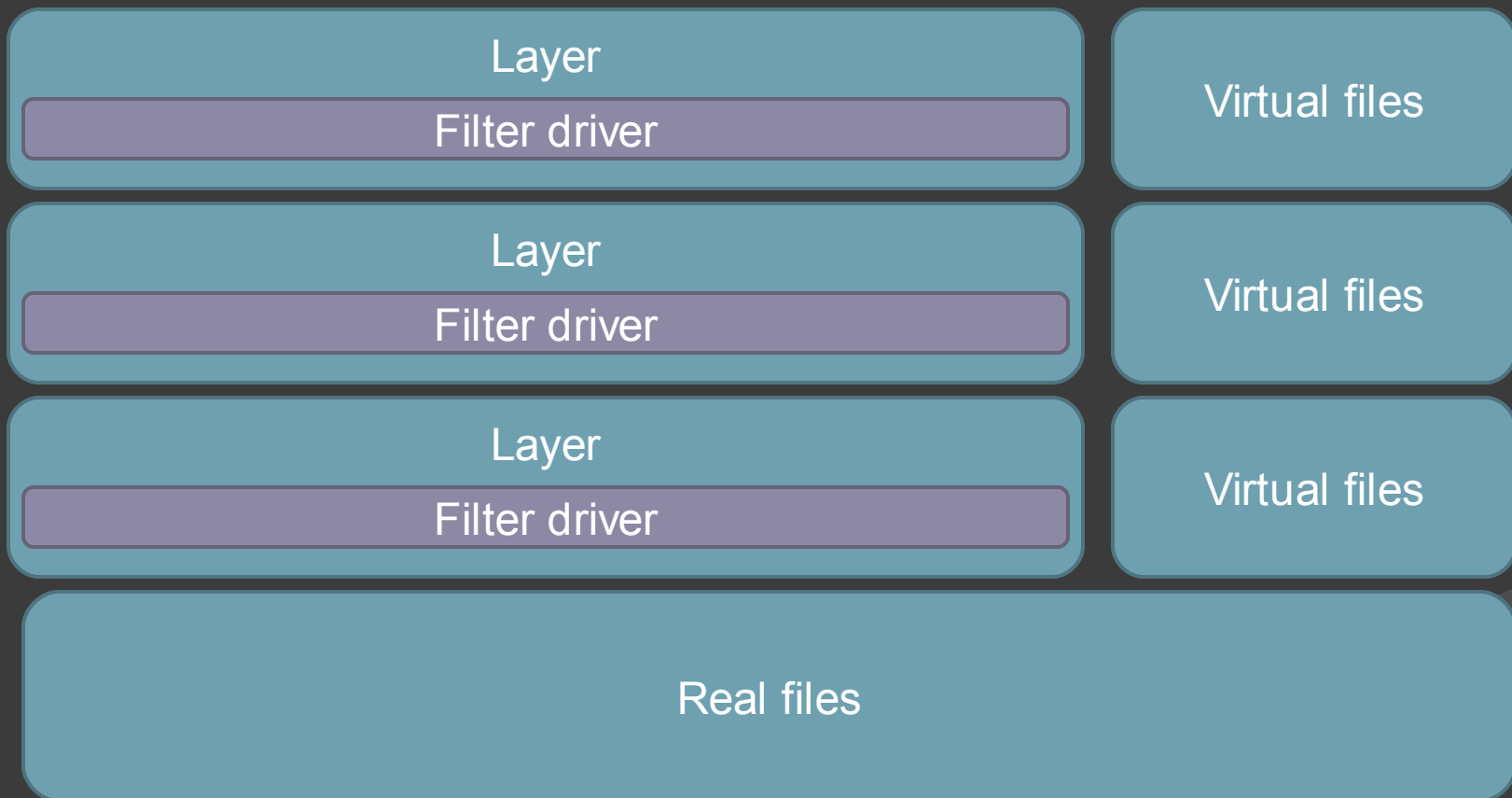


# Thinstall results

- ⦿ Agentless
- ⦿ Running fully in user-mode (potential security risk)
- ⦿ No infrastructure needed
- ⦿ Cool tricks (8.3, .NET, Java, IE...)
- ⦿ Virtual in virtual
- ⦿ Expensive
- ⦿ Missing infrastructure (easy to integrate)



# Altiris SVS architecture



# Altiris SVS

- ⦿ “Symantec Applications Ghost” ;)
- ⦿ Integration with Altiris
- ⦿ Inter-process bubbles
- ⦿ Free for personal use
- ⦿ No infrastructure needed
- ⦿ Not application virtualization (!)
- ⦿ SVS 2.0 – performance
- ⦿ Designed for desktops

# Other solutions

- ⦿ AppExpress
- ⦿ AppStream
- ⦿ XenoCode
- ⦿ InstallFree

# Best practices

- ⦿ Know you applications (!)
- ⦿ Deliver only what is really needed
- ⦿ Less is sometimes more (only isolate what you really need)
  - Isolation related problems
  - Performance

# Future

- ◎ VMWare – future driver?
- ◎ Trial software
- ◎ Pay per use
- ◎ Jukebox
- ◎ Microsoft “cloud”? SkyDrive, FolderShare...

# Links

- ◉ [My blog](#)
- ◉ [DABCC](#)
- ◉ [Virtual](#)
- ◉ [Feature matrix](#)
- ◉ [Microsoft Application Virtualization](#)
- ◉ [Citrix XenApp](#)
- ◉ [VMWare Thinstall](#)
- ◉ [AppStream](#)
- ◉ [Xenocode](#)
- ◉ [Endeavors AppExpress](#)

Q&A