Server 2019 Storage Migration Service Quick Look

AWS Re:Invent 2018

Mike Nelson Solutions Architect @ Rubrik

mike.nelson@rubrik.com

@nelmedia

geektweakers.com

http://github.com/nelmediamike

Microsoft MVP, Azure UG Leader

Citrix Technology Professional (CTP)

vExpert – Wisconsin VMUG Leader

Server 2003... Server 2008... Server 2012...

Why can't / won't you upgrade?

What gets missed?

Files

- Ownership
- Permissions
- Encrypted
- Attributes
- In-use

Share properties

Network

Names & AD

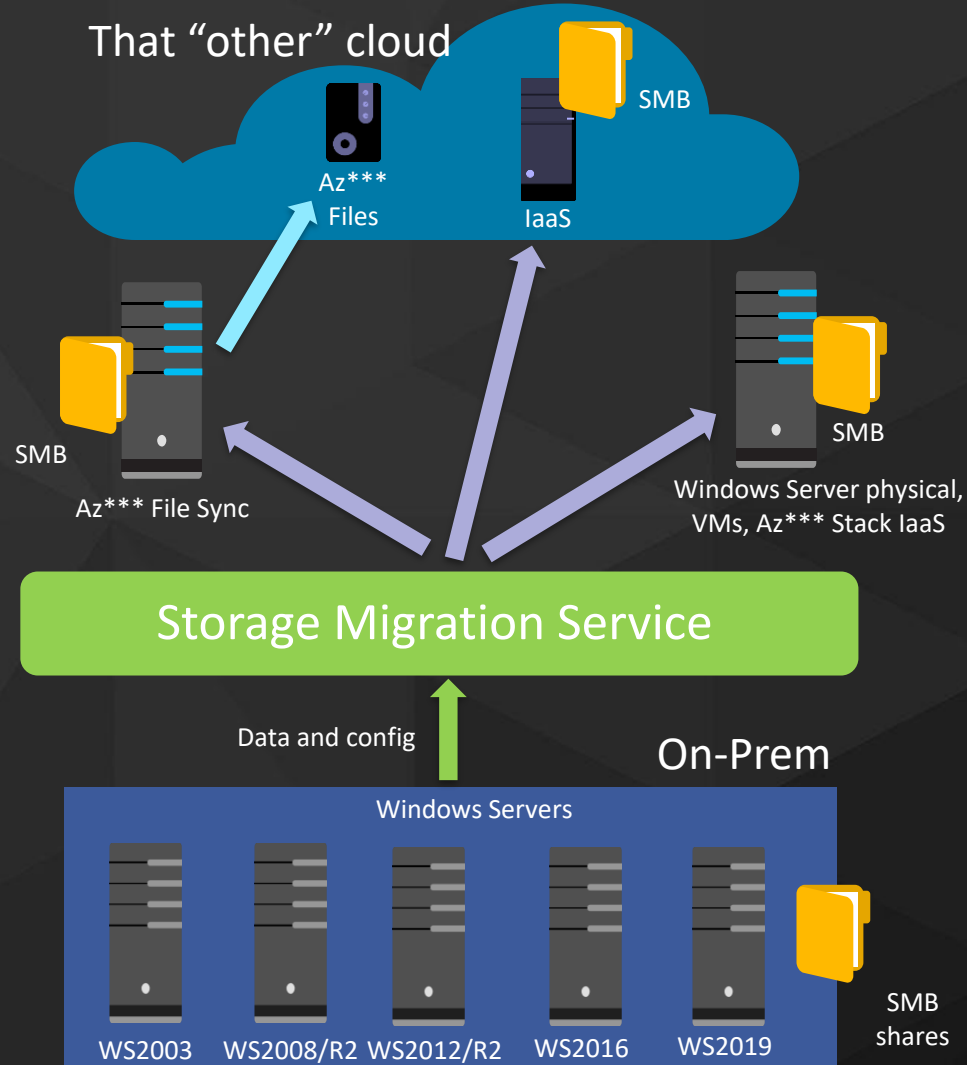Not knowing what you don't know

Storage Migration Service Vision

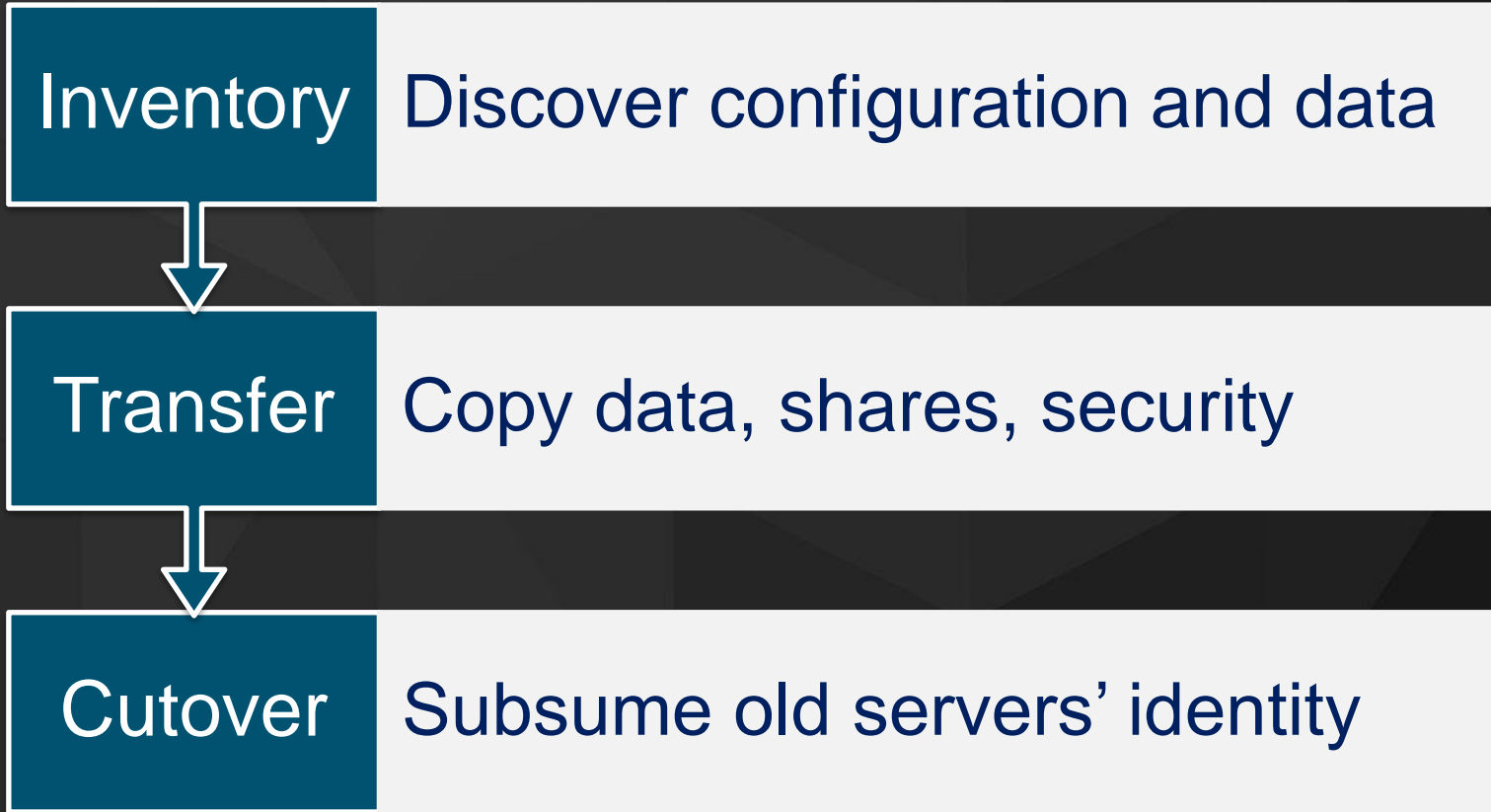Migrate unstructured data from anywhere into physical, virtual, and IaaS

Fast, consistent, scalable

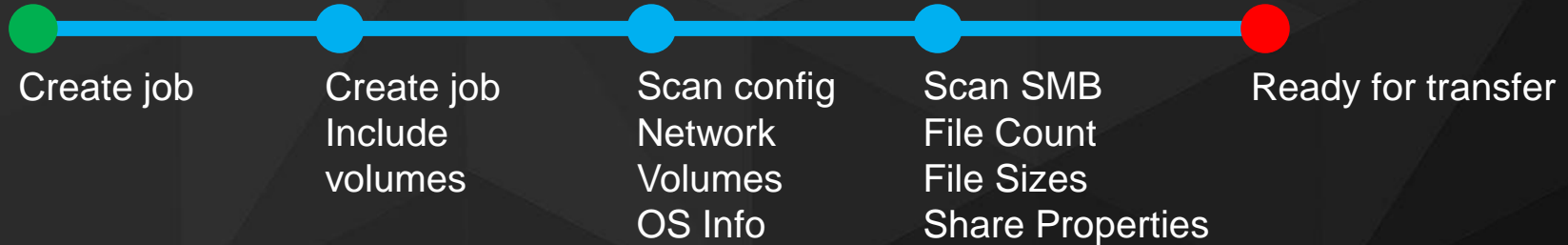Takes care of complexity

An elegant graphical workflow

Jobs

Inventory	Discover configuration and data
Transfer	Copy data, shares, security
Cutover	Subsume old servers' identity

Inventory

Passive (no agent*)
Run from WS2019 Orchestrator

| Create job | Create job
Include
volumes | Scan config
Network
Volumes
OS Info | Scan SMB
File Count
File Sizes
Share Properties | Ready for transfer |

Inventory

File and Printer Sharing (SMB-In)
Netlogon Service (NP-In)
Windows Management Instrumentation (DCOM-In)
Windows Management Instrumentation (WMI-In)

Orchestrator service

Proxy service

DB
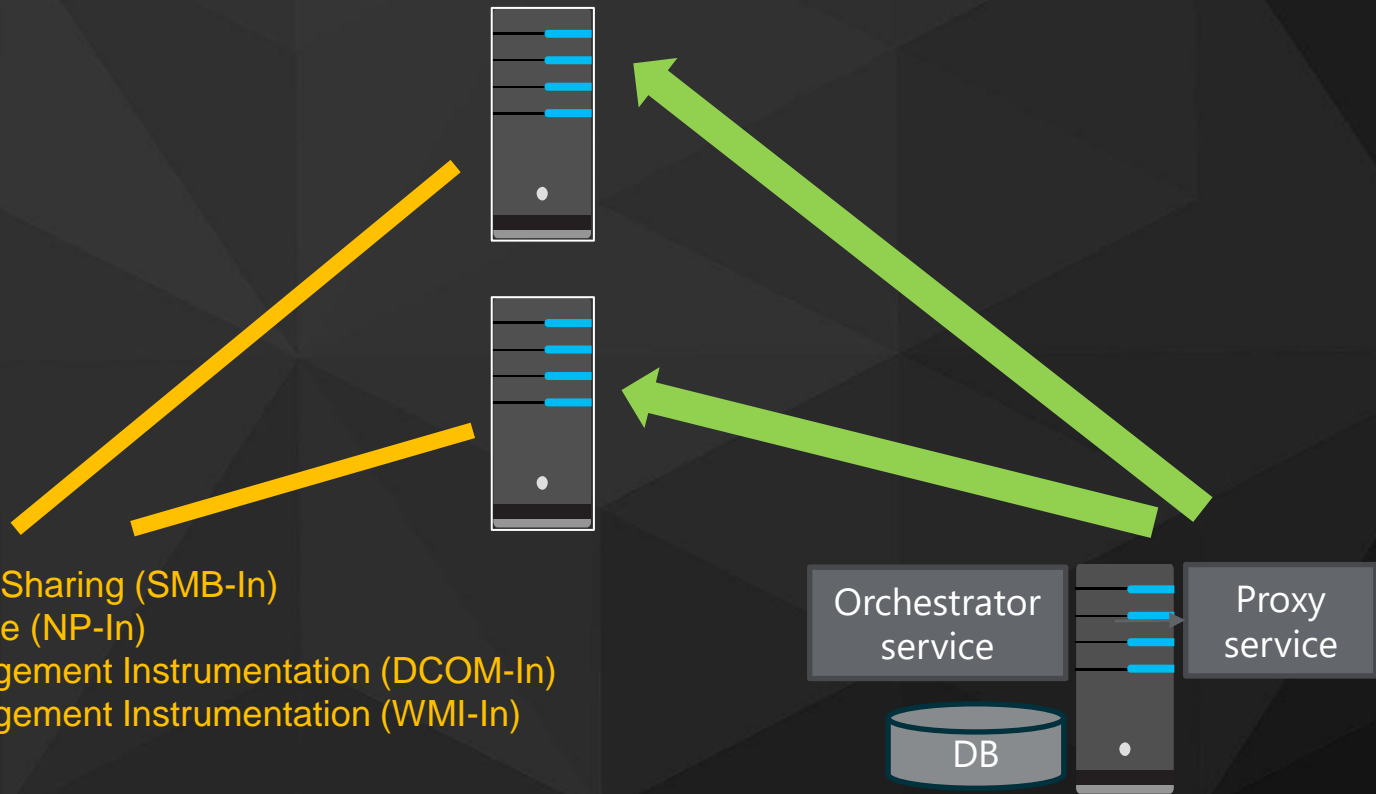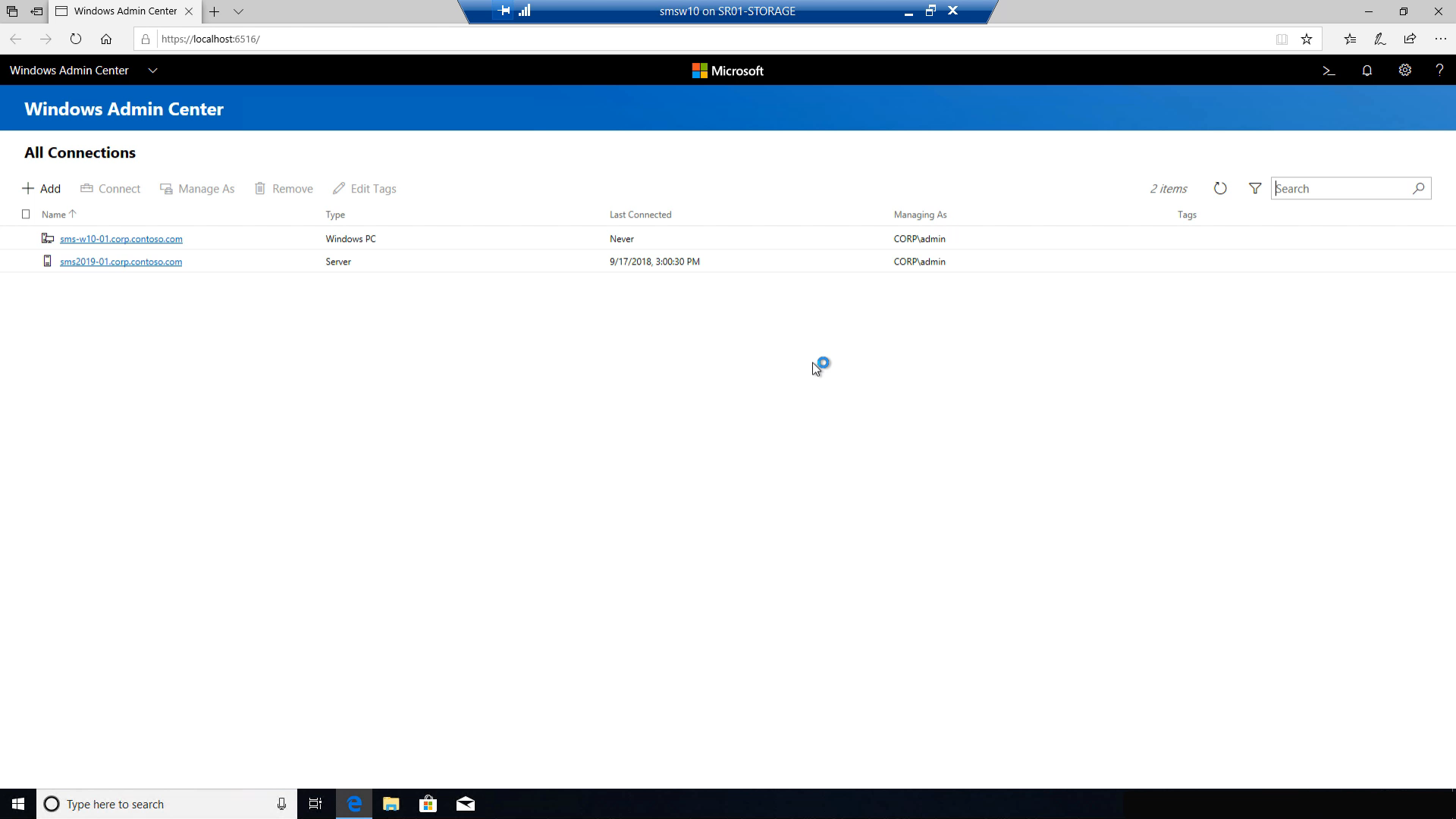
Windows Admin Center

All Connections

+ Add   Connect   Manage As   Remove   Edit Tags

2 items

Search

	Name ↑	Type	Last Connected	Managing As	Tags
	sms-w10-01.corp.contoso.com	Windows PC	Never	CORP\admin	
	sms2019-01.corp.contoso.com	Server	9/17/2018, 3:00:30 PM	CORP\admin	

Transfer

Copies data between nodes (SMB)
Multi-threaded, multi-server

10 copy threads per node (default)

Registry-controlled

Serialized by server in a job, but up to 100 jobs

Many servers per job

Security
Retry, multi-pass, delta

Transfer
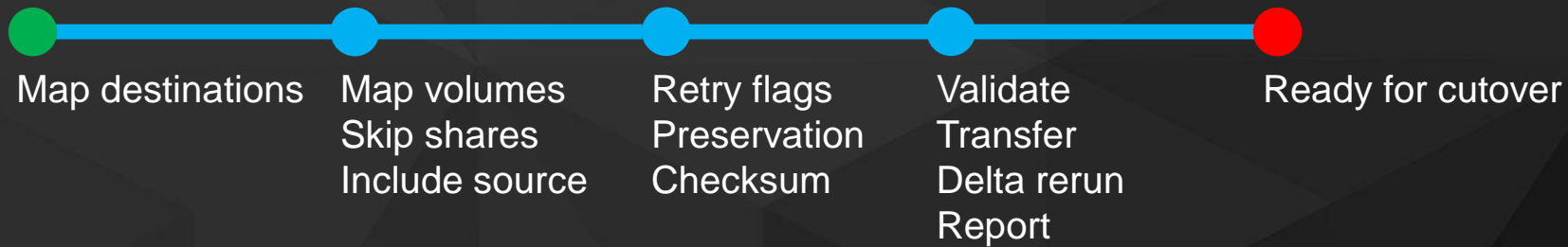
Map destinations

Map volumes
Skip shares
Include source

Retry flags
Preservation
Checksum

Validate
Transfer
Delta rerun
Report

Ready for cutover

Transfer WS2019 Target
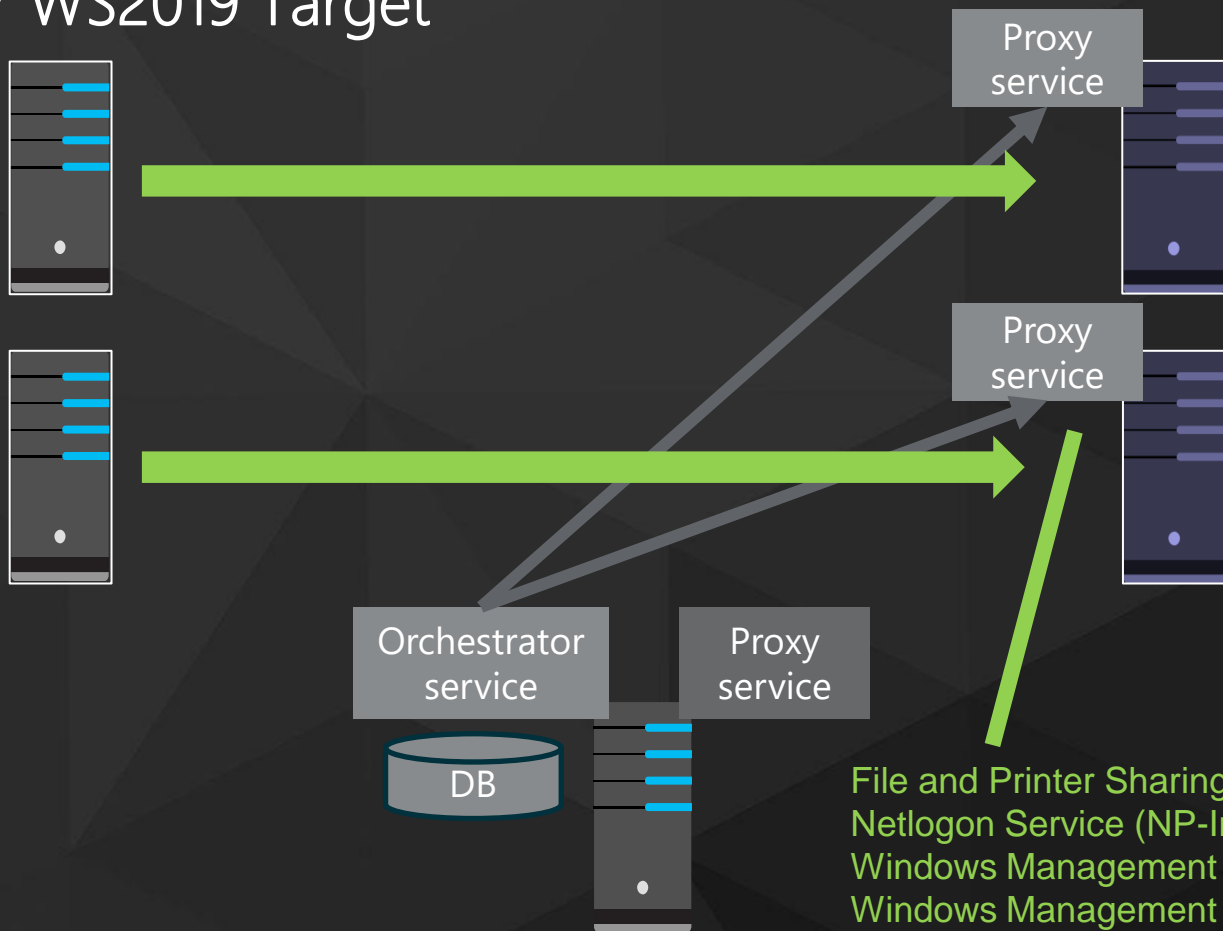
Proxy service

Proxy service

Orchestrator service

Proxy service

DB

File and Printer Sharing (SMB-In)
Netlogon Service (NP-In)
Windows Management Instrumentation (DCOM-In)
Windows Management Instrumentation (WMI-In)

Transfer WS2012 R2/2016 Target

Orchestrator service

Proxy service

DB

File and Printer Sharing (SMB-In)
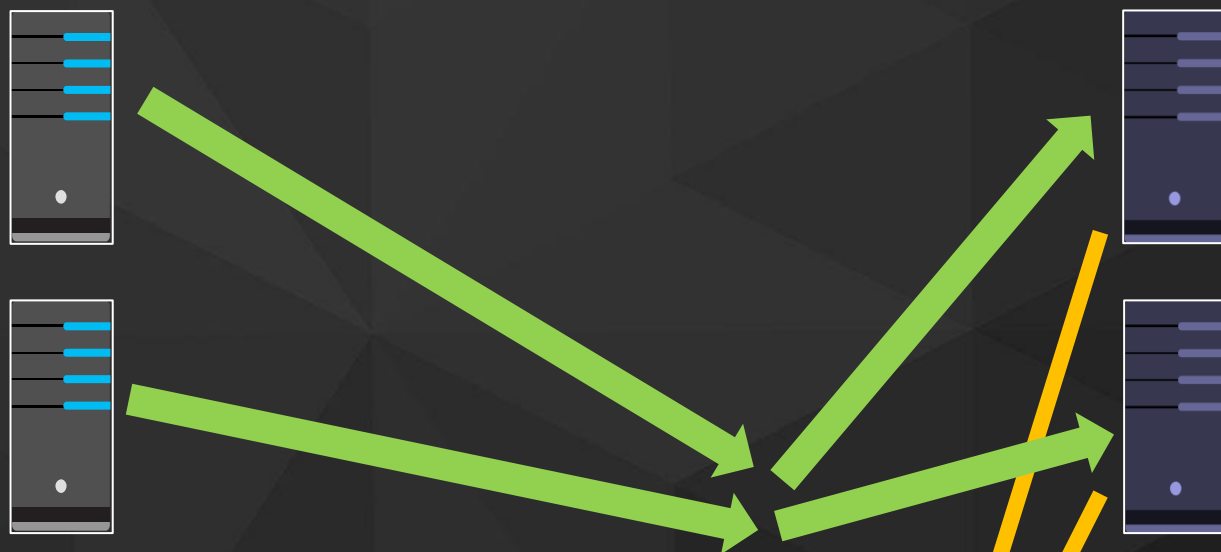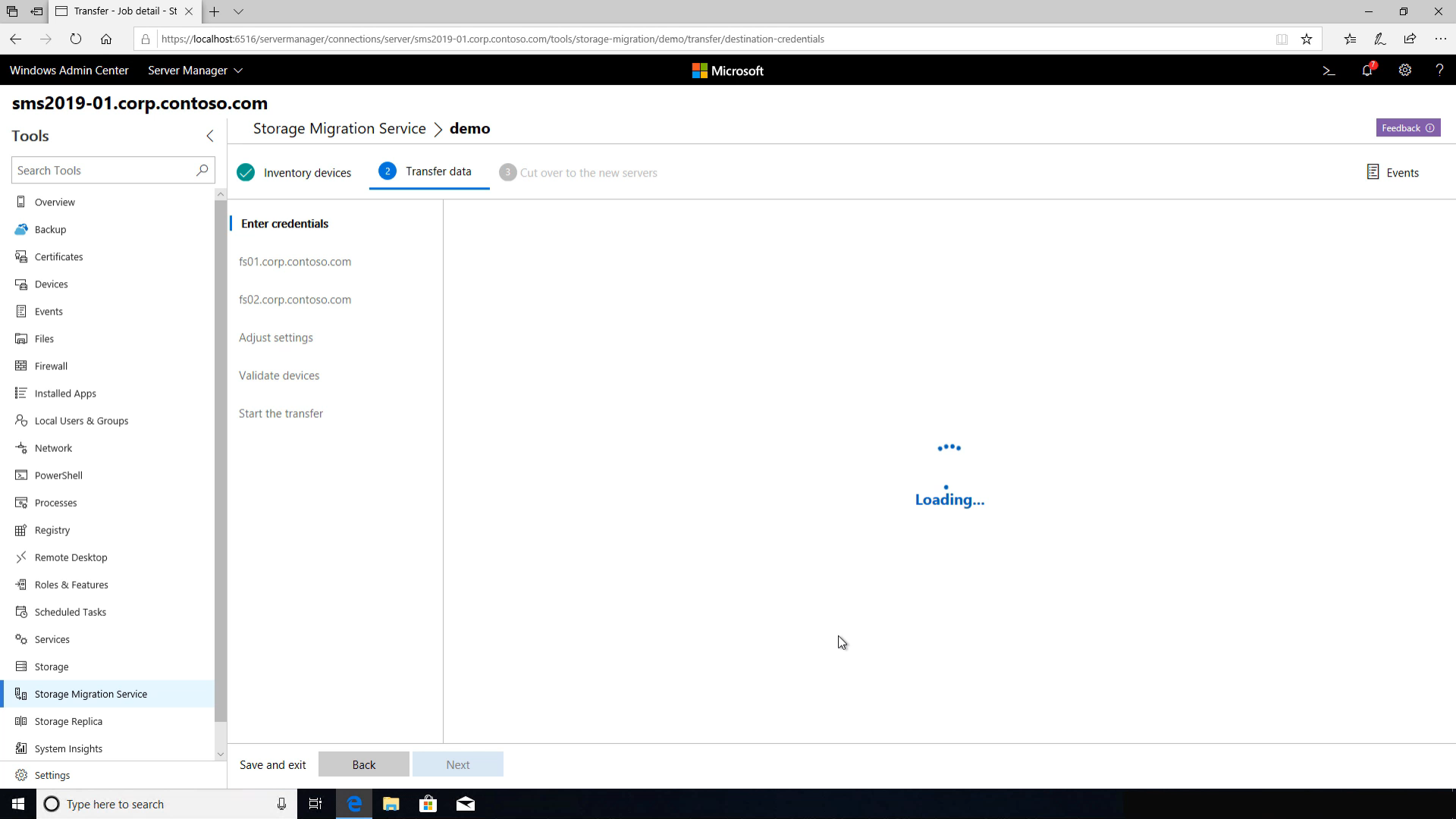Netlogon Service (NP-In)
Windows Management Instrumentation (DCOM-In)
Windows Management Instrumentation (WMI-In)

Windows Admin Center   Server Manager ⌄

Microsoft

sms2019-01.corp.contoso.com

Tools

Search Tools

- Overview
- Backup
- Certificates
- Devices
- Events
- Files
- Firewall
- Installed Apps
- Local Users & Groups
- Network
- PowerShell
- Processes
- Registry
- Remote Desktop
- Roles & Features
- Scheduled Tasks
- Services
- Storage
- Storage Migration Service
- Storage Replica
- System Insights
- Settings

Storage Migration Service ＞ **demo**

Feedback ⓘ

✔ Inventory devices   ② Transfer data   ③ Cut over to the new servers

Events

Enter credentials

fs01.corp.contoso.com

fs02.corp.contoso.com

Adjust settings

Validate devices

Start the transfer

••••

Loading...

Save and exit   Back   Next

Type here to search

Cutover

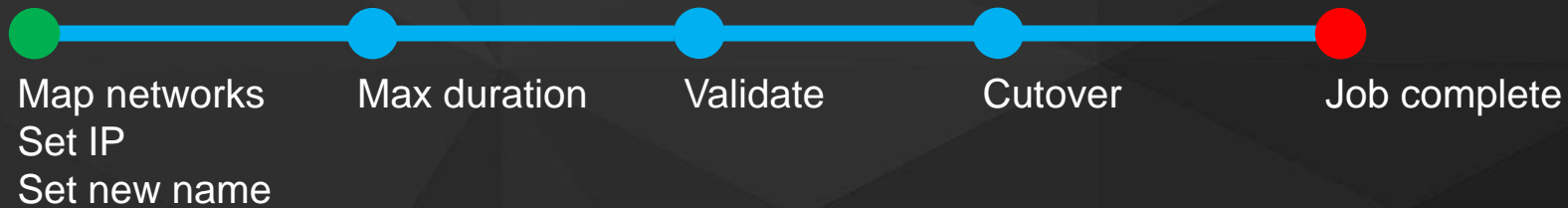Schedule for downtime
Obfuscate old source
Transfer and read-only
Takeover name and AD
Take over network
Little or no user disruption
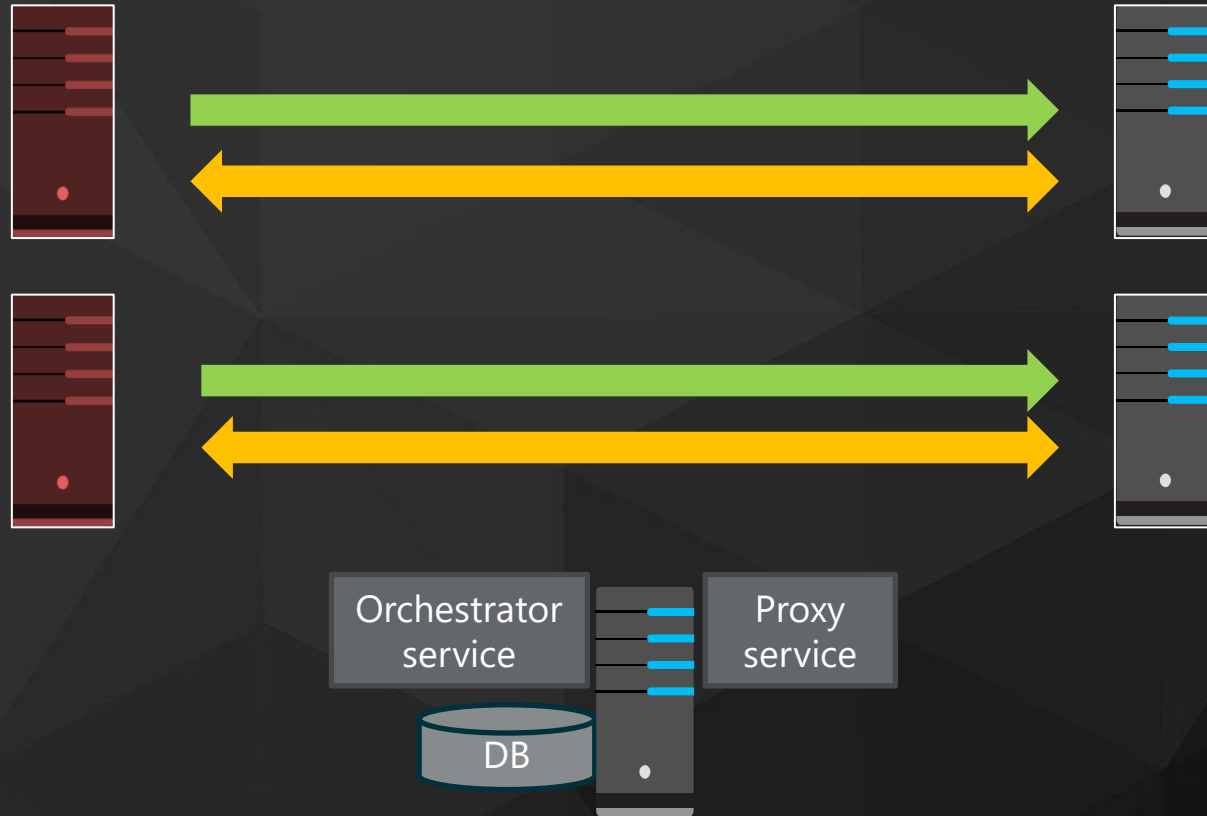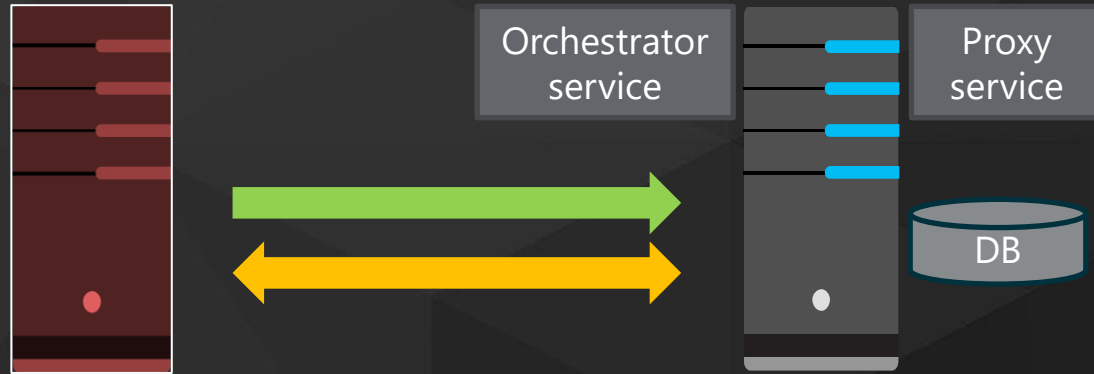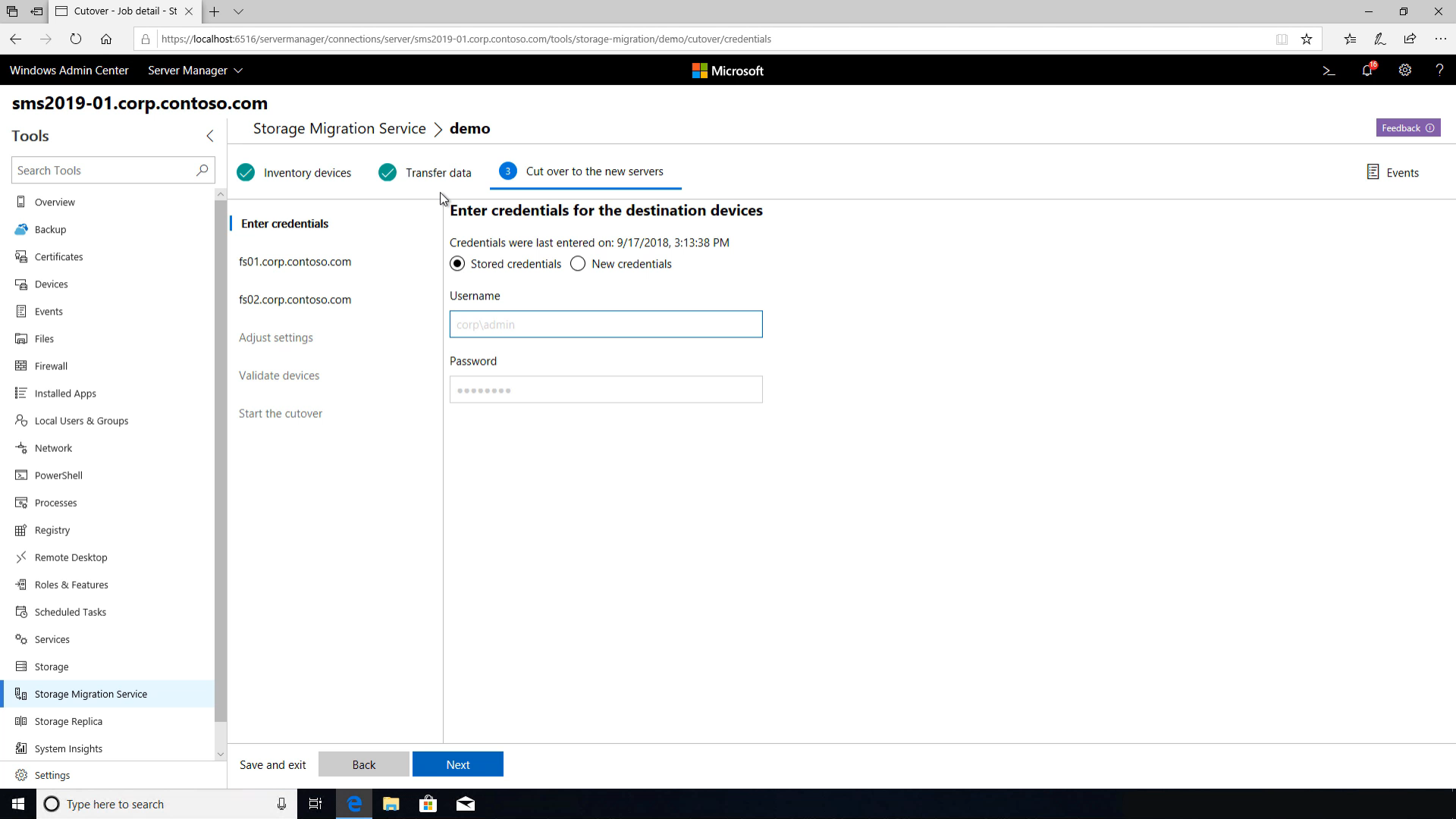
REBOOTS

Cutover

Map networks
Set IP
Set new name

Max duration

Validate

Cutover

Job complete

Separate Orchestrator Scenario

All-in-One Scenario

Orchestrator service

Proxy service

DB

Cutover - Job detail - St

https://localhost:6516/servermanager/connections/server/sms2019-01.corp.contoso.com/tools/storage-migration/demo/cutover/credentials

Windows Admin Center   Server Manager ⌄

Microsoft

sms2019-01.corp.contoso.com

Tools

Search Tools

- Overview
- Backup
- Certificates
- Devices
- Events
- Files
- Firewall
- Installed Apps
- Local Users & Groups
- Network
- PowerShell
- Processes
- Registry
- Remote Desktop
- Roles & Features
- Scheduled Tasks
- Services
- Storage
- Storage Migration Service
- Storage Replica
- System Insights
- Settings

Storage Migration Service ⟩ **demo**

Feedback ⓘ

✓ Inventory devices   ✓ Transfer data   ③ **Cut over to the new servers**

🗐 Events

Enter credentials

fs01.corp.contoso.com

fs02.corp.contoso.com

Adjust settings

Validate devices

Start the cutover

Enter credentials for the destination devices

Credentials were last entered on: 9/17/2018, 3:13:38 PM

◉ Stored credentials   ○ New credentials

Username

corp\admin

Password

••••••••

Save and exit   Back   Next

Type here to search

Not Transferred

%Systemdrive% folders such as Windows, Windows.old, $Windows.~BT, $Windows.~LS, Program Files/Program Files (x86), $Recycle.bin, Recycler, Recycled, etc. (more complete listing in doc's)

Files or folders that conflict with excluded files / folders on the destination

Limits

No clusters

No local groups or users

No workgroups or cross-domain

8 files simultaneously – regedit for more (128 max)

Windows only... for now

No NTFS to REFS

No DC migrations

Requirements

2019 1809+ & WAC 1809+ (version "locked")

OS supported

Firewall ports

Active Directory joined

Share permissions

Scale validated

50,000 shares single-node source
100 simultaneous transfer jobs
16 networks per machine

No data size limit
File count limit: ESE database size and free disk space
Proxy copy threads up to 512

The future

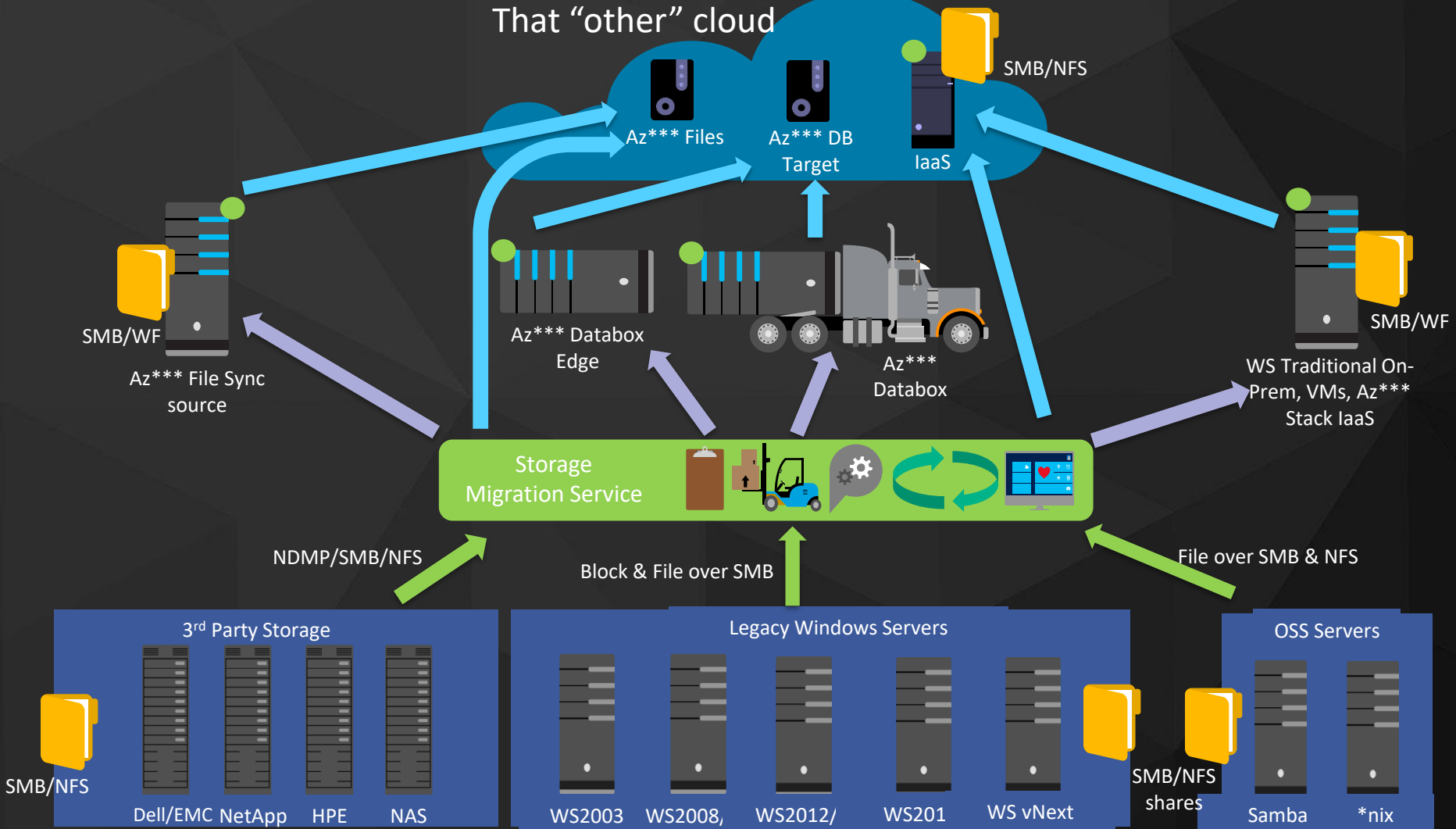Full discovery

Clusters

NFS, Block, NDMP

Samba, NAS, SAN

AFS Integration

Az*** Files as a target

Consolidation (*x* to 1) (edition rules is a blocker)

Data analysis, reporting, governance

Summaries

Orchestrator for heavy lifts

RAM & CPU & disk

Proxy feature = 50% speed increase

Schedule downtime – plan for transfer time

Check firewall ports

Extensive logs available

A lot more to come

Thanks!

mike.nelson@rubrik.com

@nelmedia