AWS re:Invent

WIN322

# Leverage automation to re-platform SQL Server to Linux

**Stefan Minhas**
Senior Consultant
ProServe
Amazon Web Services

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# Introductions: Your name, re:Invent goals, builder goals



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# Overview

- For organizations that are comfortable with Linux and are looking to save on Windows licensing costs, this represents an opportunity to run SQL Server workloads using the Linux operating system and save on Windows Server licensing costs, without drastically altering system architecture

- To help customers who want to run their SQL Server workloads on Linux, AWS has introduced a new tool, the Windows to Linux replatforming assistant for Microsoft SQL Server.

# Abstract


- For decades, IT administrators had only been able to run their SQL Server workloads on Windows
- However, as of SQL Server 2017, SQL Server is now available to run in the Linux operating system
- For IT administrators who prefer to work in the Linux environment, this represents an opportunity to run SQL Server workloads using their preferred operating system and save on Windows Server licensing costs, without drastically altering system architecture
- To help customers who want to run their SQL Server workloads on Linux, AWS has introduced a new tool, the Windows to Linux replatforming assistant for Microsoft SQL Server

# The challenge

- Organizations are looking to expedite the move to Linux
- Reduce the Windows license cost burden
- Insufficient in-house AWS knowledge to perform cloud migrations
- Manual migration can lead to downtime and possible migration errors

# Outcome

- We will leverage the Windows to Linux replatforming assistant for Microsoft SQL Server to help you migrate your SQL Server workloads from Windows Server to Linux

- The replatforming assistant allows you to test running your SQL Server workloads in Amazon EC2 Linux—it is an automated and low-commitment solution that uses native AWS Tools for PowerShell and doesn’t cause source database downtime

- Automation of the replatforming is performed by AWS Systems Manager

# Systems Manager automation

- Systems Manager automation is an AWS-hosted service that simplifies common instance and system maintenance and deployment tasks
- For example, you can use automation as part of your change management process to keep your Amazon Machine Images (AMIs) up to date with the latest application build
- Avoids deploying scripts and scheduling logic directly to the instance

# Agenda

- This builders session will guide you through the process of using the Windows to Linux replatforming assistant for Microsoft SQL Server
- We will use the replatforming assistant to launch a new Amazon EC2 Linux instance with SQL Server 2017 and migrate your SQL Server databases to it
- At the end of this session, we will walk you through the process of connecting to your Amazon EC2 Linux SQL Server 2017 instance and setting your SQL Server SA password once your databases have been migrated

# Preconfigured steps (due to limited time)

1. Created an IAM role
2. Created an IAM user
3. Installed the AWS Tools for PowerShell module
4. Downloaded the replatforming assistant to your source SQL Server instance
5. Installed 3 demo SQL Server databases for the demo

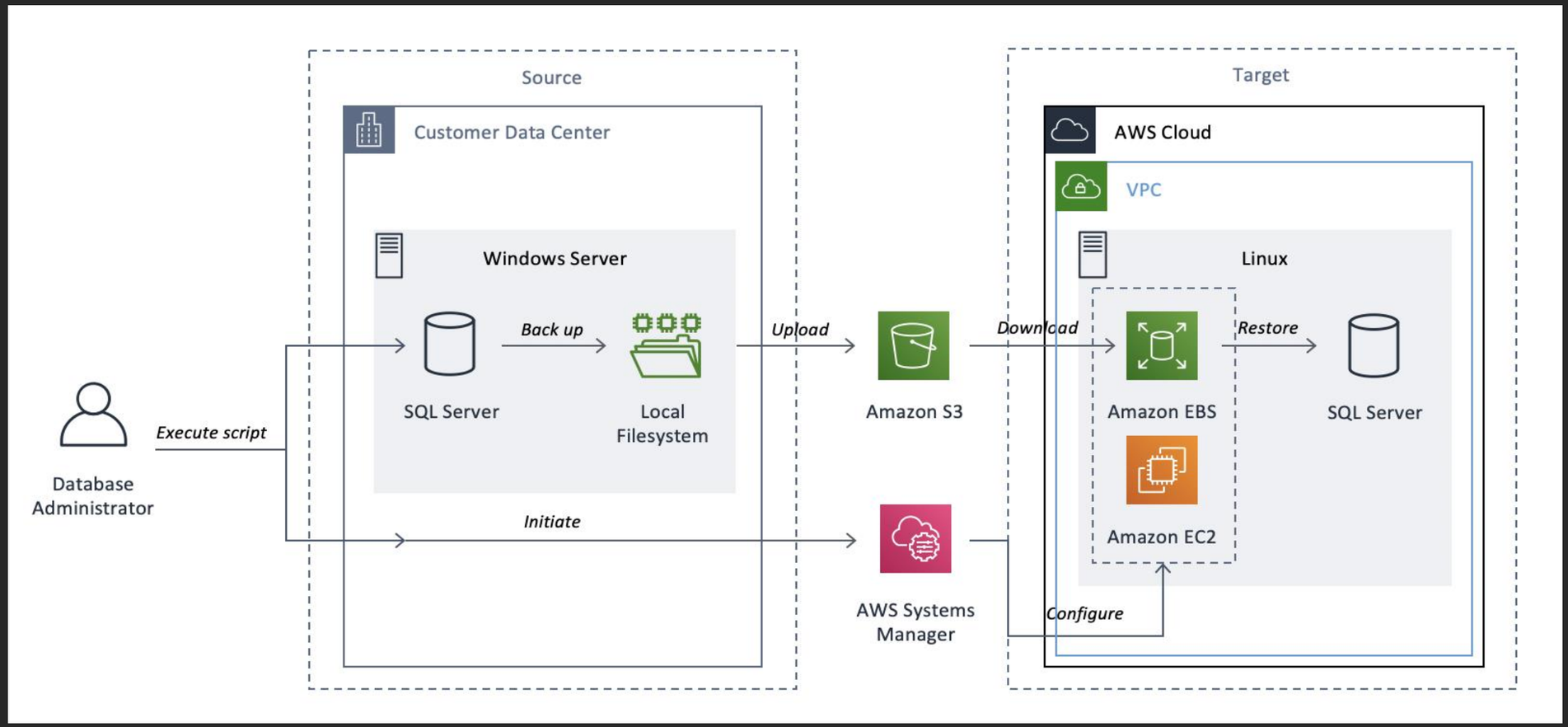
# Executing the replatforming assistant steps

Leverage locally installed replatforming assistant

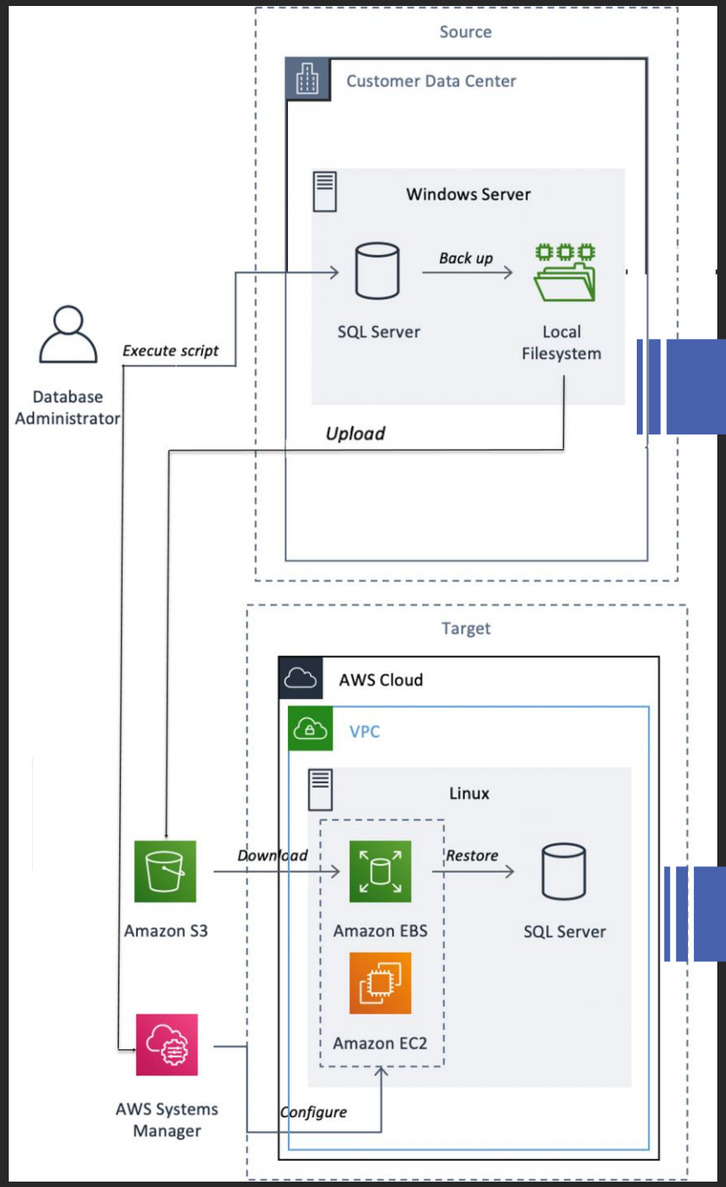
1. Creates local backups of your source SQL Server databases
2. Uploads them to an Amazon S3 bucket
3. Invokes the SSM automation AWSEC2-SQLServerDBRestore options:
4. Existing instance
   - The SSM automation will download the SQL Server database backups from Amazon S3 to the target Amazon EC2 Linux instance and then restore the databases
5. New instance
   - The SSM automation will launch and configure a new Amazon EC2 instance running SQL Server 2017 on Ubuntu 16.04, which the databases will then be restored to

# AWS automation process

The following diagram shows the actions taken by the Windows to Linux replatforming assistant for Microsoft SQL Server:



# Windows to Linux replatforming assistant




Migrate to SQL Server Linux EC2

## Source

Source SQL Server Details

SQL Server Name: EC2AMAZ-EA3NF

Authentication Type: ○ Windows ◉ SQL Authentication

User Name: sample-user

Password: *******

Databases to migrate: ○ All databases ◉ Specific databases (enter names below)

Database names (comma-separated): sample-db-1, sample-db-2

Path for local database backup: C:\SQLBackups

## Destination

AWS Destination Details - provide the ID of an existing EC2 instance or the parameters to launch a new EC2 instance.

Existing EC2 Instance

EC2 Instance ID:

AWS Profile Name: ReplatformUser

AWS Profile Location:

IAM Instance Role: iEC2RoleForSSM

New EC2 Instance

EC2 Instance Type: r4.4xlarge

Subnet ID: subnet-1234abcd

EC2 Key Pair: sample-keypair

AWS Region: us-east-1

Click To Migrate

Console output:

# Builder exercise link: https://tinyurl.com/y22nzgpf



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