

DEEP DIVE INTO SSIS IN ADF

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 - 3rd Party Licensing/Extensibility/Ecosystem
 - Demo of Custom Setup

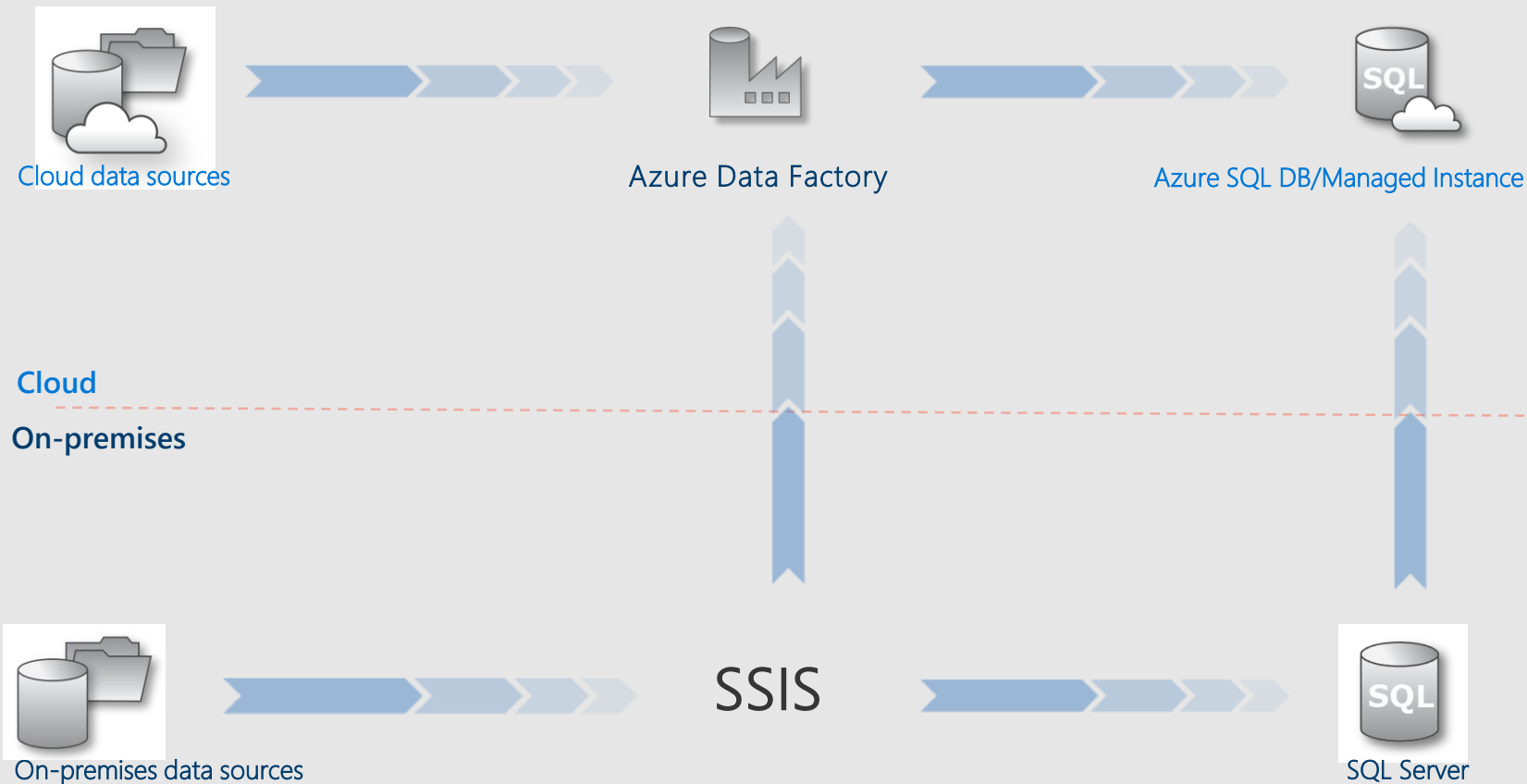
SSIS on premises > IaaS >> PaaS

SSIS on premises > IaaS



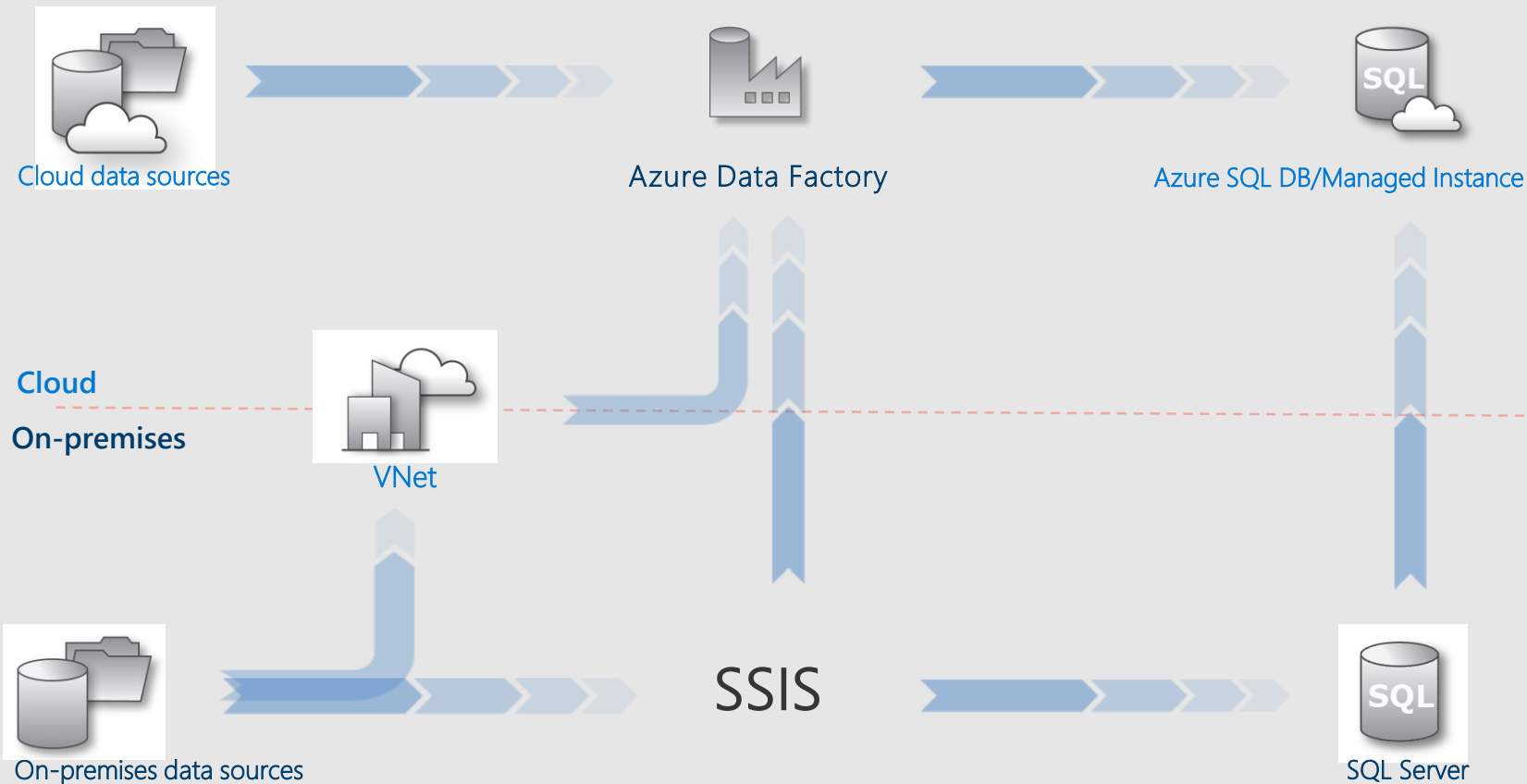
- Running SSIS on premises:
 - OS: Windows/Linux
 - SCALABILITY: Scale-Out feature
 - EDITION: Standard/Enterprise
 - TOOLS: SSDT/SSMS to design/deploy/manage/execute/monitor packages
 - EXTENSIBILITY: ISVs can build components/extensions on SSIS
 - PRICING: Bundled w/ on-prem SQL Server

SSIS on premises > IaaS >> PaaS (SSIS in ADF)



- Running SSIS in the cloud:
 - LIFT & SHIFT: Use Azure SQL DB/Managed Instance (MI) to host SSISDB
 - SCALABILITY: Use ADF to provision a managed cluster of Azure VMs dedicated to run your packages – Azure-SSIS Integration Runtime (IR)
 - EDITION: Standard/Enterprise
 - TOOLS: SSDT/SSMS + ADF app to design/deploy/manage/execute/monitor packages (activities)
 - EXTENSIBILITY: ISVs can build components/extensions + SaaS on SSIS in ADF via custom setup + 3rd party licensing
 - PRICING: Pay per hour + Azure Hybrid Benefit (AHB) to Bring Your Own License (BYOL), see [here](#)

SSIS on premises > IaaS >> PaaS (SSIS in ADF)



- Running SSIS in the cloud:
 - HYBRID: Join Azure-SSIS IR to a VNet that is connected to your on-prem network to enable on-prem data access, see [here](#)
 - MODERNIZATION: Schedule first-class SSIS activities in ADF pipelines via SSMS and chain/group them w/ other activities via ADF app
 - COMPLEMENTARY: Splice/inject built-in/custom/Open Source/3rd party SSIS tasks and transformations in ADF pipelines
 - READINESS: General Availability (GA) w/ 24/7 live-site support

Demo of SSIS in ADF

Demo of SSIS in ADF: End to End

- Provisioning SSIS IR via ADF UI
- Monitoring SSIS IR via ADF UI
- Project Deployment via SSDT
- Package Execution via SSMS
- Monitoring Execution via SSMS

Demo of SSIS in ADF: 1st Class Activity

- Package Execution via ADF UI
- Execution Scheduling via ADF UI/SSMS
- On-Demand/Just-In-Time Provisioning via ADF UI
- Leveraging ADF Templates

Enterprise Edition

Enterprise Edition – Introduction

- Enterprise Edition of Azure-SSIS IR allows you to use advanced/premium features:
 - Change Data Capture (CDC) components
 - Oracle/Teradata/SAP BW connectors
 - SQL Server Analysis Services (SSAS)/Azure Analysis Services (AAS) connectors/transformations
 - Fuzzy Grouping/Lookup transformations
 - Term Extraction/Lookup transformations
- Some of these features will also require you to install additional components, essentially customizing your Azure-SSIS IR (via Custom Setup Interface)

Custom Setup Interface

Custom Setup Interface – Introduction

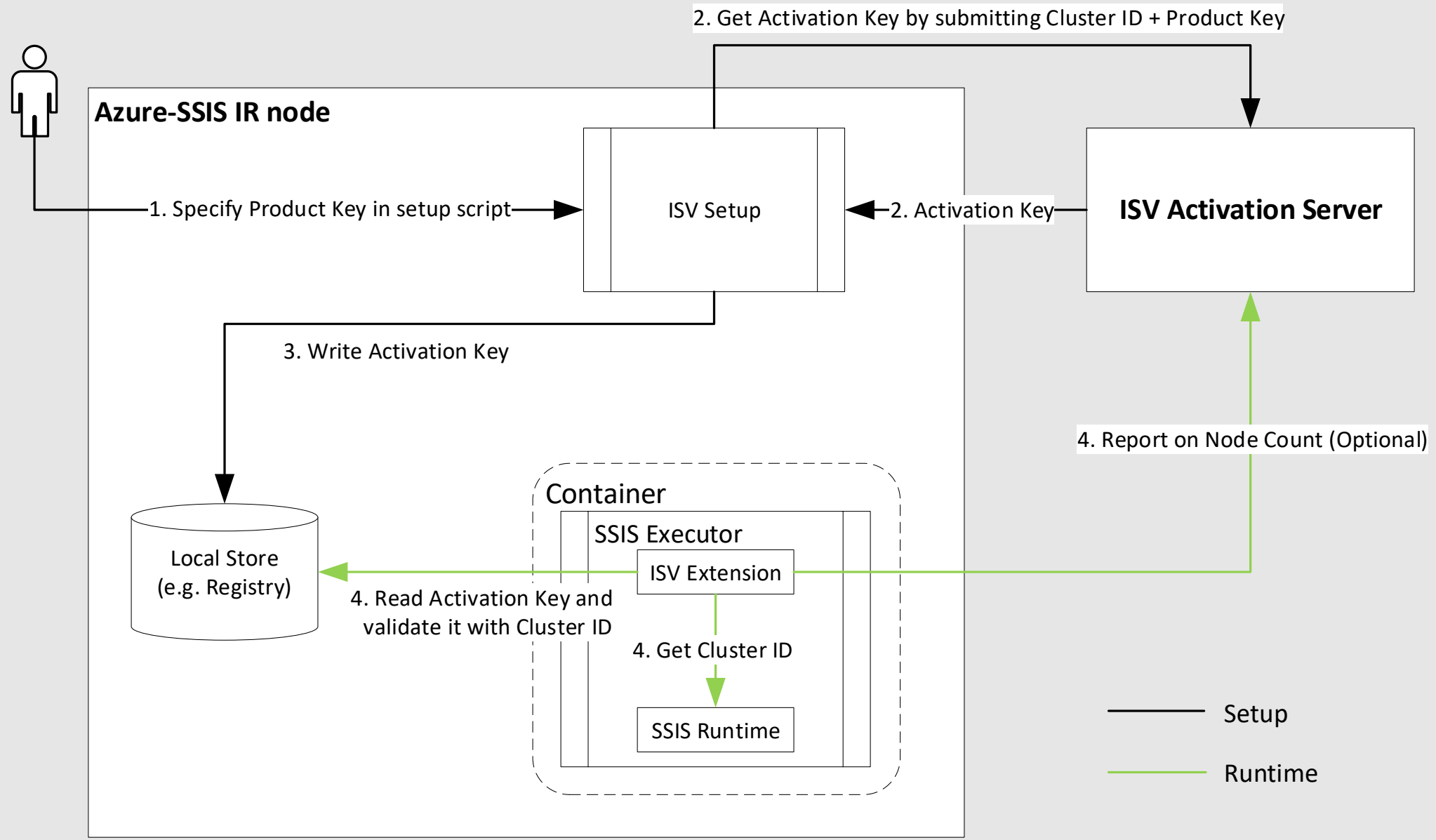
- Custom setup allows you to add your own setup steps during the provisioning/reconfiguration of your Azure-SSIS IR to:
 - Alter the default operating configuration/environment (e.g. to start additional Windows services or persist access credentials for file shares)
 - Install additional components (e.g. APIs/assemblies/drivers/extensions)
- Instructions:
 - Prepare a script (main.cmd) + associated files and upload them into a blob container in your Azure Storage account
 - Provide Shared Access Signature (SAS) Uniform Resource Identifier (URI) of your container when you provision/reconfigure your Azure-SSIS IR
 - Each node of your Azure-SSIS IR will then download the script + files from your container and execute your custom setup with an elevated privilege
 - Upon completion, each node will upload the standard output of execution and other logs into your container
- We support the installation of free/paid/(un)licensed components

3rd Party Licensing/Extensibility/Ecosystem

3rd Party Licensing – Introduction

- To support the installation of paid/licensed components from our ISV partners, we face challenges from the nature of Azure-SSIS IR as the nodes are volatile in the sense that they can be allocated/released at any time:
 - We regularly reimage the nodes to release security patches/new features
 - Customers can start/stop their Azure-SSIS IR to manage its running cost
 - Customers can scale up/down through various node sizes
 - Customers can scale in/out the number of nodes between 1 to 10 (or more by a special request)
- Binding a component installation to any particular node by collecting machine-specific info that is traditionally used for on-prem installations, e.g. MAC address, CPU ID, etc. isn't viable anymore
- We provide new unique and persistent Windows environment + SSIS system variables for ISVs to bind/validate their component licenses on Azure-SSIS IR:
 - Cluster ID and Cluster Node Count

3rd Party Extensibility – Implementation



3rd Party Ecosystem – ISV Partners



More ISV partners coming soon...

Demo of Custom Setup

Demo of Custom Setup

- main.cmd
- main.cmd.log
- Package Execution w/ 3rd Party Component/Azure PSH/PQ Source

Resources

Contacts

- My email: sawinark@microsoft.com
- SSIS Advisors Yammer Group:
https://www.yammer.com/azureadvisors/#/threads/inGroup?type=in_group&feedId=12090139&view=all
- SSIS Team Blog: <https://blogs.msdn.microsoft.com/ssis/>

Documentations

- Complete Presentation: <https://www.slideshare.net/SandyWinarko/embrace-and-extend-firstclass-activity-and-3rd-party-ecosystem-for-ssis-in-adf-108683267>

Provisioning Azure-SSIS IR	Using UI: https://docs.microsoft.com/en-us/azure/data-factory/tutorial-deploy-ssis-packages-azure Using PSH: https://docs.microsoft.com/en-us/azure/data-factory/tutorial-deploy-ssis-packages-azure-powershell Using ARM template: https://docs.microsoft.com/en-us/azure/data-factory/create-azure-ssis-integration-runtime#azure-resource-manager-template
Provisioning Azure-SSIS IR using Azure SQL DB w/ VNet service endpoints/Managed Instance to host SSISDB	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/create-azure-ssis-integration-runtime Joining a VNet: https://docs.microsoft.com/en-us/azure/data-factory/join-azure-ssis-integration-runtime-virtual-network
Provisioning Azure-SSIS IR using AAD Auth w/ the managed identity for ADF	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/create-azure-ssis-integration-runtime Enabling AAD Auth: https://docs.microsoft.com/en-us/azure/data-factory/enable-aad-authentication-azure-ssis-ir
Provisioning Azure-SSIS IR inside a VNet to access data on premises	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/create-azure-ssis-integration-runtime Joining a VNet: https://docs.microsoft.com/en-us/azure/data-factory/join-azure-ssis-integration-runtime-virtual-network
Monitoring Azure-SSIS IR	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/monitor-integration-runtime#azure-ssis-integration-runtime

Documentations

Configuring Azure-SSIS IR	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/manage-azure-ssis-integration-runtime
Configuring Azure-SSIS IR to use Enterprise Edition	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/how-to-configure-azure-ssis-ir-enterprise-edition
Configuring Azure-SSIS IR to use custom setup	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/how-to-configure-azure-ssis-ir-custom-setup
Configuring Azure-SSIS IR for high performance	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/configure-azure-ssis-integration-runtime-performance
Configuring Azure-SSIS IR for disaster recovery	Using UI/PSH: https://docs.microsoft.com/en-us/azure/data-factory/configure-bcdr-azure-ssis-integration-runtime
Deploying projects/packages to run on Azure-SSIS IR	Using UI/PSH: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-deploy-run-monitor-tutorial?view=sql-server-2017 Connecting SSMS to SSISDB: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-connect-to-catalog-database?view=sql-server-2017 Validating projects/packages: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-validate-packages?view=sql-server-2017

Documentations

Connecting to data sources using Win Auth on Azure-SSIS IR	Using 3 methods: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-connect-with-windows-auth?view=sql-server-2017
Connecting to file shares and processing files on Azure-SSIS IR	Using local file system/file shares: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-files-file-shares?view=sql-server-2017 Using Win Auth: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-connect-with-windows-auth?view=sql-server-2017
Running packages on Azure-SSIS IR	Using SSMS/ADF/other methods: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-run-packages?view=sql-server-2017 As Execute SSIS Package activities in ADF pipelines: https://docs.microsoft.com/en-us/azure/data-factory/how-to-invoke-ssis-package-ssis-activity As Stored Procedure activities in ADF pipelines: https://docs.microsoft.com/en-us/azure/data-factory/how-to-invoke-ssis-package-stored-procedure-activity
Scheduling package executions on Azure-SSIS IR	Using SSMS/ADF/other methods: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-schedule-packages?view=sql-server-2017 Using SSMS: https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-schedule-packages-ssms?view=sql-server-2017 As Execute SSIS Package activities in ADF pipelines: https://docs.microsoft.com/en-us/azure/data-factory/how-to-invoke-ssis-package-ssis-activity As Stored Procedure activities in ADF pipelines: https://docs.microsoft.com/en-us/azure/data-factory/how-to-invoke-ssis-package-stored-procedure-activity

Documentations

Scheduling Azure-SSIS IR provisioning on demand/just in time	Using Azure Automation: https://docs.microsoft.com/en-us/azure/data-factory/how-to-schedule-azure-ssis-integration-runtime
Cleaning up package execution logs in SSISDB	Using Elastic Jobs: https://docs.microsoft.com/en-us/azure/data-factory/how-to-clean-up-ssisdb-logs-with-elastic-jobs
Developing premium/licensed components for Azure-SSIS IR	Using Cluster ID: https://docs.microsoft.com/en-us/azure/data-factory/how-to-develop-azure-ssis-ir-licensed-components
Procuring 3rd party components for Azure-SSIS IR	Partner list: https://blogs.msdn.microsoft.com/ssis/2018/04/27/enterprise-edition-custom-setup-and-3rd-party-extensibility-for-ssis-in-adf/

