Bring your own storage/customer-side compatibility and configuration

The Blue Prism Cloud Data Vault & Partitioner solution gives RPA Developers and key operational stakeholders an automated solution to mitigate common issues encountered with the accumulation of Session data within the Blue Prism product database, hosted within Blue Prism Cloud. The solution primarily focuses on maintaining the session logs and work queue items and is being continuously developed to enhance and extend its operational effectiveness. This is accomplished through the use of an Azure Data Lake to transfer the archival data to a cost-effective columnar file format (Apache Parquet), with older session log entries being purged from the primary Blue Prism database routinely in order to maintain the database size.

As a secondary purpose, the solution also offers key stakeholders the ability to directly access and interrogate a synchronized copy of that archival data, for the purposes of BI reporting.

The solution is deployed in alignment with Blue Prism Cloud's SOC 2 verified data segregation and integrity policies. No resources are shared between customer subscriptions or accounts and data is effectively secured at all transit stages.

This article aims to empower Blue Prism Cloud consumers to enhance the security of their product data, through the utilization of their own Azure Data Lake. For this, the guide can be used to deploy and configure an Azure Storage Account that's compatible with the Blue Prism Cloud deployment.

Intended audience

This guidance affects all stakeholders of the Blue Prism Cloud-hosted solution. Affected roles may include:

- RPA Developers
- Technical Architecture
- IT Operations
- IT Security, Compliance and Governance
- Database Administrators

Prerequisites

Before embarking on the setup and configuration of your Data Lake Storage Gen2 equivalent, ensure you have the following pre-requisite knowledge, experience, and tools in place:

- **Microsoft Azure tenant & sufficient access** Ensure that you have access to a Microsoft Azure tenant and an associated account with sufficient permissions to create & configure resources
- Deployment location confirmation Your Azure storage will require geographical/regional parity to your BPC instance. If you don't know your BPC platform's region (as elected on the Platform Config Form), please reach out to BPC support via emailing cloudsupport@blueprism.com, or via our support portal portal.blueprism.com.

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Deploying and configuring your BPC-compatible data lake

Via the Microsoft Azure UI

Any mandatory configuration for compatibility will be suffixed with an emboldened asterisk: *

- 1. Log into the Microsoft Azure portal
 - a. Access the Azure Portal and authenticate with your Azure account credentials.
 - b. If applicable, navigate to your selected Azure tenant, within which you wish to deploy the resources.
- 2. Create new resource
 - a. Initiate the process by selecting **Create a resource** from the hamburger menu in the Azure Portal.
 - b. In the search bar, locate and select **Storage account** and click **Create**.



3. Configure the storage account.

- a. Provide essential details, including a unique name for your storage account.*
- b. Choose the appropriate subscription either create a new or select an existing resource group.
- c. Specify the following configuration items:
 - **Region** As noted by your Blue Prism Cloud support rep (see pre-requisites)*.
 - **Performance** Standard or Premium.
 - Account kind StorageV2 general-purpose v2*.
 - **Replication method and access tier** Hot or Cool.

Creat	Create a storage account					
Basics	Advanced	Networking	Data protection	Encryption	Tags	Review
Azure Si redunda Tables. 1 storage	torage is a Micr ant. Azure Stora The cost of you accounts	osoft-managed se ige includes Azure r storage account (ervice providing cloud Blobs (objects), Azure depends on the usage	storage that is hi Data Lake Storag and the options	ghly availa ge Gen2, A you choo	able, secure, durable, scalable, and Azure Files, Azure Queues, and Azure se below. Learn more about Azure
Project	details					
Select ti manage	he subscription your storage a	in which to create account together w	the new storage acco vith other resources.	unt. Choose a ne	w or exist	ing resource group to organize and
Subscrip	otion *					~
	Resource group)*	RG-SQL			~
Instanc	e details					
Storage	account name	0 *	bpcarchivedemo			
Region	0 *		(Europe) UK South	1		~
			Deploy to an edge zo			
Perform	ance 🛈 *		Standard: Record	ommended for m	nost scena	arios (general-purpose v2 account)
			O Premium: Reco	ommended for se	cenarios t	hat require low latency.
Redund	ancy 🛈 *		Locally-redundant	storage (LRS)		~

- 4. Configure the advanced settings*:
 - a. Navigate to the **Advanced** tab.
 - b. Enable the **Hierarchical namespace** option, crucial for unleashing the advanced features of Azure Data Lake Storage Gen2*.

Crea	te a stor	age accou	int …				
Basics	Advanced	Networking	Data protection	Encryption	Tags	Review	
	Certain options region.	have been disabled	by default due to the c	ombination of stor	age accour	nt performance, redundancy, and	
Securi	ity						
Config	ure security setti	ings that impact yo	our storage account.				
Requir operat	e secure transfer ions ①	for REST API					
Allow e individ	enabling anonyn lual containers (i	nous access on					
Enable	storage account	t key access 🛈					
Defaul the Az	t to Microsoft En ure portal (i)	ntra authorization i	" 🗆				
Minim	um TLS version (Ū	Version 1.2				\sim
Permit (previe	ted scope for co w) (i	py operations	From any storage	e account			~
Hiera	rchical Names	pace					
Hierard big dat	chical namespace ta analytics work	e, complemented b loads, and enables	by Data Lake Storage access control lists (/	Gen2 endpoint, e ACLs) Learn more	nables file	and directory semantics, accele	rates
Enable	hierarchical nan	nespace					

- 5. Review and create your BPC Azure Data Lake:
 - a. Thoroughly review the configured settings to ensure accuracy.
 - b. Click **Review + create** followed by **Create** to initiate the deployment of your Azure Data Lake Storage Gen2 account.

Create a storage accou	int
Basics Advanced Networking	Data protection Encryption Tags Review
Basics	
Subscription	
Resource Group	RG-SQL
Location	uksouth
Storage account name	bpcarchivedemo
Deployment model	Resource manager
Performance	Standard
Replication	Locally-redundant storage (LRS)
Advanced	
Enable hierarchical namespace	Enabled
Enable network file system v3	Disabled
Allow cross-tenant replication	Disabled
Access tier	Hot
Enable SFTP	Disabled
Large file shares	Disabled
Networking	
Network connectivity	Public endpoint (all networks)
Default routing tier	Microsoft network routing
Endpoint type	Standard
Security	
Secure transfer	Enabled
Allow storage account key access	Enabled
Default to Microsoft Entra authorization in the Azure portal	Disabled
Blob anonymous access	Disabled
Minimum TLS version	Version 1.2
Permitted scope for copy operations (preview)	From any storage account
Data protection	
Point-in-time restore	Disabled
Blob soft delete	Enabled
Blob retainment period in days	
Container soft delete	Enabled
Container retainment period in days	
File share soft delete	Enabled
File share retainment period in days	
Versioning	Disabled
Blob change feed	Disabled
Version-level immutability support	Disabled
Encryption	
Encryption type	Microsoft-managed keys (MMIK)
Enable support for customer-managed keys	Blobs and files only
Enable infrastructure encryption	Disabled
and press	
Create < Pre-	Next > Download a template for automation

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Via ARM

Alternative to using the Microsoft Azure UI to deploy the resources, the following example JSON template creates an Azure data lake storage Gen2, compatible with the BPC deployment.

```
Code snippet for ARM deployment
 {
      "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
      "contentVersion": "1.0.0.0",
      "parameters": {
          "storageAccountName": {
              "type": "String",
              "metadata": {
                  "description": "Name of the Azure Data Lake Storage Gen2 account."
              }
         "description": "Location given by BluePrism for your DataLake."
              }
         },
"sku": {
"daf
              "defaultValue": "Standard_LRS",
              "allowedValues": [
                  "Standard_LRS<sup>"</sup>,
                  "Standard GRS",
                  "Standard_RAGRS",
                  "Standard_ZRS"
              ],
              "type": "String",
              "metadata": {
                  "description": "Specifies the desired replication for the storage account."
              }
         }
     },
      "variables": {
          "storageAccountId": "[resourceId('Microsoft.Storage/storageAccounts', parameters
 ('storageAccountName'))]"
     },
"resources": [
          {
              "type": "Microsoft.Storage/storageAccounts",
              "apiVersion": "2021-04-01",
              "name": "[parameters('storageAccountName')]",
              "location": "[parameters('location')]",
              "sku": {
                  "name": "[parameters('sku')]"
             },
"kind": "StorageV2",
" " "
              "properties": {
                  "supportsHttpsTrafficOnly": true,
                  "isHnsEnabled": true
              }
         }
     ],
      "outputs": {
          "storageAccountId": {
              "type": "String",
              "value": "[variables('storageAccountId')]"
         }
     }
 }
```

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Deploy the template using the Azure portal

There are multiple ways in which the JSON template can be used to deploy the applicable resources, including automated methods such as enrolling the template into your own deployment pipelines, or using a PowerShell script.

For the purpose of this walk through, we will specify how to deploy the template using the Microsoft Azure UI.

The Microsoft Azure portal can be used to deploy the above JSON, via the following method:

1. In the Azure portal, search **Deploy a custom template**.

					×
All	Services (99+)	Marketplace (9)	Documentation (99+)	Microsoft Entra ID (9)	Resources (0)
Resource	Groups (0)				
Services —					
🗮 Deploy	a custom template		Activity Ic	og	

2. Select **Build your own template in the editor**. In here you are able to paste the template.

Home > Custom deployment Deploy from a custom template
Select a template Basics Review + create
Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Create or select a template below to get started. Learn more about template deployment 더 가
Build your own template in the editor
Common templates
🕎 Create a Linux virtual machine
🖳 Create a Windows virtual machine
💿 Create a web app
Create a SQL database
Azure landing zone
Start with a quickstart template or template spec
Template source ① Quickstart template
O Template spec
Quickstart template (disclaimer) ①

3. Save the template.

48 49 50 51 52 53 54 55	<pre>} ' J, "outputs": { "`StorageAccountId": { "type": "<u>String</u>", "value": "[variables('storageAccountId')]" } }</pre>
Save Discard	

4. Enter the region parameter values from the information provided by our support team and click **Review and create**.

Custom deployment		
🌍 New! Deployment Stacks let you manag	ge the lifecycle of your deployments. Try it now $ ightarrow $	
Select a template Basics Review	+ create	
Customized template d 1 resource	Edit template Edit parameters Visualize	
Project details		
Select the subscription to manage deploye manage all your resources.	ed resources and costs. Use resource groups like folders to organize and	
Subscription * 🛈	BPC-OPS-Engineering-9	~
Resource group * 💿	RG-SQL	~
	.Create new	
Instance details		
Region * 💿	(Europe) UK South	~
Storage Account Name * 💿	namefordatalake	
Location * 💿	uksouth	
Sku 🛈	Standard_LRS	~



5. Review the deployment to assure accuracy and compliance to the BPC values and when happy, click **Create**.

Select a template Bacico Boulow	r + create			
Select a template basics Neview	T + Creater			
Summary				
Customized template 1 resource				
Terms				
Azure Marketplace Terms Azure Marke				
By clicking "Create," I (a) agree to the appl charge or bill my current payment methor same billing frequency as my Azure subso deployment involves 3rd party offerings, M deployment with the publisher of that offer	By clicking "Create," I (a) agree to the applicable legal terms associated with the offering; (b) authorize Microsoft to charge or bill my current payment method for the fees associated the offering(s), including applicable taxes, with the same billing frequency as my Azure subscription, until I discontinue use of the offering(s); and (c) agree that, if the deployment involves 3rd party offerings, Microsoft may share my contact information and other details of such deployment with the publisher of that offering.			
Microsoft assumes no responsibility for an third-party products or services. See the A	ny actions performed by third-party templates and does not provide rights for zure Marketplace Terms for additional terms.			
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Neither subscription credits nor monetary purchases are billed separately.	commitment funds may be used to purchase non-Microsoft offerings. These			
If any Microsoft products are included in a licensed by Microsoft and not by any third	a Marketplace offering (e.g. Windows Server or SQL Server), such products are I party.			
Basics				
Subscription				
Resource group	RG-SQL			
Region	UK South			
Storage Account Name	namefordatalake			
Location	ulsouth			
Sku	Standard_LRS			
Previous Next Create				

You should now have a BPC Data Vault and Partitioner solution compatible storage account.

Acquire and share your SAS token

A Shared Access Signature (SAS) token grants secure, limited access to an Azure Storage account.

For ease of access and collaboration, please follow these steps to create and securely share your SAS token:

Your SAS token should have an expiration date, no less than 1 year from generation.

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- 1. Find your SAS URI: Identify your Data Lake Storage Gen2 storage account which you previously created.
- 2. Access Storage Account Settings:
 - a. Open the details page of your Data Lake Storage Gen2 account.
 - b. Navigate to **Security + networking** from the left-hand menu and select **Shared access signature** in the Security + networking pane.



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- 3. Generate Your SAS URI:
 - a. Click Add to create a new shared access policy.
 - b. Enter a descriptive name, for example Archive-Access, and specify permissions, ensuring comprehensive access (Read, Write, and Delete). For example:

A shared access signature (SAS) is a URI that grants restricted access rights to Azure Storage resources. You can provide a shared access signature to clients who should not be trusted with your resource for a specified period of time.	torage account key but whom you wish to delegate access to certain storage account resources. By distributing a shared access signature uro to unoversents, you grant mem access to a
An account-level SAS can delegate access to multiple storage services (i.e. blob, file, queue, table). Note that stored access policies are currently not supported for an account-level SAS.	
Learn more about creating an account SAS	
Allowed services () Stob 🙋 File 💆 Queue 😰 Table	
Allowed resource types () Service Object	
Allowed permissions 🔿 🛃 Read 💆 Write 🦉 Delete 🕎 List 🖉 Add 🖉 Create 🖉 Update 😰 Process 🗍 Immutable-storage 😢 Permanent delete	
Blob versioning permissions O Z Enables deletion of versions	
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- c. Enter start/expiry times that should be at least (1 year) and avoid IP restrictions.
- d. Click Generate SAS and connection string to create the URI.
- 4. Securely Copy SAS URI:
 - a. Copy the generated SAS URI securely and transmit it to our Blue Prism Support team. You can do this by email or by logging a ticket on our support portal.

The URI should contain the following: https://{your_storage_account_ name}.dfs.core.windows.net/<path>/<file_name>?<SAS_token>

Next steps

After the SAS token has been generated and securely transmitted to our support engineers, we will continue to work with you via your aligned support representative to establish the link between resources.