



AI-POWERED AZURE AUTOMATION
AS A SERVICE



AI-powered Azure Automation as-a-Service

User Manual

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1 Introduction

This documentation is intended to be a step by step, detailed user manual for AI-powered Azure Automation as a Service (A3S) users to follow to get the most out of our zero code, fully automated, AI-powered Azure Management SaaS platform that's backed by relentless 24x7 support for instant support requirements that you may have as our valuable user.

A3S takes the grunt work out of your Azure usage, making it a truly delightful experience. A3S will make your Azure usage super easy, will lessen the time, effort, and money you spend while using Azure and in doing that it will enable you & your team to instead direct your efforts, time, and money to building your business.

Let A3S take care of Azure, so that you can focus on your business.

A3S is your Azure Sherpa – Zero Code, Fully Automated, AI-powered Azure Management Platform!



2 Intended Audience

A3S is a fully self-service SaaS platform that provides comprehensive, fully automated, zero code cloud management capabilities that enables Azure users to make use of the platform in an easy & seamless manner.

A3S' key goal is to enable you to leverage Azure to its fullest extent to modernize your business without the need to spend time & effort to get into technical complexities of the platform or to write code or do manual deployments & thereon worry about ongoing monitoring, management & remediation of the resources, all the while also ensuring strong cyber/network security, data security, access control, and identity management etc.

A3S accomplishes this goal in multiple ways depending on your situation:

1. **Starting with Azure:** if you are new to Azure, you'll find A3S to be your Azure Sherpa who with all its intelligent and comprehensive automation that's backed by relentless 24x7 support will enable you to start using Azure for your business without a need to know anything at all about it.
2. **Intermediate Expertise:** you'll find A3S quite handy as your Azure Sherpa to perform activities that you need to use Azure for as you modernize your business, plus continuous monitoring & GRC will give you peace of mind that your Azure deployments are healthy & secure.
3. **Power User:** if you are an Azure guru then A3S will be your Azure Sherpa that saves you time by taking care of tedious tasks that necessarily don't need your time & effort and thereon by making sure your deployments are secure, stable & healthy.

Same dynamics as above applies to various other scenarios where you may have a small team that's better utilized to focus on solving your business problems, or you have a small IT team that caters to large number of business teams and their voluminous Azure related requests, or you have no team at all – in all these scenarios, A3S will be your Sherpa that does all things related to Azure that need to be done pronto and continually.



3 AI-powered Azure Automation as a Service

3.1 Overview

AI-powered Azure Automation as-a-Service or A3S is envisioned to be a comprehensive Azure cloud management SaaS platform focused on taking the grunt work out of customers' Azure usage, thus enabling them to be more productive with Azure to build their business.

The 4 key pillars of A3S are:

- Automate: reduce manual effort to the minimum, keep automating all that is possible across all aspects of Azure.
- Simplify: demystify Azure with simple and easy monitoring, management, optimization & reporting.
- Learn: leverage AI to learn from customers' Azure usage, identify patterns and insights to make the platform smarter, ever evolving & learning.
- Support: 24x7 availability of highly trained engineers to support customers using A3S to provide a truly delightful Managed Service experience.

Functionality provided by the product are categorized into four functional buckets:

1. Digital Transformation.
2. Monitoring and Remediation.
3. Governance, Risk, and Compliance (GRC).
4. Dedicated Support.

3.2 Azure Sherpa

A3S being your Azure Sherpa helps you across the Azure platform with these:

- **Deploy resources with 100% automation:** no code needed, use our patent pending architecture design tool to simply drag and drop the needed resource icons from the icon palette onto the design canvas and create as complex an architecture that your business needs. Thereon, follow simple & intuitive workflow to deploy the designed architecture to Azure with a click of a button.
- **Bring your own architecture (BYOA):** upload your own architecture with set of inputs for all the resources used to the architecture design tool and thereon A3S takes care of creating an Azure best-practices based architecture that you can deploy with a click of a button.
- **Assessment & Datacenter migration:** let A3S conduct an in-depth assessment of your on-premises Data center assets – both hardware and software to create a roadmap for seamless, automated migration to Virtual Data Center (VDC) in Azure.
- **Business Continuity:** A3S has fully automated capabilities to ensure minimal downtime in case your on-premises assets are down for any reason by standing up the same environment in Azure. It also offers the same protection for Azure deployments by ensuring cross region backup and replication.
- **Comprehensive DevOps:**



- **Manage infrastructure:** view, analyze, and manage an existing or a new deployment on Azure with A3S. It provides a highly intuitive interface with easy navigation and comprehensive menu of actions that can be used to make the required changes to the resources across all your Azure deployments.
- **Data estate modernization:** a comprehensive framework that caters to various aspects of data estate modernization and management. It enables you to migrate data from any source data system to Azure in a fully automated manner. There are no pipelines to be created and maintained, A3S has no pipeline, zero code approach to offer automated data migration.
- **Effective data governance:** A3S enables you to implement a comprehensive data governance framework based on your data related requirements & policies along with RBAC to control data access and security measures such as data masking and encryption.
- **Analytics as a Service:** choose from A3S' catalog of business-driven use cases that are backed by fully trained & tested machine learning models. Simply provide details of your data source and in few clicks you will start getting the actionable insights from your data to grow your business.
- **Comprehensive DataOps:**
- **Monitor Resources & Apps:** comprehensive, real-time reporting is provided with highly intuitive easy to use dashboards as A3S performs continuous monitoring of all the resources and applications used across all your Azure deployments. Issues or errors are detected in real time and immediate remedial actions are performed to rectify errors to restore the resources and applications to healthy state.
- **Governance, Risk, and Compliance (GRC):** A3S enables you to implement & manage your organizational IT governance policies, to manage identity & access control, to perform checks on various aspects of the infrastructure to understand & manage the risk levels from cyber & network security perspective, and to review & enforce various regulatory compliances as needed.
- **Dedicated Support:** get 24x7 support from A3S product team for A3S related issues and thereon for custom development & deployments you can also get Azure & SAP certified engineers.



4 A3S Functional Buckets

For your ease of use, A3S' various Azure cloud management capabilities have been neatly categorized as below:

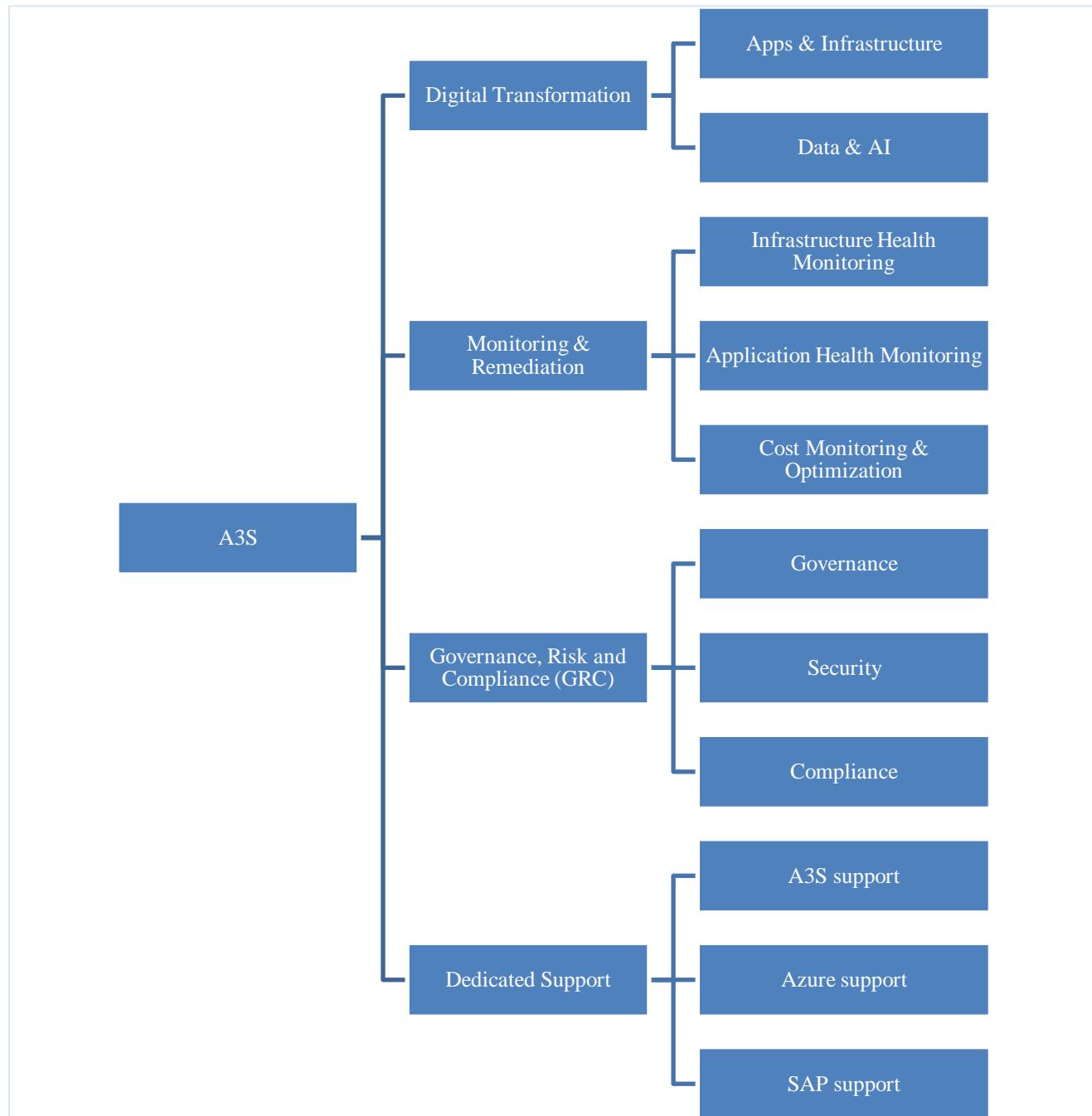


Image 1: A3S functional hierarchy



5 Functional Overview

All of A3S' Azure cloud management capabilities are presented to you for easy navigation and use with Tiles on the A3S portal's landing page:

The ... Tile displays	Provides...
Home	<ul style="list-style-type: none">▪ Search bar to search projects and content A3S solution and Azure documentation.▪ Chat icon to initiate conversation with A3S product engineer.▪ Bell icon to view notifications from all/specific actions.▪ Hamburger menu to navigate through various services of A3S.▪ Recent activities section to see latest activities performed in the environment.▪ Favorites shows activities you perform most frequently for quick access.
Apps & Infrastructure	<ul style="list-style-type: none">▪ Architecture blueprint<ul style="list-style-type: none">○ Create architecture diagrams.○ Workflow to finalize the architecture and thereon deployment on Azure.○ View list of projects and respective summary.▪ Manage Infrastructure<ul style="list-style-type: none">○ Inventory of resources.○ Infrastructure overview.○ Resource categorization for easy navigation and management.○ Perform actions (modify resources) with a single click.
Data &AI	<ul style="list-style-type: none">▪ Migrate data from source data systems.▪ Data governance and security.▪ Data analytics.▪ DataOps.
Infrastructure Health Monitoring	<ul style="list-style-type: none">▪ Monitor and analyze infrastructure health by project and thereon related subscription, resource groups, and resources.▪ Apply filters to drill down to resource level and look health metrics of a specific resource.▪ Insights: provides prebuilt queries to retrieve the relevant data of a resource for auditing and analyzing & understanding the health pattern.▪ Alerts: enables creation and management of alerts for various metrics of Azure resources.
Application Health Monitoring	<ul style="list-style-type: none">▪ Consolidated health report of by project.▪ Use filters to drill down to check health related metrics of an application.▪ Region based usage & count of returning users.▪ Mechanism to keep you alerted when anything goes wrong.
Cost Monitoring & Optimization	<ul style="list-style-type: none">▪ Track current cost incurred by resources and forecast expenses.▪ View expenditure by scope such as Project, Subscription, etc.▪ Create budgets and get alerted when thresholds are crossed.▪ Recommendations to reduce the cost.



Governance	<ul style="list-style-type: none"> ▪ Enterprise policies to ensure resources are governed per applicable organizational policies. ▪ Identity and access management provides access control framework to manage the users and groups. ▪ Auditing & logging captures all user activity & actions performed in A3S for review and auditing as needed.
Compliance	<ul style="list-style-type: none"> ▪ Ensures resources are compliant with the required or applicable regulatory compliances. ▪ Compliance policy management. ▪ Add/remove more regulatory compliance standards.
Security	<ul style="list-style-type: none"> ▪ Calculates 'Secure score' based on analysis of multiple dimensions of all deployed and active projects. ▪ Endpoints and identity protection to capture malicious activities to secure various resources, ▪ Recommendations to strengthen the security posture.
A3S Support	<ul style="list-style-type: none"> • Product related support from trained A3S product engineers, log tickets and chat for instant help.
Azure Support	<ul style="list-style-type: none"> • Azure certified resources for building custom applications and deployments on Azure with A3S.
SAP Support	<ul style="list-style-type: none"> • SAP certified resources for migration of SAP systems to Azure and ongoing Basis & Functional support with A3S.



6 A3S Project

6.1 Concept of Project

"Project" is a key and only way of using A3S as your Azure Sherpa. Everything in A3S is encapsulated within a Project. If you are using Azure for first time, you'll create Projects in Digital Transformation bucket to execute various tasks. If you have been using Azure and are looking to leverage A3S for your existing deployments, you'll need to create Project(s) in A3S and thereon put the deployments underneath it as required.

Once Projects have been created thereon all the functionality provided in Monitoring & Remediation and GRC buckets are conducted in context of Projects. You'll monitor infrastructure & application health and associated costs by the Project and similarly GRC functionality also works at the Project level with some exceptions.

Important points about Project:

- Deployment of resources through architecture blueprint requires user to create a project.
- For example, 'User A' creates 'Project 1' and deploys set of resources in the architecture blueprint to Azure.
- Later, Project 1 will be available in other buckets of A3S. For example, resources deployed under Project 1 can be monitored in the Infrastructure Health Monitoring bucket.
- Advantages of the concept of projects are as below:
 - Concise and precise management of the resources: User 1 will have access to the resources that are deployed under Project 1.
 - Focused scope makes management easy: an application administrator can view and manage only web apps and not the domain servers.
 - Users can manage their respective projects, whereas global/organization admins have access to all the projects to keep track and have oversight across the tenant.
- Some parts of A3S functional buckets cannot be categorized by projects. For example,
 - Compliance standards can be applied on subscription level only.
 - A project can span single/multiple subscriptions.
 - If User 1 wants to add standards for Project 1 that spans across subscriptions, then other resources in those subscriptions that do not fall under Project 1 will also be impacted by application of those standards.
 - In such scenarios as above, the access to such parts of the buckets is provided to global/organization administrators only. For example, compliance administrator can access the entire bucket and can manage policies and standards irrespective of the projects. Compliance administrator can add/remove standards as needed in the subscription.



7 A3S Filters

7.1 Concept of Filter

In line with the concept of Projects, the Filters are used in A3S to provide drill down capability to delve deeper into the Projects. Following filter options are available in the most of A3S functional buckets:

- **Subscription:** in case of a project spanning multiple Subscriptions, this filter option shows Resource Groups and resources from selected Subscription(s).
- **Resource Group:** single/multiple Resource Groups can be selected to focus on specific resources.
- **Resource Type:** if user wants to view only a certain resource type such as Virtual Machines, then resource type filter is useful.
- **Resource:** drill down to an individual resource level within a Resource Type and thereon for example, user can view key metrics & alert information and modify the resource as needed.



8 A3S Login

8.1 Login Steps

Start by logging in to A3S portal.

- URL to login to the portal is <https://app.azureautomation.ai/>.

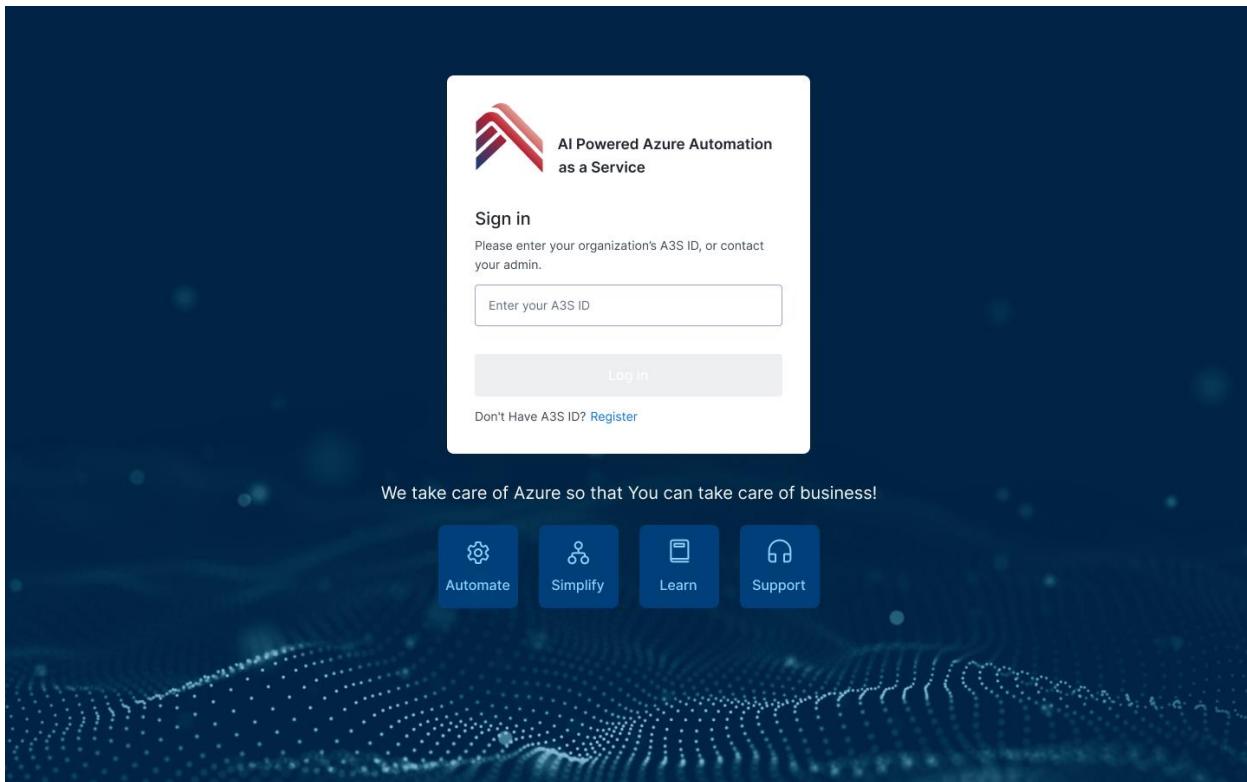


Image 2: Login Screen

- Input your organization's A3S id. For example, a3s@contoso.com.
- Click **Log in**. (**Note:** A3S does not store any credentials, hence you need to login with your Microsoft Azure credentials).
- On successful login, you will land on the A3S home/landing page.
- In case of problems, click help icon.



9 Home Page

9.1 Overview

Home page shows all the functional buckets of A3S in a manner that is easy to navigate and access the required functionality.

The interface has the following components:

- Banner & task bar.
- Tile for each functional bucket.
- Recent activities.
- Favorites.



The screenshot shows the AI Powered Azure Automation interface. At the top, there's a navigation bar with icons for Home, AI, Projects, Documentation, and Help. A search bar is also present.

Digital Transformation

- Apps & Infrastructure**: Enables modernization of application and infrastructure landscape with automated assessment, migration, architecture blueprint deployment and management of resources and applications.
- Data & AI**: Enables modernization of data estates with automated data migration and analytics while also providing comprehensive automated data governance and DataOps capabilities.

Monitoring & Remediation

- Infrastructure Health Monitoring**: Enables automated monitoring of all the deployed resources and provides remediation capabilities to ensure healthy state of the resources.
- Application Health Monitoring**: Enables automated monitoring of all the deployed applications and provides remediation capabilities to ensure healthy state of the applications.
- Cost Monitoring and Optimization**: Enables real-time monitoring of the usage of resources and provides recommendations to optimize cost by analyzing usage and other relevant data.

Governance, Risk, & Compliance (GRC)

- Governance**: Enables and ensures provisioning, implementation & enforcement of enterprise IT policies, Identity & Access Management and Auditing & Logging.
- Security**: Enables and ensures that all deployed Azure resources are secure from network breaches and unauthorized access.
- Compliance**: Enables and ensures that all deployed resources are following all applicable regulatory compliances.

Dedicated Support

- A3S Support**: Get product related support from trained A3S product engineers, log tickets and chat for instant help.
- Azure Support**: Get Azure certified resources for building custom applications and deployments on Azure with A3S.
- SAP Support**: Get SAP certified resources for migration of SAP systems to Azure and ongoing Basis & Functional support with A3S.

Recent Activity

Action	Time Ago	Details
Data Migration from Microsoft SQL	2h ago	
Data Migration from SAP HANA	4h ago	
Infrastructure Deployment	21/1/2012	
Data Migration from Microsoft SQL	21/1/2012	

Favorites

Category	Name	Details
Data Migration	Data Migration	
Data Governance	Data Governance	
Data Security	Data Security	
DevOps Starter	DevOps Starter	

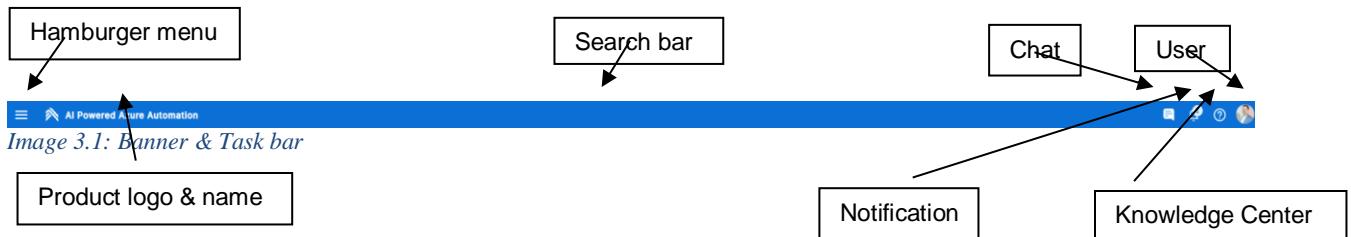
9.2 Banner & Task Bar

The task bar cum banner consists of the following (shown in *image 3.1 – task bar*):

- Logo & name.
- Search bar.
- Chat icon.



- Notification icon.
- Knowledge center icon.
- User icon.



9.3 Hamburger Menu

Click it to find the list of functional buckets.

9.4 Logo & Name

Click it to reach home page from any other page.

9.5 Search Bar

Use this to search projects, A3S knowledge base, and Azure documentation.

The screenshot shows the search interface with the following details:

- Search Bar**: A top bar with a magnifying glass icon and a placeholder "Keyword".
- Project Section**: Shows a list of project names:
 - Project name (Data migration)
 - Project name (Infrastructure)
 - Project name (Data migration)
 - Project name (Infrastructure)
 - Project name (Data Analytics)
- A3S Documentation Section**: Shows a list of documentation entries:
 - Tetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
 - Tetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
 - Tetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
- Azure Documentation Section**: Shows a list of Azure documentation entries:
 - Tetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
 - Tetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
 - Tetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.
- Recent Activity**: A section showing recent activity items:
 - Data Migration from Microsoft SQL (2h ago)
 - Data Migration from SAP HANA (4h ago)
 - Infrastructure Deployment (21/1/2012)
 - Data Migration from Microsoft SQL (21/1/2012)
- Favorites**: A section showing favorite items:
 - Data Migration
 - Data Governance
 - Data Security
 - DevOps Starter
- Bottom Right**: A blue circular button with a white speech bubble icon.

Image 3.2: Search bar



9.6 Chat

In case of any issues related to A3S or to raise a ticket with support engineer, initiate the chat by clicking this button.

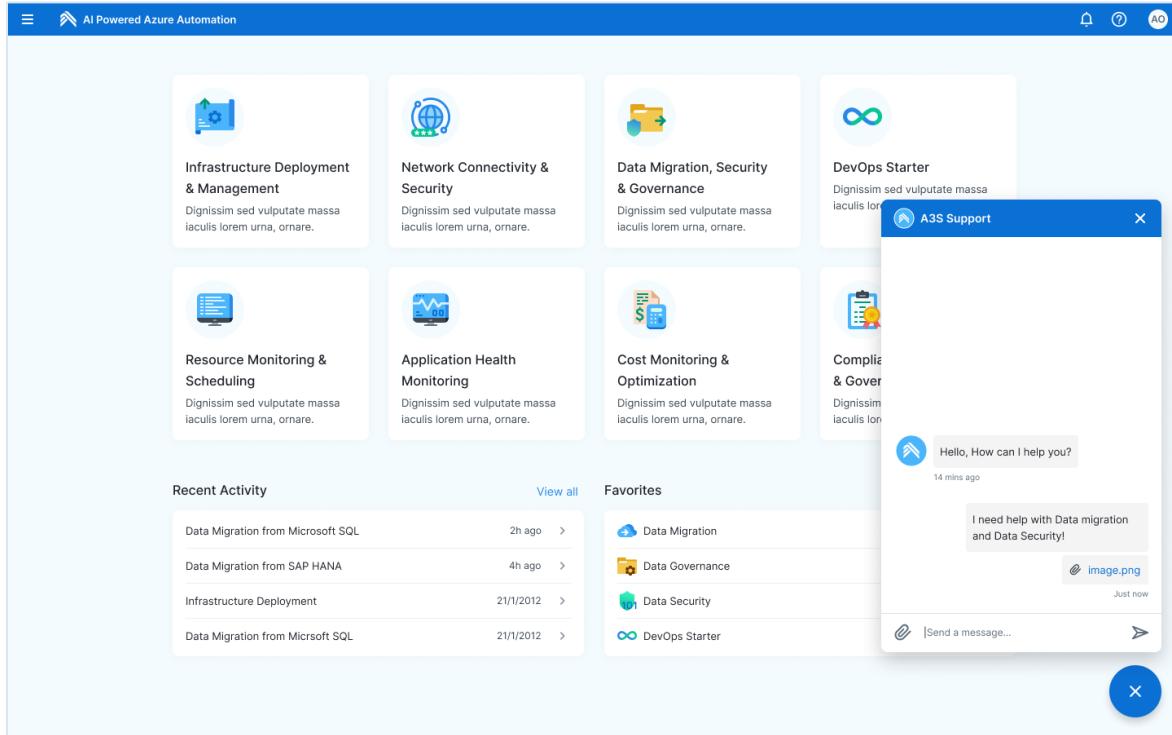


Image 3.3: Chat

9.7 Notifications

Click notification icon to view status of the ongoing actions.

9.8 Knowledge Center

To navigate to the knowledge center page and to read through articles.

9.9 User

To view user details such as, username, roles, and responsibilities, etc.



The screenshot shows the 'My Account' page of the AI Powered Azure Automation portal. At the top, there's a navigation bar with icons for Home, Account settings, Log out, and other notifications. Below the navigation is a header 'My Account' with a 'Log out' button. The main content area includes a circular profile picture of a man, Amgad Okail. To the right of the profile picture are sections for 'Connect Apps' (listing Microsoft Teams) and 'Newsletter' (with a toggle switch turned on). Below these are 'Account Option' and 'Role(s) in organization' sections. The 'Role(s) in organization' section lists Admin, Contributor, Reader, Contributor, Admin, Contributor, Reader, and Contributor. There's also a 'Show less' link. In the bottom right corner of the content area, there's a blue circular icon with a white speech bubble and a plus sign.

Image 3.4: Account details

Important action items on the account details page as shown above:

1. Log out.
2. Connect Apps.
3. Newsletter.
4. Delete organization account.

9.10 Log out

It logs you out of the portal.

9.11 Connect Apps

1. Click Connect and Microsoft Teams application will be launched.
2. Sign into Teams and A3S Teams bot will appear.
3. Start chatting with the bot to accomplish majority of A3S tasks as well as raise a ticket in case of any issues.

9.12 Newsletter

A3S newsletters will contain version release, feature updates, modifications in the functional buckets of the product, blog posts updates, etc.



9.13 Delete organization account

Use it to delete the organization account.

Note: this option is available to global/organization administrators only.

9.14 Tiles

There are eleven buckets in A3S which cover various aspects of the services provided under single umbrella.

1. Apps & Infrastructure.
2. Data & AI.
3. Infrastructure Health Monitoring.
4. Application Health Monitoring.
5. Cost Monitoring & Optimization.
6. Governance.
7. Security.
8. Compliance.
9. A3S Support.
10. Azure Support.
11. SAP Support.

Each tile navigates to respective bucket's home/landing page.



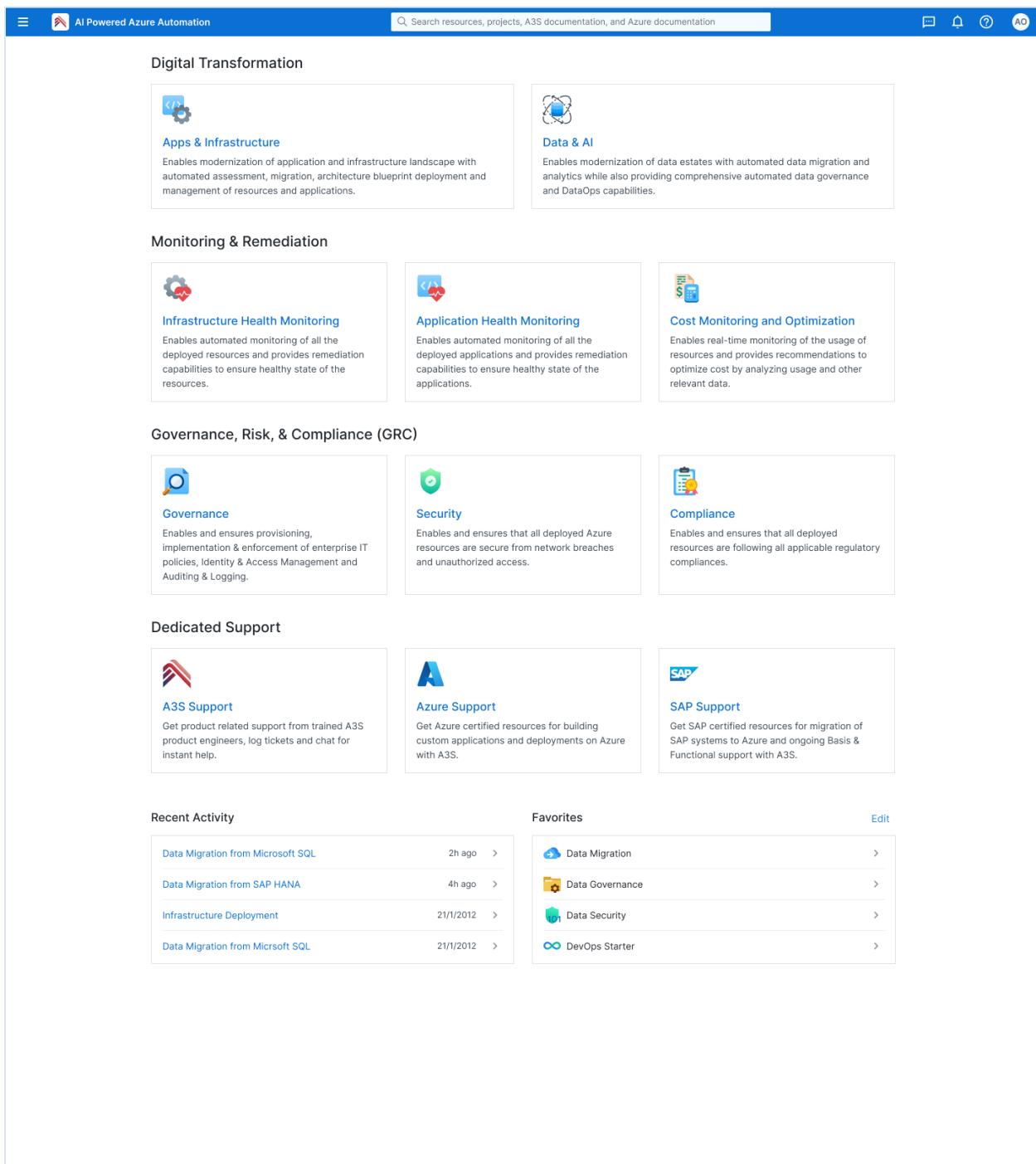


Image 3.5: Home screen tiles

9.15 Recent Activity

Shows the list of the recent activity performed in the portal by the user.

9.16 Favorites

Shows the list of frequently executed actions or various dashboards etc. viewed by the user.



10 Apps & Infrastructure

This bucket enables modernization of application and infrastructure landscape with automated assessment, migration, architecture blueprint deployment and management of resources and applications.

10.1 Architecture Blueprint

A3S' patent pending drag & drop architecture blueprint creation tool helps you create, modify & deploy required architecture, manage project execution flow, and interact with A3S architecture team.

The screenshot shows the 'Architecture Blueprint' section of the AI Powered Azure Automation interface. The left sidebar has 'Management' selected under 'Architecture Blueprint'. The main area shows a list of projects with the following details:

Project name	Status	Subscription	Created by	Created on (UTC)	Actions
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM	...
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM	...
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM	...
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM	...
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM	...

At the bottom of the page is a blue button labeled '+ Create new project'.

Image 4.1: List of projects

10.1.1 Create Project

1. Click **Create new project** at the bottom of the page.



The screenshot shows the 'List of projects' page under the 'Architecture Blueprint' section. The left sidebar has a 'Management' section. The main area shows a table with 5 project entries, all named 'aipdms-1' and marked as 'Saved'. A search bar at the top says 'Search projects' and a button at the bottom says '+ Create new project'.

Project name	Status	Subscription	Created by	Created on (UTC)
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM
aipdms-1	Saved	Saved	Amgad Okail	2/26/2021, 9:24:57 PM

Image 4.3: Create project

2. Enter **project name** and select **subscription**. Resources are deployed in the selected subscription.

The screenshot shows the 'Create Project' page under the 'Architecture Blueprint' section. The left sidebar has a 'Management' section. The main area has fields for 'Project name' and 'Subscription', both currently set to 'Dynapt Enterprise'. A 'Next' button is at the bottom.

Image 4.4: Create new project

3. Click **Next**.
4. Next screen displays architecture design drag & drop tool with an empty canvas.

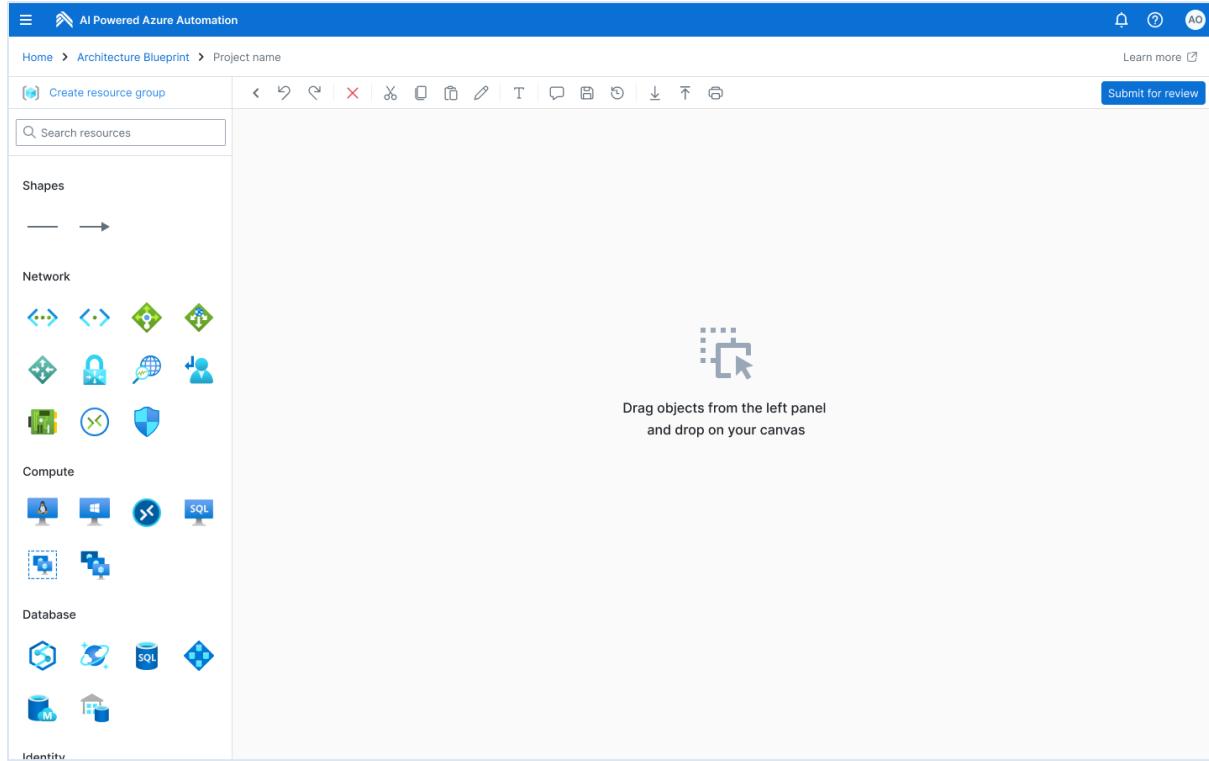


Image 4.5: Empty canvas

10.1.2 Delete project

1. Click ellipsis (⋮) then click delete project.

Project name	Status	Subscription	Created By	Created on (UTC)	⋮
M16	Failed	MPN-A3S Dev 2-New	Vishal Aggarwal	8/9/2021, 6:28:34 AM	
M15	Deployed	MPN-A3S Dev 2-New	Vishal Aggarwal	8/9/2021, 5:43:13 AM	
M14	Failed	Visual Studio Enterprise Subscription – MPN	Vishal Aggarwal	8/9/2021, 5:32:54 AM	
M13	Pending	Visual Studio Enterprise Subscription – MPN	Vishal Aggarwal	8/5/2021, 5:59:4 PM	
M12	Failed	Visual Studio Enterprise Subscription – MPN	Vishal Aggarwal	8/5/2021, 5:38:51 PM	
M11	Failed	MPN-A3S Dev 1-New	Vishal Aggarwal	8/2/2021, 5:55:40 AM	
Sddd	Pending	Visual Studio Enterprise Subscription – MPN	Amgad Okail	8/1/2021, 2:40:25 PM	

Image 4.2: Delete project

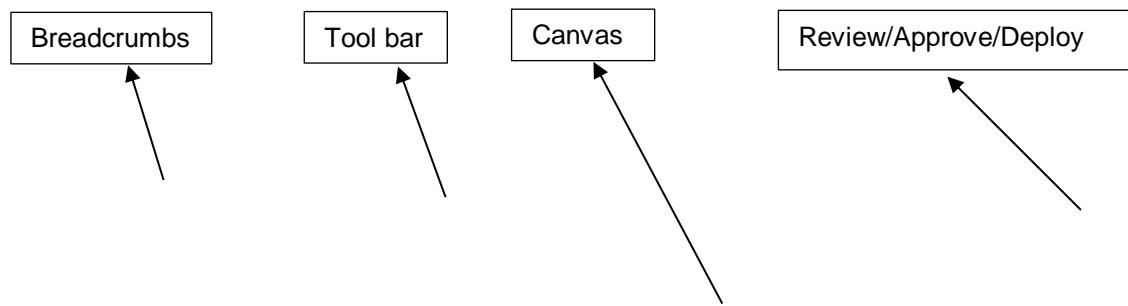


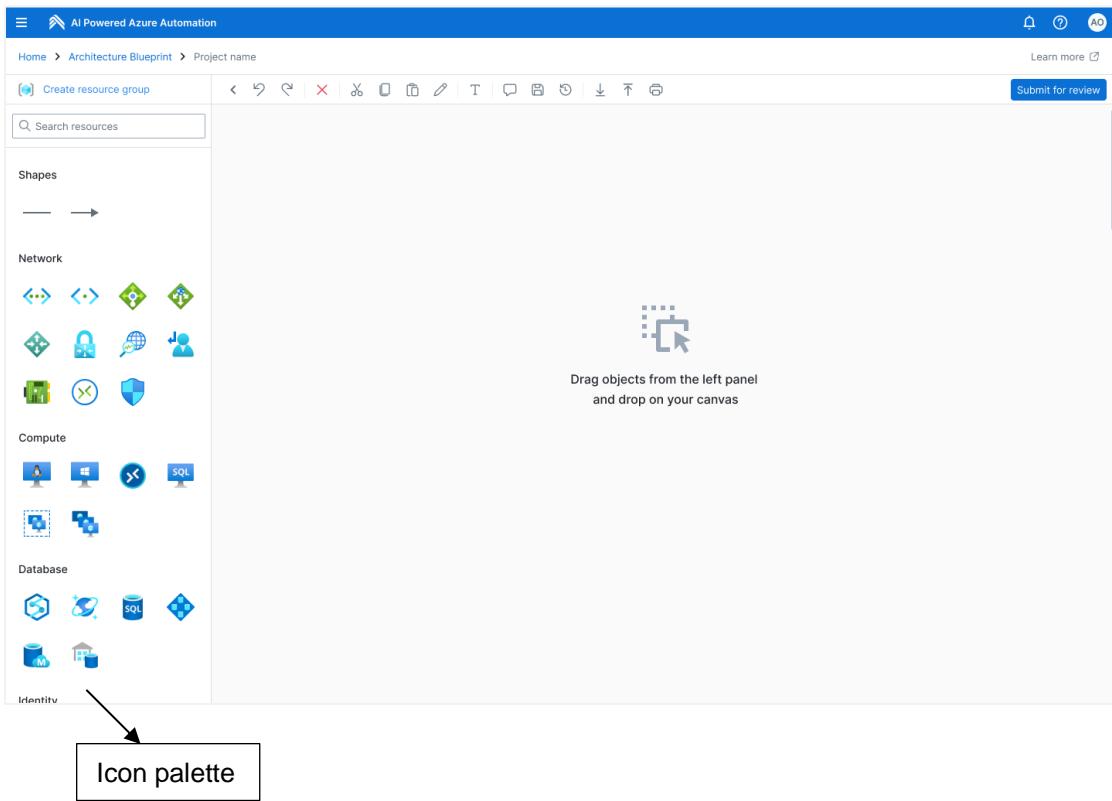
Note: Normal user can see only their list of projects, however global/company admin can view all the projects and delete. Normal user needs consent from global admin to delete the project.

10.2 Design Tool Components

This interface has the following parts:

- **Icon palette** – contains all Azure resource icons that can be dragged and dropped into the canvas for creating an architecture diagram.
- **Tool bar** – icons from left to right:
 - Hide icon palette – hides left icon inventory.
 - Undo and redo – to move a step backward or forward respectively.
 - Red cross – to remove resource icon from the diagram.
 - Cut – to move a resource icon from the diagram.
 - Copy – to copy a resource icon.
 - Paste – to paste a resource icon.
 - Edit – to edit the side sheet of the selected resource.
 - Text box – to insert text box into the canvas.
 - Chat – to initiate chat with A3S team.
 - Save – to save the architecture diagram.
 - Version history – to view version history of the diagram.
 - Download & upload – to download the architecture diagram or upload the architecture diagram or other documents as needed.
 - Print – to print the architecture diagram.





- **Review/Approve/Deploy:** this button shows the state of the diagram in a project execution flow (explained later in this chapter).
- **Canvas:** design area in which icons can be dropped. Create architecture diagram here.
- **Side sheet** – a collection of inputs respective to the resources. These input values help in creation of an architecture that is ready for deployment on Azure.

10.3 Using Architecture Design Tool

1. Choose a resource from the icon palette and drop it on the empty canvas.
2. A side sheet with list of needed inputs will appear from the right-hand side.



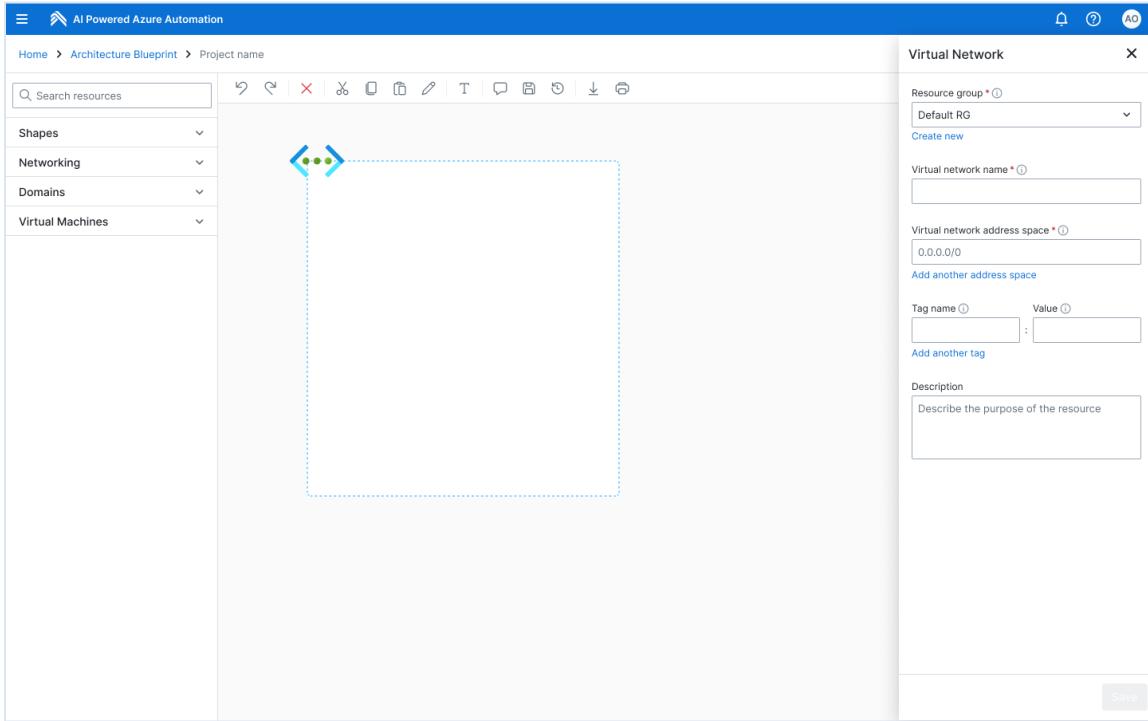


Image 4.6: drag & drop VNET

In the above image, Virtual Network icon is dropped, hence respective side sheet appears to the right to collect the needed inputs to configure it on Azure while deploying.

3. Side sheet has basic and advanced input fields section. In the image below, Virtual Machine side sheet shows list of basic inputs as well as advanced inputs.

Important: We encourage users to fill in list of inputs with which they are familiar. Values for the remaining inputs will be discussed with users and filled in by A3S architecture team to create a best-practices based architecture that's ready for deployment.

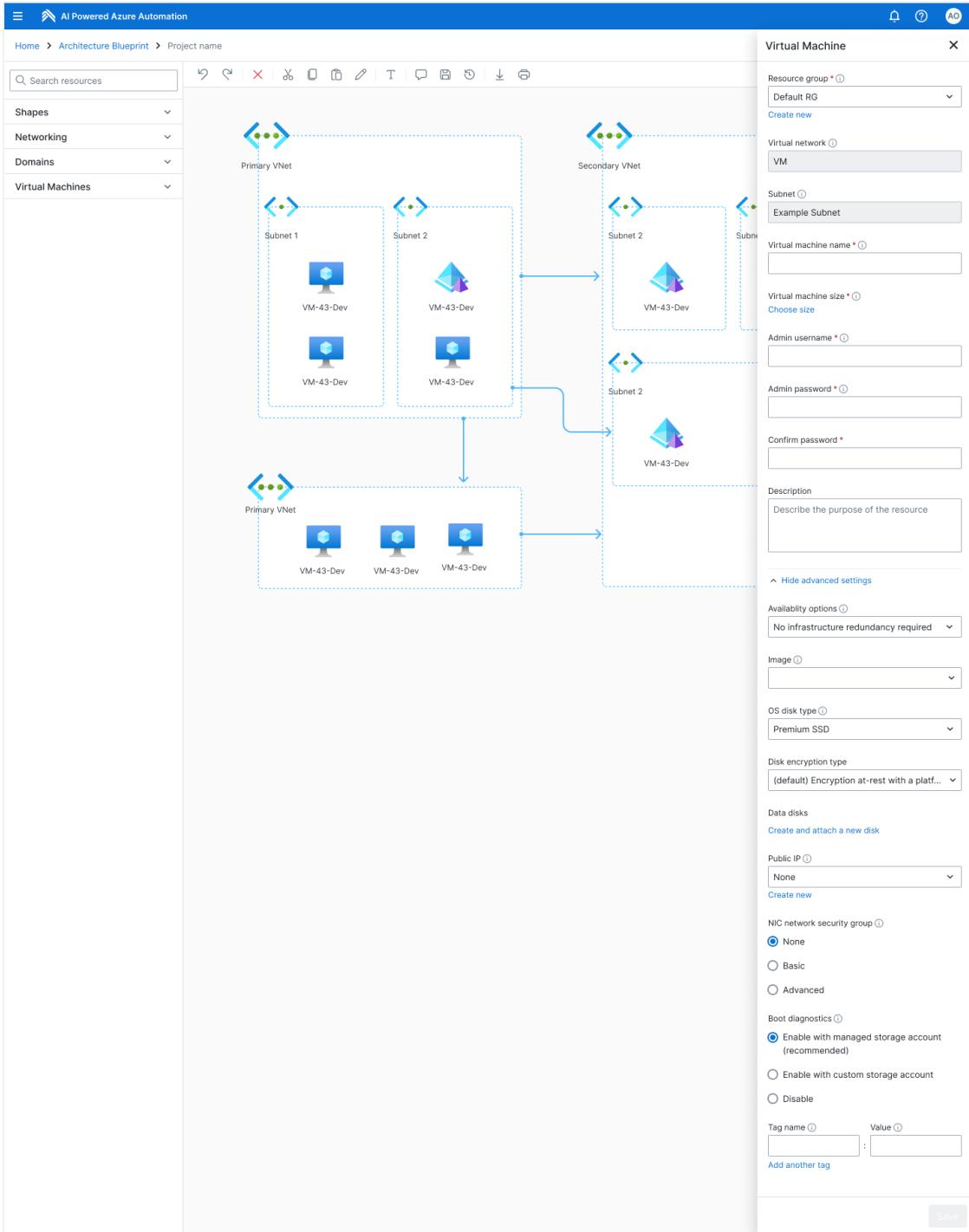


Image 4.7: Advance side sheet



10.4 Project Status

Following are the status that a project can have:

10.4.1 In Review

1. Create a new project.
2. Draw architecture diagram.
3. Click **Submit for review** button.

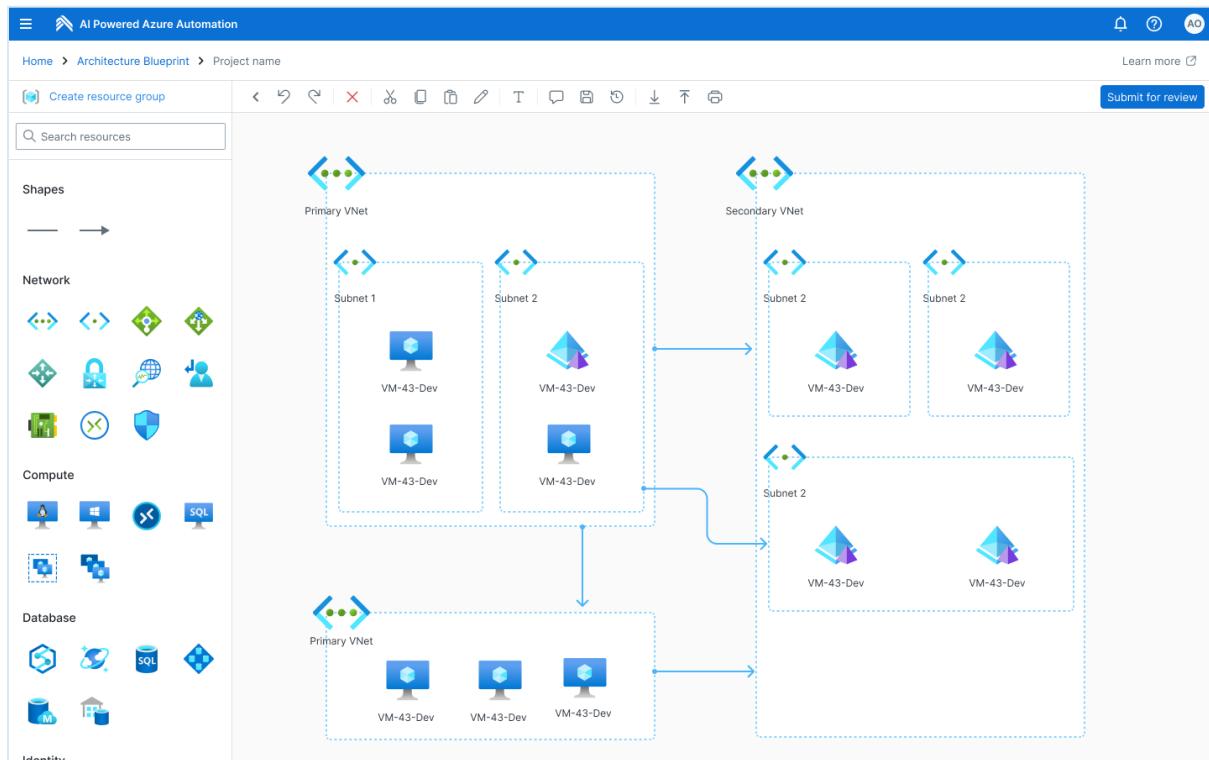


Image 4.8: Submit for review

4. A3S architecture team will review the architecture diagram.
5. Project status is 'In Review'.



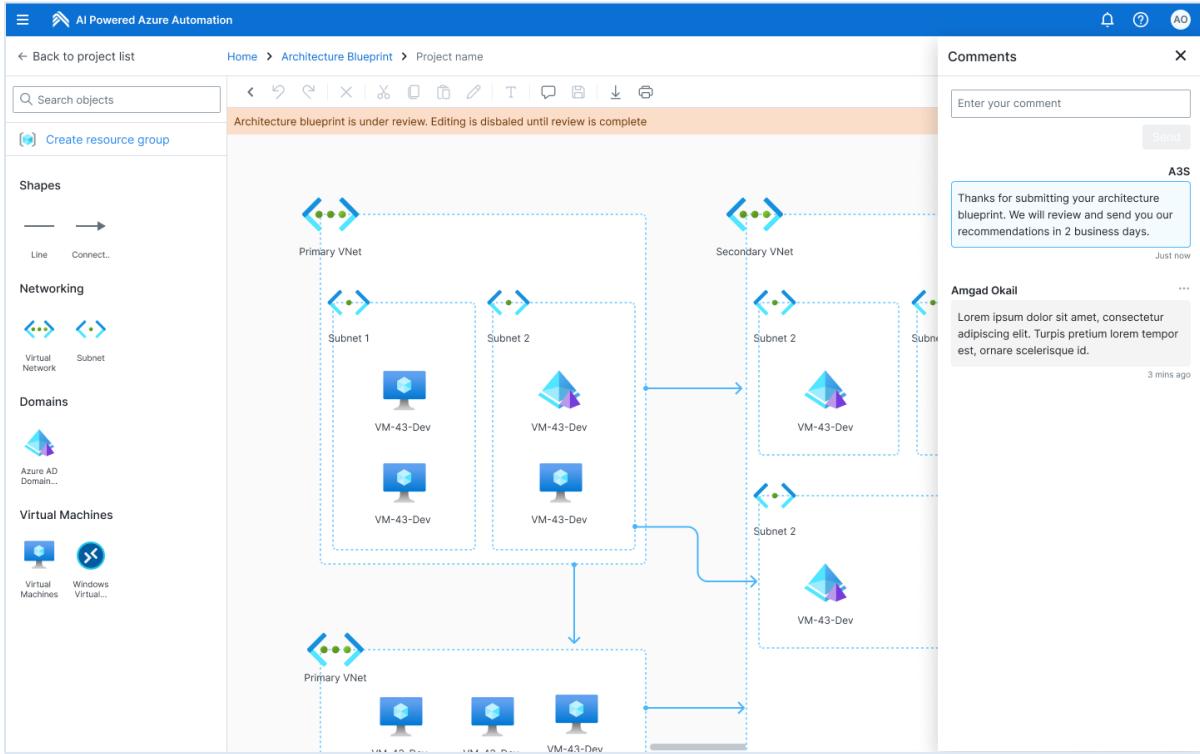


Image 4.9: Under review

10.4.2 Approved

1. A3S team will review and modify the architecture diagram as needed based on Azure best practices.
2. A meeting with the user will be scheduled to review the modifications.
3. Once all questions have been answered and User finalizes the diagram by clicking **Approve** button.
4. Project status is ‘Approved’.



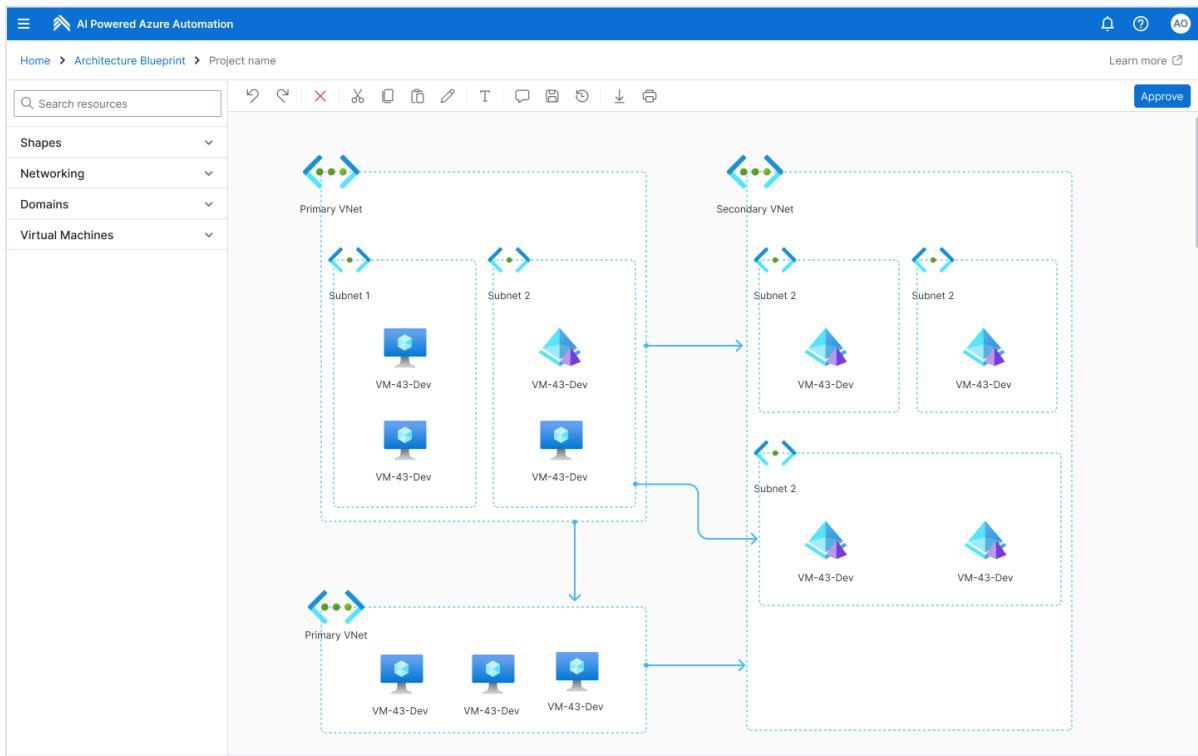


Image 4.10: Approve button

10.4.3 Deployed Successfully

1. Click **Deploy** to start the automated deployment of the finalized and approved architecture on Azure.

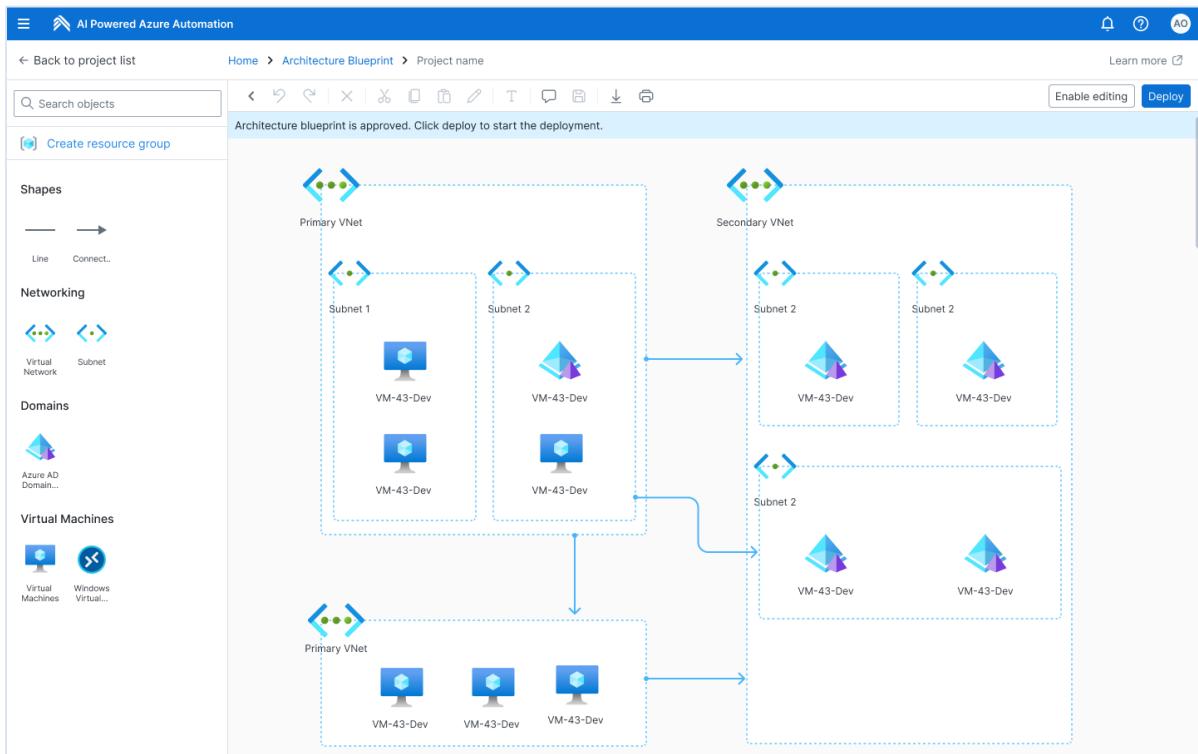


Image 4.11: Deploy

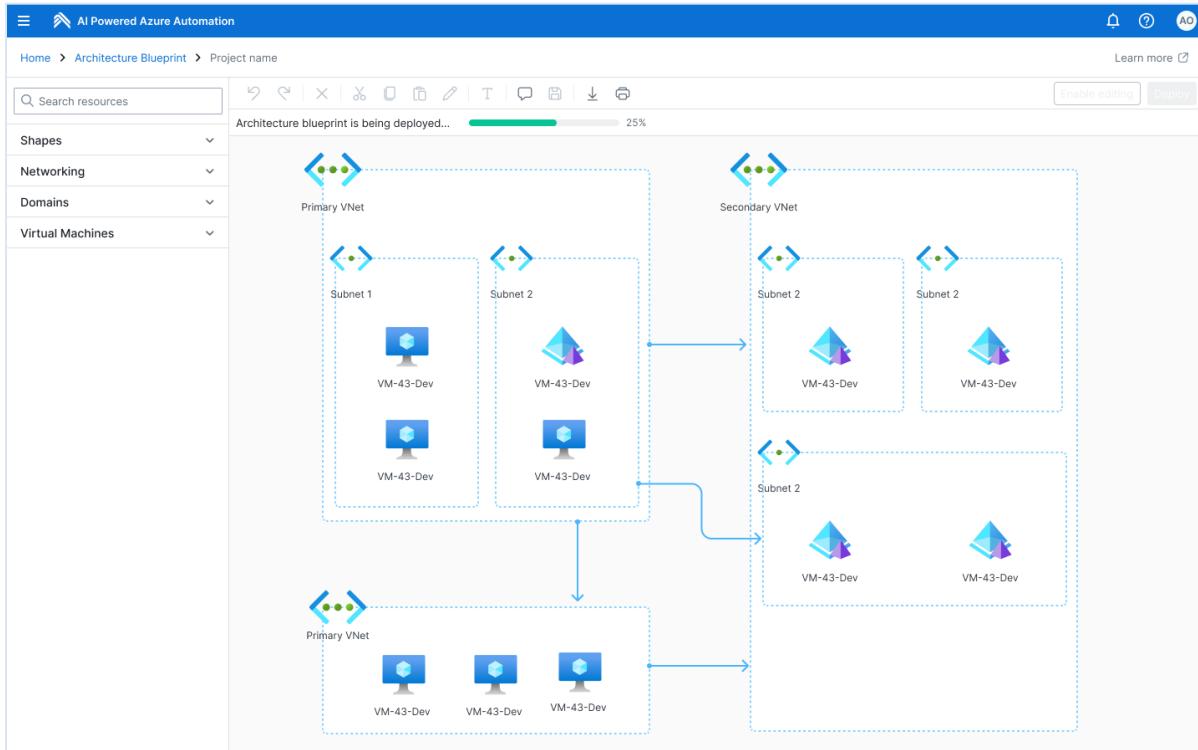
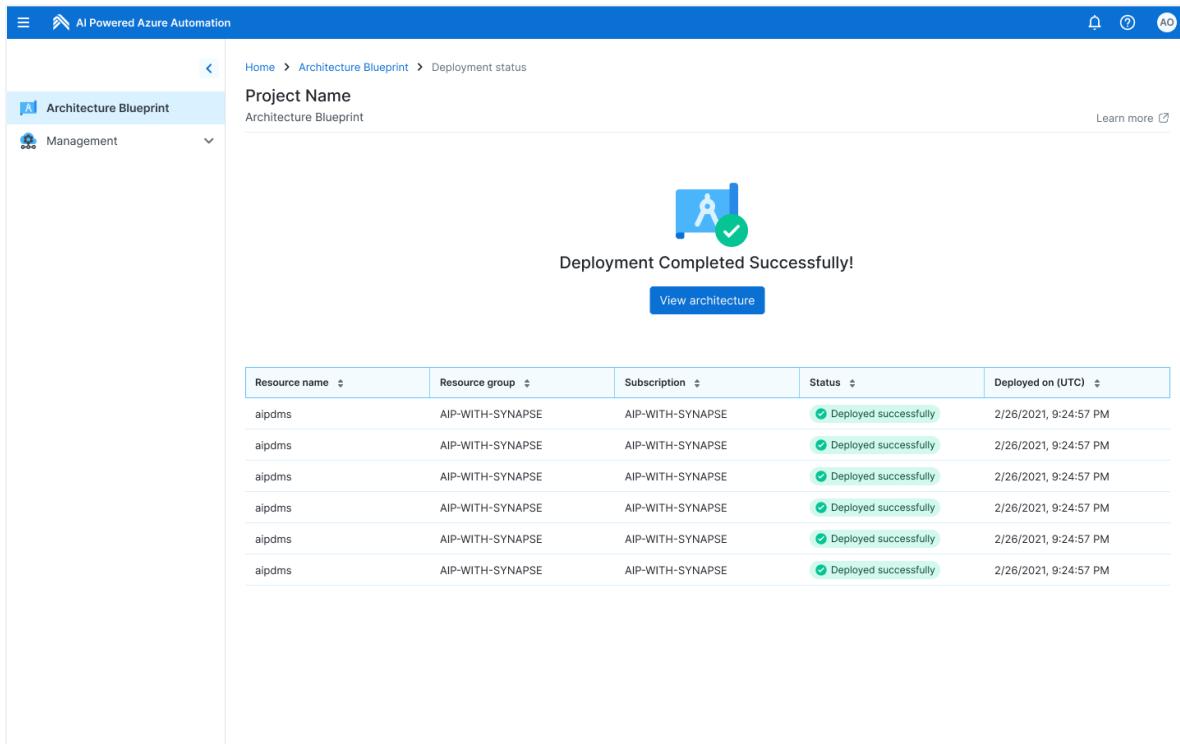


Image 4.12: Deployment progress

2. All needed resources are deployed on Azure and a successful deployment notification is displayed.



The screenshot shows the 'Architecture Blueprint' project page in the AI Powered Azure Automation portal. The top navigation bar includes 'Home', 'Architecture Blueprint', and 'Deployment status'. The 'Project Name' is listed as 'Architecture Blueprint'. A central message says 'Deployment Completed Successfully!' with a checkmark icon. Below it is a 'View architecture' button. A table lists deployed resources: 6 entries for 'aipdms' under 'AIP-WITH-SYNAPSE' with a status of 'Deployed successfully' and timestamp '2/26/2021, 9:24:57 PM'.

Resource name	Resource group	Subscription	Status	Deployed on (UTC)
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	Deployed successfully	2/26/2021, 9:24:57 PM

Image 4.13: Project deployment success

3. Project status is 'Deployed successfully'

10.4.4 Failed to Deploy

1. In case the deployment fails, then error notification will be shown.



The screenshot shows the AI Powered Azure Automation interface. In the top navigation bar, there are icons for Home, AI, and a user profile. Below the navigation bar, the path is Home > Architecture Blueprint > Deployment status. The main title is Project Name: Architecture Blueprint. A large icon of a blue 'A' with a red 'X' is displayed, indicating a failure. The message 'Deployment Failed!' is shown in bold, followed by '1 resource(s) failed to deploy'. A blue button labeled 'View architecture' is present. Below this, a table lists deployment details:

Resource name	Resource group	Subscription	Status	Deployed on (UTC)
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🔴 Failed to deploy	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🟢 Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🟢 Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🟢 Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🟢 Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🟢 Deployed successfully	2/26/2021, 9:24:57 PM
aipdms	AIP-WITH-SYNAPSE	AIP-WITH-SYNAPSE	🟢 Deployed successfully	2/26/2021, 9:24:57 PM

Image 4.14: Project deployment failure

2. Project status is ‘Failed to deploy’.



10.5 Infrastructure Management

This bucket is for managing the resources deployed on Azure for various projects. Resource management is done in context of a project per these 2 scenarios:

1. If the architecture is deployed using Architecture Blueprint design tool, then same project and its content will be displayed.
2. If customer has existing resources and signed up for A3S services, then a new project will be created by A3S team as part of the customer onboarding process.

10.5.1 Overview

The page has the following sections:

- **Left menu:** two-level tree structure (shown in the image above):
 - i. Level 1: is list of projects.
 - ii. Level 2: underneath a project is list of the resource types.
- **Dashboards:** at two levels:
 - i. Project.
 - ii. Resource type.
- **Filter options:**
 - i. Subscription: in case the resources are deployed in multiple subscriptions under a project.
 - ii. Resource group: to view resources from specific resource groups
 - iii. Resource: to manage a specific resource.
- **Learn more:** to visit knowledge base page.
- **Main area:** resource dropdowns and actions (explained later in detail).

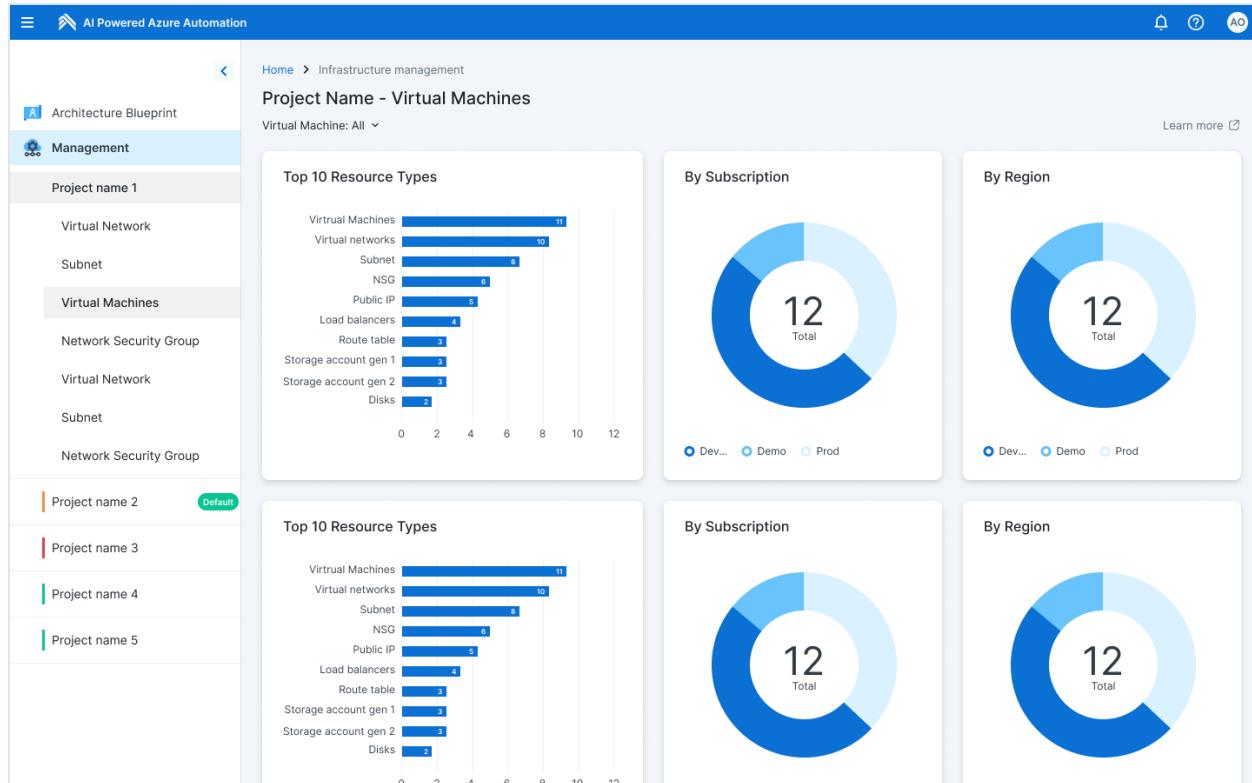


Image 4.15: Management Tab: Overview





10.5.2 Resource Management

Follow these steps to navigate the management page:

1. Click **Infrastructure deployment and management** on the homepage.
2. Click **Management** from the left menu.

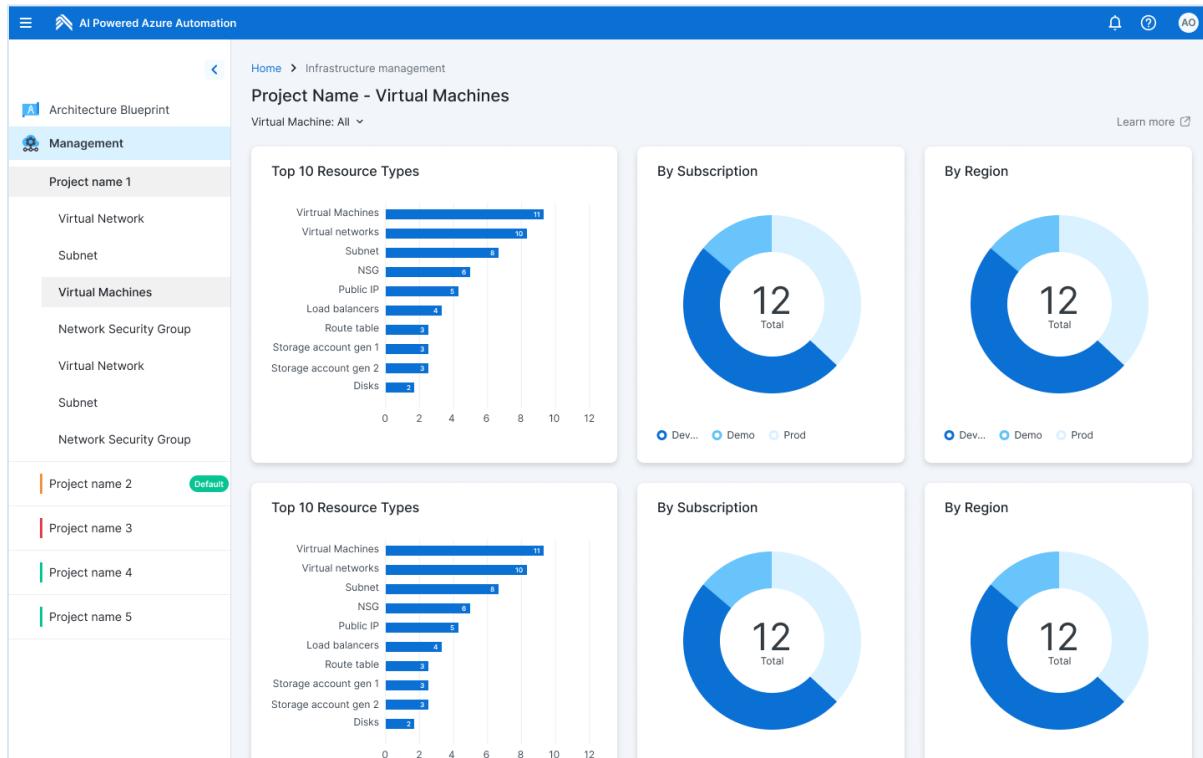


Image 4.16: Management Tab overview

3. Click a project and view its dashboard.
4. To view resources of same type, click resource type (for example, Virtual Machines).
5. Click specific resource to obtain its details and to take actions to modify that resource, for example to view details and to modify a specific Virtual Machine.



The screenshot shows the Azure Automation Infrastructure Overview page. On the left, there's a sidebar with 'Architecture Blueprint' and 'Management' sections, including 'Overview', 'Compute', and 'Storage'. The main area displays an 'Infrastructure Overview' card with a table of resource details and a pie chart.

Resource name:

Resource name		Action	
Connect	Start	Restart	Stop
Deployment type : Azure Container Registry (ACR)			
Subscription : Dynapt Enterprise Azure			
Resource : aipsynapsqlpool	Resource : aipsynapsqlpool	Resource : aipsynapsqlpool	Resource : aipsynapsqlpool
Status : Running	Status : Running	Status : Running	Status : Running
Deployment type : Azure Container Registry (ACR)			
Deployment type : Azure Container Registry (ACR)			
Subscription : Dynapt Enterprise Azure			
Deployment type : Azure Container Registry (ACR)			
Resource : aipsynapsqlpool	Resource : aipsynapsqlpool	Resource : aipsynapsqlpool	Resource : aipsynapsqlpool
Deployment type : Azure Container Registry (ACR)			
Resource group : AIP-WITH-SYNAPSE	Resource group : AIP-WITH-SYNAPSE	Deployment type : Azure Container Registry (ACR)	Deployment type : Azure Container Registry (ACR)
Deployment type : Azure Container Registry (ACR)	Deployment type : Azure Container Registry (ACR)	Resource group : AIP-WITH-SYNAPSE	Resource group : AIP-WITH-SYNAPSE
Resource group : AIP-WITH-SYNAPSE	Deployment type : Azure Container Registry (ACR)	Deployment type : Azure Container Registry (ACR)	Resource group : AIP-WITH-SYNAPSE
Deployment type : Azure Container Registry (ACR)	Resource group : AIP-WITH-SYNAPSE	Deployment type : Azure Container Registry (ACR)	Deployment type : Azure Container Registry (ACR)
Resource group : AIP-WITH-SYNAPSE	Done	Default	Default

WVD-demo-03 MPN West US IT Default Default Default ***

WVD-demo-03 MPN West US IT Default Default Default ***

WVD-demo-03 MPN West US IT Default Default Default ***

WVD-demo-03 MPN West US IT Default Default Default ***

Environment: Demo Prod

Pie Chart: Total: 12 (Prod: 3, Demo: 9)

Image 4.17: Resource details

6. Click on ellipsis (•••) to find list of actions that can be performed for a resource (actions are used to modify the resource configuration).
7. Actions either require single click or a side sheet to be filled with necessary inputs.

AI Powered Azure Automation

Home > Infrastructure management

Infrastructure Overview

Project Subscription Resource group Learn more

Top 10 Resource Types

Resource Type	Count
Virtual Machines	11
Virtual networks	10
Subnet	8
NSG	5
Public IP	5
Load balancers	4
Route table	3
Storage account gen 1	3
Storage account gen 2	3
Disk	2

By Subscription

By Region

Virtual Machine

Name	Resource Group	Subscription	Region	Status	Operating System	Size	Tags
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03	RG name	MPN	West US	Stopped	Windows	B12	Environment...
WVD-demo-03	RG name	MPN	West US	Stopped Deallocated	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...
WVD-demo-03...	RG name	MPN	West US	Running	Windows	B12	Environment...

Actions:

- Connect
- Start
- Restart
- Stop
- Capture
- Delete
- Datadisks

Virtual Network

34 Subnet

7 Network Security Group

99 Public IP

78 Load Balancers

78 Route Tables

78 Virtual Network Gateways

78 Connections

78 Storage Account

78 Key Vaults

78 Disks

78 App Service

78 Hostpools

Image 4.18: Actions

8. Use filters at the top to drill down further into the project to subscriptions & resource groups.



11 Data & AI

The Data & AI functional bucket enables modernization of data estates with automated data migration and analytics while also providing comprehensive automated data governance and DataOps capabilities.

Data & AI has following sub-sections:

1. Data Migration.
2. Data Governance.
3. Data Analytics.
4. DataOps.

11.1 Data Migration

An easy to use, intuitive workflow that fully automates Extract, Transform and Load process to migrate data from any source system to Azure Synapse.

11.1.1 Overview

- Click 'Data & AI' tile on the A3S portal homepage of A3S and choose Data migration from the left menu.
- List of all the projects will be displayed.
- Click an existing project to view the project summary.

The screenshot shows the 'Data Migration' section of the AI Powered Azure Automation portal. On the left, there's a sidebar with 'Data Migration' selected, along with other options like 'Data Security', 'Data Governance', and 'Data Analytics'. The main area is titled 'Projects' and shows a list of migrations to 'Azure Synapse'. A search bar at the top allows filtering by project name. Below it, a table lists five projects, each with columns for Project name, Status, Source, Source Type, Target, Resource group, Subscription, Resource, and Created on (UTC). The first project is 'aipdms' with a 'Successful' status, while the second is 'Failed'. The last three are 'Successful'. At the bottom of the list is a button labeled '+ Create new project'.

Project name	Status	Source	Source Type	Target	Resource group	Subscription	Resource	Created on (UTC)
aipdms	Successful	13.92.185.224	Microsoft SQL	Azure Synapse	AIP-WITH-SYNAP...	Dynapt Enterpriz...	aipsynapsqlp...	2/26/2021, 9:24:57 PM
aipdms	Failed	13.92.185.224	Microsoft SQL	Azure Synapse	AIP-WITH-SYNAP...	Dynapt Enterpriz...	aipsynapsqlp...	2/26/2021, 9:24:57 PM
aipdms	Successful	13.92.185.224	Microsoft SQL	Azure Synapse	AIP-WITH-SYNAP...	Dynapt Enterpriz...	aipsynapsqlp...	2/26/2021, 9:24:57 PM
aipdms	Successful	13.92.185.224	Microsoft SQL	Azure Synapse	AIP-WITH-SYNAP...	Dynapt Enterpriz...	aipsynapsqlp...	2/26/2021, 9:24:57 PM
aipdms	Completed	13.92.185.224	Microsoft SQL	Azure Synapse	AIP-WITH-SYNAP...	Dynapt Enterpriz...	aipsynapsqlp...	2/26/2021, 9:24:57 PM

Image 5.1: Data migration project List



- Click on ellipsis (•••) and thereon click delete project, if needed.



11.1.2 SQL Server

1. Click on **Create new project**.
2. Select **Source data system – SQL Server**.

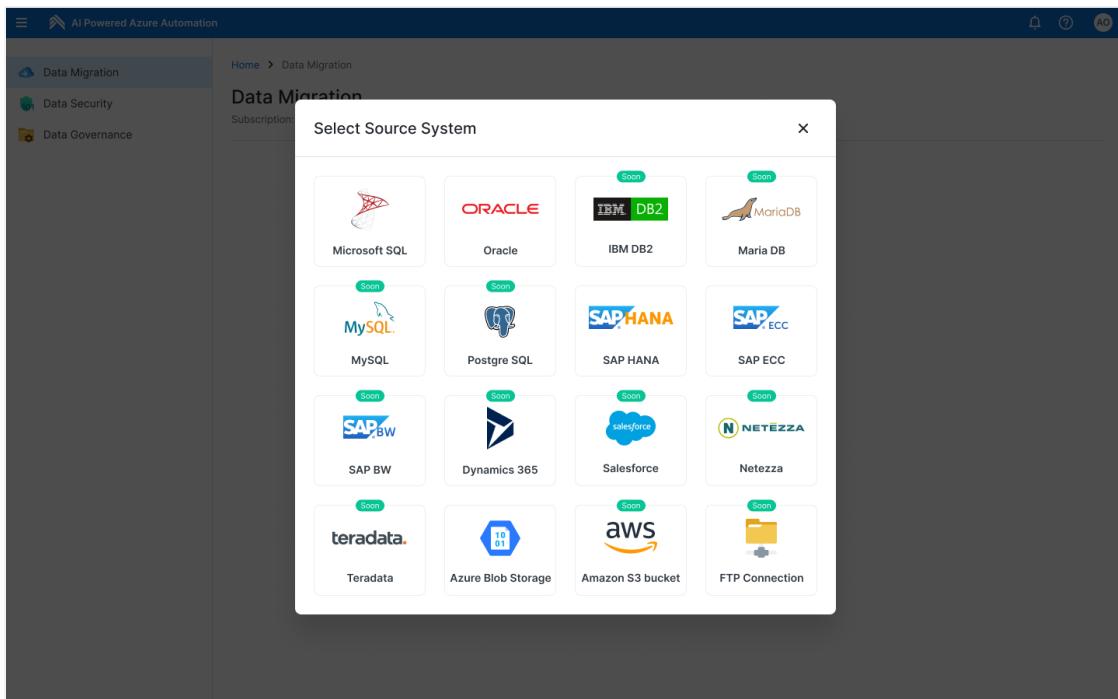


Image 5.2: SQL - source system

3. Provide required details for Azure synapse as destination and SQL server as the source system.



AI Powered Azure Automation

Home > Data Migration > Create project

Microsoft SQL
Data Migration to Azure Synapse

Learn more ⓘ

1 Basics — 2 Select Tables — 3 Migrate Schema — 4 Migrate Data

Project name * (Input field)

Target details
Select the target where data will be migrated to.

Subscription * (Dropdown: Choose target subscription)

Resource group * (Dropdown: Choose target resource group)

Resource * (Dropdown: Choose target resource)

Source details
Enter the details of the source where the data will be migrated from.

Server name * (Input field)

Port number * (Input field)

Database name * (Input field)

Username * (Input field)

Password * (Input field)

Next (Disabled) Cancel

Image 5.3: SQL - source details

4. Click **Next**.
5. Select table(s) to be migrated and click **Next**.

AI Powered Azure Automation

Home > Data Migration > Create project

SAP HANA
Data Migration to Azure Synapse

Learn more ⓘ

1 Basics — 2 Select Tables — 3 Migrate Schema — 4 Migrate Data

Please select the tables that you want to migrate

Search tables (Input field)

11 out of 11 table(s) shown

Table Name	Records
Orange Juice Data	23
Orange	47
Data	12
Blue Data	80
Yellow Data	45
Green Data	32
Orange Juice Data	23
Orange	47
Data	12
Yellow Data	45
Green Data	32

Next Cancel

Image 5.4: SQL - select tables

6. Click **Next** to migrate schema.

7. Click **Migrate data**.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation portal. The project name is 'SAP HANA' and it is described as 'Data Migration to Azure Synapse'. The navigation bar indicates the current step is 'Migrate Schema' (step 3 of 4). A success message states 'Schema migration successful! You can now migrate your data.' Below this, a table lists 11 tables, all of which have been 'Created' successfully. The table has columns for 'Table Name' and 'Status'. At the bottom, there are 'Migrate data' and 'Cancel' buttons.

Table Name	Status
Orange Juice Data	Created
Orange	Created
Data	Created
Blue Data	Created
Yellow Data	Created
Green Data	Created

Image 5.5: SQL - migrate data

8. Data migration progress will be displayed.



Your data is being migrated... While it takes time, you can choose to move away. You will be notified once the migration is finished.

Table Name	Status
Orange Juice Data	23/25 rows created
Orange	30/30 rows copied
Data	30/30 rows copied
Blue Data	30/30 rows copied
Yellow Data	30/30 rows copied
Green Data	30/30 rows failed

Overall progress: 50% Cancel

Image 5.6: SQL - migration progress

- If data migration was successful, then Successful data migration message will be displayed.

SAP HANA
Data Migration to Azure Synapse

Overall progress: Completed

Migration Completed Successfully!

[Start new migration](#) [View in A3S BI dashboard](#)

Table Name	Status
Orange Juice Data	30/30 rows copied
Orange	30/30 rows copied
Blue Data	30/30 rows copied

Image 5.7: SQL - migration success



10. In case of error/failure, a Failed data migration message will be displayed.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation interface. The navigation bar includes 'Home', 'Data Migration', and 'Create project'. The main area displays a 'SAP HANA' migration project titled 'Data Migration to Azure Synapse'. A progress bar at the top indicates steps: 'Basics' (green checkmark), 'Select Tables' (green checkmark), 'Migrate Schema' (green checkmark), and 'Migrate Data' (red X). Below the progress bar is a diagram showing a red 'X' over an arrow from 'SAP HANA' to 'Azure Synapse'. A prominent message 'Migration Failed!' is displayed, followed by 'Something went wrong...'. A blue button labeled 'Start new migration' is visible. A table below lists migration status for three tables: 'Data', each showing '30/30 rows failed'. At the bottom, an 'Overall progress' bar is shown as 'Stopped'.

Table Name	Status
▼ Data	● 30/30 rows failed
▼ Data	● 30/30 rows failed
▼ Data	● 30/30 rows failed

Overall progress: Stopped

Image 5.8: SQL - migration failure

11. In case of partial migration, Data migration partial success message will be displayed.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation portal. The main heading is 'SAP HANA' with the subtext 'Data Migration to Azure Synapse'. A progress bar at the top indicates completion: Basics (green checkmark), Select Tables (green checkmark), Migrate Schema (green checkmark), and Migrate Data (red X). Below the progress bar is a diagram showing 'SAP HANA' connected by an orange arrow to 'Azure Synapse' (represented by a hexagonal icon with a blue swirl). A message below the diagram says 'Migration Completed!' followed by '12 tables failed to migrate'. There are two buttons: 'Start new migration' and 'View in A3S BI dashboard'. A detailed table below lists migration status for individual tables:

Table Name	Status
✓ Data	30/30 rows copied
✓ Data	30/30 rows copied
✗ Data	12/30 rows failed

Overall progress: Completed

Image 5.9: SQL - migration partial success

- Upon completion of the migration, project summary will be displayed.



The screenshot shows the 'Data migration' section of the AI Powered Azure Automation interface. The 'Project Name' is 'Data Migration to Azure Synapse'. The 'Project summary' table includes the following details:

Source system	: SAP HANA	Subscription	: Dynapt Enterprise Azure
Server name	: Server	Resource group	: AIP-WITH-SYNAPSE
Port number	: 1344	Resource	: aipsynapsqlpool
Data basename	: Database	States	: Completed
Username	: Database	Created on (UTC)	: 2/26/2021, 9:24:57 PM

The 'Table Name' section lists three tables: 'Orange Juice Data', 'Orange', and 'Blue Data', each with a status of '34 completed, 0 failed'. A success message 'Project name" data migration successful!' is displayed at the bottom right.

Image 5.10: SQL - project summary

13. Click **View in A3S BI dashboard** button to view data in a dashboard.

(Screen required)

Image 5.11: SQL - BI dashboard



11.1.3 Oracle Server

11.1.4 SAP HANA

1. Click **Create new project**.
2. Select source system as **SAP HANA**.

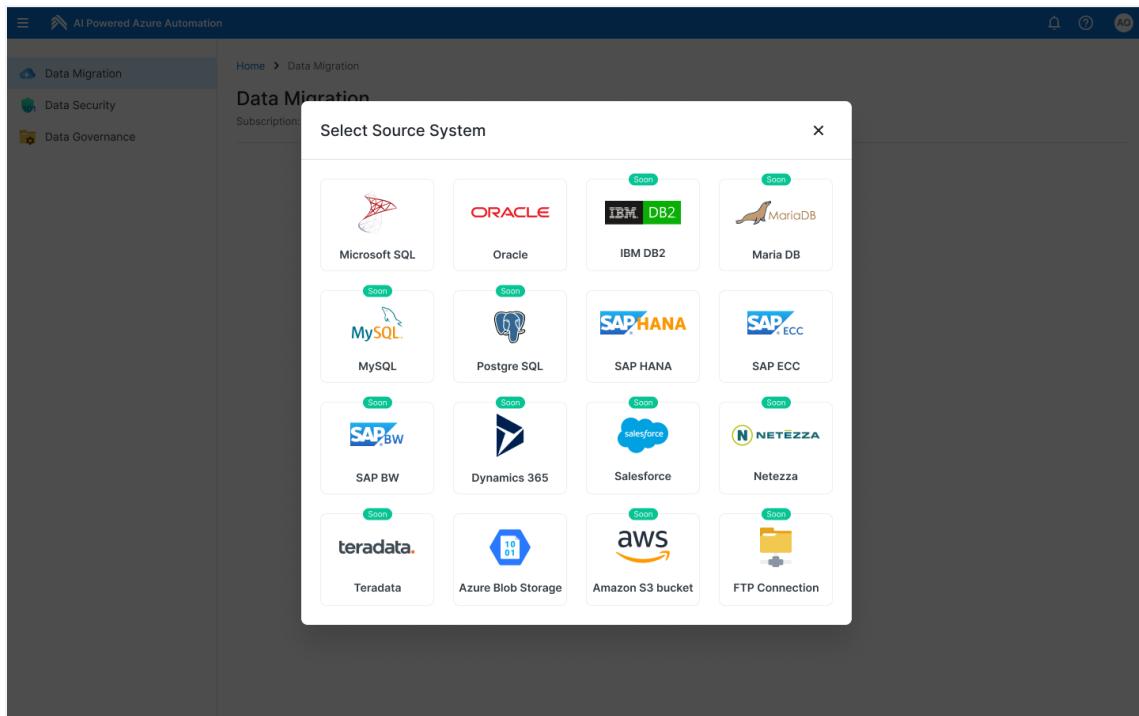


Image 5.12: SAP Hana - select source

3. Select **ingestion method**.



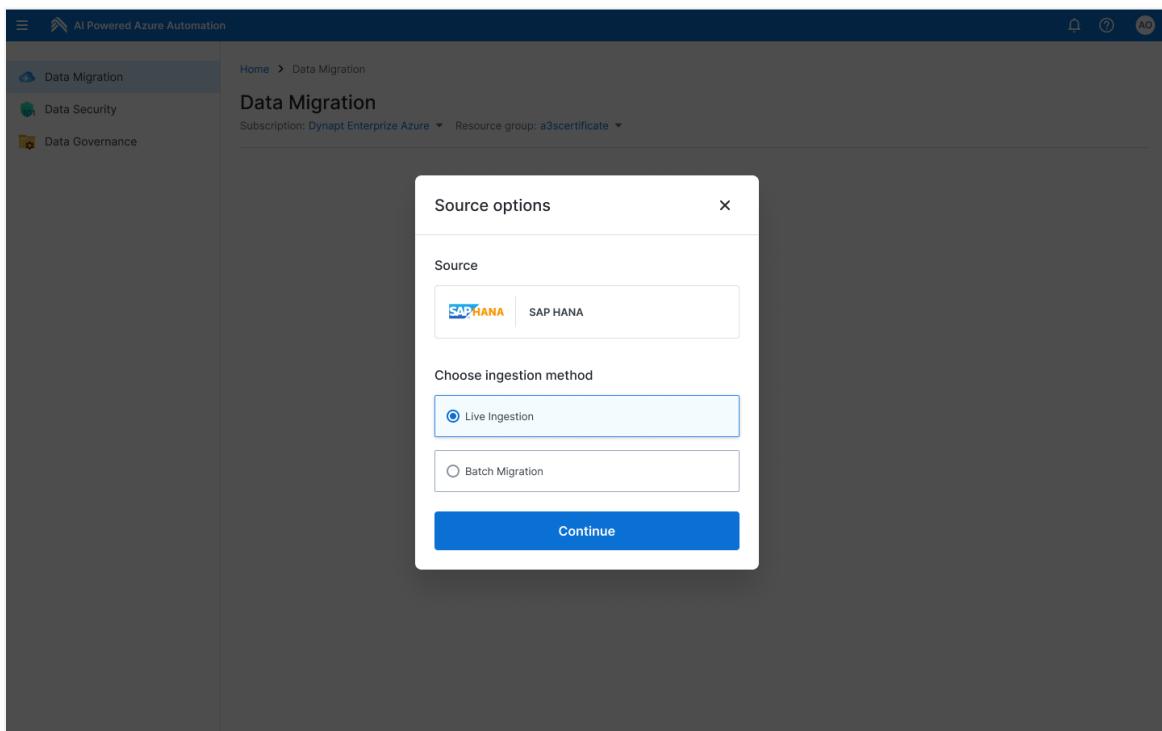


Image 5.13: SAP Hana – ingestion

4. Provide required details for Azure Synapse as the destination and for SAP HANA as source system.

The screenshot shows the 'Create project' step for a 'SAP HANA' migration. The 'Basics' tab is selected. The 'Project name' field is empty. Under 'Target details', 'Subscription', 'Resource group', and 'Resource' dropdowns are shown. Under 'Source details', fields for 'Server name', 'Port number', 'Database name', 'Username', and 'Password' are present. At the bottom are 'Next' and 'Cancel' buttons.

Image 5.14: SAP Hana - source details

5. Click **Next**.
6. Select a table(s) to be migrated and click **Next**.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation portal. The left sidebar includes 'Data migration', 'Data Security', 'Data Governance', and 'Data Analytics'. The main area is titled 'SAP HANA' and 'Data Migration to Azure Synapse'. A progress bar at the top indicates steps 1 (Basics), 2 (Select Tables), 3 (Migrate Schema), and 4 (Migrate Data). Below the progress bar, a message says 'Please select the tables that you want to migrate'. A search bar labeled 'Search tables' is present. A table lists 11 tables with their record counts:

Table Name	Records
Orange Juice Data	23
Orange	47
Data	12
Blue Data	80
Yellow Data	45
Green Data	32
Orange Juice Data	23
Orange	47
Data	12
Yellow Data	45
Green Data	32

At the bottom are 'Next' and 'Cancel' buttons.

Image 5.15: SAP Hana - select tables

7. Click **Next** to migrate schema.
8. Click **Migrate data**.



The screenshot shows the SAP HANA Data Migration to Azure Synapse interface. The left sidebar has options: Data migration (selected), Data Security, Data Governance, and Data Analytics. The main area shows the migration progress: Basics (Completed), Select Tables (Completed), Migrate Schema (In Progress), and Migrate Data (Not Started). A message says "Schema migration successful! You can now migrate your data." Below is a table of tables and their status:

Table Name	Status
Orange Juice Data	Created
Orange	Created
Data	Created
Blue Data	Created
Yellow Data	Created
Green Data	Created

At the bottom are "Migrate data" and "Cancel" buttons.

Image 5.16: SAP Hana - migrate data

9. Data migration progress will be displayed.

The screenshot shows the SAP HANA Data Migration to Azure Synapse interface. On the left, there's a sidebar with icons for Data migration, Data Security, Data Governance, and Data Analytics. The main area has a breadcrumb navigation: Home > Data Migration > Create project. It displays the title "SAP HANA" and "Data Migration to Azure Synapse". A progress bar at the top indicates the migration status: Basics (green), Select Tables (green), Migrate Schema (green), and Migrate Data (yellow). Below this, a message says "Your data is being migrated..." and "While it takes time, you can choose to move away. You will be notified once the migration is finished." A table lists the migration status for various tables:

Table Name	Status
Orange Juice Data	23/25 rows created
Orange	30/30 rows copied
Data	30/30 rows copied
Blue Data	30/30 rows copied
Yellow Data	30/30 rows copied
Green Data	30/30 rows failed

At the bottom, there's an "Overall progress" bar at 50% and a "Cancel" button.

Image 5.17: SAP Hana - migration progress

10. If data migration is successful, Successful migration message will be displayed.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation portal. The navigation bar includes 'Home', 'Data Migration', and 'Create project'. A sidebar on the left lists 'Data migration', 'Data Security', 'Data Governance', and 'Data Analytics'. The main content area is titled 'SAP HANA' and 'Data Migration to Azure Synapse'. It displays a progress bar with four steps: 'Basics' (green checkmark), 'Select Tables' (green checkmark), 'Migrate Schema' (green checkmark), and 'Migrate Data' (green checkmark). Below the progress bar is a diagram showing 'SAP HANA' connected by a green arrow to 'Azure Synapse'. A success message 'Migration Completed Successfully!' is displayed, along with 'Start new migration' and 'View in A3S BI dashboard' buttons. A table below shows migration status for three tables: 'Orange Juice Data' (30/30 rows copied), 'Orange' (30/30 rows copied), and 'Blue Data' (30/30 rows copied). At the bottom, an 'Overall progress' bar is shown as 'Completed'.

Table Name	Status
Orange Juice Data	30/30 rows copied
Orange	30/30 rows copied
Blue Data	30/30 rows copied

Image 5.18: SAP Hana - successful migration

11. In case of error/failure, Failed data migration message will be displayed.

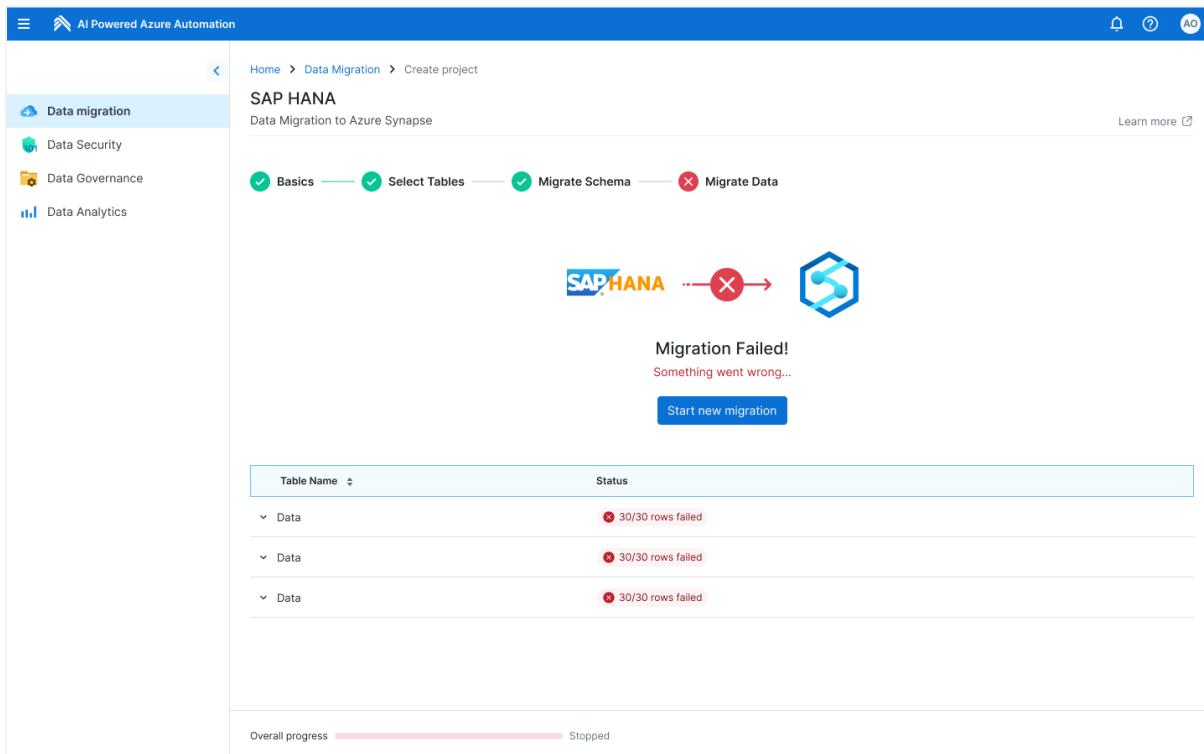


Image 5.19: SAP Hana - migration failure

12. In case of partial migration, Partial data migration message will be displayed.

The screenshot shows the AI Powered Azure Automation interface for a 'SAP HANA' project. The left sidebar includes 'Data migration', 'Data Security', 'Data Governance', and 'Data Analytics'. The main content area displays the migration status from 'SAP HANA' to 'Azure Synapse'. A progress bar at the top indicates 'Migrate Schema' is completed, while 'Migrate Data' is in progress. Below the bar, the text 'Migration Completed!' is shown, followed by '12 tables failed to migrate'. A table lists migration details for three tables: 'Data', 'Data', and 'Data', showing counts of rows copied or failed. An overall progress bar at the bottom is labeled 'Completed'.

Table Name	Status
✓ Data	30/30 rows copied
✓ Data	30/30 rows copied
✗ Data	12/30 rows failed

Overall progress: Completed

Image 5.20: SAP Hana - partial success

13. Project summary page will be displayed after migration process is complete.

The screenshot shows the AI Powered Azure Automation interface. On the left, there's a sidebar with icons for Data migration, Data Security, Data Governance, and Data Analytics. The main area displays a project summary for "Example Project". The project name is "Data Migration to Azure Synapse". The "Project summary" section lists details such as Source system (SAP HANA), Server name (Server), Port number (1344), Data basename (Database), Username (Database), Subscription (Dynapt Enterprise Azure), Resource group (AIP-WITH-SYNAPSE), Resource (aipsynapsqlpool), State (Completed), and Created on (UTC) (2/26/2021, 9:24:57 PM). Below this, a table titled "Table Name" shows three entries: "Orange Juice Data", "Orange", and "Blue Data", each with a status of "34 completed, 0 failed". At the bottom, there are buttons for "View in A3S BI dashboard" and a success message: "Project name" data migration successful! X

Image 5.21: SAP Hana - project summary

14. Click **View in A3S BI dashboard** button to view data in a dashboard.

(Screen required)

Image 5.22: SAP Hana - BI dashboard

11.1.5 SAP ECC with Full & Delta Load

1. Click **Create new project**.
2. Select **SAP ECC** as source system.

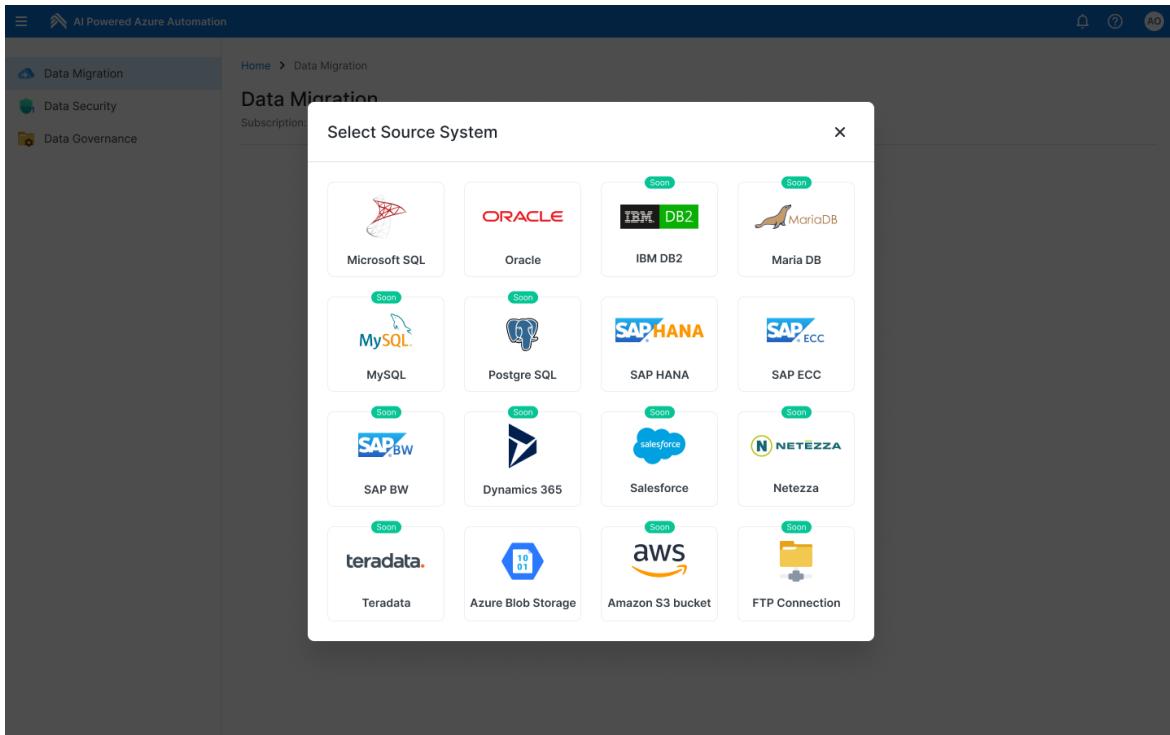


Image 5.23: SAP ECC - source system

- Provide required details for Azure Synapse as destination and for SAP ECC as source system.

SAP ECC
Data Migration to Azure Synapse

Learn more ⓘ

① Basics — ② Select Tables — ③ Migrate Schema — ④ Migrate Data

Project name *

Target details
Select the target where data will be migrated to.

Subscription *

Resource group *

Resource *

Source details
Enter the details of the source where the data will be migrated from.

Server name *

Port number *

Database name *

Username *

Password *

Image 5.24: SAP ECC - source details

4. Select table(s) for migration.

The screenshot shows a web interface for data migration. On the left, a sidebar lists 'Data migration', 'Data Security', 'Data Governance', and 'Data Analytics'. The main area is titled 'SAP ECC' and 'Data Migration to Azure Synapse'. A navigation bar at the top includes 'Home', 'Data Migration', 'Create project', and 'Learn more'. Below the navigation, a progress bar shows 'Basics' (green), 'Select Tables' (blue, currently selected), 'Migrate Schema' (grey), and 'Migrate Data' (grey). A sub-instruction says 'Please select the tables that you want to migrate'. A search bar labeled 'Search tables' is present. A table lists 11 tables with their record counts. The first five tables have checkboxes checked, while the last six are unchecked. At the bottom are 'Next' and 'Cancel' buttons.

Table Name	Records
Orange Juice Data	23
Orange	47
Data	12
Blue Data	80
Yellow Data	45
Green Data	32
Orange Juice Data	23
Orange	47
Data	12
Yellow Data	45
Green Data	32

Image 5.25: SAP ECC - select tables

5. Click **Next** to Migrate schema.

The screenshot shows the 'SAP ECC' migration project in the 'Data Migration' section of the Azure portal. The 'Migrate Schema' step is currently active, indicated by a green checkmark icon. A progress bar at the top shows steps 1 through 4: Basics (green), Select Tables (green), Migrate Schema (blue), and Migrate Data (grey). Below the progress bar, a message says 'Please wait while tables are getting loaded.' A search bar labeled 'Search tables' is present. A table lists 11 tables with their status: Orange Juice Data (Creating...), Orange (Creating...), Data (Created), Blue Data (Created), Yellow Data (Created), and Green Data (Created). At the bottom are 'Next' and 'Cancel' buttons.

Image 5.26: SAP ECC - migrate schema

6. Click **Migrate data** to start the migration.

The screenshot shows the 'SAP ECC' migration project in the 'Data Migration' section of the Azure portal. The 'Migrate Data' step is now active, indicated by a blue checkmark icon. A message at the top says 'Schema migration successful! You can now migrate your data.' A search bar labeled 'Search tables' is present. A table lists 11 tables with their status: Orange Juice Data (Created), Orange (Created), Data (Created), Blue Data (Created), Yellow Data (Created), and Green Data (Created). At the bottom are 'Migrate data' and 'Enable delta load' buttons, along with a 'Cancel' button.

Image 5.27: SAP ECC - migrate data



7. If data migration is successful, Successful data migration message will be displayed.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation portal. The navigation bar includes 'Home', 'Data Migration', 'Create project', 'Learn more', and icons for notifications, help, and account. On the left, a sidebar lists 'Data migration', 'Data Security', 'Data Governance', and 'Data Analytics'. The main content area displays a migration project titled 'SAP ECC' for 'Data Migration to Azure Synapse'. A progress bar at the top indicates 'Basics', 'Select Tables', 'Migrate Schema', and 'Migrate Data' are completed. Below the progress bar, the SAP logo is shown next to a green checkmark and an arrow pointing to a blue hexagonal icon representing Azure Synapse. A success message 'Migration Completed Successfully!' is displayed. Two buttons are present: 'Start new migration' (blue) and 'View in A3S BI dashboard' (white). A table below shows migration status for three tables: 'Orange Juice Data' (30/30 rows copied), 'Orange' (30/30 rows copied), and 'Blue Data' (30/30 rows copied). At the bottom, an 'Overall progress' bar is labeled 'Completed'.

Image 5.28: SAP ECC - migration success

8. In case of error/failure, Failure data migration message will be displayed.

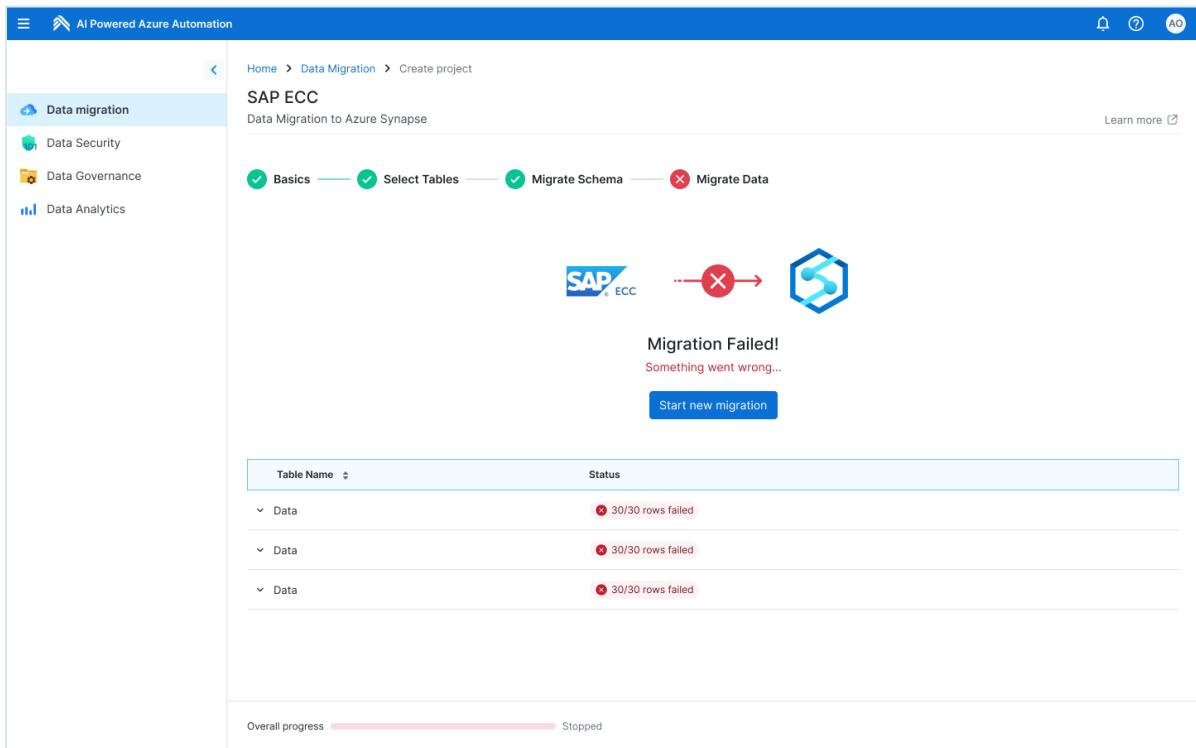


Image 5.29: SAP ECC - migration failure

9. In case of partial migration, Partial data migration message will be displayed

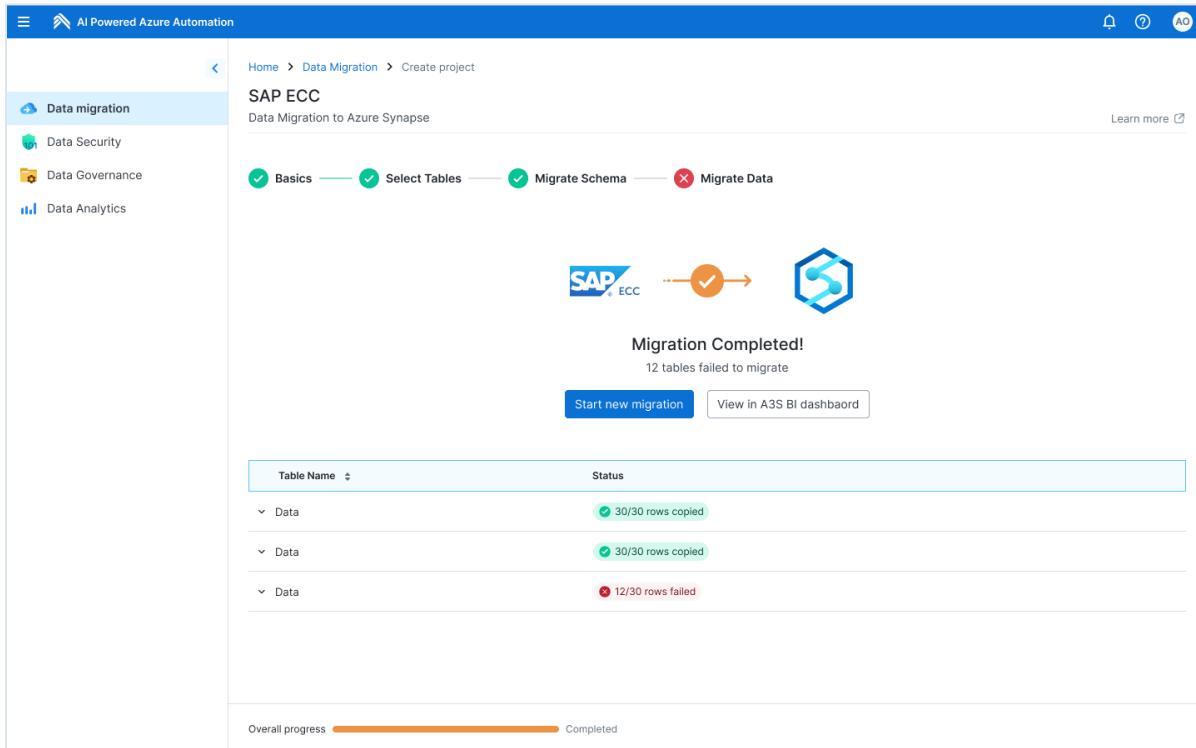


Image 5.30: SAP ECC - partial success

10. Project summary page will be displayed after the data migration process is completed.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation interface. The 'Project Name' is 'Data Migration to Azure Synapse'. The 'Project summary' table provides details about the migration:

Source system	:	SAP ECC	Subscription	:	Dynapt Enterprise Azure
Server name	:	Server	Resource group	:	AIP-WITH-SYNAPSE
Port number	:	1344	Resource	:	alpsynapsqlpool
Data basename	:	Database	States	:	Completed
Username	:	Database	Created on (UTC)	:	2/26/2021, 9:24:57 PM

Below the summary, a table titled 'Table Name' lists three tables: 'Orange Juice Data', 'Orange', and 'Blue Data'. A status bar indicates '34 completed, 0 failed'. At the bottom are buttons for 'View in A3S BI dashboard' and 'Start delta load'.

Image 5.31: SAP ECC - project summary

11.1.6 Azure Blob Storage

1. Click **Create new project**.
2. Select source system as **Azure blob storage**.

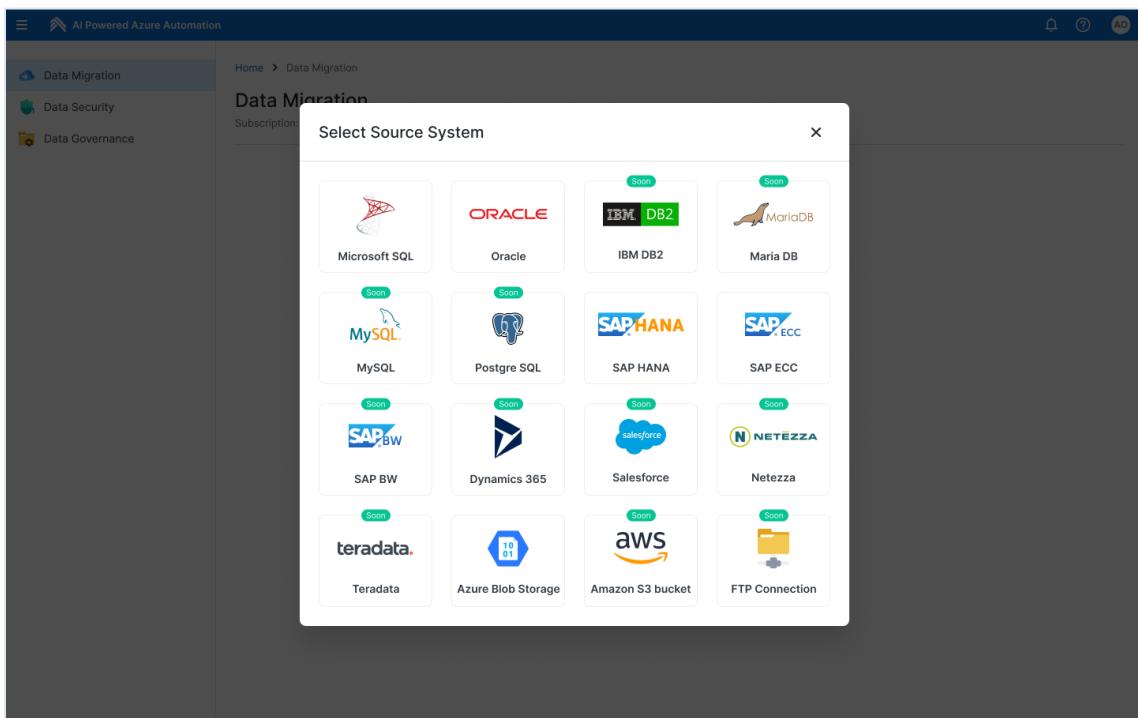


Image 5.37: Storage Blob – source

- Fill in required details for Azure Synapse as destination and for Blob storage as source system.

Azure Blob Storage
Data Migration to Azure Synapse

Basics **Select files** **Migrate files**

Project Details
Enter project details and choose where the data will be stored

Project name *	<input type="text"/>
Subscription *	<input type="button" value="Choose subscription"/>
Resource group *	<input type="button" value="Choose resource group"/>
Resource *	<input type="button" value="Choose resource"/>
Storage account *	<input type="button" value="choose storage account"/>
Storage account key *	<input type="text"/>
Container name *	<input type="button" value="Choose resource"/>

Source Details

Storage account name *	<input type="text"/>
Storage account key *	<input type="text"/>
Container name *	<input type="text"/>

Next **Cancel**

Image 5.38: Storage Blob - source details

4. Click **Next**.
5. Select file(s) to be migrated.

The screenshot shows the 'Data migration' section of the Azure portal. The left sidebar has 'Data migration' selected. The main area is titled 'Azure Blob Storage' with the sub-tittle 'Data Migration to Azure Synapse'. A progress bar at the top indicates 'Basics' (green), 'Select files' (red, step 2), and 'Migrate files' (grey, step 3). Below the progress bar, a message says 'Please select the files that you want to migrate' with a search bar. A table lists 5 out of 5 directories shown, each with a checkbox and a 'Content' column. One directory contains two files named 'file 1.png'. At the bottom are 'Migrate' and 'Cancel' buttons.

Image 5.39: Storage Blob - select files

6. Click **Migrate** to initiate the migration.



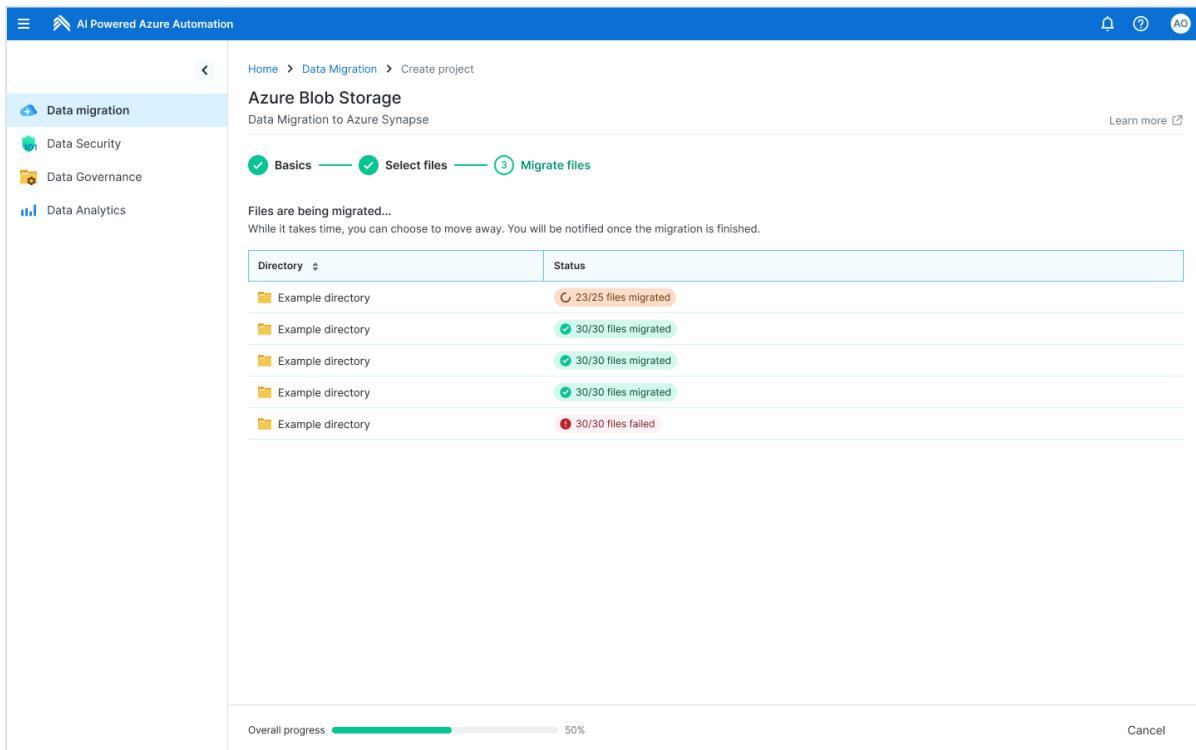


Image 5.40: Storage Blob - migration process

- If migration is successful, Successful migration message will be displayed.

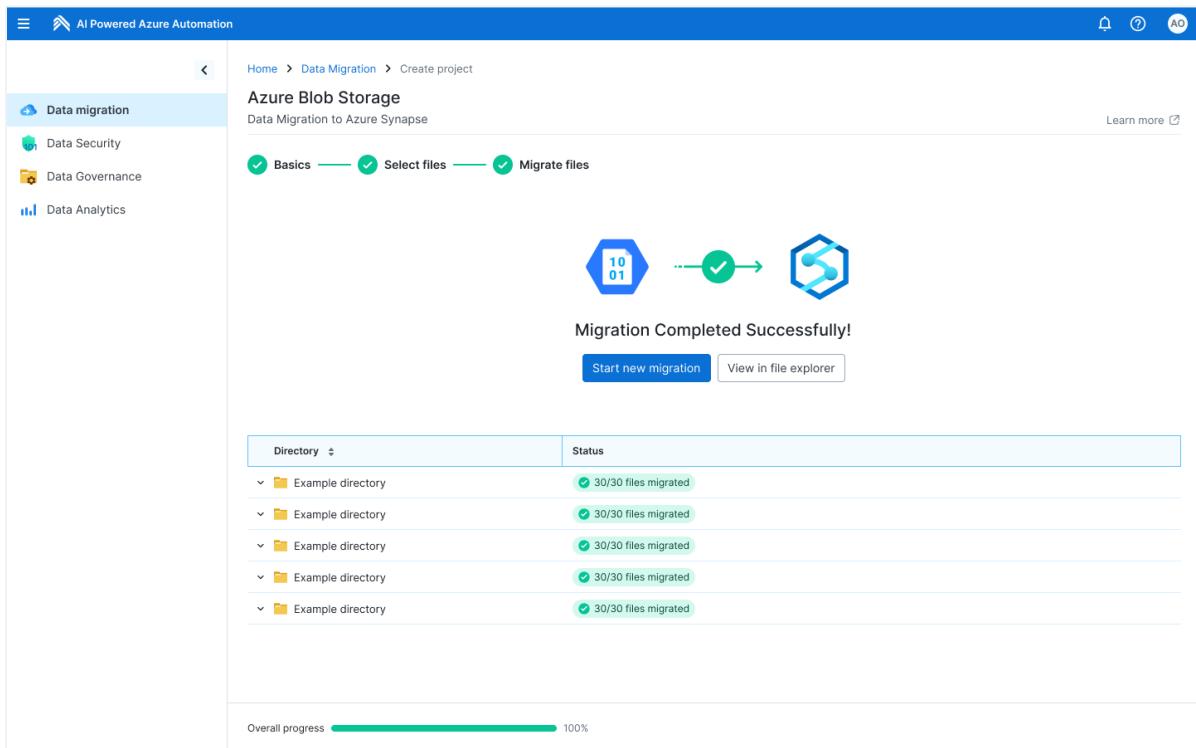


Image 5.41: Storage Blob - migration success

8. In case partial migration, Partial migration message will be displayed.

The screenshot shows the 'Data migration' section of the AI Powered Azure Automation portal. The main heading is 'Azure Blob Storage' with the subtext 'Data Migration to Azure Synapse'. Below this, a progress bar indicates 'Migration Completed!' with a note '1 file failed to migrate'. Two icons represent the source (a blue hexagon with '10/01') and destination (a blue hexagon with a cloud icon). Below the progress bar are two buttons: 'Start new migration' and 'View in file explorer'. A detailed file tree below shows the migration status for each item:

Directory	Status
Example directory	12/30 files failed
Example folder	9/10 files migrated
Example folder	2/2 files failed
file 1.png	Failed
file 1.png	Failed
Example folder	9/10 files migrated
Example directory	30/30 files migrated

Overall progress: 100%

Image 5.42: Storage Blob - partial success

9. In case of error/failure, Failure migration message will be displayed.

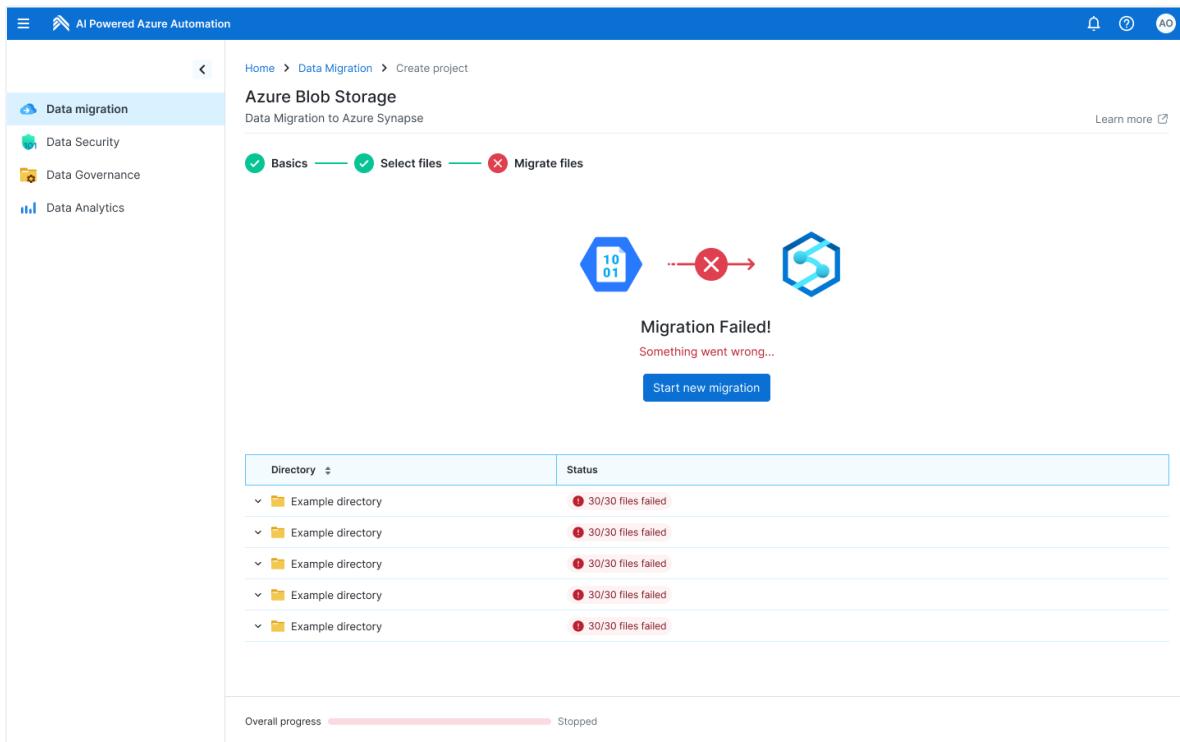
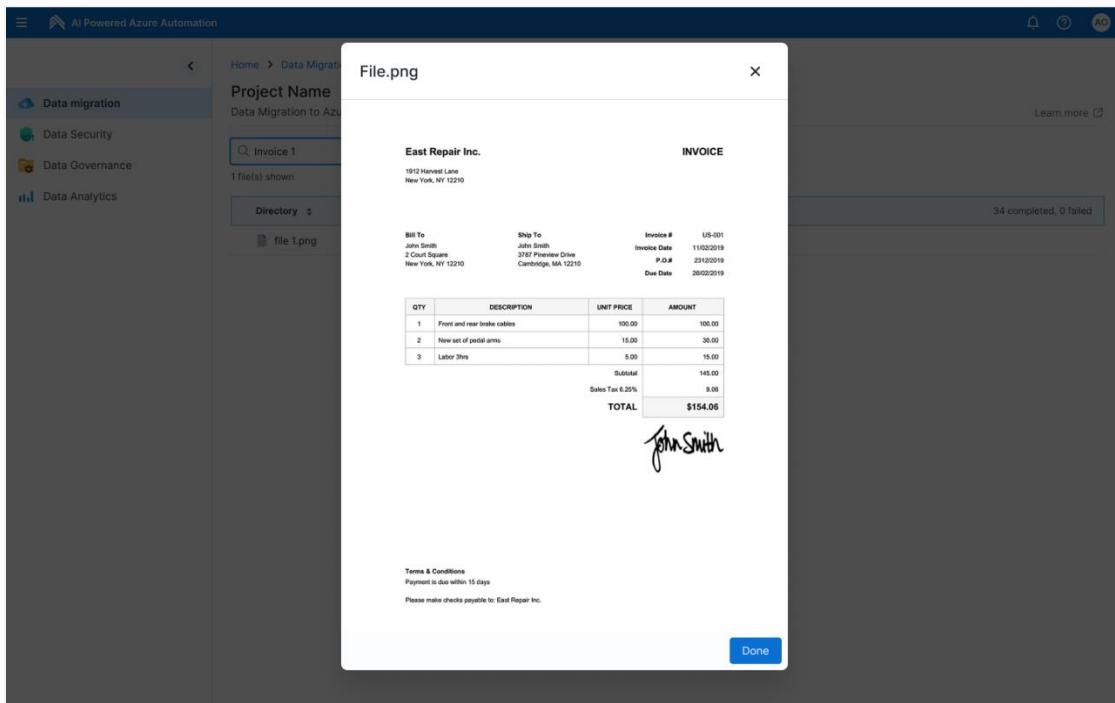


Image 5.43: Storage Blob – failure

10. Access files using file explorer

The screenshot shows the 'File explorer' section of the Azure Automation portal. The main heading is 'Project Name' with the sub-section 'Data Migration to Azure Synapse'. A search bar at the top contains 'Search directories, folders or files'. Below it, a message says '5 out of 5 directories shown'. A table displays the file structure: 'Directory' column (e.g., 'Example directory') and 'Content' column (e.g., '3 file(s)'). One entry shows a folder named 'Example folder' containing two files: 'file 1.png' and 'file 2.png'. The total status at the top right is '34 completed, 0 failed'.

Image 5.44: Storage Blob - file explorer



11.2 Data Governance

11.2.1 Data Estate Scan

1. Click **Create new project**.
2. Provide Project name and source details – you can choose either Azure Synapse workspace and/or data lake storage.

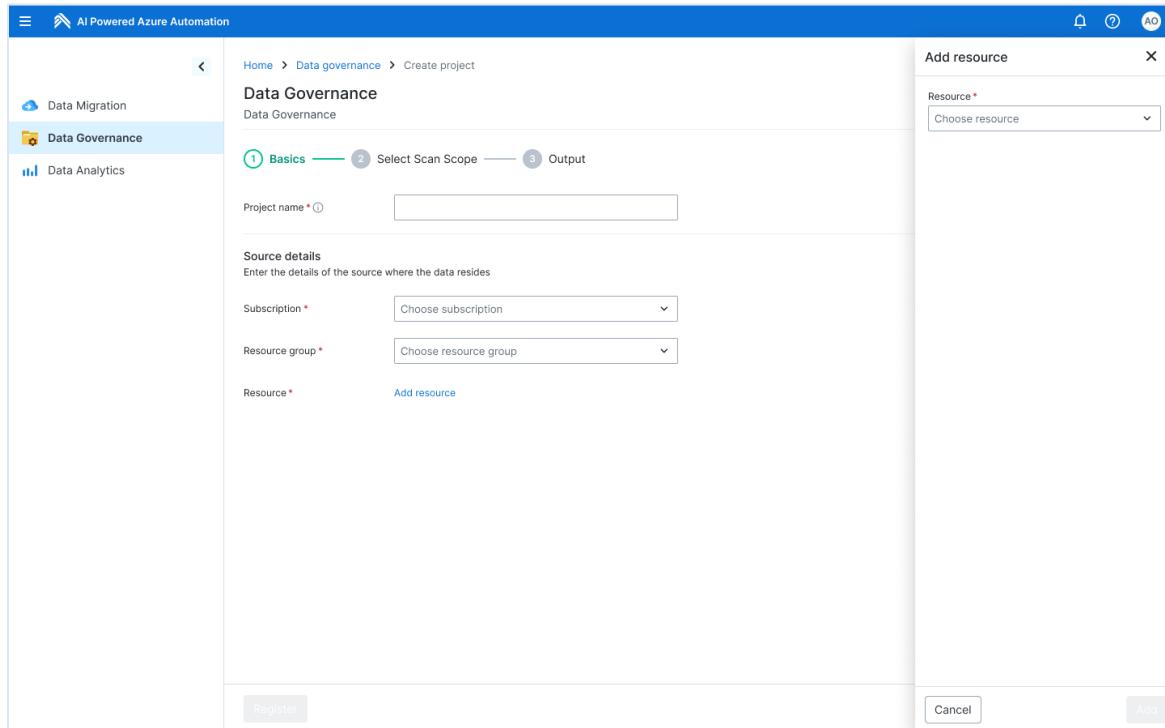


Image 5.45: Data governance - select source



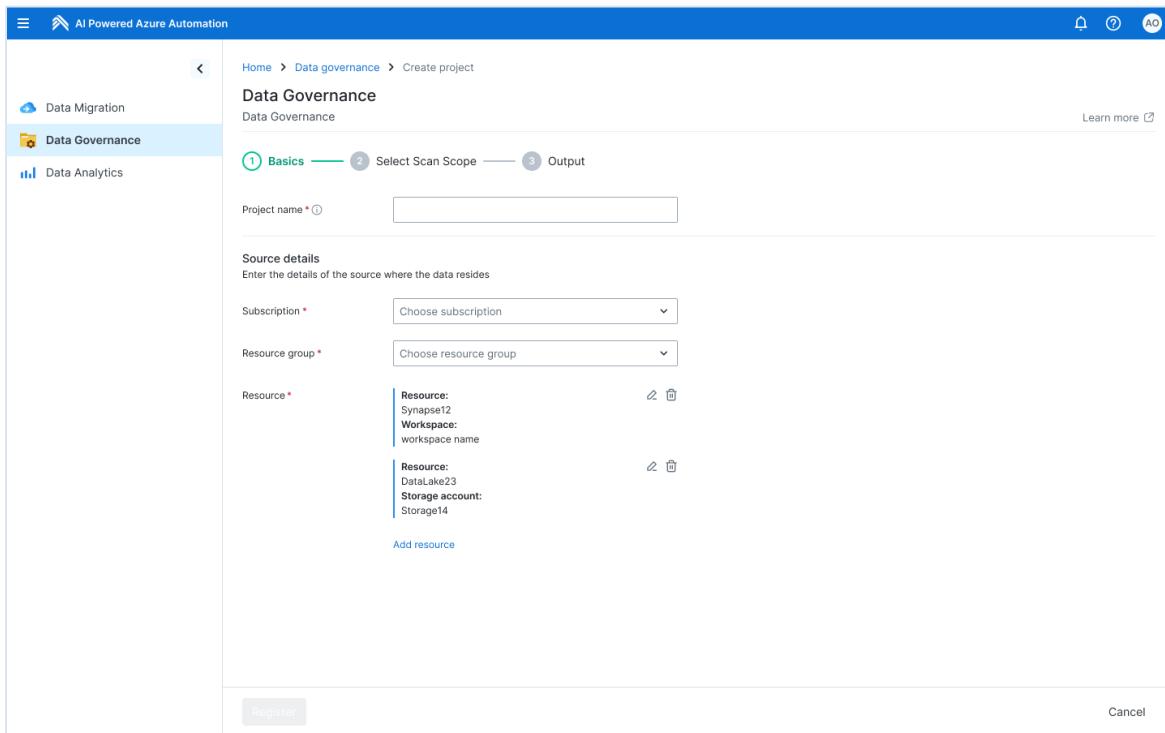


Image 5.46: Data governance - select source

3. Click **Register**.
4. Select data estates that need to be scanned.



The screenshot shows the 'Data Governance' section of the Azure portal. The left sidebar has 'Data Migration', 'Data Governance' (which is selected and highlighted in blue), and 'Data Analytics'. The main area shows the 'Create project' flow: 'Basics' (step 1, completed with a green checkmark), 'Select Scan Scope' (step 2, currently active with a red circle and number 2), and 'Output' (step 3). The 'Select Scan Scope' step is titled 'Synapse workspace' and contains a search bar ('Search databases') and a list of 5 databases: 'Dedicated SQL Pool' and 'Serverless SQL Pool', each with 3 server(s). Below this is the 'Data Lake' section, which also has a search bar ('Search directories, folders or files') and a list of 5 example directories, each containing 3 containers(s). At the bottom are 'Back', 'Scan' (which is highlighted in blue), and 'Cancel' buttons.

Image 5.47: Data governance - select scope

5. Click **Scan**.
6. Upon successful completion, results of the scan will be displayed.



The screenshot shows the 'Data Governance' step in the 'Create project' wizard. The left sidebar has 'Data Migration', 'Data Governance' (selected), and 'Data Analytics'. The main area shows 'Synapse workspace' and 'Date lake' sections with scanning status. A 'Finish' button is at the bottom.

Image 5.48: Data governance – output

7. Click Finish or View in A3S BI dashboard.

The screenshot shows the 'Project Name' step in the 'Create project' wizard. The left sidebar has 'Data Migration', 'Data Governance' (selected), and 'Data Analytics'. The main area shows 'Project summary' (Subscription name: Dynapt Enterprize Azure, Resource group: AIP-WITH-SYNAPSE, Resource: aipsynapsqlpool, aipsynapsqlpool) and 'Synapse workspace' and 'Date lake' sections with scanning status. Buttons for 'View in A3S BI dashboard' and 'Start scan' are at the bottom.

Image 5.49: Data governance - project summary

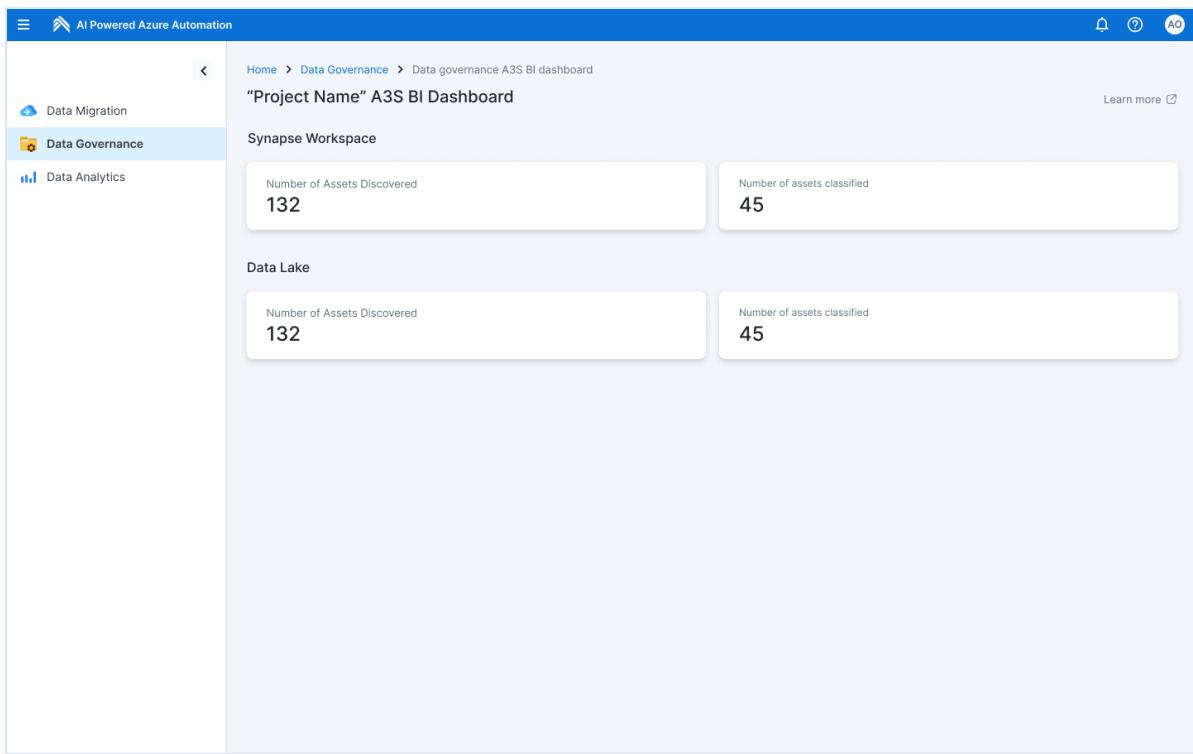


Image 5.50: Data governance – A3S dashboard



11.3 Data analytics

Following analytics use cases are part of this offering:

1. Demand forecasting.
2. Form Recognition.
3. Sales Predictions.
4. Revenue Predictions.
5. Knowledge Mining.
6. Modern Finance.
7. Product Seasonality Classifier.
8. Text Analytics.
9. Topic Modeling.
10. Image Classification.

11.3.1 Demand Forecasting

1. Click **Data analytics** in the left menu.
2. Click **Create new project**.

The screenshot shows the 'Demand Forecasting' project creation screen in the Azure AI Powered Automation interface. The left sidebar has 'Data Analytics' selected. The main area shows the 'Basics' step of a four-step process. The 'Source details' section asks for source information, with fields for 'Subscription', 'Resource group', and 'Resource'. A 'NEXT' button is at the bottom left, and a 'Cancel' button is at the bottom right.

Image 5.51: Demand forecasting - source details

Note – screens not available.

Image 5.52: Demand forecasting - source details

Image 5.53: Demand forecasting - source details

Image 5.54: Demand forecasting - source details



Image 5.55: Demand forecasting - source details

Image 5.56: Demand forecasting - source details



11.3.2 Form Recognition

1. Click **Data analytics** -> **Create project** -> **Form recognition**.
2. Fill **Project name** and **Source details** (connection properties).

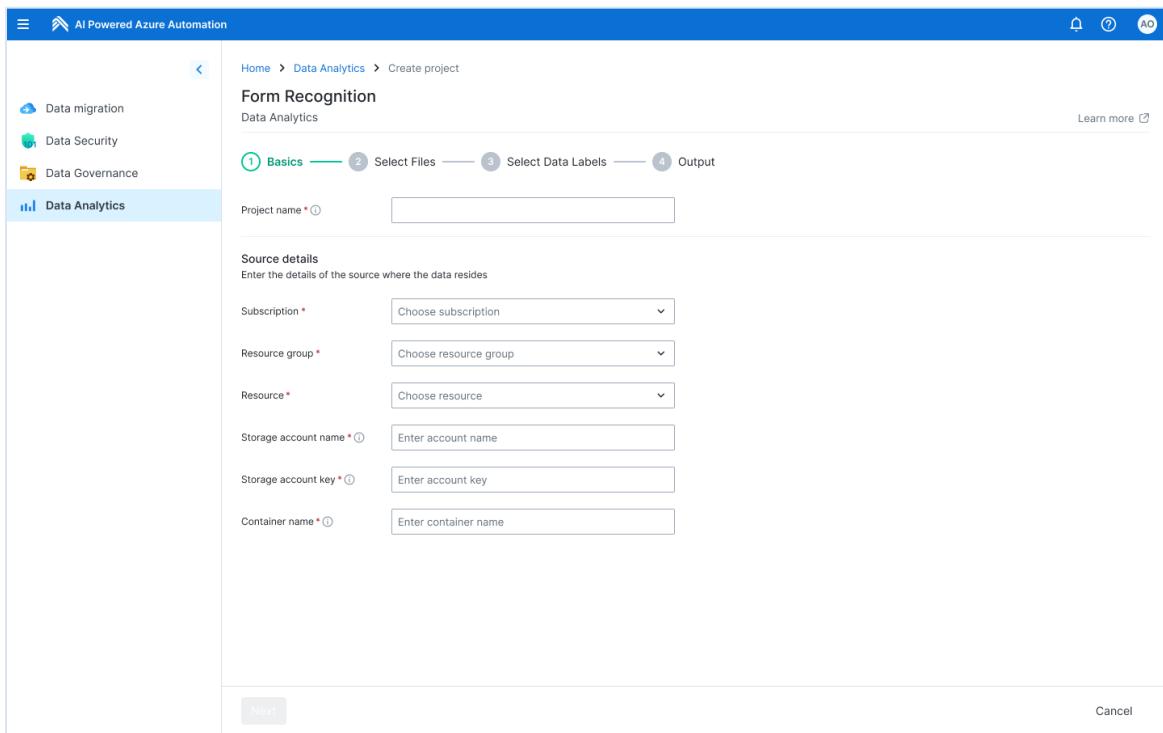


Image 5.57: Form recognition - source details

3. Click **Next**.
4. Select **document type**.



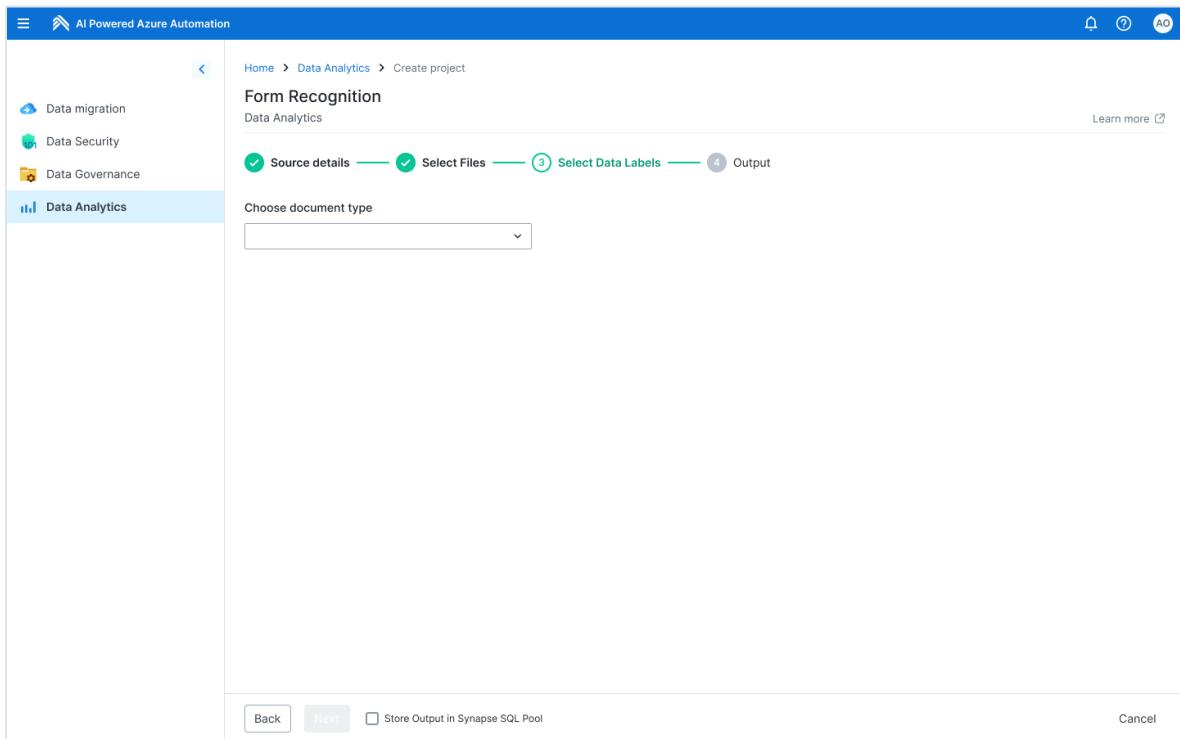


Image 5.58: Form recognition – document type

5. Click **Next**.
6. Select **Data Labels** and click **Next**.



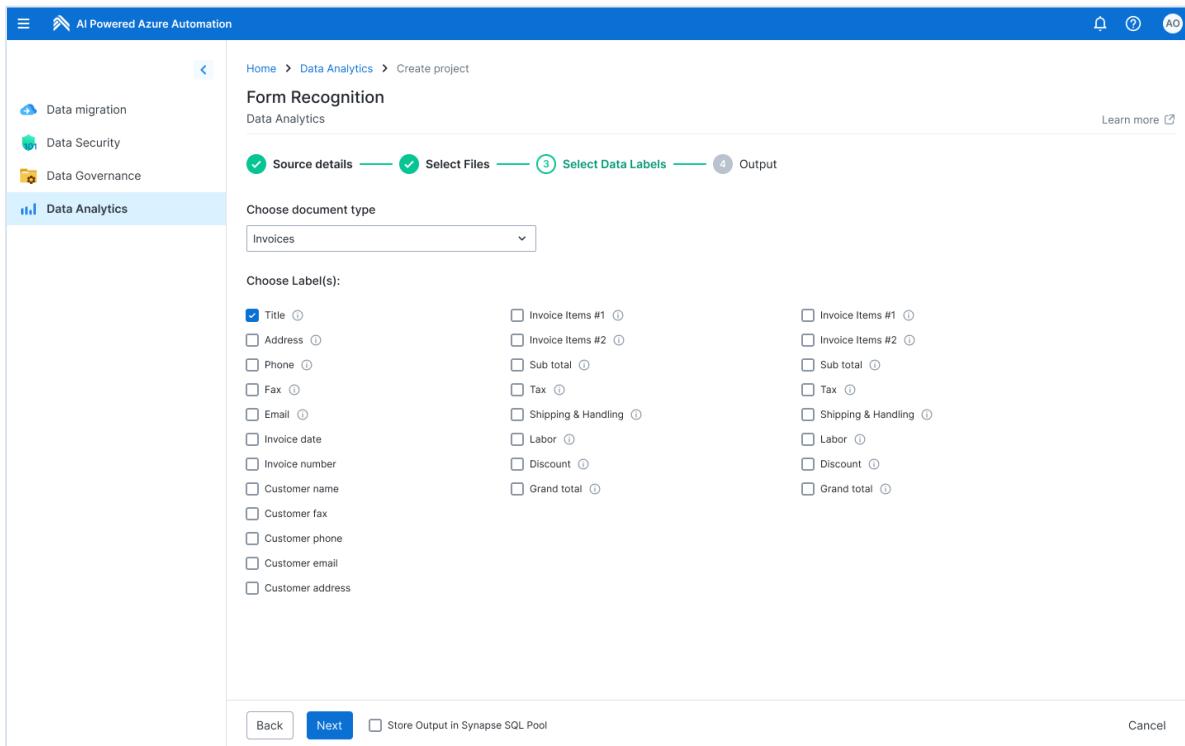


Image 5.59: Form recognition - select labels

7. Click Finish.

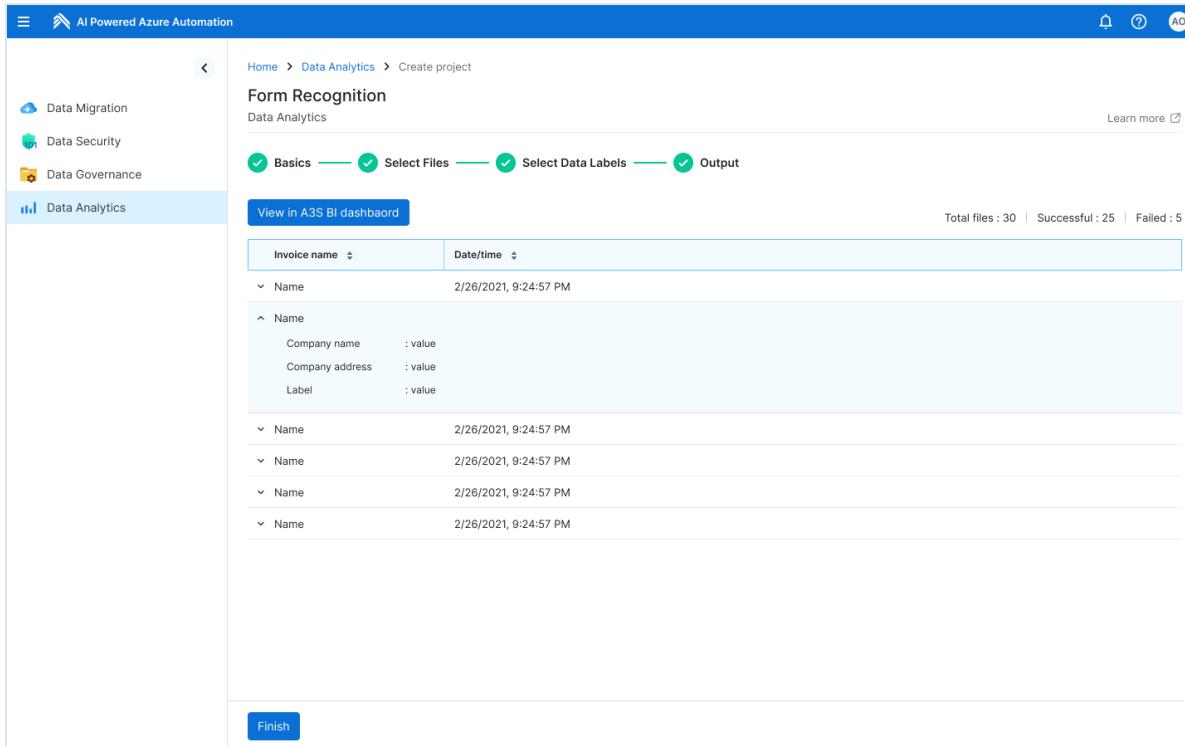


Image 5.60: Form recognition – output



8. Click View in A3S BI Dashboard.

The screenshot shows a BI dashboard titled "Project Name" A3S BI Dashboard. The left sidebar has categories: Data Migration, Data Security, Data Governance, and Data Analytics (which is selected). The top navigation bar shows "Home > Data Migration > "Project name" A3S BI Dashboard". There are two tabs: "Card View" (selected) and "Table View". A dropdown menu for "Invoice name" is open, listing "Invoice", "Invoice 2", "Invoice 3", and other options. The main area contains tiles with data: Phone (000-000-0000), Email (name@gmail.com), Sub total (\$6000), Labor (\$345), Discount (-\$100), and Grand total (\$10000).

Image 5.61: Form recognition - BI dashboard (tile view)



Image 5.62: Form recognition - BI dashboard (table view)

11.3.3 Sales Predictions

1. Click **Data analytics** -> **Create project** -> **Sales Predictions**.

AI Powered Azure Automation

Home > Data Analytics

Data Analytics Projects

Data Analytics

Learn more 

Search projects

5 out of 5 projects shown

Project name	Use case	Date created
aipdms	Demand Forecasting	1/15/2021 - 11:00 am
aipdms	Demand Forecasting	1/15/2021 - 11:00 am
aipdms	Demand Forecasting	1/15/2021 - 11:00 am
aipdms	Demand Forecasting	1/15/2021 - 11:00 am
aipdms	Demand Forecasting	1/15/2021 - 11:00 am

Select use case

X



Demand Forecasting



Form Recognition



ML Predictions



Sales Predictions



Text Analytics



Topic Modeling



Image Classification

+ Create new project

Image 5.63: Sales Predictions – use case

2. Provide **Project name** and **Source Details** to connect to the source system.

The screenshot shows the 'Create project' wizard for 'Sales Predictions' under 'Data Analytics'. The left sidebar lists 'Data Migration', 'Data Security', 'Data Governance', and 'Data Analytics' (which is selected). The main area has a breadcrumb trail: Home > Data Analytics > Create project. A progress bar at the top indicates steps 1 (Basics), 2 (Prepare Data), 3 (Select Analysis Type), and 4 (Output). Step 1 is highlighted in green. The 'Project name' field is empty. Below it, the 'Source details' section asks for 'Subscription', 'Resource group', 'Resource', 'Username', and 'Password', each with a dropdown menu. At the bottom are 'Next' and 'Cancel' buttons.

Image 5.64: Sales prediction - source details

3. Prepare data by **selecting Table, Prediction column, Split column**.



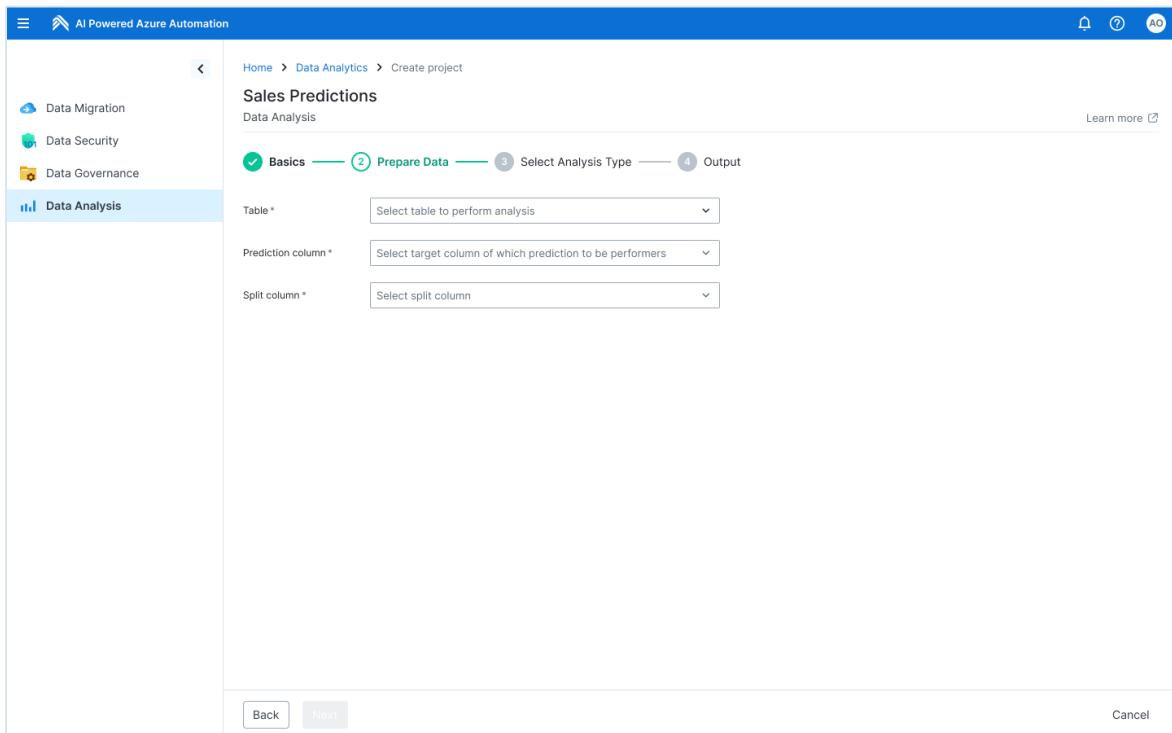


Image 5.65: Sales prediction - prepare data

4. Select analysis type.



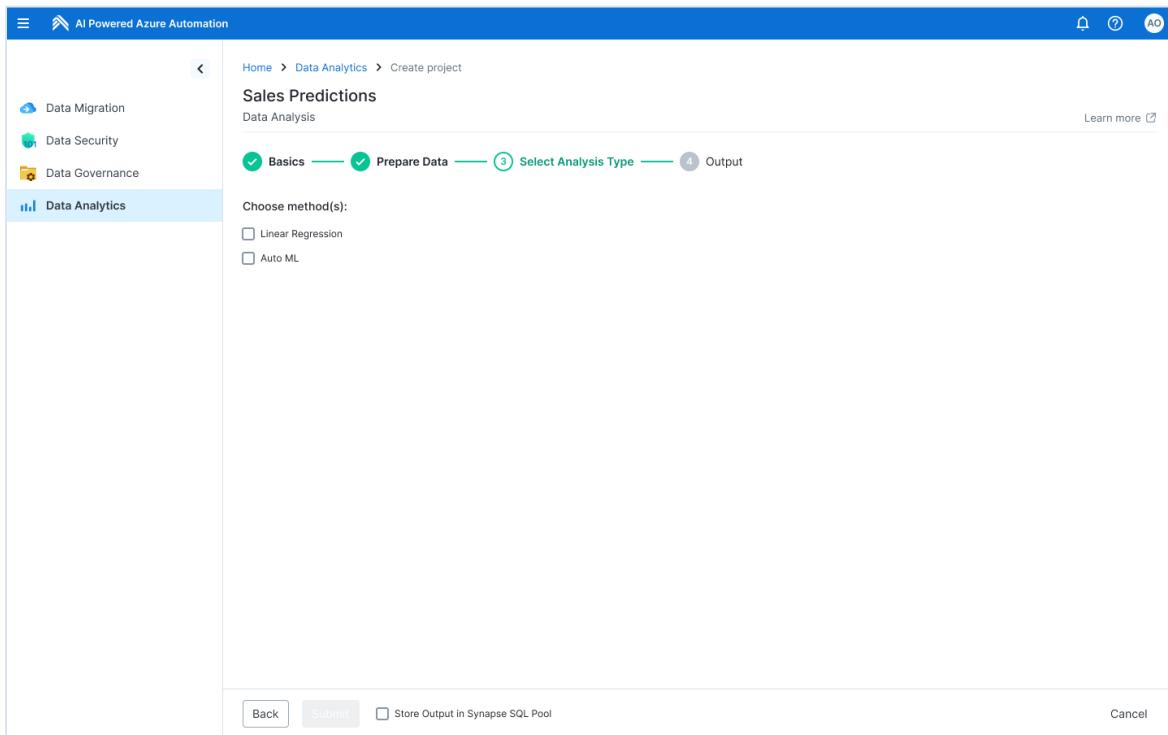


Image 5.66: Sales predictions - analysis method

5. Click **Submit**.
6. Click **View in A3S BI dashboard**.



The screenshot shows the 'Sales Predictions' project creation process in the AI Powered Azure Automation interface. The top navigation bar includes 'Home', 'Data Analytics', 'Create project', a bell icon, a question mark icon, and 'AO'. On the left, a sidebar lists 'Data Migration', 'Data Security', 'Data Governance', and 'Data Analytics' (which is selected). The main content area shows a progress bar with four steps: 'Basics' (completed), 'Prepare Data' (in progress), 'Select Analysis Type' (in progress), and 'Output' (in progress). A blue button labeled 'View in A3S BI dashboard' is visible. Below the progress bar is a table with columns 'Col 1', 'Col 2', 'Col 3', and 'Prediction'. The table has six rows, each containing 'Name' in all columns. At the bottom is a 'Finish' button.

Image 5.67: Sales predictions - output

The screenshot shows the 'Sales Predictions A3S BI Dashboard' interface. The top navigation bar includes 'Home', 'Data Analytics', 'Sales predictions A3S BI dashboard', a bell icon, a question mark icon, and 'AO'. On the left, a sidebar lists 'Data Migration', 'Data Security', 'Data Governance', and 'Data Analytics'. The main content area features three summary cards: 'Date range' (Feb 2020 - Oct 2020), 'Total Invoices' (345), and 'Total Expenses' (\$ 45,000). Below these is a line chart titled 'Expenses per month' showing monthly expenses from February to September 2020. The Y-axis represents 'Expenses' from \$0 to \$20,000, and the X-axis represents the months from Feb 2020 to Sep 2020. The chart shows a general upward trend with a peak in May and another rise towards October.

Image 5.68: Sales predictions - BI dashboard

7. View project summary by clicking **Finish** on the Output page.

The screenshot shows the 'Project Name' section for 'Data Analytics'. It displays the following details:

- Use case: Sales predictions
- Subscription name: Dynapt Enterprise Azure
- Resource group: AIP-WITH-SYNAPSE
- Resource: aipsynapsqlpool
- Table name: Table
- Column selected: Column
- Split column: Column
- Created on (UTC): 2/26/2021, 9:24:57 PM

A table below lists five rows of data, each with three columns labeled 'Image name', 'Form data', and 'File type'. All three columns in each row contain the word 'Name'.

Image name	Form data	File type
Name	Name	Name

[View in A3S BI dashboard](#)

Image 5.69: Sales predictions - project summary

8. In case of error/failure, Failure message will be displayed.



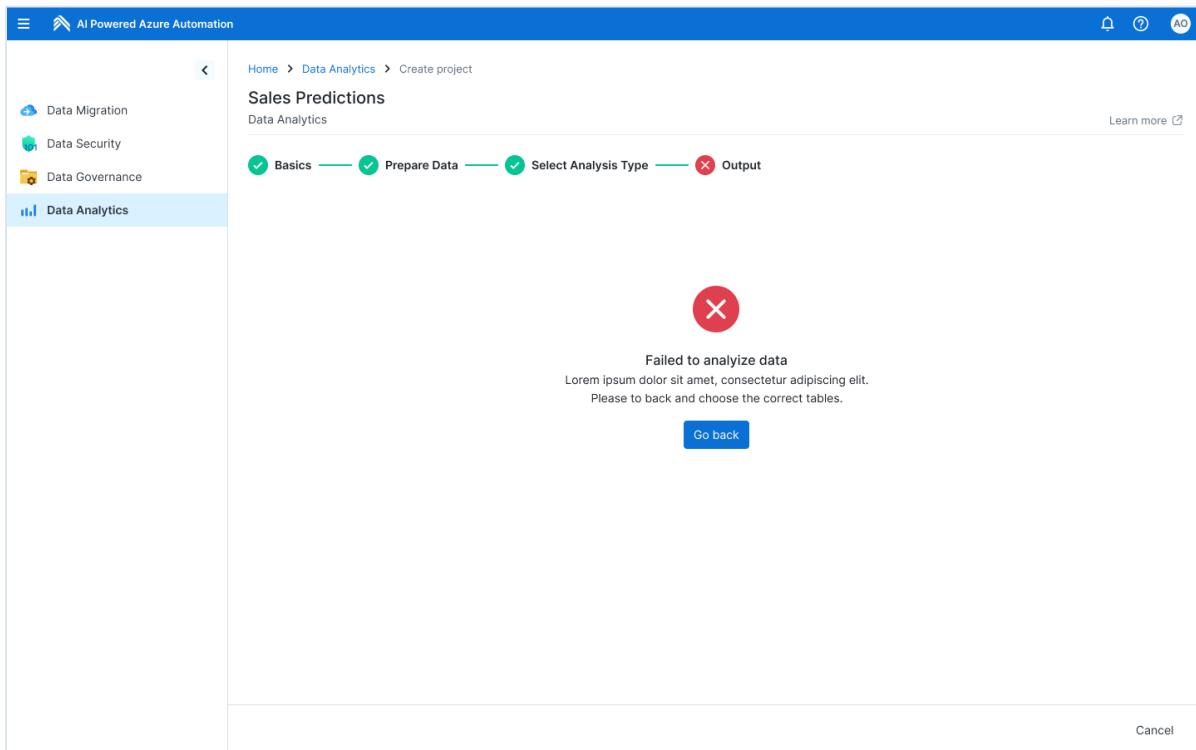


Image 5.70: Sales predictions - failure

11.3.4 Revenue Prediction

1. Click **Data analytics** -> **Create project** -> **Revenue Predictions**.



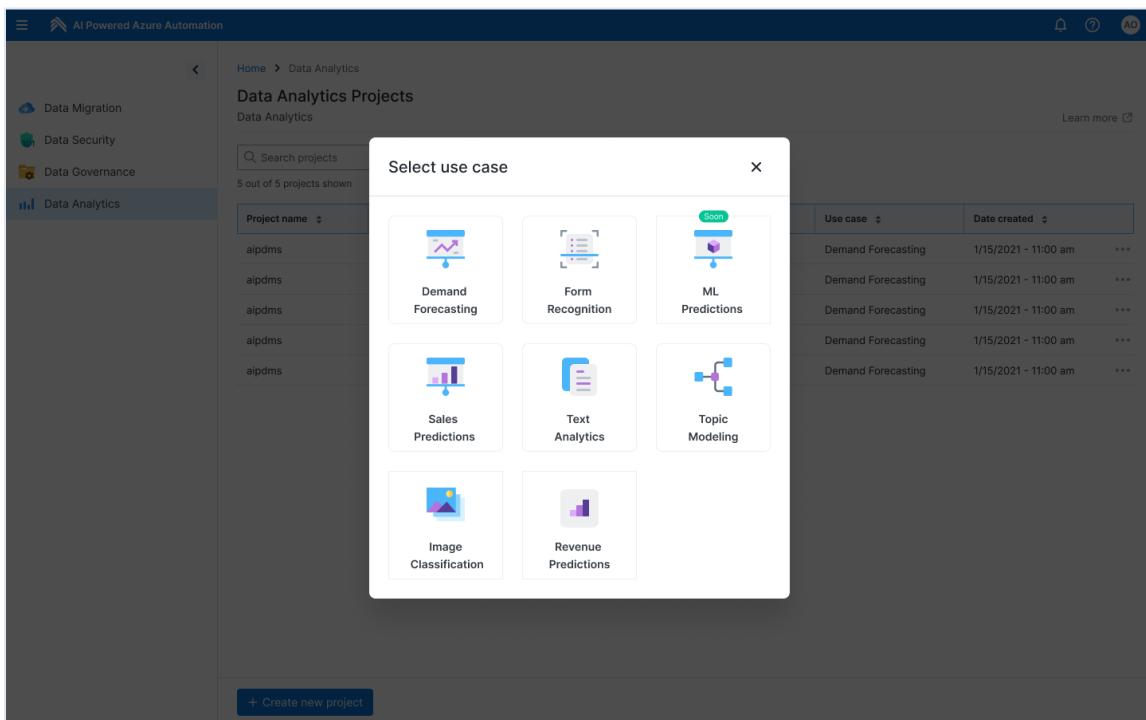


Image 5.71: Revenue prediction - use case

2. Provide source details to connect to source system.

Image 5.72: Revenue prediction - source details

3. Prepare data by selecting **Table**, **Prediction column**, and **Split column**.

The screenshot shows the 'Revenue Predictions' setup page in the AI Powered Azure Automation interface. The left sidebar has categories: Data Migration, Data Security, Data Governance, and Data Analysis (which is selected). The main area shows the 'Prepare Data' step of a four-step process. It includes fields for 'Table *', 'Prediction column *', and 'Split column *'. Buttons at the bottom include 'Back', 'Next', and 'Cancel'.

Basics (1) Prepare Data (2) Select Analysis Type (3) Output (4)

Table * Select table to perform analysis

Prediction column * Select target column of which prediction to be performers

Split column * Select split column

Back Next Cancel

Image 5.73: Revenue prediction - prepare data

4. Choose **method(s)**.



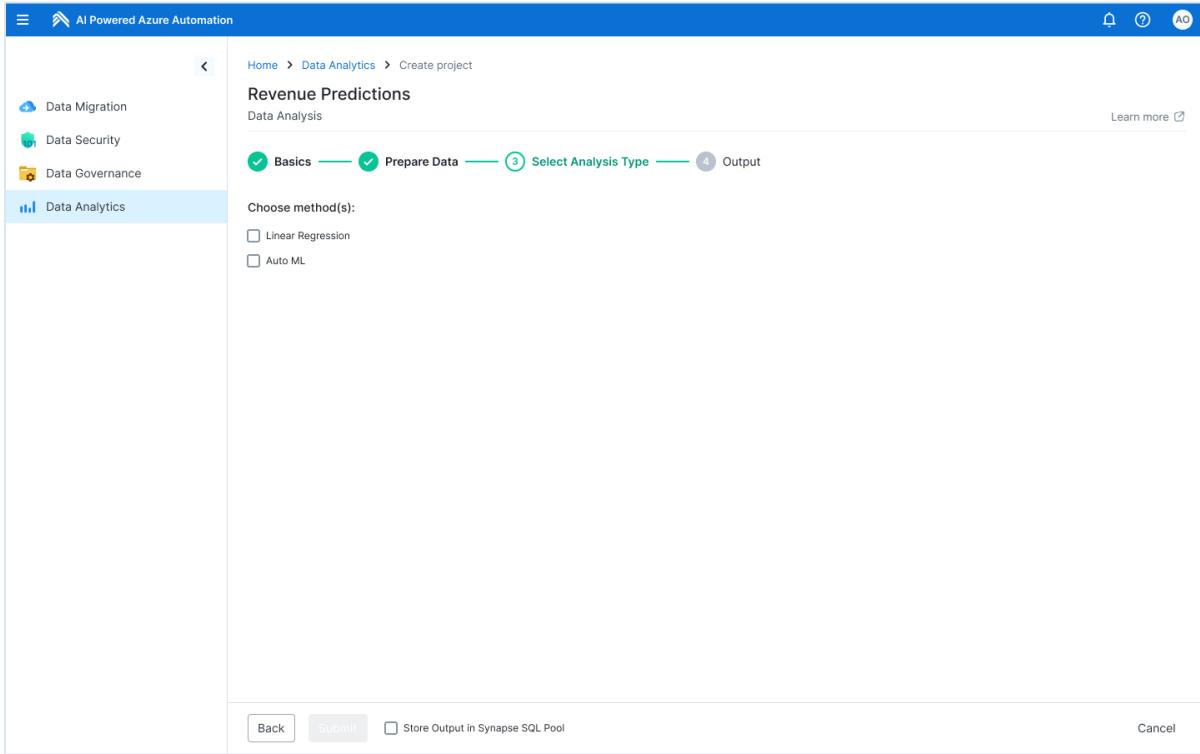


Image 5.74: Revenue prediction - analysis method

5. Click Finish or View in A3S BI Dashboard.

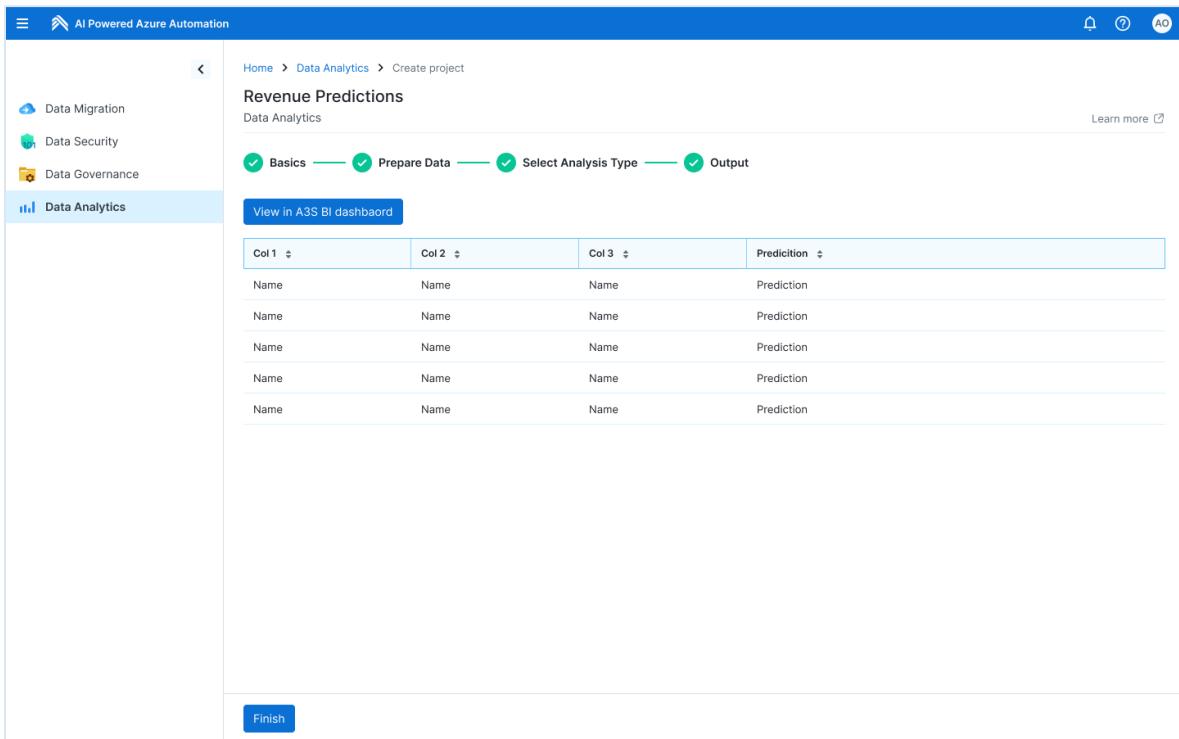


Image 5.75: Revenue prediction - output

6. Project summary page.

The screenshot shows the 'Project summary' page for a project named 'Example Project'. The left sidebar has a 'Data Analytics' tab selected. The main content area displays project details and a table of data. The table has columns for 'Image name', 'Form data', and 'File type'. All three columns contain the word 'Name'.

Image name	Form data	File type
Name	Name	Name

[View in A3S BI dashboard](#)

Image 5.76: Revenue prediction - project summary

7. Output in the A3S BI Dashboard.

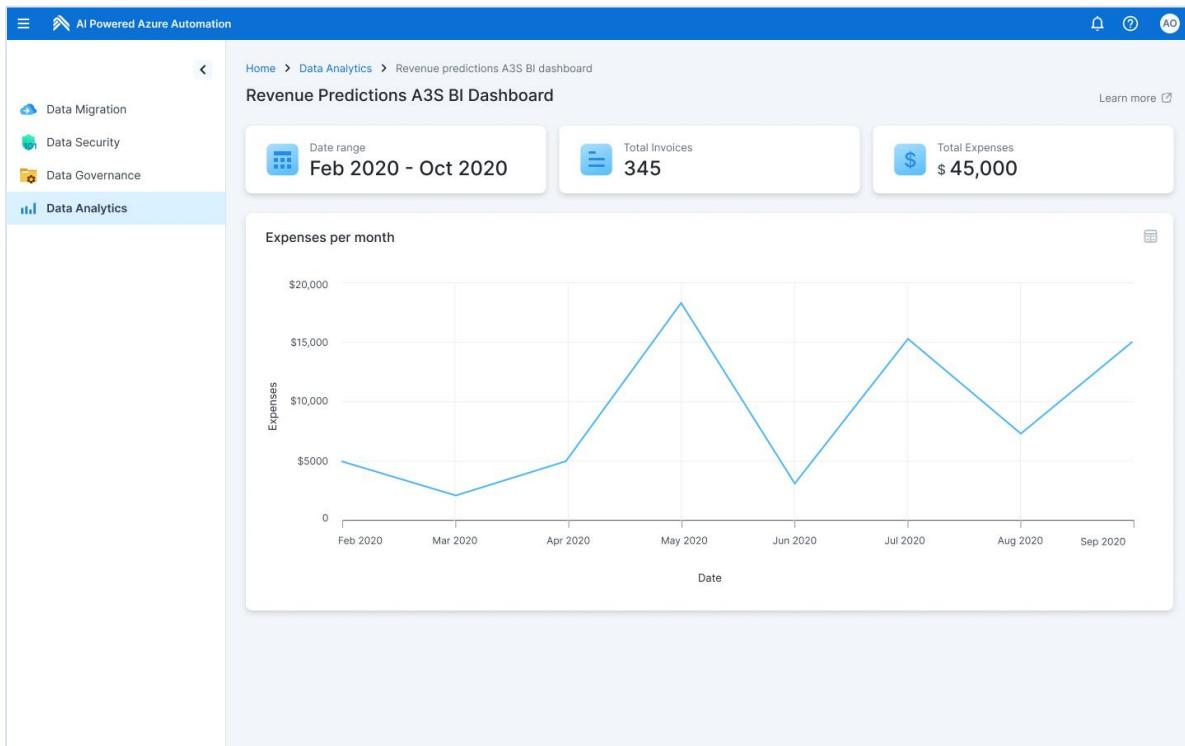


Image 5.77: Revenue prediction - BI dashboard

8. In case of error/failure, Failure message will be displayed.

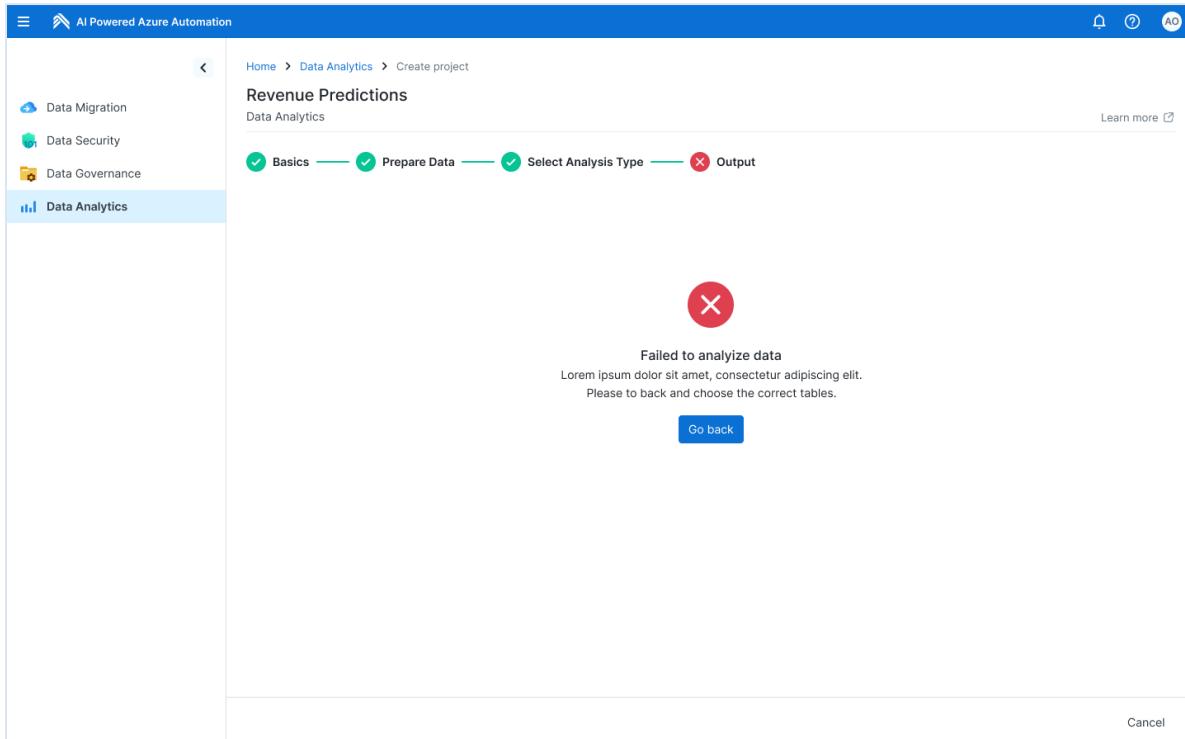


Image 5.78: Revenue prediction - failure





11.3.5 Product Seasonality Classifier

1. Click Data analytics -> Create project -> Seasonality classifier.

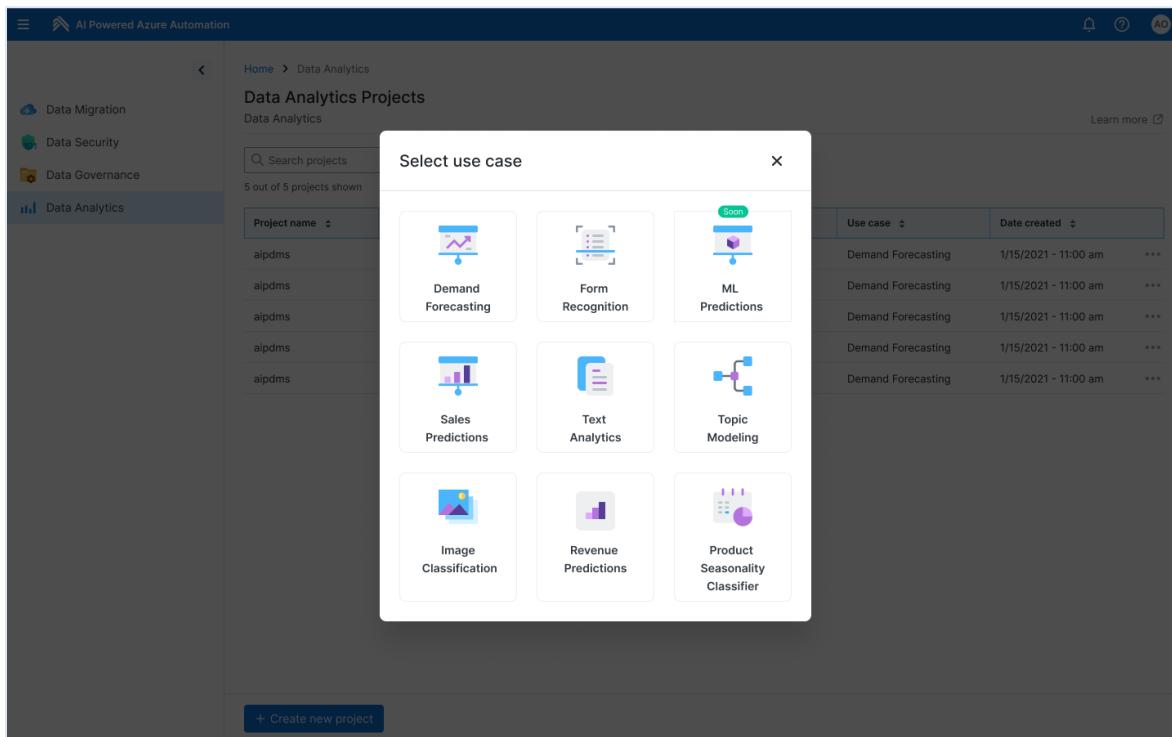


Image 5.79: Seasonality classifier - use case

2. Fill in source details to connect to the data source.



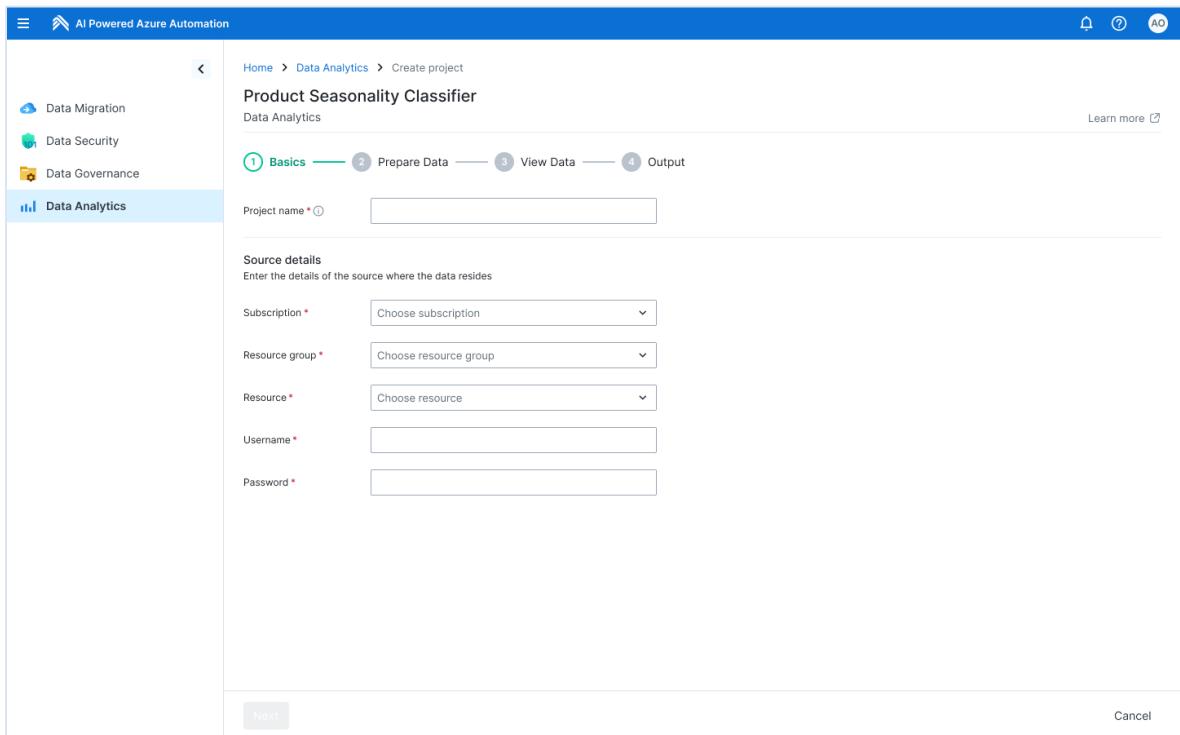


Image 5.80: Seasonality classifier – source detail

3. Prepare data by selecting **Table** and **Split column**, and **Data range**.

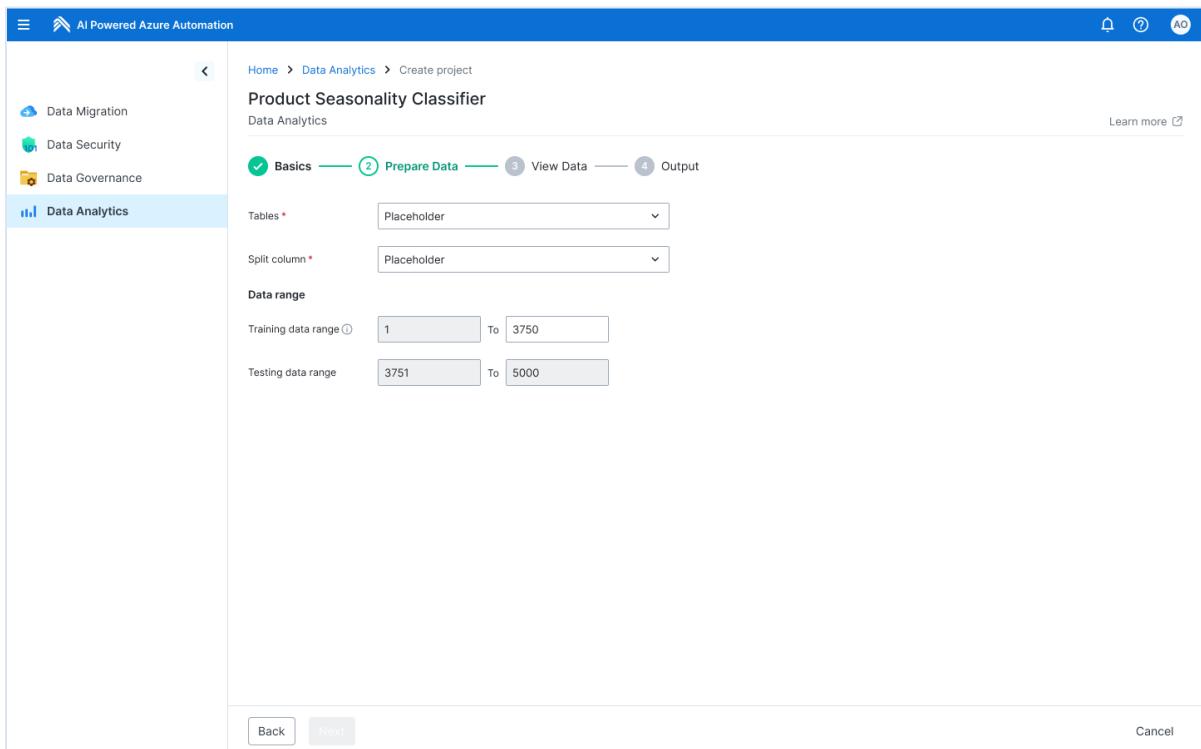


Image 5.81: Seasonality classifier - prepare data

4. Verify the training data.

The screenshot shows the 'Product Seasonality Classifier' project in the 'Data Analytics' section of the AI Powered Azure Automation interface. The 'Training data' section displays a table with 5 records, all of which are labeled 'Record name' and have a 'Sold on' date of 2/26/2021 and an 'Items sold' count of 5232. The 'Testing data' section shows a similar table with 5 records. Navigation buttons for 'Back' and 'Next' are located at the bottom of the page.

Name	Sold on	Items sold
Record name	2/26/2021	5232

Name	Sold on	Items sold
Record name	2/26/2021	5232

Image 5.82: Seasonality classifier - training data

5. Click **Finish** or **View in A3S BI Dashboard**.



The screenshot shows the 'Data Analytics' section of the AI Powered Azure Automation portal. The 'Product Seasonality Classifier' project is selected. The 'Output' tab is active, indicated by a green checkmark. Below it, a table displays the classifier's predictions for various products:

Product ID	Season
Product name	Summer

A 'Finish' button is located at the bottom of the table.

Image 5.83: Seasonality classifier - output

6. Project Summary page.

The screenshot shows the 'Data Analytics' section of the AI Powered Azure Automation portal. The 'Example Project' project is selected. The 'Project summary' tab is active, indicated by a green checkmark. Below it, a table displays project details:

Use case	: Revenue predictions	Table name	: Table
Subscription name	: Dynapt Enterprise Azure	Column selected	: Column
Resource group	: AIP-WITH-SYNAPSE	Split column	: Column
Resource	: aipsynapsqlpool	Created on (UTC)	: 2/26/2021, 9:24:57 PM

A 'View in A3S BI dashboard' button is located at the bottom of the table.

Image 5.84: Seasonality classifier - project summary



7. View in A3S BI Dashboard.

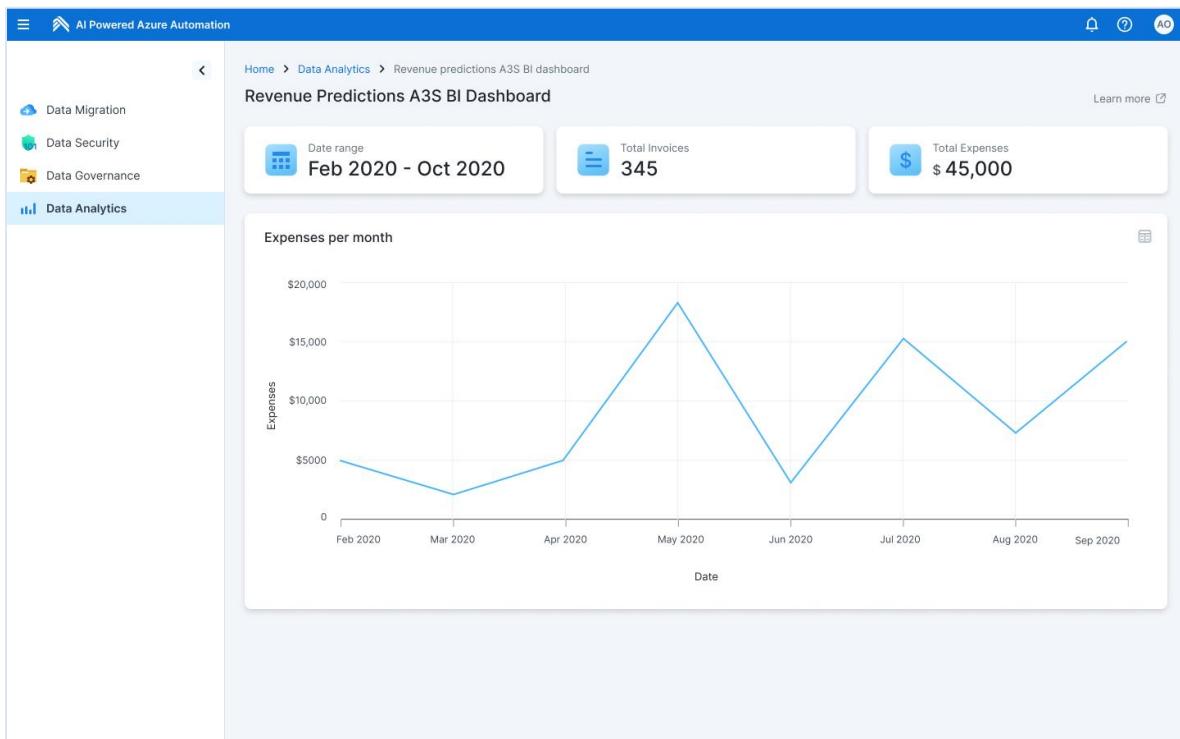


Image 5.85: Seasonality classifier - BI dashboard

8. In case of error/failure, Failure message will be displayed.

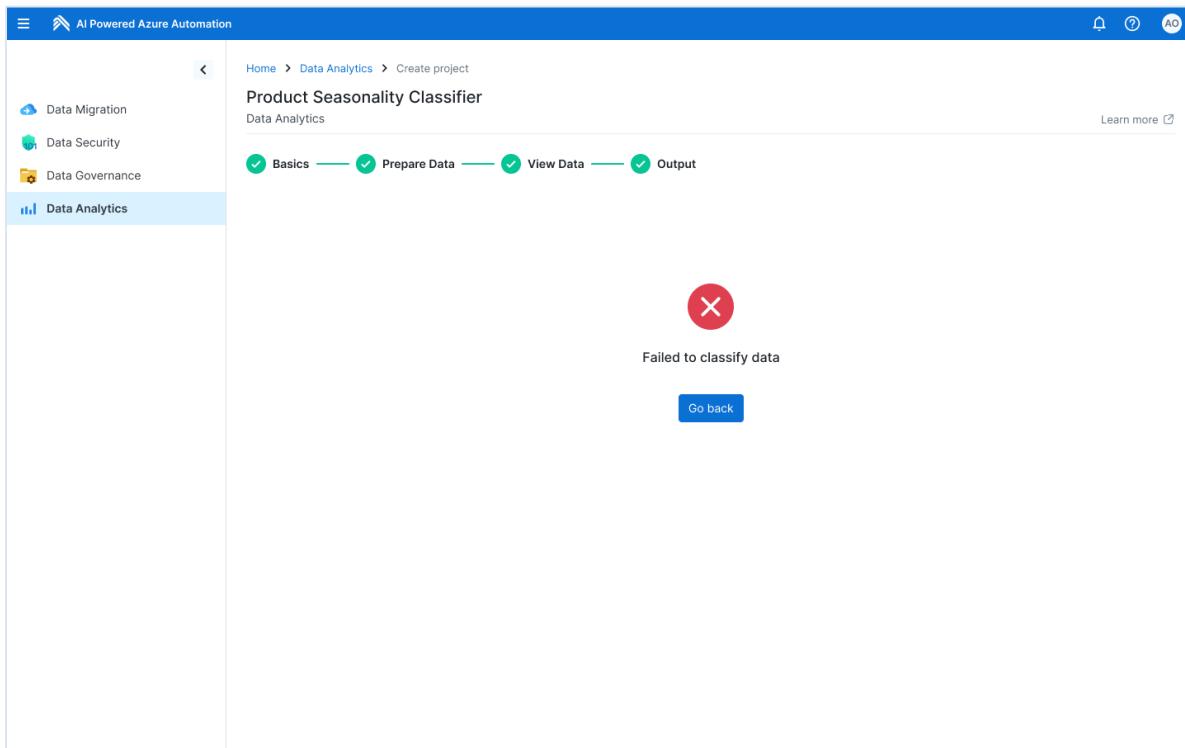


Image 5.86: Seasonality classifier - failure



11.3.6 Knowledge Mining

1. Click Data analytics -> Create new project -> Knowledge mining.

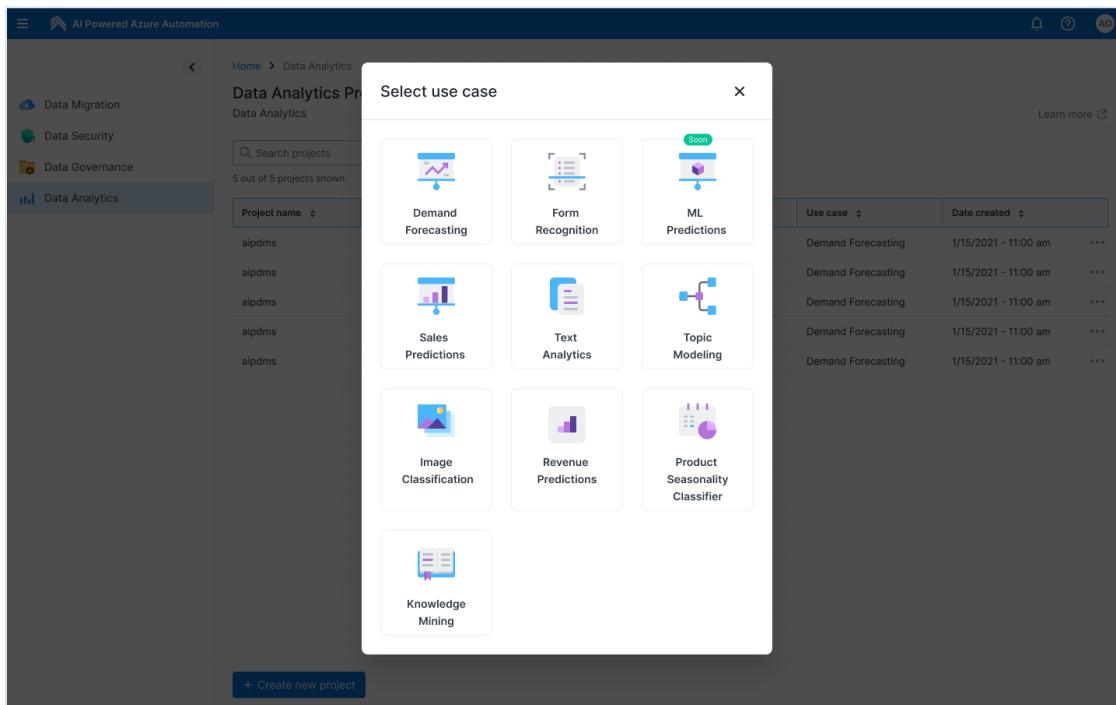


Image 5.87: Knowledge mining - use case

2. Fill in source details to connect to the data source.



AI Powered Azure Automation

Home > Data Analytics > Create project

Knowledge Mining

Data Analytics

Learn more

Basics **Select labels** **Smart Search**

Project name *

Source details
Enter the details of the source where the data resides

Subscription *

Resource group *

ADLS/Storage Account *

SAS Token/Access Key *

Next **Cancel**

Image 5.88: Knowledge mining - source details

3. Select tables.

AI Powered Azure Automation

Home > Data Analytics > Create project

Knowledge Mining

Data Analytics

Learn more

Basics **Select labels** **Smart Search**

Select labels for knowledge mining

Select labels *

All

Label name

Add other labels

Enter the label name then hit enter to add label.

Next **Cancel**

Image 5.89: Knowledge mining - select table



4. Start the search.

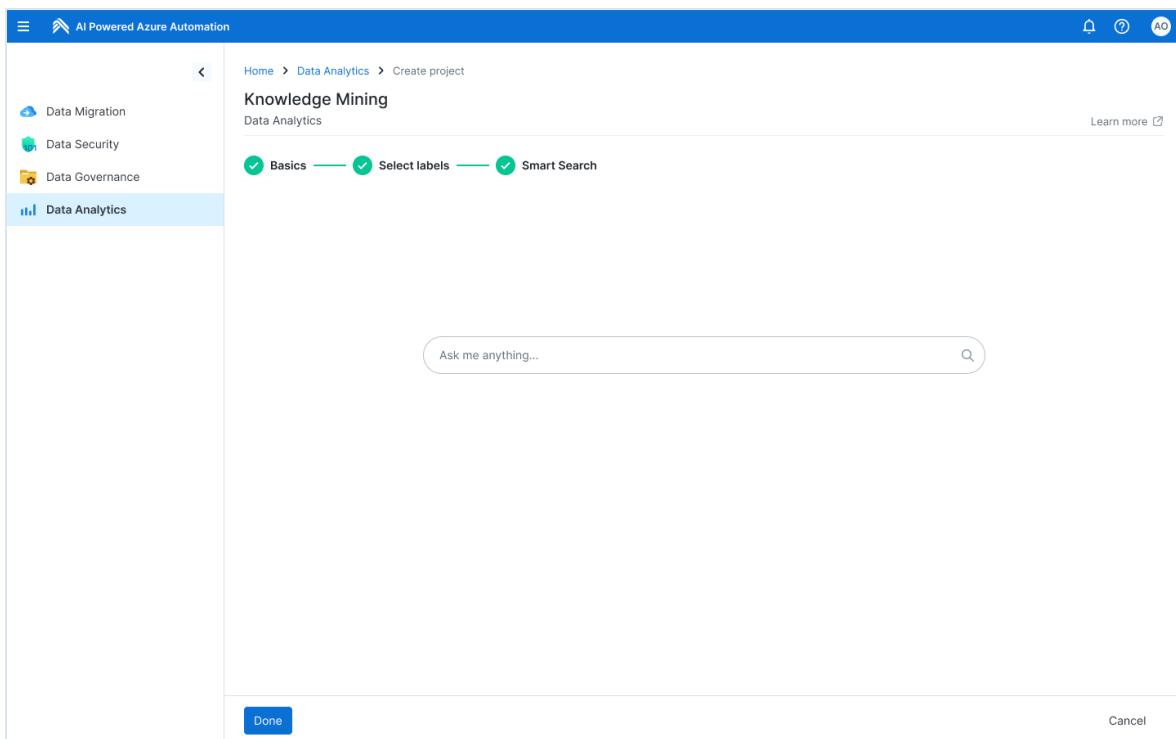


Image 5.90: Knowledge mining – smart search

5. See result of the search query.



The screenshot shows the 'Data Analytics' section of the AI Powered Azure Automation interface. On the left, there's a sidebar with icons for Data Migration, Data Security, Data Governance, and Data Analytics (which is selected). The main area shows a project summary for 'Example Project' with details like 'Project Name: Data Analytics', 'Use case: Knowledge mining', 'Subscription: Dynapt Enterprise Azure', 'Resource group: AIP-WITH-SYNAPSE', and 'Resource: aipsynapsqlpool'. Below this is a search bar with 'Data Migration' and '22 result(s)'. The results are listed in a grid:

- Example title 1**: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque vivamus amet, amet iaculis sapien. Ornare auctor tortor enim, turpis sagittis in ornare semper amet. Sed nisl purus amet, ac dapibus sed. [Data migrat](#) tor. Lorem ipsum dolor sit amet, consectetur adipiscin...
- Example title 1**: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque vivamus amet, amet iaculis sapien. Ornare auctor tortor enim, turpis sagittis in ornare semper amet. Sed nisl purus amet, ac dapibus sed. [Data migrat](#) tor. Lorem ipsum dolor sit amet, consectetur adipiscin...
- Example title 1**: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque vivamus amet, amet iaculis sapien. Ornare auctor tortor enim, turpis sagittis in ornare semper amet. Sed nisl purus amet, ac dapibus sed. [Data migrat](#)
- Example title 1**: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque vivamus amet, amet iaculis sapien. Ornare auctor tortor enim, turpis sagittis in ornare semper amet. Sed nisl purus amet, ac dapibus sed.

Each result has a 'Click next' button. In the bottom right corner of the results area, there's a 'Done' button.

Image 5.91: Knowledge mining - search result

6. Project summary page.



The screenshot shows the 'AI Powered Azure Automation' interface. On the left, there's a sidebar with icons for Data Migration, Data Security, Data Governance, and Data Analytics (which is selected). The main area displays a 'Project summary' for 'Example Project'. The project details are as follows:

Project Name	
Data Analytics	
Project summary	
Use case	: Knowledge mining
Subscription	: Dynapt Enterprise Azure
Resource group	: AIP-WITH-SYNAPSE
Resource	: aipsynapseqlpool

On the right, there's a 'Learn more' link with a help icon. At the bottom, there's a search bar with the placeholder 'Ask me anything...' and a magnifying glass icon.

Image 5.92: Knowledge mining - project summary



11.3.7 Modern Finance

1. Click Data analytics -> Create new project -> Modern Finance.

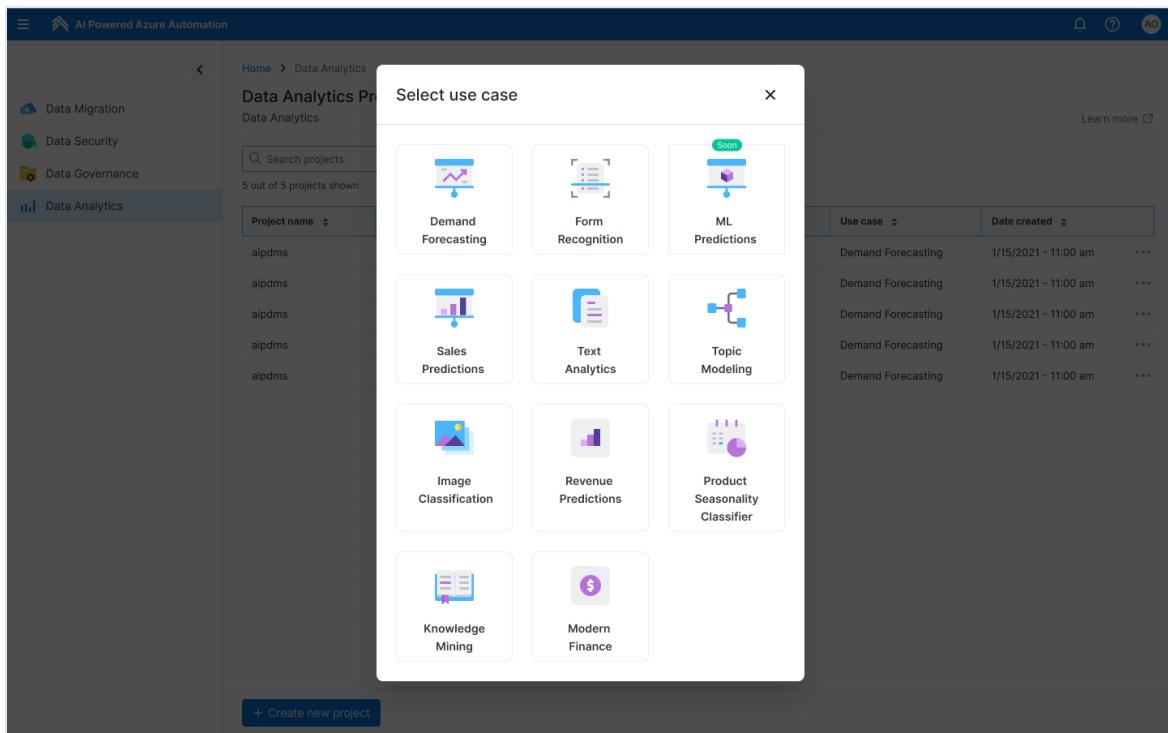


Image 5.93: Modern finance - use case

2. Fill source details to connect the data source.



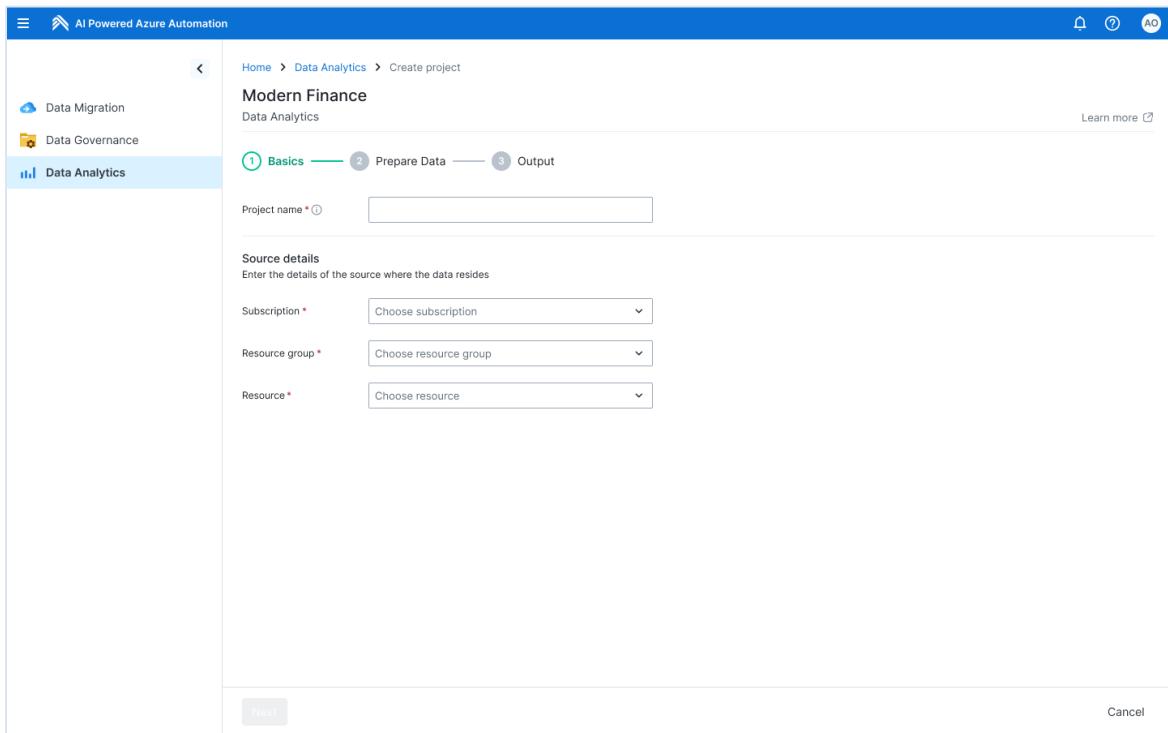


Image 5.94: Modern finance - source details

3. Prepare the data by selecting **Table**, **Target column**, and **metrics**.

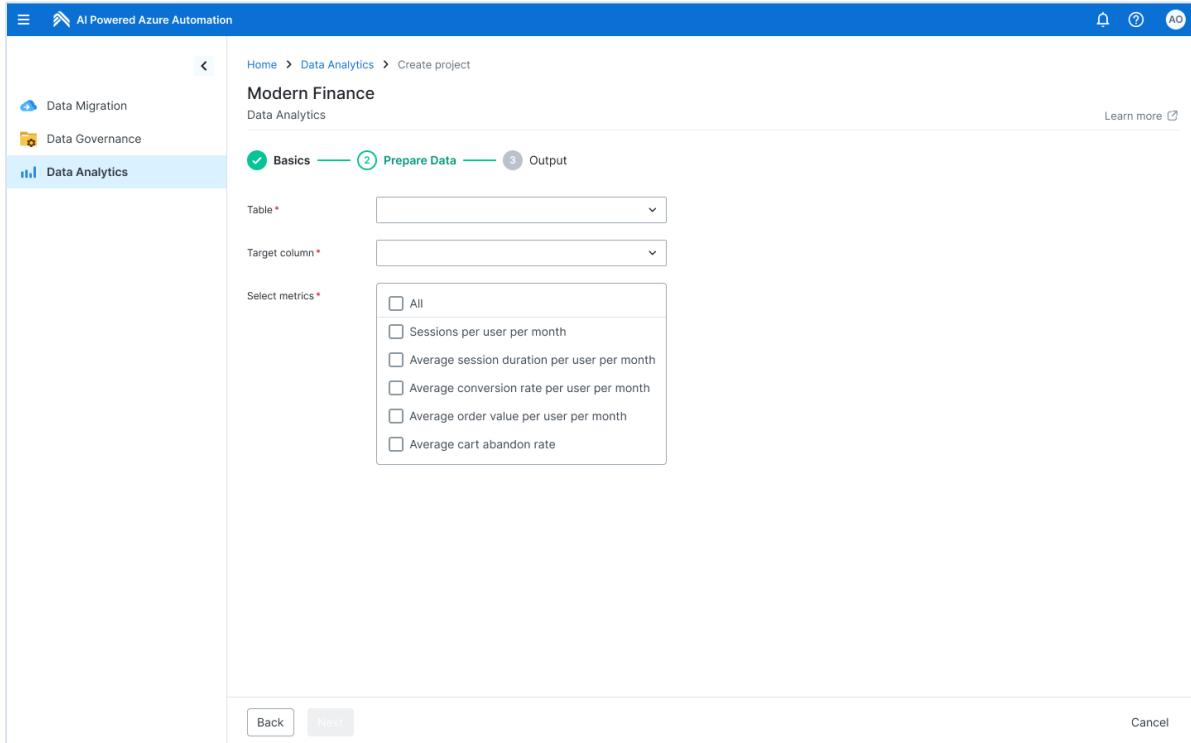


Image 5.95: Modern finance – prepare data

4. Output page.

The screenshot shows the 'Output' page of an AI Powered Azure Automation project titled 'Modern Finance' under 'Data Analytics'. The navigation bar includes 'Home', 'Data Analytics', and 'Create project'. A progress bar at the top indicates 'Basics' (green), 'Prepare Data' (green), and 'Output' (green). On the right, there's a 'Learn more' link and a 'View in A3S BI dashboard' button. The main content area is divided into 'Output' and 'Metrics' sections. The 'Output' section contains a table with columns: User ID, Year, Month, Growth, Sessions (per user per month), Avg session duration (per user per month), Avg conversion rate (per user per month), Avg order value (per user per month), and Avg cart abandon rate. The 'Metrics' section contains a table with columns: Name and Score, listing various metrics like 'Avg order value per user per month' with scores 1201, 1169, 775, 600, and 564. A 'Finish' button is located at the bottom left of the output section.

User ID	Year	Month	Growth	Sessions (per user per month)	Avg session duration (per user per month)	Avg conversion rate (per user per month)	Avg order value (per user per month)	Avg cart abandon rate
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6

Name	Score
Avg order value per user per month	1201
Avg order value per user per month	1169
Avg order value per user per month	775
Avg order value per user per month	600
Avg order value per user per month	564

Image 5.96: Modern finance – output

5. Project summary page.

Project Name
Data Analytics

Project summary

Use case	:	Modern Finance	Table name	:	Table
Subscription name	:	Dynapt Enterprize Azure	Created on (UTC)	:	2/26/2021, 9:24:57 PM
Resource group	:	AIP-WITH-SYNAPSE			
Resource	:	aipsynapsqlpool			

Output

User ID	Year	Month	Growth	Sessions (per user per month)	Avg session duration (per user per month)	Avg conversion rate (per user per month)	Avg order value (per user per month)	Avg cart abandon rate
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6
512369908	2019	11	1	6	146.5	0.11111	1280.505	0.6

Metrics

Name	Score
Avg order value per user per month	1201
Avg order value per user per month	1169
Avg order value per user per month	775

[View in A3S BI dashboard](#)

Image 5.97: Modern finance - project summary

6. View in A3S BI dashboard.

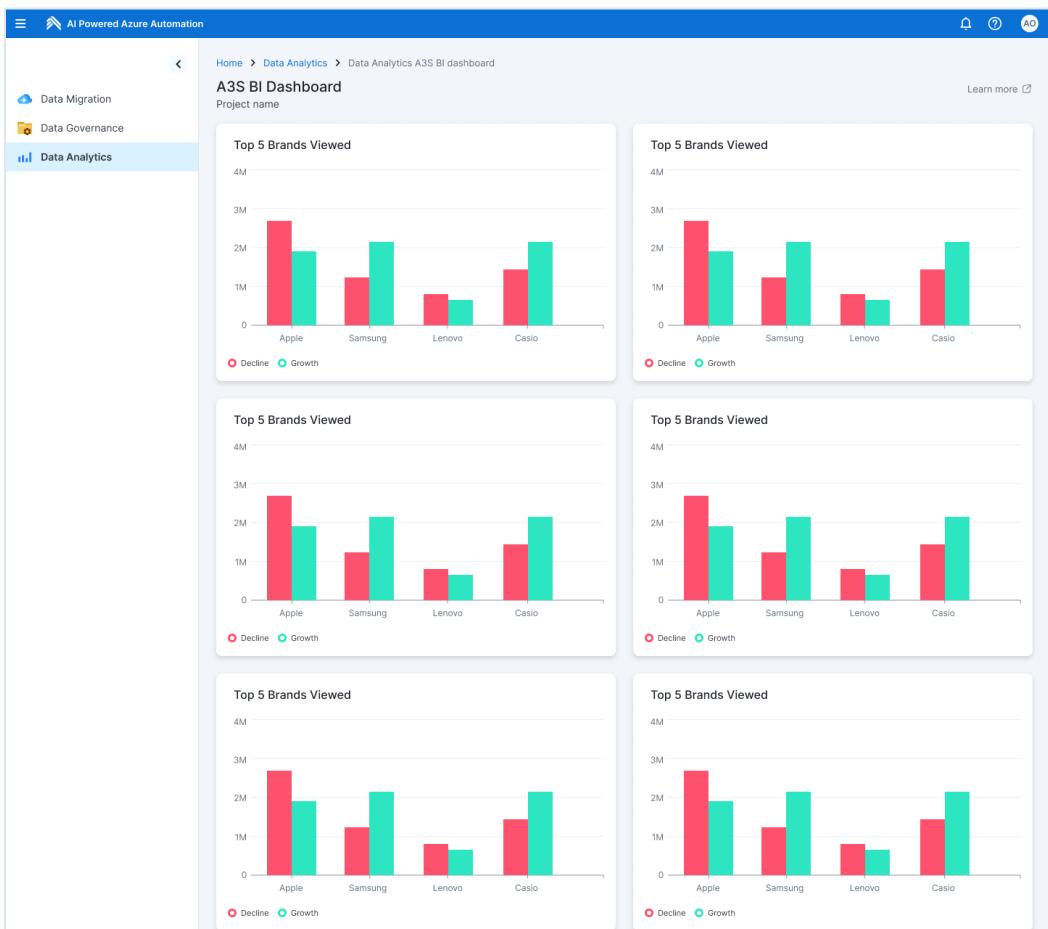


Image 5.98: Modern finance - BI dashboard

11.4 DataOps



12 Infrastructure Health Monitoring

Continual monitoring of the resources deployed on Azure under various projects in A3S is key to making sure that any issues or errors are identified as early as possible and thereon remediation steps are undertaken to ensure healthy status of all the resources. End goal of this ongoing infrastructure monitoring and remediation is to learn from and analyze incident management data logs with AI/ML to implement preemptive measures that avoid the potential errors and issues from occurring in the first place.

Infrastructure Health Monitoring consists of the following sections:

1. **Metrics:** display health metrics of a project.
2. **Insights:** enable execution of prebuilt or custom queries to retrieve information for a given time frame (for auditing) or to view & analyze the potential error or issue.
3. **Alerts:** view & modify existing alerts and create new alerts.

12.1 Overview

Click Infrastructure Health Monitoring tile on the homepage.

- By default, overall health of the first project will be displayed.



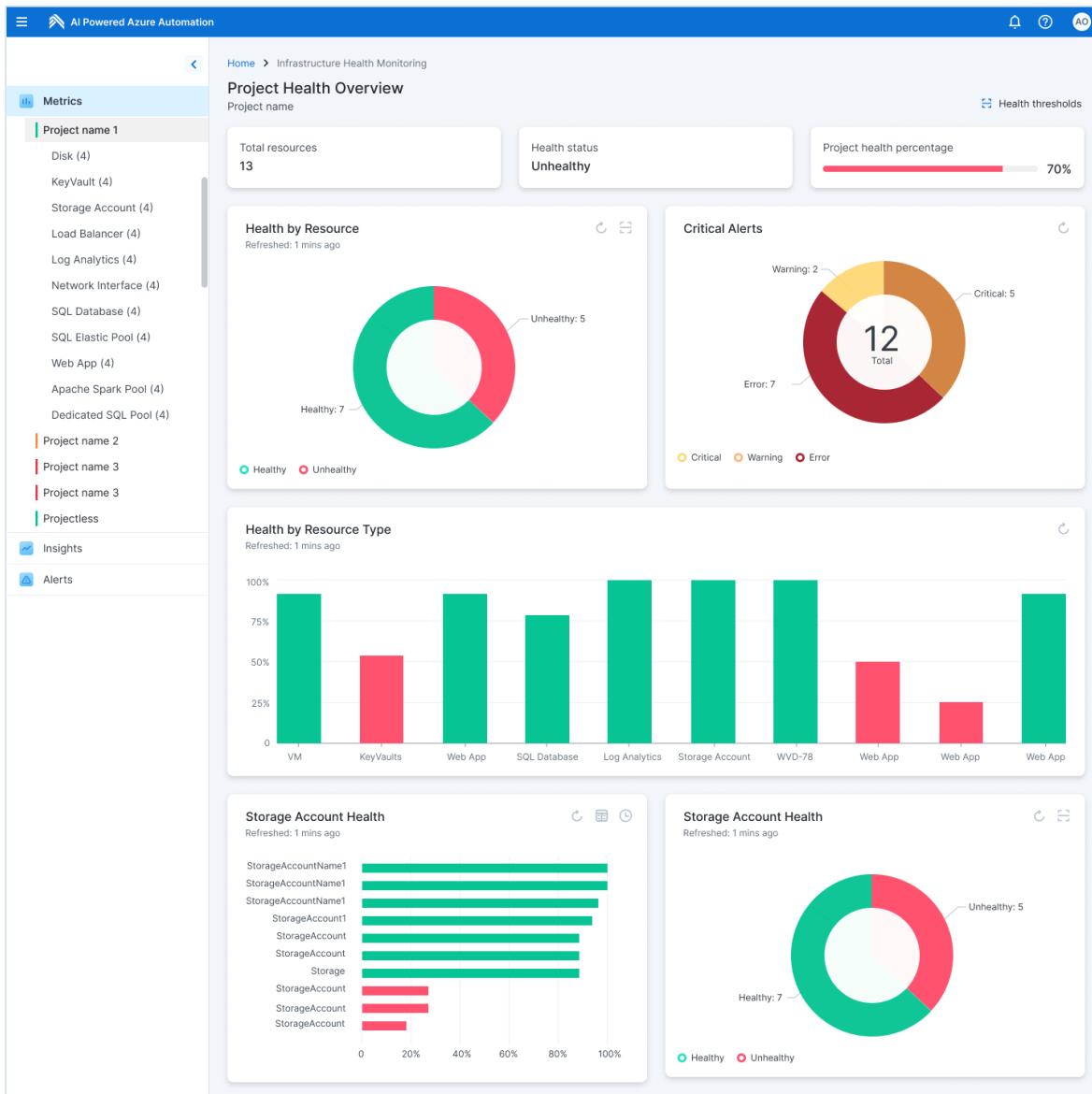


Image 6.3: Infra health monitoring - project overview

- Projects and resource types under the projects are listed in the left menu.

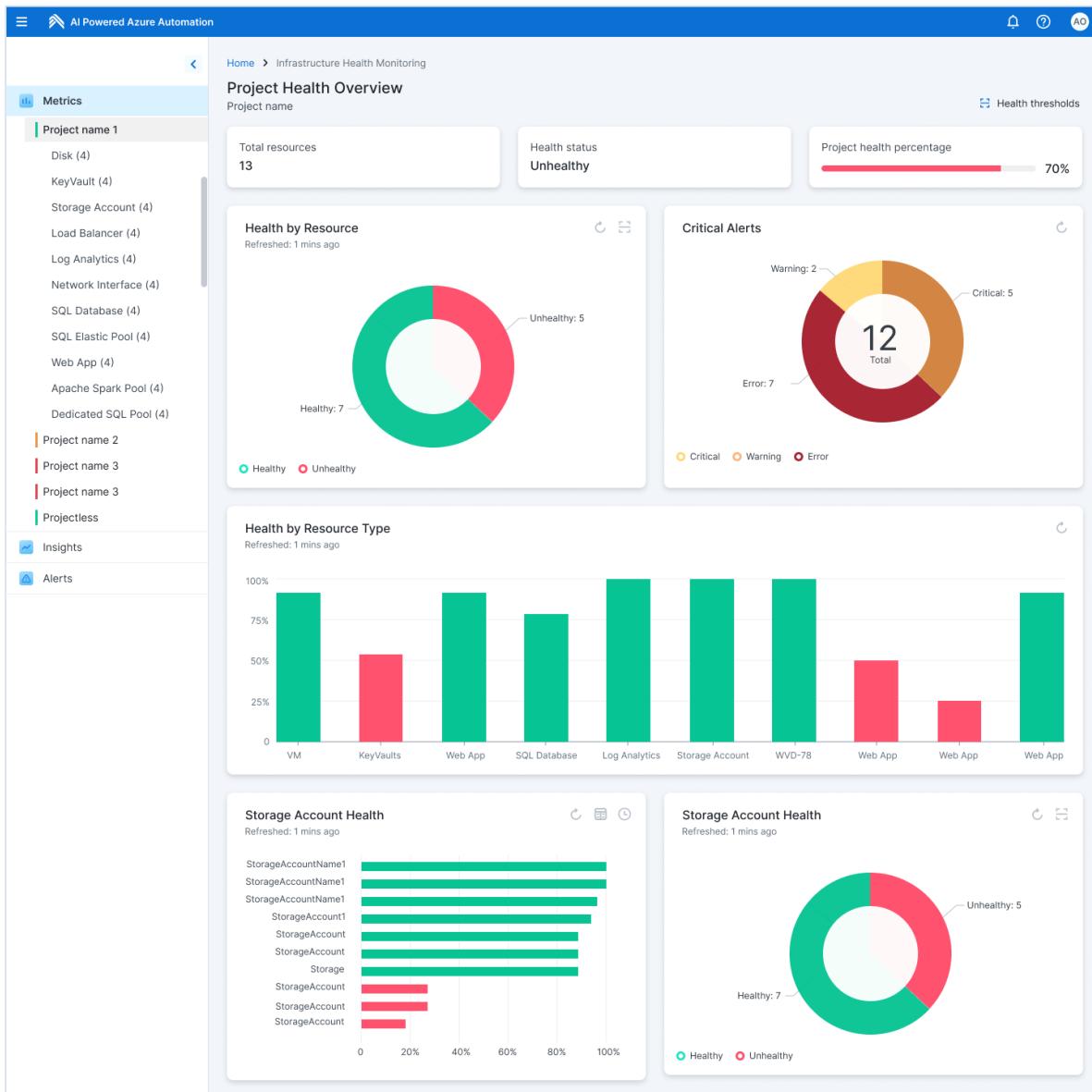


Image 6.1: Infra health monitoring dashboard

- It is a two-level tree structure as shown in the image above:
 - Level 1: is a list of projects.
 - Level 2: resource type(s) deployed under the project (for example, Virtual Machine, Storage, etc.).
- Live dashboards are available for project & resource type and the dashboard with corresponding data will be displayed when a project and resource type is chosen.
- **Threshold icon** helps to set the threshold for a metric of a resource. Alert will be sent when the threshold is crossed.
- **Refresh icon** on the tile helps you refresh the chart to view latest data.
- **Table icon** is to view specific information in tabular format.
- **Filters** provide a way to drill down to search and view specific information and filters out the charts not needed in the tile.



Note: Threshold, refresh, table icons are available on those tiles where they are applicable.

12.2 Metrics

- To view the health metrics of a resource type under a project, choose and click on a resource type.

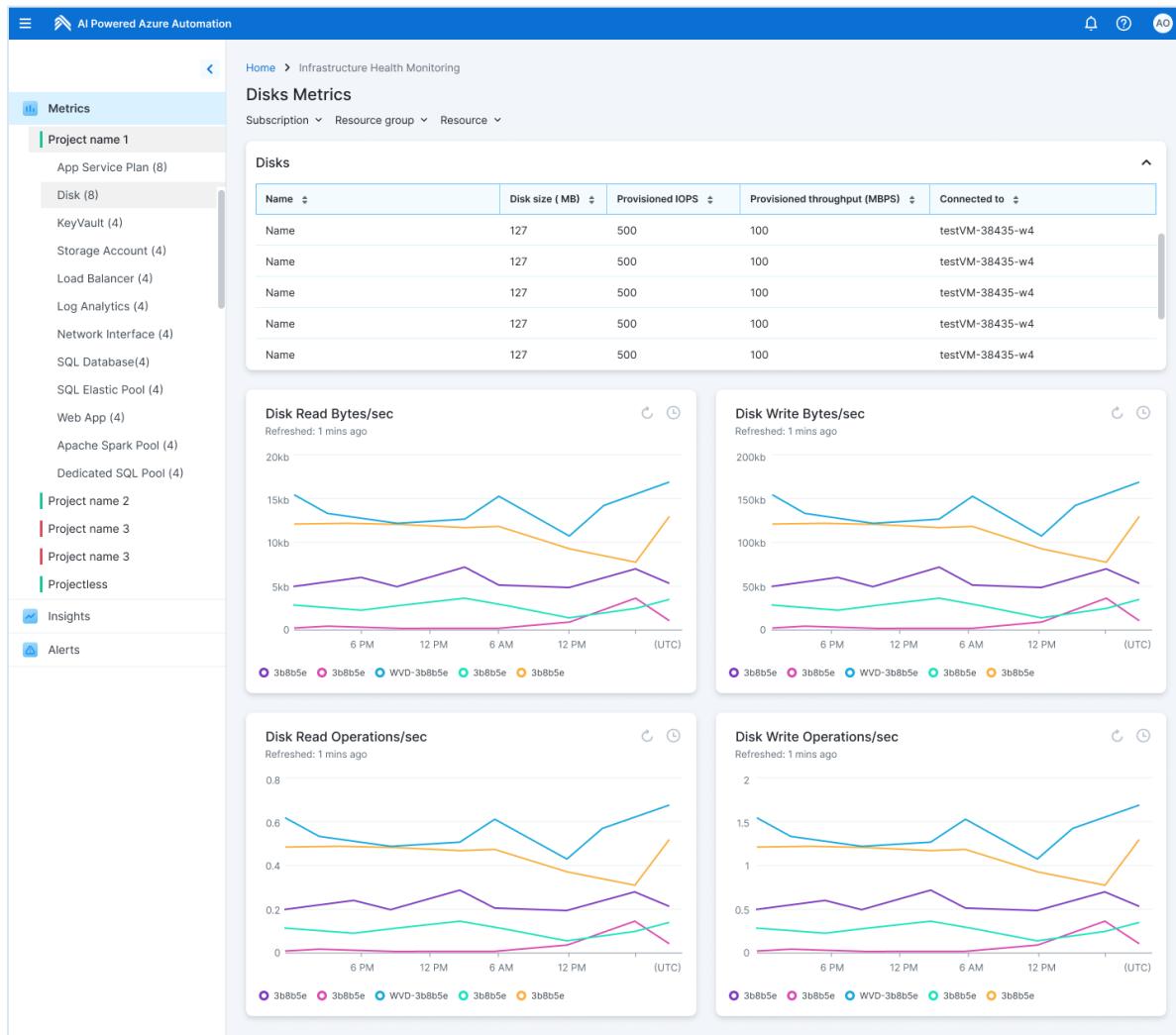


Image 6.4: Infra health monitoring - resource metrics

- Click refresh icon on the tile to refresh the data.



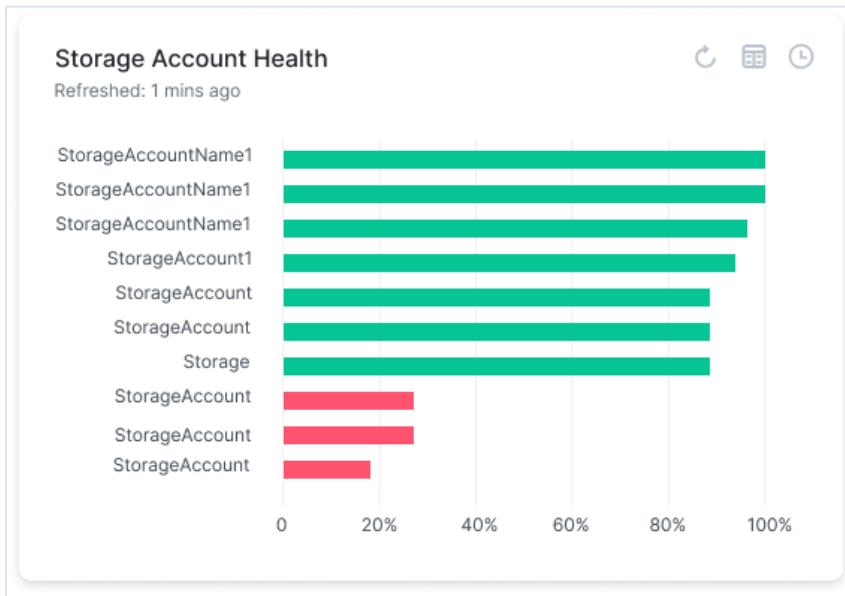
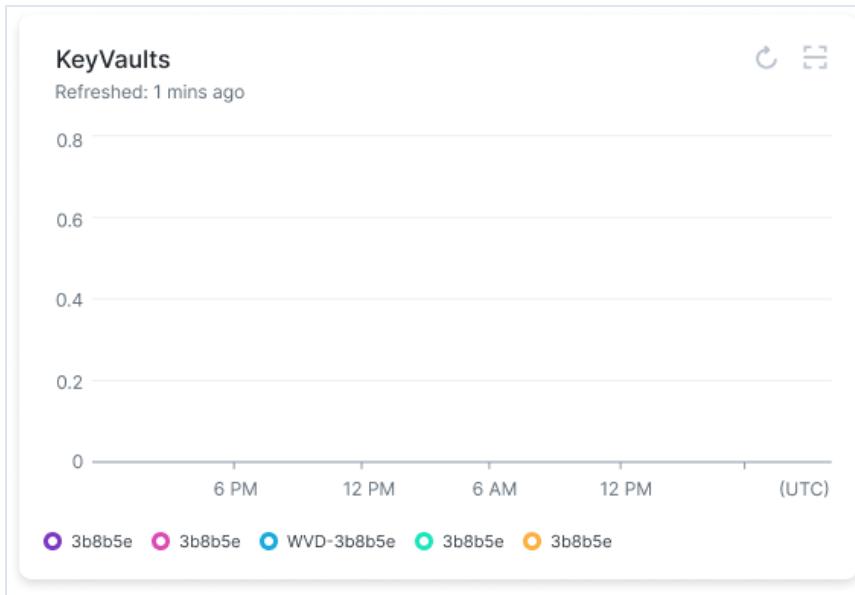


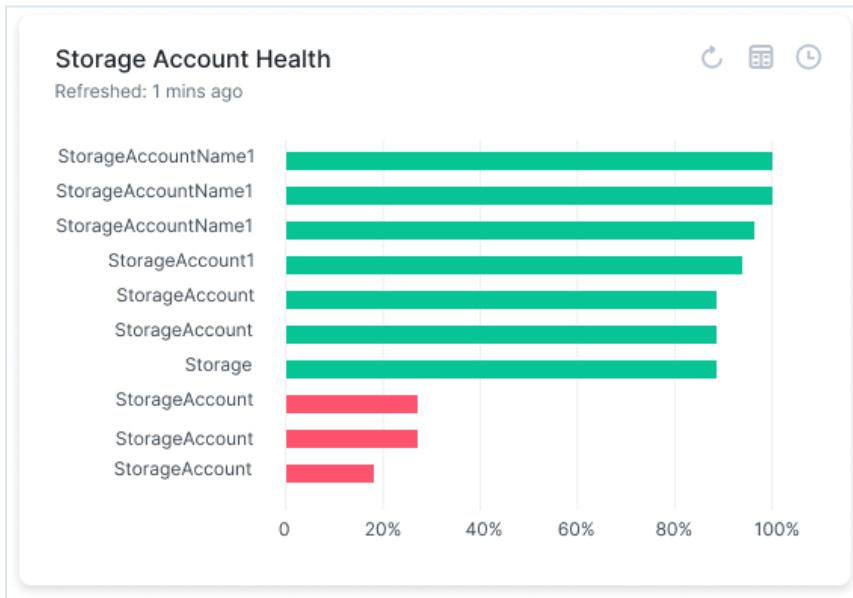
Image 6.5: Resource health tile

- Click threshold icon to set custom threshold value.

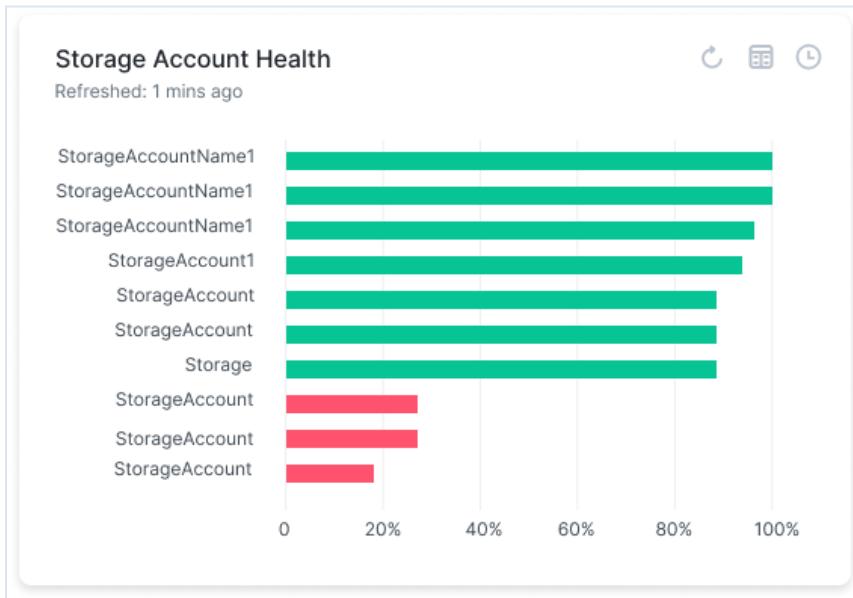


- Click table icon to view & download information in tabular format.





- Click clock icon to set the timeframe for which you want to view the data for.



Choose time range X

From : 6/5/2021, 10:36:51 AM							To : 1/27/2021, 10:36:51 AM						
< June 2021 >							< June 2021 >						
Mo	Tu	We	Th	Fri	Sa	Su	Mo	Tu	We	Th	Fri	Sa	Su
29	30	31	1	2	3	4	29	30	31	1	2	3	4
5	6	7	8	9	10	11	5	6	7	8	9	10	11
12	13	14	15	16	17	18	12	13	14	15	16	17	18
19	20	21	22	23	24	25	19	20	21	22	23	24	25
26	27	28	29	30	1	2	26	27	28	29	30	1	2
<input type="button" value="10 : 36 : 51 AM"/>							<input type="button" value="10 : 36 : 51 AM"/>						

Time selection is in UTC Cancel



12.3 Insights

Insights tab enables you to retrieve the historical metric data for a specific timeframe.

The screenshot shows the 'Insights' tab in the Azure Automation interface. At the top, there are navigation links: Home > Infrastructure Health Monitoring, Overview, Insights (which is highlighted in blue), Metrics, and Alerts. Below the navigation, there's a search bar labeled 'Search queries' and a 'Learn more' link. On the left, a sidebar lists categories: Alerts, Availability, Diagnostics, Errors, Health, Performance, and Security. Under the 'Queries' section, there are eight tiles, each representing a 'Virtual Machine available memory' query. Each tile includes a 'Run' button and a 'Time range : Last 24 hours' button. The tiles are arranged in two rows of four.

Image 6.6: Insights - query list

This page is categorized into two sections:

1. Queries: predefined list of queries.
2. Custom Query: queries that user can write to retrieve data as needed.

12.3.1 *Queries*

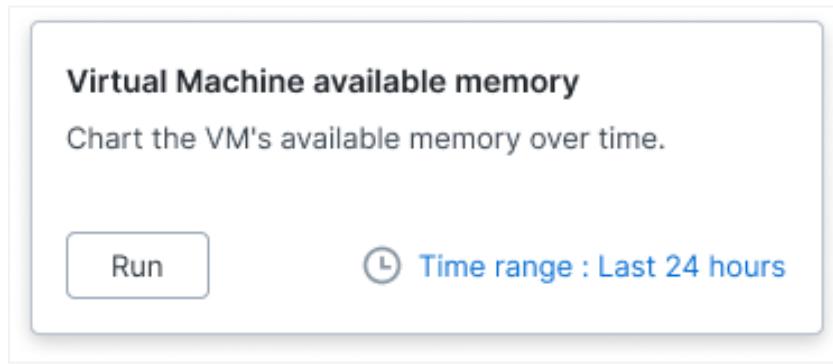
These are grouped by categories as below and the list is displayed in the left menu. You can also search a query using search box (shown in the image above).

1. Alerts.
2. Availability.
3. Diagnostics.
4. Errors.
5. Health.
6. Performance.
7. Security.

12.3.1.1 Run a Query

1. Browse a query and you will get a tile like this:





2. Select Time range.

A screenshot of the Azure Insights blade. On the left, there is a sidebar with categories like Alerts, Availability, Diagnostics, Errors, Health, Performance, and Security. The "Alerts" category is selected and highlighted in grey. The main area contains several cards, each titled "Virtual Machine available memory" and "Chart the VM's available memory over time." Each card has a "Run" button and a "Time range : Last 24 hours" indicator. A dropdown menu is open over one of the cards, showing options for time ranges: "Last 30 minutes", "Last hour", "Last 4 hours", "Last 12 hours", "Last 24 hours" (which is checked), "Last 48 hours", "Last 3 days", "Last 7 days", and "Custom".

3. Click Run.



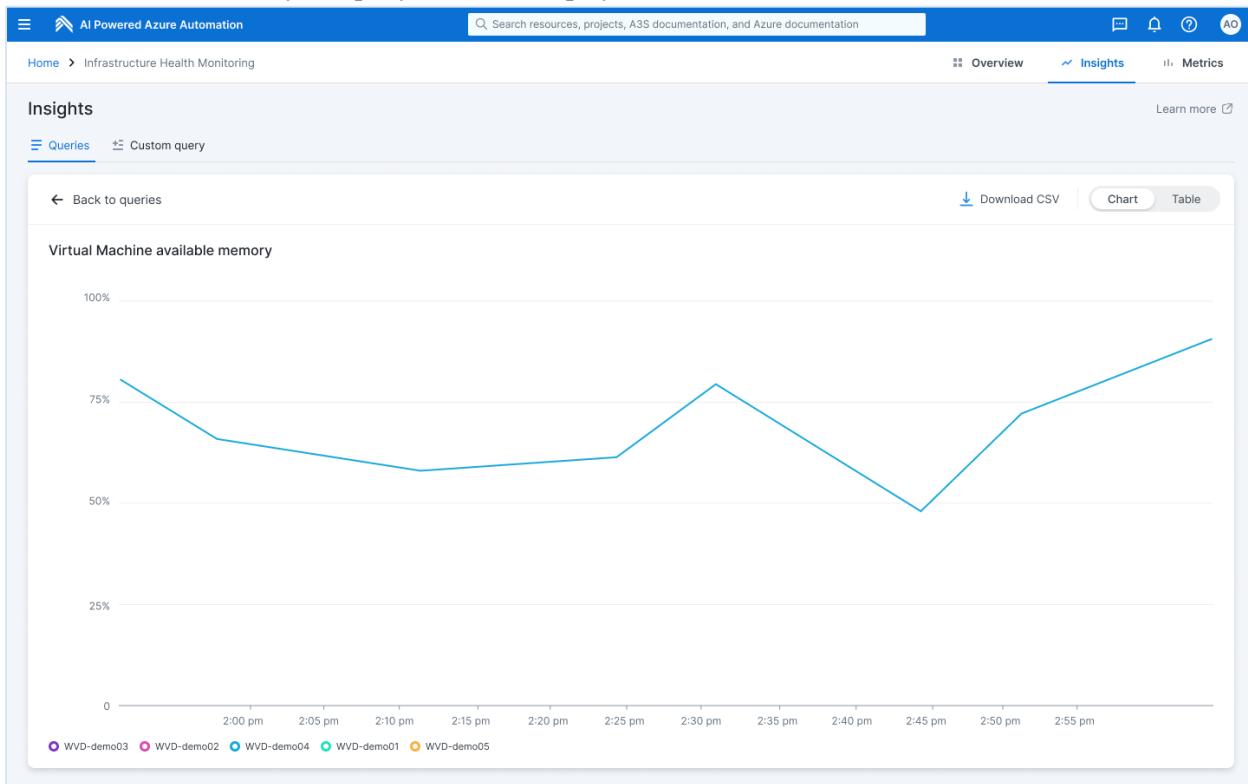
Virtual Machine available memory

Chart the VM's available memory over time.

Run

Time range : Last 24 hours

- As the data is retrieved by the query, it will be displayed in a chart and tabular format as shown in below.



The screenshot shows the 'AI Powered Azure Automation' interface with the 'Insights' tab selected. A search bar at the top right contains the placeholder 'Search resources, projects, A3S documentation, and Azure documentation'. Below the search bar are three navigation tabs: 'Overview', 'Insights' (which is highlighted in blue), and 'Metrics'. The main content area is titled 'Virtual Machine available memory' and displays a table of data. The table has four columns: 'Virtual machine', 'Resource group', 'Location', and 'Status'. There are 15 rows of data, all showing 'West Us' as the location and 'Running' as the status. The 'Resource group' column shows values like RG-3, RG-3, RG-3, etc. The 'Virtual machine' column shows values like VM-demo-03, VM-demo-03, VM-demo-03, etc. At the bottom of the table, there are buttons for 'Download CSV' and 'Chart'.

Virtual machine	Resource group	Location	Status
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Stopped
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running
VM-demo-03	RG-3	West Us	Running

12.3.2 Custom Query

A text box is provided for the user to write their own query and once written, the query can be run against the chosen resources to retrieve the data.



The screenshot shows the 'Custom Query' interface within the 'Insights' section of the Azure Automation portal. At the top, there are navigation links for 'Overview', 'Insights' (which is highlighted in blue), 'Metrics', and 'Alerts'. Below the navigation is a search bar with placeholder text 'Type your query here'. To the right of the search bar are buttons for 'Run', 'Time range : set in query', 'Scope', 'Download CSV', and 'Chart/Table' options. A large text area below the search bar is currently empty.

Image 6.7: Insights - custom query

1. Write the query in the text box.
2. Select Time range.

The screenshot shows the 'Custom Query' interface with the 'Time range : set in query' button selected, opening a dropdown menu. The menu lists various time intervals: 'Last 30 minutes', 'Last hour', 'Last 4 hour', 'Last 12 hour', 'Last 24 hour' (which is checked with a checkmark), 'Last 48 hour', 'Last 3 days', 'Last 7 days', and 'Custom'. The background of the interface shows the same layout as Image 6.7, with the 'Custom Query' text area and other navigation elements.

Image 6.8: Insights - custom query time range



3. Select Scope.

The screenshot shows the 'Custom Query' section of the Azure Automation Insights interface. On the left, there's a sidebar with 'Queries' and 'Custom query' tabs, and a main area with a 'Custom Query' input field containing the placeholder '1 Type your query here'. Above this is a 'Run' button. To the right, there's a 'Select scope' modal window with fields for 'Project' and 'Resource type', both with dropdown menus. Below the modal is an 'Apply' button.

Image 6.9: Insights - custom query scope

4. Click Run.



AI Powered Azure Automation

Home > Infrastructure Health Monitoring

Overview Insights Metrics Alerts

Learn more

Queries Custom query

Custom Query

Run Time range : set in query Scope Download CSV Chart Table

```

1 // Avg CPU usage
2 // Avg CPU usage in the last hour by resource name.
3 //consistently high averages could indicate a
customer

```

Getting data...

5. Successful run of the query will return the data and will be displayed in the form of chart and/or table.

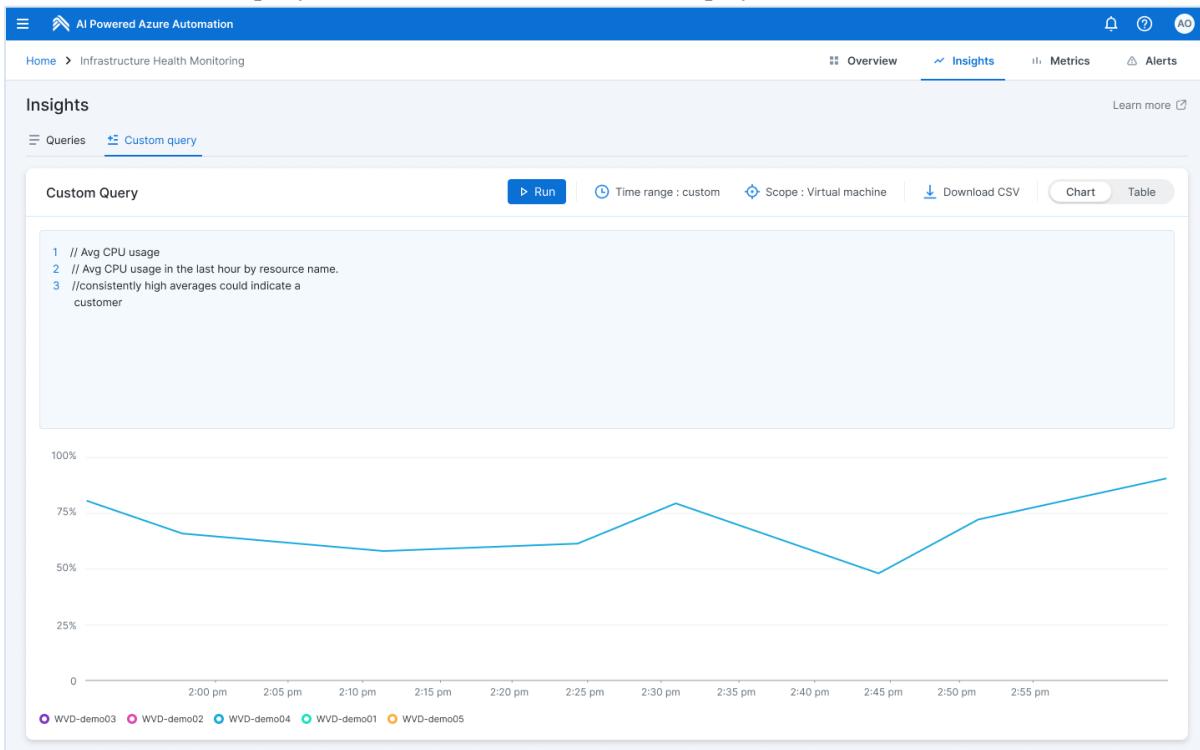


Image 6.10: Insights - custom query chart view

6. In case the query fails, or the data is not available for the selected time range, the image below will be shown.

The screenshot shows the Azure Insights interface. At the top, there's a navigation bar with 'Home' and 'Infrastructure Health Monitoring'. Below it, tabs for 'Overview', 'Insights' (which is active), 'Metrics', and 'Alerts'. Under 'Insights', there's a 'Custom query' section. A 'Run' button is visible, along with filters for 'Time range: custom', 'Scope: Virtual machine', and download options ('Download CSV', 'Chart', 'Table'). The main area contains a 'Custom Query' code block:

```
1 // Avg CPU usage
2 // Avg CPU usage in the last hour by resource name.
3 //consistently high averages could indicate a
customer
```

Below the code, there's a large empty space with a placeholder icon (a document with an 'X') and the text 'No data found'.

Image 6.11: Insights - custom query no data

7. Toggle between **Chart** (graphical representation) and **Table** (information in rows and columns).

```

1 // Avg CPU usage
2 // Avg CPU usage in the last hour by resource name.
3 //consistently high averages could indicate a
customer

```

Time generated (UTC) ▼	Virtual machine ▼	Logical disk ▼	C: ▼	D: ▼	Total ▼
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100
2/26/2021, 9:24:57 PM	WVD-demo-03		300	200	100

Image 6.12: Insights - custom query table view

8. Download the report using **Download CSV** button.

12.4 Alerts

The Alerts tab enables the user to view and modify existing alerts or to create new ones as needed.

Further, stay informed in real time via SMS text messages and/or email whenever an alert goes for the resources deployed in Azure across various projects. The alert indicates a potential error or issue, and relevant information will be shared in the message sent.



Name	Condition	Status	Target Resource	Target Resource Type	Signal Type
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector
Failure Anomalies	Failure Anomalies detected	Device	Dynapt	Application Insights	Smart detector

Image 6.13: Alerts list

12.4.1 Create New Action Group

1. Click **Alerts**.
2. Click **New Action group** button.
3. Provide needed inputs in New Action Group side sheet.
4. Click **Create**.

Create action group X

Subscription * MPN Subscription (54656546546464656)

Resource group * (empty dropdown)

Action group name * ActionGroupName |

Display name * ActionGroupN
This display name is limited to 12 characters

Notifications
Configure the method in which users will be notified when the action group triggers.

Notification type (empty dropdown) Name (empty input)

[Add another notification](#)

Tag name (empty input) Value (empty input)

[Add another tag](#)

Cancel Save

Image 6.14: Action group side sheet



12.4.2 Create New Alert

1. Click **Alerts** in the left menu.
2. Click **New alert rule**.
3. Provide needed inputs in the Alert rule side sheet.
4. Click **Create**.



Create Alert Rule X

Scope

Subscription *
MPN Subscription (0000000000000000...)

Select scope *

Resource *

Alert type *

Alert Logic

Operator *

Aggregation type *

Threshold value *
 Bytes, %

Evaluated based on

Period * Frequency *

Actions

Action group

[Create new](#)

Alert rule details

Resource group *

[Create new](#)

Alert rule name *

Description

Alert description

Severity *

Enable alert rule upon creation
 Automatically resolve alerts

Image 6.15: Create alert rule



13 Application Health Monitoring

Continual monitoring of the applications deployed on Azure under various projects in A3S is key to making sure that any issues or errors are identified as early as possible and thereon remediation steps are undertaken to ensure healthy status of all the applications. End goal of this ongoing application monitoring and remediation is to learn from and analyze incident management data logs with AI/ML to implement preemptive measures that avoid the potential errors and issues from occurring in the first place.

Application Health Monitoring consists of the following:

4. **Metrics:** displays health metrics of a project.
5. **Usage:** displays region-wise usage report and frequency of the returning users to the application.
6. **Alerts:** view & modify existing alerts and create new alerts.

13.1 Overview

Application Health Monitoring landing page displays the dashboard with overall health of the first application deployed under first project.



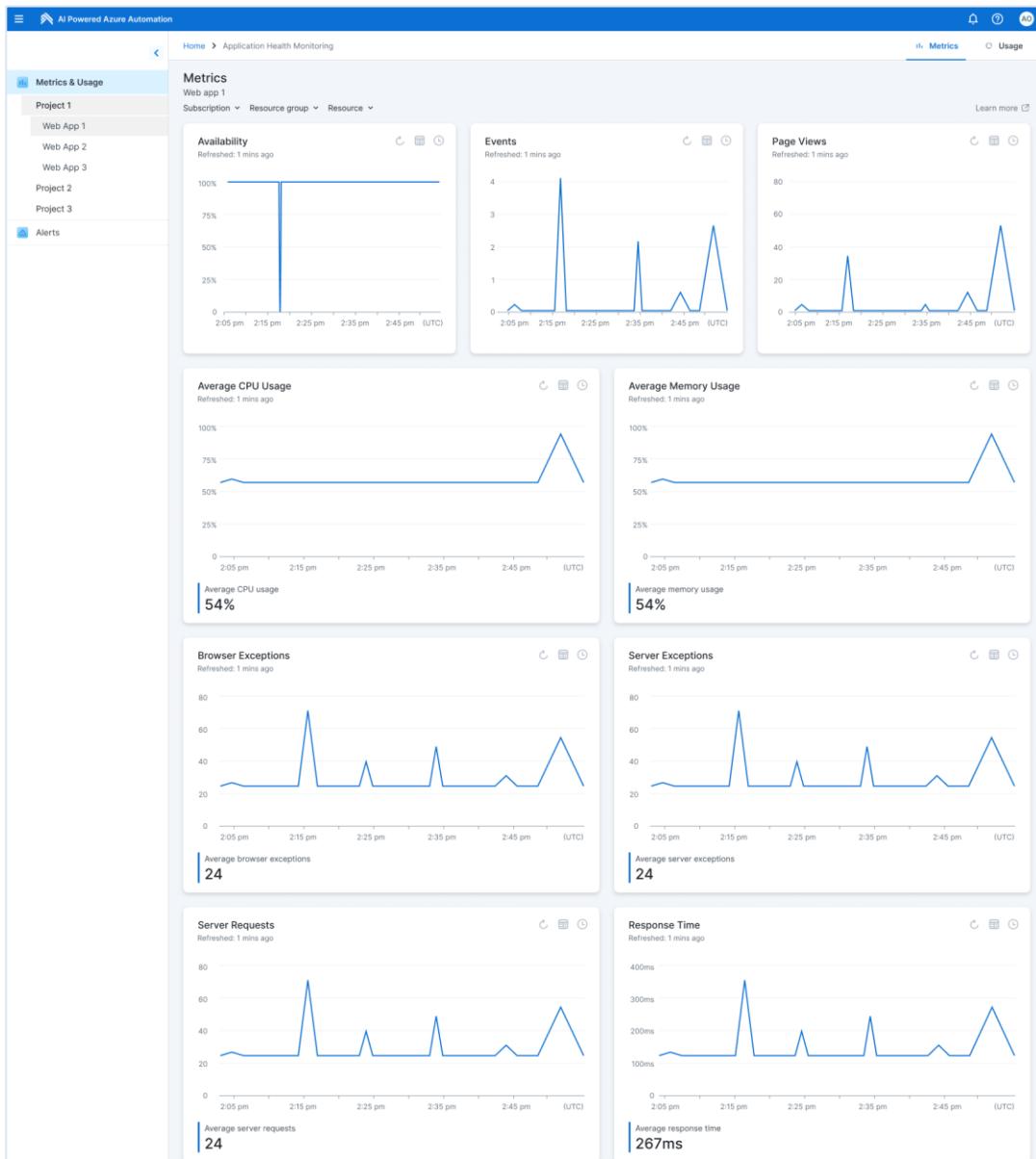


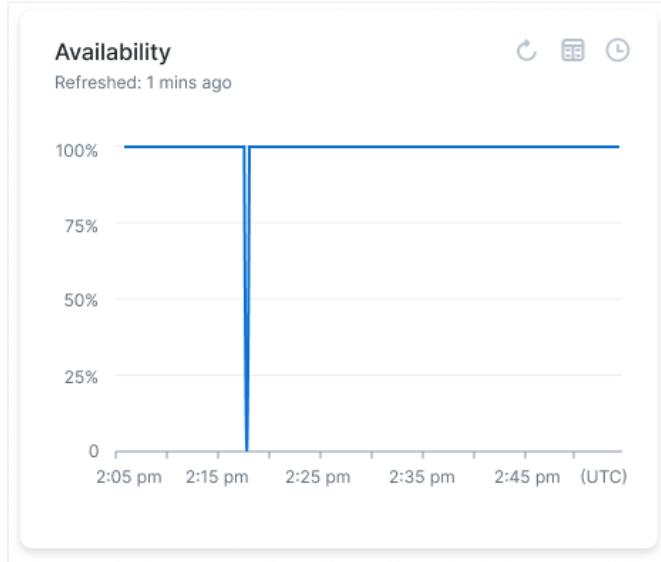
Image 7.1: Application Health Monitoring dashboard

- By default, Metrics & Usage data is displayed for the first project.
- Metrics and Usage tabs are placed at right top corner.

- Home > Application Health Monitoring Metrics Usage
- Subscription ▾ Resource group ▾ Resource ▾
- Filter options are present above the dashboard, you can use them to define the scope for which you want to view and analyze the data for.
 - Alerts tab is used to create and manage alerts.



- Click refresh  icon on the tile to refresh the data.
- Click table  icon to view & download information in tabular format.
- Click clock  icon to set the timeframe.
- Click threshold  icon to set custom value.



13.2 Metrics

The Metrics dashboard displays all aspects of the application health as below.

13.2.1 Availability

Displays average percentage of time the app is available/reachable.

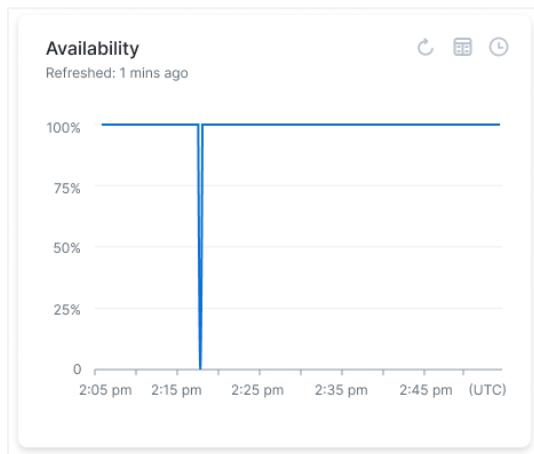


Image 7.2: availability tile



13.2.2 Average CPU and Average Memory Usage

Computational power and memory used by the application.

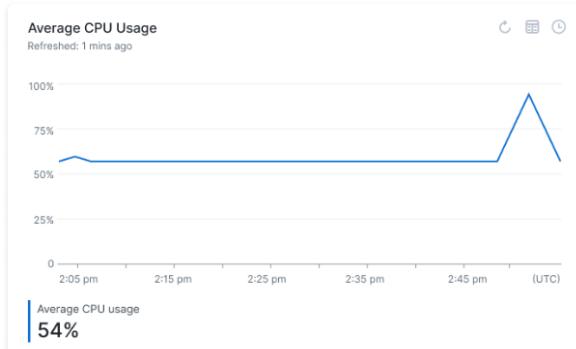


Image 7.3: Avg CPU usage

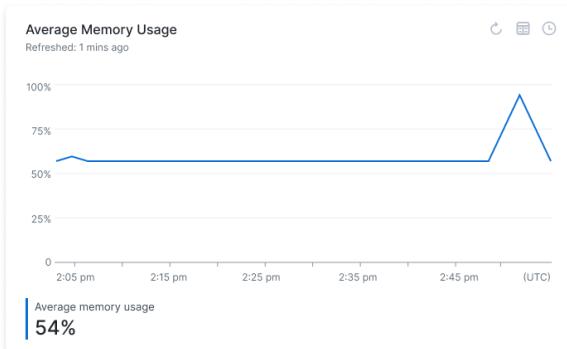


Image 7.4: Avg memory usage

13.2.3 Server Requests

Average number of requests made to the application in a given timeframe.

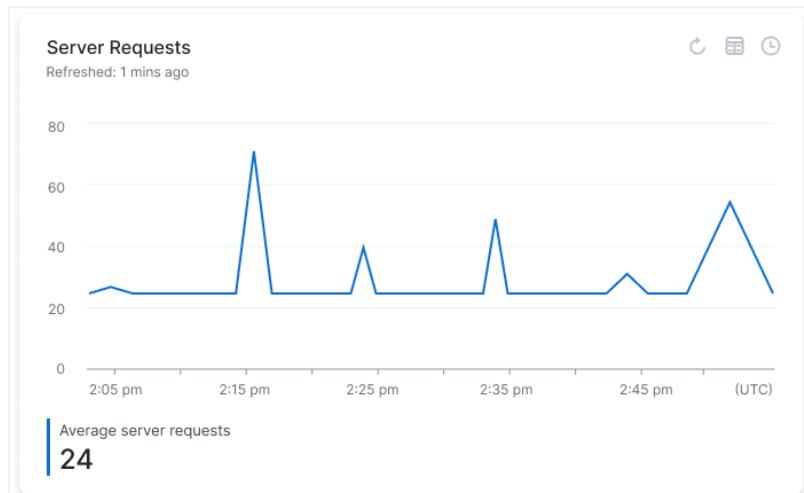


Image 7.5: Server requests

13.2.4 Response Time

Average response time in a given timeframe.



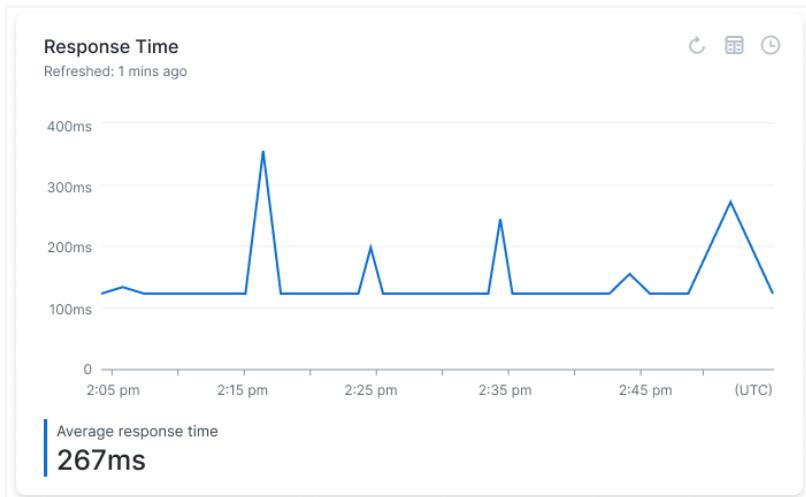


Image 7.6: Response time

13.2.5 Server Exceptions and Browser Exceptions

Average server and browser exceptions that occurred in a given timeframe.

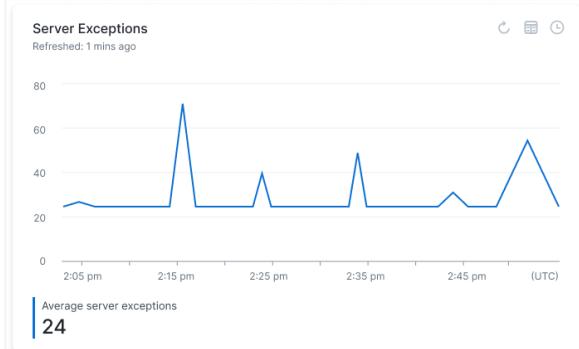


Image 7.7: Server exceptions

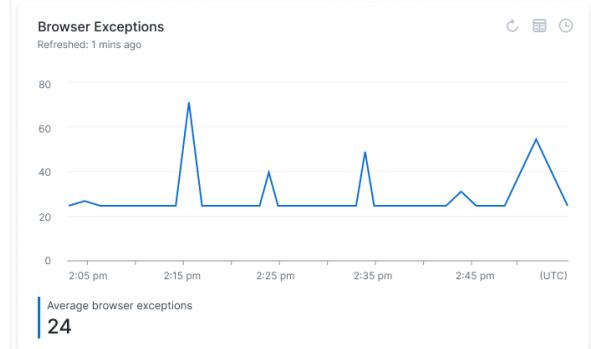


Image 7.8: Browser exceptions

13.2.6 Events

These are the events embedded by the developer to track activities of users in the web app. For example, in a game app, send an event whenever a user wins the game.



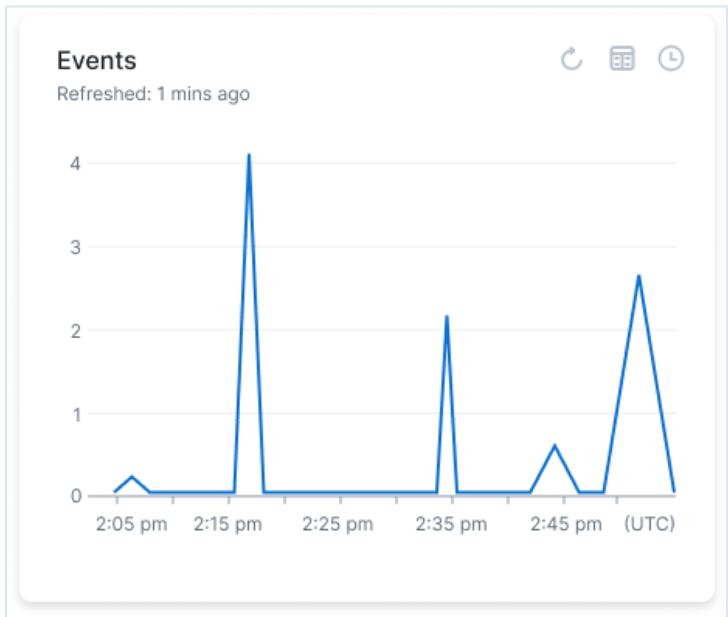


Image 7.9: Events

13.2.7 Page Views

Number of page views in a given timeframe.

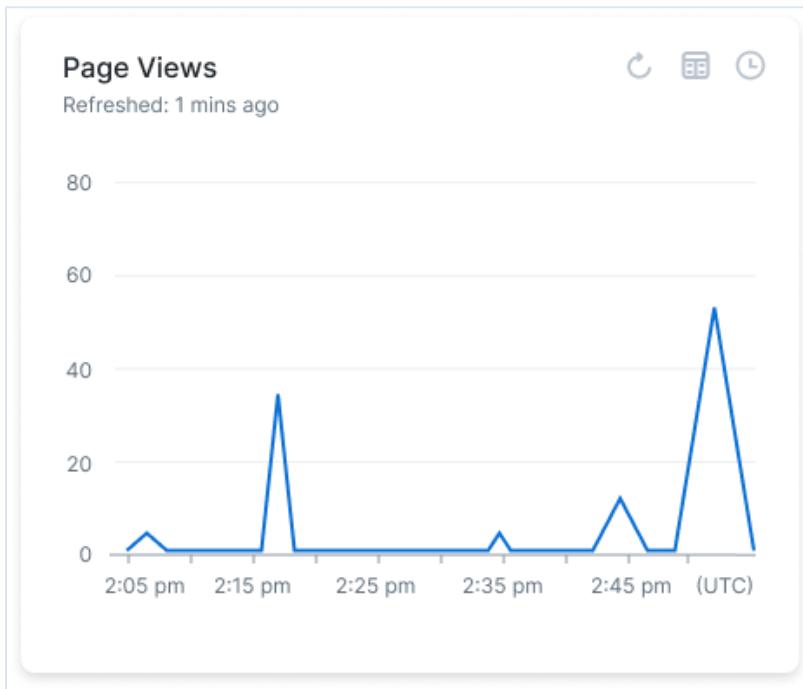


Image 7.10: Page views



13.3 Usage

The Usage dashboard displays all aspects of the application usage as below.

13.3.1 *Users by Country*

Shows the number of the user per country. X axis shows country name, Y axis show the number of users.

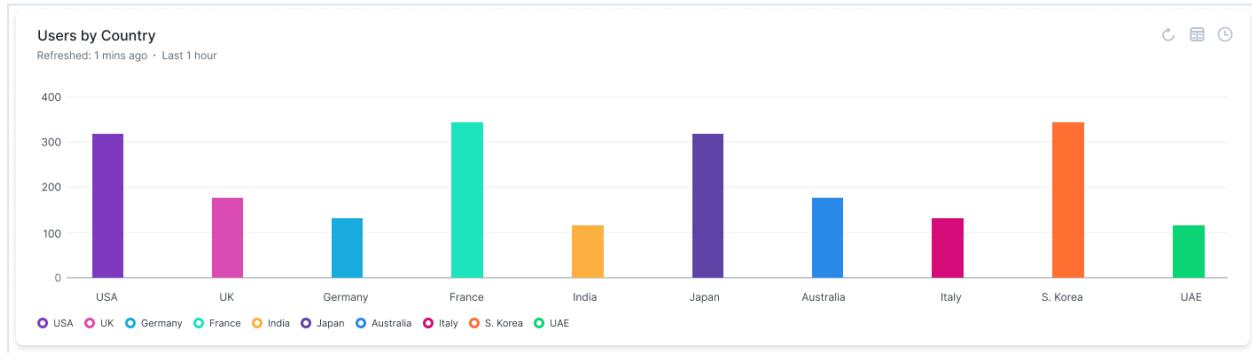


Image 7.11: Usage by location

13.3.2 *Sessions*

Average number of live sessions to the application in a given timeframe.

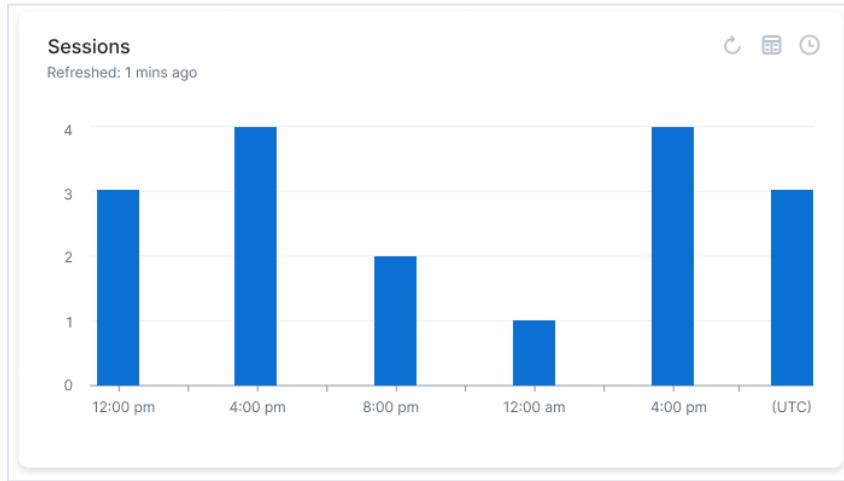


Image 7.12: Avg live sessions

13.3.3 *Events*

Average of number of events that occurred in a given timeframe.



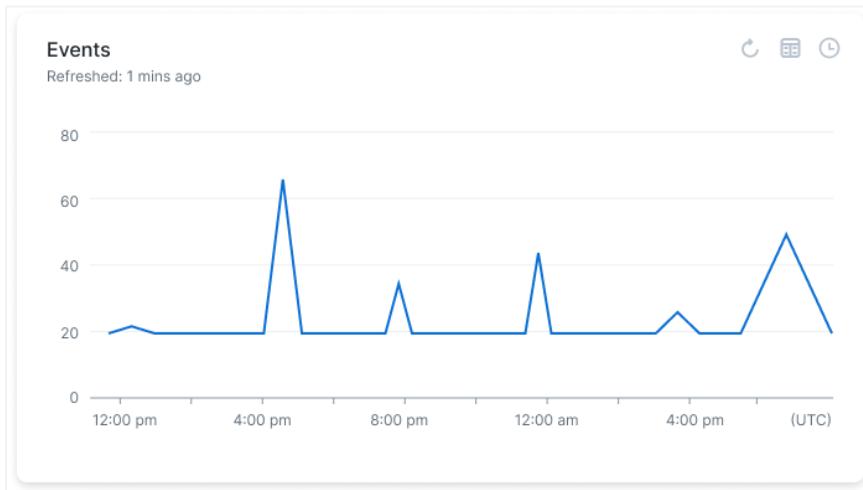


Image 7.13: Avg number of events

13.3.4 Overall Retention

Average percentage of returning users per week.



Image 7.14: Overall retention

13.3.5 Users Returned After # of Weeks

Shows the number of returning users on a weekly basis.



User Returned After # of Weeks						
Used on	Users	<1w	1w	2w	3w	4w
Overall (Jan 1 - now)	234	100%	80%	45%	99%	100%
May 9 - now	234	100%	100%	100%	100%	100%
May 9 - now	234	100%	100%	100%	100%	100%
May 9 - now	234	100%	100%	100%	100%	100%
May 9 - now	234	100%	100%	100%	100%	100%
May 9 - now	234	100%	100%	100%	100%	100%
May 9 - now	234	100%	100%	100%	100%	100%

Image 7.15: User retention per week

13.3.6 Initiating Events and Returning Events

Shows the name of event and corresponding number of users.

Initiating Events		
Refreshed: 1 mins ago · Top 5		
Name	Users	Rate
ServiceProfileIndex	2	100%

Image 7.16: Initiating events

Returned Events		
Refreshed: 1 mins ago · Top 5		
Name	Users	Rate
ServiceProfileIndex	2	100%

Image 7.17: Returned events

13.4 Alerts

This page enables the user to view and modify existing alerts or to create new ones as needed.

Further, stay informed in real time via SMS text messages and/or email whenever an alert goes for the resources deployed in Azure across various projects. The alert indicates a potential error or issue, and relevant information will be shared in the message sent.

13.4.1 Create New Action Group

1. Click **Alerts** from the left menu.
2. Click **New Action group**.
3. Provide needed inputs in the New Action Group side sheet.
4. Click **Create**.



Create action group

Subscription *
MPN Subscription (54656546546464656)

Resource group *

Action group name * ⓘ
ActionGroupName |

Display name * ⓘ
ActionGroupN
This display name is limited to 12 characters

Notifications
Configure the method in which users will be notified when the action group triggers.

Notification type ⓘ
 Name ⓘ

[Add another notification](#)

Tag name ⓘ : **Value ⓘ**
 :
[Add another tag](#)

Cancel **Save**

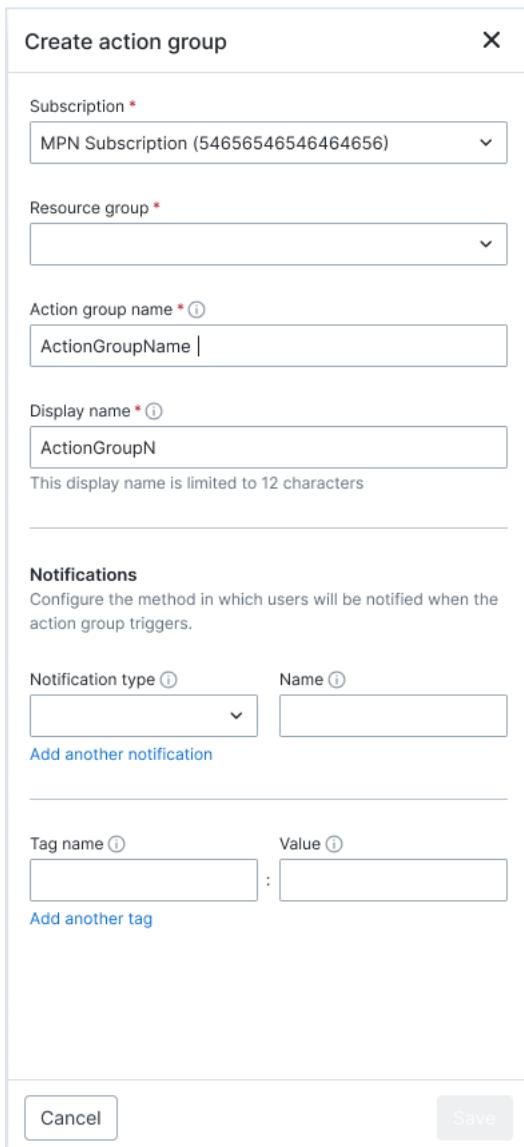


Image 7.18: Action group side sheet



13.4.2 Create New Alert

1. Click **Alerts**.
2. Click **New alert rule**.
3. Provide the needed inputs in the Alert rule side sheet.
4. Click **Create**.



Create Alert Rule

Scope

Subscription *
MPN Subscription (0000000000000000...)

Select scope *

Resource *

Alert type *

Alert Logic

Operator *

Aggregation type *

Threshold value *

Bytes, %

Evaluated based on

Period * ⓘ Frequency * ⓘ

Actions

Action group
[Create new](#)

Alert rule details

Resource group *
[Create new](#)

Alert rule name *

Description

Severity *

Enable alert rule upon creation

Automatically resolve alerts

[Cancel](#) [Save](#)

Image 7.19: Create rule side sheet



14 Cost Monitoring & Optimization

Continual monitoring of the cost incurred by the resources deployed on Azure across various projects in A3S key is to ensure that your projects are provisioned optimally with needed resources and that there is no wastage of resources leading to avoidable higher costs. Along with constant monitoring, A3S also provides the functionality to set budgets, get alerts when cost crosses a threshold and finally, it provides smart recommendations to optimize resource deployment to save as much cost as possible.

Cost Monitoring & Optimization bucket comprises of the following:

1. Overview.
2. Cost analysis.
3. Optimize.
4. Budget & Alerts.
5. Billing.

14.1 Overview

The landing page of Cost monitoring & optimization displays a dashboard with various tiles as below:

- **Spending rate and forecast** displays current cost incurred and thereon shows the forecast for remaining period in a chosen timeframe.

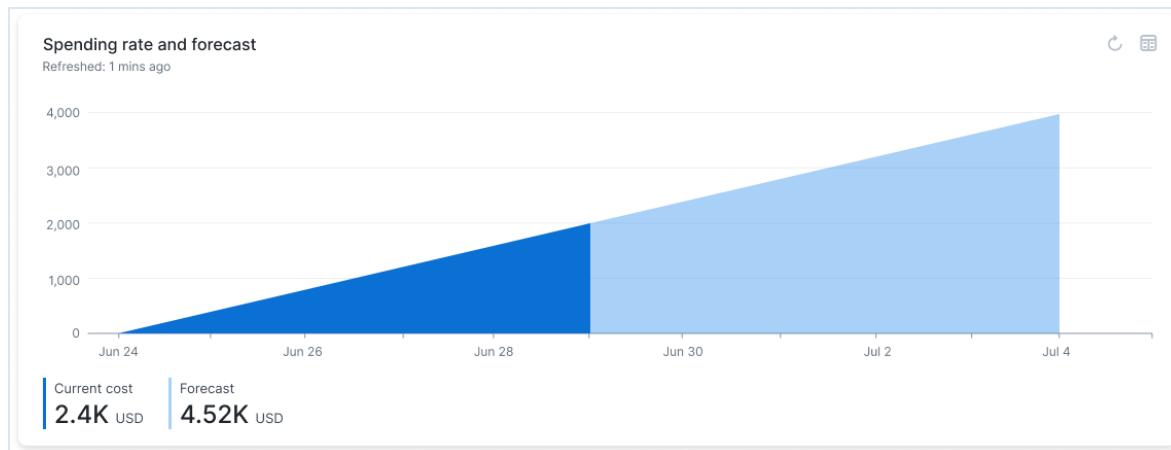


Image 8.1: Spending rate & forecast

- **Cost by Resource Group** shows the cost incurred by Resource Group.





Image 8.2: Cost by RG

- **Cost by Service Type** shows the cost incurred by service types (for example, Virtual Machine, Storage, Key Vault, etc.).

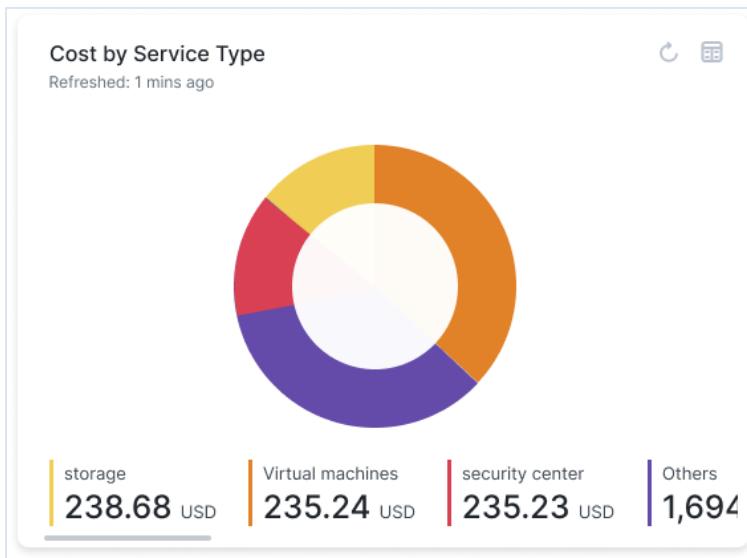


Image 8.3: Cost by resource type

- **Cost by Resource** shows the cost incurred by individual resource (for example, Virtual Machine.).

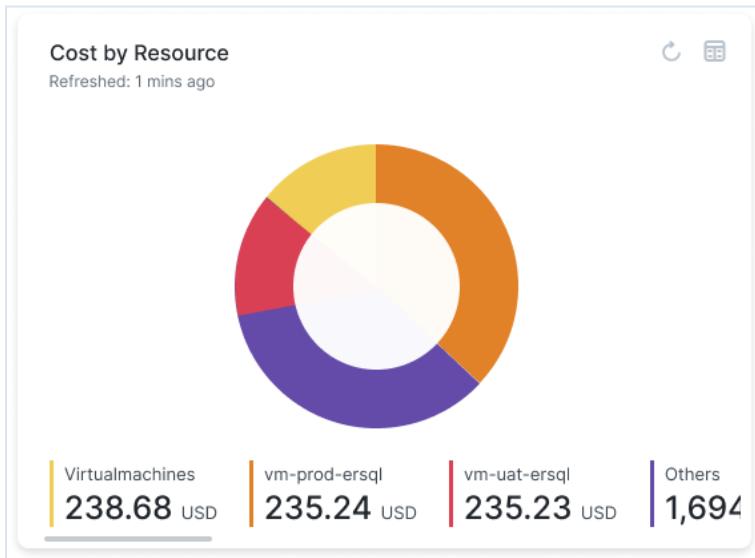


Image 8.4: Cost by resource

- **Cost by Location:** cost incurred by the resources deployed in various regions.

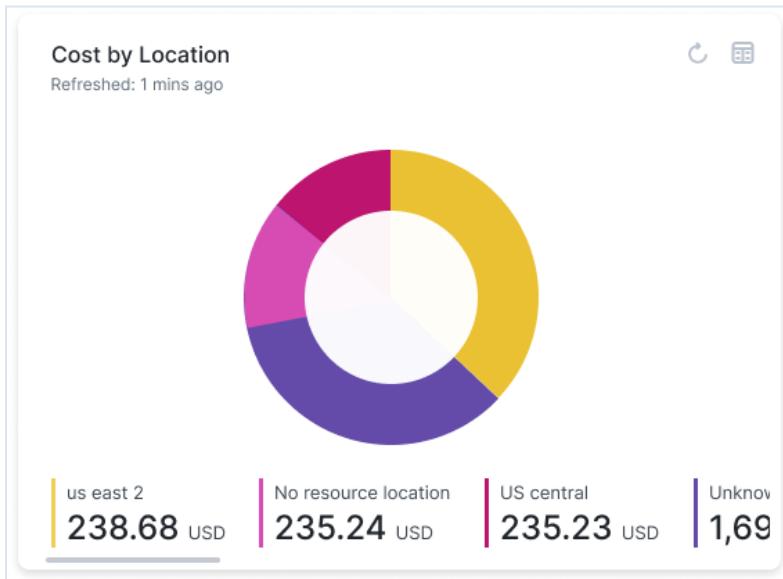


Image 8.5: Cost by location

14.2 Cost Analysis

Use Filters for in-depth view and analysis of the cost because it provides you with ability to view cost by Project and thereon drill down to Subscriptions, Resource Groups, Resource Type and Resources therein.

(Screen required)

Image 8.5: Cost by location

14.3 Optimize

A3S delivers the most critical aspect of managing expenditure on Azure by constantly monitoring the cost incurred by the resources deployed on Azure across various projects and thereon analyzes that data in real time to provide actionable recommendations to optimize the resource provisioning, utilization and the pricing structure under which to consume the resource, among many other things.

Optimize landing page displays the recommendations on how to use the resources in cost effective manner.

The screenshot shows the 'Optimize' section of the AI Powered Azure Automation interface. On the left, a sidebar lists 'Overview' (selected), 'Project name 1', 'Project name 2', 'Project name 3', and 'Project name 4'. Below that is a 'Billing' section. The main content area has a breadcrumb 'Home > Cost Management & Optimization' and tabs for 'Overview', 'Cost Analysis' (selected), 'Optimize' (highlighted in blue), and 'Budget & Alerts'. A 'Learn more' link is also present. The 'Optimize' section displays 'Total recommendations: 1' (High 11, Medium 21, Low 22), 'Impacted resources: 3', and 'Potential yearly savings: 1,258 USD'. Below this is a table titled 'Alerts' with columns: Impact, Description, Potential yearly savings, Impacted resources, and Last update. The table lists nine rows, each detailing a recommendation to buy virtual machine reserved instances to save money over pay-as-you-go costs, with a potential yearly saving of 1,258.17 USD and 3 impacted virtual machines, all updated on 6/18/2021, 12:00 PM.

Image 8.6: Cost monitoring – recommendations

- By default, the information is shared for the first project.
- Project can be chosen from left menu as needed.
- Use Subscription, Resource group and Resource filters to find recommendations for a specific resource within a project.



14.4 Budget & Alerts

One of the easiest ways to control cost is to set budgets for your projects. And get notified immediately if the budget threshold is crossed so that you can take remedial actions to contain the cost.

Budgets & Alerts landing page enables you to set budget for your projects and thereon the threshold value, which if crossed leads to notification trigger.

The screenshot shows the 'Budget & Alerts' section of the AI Powered Azure Automation interface. On the left, there's a sidebar with 'Overview' and 'Billing' sections, each containing four project names: Project name 1, Project name 2, Project name 3, and Project name 4. The main area has a search bar and navigation links for Home, Overview, Cost Analysis, Optimize, and Budget & Alerts. The 'Budget & Alerts' tab is selected. Below it, a table lists seven alerts. The columns are: Name, Scope, Reset period, Creation date, Expiration date, Budget, Forecasted, Evaluated spend, Progress, and three dots. Each alert row has a progress bar indicating spending at 12%. A context menu is open over the last alert, showing 'Edit' and 'Delete' options.

Name	Scope	Reset period	Creation date	Expiration date	Budget	Forecasted	Evaluated spend	Progress	Actions
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...
Alert 134534534...	Project1	Monthly	8/1/2021	8/1/2021	\$2,000	\$2,000	\$1,1371	12%	...

14.4.1 Create Budget and Set Alerts



The screenshot shows the 'Budget & Alerts' section of the Azure Cost Management & Optimization interface. At the top, there are tabs for Overview, Cost Analysis, Optimize, and Budget & Alerts (which is selected). Below the tabs, there's a 'Project name' field and a 'Create a budget' button. The main area is divided into sections: 'Budget scoping' (Subscription and Resource group filters), 'Budget Details' (Name, Reset period, Creation date, Expiration date), and 'Budget Amount' (Amount). To the right, a chart titled 'View of Monthly Cost Data' shows costs from April to August. The chart includes bars for Actual (blue), Forecast (light blue), and Budget (red).

Last month	Max (past 3 month)	Max monthly forecast
3,687 USD	3,3687 USD	5,731 USD

View of Monthly Cost Data
Apr 2021 - Aug 2021

Actual Forecast Budget

Image 8.7: Cost monitoring – set budgets

1. Select a project from left and click **Budget & Alerts tab** on the right top corner.
2. Set scope based on the filters (Subscription, Resource group, Resource).
3. Provide **Name** and select **Billing period** from monthly, quarterly, or yearly.
4. Select **Creation date** i.e., first day of first budget evaluation and **Expiration date**.
5. Set the budget in **Amount**.
6. Click **Next**.
7. Set alert condition.



Image 8.8: Cost monitoring - set alert condition

8. Select **Type** (Alert to be created on Actual cost/Forecasted cost?).
9. Provide **% of Budget** (percentage of the amount on ‘Type’ selected above).
10. Select **Action group** or click **Add another action group** to create new action group.
11. Provide **Alert Recipients (email)** where email alerts will be sent, you can add multiple recipients.
12. Select **Language** or use default (English).
13. Click **Create**.

14.5 Billing

Billing contains following sub-sections:

1. Invoices.
2. Reservation Transactions.
3. Billing profiles.



14.5.1 Invoices

Provides option to download the monthly invoices.

Invoice ID	Invoice date	Billing period	Billing profile	Amount due	Total amount	Status
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	No payment needed

Image 8.9: Cost monitoring – invoices

1. Select a project from the left menu.
2. Click on ellipsis (•••).

Invoice ID	Invoice date	Billing period	Billing profile	Amount due	Total amount	Status
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	No payment needed

Image 8.10: List of invoices



The screenshot shows the Azure Invoices page. At the top, there are navigation links: Home > Cost Management & Optimization, Invoices (selected), Reservation Transactions, and Billing Profiles. Below the navigation, there's a section titled "Invoices" with a "Project name" dropdown and filters for "Subscription", "Resource group", and "Resource". A summary box on the left says "Current amount due \$ 0.00 No payment needed". Another box on the right says "Next invoice Available on Jul 5 For billing period Jun 1 - Jun 30". Below these are search and filter controls: "Search invoice ID", "Status: 4 selected", and "Timespan: Last 12 months". The main area is a table with columns: Invoice ID, Invoice date, Billing period, Billing profile, Amount due, Total amount, Status, and an ellipsis column. Six rows of data are listed, all showing "Paid on 6/5/2021". The last row has a status of "No payment". A context menu is open over this row, listing four options: "Download invoice", "Download invoice price", "Download invoice price", and "Prepare Azure usage file".

Invoice ID	Invoice date	Billing period	Billing profile	Amount due	Total amount	Status	
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021	...
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021	...
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021	...
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021	...
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	Paid on 6/5/2021	...
G004243945	6/5/2021	5/1/2021 - 5/31/2021	Zenviro Tech US Inc	\$0.00	\$0.00	No payment	Download invoice Download invoice price Download invoice price Prepare Azure usage file

Image 8.11: Invoices - actions

3. Choose a download option:
 - a. Download invoice.
 - b. Download invoice price sheet.
 - c. Download Azure price sheet.
 - d. Prepare Azure usage file.

14.5.2 Reservation Transactions

Reservation Transactions landing page displays the lists of transactions for Reserved Instances.



Date	Transaction type	Product SKU	Quantity	Invoice section	Subscription	Amount
6/17/2021	Purchase	Reserved VM instance, Standard_B4...	30	Zenviro Tech US Inc	Azure subscription 1	\$1,1371
6/17/2021	Purchase	Reserved VM instance, Standard_B4...	30	Zenviro Tech US Inc	Azure subscription 1	\$1,1371
6/17/2021	Purchase	Reserved VM instance, Standard_B4...	30	Zenviro Tech US Inc	Azure subscription 1	\$1,1371
6/17/2021	Purchase	Reserved VM instance, Standard_B4...	30	Zenviro Tech US Inc	Azure subscription 1	\$1,1371
6/17/2021	Purchase	Reserved VM instance, Standard_B4...	30	Zenviro Tech US Inc	Azure subscription 1	\$1,1371
6/17/2021	Purchase	Reserved VM instance, Standard_B4...	30	Zenviro Tech US Inc	Azure subscription 1	\$1,1371

Image 8.12: Reservation Transactions

- Use Subscription, Resource group and Resource filters to view specific transaction(s).

14.5.3 Billing Profiles

A billing profile contains a payment method, Bill-to information, and other invoice settings, such as purchase order number and email invoice preference.

The screenshot shows the 'Billing Profiles' section of the Azure portal. On the left, there's a sidebar with 'Overview' and 'Billing' selected. The main area has a header 'Billing Profiles' with 'Project name' dropdown filters for 'Subscription', 'Resource group', and 'Resource'. Below is a search bar, a role filter ('Role: inherited'), and a status filter ('Status: Any'). A table lists billing profiles for 'Zenviro Tech US Inc' with columns: Name, Month-to-date charges, Last month's charges, My role, and Status. Each row has an ellipsis button (three dots) and a context menu with 'Export CSV' and 'Delete' options. The status column shows 'Active' for all profiles.

Name	Month-to-date charges	Last month's charges	My role	Status
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active
Zenviro Tech US Inc	\$4,315.49	\$4,315.49	Inherited	Active

Image 8.13: Billing profiles

14.5.3.1 Add Billing Profile

Click **+ Add billing profile** to initiate the wizard.
(Screen is required)

14.5.3.2 Delete Billing Profile

- Click ellipsis (•••) in line with the billing profile in the table.
- Select **Delete** from the drop down.

14.5.3.3 Export Billing Profile

- Click ellipsis (•••) in line with the billing profile in the table.
- Select **Export CSV** from the drop down.

15 Governance

Enables and ensures provisioning, implementation & enforcement of enterprise IT policies, Identity & Access Management along with Auditing & Logging.

15.1 Overview

15.2 Enterprise Policies

Enterprise Policies landing page shows the list of Policies and Initiatives. Initiative is a group of individual policies.

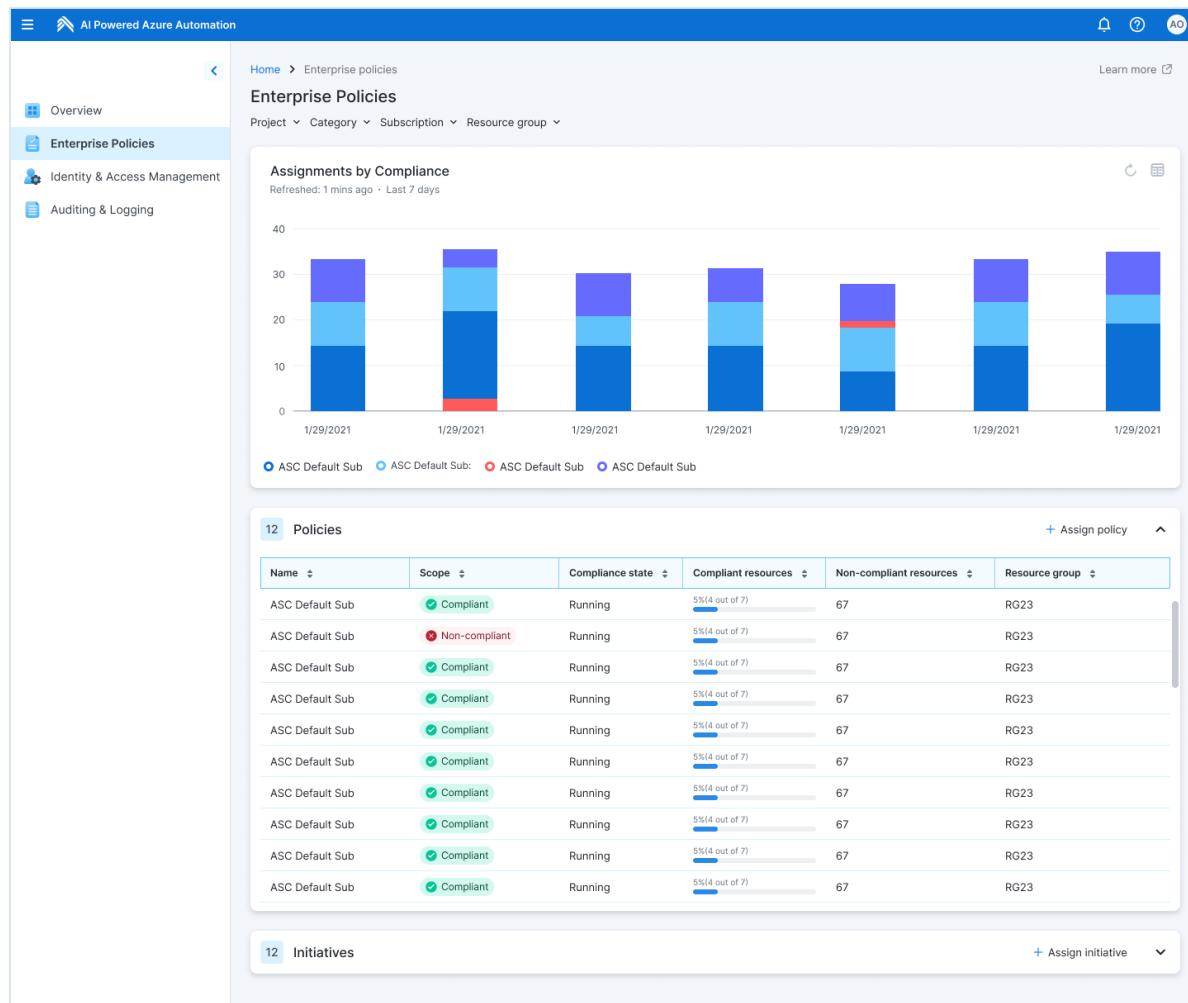


Image 9.1: Enterprise policy dashboard



- Use Filters – Project, Category, Subscription, and Resource Group at the top to define the scope that you are interested in.
- Assignments by Compliance: shows the number of assigned compliances initiatives (group of policies) by date. For example, ASC Default is a group of 10 policies that are applied to the subscription on a particular date.

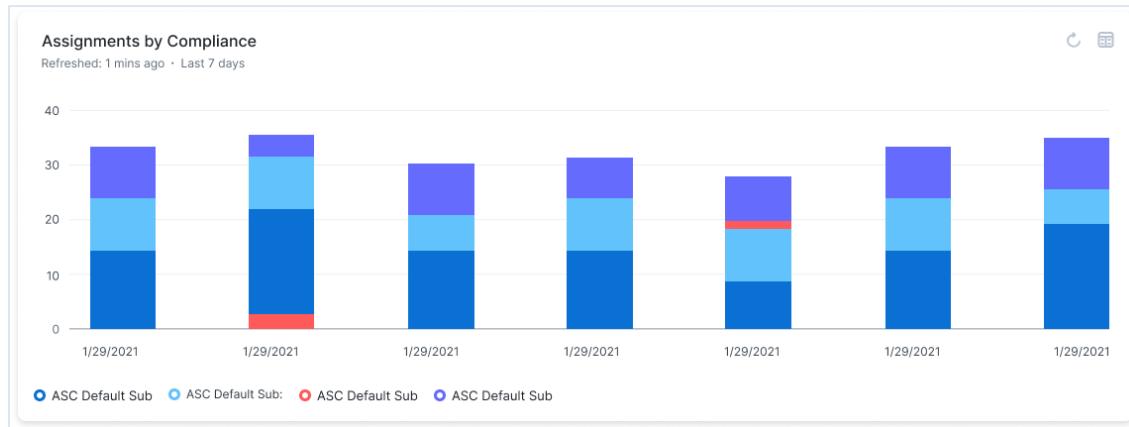


Image 9.2: Assignments by compliance

- View the list of assigned policies in the Policies table.

Name	Scope	Compliance state	Compliant resources	Non-compliant resources	Resource group
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Non-compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23
ASC Default Sub	Compliant	Running	5%(4 out of 7)	67	RG23

Image 9.3: List of policies

- View the list of assigned initiatives in the Initiatives table.



12 Initiatives

Name	Scope	Compliance state	Compliant resources	Non-compliant resources	Non-compliant policies
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Non-compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy
ASC Default Sub	Running	Compliant	5%(4 out of 7)	67	Policy

15.2.1 Assign Policy

1. Click on **Assign policy**.
2. Select **Scope** (Subscription).
3. Exclusion (optional), in case you want to exclude any Resource Group(s).
4. Choose **Policy definition** from the list.
5. Provide name for the **Assignment** and a **Description**.
6. Select **Policy enforcement** (enabled/disabled).
7. Parameters of the policy varies based on policy definition. Select correct **Parameters**.
8. Fill **non-compliance messages** with meaningful message as it helps in understanding why a resource is not compliant.
9. Click **Assign**.



Assign Policy X

Scope

Scope *
Visual Studio Enterprise Subscription – MPN/MonitoringTest
[Choose scope](#)

Exclusions (optional)
2 selected
[Choose exclusions](#)

Basics

Policy definition *
Azure Cosmos DB allowed locations
[Choose definition](#)

Assignment name * ⓘ
Azure Cosmos DB allowed locations

Description

Policy enforcement ⓘ
 Enabled Disabled

Assigned by
Amgad Okail

Parameters
Specify parameters for this policy assignment

Allowed location

Non-compliance messages

Non-compliance message ⓘ

Cancel Create



Image 9.4: Assign policy side sheet

15.2.2 Assign Initiatives

1. Click on **Assign Initiative**.
2. Select **Scope** (Subscription).
3. Exclusion (optional), in case you want to exclude any Resource Group(s).
4. Choose **Initiative definition** from the list.
5. Provide name for the **Initiative** and a **Description**.
6. Select **Initiative enforcement** (enabled/disabled).
7. Parameters of the initiative varies based on initiative definition. Select correct **Parameters**.
8. Fill **non-compliance messages** with meaningful message as it helps in understanding why a resource is not compliant.
9. Click **Assign**.



Assign Initiative X

Scope

Scope *
[Choose scope](#)

Exclusions (optional)
[Choose exclusions](#)

Basics

Initiative definition *
[Choose definition](#)

Assignment name * ⓘ

Description

Policy enforcement ⓘ
 Enabled Disabled

Assigned by

Parameters

ⓘ First, choose a policy on the Basics tab to view what parameters are required.

Non-compliance messages

ⓘ First, choose a policy on the Basics tab to configure non-compliance messages.

Cancel Create

Image 9.5: Assign initiatives



15.3 Identity and Access Management

Provides functionality for account provisioning and de-provisioning, authentication, authorization, and role management.

15.3.1 Overview

Identity and Access Management (IAM) landing page is divided into three panels:

- Count of directory roles.

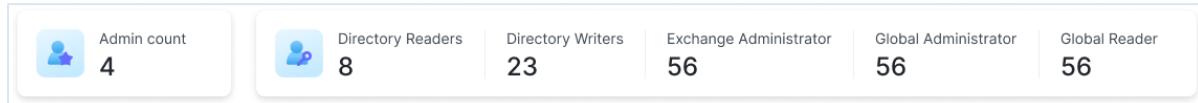


Image 9.6: count of directory roles

- List of users.

The figure shows a table titled "Users" with 12 entries. The columns are Name, Role, Department, Mail, and Office Location. Each row contains the name "Amgad Okail", the role "Owner", the department "Product design", the email "amgado@dynapt.ai", and the office location "Cupertino, CA". There is a search bar at the top left and two buttons at the top right: "+ Add role assignment" and "+ Add user". The table has a light blue header and white rows. The "Name" column is sorted by descending order.

Name	Role	Department	Mail	Office Location
Amgad Okail	Owner, Reader.	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA
Amgad Okail	Owner	Product design	amgado@dynapt.ai	Cupertino, CA

Image 9.7: List of users

- List of groups.



Name	Group Type	Email	Security enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled
Group name	Security	teamsa3s@dynapt.ai	Enabled

Image 9.8: List of groups

15.3.2 Add User

1. Create new user
 - Click **Add user** button on the Users tile.
 - Select **Create user**.
 - Provide the needed inputs in the side sheet.
 - Click **Create**.



New user

Create user Invite user

User name * @

Name *

Password

Hide advanced settings

First name

Last name

Groups and roles

Groups

Roles

Settings

Block sign in
 Yes No

Office Location

Job info

Job title

Department

Company name

Manager

Image 9.9: Create user side sheet

15.3.3 *Invite a User*

- Click **Add user**.
- Select **Invite user**.
- Provide the needed inputs in the side sheet.
- Click **Invite**.



New user X

Create user Invite user

Email address * ?

[^ Hide advanced settings](#)

Name ?

First name

Last name

Personal message

Groups and roles

Groups

Roles

Settings

Block sign in
 Yes No

Usage location

Job info

Job title

Department

Company name

Manager

Image 9.10: Invite user side sheet



15.3.4 Add Role Assignment

- Click **Add role assignment** in the Users tile.
- Select the role you want to assign to the user.
- Select the user(s) to assign the role.
- Click **Assign**.



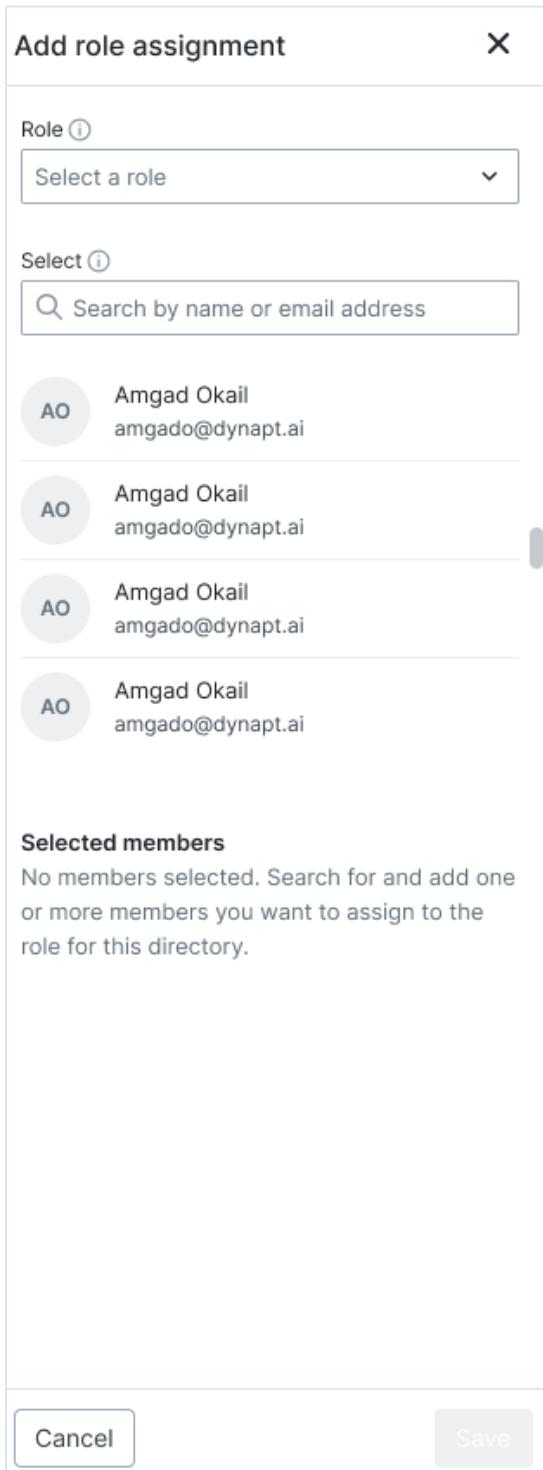


Image 9.11: Add role assignment

15.3.5 User Management

- Click on ellipsis (⋮).



- Chose the operation that you want to perform.
 - a. Edit User.
 - b. Manage Roles.

Manage Roles	
<input type="text"/> Search ⓘ	
<input checked="" type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input checked="" type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="checkbox"/>	Administrator Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
<input type="button" value="Cancel"/>	<input type="button" value="Save"/>

- c. Reset Password.
 - d. Delete User.
 - Provide all the needed inputs.
 - Click **Save**.

15.3.6 Add Group

- **Membership type:** Assigned
 - a. Click **Add group**.
 - b. Provide all the needed inputs in the side sheet.

Group type * ⓘ
Security

Group name *
[Empty input field]

Group description
A short description of the group

Azure AD roles can be assigned to the group ⓘ
 Yes No

Membership type * ⓘ
Assigned

Owners
No owners selected

Members
No members selected

Image 9.12: Group membership – assigned

- Select **Group Type**, provide values for **Name** and **Description**.
- Select **Owner(s)** and **Member(s)**.
- Click **Add**.



- **Membership type:** Dynamic
 - Click **Add group**.
 - Provide the needed inputs in the side sheet.

Group type * ⓘ
Security

Group name *
[Empty input field]

Group description
A short description of the group

Azure AD roles can be assigned to the group ⓘ
 Yes No

Membership type * ⓘ
Dynamic User

Owners
No owners selected

Dynamic user members * ⓘ
Add dynamic query

Image 9.13: Group membership - dynamic

c. Add Dynamic Membership rules

And/Or	Property	Operator	Value
And	[Dropdown]	[Dropdown]	[Input Field] Delete
And	[Dropdown]	[Dropdown]	[Input Field] Delete
Add expression			

Image 9.14: Dynamic membership rules

d. Click **Add**.



15.3.7 Group Management

1. Click on ellipsis (⋮ ⋯ ⋤).
 2. Choose the operation that you want to perform:
 - a. Manage Owners.

- b. Manage Members.

- c. Edit group.
 - d. Delete group.

15.4 Auditing and Logging

Auditing and Logging sub section is further categorized as below:

1. Activity Logs.
 2. Sign-ins.
 3. Audit Logs.

15.4.1 Activity Logs

Provides overview of all the activities that occurred in Azure at tenant level.

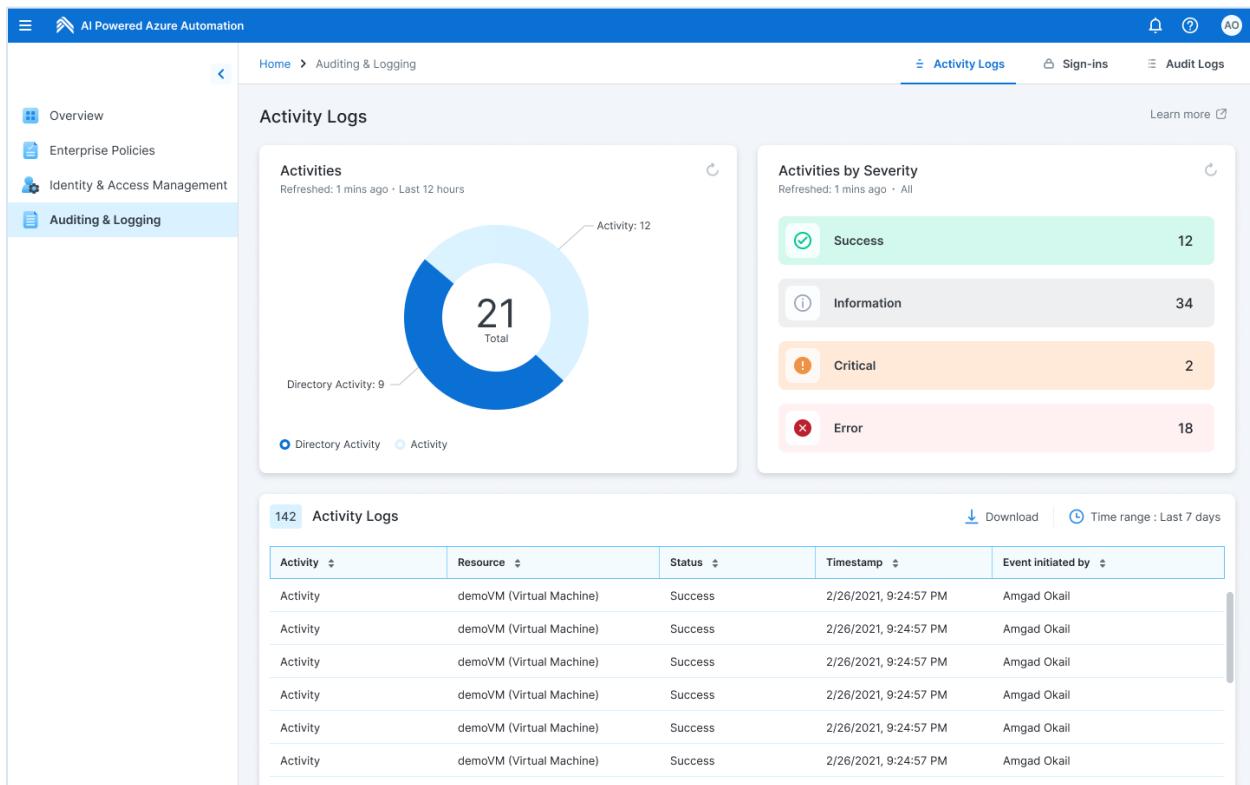


Image 9.15: Activity Logs dashboard

- **Activities** shows the count of Directory activities and actions performed by users.
 - **Activities by Severity** shows the count and severity of the activities.
 - **Activity Logs** table displays list of activities in detail.
 - Click **Download** button to download the table in CSV format.
 - Use **Time range** to find activities performed in the chosen timeframe.

Image 9.16: Activity details

15.4.2 Sign-ins

- Table displays list of user sign-in details.
 - Click **Download** icon to download the table in CSV format.
 - Use **Time range** to find sign-ins performed in the chosen timeframe.

Image 9.17: Sign-in events

15.4.3 Audit Logs

- Table displays list of audit log details.
 - Click **Download** icon to download the table in CSV format.
 - Use **Time range** to find audit logs in the chosen timeframe.

Image 9.18: Audit logs

16 Security

Enables and ensures that all deployed Azure resources are secure from network breach and unauthorized access.

16.1 Overview

The landing page of Security bucket shows the key security related metrics for the first project.

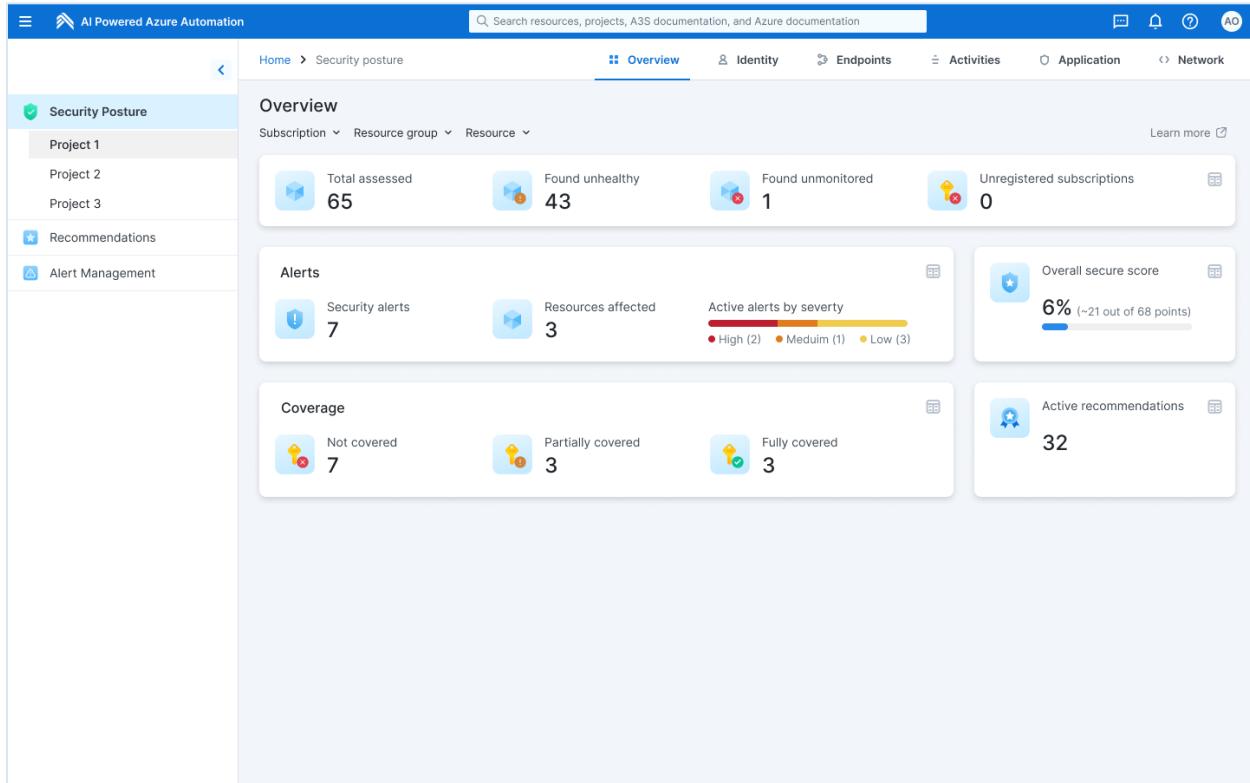


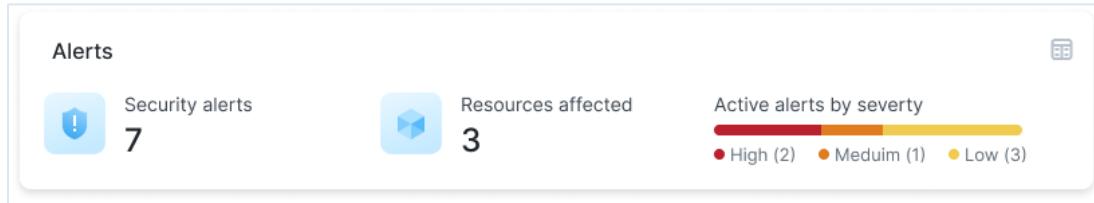
Image 10.1: Security overview

- Click **table icon** to view data in tabular format.
- Download the data using **Download CSV** button.
- Use **Filters** at the top to drill down further into a project and choose the scope within which you want to view & analyze the data.
- Total assessed:** number of assessed resources.
- Found unhealthy:** number of resources not following security best practices.
- Found unmonitored:** out of A3S security monitoring.
- Unregistered subscriptions:** subscriptions out of A3S security monitoring.



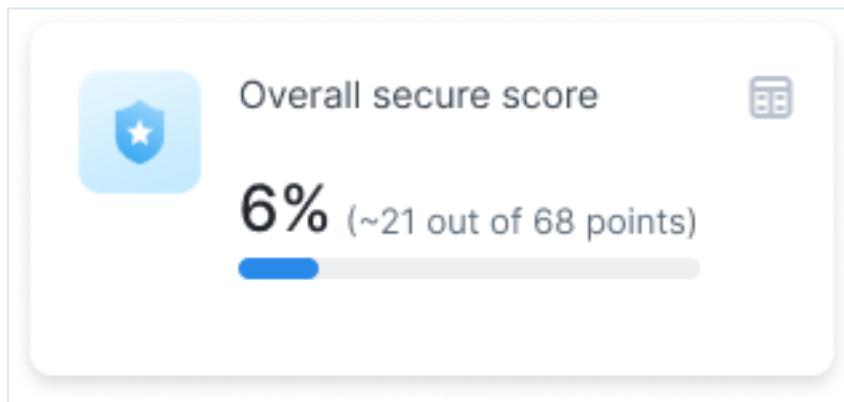
16.1.1 Alerts

- **Alerts:** number of security alerts.
- **Resources affected:** number of resources with active alerts.
- **Active alerts by severity:** number of active alters at each severity level.



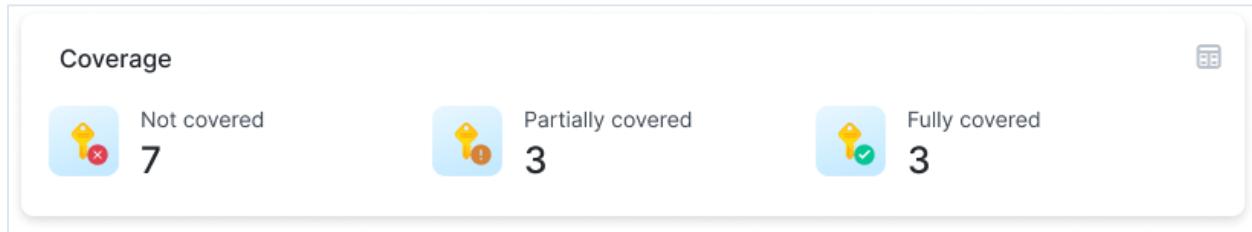
16.1.2 Overall Secure Score

Shows the percentage of resources that have been fully secured.



16.1.3 Coverage

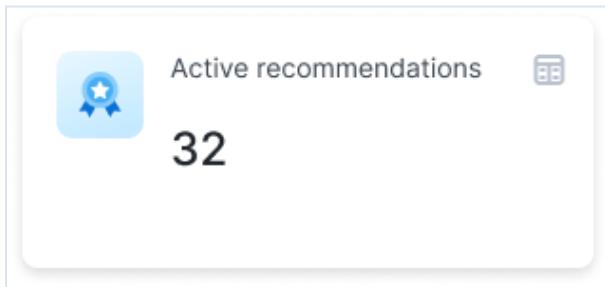
- **Not covered:** Number of subscriptions that not covered under security policies. It indicates that the subscriptions are newly created and not covered under the policies.
- **Partially covered:** Some number of security policies have been applied to the subscriptions out of total subscriptions.
- **Fully covered:** All available controls are implemented in the subscription.



16.1.4 Active Recommendations

Shows the number of security recommendations provided by A3S.





16.2 Security Posture

Security posture of a project is comprised of:

1. Identity Security.
2. Endpoint Protection.
3. Activities.
4. Application Security.
5. Network Security.

16.2.1 *Identity Security*

Shows the activities performed by identities, including the anomalous ones.



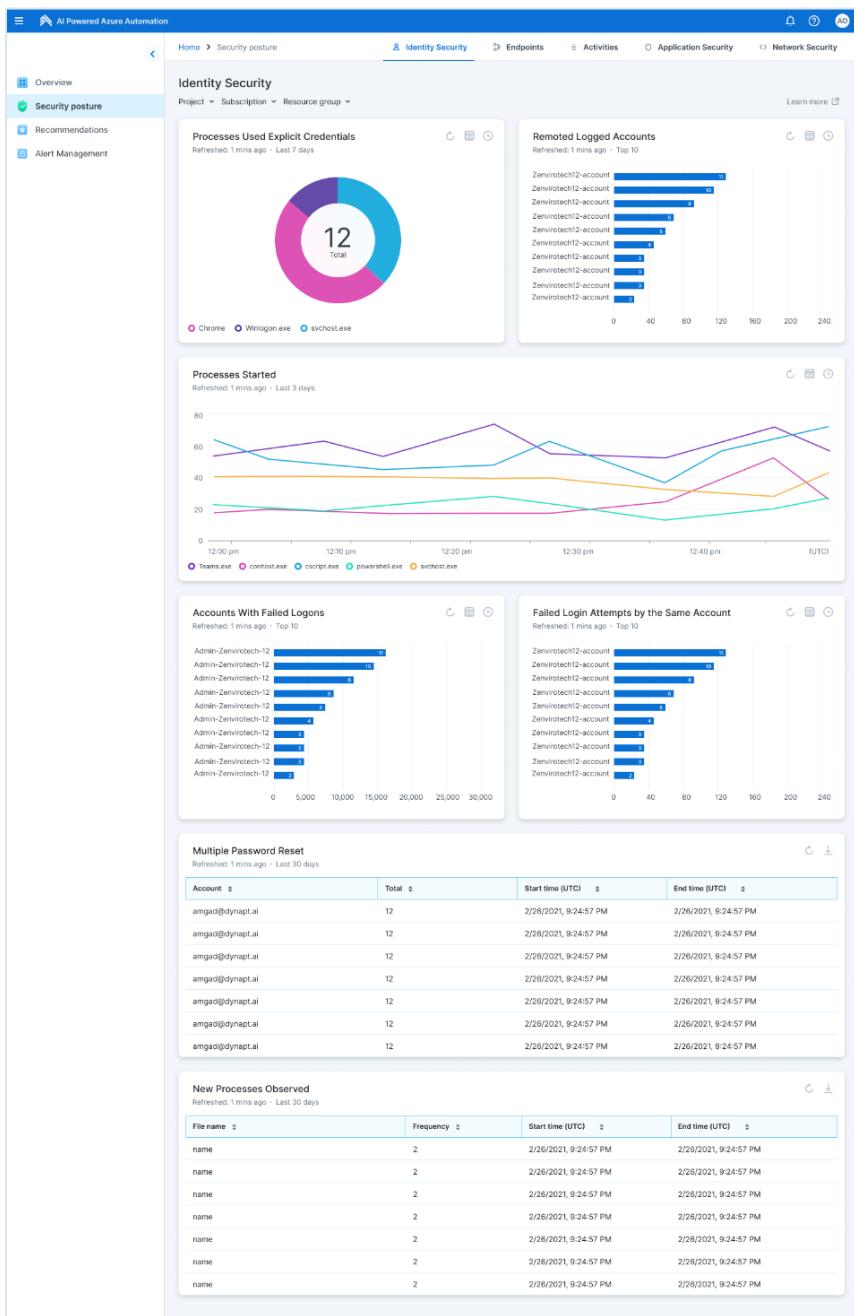


Image 10.2: Identity security dashboard

16.2.1.1 Processes Used Explicit Credentials

Shows the number of processes that attempted to login into an account by explicitly specifying credentials of that account.

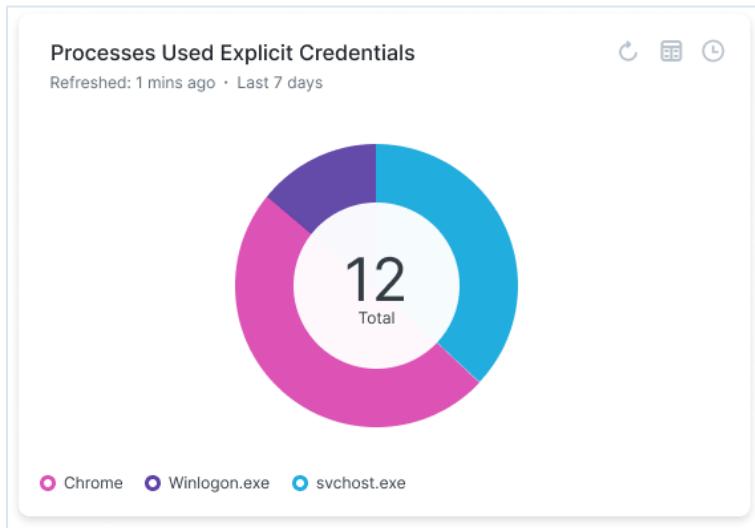


Image 10.3: Security - Explicit credentials

16.2.1.2 Remotely Logged Accounts

Shows all accounts that were logged in remotely, for example, outside office network using VPN connection, etc.



Image 10.4: Security - remote logging

16.2.1.3 Top 5 Long Running Processes

List of processes started in a chosen timeframe.



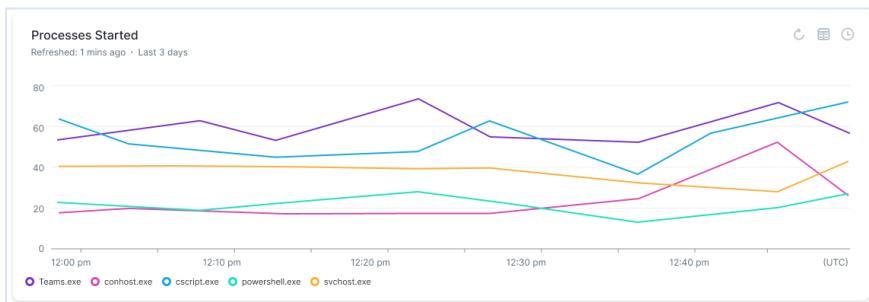


Image 10.5: Security - processes started recently

16.2.1.4 Accounts with Failed Logins

List of accounts with failed login and the number of attempts.

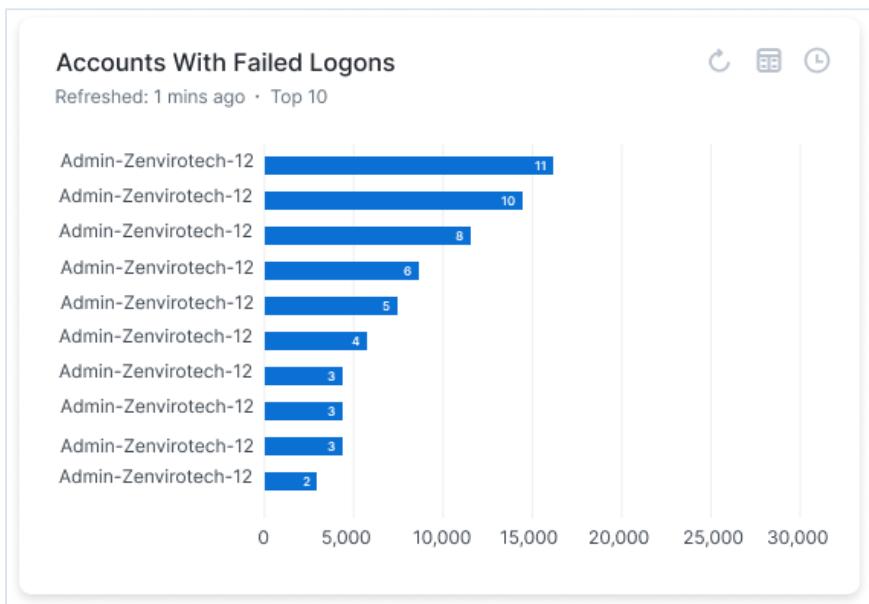


Image 10.6: Security - failed logon

16.2.1.5 Failed Login Attempts by the Same account

Shows the number of failed login attempts by the same account.





Image 10.7: Failed login attempts

16.2.1.6 Multiple Password Reset

Table displays number of times one's password is reset. First and last password reset time.

Account	Total	Start time (UTC)	End time (UTC)
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
amgad@dynapt.ai	12	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM

Image 10.8: Multiple password resets

16.2.1.7 New Processes Observed

These new processes could begin new programs installed on hosts; however, normally in stable environments, these new processes could provide an indication of an unauthorized/malicious binary that has been installed and run.



New Processes Observed			
Refreshed: 1 mins ago · Last 30 days			
File name	Frequency	Start time (UTC)	End time (UTC)
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM
name	2	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM

Image 10.9: New processes observed

Note:

- Click refresh  icon to refresh the information.
- Click table  icon to view & download information in tabular format.
- Click clock  icon to set the time range.

16.2.2 Endpoint Protection

This ensures that all the Virtual Machines in the Azure environment are secure from network security point of view.

16.2.2.1 VMs with Security Logs

Number of security related logs in the Virtual Machines.

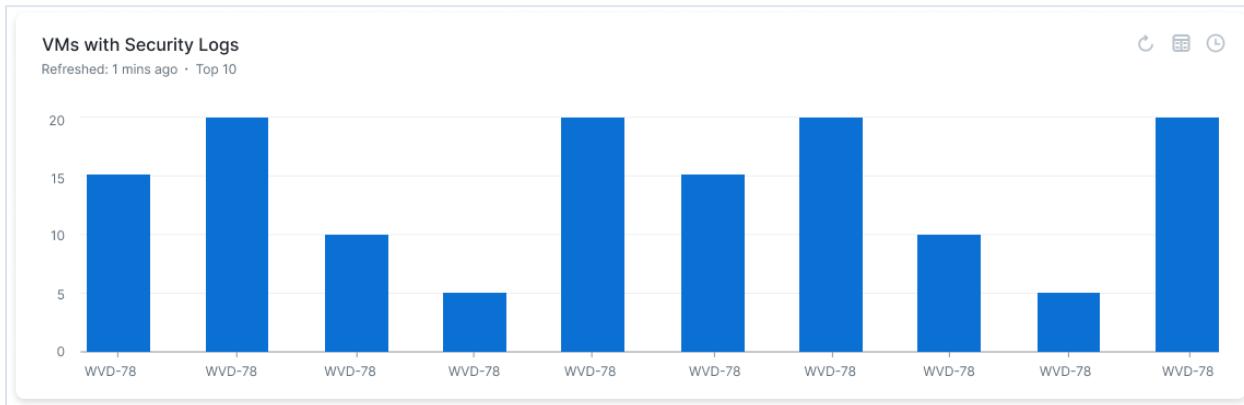


Image 10.10: VMs with Security Logs

16.2.2.2 Updates Available

List of Virtual Machines where Windows updates are available.



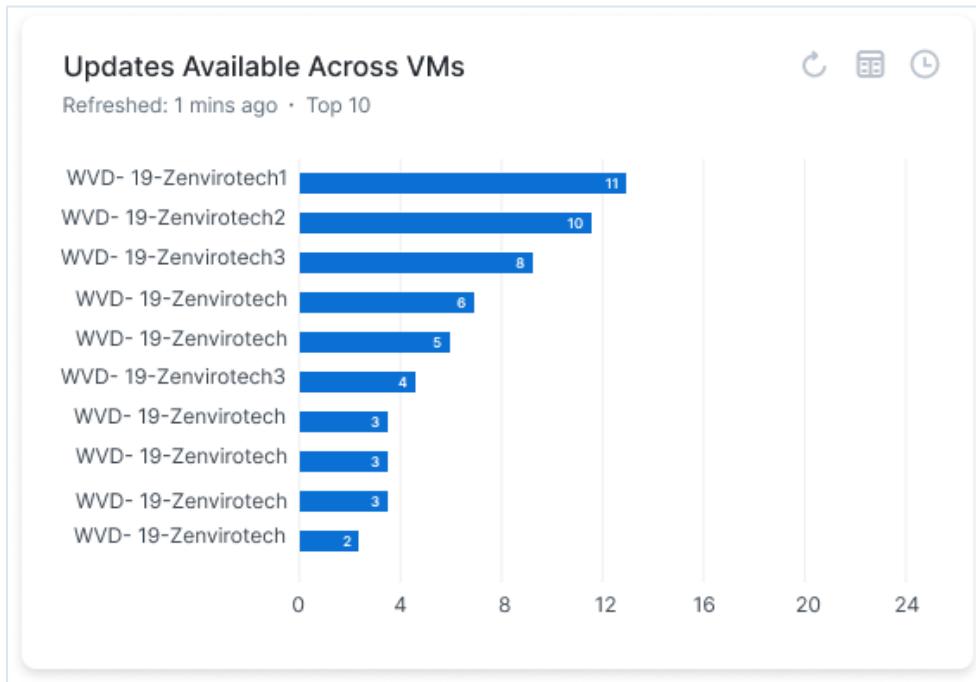


Image 10.11: Updates available on VM

16.2.2.3 VMs with Missing Critical Updates

List of Virtual Machines missing critical security updates.

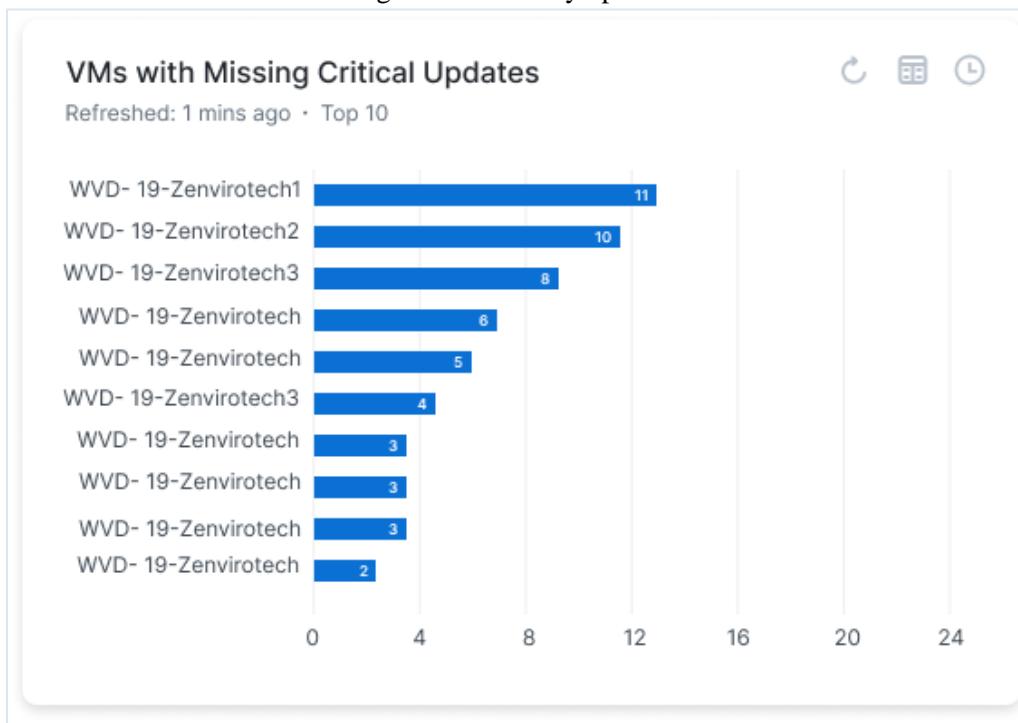


Image 10.12: Missing critical & security updates



16.2.2.4 VMs with Most Logins

List of Virtual Machines that have multiple successful logins.

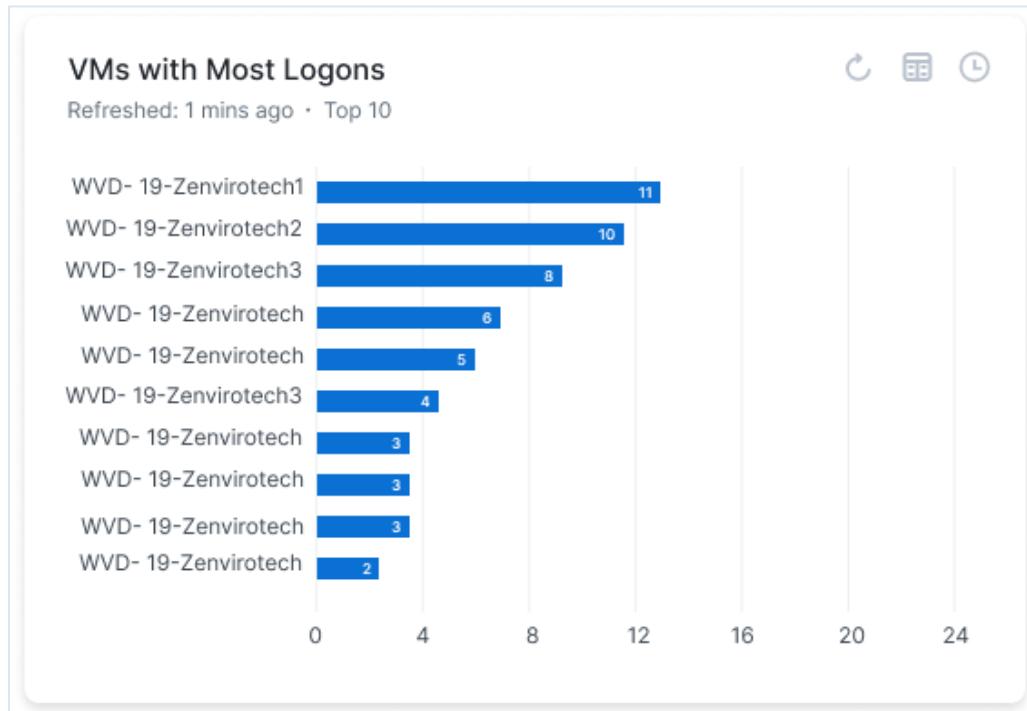


Image 10.13: VMs with most logon



16.2.2.5 VMs with Failed Logins

List of Virtual Machines that have multiple failed logins.

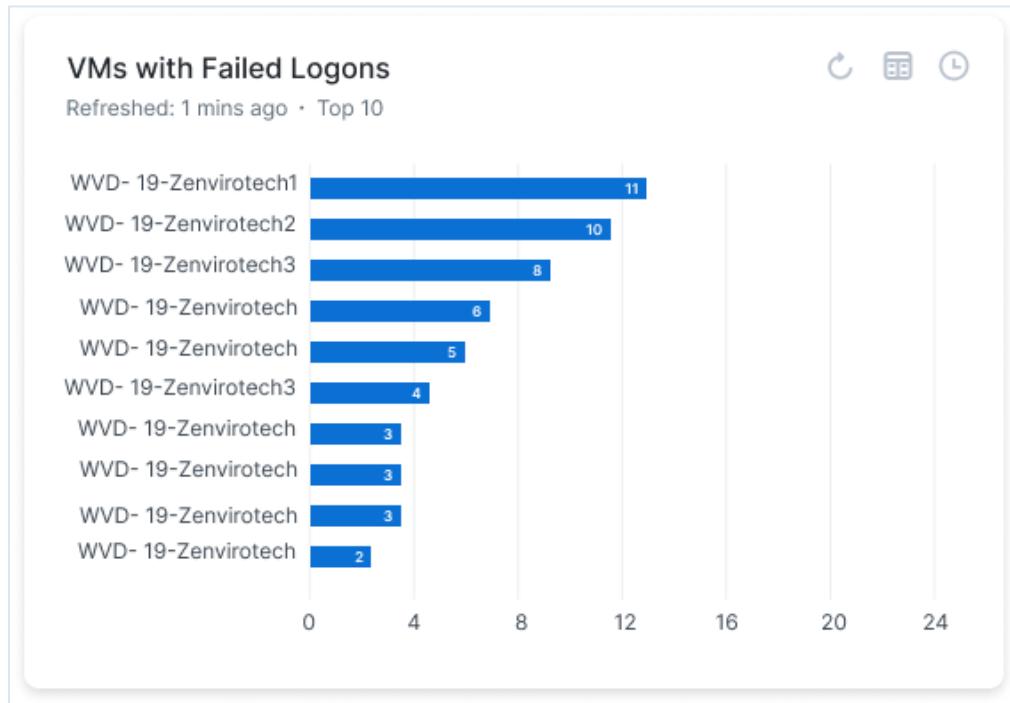


Image 10.14: Failed logon

16.2.3 Activities

Captures and analyzes all the actions performed on Azure for example start/stop of VM, Key Vaults accessed, etc. by users manually or by various applications that have access to your Azure environment.

16.2.3.1 Recent Operations

List of recent activities.



Activity Operations			
Refreshed: 1 mins ago			
Name	Resource group	Resource ID	Count
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80
Create Deployment	RG-PROD-VDI	/subscription/95lb-3784	80

Image 10.15: Recent activities

16.2.3.2 Continuous Activities Performed by Users

Looks for anomalous number of resources creation or deployment activities by same user in Azure.

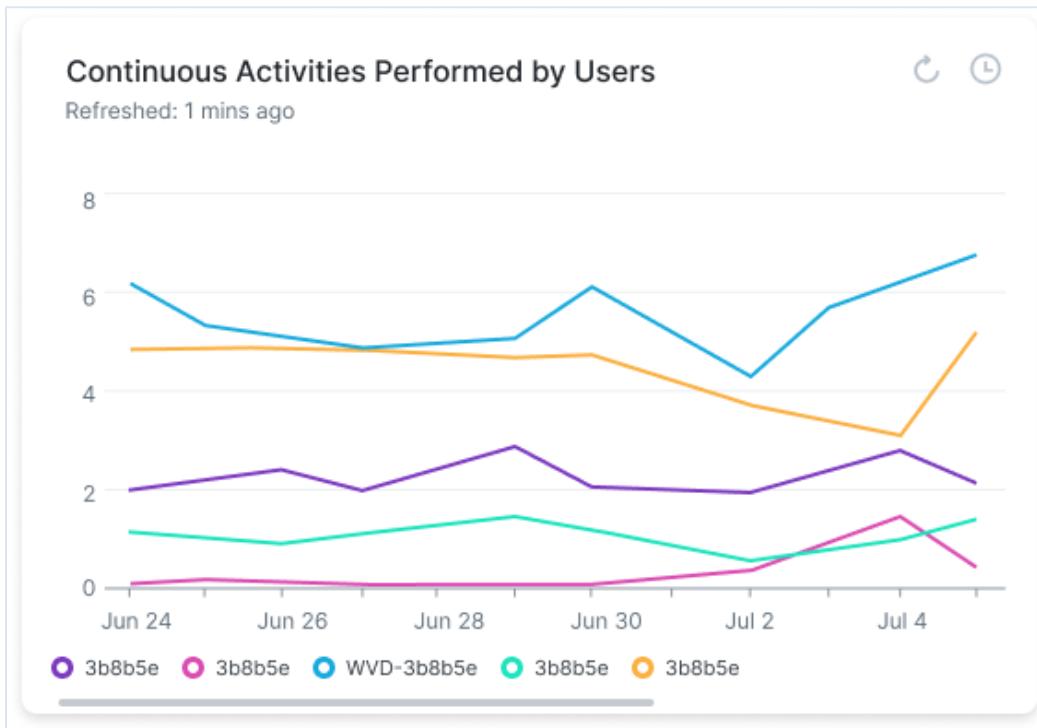


Image 10.16: Continuous activities performed by users

16.2.3.3 Key Vault Callers

List of all entities such as APIs, processes, users, applications accessing Key Vault.



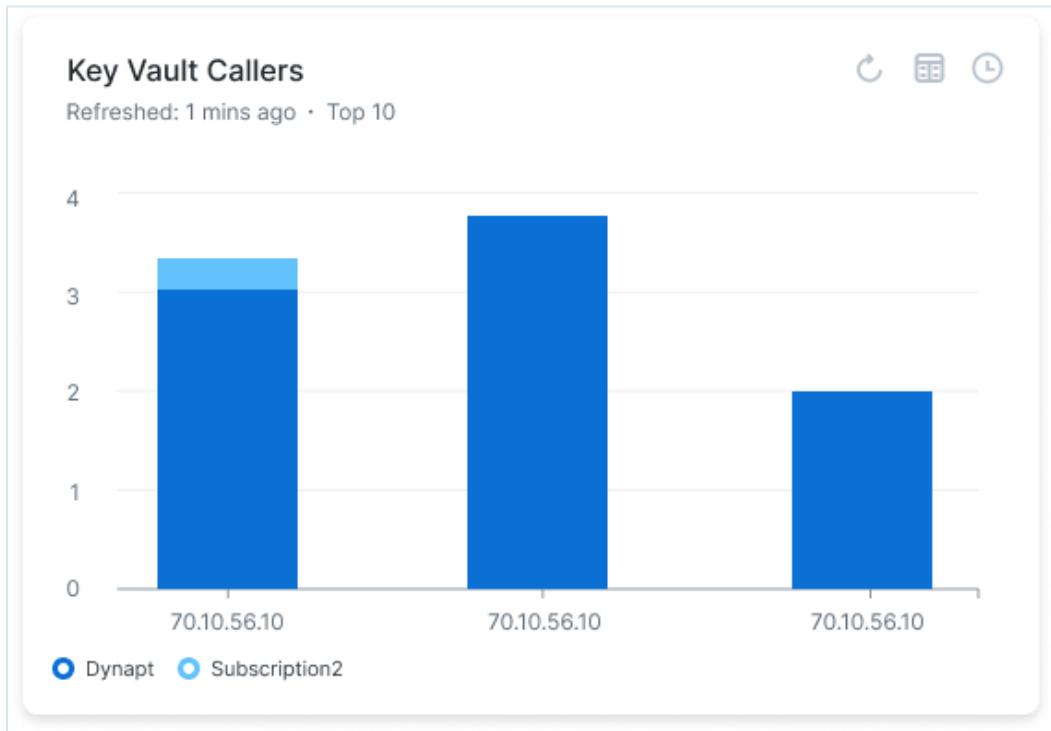


Image 10.17: Key vault callers

16.2.3.4 Users Who Granted Permissions

Shows the most prevalent users who grant access to others on Azure resources and for each account their common source IP address. If an operation is not from this IP address it may be worthy of investigation.

Users Who Granted Permissions				
Caller	Caller IP address	Start time (UTC)	End time (UTC)	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	
920c4923-deacdeacdeac	157.56.162.53	2/26/2021, 9:24:57 PM	2/26/2021, 9:24:57 PM	

Image 10.18: Users who granted permissions

16.2.3.5 Port Opened for an Azure Resource

Identifies what ports may have been opened for a given Azure Resource over the time range.



Port Opened for an Azure Resource								
Refreshed: 1 mins ago								
Time generated (UTC) ▼	Resource ▼	Resource group ▼	Caller IP address ▼	Caller ▼	Destination port range ▼	Direction ▼	Protocol ▼	Source port Range ▼
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data
2/26/2021, 9:24:57 PM	RG-PROD-VDI	RG	157.56.162.53	920c492.	Data	Data	Data	Data

Image 10.19: Resources with open ports

16.2.4 Security Recommendations

Provides all the network and cybersecurity related best practices & recommendations to reduce vulnerabilities and to avoid security breaches.

16.2.4.1 Coverage

Tile displays the number of implemented controls (group of recommendations) and individual recommendations out of total.

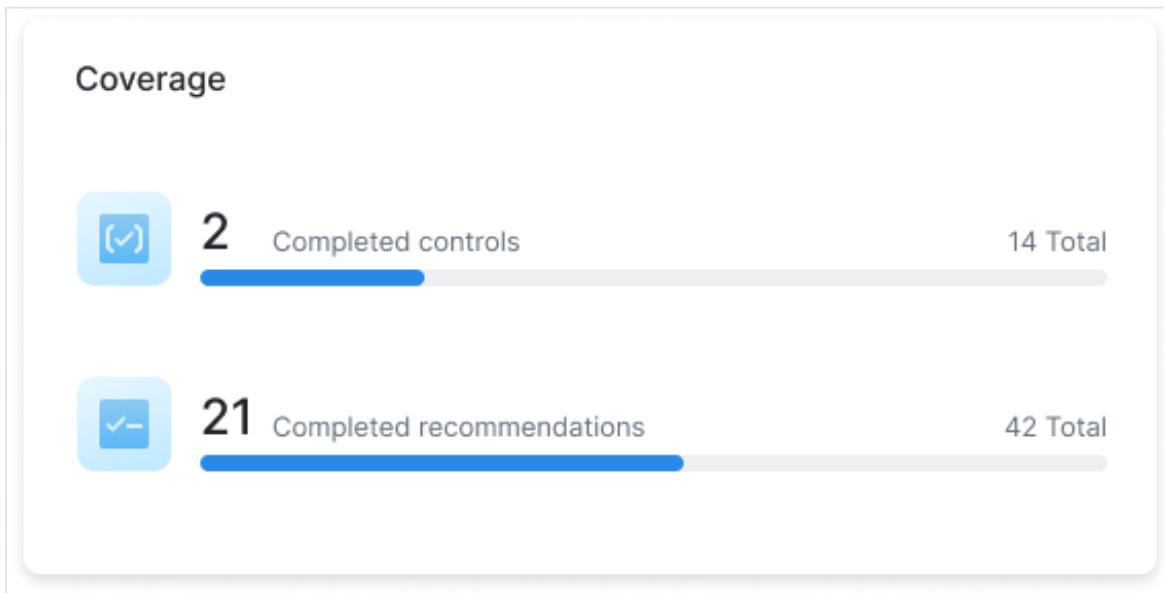


Image 10.20: Security recommendations - coverage



16.2.4.2 Resource Health

Tile displays resource state healthy for resources which either aren't impacted, or the issue is remediated, unhealthy for which are still impacted by the identified issue, and not applicable for which the recommendation does not have a specific reason.

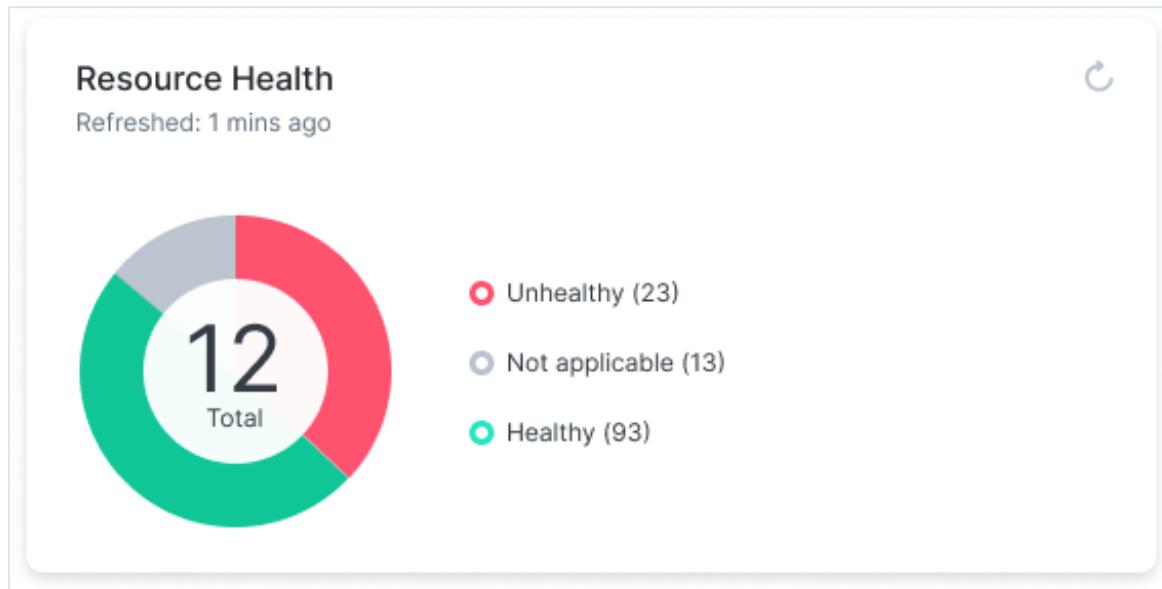


Image 10.21: Resource health

16.2.4.3 Recommendations

Table displays list of recommended best practices to be followed in the environment to strengthen the security posture.

Recommendations						Group by controls <input checked="" type="checkbox"/>	
Controls	Max score	Current score	Potential score increase	Unhealthy resources	Resource health		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #2e7131;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #dc3545;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #2e7131;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #dc3545;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #2e7131;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #dc3545;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #2e7131;"></div>		
Enable MFA	10	10	+0% (0 points)	3 out of 42	<div style="width: 75%; background-color: #dc3545;"></div>		

Image 10.22: List of recommendations



16.2.5 Alert Management

This page enables the user to manage security alerts – view and modify existing alerts or to create new ones as needed.

Further, stay informed in real time via SMS text messages and/or email whenever an alert goes for the resources deployed in Azure across various projects. The alert indicates a potential error or issue, and relevant information will be shared in the message sent.

The screenshot shows the 'Alert Management' section of the AI Powered Azure Automation interface. At the top, there are navigation links for Overview, Security posture, Recommendations, and Alert Management (which is selected). Below this, a summary box displays 'Active alerts' (7), 'Resources affected' (3), and a 'Active alerts by severity' bar chart showing 1 Medium alert and 3 Low alerts. A table below lists 10 specific alerts, each with details like severity, title, affected resource, and start time. All alerts are categorized as 'Pre-attack' and 'Active'.

Severity	Alert title	Affected resource	Resource type	Resource group	Start time (UTC)	MITRE ATT&CK® tactics	Status
Medium	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
High	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active
Low	Access from an un...	RG-vm-pro	RG-vm-pro	RG name	2/26/2021, 9:24:57 PM	Pre-attack	Active

Image 10.23: Alert management dashboard

- Click an alert in the table to view the details.



The screenshot shows the 'Alert Management' section of the AI Powered Azure Automation portal. On the left, a sidebar lists 'Overview', 'Security posture', 'Recommendations', and 'Alert Management' (which is selected). The main area has a breadcrumb path 'Home > Security'. The title 'Alert' is displayed above a table showing alert details. The table includes columns for Severity (Medium), Status (Active), Activity time (UTC) (2/26/2021, 9:24:57 PM), and MITRE ATT&CK® tactics (Pre-attack). Below the table is an 'Alert description' section with placeholder text. A 'Related entities' section lists Azure resource, Host, IP, and Network connection entities. A 'Take action' button is located at the bottom right.

Severity	Status	Activity time (UTC)	MITRE ATT&CK® tactics
Medium	Active	2/26/2021, 9:24:57 PM	Pre-attack

Alert description

Placeholder text: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vesti scelerisque bibendum augue mauris, id augue vitae enim, quisque. Tincidunt dictum neque orci adipiscing maecenas. Euismod feugiat suspendisse nunc, eu turpis suscipit. Ultricies velit velit morbi duis

Alert details

Activity start time (UTC)	Number of failed authentication attempts to host	Was RDP session initiated
2021/05/24 03:39:10:003212	14	No

Activity end time (UTC)	Number of existing account used by source to sign in	Detected by
2021/05/24 03:39:10:003212	1	Microsoft

Attacker source IP	Number of nonexistent accounts used by source to sign in
IP Address: 185.202.1.213	13

Attacker source computer name	Top accounts with failed sign in attempts (count)
Unknown	account name (1), account name (2), account name (13), account name (2), account name (4)

Related entities

- ✓ Azure resource (1)
- ✓ Host (1)
- ✓ Ip (3)
- ✓ Network connection (4)

Take action

Image 10.24: Alert details

The screenshot shows the 'Alert Management' section of the AI Powered Azure Automation portal. The left sidebar includes 'Overview', 'Security posture', 'Recommendations', and 'Alert Management' (which is selected). The main area has a breadcrumb path 'Home > Security'. The 'Alert Manager' sub-section shows 'Alert details' and 'Take action' tabs. Under 'Alerts', there is a table with columns 'Severity' and 'Alert ID'. The table lists 10 alerts, all of which are 'Low' severity. The 'Alert details' button at the bottom right of the table is highlighted with a blue border.

Severity	Alert ID
Medium	AID-1
High	AID-2
Low	AID-3
Low	AID-4
Low	AID-5
Low	AID-6
Low	AID-7
Low	AID-8
Low	AID-9
Low	AID-10

Image 10.25: Alert detail - Act

17 Compliance

Enables and ensures that all the resources deployed on Azure in A3S are following all regulatory compliances required by your organization.

Note: Compliances are applied, monitored, and managed at the Subscription level, hence the Filters functionality is not applicable & thus will not work in this bucket.

17.1 Overview

Compliance landing page shows overall view of the compliance status of all Azure Subscriptions that are under your Tenant and are being managed by A3S.



The screenshot displays the AI Powered Azure Automation interface, specifically the Compliance dashboard. On the left, a sidebar lists projects: Project name 1, Project name 2, Project name 3, Project name 3, Projectless, Manage Policy, and Reports. The main content area has a header "Home > Overview".

Azure Security Benchmark: Refreshed 1 mins ago. A circular progress chart shows 17 out of 40 passed controls.

Compliance Status: Refreshed 1 mins ago. A table shows the number of passed controls for different standards:

Standard name	Passed controls	Chart
ISO 27001	2/20	<div style="width: 10%;"></div>
SOC TSP	2/20	<div style="width: 10%;"></div>
PCI DSS 3.2.1	2/20	<div style="width: 10%;"></div>
Azure Security Benchmarking	2/20	<div style="width: 10%;"></div>

Azure Security Benchmark Details: ISO 27001, PCI DSS 3.2.1, SOC TSP, ISO 27001-2013. Download report.

NS. Network Security: A tree view showing NS. Network Security, NS. Network Security, and NS. Network Security. Under NS. Network Security, there is a single item: NS.1. Implement security for internal traffic.

Customer responsibility: Non-internet-facing virtual machine, Virtual machine, Failed resources: 39 of 42, Resource compliance status: Red.

Resource type: Non-internet-facing virtual machine, Virtual machine, Failed resources: 39 of 42, Resource compliance status: Red.

Resource type: Non-internet-facing virtual machine, Virtual machine, Failed resources: 39 of 42, Resource compliance status: Red.

Resource type: Non-internet-facing virtual machine, Virtual machine, Failed resources: 39 of 42, Resource compliance status: Red.

Deploy Additional Standards: A table of available standards with deployment buttons:

Name	Description	Deploy
CMMC Level 3	Provides guardrails for compliance with CMMC Level 3.	Deploy
FedRAMP High	Provides a set of policies to help comply with FedRAMP High.	Deploy
ISO 27001 App Service Environment/SQL Database workload	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.	Deploy
FedRAMP High	Provides a set of policies to help comply with FedRAMP High.	Deploy
FedRAMP High	Provides a set of policies to help comply with FedRAMP High.	Deploy
FedRAMP High	Provides a set of policies to help comply with FedRAMP High.	Deploy
FedRAMP High	Provides a set of policies to help comply with FedRAMP High.	Deploy
FedRAMP High	Provides a set of policies to help comply with FedRAMP High.	Deploy

Image 11.1: Compliance dashboard

17.1.1 Compliance Benchmark

Shows the total number of controls passed out of all the controls in A3S' compliance benchmark.



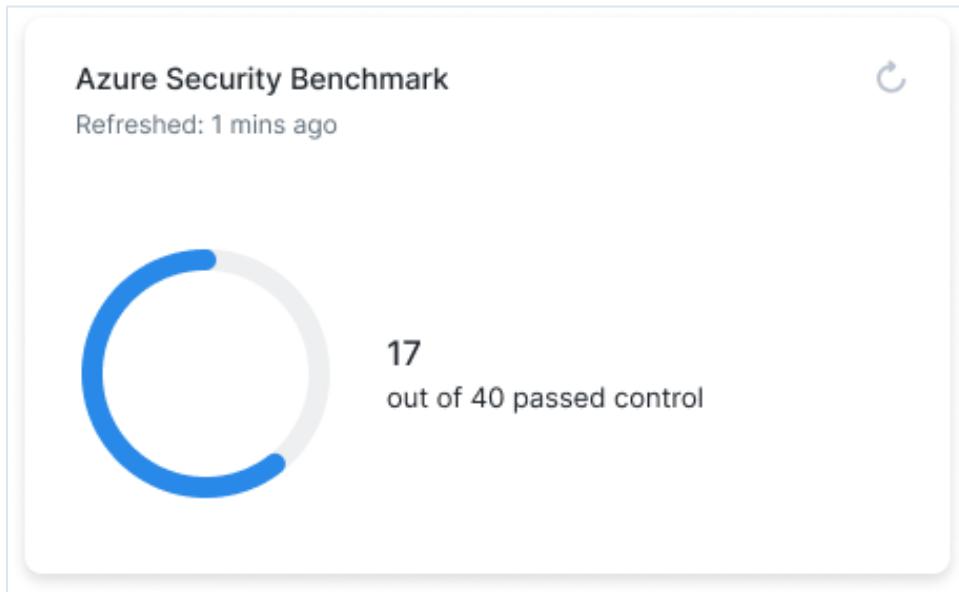


Image 11.2: Compliance Benchmark

17.1.2 *Compliance Status*

Displays the total number of controls passed out of the total controls within a compliance standard supported by A3S.

Compliance Status		
Refreshed: 1 mins ago		
Standard name	Passed controls	Chart
ISO 27001	2/20	<div style="width: 10%;"></div>
SOC TSP	2/20	<div style="width: 10%;"></div>
PCI DSS 3.2.1	2/20	<div style="width: 10%;"></div>
Azure Security Benchmarking	2/20	<div style="width: 10%;"></div>

Image 11.3: Compliance status

17.1.3 *List of Standards*

Shows the list of standards supported by A3S.



The screenshot shows the Azure Security Benchmark interface. At the top, there are links for ISO 27001, PCI DSS 3.2.1, SOC TSP, and ISO 27001-2013. On the right, there is a 'Download report' button. The main content area displays a hierarchical list of security standards under 'NS. Network Security'. One standard, 'NS.1. Implement security for internal traffic', is expanded, showing its details. Below this, there is a table with columns: 'Customer responsibility', 'Resource type', 'Failed resources', and 'Resource compliance status'. The table lists four 'Non-internet-facing virtual machine' resources, each with a 'Failed resources' count of 39 of 42 and a red progress bar indicating low compliance.

Image 11.4: List of standards

17.1.4 Deploy Additional Standards

Deploy standards as needed from the list by clicking **Deploy** button.

The screenshot shows the 'Deploy Additional Standards' page. At the top, there is a search bar labeled 'Search definitions'. Below it is a table with two columns: 'Name' and 'Description'. The table lists several standards, each with a 'Deploy' button to its right. The standards include: CMMC Level 3 (Provides guardrails for compliance with CMMC Level 3), FedRAMP High (Provides a set of policies to help comply with FedRAMP High), ISO 27001 App Service Environment/SQL Database workload (Tracks NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments), and multiple entries for FedRAMP High, each providing a set of policies to help comply with FedRAMP High.

Image 11.5: Additional standards

17.2 Manage Policy

Manage – view & modify existing policies and add new standards.

17.2.1 Default A3S Security Center Policy

Table shows the Azure security center policy details.

The screenshot shows the 'Default Security Centre Policy' table. It has six columns: 'Assignment', 'Assigned on', 'Audit policies', 'Deny policies', 'Disabled policies', and 'Exempted policies'. The table contains one row for 'Azure security benchmark', which is assigned to 'Subscription' and has 192 audit policies, 0 deny policies, 7 disabled policies, and 0 exempted policies. There is also a '...' button at the end of the table.

Image 11.6: Default Security Center policy



- Click ellipsis (•••) to edit or delete assignment or create exemption.

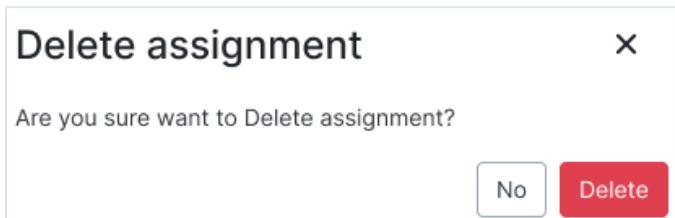


Image 11.7: Unassign policy

17.2.2 Manage Policy

Modify and existing assigned policy.



Manage Policy

Project ▾ Subscription ▾ Resource group ▾

Default Security Centre Policy

Assignment	Assigned on	Audit policies	Deny policies	Disabled policies
Azure security benchmark	Subscription	192	0	7

Industry & Regulatory standards

Azure Security Benchmark	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box
PCI DSS v3.2.1	Track PCI-DSS v3.2.1:2018 controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box
ISO 27001	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments	Out of box
SOC TSP	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments	Out of box
ISO 27001:2013	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments	Out of box

Add Standards

Name	Description
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments

Edit Assigned Policy

Scope *
Visual Studio Enterprise Subscription – MPN/MonitoringTest
[Choose scope](#)

Exclusions (optional)
[Choose exclusions](#)

Policy definition
Azure Security Benchmark

Assignment name *
ASC Default (subscription: 6ef2f1a0-a93-42

Description

Policy enforcement
 Enabled Disabled

Assigned by
Security Center

Parameters
Service principals should be used to protect your subscriptions instead of management certificates *
AuditIfNotExists

Log Analytics agent health issues should be resolved on your machines *
AuditIfNotExists

Remediation
 Create a Managed Identity

Managed identity location
East US

Permissions
This policy does not contain any role definitions. DeployIfNotExists and modify policies must specify role definitions in order to create the correct role assignments for the managed identity.

Non-compliance messages
[Edit messages](#)

Cancel **Save**

Image 11.8: Edit policy

17.2.2.1 Assign New Policies

- Click **Assign Policy**.



The screenshot shows the 'Manage Policy' section of the AI Powered Azure Automation portal. At the top, there are navigation links for Home, Overview, Manage Policy (which is selected), and Reports. Below the navigation, there's a search bar and a dropdown for Project, Subscription, and Resource group. A 'Learn more' link is also present.

Default Security Centre Policy

No existing Policy assignments.

Industry & Regulatory standards

Standard	Description	Status	Action
Azure Security Benchmark	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	Disable
PCI DSS 3.2.1	Track PCI-DSS v3.2.1:2018 controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	Disable
ISO 27001	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	Disable
SOC TSP	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	Disable
ISO 27001:2013	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	Disable

Add Standards

Q Search to filter items

Name	Description	Action
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments	Add

Image 11.9: Assign policy

- Select scope for the policy.



Image 11.10: Assign policy scope

- Add exclusion (it's optional).



Image 11.11: Assign policy – exclusion

- Provide **Assignment** name.
- Select **Policy enforcement** (Enabled/Disabled).
- Write Non-compliance message.

The screenshot shows the AI Powered Azure Automation interface. On the left, there's a navigation bar with 'Home > Manage policy'. Below it, the 'Manage Policy' section displays a table for 'Default Security Centre Policy' with columns for Assignment, Assigned on, and Audit points. There are five entries: 'Azure security benchmark' (Subscription, 192 points), 'PCI DSS 3.2.1' (Subscription, 192 points), 'ISO 27001' (Subscription, 192 points), 'SOC TSP' (Subscription, 192 points), and 'ISO 27001:2013' (Subscription, 192 points). Below this is an 'Add Standards' section with a search bar and a table for NIST SP 800-53 RA controls.

On the right, two modal windows are open:

- Assign Policy**: A modal for setting policy scope, choosing exclusions, defining the policy (e.g., 'Azure Security Benchmark'), and specifying enforcement (Enabled).
- Non-compliance Messages**: A modal for creating messages. It includes a search bar, a main message area with placeholder text ('Service principals should be used to protect your subscription'), and a save/cancel button.

Image 11.12: Assign policy - non-compliance message

17.2.2.2 Create Exemption in the Policy

The screenshot shows the 'Create Exemption' dialog box overlaid on the 'Manage Policy' page. The dialog box contains fields for 'Exemption scope', 'Assignment name', 'Exemption name', 'Exemption category', 'Expiration date', and 'Exemption description'. A note indicates that the exemption does not expire. The 'Assignment' table on the left shows various security benchmarks assigned to subscriptions.

Assignment	Assigned on	Audit policies	Deny policies	Disabled policies
Azure security benchmark	Subscription	192	0	7

Industry & Regulatory standards	
Azure Security Benchmark	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.
PCI DSS 3.2.1	Track PCI-DSS v3.2.1:2018 controls in the Compliance Dashboard, based on a recommended set of policies and assessments.
ISO 27001	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.
SOC TSP	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.
ISO 27001:2013	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.

Add Standards	
<input type="text"/> Search to filter items	
Name	Description
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.

Image 11.13: Create exemption

17.3 Industry and Regulatory Standards

Enabled standards are displayed in this list. Click **Disable** to remove any standard.

Industry & Regulatory standards			
Azure Security Benchmark	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	<button>Disable</button>
PCI DSS 3.2.1	Track PCI-DSS v3.2.1:2018 controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	<button>Disable</button>
ISO 27001	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	<button>Disable</button>
SOC TSP	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	<button>Disable</button>
ISO 27001:2013	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box	<button>Disable</button>

Image 11.14: Industry & regulatory standards

17.3.1 Add Standards

- Click **Add** button on the standard that you want to add to the regulatory compliance dashboard and then assign it to the subscription.

Add Standards	
Name	Description
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments

Image 11.15: Add standards

- Provide the needed inputs in the side sheet.



Manage Policy

Project: [dropdown] Subscription: [dropdown] Resource group: [dropdown]

Default Security Centre Policy

Assignment	Assigned on	Audit policies	Deny policies	Disabled policies
Azure security benchmark	Subscription	192	0	7

Industry & Regulatory standards

Azure Security Benchmark	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box
PCI DSS 3.2.1	Track PCI-DSS v3.2.1:2018 controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box
ISO 27001	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box
SOC TSP	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box
ISO 27001:2013	Track Azure Security Benchmark controls in the Compliance Dashboard, based on a recommended set of policies and assessments.	Out of box

Add Standards

Name	Description
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.
NIST SP 800-53 RA	Track NIST SP 800-53 RA controls in the Compliance Dashboard based on a recommended set of policies and assessments.

Scope *
Visual Studio Enterprise Subscription - MPN/MonitoringTest
[Choose scope](#)

Exclusions (optional)
[Choose exclusions](#)

Initiative definition
NIST SP 800-53 Rev. 4

Assignment name *
ASC Default (subscription: 6ef2f1a0-aa93-42)

Description

Policy enforcement
 Enabled Disabled

Assigned by
Amjad Okail

Parameters
Service principals should be used to protect your subscriptions instead of management certificates *

Log Analytics agent health issues should be resolved on your machines *

Remediation
 Create a Managed Identity

Managed identity location
East US

Permissions
This policy does not contain any role definitions. deployIfNotExists and modify policies must specify role definitions in order to create the correct role assignments for the managed identity.

Non-compliance messages
[Edit messages](#)

Cancel **Save**

Image 11.16: Add standard side sheet

17.4 Reports

Download audit reports from this page. Reports are available for different standards. Filters are provided on the right top of the table, use them to narrow down your search.



The screenshot shows the 'Reports' section of the AI Powered Azure Automation interface. At the top, there are navigation links for Home, Reports, Overview, Manage Policy, and Reports. A search bar is also present. The main content area is titled 'Audit Reports' and contains a table with the following data:

Title	Download	Description	Standard	Date
Microsoft Azure Dynamics 365 and Online Services ISO 27001 27018 27017 27701 Assessment Report 12.2.2020	Download	Assessment report for demonstrating Microsoft Azure Dynamics 365, and Online Services' compliance with the ISO 27001, 27018, 27017 and 27701 (PIMS) framework	ISO27001, ISO27018, ISO27701	Dec 18th 2020
Microsoft Azure Dynamics 365 and Online Services ISO 27001 27018 27017 27701 Assessment Report 12.2.2020	Download	Assessment report for demonstrating Microsoft Azure Dynamics 365, and Online Services' compliance with the ISO 27001, 27018, 27017 and 27701 (PIMS) framework	ISO27001, ISO27018, ISO27701	Dec 18th 2020
Microsoft Azure Dynamics 365 and Online Services ISO 27001 27018 27017 27701 Assessment Report 12.2.2020	Download	Assessment report for demonstrating Microsoft Azure Dynamics 365, and Online Services' compliance with the ISO 27001, 27018, 27017 and 27701 (PIMS) framework	ISO27001, ISO27018, ISO27701	Dec 18th 2020
Microsoft Azure Dynamics 365 and Online Services ISO 27001 27018 27017 27701 Assessment Report 12.2.2020	Download	Assessment report for demonstrating Microsoft Azure Dynamics 365, and Online Services' compliance with the ISO 27001, 27018, 27017 and 27701 (PIMS) framework	ISO27001, ISO27018, ISO27701	Dec 18th 2020
Microsoft Azure Dynamics 365 and Online Services ISO 27001 27018 27017 27701 Assessment Report 12.2.2020	Download	Assessment report for demonstrating Microsoft Azure Dynamics 365, and Online Services' compliance with the ISO 27001, 27018, 27017 and 27701 (PIMS) framework	ISO27001, ISO27018, ISO27701	Dec 18th 2020
Microsoft Azure Dynamics 365 and Online Services ISO 27001 27018 27017 27701 Assessment Report 12.2.2020	Download	Assessment report for demonstrating Microsoft Azure Dynamics 365, and Online Services' compliance with the ISO 27001, 27018, 27017 and 27701 (PIMS) framework	ISO27001, ISO27018, ISO27701	Dec 18th 2020

Image 11.17: Compliance reports



18 A3S Support



19 Azure Support



20 SAP Support

