**Azure API Management Implementation**

**High/Low Level Design (LLD)**

**LLD Author:**  **ENCAMINA |** Kyndryl

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**CONTENTS**

[1. Introduction 6](#_Toc114492479)

[1.1. Purpose 6](#_Toc114492480)

[1.2. Audience 6](#_Toc114492481)

[1.3. Scope 6](#_Toc114492482)

[1.4. Related documents 7](#_Toc114492483)

[2. Service design 8](#_Toc114492484)

[2.1. Architectural overview 8](#_Toc114492485)

[2.2. Service context 10](#_Toc114492486)

[Service components 10](#_Toc114492487)

[2.3. Service technology 11](#_Toc114492488)

[2.4. Service levels 14](#_Toc114492489)

[2.5. KPIs 14](#_Toc114492490)

[2.6. RACI 15](#_Toc114492491)

[2.7. Risks, assumptions, issues, and dependencies 15](#_Toc114492492)

[3. Security posture 16](#_Toc114492493)

[3.1. Segregation between environments 16](#_Toc114492494)

[3.2. Data protection 16](#_Toc114492495)

[4. Baseline 17](#_Toc114492496)

[4.1. Resource parameters 17](#_Toc114492497)

[4.1.1. Resource groups 17](#_Toc114492498)

[4.1.2. Virtual Networks 18](#_Toc114492499)

[4.1.3. Application security groups 19](#_Toc114492500)

[4.1.4. Network security groups 20](#_Toc114492501)

[4.1.5. Private DNS zone 22](#_Toc114492502)

[4.1.6. Application Insights 22](#_Toc114492503)

[4.1.7. Private endpoints 23](#_Toc114492504)

[4.1.8. API management service instances 24](#_Toc114492505)

[4.1.9. Application gateways 25](#_Toc114492506)

[4.1.10. Public IP addresses 26](#_Toc114492507)

[4.1.11. Traffic manager 27](#_Toc114492508)

[4.1.12. Storage Accounts 27](#_Toc114492509)

[4.1.13. Key vault 28](#_Toc114492510)

[4.1.14. Log analytics workspace 28](#_Toc114492511)

[4.1.15. Azure Front Door 28](#_Toc114492512)

[4.1.16. Azure Functions 29](#_Toc114492513)

[4.2. IAM 30](#_Toc114492514)

[4.3. IP Addressing 31](#_Toc114492515)

[4.4. IaC 31](#_Toc114492516)

[4.5. Cost estimation 32](#_Toc114492517)

[5. Abbreviations and definitions 33](#_Toc114492518)

List of changes

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 0.1 | 25-07-2022 | Initial version. | ENCAMINA |
| 0.2 | 28-08-2022 | Detailed specification of resources. | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.3 | 04-08-2022 | Cost estimation introduced | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.4 | 09-08-2022 | Env. stages introduced Security posture introduced | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.5 | 12-08-2022 | Review  Allocation of network block for Nort Europe Increased the address range for Tier 1 and Tier 2 Allocation of prod and non-prod subscriptions | Sashko Jordanov, Dufry |
| 0.6 | 19-08-2022 | North Europe location introduced East US location removed  Minor updates | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.7 | 24-08-2022 | IP assigned Tiering aligned | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.8 | 25-08-2022 | * Section 2.1 – Updated Cloud Architecture Overview with agreements from latest meetings. * Section 2.3 – Updated service components. * Section 4.1 – Resources. *Pending enrichment and validation by Kyndryl*. * Section 4.2.2 – Virtual Networks. *Pending validation and IPs address range from Kyndryl*. * Section 4.2.3 – Removed security groups; nonetheless, *this should be reviewed by Kyndryl*. * Section 4.2.4 – Idem. *This should be reviewed by Kyndryl*. * Section 4.2.5 – Idem. *This should be reviewed by Kyndryl*. * Section 4.2.7 – Idem. *This should be reviewed by Kyndryl*. * Section 4.2.8 – Only names were updated. * Section 4.2.9 – Only names were updated. * Section 4.2.10 – Only names were updated. * Section 4.2.11 – Only names were updated. * Section 4.2.12 – Changed Cosmos DB for Azure Storage Account. *This should be reviewed by Kyndryl*. * Section 4.2.13 – Changed App Services for Azure Functions. *This should be reviewed by Kyndryl*. * Section 4.3 – Updated according to changes in section 2.1. *This should be reviewed by Kyndryl*. * Section 4.4 – Updated according to changes in section 2.1. *This should be updated by Kyndryl with proper IPs ranges*. * Removed risk R001. * Important: section 4.5 regarding cost estimation was not updated. | ENCAMINA |
| 0.8.1 | 31-08-2022 | * Processed with one vnet & run each “block” as a specific subnet: subnet for TPv6, subnet for iTEK, subnet for API, etc. * At subnet level, Network Security Groups & Routing Tables will provide enough options to manage traffic to be allowed/restricted * Gamma term replaced by iTek * Detailed specification of Azure resurces | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.8.2 | 19-09-2022 | IaC details | Wojciech Pazdzierkiewicz, Kyndryl |
| 0.8.3 | 31-03-2023 | Components removed:   * Front door * Ombori   Component added:   * RJ IaaS backend | Wojciech Pazdzierkiewicz, Kyndryl |
|  |  |  |  |

Document release

|  |  |  |
| --- | --- | --- |
| Role | Name | Date |
| Author | ENCAMINA | July 2022 |
| Reviewer | Kyndryl | July 2022 |
| Reviewer | Dufry |  |
| Reviewer | ENCAMINA | August 2022 |
| Line Manager |  |  |
| Enterprise Architect |  |  |
| Target Audience | Kyndryl Operational Team |  |

1. Introduction
   1. Purpose

Currently, DUFRY has different POS software solutions, and the intention to centralize features and functions by unifying them using APIs that could be consumed by any third party.

DUFRY has also the intention to obtain a solid infrastructure that allows to manage demanding and variable traffic levels in a multi-region environment.

The intended solution is based on Azure API Management service.

Take into consideration that for DUFRY, it is important to define a solution able to evolve and integrate future deployments within Azure API Management.

**August 2022 version 0.8** – This version of the document updates the architectural needs and features from agreements reached during this month's meetings, in addition to the insights gathered and gained during backend feature discovery and the specific needs brought forward by DUFRY.

* 1. Audience

The current document is intended to any technical personnel from Kyndryl accountable for provisioning and configuring the required Azure infrastructure, services and resources needed to implement the solution described in this document.

* 1. Scope

This document only describes the current Azure infrastructure, resources and services required for this project.

Anything else, must be consider out of scope or an assumption for already available and correctly configured services.

Also, even when the general overview of the solution (please refer to section 2.1 on this document) implies various Azure services and resources, the current document will only focus on the required services for ENCAMINA’s project, which mainly involves the Azure API Management (APIM) and Azure App Services for (integration) middle layers implementations.

In terms of characteristics of the APIM, the Developers Portal is out of scope.

Additional details regarding what is and what is not in scope are provided throughout the document.

* 1. Related documents

Several vendor best practice documentations have been used in this blueprint.

|  |  |
| --- | --- |
| Vendor | Document Name |
| Microsoft | Azure security baseline for API Management  <https://docs.microsoft.com/en-us/security/benchmark/azure/baselines/api-management-security-baseline> |
| Microsoft | Connect to a virtual network using Azure API Management  <https://docs.microsoft.com/en-us/azure/api-management/api-management-using-with-vnet?tabs=stv2> |
| Microsoft | Connect privately to API Management using a private endpoint  <https://docs.microsoft.com/en-us/azure/api-management/private-endpoint> |
| Microsoft | How to deploy an Azure API Management service instance to multiple Azure regions  <https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-deploy-multi-region> |
| Microsoft | Configure Azure Private Link for an Azure Cosmos account  <https://docs.microsoft.com/en-us/azure/cosmos-db/how-to-configure-private-endpoints> |
| Microsoft | Terraform on Azure documentation  https://learn.microsoft.com/en-us/azure/developer/terraform/ |
| Dufry | Azure Landing zone design document  [Dufry Azure Landing zone design document\_v5.1.docx](https://dufry0.sharepoint.com/sites/DufryHybridCloud/Shared%20Documents/General/04%20RFP%20Due%20Diligence/Azure%20Landing%20Zone%20Design%20Workshop/Dufry%20Azure%20Landing%20zone%20design%20document_v5.1.docx?d=w0e040262b07143df9597535b6ec47354&csf=1&web=1&e=NfvBzd) |

1. Service design
   1. Architectural overview

PROD:

Graphical user interface, diagram, application

Description automatically generated

† Azure resources like the Traffic Manager or the Application Gateways are left as part of this cloud architecture since they have been already discussed and approved by the CSO from DUFRY.

DEV:

Graphical user interface, diagram

Description automatically generated

It is important to note that the number of instances of Azure API Management is just one, supporting multi-region deployments by enabling API publishers to distribute a single instance of this service across any number of supported Azure regions. Multi-region feature helps reduce request latency perceived by geographically distributed API consumers and improves service availability if one region goes offline.

A new APIM service initially contains only one unit in a single Azure region, the called the primary region. Additional units can be added, each one with its own gateway component. Only the gateway component of APIM is deployed to all regions. Incoming API requests are automatically directed to the closest region. If a region goes offline, the API requests will be automatically routed around the failed region to the next closest gateway.

Service Management component and Developer Portal (even when the Developer Portal is out side the scope of this initiative) are hosted in the primary region only. Therefore, in case of the primary region outage, access to the Developer Portal and ability to change configurations (like modifying APIs, applying policies, etc.) will be impaired until the primary region comes back online. While the primary region is offline, any other regions will continue to serve API traffic using the latest configuration available to them.

A set of Virtual Machines (VMs) contains instances of the POS software, each one with its own service API. There are going to be two VMs sets, one for TP.NET v6 and another for iTek (a.k.a. Gamma Tier).

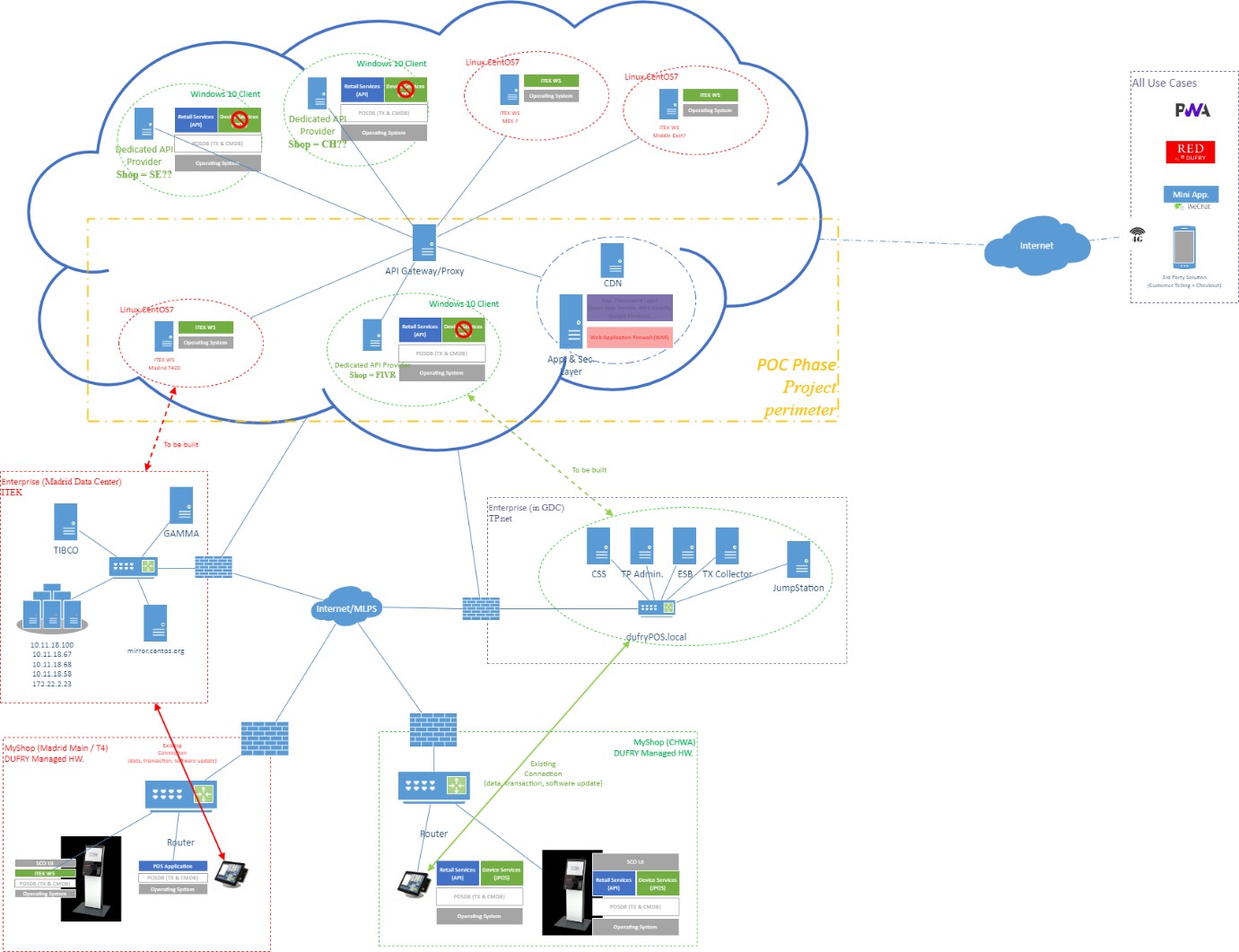
Also, an Azure Storage Account instance is required to manage states, and possibly, some Azure Functions for complex transformation scenarios required to translate request and response payloads from and to specific API contracts of each backends and the APIM instance providing the common API contract.

It is assumed that these VNETs are already available for this project. This also means that some services will requires using Azure Private Links for proper connectivity. It is also assumed that connectivity to the GCP is already in place and working as expected for each backend.

All VNETs are peered (view section 4.2.2 for more information), and to protect and restrict connectivity between the VNETs a form of hub-spoke architecture is proposed with an Azure Firewall assuming the responsibility of allowing or denying traffic between the VNETs. Traffic between subnets is controller over routing and network sercurity groups For instance, direct connectivity between iTek, TPv6 and RJ resources and the VMs is not allowed.

In this sense, iTek, TPv6 and RJ resources can only communicate directly with the APIM VNET to consume the common API contract. On the other hand, the APIM VNET is allowed to connect with the VMs of the backends and with the infrastructure that provides access to the GCP.

Monitoring will be done using Application Insigths (from Azure Metrics). It could be an already existent instance of Application Insights or a new one specifically to monitor the resources for this project (APIM and Functions).

* 1. Service context
  2. Service components

|  |  |
| --- | --- |
| Component | Description |
| Azure API Management | Usually abbreviated as APIM, it is a reliable, secure and scalable way to publish, consume and manage API’s running on Microsoft Azure platform, providing all essential tools required for an end-to-end management of API’s. It ensures optimal performance of the API’s, tracks and enforces usage, authentication, and more. |
| Azure Firewall | It is a cloud-native and intelligent network firewall security service that provides the best of breed threat protection for your cloud workloads running in Azure. It's a fully stateful, firewall as a service with built-in high availability and unrestricted cloud scalability. It provides both east-west and north-south traffic inspection. It can be easily configured to allow or deny traffic between virtual networks. |
| Azure Functions | One of the most widely used resources in Azure, it provides on-demand hosting of business processes and computation capabilities as BaaS or PaaS. |
| Azure Storage Account | It is a is a fully cloud managed data repository solution for modern data storage scenarios offering high availability, massively scalability, durability, and secure storage for a variety of data objects in the cloud. |
| Azure Application Insights | It is a is a feature of Azure Monitor that provides extensible application performance management (APM) and monitoring for live services, resources and applications both in cloud and on-premises deployments. It is quite useful to detect performance anomalies and help diagnose issues by using powerful analytics tools. It complies with almost every regulation regarding data privacy. |
| Azure Virtual Machines | It is an on-demand, scalable computer resource that is available in Azure. Virtual machines are generally used to host applications when the customer requires more control over the computing environment than what is offered by other compute resources.  **Important:** It is mentioned here as a key component because this project integrates with POS APIs deployed in virtual machines, however it is expected that any configuration or security concern for these virtual machines are already addressed by Kyndryl, since it is assumed that they are already in place and used by DUFRY. This project is about abstracting and hiding the complexity of these POS APIs in a more manageable way, not about setting up these VMs and the POS APIs. |
| Azure Virtual Network | It is the cloud alternative in azure for virtual private networks (usually abbreviated VPN or VNet). An Azure VNET enables Azure resources to securely communicate with each other, the internet, and on-premises networks. They are quite useful when an organization requires to hide cloud resources from the public Internet.  **Important:** It is mentioned here as a key component, however defined the VNet topology and configuration is outside the scope of these document, and it is assumed as a resource already in place for DUFRY by Kyndryl. Because the resources here mentioned should be somehow hidden from the public Internet, it is expected and assumed that Kyndryl understands how to setup VNet parameters for components of this project like the Azure Web Apps or the Azure API Management. |
| Azure Private Link | It is a (network) resource that provides access to Azure services form the Platform as a Service offering (for example, Azure Storage, Azure Web Apps, Azure Cosmos DB or Azure API Management, among others) and Azure hosted customer-owned/partner services over a private endpoint (i.e., a private IP address) in a private virtual network. Traffic between the VNet and the service travels the Microsoft backbone network instead of the public Internet.  **Important:** It is mentioned here as a key component, however as with the VNet, setting up Azure Private Links and Azure Private Endpoints is outside the scope of this project, and it is assumed as a resource already in place for DUFRY by Kyndryl. Because the resources here mentioned should be somehow hidden from the public Internet, it is expected and assumed that Kyndryl understands how to setup this resource for components of this project like the Azure Functions, Azure Functions, or the Azure API Management. |
| Azure Key Vault | It is a cloud service that provides a secure store for secrets like keys, passwords, certificates, and other secrets. |

* 1. Service technology

This project is fully based in services and resources from the Platform as a Service (PaaS) offering in Azure. All technologies are based on Azure services and Microsoft products on these.

Virtual Machine specifics are out of the scope of this document because they are assumed to be already in place and use since they manage the POS software and APIs that DUFRY currently uses.

**Monitoring**

All monitoring must be provided by Azure Application Insights as mentioned in section 2.1 on this document.

|  |  |  |  |
| --- | --- | --- | --- |
| Service Element | Monitoring Required? (Y/N) | Toolset | Comments |
| appi-duf-weu-storsystems-prod | Y | Microsoft.Insights/components |  |
| appi-duf-neu-storsystems-prod | Y | Microsoft.Insights/components |  |
| appi-duf-weu-storsystems-non-prod | Y | Microsoft.Insights/components |  |

Network traffic is monitored using Network Watcher capability in Azure.

NSG flow logs are enabled on all subnet level.

Graphical user interface, text, application, email

Description automatically generated

**Networking**

Solution will follow hub-spoke topology and dedicated virtual networks are provisioned across regions. Existing hub VNET will be used for on-prem connectivity.

|  |  |  |  |
| --- | --- | --- | --- |
| Hub vnet | Spoke vnet | Peering type | Direction |
| rg-duf-weu-infra-hub-prod | vnet-duf-weu-storsystems-prod | local | bi-direction |
| rg-duf-neu-infra-hub-prod | vnet-duf-neu-storsystems-prod | local | bi-direction |
| rg-duf-weu-infra-hub-nonprod | vnet-duf-weu-storsystems-prod | local | bi-direction |

**Backup and Restore**

Any backup and restore policy should be the same that Kyndryl already has in place for this type of services.

For the case of the Azure API Management, being mostly a code as platform service, there is no need for a backup if the templates (usually ARM templates, a declarative document that helps controlling and automating deployment and configuration of Azure resources and services) that define the configuration and APIs are preserved in a version control repository (like Git).

For the case of Azure Cosmos DB, a backup and restore policy may be set during its provisioning. Any current policy from Kyndryl for this type of resource will be appropriate.

Diagram

Description automatically generated

No Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO) are defined.

|  |  |  |
| --- | --- | --- |
| Name | Description | Level / Value |
| Service Continuity – Recovery Time Objective (RTO) |  | Priority 2 (1-3 days):  RTO 1 day |
| Service Continuity – Recovery Point Objective (RPO) |  | Priority 2 (1-3 days):  RPO 3 days |

**High availability**

Use the current services SLA for high availability. On the other hand, it is possible to define a single high availability group using the architecture proposed in section 2.1 by defining a primary (active) region and a secondary (passive) region with appropriate policies to replicate the state of cloud resources and VMs.

**Scalability**

Use the current services auto-scale feature for scalability. This applies to Azure API Management, Azure Storage Accounts and Azure Functions.

**Licensing**

|  |  |  |  |
| --- | --- | --- | --- |
| Environment | License | Type of License | Volume of License |
| Production |  | [Azure Hybrid Benefit for Windows Server - Azure](https://docs.microsoft.com/en-us/azure/virtual-machines/windows/hybrid-use-benefit-licensing) [Virtual Machines | Microsoft Docs](https://docs.microsoft.com/en-us/azure/virtual-machines/windows/hybrid-use-benefit-licensing) | <tbd> |
| Non-production |  | [Azure Hybrid Benefit for Windows Server - Azure](https://docs.microsoft.com/en-us/azure/virtual-machines/windows/hybrid-use-benefit-licensing) [Virtual Machines | Microsoft Docs](https://docs.microsoft.com/en-us/azure/virtual-machines/windows/hybrid-use-benefit-licensing) | <tbd> |

* 1. Service levels

Not applicable. Use the current services SLA for high availability.

* 1. KPIs

Not applicable. No KPIs have been defined for this project.

* 1. RACI

**R&R Legend: R = Responsible / S = Support / C = Consult / I = Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO.** | **DESCRIPTION** | **KYNDRYL'S REPOSNIBILITY** | **DUFRY'S RESPONSIBILITY** |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |

* 1. Risks, assumptions, issues, and dependencies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ref. | Type | Description | Owner | Action |
| A001 | Assumption | The VPN and any subnet required for this solution already exists and Kyndryl is fully capable of configuring any required services or resource in Azure within it. | Kyndryl | If any service or resource in Azure requires connectivity within the VPN or any specific subnets, Kyndryl is fully capable of configuring these characteristics. |
| A002 | Assumption | The POS are represented as VMs. These VMs are already provisioned, configured and available. | Dufry | These VMs should already exists since they represent a POS software and API already in use. |
| A003 | Assumption | VPN and subnet connectivity for the VMs in A002 is configured. | Kyndryl | Connectivity to these VMs is going to be required. Kyndryl is fully capable of configuring this connectivity. |
| A004 | Assumption | Any security concern in terms of the VMs from A002 and the VPNs from A001 is attended by Kyndryl. | Kyndryl | As managers of the Azure infrastructure, Kyndryl already has secured the VPNs and VMs resources. |
| D001 | Dependency | A Service Connection from a valid Service Principal is required to Access the resources provisioned in the Resource Group to use for this project.  This Service Connection is going to be used in Azure DevOps for automated Continuous Deployments of APIs into the APIM and web applications in Web Apps. | Kyndryl | Kyndryl must create a Service Principal with appropriate privileges to allow automated Continuous Deployments procedures on the APIM and Web Apps for the middle layers.  The information of this Service Principal must be provided to ENCAMINA to create a valid Service Connection from Azure DevOps to Azure Cloud. |

1. Security posture
   1. Segregation between environments

According “Azure Landing zone design document”.

* 1. Data protection

Ref.: [Azure encryption overview | Microsoft Docs](https://docs.microsoft.com/en-us/azure/security/fundamentals/encryption-overview)

1. Baseline
   1. Resource parameters

Distinguish between stages of hosting environments:

|  |  |  |
| --- | --- | --- |
| Hosting environment stage | Landing zone component | Value |
| PROD | Subscription | duf-storesystems-prod |
| Naming convention | <resource type>-duf-<region>-storsystems-<purpose>-prod |
| IP spaces | WEU: 10.250.80.0/21  NEU: 10.249.80.0/21 |
| DEV | Subscription | duf-storesystems-non-prod |
| Naming convention | <resource type>-duf-<region>-storsystems-<purpose>-dev |
| IP spaces | WEU: 10.250.184.0/21 |

* + 1. Resource groups

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-weu-storesystems-infra-prod |
| Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-weu-storesystems-apim-prod |
| Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-weu-storesystems-itek-prod |
| Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-weu-storesystems-tpv6-prod |
| Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-weu-storesystems-rj-prod |
| Region | West Europe |
| PROD NEU | | |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-neu-storesystems-infra-prod |
| Region | North Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-neu-storesystems-apim-prod |
| Region | North Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-neu-storesystems-itek-prod |
| Region | North Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-neu-storesystems-tpv6-prod |
| Region | North Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
| Name | rg-duf-neu-storesystems-rj-prod |
| Region | North Europe |
| DEV WEU | | |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-non-prod |
|  | Name | rg-duf-weu-storesystems-infra-non-prod |
|  | Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-non-prod |
|  | Name | rg-duf-weu-storesystems-apim-dev |
|  | Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
|  | Name | rg-duf-weu-storesystems-itek-dev |
|  | Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
|  | Name | rg-duf-weu-storesystems-tpv6-dev |
|  | Region | West Europe |
| Microsoft.Resources/resourceGroups | Subscription | duf-storesystems-prod |
|  | Name | rg-duf-weu-storesystems-rj-dev |
|  | Region | West Europe |

* + 1. Virtual Networks

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Network/virtualNetworks | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storesystems-infra-prod |
| Name | vnet-duf-weu-storesystems-prod |
| Region | West Europe |
| IP address space | 10.250.80.0/21 |
| Subnets | snet-duf-weu-storesystems-agw-prod-10.250.80.0-28  snet-duf-weu-storesystems-apim-prod-10.250.81.0-28  snet-duf-weu-storesystems-web-prod-10.250.81.16-24  snet-duf-weu-storesystems-db-prod-10.250.81.32-24  snet-duf-weu-storesystems-sec-prod-10.250.81.48-24  snet-duf-weu-storesystems-itek-prod-10.250.82.0-26  snet-duf-weu-storesystems-tpv6-prod-10.250.82.64-26  snet-duf-weu-storesystems-rj-prod-10.250.82.128-26 |
| Peering | vnet-duf-weu-storesystems-hub-prod |
| PROD NEU | | |
| Microsoft.Network/virtualNetworks | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storesystems-infra-prod |
| Name | vnet-duf-neu-storesystems-prod |
| Region | North Europe |
| IP address space | 10.249.80.0/21 |
| Subnets | snet-duf-neu-storesystems-agw-prod-10.249.80.0-28  snet-duf-neu-storesystems-apim-prod-10.249.81.0-28  snet-duf-neu-storesystems-web-prod-10.249.81.16-24  snet-duf-neu-storesystems-db-prod-10.249.81.32-24  snet-duf-neu-storesystems-sec-prod-10.249.81.48-24  snet-duf-neu-storesystems-itek-prod-10.249.82.0-26  snet-duf-neu-storesystems-tpv6-prod-10.249.82.64-26  snet-duf-neu-storesystems-rj-prod-10.249.82.128-26 |
| Peering | vnet-duf-weu-storesystems-hub-prod |
| DEV WEU | | |
| Microsoft.Network/virtualNetworks | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storesystems-infra-non-prod |
| Name | vnet-duf-weu-storesystems-nonprod |
| Region | West Europe |
| IP address space | 10.250.184.0/21 |
| Subnets | snet-duf-weu-storesystems-agw-non-prod-10.250.184.0-28  snet-duf-weu-storesystems-apim-non-prod-10.250.185.0-28  snet-duf-weu-storesystems-web-non-prod-10.250.185.16-24  snet-duf-weu-storesystems-db-non-prod-10.250.185.32-24  snet-duf-weu-storesystems-sec-non-prod-10.250.185.48-24  snet-duf-weu-storesystems-itek-non-prod-10.250.186.0-26  snet-duf-weu-storesystems-tpv6-non-prod-10.250.186.64-26  snet-duf-weu-storesystems-rj-non-prod-10.250.186.128-26 |
| Peering | vnet-duf-weu-storesystems-hub-prod |

* + 1. Application security groups

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | asg-duf-weu-storsystems-tpv6-prod |
| Region | West Europe |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | asg-duf-weu-storsystems-itek-prod |
| Region | West Europe |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | asg-duf-weu-storsystems-rj-prod |
| Region | West Europe |
| PROD NEU | | |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | asg-duf-neu-storsystems-tpv6-prod |
| Region | North Europe |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | asg-duf-neu-storsystems-itek-prod |
| Region | North Europe |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | asg-duf-neu-storsystems-rj-prod |
| Region | North Europe |
| DEV WEU | | |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | asg-duf-weu-storsystems-tpv6-non-prod |
| Region | West Europe |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | asg-duf-weu-storsystems-itek-non-prod |
| Region | West Europe |
| Microsoft.Network/applicationSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | asg-duf-weu-storsystems-rj-non-prod |
| Region | West Europe |

* + 1. Network security groups

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-agw-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-apim-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-web-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-db-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-sec-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-itek-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-tpv6-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | nsg-duf-weu-storsystems-rj-prod |
| Region | West Europe |
| PROD NEU | | |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-agw-prod |
| Region | North Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-apim-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-web-prod |
| Region | North Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-db-prod |
| Region | North Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-sec-prod |
| Region | North Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-itek-prod |
| Region | North Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-tpv6-prod |
| Region | North Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | nsg-duf-neu-storsystems-rj-prod |
| Region | North Europe |
| DEV WEU | | |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-agw-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-apim-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-web-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-db-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-sec-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-itek-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-tpv6-non-prod |
| Region | West Europe |
| Microsoft.Network/networkSecurityGroups | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | nsg-duf-weu-storsystems-rj-non-prod |
| Region | West Europe |

* + 1. Private DNS zone

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD | | |
| privatelink.azure-api.net  privatelink.azurewebsites.net  privatelink.blob.core.windows.net  privatelink.file.core.windows.net  privatelink.queue.core.windows.net  privatelink.table.core.windows.net  privatelink.vaultcore.azure.net | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Region | Global |
| Virtual network link names | vnl-duf-weu-storsystems-prod vnl-duf-neu-storsystems-prod |
| Virtual networks | vnet-duf-weu-storsystems-prod vnet-duf-neu-storsystems-prod |
| DEV | | |
| privatelink.azure-api.net  privatelink.azurewebsites.net  privatelink.blob.core.windows.net  privatelink.file.core.windows.net  privatelink.queue.core.windows.net  privatelink.table.core.windows.net  privatelink.vaultcore.azure.net | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Region | Global |
| Virtual network link names | vnl-duf-weu-storsystems-non-prod |
| Virtual networks | vnet-duf-weu-storsystems-nonprod |

* + 1. Application Insights

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Insights/components | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | appi-duf-weu-storsystems-prod |
| Region | West Europe |
| Apim logger | apiml-duf-weu-storesystems-prod |
| PROD NEU | | |
| Microsoft.Insights/components | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | appi-duf-neu-storsystems-prod |
| Region | North Europe |
| Apim logger | apiml-duf-neu-storesystems-prod |
| DEV WEU | | |
| Microsoft.Insights/components | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | appi-duf-weu-storsystems-dev |
| Region | West Europe |
| Apim logger | apiml-duf-weu-storesystems-dev |

* + 1. Private endpoints

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | pl-duf-weu-storsystems-apim-prod |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-prod |
| Subnet | snet-duf-weu-storesystems-apim-prod-10.250.81.0-28 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | pl-duf-weu-storsystems-func-prod |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-prod |
| Subnet | snet-duf-weu-storesystems-web-prod-10.250.81.16-24 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | pl-duf-weu-storsystems-st-prod |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-prod |
| Subnet | snet-duf-weu-storesystems-db-prod-10.250.81.32-24 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | pl-duf-weu-storsystems-kv-prod |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-prod |
| Subnet | snet-duf-weu-storesystems-sec-prod-10.250.81.48-24 |
| PROD NEU | | |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | pl-duf-neu-storsystems-apim-prod |
| Region | West Europe |
| Virtual network | vnet-duf-neu-storsystems-prod |
| Subnet | snet-duf-neu-storesystems-apim-prod-10.249.81.0-28 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | pl-duf-neu-storsystems-func-prod |
| Region | West Europe |
| Virtual network | vnet-duf-neu-storsystems-prod |
| Subnet | snet-duf-neu-storesystems-web-prod-10.249.81.16-24 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | pl-duf-neu-storsystems-st-prod |
| Region | West Europe |
| Virtual network | vnet-duf-neu-storsystems-prod |
| Subnet | snet-duf-neu-storesystems-db-prod-10.249.81.32-24 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | pl-duf-neu-storsystems-kv-prod |
| Region | West Europe |
| Virtual network | vnet-duf-neu-storsystems-prod |
| Subnet | snet-duf-neu-storesystems-sec-prod-10.249.81.48-24 |
| DEV WEU | | |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | pl-duf-weu-storsystems-apim-dev |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-non-prod |
| Subnet | snet-duf-weu-storesystems-apim-non-prod-10.250.185.0-28 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | pl-duf-weu-storsystems-func-dev |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-non-prod |
| Subnet | snet-duf-weu-storesystems-web-non-prod-10.250.185.16-24 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | pl-duf-weu-storsystems-st-dev |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-non-prod |
| Subnet | snet-duf-weu-storesystems-db-non-prod-10.250.185.32-24 |
| Microsoft.Network/privateLinkServices | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | pl-duf-weu-storsystems-kv-dev |
| Region | West Europe |
| Virtual network | vnet-duf-weu-storsystems-non-prod |
| Subnet | snet-duf-weu-storesystems-sec-non-prod-10.250.185.48-24 |

* + 1. API management service instances

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD | | |
| Microsoft.ApiManagement/service | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod  rg-duf-neu-storsystems-apim-prod |
| Name | apim-duf-weu-storsystems-prod  apim-duf-neu-storsystems-prod |
| Region | West Europe |
| Organization name | Dufry International AG |
| Administrator email |  |
| Pricing tier | Premium |
| Application Insights | Yes |
| Application Insights instances | appi-duf-weu-storsystems-prod appi-duf-neu-storsystems-prod |
| Scale | 2 units |
| Managed identity | System assigned |
| Virtual network | Internal |
| Private endpoints | N/A |
| Virtual network | vnet-duf-weu-storsystems-prod  vnet-duf-neu-storsystems-prod |
| Subnet | snet-duf-weu-storesystems-apim-prod-10.250.81.0-28  snet-duf-neu-storesystems-apim-prod-10.249.81.0-28 |
| Protocol settings | <default> |
| Location | West Europe (Primary) North Europe |
| DEV | | |
| Microsoft.ApiManagement/service | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | apim-duf-weu-storsystems-dev |
| Region | West Europe |
| Organization name | Dufry International AG |
| Administrator email |  |
| Pricing tier | Developer |
| Application Insights | Yes |
| Application Insights instances | appi-duf-weu-storsystems-non-prod |
| Scale | 1 unit |
| Managed identity | System assigned |
| Virtual network | Internal |
| Private endpoints | N/A |
| Virtual network | vnet-duf-weu-storsystems-non-prod |
| Subnet | snet-duf-weu-storesystems-apim-non-prod-10.250.185.0-28 |
| Protocol settings | <default> |
| Location | West Europe |

* + 1. Application gateways

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Network/applicationGateways | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | agw-duf-weu-storsystems-prod |
| Region | West Europe |
| Tier | Web Application Firewall V2 |
| WAF policy | waf-duf-weu-storsystems-prod-001 |
| Backend pool | wbp-duf-weu-storsystems-prod-001 |
| Routing rule | wrl-duf-weu-storsystems-prod-001 |
| Listener name | wls-duf-weu-storsystems-prod-001 |
| Backend settings | wbs-duf-weu-storsystems-prod-001 |
| PROD NEU | | |
| Microsoft.Network/applicationGateways | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | agw-duf-neu-storsystems-prod |
| Region | North Europe |
| Tier | Web Application Firewall V2 |
| WAF policy | waf-duf-neu-storsystems-prod-001 |
| Backend pool | wbp-duf-neu-storsystems-prod-001 |
| Routing rule | wrl-duf-neu-storsystems-prod-001 |
| Listener name | wls-duf-neu-storsystems-prod-001 |
| Backend settings | wbs-duf-neu-storsystems-prod-001 |
| DEV WEU | | |
| Microsoft.Network/applicationGateways | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | agw-duf-weu-storsystems-non-prod |
| Region | West Europe |
| Tier | Web Application Firewall V2 |
| WAF policy | waf-duf-weu-storsystems-non-prod-001 |
| Backend pool | wbp-duf-weu-storsystems-non-prod-001 |
| Routing rule | wrl-duf-weu-storsystems-non-prod-001 |
| Listener name | wls-duf-weu-storsystems-non-prod-001 |
| Backend settings | wbs-duf-weu-storsystems-non-prod-001 |

* + 1. Public IP addresses

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Network/publicIPAddresses | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | pip-duf-weu-storsystems-agw-prod |
| Region | West Europe |
| IP Version | IPv4 |
| SKU | Standard |
| Tier | Regional |
| Availability zone | Zone-redundant |
| Routing preference | Microsoft network |
| Microsoft.Network/publicIPAddresses | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | pip-duf-neu-storsystems-apim-prod |
| Region | West Europe |
| IP Version | IPv4 |
| SKU | Standard |
| Tier | Regional |
| Availability zone | Zone-redundant |
| PROD NEU | | |
| Microsoft.Network/publicIPAddresses | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-eu-storsystems-infra-prod |
| Name | pip-duf-neu-storsystems-agw-prod |
| Region | North Europe |
| IP Version | IPv4 |
| SKU | Standard |
| Tier | Regional |
| Availability zone | Zone-redundant |
| Routing preference | Microsoft network |
| Microsoft.Network/publicIPAddresses | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | pip-duf-neu-storsystems-apim-prod |
| Region | North Europe |
| IP Version | IPv4 |
| SKU | Standard |
| Tier | Regional |
| Availability zone | Zone-redundant |
| DEV WEU | | |
| Microsoft.Network/publicIPAddresses | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | pip-duf-weu-storsystems-agw-non-prod |
| Region | West Europe |
| IP Version | IPv4 |
| SKU | Standard |
| Tier | Regional |
| Availability zone | Zone-redundant |
| Routing preference | Microsoft network |
| Microsoft.Network/publicIPAddresses | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | pip-duf-neu-storsystems-apim-dev |
| Region | West Europe |
| IP Version | IPv4 |
| SKU | Standard |
| Tier | Regional |
| Availability zone | Zone-redundant |

* + 1. Traffic manager

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD | | |
| Microsoft.Network/trafficManagerProfiles | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | traf-duf-storsystems-prod |
| Routing method | Geographic |
| Endpoints | pip-duf-weu-storsystems-agw-prod  pip-duf-neu-storsystems-agw-prod |
| DEV | | |
| Microsoft.Network/trafficManagerProfiles | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | traf-duf-storsystems-non-prod |
| Routing method | Geographic |
| Endpoints | pip-duf-weu-storsystems-agw-non-prod |

* + 1. Storage Accounts

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Storage/storageAccounts | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | stdufweustoresystprod |
| Region | West Europe |
| Microsoft.Storage/storageAccounts | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | stdufweulogsprod |
| Region | West Europe |
| PROD NEU | | |
| Microsoft.Storage/storageAccounts | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | stdufneustoresystprod |
| Region | North Europe |
| Microsoft.Storage/storageAccounts | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | stdufneulogsnonprod |
| Region | North Europe |
| DEV WEU | | |
| Microsoft.Storage/storageAccounts | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | stdufweustoresystnonprod |
| Region | West Europe |
| Microsoft.Storage/storageAccounts | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-dev |
| Name | stdufweulogsnonprod |
| Region | West Europe |

* + 1. Key vault

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.KeyVault/vaults | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | kv-duf-weu-storsystems-prod |
| Region | West Europe |
| Microsoft.KeyVault/vaults | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | kv-duf-weu-sto-prod |
| Region | West Europe |
| PROD NEU | | |
| Microsoft.KeyVault/vaults | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | kv-duf-neu-storsystems-prod |
| Region | North Europe |
|  | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | kv-duf-neu-sto-prod |
| Region | North Europe |
| DEV WEU | | |
| Microsoft.KeyVault/vaults | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | kv-duf-weu-storsystems-dev |
| Region | West Europe |
| Microsoft.KeyVault/vaults | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | kv-duf-weu-sto-non-prod |
| Region | West Europe |

* + 1. Log analytics workspace

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.OperationalInsights/workspaces | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-infra-prod |
| Name | law-duf-weu-storesystems-prod |
| Region | West Europe |
| PROD NEU | | |
| Microsoft.OperationalInsights/workspaces | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-infra-prod |
| Name | law-duf-neu-storesystems-prod |
| Region | North Europe |
| DEV WEU | | |
| Microsoft.OperationalInsights/workspaces | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-infra-non-prod |
| Name | law-duf-weu-storesystems-non-prod |
| Region | West Europe |

* + 1. Azure Functions

|  |  |  |
| --- | --- | --- |
| Resource type | Property | Value |
| PROD WEU | | |
| Microsoft.Web/sites | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-weu-storsystems-apim-prod |
| Name | func-duf-weu-storsystems-prod |
| Region | West Europe |
| Kind | Functionapp |
| App service plan name | plan-duf-weu-storsystems-prod |
| OS | Linux |
| Virtual network | vnet-duf-weu-storesystems-prod |
| Private endpoint name | pl-duf-weu-storsystems-func-prod |
| Inbound subnet | snet-duf-weu-storesystems-web-prod-10.250.81.16-24 |
| Application Insights instance | appi-duf-weu-storsystems-prod |
| PROD NEU | | |
| Microsoft.Web/sites | Subscription | duf-storesystems-prod |
| Resource group | rg-duf-neu-storsystems-apim-prod |
| Name | func-duf-neu-storsystems-prod |
| Region | North Europe |
| Kind | Functionapp |
| App service plan name | plan-duf-neu-storsystems-prod |
| OS | Linux |
| Virtual network | vnet-duf-neu-storesystems-prod |
| Private edpoint name | pl-duf-neu-storsystems-func-prod |
| Inbound subnet | snet-duf-neu-storesystems-web-prod-10.249.81.16-24 |
| Application Insights instance | appi-duf-neu-storsystems-prod |
| DEV NEU | | |
| Microsoft.Web/sites | Subscription | duf-storesystems-non-prod |
| Resource group | rg-duf-weu-storsystems-apim-dev |
| Name | func-duf-weu-storsystems-dev |
| Region | West Europe |
| Kind | Functionapp |
| App service plan name | plan-duf-weu-storsystems-dev |
| OS | Linux |
| Virtual network | vnet-duf-weu-storesystems-non-prod |
| Private endpoint name | pl-duf-weu-storsystems-func-dev |
| Inbound subnet | snet-duf-weu-storesystems-web-non-prod-10.250.185.16-24 |
| Application Insights instance | appi-duf-weu-storsystems-dev |

* 1. IAM

|  |  |  |
| --- | --- | --- |
| AAD group | Property | Value |
| All | isAssignableToRole | False |

|  |  |  |
| --- | --- | --- |
| Resource group | AAD Group | Role |
| PROD | | |
| rg-duf-weu-storesytems-infra-prod  rg-duf-neu-storesytems-infra-prod | azg-duf-storesystems-infra-prod-owner-rg | Owner |
| azg-duf-storesystems-infra-prod-reader-rg | Reader |
| azg-duf-storesystems-infra-prod-contributor-rg | Contributor |
| rg-duf-weu-storesytems-apim-prod  rg-duf-neu-storesytems-apim-prod | azg-duf-storesystems-apim-prod-owner-rg | Owner |
| azg-duf-storesystems-apim-prod-reader-rg | Reader |
| azg-duf-storesystems-apim-prod-contributor-rg | Contributor |
| azg-duf-storesystems-apim-prod-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-apim-prod-vm-user-rg | Virtual Machine User Login |
| rg-duf-weu-storesystems-tpv6-prod  rg-duf-neu-storesystems-tpv6-prod | azg-duf-storesystems-tpv6-prod-owner-rg | Owner |
| azg-duf-storesystems-tpv6-prod-reader-rg | Reader |
| azg-duf-storesystems-tpv6-prod-contributor-rg | Contributor |
| azg-duf-storesystems-tpv6-prod-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-tpv6-prod-vm-user-rg | Virtual Machine User Login |
| rg-duf-weu-storesystems-itek-prod rg-duf-neu-storesystems-itek-prod | azg-duf-storesystems-itek-prod-owner-rg | Owner |
| azg-duf-storesystems-itek-prod-reader-rg | Reader |
| azg-duf-storesystems-itek-prod-contributor-rg | Contributor |
| azg-duf-storesystems-itek-prod-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-itek-prod-vm-user-rg | Virtual Machine User Login |
| rg-duf-weu-storesystems-rj-prod  rg-duf-neu-storesystems-rj-prod | azg-duf-storesystems-rj-prod-owner-rg | Owner |
| azg-duf-storesystems-rj-prod-reader-rg | Reader |
| azg-duf-storesystems-rj-prod-contributor-rg | Contributor |
| azg-duf-storesystems-rj-prod-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-rj-prod-vm-user-rg | Virtual Machine User Login |
| DEV | | |
| rg-duf-weu-storesytems-infra-non-prod | azg-duf-storesytems-infra-non-prod-owner-rg | Owner |
| azg-duf-storesytems-infra-non-prod-reader-rg | Reader |
| azg-duf-storesytems-infra-non-prod-contributor-rg | Contributor |
| rg-duf-weu-storesytems-apim-dev | azg-duf-storesytems-apim-dev-owner-rg | Owner |
| azg-duf-storesytems-apim-dev-reader-rg | Reader |
| azg-duf-storesytems-apim-dev-contributor-rg | Contributor |
| azg-duf-storesystems-apim-dev-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-apim-dev-vm-user-rg | Virtual Machine User Login |
| rg-duf-weu-storesystems-tpv6-dev | azg-duf-storesystems-tpv6-dev-owner-rg | Owner |
| azg-duf-storesystems-tpv6-dev-reader-rg | Reader |
| azg-duf-storesystems-tpv6-dev-contributor-rg | Contributor |
| azg-duf-storesystems-tpv6-dev-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-tpv6-dev-vm-user-rg | Virtual Machine User Login |
| rg-duf-weu-storesystems-itek-dev | azg-duf-storesystems-itek-de-owner-rg | Owner |
| azg-duf-storesystems-itek-dev-reader-rg | Reader |
| azg-duf-storesystems-itek-dev-contributor-rg | Contributor |
| azg-duf-storesystems-itek-dev-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-itek-dev-vm-user-rg | Virtual Machine User Login |
| rg-duf-weu-storesystems-rj-dev | azg-duf-storesystems-rj-dev-owner-rg | Owner |
| azg-duf-storesystems-rj-dev-reader-rg | Reader |
| azg-duf-storesystems-rj-dev-contributor-rg | Contributor |
| azg-duf-storesystems-rj-dev-vm-admin-rg | Virtual Machine Administrator Login |
| azg-duf-storesystems-rj-dev-vm-user-rg | Virtual Machine User Login |

* 1. IP Addressing

|  |  |  |  |
| --- | --- | --- | --- |
| VNet | Range | Subnets | Range |
| PROD WEU | | | |
| vnet-duf-weu-storesystems-prod | 10.250.80.0/21 | snet-duf-weu-storesystems-agw-prod-10.250.80.0-28 | 10.250.80.0/28 |
| snet-duf-weu-storesystems-apim-prod-10.250.81.0-28 | 10.250.81.0/28 |
| snet-duf-weu-storesystems-web-prod-10.250.81.16-24 | 10.250.81.16/28 |
| snet-duf-weu-storesystems-db-prod-10.250.81.32-24 | 10.250.81.32/28 |
| snet-duf-weu-storesystems-sec-prod-10.250.81.48-24 | 10.250.81.48/28 |
| snet-duf-weu-storesystems-itek-prod-10.250.82.0-26 | 10.250.82.0/26 |
| snet-duf-weu-storesystems-tpv6-prod-10.250.82.64-26 | 10.250.82.64/26 |
| snet-duf-weu-storesystems-rj-prod-10.250.82.128-26 | 10.250.82.128/26 |
| PROD NEU | | | |
| vnet-duf-neu-storesystems-prod | 10.249.80.0/21 | snet-duf-neu-storesystems-agw-prod-10.249.80.0-28 | 10.249.80.0/28 |
| snet-duf-neu-storesystems-apim-prod-10.249.81.0-28 | 10.249.81.0/28 |
| snet-duf-neu-storesystems-web-prod-10.249.81.16-24 | 10.249.81.16/28 |
| snet-duf-neu-storesystems-db-prod-10.249.81.32-24 | 10.249.81.32/28 |
| snet-duf-neu-storesystems-sec-prod-10.249.81.48-24 | 10.249.81.48/28 |
| snet-duf-neu-storesystems-itek-prod-10.249.82.0-26 | 10.249.82.0/26 |
| snet-duf-neu-storesystems-tpv6-prod-10.249.82.64-26 | 10.249.82.64/26 |
| snet-duf-neu-storesystems-rj-prod-10.249.82.128-26 | 10.249.82.128/26 |
| DEV WEU | | | |
| vnet-duf-weu-storesystems-nonprod | 10.250.184.0/21 | snet-duf-weu-storesystems-agw-non-prod-10.250.184.0-28 | 10.250.184.0/28 |
| snet-duf-weu-storesystems-apim-non-prod-10.250.185.0-28 | 10.250.185.0/28 |
| snet-duf-weu-storesystems-web-non-prod-10.250.185.16-24 | 10.250.185.16/28 |
| snet-duf-weu-storesystems-db-non-prod-10.250.185.32-24 | 10.250.185.32/28 |
| snet-duf-weu-storesystems-sec-non-prod-10.250.185.48-24 | 10.250.185.48/28 |
| snet-duf-weu-storesystems-itek-non-prod-10.250.186.0-26 | 10.250.186.0/26 |
| snet-duf-weu-storesystems-tpv6-non-prod-10.250.186.64-26 | 10.250.186.64/26 |
| snet-duf-weu-storesystems-rj-non-prod-10.250.186.128-26 | 10.250.186.128/26 |

* 1. IaC

Implementation of the solution components utilizes Hashicorp Terraform product, an open-source IaC (Infrastructure-as-Code) tool for provisioning and managing cloud infrastructure.

Code is stored in Azure DevOps Repo in the following location:

|  |  |
| --- | --- |
| Component | Location / Url |
| Organization | DufryGlobal |
| Project | Dufry Insights Integration - API Gateway |
| Repos | Landing Zones |
| Production service principal | sp-storsystems-devops-prod |
| Non-production service principal | sp-storsystems-devops-non-prod |

[Landing Zones - Repos (azure.com)](https://dev.azure.com/DufryGlobal/Dufry%20Insights%20Integration%20-%20API%20Gateway/_git/Landing%20Zones)

* 1. Cost estimation



Ref.: <https://azure.com/e/8f2458a8838947a5882fd1d176aeaf74>

1. Abbreviations and definitions

|  |  |
| --- | --- |
| Abbreviation / term: | Meaning |
| API | Application Programming Interface |
| PIM | Azure API Management |
| ARM | Azure Resource Management |
| PaaS | Platform as a Service |
| POS | Point of Sale |
| VM | Virtual Machine |
| RPO | Recovery Point Objective |
| RTO | Recovery Time Objective |
| VPN | Virtual Private Network |
| WAF | Web Application Firewall |