

INFRASTRUCTURE APPLICATION REQUIREMENTS – *APP\_Abbr*   
*Full App Name*

* *<optional: clustered applicationname 1>*
* *<optional: clustered applicationname 2>*

Version: x.x

Date: *<day> <month> <year>*

Document purpose

This requirements document (REQ) is used to:

* Gain a common understanding of the application requirements
* Document the requirements relevant for the DXC Infrastructure Application design (IA HLD)

The document outlines:

* External entities
* Functional and non-functional requirements

Relation to other documents

The following documents may be relevant as context to this REQ:

* The Software Architecture Document (SAD)
* The Project Start Architecture (PSA) document
* Infrastructure Application design produced by DXC for related applications (interfaces)

Structure of the document

High level flow: first the application overview and architecture are described followed by the functional and non-functional requirements that ‘drive’ the solution as it will be described in the DXC HLD.

Content of the document

UWV has prepared this document in good faith and is based on the information gathered during the requirement determination phase with all parties involved; application vendors, UWV architects, developers and UWV functional management.

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# Application Overview

## Introduction

## Scope of the desired change

## Application use cases

## Out of Scope

# Architecture

## Conceptual

## Context diagram

< Context diagram is applicable for Private Cloud sytems, Container Applications and Hybrid situations, the green circle represents the application (and does not specify where it is hosted). In all cases it is important to understand the external connections for the application >

### External entities

#### Entity 1-n

|  |  |
| --- | --- |
| **Description** | <Short description (mandatory)> |
| **Protocol and Port** | <Specify protocol and port (mandatory field)> |
| **DC (Datacenter) connection** | Select (mandatory field) |
| **Direction** | Select (mandatory field) |
| **Direct connection** | Select (mandatory field)  Via: <If No is selected specifiy otherwise mention not applicable> |
| **Security Controls** | Authorisation method or authentication method: Select (mandatory)  Use certificates: Select (mandatory)  Service account: Select (mandatory)  Other: <(only mention if applicable) other applicable security control related configuration> |
| **Number of users** | <Preferred if known otherwise “not specified”> |
| **Number of transactions** | <Preferred if known otherwise “not specified”> |
| **Frequency of transactions** | <Preferred if known otherwise “not specified”> |
| **Volume of data in transit** | <Preferred if known otherwise “not specified”> |

#### Entity n

|  |  |
| --- | --- |
| **Description** | <Short description (mandatory)> |
| **Protocol and Port** | <Specify protocol and port (mandatory field)> |
| **DC (Datacenter) connection** | Select (mandatory field) |
| **Direction** | Select (mandatory field) |
| **Direct connection** | Select (mandatory field)  Via: <If No is selected specifiy otherwise mention not applicable> |
| **Security Controls** | Authorisation method or authentication method: Select (mandatory)  Use certificates: Select (mandatory)  Service account: Select (mandatory)  Other: <(only mention if applicable) other applicable security control related configuration> |
| **Number of users** | <Preferred if known otherwise “not specified”> |
| **Number of transactions** | <Preferred if known otherwise “not specified”> |
| **Frequency of transactions** | <Preferred if known otherwise “not specified”> |
| **Volume of data in transit** | <Preferred if known otherwise “not specified”> |

# Functional Requirements

# Non-Functional Requirements

## Security & Compliance classifications

Repository used is: “2022 UWV-brede Risico Applicatie Lijst v1.0”

The BIV rating (confidentiality) will result in chosing the UWV data appropriate zoning principals.

|  |  |
| --- | --- |
| **Application** | <application name> |
| **Owner** | <division name> |
| **Availability (Beschikbaarheid)** | Select |
| **Integrity (Integriteit)** | Select |
| **Confidentiality (Vertrouwelijkheid)** | Select |
| **Type of information /Data Classification** | <specify> |

### Risk analysis UWV

*Examples (please remove this text block before or after adding the real values)*

Example 1

UWV has composed a GEB report, which includes a risk analysis. These privacy and security related risks are mitigated in the arrangement of E-Publication.

Example 2

During product selection a UWV risk analysis has been conducted

### Applicable security and compliance frameworks

|  |  |  |
| --- | --- | --- |
| Security & Compliance Framework | Applicable | Comments |
| BIO | Select | If Applicable=No please explain |
| AVG / GDPR | Select | Only select No if no personal data is handled. GPDR is mandatory in all other cases |
| DIGID | Select |  |
| SUWI | Select |  |
| Additional frameworks | Specify any additional security or compliance framework |  |

## System and Software requirements

### Private Cloud system

#### System (Operating system (OS))

| **Server(type)** | **Operating System** | **Version** |
| --- | --- | --- |
| <example: Database server 1> | <RHEL> | <8.5> |
|  |  |  |

#### System capacity forecast (volumetrics)

| **Server(type)** | **vCPU** | **RAM (GB)** | **Data Storage (GB)** |
| --- | --- | --- | --- |
| <example: Database server 1> | 2 | 8 | 500 |
|  |  |  |  |

#### Availability

|  |  |  |
| --- | --- | --- |
| **Environment** | **Application Target**  (Availability (service hours) = SLA) | **Infra Target\* (only for Application target 98%)**  (Availability (service hours) = SLA) |
| Production | 99,8% (7x24) = TAB Extra | 99,8% (7x24) = Gold |
| Acceptance | 99,5% (7x24) = TAB Plus | 99,8% (7x24) = Gold |
| Test | 98% (5 x12 (Mo-Fr, 7-19h)) = TAB Basis | 98% (7x24) = Bronze |
| Select | Select | Select |

\*Aplication Target TAB Plus and TAB Extra always require Infra Target Gold

#### Storage replication

|  |  |
| --- | --- |
| **Environment** | **Storage Replication** |
| Select | Select |
| Select | Select |

#### Scalability

| **Server(type)** | **Scalability type** | **Additional Comments** |
| --- | --- | --- |
| <example: Application server 1> | Horizontal | Load balanced |
| <example: Application server 1> | Vertical | Additional CPU |

Load balancing type: < application or infra - based>

Load balancer infra requirements (when applicable):

|  |  |
| --- | --- |
| **Application Layer** | HTTP (L7) |
| **Application Port(s)** | 80 |
| **Algorithm** | Least Connections (default) |
| **Stickiness/Persistence** | None |
| **Health monitor type** | System-HTTP |

Known application scalabilty limitations: <provide when applicable otherwise state n/a >

#### Software (Licenses)

| **Server(type)** | **Software product / component** | **Version** |
| --- | --- | --- |
| <example:Database server 1> | <Oracle Database server> | <19c> |
| <example:Database server 1> | <Oracle Active Data Guard> | <19c> |

#### System management

< specify or state No system management requirements are applicable.>

**Additional application related infra requirements**

|  |  |
| --- | --- |
| **Requirements** | **Status** |
| Use STARTTLS option for UWV mail | Select |
| Is Microsoft DTC used for inflight transactions | Select |
| Is HTTPS cookie stickiness required on the load balancer | Select |
| Mention other relevant requirements |  |

#### DXC TAB requirements

|  |  |
| --- | --- |
| **Category** | **Description** |
| Deployment method | XL deploy)/ Azure DevOPS / Application specific deployment method / Manual deployment> |
| Deployment permissions |  |
| Application Monitoring |  |
| Application Logging |  |
| Other TAB applicable requirement |  |

### Container application (MCPaaS)

#### Capacity allocation

| **MCPaaS Namespace** | **Domain** | **CPU**  **Initial** | **CPU**  **limit** | **Memory (GB)**  **Limit** | **Memory (GB)**  **Limit** | **Storage**  **(GB)** | **User Groups** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| <example: CompetentNL-O> | Development | 1 | 4 | 32 | 64 | 150 |  |
| <example: CompetentNL-T> | Test | 1 | 4 | 32 | 64 | 150 |  |
|  | Acceptance |  |  |  |  |  |  |
|  | Production |  |  |  |  |  |  |

Remark: Capacity details for each pod is documented in Appendix D (Pods are the rough equivalent of a machine instance (physical or virtual) to a container. Each pod is allocated its own internal IP address)

#### Availability

|  |  |  |
| --- | --- | --- |
| **Environment** | **Application Target**  (Availability (service hours) = SLA) | **Infra Target\* (Same as MCPaaS availability)**  (Availability (service hours) = SLA) |
| Production | AppOps | 99,8% (7x24) = Gold |
| Acceptance | AppOps | 99,8% (7x24) = Gold |
| Test | AppOps | 98% (7x24) = Bronze |
| Development | AppOps | 98% (7x24) = Bronze |

\*Infra target is the same as for the container platform, therefore no choice the values here are information

#### Software (Licenses)

| **Container or Application** | **Software product / component** | **Version** |
| --- | --- | --- |
| <example: PES suite> | < example: PES bemiddelingsservice (8vance) > |  |

#### System management

< specify or state No system management requirements are applicable.>

**Additional application related infra requirements**

|  |  |
| --- | --- |
| **Requirements** | **Status** |
| Use STARTTLS option for UWV mail | Select |
| Can the standard Azure container registry be used by the MCPaaS application | Select |
| Mention other relevant requirements |  |

#### DXC TAB requirements

|  |  |
| --- | --- |
| **Category** | **Description** |
| Deployment method | Azure DevOPS |
| Application Monitoring |  |
| Application Logging |  |
| Other TAB applicable requirement |  |

## Performance requirements

*Examples (please remove this text block before or after adding the real values)*

The total size for Production is approximately 40 GB. 16 GB of RAM should be allocated. Finally, a processor is required with x86-64 architecture and access to two or more (4 cores are required for 1 node to handle the full load) processors. The DocSys application will be used by a maximum of 5000 concurrent users.

The following additional non-functional requirements have been specified for this application environment with regards to the performance of the infrastructure.

* The end-to-end performance (total transaction time – 99th percentile) of DocSys interfaces:
  + UHR: 100 ms
  + WGA: 100 ms
  + UPA: 100 ms
  + EA: 200 ms

## Security requirements

*Examples (please remove this text block before or after adding the real values)*

• Authentication and Authorization: Users accessing DocSys (through the webbrowser) authenticates themselves with their UWV account. This authentication is provided by Active Directory Federation Services (ADFS).

• Elevated permissions: Read /write permissons on the database

• The application owner would like to have multi-factor authentication, or 4-eyes principles

### System logging retention time

## Backup and Recovery

|  |  |  |
| --- | --- | --- |
|  | **Default** | **Deviation (when applicable)** |
| Backup | standard backup | Specify deviation (see instruction for backup standards) |
| Restore | no specific restore order | Specify restore order when applicable |
| Dependency | no dependencies | Specify dependency when applicable ( for example backup with the same time stamp is required to avoid data inconsistency) |

## Disaster Recovery

No specific disaster recovery requirements applicable.

# Appendix A: Template version control

**TEMPLATE CHANGE HISTORY**

|  |  |  |
| --- | --- | --- |
| Version | Date | Summary of Changes |
| 0.1 | 08-07-2022 | * Initial version UWV requirements template, ready for review |
| 0.2 | 13-07-2022 | * Included review comments Giuliana to prepare for follow-up meeting |
| 0.3 | 14-07-2022 | * Included review comments Giuliana and Henk-Jan to prepare for REQ template pilot |
| 0.8 | 14-07-2022 | * Cora marked the REQ template v0.8.  Prepared for final UWV review and the additional writer’s instruction from Thomas H, Remco H and Walter |
| 0.9 | 25-07-2022 | * Pre-pilot version |
| 0.91 | 27-07-2022 | * Split Appendix A in A and B for document control |
| 0.92 | 11-08-2022 | * improved instructions after 1st workshop with IO&R hosting team and evaluation of pilot (use case: edit HLD for existing application) |
| 0.93 | 24-08-2022 | * improved instructions after 2nd workshop with IO&R hosting team |
| 0.99 | 28-10-2022 | * Improved and added instructions by Henk-Jan after evaluation of first use in production and to finalize template to v1.0 |
| 1.0 | 11-01-2022 | Finalized with the following adjustments   * Updated 4.4 includes service level and service hours * Updated 4.8 Added note for AIX Bronze systems |
| 1.1 | 02-01-2023 | * Updated instructions for certificate selection |
| 1.2 | 23-02-2023 | Updated the template with MCPaaS (Managed Container Platform as a Service) specific requirements   * Removed Chapter 3 (functional requirements), Evaluation shows that this is either not filled or when it is filled the requirements are non-funtional. Functional requirements for the application are documented in the application design (SAD) * Moved chapter 4.8 (storage replication) under 3.2.1 to bundle the Private Cloud (build)requirements together * Moved chapter 4.4 (Availibility), 4.6 (System management) and 4.10 (TAB requirements) under 3.2.1 and 3.2.2 to bundle the Private Cloud system and Container application requirements together * Moved chapter under 3.2.1 and 3.2.2 to bundle the Private Cloud system and Container application requirements together * Updated 4.2 System and Software requirements: seperate section for Private Cloud and MCPaaS * Updated 4.4 Availability: seperate section for Private Cloud and MCPaaS * 4.6.1 – added addition MCPaaS related infra requirement: Can the standard azure container registry be used by the MCPaaS application |
| 1.21 |  | Added Chapter 3 again: Functional requirements, to keep all chapter the same also for old documentation and to have the possibility to document functional requirements that might seem relevant  Updated 4.2.1.5 System management   * Added load balancer requirements * Added known application scalability limitations |

# Appendix B: Document version control

**USED TEMPLATE**

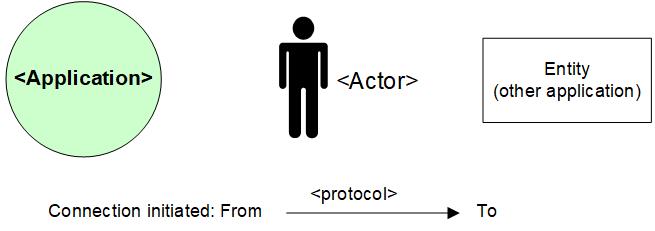
|  |
| --- |
| Based on REQ Template: UWV REQ – TEMPLATE 1.2.docx |

**CHANGE HISTORY**

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Author | Summary of Changes |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Appendix C: Legenda

## Legenda Context Diagram



# Appendix D: MCPaaS – Capacity allocation details

**EXAMPLE**

**Capacity allocation for <CompetentNL>**

To manage the resource allocation and assure the project uses only appropriate or agreed resources on the cluster, the quotas and limits to compute resources for the CompetentNL projects on the MCPaaS will be based on below details.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Service (pod)** | **Mem Reservation** | **Mem Limit** | **CPU Reservation** | **CPU Limit** | **Scale - nr of containers (Development)** | **Scale - nr of containers (Test)** |
| CNL-Backend | 256M | 512M | 0,1 | 0,3 | 1 | 1 |
| CNL-Frontend | 128M | 256M | 0,1 | 0,5 | 1 | 1 |
| CNL-IAM | 256M | 512M | 0,1 | 0.5 | 1 | 1 |
| CNL-Dataloader | 256M | 512M | 0,1 | 0,2 | 1 | 1 |
| CNL ActiveMQ | 256M | 512M | 0,1 | 0,3 | 1 | 1 |
| CNL-Config-server | 128M | 256M | 0,1 | 0,2 | 1 | 1 |
| CNL-api | 256M | 512M | 0,1 | 0,5 | 1 | 1 |
| CNL-Synchronization | 128M | 256M | 0,1 | 0,3 | 1 | 1 |
| CNL-DB Management | 128M | 256M | 0,1 | 0,2 | 1 | 1 |
| CNL-Search | 1024M | 3072M | 0,1 | 1 | 1 | 1 |

*Total Required resource allocation*

*Note: Required resource allocation for Development and Test is an initial estimation. After initial tests on these environments resource allocation for all environments will be finalized and updated. Besides the resource allocation for Acceptance and Production are based on the experiences from Development and Test.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Size description** | **Development** | **Test** | **Acceptance** | **Production** |
| Mem minimum run | 2816M | 2816M | TBD | |
| Mem maximum run | 6656M | 6656M |
| CPU reservations | 1 | 1 |
| CPU reservations limit | 4 | 4 |