DRAFT - ICT Project Guidance

Education Sector – Basic Context Information

Version:

0.1

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## Description

This document summarises key information about the New Zealand Education Sector to inform system resource target qualities.

## Synopsis

New Zealand is a small country, with approximately 1/8th of its population in compulsory education. Systems developed for the education sector have to be designed to meet a minimum quantitative threshold.

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## Introduction

BOSSCARD/ RAID: Background [], Objective, Options, Scope[In/Out], Stakeholders [Users], Constraints, Assumptions, Risks, Dependencies, Decisions, Deliverables.

## Background

The following is a table of background information about the sector.

|  |  |  |
| --- | --- | --- |
| Category | Description | Value |
| New Zealand Population: | In-Country: | 5,250,000[[1]](#footnote-2) |
| Sector Size: | *Learners:* | *800,000* |
|  | *Teachers:* | *55,000* |
|  | Combined: | 900,000 |
|  |  |  |
|  |  |  |
| Sector Size Change/Year: | Entering | 62,000 |
|  | Leaving | 62,000 |
|  | Combined: | 124,000 |
| Learner Count / Year: | 900,000 / 11 Years | 80,000 |
| Logical Groups per Provider: | Years: | 11 |
|  | Subjects: | 11 |
|  | Misc (Sports, Drama, etc.): | 8 |
|  | Combined: | 30 |
| Education Providers: | Compulsory schools: | 2500 |
|  | ECE providers: | 5000 |
|  | Home schools: | 4000 |
|  | Tertiary organisations: | 600 |
|  | Playgroups: | 850 |
|  | Sports, learning, etc. groups: | 1000 |
|  | Combined: | 14000 |

|  |  |  |
| --- | --- | --- |
| Category | Description | Value |
| Max Users: |  | 900,000 |
| Concurrent Sessions: | Method 1:  Max Users,  10% of users,  10% concurrent  over 25 seconds: | 90,000/10/4=2250 users |
|  | Method 2:  121,000 users/year,  10% concurrent  over 25 seconds: | 121,000/10/4 = 3250 users |
|  | Method 3: 3 years combined:  NCEA 1: 140,000  NECA 2: 88,0000  NCEA 3: 33,000 10% concurrent  over 25 seconds: | 261,000/10/4 = 6500 users |
|  | Method 4:  55,000 teachers,  10% concurrent  over 25 seconds: | 55,000/10/4 = 1375 users |
|  | Estimate (6500\*200%): | 13,000 |
| Avg Operations/Second | 13000/25 sec | 520 per second. |
| Peak Operations/Second | 13000/1 sec | 13,000 |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Minimum Media Resources | Estimated number of individually managed media resources:  5,000 documents  17 drafts spread over  3 published versioned | 100,000 |
| Minimum Storage (Gb): | Assuming  100,000 Resources, x 10 versions, x 0.25Mb  2.5Mb of media x 100,000 Resources | Max 375 Gb |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Response Time: | Average *Completed* Response Time | <500ms |
| Max *Completed* Response Time |  | 2 secs |
| Maximum Tolerable Downtime (MTD) | Assuming part of a lunch break. | 20 minutes |
| Minimum Downtime per fortnight | 99.9% | 20 minutes per fortnight. |
| Disaster Recovery Times (mins) | Recovery Point Objective (RPO) | 15 mins |
|  | Recovery Point in Time (RPT) | 60 mins |
| Vendor Support Response Times (mins) | P1 |  |
| P2 |  |
| P3 |  |
| Integration Systems | Hosting | Organisation Cloud Accounts |
| Identity | (I)Commodity Cloud based Identity Providers (IdPs)  (I)Cloud based Organisation specific IdPs  (I)Organisation specific Identity Provider (ESL) |
| Reporting | (I/O)Reporting Database |
| Data | (O) Data warehouse |
| Other | (I/O) Te Rito (via APIs)  (O) Student Management System (SMS)  (I/O) Learning Management System (LMS) |
| Integration Methods: | Protocols |  |
| Identity | OIDC, OAuth, SAML |
| Education specific | cmi5, xAPI, SCORM |
| Standards | JSON, REST, OpenAPI, ODATA, |
| Tech Preferences: | Host Environment | Cloud. Azure preferably |
| Database/Store | SQL Server preferably |
| OS | Windows preferably |
| Service Framework | .NET Core preferably |
| Service Language Type | Compiled |
| Service Language Framework | .NET Core |
| Service Language | C# |
| Service Client Framework | Vue.js preferably |
| Service Client Language | Typescript preferably |
| Accepted Hash Algorithms | SHA-3 |  |
| Accepted Encryption Protocols | TLS 3+ |  |
| Max Length of Certificates | 90 days |  |
| Data Classification | IN CONFIDENCE | The system is intended to hold UNCLASSIFIED resources, but the volume of users demands that the information be treated as IN CONFIDENCE. |
| Systems that may be replaced |  | CoL Tool |
| Backups | Full | Every 24 hours |
| Incremental | Every 15 minutes |
| Duration kept | 31 days |

Appendices

Appendix A - Document Information

### Images

[Figure 1: TODO Image 2](#_Toc144995112)

### Tables

[Table 1: TODO Table 3](#_Toc145048484)

[Table 2: TODO Table 2 3](#_Toc145048485)

### References

**There are no sources in the current document.**

### Review Distribution

The document was distributed for review as below:

|  |  |
| --- | --- |
| Identity | Notes |
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### Audience

The document is technical in nature, but parts are expected to be read and/or validated by a non-technical audience.

### Structure

Where possible, the document structure is guided by either ISO-\* standards or best practice.

### Diagrams

Diagrams are developed for a wide audience. Unless specifically for a technical audience, where the use of industry standard diagram types (ArchiMate, UML, C4), is appropriate, diagrams are developed as simple “box & line” monochrome diagrams.

### Terms

Refer to the project’s Glossary.

##### IT

: acronym for Information, using Technology to automate and facilitate its management.

##### ICT

: acronym for Information & Communication Technology, the domain of defining Information elements and using technology to automate their communication between entities. IT is a subset of ICT.

1. https://www.stats.govt.nz/information-releases/national-population-estimates-at-30-june-2023/ [↑](#footnote-ref-2)