

The Application Architecture of YEROTH-ERP-3.0

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Abstract

This document describes the application architecture of our ERP software-system YEROTH-ERP-3.0. This document also explains the reasons for which we chose to design and build YEROTH-ERP-3.0 as a thick-client application, as opposed to currently more popular web-browser-based software applications.

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	Thick-client application ✓	Web-browser-based application
business code	all computers	application server
co-related software-systems	1 (DBMS)	at least 2 (DBMS, web / application server)
user interface	all computers (thick-client gui)	all computers (web-browser)
user interface development	WYSIWYG tool	manual coding
networked architecture	2-tier (client and data)	at least 2-tier (client, logic / data)
security vulnerability	low (single programming language)	high (several programming languages)

Table 1: Thick-client application VS Web-browser-based application.

1 Introduction

YEROTH-ERP-3.0 is an **Enterprise Resource Planing (ERP)** software that aims 'effectiveness' and 'simplicity', compared to other high ranked ERP software-systems (e.g.: 'Sage Gescom i7', 'SAP Business One', etc.).

We chose to design and implement YEROTH-ERP-3.0 as a thick-client software-system because of the following reasons:

- 1) the implementation language C++ offers much flexibility (use of macro, etc.)
- 2) the availability of 'WHAT YOU SEE IS WHAT YOU GET' (WYSIWYG) tools for fast and useful user interface design (e.g.: Qt designer [Com20], miniStudio (vxWorks) [WEI20], etc.)
- 3) the low number of computers involved with the operation of a thick-client software-system (1-tier architecture), as opposed to a web-browser-based software-system (at least a 2-tier architecture).

2 Thick-Client VS Web-Browser

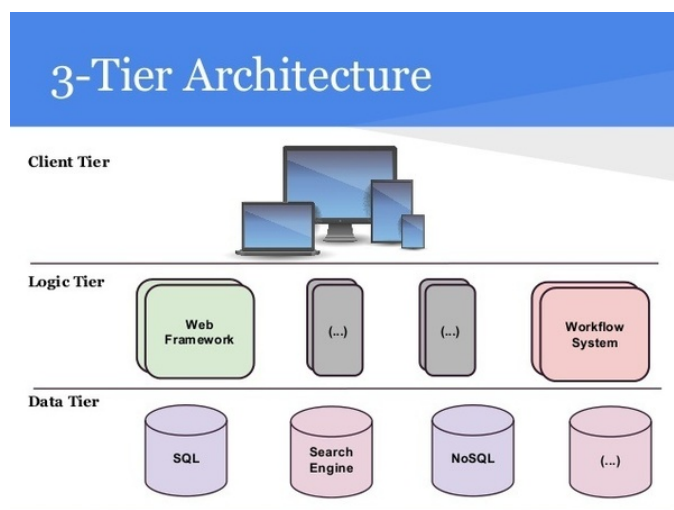


Figure 2: Logical 3-tier architecture.

Figure 2 illustrates an example of a logical 3-tier architecture (copied from [quo20]).

Table 1 compares a thick-client application against a web-browser-based application.

3 YEROTH-ERP-3.0 Upgrade Deployment

3.1 Debian-Linux

3.2 Windows 10

4 Conclusion

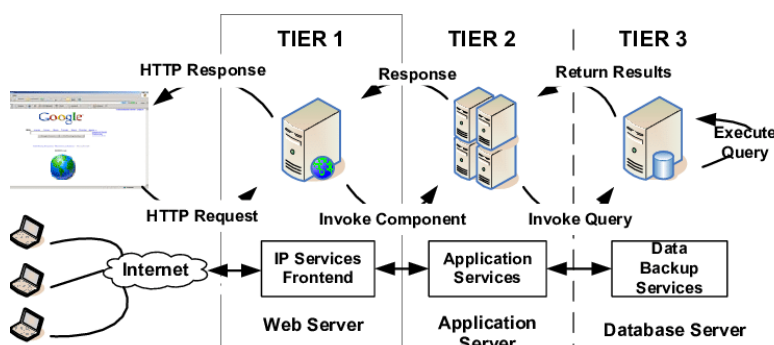


Figure 1: Physical 3-tier architecture.

Figure 1 illustrates an example of a physical 3-tier architecture (copied from [KM06]).

5 References

- [Com20] The Qt Company. Qt Designer Manual. <http://doc.qt.io/qt-5/qtdesigner-manual.html>, 2020. Last accessed on September 4, 2020 at 15:21.
- [KM06] Taeho Kgil and Trevor Mudge. Flashcache: A nand flash memory file cache for low power web servers. In *Proceedings of the 2006 International Conference on Compilers, Architecture and Synthesis for Embedded Systems*, CASES '06, page 103–112, New York, NY, USA, 2006. Association for Computing Machinery.
- [quo20] quora.com. What is the Role of a Web Service in a three Tier Architecture. <http://www.quora.com/What-is-the-role-of-a-web-service-in-a-three-tier-architecture>, 2020. Last accessed on September 4, 2020 at 21:02.
- [WEI20] Yongming WEI. miniStudio User's Guide. <http://www.minigui.net/en/ministudio>, 2020. Last accessed on September 4, 2020 at 15:21.