

## ERP System 4 Schools

1, Yomi Ajetumobi, Alfa  
Bus Stop, Sangotedo,  
Lekki expressway, Lagos.

P (+234) 802 229 4329  
P (+234) 806 111 3988  
E info@enterprisearms.net



[www.enterprisearms.net](http://www.enterprisearms.net)



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## THE LITERATURE (BRIEF) 2<sup>ND</sup> EDITION

WORLD WIDE WEB (CLOUD COMPUTING) BASED

# ERP SYSTEM 4 SCHOOLS

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## OVERVIEW

Enterprise (Academic Resource Management System) ARMS is a cloud based multi-tenancy ERP system for schools, designed to revolutionise the academic information management and processes automation.

ARMS has six (6) compound operational modules with two (2) other independent community modules in the form of PORTALS. The various compound modules are: Account, Academic, Faculties (HR), Quarters (Dormitory and Staff Quarters), Transport (School Bus and Fleet) and Student. The various independent modules are Alumni and Computer Based Testing System (CBTS).

ARMS is deployed in five (5) different web access and three (3) different mobile access. For the web, we have Experience Webtop, Community Webtop, Executive Webtop, Alumni Portal and the CBT Portal. For the mobile, we have the Alumni and the CBT on both Android and IOS.

ARMS user friendliness is second to none as it offers the look and feel experience familiar with the popular social media sites, like Facebook and Twitter.

ARMS is designed to build the world's largest community of School Executives, Teachers, Parents/Guardians and Students/wards. This revolutionary system is powered by the 5 professional and innovative companies.

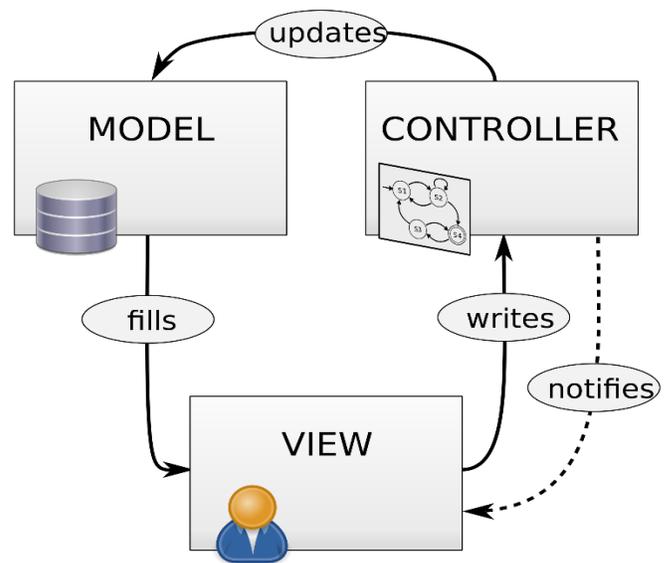
## ARCHITECTURE

ARMS is an nTier enterprise system that is built on the specification of MVC independence.

ARMS is deployed on three main servers running in the cloud with each managing the individual process.

The database services, application services and web services are running separately, then independent of the client nodes (systems) be it mobile and or web.

*Diagram 1.0 showing the MVC relationship and order:*



## TECHNOLOGY

ARMS uses the various world leading technologies for its design and engineering.

Opens Source Technology (ODST) is the core of ARMS engineering. Looking at ARMS from the point of MVC (Model, View & Control) with validations and other integrated solutions, we shall enumerate the various technologies and specifications used:

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**Model:** Oracle MySQL is the Relational Database Management System used to design, implement and manage the data structure and storage for ARMS.

**View:** Oracle JSP, Oracle Java Servlets, Bootstrap, Node.JS, Angular JS, Java Script and PHP are used in the design of the data presentation environment both on the web and the mobile.

**Control:** Oracle Java with (RMI, CORBA and EJB, JSON) are the various languages and specifications used to design the business logic tier of the system.

**Validation:** SSL certificates from COMODO, VoguePay (Payments merchants), SWEESH system, eBulk (SMS notification APIs).

**Others:** JNDI is also implemented to enable data connection pool for fast database access.

## MODULES

ARMS has six (6) compound operational modules with two (2) other independent community modules in the form of PORTALS.

### **The operational modules are:**

**Account:** manages all the finances and books of accounts with features like, school fees billing and receipts, full payroll functions with 2012 tax act PAYE formula, loans, salary advance and cash advance, inventory, fixed assets, cash book, budgets and variance analysis, journals, impress system and lots more.

**Academic:** manages classrooms & teachers, subjects & teachers, class attendance, subject attendance, student promotion, assignments & projects, timetable, calendars, scheme of works, lesson notes, list of books, library administration and lots more.

**Faculty (HR):** manages the staff employment, Identity, ID card generation, conduct score card, appraisals, casual leave, loans and advances application and approval, resume (CV), timesheet, salary constituents and lots more.

**Quarters:** manages the resident staff members, staff quarters, student dormitories, roll call and attendance, exeat (exit permits) and lots more.

**Transport:** manages the school buses, transit & manifests, drivers, conductors, other vehicles with their movements and lots more.

**Student:** manages the student admission, Identity, ID card generation, behavioural and subjects' assessments, appraisals, prefecture (nomination and voting to elect the students of choices for the various prefect portfolios are some of this features) and voting, medicals, immunization, guardian list, disciplinary, student self-services and lots more.

### **The independent portals are:**

**Alumni:** this portal manages the alumni community of the old students of the institution. It comes with rich sets of integrated modules: **Membership, Projects, Forum, Blogs, Friends, Groups, Careers, Set Mates, RIPs (Condolence Register) and Integrated Services.**

This system is fully integrated with the account, academic and student modules.

**CBT-ENGINE:** Computer Based Test System is a test engine designed to deliver tests, review answers and score students based on a multiple choice examinations. The system is fully integrated with the account, academic faculty and student modules

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## ERP ADVANTAGE

ERP stands for Enterprise Resource Planning and it is a special solution to complete business information management & processes automation and administrative requirements customisation.

ERP systems has these various statutory benefits to any academic institution in quest:

- Eradication of the analogue processes of keeping papers for every record and analysis not portable and very large space consuming. Access to information now becomes very fast.
- Real time access to and accuracy in information query available to every authorized person.
- Saves a lot of productive man hours and ensures and enforces record and information integrity.
- Cuts off unnecessary overheads; ID Cards, Receipts and Report sheets are auto generated.
- Complete financial and academic administrative management; Processes automation and reports.
- Executive policy and decision driven reports are available every time form anywhere.
- Promotes an efficient parent/school relationship through instant SMS notification and alerts.

## ARMS ADVANTAGE

ARMS has just few competitors in the development of ERP system for schools in Nigeria and West Africa. The few major ones identified are: SchoolCube and Educate.

ARMS offers a variety of unique advantages with just few of them mentioned below:

- Total cost of license ownership and payment terms are conveniently integrated into the budget. **ARMS is the cheapest and only free ERP system for schools in the whole of West Africa.**
- Multi-Branch profile, ensuring Limitless number of institution campuses are used with a single free or very low total cost of license ownership.
- Parents/Guardians have real time access to their Children's/wards' information from anywhere through the **Community Webtop** for general academic, assessment, assignments & projects medical administration, behavioural, disciplinary, appraisals, financial reporting; Internet, E-mail & SMS Notification and alerts.
- Integrated with online payment and merchant gateways; VISAcard, MasterCard and Verve.
- Automated end Session computation; Promoting, graduating and Repeating Students Processing.
- Highly robust, boundless functionalities, yet processes very fast.
- ARMS is hosted on a very secure Linux Operating System (CentOS 7.5).
- High-level Data Access Control (Authentication & Authorisation); Data Encryption over a secured socket (256 bit SSL), Sensitive Database content encryption, Audit Trail.
- Database Longevity; Information readily available over a lifetime.

## IMPLEMENTATION

ARMS is deployed on several cloud based servers for performance, speed and 99.99% service uptime. ARMS is hosted on a Linux operating system (Community Enterprise OS 7.5).

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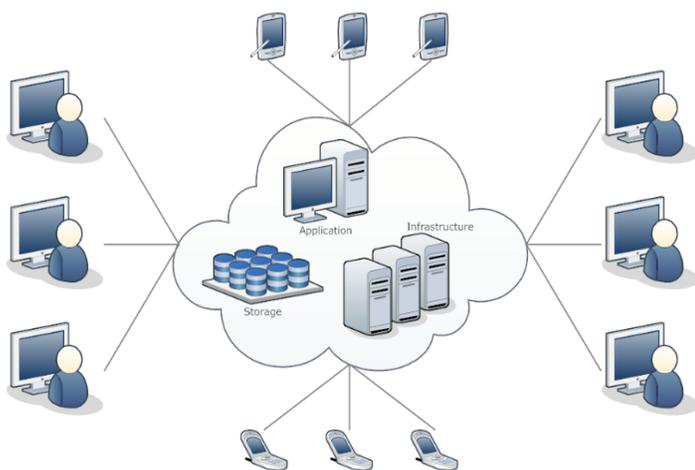
Institutions data and resources are either managed from a single point or institutions can opt for a private hosting on their own server machine, be it on the intranet or internet. **The internet is more preferable in other to unleash the full potentials of ARMS.**

### Cloud Advantage

Cloud hosting of the resources managed with ARMS offers the following advantages:

- Resources are accessible at a very high speed even with limited internet data service coverage.
- 99.99% services and resources uptime for all users.
- 24/7 services and resources available for all users.
- Remote and prompt maintenance and support services 24/7
- Android and mobile access where applicable.
- Executives, Teachers, Parent/Guardian, Students access from anywhere, anytime.

**Diagram 2.0 showing a cloud infrastructure:**



### Multi-Tenancy

The Multi-Tenancy infrastructure allows for processes and resources management of multiple institutions from a single instance of the ERP system.

The Multi-Tenancy subscription offers institutions with the following advantages:

- Highly secured data with 256 bit encryption SSL.
- Institution does not pay for any 3<sup>rd</sup> party hardware and software resources for deployment.
- Single point of maintenance and support making it very fast to resolve issues.
- Subscription is very cheap.
- 100% free subscription available.
- Very suitable for an institution with non ICT professional.
- Setup is very fast and 100% free.
- No additional support and or resource charges apart from the standard annual license.
- Resources and services are specifically managed by certified professionals.
- Administrative training is free of charge.

### Premium Service

The premium services allow institutions host ARMS on their own choice of server system. This server machine(s) must meet up with some basic requirements for ARMS to run and or perform with proven efficiency.

We also provide shared cloud based server with shared dedicated IP address is available for those who cannot afford a cloud VPS with a private dedicated IP address. You don't have to worry about



security, speed and other required performance compliance as we surely provide time tested composite solutions for ever changing academic and administrative requirements and demands.

The premium services has the following attributes:

- Institution pays for all the necessary 3<sup>rd</sup> party hardware and software resources for deployment.
- Institution has full access to private resources and database.
- Very suitable for an institution with an ICT professional.
- Setup is within 72 hours and attracts setup fee.
- Attracts additional one time and periodic support and or resource charges aside the standard annual license.
- Administrative training fee is charged for technical and functional administration where necessary.

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## EDITIONS/LICENSES

ARMS offers 2 operational editions in 4 different licenses allowing the institution make the best from the variety of options as inspired by institutions' budgets, academic and administrative operational requirements.

No matter how humongous and or numerous your institutions' operational challenges are, ARMS is the best solution provider.

Discussed below are the various licenses of the editions for your consideration:

### Community Edition

**Free:** offers all the features at no cost of license ownership but limited to **10** concurrent users.

### Commercial Edition

**Lite: Starter license;** very affordable and inspired by low budget.

**Flex: Buffet license;** allows you to serve yourself with just the features you required.

**Peak:** complete in all features available with the opportunity of "get all, but pay less".

Please refer to the license information sheet for further and explicit details. You can visit our website to download a copy from <https://enterprisearms.net/enterprise-arms-licence.pdf>.

## REQUIREMENTS

ARMS requires some basic specifications of hardware, software and other services to run and or be accessible efficiently:

	SERVER	CLIENT
<b>Hardware</b>		
CPU	Dual Core 2.4GHz	Single Core 1.6 GHz
RAM	2GB DDR 3	1GB DDR
<b>Software</b>		
Operating System	Linux/Windows	Works With All

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Database Server	Oracle MySQL	Not Applicable
Application Server	Tomcat	Not Applicable
Web Server	Apache/LAMP	Not Applicable
Web Browser	Not Applicable	Works With All
PDF Reader	Not Applicable	Works With All
<b>Services</b>		
Internet	Broad Band	Dial Up
SSL Certificate	256 Bits By Any CA	Not Applicable
Domain Name	Registered	Not Applicable
IP Address	Live/Dedicated	Not Applicable

## TARGET SCHOOLS

ARMS is designed to manage the resources for any or combination of the following schools or education grade services providers:

- **Nursery or Preparatory school**
- **Primary, Elementary or Grade School**
- **Junior High/Secondary School**
- **Senior High/Secondary School**
- **Technical College**
- **School of Nursing**
- **School of Hygiene**
- **Special School/College**
- **Co-Educational Boarding School**

If your education service institution falls into any or combination of more than one of the classes listed above, you need ARMS.

If your institution is having any of the challenges in academic and or administrative processes, reports or analysis as identified below, you need ARMS.

- **Access to first-hand information on any pupil or student right from the front desk or student information desk.**
- **Instant pupil and or student head count based on academic classes or any other classification.**
- **Instant staff head count based on employment role, type, position or any other.**
- **Daily, weekly or any periodic cash flow statement.**
- **List of school fee defaulters in an instance.**
- **Total school fees receivable/receipts on school fees on a fly.**
- **Study classrooms statistics on a fly (occupancies and vacancies).**
- **Total budget with the variance analysis on fly.**
- **Calculation of test scores and generating of report sheets manually.**
- **Customising messages to parents/guardians.**
- **Getting any information on any resource instantly from just about anywhere and anytime.**
- **Monitoring the school administrative process from anywhere and getting updates on activities just about any time.**
- **Instant access to the identity of any pupil/student or staff member and lots more.**

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