

Comparison of various enterprise application development technology stack (development, engineering, deployment, monitoring) security architecture and best practices in enterprise application programming

1. Management Information Systems:

Management Information System or 'MIS' is a planned system of collecting, storing, and disseminating data in the form of information needed to carry out the functions of management

2. Enterprise Resource Planning:

ERP is an integrated, real-time, cross-functional enterprise application, an enterprise-wide transaction framework that supports all the internal business processes of a company. It supports all core business processes such as sales order processing, inventory management and control, production and distribution planning, and finance.

3. Customer Relationship Management:

Customer Relationship Management is a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer. It involves the integration of marketing, sales, customer service, and the supply-chain functions of the organization to achieve greater efficiencies and effectiveness in delivering customer value.

4. Knowledge Management System:

A knowledge management system comprises a range of practices used in an organization to identify, create, represent, distribute, and enable adoption to insight and experience. Such insights and experience comprise knowledge, either embodied in individual or embedded in organizational processes and practices.

5. Content Management System:

A Content Management System (CMS) allows publishing, editing, and modifying content as well as its maintenance by combining rules, processes and/or workflows, from a central interface, in a collaborative environment. A CMS may

serve as a central repository for content, which could be, textual data, documents, movies, pictures, phone numbers, and/or scientific data.

6.Executive Support System:

Executive support systems are intended to be used by the senior managers directly to provide support to non-programmed decisions in strategic management. These information are often external, unstructured and even uncertain. Exact scope and context of such information is often not known beforehand.

7. Business Intelligence System:

The term 'Business Intelligence' has evolved from the decision support systems and gained strength with the technology and applications like data warehouses, Executive Information Systems and Online Analytical Processing (OLAP). Business Intelligence System is basically a system used for finding patterns from existing data from operations.

8.Enterprise Application Integration:

EAI is an integration framework, a middleware, made of a collection of technologies and services that allows smooth integration of all such systems and applications throughout the enterprise and enables data sharing and more automation of business processes.

9. Business Continuity Planning:

Identifies an organization's exposure to internal and external threats and synthesizes hard and soft assets to provide effective prevention and recovery for the organization, while maintaining competitive advantage and value system integrity. Understandably, risk management and disaster management are major components in business continuity planning.

10. Supply Chain Management:

Design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally.

Development:development is the process of conceiving, specifying, designing, programming, documenting, testing, and bug fixing involved in creating and maintaining applications, frameworks, or other software components.

Engineering: engineering is the designing, testing and building of machines, structures and processes using maths and science. Studying it can lead to a rewarding career. Engineering is a discipline dedicated to problem solving. Our built environment and infrastructure, the devices we use to communicate, the processes that manufacture our medicines, have all been designed, assembled or managed by an engineer.

Deployment:deployment includes all of the steps, processes, and activities that are required to make a software system or update available to its intended users.

Monitoring:**monitoring** is the process of collecting, analyzing, and signaling event occurrences to subscribers such as operating system processes, active database rules as well as human operators. These event occurrences may stem from arbitrary sources in both software or hardware such as operating systems, database management systems, application software and processors. Event monitoring may use a time series database.

Security architecture: Security Architecture and Design describes fundamental logical hardware, operating system, and software security components and how to use those components to design, architect, and evaluate secure computer systems. Understanding these fundamental issues is critical for an information security professional.

Best practices in enterprise application programming

1. Automation of Testing Process

- No development process is helpful until the proper testing is concluded. A good testing process helps identify which tests to use, create these tests, and then push the functionality.
- It can be very beneficial to automate testing phases in the development process. Testing is a crucial part of the process, and it helps to ensure that the software is free

from bugs and issues before it is launched or deployed on client servers.

- Automation will help you to optimize your resources and manage a better and more functional development process.

2. Ensure Application Security

- The last thing a company would wish for is data leaks. If companies' private data is compromised, it could lead to massive damages, most minor of all being hit the reputation.
- It is necessary to ensure data security compliance. However, it can be time-consuming and frustrating. Furthermore, putting it on the back burner can lead to data breaches, audit failures, and decreased brand goodwill.
- An enterprise applications software engineer can get a security testing process in place from the start of the development project. It can help them identify any dangerous vulnerabilities or risks and fix them quickly.
- Different development libraries and tools such as Veracode, DeepScan, GitLab, etc. can be used to remove any human error that might cost the organization time and money.

3. Define your Goal

- Before you initiate your development process, you must clarify your objectives. Make sure you clearly define the goals you are trying to reach to all the project stakeholders.

Answers questions such as –

- Why do you want these enterprise software apps developed?
- What business purpose will it serve?

- How much are you ready to invest in the project?

Always ensure that all the key stakeholders, especially the developers, are aware of your goal. This primary goal should always be set clearly from day zero.

4. Outline the Required Features and Functionalities

- It may affect the development process and delivery timeline if the development scope changes frequently. Dedicated development teams may find it challenging to keep up with the timeline if the clients keep changing their software's features or functionalities.
- This is frustrating and can also delay the project delivery and increase the budget. To avoid such situations, clearly outline what features and functionalities you require from your enterprise software applications.

5. Determine the Programming Language and the Platform for building the Application

- A software application is built using a particular language, for instance, Python, Java, C, Ruby on Rails, etc.
- If you possess the appropriate technical expertise, make sure to hire IT consultants to advise you on the development processes, including choosing the best language for your Application.
- At the same time, it is necessary to decide the platform your software will run on. This includes mobile or desktop devices. For desktop, you may build it on Windows, macOS, Linux, etc. On the other hand, there are only two primary mobile platforms – Android and iOS.

6. Choose the Right Team

- Since the project's ultimate success is in the hands of the developers, you must build dedicated development teams

specializing in different skills to build various elements of the software.

- A good software development team will help you with complete end-to-end solutions, from leadership strategy to ground implementation. Once the entire project is over, the software team will continue to provide support and maintenance for the Application.