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Architecture

Definitions of Architecture (digital, software, internet, information, technology):

- Overall design of a building, structure, or system that unifies its components or elements into a coherent and functional whole.
- Both the process and the product of planning, designing, and constructing solutions.
- Architecture is the starting point for anyone who wants to take humanity towards a better future
- A formal description of a system, or a detailed plan of the system at component level, to guide its implementation

Architecture, in the context of Application Lifecycle Management (ALM) and DevOps, refers to the design and structure of software applications and the systems they run on. It encompasses both the technical and business aspects of software development and deployment.

In **ALM, architecture** involves defining the overall structure of the software application, including its components, modules, and interfaces. This includes making decisions about the hardware and software infrastructure needed to support the application, as well as the overall design and architecture of the software itself. The architecture phase in ALM is critical because it lays the foundation for the entire software development lifecycle.

In **DevOps, architecture** involves designing software applications and systems with a focus on scalability, resilience, and agility. This includes the use of containerization, microservices, and cloud computing to enable rapid deployment and scalability of software applications. DevOps architecture also involves defining the infrastructure and tools needed to support the continuous delivery pipeline, such as automated testing and deployment tools.

Key architecture disciplines:

- Enterprise Architecture
- Solution Architecture
- System Architecture

	Enterprise Architecture	Solution Architecture	System Architecture
Strategic thinking	enterprise, programs	projects, solution, integrations	component re-use, maintainability
System interactions	highly abstracted	very detailed, complex	centered on single application
Communication	across organization	multiple teams/projects	single project
Design	minimal, high level	detailed	very detailed
Artifacts	catalogs, strategies, vision	capability, nfr's, matrices	sad, diagrams, blueprints

A

- Agile Architecture
- Application Architecture
- Architectural Runway

- [Architecture Lifecycle](#)

B

- [Business Architecture](#)

C

- [Cloud Architecture](#)
- [Composable Architecture](#)

D

- [Data Architecture](#)
- [Digital architecture](#)

E

- [Enterprise Architecture](#)

I

- [Information Architecture](#)
- [Integration Architecture](#)

S

- [Security Architecture](#)
- [Software Architecture](#)
- [Solution Architecture](#)
- [System Architecture](#)

T

- [Technology Architecture](#)

-
- [Enterprise Architecture](#) (EA): EA is a holistic approach to designing and managing enterprise-wide IT systems, applications, and networks. It involves aligning business goals and strategies with IT capabilities and resources to ensure optimal performance and efficiency.
 - [Solution Architecture](#): Solution architecture involves designing and implementing specific solutions, such as software applications, web services, and databases. It involves defining requirements, identifying technology solutions, and developing implementation plans.
 - [Application Architecture](#): Application architecture involves designing and developing software applications, including defining the structure, behavior, and functionality of individual applications. It includes selecting appropriate technologies, defining data models, and designing user interfaces.
 - [Infrastructure Architecture](#): Infrastructure architecture involves designing and managing the physical and virtual infrastructure that supports digital solutions, such as servers, storage, networks, and cloud services. It includes ensuring scalability, reliability, and security.
 - [Security Architecture](#): Security architecture involves designing and implementing security solutions to protect digital solutions against cyber threats, such as hacking, malware, and data breaches. It includes designing secure networks, firewalls, and access controls.
 - [Data Architecture](#): Data architecture involves designing and managing data structures and models, including defining data standards, policies, and governance. It includes selecting appropriate data management tools, such as databases and data warehouses.

- **Integration Architecture:** Integration architecture involves designing and implementing integration solutions to connect digital solutions with other systems and applications. It includes defining integration standards, protocols, and APIs.
- **Mobile Architecture:** Mobile architecture involves designing and developing mobile applications for smartphones, tablets, and other mobile devices. It includes defining mobile application architecture, user interface design, and mobile device compatibility.
- **Cloud Architecture:** Cloud architecture involves designing and managing cloud-based solutions, including cloud infrastructure, platform as a service (PaaS), and software as a service (SaaS). It includes designing for scalability, availability, and performance.
- **DevOps Architecture:** DevOps architecture involves designing and implementing software development and operations processes to ensure efficient and effective software delivery. It includes integrating development, testing, deployment, and operations processes.
- **Microservices Architecture:** Microservices architecture involves designing and implementing software systems that consist of small, independent services that communicate with each other. It includes defining service boundaries, designing communication protocols, and selecting appropriate technologies.
- **API Architecture:** API architecture involves designing and developing application programming interfaces (APIs) that enable different software systems to communicate with each other. It includes defining API standards, designing API specifications, and developing API documentation.
- **Information Architecture:** Information architecture involves designing and managing the organization, structure, and presentation of digital information, such as content on websites, mobile applications, and other digital platforms. It includes defining information architecture principles, designing information architecture frameworks, and conducting user research to inform design decisions.
- **Data Science Architecture:** Data science architecture involves designing and implementing data science solutions, including data collection, data preprocessing, and data analysis. It includes selecting appropriate data science tools, defining data science algorithms, and designing data science workflows.
- **Machine Learning Architecture:** Machine learning architecture involves designing and implementing machine learning solutions, including data preprocessing, feature engineering, model selection, and model evaluation. It includes selecting appropriate machine learning frameworks, defining machine learning algorithms, and designing machine learning workflows.
- **Cognitive Architecture:** Cognitive architecture involves designing and implementing cognitive computing solutions, including natural language processing, speech recognition, and computer vision. It includes selecting appropriate cognitive computing frameworks, defining cognitive computing algorithms, and designing cognitive computing workflows.
- **Deep Learning Architecture:** Deep learning architecture involves designing and implementing deep learning solutions, including neural networks, convolutional neural networks, and recurrent neural networks. It includes selecting appropriate deep learning frameworks, defining deep learning algorithms, and designing deep learning workflows.
- **Blockchain Architecture:** Blockchain architecture involves designing and implementing blockchain-based solutions, including blockchain infrastructure, smart contracts, and decentralized applications (DApps). It includes selecting appropriate blockchain platforms, defining blockchain architecture patterns, and designing blockchain workflows.
- **Web Architecture:** Web architecture involves designing and developing websites, including defining web architecture patterns, selecting appropriate web development frameworks, and designing web workflows. It includes optimizing website
- **Search Engine Architecture:** Search engine architecture involves designing and implementing search engine solutions, including search algorithms, indexing, and ranking. It includes selecting appropriate search engine frameworks, defining search engine architecture patterns,

and designing search engine workflows.

- [Robotic Process Automation Architecture \(RPA\)](#): RPA architecture involves designing and implementing RPA solutions to automate business processes, including defining RPA architecture patterns, selecting appropriate RPA tools, and designing RPA workflows. It includes optimizing RPA performance, scalability, and security.
- [Internet of Things Architecture \(IoT\)](#): IoT architecture involves designing and implementing IoT solutions, including connected devices, sensors, and data analytics. It includes defining IoT architecture patterns, selecting appropriate IoT platforms, and designing IoT workflows.
- [Blockchain Architecture](#): Blockchain architecture involves designing and implementing blockchain solutions, including distributed ledgers, smart contracts, and cryptocurrency systems. It includes defining blockchain architecture patterns, selecting appropriate blockchain frameworks, and designing blockchain workflows.
- [Virtual and Augmented Reality Architecture \(VR,AR\)](#): VR/AR architecture involves designing and developing virtual and augmented reality solutions, including VR/AR applications, hardware, and content. It includes defining VR/AR architecture patterns, selecting appropriate VR/AR tools, and designing VR/AR workflows.
- [Cloud Native Architecture](#): Cloud native architecture involves designing and developing applications that are optimized for cloud infrastructure, including microservices, containers, and serverless computing. It includes defining cloud native architecture patterns, selecting appropriate cloud platforms, and designing cloud native workflows.
- [Machine Learning Operations \(MLOps\) Architecture](#): MLOps architecture involves designing and implementing solutions to manage machine learning models and workflows, including defining MLOps architecture patterns, selecting appropriate MLOps tools, and designing MLOps workflows. It includes optimizing model performance, scalability, and interpretability.
- [Quantum Computing Architecture](#): Quantum computing architecture involves designing and implementing quantum computing solutions, including quantum algorithms, quantum hardware, and quantum software. It includes defining quantum computing architecture patterns, selecting appropriate quantum computing frameworks, and designing quantum computing workflows.

Architecture domains

- [Wikipedia](#)
- https://en.wikipedia.org/wiki/Architectural_pattern

Architectural Artifacts

- [Solution Architecture Document \(SAD\)](#)
- Diagrams / Drawings
- Documentation
- Blueprints
- <https://pubs.opengroup.org/architecture/togaf91-doc/arch/chap35.html>
- <http://kotusev.com/Eight%20Essential%20Enterprise%20Architecture%20Artifacts.pdf>
- <http://eaonapage.com/>

Architectural Runway

- [Architecture Lifecycle](#)

- [Architectural Runway](#)

Disciplines & Methodologies

- [ArchOps](#)
- [Atomic Design Methodology](#)
- [Business Process Management \(BPM\)](#)
- [CloudOps](#)
- [Compliance](#)
- [Computer Networking](#)
- [Cross-platform](#)
- [Data Management](#)
- [Decision-making](#)
- [DevOps toolchain](#)
- [Disciplined agile delivery](#)
- [Enterprise Search](#)
- [Extreme programming \(XP\)](#)
- [Feature toggle](#)
- [Functional specification](#)
- [Git Flow](#)
- [GitOps](#)
- [Information Management](#)
- [Information security](#)
- [Installation](#)
- [Iterative and incremental development](#)
- [Knowledge Management](#)
- [Large-Scale Scrum](#)
- [Machine learning \(ML\)](#)
- [Master data management](#)
- [MBSE](#)
- [Object-oriented programming](#)
- [Repository Management](#)
- [Robotic Process Automation \(RPA\)](#)
- [Solution Architecture Document \(SAD\)](#)
- [SDLC](#)
- [Software design](#)
- [Software development process](#)
- [Software documentation](#)
- [Software Engineering Management](#)
- [Software prototyping](#)
- [Static program analysis](#)
- [System integration](#)
- [System Reliability Engineering](#)
- [TOGAF](#)
- [User experience design](#)
- [Visual Collaboration](#)
- [Work breakdown structure \(WBS\)](#)
- [Zachman Framework](#)

Tools & Technologies

- [Apache ANT](#)
- [Apache Kafka](#)
- [Appian](#)
- [AWS](#)
- [AWS Cloud9](#)
- [Axure](#)
- [CloudRepo](#)
- [Creately](#)
- [Docker](#)
- [Elasticsearch](#)
- [Electron](#)
- [Figma](#)
- [GitLab](#)
- [Google Business Application Platform](#)
- [HP ALM](#)
- [Inedo ProGet](#)
- [Jfrog Artifactory](#)
- [Linx](#)
- [MariaDB](#)
- [Mendix](#)
- [Microsoft Graph Toolkit](#)
- [MSSQL](#)
- [Node.js](#)
- [NuGet](#)
- [Oracle DB](#)
- [Postman](#)
- [PyTorch](#)
- [Rational solution for CLM](#)
- [Rational Team Concert](#)
- [ServiceNow](#)
- [SonarQube](#)
- [Sonatype Nexus](#)
- [SQLite](#)
- [Target Process](#)
- [Team Foundation Server](#)
- [TeamForge](#)
- [Unity](#)
- [VSALM](#)
- [Visual Studio Team Services](#)
- [WebView2](#)
- [Xamarin](#)
- [Yarn](#)

Links

- [10 ALM Tools To Deliver Better Projects](#)
- [12 Best Software Development Methodologies with Pros and Con](#)

- [20 Best IT Development Software of 2019](#)
- [AI Should Augment Human Intelligence, Not Replace It](#)
- [Awesome Lists](#)
- [Code.org](#)
- [Comparison of version-control software](#)
- [Coursera](#)
- [Developer Roadmaps \(roadmap.sh\)](#)
- [edX](#)
- [GeeksforGeeks](#)
- [Guru99](#)
- [IASA](#)
- [Knowledge Management Tools](#)
- [List of collaborative software](#)
- [List of ECMAScript engines](#)
- [List of tools for static code analysis](#)
- [Periodic Table of Office 365](#)
- [Thinkful](#)
- [Unzip.dev](#)
- [Vectorly](#)
- [w3Schools](#)
- [What is VR, AR & XR? A guide to virtual, augmented and extended realities](#)
- [Wicked Problem Solving](#)
- [Acronym](#)
- [ADL](#)
- [API](#)
- [Application](#)
- [Arduino](#)
- [... as a service](#)
- [ASP.NET](#)
- [Bitcoin](#)
- [Bootstrap](#)
- [Bot](#)
- [Chaos model](#)
- [CIO Wiki](#)
- [Citizen Development](#)
- [Database](#)
- [Deep Learning](#)
- [Design System](#)
- [DNS](#)
- [Document Object Model \(DOM\)](#)
- [EABOK](#)
- [EITBOK](#)
- [Enterprise Value](#)
- [Entity Relationship Diagram \(ERD\)](#)
- [Framework](#)
- [GDPR](#)
- [Git](#)
- [GPT](#)
- [GPT-3](#)
- [Hype cycle](#)

- [Infrastructure as Code \(IaC\)](#)
- [IEEE software life cycle](#)
- [Information Lifecycle Management \(ILM\)](#)
- [Inner Source](#)
- [Intelligent Digital Mesh](#)
- [Intelligent Process Automation \(IPA\)](#)
- [Intranet](#)
- [Internet of Things \(IoT\)](#)
- [ISO/IEC 12207](#)
- [ITABoK](#)
- [JSON](#)
- [Knowledge Graph](#)
- [Library](#)
- [Low-code development](#)
- [Master data](#)
- [Metadata](#)
- [Metaverse](#)
- [Microservices](#)
- [MSBuild](#)
- [.NET MAUI](#)
- [Non-functional requirement \(NFR\)](#)
- [NOC](#)
- [OData](#)
- [OSI model](#)
- [Package manager](#)
- [Progressive web application \(PWA\)](#)
- [Records Management](#)
- [RPA](#)
- [SaaS](#)
- [Scalable Vector Graphic \(SVG\)](#)
- [SDK](#)
- [SEBoK](#)
- [Semantic network](#)
- [Service Oriented Architecture \(SOA\)](#)
- [Single sign-on \(SSO\)](#)
- [Single source of truth \(SSOT\)](#)
- [Software design pattern](#)
- [Software framework](#)
- [SOLID](#)
- [SWEBOK](#)
- [UML](#)
- [User experience \(UX\)](#)
- [WAN](#)
- [Workflow](#)
- [WYSIWYG](#)
- [XML](#)

ToDo



- [Support Us...](#) →
- API Management
- Application Infrastructure
- Authentication Systems
- Business Process Design
- Business Process Management (BPM)
- Business Rules Management
- Business-to-Business Middleware
- CEP
- Cloud Email
- Cloud ERP
- Code Signing Management
- Data Migration Appliances
- DMARC Authentication
- eDiscovery
- Email Applications
- Email Security
- Enterprise Search
- ERP
- ESB (Enterprise Service Bus)
- Event Monitoring
- Integration Platform as a Service (iPaaS)
- Intelligent Document Processing (IDP)
- IT Asset Management
- IT Financial Management
- IT Governance
- Low-Code Development Platforms
- Message Oriented Middleware (MOM)
- Message Queue (MQ) Software
- Microsoft Dynamics Service Providers
- Migration Tools
- No-Code Development Platforms
- Oracle Applications Service Providers
- Passwordless Authentication
- Process Automation
- Process Mining
- Robotic Process Automation (RPA)
- SaaS Management Platforms
- SAP Service Providers
- SOA Application Gateways
- SOA Governance
- Speech-To-Text Services
- Streaming Analytics
- Text-To-Speech Services
- Virtual Meetings
- Web Access Management

- Enterprise Architecture
- Solution Architecture
- Technical Architecture

- Information Architecture
- Business Architecture
- Application Architecture
- Data Architecture
- Cloud Architecture
- Microservices Architecture
- Event-Driven Architecture
- Service-Oriented Architecture (SOA)
- API Architecture
- Security Architecture
- DevOps Architecture
- Continuous Integration/Continuous Deployment (CI/CD)
- Agile Architecture
- Digital Transformation Architecture
- Infrastructure as Code (IaC)
- Domain-Driven Design (DDD)
- Reactive Architecture
- Architecture Governance
- Architecture Modeling and Visualization
- Architecture Tools and Frameworks

[governance](#), [development](#), [operations](#), [overview](#)

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