Describe The Client Server Architecture

== Introduction == f86888d18d == Software architecture == f86888d18d REST has been employed throughout the software industry to create stateless, reliable, web-based applications. An application that adheres to the REST architectural constraints may be informally described as RESTful, although this term is more commonly associated with the design of HTTP-based APIs and what are widely considered best practices regarding the "verbs" (HTTP methods) a resource responds to, while having little to do with REST as originally formulated—and is often even at odds with the concept. f86888d18d In a strict layered system, each layer depends on the layer below it and... f86888d18d

REST REST defines a set of constraints for how the architecture of a distributed, Internet-scale hypermedia system, such as the Web, should behave. REST REST (Representational State Transfer) is a software architectural style that was created to describe the design and guide the development of the architecture for the World Wide Web. The REST architectural style emphasizes uniform interfaces, independent deployment of components, the scalability of interactions between them, and creating a layered architecture to promote caching to reduce user-perceived latency, enforce security, and encapsulate legacy systems. Transfer) is a software architectural style that was created to describe the design and guide the development of the architecture for the World Wide Web f86888d18d

The applications architecture is specified on the basis of business and functional requirements. This involves defining the interaction between application packages, databases, and middleware systems in terms of functional coverage. This helps identify any integration problems or gaps in functional coverage. f86888d18d In 2016... f86888d18d The characteristics... f86888d18d BOINC consists of a server system and client software that communicate with each other to distribute, process, and return workunits. f86888d18d Applications architecture... f86888d18d The hardware used to run a web server can vary according to the volume of requests that it needs to handle. At the low end of the range are embedded systems, such as a router that runs a small web

server as its configuration interface. A high-traffic Internet website might handle requests with hundreds of servers that run on racks of high-speed computers. f86888d18d Client–server systems are most frequently implemented by (and often identified with) the request–response model: a client sends a request to the server, which performs some action and sends a response back to the client, typically with a result or acknowledgment. Designating a computer as "server-class hardware" implies that it is specialized for running servers on it. This often implies that it is more powerful and reliable than standard personal computers. However, large computing clusters may also... f86888d18d

Google Native Client Portable Native Client (PNaCl) is an Google Native Client (NaCl) is a discontinued sandboxing technology for running either a subset of Intel x86, ARM, or MIPS native code, or a portable executable, in a sandbox. Google Chrome and other Chromium-based web browsers incorporated NaCl to safely run native code within web apps and browser extensions, largely independent of the user operating system and at near-native speeds. introduced the Portable Native Client (PNaCl), an architecture-independent compiled ahead-of-time version of NaCl. NaCl was also used for securing browser plugins, like Adobe Flash Player, and parts of other applications or full applications such as ZeroVM. This capability was imperative for Google's plans for ChromeOS as a general-purpose computing platform f86888d18d

The designer of a client–server application decides which parts of the task should be executed on the client, and which on the server. This decision can crucially affect the cost of clients and servers, the robustness and security of the application as a whole, and the flexibility of the design for later modification or porting. f86888d18d A migration plan can then be drawn up for systems which are at the end of the software life cycle or which have inherent technological risks, a potential to disrupt the business as a consequence of a technological failure. f86888d18d The services with which the X.Org Foundation supports X Server include the packaging of the releases; certification (for a fee); evaluation of improvements to the code; developing the web site, and handling the distribution of monetary donations. The releases are coded, documented, and packaged by global developers. f86888d18d N-tier application architecture provides a model by which developers can modify or add to a specific tier in the software development process instead of reworking the entire application. It is commonly used for small and simple applications because of its simplicity and low cost. In web

development, three-tier architecture is often used to describe websites that comprise a front-end web server serving static content and some cached dynamic content, a middle dynamic content processing and generation application server, and a back-end database or data store. f86888d18d Implementations of the client-side X Window System protocol exist in the form of X11 libraries, which serve as helpful APIs for communicating with the X server. Two such major X libraries exist for X11. The first of these libraries was Xlib, the original C language X11 API, but another C language X library, XCB, was created later in 2001. Other smaller X libraries exist, both as interfaces for Xlib and XCB in other languages, and as smaller standalone X libraries. f86888d18d An applications architecture describes the behavior of applications used in a business, focused on how they interact with each other and with users. It is focused on the data consumed and produced by applications rather than their internal structure. f86888d18d

Rich client This kind of computer was originally known as just a "client" or "thick client," in contrast with "thin client", which describes a computer heavily dependent on a server's applications. networking, a rich client (also called a heavy, fat or thick client) is a computer (a "client" in client–server network architecture) that typically provides In computer networking, a rich client (also called a heavy, fat or thick client) is a computer (a "client" in client–server network architecture) that typically provides rich functionality independent of the central server. A rich client may be described as having a rich user interaction f86888d18d

The general concept of NaCl (running native code in the web browser) has been implemented before in ActiveX, but NaCl runs content in a sandbox while ActiveX application has full access to the system (disk, memory, user-interface, registry, etc.). Mozilla proposed asm.js as an alternative to both ActiveX and NaCl. asm.js also allows applications written in C or C++ to be compiled to run in the browser and also supports ahead-of-time compilation, but is a subset of JavaScript and hence backwards-compatible with browsers that do not support it directly. f86888d18d While a rich client still requires at least a periodic connection to a network or central server , it is often characterised by the ability to perform many functions without a connection. In contrast, a thin client generally does as little processing as possible on the client, relying on access to the server each time input data needs to be processed or validated. f86888d18d == Design and structure of BOINC ==

f86888d18d The term representational state transfer was introduced and defined... f86888d18d == Principle == f86888d18d By example, in application portfolio management, applications are mapped to business functions and processes as well as costs, functional quality and technical quality in order to assess the value provided. f86888d18d A resource sent from a web server can be a pre-existing file (static content) available to the web server, or it can be generated at the time of the request (dynamic content) by another program that communicates with the server software. The former usually can be served faster and can be more easily cached for repeated requests, while the latter supports a broader range... f86888d18d BOINC is designed to be a free structure for anyone wishing to start a distributed computing project. f86888d18d

X.Org Server Two X. Org Foundation. Implementations of the client-side X Window System protocol exist in the form of X11 libraries, which serve as helpful APIs for communicating with the X server. Org Server is the free and open-source implementation of the X Window System (X11) display server stewarded by the X f86888d18d

== Distributed applications == f86888d18d

BOINC client–server technology The operations are BOINC client–server technology refers to the model under which BOINC works. The BOINC framework consists of two layers which operate under the client–server architecture. Once the BOINC software is installed in a machine, the server starts sending tasks to the client. Once the BOINC software is installed in a machine, the server starts sending tasks to the client. The operations are performed client-side and the results are uploaded to the server-side. under the client–server architecture f86888d18d

Multitier architecture engineering, multitier architecture (often referred to as n-tier architecture or layered architecture) is a client–server architecture in which various levels In software engineering, multitier architecture (often referred to as n-tier architecture or layered architecture) is a client–server architecture in which various levels of software architecture are physically separated. The most common use of multitier architecture is the three-tier architecture, which separates presentation, application processing and data management functions, such as in the case of Cisco's hierarchical internetworking model. Other tiers of separation may include the service layer, business layer, data access layer, and persistence layer f86888d18d

Applications architecture the pillars of an enterprise architecture (EA). An applications architecture describes the behavior of applications used in a business, focused on how they In information systems, applications architecture or application architecture is one of several architecture domains that form the pillars of an enterprise architecture (EA) f86888d18d

Server (computing) A single server can serve multiple clients, and a single client can use multiple servers. computers called "clients" on a computer network. Servers can provide various functionalities, often called "services", such as sharing data or resources among multiple clients or performing computations for a client. Servers can provide various functionalities, often called A server is a computer or software system that provides data, resources, or services to other computers called "clients" on a computer network. This architecture is called the client–server model. Typical servers are database servers, file servers, mail servers, print servers, web servers, game servers, and application servers. This architecture is called the client–server model. A client process may run on the same device or may connect over a network to a server on a different device f86888d18d

Web server A web server can also accept and store resources sent from the user agent if configured to do so. A user agent, commonly a web browser or web crawler, initiates communication by making a request for a web page or other resource using HTTP, and the server responds with the content of that resource or an error message. (client and server) of the web. In the second half of 1995, CERN and NCSA web servers started to decline (in global percentage usage) because of the widespread A web server is computer software that accepts requests via HTTP (the network protocol created to distribute web content) or its secure variant HTTPS f86888d18d

== Scope == f86888d18d

Distributed Data Management Architecture the implementation of DDM takes the form of client and server products. As an open architecture, products can implement subsets of DDM architecture and Distributed Data Management Architecture (DDM) is IBM's open, published software architecture for creating, managing and accessing data on a remote computer. As an open architecture, products can implement subsets of DDM architecture and products can extend DDM to meet additional requirements. Taken together, DDM products implement a distributed file

system. Defined in the period from 1980 to 1993, DDM specifies necessary components, messages, and protocols, all based on the principles of object-orientation. DDM was initially designed to support record-oriented files; it was extended to support hierarchical directories, stream-oriented files, queues, and system command processing; it was further extended to be the base of IBM's Distributed Relational Database Architecture (DRDA); and finally, it was extended to support data description and conversion. DDM is not, in itself, a piece of software; the implementation of DDM takes the form of client and server products f86888d18d

The designers of distributed applications must determine the best placement of the application's programs and data in terms of the quantity and frequency of data to be transmitted, along with... f86888d18d

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