



Establishment of a Network Platform for E-Assistance »

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INTRODUCTION

In recent years, the world has been undergoing an abrupt technological change following a high-speed evolution in the use and evolution of new information and communication technology which are currently visible in almost all areas of life. Computing and long-range communication which deviates from telecomputing is currently used in state and parastatal companies being a science of an information or production system to not only make simple communication, but also ensure the tasks that the man had to do face-to-face, telecomputing is revolutionizing the world of work, the COVID pandemic is proof of telecomputing.;

Telecomputing is the basis for eliminating the need for people to travel to work and puts an end to the use of attendance registers, and rating of hours of service (TimeSheet), the obligation to be physically at the workplace, several mutations are being observed the proof, Silicon Valley, specifies that around the years 2024, the manual administration of services, will be placed in museums, and face-to-face office work will be obsolete thanks to the internet and the revolution of e-solutions. -assistance.

According to Ramazani WADIABANTU, computer science is defined as a science of automatic and rational processing of information. Information is of major interest for computing and telecommunications. It is around it that the information revolves. As said before, today, the data processed by computers are: text, graphics, images, sound and video.

Indeed, computer science being a young science can organize the business world today by facilitating the processing of data and the reliability of the results by the computer user.

Computer science is certainly the most prodigious human invention of the last century. It has not only considerably revolutionized our lives and our habits by making it easier for us to present, automatically calculate, store and search for information, but it has also imposed itself on us and continues to invade our lives down to the smallest project. : living room, kitchen, children's mode.

No one can deny the relevant role that computing and telecommunications play in our days, teleinformatics, to such an extent that people like to assert that anyone who does not know it is considered illiterate and the institution. Practical knowledge of IT time in remote assistance of people causing problems in the execution of tasks. So in terms of our study, the problem is the set of questions that a researcher asks to find a certain solution.

And yet, our problem boils down to the following three questions: What strategy can we put in place to allow the IPP Kasai Central 2 precisely in the Secretariat service to assist its collaborators and agents in real time without having to travel? What tool can we put in place to allow the Secretariat Service and the IPP to not have to travel from their office to assist their agents in real time? Why remotely support the customer's machine? These are, in fact, the questions around which we will try to answer in terms of hypothesis and which will be the very subject of our research.

After having done our research and feeling out the few snags on the ground, these answers were proposed to our problem: To allow the authority of this institution to assist its agents remotely, it would be better to model their system of feasibility of certain things like how to collaborate and put in an IT way; The tool that would be preferred is the remote assistance network platform; Remote assistance would be important to avoid the risks and accidents that agents incur when traveling long distances.

The main objective of ours is to computerize the service in which we carried out our research and revitalize things to avoid long distance travel at the risk of committing an accident....

Apart from the introduction and conclusion, this work is based on three chapters including:

- The first is entitled telecommunications and computer networks and will mainly touch on the elements, concepts essential for the realization of our ideas;
- The second chapter is devoted to the implementation and presentation of the e-assistance solution dreamed of during our various visits to this inspection and proposed to concretize and crown us 3 years of studies and scientific research.

1. TELECOMMUNICATION AND COMPUTER NETWORKS

1.1. Definitions of key concepts

1.1.1. Telecommunication

Telecommunication is a compound word, distinguishing on the one hand a field (space) and on the other hand the exchange techniques which can allow the transport of data from one point in a field to another well-known point, thus we separates as follows:

1.1.1.1. TV:

According to the French dictionary, the word tele comes from the Greek which means far away or at a distance. According to our understanding, the word tele is the exchange and discovery or attainment of a certain thing at an aerial distance.

1.1.1.2. Communication

Referring to the French Larousse, communication comes from the verb communicate which means to be in contact with others or to exchange with someone who is at a distance. It is also an exchange between a speaker and an interlocutor needing a certain precision on a certain concern that he has.

In IT, communication is the set of technological tools and resources enabling the transmission, recording, creation, sharing or exchange of information.

According to Claude Roy, communication is a verbal or non-verbal process by which we share information with someone or with a group so that they understand what we say to them.

As for Simon Pierre, communication is any behavior that has the objective of eliciting a specific response or behavior from a specific person or group.

With reference to the authors' previous definitions, our point of view specifies that communication is a sharing, an interview, an interview on a certain situation between two individuals.

1.1.1.3. Telecommunication

1.1.1.3.1. Definition

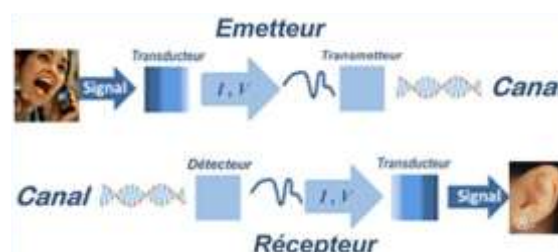
Masson defined telecommunications as a set of techniques for transmitting, emitting and receiving at a distance signs, signals, writings, images, sounds or information of all kinds by radio, optical, cable or wire. other systems.,

As for Pascal, supplemented by Georges Fontolli and, "telecommunications is the set of technical means necessary for the conveyance as faithful and reliable as possible of information between two seemingly arbitrary points, at any distance, with reasonable costs".

The notions of fidelity (conformity of the message received and the message sent) and reliability (resistance to partial failures of the system) will be the primary concern in our design and realization of this work. The messages to be transmitted can be of any nature (words, images, data of all types).

On the other hand, communication needs are not necessarily symmetrical; we can in fact opt for full-duplex transmission, where each interlocutor transmits simultaneously with the other; half-duplex, where each interlocutor transmits alternately or simplex, that is to say unidirectional. Furthermore, in the case of digital communications, the speeds are not necessarily the same in both directions.

Thus, we have reflected to define telecommunications as being all the means and techniques necessary for faithful and reliable sending of information between two nodes or stations, one transmitter and the other receiver more or less distant over a space geographical. In support of our reflection, figure No. 1



1.2. Communication protocols

1.2.1. Definition

A protocol is a standard method that allows communication between processes (possibly running on different machines), that is to say a set of rules and procedures to be followed to transmit and receive data on a network.

Related to our opinion, a protocol is a path that facilitates the exchange between different schemes.

1.2.2. TYPES OF PROTOCOLS [8]

1.2.2.1. Definition

In networks, a protocol is a set of standardized rules for formatting data so that any connected computer can understand the data.

There are several depending on what is expected of the communication. Some protocols will, for example, be specialized in the exchange of files (FTP), others may be used to simply manage the status of transmission and errors (this is the case with the ICMP protocol). If you wander around the Internet, you must, at one time or another, have heard of TCP/IP:

What does it mean and how does it work?

1.2.2.2. TCP/IP

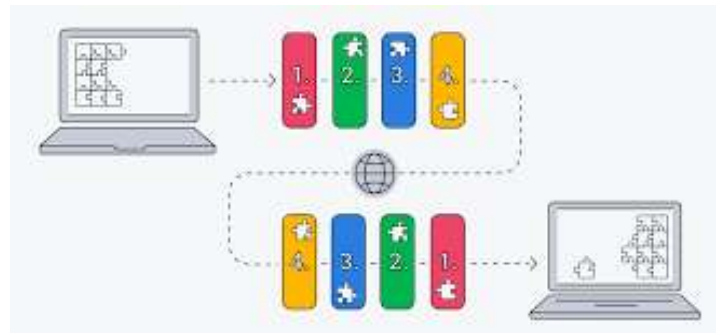
Is a generic name which in fact brings together a set of protocols, that is to say pre-established rules of communication between two or more Nodes in the extended network.

1.2.2.2.1. The IP address:

Is a unique address assigned to each entity (computer, or other device) connected to the Internet network (i.e. there are no two computers on the Internet with the same IP address). Likewise, the postal address (last name, first name, street, number, postal code and city) makes it possible to uniquely identify a recipient.

Just like with the postal address, you must first know the IP address of the computer with which you want to communicate.

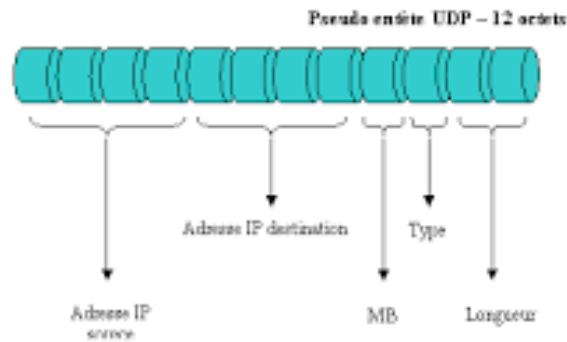
An IP address is a 32-bit address, usually noted as 4 integers separated by periods. For example: 204.35.129.3. There are actually two parts to the IP address:



1.2.2.2.2. Parts of an IP Address

Part of the numbers on the left designating the network is called the network ID (netID). On the Internet, it's pretty much the same thing: each message (each small packet of data) is enveloped by IP which is grafted onto the information and adds different information:

- The sender's address (your IP address);
- The IP address of the recipient;
- Various additional data (which makes it possible to properly control the delivery of the message);
- The numbers on the right designate the computers on this network is called host-ID. An IP address is set either manually by the user or assigned by a DHCP server.



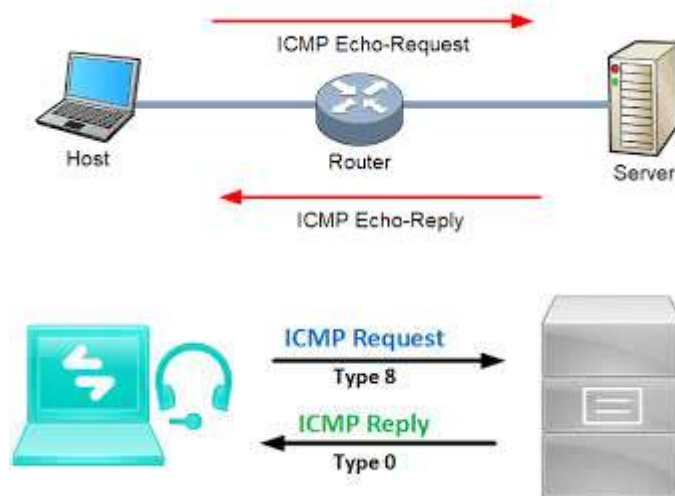
1.2.5. IP Datagram

The IP protocol is capable of managing datagram fragmentation, which allows a large datagram to be split into smaller datagrams. ICMP segment, “ping” command. The IP datagram allows the transport of higher layer data, following the TCP or UDP protocol, they are created to transport data in need of tools that allow controlling and diagnosing transmission errors. This is the function performed by the Internet Control Message Protocol (ICMP).

For an understanding of how ICMP works we are obliged to address or associate the “PING” command which operates on the ICMP protocol.

PING thus uses two types of ICMP protocol messages (out of the 18 offered by ICMP):

- Type 0 corresponding to an “echo request” command, issued by the source machine (client);
- Type 8 corresponding to an “echo reply” command, issued by the server
- At regular intervals (by default every second), the source machine (the one on which the ping command is executed) sends an “echo request” command to the target machine. Upon receipt of the “echo reply” packet, the source machine displays a line containing a certain amount of information.



If the response is not received, a line indicating “timeout” will be displayed.

1.2.6. ARP (Address Resolution Protocol)

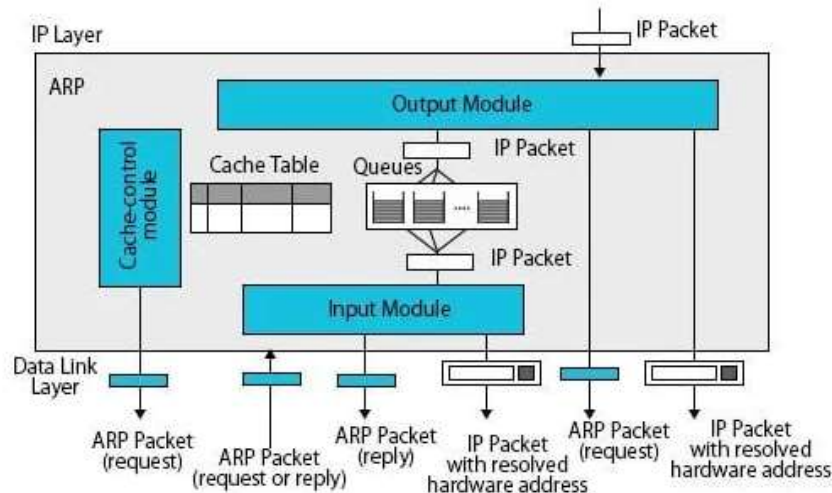
It is a protocol allowing you to know the physical address of a network card corresponding to an IP address, and is located at layer 3 of the OSI model. It allows you to dynamically match a logical address to a physical address. That is, convert the logical address (IP address) used at the network layer to the physical address (MAC address) used at the data link layer. It is therefore an essential protocol in communication within a local LAN network.

Let us remember that:

- MAC address: physical address on a network adapter
- IP address: logical address assigned to an adapter in the network configuration of the operating system

Address Resolution Protocol (ARP) is a communications protocol used for discovery of the link layer address, such as a MAC address, associated with a given Internet layer address, typically an IPv4 address.

For this, the ARP protocol works with a cache table, a subsidiary, an output module, an input module and a cache control module.



Output module: manages outgoing packets to send on the network

- Input module: manages incoming packets arriving on the PC network adapter
- The ARP cache table stores matches between the MAC addresses and IP addresses of each device on the network. It is therefore constantly updated.

1.3. Network Link Equipment

Equipment is hardware that allows a user to connect two computers or networks together.

1.3.1. Kinds of connecting equipment

In computing we distinguish categories or kinds of peripherals, input, output and input/output peripherals, this same perspective is in computer networks we distinguish three categories of equipment, transmitters, receivers and transmitters/receivers

1.3.1.1. Repeaters

A repeater amplifies the received signal, it thus makes it possible to extend a portion of the network that has reached the maximum length. It also makes it possible not to propagate electromagnetic interference throughout an entire network, it works at level 1.

1.3.1.1.1. Principle

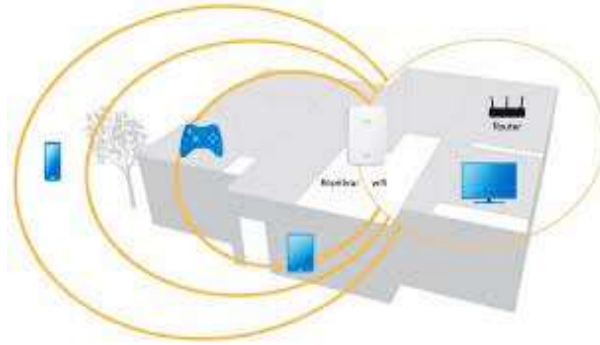
Some repeaters are used to switch from one type of media to another (coaxial/optical fiber for example), but repeaters do not have a buffer memory, in general (they are then called Standalone), the speeds on the 2 media should be the same. However, there are repeaters with memory, they are of the Store And Forward type which allow different speeds on the different sections.

Repeaters do not modify frame headers, they are devices that read electrical, optical or wave pulses on their input, on a type of medium (optical fiber, coaxial, twisted pairs, etc.) and generate on their output of pulses which are reshaped and amplified, after regeneration of the clock and synchronization.

Based on the above-mentioned operation, we can simplify the operating principle as follows:

1.3.1.1.2. Functioning

The operating principle of a Wi-Fi repeater (or amplifier) is that it "repeats" around itself the coverage of the (Wi-Fi) waves of the modem which constitutes the access point. The area covered by the propagation of the wireless signal is thus extended with the same intensity without modifying the operation and transmission of data in the network.



The objective is to optimize the range of the signal propagated by the Modem, its positioning is important in an area with strong propagation conflicts, areas with complex relief or radio voids.



1.3.1.2. Bridges

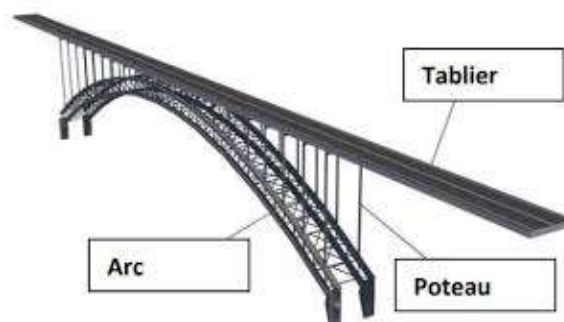
It therefore makes it possible to interconnect two physical networks. This algorithm makes it possible to determine the best route that a frame should take to go from the source to the destination. To do this, a unique number is assigned to a bridge, including its Mac address and its priority level.

1.3.1.2.1. Principle

A bridge has two connections to two separate networks. When the bridge receives a frame on one of its interfaces, it analyzes the MAC address of the recipient and the sender. If the bridge does not know the transmitter, it stores its address in a table in order to “remember” which side of the network the transmitter is on.

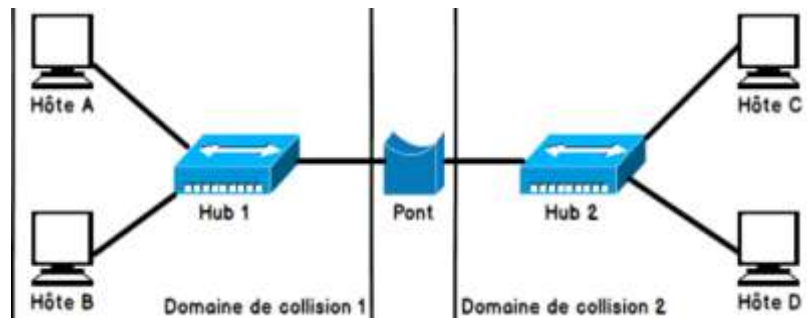
Thus the bridge is able to know whether the sender and recipient are located on the same side or on either side of the bridge. In the first case the bridge ignores the message, in the second the bridge transmits the frame to the other network.

It works with the same principles as the bridge under construction (the post is circuit (logic gate), Arc is algorithm and Apron supporting connection of two separate edges just like the computer bridge it serves to connect two distinct networks.



A bridge operates according to the Data Link layer of the OSI model, that is to say it operates at the level of the physical addresses of the machines. In reality the bridge is connected to several local networks, called segments. The bridge develops a correspondence table between the addresses of the machines and the segment to which they belong and "listens" to the data circulating on the segments.

During a data transmission, the bridge checks on the correspondence table the segment to which the sending and receiving computers belong (using their physical address, called MAC address, and not their IP address. If they belong to the same segment, the bridge does nothing, otherwise it will switch the data to the segment to which the recipient belongs.

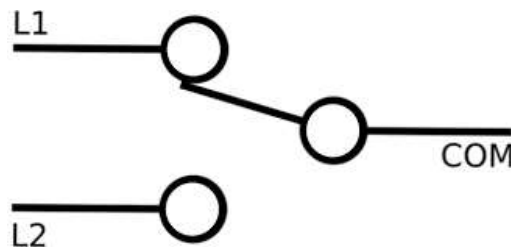


1.3.1.3. Switches

A switch is a multiport bridge, that is to say it is an active element acting at level 2 of the OSI model. The switch analyzes the frames arriving on its input ports and filters the data in order to direct it only to the appropriate ports (we speak of switching or switched networks). So the switch combines the properties of the bridge in terms of filtering and the hub in terms of connectivity.

The switch uses a filtering and switching mechanism of directing data flows to the most appropriate machines, based on certain elements present in the data packets.

The switch has the same logical role as an electrical switch, it controls the specific lines to direct the currents (data) while closing the free or unoccupied line applying the bitinary (0-1) or electrical (ON/OFF) process,



A level 4 switch, acting at the transport layer of the OSI model, inspects the source and destination addresses of the messages, draws up a table which then allows it to know which machine is connected to which port of the Switch (generally this process is done by self-learning, that is to say automatically, but the Switch manager can make additional settings).

Knowing the recipient's port, the switch will only transmit the message on the appropriate port, leaving the other ports free for other transmissions that can occur simultaneously. The result is that each exchange can be carried out at nominal speed (no more sharing of bandwidth), without collisions, with the consequence of a very significant increase in the bandwidth of the network (at equal nominal speed).

1.3.1.4. Routers

The function of a router is essentially the same as that of a bridge, except that the router will analyze the different packets to possibly reconstruct them in another protocol.

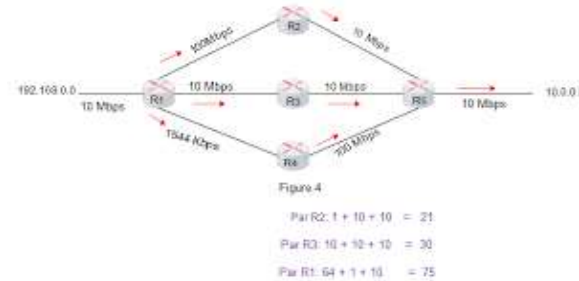
Routers intervene at level 3 (Network) of the OSI model, the software component is therefore much more important than in a bridge or a switch, the processing time is therefore also greater.

The router can therefore serve as a link between networks that do not operate with the same protocols. On certain routers, it is possible to set up filters which will authorize or prohibit the passage of certain packets.

Routers work on logical addresses (for example: IP).

The price of setting up such a system is significant. A router requires a routing table. This table contains information relating to the different possible destinations and how to reach them. The routing tables only contain network addresses, but not all of the addresses for reasons of memory space and updating the tables. To store this table, routers have RAM and a hard drive for backup.

Some routers are capable of choosing different routes for the same destination depending on the state of the environment. However, the router must not slow down the speed too much between the networks it connects. To do this, it must have a sufficiently fast processor so as not to make the routing algorithms too heavy in making decisions in the routing of packets.



1.3.1.4.1. Routing

Network routing is the process of selecting a path through one or more networks. Routing principles can be applied to any type of network, from telephone networks to public transportation. In packet-switched networks, such as the Internet, routing selects the paths that Internet Protocol (IP) packets should take to get from their origin to their destination. These Internet routing decisions are made by specialized network devices called routers.

Example: For a data packet to go from computer A to computer B, does it have to go through networks 1, 3 and 5 or networks 2 and 4? The packet will take a shorter path through networks 2 and 4, but networks 1, 3 and 5 might be faster at delivering packets than networks 2 and 4.

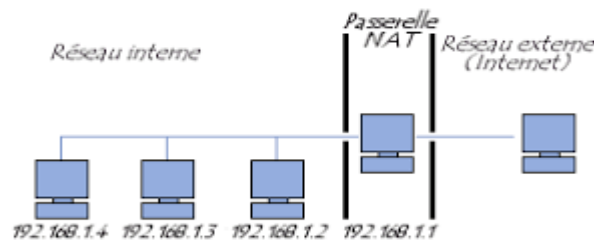
1.3.1.5. Gateways

An application gateway (in English "gateway") is a hardware and software system allowing the connection between two networks, in order to interface between different network protocols.

When a remote user contacts such a device, the latter examines his request and, if it matches the rules that the network administrator has defined, the gateway creates a link between the two networks. The information is therefore not directly transmitted, but translated in order to ensure the continuity of the two protocols.

This system offers, in addition to the interface between two heterogeneous networks, additional security because each piece of information is scrutinized (which could cause a slowdown) and sometimes added to a log which traces the history of events.

The major disadvantage of this system is that such an application must be available for each service (FTP, http, Telnet, etc.).

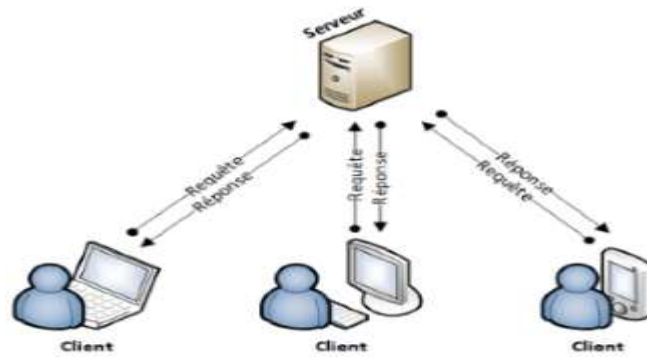


Client-server architecture

In this site we will present 3-tier architectures. We write tier and not third. Indeed "n tier" is an English term which should not be confused with the French word "tiers". Throughout the following presentation, tier means logical level and not 3.

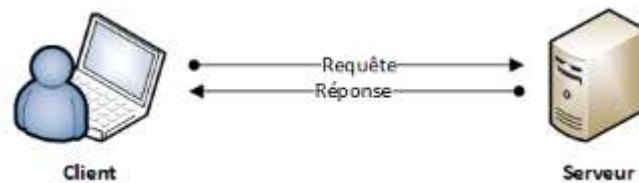
A client-server architecture represents the environment in which client machine applications communicate with server-type machine applications.

The classic example is a client's Web browser which requests (we speak of "request") the content of a Web page from a Web server which returns the result (we speak of "response").



Types of client-server architecture

- If all the necessary resources are present on a single server, we speak of a two-tier or 2-tier architecture (1 client + 1 server).



If certain resources are present on a second server (for example databases), we speak of a three-tier or 3-tier architecture (1 client queries the first server which itself queries the second server).

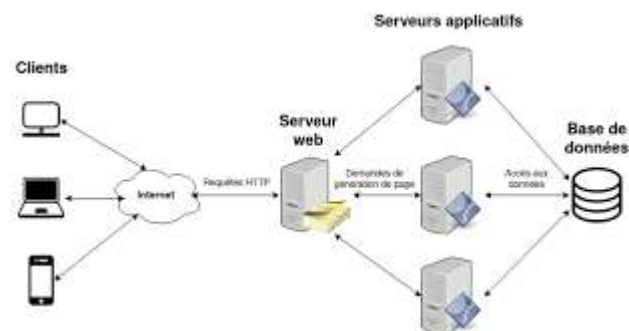


Beyond 3 actors, we speak of n-tier architecture.

1.3.2. Virtualized n-tier architecture

We recommend the 2-tier physical architecture but which will actually function as an n-tier architecture thanks to virtualization.

Concretely, only one physical server will be needed but the applications will be installed in independent virtual containers. We are talking about virtual dedicated servers (in English Virtual Private Server (VPS)).



1.4. Middleware

1.4.1. Definition

The expression middleware was constructed from the words "middle" meaning environment and "software" meaning software. It translates into French as mediator software or middleware.

A middleware is an interface allowing the connection of several heterogeneous applications. It acts as a gateway to facilitate the exchange of data between two distinct systems.

The objective of middleware is to enable interactions by providing unified services to applications such as:

- Data exchange,
- Messaging,
- Authentication,
- APIs,
- Etc.

Different types of middleware

There are three main types of middleware

1.4.2. Message-oriented middleware or MOM

This type of middleware is based on the exchange of messages between a client and a server via message queues. It allows applications to communicate asynchronously and reliably. Message-oriented middlewares are the most used today.

1.4.3. Transaction-oriented middleware or MOT

Transactional middleware takes care of running an application and verifying that it is working correctly by integrating transactional mechanisms. It offers optimized resource management, a communication, administration and supervision tool.

1.4.4. Object-oriented middleware or MOO

Object type middleware is based on the principle of calling remote functions to route the service requested by the client to the server. Unlike MOM, it uses synchronous operation.

2. IMPLEMENTATION OF THE CLOUBERY SOLUTION

When it comes to remote assistance, we use the term session to determine who is the requester and who is the server, so we will remember that there are two types of a remote assistance session. A session type is determined by how the session begins.

- a. Inbound session: Customers click a web page link for help and are automatically placed in a support queue. After you finish supporting the current customer, you accept the next customer in the queue.
- b. Outbound Session: Starts the session and invites the customer by phone, email or instant messaging. Provides the customer with the support session number and website address.

In addition to session, we will add the query, we distinguish 4 types of queries:

1. Display request: This request to view a client's application, their desktop, their browser or their entire hard drive. ;
2. Control Request: This Request to control a client's application, desktop, browser or entire hard drive.
3. Share display: This request must allow a client to see your application or your desktop, this request is issued by the administrator only.
4. Share control: This request should give control of your application or desktop to a client.

Needs :

- A fast Internet connection;
- A current support session;
- Permission to view or control an application or the entire desktop on the customer's computer;
- Allow your client to view or control your application or desktop
- You can :
- View or take control of your client's browser when accepting a session

- View or take control of your client's application or desktop.
- Pass control of your mouse to your client to control your application or desktop.
- Your customer's applications do not need to be installed on your computer and yours do not need to be installed on the customer's computer.

2.1. Choice of Solution

The choice of an IT solution is similar to that of a specialty in medicine, any specialty has the aim of curing the world from a disease that is gnawing away at it, and for lack of specialist the world would always be in the process of perish, no specialty will require a specialist, otherwise, confusion will reign forever and generalists will make room to treat by default even though they know their limits well.

By choosing this solution, we have the deep conviction that we will bring a great solution and relief to our world of researchers and the institutions in our area, a great opportunity to reduce all the aforementioned risks and consequences. Thus, to affirm our ideas, we reassure that there are several platforms offering remote assistant services, such as:

a) Connectwise.

It is a powerful software that provides instant, secure and easy-to-use connectivity while resolving technical issues. Any device, including desktops, Android, Windows, and iOS devices, can have issues resolved by specialists as long as there is an internet connection.

b) Surfing.

It is a real-time co-browsing and video singing platform to offer remote assistance to visitors. This allows you to guide your client while sharing your browser and documents while ensuring that you only see the website and nothing else to ensure that both parties' information is protected.

c) Remote support for Bomgar.

It is a powerful solution that allows suppliers and staff to easily access systems while keeping endpoints and login credentials secure from potential online threats. It works with many different platforms, including Linux, iOS, Android, Windows, and Mac servers.

d) Zoho Support

This remote access and support program facilitates managed service provider (MSP) and outsourced IT support. It allows rapid communication with customers of your business products for the purpose of using customer support.

e) CloudBerry Remote Assistant

A remote assistance program developed by CloudBerry that allows users to remotely connect and access computers to perform a variety of tasks and services such as system updates, software downloads, and computer maintenance and repairs. Benefits of Remote Assistance Software

We have chosen this solution for the following advantages, unlike other solutions which only present the read-only solution, this one, and being an administrator, you have the possibility of co-managing the client computer, or server once in client mode.

a) Rapid assistance

Embracing this system's ability to provide immediate support is probably its most crucial component. On-demand technical support can be quickly provided to customers, partners and staff by your IT team.

b) Effectiveness.

This software provides an efficient method for remote assistance. From a single location, almost all network components can be managed and monitored in real time. It lays the foundation for a comprehensive method of managing your entire network, from changing rights based on user groups and defining who you are to limiting access to ensure that they can only see and use particular desktop controls.

c) Profitable.

Compared to hiring additional full-time on-site workers to provide the same level of service, hiring a remote technical support provider will be less costly. Technicians can work remotely if they have remote support software.

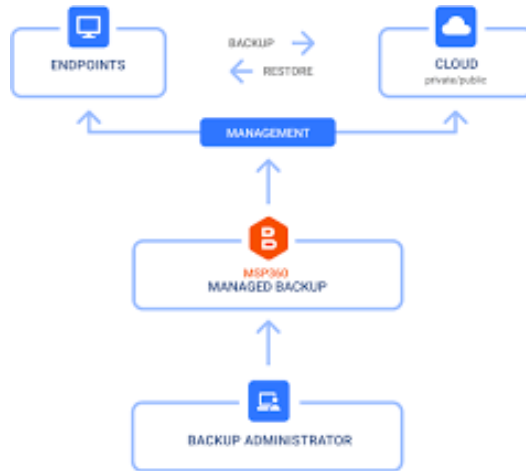
d) Proactive system maintenance

This software is undoubtedly a useful tool for monitoring your clients' systems if your company has maintenance agreements. With remote access, you can log into their systems to check the status of the hardware and see if it needs to be updated.

e) User-friendly.

You need to choose a time that is convenient for your client when you visit their home. A back and forth of available time is necessary to reach a scheduling agreement. Additionally, there are times when impromptu changes take place and disrupt your planned schedule.

2.3. DEPLOYMENT ARCHITECTURE



2.4. NEW NETWORK TOPOLOGY

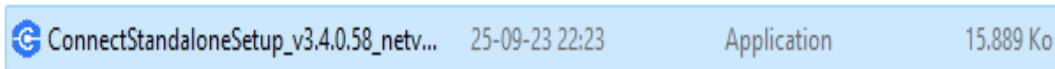
This image explains how an IT professional can work remotely and resolve any issues related to the computers they are connected to



2.5. CLOUDBERRY SYSTEM INSTALLATION

1 Cloud Berry Compiled Package Overview

Once the solution is ready, a package will be presented as follows:

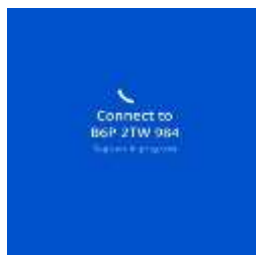


2. Presentation of Solution Interfaces



Solution home interface on Windows OS

Source: our study



3. Summary of Configuration Settings step by step

To configure the remote network, you must first install CloudBerry Remote Assistant on both PCs. After installing the application, follow the following steps.

- a. Configure and integrate RDS protocols;
- b. Compile the parameters and create the access options;
- c. Import the information saving it in executable format with the dot Exe extension
- d. Launch the application and write down the computer ID and password for both computers.
- e. Type the computer ID and password of the PC you want to access in the fields given on the right, and then click connect. Remember that you will enter the details about the PC from which you are going to access the other PC.
- f. On the other PC, an invitation appears asking you to approve the connection. Tell the person on the other side to accept the request and change the access rights to Full Control or View Only mode, as needed.
- g. If it cannot find the option to change permissions. Click on “advanced settings” and the options will appear.
- h. Once you touch the keyboard, you will be able to access the computer remotely. Don't panic if the wallpaper of the computer you are accessing remotely turns black, the software does this automatically to minimize data transferred over the network.
- i. It's the simplicity of the process. Now you can also chat with the other person while you access their PC. In the image below you will find a mail icon in red. Click on the icon to start chat. As mentioned before, voice chat is already active if both microphones are enabled.

The present solution will remain in demonstration mode until proven otherwise, unless the customer indicates that we could extend it to the protection algorithm loop and operate in real mode.

CRITICISMS AND SUGGESTIONS

1. CRITICISM

The critique of the existing system, also called an assessment of the existing system, will help us evaluate the existing system in relation to the analysis carried out at the IPP Kasai 2 under study while establishing a diagnosis. This diagnosis is established with the aim of seeking future solutions to the problems posed.

The aim of criticizing the existing system is to establish a precise diagnosis of the procedures used, to identify anomalies, qualities and defects of the existing system.

Furthermore, two aspects are always identified during this criticism, one of which is positive and the other negative.

These two aspects are worth raising since the need for perfection will always be desired by users for proper functioning. Indeed, as in all companies; the negative points are not missing, the jury office is missing the following elements:

As everywhere in all societies, there are no shortage of negative points:

- The circulation of archaic information following the long distances that office agents travel to reach the information; the risk of accidents along the way, the loss of physical support due to natural climatic conditions (rain, wind, earthquake, etc.);
- The use of social networks (WhatsApp, Facebook, for transfers or work for remote assistance);
- The non-existence of a remote reading and writing assistance system;
- The remarkable absence of a network architecture despite the immensity of the office and the multiplicity of services and offices;
- No project to computerize the office and services;
- The classification of documents and files is still lacking a reliable IT tool that can allow them to do the work better;
- The absence of a tool maker to assist agents remotely.

2. SUGGESTIONS:

In view of the above, we suggest the following:

- That the IPP consider purchasing computer equipment of all kinds to enable it to establish a very good connection with its agents;

- The use of social networks (WhatsApp, Facebook) is very archaic for communicating or providing assistance remotely because you cannot use the computer remotely or work for remote assistance;
- It is also necessary to think about the existence of a remote assistance system for reading and writing;
- Reason to set up a network architecture despite the immensity of the office and the multiplicity of services and offices;
- That IT professionals surpass themselves to create a computerization project for the office and remote services after the arrival of all these required materials
- The absence of a tool maker to assist agents remotely.

GENERAL CONCLUSION

Here we are at the end of our work which is entitled: "Establishment of an e-assistance platform at the Provincial Main Inspection of EPST Kasai central 2/Luiza" While in the 21st century, computing is a criterion for literacy, remote assistance and real-time availability of transcripts in our country, the Democratic Republic of Congo has not yet evolved much. This is why we have assigned ourselves this duty.

Thus, the objective of designing and implementing a shared Cloudberry-based platform for remote assistance in order to resolve all computer-related situations given the difficulties that this structure undergoes for intercommunication and resolution of lots of computer related problems.

Having noted that this subject is so relevant, we asked ourselves certain questions which made it possible to address the problems, in particular:

- What strategy can we put in place to allow IPP Kasai Central 2 specifically in the Secretariat service to assist its collaborators and agents in real time without having to travel?
- What tool can we put in place to allow the Secretariat Service and the IPP to not have to travel from its office to assist its agents and this in real time?
- Why remotely assist the customer's machine?

In this, we have put forward the hypotheses according to which the establishment of an e-assistance platform at IPP Kasai Central 2:

- To allow the authority of this institution to assist its agents remotely, it would be better to model their system of feasibility of certain things such as how to collaborate and put in an IT way;
- The tool that would be preferred is the remote assistance network platform;
- Remote assistance would be important to avoid the risks and accidents that agents incur when traveling long distances.

The design of a CloudBerry e-assistance solution in an e-assistance interface would allow the IPP of EPST Kasai Central 2 to be able to solve without any problem the remote assistance problem which remains until our physical and very archaic days take more Energy from members who don't really realize it.

It is obvious that this analysis led us to notice that the insufficiency in the IT field and the disinterest of the IPP of EPST Kasai Central 2 in new technologies despite the fact that it organizes cells specific to New Technologies of the information and communication, the non-computerization of almost all services blocks the development and implementation of such a system, yet this policy is a real source of revolution and development, it will even be the first in the Territory of Luiza and even the Kasai Central Province For institutions in this category and promotion and remote assistance in the region, facing the development of a company's NICTs.

The IPP of EPST Kasai Central 2/ Luiza being an education structure keen to make itself known and distinguish itself from other structures in the area must use Cloudberry as a working tool in order to gain visibility and its time response, our developed solution will constitute a definite advantage against competition in the NICT sector.

It was noted that the IPP/Kasai central 2 does not have management tools in this sector just like other education structures, by putting this solution in place, this structure will be a reference in the field and would be able to sell its expertise to other institutions. It would be wise to provide a platform that will allow the development of computer applications managing the automatic generation of troubleshooting and IT solutions.

From the above, it is obvious to claim to have had an ideal solution with the will of the IPP authorities, however we hope to have responded to our problem and confirmed our hypotheses by this IT solution, we hope that the IPP of EPST Kasai Central 2/ Luiza will be at its best performance both nationally and internationally.

Thus, through this IT solution, we will be able to manage these e-assistance activities and offer this structure a chance to establish itself and enter fully into the very competitive world of communication by implementing this IT solution to materialize its remote assistance puzzle and facilitate many services to connect to it to avoid flaws; also and above all seen the size of the company.

Regarding the presentation of our solution, we point out in advance that we have not presented all the interfaces, those who wish to see them all, we recommend contacting us for more information.

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