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A.C.3.1

Produce a detailed system specification to meet the given clients requirements of LIVEWIRE for internet server in the form of written report. This specification should contain:
a) Server name
b) Which files will be required for internet server
c) Any required installation scripts
d) The configuration of the network server
e) The operating system to be used on the internet server
f) Server required information such as domain names and URLs
g) Customization issue
(Your report should contain the server components of both hardware and software)

Server name-:

The server name I will assign is call center BPO because the organization, I am going to prepare the server for this company.

Operating system-:

The operating system to be used in the internet server is window server 2008 rs because it might be enough for the internet server and it is appropriate for inter server.

Flies require-:

The flies required for internet server is http which is used to redirect the page in the website and many more flies like images and company related flies and the document like about the details of the customer's problem and consultancy details. Media document for contacting the customers.

Scripts -:

The required installation script is ASP which means active server pages and is used for development of web pages, this able to execute the computer codes in the server and it is used for read the flies and can execute any code in the file format and which output can be observe in the browser.

Figure 1asp

(DYNATRACE, 2017)

Requirements-:

The configuration needed for the network server-:

- ✓ 1.4 GHZ 64 bit processor
- ✓ RAM required for this 16 GB
- ✓ Disk space given to the organization is 32GB
- ✓ Gigabit(10/100/1000baseT) Ethernet adapter
- ✓ DVD rider for installing any required software in it.
- ✓ MYSQL database for storing the data.

Domain name and URLs-:

The domain name I have given to the organization BPO is bpo-callcenter.com this domain name which is used to find the site without entering the IP address of the site. The customers can find the site in network in fraction of seconds in the network and the URL given is www.bpo-callcenter.com with URL the organization site can be find easily and the customer can easily enter the URL and solve their quarries.

Customization issues-:

The customization is done to the BPO server which is all the error flies like storage recorders and are retrieve and all the default things have been corrected at the time like default domain name and user details will be removed or corrected and if any problem arise in the http in the network this is solved by setting the policies of the networking like when the routing and remote service the problem arise is NPS and it can be solved by the clearing or enabling network policies. The authentication problem occur like when the people using the domain name sometime they may not get the domain name enter and becomes big problem to the staff for solving I have set the backups and sometime the network performance may go down then for making it up stream, the server should capability have been increased by me like if many users access it then also they does not get any problem.

A.C.3.2

Evaluate the suitability of internet server component you have chosen in assessment criteria 3.1 and produce a written report in terms of evaluating of the installation of internet server, configuration, server performance, cost, security, reliability, scalability.

The components I have chosen for the internet server is-:

- ✓ 1.4 GHZ 64 bit processor
- ✓ RAM required for this 12 GB
- ✓ Disk space given to the organization is 32GB
- ✓ Gigabit(10/100/1000baseT) Ethernet adapter
- ✓ DVD rider for installing any required software in it.
- ✓ MYSQL database for storing the data.

Installation of internet server-:

The components installation of internet server

- ✓ Processor
- ✓ Hard disk
- ✓ Database

Configuration-:

I have configure the processor, RAM and hard disk for running the server and the high GB of RAM, I have used because with the help of high GB and processor which is used to boot the server used for running the server. I have install the active directory services for managing the groups in the server and I have configured the DNS server so that the network IP address would be change to particular address, and remote access service which is used to transfer the data from server to the staff PC like for example when the staff is talking to the customer then they need for retrieving of data from storage server etc. are the things which I have been installed server.

Server performance-:

The server performance becomes very high so that the like for example when after configuring the device all new device in the server, then server performance get increase and by checking the server it always be in the high stream only and with the processor of high speed the server performance also get increased and the performance of the network which also will be the packet transfer will be high also support many user at that time also the server speed be in the upstream only.

Cost-:

The cost of components internet server are-:

- Itanium 2: 1.60GHZ clock speed and include 1-2 processor cores.
  Cost is **3692/-**
- RAM recommended is 16GB
  Cost is **8429/-**
- Storage devices SCSI drive
  Cost is **3000/-**
- Network connectivity device
  Cost is **2500/-**
- Database
  Cost is **2,100/-**
- Server 2008r2
  Cost is **50,000/-**

Security -:

The security I have created in this server is like setting the firewall which is used to connect the particular which the organization want, setting user access so that particular user can only access the server for flies and I have given the more secure in the in creating the website like giving the SSL certificate and I have given some of the authentication so that the staff can access to some of the flies stored in the server but not whole staff can access the server and providing more providing more secure to the server by giving some keys.

Reliability-:

The server I have proposed is more reliable because when more user and sites and services are installed in the server then the performance of the computer will not get problem to the server, if the problem arises then by adding the other devices to it like for example adding extra RAM to it then also it doesn't cause any problem to the performance of the server will not go downstream and it may not get problem to server.

Scalability-:

The scalability in this server is when some of the user enter in the organization then some of the details should be entered in the server and all the services which are in the organization, the server I have proposed is more scalable which means if many user are added to the server, then every user get all the services and there will no problem on retrieving the data to the staff and many the responding speed of the server will also very high to the client, if the server got struck then, I will be needed to include more device to get best performance.

A.C.3.3

Build and configure an internet server (web server, FTP server, Proxy server) including services such as web services, FTP, SMTP services for the LIVEWIRE clients. (You have to practically demonstrate the step by step installation and configuration of web site, virtual directory, FTP sites, proxy and their services in the form of written report with photographic evidence and necessary explanation at various stages of internet server building.)

Building the internet server hardware configuration -:

Figure 2 fan

In the above photo I have set the fan to the processor because the processor does more work. So it produces much heat.

Figure 3setting hard disk

Where I have assigned the hard drive, Ethernet and etc. are the components I have assigned.

Figure 4assign RAM

In the above I am assigning the RAM which generally known random access memory. I have used the RAM as mentioned above that is 16GB

Webserver-:

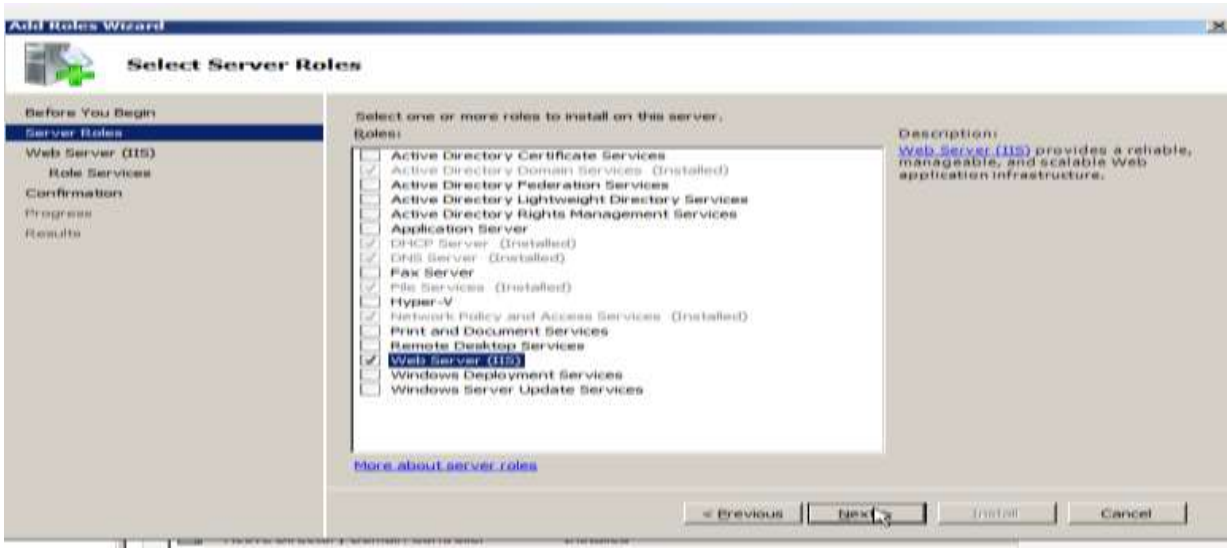


Figure 5web server

Here in the above screenshot, I have selected the web server and it is selecting for installing webserver.

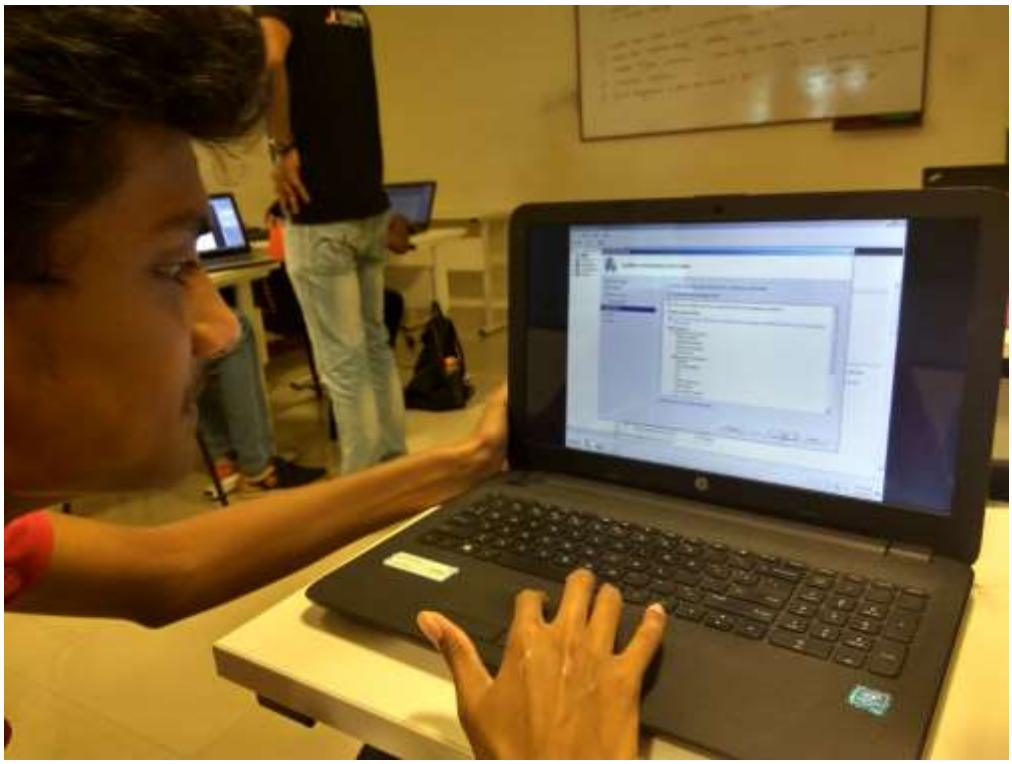


Figure 6 adding roles

Next step is I have enabled the service in the IIS like for example FTP, IIS management compatibility and application development (includes ASP.NET, ASP and etc.), some of the features are automatically installed like HTTP, this feature is used to create the site and used for retrieving the hosts for showing the page, health and diagnostics used to manage the tools and ASP features is used to manage the active directory service like domain names and FTP service is used to transfer the data like host and other services in the web. I have selected the next button.

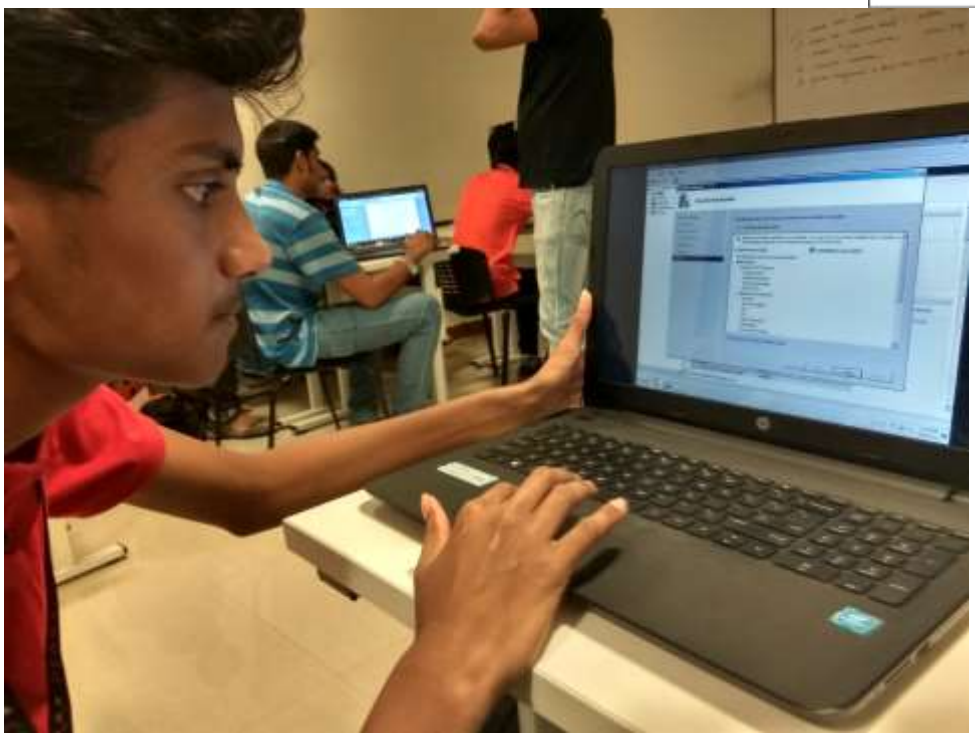


Figure 7successful page of installation

Then the installation of the IIS will goon and finally i can see the close button on the screen I have selected that close button.

Virtual directory-:

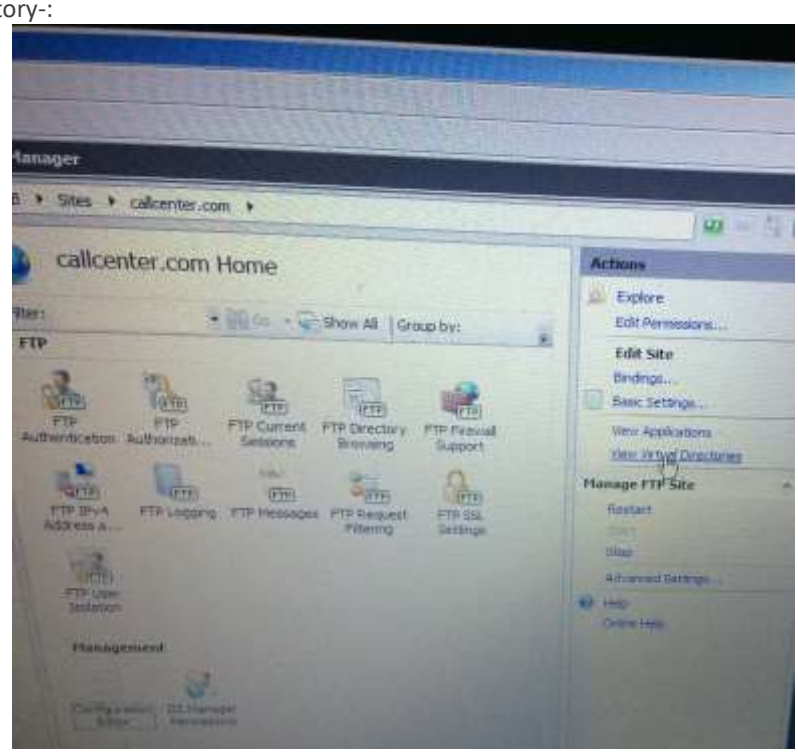


Figure 8 virtual directory

In the above I am going to open the virtual directory in which I have created site called call center and virtual directory used to manage the URL and their path.

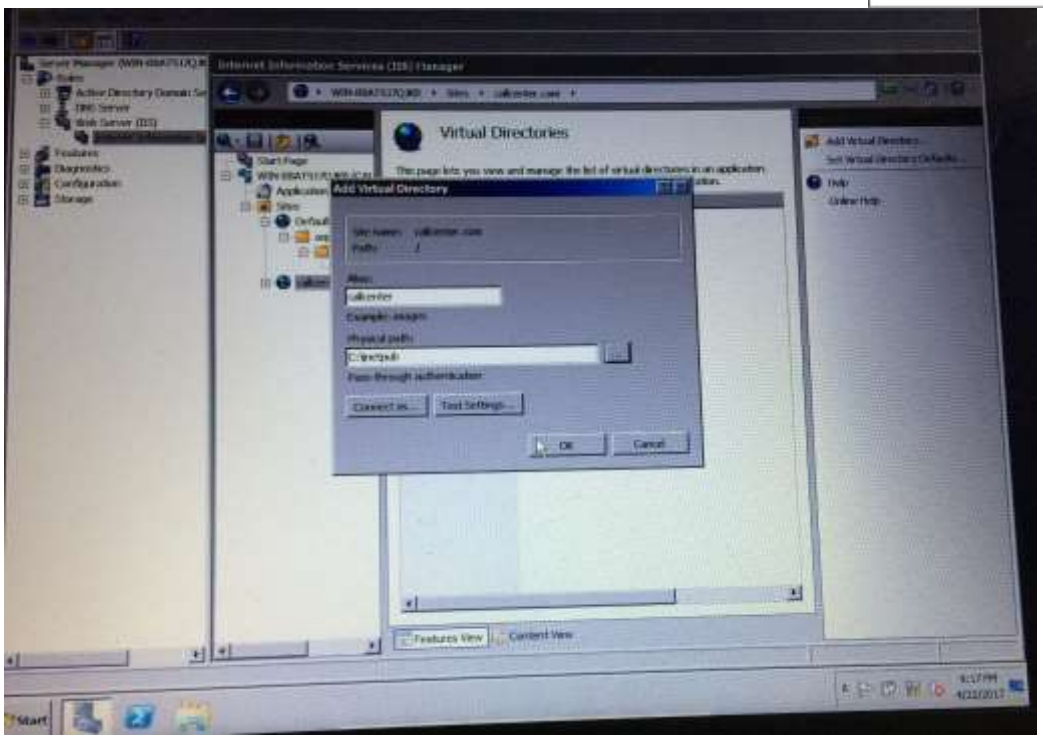


Figure 9 add virtual directories

In the above photo I have add my call center in the virtual directory and here it defines the URL of virtual directories. In alas I have to enter the name of the files which I need to pass in the in the website through the particular path.

FTP service-:

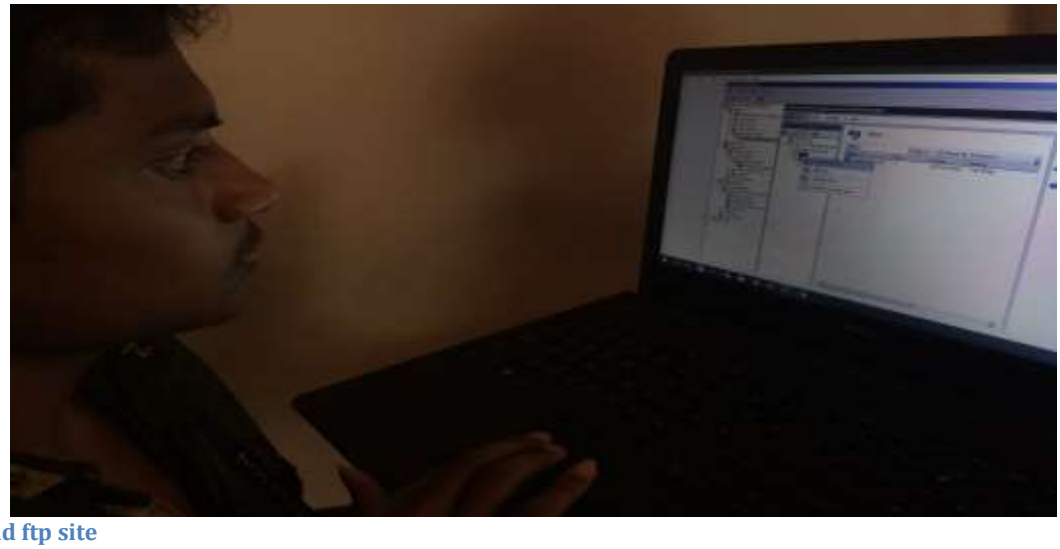


Figure 10add ftp site

In the above photo I am adding the ftp site which is used to create the site to transfer the files through it.

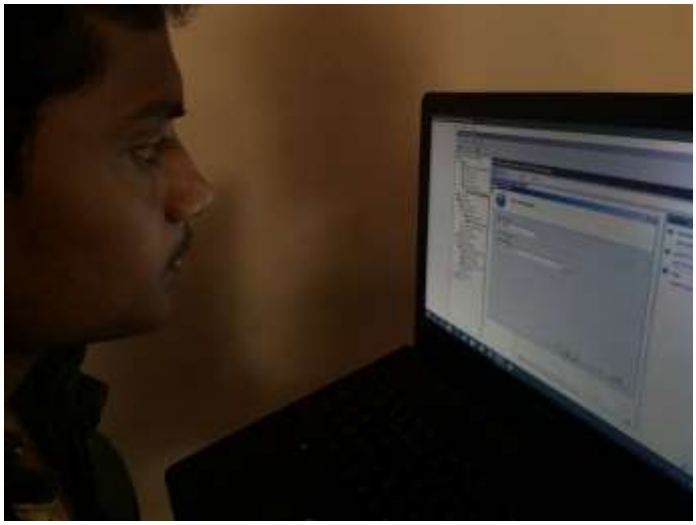


Figure 11 ssl setting

Here in the above photo I am selecting all certificate to the site and I am assigning the IP address to the site.

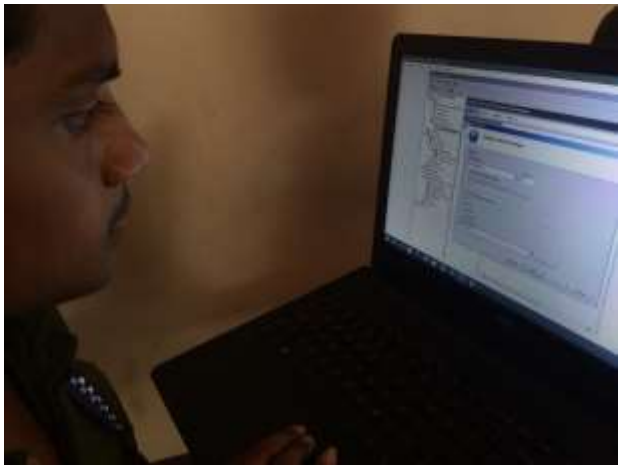


Figure 12authentications

In the above I am authenticating the site like by giving the authentication should be in basic and setting the user authentication setting as anonymous users because to selecting all the users, and setting the authentications as read and write and etc. to the users.

Figure 13 viewing it is successful or not

I have seen that the site which I have created is done successful and created the site successfully.

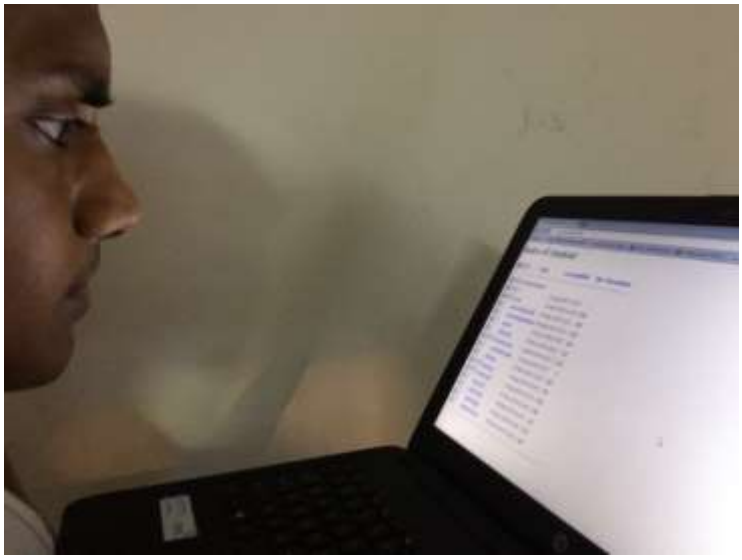


Figure 14 output

The above one is the output of ftp service which I have created.

SMTP service-:

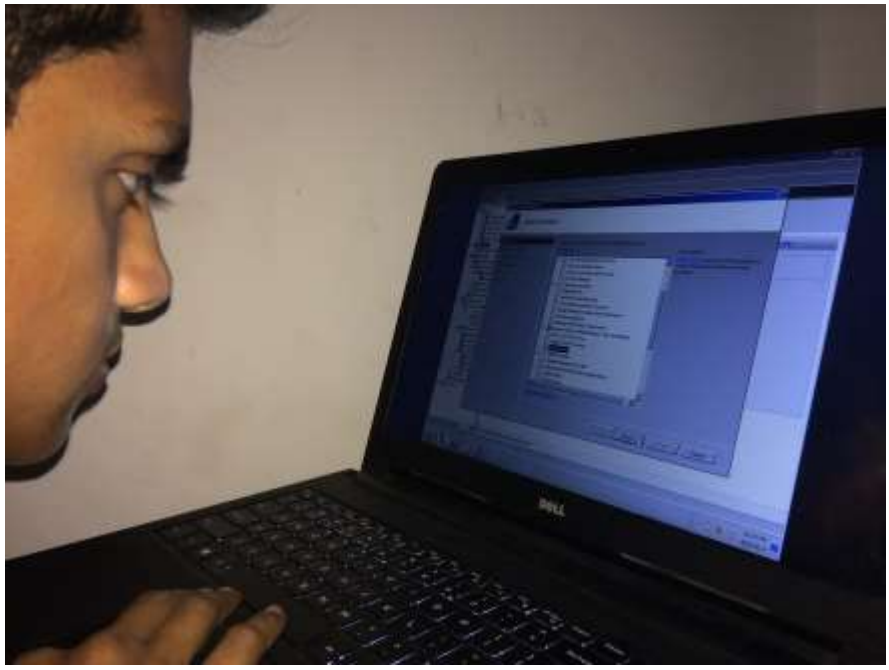


Figure 15 smtp server

I have selected the smtp server which I have been selected because it is used manage the email form one system to other.

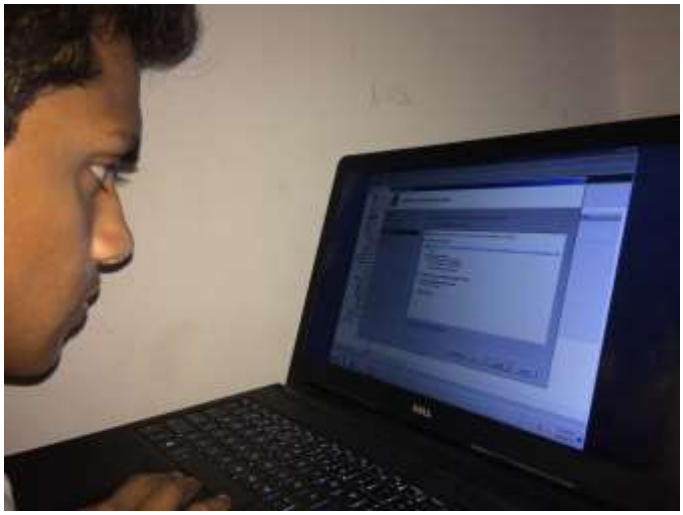


Figure 16 output to install

Here it show in which tool it is managing and the smtp features and I am going to install the features which needed is and management tool which is use optimization usage of processors.

Figure 17 smtp server

In the above photo, I am creating the setting the email address and setting the anonymous authentication like windows or set and setting the path which is used to set the path and setting e-mail smtp server to deliver.

Proxy server-:

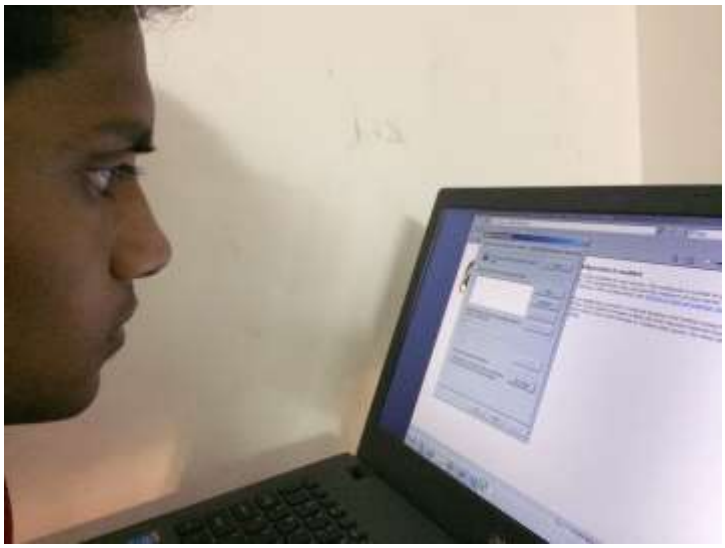


Figure 18 proxy server

For enabling the proxy server, I have gone to internet properties and went to connectivity and there I have seen the LAN setting.

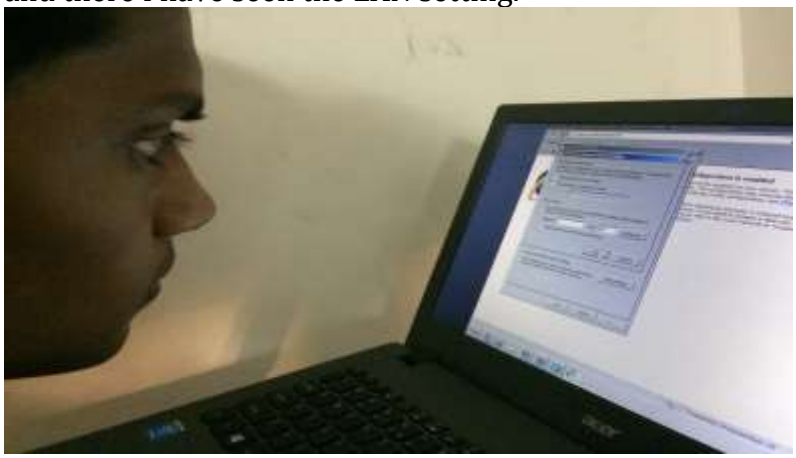


Figure 19 output

Here in the in the lan setting I am giving the authentication to detect the site and setting the IP address and selecting the proxy server and it is used to block the sites when cause disturbance to the sites like add and un wanted sites.

The website I have created is-:

Figure 20 output

A.C.3.4

Critically review and test an internet server you have configured in A.C 3.3 in the form of written report. Your test report must contain the test data, expected and actual result with explanations and photographic evidence.
(Test :- connectivity test, Anonymous users/sec, total bytes sent and received, http service request queues Review: How you have performed the test with its advantages and suggest alternative way to perform the same with advantages)

The test and review of internet server which I have created-:

Name	Test data	Expected result	Actual result
Connectivity	I am connecting the server and client machine	The output should be ping and should show successful message.	The actual output is it as shown the successful of packet transfer.
Anonymous user	The user who does not have right and should enter the site and access all the flies	The output of this is shown in the graph and the graph should be always high	As I have expected the result of the graph is high
Total bytes	The bytes from server to the client should pass	The expected the bytes should pass	As expected the bytes are passing
http service	The browser can access from different client s they can see it	The expected output will be the performance of the browser at the time of multiple clients	As expected output is as I have it show the performance of graph.

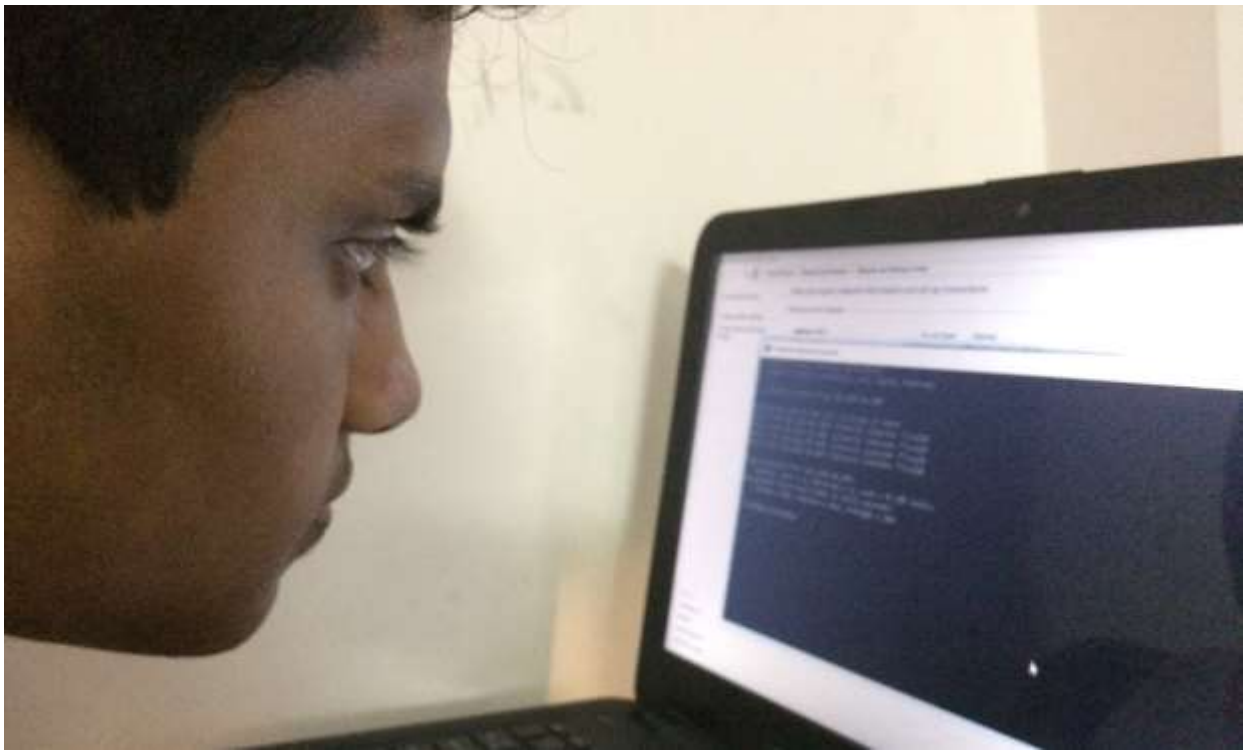


Figure 21 ping test

Figure 22 https queue

Figure 23 bytes

Figure 24 anonymous

Ping test-:

The ping is done between client and the base machine which shows the successful, if the pc show the like request time or other then I have to check the connection and find out where the packet are missing and try to solve the problem and clear the problem, then it show the successful message.

Advantages-:

- With the help of ping client may know about the pc is responding to the server are not if not I should try to make it.
- With the help of the ping I able to the where the actual problem arises like for example in the server or in the pc connecting.
- We can able to know about the time at which the both are replying to each other.

Alternatives-:

The alternate way of ping is gping which is used ping in graph way, it will check multiple users who host pc in interval of time.

Advantages-:

- It shows the correct problem where the packet has fallen and able to know about it and can solve easily.
- Multiple users hosts can checks and say the results in less time.

Anonymous users-:

When I try to enter the site which I have does not have any authentication like login details then also I am able to enter the site then graph of the monitoring screen will increase instantly.

Advantages-:

Which help of the anonymous user the client can able to contact the server and organization able to known about the users this service is off.

Alternate methods-:

Setting the site as public so the clients who have authentication can access, who does not know about the clients access to.

Advantages-:

The advantages of the public is their will no anonymous users and all the site will can be will viewed.

A.C.4.1

Install and manage websites and services to meet the LIVEWIRE clients requirements which are given below:
a) Web application which includes CGI, ISAPI.
b) Server side includes ASP, ASP.NET.
c) Activities include UDDI, configuring FTP, SMTP and other services
(You have to practically perform the installation and management process with necessary screenshots and explanation in the form of written report.)

The details in the internet server-:

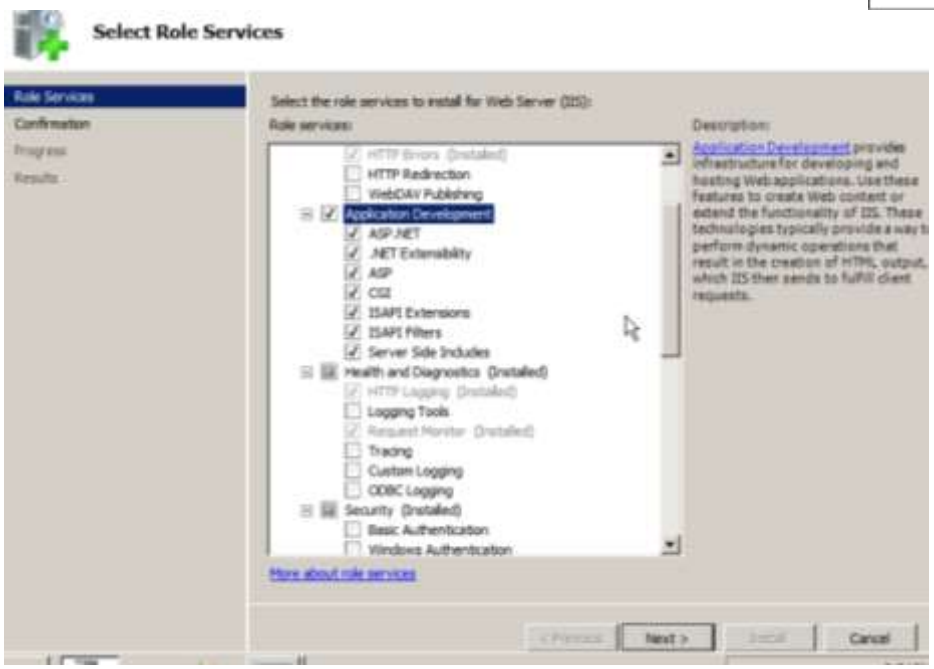


Figure 25 application development

I have enabled the service in the IIS like for example FTP, IIS management compatibility and application development (includes ASP.NET, ASP and CGI, ISAPI), some of the features are automatically installed like HTTP, this feature is used to create the site and used for retrieving the hosts for showing the page, health and diagnostics used to manage the tools and ASP features is used to manage the active directory service like domain names.
Where CGI means computer generated imagery and ISAPI means Internet Server Application Programming Interface.

Figure 26 successful

It show all the flies which I have been selected in the server, they show that they have been installed properly.

Smtp-:

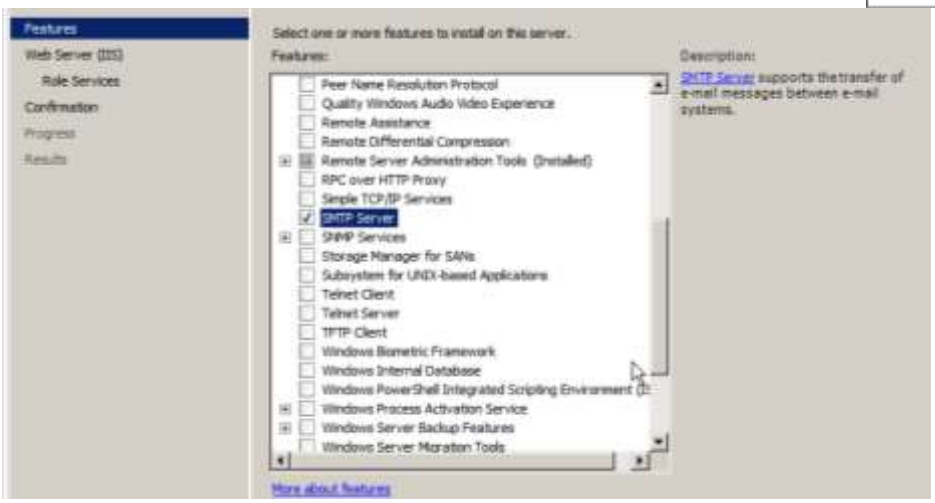


Figure 27 smtp

I have selected the smtp server which I have been selected because it is used manage the email form one system to other.

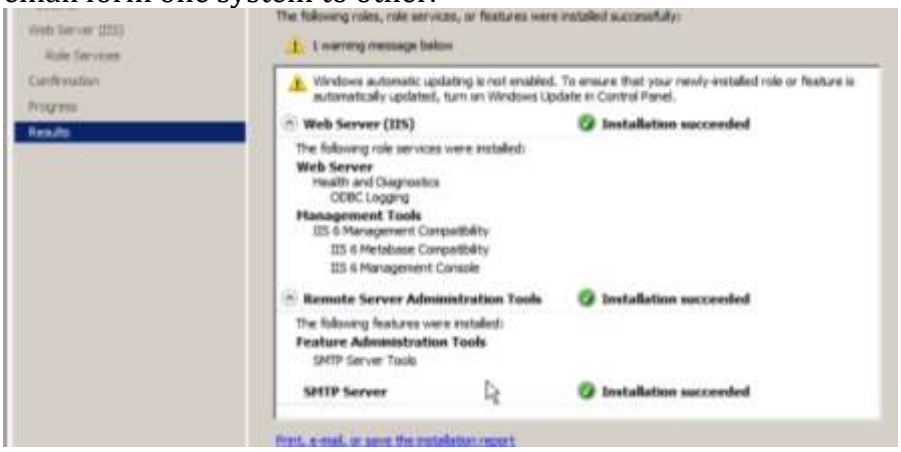


Figure 28 successful

Here it show in which tool it is managing and the smtp features and I have install the features which needed is and management tool which is use optimization usage of processors

Asp and asp.net has been installed while the process and it is a protocol which to run the webserver services.

Ftp-:

Figure 29 ftp

In the above photo I have selected the ftp which is used to transfer the data form on to another.

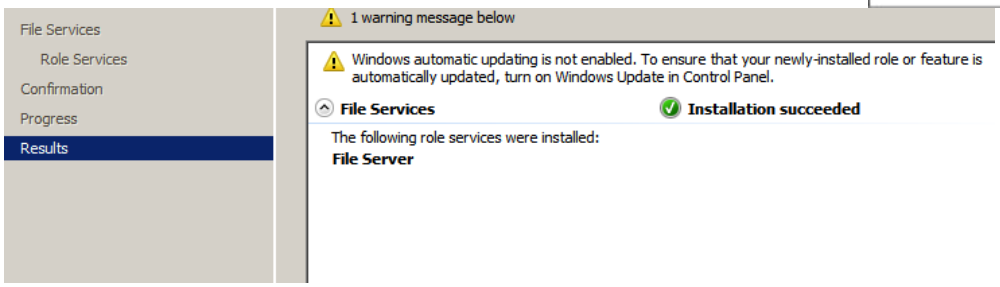


Figure 30 ftp successful

In the above photo it has been the file service has been installed properly then shows the successful message.

UDDI-:

It means universal description, discovery and integration, it is a xml-based standard describing webserver and finding webserver and publishing webserver.

CGI-:

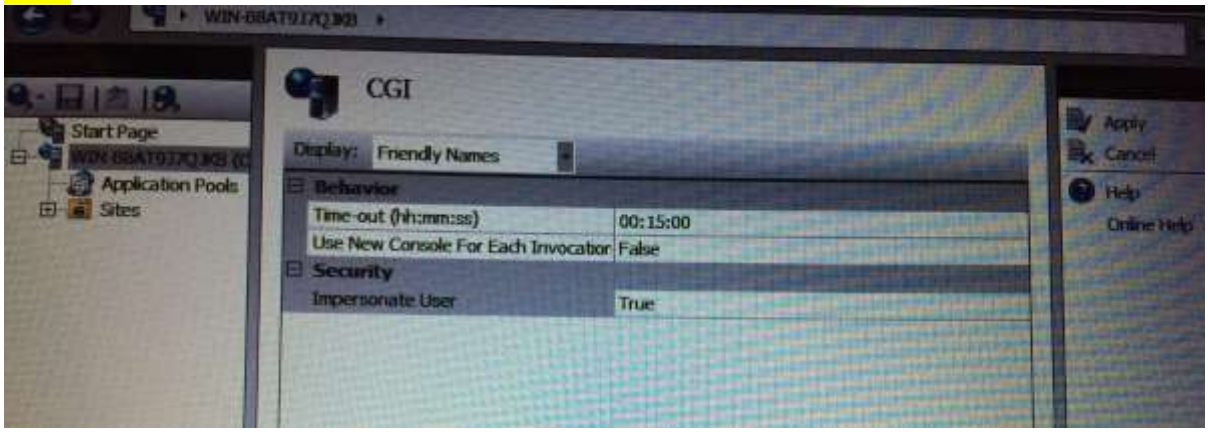


Figure 31 cgi

This is used to find out where the cgi process should create in the request user or in the system by selecting.

ISAPI-:

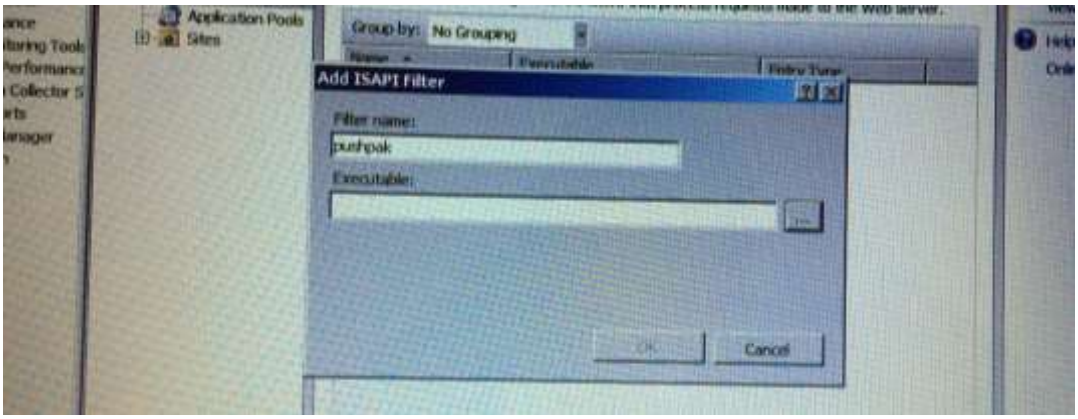


Figure 32 isapi

This is used to make the processor requests to the web server like I am adding pushpak in the isapi filter in the web server.

A.C.4.2

Implement a secure network access for LIVEWIRE internet security. The security activities should include:

a) Configuring web site security
b) Configuring IP address and domain name restrictions
c) Enabling and configuring authentication methods
d) Configuring anonymous access
e) Using OS authentication
f) Enabling forms authentication
g) Creating URL authorization rules
h) Using access control and file permissions
i) Enabling and implementing certificate authentication
j) Use VPN and SSL to protect integrity and authenticity and data exchange.
(You have to practically perform the implementation of security activities with necessary screenshots and explanation in the form of written report)

Configuring web site security-:

Figure 33 security page

In the above photo I am adding extra role like security to the web server.

Figure 34 basic

In this security the I am selecting all the option in the security like url authentication for setting the ip address authentication and etc. are installed in it.

Figure 35 installing security

After selecting all authentication then it ask me to install or not if I say ok then it will install in the services and show successful message.

Configuring IP address and domain name restrictions-:

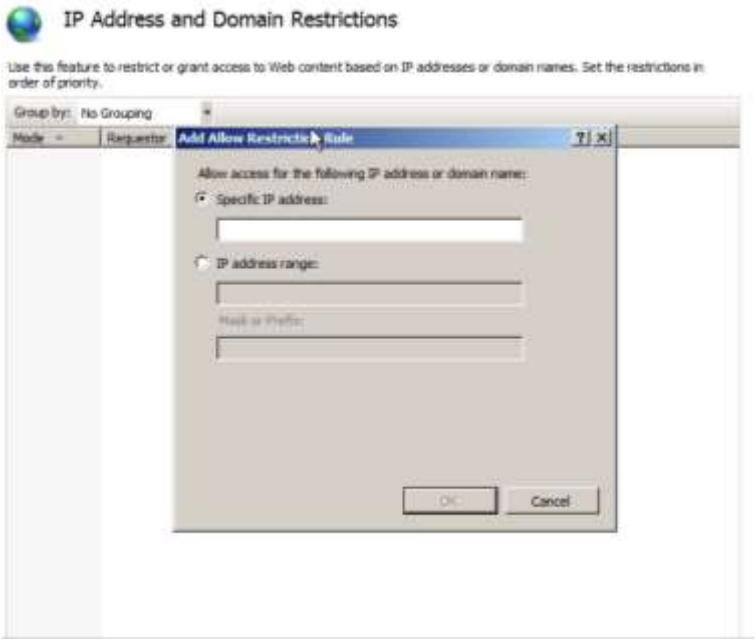


Figure 36 ip add and domain restrictions

This is used to allow access to the site which means by giving specific range and address the when it allows the site to pass through the server and the client get access to it, for example I can give some access to the site so that client can access the flies easily.

Enabling and configuring authentication methods-:

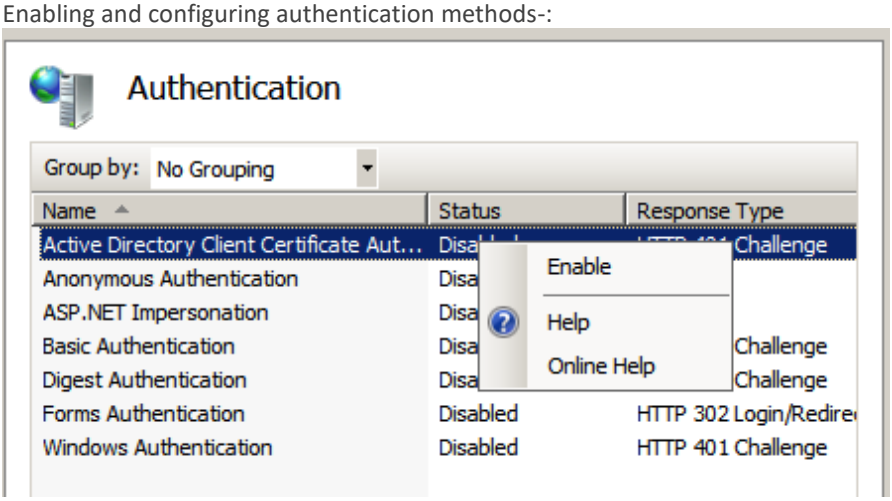


Figure 37authentication method

The authentication method which is authentication to the clients for enabling these authentications goes to the authentication and enables the disable service in the server like I have enabled the active directory client certificate.

Configuring anonymous access-:

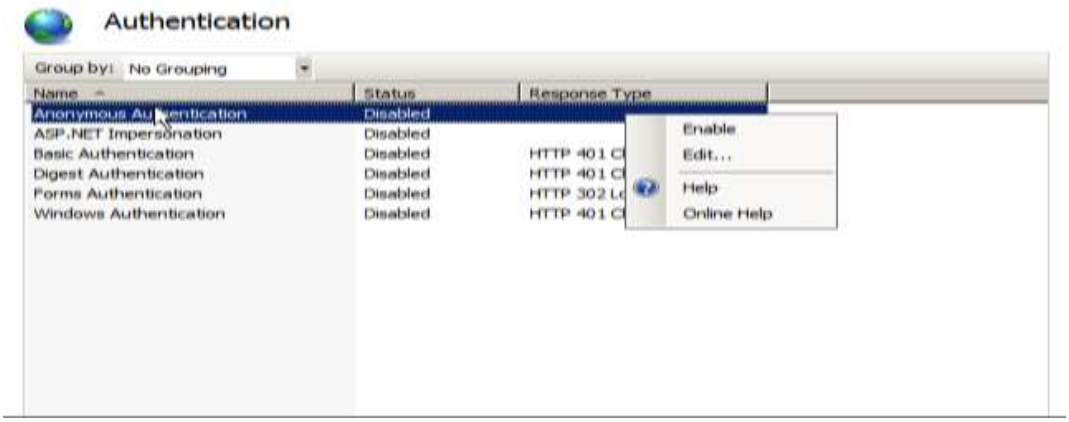


Figure 38 anonymous access

This I have been selected because to give the site which I have been created should be access to every client in the like for example if I will open the FTP site then will not ask the name domain and password to the enter the site.

Figure 39 anonymous access

Using OS authentication-:

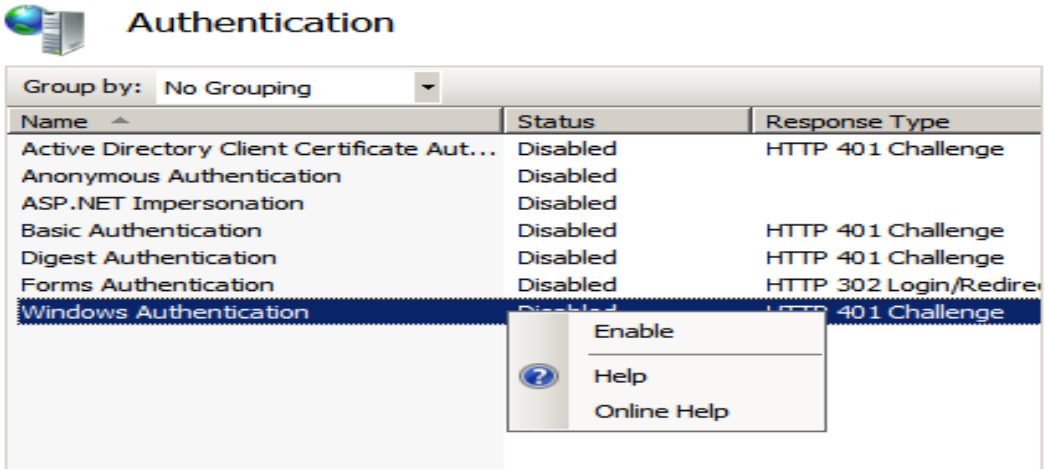


Figure 40 os authentication

Windows authentication which is used to set the username and password in the server and when we open the client pc then it show login and password details and it will open all the sites which are given the authentication in server

Enabling forms authentication-:

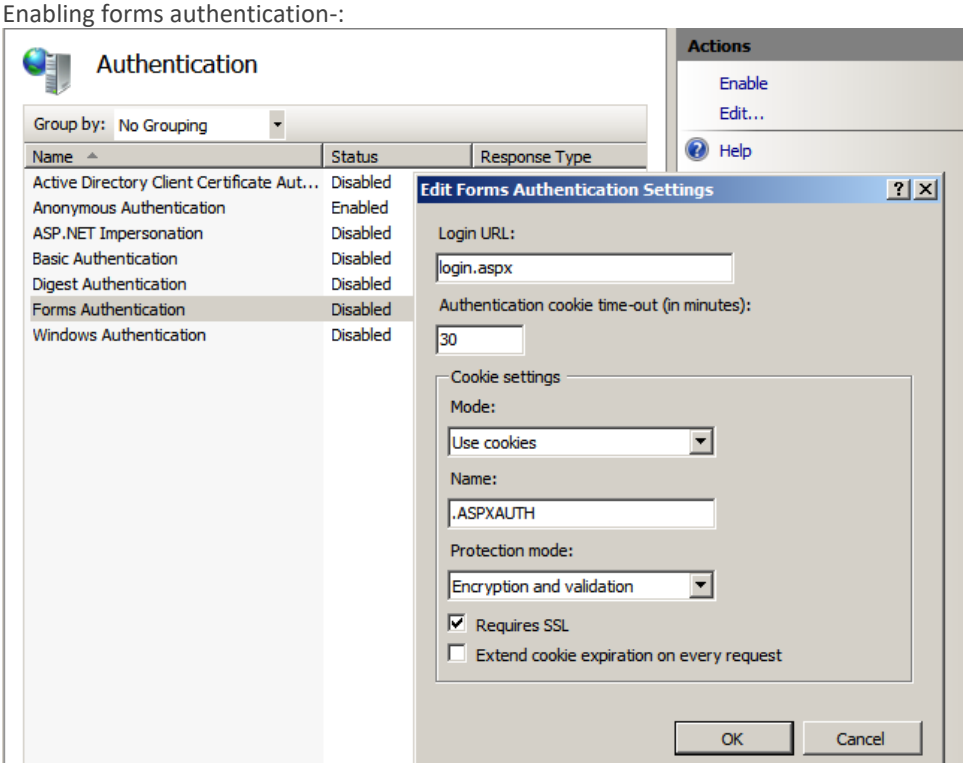


Figure 41 authentication

I have given in the forms of security like setting the and cookies for the particular website created like for example I have shown in the page the login url an its time and setting the cookies setting done for the particular user to the website.

Creating URL authorization rules-:

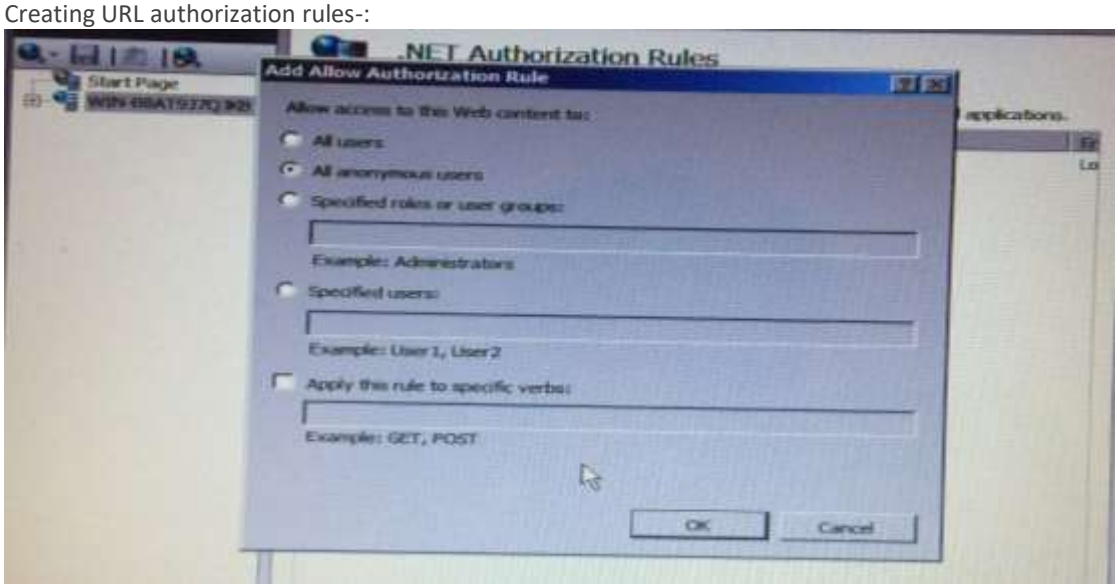
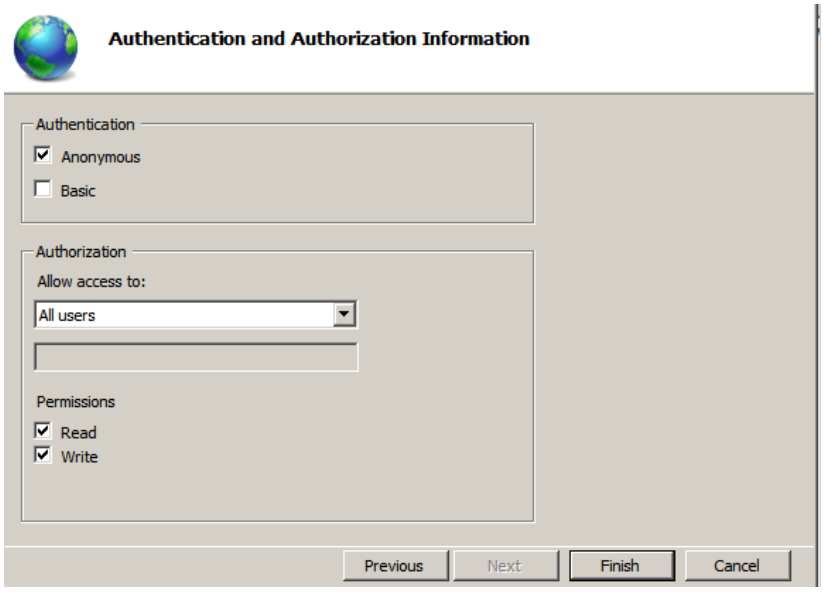


Figure 42authorization rules

It is used to set the anonymous users authentication to all the users in the groups and adding the rules to the option to all users.

Using access control and file permissions-:

Figure 43 control and file permission



In the above photo I have given permission to flies that in the client can only visit the page who have domain and other permission given to the user who had it.

Figure 44 access continrol

Enabling and implementing certificate authentication-:

Figure 45 server certificate

Here I will create the certificate to my site which I have prepare like it is giving security to the site so that there may be no issues in using these site

Figure 46 ssl certificate

I am selecting https because it is more secure than http and I have assigned the ip address and ports to site and certificate which I have added above.

Use VPN and SSL to protect integrity and authenticity and data exchange-:

Through vpn and ssl they try to transfer the file like for example when let me show in the photo that ssl I have been transfer some the data in the flies like I have shown in the above photo the flies have been transfer and the url is also have https and it is more secure and flies are can be view by some of the user only.

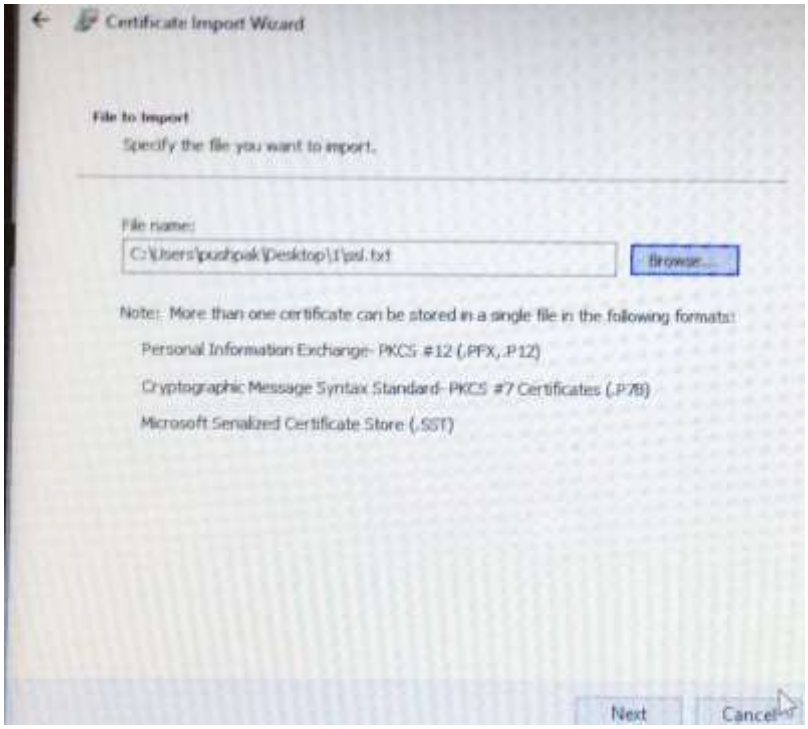


Figure 47 import of ssl

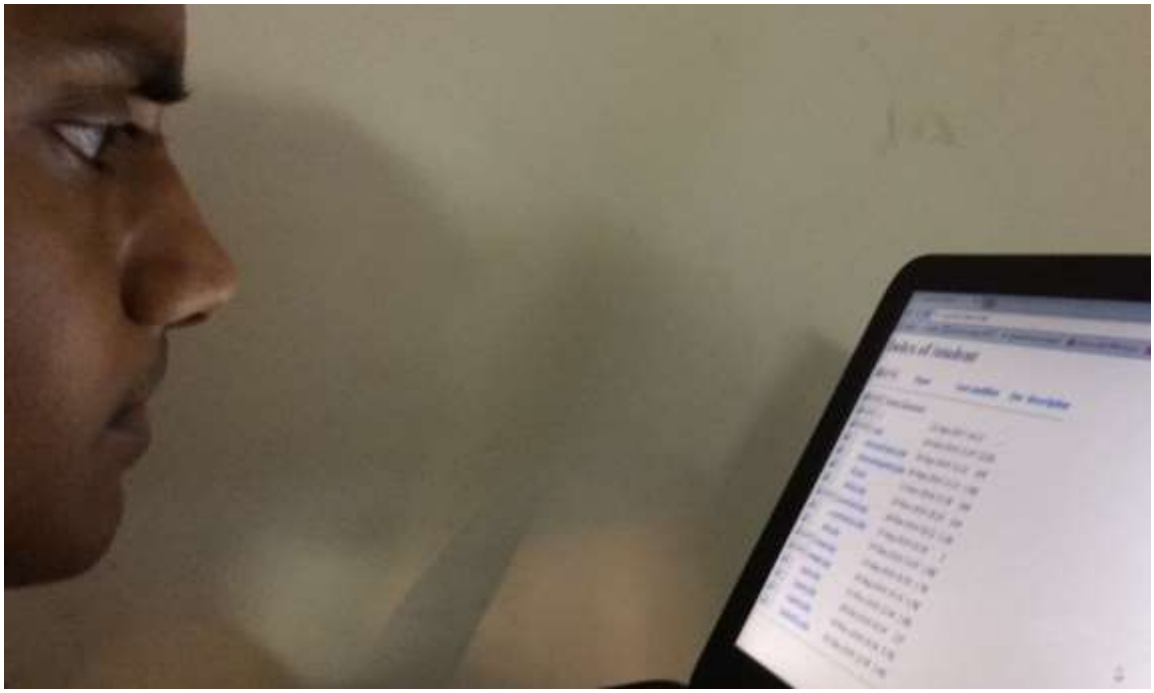


Figure 48 page

A.C.4.3

Monitor and troubleshoot an internet server and services for the following:
Monitoring includes:
a) Configuring sites and application logging
b) Configuring centralized and remote logging,

c) Identifying log file and format
d) Analyzing log file
Troubleshooting includes:
e) Tracing and diagnose problems
f) Troubleshoot and solve common problems such as 401, 404 etc.
(You have to practically perform the monitoring and troubleshooting of internet server and services with necessary screenshots and explanation in the form of written report)

Configuring sites and application logging-:

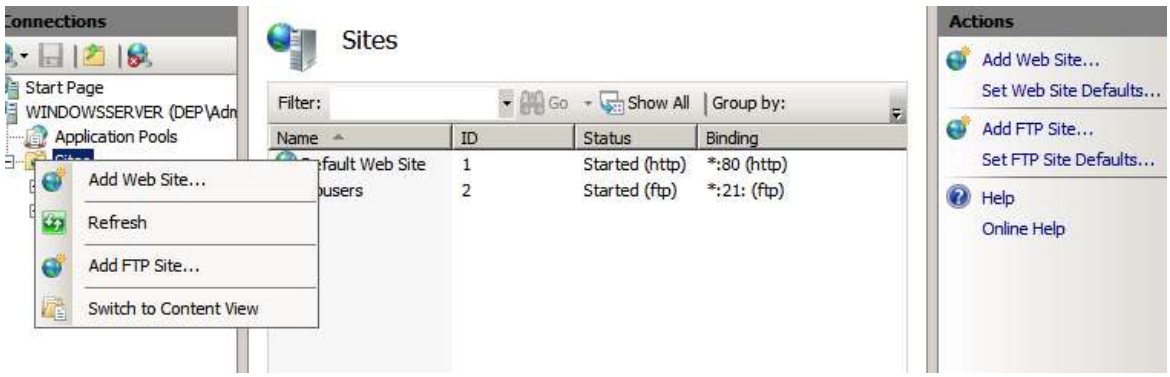


Figure 49 site

Here I am creating the website by adding the website and I can create the website to the based upon my organization.

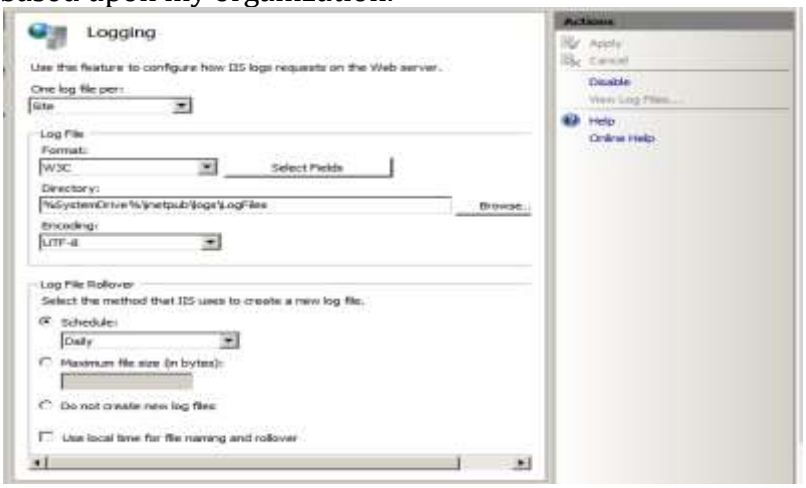


Figure 50 application login

Here I am going to set the format of the folder and browser to and encoding to the files and selecting the methods to new log the files and schedule daily because this code is to set the log to the sites which I have created.

Configuring centralized and remote logging-:

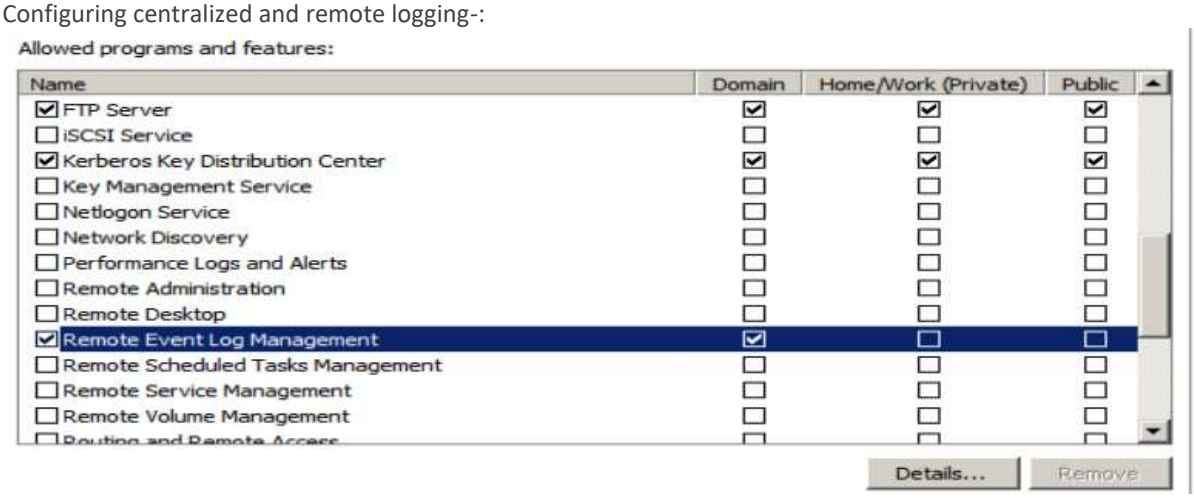


Figure 51 remote

I have selected the remote event log management which is used to manage the logs through remotely and which allows storage logs from the remote clients and server know about the events logs from window desktop and see all the flies are secure are not.

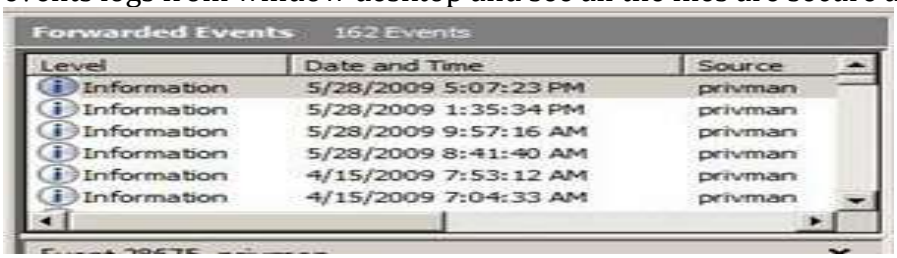


Figure 52 application

Here are setting this services the log forward events can be seen here with the date and time and express the source at which it has forward event is done and can see how many events are performed in it and which is able to know these service in IIS

Identifying log file and format-:

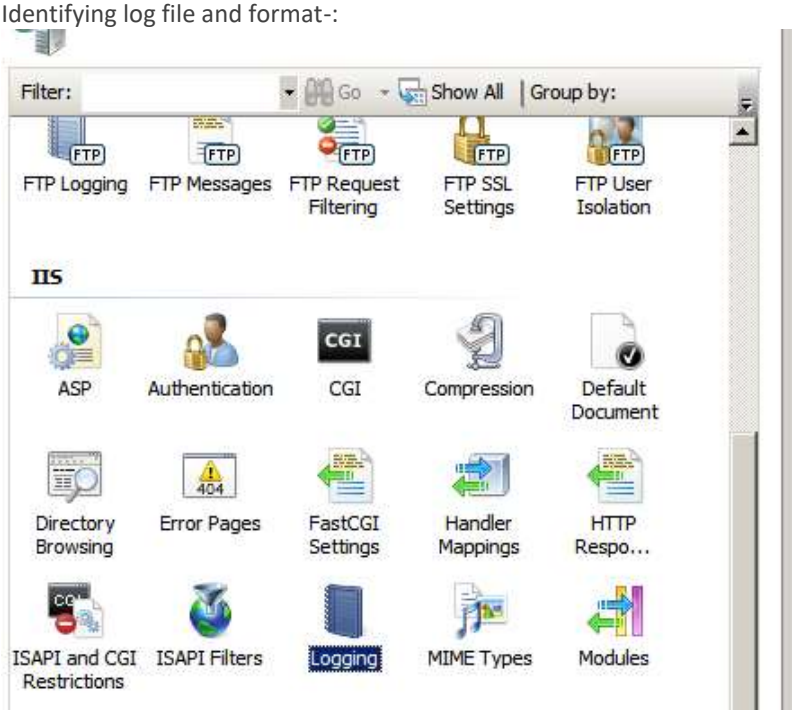


Figure 53logging

Here I have selected the logging option which is used to know about the details of the web server.

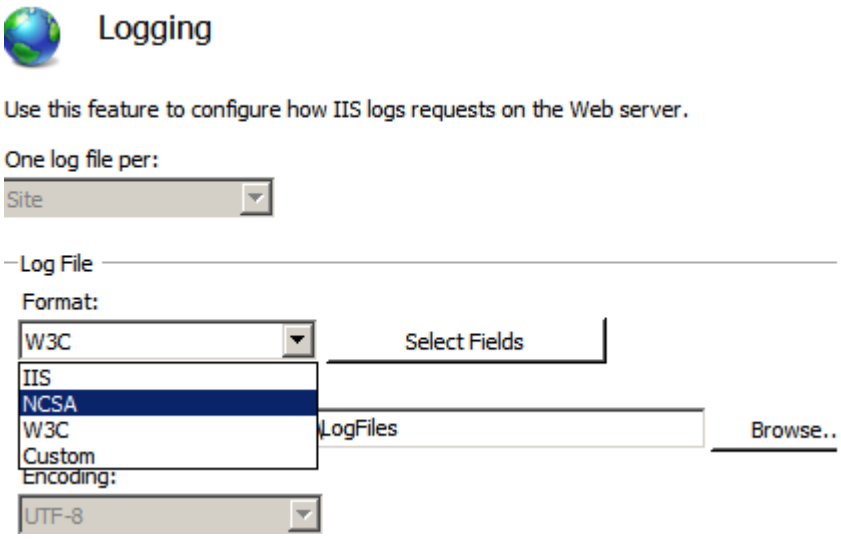


Figure 54 logging

These logging is used to set log configuration on the server, then I have select the IIS in the select field and should select the log flies form the browse and encoding will be in the default.

Analyzing log file-

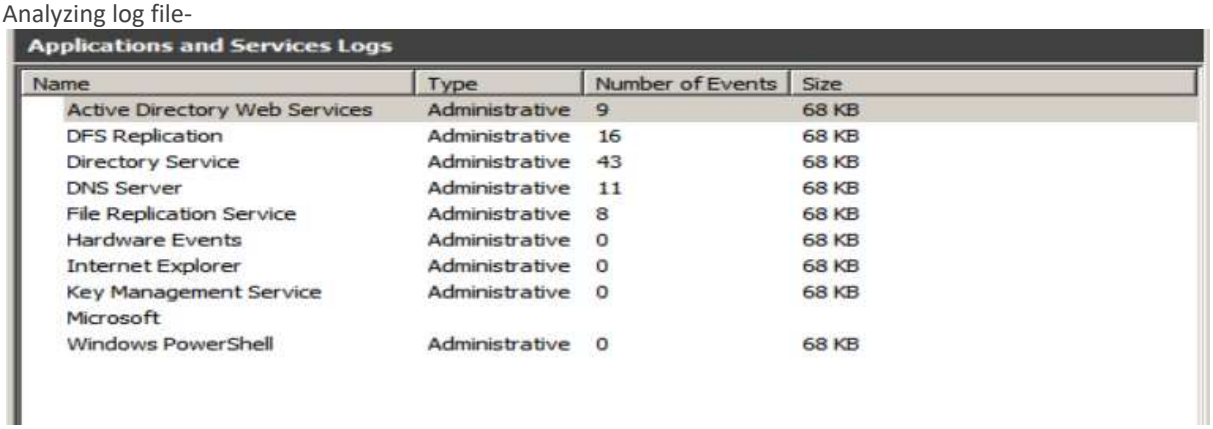


Figure 55 log flies

Which is used to analysis the data in the log files here I can see what are the services are active and how much events are performed in the services. Used to analysis the service better than and understand it.

Troubleshooting includes-:

The troubleshooting includes the 404 error and checking the connections and some other trouble shoot is done for in many ways like doing the diagnose and ping transfer and etc. are the ways to troubleshoot.

Tracing and diagnose problems-:

Figure 56 failed

The problem may be seen in the below like it show fail message when I have trace it and these are logged so that users can view the analysis and logged time can been seen and errors codes is generated.

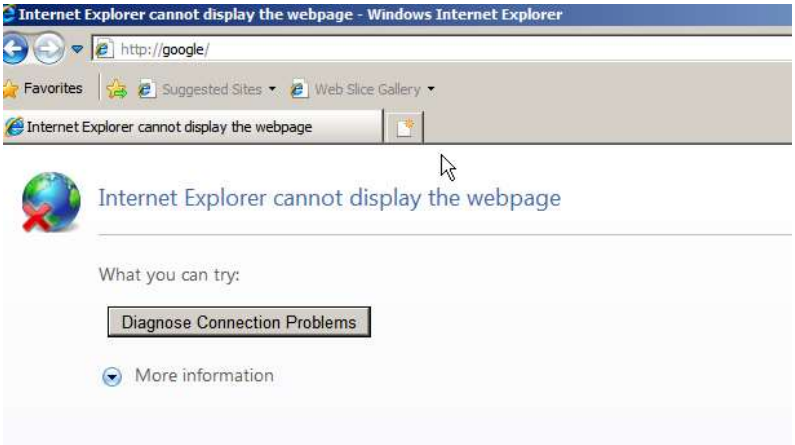


Figure 57 diagnose

By selecting the diagnose button then the it start searching the problem and it will try to solve by itself or sometime it may show the error in the site.

Troubleshoot and solve common problems such as 401, 404 etc-:

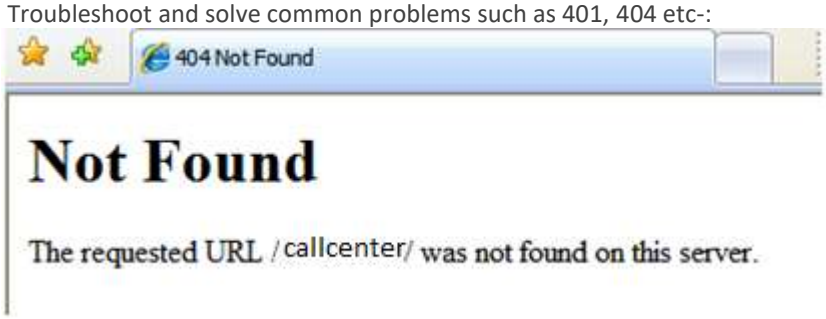


Figure 58 404 error

The problem in the sites may occur in the client pc because like when the client cannot find the site because some time the file that is loading may be deleting, for solving the error we should store the backups and I should recreate the site.

A.C.4.4

Critically evaluate the performance of an internet server you have implemented in criteria 4.1 and 4.2 using server monitoring tool in the form written report. Your evaluation must be for following with the graph analysis:

- Hardware performance [idle time, interrupt time, transitions/sec]
- Network Performance [received packets/sec, returned packets/sec]
- Web server Performance [anonymous user/sec, connection attempt/sec, bytes sent/sec, bytes received/sec]

[Make sure your evaluate the above by providing different loads to the internet server and mention the reason for decrease in performance with suggestions to improve the performance]

The performance of internet server, I have implemented in the above task and the report I am going to perform using monitoring tools.

Hardware performance-:

The performance of the hardware is mentioned in the above is idle time, interrupt time, transitions/sec.

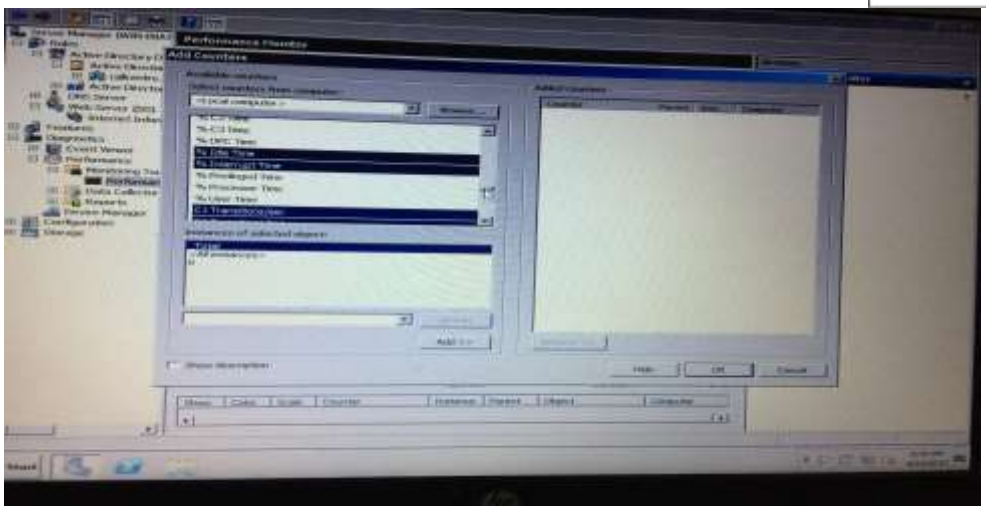


Figure 59 selecting the hardware

The above photo indicating that I am selecting for hardware and monitoring.

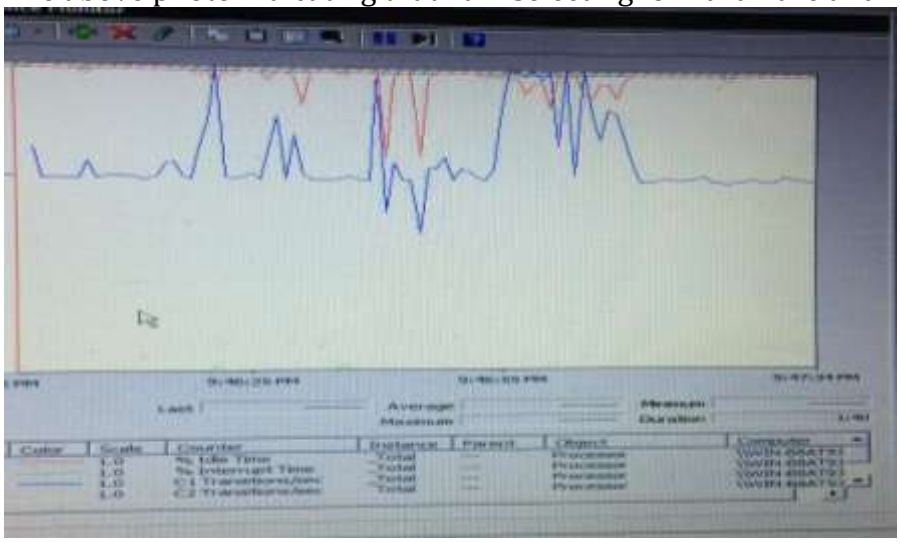


Figure 60 output

The above photo indicates that about the details of the monitoring for the selected performance.
In the above photo I have seen the ups and downs of everything which I have selected Blue color is the transition/sec and red color is the idle time and light green is the interrupt time. I have seen that the interrupt time is very low as download stream. I will suggest the for increase to upstream is like strop using the more buffered flies like some of the videos and any HD photos or high GB flies should be reduce then there will be no interrupt time.

Network performance-:

The performance of the network is mentioned in the above is received packets/sec, returned packets/sec

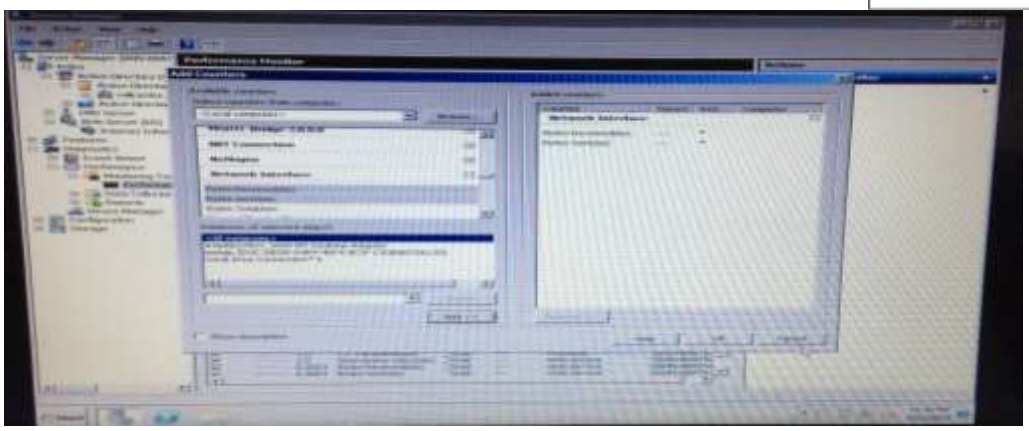


Figure 61 selecting the network

The above photo indicating that I am selecting for network and monitoring.

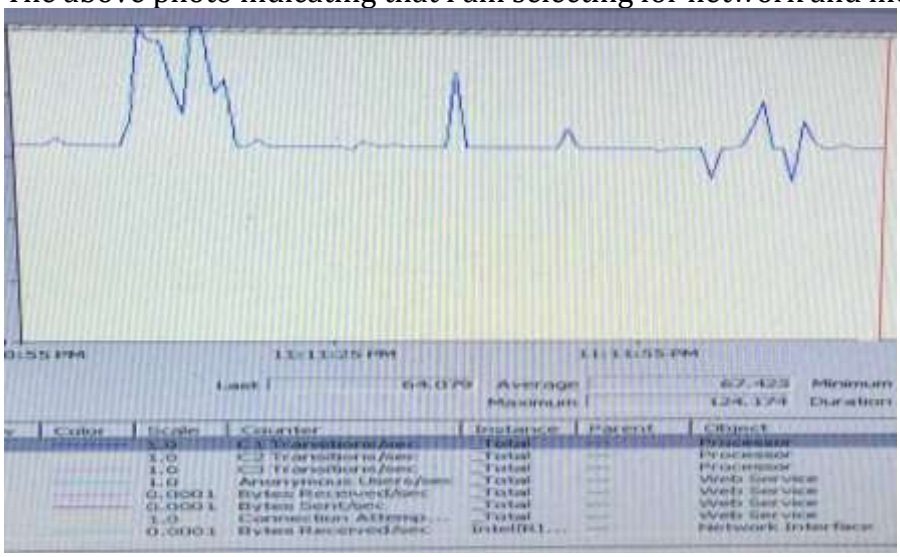


Figure 62 output

The above photo indicates that about the details of the monitoring for the selected performance.
In the above photo I have seen the ups and downs of everything which I have selected Blue color packets received and returned in the graph sometime it show downstream and upstream for I have absorbed sometime it has been falling down making it up stream, I will suggest that the packets should check the packets where it is dropping and stop the by configuring the codes.

Webserver performance-:

The performance of the webserver is mentioned in the above is anonymous user/sec, connection attempt/sec, bytes sent/sec, bytes received/sec

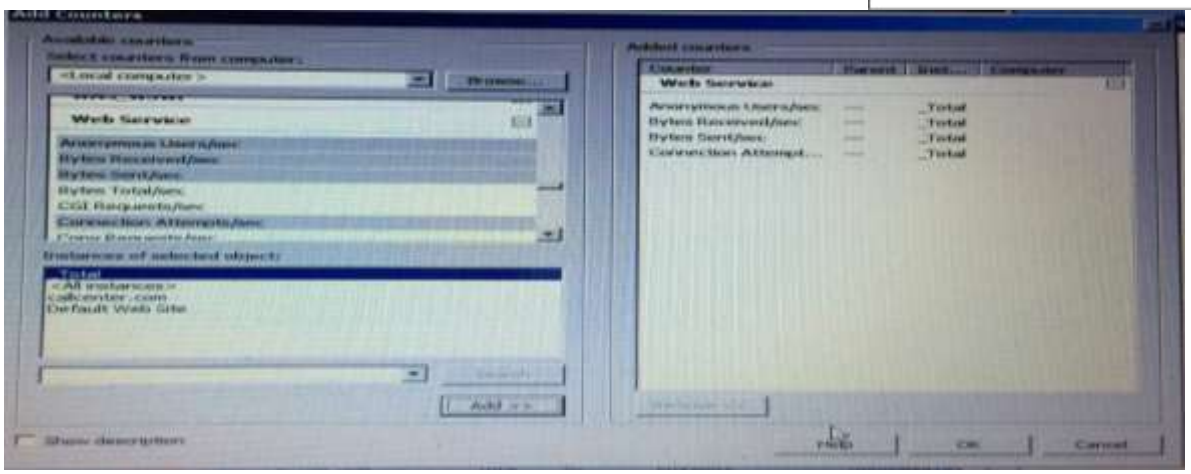


Figure 63 selecting the webserver

The above photo indicating that I am selecting for webserver and monitoring.

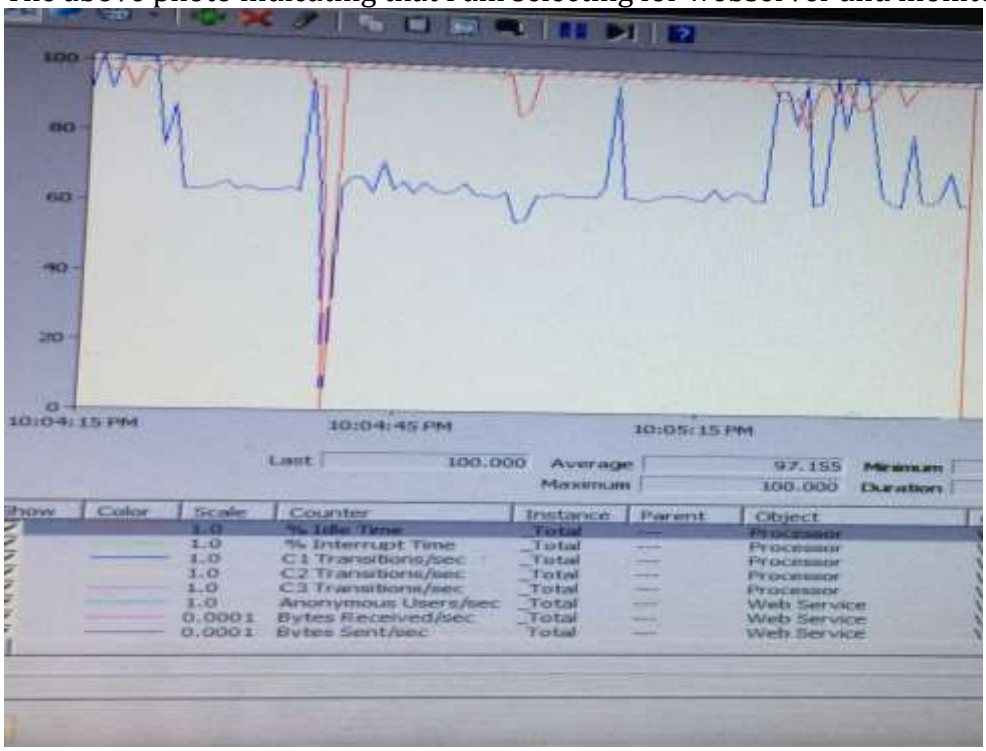


Figure 64 output

The above photo indicates that about the details of the monitoring for the selected performance.
In the above photo I have seen the ups and downs of everything which I have selected Light blue is anonymous users, light pink is bytes received, violet for bytes send returned in the graph sometime it show downstream and upstream for I have absorbed sometime it has been falling down making it up stream, I have observed that send packets are falling bytes received is in upstream and anonymous is always up and down and for I will suggest the for the send packet is try to check where the error is and solve the problem.