INTELLIGENT FILE TRANSFER WIZARD

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BONAFIDE CERTIFICATE

Certified that this project report titled **"INTELLIGENT FILE TRANSFER WIZARD"** is the bonafide work of **Ms. K. Malar Vizhi (Reg No: 71205621024)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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PROJECT COMPLETION CERTIFICATE

This is to certify that **Miss. K. Malarvizhi** of **Kumaraguru College of Technology,** Coimbatore, Tamil Nadu was associated with us as a project trainee to carry out her academic project for the partial fulfillment of award of Master of Computer Applications for the year 2008.

She has successfully completed the project titled **"Intelligent File Transfer Wizard"** as per the requirements.

Senior Project Manager
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ABSTRACT

"Intelligent File Transfer Wizard" chips in the network's contemporary site to unroll the merits that would let efficient and robust transmission of files. Irrespective of the discrepancies that pop up during a file transfer , the system tracks the effectual means by ripping the files and driving them to their destinations. The system focuses on tackling the file clashes, automating the transfer as per the schedule and to serve robust .

The system serves efficient by enabling the user to perform the transfer as per the bandwidth level. The problem of transferring large files during heavy network traffic is solved by allowing the users to split the file into smaller files as per the size specified by the user. Once the files are ripped then the files are transmitted even at lower bandwidth.

The system gazes the network wedges and manages it by retransmitting the file packets proficient and presage the users too. The system examines the errors of network and automates the retransmission of files if necessary. As an assimilate tool, the system trails the dropouts and reimburses a robust environment for file transfer.

The application is developed with ASP .Net as front end.

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INTRODUCTION

1.1 ORGANIZATION PROFILE

Infosys Technologies Limited is a multinational information technology services company headquartered in Bangalore, India. Infosys was founded in July 2, 1981 by seven software professionals. It is one of India's largest IT companies, with nine development centers in India and over 30 offices worldwide. Infosys Technologies Limited (NASDAQ: INFY) is a world leader in providing IT consulting and software services to the finest global organizations. Infosys offers offshore based software services such as application development, software maintenance, internet consulting, and establishing software centers for their customers. Infosys's solutions focus on addressing business challenges across different horizontal applications and target vertical industries.

Infosys employs over 88,601 professionals (as of December 31, 2007). Its annual revenues for the fiscal year 2006-2007 exceeded US$3.1 billion with a market capitalization of over US$30 billion. . In 1999 Infosys attained a SEI-CMM Level 5 ranking and became the first Indian company to be listed on NASDAQ. In 2001 it was rated "Best Employer in India" by Business Today, and in 2002 Business World named Infosys "India's Most Respected Company".

Through the worldwide sales headquarters in Fremont, California, US, and 35 other sales offices located in North America, Europe, Australia, UAE and 8 development centers located through out India, Infosys capitalizes on time zone differences to create a 24 hour workday.

1.2 PROJECT OVERVIEW

In the current world of Information Technology, companies like Infosys enable most of the services to people located at various geographic locations and it becomes crucial to transmit files across the network irrespective of the network tribulations to achieve client satisfaction.

In case of file transfer, there exist certain discrepancies like the network clashes and the insufficient recovery mechanisms. The process of transfer becomes a tedious task when the bandwidth is low and the file to be transmitted is huge. In such cases, the transfer rate is very slow which lead to disordering of packets and delay in transfers.

This enabled the development of a system to tackle the file clashes, automate the transfer as per the schedule and to serve robust for the future. The system should be effective enough to enable file transfers as per the schedule even at low bandwidth levels. Additionally the system must be adept to recover from network clashes, display error messages and retransmit the lost files.

The application includes five modules such as File Transfer, Traffic Tracking, Detach and Drive, Recovery Resurgence and Sustain. Initially the file transfer module checks for the file configuration, then the traffic tracking module determines the bandwidth level and the files are splitted and transferred using the Detach and drive module. The network clashes are determined by the Recovery Resurgence module and the Sustain module takes over in notifying the users by means of alerts in case of failures.

CHAPTER 2

SYSTEM ANALYSIS

The existing system is analyzed for its features and shortcomings. The proposed system is developed with advanced features and as per the requirements. These details are described under this section.

2.1 EXISTING SYSTEM

The existing system is the File Transfer utilities like File split and join, file transmitter and it allows users to transfer files between two computers, generally connected via the Internet. File Transfer Protocol (FTP) is a file transfer protocol for exchanging files over any TCP/IP based network to manipulate files on another computer on the same network.

FTP servers by default listen on port 21 for incoming connections from FTP clients. There are many existing FTP client and server programs. There is no doubt most of the file transfer utilities are available and are in use, but all these utilities end up with a common drawback of delay in transfer during heavy network traffic.Some of the other disadvantages are as follows

- No integrity check on the receiver side. If a transfer is interrupted, the receiver has no way to know if the received file is complete or not.
- No date/timestamp attribute transfer. User cannot specify the attributes or configuring the transfer.
- Tools for file splitting ,joining and transmitting are available as separate but they are not availale as an integrated tool.

2.2 PROPOSED SYSTEM

The proposed system is the **"INTELLIGENT FILE TRANSFER WIZARD"** that solves the problems of ftp and comes out as an Integrated tool that provides easy upload/download by means of file splitting even in cases of high network traffic and retransmission in case of failures and notifying users by raising alerts.

The system sets ftp as a basis for setting up the connection to the remote server and it provides various options like

- Splitting the huge file into pieces
- Scheduling the Transfer
- Monitor the Bandwidth
- Alert Messages
- Retransmission in case of network clash

The goal of the system is to automate the file transfer and enables the user to schedule the transfer and walk out thereby successfully overruling the work done by the independent existing modules as a single system. The system focuses on the transmission in an efficient manner in such a way that in case of network failures the files are retransmitted to the destination effectively.

2.3 USER INTERFACE REQUIREMENTS

The user interface requirements are specified module wise as follows

FILE TRANSMISSION

- The user provides the configuration by means of this module.
- The user can select the split size and can schedule the transfer.
- Once the user provides the input, system should validate the input and then set the connection.
- Then the transmission takes place.
- User may pause the transfer and resume it when needed.

TRAFFIC TRACKING

- Traffic tracking checks for the bandwidth level.
- Bandwidth level of the network has to be monitored by means of the Bandwidth Monitor tool.
- The tool should provide the details of bytes sent and received.
- The tool needs to monitor the bandwidth level at two second interval.

DIVIDE AND DRIVE

- This module has to focus on splitting the files into pieces in order to enable fast transfer.
- Initially the file size is determined and then as per the user's choice the files are ripped down.
- Once they are ripped, the file packets are transmitted and the order is maintained.

After the transmission of each packet, the total count is decremented by one and once the count reaches zero it is taken as successful transmission.

RECOVERY RESURGENCE

- The process of recovery is handled by means of locating the failures and handling the exceptions.
- Additionally the lost or crashed file is retransmitted to the destination.
- Before retransmitting the packet id of the file is verified and it leads to two cases.
- If the packet id is of the first packet been transferred then
    - the entire file packets are transferred from the scratch
    - Else the particular packet that has been lost is retransmitted
- Recovery module uses the sustain module to provide alerts to the user in case of failures.

SUSTAIN

- Sustain focuses on logging the user events and the system responses.
- A log file has to be maintained and when needed the user configuration is retrieved.
- Sustain module has to capture the form events and raises appropriate messages.
- System messages to user on success/failure too logged.

CHAPTER 3

DEVELOPMENT ENVIRONMENT

The hardware and software components with which the application was developed are described as follows.

3.1 HARDWARE ENVIRONMENT

This section describes the hardware components with which the application was developed and the minimum hardware configuration with which the system operates best.

- PROCESSOR : Intel Pentium D
- RAM : 1 GB
- HARD DISK : 80 GB Hard Disk
- MONITOR : 17'' TFT Color Monitor
- KEYBOARD : Multimedia Keyboard
- MOUSE : Logitech

3.2 SOFTWARE ENVIRONMENT

This section describes the software in which the application was developed and using the same software would make it more compatible.

- OPERATING SYSTEM : Windows XP
- FRAMEWORK : Microsoft Asp.Net
- VERSION : 3.0
- PRE REQUISITE : IIS – FTP service

3.2 SOFTWARE OVERVIEW

This section describes the features of the software used to develop the application.

3.4.1 ASP . NET

Asp .Net is the .Net Framework layer that handles web requests for specific types of files.Asp .Net supports all the .Net languages (currently C#,C++,VB .Net and Java Script).Some of the main features include Object-oriented,Event-based,Compiled languages instead of inteprated languages and rich library of web controls.

Asp .Net enables development od effective web sites. Some of the new features in ASP.NET 2.0 are:

- Master Pages, Themes, and Web Parts
- Standard controls for navigation
- Improved and simplified data access controls
- Improved compilation and deployment.
- Improved site management
- New and improved development tools

These features are described in detail as follows

Master Pages

A master page is a template for other pages, with shared layout and functionality. The master page defines placeholders for content pages. The result page is a combination (merge) of the master page and the content.

Themes

Themes is another feature of ASP.NET 2.0. Themes, or skins, allow developers to create a customized look for web applications.

Design goals for ASP.NET 2.0 themes:

- Make it simple to customize the appearance of a site
- Allow themes to be applied to controls, pages, and entire sites
- Allow all visual elements to be customized

Navigation

ASP.NET 2.0 has built-in navigation controls like

- Site Maps
- Dynamic HTML menus
- Tree Views

Images

ASP.NET 2.0 has new controls for handling images:

- The Image Map control - image map support
- The Dynamic Image control - image support for different browsers

These controls are important for better image display on mobile devices, like hand-held computers and cell phones.

Automatic Compilation

ASP.NET 2.0 provides automatic compilation. All files within a directory will be compiled on the first run, including support for WSDL, and XSD files.

Compiled Deployment

ASP.NET 2.0 also provides pre-compilation. An entire web site can be pre-compiled. This provides an easy way to deploy (upload to a server) compiled applications, and because only compiled files are deployed, the source code is protected.

Development Tools

With ASP.NET Visual Studio.NET was released with project and design features targeted at corporate developers. Key design features include:

- Support for the features described above
- Upload files from anywhere (FTP, File System, Front Page....)
- No project files, allowing code to be manipulated outside Visual Studio
- Integrated Web Site Administration Tool
- No "build" step - ability to compile on first run

CHAPTER 4

SYSTEM DESIGN

4.1 PROCESS MODELS

Process models include diagrams like usecase diagram,sequence diagram,activity diagram which describe the user interaction with the system.

4.1.1 USECASE DIAGRAMS

Usecases are scenarios for understanding system requirements.A usecase is an interaction between users and a system.Actors are users playing a role with respect to the system.The usecase diagrams for the File transfer and Sustain modules are given as follows.

4.1.1.1 SUSTAIN MODULE

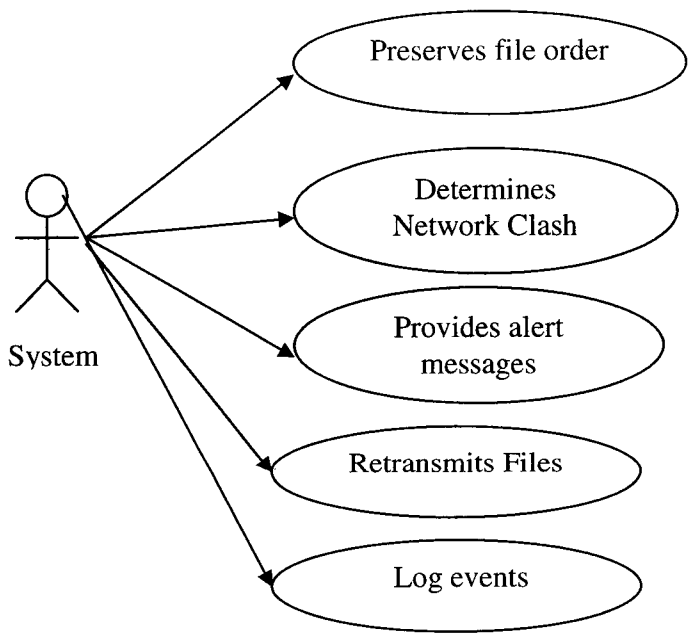


Figure 4.1.1.1 Usecase for Sustain Module

4.1.1.2 FILE TRANSFER MODULE

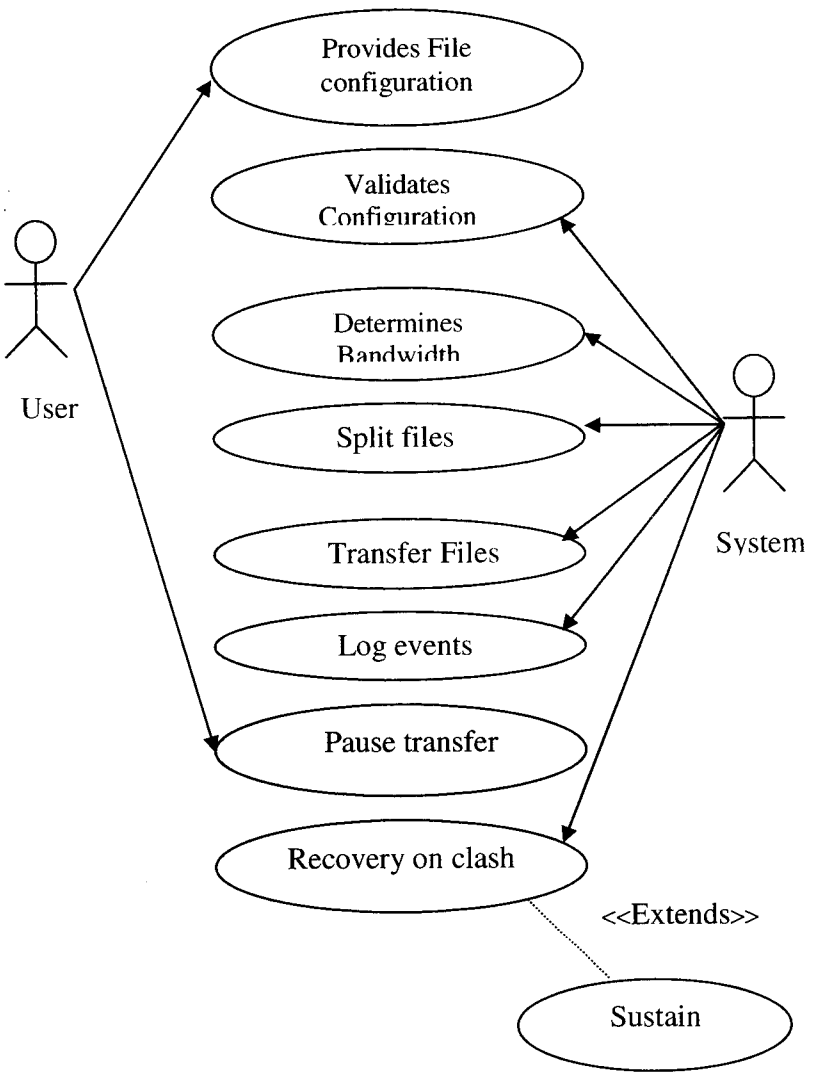


Figure 4.1.1.2 Usecase for File Transfer Module

4.1.2 USECASE DESCRIPTION

This section provides the description of the usecases for the file transfer and sustain modules

4.1.2.1 FILE TRANSFER MODULE

Description
This use case describes the file transfer from any client system to the FTP Server.

Special Requirements
NA
Assumptions
NA
Pre-conditions
User must provide the file configuration
Post-conditions
User is notified with success/failure messages

Flow of Events/Requirements(Main Scenario)
• System validates the configuration and if valid moves to next step. • Bandwidth level of the network is monitored. • As per the bandwidth level, the file is split to pieces. • Then the file packets are transferred over the network. • Once all the file packets are transmitted, success message is sent to the user.
Sub flows/ Alternate flows/ Scenarios

• If invalid configuration, send error message to user.
• If the user pauses the transfer, store the order of transfer in the log file and wait for specific time period.
• If the user resumes the transfer, start retransmitting the packets from the last transmitted packet.
• In case of network clashes, determine the lost packet id
  - If packet id is one then transmit the packets from the scratch.
  - Else if packet id is that of a particular packet then transmit the particular file packet.

Notify the user in case of any of the above failures with alert messages.	
Screens: NA	
Data Requirements	
NA	
Issues	
NA	

4.1.2.2 SUSTAIN MODULE

Description
This use case describes the sustain module that notifies the user with alerts.

Special Requirements
NA
Assumptions
NA
Pre-conditions
File transfer has to be started
Post-conditions
User is notified with success/failure messages

Flow of Events/Requirements(Main Scenario)	
• Then the file packets are transferred over the network. • Once all the file packets are transmitted, success message is sent to the user.	
Sub flows/ Alternate flows/ Scenarios	
• If invalid configuration, send error message to user. • If the user pauses the transfer, log it. • If the user resumes the transfer log it and display message to the user. • In case of network clashes, determine the lost packet id and retransmit. • Notify the user in case of any of the above failures with alert messages.	
Screens: NA	
Data Requirements	
NA	
Issues	
NA	

4.1.3 SEQUENCE DIAGRAM

A sequence diagram is an easy way of describing the behaviour of a system by viewing the interaction between the system and its environment.

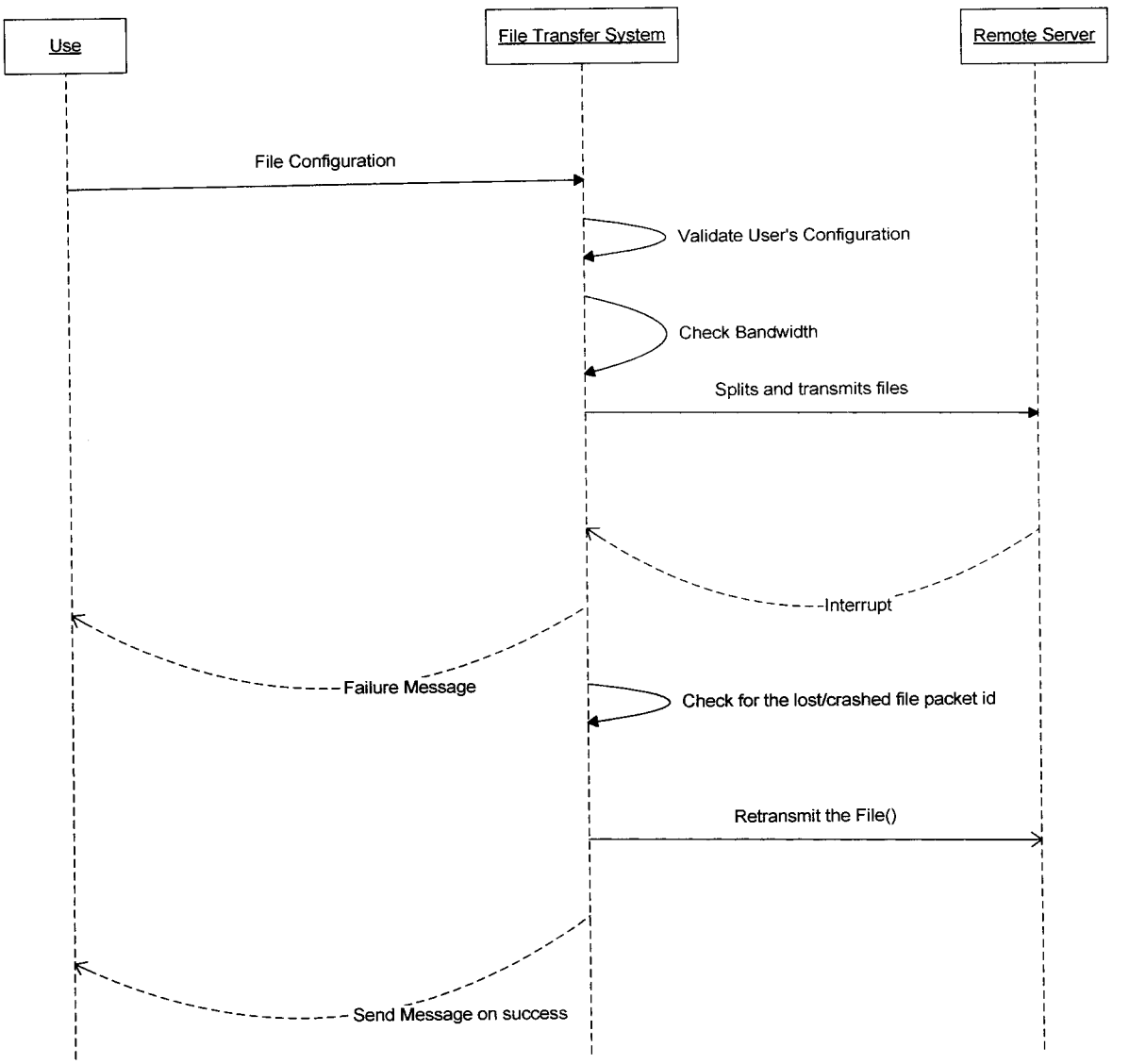


Figure 4.1.3.1 Sequence Diagram for File Transfer

4.1.4 ACTIVITY DIAGRAM

An activity diagram is to depict the internal state of an object.The purpose of activity diagram is to provide a view of flows and what is going on inside a system.

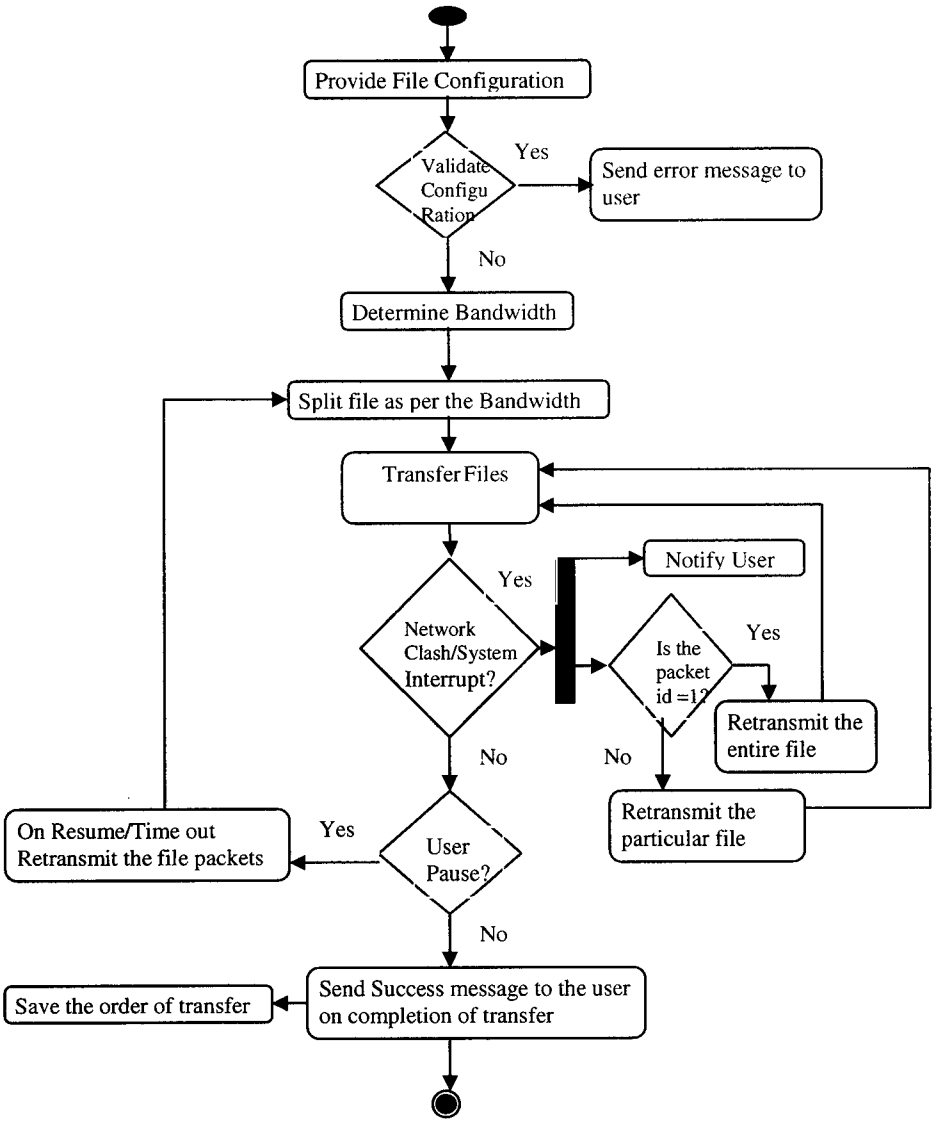


Figure 4.1.4.1 Activity Diagram for File Transfer

4.1.5 DATA FLOW DIAGRAM (DFD)

Data Flow Diagrams play an important role in structural analysis. The DFD takes an input-process-output view of a system. Data Objects flow into the software are transformed by the processing elements and resultant data objects flow out of the system.

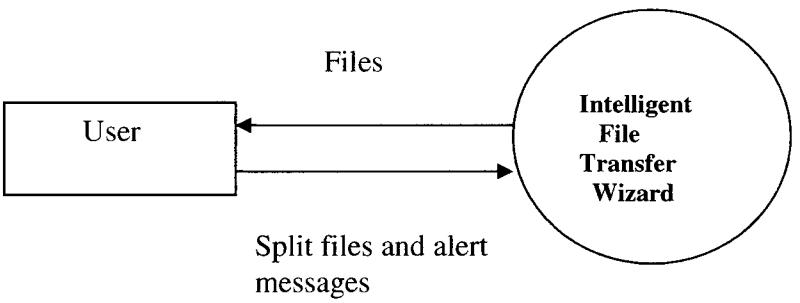


Figure 4.1.5.1 : LEVEL 0

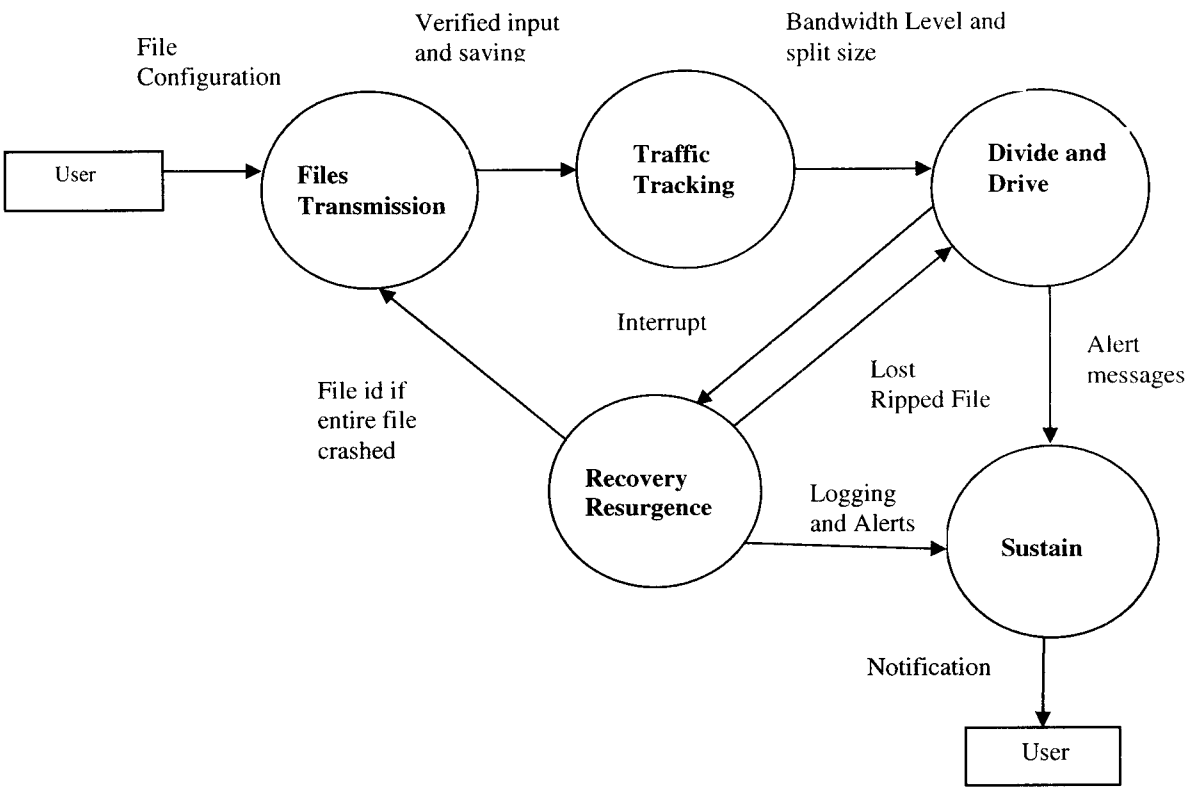


Figure 4.1.5.2 : LEVEL 1

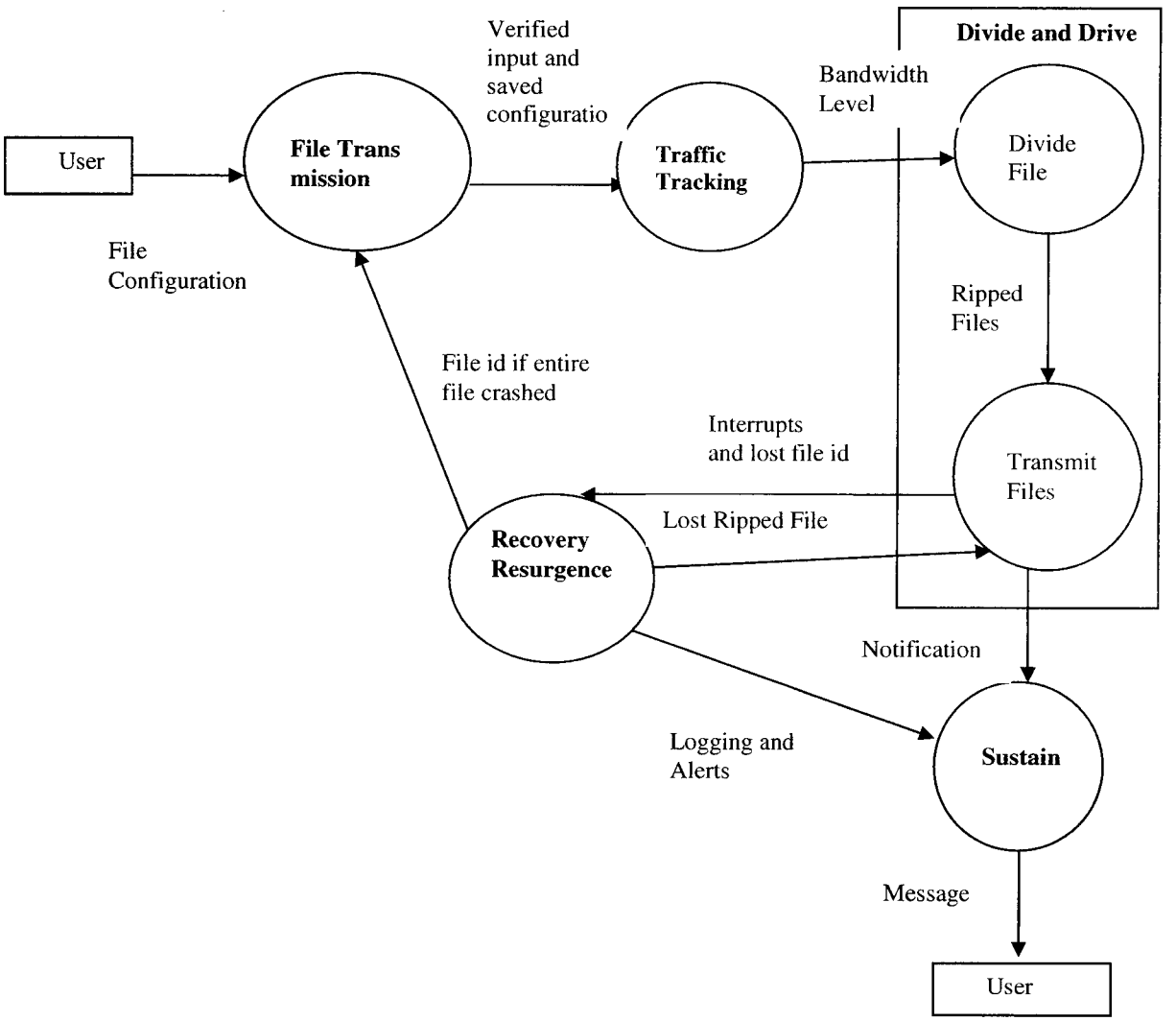


Figure 4.1.5.3 : LEVEL 2

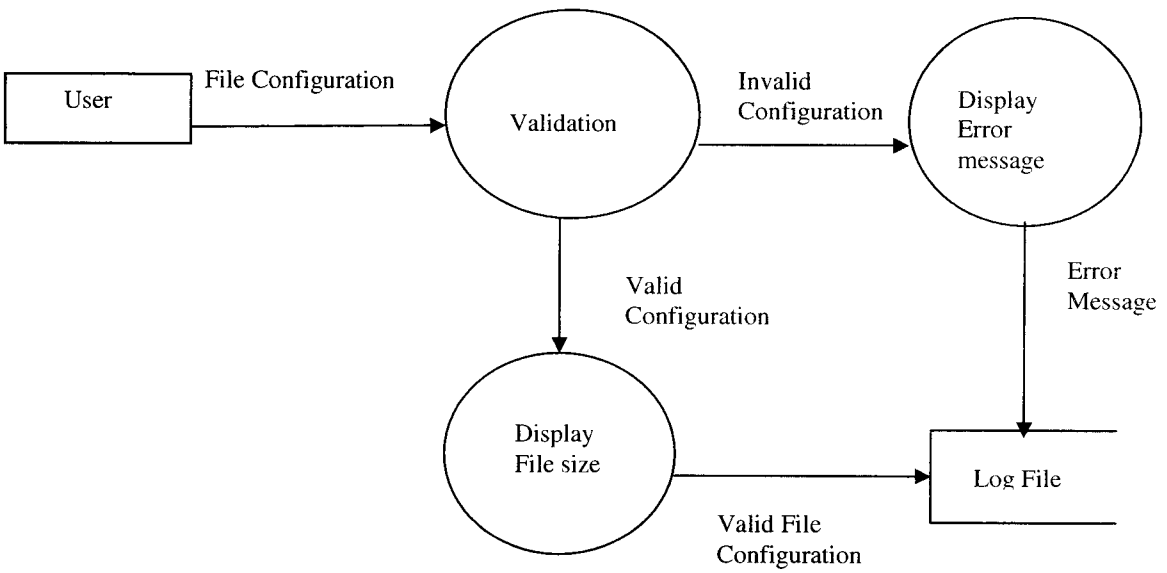


Figure 4.1.5.4 : DFD for File Transmission Module

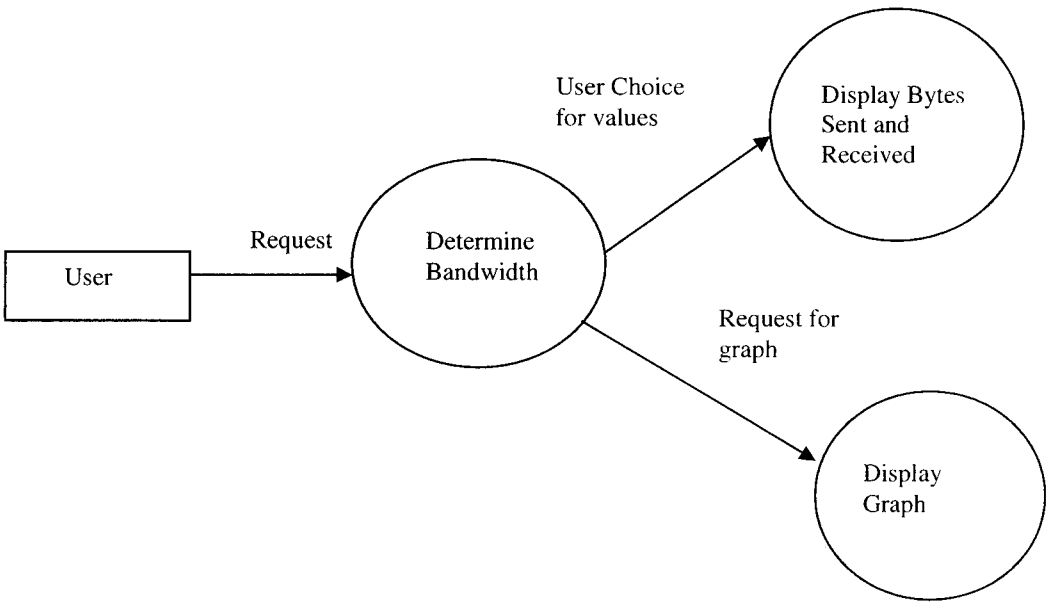


Figure 4.1.5.5 : DFD for Traffic Tracking Module

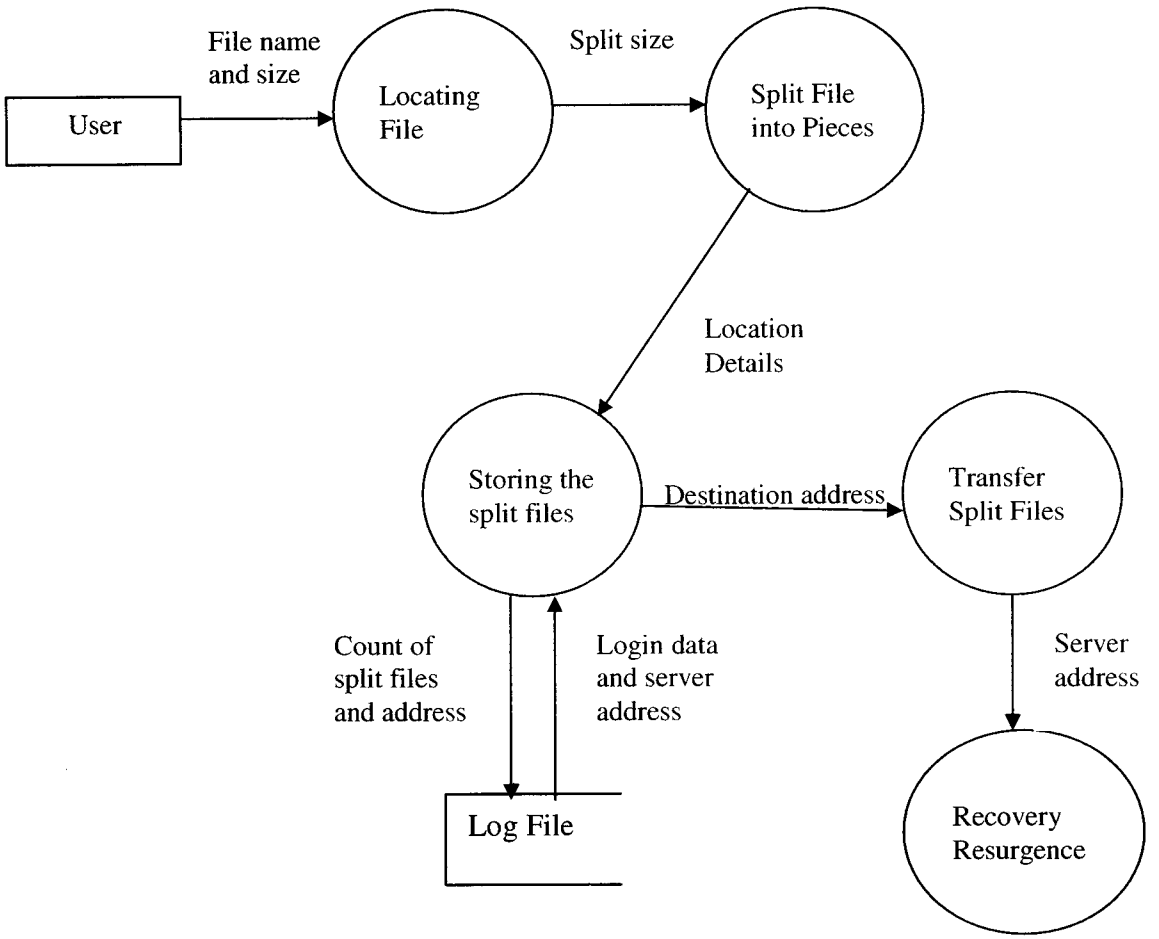


Figure 4.1.5.6 : DFD for Detach and Drive Module

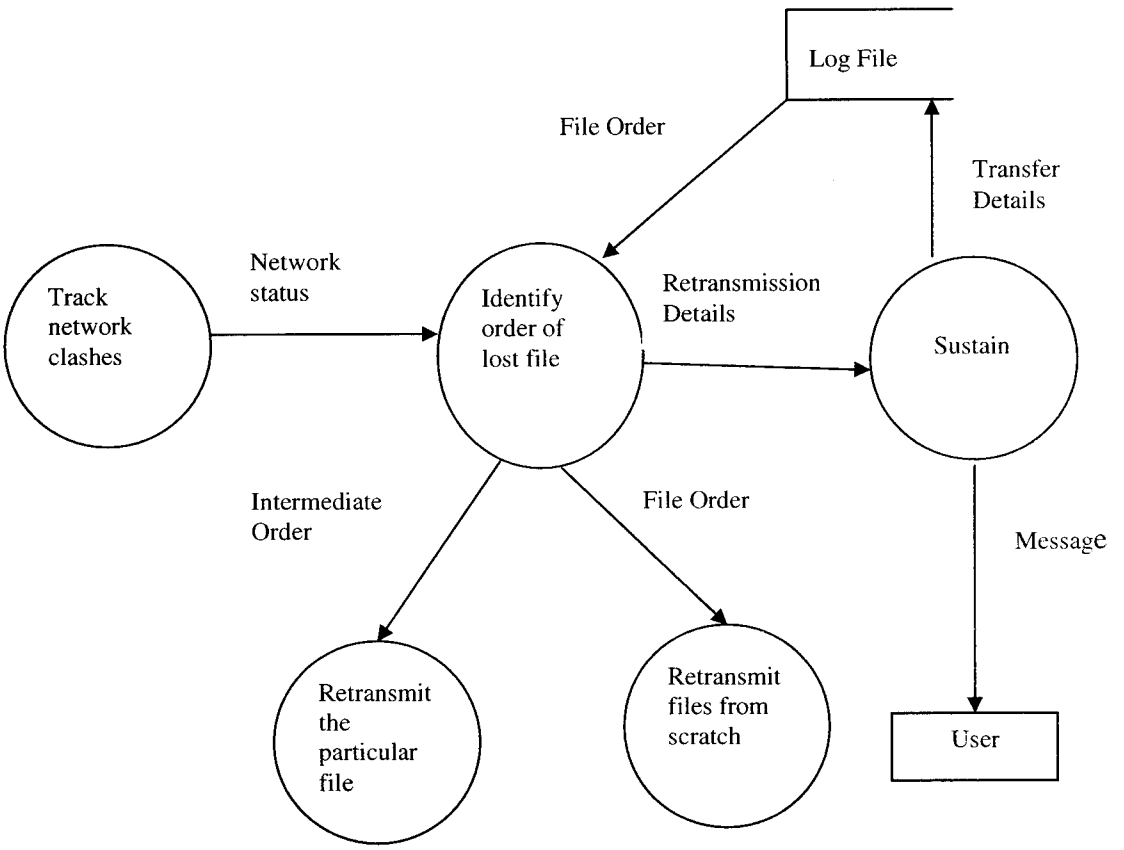


Figure 4.1.5.7 : DFD For Recovery Resurgence Module

CHAPTER 5

ARCHITECTURAL DETAILS

This section describes the type of architecture used in the application. There e three types of architecture namely Two tier architecture, Three tier architecture and N tier chitecture.

1 N TIER ARCHITECTURE

Intelligent File Transfer Wizard has N tier architecture and the pictorial presentation is given below

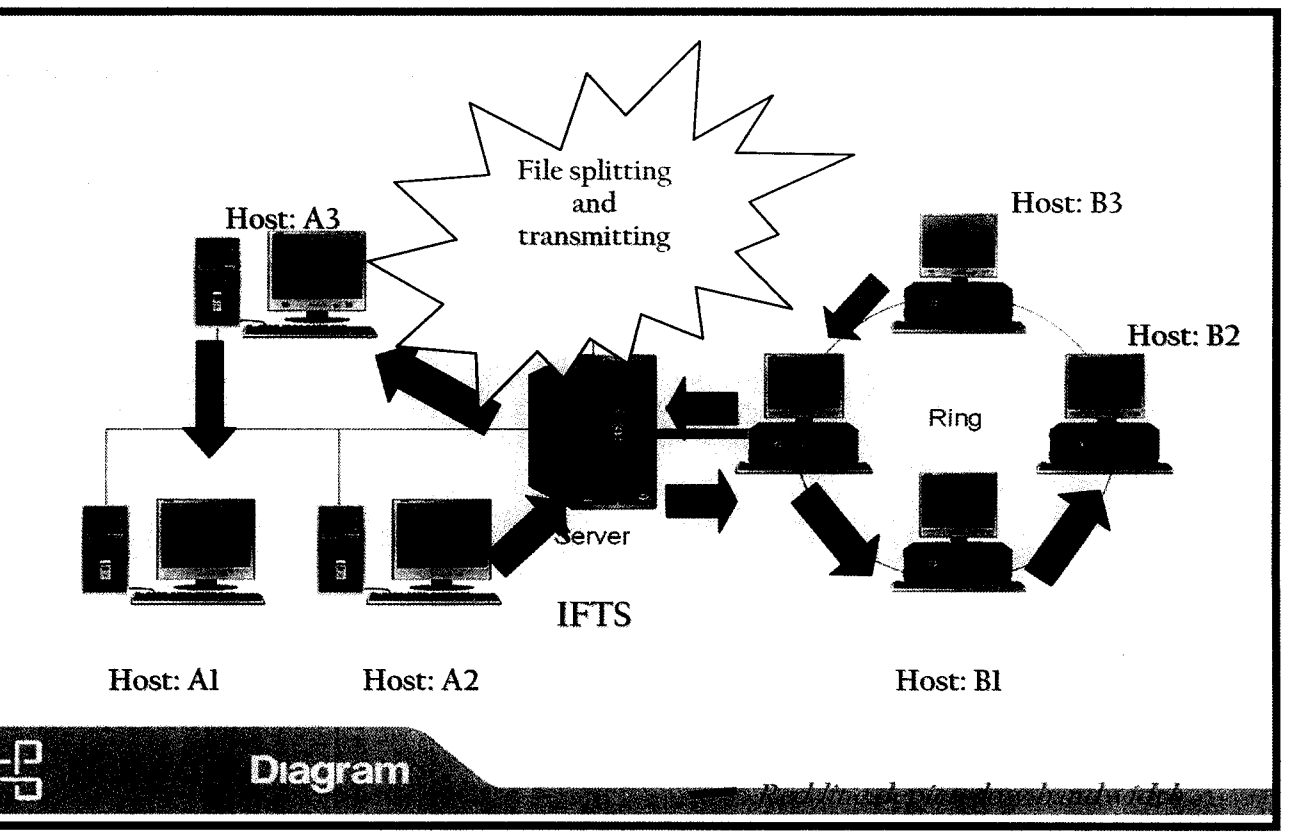


Figure 5.1.1 N –Tier Architecture

CHAPTER 6

IMPLEMENTATION

Implementation is the most important part of software development. After the coding phase, the system is implemented. During this phase the application is tested for validity and performance in the real time environment. The implementation process and the client side coding is described under this section.

6.1 IMPLEMENTATION PROCESS

System Implementation is the final stage of the project. Once the user is satisfied with the system, it is implemented and ready to use.

Types of Implementation

- Implementation of a computer system to replace a manual system.
- Implementation of a new computer system to replace an existing system with demerits.
- Implementation of a modified application to replace an existing one.

In this application, the second type of implementation was done. The users were provided with a user manual and a live demo was done to depict the usage of the system. The users were said about the benefits of the new system and how it differs from the existing system. Since the system worked properly and up to the user satisfaction, the system was implemented for the usage of users forever.

6.2 CLIENT SIDE CODING

Transfer Module Code

```
using System;
using System.Data;
using System.Configuration;
using System.Web;
using System.Web.UI.WebControls;
using System.Net.NetworkInformation;
using System.Xml;
using System.Diagnostics;
using System.IO;
using System.Text.RegularExpressions;

 public void Transfer()
 {
  try
  {
     //Extracting File Name
     string fname;
     string extn;
     string loc;
     fname = sfname;
     int len = fname.Length;
     extn = fname.Substring(len - 4, 4);
     fname = fname.Remove(len - 4, 4);
```

```
 loc = fname + "/" + fname + extn;
lblErrorMessage.Visible = false;
lblErrorMessage.Text = "";

using (FtpClient ftpClient = new FtpClient())
{
   string paths;
   string filename;
   //Setting up the connection with the remote server
   ftpClient.Connect(txtDestination.Text, Convert.ToInt32("21"),
                txtUserId.Text, sPassword);
   //Setting the Transfer mode to ascii
   ftpClient.RemoteFile.TransferMode = TransferMode.Ascii;
   //Transmitting the split files
   for (iCount = 0; iCount < NoofParts; iCount++)
   {
                paths = "./" + loc + Convert.ToString(iCount);
      filename = fname + extn + Convert.ToString(iCount);
      ftpClient.RemoteFile.Upload(paths, filename);
   }
}
lblErrorMessage.Visible = true;
lblErrorMessage.Text = "Files transmitted successfully";
```

```
        /* Logging*/

        //Opening the file in write mode
        StreamWriter strWriter = File.AppendText(path);
        strWriter.Write("Files Transmitted Successfully");
        strWriter.Close();
    }
    catch (Exception exception)
    {
        lblErrorMessage.Visible = true;
        lblErrorMessage.Text = exception.Message;

        /* Logging*/

        //Opening the file in write mode
        StreamWriter strWriter = File.AppendText(path);
        strWriter.Write("Error:"+exception.Message);
        strWriter.Close();
    }
}
```

Log File

ITLINFOSYS\400687has logged in

userITLINFOSYS\400687saved configuration

ITLINFOSYS\400687,Shantala29,4/21/2008,10.122.182.55

UserITLINFOSYS\400687has requested the configuration

ITLINFOSYS\400687has logged in

Files splitted successfully into2

Files Transmitted Successfully

User itlinfosys\400687has requested the configuration

itlinfosys\400687has logged in

Files splitted successfully into3

Files Transmitted Successfully

User ITLINFOSYS\400687has requested the configuration

ITLINFOSYS\400687has logged in

Files splitted successfully into16

Files Transmitted Successfully

itlinfosys\400687has logged in

Files splitted successfully into15

itlinfosys\400687has pause the transfer

6files not sent

Files Transmitted Successfully

itlinfosys\400687has resumed the transfer

files sent

ITLINFOSYS\400687has logged in

Files splitted successfully into16

Files Transmitted Successfully

ITLINFOSYS\400687has logged in

Files splitted successfully into26

Files Transmitted Successfully

CHAPTER 7

TESTING

Testing plays a major part in software development. Once the customer has specified the requirements the system has to be developed so as to satisfy those requirements and this is ensured by means of testing. In Intelligent File Transfer Wizard, various testing techniques like unit testing, integration testing, black box testing, white box testing, stress testing, acceptance testing are used to test the modules individually and also the system as a whole to determine the quality of the system. Some of the modules are as follows.

7.1 UNIT TESTING

Unit testing focuses verification effort on the smallest unit of software design such as the software component or the module. By means of unit testing the input, Interfaces and output of each module is checked for bugs.

There are five modules and each of them is tested individually to determine errors. The boundary conditions of the modules are tested to ensure that the module operates properly.

7.2 INTEGRATION TESTING

Integration Testing is a systematic technique for constructing the software architecture while at the same time it uncovers the errors associated with interfacing. All components are combined into a single unit and tested as a whole.

Bottom up Integration testing was done where in the modules of the application was combined one by one and tested and finally the application was tested as a whole. The interdependencies between the modules of this application are tested and the bugs are corrected.

7.3 BLACK BOX TESTING

Black box testing is a technique for testing the functionality of the system by providing a set of inputs and checking whether the expected outputs are received. It uncovers errors in performance, interface and initialization errors.

In this application, Boundary Value Analysis testing technique is used to generate test cases and each of the functionalities is tested with the maximum and minimum values.

7.4 WHITE BOX TESTING

White box testing is the process of testing all the independent paths. It ensures that all independent paths within a module have been tested at least once and the internal data structures are valid.

In this application, every module is tested in both the client and server systems. All the important logical paths are identified and used to generate test cases. The results were evaluated to determine the validity of procedural detail.

7.5 STRESS TESTING

Stress testing is executing the application in such a way it demands abnormal quantity of resources. The amount of data load is increased and tested for results.

The server software of this application is tested for the "Server not available" messages and the capacity demands. A tool called Capacity Planning system is used to determine these facts.

7.6 ACCEPTANCE TESTING

Acceptance Testing is done by the customer. It focuses on overall features and functionalities of the system that are visible and reviewable by the customer. The application was tested by the customer and accepted as a quality product since it satisfies the user requirements.

7.7 TEST CASE REPORT

The test case report after testing the Intelligent File Transfer Wizard application is as follows

TESTCASE	*DESCRIPTION*	*PREREQUISITE*	*EXPECTED RESULT*	*PASS/FAIL*
1.1	Choose either of the tab	Transfer and Help tabs should be present	The particular page should be displayed	PASS
1.2	Choose Transfer page tab	NIL	A new window which gives the List of File Transfer controls like File Upload Destination User Id Password Time of Transfer File size File Split size Date with Load configuration, Save Configuration,Bendwidth,TransferFiles,Pause and Resume buttons should open	PASS
1.3	Choose Help Page tab	NIL	Help page displays the instructions to use the Transfer Page	PASS

1.4	On click of Load Configuration	Username should be provided	Data in the text fields must be loaded in the fields from the log file	PASS
1.5	Click the Resume button	File Transfer must be aborted	Files which are not sent in the previous transfer has to be transmitted	PASS
1.6	Split size chosen greater than File size	NIL	Error message has to be displayed indicating split size greater than file size	PASS
1.7	Incorrect Password	NIL	Error message saying Incorrect password unable to login	PASS
1.8	Ftp Service disabled	NIL	Error message has to be displayed specifying service disabled	FAIL
1.9	Invalid server address as destination	NIL	Error message has to be displayed requesting for a local file name	PASS

CHAPTER 8

PERFORMANCE AND LIMITATIONS

The existing system is studied and the drawbacks of the existing system are analyzed and the proposed system is designed in a manner such that the drawbacks of the existing system are overcome and the system serves proficient.

8.1 MERITS OF THE SYSTEM

8.1.1 Effective File Splitting

Intelligent File Transfer Wizard serves efficient by splitting the large files into pieces and transferring them, thereby it saves the bandwidth. If the user does not specify any size, the system by default chooses a size as per the bandwidth level. The application is designed in such a way that a batch file is generated when splitting the file and transferred to the destination allowing the user to join the split files on the other end.

8.1.2 Bandwidth Tracing

The system enables the user to view the bandwidth level and determine the network traffic. By means of this feature, the user determines the split size of the files. The bandwidth level is updated every two seconds.

8.1.3 Scheduling the Transfer

The biggest advantage of using Intelligent File Transfer wizard is that the users are allowed to schedule the transfer. The system transfers the files on specified time and notifies the user.

8.1.4 Recovery and retransmission

In case of network clashes the system serves robust. It keeps track of the order of files transferred and in case of failures it retransmits the lost files automatically. Similarly in cases of server overloaded, the application transmits the files from scratch.

8.1.5 Alert messages to user

The user is notified when there is network clash, in case of files being lost, invalid server address and invalid file configuration. The system tracks all types of network errors and alerts the user with the detailed description.

8.1.6 Full function Logging

All the events that take place during file transfer are logged effectively. A separate log file is maintained to log all the events. In case of an existing user, the entire configuration is retrieved and displayed, on click of Load Configuration button. On viewing the log file, user identifies the sequence of operations taken place during the transfer and whether the files have reached the destination successfully.

8.2 CONCLUSION AND FUTURE ENHANCEMENTS

8.2.1 CONCLUSION

In the current world of Information Technology, companies like Infosys provide most of the services to people located at various geographic locations and it becomes crucial to transmit files across a network irrespective of the network tribulations to achieve client satisfaction. This enabled to automate the development of the system to tackle the file clashes, transfer as per the schedule. Thus the system "Intelligent File Transfer Wizard" has been developed so as to satisfy the requirements and to serve robust for the future.

8.2.2 FUTURE ENHANCEMENT

Intelligent File Transfer Wizard is developed in such a way it is flexible to adapt any changes in the future. The system can be enhanced to satisfy additional requirements. The system can also be modified to improve its efficiency. Some of the enhancements that can take place in the future are as follows.

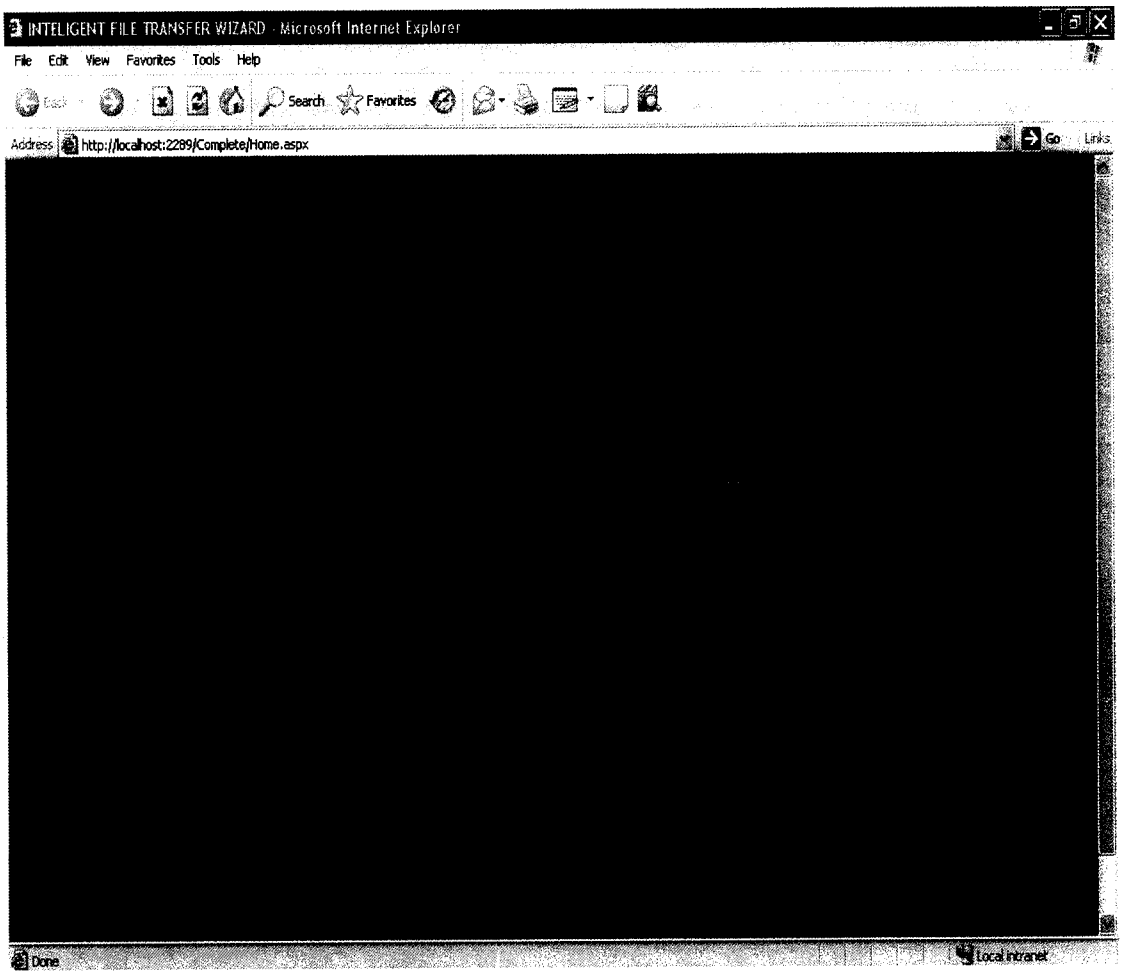
⇒ The application has been developed for windows operating system at present and in future a more generic version of the system can be developed by enhancing the currently developed system to make it suitable for all operating systems including linux, unix, etc.

⇒ The log files can be cleared automatically when it exceeds a maximum size. By means of this, usage of disk space can be reduced.

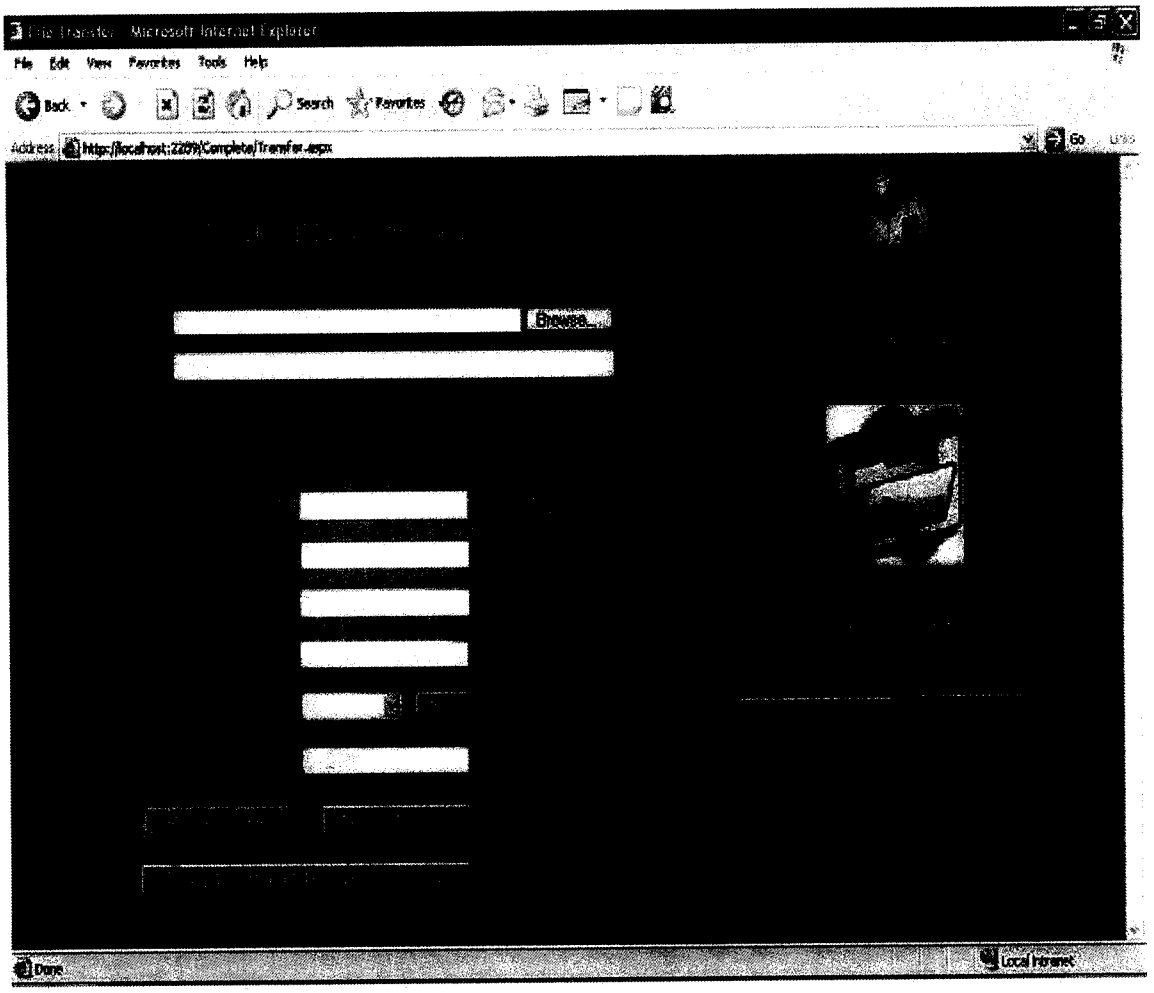
CHAPTER 9

APPENDICES

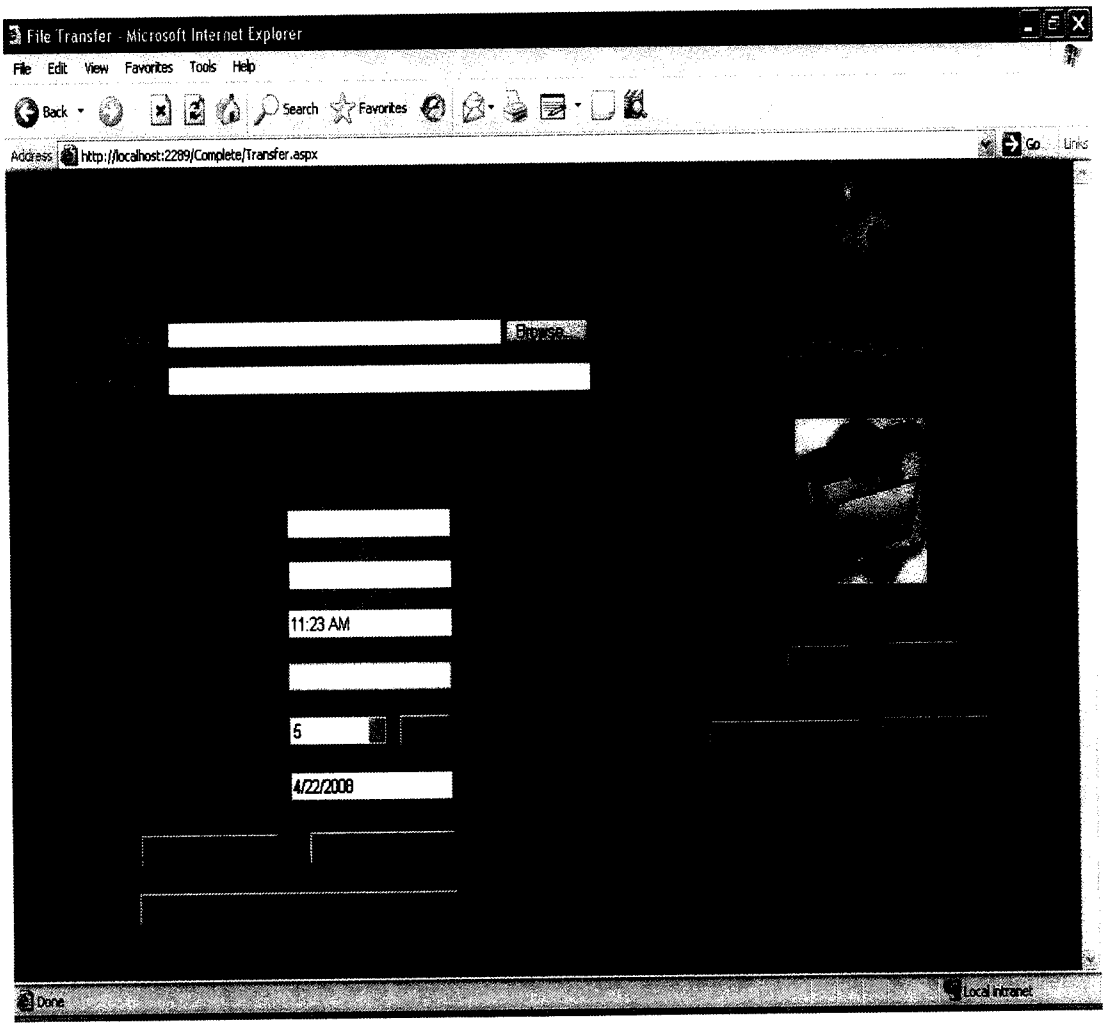
9.1 SCREEN SHOTS



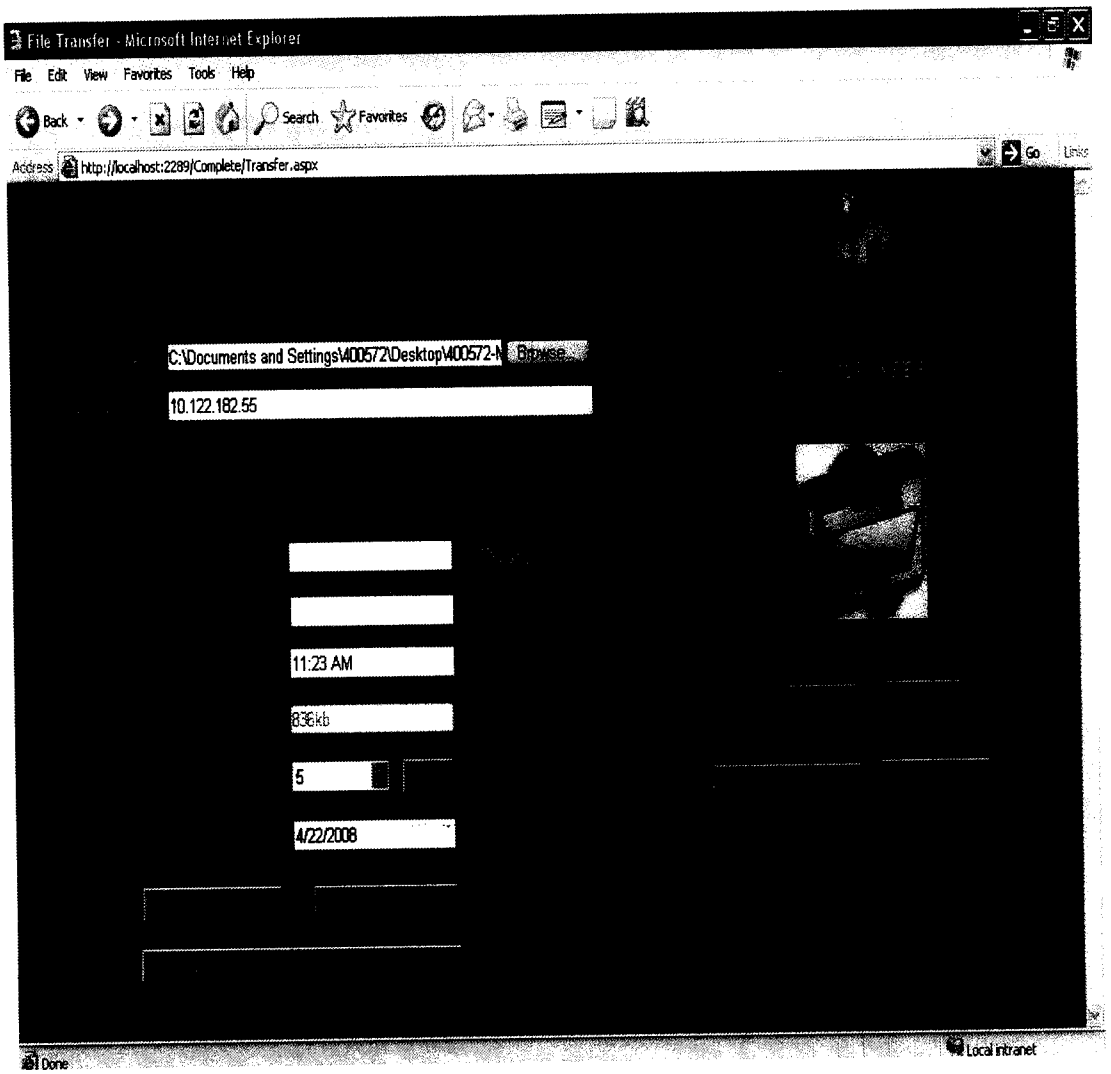
Screen Shot 9.1.1: HOME PAGE



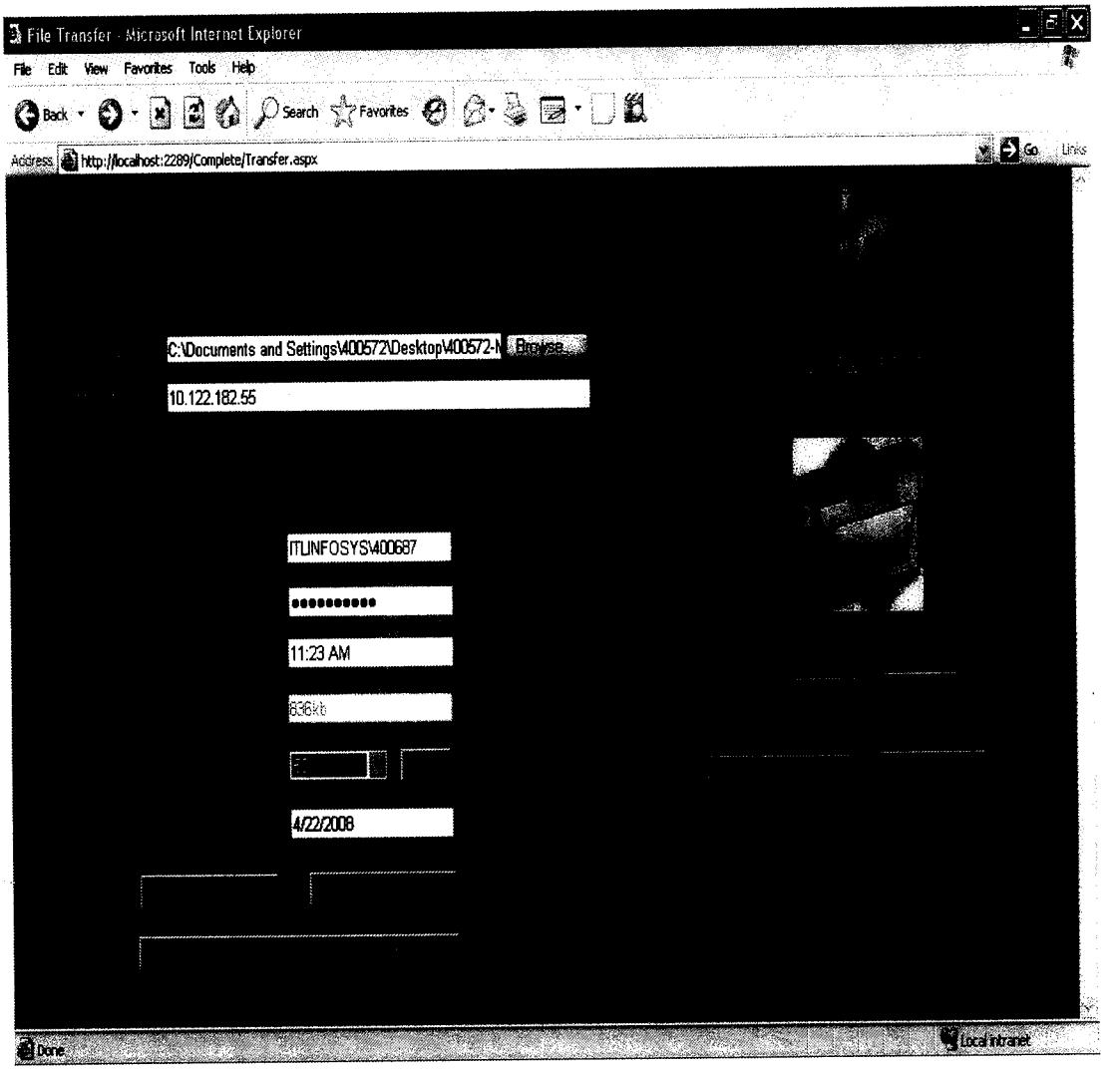
Screen Shot 9.1.2: FILE TRANSFER PAGE



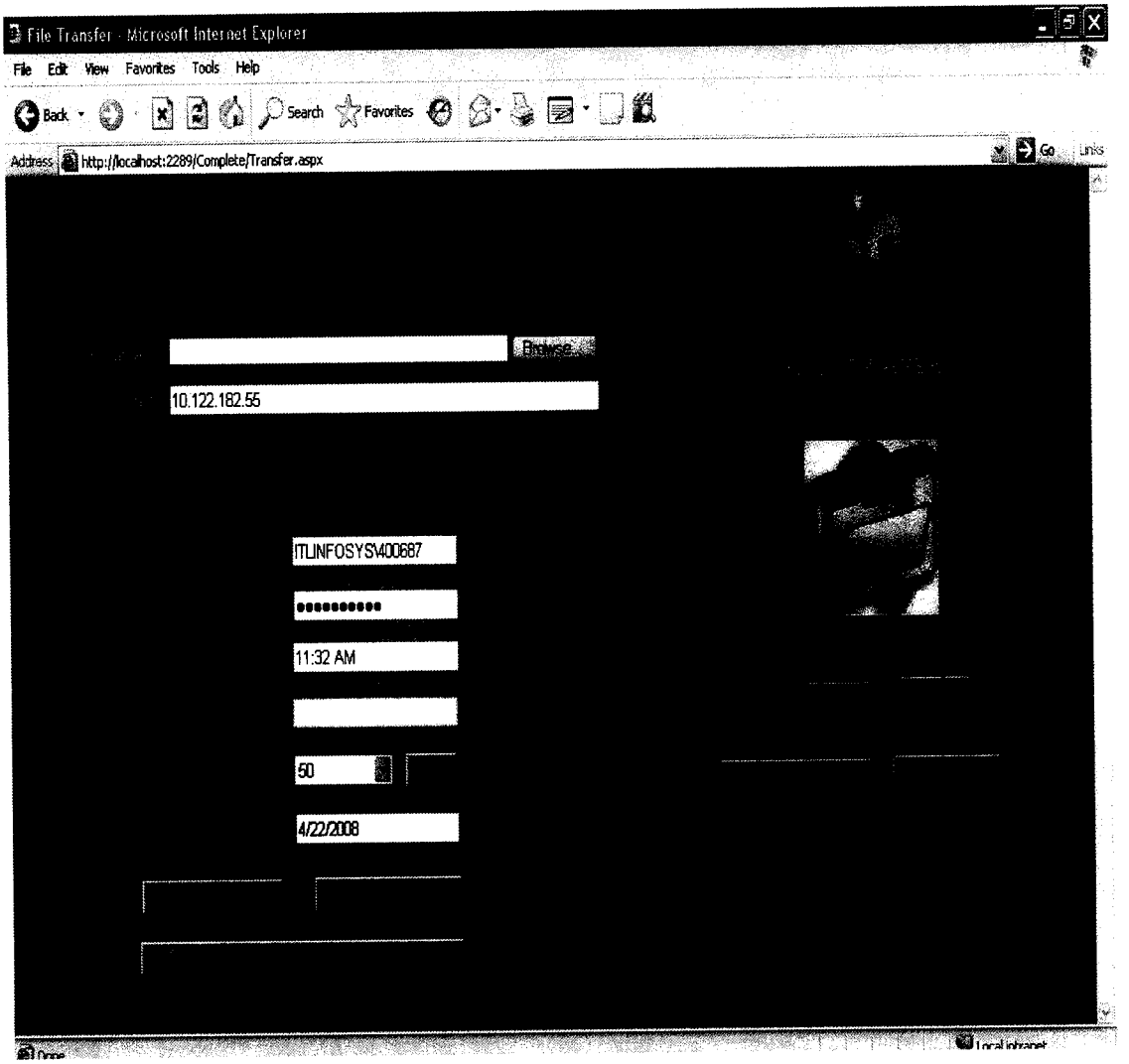
Screen Shot 9.1.3: TRANSFER PAGE WITH DEFAULT VALUES



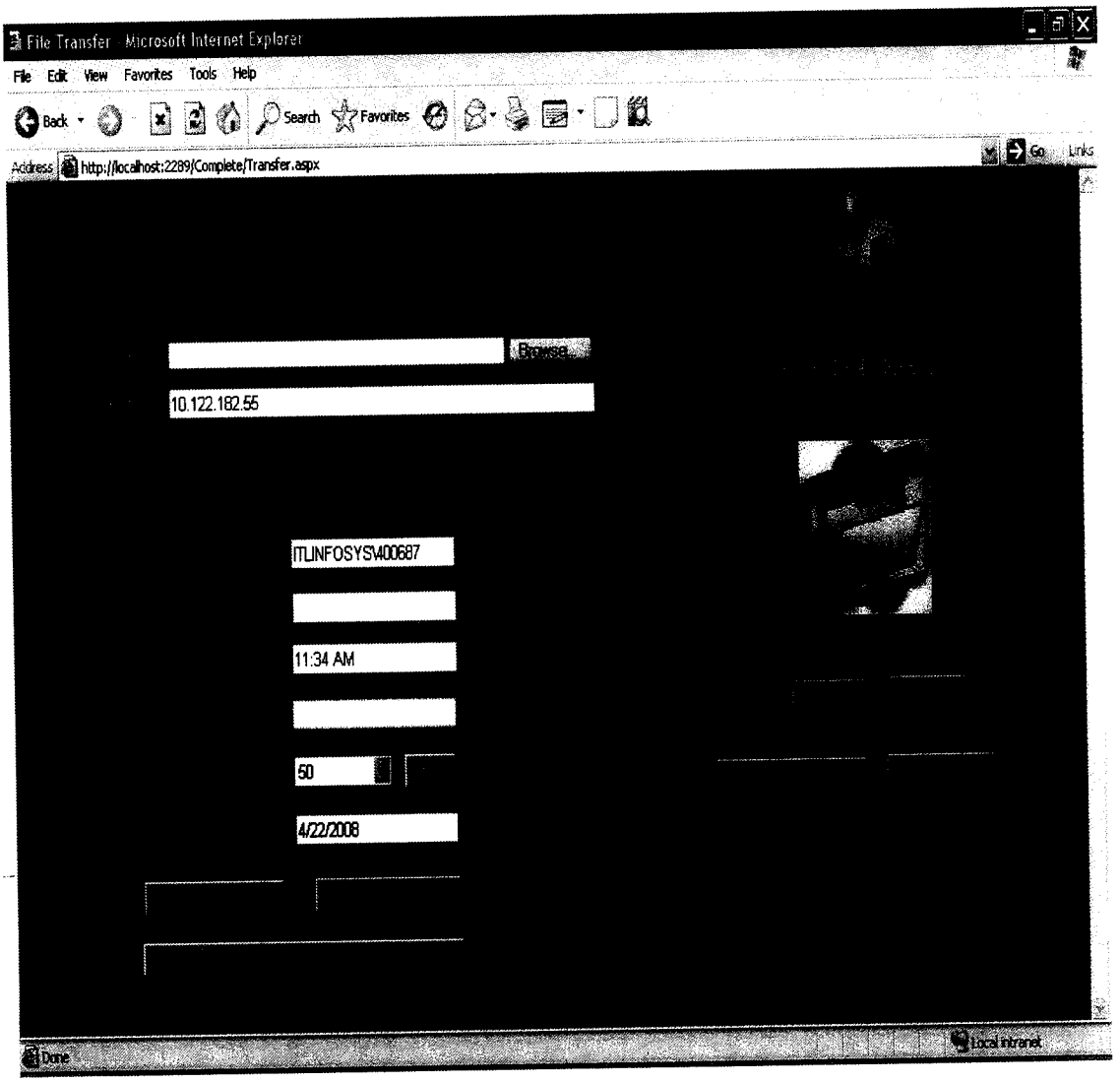
Screen Shot 9.1.4: TRANSFER PAGE WITH VALIDATION



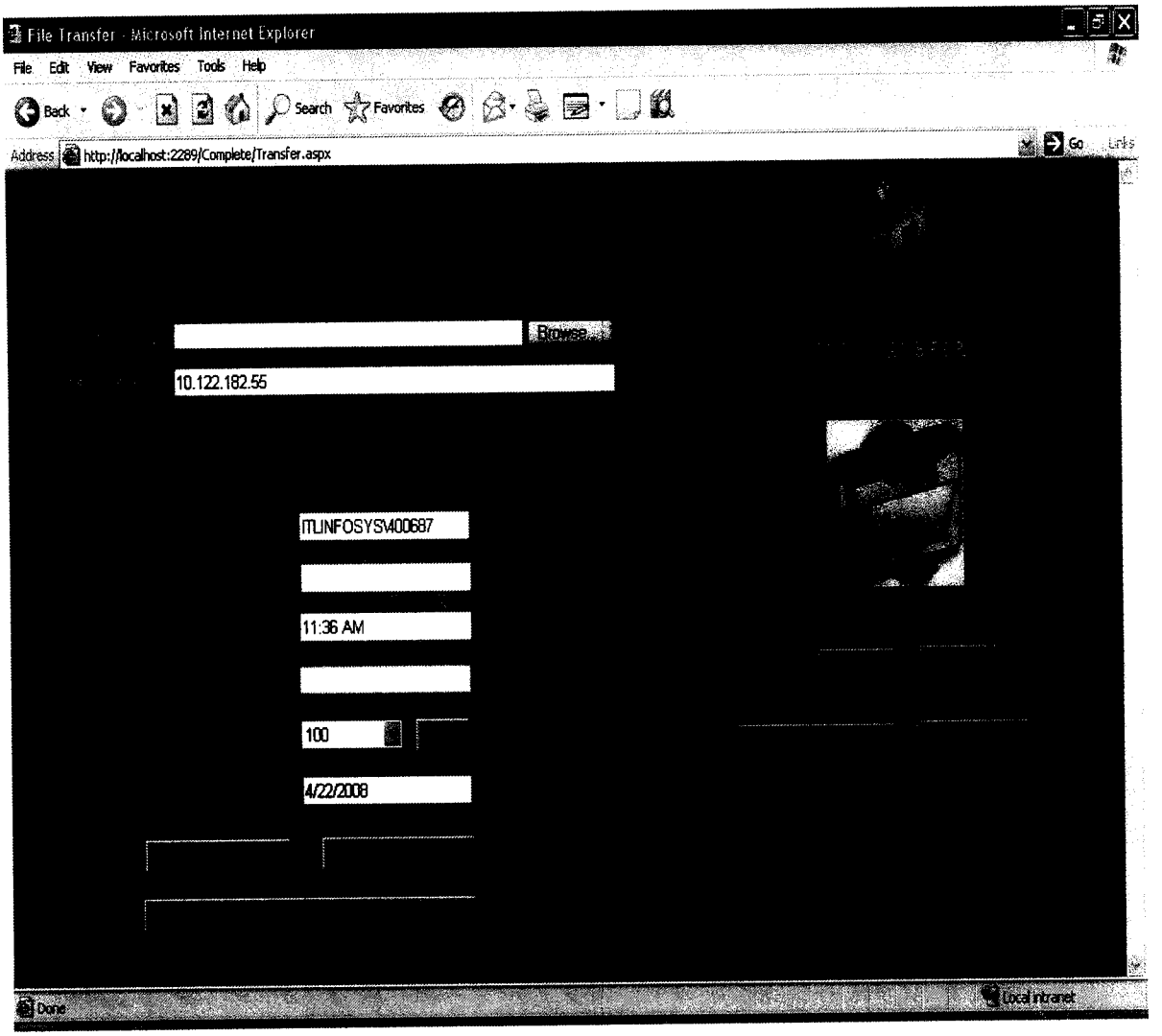
Screen Shot 9.1.5: TRANSFER PAGE WITH DATA



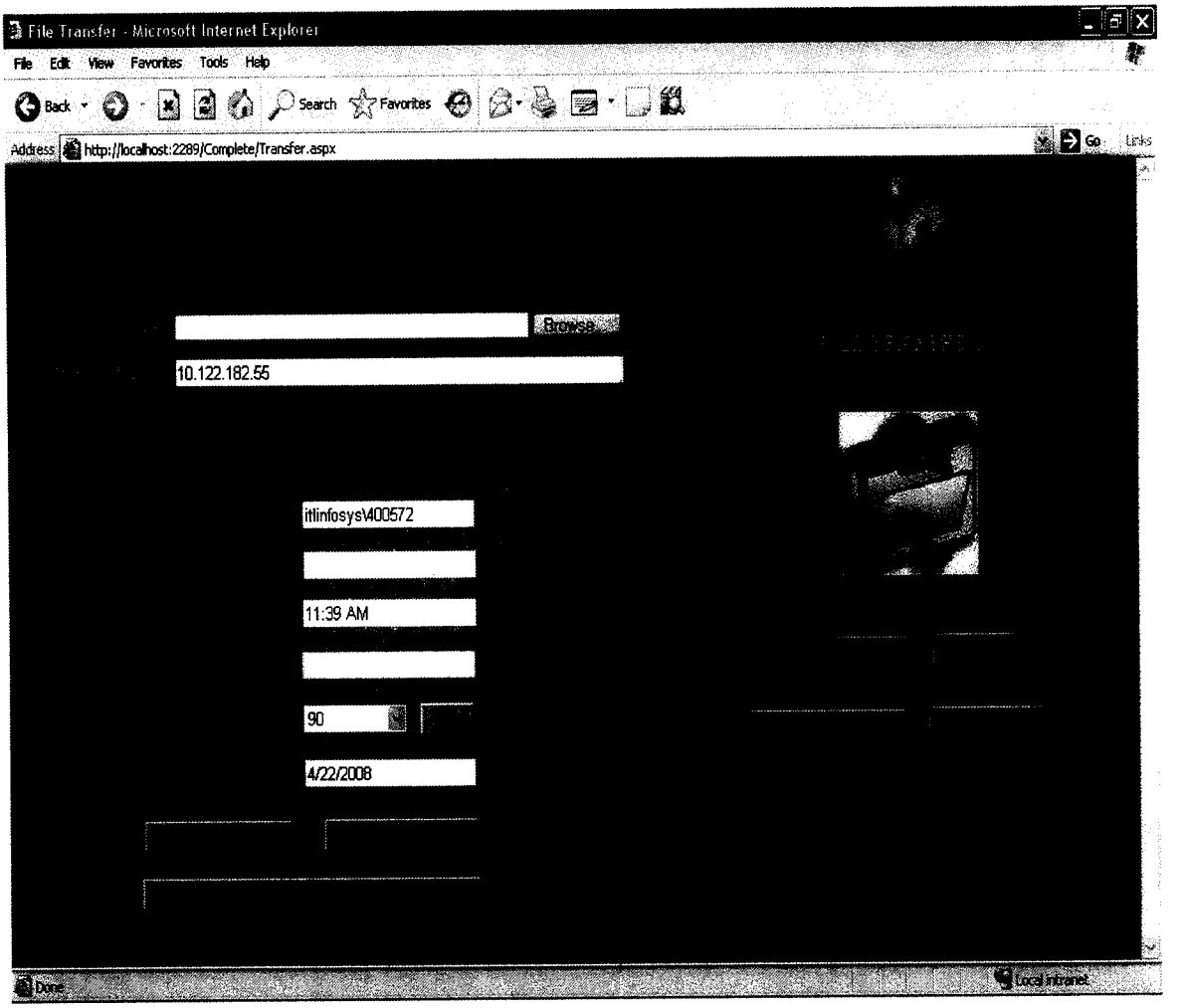
Screen Shot 9.1.6: SPLIT COMPLETE



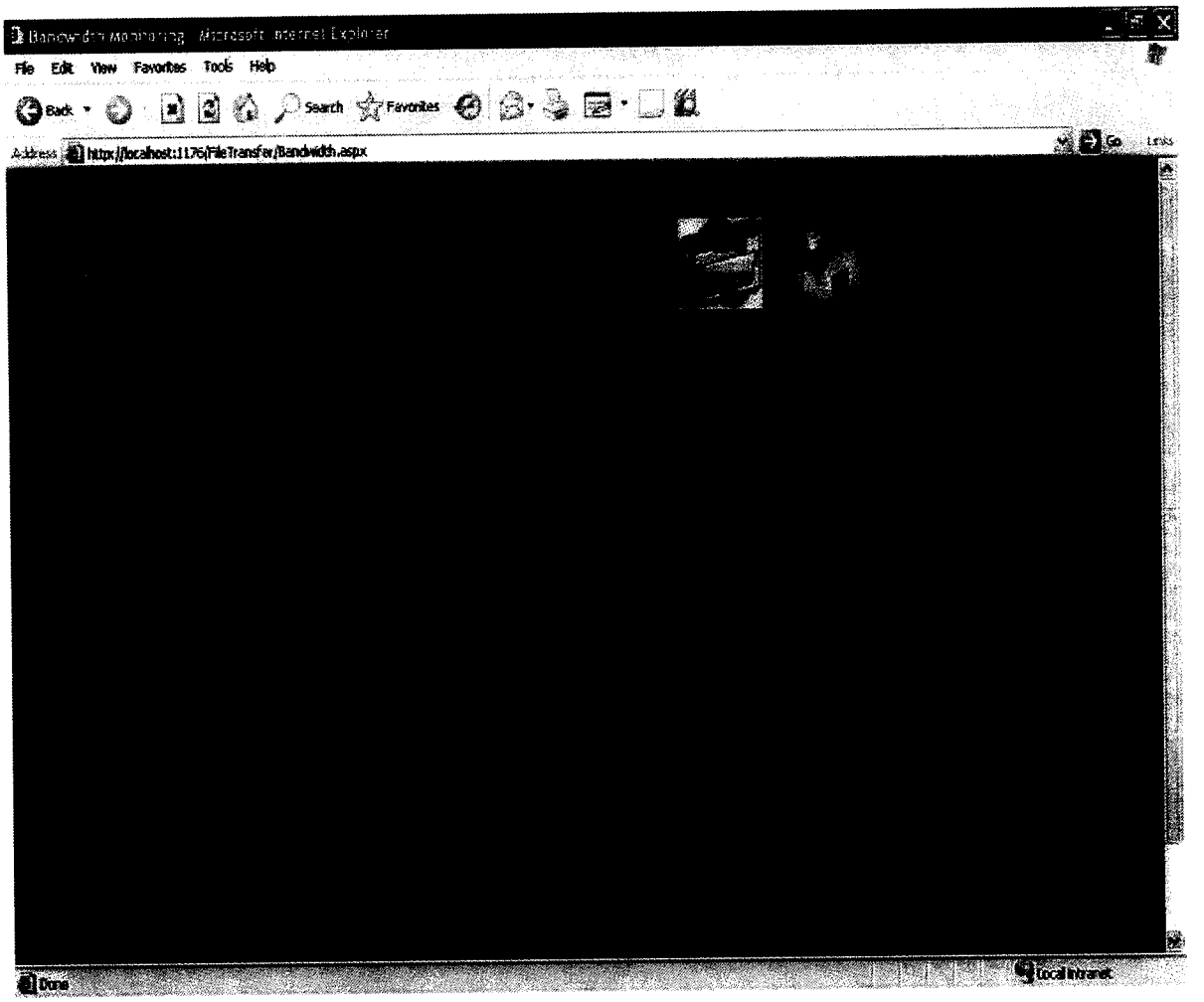
Screen Shot 9.1.7: TRANSFER COMPLETE



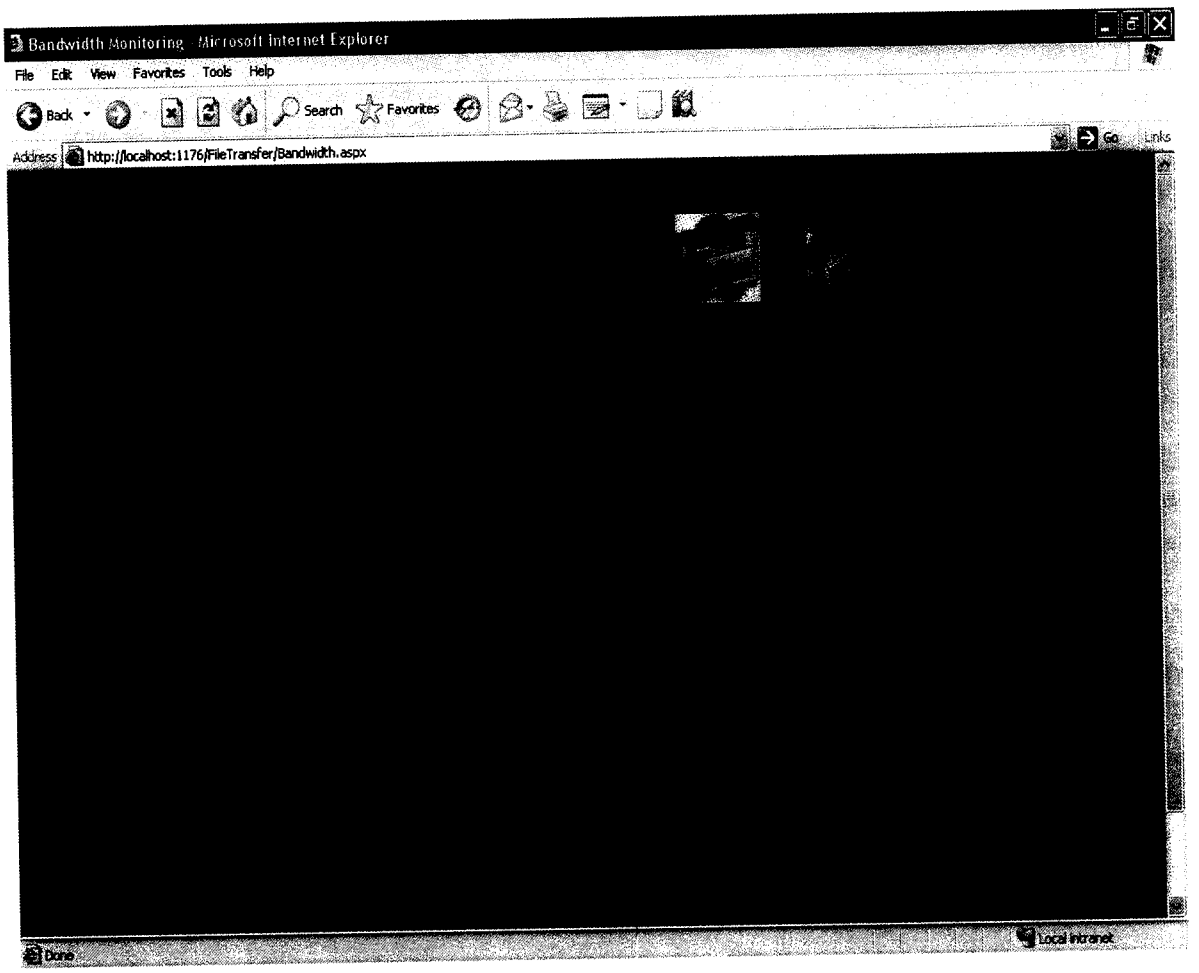
Screen Shot 9.1.8: TRANSFER PAUSED



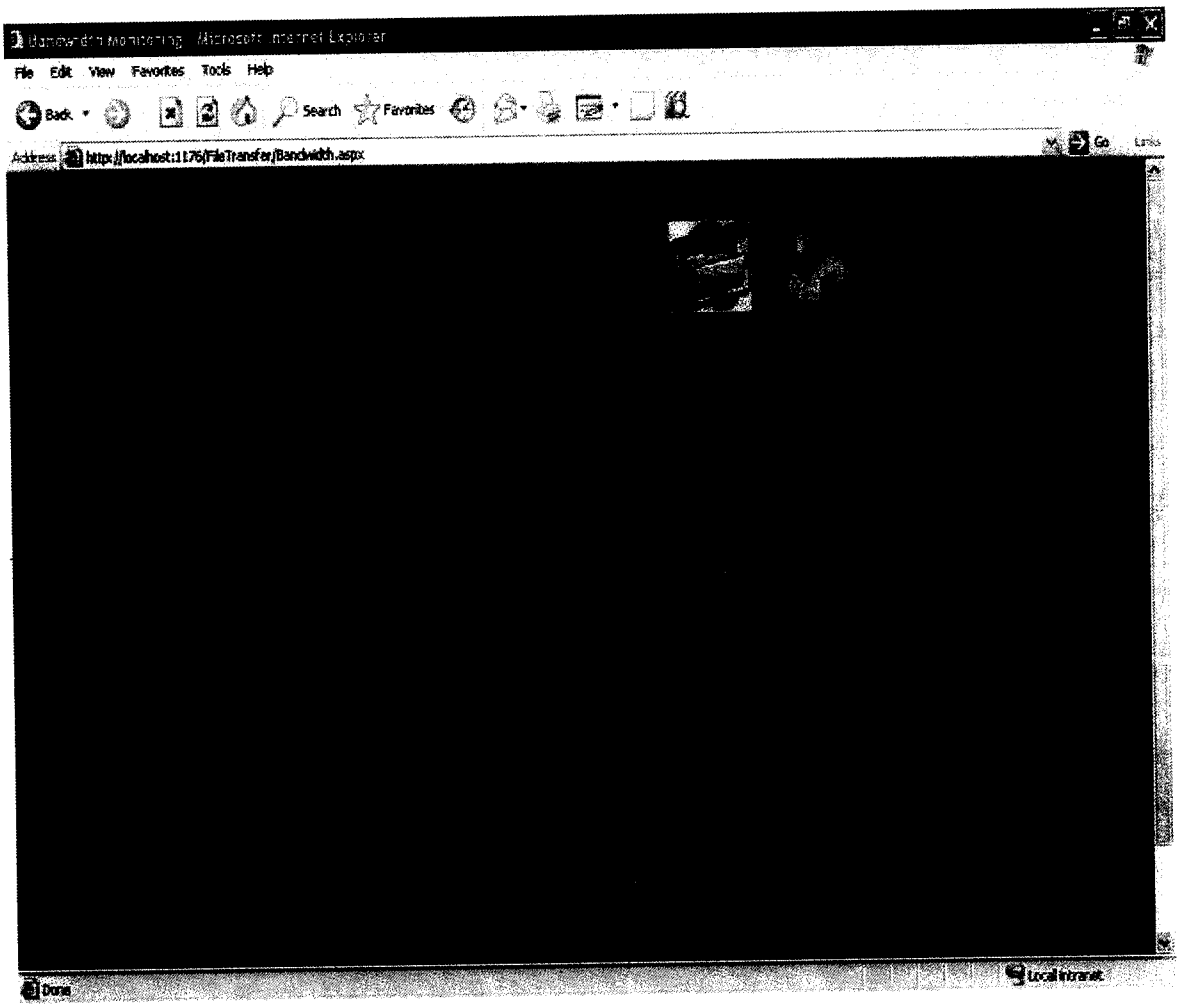
Screen Shot 9.1.9: TRANSFER RESUMED



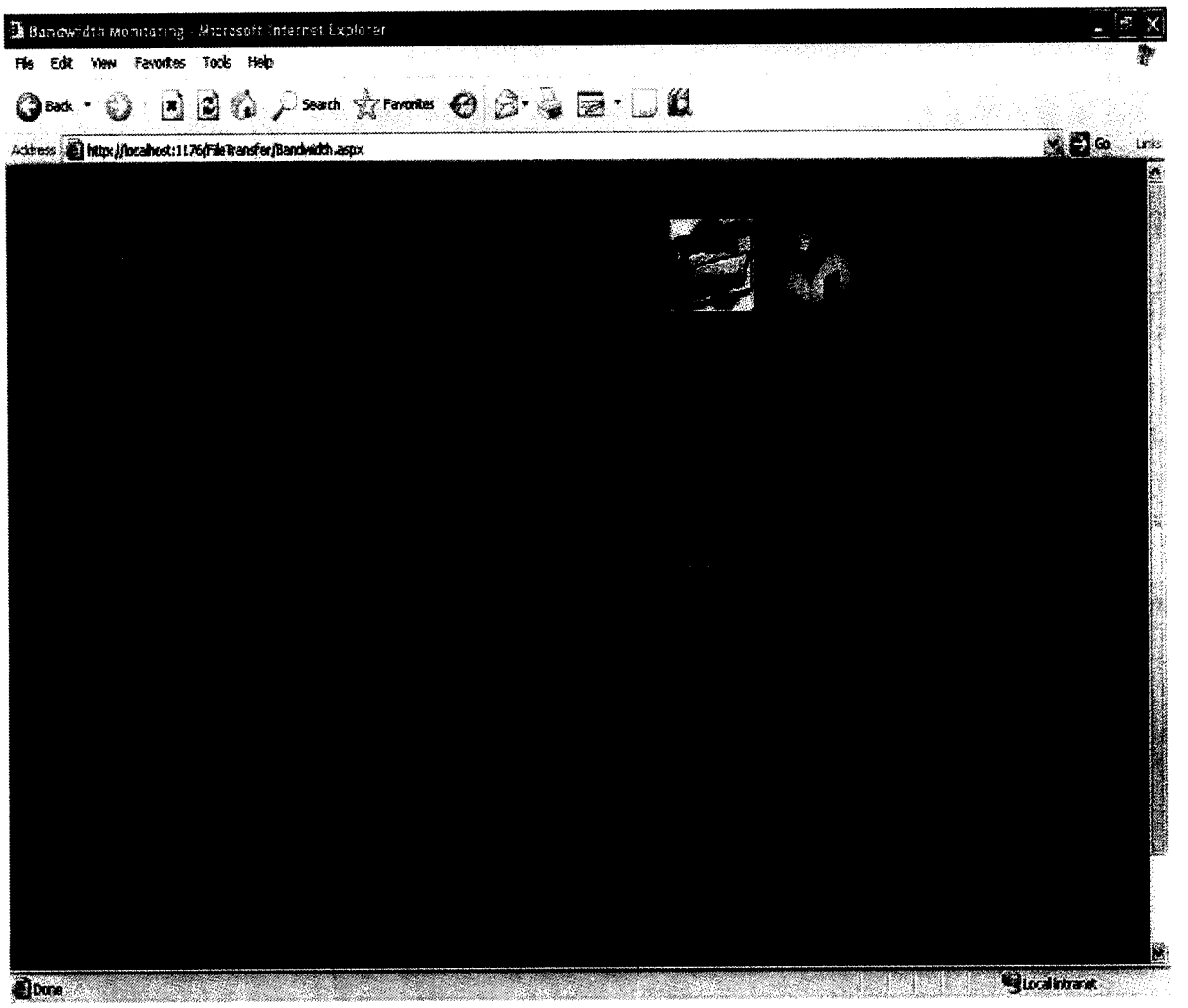
Screen Shot 9.2.0: BANDWIDTH PAGE



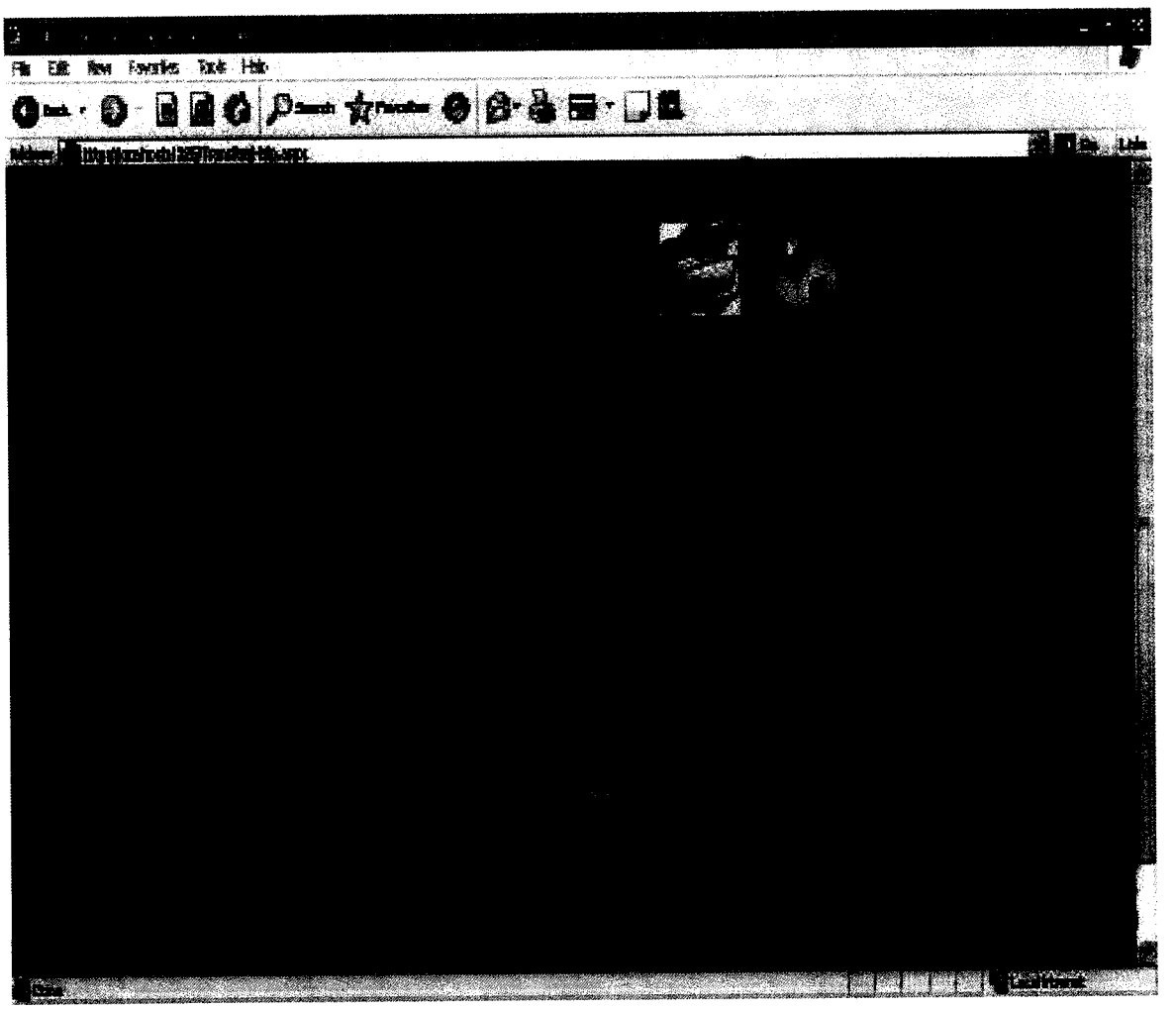
Screen Shot 9.2.1: BANDWDITH PAGE 1



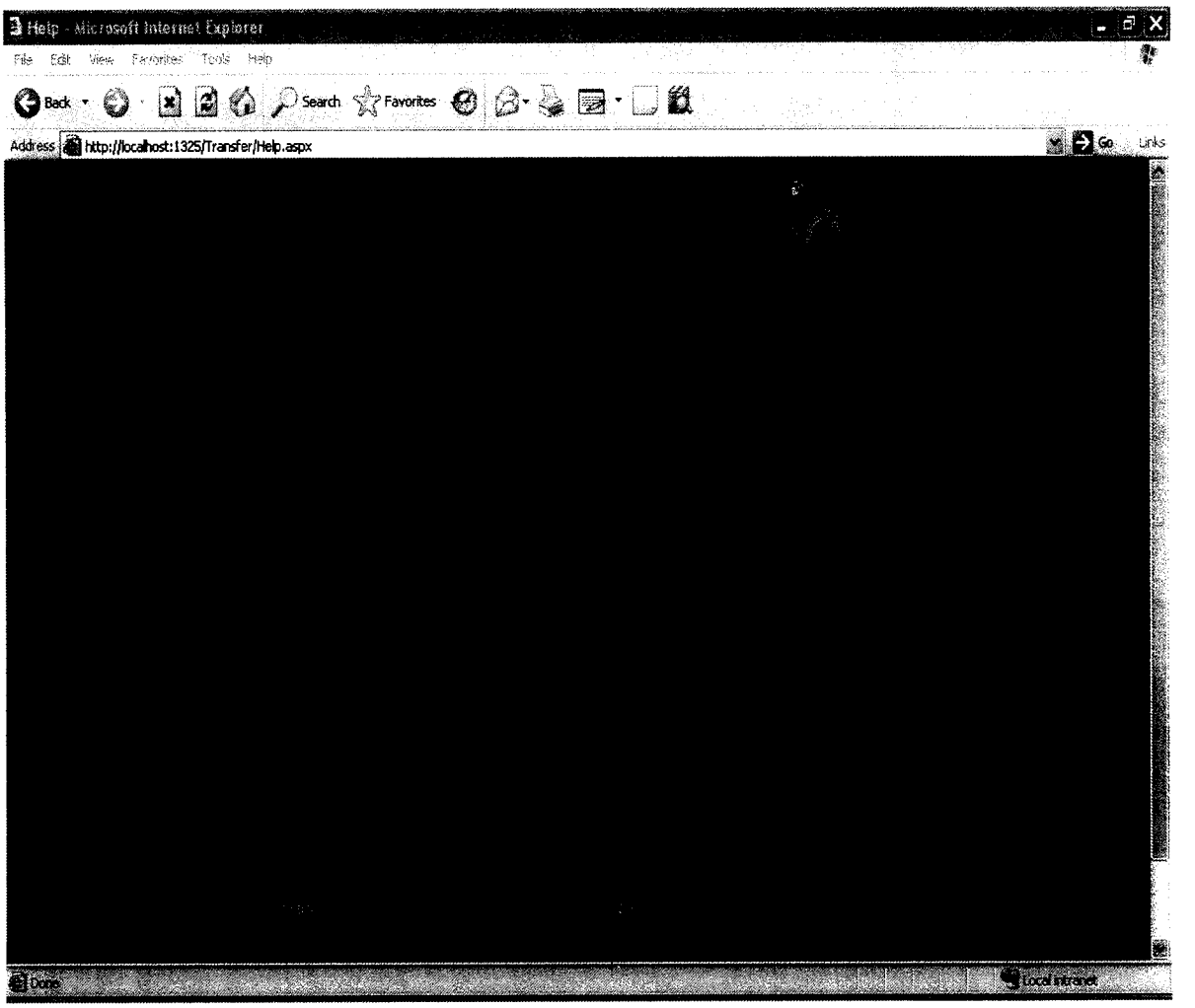
Screen Shot 9.2.2: BANDWIDTH PAGE 2



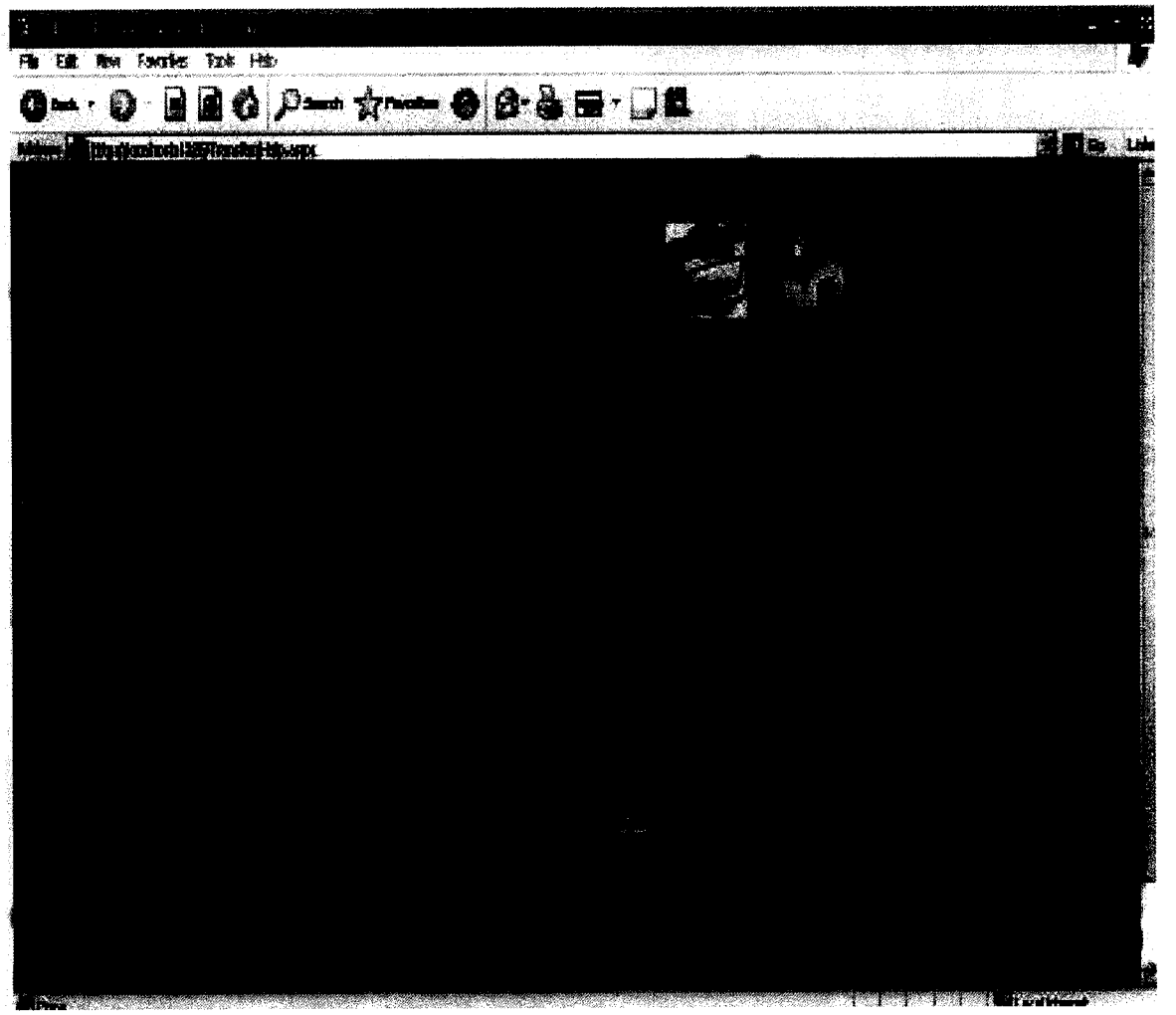
Screen Shot 9.2.3: BANDWIDTH PAGE 3



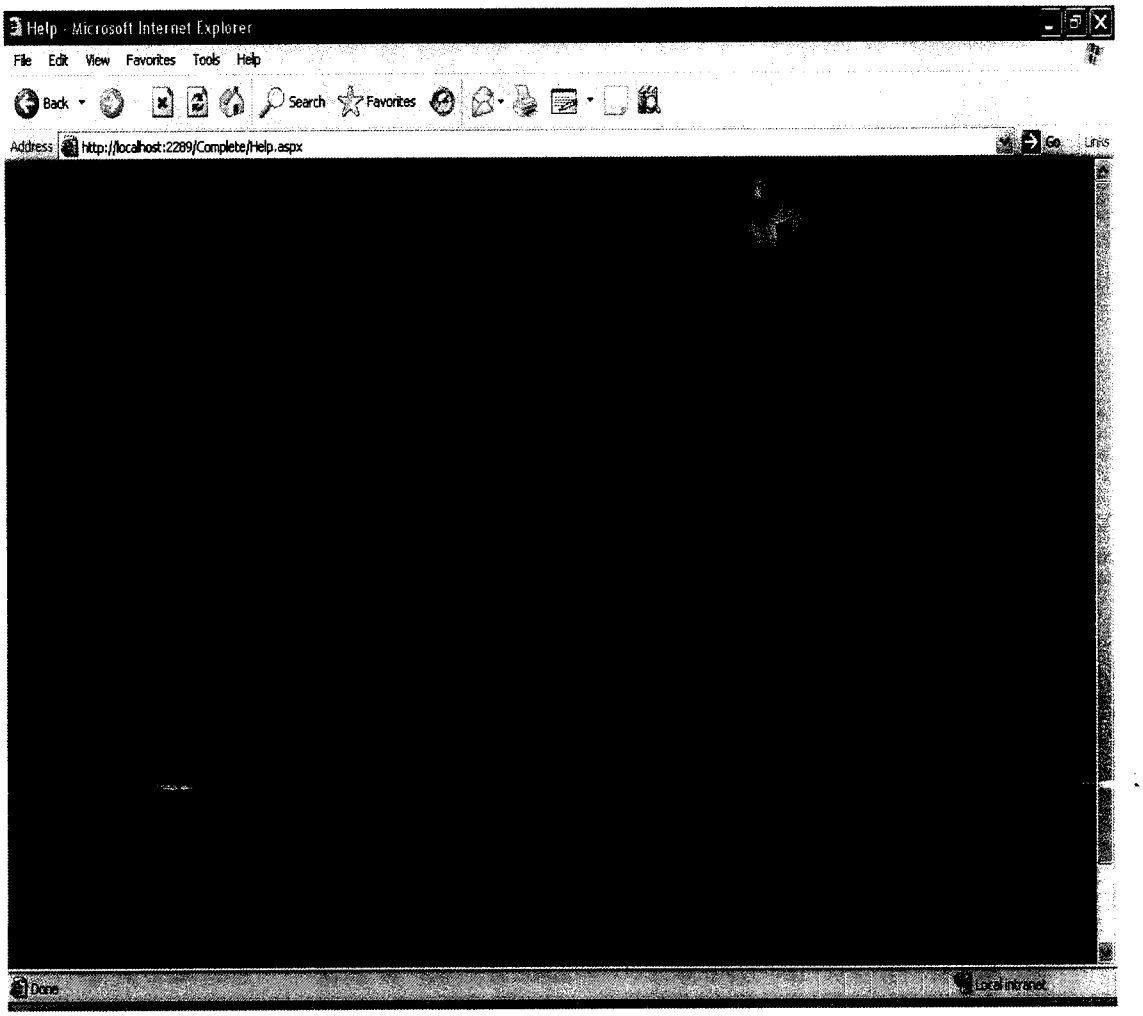
Screen Shot 9.2.4: BANDWIDTH PAGE 4



Screen Shot 9.2.5: BANDWIDTH PAGE 5



Screen Shot 9.2.6: BANDWIDTH PAGE 6



Screen Shot 9.2.7: HELP PAGE

9.2 USER MANUAL

1. User provides the file configuration
2. System validates the configuration,
   - If valid moves to step 3.
   - If invalid sends an error message to user.
3. The Bandwidth level of the network is monitored by means of clicking the monitor bandwidth button
4. As per the bandwidth level, the user selects the split size so as the system splits the file into pieces of size as specified by the user.
5. Then the file packets are transferred over the network on click of the transfer files button.
6. In case of network clashes, the lost packet id is determined from the log file
   - If packet id is one then transmit the packets from the scratch.
   - Else if packet id is that of a particular packet then transmit the particular file packet.
7. If the user pause the transfer, order of transfer is stored in the log file and waits for specific time period.
8. If the user resumes the transfer or waiting time passes out, the system starts retransmitting the packets from the last transmitted packet.
9. All the events taking place during the transmission are logged.
10. Once all the file packets are transmitted, success message is sent to the user.

CHAPTER 10

REFERENCES

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