

ANNUAL ASSESSMENT REPORT

Name of Center: Information Technology Center (A Centre for Providing Internet and Campus Wide Network Services)

Year of Report: 2011-12

History:- IT Centre was established in the year 2000 to provide IT Services in the university. University has a huge Campus Wide Network that interconnects distant campuses and various departments through optical fiber.

First phase which was completed in April 2001, networked 18 departments having 524 nodes. Second phase was completed in Oct 2002, which connected ten more departments and installed 331 additional nodes. During third phase we have connected IET and Nalanda Campus to our central server located at IT Centre, Khandwa Road Campus. IET has been connected by laying 2.1 kilometer fibre optic cable where as Nalanda Campus which is six kilometer away from Khandwa Road Campus has been connected using 10 Mbps leased line.

During third phase expansion additional 150 nodes have been added to Nalanda Campus, RNT Marg Network and 128 nodes to IET network.

After completion of third phase i.e. from Feb, 2004 all the departments of the University are now on Campus LAN having access to the Internet and other services.

During fourth phase all university hostels are connected to IT centre through wireless link. All students in university hostels have Internet facility round the clock.

Under UGC-INFONET scheme, from Jan 2004, UGC has provided our University free subscription to the various e-Journals along with 2 mbps bandwidth through ERNET.

MISSION:-

Provide value through leadership in the development and delivery of innovative computing and information technology solutions to facilitate the Teaching, Learning, Research, and Governance goals of the University.

Objectives:-

- To improve quality of research, teaching and learning by providing the Internet access to faculty, research scholars and students.
- To share University documents and resources.
- To improve reliability, quality and efficiency of University operations.

IT Center Staff:-

- **Head, IT Centre** : **Dr. Vrinda Tokekar**
(Additional responsibility as Head IT Centre,
Professor & Head, Dept. of IT,IET, DAVV)
- System Administration : Mr.Rajesh Yadav, MCA
- Web Designer : Mr. Nandkishore Buwade, MCA
- Programmer : Mr. Alok Malviya, M.Sc., M.Tech.
- Asstt. Programmer : Mr. Ravi Sharma, M.Sc (IT)., M.B.A.
- Jr. Network Administrator : Mr. Jaideep Sisodiya, M.Sc.(Elex.)

Future Plan:

Document Management & work flow management.

- File tracking system for e-governance.
- Video Conferencing among the campuses.
- Degree Printing with Photograph & Signature.
- Personal Advance Management System.
- To provide IP Telephony.
- To use the infrastructure for distance education.
- To extend facility to hostels & faculty residence
- To develop virtual classroom fitted with videos, conferencing and broadcasting capabilities.

Activities:-

IT Services and Internet access is provided to all departments. The centre is equipped with an array of high-end servers using 7 hours battery backup. Internet access is available to departments round the clock (24 x 7). There are more than 125 computers with latest configuration in the IT Centre Lab to provide computing facility and Internet access to university students from 8:30 AM to 8:30 PM.

Labs:-

There are three Labs in the IT Centre, having 10 High End Servers for Websites, Mail Server, Proxy Server, Mail Server etc. There are 125 Nodes connected with switches using CAT 5 UTP cable.

DAVV Campus Network

The following statistics would provide an idea of the infrastructure created and its dimensions. There are very few universities in the country having this kind of a infrastructure, none in M.P. and many surrounding states.

- 44 Departments interconnected using extended star topology.
- 1500 Nodes.
- 90 Switches, (3COM 66, D-link 19, Netgear 5,HP-7500(1),HP-2510(10)).
- Internet Access through NKN 1Gbps link now onwards
- Fiber Optic Cable length (Backbone): 10 Kilometer.
- UTP Cable length (Copper Wires, within the departments): Approx. 100 KM .
- 100/1000 Mbps internal bandwidth.
- High performance 4007 Switch with 4 million packets per second processing or approximately.
- Structured cabling.
- Network Management Station.
- Network Security: Through Firewall.
- Invested Rs. 4.5 Crore.

- More than 8000 users.
- UPS : 15 KVA, 8 hrs. Backup
 - 10 KVA, 8 hrs. Backup
 - 05 KVA, 2 hrs. Backup

Details of Equipments:

- Servers:- IBM (Intel Xeon)- 4, HP (Intel Xeon) - 5, Wipro (Intel Xeon)-4.
- Routers (Cisco -1700)- 7, (Cisco-2800)- 1
- (Juniper M10i 3600 series: 1)
- Lease line modems RAD, Keymile: 8
- Wi-Fi Routers -13, Andrew Grid Antenna -9, Omni Directional Antenna -6
- Firewall Cisco ASA5520, Fortigate 110C UTM
- IBM RAID SERVER (1)
- Motorola Campus Wi-Fi :- 2-6000 Controller, 7-650 Outdoor Access Unit, 622 Indoor Unit-45.

Software:-

Linux OS : Suse Enterprise 9.0- 64 bit -16 Processor, CentOS (Open Source), Redhat Enterprise addition .

- Antivirus Software : Trend Micro Enterprise Server 800 users.
- Database Server : Oracle 10g Enterprise Server

IT Centre Servers :-

- Mail Server
- Web server
- Proxy Server
- DNS server
- Bandwidth Monitoring Server
- LDAP Server
- Departmental Firewalls (7 No.)
- Campus Wide DHCP Server
- Student- ID Server

- Result Server
- EDU Research Server
- Library Server
- University Automation Server
- Antivirus Server(Trend Micro)
- Caching DNS

Mail Server :-

Hardware configuration: - AMD Opteron(tm) Processor 250, CPU MHz: 2393.207, RAM 8 GB

Operation system: - Linux kernel version 2.6.18-120.el5PAE (Red Hat 4.1.2-42)

Outgoing mail server user SMTP (Simple mail transfer protocol)

Incoming mail: - IMAP (Internet message access protocol) DOVCOTT

Web based mail client is (Squirrel mail)

Web Server :-

Hardware configuration: - Intel(R) Xeon(TM) MP CPU 3.16GHz, RAM 4 Gb,

Operating system: - Linux version 2.6.32-131.0.15.el6.x86_64 (Red Hat 4.4.4-13)

Httpd web application installed, php ,mysql ,php-myadmin

Proxy server :-

- Hardware Configuration: - HP ML 550 with quad core cpu configuration, IBM -360 dual core cpu configuration.
- CPU processing speed: Intel(R) Xeon(TM) MP CPU 3.16GHz, RAM 4GB.
- Operating system: Linux version 2.6.32-220.4.2.el6.x86_64 (Centos Open source)
- Application: Squid proxy, Ldap authentication by PAM LDAP.

LDAP Server : -

- Hardware Configuration: - IBM -160 Dual core configuration, CPU speed Intel(R) Xeon(TM) CPU 3.20GHz, RAM 2 GB.
- Operating System: Centos -6 , Linux version 2.6.18-274.18.1.el5.
- Application Installed: Open-ldap client and server, php , phpmyadmin , httpd .

Antivirus Server:-

- Hardware configuration: - IBM -160 , CPU speed Intel(R) Xeon(TM) CPU 3.20GHz, RAM 2 GB.
- Operating System : - Windows Server -2008.
- Application : - Trend Micro Smart Scan enterprise additions .

Caching Name Server : -

- Hardware Configuration: - Wipro - , Intel(R) Xeon(TM) CPU 3.20GHz, RAM 2 GB
- Operating System: - Suse Enterprise – 9, Linux version 2.6.5-7.97-smp
- Application: - DNS Bind .

Result Server :-

- Hardware Configuration :- HP ML -250 , 2 GB Ram , Intel xeon 3.2 Ghz.
- Operating System : Windows – 2003.
- Application : - Java , Oracle-10g

Campus Wide DHCP Server :-

- Hardware Configuration :- Intel i-5 Processor with 8 GB RAM
- Operating System: - Windows Server -2008.
- Application: - DHCP server.

I.T.Center Services:-

IT Centre caters to the computing needs of the faculty, staff and students for their research and teaching. The IT Centre is solely responsible for keeping the Electronic Communication & Computation related facilities available to each and every member of Devi Ahilya University.

IT Centre supports an institute wide 100 Mbps fiber optic network that connects all the academic departments, hostels, library and other central facilities to the IT Centre. Internet access is provided through a 1Gbps dedicated Internet link.

The services provided by the IT Centre include.

- Installation & Maintenance of Servers for:
 - Internet Access.
 - E-mailing Facilities.
 - World Wide Web.
 - Data base.
 - Digital Library.
 - Computation Facilities.
- Management & upkeep of the University Website & Intranet Web Page.
- Management of the Centralized Computer Lab accessible to all the students of the institute as well as to other local researchers/students.
- Maintaining the huge campus network, consisting about 1500 nodes.
- Providing technical assistance to the Academic Institutes.
- ITC provides electronic mail, World Wide Web, DNS, FTP and other services.
- ITC also provides computing facility for visually challenged students.

User Services

- Internet Access in departmental Labs & IT center
- 24X7 Internet Access in student hostels thru Wi-Fi connectivity

- E-mail service (mail.dauniv.ac.in)
- Web services (www.dauniv.ac.in)
- Online Results
- Research Compendium (database of Ph.D. Registration/award since 1964 more than 20,000 records)
- Survey of Education Research
- Applications
- Online University Results
- Digital Library (UGC Infonet)
- Online Electronic Journals
- ACM,IEEE & many more
- Facility for Visually Challenged Students “Drishti”

Use of Open Source Softwares:-

- Operating System : Linux, CentOS 6.0
- Firewall : Shorewall
- Proxy : Squid 3.0
- E-Mail : Dovecot
- User Authentication : LDAP
- DNS : Named
- MRTG : Network monitoring tool (Multi Router Traffic Grapher).

Recent Developments..

- Up gradation of Internet Bandwidth from 16 mbps to 1Gbps under NMEICT scheme.
- MOU signed between DAVV and NTPC foundation for setting up ICT Centre for students with disabilities in Uni. Campus.
- Up gradation of IT Centre network infrastructure from 100 mbps to 1Gbps (in progress).

Policy:-

The centre provides facilities to support and enhance the educational mission of the institute; for enriching the educational experience of the students, faculty and the staff and supporting their research and academic activities; and for providing automation support to the institute. This facility is needed for your day to day research activities as well as courses and assignments.

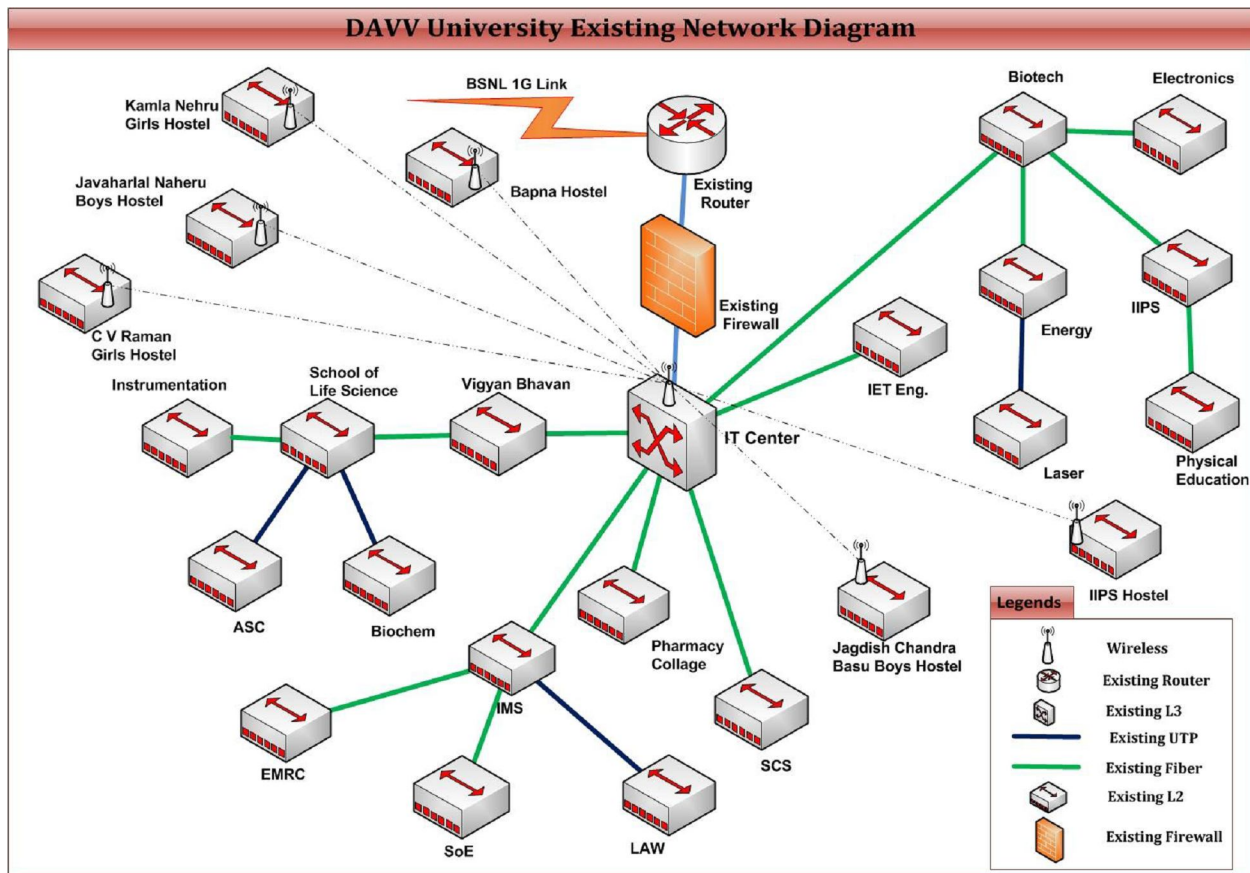
A network access account is created for every individual on admission to the institute. The account allows you to browse the web, send and receive e-mail, use the computational and interactive facilities of the centre. You can use the state of the art services of the IT centre with freedom. This freedom, you will find, is unsurpassed, when compared with elsewhere. Hence it is expected that you have to use the services in a responsible manner. Your conduct and use should be tempered with propriety and a spirit that respects the right of everyone. Any abuse of the facility may have serious implications on the reputation and the standing of the institute as well as can bring the facility of the institute into disrepute. Such misuse of the facility will not be tolerated.

Certain guidelines that should be followed in the use of the computer centre and its facilities have been formulated. The compliance with the guidelines and the do's and the don'ts are necessary for the continued use of your freedom. Not only should users stick to the use of the facility in accordance with the guidelines, but also report any use that is against these guide lines or the spirit of these guides lines. Failure to report infractions of the guide lines shall also be construed as an act of omission in following the guidelines.

Following activities amount to unethical use of computing facilities and will attract punishment from the Institute authorities. You should read the following list of activities that amount to unethical use of computing facilities and the previous discussion carefully.

Existing Network of the University

At present Devi Ahilya Vishwavidyalaya has very large network connectivity. BSNL 1 Gbps link is terminated in Juniper M10i Router.



Future Expansion

Future plan includes upgradation of existing links and providing redundant connectivity to departments and hostels through fiber.

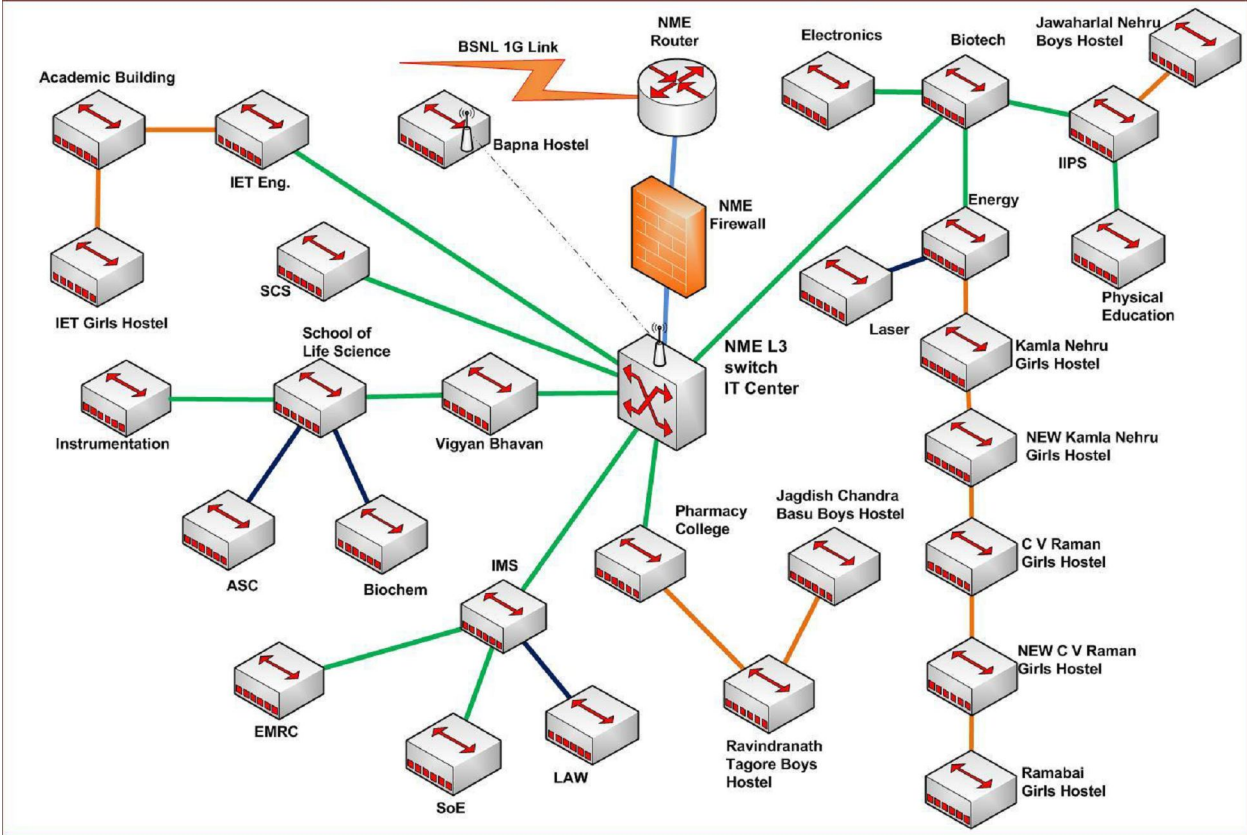
Fiber Route 1

First fiber will connect the following buildings:
Building to Building connectivity will be as below:

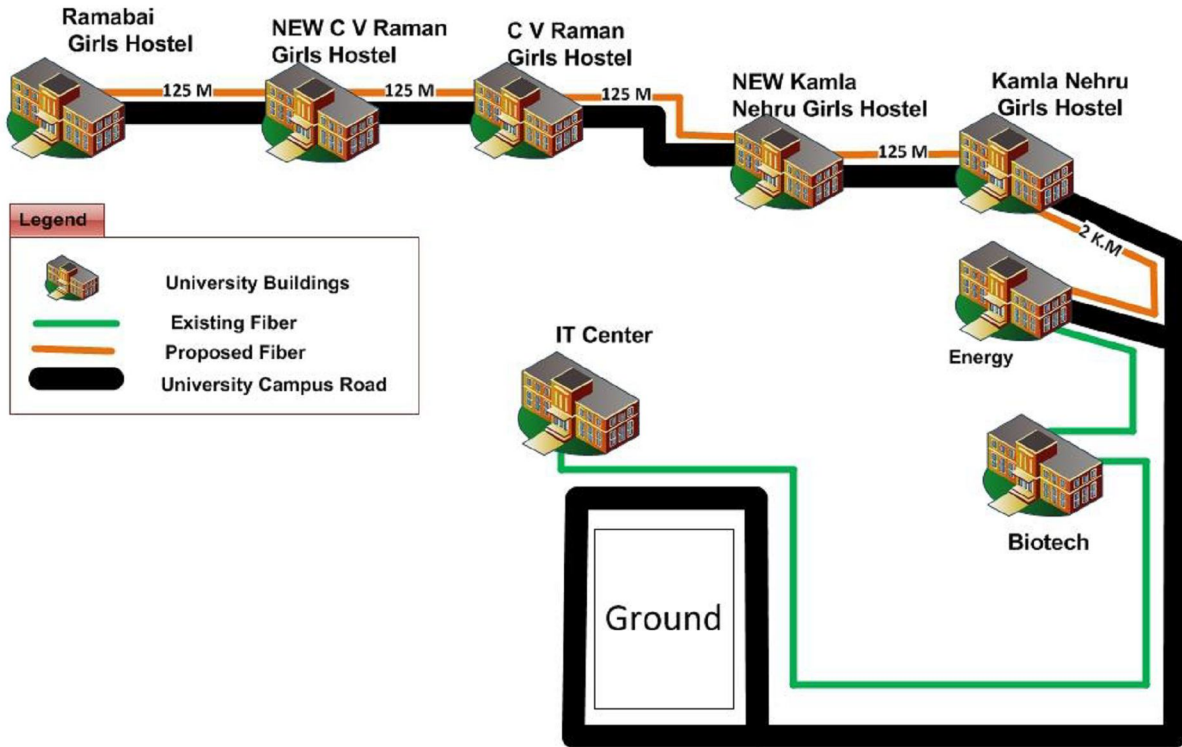
- 1) Energy to Kamla Nehru Girls Hostel
- 2) Kamla Nehru Girls Hostel to New Kamla Nehru Girls Hostel
- 3) New Kamla Nehru Girls Hostel to C V Raman Girls Hostel
- 4) C V Raman Girls Hostel to New C V Raman Girls Hostel
- 5) New C V Raman Girls Hostel to Ramabai Girls Hostel

Proposed upgradation

DAVV University Integration Diagram



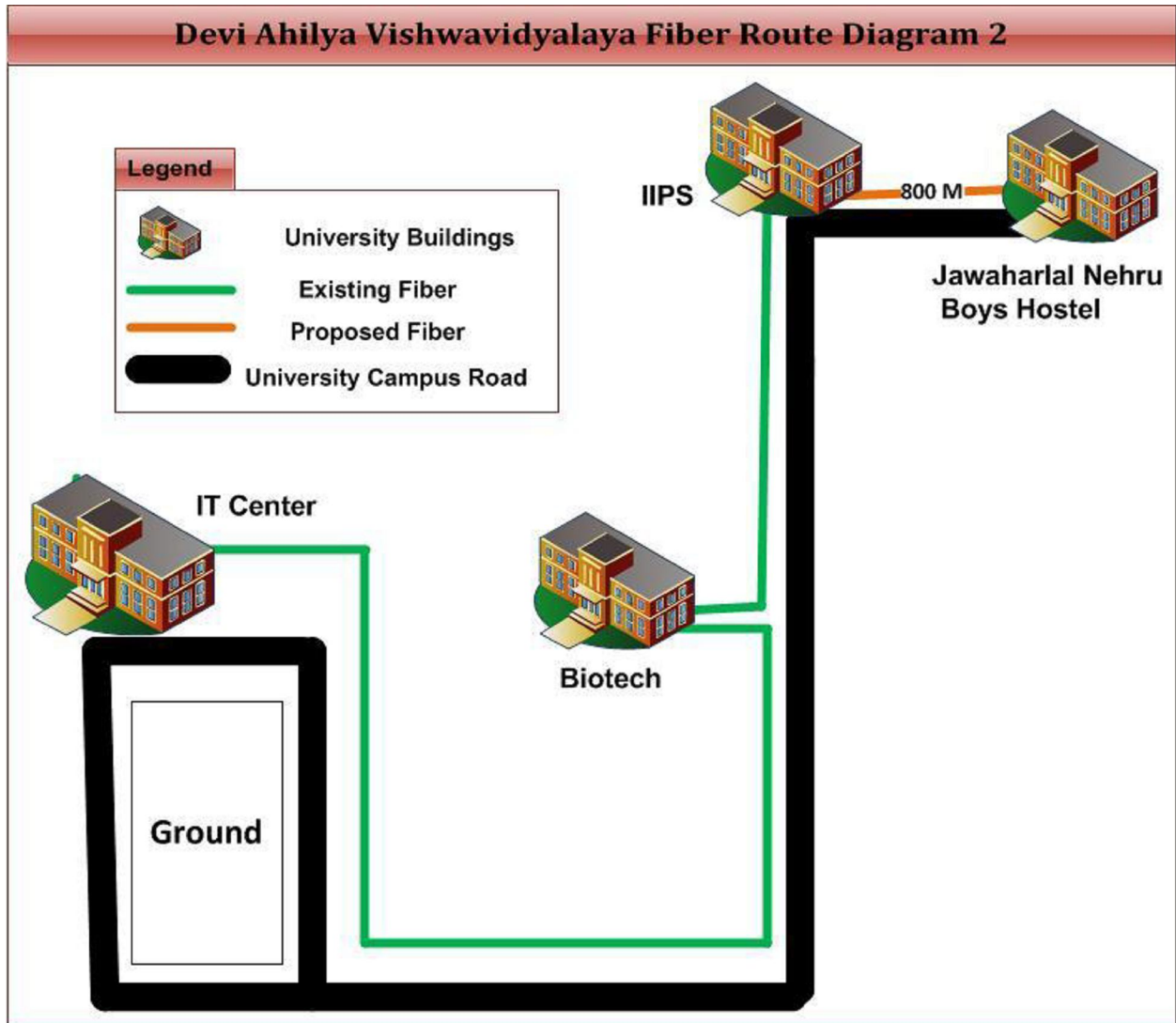
DAVV University Fiber Route Diagram 1



Fiber Route 2

Second fiber will connect the following buildings:
Building to Building connectivity will be as below:

- 1) IIPS to Jawaharlal Nehru Boys Hostel.

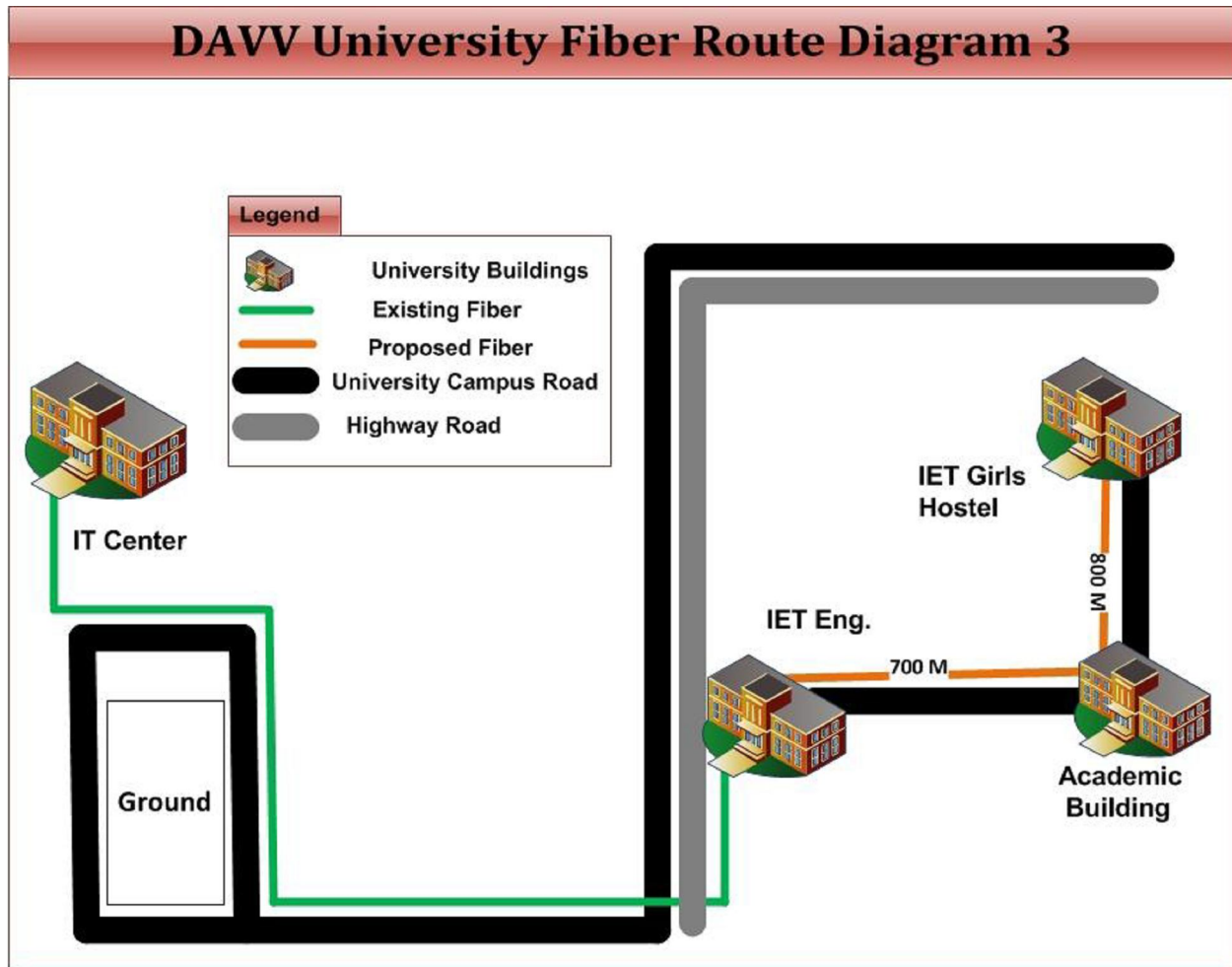


Fiber Route 3

Third fiber will connect the following buildings:

Building to Building connectivity will be as below:

- 1) IET Eng. to Academic Building
- 2) Academic Building to IET Girls Hostel

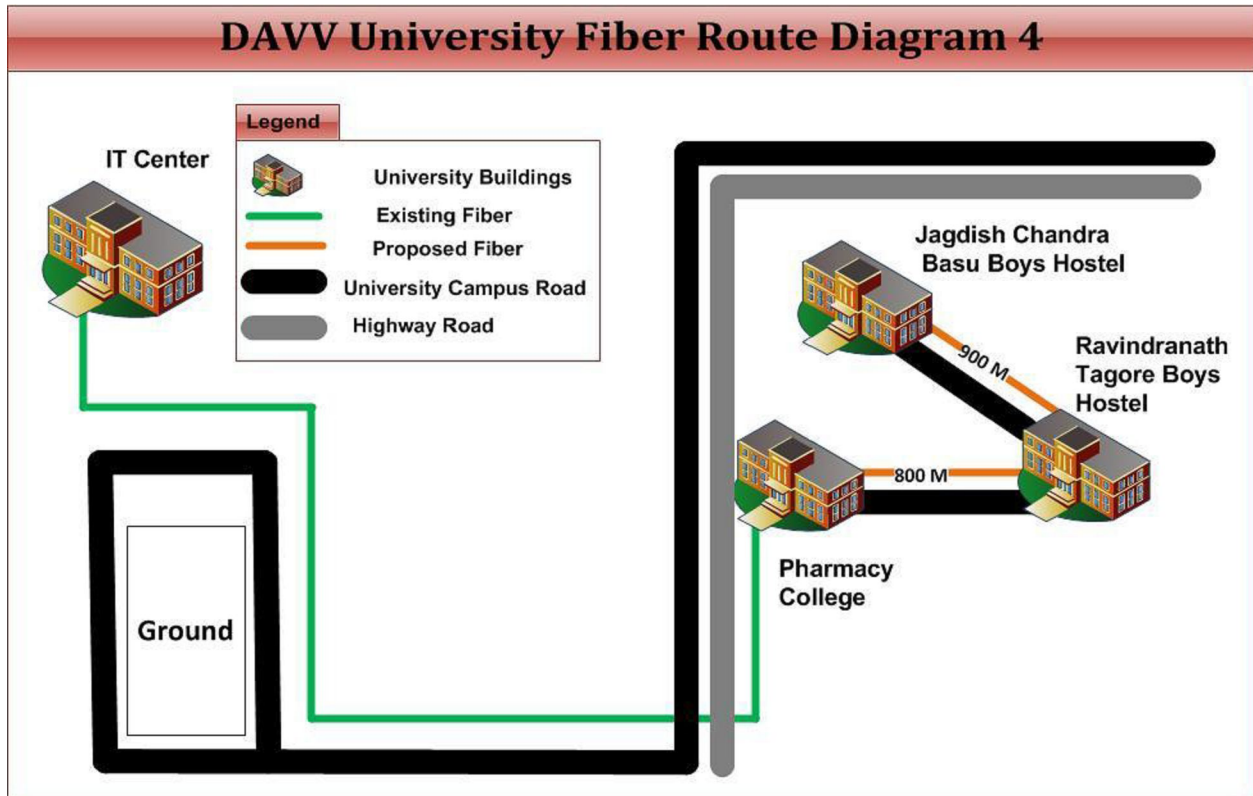


Fiber Route 4

Fourth fiber will connect the following buildings:

Building to Building connectivity will be as below:

- 1) Pharmacy College to Ravindranath Tagore Boys Hostel
- 2) Ravindranath Tagore Boys Hostel to Jagdish Chandra Basu Boys Hostel



e-Governance:-

Results:-

The results server contains a centralized database for providing results of exams held under various course streams like

- Science
- Education
- Social work
- Law
- Medical science
- Commerce
- Journalism
- Management / Management DE
- Computer Application
- Arts
- Home Science
- And Engineering

The applications on results server have been developed with java, cobol and jsp like front end tools while Oracle 10g is used to store the results database. The results server is of much higher demand among students for watching status of their results. It is also helpful for them while submitting their queries for revaluation, review or re-totaling etc.

Sixth Survey of Research in Education

(1993 onwards)

Research is the backbone of development in all areas. The past researches contribute a lot in the planning, designing and execution of the Researches. Understanding the importance of the past researches in Education, Late Professor M.B.Buch ,Ex- Director, Centre of Advance Study in Education, M.S.University of Baroda, Baroda thought of collecting abstracts of all researches in Education and related to it done at Doctoral level as well as Project Level. These abstracts were classified and Indian experts wrote Trend Reports. The First Survey of Research in Education was published by the M.S. University of Baroda, Baroda wherein all researches in education and related to it till 1972 were included. This was followed by the publication of the Second Survey of Research in Education (1972-1978), the Third Survey of Research in Education (1978-1983), the Forth Survey of Research in Education (1983-1988), and the Fifth Survey of Research in Education (1988-1992). The University Grants Commission, New Delhi has sanctioned SAP (DRS Phase- II) to Department of Education, Devi Ahilya Vishwavidyalay, Indore . Under this, The Sixth Survey of Research in Education has been sanctioned. This survey will cover all researches in education and related to it till conducted during 1993 – 2005.The Chief Editor of Sixth Survey of Research in Education is Prof D.N.SANSANWAL, Head and Coordinator,

Department of Education, Devi Ahilya University , Indore . For the first time, the abstracts of Researches in Education and related to it are being made available ON LINE. The same will be made available in PRINT mode also. The process of collecting abstracts is in progress. The abstracts have been collected from the following Universities:

- Devi Ahilya University, Indore
- Vikram University, Ujjain
- Barkhtullah University, Bhopal
- Jiwaji University, Gwalior
- LNIPE, Gwalior
- Agra University, Agra
- DayalBagh Institute of Education, Agra
- Bundelkhand University, Jhansi
- Saurashtra University, Rajkot
- Rani Durga Vati Vishwavidyalaya, Jabalpur
- Dr. H.S Gaur University, Sagar
- Avdesh Pratap University, Rewa
- University of Mumbai, Mumbai
- SNTD Womens' University, Mumbai
- Tata Institute of Social Sciences, Mumbai
- Guru Nanak Dev University, Amritsar
- Gujarat University, Ahmedabad
- Kurukshetra University, Kurukshetra
- Jai Narayan University, Jodhpur
- M.L. Sukhadia University, Udaipur
- M.S. University, Baroda
- S.P. University, Vallabh Vidya Nagar
- University of Jammu, Jammu
- Punjab University, Chandigarh

Research Compendium:-

The catalogue (compendium) of PhD researches done in the various academic disciplines of the university from 1964-1993 was brought out in Oct. 1994. There is a compelling need not only to update the compendium but also to make available the information on the internet. A brief Resume and findings of theses by the awardees of PhD in various fields will be displayed on the website of the university. The knowledge lying dormant will be released for the evaluation by all concerned, to assess as to how far the studies/researches undertaken in the past have contributed to extend the frontier of knowledge, quality change in the status of existing knowledge. Research has been strongly influenced by two major trends in the business/academic world: increased globalization and rapid growth of internet and other information technologies. A review will reveal whether the knowledge created through research work enabled us to find solutions to the problems facing us and whether changes affected educational policies and practices.

The quality of research undertaken in the past will set the tone for orientation of research work to relate it to provide solutions to the growing problems of the modern and changing Indian society. The postgraduate students and research scholar will benefit for framing and delimiting the scope of the study. The worldwide exposure of the research will bring paradigm shift to shed complacent attitude of the studies conducted in the past and consigned to the annals of the library and to conduct research in the modern context. The student and guide will put in conscious effort to bring out the best research work in various fields subject to public scrutiny and approval.

The technological developments and social diffusions of the internet has dramatically shaped the future of the research.

On the occasion of the 41st foundation day of Devi Ahilya Vishwavidyalaya, I release “e-Research Compendium (1964-2012)” and make it available on the internet.

User Registration:-

Student Feedback:-

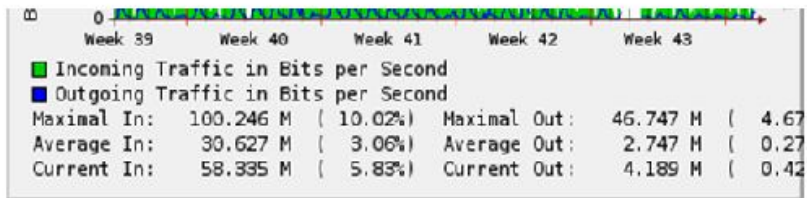
Feedback received from students of various department and hostels.

Safety Precaution:-

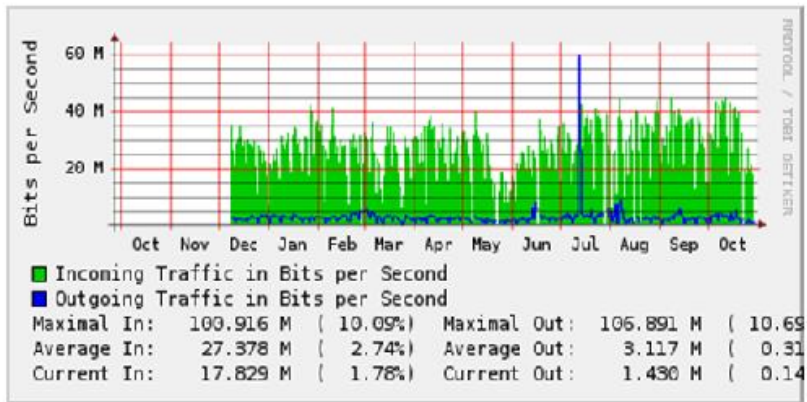
Centre is insured for risk cover of Rs. 40 lacs. Department is well equipped fire protection alarm and fire extinguishers.

MRTG :-Network monitoring tool (Multi Router Traffic Grapher)

Network Traffic View

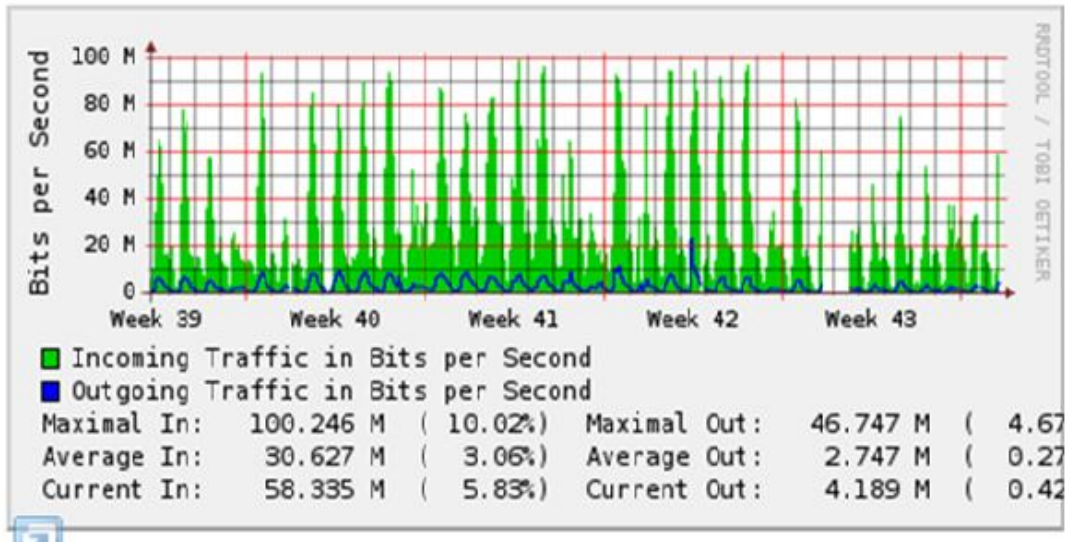


'Yearly' graph (1 Day Average)



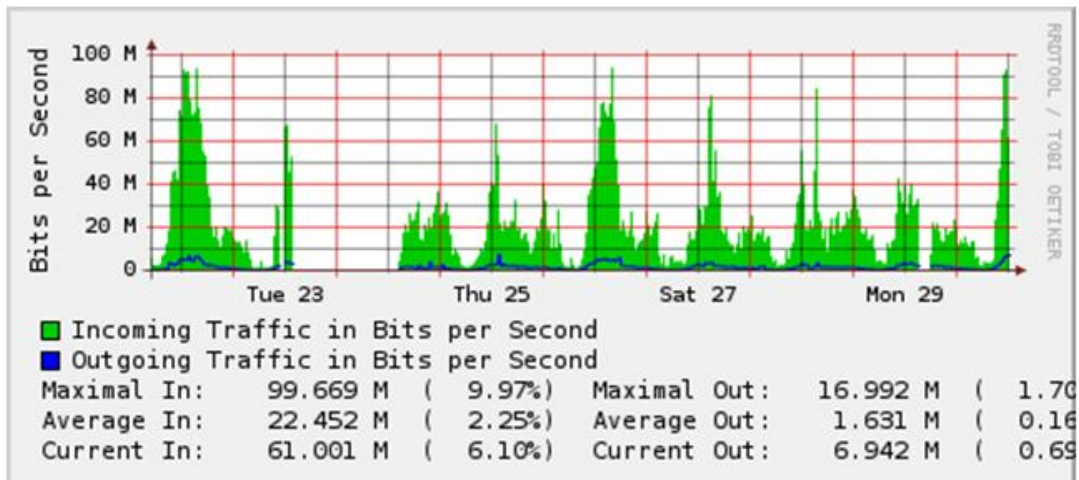
Network Traffic View

'Monthly' graph (2 Hour Average)



Network Traffic View

'Weekly' graph (30 Minute Average)



Network Traffic View

'Daily' graph (5 Minute Average)

