



# CISCO Networking Solutions

## Institute for Development and Research in Banking Technology: Implementing Cisco's networking technology

### Summary

*In the first phase of financial sector reforms, a need was felt to develop an Institute of higher learning, which can also provide the operational service support in Information Technology to Banks and Financial Institutions. In the year 1993, the Employees' Unions of Banks signed an agreement with Bank Managements under the auspices of Indian Banks' Association (IBA). This agreement was a major breakthrough in the introduction of computerized applications and development of communication networks in Banks. In two years, substantial work was done and the top managements realised the urgent need for training, research and development activities in the Banking Technology area. Banks and Financial Institutions started setting up Technology-based training centers and colleges. However, a need was felt for an apex level Institute that could be a Think-tank and Brain Trust for Banking Technology. RBI established IDRBT in 1996 as an autonomous center for Development and Research in Banking Technology.*

Located in the heart of Hyderabad city, the institute is spread over two and half acres of land with a three-storied office complex and an 8 storied annex building. Having established itself in 1996 as an autonomous centre for Development and Research in Banking Technology, IDRBT has now positioned itself as an Information Technology Institute designed for the purpose of research and development as well as consultancy in the application of technologies to the banking and financial sector of the country.

In the year 1994, RBI formed a committee on "Technology Upgradation in the Payment Systems". The committee recommended a variety of payment applications, which can be implemented with appropriate technology upgradation, and development of a reliable communication network.

IDRBT is engaged in a number of Research Projects to improve Banking Technology in India. The Institute is concentrating on four major areas of Research as follows:

- Financial Network and Application Architecture
- Payments System and Security Technology
- Multimedia, Internet and Web Based Learning
- Data Mining, Data Warehousing and Risk Management

IDRBT is also collaborating with Academic Institutions and Research Organisations in India and abroad for the purpose of promoting higher education, research and development in Banking Technology in India. With a total of 60 to 70 IT employees which includes temporary Research and Development (R&D) and outsourced operational people, the Institute is actively involved in the development of various standards and systems for Banking Technology, in coordination with the Reserve Bank of India, Indian Banks' Association and the various high-level committees constituted at the industry and national levels.

The company's drive is best exemplified by its achievements. The Institute of Directors (IOD) has bestowed IDRBT with the "Golden Peacock National Training Award 2001" for its outstanding contribution in the area of conducting training programs.





## **IDRBT's IT infrastructure - the present**

Ever since its conceptualization this institute has been working on VSAT as the backbone and Ethernet on the LAN. Now with this leased line backbone coming in place, the backbone would be on multiple 2Mbps lines and with gigabit as the backbone in the LAN. Being a research institute most of the research / development happens on the LAN / WAN environment. The primary objective of this institute is to make all inter and intra bank transactions to happen seamlessly on the electronic medium. IDRBT inaugurated INFINET in June 1999 to provide a reliable communication backbone for the banking and financial sector.

The INFINET is a Closed User Group (CUG) Network for the exclusive use of Member Banks and Financial Institutions. It uses a blend of communication technologies such as VSATs and Terrestrial Leased Lines. Presently, the network consists of over 689 VSATs located in 127 cities of the country and utilises one full transponder on INSAT 3B. The INFINET is primarily a TCP/IP based network. A detailed IP addressing scheme has been devised by IDRBT for all CUG members, which has to be strictly followed by all CUG members, while interacting via the communication backbone. The network consists of a central earth station (HUB), which is located at IDRBT, Hyderabad. The HUB consists of an 11 meter antennae, RF, BaseBand and IF equipment. The network started with one eighth of transponder (No. 13) in INSAT 2B in June 1999. Later, in July 2000, a full transponder (No. 8) was allotted on INSAT 3B. The network works on TDM/TDMA technology. The central earth station is housed in a VSAT Control Centre (VCC) located in the ground floor of the Executive Facilities Centre of the Institute. DAMA overlay will also be soon provided to facilitate high-speed data communications, voice and video.

The old network based on VSATs - a total of 700 VSAT's were set up in the hub site. There were 3 Networks with two out route and 32 in routes - all set up by Hughes Escorts Communications Limited. Before Networking, inter bank transactions used to take place through paper. However, after completing the network it is expected that all inter and intra bank transactions will be through wire.

## **But, there was a problem....**

Given the growth of IDRBT's business in the past few years, IDRBT's network architects have a serious challenge ahead of them - to keep the network "growth-proof". Information Technology has now become the lifeline. Firstly, with more and more banking applications being web-enabled and core banking solutions being the order of the day, networks are a must for these applications to work and sustain in the long run. Hence the network rollout became very critical at this juncture. The future of banking depended completely on he services the backbone network would support. Hence our IT strategy was to harness the various technologies which would help the member banks to roll out new services / schemes to their end customers in a limited time period.

Secondly, the network had to be compatible with keeping pace with fast, very fast, technology changes - Network performance was getting restricted as increasingly complex technologies and applications are hosted on to the Intranet. The VSAT network was just the first step in the setting up of a highly efficient communication backbone for the Indian Financial Sector. The Institute was now exploring ways and means to expand the network using more VSATs as well as through high speed terrestrial links.

Thus, the need at IDRBT was for a network that is 100% available, secure and future proof network. Also, IDRBT was looking for a way to connect their various offices with just one backbone network. Hence the key challenge was to implement such a network that enabled anytime, anywhere connectivity - reliably, securely.

## **...So what is the solution?**

Setting up a comprehensive network seemed to be the only solution for IDRBT. There was a need for all the member banks and financial institutions would be in a position to roll out various services or schemes to their end customers. In this scheme of things, the INFINET network plays a major roll in the member banks business strategy. Hence the entire strategy is based on efficient customer service, which would directly impact the individual banks business strategy.

The idea was to create a link between the VSAT network and the terrestrial network of the INFINET by drawing the strengths from each other. Users would now have the facility of a dynamic option to choose between these two networks depending upon the need, urgency, suitability, volume of traffic, availability and accessibility.

Cisco's Networking delivers the network agility required by the enterprise to deploy new Internet business applications critical to secure competitive advantage by increasing revenue while reducing operating costs. By creating the end-to-end intelligent network



services required for Internet business applications such as e-commerce, supply chain management, and workforce optimization, Cisco's Networking integrates the enterprise with customers, suppliers, and business partners. It provides an intelligent network architecture that dynamically recognizes Internet business applications and engages network services to achieve end-to-end security, performance, and availability.

Some of the specification includes:

Leased Line Network

Vendor Name: M/S CMC Ltd

Products: CISCO Routers

Number of locations: 21 locations

Sphere of circuits: 2Mbps and 64 Kbps will be upgraded as and when required.

Mr. Gulati, Director IDRBT, says, "The need of the hour is to grow exponentially with the company's business. What financial and banking institutions need at this point of time is web-enabled, core banking solutions which will help harness our technologies"

### **The evaluation process..going the IDRBT way**

IDRBT was very clear on the requirements - the top priority was on ensuring that employees got what they wanted, by way of the IT experience, to deliver consistent value to the customer. Care was taken to choose technology that will enable a scalable network design to tie into the business needs of every employee.

Given this, the entire LAN/WAN infrastructure was built mostly on Cisco components. The networking solution was implemented to leverage the existing infrastructure with minimal configuration changes to define quality of service for different applications based on business priorities.

On why IDRBT laid its bets on the Cisco solution; Mr., Gulati, Director IDRBT says, "the terrestrial WAN network will be easy to migrate to Ethernet speeds in the future. Cisco is the recognized leader in networking and is therefore our technology provider of choice."

### **Implementing the Cisco solution**

Given that this implementation was one of the first of its kind in India, it was a tremendous learning experience for both IDRBT and Cisco engineers. The institute tied up with Cisco Systems to set up a terrestrial network with the supply of 45 Cisco routers, including 25 high-end routers, security systems, network management software and switches.

Cisco 7500 series routers would form the core of the network; located in important cities and inter-connecting various cities, while Cisco 3600 routers will be deployed at the distribution level to enable banks' branches to ride on the core network.

### **Cisco's 7500 Series**

Then came the plan of rolling up the sleeves and drawing out the exhaustive network design and plan, which will enable such an ambitious initiative of networking. The primary objective of this network is to do all banking transactions of the various member banks & financial institutions, on this INFINET backbone network. If one member bank has to interact to another member bank of IDRBT, backbone network would be the channel to do that business.

### **Cisco's 3500 router**

IDRBT proposes to pay greater attention to the use of computers in criminal investigations, analysis of evidence stored on those computers, which were used in the commission of financial crimes, and all aspects of investigating financial fraud perpetrated in a computerized environment. **PIX firewalls from Cisco Systems** are deployed in all the key locations within this INFINET network, which would give INFINET network the primary protection from any hacking and other regular intrusions into the network

*B Ashok, VP- Sales, Cisco India, "The mandate from IDRBT is a special milestone for Cisco Systems in India. It is reflective of the faith our customers have in us to provide them reliable and secure solutions for their networking needs. INFINET is one of the key mission-critical networks in the country on which transactions and settlements worth thousands of crores are conducted everyday".*



### **Benefits to IDRBT Technologies**

*According to Dr V.P. Gulati, Director, IDRBT said, “ The new terrestrial network links will provide us higher bandwidth speeds from 2 MB to upwards of 34 MB, and will be integrated with our existing VSAT network. INFINET is a blend of both leased line and VSAT network technologies. More importantly the terrestrial WAN network will be easy to migrate to Ethernet speeds in the future. Cisco is the recognized leader in networking and is therefore our technology provider of choice.”*

As mentioned, all the member banks & financial institutions would be in a position to roll out various services or schemes to their end customers based on the services they can get from the backbone network, the banking applications which they adopt and their internal Go-To-Market strategy for various services. The INFINET network plays a major roll in the member banks business strategy. Hence the entire strategy is based on efficient customer service, which will be provided for the member banks based on individual banks requirement. The INFINET network supports various services, which would directly impact the individual banks business strategy.

To sum up **Mr. Gulati said**, “*Though we have not come across any issues at this juncture, we are confident that our technology partner (Cisco Systems) and our network integrator would be in a position to solve any issues, which might arise. Since the implementation is happening now, it would be difficult to measure the efficiency of the envisaged network. We are sure that this network would bring in multi-fold increase in efficiency, time and lower costs while using the INFINET network*”