

Communication Networks

Introduction and Details of the assigned task.

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An Introduction to Hybrid Work-Group.

We cased our task in the name Hybrid Work-Group. Firstly Sir Assigned us a simple task i.e. to create a network either Physical or on Virtual Machine Ware. As to learn more and our familiarity with LINUX we decided to create a Virtual network on LINUX, to do it so we choose VirtualBox developed by Sun Microsystems, because we find out sufficient support and installation guides on web.

Later on we decided to develop a physical network, so we utilizes network equipment of our lab so as we can complete our project and make the Ethernet working again.

After deciding the second task we use Rack-Mounted **3COM – 3300** Switches and Patch Cords (Straight Ethernet Cable) to establish our work group, by installing Win 7 one by one on 09 Core – i3 PCs and one Dual core PC we connect all PCs with Rack Mount switch and Patch cords. After that we use Dual Core PC as a file sharing server. By installing further applications on Core – i3 PCs through Ethernet from Dual Core PC, we satisfy our second thought.

As using Physical Work Group, we observed variable TTL through PING, so make it constant we decide to deploy a Router so that we can manage up-loading and downloading bandwidth for each user and can share our network to wireless users or Laptop of students too.

So this was our third task and after discussing from Sir Maqsood we hang over it .Unfortunately, no router with such facilities comes in our range of Budget, so after surfing on web we find a solution that by changing OS of selected brands' router which pretty cheap can help us to approach that what third task we decided.

Form that links, DD-WRT and OPEN-WRT were the solutions for making a cheap cost router in some more beneficial product. We decided DD-WRT as it is easy to install while OPEN-WRT was from Command line. On web site in ROUTER DATABASE section, the TP-LINK's 740N was listed and we decided to purchase two of them one for our task and other just to keep original to compare after OS of First one is changed. Making it shorter we are not successful in changing OS of 740N, as now V4 of 740N is available and DD-WRT is only applicable till V3. In detail V3 has **Atheros AR7240** processor and V4 has **Atheros AR9331** processor. DD-WRT Supported devices shows **WIP** (Work In Process). We may have chance to do it in future but in today it is not possible.

After all this, to achieve and learn more we try to combine both Virtual WORKGROUP and physical WORKGROUP, with the bit of effort we done it successfully.

Further Enhancement

Al-Hamd o lilliah, as we are fore from schedule , Sir Declared one more task so as we can improve our skills in Computer network because none of our group member have Background of Computer networks.

So now we currently working on a Domain Sever based network design and decided LINUX as operating System and SAMBA for Domain based facilities.

