Net-centric computing and information systems

Paper on Net-centric Computing and Information Systems - By Harish Das

What seemed new-fangled and smart yesterday is eyed as ' something obvious' today! That's the scenario where the high-end technologies are outpaced by itself the next day. There was a time when people used to speak computers and systems; now the topic has changed to Information Management in state of the art organizational structures. This could only be possible due to fast elevation of Networking. The Open System Interconnection model identifies a networking framework for implementing protocols in 7-layers. Control is conceded from one layer to the next, starting at the application layer in one station, and proceeding to the foot layer, over the channel to the next station and back up the pecking order. This layer gives switching & routing technologies, generating logical paths, termed as virtual circuits, for sending data from node to node. Routing and forwarding are the functions, as well as internetworking, addressing, error handling, packet sequencing and congestion control. The tutorials showcase the opinions and perspectives of experts that would cater your in-depth understanding of the topics which you would find of absolute importance when you design or analyze a system or structure of your own. An outsized computer network may seem just hassles of hardware; but actually it is also a multifaceted structure of rules, technically called as protocols which are executed and imposed by network operating systems. Before beginning our talk on Network Layers, it is a prerequisite to brief on the- seven layers Open Systems Interconnection model (OSI model) of Computer Networking. At the International Organization for Standardization, the communication systems were subdivided into smaller sections called layers. A layer provides services to its upper layer while getting services from the layer below. The seven

layers of OSI are: i) Physical ii) Data link iii) Network iv) Transport v) Session vi) Presentation vii) Application There is of course a special intent to choose this article. In today's world, network-centric computing, aids the replacement of complexity of desktop workstations with the simple software of thin clients- all powered by a central control. The evolving highly engineered systems face the challenge of interfacing to the Global Information Grid in a picture perfect fashion in order to communicate information with the broader electronic community however not negatively impacting high performance mission-critical functionality. The Janco Associates Inc. (2009) highlights that Size Pollutes in one of their forums, " Myths of Client / Server Architecture Are Impacting Many". This is indeed a globally accepted fact that with the systems and companies become bigger and multifaceted, they become more unresponsive and consequently inefficient. Thus to have a better control over the impact of complexity, it is a real life concern to minimize the impact of vendor surprises which is only possible when an in-depth risk assessment is performed. Mark S. Merkow (1997) brings out a challenging yet realistic approach and concept in the tutorial on " Extraordinary Extranets". An extranet, as he puts it in his write up, can be viewed as the part of a company's intranet that is made accessible and unrestricted to other companies, to the public, or comprises of components that facilitate the collaboration with other companies. James Robertson (2005) rightly addresses the issues on Information Management in his work on " 10 principles of effective information management". Management of people, process, technology and content is the key to elevated organizational structures with a firm Information Management. Address Resolution Protocol (ARP) is a protocol for mapping link layer

addresses to a physical machine address that is known in the local network. An IP network forms when a several IP ports can communicate using the IP protocol, without mediators. An IP host can have ' n' number of IP ports that may be positioned on different IP networks. To enable IP communication between 2 IP hosts, we find a route between their IP ports. So, each IP port is assigned to an IP address. The Dynamic Host Configuration Protocol (DHCP) gives configuration parameters to Internet hosts in a client-server model. DHCP server hosts allot network addresses and deliver configuration parameters to other (client) hosts. DHCP consists of two components: a protocol for delivering host-specific configuration parameters from a server to a host and a mechanism for allocation of network addresses to hosts. The tutorial of MPLS was very useful which details you the services provided by it called traffic engineering. MPLS is somewhere in between the network layer and data link layer that provides a more natural interface to data link switching fabrics and optical networks. The VPN is another important section to study; a VPN is a networked architecture that enables the operation of private (secure), networks over a public infrastructure, like in Internet. Hope you find the suggested tutorials informative and useful in real life experiences. Visit more often to this tutorial and find the difference in your awareness. These discussed topics are just not to study and mug up, rather there should be a constant endeavor to research and of course share in our platform of knowledge. References Mark S. Merkow (1997, Aug 27). Extraordinary Extranets. Retrieved from http://www. webreference. com/content/extranet/ RAD Data Communications, Ltd. ARP - Address Resolution Protocol. Retrieved from http://www2. rad. com/networks/network/arp/main. htm Mark Hamilton (2009, June 7). The

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