Network Traffic Analysis

 Name:

School Affiliation:

**Analysis**

**Summary of each of the major uses of the distributed network.**

 The distributed network at AT&T will help in monitoring service delivery. The networks will provide users with high availability and quality applications. The teams at AT&T will be able to user performance or interruption and be able to work on it. All crucial information will be gathered easily and there will be no need to get the data through calling users, RDPing the remote workstations or sending boots to the ground. This will help in better service delivery.

 AT&T was used to doing configuration changes (firewalls, content filtering and routing) during the off-peak hours to reduce the impact when something went wrong. The adoption of network design architecture will enable the data managers to get the reports from each location instantaneously during configuration changes. This will enable the prompt fixing of the problem at hand and there will be less inconveniences.

 Distributed networks will aid in performance measurement and analysis (Hyde, 2012). The company will be able to collect data and build performance profiles. It will be easier for the company to know how its staff and users experience the data flow over a given duration of time. It will also be easier to point out the areas that suffer outages frequently and this way, the company will be able to plan for upgrades and budgeting.

 The company will be able to move away from human-driven and error-prone procedures and users frustrations. It will move to the collection of data by agents including the exact response times, the genesis of the problem, when it ended and so on (Vien, (2018). At the help desk, it will be easier to establish the magnitude of the problem and escalate it in the shortest time possible, thereby shortening detection and repair time.

 The company has its staff mostly blaming the network for almost everything that goes wrong in the company. To eliminate this blame game, the network will enable the running of bandwidth tests from the agents that will report problems from any location. When the bandwidth is found to be up to standard, other problems will be scrutinized other than the network.

**Traffic Estimates**

 Data demands from AT&T will continue to increase. At the moment, there are about 3 billion internet users generating traffic network every minute all year round. Due to this, the traffic at AT&T data traffic has increased by over 300% every year for the last seven years. About 60% of the data is video related. About 120 petabytes of data traverses AT&T network every day which is an equivalent of about 130 million hours of HD video. The company expects that data traffic will grow tenfold by the year 2022. In the same year, it is expected that there will be about 6.5 billion objects connected to various networks, which is a 30% increase from the current number in 2019. This implies that there will be huge data demands on AT&T network.

**Peak traffic times and levels**

 Network congestion at AT&T mostly happens during the evening hours from 4 p.m to about 5 p.m since that is the time when most people are trying to use data services both at the company and those who are customers of the company’s data packages.

**Other issues that produce congestion on the AT&T network.**

 Network overload will happen due to many hosts in the network. This could range from a VLAN to an enterprise that is affiliated to AT&T. Too many hosts in the network will cause congestion (Plunkett & Plunkett Research, Ltd, 2014). Broadcast storms are the other main cause of congestion. It refers to having many requests in the network. This is likely to occur during very busy days. The company may also experience low bandwidth. The pipe that the data travels through may not be large enough for all of it to move through at once. This may mainly happen during streaming hours and when large files are being downloaded at the company. Other issues may include multicasting, old-fashioned hardware, debauched configuration management, rogue adapter broadcasts and artificial congestion.

**Software recommendations that can manage potential network congestion, and their working.**

One of the ways to reduce network congestion includes load balancing (Subbaraman, 2018). Cisco’s cloud-based Meraki firewalls software will be a great way of dealing with this. It provides added redundancy as well as the capability to make use of two or more internet pipes simultaneously. Software-based optimization tools also come in handy to enforce techniques like caching, compression and data shaping. These help decrease WAN congestion devoid of having to improve leased line throughput. SD-WAN software can also be used to monitor links and route packets down to the optima path at a given point in time. When it detects congestion, traffic is then routed around to avoid a bottleneck.

**References**

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