# INT301 Network Design and Design Proposal for Anthony’s Potato Chip Company

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## **Requirement Analysis**

Data Types:

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| The data transmitted throughout the network will include audio, video, text, and any other virtual information transferred through associates computers. The different types of data will be used for properly recording, analyzing, and manipulating data across departments |

Data Sources:

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| The origin of your data will be kept at your three primary operating locations in San Diego, Escondido, and Alpine, where a centralized network will facilitate communication between your businesses and the internet. |

Numbers of Users and Priority Levels:

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| 500 people are currently employed by Anthony's across all business operations. It is reasonable to assume that positions will likely be created and/or relocated in the near future given the recent rapid growth. The needs of the users should come second, with the company's operations and manufacturing receiving top priority. Updating and maintenance work should be done either off-peak or with the least possible disruption to business operations. |

Transmission Speed Requirements:

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| All users should be able to operate at a speed of 1Gbps, so all network drops should be capable of 1000Base-T speed. With 10Gbps, there should be very little fatigue at the local backbone level even during peak usage. A 100Gbps VPN connection to ISP resources should be even faster across their prebuilt connections. |

Load Variation Estimates:

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| The main office and sales office are open during normal buinses hours, with peak productivity occurring in the middle of the day. A second shift from 4pm to midnight could be added to the manufacturing industry's single 8am to 4pm shift that it currently runs Monday through Friday. |

Storage Requirements:

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| On each laptop and desktop PC, depending on the model, local storage will be kept. In the beginning, there will be about 500TB of network storage handled by a NAS device in the San Diego data center's second floor. In order to support business scaling, NAS must be upgradeable, along with prepped for fast future upscaling. |

Reliability Requirements. The standards reliability requires the network to operate at following percentage rates:

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| Standard Operations Uptime: There should typically be a 95% standard operation uptime.  Downtime: The other 5% should be reserved for system performance, scans, updates, upgrades, and any other maintenance needs on the network  Error rate: 0.001% |

Existing Network:

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| On the current network, previous network contractors have started planning and building. However, the majority of the parts are outdated and incapable of supporting the proposed expansion. The system-wide network is not connected to all of the current LANs, and has proven to remain unsuccessful across important transactions made within the organization. |

### High-Level Diagram:Diagram Description automatically generatedDetailed Design

Diagram

Description automatically generated

### Equipment Analysis

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| **Equipment Cost - LAN** | | | | | | |
| **Tangible Costs** | | | | | | |
| **Product** | Model | Price | Quantity | Warranty | Maintenance | Total $$ |  |
| Open Rack | RM7001A-R3 | $396.99 | 2 | Lifetime |  |  |  |
| Wall Mount Rack | SRW15US | $529.99 | 1 | Lifetime |  |  |  |
| Switch | MS225-48FP-HW | $7,323.99 | 6 | Lifetime |  |  |  |
| Cat6 Cable | C6ABC50-STR-BL-1000 | $150 | 247 | N/A |  |  |  |
| Fiber Optic | PRO-1KFOS2-NT | $361.99 | 3 | N/A |  |  |  |
| Wireless Access | R4W01A | $169.99 | 11 | Lifetime |  |  |  |
| RJ45 Connectors |  |  | 494 |  |  |  |  |
|  |  |  |  |  | Total |  |  |
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Provide a rationale for your choices based on your sources.

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| Since there is a whole data room set aside for the central mainframe, I made the decision to go with an open server rack for proper ventilation and access to the various switches and networks and any other added devices. For the other buildings, which won't be supporting the main data hub, I chose wall mounted racks. I chose the 24 port switch with cloud support because it is more reliable and requires less maintenance. Additionally, I selected cat6 cable and fiber optics for quick internet connections and fast connection speeds within the company, respectively. Additionally, there will be wireless access points for wired connections. There is also added extra space for any added devices such as card readers, cameras, or other data recording devices. |

Recommend additional software that Anthony’s may need for ease of communication. For example: Skype, WebEx, Adobe, audio files, email, chat, and video. Provide a rationale for your recommendations using scholarly sources. (Similar to Figure 9-19 in your text).

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| When providing communication for your employees and their teams to complete their tasks in line with the company's goals, there are many applications and software's to select from. Many great features, including group policy enforcement, remote desktop, and long-term OEM support, are offered by Microsoft Windows 10 Pro for businesses. The same is true for MS Office 365, which provides both conventional locally hosted apps and cloud/web based apps. In comparison to WebEx or other similar conferencing apps, Microsoft recently added Teams, which is very competitive. A group license for Adobe to use Photoshop, Premier Pro, and Acrobat may be advantageous for marketing and sales. |

### Reflection

[This section is to be completed in Week 5 as part of the Final Assignment once you have incorporated feedback provided by your peers and/or instructor].

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