

Network Documentation Overhaul for CCL and Clients

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ABSTRACT

This paper will document and describe a network configuration documentation overhaul for Computer Concepts Limited (CCL) and many of its clients. This project aimed to create a standardised documentation style and deliver network documentation for clients to increase efficiency. The project researched, developed, and designed documentation for multiple CCL clients which required new and up to date documentation. Agile methodology was used to organise and complete the project. Analysis has been completed to prove the efficiency of the completed work.

Keywords: Networking, Documentation, Structure, Design, Efficiency

1. INTRODUCTION

At Computer Concepts Limited (CCL), multiple services are offered to a vast range of clients. It is a hybrid and multi-cloud solution provider who provide a high quality of infrastructure and end to end management services. Founded by Darryl Swan in 1990 and originating in IT engineering, CCL grew rapidly becoming one of the largest providers of its kind in New Zealand.

With the datacentre opening in Christchurch in 2003, expansion was rapid due to its capabilities. Becoming a top Infrastructure as a Service provider allowed for CCL to now manage over 500 clients end to end. Such clients are Farmlands, Lyttleton Port Company, Ravensdown and Canterbury DHB.

CCL has over 650 employees after merging with Auckland based Rivera in 2019. This merger of two Spark owned companies was a large success and CCL continues to flourish.

CCL provides top quality service, both public and private, to small and large organisations all over the country.

2. REQUIREMENT

There is a requirement for more efficiency in documentation for CCL clients in the networking space. Network documentation is currently used as a mapping and information tool by many engineers within CCL, and without this being up to date and relevant, issues are prevalent.

Network infrastructure can be difficult to understand, no matter the level of experience of the engineer. This problem can be solved with a regular review of the documentation held on each documentation. It has been noticed that some clients lack the required level, and recency of completed documentation.

Without these up-to-date documents in place, it may take an extended and frustrating period for an engineer to discover the network. This is a problem as if work needs to be completed such as upgrades or updates, a review will need to happen.

This means that new documents must be created. These documents need to be relevant, efficient, and consistent to other documentation at CCL. This documentation/audit will also allow for the engineer who completes the tasks to have a firm knowledge for future reference of the clients involved.

Once completed, the goal is for the new documents to give a more structured and defined idea of how the clients have been designed. This will also allow for an up-to-date idea of the changes that should be made within each client's infrastructure.

3. EXECUTION

The first client that was audited was Venues Ōtautahi. During this audit, a standardised process was developed for organising and creating documentation for clients. This style included 4 documents including one visio document as a visual aide, one excels document including all device information, and two word documents for client and relevant information, and a review of the audited network.

Following this, audits were completed for two more clients following this style. The completion of these tasks became much more efficient as the project progressed. Discovery tasks included remoting into device to gather accurate information.

After the completion of each client's documentation, the last of the four documents was completed. This included a thorough review of the client. I discussed my ideas on how to

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Beginning

As time progresses, in the field of networking it is vital that documentation remains up to date and accurate. I have been tasked with reinvigorating network documentation for some clients at CCL. After reviewing documentation with a Senior engineer, I understand that for some clients it is a major weak point, and all parties would benefit from a review of these documents. I will undertake a complete documentation overhaul for the selected clients, bringing their recorded information to the next level.

Results

What did I do?

- Creation and development of my "4 Doc" style
- Testing of this style, review against other documentation currently implemented
- Testing of my documentation with relevant networking related tickets for clients
- Creating of review/audit documents for clients to explain infrastructure flaws/positives

How did it work?

- Clients in need were sourced via industry supervisor and top CCL engineers
- Information was gathered through teams and email messages between myself and engineers
- "4 Doc" style was implemented to create a standardised style of documentation for clients

Sample Client Topology Diagrams

*Sensitive information has been removed for privacy purposes

Learnings

Upon review of my project, I found communication skills and networking throughout the company to be vital. I feel much more comfortable in using these skills now. I enjoyed using my computer networking skills that I learned throughout my time at Ara and also learned some neat tricks for the future. Overall I found that both my soft skills and technical skills have grown to a new level, and I feel comfortable moving forward to full time work in industry. I have never been this excited focus on my career!

Goal

- My aim was to develop a standardised documentation style, allowing for ease of navigation
- Create new and up to date documentation that is easy to understand and informative at the same time
- Report on my findings and draw conclusions for both CCL and its clients

How?

Conducted regular meetings with stakeholders
Learned a vast range of new skills from engineers
Agile methodology on a single person basis
Weeklong sprints including weekly review
A wide range of network discovery tasks

Tips/Tricks

- Documentation is often overlooked and gets outdated quickly, creating need for expansive overhauls
- Different levels of complexity required
- Useful for explaining the need for updates/upgrades
- Important to be thorough with details

References/Tools

Diagrams designed using Microsoft Visio
Network device art from Cisco
Device information from Cisco EOL statements
Use of MS 365 apps supplied by CCL

Logos: CCL, Ara, Cisco, Microsoft Office (Word, Excel, PowerPoint, OneDrive)

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improve and included weak points that should be seen to. This may be useful to anybody involved with the client.

After the completion of these documents, A review and examination of the new documents was completed to prove the efficiency and accuracy of the new documentation. This included technical examination and employee interviews.

A complete review was completed after these tasks concluded. This review contained information about the upgrades that have been completed and recommendations for infrastructure changes to be made for each client.

CONCLUSION

This course and project have been vital in creating a real-world range of knowledge. Many challenges have been encountered such as the COVID 19 lockdown which happened at the very beginning of the project. Such

challenges have enabled a vaster range of skills which will help in the future.

The main lesson learned is how important the trait of adaptability is to an organisation such as CCL. Things will change and obstacles will appear, and it is important that these can be overcome with confidence.

4. REFERENCES

Computer Concepts Limited. (2021). *About Us*. Retrieved from Computer Concepts Limited: <https://concepts.co.nz/about/about-ccl/>