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| **Overview** |  |  |

The purpose of this document is to update management and the project team members on the current status of the API automation initiative centered around the Meraki Dashboard API, specifically which requirements can be met by January 31st and which can not.

The requirements have been defined and published in a requirements document referred to as the BRD for short. The BRD was supplemented with a prioritized list of critical requirements which will be rolled out first as there would be a business impact otherwise. The development team consisting of DiData and Safeway developers/engineers has focused on meeting the list of critical requirements while keeping the larger BRD in mind. The following sections will provide an update on the overall progress as a whole as well as comment on the status of specific requirements (both critical and those found on BRD). Lastly this document aims to provide some feedback from the development team with regards to suggestions on that may be useful to Safeway, potentially even new BRD suggestions.

To date we’ve worked closely with Safeway development engineering team in close collaborative fashion. Much of the earlier sessions were aimed at establishing a development baseline environment and a way for the two teams to test/share from equal environments. This helps avoid inconsistent errors and unexpected results. One of the tools used by developers as a piece of software called an Integrated Development Environment (IDE), it’s like notepad for developers), using a IDE is extremely common and the IDE DiData had suggested (Pycharm) is industry recognized free IDE client which provides a wealth of functionality for a developer. It is our suggestion that any party responsible for maintaining the python package we create should also employ this IDE for uniformity and known compatibility.

At this point in the project we’ve had the opportunity to work with a number of key individuals within the Safeway team, including network engineers (Naveen Kumar) and Men and Mice automation developer (Mark Trout). We may even be at the point where we can expedite the development in a more independent manner (no longer continue with the 1:30pm working sessions). We have access to the meraki Organizations within the Safeway environment, and with VPN access to the Safeway network we would even be able to test Mark Trouts netX subnet lookup tool which would be employed for the firewall conversion process. In short the DiData teams can be self sufficient in the continued development of the requirements with only an occasional meeting with key Safeway personnel for questions and validation confirmation.

To aid with this discussion I’m sending this document out with a copy of the flowchart titled Safeway Meraki API Automation Architecture & Flow.pdf, it visually represents the architecture and flow used for the exporting and importing between Meraki Organization and 3rd party systems like Men and Mice. Documentation around the automation component piece will be developed and provided as part of the final deliverables.

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| **Objective** |  |  |

* Update all parties on current status and direction of API automation.
* Share architecture and flow visio file. (v1)
* Raise the level of awareness related to non-BRD related functions which Safeway may want to add to official BRD. (Backups/Rollback automation, building test tools, etc)
* Hopefully spur a larger discussion around enhanced automation aspects and the end user experience to fine tune and tailor the expected interface and results.

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| **A Note on Automation** |  |  |

Automation makes perfect business sense. Reduce the labor overhead and minimize human error to deliver large scale rollouts. The more granular the automation the less time it should take to implement the changes. Since the Safeway business need to rollout some automation is great some of the enhanced granular automation capabilities will need to be discussed with the Safeway team in more detail after the initial automation scripts are demonstrated and implemented. Things can always get more granular and efficient.

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| **Development Team Feedback** |  |  |

There are a number of useful enhancements some which don’t fall within the BRD but may be useful or even critical. Once the core requirements are met, we’d like to have a discussion about items such as Rollback/Backup automation, building test tools in python to support continued development, refining automation aspects to be tailored to expectations, etc.

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| **Core Requirements** |  |  |

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| **Defined Requirement** | **Status Notes** |
| Create New Network as per request. | Tested - Green for Jan 31st |
| Claim the new devices as per input provided | Tested - Green for Jan 31st |
| Create standard VLANs as per requirement | Tested - Green for Jan 31st |
| Create DHCP scopes as per requirement | Untested - Green for Jan 31st DHCP config can be pushed to new Network but current API does not have function to export DHCP configs from original network. DHCP config details will need to be supplied by Network engineer and imported. |
| Create static routes for store summary subnet | Untested – Green for Jan 31st We have a process in place to retrieve the summary subnets and how to determine the next-hop-ip but have yet to test. Testing next week. |
| Create static route for Adtran gateway | Untested – Status Unknown - Still waiting on Additional Details from Naveen |
| Create standard site specific L3 firewall rules | Tested – Green for Jan 31st (potentially earlier if there is a business need for upcoming stores). This function has been the most complicated component due to having to cross reference data with men and mice. It has been tested but some minor adjustments remain. |
| Enable site to site VPN and enable routing for static routes over VPN | Untested – Green for Jan31st API calls have been identified and this will be tested next week. |
| Bind the group policy to customer Wi-Fi VLAN to restrict bandwidth | Currently Not Supported in API |
| Organizational config sync for New stores regarding traffic shaping and content filtering configurations | Currently Not Supported in API |

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| **BRD Status Update** |  |  |

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| ID | Requirement | DiData Status Note |
| BR01 | Extract an accurate copy of the Meraki seed file on demand from the Meraki Dashboard (firewall policies and rules) | Tested - We have the ability to accurately extract data from various configuration sections, multiple files are generated during the script process. |
| BR02 | Translate the seed file output to an easily understood “user friendly” format including translation of rules similar to the Layer 3 Rules translation provided by nmsTools (Mark Trout) | Untested - They can be presented in a readable fashion as needed. Currently data is formatted in JSON but can be converted to any format for easier reading (if reading is needed). |
| BR03 | Allow for the indication of intended user action options of <Read Only> or <Update> for the extracted seed file.  <Read Only> does not permit changes of any kind nor an import back into the Meraki Dashboard | Will need more details on this request. |
| BR04 | Apply version controls to the extracted seed file copy when the <Update> action option is selected. Support multiple update versions for the same file. | Will need more details on this request. |
| BR05 | Apply change control to the extracted seed file copy when the <Update> action option is selected.  Allow for easily identifiable changes across versions, before and after. (the Meraki change log is impossible to understand)  Change controls will also facilitate the synchronization of replication of changes across all Layer 3 templates. | Will need more details on request. |
| BR06 | Allow for the user to make updates to the seed file copy when the <Update> action option is selected. | The process and flow to retrieve data and import data may differ from what is presumed in BDR. This is something we should discuss in greater detail. |
| BR07 | Perform automated validations of the policies on the updated seed file.  Prevent duplicate rules.  Additional Integrity checks… see Sergio for more details | The seedfile will have some limitations based on what the APIs are capable of. There will also be multiple seedfiles, one for vlans/subnets, another for firewall rules, etc. |
| BR08 | Import the updated Meraki seed file back into the Meraki Dashboard. | Tested multiple API calls and successfully pushed POSTs to dashboard. This would be accomplished with multiple data files and multiple separate functions. |
| BR09 | [HIGHEST PRIORITY]  Provide the ability to quickly and easily apply the same Layer 3 rules updates from one template across multiple user selected or all other templates. | Currently developing (and partially tested) method to export firewall rules from template based store in ORG\_1, parse with men and mice, then import the results into non-template based store in ORG\_2. We have not tested template to template import/export. |
| BR10 | [HIGHEST PRIORITY]  Provide the ability to quickly and easily apply the same Site to Site or Layer 3 rules updates (seed file, whole rule set) from one organization/environment across multiple user selected or all other organizations/environments. | Currently developing method to export VPN settings and firewall rules. On track for Jan 31st. |
| BR11 | Provide the ability to perform a compare validation of rules/policies between the Production environment and another user selected organization/environment. | This can be done however would probably not be ready by Jan 31st. |
| BR12 | Provide the capability to accurately Add or Remove vLANs to a selected set of or across all Retail Stores or labs. | API Calls related to adding/deleting tested. Bulk administration of these tasks has not. The core requirements indicate the need to copy vlans/subnet data from a template based network in ORG\_1 and import the results into a non-template network in ORG\_2. We will have available by Jan 31st. |
| BR13 | Provide the capability to accurately Add or Remove or Modify DHCP scopes for vLANs to a selected set of or across all Retail Stores or labs. | Meraki Dashboard API can import DHCP details but no API exists to export from original network so it will have to be manually provided by network team in the form of an excel file, then imported with script. On track for Jan 31st |
| BR14 | Provide the capability to accurately Add or Remove or Modify Quality of Service Rules to a selected set of or across all Retail Stores or labs. | TBD, may not be available as API call. |
| BR15 | Provide the capability to accurately Migrate MX Configurations for the 100+ Shaw’s stores that have been configured with templates. | Most configuration aspects expected will be migratable with our scripts, which should save hours. |
| BR16 | Provide the capability to accurately deploy pilot configurations and firewall policies in the standard rollout process (pilot of up to 20 stores/extended pilot of up to 50 stores/deployment of max 2 divisions at a time. | Most configuration aspects will be migratable with our scripts which should save hours. |
| BR17 | Provide an integration tool to facilitate the maintenance of Firewall Rules and Network configurations… | Will need more details on this request. |
| BR18 | Provide mechanism for maintaining Content Filtering settings across all stores. | TBD, may not be available as API call. |
| BR19 | Provide ability to create static routes for two /22 store summary subnet addresses | Untested but should not be an issue. Should be tested and operational by Jan 31st. |
| BR20 | Provide ability to create static routes for Voice Loopback addresses | Untested but should not be an issue. Should be tested and operational by Jan 31st. |

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| **Use Cases** |  |  |

**Business Use Case List**

My intention is to comment on the use cases next week.