



ARISTA WHITE PAPER

Configuration Archive Application for ServiceNow™

ServiceNow offers a portfolio of robust cloud-based products that automate and manage enterprise services. Arista EOS is designed to provide a foundation for the business needs of next-generation datacenters and cloud networks. Arista EOS™ provides extremely robust and reliable data center communication services while delivering security, stability, openness, modularity, and extensibility. This is the perfect match because ServiceNow is all about automating the Enterprise and letting customers quickly add features. EOS is all about extensibility and letting customers quickly add functionality. You can leverage both ServiceNow and EOS to improve your productivity.

The Configuration Archive Application allows for complete configuration archival and versioning, merging DevOps concepts with the power of ServiceNow. The Arista Cloud Networking Portfolio integration with the ServiceNow platform allows users to backup and track changes to switch configurations minimizing operator errors and resulting in less downtime and greater SLA's.

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ARCHITECTURE

The software architecture used to deliver ServiceNow applications that integrate with EOS is shown in Figure 1. In this diagram only one ServiceNow instance and one data center is shown. There could be one or more ServiceNow instances working with one or more data centers. A description of the components follows:

SERVICENOW INSTANCE

The ServiceNow instance is accessible from the cloud. One or more ServiceNow MID Servers can be installed in a customer data center that communicates with the ServiceNow instance via a RESTful API. The MID Server polls the External Communication Channel (ECC) queue looking for work. The ECC queue provides the ability to initiate requests to the MID Server from the ServiceNow instance and process replies from the MID Server.

The ServiceNow instance contains database tables that store application specific information, in this case the switch configurations. Having the data stored in the ServiceNow instance is convenient and eliminates the need for a complex HA solution implemented within or between the data centers.

The application functionality is implemented in server-side scripts that execute on the ServiceNow instance. Client-side scripts that run in the web browser can be used for further customization.

CUSTOMER DATA CENTER

One or more MID Servers can be installed on servers within the data center. The MID Server needs access through the firewall so that it can initiate communications with the ServiceNow instance. When the MID Server receives a request going to Arista switches, the applications in the ServiceNow instance will send eapish commands to the MID Server that then sends eAPI requests via the pyeapi library to the Arista switch. eapish is a python program that lets you type in eAPI commands as a shell command. pyeapi is a python eAPI client library. Both eapish and pyeapi are open source and available via github or could be installed via pip.

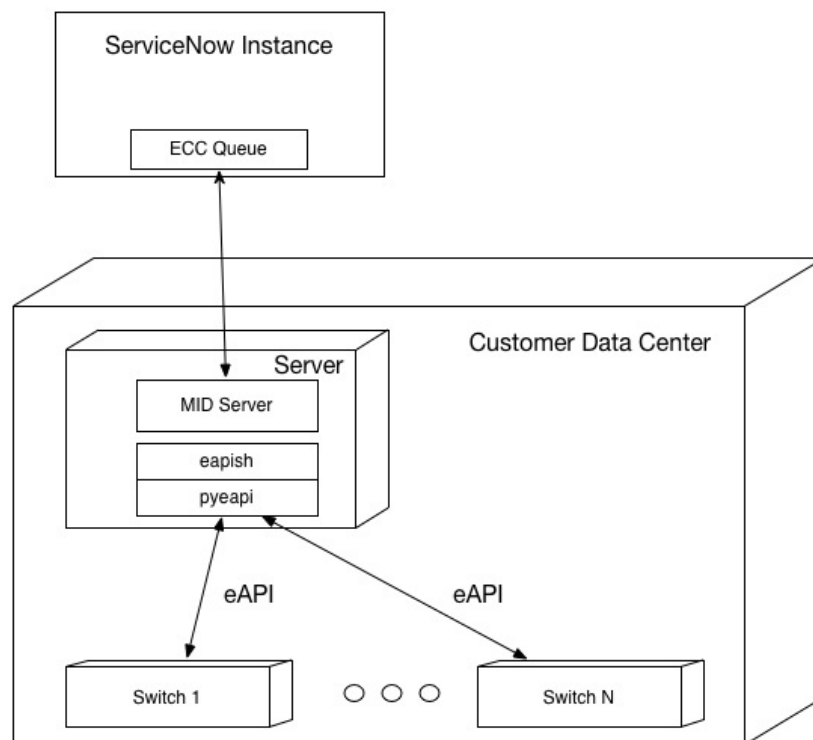


Figure 1: Architecture for EOS applications on ServiceNow

CONFIGURATION ARCHIVE APPLICATION

The Arista Configuration Archive application allows startup and running switch configurations to be archived in a ServiceNow instance. The application running on a ServiceNow instance will get the switch configurations in one or more data centers and upload them to the ServiceNow instance via a MID server. This capability allows users to backup and track changes to switch configurations.

The process for uploading switch configurations follows. The user initiates an upload of the switch configurations to the ServiceNow instance. The user could schedule a job to upload switch configurations. Either of those actions would occur in the ServiceNow instance. When the user requests a switch configuration upload an Arista CLI command is wrapped in an *eapish* command passed into an ECC output queue record as a command to be executed on the MID server. The *eapish* command executed on the host running the MID server will then generate an eAPI request that will be sent to the switch. The reply from the switch is returned to *pyepai* that returns it to *eapish* sending the output to stdout. The MID server takes the stdout and stderr from running the *eapish* command and returns it in an ECC input queue record. Server-side scripts process the configurations changing the version numbers as required and storing the configuration into the database table when needed.

Only unique switch configurations are stored in the ServiceNow instance, that is the switch configurations are deduped. If a startup and running configuration is the same then only one configuration is stored. If one or more switches have the exact same configuration then only one configuration is stored.

The Configuration Archive Application is available for free to download into your instance from the ServiceNow store.

SUMMARY

The Configuration Archive application is the first ServiceNow certified application from Arista that runs on your ServiceNow instance. The software architecture implemented allows Arista developers and developers from your organization to easily leverage the flexibility of both the ServiceNow platform and EOS to add new functionality that will improve productivity within your organization.

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