A little about me....

- CompTIA CASP+, Security +, Network +, A+, CSIS (Secure Infrastructure Specialist), CIOS – (IT Operations Specialists)

- Technology & Cybersecurity SME

- Over 8 years in the IT Security industtry

- 4 years of strategic engagement with Partners

- Cisco Sales Champion ('22)

- Passionate about leveraging technology to solve complex security challenges, streamline processes, and continuously expand my technical knowledge to share in those learnings

Jonathan Smith

Solutions
Engineer Cisco Secure MSP

Overview of Duo's APIs

Duo's Core APIs

Duo Admin API

- Offers methods for creating, retrieving, updating, and deleting the core objects in Duo's system: users, phones, hardware tokens, admins, and integrations.

Duo Accounts API

- Allows multi-tenant Duo administrators to programmatically create, delete, and manage individual Duo customer accounts.

Duo Accounts API w/ Admin API

- While the Duo Admin API allows programmatic management of account objects like users, devices, integrations, and logs, using a parent-level Accounts API application with the Admin API lets you manage and query child accounts by specifying their API host and account ID in the request parameters.

Message Format for HMAC Signature

Component	Description	Example
`date`	The current time, formatted as RFC 2822. This must be the same string as the `Date` header.	Tue, 21 Aug 2012 17:29:18 -0000
`method`	The HTTP method (uppercase).	POST
`host`	Your API hostname (lowercase).	api-xxxxxxxx.duosecurity.com
`path`	The specific API method's path.	/admin/v1/users
`params`	The URL-encoded list of key=value pairs, sorted by key. These come from the request parameters (the URL query string for GET and DELETE requests or the request body for POST requests). If the request does not have any parameters, one must still include a blank line in the string that is signed.	realname=First%20Last&username=root

Why use Duo APIs?
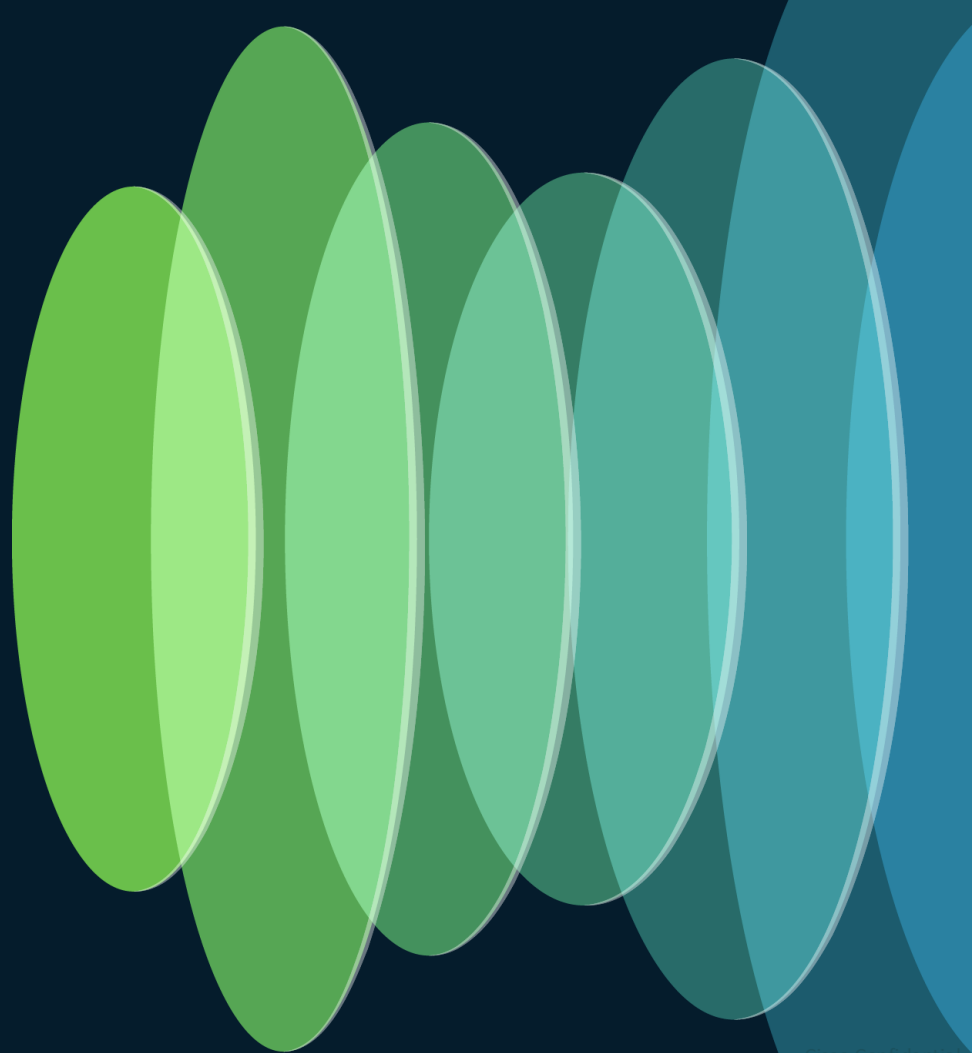
Common Challenges

- Time Constraints – Managing administrative tasks manually is time-consuming and labor-intensive.

- Scalability Challenges – As client numbers grow, maintaining security consistency across accounts becomes difficult.

- Inconsistent Configurations – Lack of uniform setups can lead to security gaps and compliance risks.

- Manual Errors – Human mistakes can cause misconfigurations, overlooked security settings, and breaches.

- Limited Resources – Insufficient staff and technical resources make it harder to manage and support multiple accounts effectively.

Benefits of Using Duo APIs

- **Accelerate Deployments:** Streamline the deployment process, enabling quicker setup across multiple client environments.

- **Improve Operational Efficiencies:** Reduce manual tasks by automating routine operations, such as user provisioning and configuration updates.

- **Reduce Total Cost of Ownership (TCO):** Experience a tangible reduction in TCO by decreasing deployment time, eliminating errors in manual operations

- **Enhance Security:** Meet security needs rapidly and minimize disruption to end-users, help desk, and IT staff, improving overall security posture

- **Improve Business Agility:** Respond faster to business needs and security requirements with the ability to quickly modify and deploy Duo configurations and settings through APIs.

Introduction to Postman

Postman Overview

What is Postman?

Postman is a popular and user-friendly platform for building, testing, documenting, and sharing APIs. It simplifies API testing and documentation by providing an intuitive interface for creating and executing HTTP requests, as well as managing API collections and environments.

- **API Development Environment:** A powerful tool for building, testing, and managing APIs with an easy-to-use interface for creating and sending HTTP requests.
- **Automation:** Automate testing through collections and scripts, simplifying repetitive tasks and ensuring consistent results.

Why Postman?

- Ease of use
- Advanced API testing capabilities
- Pre-configured API requests
- Schedule & automate tasks
- Seamless integration & interoperability

Postman Basics & Key Terms

In Postman, a Request is made to an API endpoint.

- URL: The endpoint you are sending the request to.

- Parameters: Key-value pairs that you can include in your request URL to pass information.

- Authorization: Auth details can be included in the header, body, or as parameters. Postman auto-populates relevant parts of the request based on the auth type chosen.

- Headers: Key-value pairs sent along with the request to provide additional information to the server.

- Body: The data you send to the server in POST, PUT, PATCH, or DELETE requests.

Variables enable you to assign and reuse data throughout your requests and change values based on your working environment.

- Collection Variables: Specific to a collection of requests.

- Global Variables: Accessible across all collections and environments.

- Environment Variables: Specific to a particular environment, allowing you to switch settings based on the environment you're working in.

Postman Basics & Key Terms (cont...)

A Postman Collection is a set of API endpoints or requests, grouped under the same collection ID. It includes each endpoint's authorization type, parameters, headers, request bodies, tests, and settings.

- Collections enable you to group requests with different method types (e.g., GET, POST, DELETE, PUT) and organize them into folders or subfolders.

- The Collection Runner allows you to run all the requests in a collection in sequence, automating testing and enabling you to view results for the entire set of requests

Scripts in Postman allow you to automate actions before a request is sent and after a response is received

- Pre-request Scripts: Run before the request is sent. Useful for setting variables, and other setup tasks

- Post-response Scripts: Run after the response is received. Useful for extracting data from responses, chaining requests, and validating responses.

Lab Walkthrough
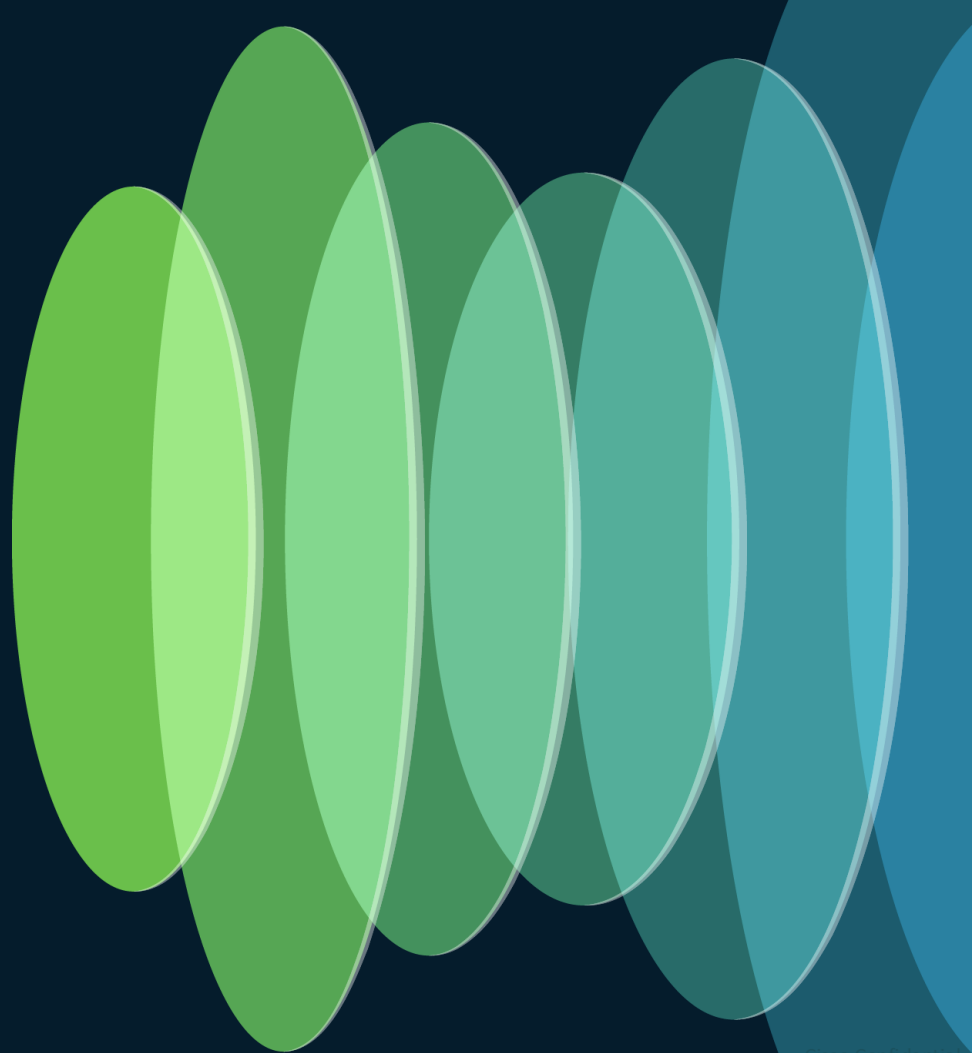
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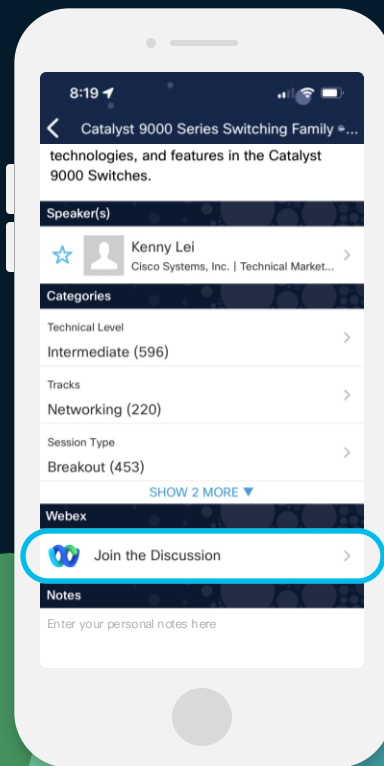
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