**COVERALL**

***GENERAL API ENDPOINT ARCHITECTURE***

**API MAP**

**Coverall School Administration Server (SAS) API Endpoints:**

1. **User Management**:
   * **/api/users/signup**: Register a new user.
   * **/api/users/login**: Authenticate and log in an existing user.
   * **/api/users/logout**: Log out the currently authenticated user.
   * **/api/users/update**: Modify user details.
   * **/api/users/delete**: Remove a user from the system.
2. **Content Management**:
   * **/api/content/submit**: Submit a new YouTube video for approval.
   * **/api/content/update**: Modify details of a submitted video.
   * **/api/content/delete**: Remove a video from the list.
   * **/api/content/approve**: Mark a video as approved for viewing.
   * **/api/content/reject**: Mark a video as rejected.
3. **Policy Management**:
   * **/api/policy/create**: Define a new content policy.
   * **/api/policy/update**: Modify an existing content policy.
   * **/api/policy/delete**: Remove a policy.
4. **Billing & Sales**:
   * **/api/billing/subscribe**: Start a subscription plan.
   * **/api/billing/cancel**: Cancel an ongoing subscription.
   * **/api/billing/update**: Modify billing details or plan.

**Hive Server (Central Server) API Endpoints:**

1. **Policy Synchronization**:
   * **/api/sync/policies**: Retrieve the latest policies from the SAS.
   * **/api/sync/update**: Update a policy in the central server.
   * **/api/sync/delete**: Remove a policy from the central server.
2. **AI Settings**:
   * **/api/ai/settings/update**: Modify AI analysis parameters.
3. **Statistics & Metrics**:
   * **/api/stats/get**: Retrieve user behavior and access statistics.
   * **/api/stats/update**: Update statistics based on recent data.

**Cyber Security Server (CSS) API Endpoints:**

1. **Web Request Handling**:
   * **/api/request/forward**: Forward a web request to its destination.
   * **/api/request/cache**: Store or retrieve a web request/response in/from cache.
   * **/api/request/block**: Block a web request based on policies.
2. **Threat Analysis**:
   * **/api/threat/check**: Analyze a URL for potential threats.
   * **/api/threat/update**: Update the threat database with new information.
3. **Kafka Integration**:
   * **/api/kafka/publish**: Send data to a Kafka topic.
   * **/api/kafka/consume**: Retrieve data from a Kafka topic.
4. **Authentication**:
   * **/api/auth/student**: Authenticate a student user.
   * **/api/auth/validate**: Validate a user's session or token.

**Software Agent API Endpoints:**

1. **Configuration**:
   * **/api/agent/config/get**: Retrieve the current configuration for the agent.
   * **/api/agent/config/update**: Modify the agent's configuration.
2. **Policy Check**:
   * **/api/agent/policy/check**: Check if a web request complies with the set policies.
3. **Redirect**:
   * **/api/agent/redirect**: Redirect a web request to a specified destination (e.g., SAS for YouTube content).

**API DATA FLOW**

**Coverall School Administration Server (SAS) API Endpoints:**

1. **User Management**:
   * Direction: Inbound to SAS
   * Data Exchange: SAS <-> User Interface
2. **Content Management**:
   * Direction: Inbound to SAS and Outbound to Hive Server
   * Data Exchange: SAS <-> User Interface, SAS <-> Hive Server
3. **Policy Management**:
   * Direction: Inbound to SAS and Outbound to Hive Server
   * Data Exchange: SAS <-> User Interface, SAS <-> Hive Server
4. **Billing & Sales**:
   * Direction: Inbound to SAS
   * Data Exchange: SAS <-> User Interface, SAS <-> Payment Gateway (e.g., Stripe)

**Hive Server (Central Server) API Endpoints:**

1. **Policy Synchronization**:
   * Direction: Inbound to Hive Server
   * Data Exchange: Hive Server <-> SAS
2. **AI Settings**:
   * Direction: Inbound to Hive Server
   * Data Exchange: Hive Server <-> User Interface
3. **Statistics & Metrics**:
   * Direction: Inbound to Hive Server
   * Data Exchange: Hive Server <-> User Interface

**Cyber Security Server (CSS) API Endpoints:**

1. **Web Request Handling**:
   * Direction: Inbound to CSS and Outbound to Hive Server
   * Data Exchange: CSS <-> Software Agent, CSS <-> Hive Server
2. **Threat Analysis**:
   * Direction: Inbound to CSS
   * Data Exchange: CSS <-> External Threat Databases, CSS <-> Hive Server
3. **Kafka Integration**:
   * Direction: Inbound to CSS and Outbound from CSS
   * Data Exchange: CSS <-> Kafka, CSS <-> Hive Server
4. **Authentication**:
   * Direction: Inbound to CSS
   * Data Exchange: CSS <-> Software Agent

**Software Agent API Endpoints:**

1. **Configuration**:
   * Direction: Inbound to Software Agent
   * Data Exchange: Software Agent <-> Hive Server
2. **Policy Check**:
   * Direction: Outbound from Software Agent
   * Data Exchange: Software Agent <-> Hive Server
3. **Redirect**:
   * Direction: Outbound from Software Agent
   * Data Exchange: Software Agent <-> SAS (for YouTube content)