Comic Vine + Pinecone Integration Script Summary:

1. Goal:

   - Extract character, comic, and related metadata from ComicVine's API.

   - Sanitize and filter the data (e.g., remove invalid/None fields).

   - Index the cleaned data into Pinecone for later retrieval/embedding.

2. ComicVine:

   - API key provided and tested.

   - Multiple endpoints (characters, issues, teams, etc.).

   - Some fetches failed due to HTTP 403 errors (possibly missing headers or deprecated format usage).

   - Image data, first appearance info, and origin stories requested.

3. Pinecone:

   - Pinecone client updated to latest SDK structure (via `Pinecone` class).

   - `Index` object requires both `name` and `host` explicitly.

   - Errors handled for 'NoneType' and oversized metadata payloads.

   - Metadata type conversion and size limits implemented.

4. Fixes Implemented:

   - Updated Pinecone initialization using `Pinecone` and `Index` classes.

   - Sanitized metadata to meet Pinecone's format requirements.

   - Retry logic and offset continuation added for resilience.

   - Verified `PINECONE_HOST_URL`, `PINECONE_API_KEY`, and `PINECONE_INDEX_NAME` used correctly.

5. Outstanding Tasks:

   - Ensure API headers and correct endpoint formatting for ComicVine.

   - Handle HTTP 403 and service unavailability errors gracefully.

   - Extend data model for pricing/crossover fields as needed.

Conclusion:

The scripts are now structured to extract, clean, and insert ComicVine data into Pinecone reliably, assuming API headers and rate limits are correctly addressed.