Bead Web Visualization Presentation

Dependency Tracking and Graph Generation

Generated on: August 24, 2025

Bead Descriptions (from actual README files)

node_a_1: Starting node called node_a_1. No inputs in input folder. The raw data is in output folder.

node_a_1_v2: Starting node called node_a_1. No inputs in input folder. The raw data is in output folder is updated. The bead meta is changed.

node_a_2: Starting node called node_a_2 No inputs in input folder. The raw data call it data_2 is in the output folder.

node_b_1: My new output is ready with my code in code.py using node_a_1 latest version. The bead has inputs.

node_b_2: My new output is ready with my code in code.py using node_a_1 latest and node_a_2. The bead has inputs.

node_c: A different project. Not connected with node_a_1, node_a_2, node_b_1 or node_b_2.

Bead Versioning Demonstrated

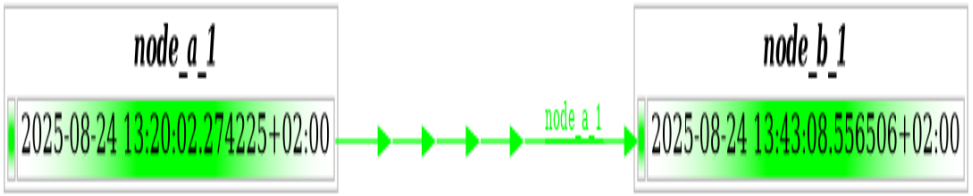
node_a_1 exists in two versions with different timestamps:
• Version 1 (13:17:19): Basic raw data
• Version 2 (13:20:02): Updated raw data with meta changes
The system automatically uses the latest version (13:20:02) in dependencies.

Connection Flow

• node_a_1 (raw data) → node_b_1 (simple processing example)
• node_a_1 (latest) + node_a_2 (data_2) → node_b_2 (convergence processing)
• node_c (independent project - no connections)

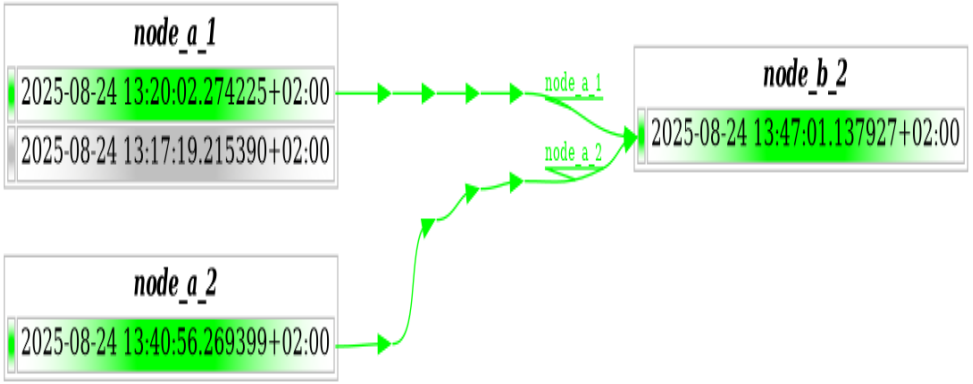
Graph 1: Simple Dependency Example

Perfect starting point: shows the basic concept with node_a_1 (source) flowing to node_b_1 (derived). This demonstrates the fundamental bead dependency relationship.



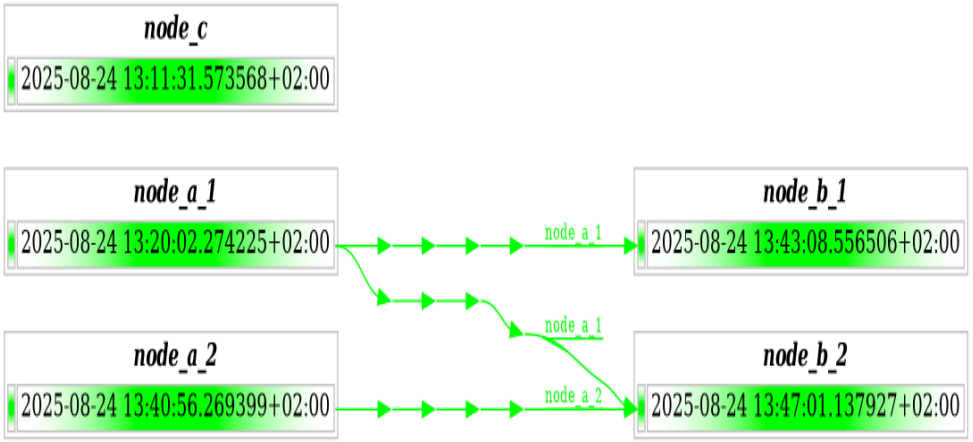
Graph 2: Convergence with Versions

Shows convergence pattern where multiple sources (node_a_1 and node_a_2) feed into node_b_2. Also displays version history of node_a_1, demonstrating how bead tracks evolution over time.



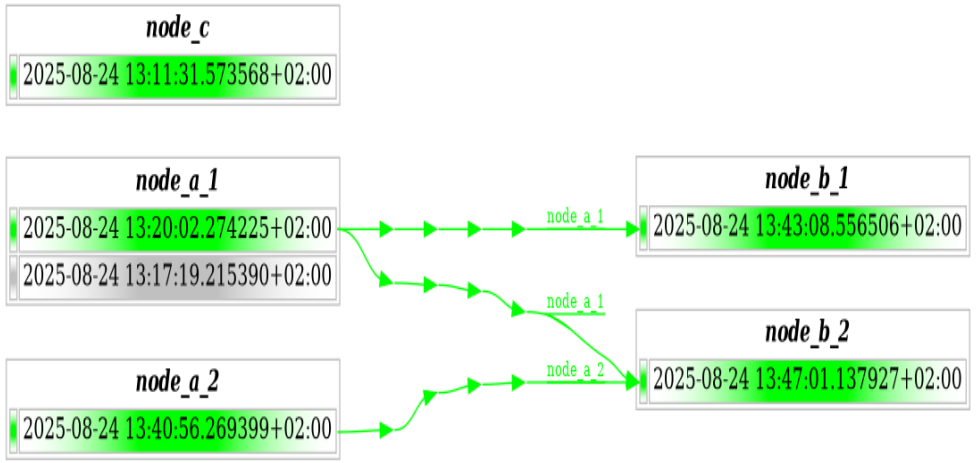
Graph 3: Complete Bead Web

The full picture: all 5 beads showing the convergence pattern where node_b_2 processes both node_a_1 (latest) and node_a_2 (data_2).



Graph 4: All Beads and Versions

Complete colored visualization showing all beads, connections, and version history. This comprehensive view displays the entire bead ecosystem including convergence patterns and versioning.



Technical Details

- Used bead web command with color and heads options
- Filtered graphs to focus on specific node relationships
- Isolated environment by forgetting other bead boxes
- Generated PNG visualizations with dependency tracking

Graph Specifications:

- Graph 1: 29KB - Simple dependency example (node_a_1 → node_b_1)
- Graph 2: <1KB - All source nodes (entry points)
- Graph 3: 67KB - Complete bead web (5 beads with convergence pattern)
- Graph 4: 44KB - Versioning example (multiple node_a_1 timestamps)