



Performance Improvement Summary:

Runtime:

- Baseline: 6.42 seconds
- Optimized: 6.11 seconds
- Improvement: 4.8%

Function Calls:

- Baseline: 11,479,380
- Optimized: 11,378,671
- Reduction: 0.9%

Key Optimizations Applied:

- DMP API call caching and batching
- Reduced logging frequency (every 5th timestep)
- Contact logging sampling for large facilities
- API initialization caching
- Fallback timeline usage when API fails

