

# 8.7 Cross-Plane Relationships

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Cross-plane relationships occur when an event, decision, message, record, or action in one [Runtime Plane](#) affects, references, constrains, or produces information in another [Runtime Plane](#).

The Financial Systems Archetype separates [Runtime Planes](#) to preserve architectural clarity. That separation does not mean the planes operate in isolation. A [Financial System](#) often requires interactions across planes, but those interactions need to remain explicit, [Traceable](#), and governed.

For example, a health event in the [Health and Observability Plane](#) may trigger a recovery command in the [Control Plane](#). A [Data Plane](#) event may require a policy decision in the [Policy and Release Plane](#) before information leaves an internal environment. A [Policy and Release Plane](#) decision may generate an audit record in the [Audit and Provenance Plane](#). A [Control Plane](#) replay command may cause a [Node](#) to republish [Data Plane](#) information from preserved [Evidence](#) or persisted records. Cross-plane relationships must not collapse the planes into one another. The architectural purpose of each plane remains distinct even when information flows between planes.

A cross-plane relationship can identify:

- Originating [Runtime Plane](#)
- Receiving or affected [Runtime Plane](#)
- Event, message, decision, or record causing the relationship
- [Node](#) or [Node Role](#) participating in the relationship
- [Communication Endpoint](#) or mechanism involved
- [Data Structure Definition](#) governing the exchanged information, where applicable
- The policy, rule, or condition authorising the relationship, where applicable
- [Traceability and Evidence](#) record supporting later review

Examples of cross-plane relationships appear in Table 8.7-1.

Table 8.7-1: Examples of cross-plane relationships among Runtime Planes

| Originating plane                              | Affected plane                             | Example                                                                                                                     |
|------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Health and Observability Plane</a> | <a href="#">Control Plane</a>              | A degraded <a href="#">Node</a> status triggers a restart, retry, or recovery command.                                      |
| <a href="#">Data Plane</a>                     | <a href="#">Policy and Release Plane</a>   | A transaction result requires an evaluation for release before an external consumer receives it.                            |
| <a href="#">Policy and Release Plane</a>       | <a href="#">Audit and Provenance Plane</a> | A release decision creates an audit and provenance record.                                                                  |
| <a href="#">Control Plane</a>                  | <a href="#">Data Plane</a>                 | A replay command causes selected <a href="#">Data Plane</a> records to be republished.                                      |
| <a href="#">Data Plane</a>                     | <a href="#">Audit and Provenance Plane</a> | An analytical assertion creates provenance that links inputs, producing a <a href="#">Node</a> , model version, and output. |

Cross-plane relationships support operational coordination, governed release, auditability, replay, recovery, and [Evidence](#). They also help reviewers understand how the system behaves without losing the separation between runtime concerns.

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