

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 authorizing 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
Health and Observability Plane	Control Plane	A degraded Node status triggers a restart, retry, or recovery command.
Data Plane	Policy and Release Plane	A transaction result requires an evaluation for release before an external consumer receives it.
Policy and Release Plane	Audit and Provenance Plane	A release decision creates an audit and provenance record.
Control Plane	Data Plane	A replay command causes selected Data Plane records to be republished.
Data Plane	Audit and Provenance Plane	An analytical assertion creates provenance that links inputs, producing a Node , 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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Last update: **2026/08/04 07:08**

