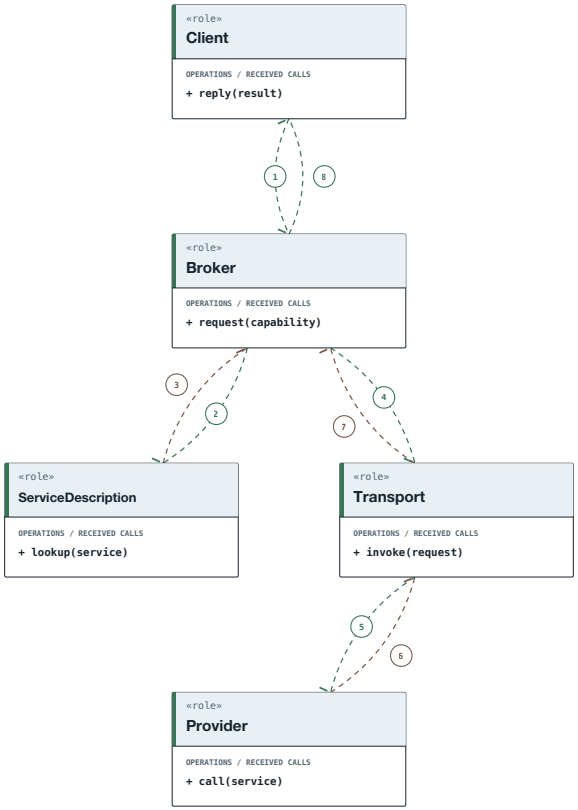
C04 Broker

Communication / UML CLASS VIEW / ANALYTICAL MODEL

Mediate discovery and invocation across boundaries.

UML CLASS VIEW

dashed arrow: call dependency · brown: return/failure · analytical, not an observed trace



POINTCUT / PATTERN INTERFACE

CONTEXT	A caller invokes a service or provider without direct construction.
TRIGGER	A service description is registered or a request is addressed.
STRUCTURE	Registry, service description, transport, request/reply, and error mapping.
EFFECT	Broker resolves a compatible endpoint and returns a correlated response.

CONTRACT / REQUIRED BEHAVIOR

REQUIRES	Provider identity and versioned service description are available.
ENSURES	Client and provider agree on schema or return incompatibility.
INVARIANT	Broker discovery does not bypass authentication or trust boundaries.
VIOLATION	Provider absence, timeout, partial reply, and schema mismatch are explicit.

RELATIONSHIPS / ANALYTICAL CALLS

number · caller → callee · message

1 Client → Broker request(capability)
2 Broker → ServiceDescription lookup(service)
3 ServiceDescription ↩ Broker return(provider)
4 Broker → Transport invoke(request)
5 Transport → Provider call(service)
6 Provider ↩ Transport return(response)
7 Transport ↩ Broker return(response)
8 Broker → Client reply(result)

VARIATION / TEST / NEGATIVE CONTROL

VARIATION	Tool registry, provider registry, cross-process broker, and service mesh.
TEST_OBLIGATION	Test discovery, missing provider, version mismatch, timeout, and reconnect.
NEGATIVE_CONTROL	A local factory returning implementations is only a registry cue.