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Cancellation

ℹ️ **Protocol Revision**: 2024-11-05

The Model Context Protocol (MCP) supports optional cancellation of in-progress requests through notification messages. Either side can send a cancellation notification to indicate that a previously-issued request should be terminated.

Cancellation Flow

When a party wants to cancel an in-progress request, it sends a `notifications/cancelled` notification containing:

- The ID of the request to cancel
- An optional reason string that can be logged or displayed

```json
{
  "jsonrpc": "2.0",
  "method": "notifications/cancelled",
  "params": {
    "requestId": "123",
    "reason": "User requested cancellation"
  }
}
```

Behavior Requirements

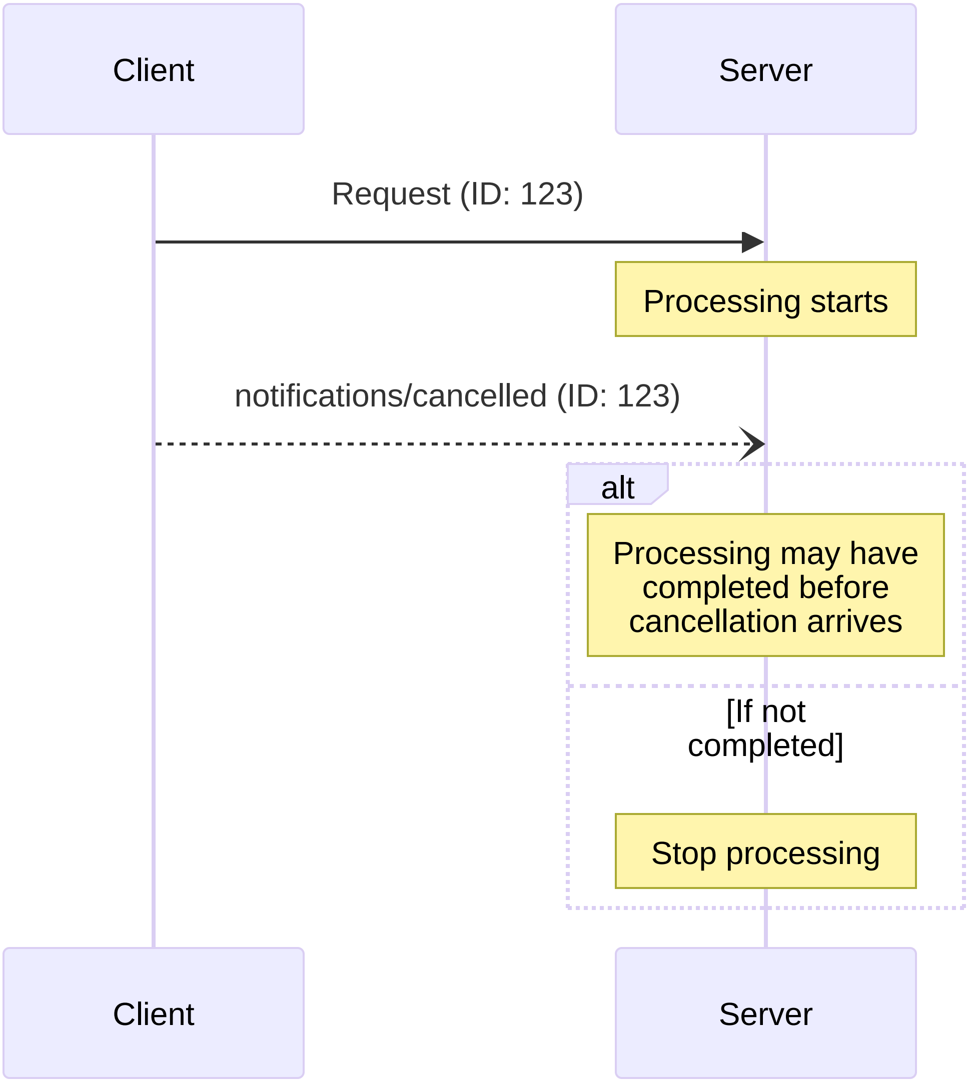
1. Cancellation notifications **MUST** only reference requests that:
   - Were previously issued in the same direction
   - Are believed to still be in-progress

2. The `initialize` request **MUST NOT** be cancelled by clients
3. Receivers of cancellation notifications **SHOULD**:
   - Stop processing the cancelled request
   - Free associated resources
   - Not send a response for the cancelled request
4. Receivers **MAY** ignore cancellation notifications if:
   - The referenced request is unknown
   - Processing has already completed
   - The request cannot be cancelled
5. The sender of the cancellation notification **SHOULD** ignore any response to the request that arrives afterward

Timing Considerations

Due to network latency, cancellation notifications may arrive after request processing has completed, and potentially after a response has already been sent.

Both parties **MUST** handle these race conditions gracefully:



Implementation Notes

- Both parties **SHOULD** log cancellation reasons for debugging
- Application UIs **SHOULD** indicate when cancellation is requested

Error Handling

Invalid cancellation notifications **SHOULD** be ignored:

- Unknown request IDs

- Already completed requests
- Malformed notifications

This maintains the “fire and forget” nature of notifications while allowing for race conditions in asynchronous communication.