

Why?

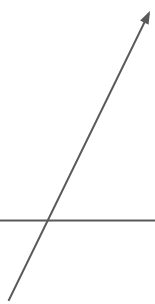
Main thread

ActorDestroy
Release 1->0

TrySendDeletingChannel
'this' is invalid

Other thread

Release 2->1
TrySendDeletingChannel



Root cause

- Runnable for TrySendDeletingChannel hold only weak reference of HttpChannelChild
- Refcount hack to do self destruction when external reference to HttpChannelChild doesn't work for multi-thread scenario

How to resolve

- Remove refcount hack
- Use strong reference to maintain IPDL lifecycle
- Restrict IPDL lifecycle management on main thread

- Introduce `HttpChannelChildActorSet` to hold strong reference to active IPDL and keptAlive IPDL
 - Active IPDL set is maintained by `Alloc/DeallocPHttpChannelChild` (main thread)
 - keptAlive IPDL set is maintained by `HttpChannelChild`
- Move IPDL implementation from `HttpChannelChild` to `HttpChannelChildActor`
 - `HttpChannelChild` hold strong reference to `HttpChannelChildActor`
- `HttpChannelChildActor` holds a weak reference to `HttpChannelChild`
 - Weak reference will be removed when `HttpChannelChild` is about to be deleted
 - Accessing this weak reference is protected by mutex

Proposed Solution

- Strong reference
- - -> Weak reference
- Direct invocation
- - -> Async invocation

