# Requests

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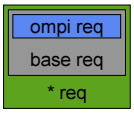
## Requests

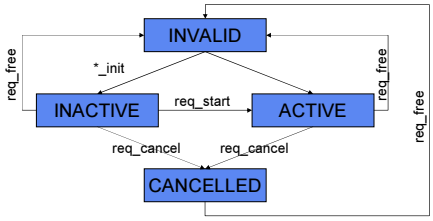
- Used for:
  - Communications (point-to-point, one sided)
  - MPI I/O
  - Generalized requests
- Fortran indexes
  - Created only if required
  - Removed when the request is freed internally

## Requests

- Inheritance
  - Share the data between layers
- OMPI store general information
- The PML base request store the user level information
- The specific PML request store all other information required by this specific implementation of the PML.




## Requests life cycle




## OMPI Request

- Contain the basic information about the request in a generic way
  - Not point-to-point specific
- The req_free and req_cancel are set by the layer which create the request.
- OMPI_REQUEST_INIT and OMPI_REQUEST_FREE

## PML Requests

- User buffer pointer, count, data-type, tag and remote rank
- The sequence number of the request
- PML completion status
- Free callback called …
- Usually the send and receive requests are different in the PML

## How a request get completed

- 2 steps process
  - The MPI layer has to free it
    - Using request_free function or by calling one of the test, wait functions
  - The other layer has to release it
    - And here the object approach is quite useful