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\* \* \*

## # Point To Point Communication Functions

(Since NCCL 2.7) Point-to-point communication primitives need to be used when ranks need to send and receive arbitrary data from each other, which cannot be expressed as a broadcast or allgather, i.e. when all data sent and received is different.

### ## ncclSend

```
[ncclResult_t](types.html#c.ncclResult_t "ncclResult_t") `ncclSend` (const  
void* _ sendbuff_, size_t _ count_,  
[ncclDataType_t](types.html#c.ncclDataType_t "ncclDataType_t") _ datatype_,  
int _ peer_, [ncclComm_t](types.html#c.ncclComm_t "ncclComm_t") _ comm_,  
cudaStream_t _ stream_)
```

Send data from `sendbuff` to rank `peer`.

Rank `peer` needs to call `ncclRecv` with the same `datatype` and the same `count` as this rank.

This operation is blocking for the GPU. If multiple `ncclSend()` and `ncclRecv()` operations need to progress concurrently to complete, they must be fused within a `[ncclGroupStart()]`(group.html#c.ncclGroupStart

"ncclGroupStart")/ [ `ncclGroupEnd()`](group.html#c.ncclGroupEnd

"ncclGroupEnd") section.

Related links: [Point-to-point communication](../usage/p2p.html#point-to-point).

## ncclRecv¶

```
[ncclResult_t](types.html#c.ncclResult_t "ncclResult_t") `ncclRecv` (void*_  
recvbuff_, size_t _ count_, [ncclDataType_t](types.html#c.ncclDataType_t  
"ncclDataType_t") _ datatype_, int _ peer_,  
[ncclComm_t](types.html#c.ncclComm_t "ncclComm_t") _ comm_, cudaStream_t _  
stream_)¶
```

Receive data from rank `peer` into `recvbuff`.

Rank `peer` needs to call ncclSend with the same `datatype` and the same  
`count` as this rank.

This operation is blocking for the GPU. If multiple `ncclSend()` and  
`ncclRecv()` operations need to progress concurrently to complete, they must  
be fused within a [ `ncclGroupStart()`](group.html#c.ncclGroupStart  
"ncclGroupStart")/ [ `ncclGroupEnd()`](group.html#c.ncclGroupEnd  
"ncclGroupEnd") section.

Related links: [Point-to-point communication](../usage/p2p.html#point-to-point).

[Next ](types.html "Types") [ Previous](group.html "Group Calls")

\* \* \*

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[theme](https://github.com/rtd/sphinx\_rtd\_theme) provided by [Read the Docs](https://readthedocs.org).