

Interoperability

Group 1

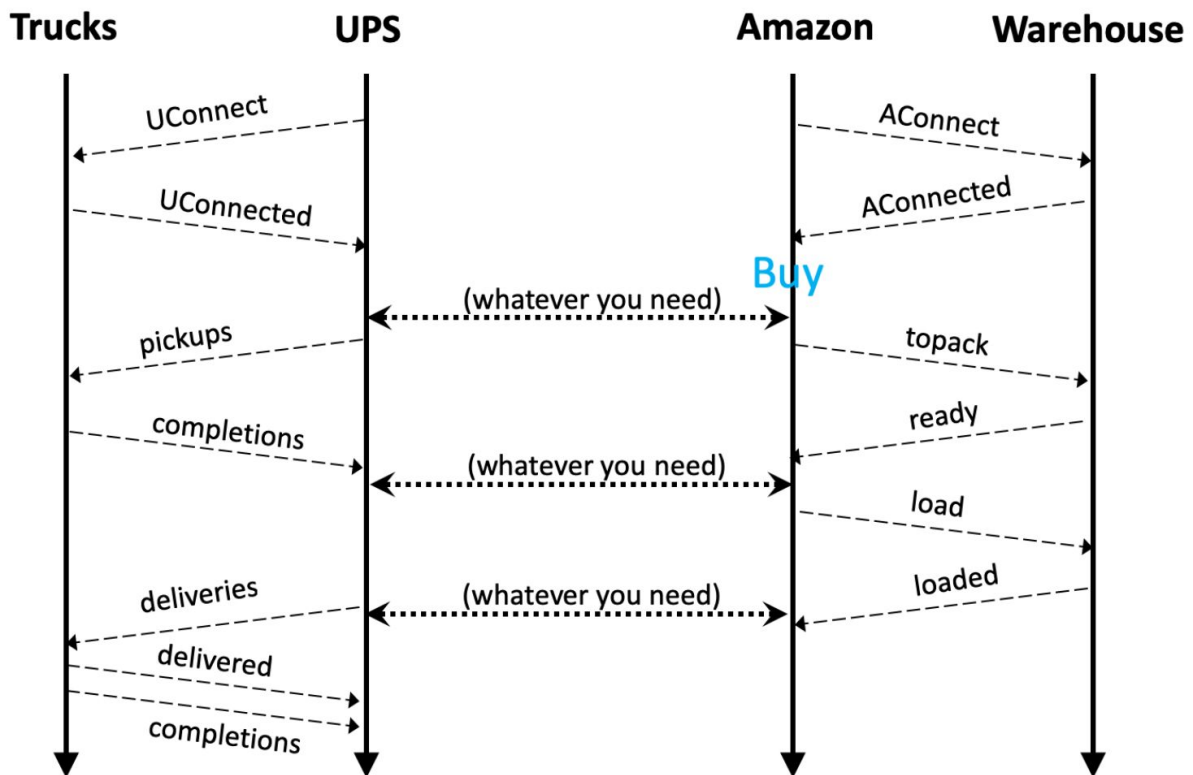
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Communication rule between Amazon and UPS:

2 level: big packets(wrapper message) & small packets(actual message)

All seq numbers are in small packets(actual message), indicating the msg sent.

All ack numbers are in big packets(wrapper message), indicating msg received.

Amazon sends AMsg to UPS, UPS sends UMsg to Amazon. All the details are embedded in the A/UMsgs.

Amazon Port: 33333 UPS Port: 22222

1. A/UMsg (wraps all detail messages)

```

message AMsg{
    repeated ASendTruck asendtruck = 1;           (optional)
    repeated AFinishLoading afinishloading = 2;    (optional)
    repeated int64 ack = 3;                        (optional)
}
  
```

```

message UMsg{
    repeated UOrderPlaced uorderplaced = 1;       (optional)
}
  
```

```

    repeated UTruckArrived utruckarrived = 2; // Truck arrived at the warehouse
(optional)
    repeated UDelivered udelivered = 3; // Package delivered (optional)
    repeated int64 ack = 4; (optional)
}

```

2. Package is ready for the truck to pick up

2.1 Amazon -> UPS

```

message ASendTruck{
    required int32 whid = 1; //The warehouse ID (must)
    required int32 x = 2; (must)
    required int32 y = 3; (must)
    required int64 pkgid = 4; // Package ID (must)
    repeated Product products = 5; // The products in a package (optional)
    required int64 seq = 6; // Sequence number (must)
}

```

```

message Product{
    required int64 id = 1; //Product ID (must)
    required string description = 2; //Product description (must)
    required int32 count = 3; // Number of product (must)
}

```

2.2 UPS->Amazon

```

message UOrderPlaced{
    required int64 pkgid = 1; // Package ID (must)
    required int32 truckid = 2; // Truck ID (must)
    required int64 seq = 3; //Sequence number (must)
}

```

3. Truck arrives at the warehouse

3.1 UPS -> Amazon

```

message UTruckArrived{
    required int32 truckid = 1; //Truck ID (must)
    required int64 seq = 2; //Sequence number (must)
}

```

3.2 Amazon -> UPS (just send ack)

In this case, UPS will send the UTruckArrived message to Amazon, so Amazon MUST acknowledge this message.

4. Finish loading

4.1 Amazon -> UPS

```

message AFinishLoading{
    required int64 pkgid = 1; //Package ID (must)
    required int32 truckid = 2; //Truck ID (must)
}

```

```
        required int64 seq = 3; //Sequence number          (must)
    }
```

4.2 UPS -> Amazon (just send ack)

In this case Amazon will send the AFinishLoading message to UPS, so UPS MUST acknowledge this message.

5.Package Delivered

5.1 UPS -> Amazon

```
message UPkgDelivered{
    required int64 pkgid = 1;          (must)
    required int64 seq = 2;           (must)
}
```

5.2 Amazon -> UPS (just send ack)

Amazon replies ack