Adversarial Regularization

June 10, 2019

In [1]:
```
# coding: utf-8
from __future__ import print_function
import argparse
import os
import shutil
import time
import random
```

In [2]:
```
import torch
import torch.nn as nn
import torch.nn.parallel
import torch.backends.cudnn as cudnn
import torch.optim as optim
import torch.utils.data as data
import torchvision.transforms as transforms
import torchvision.datasets as datasets
from utils import Bar, Logger, AverageMeter, accuracy, mkdir_p, savefig
import numpy as np
```

In [3]:
```
use_cuda = torch.cuda.is_available()
```

In [4]:
```
manualSeed = random.randint(1, 10000)
random.seed(manualSeed)
torch.manual_seed(manualSeed)
if use_cuda:
    torch.cuda.manual_seed_all(manualSeed)

best_acc = 0  # best test accuracy
```

In [5]:
```
class AlexNet(nn.Module):

    def __init__(self, num_classes=10):
        super(AlexNet, self).__init__()
        self.features = nn.Sequential(
            nn.Conv2d(3, 64, kernel_size=11, stride=4, padding=5),
            nn.ReLU(inplace=True),
            nn.MaxPool2d(kernel_size=2, stride=2),
            nn.Conv2d(64, 192, kernel_size=5, padding=2),
```

```
                    nn.ReLU(inplace=True),
                    nn.MaxPool2d(kernel_size=2, stride=2),
                    nn.Conv2d(192, 384, kernel_size=3, padding=1),
                    nn.ReLU(inplace=True),
                    nn.Conv2d(384, 256, kernel_size=3, padding=1),
                    nn.ReLU(inplace=True),
                    nn.Conv2d(256, 256, kernel_size=3, padding=1),
                    nn.ReLU(inplace=True),
                    nn.MaxPool2d(kernel_size=2, stride=2),
                )
                self.classifier = nn.Linear(256, num_classes)

            def forward(self, x):
                x = self.features(x)
                x = x.view(x.size(0), -1)
                x = self.classifier(x)
                return x


        def alexnet(**kwargs):
            r"""AlexNet model architecture from the
            `"One weird trick..." <https://arxiv.org/abs/1404.5997>`_ paper.
            """
            model = AlexNet(**kwargs)
            return model

In [6]: class InferenceAttack_HZ(nn.Module):
            def __init__(self,num_classes):
                self.num_classes=num_classes
                super(InferenceAttack_HZ, self).__init__()
                self.features=nn.Sequential(
                    nn.Linear(100,1024),
                    nn.ReLU(),
                    nn.Linear(1024,512),
                    nn.ReLU(),
                    nn.Linear(512,64),
                    nn.ReLU(),
                    )
                self.labels=nn.Sequential(
                   nn.Linear(num_classes,128),
                    nn.ReLU(),
                    nn.Linear(128,64),
                    nn.ReLU(),
                    )
                self.combine=nn.Sequential(
                    nn.Linear(64*2,256),

                    nn.ReLU(),
```

```
                    nn.Linear(256,128),

                    nn.ReLU(),
                    nn.Linear(128,64),
                    nn.ReLU(),
                    nn.Linear(64,1),
                    )
                for key in self.state_dict():
                    print (key)
                    if key.split('.')[-1] == 'weight':
                        nn.init.normal(self.state_dict()[key], std=0.01)
                        print (key)

                    elif key.split('.')[-1] == 'bias':
                        self.state_dict()[key][...] = 0
                self.output= nn.Sigmoid()
            def forward(self,x,l):

                out_x = self.features(x)
                out_l = self.labels(l)




                is_member =self.combine( torch.cat((out_x  ,out_l),1))


                return self.output(is_member)
```

In [7]:
```
dataset='cifar100'
checkpoint_path='checkpoints'
train_batch=100
test_batch=100
lr=0.05
epochs=50
state={}
state['lr']=lr
```

In [8]:
```
def train_privatly(trainloader, model,inference_model, criterion, optimizer, epoch, use_
    # switch to train mode
    model.train()
    inference_model.eval()
    batch_time = AverageMeter()
    data_time = AverageMeter()
    losses = AverageMeter()
    top1 = AverageMeter()
    top5 = AverageMeter()
    end = time.time()
```

```
first_id = -1
for batch_idx, (inputs, targets) in (trainloader):
    # measure data loading time
    data_time.update(time.time() - end)
    if first_id == -1:
        first_id = batch_idx

    if use_cuda:
        inputs, targets = inputs.cuda(), targets.cuda(async=True)
    inputs, targets = torch.autograd.Variable(inputs), torch.autograd.Variable(targe

    # compute output
    outputs = model(inputs)


    one_hot_tr = torch.from_numpy((np.zeros((outputs.size(0),100))-1)).cuda().type(t
    target_one_hot_tr = one_hot_tr.scatter_(1, targets.type(torch.cuda.LongTensor).v

    infer_input_one_hot = torch.autograd.Variable(target_one_hot_tr)

    inference_output = inference_model ( outputs,infer_input_one_hot)
    #print (inference_output.mean())


    loss = criterion(outputs, targets) + (alpha)*(((inference_output-1.0).pow(2).mea

    # measure accuracy and record loss
    prec1, prec5 = accuracy(outputs.data, targets.data, topk=(1, 5))
    losses.update(loss.data, inputs.size(0))
    top1.update(prec1, inputs.size(0))
    top5.update(prec5, inputs.size(0))

    # compute gradient and do SGD step
    optimizer.zero_grad()
    loss.backward()
    optimizer.step()

    # measure elapsed time
    batch_time.update(time.time() - end)
    end = time.time()

    # plot progress
    if batch_idx%100==0:
        print  ('({batch}/{size}) Data: {data:.3f}s | Batch: {bt:.3f}s | | Loss: {lo
                batch=batch_idx + 1,
                size=500,
```

```
                        data=data_time.avg,
                        bt=batch_time.avg,
                        loss=losses.avg,
                        top1=top1.avg,
                        top5=top5.avg,
                        ))
            if batch_idx-first_id >= num_batchs:
                break

    return (losses.avg, top1.avg)
```

In [9]:
```
def train(trainloader, model, criterion, optimizer, epoch, use_cuda):
    # switch to train mode
    model.train()

    batch_time = AverageMeter()
    data_time = AverageMeter()
    losses = AverageMeter()
    top1 = AverageMeter()
    top5 = AverageMeter()
    end = time.time()

    bar = Bar('Processing', max=len(trainloader))
    for batch_idx, (inputs, targets) in enumerate(trainloader):
        # measure data loading time
        data_time.update(time.time() - end)

        if use_cuda:
            inputs, targets = inputs.cuda(), targets.cuda(async=True)
        inputs, targets = torch.autograd.Variable(inputs), torch.autograd.Variable(targe

        # compute output
        outputs = model(inputs)

        loss = criterion(outputs, targets)

        # measure accuracy and record loss
        prec1, prec5 = accuracy(outputs.data, targets.data, topk=(1, 5))
        losses.update(loss.data, inputs.size(0))
        top1.update(prec1, inputs.size(0))
        top5.update(prec5, inputs.size(0))

        # compute gradient and do SGD step
        optimizer.zero_grad()
        loss.backward()
        optimizer.step()

        # measure elapsed time
```

```
            batch_time.update(time.time() - end)
            end = time.time()

            # plot progress
            if batch_idx%100==0:
                print  ('({batch}/{size}) Data: {data:.3f}s | Batch: {bt:.3f}s | | Loss: {lo
                        batch=batch_idx + 1,
                        size=len(trainloader),
                        data=data_time.avg,
                        bt=batch_time.avg,
                        loss=losses.avg,
                        top1=top1.avg,
                        top5=top5.avg,
                        ))

        return (losses.avg, top1.avg)
```

In [10]:
```
def test(testloader, model, criterion, epoch, use_cuda):
    global best_acc

    batch_time = AverageMeter()
    data_time = AverageMeter()
    losses = AverageMeter()
    top1 = AverageMeter()
    top5 = AverageMeter()

    # switch to evaluate mode
    model.eval()

    end = time.time()
    for batch_idx, (inputs, targets) in enumerate(testloader):
        # measure data loading time
        data_time.update(time.time() - end)

        if use_cuda:
            inputs, targets = inputs.cuda(), targets.cuda()
        inputs, targets = torch.autograd.Variable(inputs, volatile=True), torch.autogra

        # compute output
        outputs = model(inputs)
        loss = criterion(outputs, targets)

        # measure accuracy and record loss
        prec1, prec5 = accuracy(outputs.data, targets.data, topk=(1, 5))
        losses.update(loss.data, inputs.size(0))
        top1.update(prec1, inputs.size(0))
        top5.update(prec5, inputs.size(0))
```

```
            # measure elapsed time
            batch_time.update(time.time() - end)
            end = time.time()

            # plot progress
            if batch_idx % 100==0:

                print ('({batch}/{size}) Data: {data:.3f}s | Batch: {bt:.3f}s | Loss: {loss
                            batch=batch_idx + 1,
                            size=len(testloader),
                            data=data_time.avg,
                            bt=batch_time.avg,
                            loss=losses.avg,
                            top1=top1.avg,
                            top5=top5.avg,
                            ))

        return (losses.avg, top1.avg)
```

In [11]:
```
def privacy_train(trainloader, model,inference_model, criterion, optimizer, epoch, use_
    global best_acc

    batch_time = AverageMeter()
    data_time = AverageMeter()
    losses = AverageMeter()
    top1 = AverageMeter()
    mtop1_a = AverageMeter()
    mtop5_a = AverageMeter()

    inference_model.train()
    model.eval()
    # switch to evaluate mode

    end = time.time()
    first_id = -1
    for batch_idx,((tr_input, tr_target) ,(te_input, te_target)) in trainloader:
        # measure data loading time
        if first_id == -1:
            first_id = batch_idx

        data_time.update(time.time() - end)
        tr_input = tr_input.cuda()
        te_input = te_input.cuda()
        tr_target = tr_target.cuda()
        te_target = te_target.cuda()


        v_tr_input = torch.autograd.Variable(tr_input)
```

```
v_te_input = torch.autograd.Variable(te_input)
v_tr_target = torch.autograd.Variable(tr_target)
v_te_target = torch.autograd.Variable(te_target)

# compute output
model_input =torch.cat((v_tr_input,v_te_input))

pred_outputs = model(model_input)

infer_input= torch.cat((v_tr_target,v_te_target))

mtop1, mtop5 =accuracy(pred_outputs.data, infer_input.data, topk=(1, 5))

mtop1_a.update(mtop1, model_input.size(0))
mtop5_a.update(mtop5, model_input.size(0))



one_hot_tr = torch.from_numpy((np.zeros((infer_input.size(0),100))-1)).cuda().t
target_one_hot_tr = one_hot_tr.scatter_(1, infer_input.type(torch.cuda.LongTens

infer_input_one_hot = torch.autograd.Variable(target_one_hot_tr)


attack_model_input = pred_outputs#torch.cat((pred_outputs,infer_input_one_hot),
member_output = inference_model(attack_model_input,infer_input_one_hot)



is_member_labels = torch.from_numpy(np.reshape(np.concatenate((np.zeros(v_tr_in

v_is_member_labels = torch.autograd.Variable(is_member_labels).type(torch.cuda.

loss = criterion(member_output, v_is_member_labels)

# measure accuracy and record loss
prec1=np.mean((member_output.data.cpu().numpy() >0.5)==v_is_member_labels.data.
losses.update(loss.data, model_input.size(0))
top1.update(prec1, model_input.size(0))

# compute gradient and do SGD step
optimizer.zero_grad()
loss.backward()
optimizer.step()

# measure elapsed time
batch_time.update(time.time() - end)
end = time.time()
```

```
            if batch_idx-first_id > num_batchs:
                break

            # plot progress
            if batch_idx%10==0:
                print  ('({batch}/{size}) Data: {data:.3f}s | Batch: {bt:.3f}s | | Loss: {l
                        batch=batch_idx ,
                        size=500,
                        data=data_time.avg,
                        bt=batch_time.avg,
                        loss=losses.avg,
                        top1=top1.avg,
                        ))

        return (losses.avg, top1.avg)
```

In [12]:
```
def privacy_test(trainloader, model,inference_model, criterion, optimizer, epoch, use_c
    global best_acc

    batch_time = AverageMeter()
    data_time = AverageMeter()
    losses = AverageMeter()
    top1 = AverageMeter()
    mtop1_a = AverageMeter()
    mtop5_a = AverageMeter()

    inference_model.eval()
    model.eval()
    # switch to evaluate mode

    end = time.time()
    for batch_idx,((tr_input, tr_target) ,(te_input, te_target)) in trainloader:
        # measure data loading time
        if first_id == -1:
            first_id = batch_idx

        data_time.update(time.time() - end)
        tr_input = tr_input.cuda()
        te_input = te_input.cuda()
        tr_target = tr_target.cuda()
        te_target = te_target.cuda()


        v_tr_input = torch.autograd.Variable(tr_input)
        v_te_input = torch.autograd.Variable(te_input)
        v_tr_target = torch.autograd.Variable(tr_target)
        v_te_target = torch.autograd.Variable(te_target)
```

```
        # compute output
        model_input =torch.cat((v_tr_input,v_te_input))

        pred_outputs = model(model_input)

        infer_input= torch.cat((v_tr_target,v_te_target))

        mtop1, mtop5 =accuracy(pred_outputs.data, infer_input.data, topk=(1, 5))

        mtop1_a.update(mtop1, model_input.size(0))
        mtop5_a.update(mtop5, model_input.size(0))



        one_hot_tr = torch.from_numpy((np.zeros((infer_input.size(0),100))-1)).cuda().t
        target_one_hot_tr = one_hot_tr.scatter_(1, infer_input.type(torch.cuda.LongTens

        infer_input_one_hot = torch.autograd.Variable(target_one_hot_tr)


        attack_model_input = pred_outputs#torch.cat((pred_outputs,infer_input_one_hot),
        member_output = inference_model(attack_model_input,infer_input_one_hot)



        is_member_labels = torch.from_numpy(np.reshape(np.concatenate((np.zeros(v_tr_in

        v_is_member_labels = torch.autograd.Variable(is_member_labels).type(torch.cuda.

        loss = criterion(member_output, v_is_member_labels)

        # measure accuracy and record loss
        prec1=np.mean((member_output.data.cpu().numpy() >0.5)==v_is_member_labels.data.
        losses.update(loss.data, model_input.size(0))
        top1.update(prec1, model_input.size(0))

        # compute gradient and do SGD step

        # measure elapsed time
        batch_time.update(time.time() - end)
        end = time.time()
        if batch_idx-first_id >= num_batchs:
            break

        # plot progress
#         if batch_idx%10==0:
#             print  ('({batch}/{size}) Data: {data:.3f}s | Batch: {bt:.3f}s | | Loss:
#                     batch=batch_idx ,
```

```
            #                     size=len(trainloader),
            #                     data=data_time.avg,
            #                     bt=batch_time.avg,
            #                     loss=losses.avg,
            #                     top1=top1.avg,
            #                     ))

                return (losses.avg, top1.avg)

In [13]: def save_checkpoint(state, is_best, checkpoint='checkpoint', filename='checkpoint.pth.t
                filepath = os.path.join(checkpoint, filename)
                torch.save(state, filepath)
                if is_best:
                    shutil.copyfile(filepath, os.path.join(checkpoint, 'model_best.pth.tar'))

            def adjust_learning_rate(optimizer, epoch):
                global state
                if epoch in [20,40]:
                    state['lr'] *= 0.1
                    for param_group in optimizer.param_groups:
                        param_group['lr'] = state['lr']

In [14]: def save_checkpoint_adversary(state, is_best, checkpoint='checkpoint', filename='checkp
                filepath = os.path.join(checkpoint, filename)
                torch.save(state, filepath)
                if is_best:
                    shutil.copyfile(filepath, os.path.join(checkpoint, 'model_adversary_best.pth.ta

In [15]: global best_acc
            start_epoch = 0  # start from epoch 0 or last checkpoint epoch

            if not os.path.isdir(checkpoint_path):
                mkdir_p(checkpoint_path)

            # Data
            print('==> Preparing dataset %s' % dataset)
            mean = [x / 255 for x in [125.3, 123.0, 113.9]]
            std = [x / 255 for x in [63.0, 62.1, 66.7]]

            transform_train = transforms.Compose([
                    #transforms.RandomCrop(32, padding=4),
                    #transforms.RandomHorizontalFlip(),
                    transforms.ToTensor(),
                    transforms.Normalize((0.4914, 0.4822, 0.4465), (0.2023, 0.1994, 0.2010)),
                ])

            transform_test = transforms.Compose([
                    transforms.ToTensor(),
```

```
                transforms.Normalize((0.4914, 0.4822, 0.4465), (0.2023, 0.1994, 0.2010)),
            ])



        mean = [x / 255 for x in [125.3, 123.0, 113.9]]
        std = [x / 255 for x in [63.0, 62.1, 66.7]]

        # prepare test data parts
        transform_test = transforms.Compose(
            [transforms.ToTensor(), transforms.Normalize(mean, std)])


        if dataset == 'cifar10':
            dataloader = datasets.CIFAR10
            num_classes = 10
        else:
            dataloader = datasets.CIFAR100
            num_classes = 100

        # Model
        print("==> creating model ")


        model = AlexNet(num_classes)
        model = model.cuda()
```

```
==> Preparing dataset cifar100
==> creating model
```

```
In [16]: #inferenece_model = torch.nn.DataParallel(inferenece_model).cuda()

        cudnn.benchmark = True
        print('    Total params: %.2fM' % (sum(p.numel() for p in model.parameters())/1000000.0

        criterion = nn.CrossEntropyLoss()
        criterion_attack = nn.MSELoss()
        optimizer = optim.SGD(model.parameters(), lr=lr, momentum=0.9, weight_decay=5e-4)


        # Resume
        title = 'cifar-100'
```

```
    Total params: 2.50M
```

```
In [17]: inferenece_model = InferenceAttack_HZ(100).cuda()
        private_train_criterion = nn.MSELoss()
        optimizer_mem = optim.Adam(inferenece_model.parameters(), lr=0.00001)
```

```
features.0.weight
features.0.weight
features.0.bias
features.2.weight
features.2.weight
features.2.bias
features.4.weight
features.4.weight
features.4.bias
labels.0.weight
labels.0.weight
labels.0.bias
labels.2.weight
labels.2.weight
labels.2.bias
combine.0.weight
combine.0.weight
combine.0.bias
combine.2.weight
combine.2.weight
combine.2.bias
combine.4.weight
combine.4.weight
combine.4.bias
combine.6.weight
combine.6.weight
combine.6.bias


/usr/local/lib/python3.5/dist-packages/ipykernel_launcher.py:33: UserWarning: nn.init.normal is


In [18]: batch_privacy=100
         trainset = dataloader(root='./data100', train=True, download=True, transform=transform_
         trainloader = data.DataLoader(trainset, batch_size=batch_privacy, shuffle=True, num_wor

         trainset_private = dataloader(root='./data100', train=True, download=True, transform=tr
         trainloader_private = data.DataLoader(trainset, batch_size=batch_privacy, shuffle=True,

         testset = dataloader(root='./data100', train=False, download=False, transform=transform
         testloader = data.DataLoader(testset, batch_size=batch_privacy, shuffle=True, num_worke

Files already downloaded and verified
Files already downloaded and verified


In [19]: batch_privacy=100
         trainset = dataloader(root='./data', train=True, download=True, transform=transform_tes
         testset = dataloader(root='./data', train=False, download=False, transform=transform_te
```

```
        r = np.arange(50000)
        np.random.shuffle(r)

        private_trainset_intrain = []
        private_trainset_intest = []

        private_testset_intrain =[]
        private_testset_intest =[]


        for i in range(25000):
            private_trainset_intrain.append(trainset[r[i]])


        for i in range(25000,50000):
            private_testset_intrain.append(trainset[r[i]])


        r = np.arange(10000)
        np.random.shuffle(r)

        for i in range(5000):
            private_trainset_intest.append(testset[r[i]])


        for i in range(5000,10000):
            private_testset_intest.append(testset[r[i]])




        private_trainloader_intrain = data.DataLoader(private_trainset_intrain, batch_size=batc
        private_trainloader_intest = data.DataLoader(private_trainset_intest, batch_size=batch_


        private_testloader_intrain = data.DataLoader(private_testset_intrain, batch_size=batch_
        private_testloader_intest = data.DataLoader(private_testset_intest, batch_size=batch_pr
```

```
Files already downloaded and verified
```

```
In [20]: is_best=False
         best_acc=0.0
         start_epoch=0
         # Train and val
         for epoch in range(start_epoch, 50):
```

```
        adjust_learning_rate(optimizer, epoch)

        print('\nEpoch: [%d | %d] LR: %f' % (epoch + 1, epochs, state['lr']))

        train_enum = enumerate(trainloader)
        train_private_enum = enumerate(zip(trainloader_private,testloader))
        for i in range(500//2):


            if epoch>3:
                privacy_loss, privacy_acc = privacy_train(train_private_enum,model,inferene
                train_loss, train_acc = train_privatly(train_enum, model,inferenece_model,


                if i%10 ==0:
                    print ('privacy res',privacy_acc,train_acc)
                if  (i+1)%50 ==0:
                    train_private_enum = enumerate(zip(trainloader_private,testloader))
            else:
                train_loss, train_acc = train_privatly(train_enum, model,inferenece_model,
                break


        test_loss, test_acc = test(testloader, model, criterion, epoch, use_cuda)

        print ('test acc',test_acc)




        # save model
        is_best = test_acc>best_acc
        best_acc = max(test_acc, best_acc)
        save_checkpoint({
                'epoch': epoch + 1,
                'state_dict': model.state_dict(),
                'acc': test_acc,
                'best_acc': best_acc,
                'optimizer' : optimizer.state_dict(),
            }, False, checkpoint=checkpoint_path,filename='epoch_%d'%epoch)


    print('Best acc:')
    print(best_acc)
```

```
Epoch: [1 | 50] LR: 0.050000
```

```
(1/500) Data: 0.004s | Batch: 0.339s | | Loss: 4.6078 | top1:  4.0000 | top5:  5.0000
(101/500) Data: 0.027s | Batch: 0.041s | | Loss: 4.5927 | top1:  1.5644 | top5:  6.3267
(201/500) Data: 0.026s | Batch: 0.038s | | Loss: 4.4683 | top1:  2.5522 | top5:  10.4925
(301/500) Data: 0.026s | Batch: 0.037s | | Loss: 4.3409 | top1:  3.6944 | top5:  14.3621
(401/500) Data: 0.025s | Batch: 0.035s | | Loss: 4.2463 | top1:  4.7706 | top5:  17.5187


/usr/local/lib/python3.5/dist-packages/ipykernel_launcher.py:20: UserWarning: volatile was remov


(1/100) Data: 0.234s | Batch: 0.242s | Loss: 3.8644 | top1:  13.0000 | top5:  37.0000
test acc tensor(9.3800, device='cuda:0')

Epoch: [2 | 50] LR: 0.050000
(1/500) Data: 0.003s | Batch: 0.017s | | Loss: 3.7729 | top1:  10.0000 | top5:  33.0000
(101/500) Data: 0.026s | Batch: 0.037s | | Loss: 3.7632 | top1:  11.2970 | top5:  33.8119
(201/500) Data: 0.025s | Batch: 0.035s | | Loss: 3.7300 | top1:  11.5970 | top5:  34.9801
(301/500) Data: 0.025s | Batch: 0.035s | | Loss: 3.6922 | top1:  12.3522 | top5:  36.0100
(401/500) Data: 0.025s | Batch: 0.035s | | Loss: 3.6486 | top1:  13.0374 | top5:  37.3566
(1/100) Data: 0.264s | Batch: 0.270s | Loss: 3.5527 | top1:  11.0000 | top5:  39.0000
test acc tensor(15.6400, device='cuda:0')

Epoch: [3 | 50] LR: 0.050000
(1/500) Data: 0.002s | Batch: 0.016s | | Loss: 3.3159 | top1:  20.0000 | top5:  49.0000
(101/500) Data: 0.018s | Batch: 0.027s | | Loss: 3.3887 | top1:  17.4653 | top5:  45.0396
(201/500) Data: 0.021s | Batch: 0.030s | | Loss: 3.3726 | top1:  17.5323 | top5:  45.7114
(301/500) Data: 0.022s | Batch: 0.031s | | Loss: 3.3573 | top1:  18.0000 | top5:  46.3455
(401/500) Data: 0.023s | Batch: 0.032s | | Loss: 3.3357 | top1:  18.5835 | top5:  46.9950
(1/100) Data: 0.210s | Batch: 0.215s | Loss: 3.3893 | top1:  18.0000 | top5:  42.0000
test acc tensor(21.5100, device='cuda:0')

Epoch: [4 | 50] LR: 0.050000
(1/500) Data: 0.003s | Batch: 0.047s | | Loss: 3.2137 | top1:  22.0000 | top5:  51.0000
(101/500) Data: 0.027s | Batch: 0.038s | | Loss: 3.1200 | top1:  22.7921 | top5:  52.1386
(201/500) Data: 0.025s | Batch: 0.036s | | Loss: 3.1158 | top1:  23.0448 | top5:  52.7015
(301/500) Data: 0.024s | Batch: 0.034s | | Loss: 3.1034 | top1:  23.1296 | top5:  52.8472
(401/500) Data: 0.024s | Batch: 0.033s | | Loss: 3.1082 | top1:  23.1721 | top5:  52.5985
(1/100) Data: 0.214s | Batch: 0.220s | Loss: 3.1662 | top1:  19.0000 | top5:  47.0000
test acc tensor(22.8300, device='cuda:0')

Epoch: [5 | 50] LR: 0.050000
(0/500) Data: 0.022s | Batch: 0.492s | | Loss: 0.2500 | top1:  0.5600
(1/500) Data: 0.005s | Batch: 0.041s | | Loss: 3.2689 | top1:  22.0000 | top5:  56.0000
privacy res 0.5116666666666667 tensor(20.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.035s | | Loss: 0.2500 | top1:  0.4925
(30/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.2500 | top1:  0.5650
privacy res 0.5566666666666666 tensor(32.5000, device='cuda:0')
(40/500) Data: 0.028s | Batch: 0.043s | | Loss: 0.2500 | top1:  0.5500
```

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(60/500) Data: 0.011s | Batch: 0.023s | | Loss: 0.2500 | top1:  0.5050
privacy res 0.5383333333333333 tensor(28.5000, device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.033s | | Loss: 0.2500 | top1:  0.5200
(90/500) Data: 0.007s | Batch: 0.016s | | Loss: 0.2500 | top1:  0.5600
privacy res 0.56 tensor(25., device='cuda:0')
privacy res 0 tensor(21., device='cuda:0')
(0/500) Data: 0.018s | Batch: 0.053s | | Loss: 0.2500 | top1:  0.5750
(101/500) Data: 0.011s | Batch: 0.022s | | Loss: 3.1875 | top1:  22.0000 | top5:  58.0000
privacy res 0.56 tensor(25.5000, device='cuda:0')
(10/500) Data: 0.035s | Batch: 0.056s | | Loss: 0.2500 | top1:  0.5325
(30/500) Data: 0.023s | Batch: 0.045s | | Loss: 0.2500 | top1:  0.5200
privacy res 0.5466666666666666 tensor(24., device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.038s | | Loss: 0.2500 | top1:  0.5200
(60/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.2500 | top1:  0.5950
privacy res 0.58 tensor(29., device='cuda:0')
(70/500) Data: 0.024s | Batch: 0.036s | | Loss: 0.2500 | top1:  0.5225
(90/500) Data: 0.028s | Batch: 0.042s | | Loss: 0.2500 | top1:  0.6200
privacy res 0.6016666666666667 tensor(27.5000, device='cuda:0')
privacy res 0 tensor(30.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.036s | | Loss: 0.2500 | top1:  0.5100
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.2407 | top1:  28.0000 | top5:  52.0000
privacy res 0.5316666666666666 tensor(28.5000, device='cuda:0')
(10/500) Data: 0.030s | Batch: 0.050s | | Loss: 0.2500 | top1:  0.5750
(30/500) Data: 0.005s | Batch: 0.031s | | Loss: 0.2500 | top1:  0.6000
privacy res 0.5783333333333334 tensor(28.5000, device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.028s | | Loss: 0.2500 | top1:  0.5900
(60/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2500 | top1:  0.5850
privacy res 0.56 tensor(27., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.037s | | Loss: 0.2500 | top1:  0.5600
(90/500) Data: 0.018s | Batch: 0.039s | | Loss: 0.2500 | top1:  0.5800
privacy res 0.5733333333333334 tensor(26., device='cuda:0')
privacy res 0 tensor(30.5000, device='cuda:0')
(0/500) Data: 0.013s | Batch: 0.062s | | Loss: 0.2500 | top1:  0.6050
(301/500) Data: 0.002s | Batch: 0.030s | | Loss: 3.4308 | top1:  19.0000 | top5:  51.0000
privacy res 0.5966666666666667 tensor(21., device='cuda:0')
(10/500) Data: 0.034s | Batch: 0.048s | | Loss: 0.2500 | top1:  0.5650
(30/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.2500 | top1:  0.5950
privacy res 0.565 tensor(28., device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.029s | | Loss: 0.2500 | top1:  0.5450
(60/500) Data: 0.019s | Batch: 0.033s | | Loss: 0.2500 | top1:  0.5700
privacy res 0.5733333333333334 tensor(28.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.035s | | Loss: 0.2500 | top1:  0.5600
(90/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2500 | top1:  0.5400
privacy res 0.5733333333333334 tensor(27., device='cuda:0')
privacy res 0 tensor(26.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2500 | top1:  0.6050
(401/500) Data: 0.002s | Batch: 0.041s | | Loss: 3.2242 | top1:  28.0000 | top5:  59.0000
privacy res 0.585 tensor(27.5000, device='cuda:0')
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(10/500) Data: 0.009s | Batch: 0.028s | | Loss: 0.2500 | top1:  0.5575
(30/500) Data: 0.007s | Batch: 0.039s | | Loss: 0.2500 | top1:  0.5350
privacy res 0.5583333333333333 tensor(29.5000, device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2500 | top1:  0.5775
(60/500) Data: 0.010s | Batch: 0.020s | | Loss: 0.2500 | top1:  0.5850
privacy res 0.5533333333333333 tensor(32., device='cuda:0')
(70/500) Data: 0.028s | Batch: 0.042s | | Loss: 0.2500 | top1:  0.5925
(90/500) Data: 0.020s | Batch: 0.048s | | Loss: 0.2500 | top1:  0.5300
privacy res 0.5416666666666666 tensor(27., device='cuda:0')
privacy res 0 tensor(24., device='cuda:0')
(1/100) Data: 0.230s | Batch: 0.235s | Loss: 3.1147 | top1:  30.0000 | top5:  55.0000
test acc tensor(26.5400, device='cuda:0')

Epoch: [6 | 50] LR: 0.050000
(0/500) Data: 0.008s | Batch: 0.027s | | Loss: 0.2500 | top1:  0.5450
(1/500) Data: 0.012s | Batch: 0.022s | | Loss: 2.8512 | top1:  34.0000 | top5:  62.0000
privacy res 0.5733333333333334 tensor(34.5000, device='cuda:0')
(10/500) Data: 0.029s | Batch: 0.048s | | Loss: 0.2499 | top1:  0.5625
(30/500) Data: 0.022s | Batch: 0.036s | | Loss: 0.2499 | top1:  0.5650
privacy res 0.5616666666666666 tensor(25., device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.031s | | Loss: 0.2499 | top1:  0.5650
(60/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.2497 | top1:  0.6000
privacy res 0.585 tensor(31.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.037s | | Loss: 0.2495 | top1:  0.5725
(90/500) Data: 0.004s | Batch: 0.019s | | Loss: 0.2495 | top1:  0.5900
privacy res 0.5933333333333334 tensor(32.5000, device='cuda:0')
privacy res 0 tensor(27.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.063s | | Loss: 0.2493 | top1:  0.5800
(101/500) Data: 0.014s | Batch: 0.024s | | Loss: 3.2543 | top1:  21.0000 | top5:  49.0000
privacy res 0.5683333333333334 tensor(24., device='cuda:0')
(10/500) Data: 0.029s | Batch: 0.048s | | Loss: 0.2495 | top1:  0.5525
(30/500) Data: 0.028s | Batch: 0.048s | | Loss: 0.2464 | top1:  0.6250
privacy res 0.5983333333333334 tensor(28.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2488 | top1:  0.5525
(60/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2479 | top1:  0.5700
privacy res 0.5616666666666666 tensor(31.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.020s | | Loss: 0.2467 | top1:  0.5500
(90/500) Data: 0.008s | Batch: 0.024s | | Loss: 0.2474 | top1:  0.5000
privacy res 0.5433333333333333 tensor(30., device='cuda:0')
privacy res 0 tensor(34., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2473 | top1:  0.5850
(201/500) Data: 0.013s | Batch: 0.036s | | Loss: 2.9409 | top1:  31.0000 | top5:  61.0000
privacy res 0.5516666666666666 tensor(29., device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.037s | | Loss: 0.2474 | top1:  0.5575
(30/500) Data: 0.006s | Batch: 0.036s | | Loss: 0.2487 | top1:  0.5650
privacy res 0.595 tensor(26.5000, device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.029s | | Loss: 0.2461 | top1:  0.5500
(60/500) Data: 0.008s | Batch: 0.024s | | Loss: 0.2413 | top1:  0.5950
```

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privacy res 0.6033333333333334 tensor(35.5000, device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.026s | | Loss: 0.2473 | top1:  0.5575
(90/500) Data: 0.024s | Batch: 0.037s | | Loss: 0.2436 | top1:  0.5400
privacy res 0.5533333333333333 tensor(26.5000, device='cuda:0')
privacy res 0 tensor(33.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.2401 | top1:  0.5900
(301/500) Data: 0.004s | Batch: 0.038s | | Loss: 3.4937 | top1:  19.0000 | top5:  47.0000
privacy res 0.5766666666666667 tensor(26., device='cuda:0')
(10/500) Data: 0.045s | Batch: 0.064s | | Loss: 0.2419 | top1:  0.5850
(30/500) Data: 0.020s | Batch: 0.039s | | Loss: 0.2429 | top1:  0.6050
privacy res 0.5716666666666667 tensor(32., device='cuda:0')
(40/500) Data: 0.022s | Batch: 0.036s | | Loss: 0.2410 | top1:  0.6150
(60/500) Data: 0.006s | Batch: 0.026s | | Loss: 0.2450 | top1:  0.5550
privacy res 0.575 tensor(25., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.027s | | Loss: 0.2495 | top1:  0.5300
(90/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2352 | top1:  0.6350
privacy res 0.61 tensor(27., device='cuda:0')
privacy res 0 tensor(26., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.2388 | top1:  0.6050
(401/500) Data: 0.008s | Batch: 0.039s | | Loss: 2.9506 | top1:  31.0000 | top5:  69.0000
privacy res 0.6033333333333334 tensor(32., device='cuda:0')
(10/500) Data: 0.005s | Batch: 0.019s | | Loss: 0.2438 | top1:  0.5650
(30/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2387 | top1:  0.5900
privacy res 0.63 tensor(29.5000, device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.026s | | Loss: 0.2452 | top1:  0.5600
(60/500) Data: 0.017s | Batch: 0.036s | | Loss: 0.2422 | top1:  0.5550
privacy res 0.5733333333333334 tensor(25., device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.039s | | Loss: 0.2470 | top1:  0.5500
(90/500) Data: 0.018s | Batch: 0.037s | | Loss: 0.2385 | top1:  0.5850
privacy res 0.5733333333333334 tensor(33.5000, device='cuda:0')
privacy res 0 tensor(31., device='cuda:0')
(1/100) Data: 0.239s | Batch: 0.245s | Loss: 2.8116 | top1:  33.0000 | top5:  62.0000
test acc tensor(25.9000, device='cuda:0')

Epoch: [7 | 50] LR: 0.050000
(0/500) Data: 0.006s | Batch: 0.036s | | Loss: 0.2433 | top1:  0.5550
(1/500) Data: 0.012s | Batch: 0.034s | | Loss: 2.8973 | top1:  35.0000 | top5:  63.0000
privacy res 0.5583333333333333 tensor(32., device='cuda:0')
(10/500) Data: 0.025s | Batch: 0.047s | | Loss: 0.2421 | top1:  0.5875
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2366 | top1:  0.6200
privacy res 0.57 tensor(33.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2436 | top1:  0.5825
(60/500) Data: 0.013s | Batch: 0.026s | | Loss: 0.2502 | top1:  0.5400
privacy res 0.5516666666666666 tensor(34.5000, device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.2373 | top1:  0.5925
(90/500) Data: 0.010s | Batch: 0.028s | | Loss: 0.2313 | top1:  0.6350
privacy res 0.595 tensor(31.5000, device='cuda:0')
privacy res 0 tensor(32.5000, device='cuda:0')
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(0/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2410 | top1:  0.6150
(101/500) Data: 0.014s | Batch: 0.024s | | Loss: 2.7536 | top1:  40.0000 | top5:  65.0000
privacy res 0.6033333333333334 tensor(37.5000, device='cuda:0')
(10/500) Data: 0.031s | Batch: 0.056s | | Loss: 0.2398 | top1:  0.6025
(30/500) Data: 0.009s | Batch: 0.043s | | Loss: 0.2388 | top1:  0.5950
privacy res 0.61 tensor(34.5000, device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.032s | | Loss: 0.2407 | top1:  0.5800
(60/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.2454 | top1:  0.5250
privacy res 0.5483333333333333 tensor(35.5000, device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.025s | | Loss: 0.2379 | top1:  0.5675
(90/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.2367 | top1:  0.5800
privacy res 0.595 tensor(34., device='cuda:0')
privacy res 0 tensor(27.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2359 | top1:  0.5900
(201/500) Data: 0.003s | Batch: 0.013s | | Loss: 3.1554 | top1:  35.0000 | top5:  63.0000
privacy res 0.6083333333333333 tensor(35., device='cuda:0')
(10/500) Data: 0.038s | Batch: 0.052s | | Loss: 0.2368 | top1:  0.6075
(30/500) Data: 0.022s | Batch: 0.039s | | Loss: 0.2351 | top1:  0.6250
privacy res 0.6 tensor(32., device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.2388 | top1:  0.5975
(60/500) Data: 0.034s | Batch: 0.046s | | Loss: 0.2344 | top1:  0.6100
privacy res 0.5816666666666667 tensor(34., device='cuda:0')
(70/500) Data: 0.018s | Batch: 0.032s | | Loss: 0.2382 | top1:  0.5850
(90/500) Data: 0.014s | Batch: 0.036s | | Loss: 0.2464 | top1:  0.5250
privacy res 0.5483333333333333 tensor(27., device='cuda:0')
privacy res 0 tensor(33., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2358 | top1:  0.6250
(301/500) Data: 0.013s | Batch: 0.031s | | Loss: 3.2398 | top1:  24.0000 | top5:  54.0000
privacy res 0.605 tensor(34.5000, device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.042s | | Loss: 0.2428 | top1:  0.5575
(30/500) Data: 0.017s | Batch: 0.036s | | Loss: 0.2437 | top1:  0.5900
privacy res 0.5416666666666666 tensor(29., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.035s | | Loss: 0.2452 | top1:  0.5475
(60/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2305 | top1:  0.6250
privacy res 0.5983333333333334 tensor(33., device='cuda:0')
(70/500) Data: 0.026s | Batch: 0.043s | | Loss: 0.2393 | top1:  0.5600
(90/500) Data: 0.004s | Batch: 0.013s | | Loss: 0.2327 | top1:  0.6350
privacy res 0.57 tensor(36., device='cuda:0')
privacy res 0 tensor(31.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.027s | | Loss: 0.2464 | top1:  0.5550
(401/500) Data: 0.002s | Batch: 0.019s | | Loss: 3.3768 | top1:  24.0000 | top5:  64.0000
privacy res 0.57 tensor(25.5000, device='cuda:0')
(10/500) Data: 0.025s | Batch: 0.041s | | Loss: 0.2392 | top1:  0.5725
(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2348 | top1:  0.5750
privacy res 0.5433333333333333 tensor(35.5000, device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2397 | top1:  0.5875
(60/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2388 | top1:  0.5600
privacy res 0.5833333333333334 tensor(32., device='cuda:0')
```

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(70/500) Data: 0.015s | Batch: 0.032s | | Loss: 0.2392 | top1:  0.5525
(90/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.2393 | top1:  0.6200
privacy res 0.5883333333333334 tensor(30.5000, device='cuda:0')
privacy res 0 tensor(37., device='cuda:0')
(1/100) Data: 0.217s | Batch: 0.223s | Loss: 3.2590 | top1:  23.0000 | top5:  49.0000
test acc tensor(26.7700, device='cuda:0')

Epoch: [8 | 50] LR: 0.050000
(0/500) Data: 0.019s | Batch: 0.050s | | Loss: 0.2346 | top1:  0.5850
(1/500) Data: 0.015s | Batch: 0.027s | | Loss: 3.0067 | top1:  37.0000 | top5:  63.0000
privacy res 0.595 tensor(36.5000, device='cuda:0')
(10/500) Data: 0.045s | Batch: 0.058s | | Loss: 0.2362 | top1:  0.5725
(30/500) Data: 0.011s | Batch: 0.039s | | Loss: 0.2472 | top1:  0.5350
privacy res 0.5666666666666667 tensor(35.5000, device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.028s | | Loss: 0.2386 | top1:  0.5825
(60/500) Data: 0.013s | Batch: 0.043s | | Loss: 0.2446 | top1:  0.5600
privacy res 0.5833333333333334 tensor(33.5000, device='cuda:0')
(70/500) Data: 0.023s | Batch: 0.038s | | Loss: 0.2420 | top1:  0.5575
(90/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2343 | top1:  0.6300
privacy res 0.565 tensor(33., device='cuda:0')
privacy res 0 tensor(38.5000, device='cuda:0')
(0/500) Data: 0.012s | Batch: 0.047s | | Loss: 0.2398 | top1:  0.6000
(101/500) Data: 0.011s | Batch: 0.021s | | Loss: 2.9673 | top1:  27.0000 | top5:  64.0000
privacy res 0.5783333333333334 tensor(36.5000, device='cuda:0')
(10/500) Data: 0.043s | Batch: 0.056s | | Loss: 0.2413 | top1:  0.5425
(30/500) Data: 0.018s | Batch: 0.050s | | Loss: 0.2296 | top1:  0.6200
privacy res 0.59 tensor(30.5000, device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.038s | | Loss: 0.2370 | top1:  0.5675
(60/500) Data: 0.012s | Batch: 0.023s | | Loss: 0.2370 | top1:  0.6250
privacy res 0.6083333333333333 tensor(35., device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.029s | | Loss: 0.2443 | top1:  0.5600
(90/500) Data: 0.008s | Batch: 0.021s | | Loss: 0.2432 | top1:  0.5400
privacy res 0.5783333333333334 tensor(44.5000, device='cuda:0')
privacy res 0 tensor(38., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.044s | | Loss: 0.2355 | top1:  0.5900
(201/500) Data: 0.014s | Batch: 0.024s | | Loss: 3.1169 | top1:  34.0000 | top5:  57.0000
privacy res 0.6016666666666667 tensor(32., device='cuda:0')
(10/500) Data: 0.034s | Batch: 0.047s | | Loss: 0.2445 | top1:  0.5775
(30/500) Data: 0.014s | Batch: 0.033s | | Loss: 0.2359 | top1:  0.5700
privacy res 0.5933333333333334 tensor(35., device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.041s | | Loss: 0.2325 | top1:  0.6350
(60/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2407 | top1:  0.5750
privacy res 0.5683333333333334 tensor(34., device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.021s | | Loss: 0.2352 | top1:  0.6125
(90/500) Data: 0.020s | Batch: 0.031s | | Loss: 0.2319 | top1:  0.6050
privacy res 0.5933333333333334 tensor(34.5000, device='cuda:0')
privacy res 0 tensor(37.5000, device='cuda:0')
(0/500) Data: 0.016s | Batch: 0.051s | | Loss: 0.2388 | top1:  0.6050
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(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.2460 | top1:  32.0000 | top5:  56.0000
privacy res 0.565 tensor(36., device='cuda:0')
(10/500) Data: 0.027s | Batch: 0.052s | | Loss: 0.2365 | top1:  0.5950
(30/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.2440 | top1:  0.5400
privacy res 0.53 tensor(32.5000, device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.029s | | Loss: 0.2396 | top1:  0.5825
(60/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.2341 | top1:  0.6350
privacy res 0.5883333333333334 tensor(29., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.2347 | top1:  0.6350
(90/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2399 | top1:  0.5800
privacy res 0.58 tensor(39., device='cuda:0')
privacy res 0 tensor(29., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.2352 | top1:  0.5900
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.1142 | top1:  32.0000 | top5:  63.0000
privacy res 0.6083333333333333 tensor(33.5000, device='cuda:0')
(10/500) Data: 0.005s | Batch: 0.019s | | Loss: 0.2487 | top1:  0.5275
(30/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.2381 | top1:  0.6150
privacy res 0.59 tensor(33.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.028s | | Loss: 0.2366 | top1:  0.6200
(60/500) Data: 0.004s | Batch: 0.027s | | Loss: 0.2407 | top1:  0.5750
privacy res 0.5816666666666667 tensor(38., device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.029s | | Loss: 0.2403 | top1:  0.5875
(90/500) Data: 0.010s | Batch: 0.027s | | Loss: 0.2399 | top1:  0.5800
privacy res 0.5833333333333334 tensor(30.5000, device='cuda:0')
privacy res 0 tensor(34., device='cuda:0')
(1/100) Data: 0.207s | Batch: 0.212s | Loss: 3.1714 | top1:  25.0000 | top5:  56.0000
test acc tensor(29.0900, device='cuda:0')

Epoch: [9 | 50] LR: 0.050000
(0/500) Data: 0.016s | Batch: 0.048s | | Loss: 0.2397 | top1:  0.5850
(1/500) Data: 0.002s | Batch: 0.040s | | Loss: 2.9023 | top1:  34.0000 | top5:  67.0000
privacy res 0.58 tensor(31., device='cuda:0')
(10/500) Data: 0.032s | Batch: 0.045s | | Loss: 0.2334 | top1:  0.5875
(30/500) Data: 0.045s | Batch: 0.061s | | Loss: 0.2373 | top1:  0.5900
privacy res 0.5833333333333334 tensor(38., device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.043s | | Loss: 0.2383 | top1:  0.5575
(60/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2515 | top1:  0.5150
privacy res 0.5533333333333333 tensor(36.5000, device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.030s | | Loss: 0.2391 | top1:  0.5625
(90/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2492 | top1:  0.5750
privacy res 0.59 tensor(37.5000, device='cuda:0')
privacy res 0 tensor(44.5000, device='cuda:0')
(0/500) Data: 0.023s | Batch: 0.042s | | Loss: 0.2257 | top1:  0.6700
(101/500) Data: 0.002s | Batch: 0.047s | | Loss: 2.9347 | top1:  42.0000 | top5:  74.0000
privacy res 0.6166666666666667 tensor(42.5000, device='cuda:0')
(10/500) Data: 0.020s | Batch: 0.034s | | Loss: 0.2482 | top1:  0.5625
(30/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2324 | top1:  0.6100
privacy res 0.5933333333333334 tensor(37.5000, device='cuda:0')
```

```
(40/500) Data: 0.032s | Batch: 0.051s | | Loss: 0.2413 | top1:  0.5625
(60/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2256 | top1:  0.6500
privacy res 0.6133333333333333 tensor(40.5000, device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.031s | | Loss: 0.2345 | top1:  0.6100
(90/500) Data: 0.025s | Batch: 0.046s | | Loss: 0.2336 | top1:  0.6200
privacy res 0.6266666666666667 tensor(35.5000, device='cuda:0')
privacy res 0 tensor(31., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.2425 | top1:  0.5750
(201/500) Data: 0.002s | Batch: 0.037s | | Loss: 2.9030 | top1:  30.0000 | top5:  70.0000
privacy res 0.5866666666666667 tensor(33.5000, device='cuda:0')
(10/500) Data: 0.027s | Batch: 0.040s | | Loss: 0.2348 | top1:  0.5975
(30/500) Data: 0.012s | Batch: 0.026s | | Loss: 0.2410 | top1:  0.5700
privacy res 0.6066666666666667 tensor(30.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.014s | | Loss: 0.2407 | top1:  0.5600
(60/500) Data: 0.012s | Batch: 0.023s | | Loss: 0.2361 | top1:  0.6200
privacy res 0.565 tensor(29., device='cuda:0')
(70/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2393 | top1:  0.5625
(90/500) Data: 0.029s | Batch: 0.041s | | Loss: 0.2326 | top1:  0.6400
privacy res 0.5983333333333334 tensor(33., device='cuda:0')
privacy res 0 tensor(38., device='cuda:0')
(0/500) Data: 0.014s | Batch: 0.035s | | Loss: 0.2520 | top1:  0.5400
(301/500) Data: 0.002s | Batch: 0.020s | | Loss: 3.1377 | top1:  34.0000 | top5:  65.0000
privacy res 0.585 tensor(36., device='cuda:0')
(10/500) Data: 0.044s | Batch: 0.065s | | Loss: 0.2349 | top1:  0.5950
(30/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2362 | top1:  0.5900
privacy res 0.5933333333333334 tensor(41., device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.018s | | Loss: 0.2433 | top1:  0.5600
(60/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2385 | top1:  0.5700
privacy res 0.5633333333333334 tensor(34.5000, device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.023s | | Loss: 0.2434 | top1:  0.5850
(90/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2387 | top1:  0.5950
privacy res 0.57 tensor(33., device='cuda:0')
privacy res 0 tensor(31., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.033s | | Loss: 0.2347 | top1:  0.5950
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.3058 | top1:  33.0000 | top5:  59.0000
privacy res 0.5983333333333334 tensor(36.5000, device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.034s | | Loss: 0.2475 | top1:  0.5775
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2363 | top1:  0.6050
privacy res 0.5916666666666667 tensor(30., device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.029s | | Loss: 0.2408 | top1:  0.5950
(60/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2407 | top1:  0.5700
privacy res 0.545 tensor(40., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.027s | | Loss: 0.2371 | top1:  0.6050
(90/500) Data: 0.039s | Batch: 0.051s | | Loss: 0.2372 | top1:  0.6150
privacy res 0.615 tensor(31., device='cuda:0')
privacy res 0 tensor(35., device='cuda:0')
(1/100) Data: 0.184s | Batch: 0.189s | Loss: 3.2495 | top1:  29.0000 | top5:  50.0000
test acc tensor(30.0400, device='cuda:0')
```

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Epoch: [10 | 50] LR: 0.050000
(0/500) Data: 0.006s | Batch: 0.046s | | Loss: 0.2417 | top1:  0.6250
(1/500) Data: 0.011s | Batch: 0.021s | | Loss: 3.2315 | top1:  29.0000 | top5:  58.0000
privacy res 0.5866666666666667 tensor(33.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.044s | | Loss: 0.2416 | top1:  0.5850
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2505 | top1:  0.5600
privacy res 0.5633333333333334 tensor(38.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.039s | | Loss: 0.2397 | top1:  0.5500
(60/500) Data: 0.010s | Batch: 0.078s | | Loss: 0.2343 | top1:  0.5600
privacy res 0.5716666666666667 tensor(39., device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.031s | | Loss: 0.2375 | top1:  0.5950
(90/500) Data: 0.030s | Batch: 0.041s | | Loss: 0.2334 | top1:  0.6000
privacy res 0.6083333333333333 tensor(33., device='cuda:0')
privacy res 0 tensor(36., device='cuda:0')
(0/500) Data: 0.014s | Batch: 0.034s | | Loss: 0.2475 | top1:  0.5400
(101/500) Data: 0.003s | Batch: 0.025s | | Loss: 2.8823 | top1:  38.0000 | top5:  71.0000
privacy res 0.59 tensor(34.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.038s | | Loss: 0.2368 | top1:  0.5950
(30/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2370 | top1:  0.6050
privacy res 0.5883333333333334 tensor(40.5000, device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.2492 | top1:  0.5175
(60/500) Data: 0.010s | Batch: 0.026s | | Loss: 0.2325 | top1:  0.6200
privacy res 0.5933333333333334 tensor(36., device='cuda:0')
(70/500) Data: 0.024s | Batch: 0.043s | | Loss: 0.2302 | top1:  0.5925
(90/500) Data: 0.005s | Batch: 0.036s | | Loss: 0.2378 | top1:  0.5650
privacy res 0.5816666666666667 tensor(29.5000, device='cuda:0')
privacy res 0 tensor(28.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.037s | | Loss: 0.2409 | top1:  0.5650
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.7991 | top1:  37.0000 | top5:  69.0000
privacy res 0.5983333333333334 tensor(36.5000, device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.028s | | Loss: 0.2417 | top1:  0.5725
(30/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2278 | top1:  0.6500
privacy res 0.5916666666666667 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.022s | | Loss: 0.2411 | top1:  0.5950
(60/500) Data: 0.021s | Batch: 0.034s | | Loss: 0.2319 | top1:  0.6300
privacy res 0.6066666666666667 tensor(31., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.033s | | Loss: 0.2379 | top1:  0.5875
(90/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2456 | top1:  0.5950
privacy res 0.585 tensor(36., device='cuda:0')
privacy res 0 tensor(36.5000, device='cuda:0')
(0/500) Data: 0.018s | Batch: 0.055s | | Loss: 0.2266 | top1:  0.5900
(301/500) Data: 0.011s | Batch: 0.030s | | Loss: 3.4342 | top1:  25.0000 | top5:  68.0000
privacy res 0.56 tensor(34., device='cuda:0')
(10/500) Data: 0.020s | Batch: 0.041s | | Loss: 0.2402 | top1:  0.5975
(30/500) Data: 0.017s | Batch: 0.035s | | Loss: 0.2345 | top1:  0.6000
privacy res 0.59 tensor(36., device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.034s | | Loss: 0.2421 | top1:  0.5675
```

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(60/500) Data: 0.020s | Batch: 0.032s | | Loss: 0.2431 | top1:  0.5800
privacy res 0.5766666666666667 tensor(38.5000, device='cuda:0')
(70/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.2393 | top1:  0.5825
(90/500) Data: 0.017s | Batch: 0.046s | | Loss: 0.2381 | top1:  0.5450
privacy res 0.585 tensor(35., device='cuda:0')
privacy res 0 tensor(40.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.030s | | Loss: 0.2394 | top1:  0.5750
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.1134 | top1:  36.0000 | top5:  63.0000
privacy res 0.5666666666666667 tensor(29.5000, device='cuda:0')
(10/500) Data: 0.019s | Batch: 0.030s | | Loss: 0.2323 | top1:  0.6225
(30/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2363 | top1:  0.5650
privacy res 0.55 tensor(30., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.030s | | Loss: 0.2344 | top1:  0.6100
(60/500) Data: 0.011s | Batch: 0.027s | | Loss: 0.2373 | top1:  0.5500
privacy res 0.595 tensor(35.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.055s | | Loss: 0.2392 | top1:  0.5650
(90/500) Data: 0.018s | Batch: 0.041s | | Loss: 0.2533 | top1:  0.5150
privacy res 0.5416666666666666 tensor(37.5000, device='cuda:0')
privacy res 0 tensor(35., device='cuda:0')
(1/100) Data: 0.172s | Batch: 0.178s | Loss: 3.1676 | top1:  34.0000 | top5:  59.0000
test acc tensor(31.2500, device='cuda:0')

Epoch: [11 | 50] LR: 0.050000
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.2453 | top1:  0.5900
(1/500) Data: 0.002s | Batch: 0.013s | | Loss: 2.7112 | top1:  38.0000 | top5:  75.0000
privacy res 0.575 tensor(40.5000, device='cuda:0')
(10/500) Data: 0.021s | Batch: 0.034s | | Loss: 0.2455 | top1:  0.5450
(30/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.2362 | top1:  0.6150
privacy res 0.6233333333333333 tensor(46., device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.025s | | Loss: 0.2304 | top1:  0.6525
(60/500) Data: 0.015s | Batch: 0.037s | | Loss: 0.2269 | top1:  0.6150
privacy res 0.5933333333333334 tensor(38., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.034s | | Loss: 0.2451 | top1:  0.5625
(90/500) Data: 0.012s | Batch: 0.033s | | Loss: 0.2423 | top1:  0.5450
privacy res 0.5866666666666667 tensor(38.5000, device='cuda:0')
privacy res 0 tensor(33.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.036s | | Loss: 0.2430 | top1:  0.5600
(101/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.1444 | top1:  29.0000 | top5:  65.0000
privacy res 0.54 tensor(33.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.029s | | Loss: 0.2416 | top1:  0.5675
(30/500) Data: 0.026s | Batch: 0.040s | | Loss: 0.2344 | top1:  0.6150
privacy res 0.605 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.028s | Batch: 0.045s | | Loss: 0.2423 | top1:  0.5600
(60/500) Data: 0.005s | Batch: 0.036s | | Loss: 0.2336 | top1:  0.5750
privacy res 0.6 tensor(39., device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2376 | top1:  0.5725
(90/500) Data: 0.014s | Batch: 0.030s | | Loss: 0.2383 | top1:  0.6050
privacy res 0.595 tensor(36.5000, device='cuda:0')
```

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privacy res 0 tensor(39., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.032s | | Loss: 0.2266 | top1:  0.6550
(201/500) Data: 0.002s | Batch: 0.011s | | Loss: 2.7135 | top1:  42.0000 | top5:  72.0000
privacy res 0.595 tensor(44., device='cuda:0')
(10/500) Data: 0.020s | Batch: 0.035s | | Loss: 0.2474 | top1:  0.5675
(30/500) Data: 0.006s | Batch: 0.029s | | Loss: 0.2345 | top1:  0.5550
privacy res 0.595 tensor(45., device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.034s | | Loss: 0.2367 | top1:  0.5850
(60/500) Data: 0.011s | Batch: 0.034s | | Loss: 0.2368 | top1:  0.5700
privacy res 0.5866666666666667 tensor(42., device='cuda:0')
(70/500) Data: 0.023s | Batch: 0.040s | | Loss: 0.2410 | top1:  0.5825
(90/500) Data: 0.010s | Batch: 0.035s | | Loss: 0.2320 | top1:  0.6500
privacy res 0.5983333333333334 tensor(39.5000, device='cuda:0')
privacy res 0 tensor(31., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.2409 | top1:  0.5650
(301/500) Data: 0.002s | Batch: 0.021s | | Loss: 2.8907 | top1:  43.0000 | top5:  68.0000
privacy res 0.565 tensor(41.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.035s | | Loss: 0.2393 | top1:  0.5875
(30/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.2429 | top1:  0.5650
privacy res 0.5566666666666666 tensor(34., device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.030s | | Loss: 0.2497 | top1:  0.5550
(60/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2467 | top1:  0.5550
privacy res 0.6033333333333334 tensor(30.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.027s | | Loss: 0.2376 | top1:  0.5725
(90/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2564 | top1:  0.4900
privacy res 0.5866666666666667 tensor(36.5000, device='cuda:0')
privacy res 0 tensor(37., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.020s | | Loss: 0.2395 | top1:  0.5750
(401/500) Data: 0.002s | Batch: 0.010s | | Loss: 2.8569 | top1:  48.0000 | top5:  73.0000
privacy res 0.595 tensor(43., device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.032s | | Loss: 0.2506 | top1:  0.5250
(30/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.2454 | top1:  0.5050
privacy res 0.5883333333333334 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.2388 | top1:  0.5850
(60/500) Data: 0.018s | Batch: 0.030s | | Loss: 0.2405 | top1:  0.5450
privacy res 0.5533333333333333 tensor(36., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.039s | | Loss: 0.2414 | top1:  0.5600
(90/500) Data: 0.021s | Batch: 0.042s | | Loss: 0.2394 | top1:  0.5900
privacy res 0.595 tensor(37., device='cuda:0')
privacy res 0 tensor(37., device='cuda:0')
(1/100) Data: 0.179s | Batch: 0.185s | Loss: 2.7164 | top1:  36.0000 | top5:  64.0000
test acc tensor(29.3300, device='cuda:0')

Epoch: [12 | 50] LR: 0.050000
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2531 | top1:  0.5150
(1/500) Data: 0.004s | Batch: 0.015s | | Loss: 2.9386 | top1:  39.0000 | top5:  66.0000
privacy res 0.5566666666666666 tensor(40., device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.029s | | Loss: 0.2461 | top1:  0.5300
```

```
(30/500) Data: 0.039s | Batch: 0.050s | | Loss: 0.2299 | top1:  0.6850
privacy res 0.6266666666666667 tensor(40.5000, device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.037s | | Loss: 0.2446 | top1:  0.5450
(60/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2367 | top1:  0.5900
privacy res 0.59 tensor(40., device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.046s | | Loss: 0.2403 | top1:  0.5775
(90/500) Data: 0.006s | Batch: 0.027s | | Loss: 0.2510 | top1:  0.5250
privacy res 0.5433333333333333 tensor(49.5000, device='cuda:0')
privacy res 0 tensor(41., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.2409 | top1:  0.5850
(101/500) Data: 0.014s | Batch: 0.024s | | Loss: 2.9190 | top1:  38.0000 | top5:  65.0000
privacy res 0.5933333333333334 tensor(38.5000, device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.034s | | Loss: 0.2350 | top1:  0.6100
(30/500) Data: 0.036s | Batch: 0.058s | | Loss: 0.2176 | top1:  0.6800
privacy res 0.61 tensor(34., device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.038s | | Loss: 0.2412 | top1:  0.6100
(60/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.2505 | top1:  0.5100
privacy res 0.6016666666666667 tensor(39.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.041s | | Loss: 0.2321 | top1:  0.6125
(90/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.2501 | top1:  0.5000
privacy res 0.5516666666666666 tensor(42.5000, device='cuda:0')
privacy res 0 tensor(35.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.032s | | Loss: 0.2430 | top1:  0.5550
(201/500) Data: 0.016s | Batch: 0.045s | | Loss: 2.8996 | top1:  43.0000 | top5:  70.0000
privacy res 0.5766666666666667 tensor(38., device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.041s | | Loss: 0.2341 | top1:  0.6250
(30/500) Data: 0.013s | Batch: 0.026s | | Loss: 0.2364 | top1:  0.6050
privacy res 0.575 tensor(38.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.028s | | Loss: 0.2419 | top1:  0.5600
(60/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2337 | top1:  0.5800
privacy res 0.6183333333333333 tensor(36., device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2447 | top1:  0.5700
(90/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2400 | top1:  0.5750
privacy res 0.5966666666666667 tensor(38., device='cuda:0')
privacy res 0 tensor(43., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2241 | top1:  0.6650
(301/500) Data: 0.006s | Batch: 0.016s | | Loss: 2.9867 | top1:  35.0000 | top5:  64.0000
privacy res 0.6116666666666667 tensor(35., device='cuda:0')
(10/500) Data: 0.034s | Batch: 0.051s | | Loss: 0.2453 | top1:  0.5950
(30/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2258 | top1:  0.6400
privacy res 0.605 tensor(31.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.2378 | top1:  0.5950
(60/500) Data: 0.005s | Batch: 0.031s | | Loss: 0.2381 | top1:  0.5900
privacy res 0.59 tensor(43.5000, device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.026s | | Loss: 0.2317 | top1:  0.5875
(90/500) Data: 0.015s | Batch: 0.026s | | Loss: 0.2278 | top1:  0.6350
privacy res 0.605 tensor(39.5000, device='cuda:0')
privacy res 0 tensor(40., device='cuda:0')
```

```
(0/500) Data: 0.022s | Batch: 0.053s | | Loss: 0.2330 | top1:  0.6050
(401/500) Data: 0.012s | Batch: 0.022s | | Loss: 2.9443 | top1:  35.0000 | top5:  72.0000
privacy res 0.5983333333333334 tensor(30., device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.049s | | Loss: 0.2410 | top1:  0.5550
(30/500) Data: 0.007s | Batch: 0.032s | | Loss: 0.2461 | top1:  0.5350
privacy res 0.5683333333333334 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.035s | | Loss: 0.2388 | top1:  0.6050
(60/500) Data: 0.019s | Batch: 0.030s | | Loss: 0.2393 | top1:  0.6050
privacy res 0.5766666666666667 tensor(35.5000, device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2445 | top1:  0.5650
(90/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.2365 | top1:  0.5950
privacy res 0.565 tensor(32.5000, device='cuda:0')
privacy res 0 tensor(37., device='cuda:0')
(1/100) Data: 0.221s | Batch: 0.228s | Loss: 3.0416 | top1:  31.0000 | top5:  60.0000
test acc tensor(30.8000, device='cuda:0')

Epoch: [13 | 50] LR: 0.050000
(0/500) Data: 0.005s | Batch: 0.043s | | Loss: 0.2552 | top1:  0.4950
(1/500) Data: 0.002s | Batch: 0.013s | | Loss: 2.6459 | top1:  42.0000 | top5:  71.0000
privacy res 0.5483333333333333 tensor(42., device='cuda:0')
(10/500) Data: 0.036s | Batch: 0.051s | | Loss: 0.2303 | top1:  0.6250
(30/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2474 | top1:  0.5750
privacy res 0.61 tensor(42.5000, device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.033s | | Loss: 0.2301 | top1:  0.6100
(60/500) Data: 0.005s | Batch: 0.020s | | Loss: 0.2323 | top1:  0.6050
privacy res 0.6016666666666667 tensor(45., device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.040s | | Loss: 0.2336 | top1:  0.5950
(90/500) Data: 0.017s | Batch: 0.041s | | Loss: 0.2492 | top1:  0.5800
privacy res 0.565 tensor(40.5000, device='cuda:0')
privacy res 0 tensor(43., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2245 | top1:  0.6500
(101/500) Data: 0.003s | Batch: 0.012s | | Loss: 3.0969 | top1:  43.0000 | top5:  65.0000
privacy res 0.5966666666666667 tensor(40.5000, device='cuda:0')
(10/500) Data: 0.036s | Batch: 0.068s | | Loss: 0.2358 | top1:  0.5925
(30/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2342 | top1:  0.6450
privacy res 0.5833333333333334 tensor(44.5000, device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.036s | | Loss: 0.2294 | top1:  0.6200
(60/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2522 | top1:  0.5500
privacy res 0.5816666666666667 tensor(42., device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.031s | | Loss: 0.2408 | top1:  0.5725
(90/500) Data: 0.011s | Batch: 0.028s | | Loss: 0.2399 | top1:  0.5550
privacy res 0.5866666666666667 tensor(34., device='cuda:0')
privacy res 0 tensor(49.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.024s | | Loss: 0.2423 | top1:  0.5800
(201/500) Data: 0.014s | Batch: 0.029s | | Loss: 2.8726 | top1:  41.0000 | top5:  71.0000
privacy res 0.5933333333333334 tensor(40., device='cuda:0')
(10/500) Data: 0.025s | Batch: 0.046s | | Loss: 0.2420 | top1:  0.5950
(30/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.2251 | top1:  0.6600
```

```
privacy res 0.5883333333333334 tensor(39., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.033s | | Loss: 0.2354 | top1:  0.6000
(60/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.2319 | top1:  0.6300
privacy res 0.6016666666666667 tensor(34., device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.029s | | Loss: 0.2384 | top1:  0.5975
(90/500) Data: 0.018s | Batch: 0.034s | | Loss: 0.2449 | top1:  0.5750
privacy res 0.5983333333333334 tensor(40., device='cuda:0')
privacy res 0 tensor(40.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2386 | top1:  0.5650
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 3.0432 | top1:  37.0000 | top5:  64.0000
privacy res 0.5483333333333333 tensor(41., device='cuda:0')
(10/500) Data: 0.030s | Batch: 0.043s | | Loss: 0.2399 | top1:  0.5625
(30/500) Data: 0.014s | Batch: 0.039s | | Loss: 0.2306 | top1:  0.6300
privacy res 0.6016666666666667 tensor(37., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.030s | | Loss: 0.2370 | top1:  0.6025
(60/500) Data: 0.006s | Batch: 0.038s | | Loss: 0.2409 | top1:  0.5850
privacy res 0.6 tensor(38.5000, device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.040s | | Loss: 0.2403 | top1:  0.5625
(90/500) Data: 0.009s | Batch: 0.033s | | Loss: 0.2463 | top1:  0.5900
privacy res 0.5766666666666667 tensor(35.5000, device='cuda:0')
privacy res 0 tensor(38.5000, device='cuda:0')
(0/500) Data: 0.012s | Batch: 0.064s | | Loss: 0.2334 | top1:  0.5950
(401/500) Data: 0.002s | Batch: 0.024s | | Loss: 2.8770 | top1:  37.0000 | top5:  69.0000
privacy res 0.6183333333333333 tensor(37., device='cuda:0')
(10/500) Data: 0.028s | Batch: 0.049s | | Loss: 0.2329 | top1:  0.5750
(30/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2298 | top1:  0.6600
privacy res 0.6 tensor(36.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.042s | | Loss: 0.2428 | top1:  0.5550
(60/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2279 | top1:  0.6200
privacy res 0.6033333333333334 tensor(37., device='cuda:0')
(70/500) Data: 0.026s | Batch: 0.040s | | Loss: 0.2413 | top1:  0.5725
(90/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2323 | top1:  0.5900
privacy res 0.5916666666666667 tensor(43.5000, device='cuda:0')
privacy res 0 tensor(34.5000, device='cuda:0')
(1/100) Data: 0.262s | Batch: 0.268s | Loss: 3.2714 | top1:  32.0000 | top5:  55.0000
test acc tensor(30.5400, device='cuda:0')

Epoch: [14 | 50] LR: 0.050000
(0/500) Data: 0.013s | Batch: 0.052s | | Loss: 0.2254 | top1:  0.6400
(1/500) Data: 0.012s | Batch: 0.029s | | Loss: 2.7772 | top1:  38.0000 | top5:  68.0000
privacy res 0.5983333333333334 tensor(38., device='cuda:0')
(10/500) Data: 0.028s | Batch: 0.050s | | Loss: 0.2295 | top1:  0.6125
(30/500) Data: 0.032s | Batch: 0.055s | | Loss: 0.2476 | top1:  0.5300
privacy res 0.5616666666666666 tensor(43., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.032s | | Loss: 0.2376 | top1:  0.5725
(60/500) Data: 0.006s | Batch: 0.038s | | Loss: 0.2444 | top1:  0.5300
privacy res 0.5533333333333333 tensor(55., device='cuda:0')
(70/500) Data: 0.024s | Batch: 0.049s | | Loss: 0.2304 | top1:  0.6225
```

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(90/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2397 | top1:  0.5700
privacy res 0.5883333333333334 tensor(40.5000, device='cuda:0')
privacy res 0 tensor(41.5000, device='cuda:0')
(0/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.2366 | top1:  0.5700
(101/500) Data: 0.002s | Batch: 0.026s | | Loss: 2.4322 | top1:  48.0000 | top5:  74.0000
privacy res 0.5766666666666667 tensor(46., device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.041s | | Loss: 0.2416 | top1:  0.5575
(30/500) Data: 0.013s | Batch: 0.039s | | Loss: 0.2469 | top1:  0.5600
privacy res 0.595 tensor(45., device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.030s | | Loss: 0.2328 | top1:  0.5900
(60/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.2309 | top1:  0.6550
privacy res 0.6083333333333333 tensor(40., device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.030s | | Loss: 0.2365 | top1:  0.5950
(90/500) Data: 0.005s | Batch: 0.015s | | Loss: 0.2353 | top1:  0.6250
privacy res 0.5866666666666667 tensor(47.5000, device='cuda:0')
privacy res 0 tensor(40., device='cuda:0')
(0/500) Data: 0.013s | Batch: 0.044s | | Loss: 0.2351 | top1:  0.6150
(201/500) Data: 0.012s | Batch: 0.022s | | Loss: 2.6692 | top1:  36.0000 | top5:  73.0000
privacy res 0.6166666666666667 tensor(42., device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.032s | | Loss: 0.2433 | top1:  0.5675
(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2499 | top1:  0.5600
privacy res 0.5983333333333334 tensor(34.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.035s | | Loss: 0.2309 | top1:  0.6325
(60/500) Data: 0.006s | Batch: 0.035s | | Loss: 0.2343 | top1:  0.6250
privacy res 0.6016666666666667 tensor(44.5000, device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.039s | | Loss: 0.2401 | top1:  0.5875
(90/500) Data: 0.014s | Batch: 0.025s | | Loss: 0.2484 | top1:  0.5850
privacy res 0.6133333333333333 tensor(37., device='cuda:0')
privacy res 0 tensor(35.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.024s | | Loss: 0.2326 | top1:  0.5750
(301/500) Data: 0.002s | Batch: 0.037s | | Loss: 3.2024 | top1:  33.0000 | top5:  61.0000
privacy res 0.5533333333333333 tensor(30.5000, device='cuda:0')
(10/500) Data: 0.020s | Batch: 0.033s | | Loss: 0.2416 | top1:  0.5800
(30/500) Data: 0.011s | Batch: 0.028s | | Loss: 0.2383 | top1:  0.5650
privacy res 0.56 tensor(38.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.2471 | top1:  0.5175
(60/500) Data: 0.004s | Batch: 0.021s | | Loss: 0.2313 | top1:  0.6100
privacy res 0.5966666666666667 tensor(43.5000, device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.2403 | top1:  0.5925
(90/500) Data: 0.005s | Batch: 0.015s | | Loss: 0.2388 | top1:  0.5700
privacy res 0.57 tensor(44.5000, device='cuda:0')
privacy res 0 tensor(43., device='cuda:0')
(0/500) Data: 0.025s | Batch: 0.063s | | Loss: 0.2423 | top1:  0.5750
(401/500) Data: 0.006s | Batch: 0.018s | | Loss: 2.7904 | top1:  46.0000 | top5:  67.0000
privacy res 0.5566666666666666 tensor(43.5000, device='cuda:0')
(10/500) Data: 0.023s | Batch: 0.040s | | Loss: 0.2300 | top1:  0.6450
(30/500) Data: 0.016s | Batch: 0.033s | | Loss: 0.2429 | top1:  0.5450
privacy res 0.5516666666666666 tensor(31.5000, device='cuda:0')
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(40/500) Data: 0.015s | Batch: 0.032s | | Loss: 0.2401 | top1:  0.5500
(60/500) Data: 0.019s | Batch: 0.046s | | Loss: 0.2290 | top1:  0.6100
privacy res 0.5616666666666666 tensor(38., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.031s | | Loss: 0.2343 | top1:  0.6000
(90/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2453 | top1:  0.5350
privacy res 0.5583333333333333 tensor(31.5000, device='cuda:0')
privacy res 0 tensor(43., device='cuda:0')
(1/100) Data: 0.242s | Batch: 0.249s | Loss: 2.9601 | top1:  29.0000 | top5:  63.0000
test acc tensor(29.2200, device='cuda:0')

Epoch: [15 | 50] LR: 0.050000
(0/500) Data: 0.005s | Batch: 0.052s | | Loss: 0.2412 | top1:  0.5650
(1/500) Data: 0.013s | Batch: 0.047s | | Loss: 3.0087 | top1:  37.0000 | top5:  64.0000
privacy res 0.5833333333333334 tensor(40., device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.042s | | Loss: 0.2386 | top1:  0.5800
(30/500) Data: 0.016s | Batch: 0.041s | | Loss: 0.2324 | top1:  0.6100
privacy res 0.6116666666666667 tensor(46.5000, device='cuda:0')
(40/500) Data: 0.042s | Batch: 0.055s | | Loss: 0.2373 | top1:  0.5850
(60/500) Data: 0.010s | Batch: 0.027s | | Loss: 0.2410 | top1:  0.5750
privacy res 0.565 tensor(45.5000, device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.038s | | Loss: 0.2443 | top1:  0.5375
(90/500) Data: 0.014s | Batch: 0.023s | | Loss: 0.2363 | top1:  0.5900
privacy res 0.58 tensor(42., device='cuda:0')
privacy res 0 tensor(42.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.056s | | Loss: 0.2339 | top1:  0.5900
(101/500) Data: 0.002s | Batch: 0.039s | | Loss: 2.3244 | top1:  50.0000 | top5:  78.0000
privacy res 0.5716666666666667 tensor(47., device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.041s | | Loss: 0.2251 | top1:  0.6075
(30/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2391 | top1:  0.6200
privacy res 0.62 tensor(47.5000, device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.038s | | Loss: 0.2314 | top1:  0.6325
(60/500) Data: 0.005s | Batch: 0.041s | | Loss: 0.2248 | top1:  0.6650
privacy res 0.6483333333333333 tensor(43., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.034s | | Loss: 0.2309 | top1:  0.6450
(90/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2464 | top1:  0.5550
privacy res 0.605 tensor(38., device='cuda:0')
privacy res 0 tensor(39.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.055s | | Loss: 0.2340 | top1:  0.5800
(201/500) Data: 0.002s | Batch: 0.030s | | Loss: 2.5524 | top1:  42.0000 | top5:  71.0000
privacy res 0.5966666666666667 tensor(42.5000, device='cuda:0')
(10/500) Data: 0.039s | Batch: 0.061s | | Loss: 0.2353 | top1:  0.6100
(30/500) Data: 0.009s | Batch: 0.042s | | Loss: 0.2294 | top1:  0.6250
privacy res 0.59 tensor(36.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.040s | | Loss: 0.2385 | top1:  0.5875
(60/500) Data: 0.010s | Batch: 0.034s | | Loss: 0.2216 | top1:  0.6500
privacy res 0.6 tensor(45.5000, device='cuda:0')
(70/500) Data: 0.028s | Batch: 0.042s | | Loss: 0.2358 | top1:  0.6025
(90/500) Data: 0.005s | Batch: 0.031s | | Loss: 0.2518 | top1:  0.5400
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privacy res 0.6133333333333333 tensor(44.5000, device='cuda:0')
privacy res 0 tensor(34., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2407 | top1:  0.5800
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.9178 | top1:  41.0000 | top5:  62.0000
privacy res 0.5816666666666667 tensor(43., device='cuda:0')
(10/500) Data: 0.008s | Batch: 0.027s | | Loss: 0.2360 | top1:  0.6150
(30/500) Data: 0.005s | Batch: 0.031s | | Loss: 0.2456 | top1:  0.5350
privacy res 0.605 tensor(41.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.020s | | Loss: 0.2385 | top1:  0.5950
(60/500) Data: 0.008s | Batch: 0.021s | | Loss: 0.2338 | top1:  0.5750
privacy res 0.6016666666666667 tensor(43.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.2372 | top1:  0.5550
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2507 | top1:  0.5350
privacy res 0.5733333333333334 tensor(36., device='cuda:0')
privacy res 0 tensor(39.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.048s | | Loss: 0.2416 | top1:  0.5800
(401/500) Data: 0.013s | Batch: 0.032s | | Loss: 3.0592 | top1:  37.0000 | top5:  65.0000
privacy res 0.6066666666666667 tensor(38., device='cuda:0')
(10/500) Data: 0.028s | Batch: 0.050s | | Loss: 0.2393 | top1:  0.5825
(30/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2337 | top1:  0.6200
privacy res 0.5666666666666667 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.035s | | Loss: 0.2341 | top1:  0.6050
(60/500) Data: 0.032s | Batch: 0.047s | | Loss: 0.2378 | top1:  0.5850
privacy res 0.6 tensor(42., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.037s | | Loss: 0.2386 | top1:  0.5925
(90/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.2266 | top1:  0.6500
privacy res 0.6183333333333333 tensor(37.5000, device='cuda:0')
privacy res 0 tensor(38.5000, device='cuda:0')
(1/100) Data: 0.227s | Batch: 0.234s | Loss: 2.7826 | top1:  36.0000 | top5:  63.0000
test acc tensor(31.5900, device='cuda:0')

Epoch: [16 | 50] LR: 0.050000
(0/500) Data: 0.017s | Batch: 0.044s | | Loss: 0.2360 | top1:  0.6100
(1/500) Data: 0.002s | Batch: 0.029s | | Loss: 2.4014 | top1:  52.0000 | top5:  80.0000
privacy res 0.6133333333333333 tensor(48.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.029s | | Loss: 0.2399 | top1:  0.5875
(30/500) Data: 0.024s | Batch: 0.041s | | Loss: 0.2461 | top1:  0.5750
privacy res 0.585 tensor(40.5000, device='cuda:0')
(40/500) Data: 0.030s | Batch: 0.043s | | Loss: 0.2358 | top1:  0.5725
(60/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2350 | top1:  0.6100
privacy res 0.6083333333333333 tensor(46., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.2382 | top1:  0.6050
(90/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2358 | top1:  0.6200
privacy res 0.5983333333333334 tensor(41., device='cuda:0')
privacy res 0 tensor(42., device='cuda:0')
(0/500) Data: 0.017s | Batch: 0.059s | | Loss: 0.2418 | top1:  0.5750
(101/500) Data: 0.003s | Batch: 0.033s | | Loss: 2.2507 | top1:  53.0000 | top5:  73.0000
privacy res 0.6066666666666667 tensor(54., device='cuda:0')
```

```
(10/500) Data: 0.046s | Batch: 0.062s | | Loss: 0.2284 | top1:  0.6225
(30/500) Data: 0.004s | Batch: 0.042s | | Loss: 0.2347 | top1:  0.5800
privacy res 0.5916666666666667 tensor(45., device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.034s | | Loss: 0.2308 | top1:  0.6100
(60/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2236 | top1:  0.6500
privacy res 0.6033333333333334 tensor(44.5000, device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.022s | | Loss: 0.2344 | top1:  0.6300
(90/500) Data: 0.007s | Batch: 0.030s | | Loss: 0.2350 | top1:  0.5850
privacy res 0.59 tensor(43.5000, device='cuda:0')
privacy res 0 tensor(47., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.051s | | Loss: 0.2409 | top1:  0.5400
(201/500) Data: 0.002s | Batch: 0.041s | | Loss: 2.9948 | top1:  40.0000 | top5:  70.0000
privacy res 0.5833333333333334 tensor(34.5000, device='cuda:0')
(10/500) Data: 0.031s | Batch: 0.044s | | Loss: 0.2412 | top1:  0.5625
(30/500) Data: 0.020s | Batch: 0.036s | | Loss: 0.2378 | top1:  0.5750
privacy res 0.6083333333333333 tensor(39.5000, device='cuda:0')
(40/500) Data: 0.025s | Batch: 0.053s | | Loss: 0.2442 | top1:  0.5575
(60/500) Data: 0.030s | Batch: 0.049s | | Loss: 0.2350 | top1:  0.6200
privacy res 0.5933333333333334 tensor(42.5000, device='cuda:0')
(70/500) Data: 0.006s | Batch: 0.033s | | Loss: 0.2351 | top1:  0.5850
(90/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2341 | top1:  0.5750
privacy res 0.59 tensor(43.5000, device='cuda:0')
privacy res 0 tensor(41., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2376 | top1:  0.5800
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.9090 | top1:  40.0000 | top5:  67.0000
privacy res 0.6166666666666667 tensor(42.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2437 | top1:  0.5425
(30/500) Data: 0.019s | Batch: 0.030s | | Loss: 0.2438 | top1:  0.5400
privacy res 0.5666666666666667 tensor(40., device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.025s | | Loss: 0.2466 | top1:  0.5575
(60/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2395 | top1:  0.6200
privacy res 0.6016666666666667 tensor(41., device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.019s | | Loss: 0.2304 | top1:  0.6400
(90/500) Data: 0.021s | Batch: 0.032s | | Loss: 0.2318 | top1:  0.6100
privacy res 0.61 tensor(35.5000, device='cuda:0')
privacy res 0 tensor(41.5000, device='cuda:0')
(0/500) Data: 0.017s | Batch: 0.037s | | Loss: 0.2337 | top1:  0.6150
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.8422 | top1:  40.0000 | top5:  66.0000
privacy res 0.5916666666666667 tensor(41., device='cuda:0')
(10/500) Data: 0.049s | Batch: 0.063s | | Loss: 0.2300 | top1:  0.6025
(30/500) Data: 0.014s | Batch: 0.040s | | Loss: 0.2454 | top1:  0.5950
privacy res 0.575 tensor(43.5000, device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.031s | | Loss: 0.2325 | top1:  0.5925
(60/500) Data: 0.029s | Batch: 0.047s | | Loss: 0.2288 | top1:  0.6300
privacy res 0.6016666666666667 tensor(35., device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.022s | | Loss: 0.2420 | top1:  0.5750
(90/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.2291 | top1:  0.6450
privacy res 0.6 tensor(36., device='cuda:0')
```

```
privacy res 0 tensor(38.5000, device='cuda:0')
(1/100) Data: 0.217s | Batch: 0.223s | Loss: 3.4328 | top1:  29.0000 | top5:  55.0000
test acc tensor(31.9400, device='cuda:0')

Epoch: [17 | 50] LR: 0.050000
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.2263 | top1:  0.6250
(1/500) Data: 0.002s | Batch: 0.025s | | Loss: 2.4944 | top1:  45.0000 | top5:  76.0000
privacy res 0.61 tensor(44.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.050s | | Loss: 0.2331 | top1:  0.6125
(30/500) Data: 0.006s | Batch: 0.024s | | Loss: 0.2369 | top1:  0.6150
privacy res 0.57 tensor(41.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.2372 | top1:  0.6150
(60/500) Data: 0.014s | Batch: 0.055s | | Loss: 0.2405 | top1:  0.5500
privacy res 0.585 tensor(43., device='cuda:0')
(70/500) Data: 0.024s | Batch: 0.045s | | Loss: 0.2289 | top1:  0.6350
(90/500) Data: 0.018s | Batch: 0.044s | | Loss: 0.2446 | top1:  0.5400
privacy res 0.5616666666666666 tensor(43.5000, device='cuda:0')
privacy res 0 tensor(43.5000, device='cuda:0')
(0/500) Data: 0.011s | Batch: 0.049s | | Loss: 0.2478 | top1:  0.4950
(101/500) Data: 0.002s | Batch: 0.024s | | Loss: 2.5273 | top1:  51.0000 | top5:  78.0000
privacy res 0.55 tensor(46., device='cuda:0')
(10/500) Data: 0.026s | Batch: 0.044s | | Loss: 0.2371 | top1:  0.5875
(30/500) Data: 0.036s | Batch: 0.051s | | Loss: 0.2264 | top1:  0.6750
privacy res 0.62 tensor(44.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2403 | top1:  0.5575
(60/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2257 | top1:  0.6100
privacy res 0.6183333333333333 tensor(47., device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.033s | | Loss: 0.2363 | top1:  0.5925
(90/500) Data: 0.019s | Batch: 0.043s | | Loss: 0.2355 | top1:  0.6350
privacy res 0.6 tensor(45., device='cuda:0')
privacy res 0 tensor(45., device='cuda:0')
(0/500) Data: 0.017s | Batch: 0.035s | | Loss: 0.2379 | top1:  0.6400
(201/500) Data: 0.015s | Batch: 0.037s | | Loss: 2.4539 | top1:  51.0000 | top5:  82.0000
privacy res 0.5766666666666667 tensor(51.5000, device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.043s | | Loss: 0.2322 | top1:  0.6175
(30/500) Data: 0.024s | Batch: 0.048s | | Loss: 0.2286 | top1:  0.6050
privacy res 0.565 tensor(45., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.030s | | Loss: 0.2352 | top1:  0.5875
(60/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.2396 | top1:  0.5900
privacy res 0.6066666666666667 tensor(42., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2417 | top1:  0.5575
(90/500) Data: 0.009s | Batch: 0.031s | | Loss: 0.2419 | top1:  0.5700
privacy res 0.5766666666666665 tensor(31., device='cuda:0')
privacy res 0 tensor(36., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2495 | top1:  0.5450
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.8006 | top1:  34.0000 | top5:  69.0000
privacy res 0.5683333333333334 tensor(35.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.036s | | Loss: 0.2437 | top1:  0.5475
```

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(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2388 | top1:  0.5850
privacy res 0.57 tensor(36., device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2444 | top1:  0.5575
(60/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2341 | top1:  0.6050
privacy res 0.5966666666666667 tensor(44.5000, device='cuda:0')
(70/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2359 | top1:  0.5950
(90/500) Data: 0.006s | Batch: 0.027s | | Loss: 0.2400 | top1:  0.5600
privacy res 0.5616666666666666 tensor(35.5000, device='cuda:0')
privacy res 0 tensor(42., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.030s | | Loss: 0.2377 | top1:  0.5600
(401/500) Data: 0.002s | Batch: 0.020s | | Loss: 2.6624 | top1:  45.0000 | top5:  75.0000
privacy res 0.5783333333333334 tensor(48.5000, device='cuda:0')
(10/500) Data: 0.007s | Batch: 0.032s | | Loss: 0.2394 | top1:  0.5850
(30/500) Data: 0.010s | Batch: 0.033s | | Loss: 0.2306 | top1:  0.6200
privacy res 0.5983333333333334 tensor(41.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.022s | | Loss: 0.2352 | top1:  0.5775
(60/500) Data: 0.007s | Batch: 0.034s | | Loss: 0.2325 | top1:  0.5750
privacy res 0.5933333333333334 tensor(46., device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.030s | | Loss: 0.2296 | top1:  0.5950
(90/500) Data: 0.015s | Batch: 0.029s | | Loss: 0.2358 | top1:  0.6150
privacy res 0.595 tensor(43.5000, device='cuda:0')
privacy res 0 tensor(46., device='cuda:0')
(1/100) Data: 0.224s | Batch: 0.229s | Loss: 3.2703 | top1:  32.0000 | top5:  57.0000
test acc tensor(31.3300, device='cuda:0')

Epoch: [18 | 50] LR: 0.050000
(0/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.2466 | top1:  0.5250
(1/500) Data: 0.006s | Batch: 0.047s | | Loss: 2.8026 | top1:  44.0000 | top5:  70.0000
privacy res 0.58 tensor(48., device='cuda:0')
(10/500) Data: 0.027s | Batch: 0.040s | | Loss: 0.2368 | top1:  0.6125
(30/500) Data: 0.027s | Batch: 0.038s | | Loss: 0.2390 | top1:  0.5900
privacy res 0.6083333333333333 tensor(48., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.035s | | Loss: 0.2222 | top1:  0.6475
(60/500) Data: 0.004s | Batch: 0.021s | | Loss: 0.2452 | top1:  0.5650
privacy res 0.58 tensor(48.5000, device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.032s | | Loss: 0.2352 | top1:  0.5725
(90/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.2374 | top1:  0.6200
privacy res 0.6266666666666667 tensor(47., device='cuda:0')
privacy res 0 tensor(44.5000, device='cuda:0')
(0/500) Data: 0.008s | Batch: 0.031s | | Loss: 0.2269 | top1:  0.6450
(101/500) Data: 0.007s | Batch: 0.022s | | Loss: 2.3894 | top1:  46.0000 | top5:  73.0000
privacy res 0.6383333333333333 tensor(45., device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.042s | | Loss: 0.2469 | top1:  0.5250
(30/500) Data: 0.010s | Batch: 0.048s | | Loss: 0.2392 | top1:  0.6350
privacy res 0.5583333333333333 tensor(43.5000, device='cuda:0')
(40/500) Data: 0.032s | Batch: 0.050s | | Loss: 0.2445 | top1:  0.5675
(60/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.2368 | top1:  0.5950
privacy res 0.585 tensor(46.5000, device='cuda:0')
```

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(70/500) Data: 0.019s | Batch: 0.031s | | Loss: 0.2369 | top1:  0.6075
(90/500) Data: 0.012s | Batch: 0.022s | | Loss: 0.2315 | top1:  0.5750
privacy res 0.6033333333333334 tensor(46., device='cuda:0')
privacy res 0 tensor(44.5000, device='cuda:0')
(0/500) Data: 0.019s | Batch: 0.060s | | Loss: 0.2300 | top1:  0.6200
(201/500) Data: 0.004s | Batch: 0.034s | | Loss: 2.5942 | top1:  46.0000 | top5:  71.0000
privacy res 0.605 tensor(44.5000, device='cuda:0')
(10/500) Data: 0.028s | Batch: 0.046s | | Loss: 0.2341 | top1:  0.5850
(30/500) Data: 0.018s | Batch: 0.037s | | Loss: 0.2374 | top1:  0.5850
privacy res 0.565 tensor(43., device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.047s | | Loss: 0.2413 | top1:  0.5475
(60/500) Data: 0.005s | Batch: 0.041s | | Loss: 0.2180 | top1:  0.6100
privacy res 0.6033333333333334 tensor(48.5000, device='cuda:0')
(70/500) Data: 0.026s | Batch: 0.038s | | Loss: 0.2355 | top1:  0.5875
(90/500) Data: 0.010s | Batch: 0.021s | | Loss: 0.2349 | top1:  0.5600
privacy res 0.56 tensor(41., device='cuda:0')
privacy res 0 tensor(42.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2274 | top1:  0.6400
(301/500) Data: 0.008s | Batch: 0.042s | | Loss: 2.4135 | top1:  51.0000 | top5:  76.0000
privacy res 0.635 tensor(49., device='cuda:0')
(10/500) Data: 0.029s | Batch: 0.048s | | Loss: 0.2324 | top1:  0.6075
(30/500) Data: 0.009s | Batch: 0.026s | | Loss: 0.2329 | top1:  0.6100
privacy res 0.61 tensor(46.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.2350 | top1:  0.5850
(60/500) Data: 0.004s | Batch: 0.034s | | Loss: 0.2267 | top1:  0.6200
privacy res 0.59 tensor(38., device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.029s | | Loss: 0.2352 | top1:  0.6075
(90/500) Data: 0.014s | Batch: 0.043s | | Loss: 0.2420 | top1:  0.5950
privacy res 0.6216666666666667 tensor(40.5000, device='cuda:0')
privacy res 0 tensor(48.5000, device='cuda:0')
(0/500) Data: 0.018s | Batch: 0.041s | | Loss: 0.2341 | top1:  0.6500
(401/500) Data: 0.002s | Batch: 0.044s | | Loss: 2.8682 | top1:  43.0000 | top5:  70.0000
privacy res 0.605 tensor(41., device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.034s | | Loss: 0.2445 | top1:  0.5675
(30/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2298 | top1:  0.6250
privacy res 0.5983333333333334 tensor(42.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.2381 | top1:  0.5925
(60/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.2363 | top1:  0.5400
privacy res 0.5983333333333334 tensor(40., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.025s | | Loss: 0.2374 | top1:  0.5850
(90/500) Data: 0.009s | Batch: 0.033s | | Loss: 0.2336 | top1:  0.6100
privacy res 0.6166666666666667 tensor(40.5000, device='cuda:0')
privacy res 0 tensor(42.5000, device='cuda:0')
(1/100) Data: 0.240s | Batch: 0.246s | Loss: 2.8361 | top1:  40.0000 | top5:  62.0000
test acc tensor(32.5500, device='cuda:0')

Epoch: [19 | 50] LR: 0.050000
(0/500) Data: 0.008s | Batch: 0.026s | | Loss: 0.2176 | top1:  0.6650
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(1/500) Data: 0.014s | Batch: 0.025s | | Loss: 2.5176 | top1:  51.0000 | top5:  77.0000
privacy res 0.655 tensor(50.5000, device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.045s | | Loss: 0.2352 | top1:  0.5925
(30/500) Data: 0.012s | Batch: 0.032s | | Loss: 0.2467 | top1:  0.5700
privacy res 0.5866666666666667 tensor(57.5000, device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.027s | | Loss: 0.2335 | top1:  0.6000
(60/500) Data: 0.004s | Batch: 0.021s | | Loss: 0.2302 | top1:  0.6100
privacy res 0.6233333333333333 tensor(45.5000, device='cuda:0')
(70/500) Data: 0.018s | Batch: 0.028s | | Loss: 0.2269 | top1:  0.6250
(90/500) Data: 0.023s | Batch: 0.056s | | Loss: 0.2388 | top1:  0.6000
privacy res 0.5766666666666667 tensor(50.5000, device='cuda:0')
privacy res 0 tensor(50., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.023s | | Loss: 0.2372 | top1:  0.6300
(101/500) Data: 0.012s | Batch: 0.030s | | Loss: 2.1028 | top1:  63.0000 | top5:  79.0000
privacy res 0.6 tensor(54., device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.033s | | Loss: 0.2370 | top1:  0.5900
(30/500) Data: 0.042s | Batch: 0.053s | | Loss: 0.2498 | top1:  0.5350
privacy res 0.5783333333333334 tensor(44.5000, device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.022s | | Loss: 0.2282 | top1:  0.6050
(60/500) Data: 0.007s | Batch: 0.019s | | Loss: 0.2272 | top1:  0.6550
privacy res 0.6183333333333333 tensor(45., device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.031s | | Loss: 0.2284 | top1:  0.5825
(90/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.2386 | top1:  0.5900
privacy res 0.6 tensor(49., device='cuda:0')
privacy res 0 tensor(46.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.2230 | top1:  0.6250
(201/500) Data: 0.010s | Batch: 0.031s | | Loss: 2.8058 | top1:  39.0000 | top5:  74.0000
privacy res 0.6116666666666667 tensor(44., device='cuda:0')
(10/500) Data: 0.037s | Batch: 0.054s | | Loss: 0.2331 | top1:  0.6250
(30/500) Data: 0.028s | Batch: 0.039s | | Loss: 0.2289 | top1:  0.6100
privacy res 0.58 tensor(49.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.030s | | Loss: 0.2326 | top1:  0.5950
(60/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2385 | top1:  0.6050
privacy res 0.5833333333333334 tensor(49., device='cuda:0')
(70/500) Data: 0.025s | Batch: 0.037s | | Loss: 0.2271 | top1:  0.6150
(90/500) Data: 0.003s | Batch: 0.015s | | Loss: 0.2290 | top1:  0.6100
privacy res 0.6066666666666667 tensor(41.5000, device='cuda:0')
privacy res 0 tensor(43., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2318 | top1:  0.6050
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.7314 | top1:  46.0000 | top5:  70.0000
privacy res 0.6016666666666667 tensor(46.5000, device='cuda:0')
(10/500) Data: 0.032s | Batch: 0.045s | | Loss: 0.2411 | top1:  0.5625
(30/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.2302 | top1:  0.5950
privacy res 0.6166666666666667 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.029s | | Loss: 0.2387 | top1:  0.5875
(60/500) Data: 0.011s | Batch: 0.029s | | Loss: 0.2489 | top1:  0.5850
privacy res 0.5666666666666667 tensor(37., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.041s | | Loss: 0.2403 | top1:  0.5875
```

```
(90/500) Data: 0.022s | Batch: 0.034s | | Loss: 0.2492 | top1:  0.5450
privacy res 0.5883333333333334 tensor(45., device='cuda:0')
privacy res 0 tensor(45.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.048s | | Loss: 0.2314 | top1:  0.6100
(401/500) Data: 0.012s | Batch: 0.027s | | Loss: 2.8335 | top1:  44.0000 | top5:  62.0000
privacy res 0.6083333333333333 tensor(48., device='cuda:0')
(10/500) Data: 0.023s | Batch: 0.046s | | Loss: 0.2356 | top1:  0.5800
(30/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2340 | top1:  0.6000
privacy res 0.6033333333333334 tensor(37.5000, device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.028s | | Loss: 0.2428 | top1:  0.5775
(60/500) Data: 0.006s | Batch: 0.028s | | Loss: 0.2312 | top1:  0.5700
privacy res 0.595 tensor(45., device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.038s | | Loss: 0.2366 | top1:  0.6000
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2238 | top1:  0.6450
privacy res 0.6266666666666667 tensor(40.5000, device='cuda:0')
privacy res 0 tensor(34.5000, device='cuda:0')
(1/100) Data: 0.214s | Batch: 0.219s | Loss: 2.9828 | top1:  34.0000 | top5:  59.0000
test acc tensor(31.3000, device='cuda:0')

Epoch: [20 | 50] LR: 0.050000
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.2271 | top1:  0.6400
(1/500) Data: 0.009s | Batch: 0.025s | | Loss: 2.5267 | top1:  51.0000 | top5:  75.0000
privacy res 0.5966666666666667 tensor(50., device='cuda:0')
(10/500) Data: 0.054s | Batch: 0.070s | | Loss: 0.2365 | top1:  0.5900
(30/500) Data: 0.022s | Batch: 0.033s | | Loss: 0.2362 | top1:  0.5900
privacy res 0.5933333333333334 tensor(47., device='cuda:0')
(40/500) Data: 0.025s | Batch: 0.037s | | Loss: 0.2297 | top1:  0.5825
(60/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2390 | top1:  0.6050
privacy res 0.6 tensor(44., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.034s | | Loss: 0.2240 | top1:  0.6300
(90/500) Data: 0.005s | Batch: 0.014s | | Loss: 0.2440 | top1:  0.5600
privacy res 0.6033333333333334 tensor(46., device='cuda:0')
privacy res 0 tensor(46.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.2272 | top1:  0.5900
(101/500) Data: 0.014s | Batch: 0.034s | | Loss: 2.3910 | top1:  50.0000 | top5:  76.0000
privacy res 0.6183333333333333 tensor(51., device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.029s | | Loss: 0.2385 | top1:  0.5750
(30/500) Data: 0.013s | Batch: 0.035s | | Loss: 0.2429 | top1:  0.5900
privacy res 0.595 tensor(49., device='cuda:0')
(40/500) Data: 0.032s | Batch: 0.049s | | Loss: 0.2442 | top1:  0.5450
(60/500) Data: 0.025s | Batch: 0.061s | | Loss: 0.2328 | top1:  0.6450
privacy res 0.595 tensor(46.5000, device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.022s | | Loss: 0.2325 | top1:  0.5850
(90/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.2306 | top1:  0.5950
privacy res 0.6183333333333333 tensor(43.5000, device='cuda:0')
privacy res 0 tensor(40.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.2337 | top1:  0.6300
(201/500) Data: 0.002s | Batch: 0.019s | | Loss: 2.9965 | top1:  45.0000 | top5:  63.0000
```

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privacy res 0.5766666666666667 tensor(41., device='cuda:0')
(10/500) Data: 0.038s | Batch: 0.051s | | Loss: 0.2333 | top1:  0.5925
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2381 | top1:  0.6150
privacy res 0.595 tensor(42.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.027s | | Loss: 0.2328 | top1:  0.6175
(60/500) Data: 0.005s | Batch: 0.033s | | Loss: 0.2272 | top1:  0.5900
privacy res 0.6016666666666667 tensor(41., device='cuda:0')
(70/500) Data: 0.003s | Batch: 0.013s | | Loss: 0.2373 | top1:  0.5950
(90/500) Data: 0.008s | Batch: 0.020s | | Loss: 0.2561 | top1:  0.5150
privacy res 0.5483333333333333 tensor(47.5000, device='cuda:0')
privacy res 0 tensor(38., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2339 | top1:  0.5950
(301/500) Data: 0.002s | Batch: 0.013s | | Loss: 2.8980 | top1:  42.0000 | top5:  57.0000
privacy res 0.6033333333333334 tensor(44.5000, device='cuda:0')
(10/500) Data: 0.007s | Batch: 0.020s | | Loss: 0.2338 | top1:  0.6025
(30/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.2556 | top1:  0.5350
privacy res 0.5883333333333334 tensor(46.5000, device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.2471 | top1:  0.5625
(60/500) Data: 0.014s | Batch: 0.027s | | Loss: 0.2468 | top1:  0.5650
privacy res 0.585 tensor(45.5000, device='cuda:0')
(70/500) Data: 0.028s | Batch: 0.048s | | Loss: 0.2369 | top1:  0.5750
(90/500) Data: 0.015s | Batch: 0.042s | | Loss: 0.2328 | top1:  0.5800
privacy res 0.5566666666666666 tensor(41.5000, device='cuda:0')
privacy res 0 tensor(39., device='cuda:0')
(0/500) Data: 0.021s | Batch: 0.052s | | Loss: 0.2266 | top1:  0.6350
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 2.4605 | top1:  44.0000 | top5:  77.0000
privacy res 0.6183333333333333 tensor(45., device='cuda:0')
(10/500) Data: 0.043s | Batch: 0.062s | | Loss: 0.2347 | top1:  0.5975
(30/500) Data: 0.006s | Batch: 0.026s | | Loss: 0.2346 | top1:  0.6000
privacy res 0.5966666666666667 tensor(42.5000, device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.035s | | Loss: 0.2430 | top1:  0.5600
(60/500) Data: 0.020s | Batch: 0.048s | | Loss: 0.2389 | top1:  0.5900
privacy res 0.6116666666666667 tensor(47.5000, device='cuda:0')
(70/500) Data: 0.023s | Batch: 0.045s | | Loss: 0.2410 | top1:  0.5775
(90/500) Data: 0.020s | Batch: 0.058s | | Loss: 0.2363 | top1:  0.6450
privacy res 0.6016666666666667 tensor(35., device='cuda:0')
privacy res 0 tensor(46.5000, device='cuda:0')
(1/100) Data: 0.254s | Batch: 0.260s | Loss: 3.2498 | top1:  34.0000 | top5:  52.0000
test acc tensor(32.4700, device='cuda:0')

Epoch: [21 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.2521 | top1:  0.5350
(1/500) Data: 0.002s | Batch: 0.042s | | Loss: 2.5741 | top1:  50.0000 | top5:  75.0000
privacy res 0.5733333333333334 tensor(50., device='cuda:0')
(10/500) Data: 0.027s | Batch: 0.048s | | Loss: 0.2310 | top1:  0.6000
(30/500) Data: 0.020s | Batch: 0.035s | | Loss: 0.2359 | top1:  0.6000
privacy res 0.6183333333333333 tensor(52.5000, device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.024s | | Loss: 0.2386 | top1:  0.5850
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(60/500) Data: 0.014s | Batch: 0.028s | | Loss: 0.2298 | top1:  0.6250
privacy res 0.6166666666666667 tensor(52.5000, device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.034s | | Loss: 0.2345 | top1:  0.6125
(90/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2274 | top1:  0.6400
privacy res 0.6566666666666666 tensor(52.5000, device='cuda:0')
privacy res 0 tensor(57., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.049s | | Loss: 0.2373 | top1:  0.5900
(101/500) Data: 0.010s | Batch: 0.025s | | Loss: 1.6150 | top1:  69.0000 | top5:  86.0000
privacy res 0.6066666666666667 tensor(62.5000, device='cuda:0')
(10/500) Data: 0.038s | Batch: 0.064s | | Loss: 0.2285 | top1:  0.6225
(30/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2303 | top1:  0.6450
privacy res 0.6116666666666667 tensor(58.5000, device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.036s | | Loss: 0.2257 | top1:  0.6225
(60/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2196 | top1:  0.6350
privacy res 0.5966666666666667 tensor(61., device='cuda:0')
(70/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.2234 | top1:  0.6400
(90/500) Data: 0.031s | Batch: 0.042s | | Loss: 0.2406 | top1:  0.5950
privacy res 0.62 tensor(66.5000, device='cuda:0')
privacy res 0 tensor(56.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.030s | | Loss: 0.2137 | top1:  0.6550
(201/500) Data: 0.002s | Batch: 0.019s | | Loss: 1.6718 | top1:  69.0000 | top5:  86.0000
privacy res 0.6266666666666667 tensor(64., device='cuda:0')
(10/500) Data: 0.030s | Batch: 0.041s | | Loss: 0.2299 | top1:  0.6225
(30/500) Data: 0.004s | Batch: 0.026s | | Loss: 0.2317 | top1:  0.5950
privacy res 0.6166666666666667 tensor(62.5000, device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.036s | | Loss: 0.2279 | top1:  0.6325
(60/500) Data: 0.005s | Batch: 0.030s | | Loss: 0.2086 | top1:  0.6900
privacy res 0.645 tensor(64., device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2210 | top1:  0.6250
(90/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2125 | top1:  0.7050
privacy res 0.655 tensor(58.5000, device='cuda:0')
privacy res 0 tensor(62.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.026s | | Loss: 0.2331 | top1:  0.6350
(301/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.9775 | top1:  57.0000 | top5:  82.0000
privacy res 0.625 tensor(64.5000, device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.033s | | Loss: 0.2192 | top1:  0.6525
(30/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.2277 | top1:  0.6250
privacy res 0.6433333333333333 tensor(61.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.030s | | Loss: 0.2328 | top1:  0.6125
(60/500) Data: 0.023s | Batch: 0.046s | | Loss: 0.2184 | top1:  0.6150
privacy res 0.6183333333333333 tensor(63.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.035s | | Loss: 0.2243 | top1:  0.6250
(90/500) Data: 0.009s | Batch: 0.039s | | Loss: 0.2288 | top1:  0.6100
privacy res 0.615 tensor(63., device='cuda:0')
privacy res 0 tensor(58.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.037s | | Loss: 0.2360 | top1:  0.6100
(401/500) Data: 0.002s | Batch: 0.032s | | Loss: 2.0026 | top1:  55.0000 | top5:  80.0000
privacy res 0.6166666666666667 tensor(57.5000, device='cuda:0')
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(10/500) Data: 0.045s | Batch: 0.059s | | Loss: 0.2347 | top1:  0.5875
(30/500) Data: 0.010s | Batch: 0.023s | | Loss: 0.2278 | top1:  0.6700
privacy res 0.6433333333333333 tensor(64.5000, device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.020s | | Loss: 0.2269 | top1:  0.6375
(60/500) Data: 0.014s | Batch: 0.047s | | Loss: 0.2228 | top1:  0.6450
privacy res 0.66 tensor(58.5000, device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2351 | top1:  0.6175
(90/500) Data: 0.011s | Batch: 0.048s | | Loss: 0.2223 | top1:  0.6050
privacy res 0.6233333333333333 tensor(62.5000, device='cuda:0')
privacy res 0 tensor(64., device='cuda:0')
(1/100) Data: 0.222s | Batch: 0.228s | Loss: 3.2701 | top1:  40.0000 | top5:  62.0000
test acc tensor(38.4500, device='cuda:0')

Epoch: [22 | 50] LR: 0.005000
(0/500) Data: 0.007s | Batch: 0.042s | | Loss: 0.2273 | top1:  0.6200
(1/500) Data: 0.005s | Batch: 0.025s | | Loss: 1.9427 | top1:  55.0000 | top5:  86.0000
privacy res 0.6466666666666666 tensor(60., device='cuda:0')
(10/500) Data: 0.031s | Batch: 0.049s | | Loss: 0.2256 | top1:  0.6350
(30/500) Data: 0.022s | Batch: 0.033s | | Loss: 0.2271 | top1:  0.6250
privacy res 0.6266666666666667 tensor(68., device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.032s | | Loss: 0.2207 | top1:  0.6400
(60/500) Data: 0.005s | Batch: 0.020s | | Loss: 0.2183 | top1:  0.6950
privacy res 0.6366666666666667 tensor(66.5000, device='cuda:0')
(70/500) Data: 0.029s | Batch: 0.047s | | Loss: 0.2220 | top1:  0.6500
(90/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2341 | top1:  0.6300
privacy res 0.6416666666666667 tensor(72., device='cuda:0')
privacy res 0 tensor(74., device='cuda:0')
(0/500) Data: 0.007s | Batch: 0.046s | | Loss: 0.2210 | top1:  0.6350
(101/500) Data: 0.020s | Batch: 0.032s | | Loss: 1.4853 | top1:  75.0000 | top5:  90.0000
privacy res 0.6533333333333333 tensor(66.5000, device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.031s | | Loss: 0.2229 | top1:  0.6550
(30/500) Data: 0.020s | Batch: 0.032s | | Loss: 0.2156 | top1:  0.6450
privacy res 0.6566666666666666 tensor(68.5000, device='cuda:0')
(40/500) Data: 0.026s | Batch: 0.038s | | Loss: 0.2254 | top1:  0.6375
(60/500) Data: 0.009s | Batch: 0.021s | | Loss: 0.2112 | top1:  0.6700
privacy res 0.6516666666666666 tensor(65.5000, device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.042s | | Loss: 0.2332 | top1:  0.6100
(90/500) Data: 0.005s | Batch: 0.037s | | Loss: 0.2225 | top1:  0.6600
privacy res 0.6316666666666667 tensor(68., device='cuda:0')
privacy res 0 tensor(67., device='cuda:0')
(0/500) Data: 0.023s | Batch: 0.059s | | Loss: 0.2254 | top1:  0.6400
(201/500) Data: 0.002s | Batch: 0.018s | | Loss: 1.6161 | top1:  69.0000 | top5:  87.0000
privacy res 0.6466666666666666 tensor(72.5000, device='cuda:0')
(10/500) Data: 0.038s | Batch: 0.057s | | Loss: 0.2220 | top1:  0.6500
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2327 | top1:  0.6250
privacy res 0.6233333333333333 tensor(68., device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.2229 | top1:  0.6475
(60/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2134 | top1:  0.6400
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privacy res 0.6366666666666667 tensor(65., device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.027s | | Loss: 0.2162 | top1:  0.6550
(90/500) Data: 0.020s | Batch: 0.031s | | Loss: 0.2318 | top1:  0.6400
privacy res 0.6616666666666666 tensor(71., device='cuda:0')
privacy res 0 tensor(70.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2234 | top1:  0.6300
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.7149 | top1:  63.0000 | top5:  88.0000
privacy res 0.6583333333333333 tensor(61.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.032s | | Loss: 0.2195 | top1:  0.6600
(30/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2196 | top1:  0.6500
privacy res 0.6416666666666667 tensor(70.5000, device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.037s | | Loss: 0.2251 | top1:  0.6400
(60/500) Data: 0.007s | Batch: 0.035s | | Loss: 0.2286 | top1:  0.6000
privacy res 0.61 tensor(69., device='cuda:0')
(70/500) Data: 0.036s | Batch: 0.051s | | Loss: 0.2207 | top1:  0.6575
(90/500) Data: 0.018s | Batch: 0.030s | | Loss: 0.2246 | top1:  0.6600
privacy res 0.6516666666666666 tensor(72.5000, device='cuda:0')
privacy res 0 tensor(68., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.2365 | top1:  0.5650
(401/500) Data: 0.002s | Batch: 0.014s | | Loss: 1.4294 | top1:  75.0000 | top5:  92.0000
privacy res 0.64 tensor(74.5000, device='cuda:0')
(10/500) Data: 0.026s | Batch: 0.041s | | Loss: 0.2238 | top1:  0.6450
(30/500) Data: 0.007s | Batch: 0.023s | | Loss: 0.2281 | top1:  0.6500
privacy res 0.63 tensor(66.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.022s | | Loss: 0.2059 | top1:  0.6725
(60/500) Data: 0.007s | Batch: 0.041s | | Loss: 0.2261 | top1:  0.6600
privacy res 0.6783333333333333 tensor(72.5000, device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.041s | | Loss: 0.2100 | top1:  0.6750
(90/500) Data: 0.011s | Batch: 0.023s | | Loss: 0.2109 | top1:  0.6700
privacy res 0.65 tensor(66.5000, device='cuda:0')
privacy res 0 tensor(65.5000, device='cuda:0')
(1/100) Data: 0.173s | Batch: 0.179s | Loss: 2.8051 | top1:  33.0000 | top5:  64.0000
test acc tensor(39.1100, device='cuda:0')

Epoch: [23 | 50] LR: 0.005000
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.2338 | top1:  0.6300
(1/500) Data: 0.003s | Batch: 0.037s | | Loss: 1.6022 | top1:  66.0000 | top5:  89.0000
privacy res 0.6133333333333333 tensor(68.5000, device='cuda:0')
(10/500) Data: 0.025s | Batch: 0.038s | | Loss: 0.2249 | top1:  0.6050
(30/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.2034 | top1:  0.6750
privacy res 0.6733333333333333 tensor(77., device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.030s | | Loss: 0.2140 | top1:  0.6700
(60/500) Data: 0.006s | Batch: 0.024s | | Loss: 0.2291 | top1:  0.6450
privacy res 0.6516666666666666 tensor(72., device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.046s | | Loss: 0.2254 | top1:  0.6275
(90/500) Data: 0.014s | Batch: 0.035s | | Loss: 0.2354 | top1:  0.6000
privacy res 0.6233333333333333 tensor(67., device='cuda:0')
privacy res 0 tensor(62., device='cuda:0')
```

```
(0/500) Data: 0.008s | Batch: 0.039s | | Loss: 0.2306 | top1:  0.6500
(101/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.4744 | top1:  73.0000 | top5:  89.0000
privacy res 0.6516666666666666 tensor(75.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.2284 | top1:  0.6125
(30/500) Data: 0.026s | Batch: 0.051s | | Loss: 0.2118 | top1:  0.6900
privacy res 0.655 tensor(71., device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.025s | | Loss: 0.2241 | top1:  0.6400
(60/500) Data: 0.011s | Batch: 0.036s | | Loss: 0.2385 | top1:  0.5600
privacy res 0.625 tensor(70., device='cuda:0')
(70/500) Data: 0.025s | Batch: 0.047s | | Loss: 0.2293 | top1:  0.6450
(90/500) Data: 0.032s | Batch: 0.059s | | Loss: 0.2300 | top1:  0.6150
privacy res 0.6583333333333333 tensor(78., device='cuda:0')
privacy res 0 tensor(67.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.031s | | Loss: 0.2200 | top1:  0.6550
(201/500) Data: 0.018s | Batch: 0.037s | | Loss: 1.8644 | top1:  69.0000 | top5:  83.0000
privacy res 0.64 tensor(74., device='cuda:0')
(10/500) Data: 0.011s | Batch: 0.039s | | Loss: 0.2173 | top1:  0.6625
(30/500) Data: 0.012s | Batch: 0.030s | | Loss: 0.2097 | top1:  0.6650
privacy res 0.6633333333333333 tensor(74., device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2278 | top1:  0.6125
(60/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2442 | top1:  0.6050
privacy res 0.635 tensor(71., device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.2108 | top1:  0.6725
(90/500) Data: 0.006s | Batch: 0.029s | | Loss: 0.2266 | top1:  0.6350
privacy res 0.6733333333333333 tensor(72.5000, device='cuda:0')
privacy res 0 tensor(70.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.021s | | Loss: 0.2296 | top1:  0.6250
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.4905 | top1:  72.0000 | top5:  92.0000
privacy res 0.65 tensor(74., device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.046s | | Loss: 0.2160 | top1:  0.6475
(30/500) Data: 0.008s | Batch: 0.017s | | Loss: 0.2177 | top1:  0.6400
privacy res 0.64 tensor(67., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2221 | top1:  0.6300
(60/500) Data: 0.011s | Batch: 0.023s | | Loss: 0.2245 | top1:  0.6600
privacy res 0.65 tensor(75., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.042s | | Loss: 0.2142 | top1:  0.6575
(90/500) Data: 0.009s | Batch: 0.031s | | Loss: 0.2068 | top1:  0.6700
privacy res 0.67 tensor(75., device='cuda:0')
privacy res 0 tensor(70., device='cuda:0')
(0/500) Data: 0.008s | Batch: 0.027s | | Loss: 0.2332 | top1:  0.6100
(401/500) Data: 0.014s | Batch: 0.024s | | Loss: 1.5427 | top1:  73.0000 | top5:  87.0000
privacy res 0.675 tensor(71.5000, device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.038s | | Loss: 0.2133 | top1:  0.6750
(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2043 | top1:  0.7000
privacy res 0.6633333333333333 tensor(74.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.022s | | Loss: 0.2223 | top1:  0.6575
(60/500) Data: 0.010s | Batch: 0.021s | | Loss: 0.2127 | top1:  0.6750
privacy res 0.6733333333333333 tensor(74., device='cuda:0')
```

```
(70/500) Data: 0.009s | Batch: 0.031s | | Loss: 0.2272 | top1:  0.6325
(90/500) Data: 0.016s | Batch: 0.037s | | Loss: 0.2311 | top1:  0.6250
privacy res 0.625 tensor(73.5000, device='cuda:0')
privacy res 0 tensor(69., device='cuda:0')
(1/100) Data: 0.233s | Batch: 0.239s | Loss: 2.6212 | top1:  45.0000 | top5:  63.0000
test acc tensor(38.9200, device='cuda:0')

Epoch: [24 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.024s | | Loss: 0.2089 | top1:  0.6650
(1/500) Data: 0.003s | Batch: 0.032s | | Loss: 1.5567 | top1:  74.0000 | top5:  87.0000
privacy res 0.65 tensor(75., device='cuda:0')
(10/500) Data: 0.051s | Batch: 0.065s | | Loss: 0.2279 | top1:  0.6275
(30/500) Data: 0.008s | Batch: 0.020s | | Loss: 0.2092 | top1:  0.6450
privacy res 0.6066666666666667 tensor(74., device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.022s | | Loss: 0.2235 | top1:  0.6425
(60/500) Data: 0.020s | Batch: 0.045s | | Loss: 0.2144 | top1:  0.6850
privacy res 0.6516666666666666 tensor(77., device='cuda:0')
(70/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2149 | top1:  0.6600
(90/500) Data: 0.005s | Batch: 0.034s | | Loss: 0.2132 | top1:  0.6700
privacy res 0.665 tensor(71., device='cuda:0')
privacy res 0 tensor(79.5000, device='cuda:0')
(0/500) Data: 0.021s | Batch: 0.040s | | Loss: 0.2374 | top1:  0.6300
(101/500) Data: 0.004s | Batch: 0.018s | | Loss: 1.2627 | top1:  73.0000 | top5:  94.0000
privacy res 0.6466666666666666 tensor(73.5000, device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.050s | | Loss: 0.2193 | top1:  0.6350
(30/500) Data: 0.010s | Batch: 0.033s | | Loss: 0.2115 | top1:  0.6750
privacy res 0.6533333333333333 tensor(76., device='cuda:0')
(40/500) Data: 0.029s | Batch: 0.042s | | Loss: 0.2208 | top1:  0.6475
(60/500) Data: 0.025s | Batch: 0.046s | | Loss: 0.2139 | top1:  0.6700
privacy res 0.67 tensor(78.5000, device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.032s | | Loss: 0.2087 | top1:  0.7025
(90/500) Data: 0.007s | Batch: 0.027s | | Loss: 0.2197 | top1:  0.6450
privacy res 0.6616666666666666 tensor(71.5000, device='cuda:0')
privacy res 0 tensor(72.5000, device='cuda:0')
(0/500) Data: 0.031s | Batch: 0.061s | | Loss: 0.2187 | top1:  0.6300
(201/500) Data: 0.014s | Batch: 0.023s | | Loss: 1.4764 | top1:  75.0000 | top5:  88.0000
privacy res 0.67 tensor(77., device='cuda:0')
(10/500) Data: 0.024s | Batch: 0.044s | | Loss: 0.2126 | top1:  0.6675
(30/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.1980 | top1:  0.7200
privacy res 0.6683333333333333 tensor(77., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.029s | | Loss: 0.2137 | top1:  0.6600
(60/500) Data: 0.011s | Batch: 0.021s | | Loss: 0.2080 | top1:  0.7100
privacy res 0.6983333333333334 tensor(76.5000, device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.020s | | Loss: 0.2331 | top1:  0.6150
(90/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2057 | top1:  0.7200
privacy res 0.6633333333333333 tensor(74., device='cuda:0')
privacy res 0 tensor(78.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2185 | top1:  0.6600
```

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(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.4422 | top1:  73.0000 | top5:  88.0000
privacy res 0.63 tensor(73., device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.032s | | Loss: 0.2070 | top1:  0.6650
(30/500) Data: 0.008s | Batch: 0.037s | | Loss: 0.2022 | top1:  0.6950
privacy res 0.675 tensor(77.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2093 | top1:  0.7025
(60/500) Data: 0.013s | Batch: 0.029s | | Loss: 0.2121 | top1:  0.6700
privacy res 0.6433333333333333 tensor(73.5000, device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.031s | | Loss: 0.2074 | top1:  0.6850
(90/500) Data: 0.032s | Batch: 0.053s | | Loss: 0.1897 | top1:  0.7200
privacy res 0.6516666666666666 tensor(80.5000, device='cuda:0')
privacy res 0 tensor(68.5000, device='cuda:0')
(0/500) Data: 0.010s | Batch: 0.040s | | Loss: 0.2336 | top1:  0.6150
(401/500) Data: 0.013s | Batch: 0.023s | | Loss: 1.3035 | top1:  79.0000 | top5:  92.0000
privacy res 0.6066666666666667 tensor(74., device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.035s | | Loss: 0.2032 | top1:  0.7025
(30/500) Data: 0.021s | Batch: 0.032s | | Loss: 0.2166 | top1:  0.6950
privacy res 0.6833333333333333 tensor(73.5000, device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.041s | | Loss: 0.2052 | top1:  0.7000
(60/500) Data: 0.014s | Batch: 0.035s | | Loss: 0.2244 | top1:  0.6300
privacy res 0.635 tensor(78., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.038s | | Loss: 0.2223 | top1:  0.6650
(90/500) Data: 0.023s | Batch: 0.048s | | Loss: 0.2176 | top1:  0.6700
privacy res 0.675 tensor(70., device='cuda:0')
privacy res 0 tensor(71.5000, device='cuda:0')
(1/100) Data: 0.156s | Batch: 0.161s | Loss: 3.5601 | top1:  41.0000 | top5:  57.0000
test acc tensor(38.7500, device='cuda:0')

Epoch: [25 | 50] LR: 0.005000
(0/500) Data: 0.016s | Batch: 0.065s | | Loss: 0.2083 | top1:  0.6600
(1/500) Data: 0.015s | Batch: 0.026s | | Loss: 1.3332 | top1:  79.0000 | top5:  88.0000
privacy res 0.655 tensor(77., device='cuda:0')
(10/500) Data: 0.047s | Batch: 0.070s | | Loss: 0.2014 | top1:  0.7125
(30/500) Data: 0.014s | Batch: 0.027s | | Loss: 0.2186 | top1:  0.6650
privacy res 0.6683333333333333 tensor(81.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2031 | top1:  0.6975
(60/500) Data: 0.014s | Batch: 0.047s | | Loss: 0.2188 | top1:  0.6400
privacy res 0.6433333333333333 tensor(77.5000, device='cuda:0')
(70/500) Data: 0.033s | Batch: 0.050s | | Loss: 0.2165 | top1:  0.6600
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2194 | top1:  0.6400
privacy res 0.665 tensor(77.5000, device='cuda:0')
privacy res 0 tensor(75., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.049s | | Loss: 0.2135 | top1:  0.6350
(101/500) Data: 0.026s | Batch: 0.037s | | Loss: 1.2366 | top1:  83.0000 | top5:  94.0000
privacy res 0.64 tensor(83.5000, device='cuda:0')
(10/500) Data: 0.042s | Batch: 0.066s | | Loss: 0.2179 | top1:  0.6600
(30/500) Data: 0.012s | Batch: 0.026s | | Loss: 0.2228 | top1:  0.6400
privacy res 0.67 tensor(80., device='cuda:0')
```

```
(40/500) Data: 0.005s | Batch: 0.034s | | Loss: 0.2148 | top1:  0.6825
(60/500) Data: 0.012s | Batch: 0.027s | | Loss: 0.2120 | top1:  0.6600
privacy res 0.6633333333333333 tensor(79., device='cuda:0')
(70/500) Data: 0.035s | Batch: 0.050s | | Loss: 0.2222 | top1:  0.6175
(90/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.2045 | top1:  0.7100
privacy res 0.6633333333333333 tensor(81., device='cuda:0')
privacy res 0 tensor(79.5000, device='cuda:0')
(0/500) Data: 0.008s | Batch: 0.035s | | Loss: 0.2105 | top1:  0.6500
(201/500) Data: 0.002s | Batch: 0.036s | | Loss: 1.3124 | top1:  78.0000 | top5:  90.0000
privacy res 0.655 tensor(73.5000, device='cuda:0')
(10/500) Data: 0.007s | Batch: 0.018s | | Loss: 0.2124 | top1:  0.6800
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2320 | top1:  0.6200
privacy res 0.6283333333333333 tensor(77.5000, device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.030s | | Loss: 0.2155 | top1:  0.6450
(60/500) Data: 0.014s | Batch: 0.028s | | Loss: 0.2096 | top1:  0.6650
privacy res 0.68 tensor(80., device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.023s | | Loss: 0.2130 | top1:  0.6900
(90/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.2070 | top1:  0.6650
privacy res 0.6883333333333334 tensor(76., device='cuda:0')
privacy res 0 tensor(76., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.029s | | Loss: 0.2263 | top1:  0.6300
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.4300 | top1:  78.0000 | top5:  94.0000
privacy res 0.6333333333333333 tensor(80.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.033s | | Loss: 0.2155 | top1:  0.6550
(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2106 | top1:  0.6850
privacy res 0.6666666666666666 tensor(78.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2253 | top1:  0.6425
(60/500) Data: 0.010s | Batch: 0.024s | | Loss: 0.2163 | top1:  0.6650
privacy res 0.645 tensor(84., device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2208 | top1:  0.6450
(90/500) Data: 0.011s | Batch: 0.029s | | Loss: 0.1964 | top1:  0.7200
privacy res 0.6766666666666666 tensor(74., device='cuda:0')
privacy res 0 tensor(77.5000, device='cuda:0')
(0/500) Data: 0.013s | Batch: 0.037s | | Loss: 0.2134 | top1:  0.6850
(401/500) Data: 0.013s | Batch: 0.023s | | Loss: 1.5905 | top1:  73.0000 | top5:  89.0000
privacy res 0.675 tensor(77.5000, device='cuda:0')
(10/500) Data: 0.034s | Batch: 0.051s | | Loss: 0.2073 | top1:  0.6725
(30/500) Data: 0.018s | Batch: 0.028s | | Loss: 0.2104 | top1:  0.6700
privacy res 0.7066666666666667 tensor(73.5000, device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.041s | | Loss: 0.2294 | top1:  0.6475
(60/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2231 | top1:  0.6800
privacy res 0.665 tensor(71.5000, device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.032s | | Loss: 0.2212 | top1:  0.6300
(90/500) Data: 0.015s | Batch: 0.028s | | Loss: 0.1968 | top1:  0.7100
privacy res 0.7066666666666667 tensor(79.5000, device='cuda:0')
privacy res 0 tensor(75., device='cuda:0')
(1/100) Data: 0.211s | Batch: 0.217s | Loss: 2.8236 | top1:  48.0000 | top5:  62.0000
test acc tensor(38.7400, device='cuda:0')
```

```
Epoch: [26 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.055s | | Loss: 0.2018 | top1:  0.7250
(1/500) Data: 0.002s | Batch: 0.018s | | Loss: 1.0976 | top1:  86.0000 | top5:  94.0000
privacy res 0.69 tensor(85.5000, device='cuda:0')
(10/500) Data: 0.023s | Batch: 0.049s | | Loss: 0.2117 | top1:  0.6850
(30/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2068 | top1:  0.6950
privacy res 0.665 tensor(83., device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.024s | | Loss: 0.2144 | top1:  0.6625
(60/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.2077 | top1:  0.6300
privacy res 0.6616666666666666 tensor(82., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.038s | | Loss: 0.2151 | top1:  0.6850
(90/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.2099 | top1:  0.6800
privacy res 0.6933333333333334 tensor(85.5000, device='cuda:0')
privacy res 0 tensor(81.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.064s | | Loss: 0.1917 | top1:  0.7250
(101/500) Data: 0.002s | Batch: 0.021s | | Loss: 1.4221 | top1:  80.0000 | top5:  93.0000
privacy res 0.7033333333333334 tensor(82., device='cuda:0')
(10/500) Data: 0.031s | Batch: 0.051s | | Loss: 0.2232 | top1:  0.6425
(30/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.2041 | top1:  0.7150
privacy res 0.68 tensor(85., device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.034s | | Loss: 0.2109 | top1:  0.6650
(60/500) Data: 0.010s | Batch: 0.030s | | Loss: 0.2176 | top1:  0.6800
privacy res 0.6766666666666666 tensor(80.5000, device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.024s | | Loss: 0.2265 | top1:  0.6475
(90/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.1968 | top1:  0.7550
privacy res 0.6766666666666666 tensor(80.5000, device='cuda:0')
privacy res 0 tensor(82., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.2041 | top1:  0.6600
(201/500) Data: 0.010s | Batch: 0.029s | | Loss: 1.4754 | top1:  74.0000 | top5:  91.0000
privacy res 0.6566666666666666 tensor(79.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.033s | | Loss: 0.2093 | top1:  0.6900
(30/500) Data: 0.006s | Batch: 0.020s | | Loss: 0.2074 | top1:  0.6600
privacy res 0.6816666666666666 tensor(79., device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2148 | top1:  0.6875
(60/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2329 | top1:  0.5900
privacy res 0.655 tensor(75.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.023s | | Loss: 0.2136 | top1:  0.6800
(90/500) Data: 0.015s | Batch: 0.031s | | Loss: 0.2198 | top1:  0.6700
privacy res 0.685 tensor(83.5000, device='cuda:0')
privacy res 0 tensor(80.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2139 | top1:  0.6600
(301/500) Data: 0.002s | Batch: 0.034s | | Loss: 1.4449 | top1:  77.0000 | top5:  93.0000
privacy res 0.68 tensor(78.5000, device='cuda:0')
(10/500) Data: 0.007s | Batch: 0.025s | | Loss: 0.1915 | top1:  0.7175
(30/500) Data: 0.020s | Batch: 0.044s | | Loss: 0.2013 | top1:  0.7150
privacy res 0.6916666666666667 tensor(82., device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.033s | | Loss: 0.2020 | top1:  0.6975
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(60/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.2219 | top1:  0.6200
privacy res 0.64 tensor(82.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.025s | | Loss: 0.2132 | top1:  0.6525
(90/500) Data: 0.013s | Batch: 0.038s | | Loss: 0.2323 | top1:  0.6400
privacy res 0.6716666666666666 tensor(82.5000, device='cuda:0')
privacy res 0 tensor(75.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.2050 | top1:  0.6850
(401/500) Data: 0.013s | Batch: 0.047s | | Loss: 1.3136 | top1:  81.0000 | top5:  94.0000
privacy res 0.6883333333333334 tensor(85., device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.026s | | Loss: 0.2304 | top1:  0.6375
(30/500) Data: 0.024s | Batch: 0.044s | | Loss: 0.2073 | top1:  0.6900
privacy res 0.6766666666666666 tensor(82., device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.029s | | Loss: 0.2282 | top1:  0.6300
(60/500) Data: 0.037s | Batch: 0.050s | | Loss: 0.2225 | top1:  0.6750
privacy res 0.68 tensor(78.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.024s | | Loss: 0.2005 | top1:  0.6975
(90/500) Data: 0.016s | Batch: 0.029s | | Loss: 0.2146 | top1:  0.6550
privacy res 0.6816666666666666 tensor(81.5000, device='cuda:0')
privacy res 0 tensor(79., device='cuda:0')
(1/100) Data: 0.181s | Batch: 0.187s | Loss: 4.1813 | top1:  43.0000 | top5:  64.0000
test acc tensor(38.6000, device='cuda:0')

Epoch: [27 | 50] LR: 0.005000
(0/500) Data: 0.007s | Batch: 0.028s | | Loss: 0.2154 | top1:  0.6950
(1/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.2142 | top1:  86.0000 | top5:  95.0000
privacy res 0.675 tensor(83., device='cuda:0')
(10/500) Data: 0.023s | Batch: 0.050s | | Loss: 0.2100 | top1:  0.6825
(30/500) Data: 0.019s | Batch: 0.039s | | Loss: 0.2116 | top1:  0.6800
privacy res 0.6916666666666667 tensor(86.5000, device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.037s | | Loss: 0.2115 | top1:  0.6875
(60/500) Data: 0.018s | Batch: 0.039s | | Loss: 0.2093 | top1:  0.6900
privacy res 0.705 tensor(86.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.019s | | Loss: 0.2118 | top1:  0.6575
(90/500) Data: 0.016s | Batch: 0.034s | | Loss: 0.2285 | top1:  0.6150
privacy res 0.6616666666666666 tensor(78., device='cuda:0')
privacy res 0 tensor(79.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2053 | top1:  0.6900
(101/500) Data: 0.002s | Batch: 0.015s | | Loss: 1.1876 | top1:  83.0000 | top5:  94.0000
privacy res 0.6616666666666666 tensor(80., device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.039s | | Loss: 0.2068 | top1:  0.6725
(30/500) Data: 0.015s | Batch: 0.029s | | Loss: 0.2121 | top1:  0.6500
privacy res 0.6533333333333333 tensor(82., device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.025s | | Loss: 0.2180 | top1:  0.6425
(60/500) Data: 0.006s | Batch: 0.019s | | Loss: 0.2171 | top1:  0.6450
privacy res 0.6516666666666666 tensor(80., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.030s | | Loss: 0.2119 | top1:  0.6550
(90/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2094 | top1:  0.6900
privacy res 0.6833333333333333 tensor(89.5000, device='cuda:0')
```

```
privacy res 0 tensor(85.5000, device='cuda:0')
(0/500) Data: 0.029s | Batch: 0.064s | | Loss: 0.2158 | top1:  0.6650
(201/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.3316 | top1:  79.0000 | top5:  92.0000
privacy res 0.6616666666666666 tensor(84.5000, device='cuda:0')
(10/500) Data: 0.024s | Batch: 0.039s | | Loss: 0.2068 | top1:  0.6925
(30/500) Data: 0.018s | Batch: 0.034s | | Loss: 0.2263 | top1:  0.6400
privacy res 0.68 tensor(85.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.020s | | Loss: 0.2091 | top1:  0.6925
(60/500) Data: 0.006s | Batch: 0.022s | | Loss: 0.1954 | top1:  0.7000
privacy res 0.6683333333333333 tensor(82., device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.027s | | Loss: 0.2090 | top1:  0.6800
(90/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.2274 | top1:  0.6500
privacy res 0.665 tensor(86., device='cuda:0')
privacy res 0 tensor(82., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2285 | top1:  0.6550
(301/500) Data: 0.003s | Batch: 0.013s | | Loss: 1.0235 | top1:  90.0000 | top5:  99.0000
privacy res 0.68 tensor(88.5000, device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.023s | | Loss: 0.2094 | top1:  0.6875
(30/500) Data: 0.031s | Batch: 0.045s | | Loss: 0.2127 | top1:  0.6850
privacy res 0.69 tensor(81.5000, device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2174 | top1:  0.6950
(60/500) Data: 0.011s | Batch: 0.037s | | Loss: 0.2090 | top1:  0.6750
privacy res 0.6516666666666666 tensor(77.5000, device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.040s | | Loss: 0.2163 | top1:  0.6700
(90/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2113 | top1:  0.6500
privacy res 0.665 tensor(77.5000, device='cuda:0')
privacy res 0 tensor(80., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1979 | top1:  0.6850
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0027 | top1:  92.0000 | top5:  98.0000
privacy res 0.6866666666666666 tensor(89.5000, device='cuda:0')
(10/500) Data: 0.009s | Batch: 0.033s | | Loss: 0.2136 | top1:  0.6675
(30/500) Data: 0.006s | Batch: 0.038s | | Loss: 0.2004 | top1:  0.6950
privacy res 0.6883333333333334 tensor(83.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.031s | | Loss: 0.1996 | top1:  0.6975
(60/500) Data: 0.022s | Batch: 0.052s | | Loss: 0.1840 | top1:  0.7600
privacy res 0.68 tensor(83.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.035s | | Loss: 0.2163 | top1:  0.6625
(90/500) Data: 0.011s | Batch: 0.039s | | Loss: 0.2174 | top1:  0.6500
privacy res 0.66 tensor(85., device='cuda:0')
privacy res 0 tensor(85., device='cuda:0')
(1/100) Data: 0.168s | Batch: 0.173s | Loss: 3.3012 | top1:  32.0000 | top5:  56.0000
test acc tensor(38.8400, device='cuda:0')

Epoch: [28 | 50] LR: 0.005000
(0/500) Data: 0.005s | Batch: 0.039s | | Loss: 0.2147 | top1:  0.6750
(1/500) Data: 0.013s | Batch: 0.029s | | Loss: 1.2227 | top1:  84.0000 | top5:  95.0000
privacy res 0.655 tensor(86., device='cuda:0')
(10/500) Data: 0.021s | Batch: 0.035s | | Loss: 0.2172 | top1:  0.6775
```

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(30/500) Data: 0.021s | Batch: 0.032s | | Loss: 0.2099 | top1:  0.7050
privacy res 0.6883333333333334 tensor(88.5000, device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.1970 | top1:  0.7225
(60/500) Data: 0.008s | Batch: 0.025s | | Loss: 0.2053 | top1:  0.6750
privacy res 0.6966666666666667 tensor(84., device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.2209 | top1:  0.6650
(90/500) Data: 0.020s | Batch: 0.032s | | Loss: 0.1977 | top1:  0.6950
privacy res 0.6983333333333334 tensor(86., device='cuda:0')
privacy res 0 tensor(82., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2102 | top1:  0.6950
(101/500) Data: 0.002s | Batch: 0.035s | | Loss: 1.1867 | top1:  87.0000 | top5:  94.0000
privacy res 0.6733333333333333 tensor(86.5000, device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.026s | | Loss: 0.2146 | top1:  0.6925
(30/500) Data: 0.009s | Batch: 0.040s | | Loss: 0.2003 | top1:  0.7100
privacy res 0.6783333333333333 tensor(94., device='cuda:0')
(40/500) Data: 0.025s | Batch: 0.037s | | Loss: 0.2140 | top1:  0.6700
(60/500) Data: 0.011s | Batch: 0.040s | | Loss: 0.2047 | top1:  0.6950
privacy res 0.7 tensor(85., device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.041s | | Loss: 0.2300 | top1:  0.6625
(90/500) Data: 0.023s | Batch: 0.044s | | Loss: 0.2068 | top1:  0.6950
privacy res 0.685 tensor(86., device='cuda:0')
privacy res 0 tensor(84.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.027s | | Loss: 0.2236 | top1:  0.6450
(201/500) Data: 0.002s | Batch: 0.024s | | Loss: 1.1079 | top1:  85.0000 | top5:  97.0000
privacy res 0.6716666666666666 tensor(87., device='cuda:0')
(10/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1983 | top1:  0.7100
(30/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2149 | top1:  0.6600
privacy res 0.705 tensor(86., device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.036s | | Loss: 0.2133 | top1:  0.6625
(60/500) Data: 0.007s | Batch: 0.028s | | Loss: 0.2028 | top1:  0.6800
privacy res 0.6816666666666666 tensor(87.5000, device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.024s | | Loss: 0.2085 | top1:  0.6875
(90/500) Data: 0.005s | Batch: 0.038s | | Loss: 0.1995 | top1:  0.6900
privacy res 0.68 tensor(83.5000, device='cuda:0')
privacy res 0 tensor(83., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.1985 | top1:  0.7200
(301/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.0504 | top1:  90.0000 | top5:  98.0000
privacy res 0.7033333333333334 tensor(87., device='cuda:0')
(10/500) Data: 0.053s | Batch: 0.067s | | Loss: 0.2054 | top1:  0.6925
(30/500) Data: 0.041s | Batch: 0.062s | | Loss: 0.2172 | top1:  0.6650
privacy res 0.6866666666666666 tensor(88.5000, device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.031s | | Loss: 0.2235 | top1:  0.6475
(60/500) Data: 0.013s | Batch: 0.038s | | Loss: 0.1839 | top1:  0.7750
privacy res 0.7116666666666667 tensor(84.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.043s | | Loss: 0.1975 | top1:  0.7025
(90/500) Data: 0.026s | Batch: 0.039s | | Loss: 0.2046 | top1:  0.6800
privacy res 0.6816666666666666 tensor(90., device='cuda:0')
privacy res 0 tensor(87.5000, device='cuda:0')
```

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(0/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.2272 | top1:  0.6550
(401/500) Data: 0.004s | Batch: 0.037s | | Loss: 1.2660 | top1:  80.0000 | top5:  95.0000
privacy res 0.695 tensor(81.5000, device='cuda:0')
(10/500) Data: 0.055s | Batch: 0.068s | | Loss: 0.1951 | top1:  0.7200
(30/500) Data: 0.011s | Batch: 0.040s | | Loss: 0.2262 | top1:  0.6200
privacy res 0.6733333333333333 tensor(84., device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.036s | | Loss: 0.2290 | top1:  0.6350
(60/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.1906 | top1:  0.7550
privacy res 0.7366666666666667 tensor(84.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.041s | | Loss: 0.1986 | top1:  0.7300
(90/500) Data: 0.026s | Batch: 0.044s | | Loss: 0.2299 | top1:  0.6350
privacy res 0.6916666666666667 tensor(84.5000, device='cuda:0')
privacy res 0 tensor(86., device='cuda:0')
(1/100) Data: 0.226s | Batch: 0.233s | Loss: 3.3688 | top1:  30.0000 | top5:  60.0000
test acc tensor(38.3600, device='cuda:0')

Epoch: [29 | 50] LR: 0.005000
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.1949 | top1:  0.7350
(1/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.2030 | top1:  86.0000 | top5:  93.0000
privacy res 0.6483333333333333 tensor(85.5000, device='cuda:0')
(10/500) Data: 0.020s | Batch: 0.039s | | Loss: 0.2017 | top1:  0.7300
(30/500) Data: 0.016s | Batch: 0.031s | | Loss: 0.2179 | top1:  0.6850
privacy res 0.695 tensor(87., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.034s | | Loss: 0.2030 | top1:  0.6850
(60/500) Data: 0.022s | Batch: 0.034s | | Loss: 0.2171 | top1:  0.6650
privacy res 0.6816666666666666 tensor(88., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.038s | | Loss: 0.2000 | top1:  0.7275
(90/500) Data: 0.023s | Batch: 0.041s | | Loss: 0.2104 | top1:  0.6800
privacy res 0.6833333333333333 tensor(91., device='cuda:0')
privacy res 0 tensor(91.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.041s | | Loss: 0.2062 | top1:  0.7000
(101/500) Data: 0.002s | Batch: 0.032s | | Loss: 1.2749 | top1:  81.0000 | top5:  95.0000
privacy res 0.6766666666666666 tensor(82.5000, device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.023s | | Loss: 0.2201 | top1:  0.6600
(30/500) Data: 0.024s | Batch: 0.036s | | Loss: 0.2058 | top1:  0.6950
privacy res 0.6833333333333333 tensor(85.5000, device='cuda:0')
(40/500) Data: 0.034s | Batch: 0.048s | | Loss: 0.2013 | top1:  0.7075
(60/500) Data: 0.011s | Batch: 0.040s | | Loss: 0.2000 | top1:  0.7000
privacy res 0.6883333333333334 tensor(84.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.045s | | Loss: 0.2066 | top1:  0.6625
(90/500) Data: 0.024s | Batch: 0.035s | | Loss: 0.2200 | top1:  0.6750
privacy res 0.6983333333333334 tensor(89., device='cuda:0')
privacy res 0 tensor(87.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.2140 | top1:  0.6700
(201/500) Data: 0.002s | Batch: 0.024s | | Loss: 1.0767 | top1:  88.0000 | top5:  95.0000
privacy res 0.675 tensor(84.5000, device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.029s | | Loss: 0.2069 | top1:  0.6875
(30/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1990 | top1:  0.7250
```

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privacy res 0.705 tensor(91., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.031s | | Loss: 0.2110 | top1:  0.6625
(60/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2049 | top1:  0.7200
privacy res 0.72 tensor(93., device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.021s | | Loss: 0.2094 | top1:  0.6675
(90/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2207 | top1:  0.6350
privacy res 0.6883333333333334 tensor(87.5000, device='cuda:0')
privacy res 0 tensor(87.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.2061 | top1:  0.6950
(301/500) Data: 0.009s | Batch: 0.032s | | Loss: 1.1993 | top1:  83.0000 | top5:  91.0000
privacy res 0.71 tensor(85.5000, device='cuda:0')
(10/500) Data: 0.019s | Batch: 0.037s | | Loss: 0.2040 | top1:  0.6850
(30/500) Data: 0.006s | Batch: 0.029s | | Loss: 0.2103 | top1:  0.7000
privacy res 0.6816666666666666 tensor(87.5000, device='cuda:0')
(40/500) Data: 0.031s | Batch: 0.046s | | Loss: 0.2091 | top1:  0.6575
(60/500) Data: 0.011s | Batch: 0.024s | | Loss: 0.2123 | top1:  0.7000
privacy res 0.6883333333333334 tensor(88., device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.035s | | Loss: 0.2095 | top1:  0.6950
(90/500) Data: 0.020s | Batch: 0.035s | | Loss: 0.2165 | top1:  0.6450
privacy res 0.6616666666666666 tensor(89., device='cuda:0')
privacy res 0 tensor(87.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.037s | | Loss: 0.1928 | top1:  0.7150
(401/500) Data: 0.010s | Batch: 0.020s | | Loss: 1.0318 | top1:  89.0000 | top5:  98.0000
privacy res 0.6833333333333333 tensor(86.5000, device='cuda:0')
(10/500) Data: 0.004s | Batch: 0.034s | | Loss: 0.2164 | top1:  0.6525
(30/500) Data: 0.029s | Batch: 0.041s | | Loss: 0.2032 | top1:  0.6850
privacy res 0.6966666666666667 tensor(89.5000, device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.036s | | Loss: 0.2155 | top1:  0.6575
(60/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.2073 | top1:  0.7000
privacy res 0.7283333333333334 tensor(82., device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.041s | | Loss: 0.2071 | top1:  0.7075
(90/500) Data: 0.007s | Batch: 0.036s | | Loss: 0.1959 | top1:  0.6950
privacy res 0.6983333333333334 tensor(82.5000, device='cuda:0')
privacy res 0 tensor(86.5000, device='cuda:0')
(1/100) Data: 0.218s | Batch: 0.224s | Loss: 3.0020 | top1:  40.0000 | top5:  59.0000
test acc tensor(38.0800, device='cuda:0')

Epoch: [30 | 50] LR: 0.005000
(0/500) Data: 0.019s | Batch: 0.039s | | Loss: 0.2114 | top1:  0.6600
(1/500) Data: 0.002s | Batch: 0.018s | | Loss: 1.0081 | top1:  90.0000 | top5:  98.0000
privacy res 0.6966666666666667 tensor(91.5000, device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.053s | | Loss: 0.2068 | top1:  0.6925
(30/500) Data: 0.030s | Batch: 0.062s | | Loss: 0.1928 | top1:  0.7250
privacy res 0.665 tensor(86., device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.039s | | Loss: 0.2048 | top1:  0.6950
(60/500) Data: 0.021s | Batch: 0.036s | | Loss: 0.1993 | top1:  0.7400
privacy res 0.7083333333333334 tensor(92., device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.031s | | Loss: 0.2017 | top1:  0.7100
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(90/500) Data: 0.010s | Batch: 0.034s | | Loss: 0.2017 | top1:  0.6800
privacy res 0.7016666666666667 tensor(86.5000, device='cuda:0')
privacy res 0 tensor(91.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.048s | | Loss: 0.2156 | top1:  0.6550
(101/500) Data: 0.008s | Batch: 0.032s | | Loss: 1.1199 | top1:  88.0000 | top5:  97.0000
privacy res 0.6833333333333333 tensor(88., device='cuda:0')
(10/500) Data: 0.024s | Batch: 0.043s | | Loss: 0.2049 | top1:  0.7025
(30/500) Data: 0.009s | Batch: 0.022s | | Loss: 0.1974 | top1:  0.6900
privacy res 0.69 tensor(89., device='cuda:0')
(40/500) Data: 0.037s | Batch: 0.049s | | Loss: 0.2129 | top1:  0.6900
(60/500) Data: 0.031s | Batch: 0.048s | | Loss: 0.1936 | top1:  0.7050
privacy res 0.7033333333333334 tensor(88.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.044s | | Loss: 0.1984 | top1:  0.7000
(90/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.1885 | top1:  0.7400
privacy res 0.7166666666666667 tensor(88.5000, device='cuda:0')
privacy res 0 tensor(92., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2057 | top1:  0.6700
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9809 | top1:  94.0000 | top5:  98.0000
privacy res 0.7083333333333334 tensor(90., device='cuda:0')
(10/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.2128 | top1:  0.6850
(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.2129 | top1:  0.6850
privacy res 0.7083333333333334 tensor(89., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.1963 | top1:  0.7050
(60/500) Data: 0.016s | Batch: 0.036s | | Loss: 0.2138 | top1:  0.6650
privacy res 0.6983333333333334 tensor(93.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.1983 | top1:  0.7100
(90/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.2093 | top1:  0.6750
privacy res 0.685 tensor(87.5000, device='cuda:0')
privacy res 0 tensor(88., device='cuda:0')
(0/500) Data: 0.012s | Batch: 0.044s | | Loss: 0.2056 | top1:  0.7050
(301/500) Data: 0.002s | Batch: 0.023s | | Loss: 1.0974 | top1:  89.0000 | top5:  96.0000
privacy res 0.6833333333333333 tensor(89.5000, device='cuda:0')
(10/500) Data: 0.037s | Batch: 0.055s | | Loss: 0.2159 | top1:  0.6800
(30/500) Data: 0.018s | Batch: 0.030s | | Loss: 0.2020 | top1:  0.6700
privacy res 0.6933333333333334 tensor(92.5000, device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.030s | | Loss: 0.1996 | top1:  0.6975
(60/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.1942 | top1:  0.7350
privacy res 0.7183333333333334 tensor(87.5000, device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.035s | | Loss: 0.2178 | top1:  0.6925
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1950 | top1:  0.7150
privacy res 0.7016666666666667 tensor(91.5000, device='cuda:0')
privacy res 0 tensor(92.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.070s | | Loss: 0.2013 | top1:  0.6900
(401/500) Data: 0.002s | Batch: 0.011s | | Loss: 1.1399 | top1:  88.0000 | top5:  97.0000
privacy res 0.685 tensor(85.5000, device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.052s | | Loss: 0.1953 | top1:  0.7250
(30/500) Data: 0.028s | Batch: 0.040s | | Loss: 0.2107 | top1:  0.7000
privacy res 0.7 tensor(90., device='cuda:0')
```

```
(40/500) Data: 0.012s | Batch: 0.029s | | Loss: 0.1983 | top1:  0.7050
(60/500) Data: 0.007s | Batch: 0.029s | | Loss: 0.1912 | top1:  0.7050
privacy res 0.705 tensor(89., device='cuda:0')
(70/500) Data: 0.006s | Batch: 0.035s | | Loss: 0.2207 | top1:  0.6500
(90/500) Data: 0.015s | Batch: 0.040s | | Loss: 0.1959 | top1:  0.7450
privacy res 0.7033333333333334 tensor(82.5000, device='cuda:0')
privacy res 0 tensor(93., device='cuda:0')
(1/100) Data: 0.244s | Batch: 0.250s | Loss: 4.4699 | top1:  38.0000 | top5:  55.0000
test acc tensor(37.1400, device='cuda:0')

Epoch: [31 | 50] LR: 0.005000
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.1915 | top1:  0.7400
(1/500) Data: 0.010s | Batch: 0.020s | | Loss: 1.0808 | top1:  88.0000 | top5:  95.0000
privacy res 0.7316666666666667 tensor(89.5000, device='cuda:0')
(10/500) Data: 0.038s | Batch: 0.059s | | Loss: 0.1993 | top1:  0.7200
(30/500) Data: 0.009s | Batch: 0.022s | | Loss: 0.2031 | top1:  0.6800
privacy res 0.72 tensor(92.5000, device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.036s | | Loss: 0.2182 | top1:  0.6750
(60/500) Data: 0.020s | Batch: 0.032s | | Loss: 0.1818 | top1:  0.7500
privacy res 0.69 tensor(93.5000, device='cuda:0')
(70/500) Data: 0.018s | Batch: 0.046s | | Loss: 0.2095 | top1:  0.6775
(90/500) Data: 0.047s | Batch: 0.059s | | Loss: 0.2212 | top1:  0.6550
privacy res 0.7133333333333334 tensor(93.5000, device='cuda:0')
privacy res 0 tensor(89.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.026s | | Loss: 0.2021 | top1:  0.6850
(101/500) Data: 0.013s | Batch: 0.023s | | Loss: 1.1625 | top1:  90.0000 | top5:  94.0000
privacy res 0.7066666666666667 tensor(91.5000, device='cuda:0')
(10/500) Data: 0.019s | Batch: 0.039s | | Loss: 0.1869 | top1:  0.7300
(30/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.1905 | top1:  0.7350
privacy res 0.7333333333333333 tensor(92., device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.031s | | Loss: 0.2165 | top1:  0.6500
(60/500) Data: 0.010s | Batch: 0.042s | | Loss: 0.2044 | top1:  0.6900
privacy res 0.695 tensor(91., device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.033s | | Loss: 0.1974 | top1:  0.7275
(90/500) Data: 0.037s | Batch: 0.050s | | Loss: 0.2021 | top1:  0.6950
privacy res 0.6783333333333333 tensor(89., device='cuda:0')
privacy res 0 tensor(90.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.2040 | top1:  0.7050
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.1000 | top1:  91.0000 | top5:  95.0000
privacy res 0.6816666666666666 tensor(92., device='cuda:0')
(10/500) Data: 0.005s | Batch: 0.019s | | Loss: 0.2150 | top1:  0.6325
(30/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.1833 | top1:  0.7100
privacy res 0.6683333333333333 tensor(90.5000, device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.027s | | Loss: 0.2065 | top1:  0.6875
(60/500) Data: 0.005s | Batch: 0.038s | | Loss: 0.2063 | top1:  0.7150
privacy res 0.7083333333333334 tensor(96., device='cuda:0')
(70/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.2141 | top1:  0.6800
(90/500) Data: 0.010s | Batch: 0.033s | | Loss: 0.1785 | top1:  0.7150
```

```
privacy res 0.6983333333333334 tensor(91.5000, device='cuda:0')
privacy res 0 tensor(95., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.060s | | Loss: 0.2198 | top1:  0.6650
(301/500) Data: 0.014s | Batch: 0.023s | | Loss: 1.1411 | top1:  89.0000 | top5:  93.0000
privacy res 0.6716666666666666 tensor(90.5000, device='cuda:0')
(10/500) Data: 0.047s | Batch: 0.063s | | Loss: 0.1978 | top1:  0.6900
(30/500) Data: 0.008s | Batch: 0.038s | | Loss: 0.2199 | top1:  0.6750
privacy res 0.7166666666666667 tensor(91.5000, device='cuda:0')
(40/500) Data: 0.036s | Batch: 0.057s | | Loss: 0.2045 | top1:  0.6950
(60/500) Data: 0.027s | Batch: 0.042s | | Loss: 0.1864 | top1:  0.7350
privacy res 0.7333333333333333 tensor(89.5000, device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.032s | | Loss: 0.2005 | top1:  0.7100
(90/500) Data: 0.009s | Batch: 0.030s | | Loss: 0.1769 | top1:  0.7550
privacy res 0.745 tensor(92.5000, device='cuda:0')
privacy res 0 tensor(91., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.046s | | Loss: 0.2049 | top1:  0.7050
(401/500) Data: 0.007s | Batch: 0.018s | | Loss: 1.0643 | top1:  89.0000 | top5:  96.0000
privacy res 0.715 tensor(89., device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.030s | | Loss: 0.1918 | top1:  0.7225
(30/500) Data: 0.014s | Batch: 0.034s | | Loss: 0.1999 | top1:  0.6900
privacy res 0.705 tensor(86.5000, device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.040s | | Loss: 0.1817 | top1:  0.7625
(60/500) Data: 0.010s | Batch: 0.030s | | Loss: 0.1924 | top1:  0.7750
privacy res 0.7416666666666667 tensor(91., device='cuda:0')
(70/500) Data: 0.042s | Batch: 0.055s | | Loss: 0.1894 | top1:  0.7125
(90/500) Data: 0.009s | Batch: 0.020s | | Loss: 0.1848 | top1:  0.7450
privacy res 0.685 tensor(88., device='cuda:0')
privacy res 0 tensor(90., device='cuda:0')
(1/100) Data: 0.229s | Batch: 0.235s | Loss: 4.1331 | top1:  30.0000 | top5:  55.0000
test acc tensor(37.3700, device='cuda:0')

Epoch: [32 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.055s | | Loss: 0.2052 | top1:  0.6600
(1/500) Data: 0.014s | Batch: 0.044s | | Loss: 1.0520 | top1:  93.0000 | top5:  98.0000
privacy res 0.6766666666666666 tensor(93.5000, device='cuda:0')
(10/500) Data: 0.043s | Batch: 0.061s | | Loss: 0.1842 | top1:  0.7525
(30/500) Data: 0.013s | Batch: 0.033s | | Loss: 0.1987 | top1:  0.7000
privacy res 0.72 tensor(93., device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.042s | | Loss: 0.2092 | top1:  0.7025
(60/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.1846 | top1:  0.7450
privacy res 0.7133333333333334 tensor(88.5000, device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.036s | | Loss: 0.1904 | top1:  0.7200
(90/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.1899 | top1:  0.7550
privacy res 0.73 tensor(91.5000, device='cuda:0')
privacy res 0 tensor(92., device='cuda:0')
(0/500) Data: 0.014s | Batch: 0.034s | | Loss: 0.1855 | top1:  0.7500
(101/500) Data: 0.006s | Batch: 0.025s | | Loss: 1.0352 | top1:  92.0000 | top5:  95.0000
privacy res 0.7133333333333334 tensor(92.5000, device='cuda:0')
```

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(10/500) Data: 0.008s | Batch: 0.031s | | Loss: 0.2035 | top1:  0.7050
(30/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.2205 | top1:  0.6750
privacy res 0.7133333333333334 tensor(95.5000, device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.032s | | Loss: 0.1893 | top1:  0.7375
(60/500) Data: 0.022s | Batch: 0.049s | | Loss: 0.1916 | top1:  0.7200
privacy res 0.6633333333333333 tensor(93.5000, device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.037s | | Loss: 0.2084 | top1:  0.6800
(90/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.2028 | top1:  0.7200
privacy res 0.7333333333333333 tensor(91., device='cuda:0')
privacy res 0 tensor(93., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.1901 | top1:  0.7500
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0337 | top1:  93.0000 | top5:  97.0000
privacy res 0.6966666666666667 tensor(91.5000, device='cuda:0')
(10/500) Data: 0.007s | Batch: 0.025s | | Loss: 0.1899 | top1:  0.7100
(30/500) Data: 0.018s | Batch: 0.029s | | Loss: 0.2050 | top1:  0.6850
privacy res 0.695 tensor(91., device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.027s | | Loss: 0.1978 | top1:  0.7100
(60/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.1908 | top1:  0.7300
privacy res 0.715 tensor(94., device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.020s | | Loss: 0.1892 | top1:  0.7225
(90/500) Data: 0.005s | Batch: 0.015s | | Loss: 0.2240 | top1:  0.6550
privacy res 0.7083333333333334 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(91.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.037s | | Loss: 0.1656 | top1:  0.7800
(301/500) Data: 0.009s | Batch: 0.020s | | Loss: 1.1037 | top1:  89.0000 | top5:  96.0000
privacy res 0.7 tensor(91., device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.048s | | Loss: 0.1940 | top1:  0.7300
(30/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.1757 | top1:  0.7800
privacy res 0.7166666666666667 tensor(93.5000, device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.032s | | Loss: 0.2022 | top1:  0.6850
(60/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.1860 | top1:  0.7400
privacy res 0.7133333333333334 tensor(91., device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.2066 | top1:  0.6650
(90/500) Data: 0.021s | Batch: 0.042s | | Loss: 0.1749 | top1:  0.7750
privacy res 0.7116666666666667 tensor(89.5000, device='cuda:0')
privacy res 0 tensor(95., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1844 | top1:  0.7400
(401/500) Data: 0.005s | Batch: 0.021s | | Loss: 1.0800 | top1:  91.0000 | top5:  97.0000
privacy res 0.715 tensor(91.5000, device='cuda:0')
(10/500) Data: 0.036s | Batch: 0.050s | | Loss: 0.2131 | top1:  0.6550
(30/500) Data: 0.020s | Batch: 0.032s | | Loss: 0.1941 | top1:  0.7250
privacy res 0.7183333333333334 tensor(89., device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.034s | | Loss: 0.1934 | top1:  0.7325
(60/500) Data: 0.021s | Batch: 0.032s | | Loss: 0.2062 | top1:  0.6700
privacy res 0.7233333333333334 tensor(96., device='cuda:0')
(70/500) Data: 0.029s | Batch: 0.050s | | Loss: 0.1920 | top1:  0.7300
(90/500) Data: 0.004s | Batch: 0.026s | | Loss: 0.1847 | top1:  0.7100
privacy res 0.7083333333333334 tensor(90., device='cuda:0')
```

```
privacy res 0 tensor(89.5000, device='cuda:0')
(1/100) Data: 0.198s | Batch: 0.204s | Loss: 3.8424 | top1:  38.0000 | top5:  56.0000
test acc tensor(37.5200, device='cuda:0')

Epoch: [33 | 50] LR: 0.005000
(0/500) Data: 0.014s | Batch: 0.073s | | Loss: 0.1809 | top1:  0.7450
(1/500) Data: 0.002s | Batch: 0.014s | | Loss: 0.9476 | top1:  96.0000 | top5:  99.0000
privacy res 0.7366666666666667 tensor(94.5000, device='cuda:0')
(10/500) Data: 0.024s | Batch: 0.047s | | Loss: 0.2100 | top1:  0.6925
(30/500) Data: 0.006s | Batch: 0.022s | | Loss: 0.1887 | top1:  0.7450
privacy res 0.6966666666666667 tensor(95., device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.1908 | top1:  0.7425
(60/500) Data: 0.020s | Batch: 0.036s | | Loss: 0.1838 | top1:  0.7450
privacy res 0.7333333333333333 tensor(94., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.030s | | Loss: 0.2025 | top1:  0.7000
(90/500) Data: 0.015s | Batch: 0.035s | | Loss: 0.1886 | top1:  0.7250
privacy res 0.7083333333333334 tensor(94., device='cuda:0')
privacy res 0 tensor(93.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.043s | | Loss: 0.1870 | top1:  0.7400
(101/500) Data: 0.003s | Batch: 0.045s | | Loss: 1.1364 | top1:  90.0000 | top5:  96.0000
privacy res 0.715 tensor(93., device='cuda:0')
(10/500) Data: 0.021s | Batch: 0.039s | | Loss: 0.1978 | top1:  0.7150
(30/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1786 | top1:  0.7350
privacy res 0.725 tensor(94., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.039s | | Loss: 0.2097 | top1:  0.6925
(60/500) Data: 0.026s | Batch: 0.039s | | Loss: 0.1956 | top1:  0.6800
privacy res 0.6616666666666666 tensor(95., device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.033s | | Loss: 0.2008 | top1:  0.6925
(90/500) Data: 0.009s | Batch: 0.038s | | Loss: 0.1806 | top1:  0.7600
privacy res 0.7033333333333334 tensor(91.5000, device='cuda:0')
privacy res 0 tensor(92.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.024s | | Loss: 0.2000 | top1:  0.7150
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.1531 | top1:  90.0000 | top5:  95.0000
privacy res 0.695 tensor(91., device='cuda:0')
(10/500) Data: 0.004s | Batch: 0.030s | | Loss: 0.1989 | top1:  0.7075
(30/500) Data: 0.023s | Batch: 0.033s | | Loss: 0.1986 | top1:  0.7000
privacy res 0.7283333333333334 tensor(94., device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.030s | | Loss: 0.1934 | top1:  0.7250
(60/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.1751 | top1:  0.7550
privacy res 0.7266666666666667 tensor(95., device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.2009 | top1:  0.6925
(90/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.2162 | top1:  0.6450
privacy res 0.6983333333333334 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(0/500) Data: 0.007s | Batch: 0.027s | | Loss: 0.1699 | top1:  0.7650
(301/500) Data: 0.008s | Batch: 0.031s | | Loss: 1.0103 | top1:  91.0000 | top5:  98.0000
privacy res 0.7516666666666667 tensor(93., device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.038s | | Loss: 0.1889 | top1:  0.7200
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(30/500) Data: 0.012s | Batch: 0.035s | | Loss: 0.1763 | top1:  0.7450
privacy res 0.7516666666666667 tensor(93.5000, device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.040s | | Loss: 0.1880 | top1:  0.7150
(60/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.1837 | top1:  0.7100
privacy res 0.7133333333333334 tensor(94., device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.040s | | Loss: 0.1993 | top1:  0.7125
(90/500) Data: 0.010s | Batch: 0.026s | | Loss: 0.1988 | top1:  0.6950
privacy res 0.6766666666666666 tensor(93., device='cuda:0')
privacy res 0 tensor(88.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.053s | | Loss: 0.1948 | top1:  0.7200
(401/500) Data: 0.009s | Batch: 0.047s | | Loss: 1.0203 | top1:  93.0000 | top5:  95.0000
privacy res 0.725 tensor(93.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.043s | | Loss: 0.2061 | top1:  0.6925
(30/500) Data: 0.015s | Batch: 0.050s | | Loss: 0.2106 | top1:  0.6750
privacy res 0.6916666666666667 tensor(92., device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.030s | | Loss: 0.2030 | top1:  0.7225
(60/500) Data: 0.006s | Batch: 0.028s | | Loss: 0.2035 | top1:  0.6800
privacy res 0.6983333333333334 tensor(92.5000, device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.036s | | Loss: 0.2015 | top1:  0.7250
(90/500) Data: 0.012s | Batch: 0.036s | | Loss: 0.1642 | top1:  0.7700
privacy res 0.7566666666666667 tensor(91., device='cuda:0')
privacy res 0 tensor(93., device='cuda:0')
(1/100) Data: 0.245s | Batch: 0.251s | Loss: 3.9288 | top1:  40.0000 | top5:  59.0000
test acc tensor(36.8100, device='cuda:0')

Epoch: [34 | 50] LR: 0.005000
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1899 | top1:  0.7450
(1/500) Data: 0.002s | Batch: 0.013s | | Loss: 0.8827 | top1:  98.0000 | top5:  100.0000
privacy res 0.7383333333333333 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.021s | Batch: 0.034s | | Loss: 0.1924 | top1:  0.7150
(30/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.1818 | top1:  0.7350
privacy res 0.7116666666666667 tensor(95., device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.024s | | Loss: 0.1900 | top1:  0.6950
(60/500) Data: 0.025s | Batch: 0.037s | | Loss: 0.2142 | top1:  0.6850
privacy res 0.72 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.030s | | Loss: 0.1908 | top1:  0.7125
(90/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.2085 | top1:  0.7050
privacy res 0.6916666666666667 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.034s | | Loss: 0.1842 | top1:  0.7500
(101/500) Data: 0.002s | Batch: 0.022s | | Loss: 0.9705 | top1:  98.0000 | top5:  100.0000
privacy res 0.72 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.045s | Batch: 0.064s | | Loss: 0.2143 | top1:  0.7000
(30/500) Data: 0.015s | Batch: 0.045s | | Loss: 0.1730 | top1:  0.7800
privacy res 0.735 tensor(95., device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.030s | | Loss: 0.1960 | top1:  0.7325
(60/500) Data: 0.006s | Batch: 0.032s | | Loss: 0.1759 | top1:  0.7450
privacy res 0.7283333333333334 tensor(92.5000, device='cuda:0')
```

```
(70/500) Data: 0.028s | Batch: 0.040s | | Loss: 0.1835 | top1:  0.7425
(90/500) Data: 0.012s | Batch: 0.030s | | Loss: 0.1805 | top1:  0.7550
privacy res 0.735 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(93.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.1677 | top1:  0.7750
(201/500) Data: 0.002s | Batch: 0.036s | | Loss: 0.9190 | top1:  95.0000 | top5:  99.0000
privacy res 0.73 tensor(92.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.026s | | Loss: 0.1849 | top1:  0.7200
(30/500) Data: 0.024s | Batch: 0.045s | | Loss: 0.1984 | top1:  0.7350
privacy res 0.725 tensor(92.5000, device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.022s | | Loss: 0.1940 | top1:  0.7150
(60/500) Data: 0.012s | Batch: 0.026s | | Loss: 0.1898 | top1:  0.7250
privacy res 0.7166666666666667 tensor(94.5000, device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.024s | | Loss: 0.1801 | top1:  0.7325
(90/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.1937 | top1:  0.7550
privacy res 0.6966666666666667 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(92.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.032s | | Loss: 0.2002 | top1:  0.6900
(301/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0100 | top1:  93.0000 | top5:  98.0000
privacy res 0.7433333333333333 tensor(91.5000, device='cuda:0')
(10/500) Data: 0.029s | Batch: 0.043s | | Loss: 0.2154 | top1:  0.6750
(30/500) Data: 0.016s | Batch: 0.039s | | Loss: 0.2029 | top1:  0.7200
privacy res 0.7166666666666667 tensor(94., device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.1947 | top1:  0.7300
(60/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.1822 | top1:  0.7100
privacy res 0.7066666666666667 tensor(92.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.027s | | Loss: 0.1889 | top1:  0.7150
(90/500) Data: 0.012s | Batch: 0.038s | | Loss: 0.1969 | top1:  0.7350
privacy res 0.6966666666666667 tensor(95., device='cuda:0')
privacy res 0 tensor(93., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.2016 | top1:  0.7100
(401/500) Data: 0.009s | Batch: 0.030s | | Loss: 1.0747 | top1:  95.0000 | top5:  99.0000
privacy res 0.705 tensor(93., device='cuda:0')
(10/500) Data: 0.045s | Batch: 0.059s | | Loss: 0.2036 | top1:  0.7150
(30/500) Data: 0.009s | Batch: 0.045s | | Loss: 0.1794 | top1:  0.7150
privacy res 0.7233333333333334 tensor(93.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.029s | | Loss: 0.2056 | top1:  0.7125
(60/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1931 | top1:  0.7050
privacy res 0.7216666666666667 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.037s | | Loss: 0.2069 | top1:  0.7000
(90/500) Data: 0.014s | Batch: 0.027s | | Loss: 0.1781 | top1:  0.7150
privacy res 0.7433333333333333 tensor(96., device='cuda:0')
privacy res 0 tensor(92., device='cuda:0')
(1/100) Data: 0.241s | Batch: 0.250s | Loss: 4.1880 | top1:  30.0000 | top5:  47.0000
test acc tensor(36.9600, device='cuda:0')

Epoch: [35 | 50] LR: 0.005000
(0/500) Data: 0.005s | Batch: 0.047s | | Loss: 0.2032 | top1:  0.6750
```

```
(1/500) Data: 0.013s | Batch: 0.032s | | Loss: 0.9201 | top1:  98.0000 | top5:  100.0000
privacy res 0.7116666666666667 tensor(93., device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.042s | | Loss: 0.1877 | top1:  0.7275
(30/500) Data: 0.015s | Batch: 0.049s | | Loss: 0.1885 | top1:  0.7550
privacy res 0.7283333333333334 tensor(94.5000, device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.040s | | Loss: 0.1832 | top1:  0.7275
(60/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.1871 | top1:  0.7500
privacy res 0.7316666666666667 tensor(95., device='cuda:0')
(70/500) Data: 0.025s | Batch: 0.038s | | Loss: 0.1997 | top1:  0.6950
(90/500) Data: 0.017s | Batch: 0.027s | | Loss: 0.2013 | top1:  0.7050
privacy res 0.745 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(0/500) Data: 0.011s | Batch: 0.042s | | Loss: 0.2024 | top1:  0.7150
(101/500) Data: 0.002s | Batch: 0.026s | | Loss: 1.0598 | top1:  93.0000 | top5:  98.0000
privacy res 0.7466666666666667 tensor(95.5000, device='cuda:0')
(10/500) Data: 0.045s | Batch: 0.066s | | Loss: 0.1913 | top1:  0.7275
(30/500) Data: 0.015s | Batch: 0.034s | | Loss: 0.1859 | top1:  0.7250
privacy res 0.715 tensor(94.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.031s | | Loss: 0.1987 | top1:  0.6975
(60/500) Data: 0.005s | Batch: 0.027s | | Loss: 0.1724 | top1:  0.7550
privacy res 0.705 tensor(93.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.035s | | Loss: 0.2049 | top1:  0.6800
(90/500) Data: 0.006s | Batch: 0.021s | | Loss: 0.1768 | top1:  0.7150
privacy res 0.73 tensor(93.5000, device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.030s | | Loss: 0.1652 | top1:  0.7700
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.1041 | top1:  92.0000 | top5:  98.0000
privacy res 0.7383333333333333 tensor(93.5000, device='cuda:0')
(10/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.1865 | top1:  0.7425
(30/500) Data: 0.004s | Batch: 0.034s | | Loss: 0.2007 | top1:  0.7250
privacy res 0.7216666666666667 tensor(96., device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.1891 | top1:  0.7225
(60/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.1684 | top1:  0.7750
privacy res 0.7583333333333333 tensor(94., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.026s | | Loss: 0.1977 | top1:  0.7175
(90/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.1790 | top1:  0.7450
privacy res 0.7483333333333333 tensor(92.5000, device='cuda:0')
privacy res 0 tensor(94.5000, device='cuda:0')
(0/500) Data: 0.012s | Batch: 0.056s | | Loss: 0.1813 | top1:  0.7950
(301/500) Data: 0.014s | Batch: 0.041s | | Loss: 1.0444 | top1:  94.0000 | top5:  97.0000
privacy res 0.745 tensor(93.5000, device='cuda:0')
(10/500) Data: 0.036s | Batch: 0.053s | | Loss: 0.1945 | top1:  0.7250
(30/500) Data: 0.006s | Batch: 0.020s | | Loss: 0.1880 | top1:  0.7600
privacy res 0.7233333333333334 tensor(93.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.027s | | Loss: 0.1865 | top1:  0.7450
(60/500) Data: 0.015s | Batch: 0.026s | | Loss: 0.2151 | top1:  0.6900
privacy res 0.7116666666666667 tensor(94.5000, device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.043s | | Loss: 0.1934 | top1:  0.7175
```

```
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1689 | top1:  0.7850
privacy res 0.755 tensor(93., device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.048s | | Loss: 0.1815 | top1:  0.7500
(401/500) Data: 0.013s | Batch: 0.023s | | Loss: 1.0569 | top1:  95.0000 | top5:  97.0000
privacy res 0.7666666666666667 tensor(95., device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.031s | | Loss: 0.1860 | top1:  0.7400
(30/500) Data: 0.012s | Batch: 0.034s | | Loss: 0.1888 | top1:  0.7600
privacy res 0.7566666666666667 tensor(94.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.031s | | Loss: 0.1847 | top1:  0.7400
(60/500) Data: 0.008s | Batch: 0.033s | | Loss: 0.1939 | top1:  0.7300
privacy res 0.7433333333333333 tensor(97., device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.039s | | Loss: 0.1731 | top1:  0.7500
(90/500) Data: 0.006s | Batch: 0.032s | | Loss: 0.1995 | top1:  0.7400
privacy res 0.74 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(94.5000, device='cuda:0')
(1/100) Data: 0.213s | Batch: 0.219s | Loss: 4.6975 | top1:  28.0000 | top5:  44.0000
test acc tensor(36.7800, device='cuda:0')

Epoch: [36 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.055s | | Loss: 0.1839 | top1:  0.7600
(1/500) Data: 0.013s | Batch: 0.022s | | Loss: 1.0243 | top1:  93.0000 | top5:  99.0000
privacy res 0.7366666666666667 tensor(93., device='cuda:0')
(10/500) Data: 0.014s | Batch: 0.045s | | Loss: 0.1754 | top1:  0.7650
(30/500) Data: 0.016s | Batch: 0.044s | | Loss: 0.2064 | top1:  0.6950
privacy res 0.7233333333333334 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.038s | Batch: 0.050s | | Loss: 0.1930 | top1:  0.7225
(60/500) Data: 0.020s | Batch: 0.033s | | Loss: 0.1737 | top1:  0.7700
privacy res 0.755 tensor(94., device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.031s | | Loss: 0.1893 | top1:  0.7275
(90/500) Data: 0.005s | Batch: 0.034s | | Loss: 0.1833 | top1:  0.7350
privacy res 0.73 tensor(93.5000, device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.043s | | Loss: 0.1812 | top1:  0.7400
(101/500) Data: 0.009s | Batch: 0.028s | | Loss: 0.9776 | top1:  99.0000 | top5:  99.0000
privacy res 0.7216666666666667 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.034s | | Loss: 0.1865 | top1:  0.7500
(30/500) Data: 0.005s | Batch: 0.033s | | Loss: 0.2039 | top1:  0.6900
privacy res 0.6916666666666667 tensor(95., device='cuda:0')
(40/500) Data: 0.040s | Batch: 0.063s | | Loss: 0.1937 | top1:  0.7275
(60/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.1754 | top1:  0.7100
privacy res 0.7083333333333334 tensor(93., device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.039s | | Loss: 0.1943 | top1:  0.6975
(90/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.1786 | top1:  0.7700
privacy res 0.765 tensor(96., device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.027s | | Loss: 0.1882 | top1:  0.7500
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9504 | top1:  96.0000 | top5:  100.0000
```

```
privacy res 0.745 tensor(96., device='cuda:0')
(10/500) Data: 0.006s | Batch: 0.030s | | Loss: 0.1785 | top1:  0.7700
(30/500) Data: 0.022s | Batch: 0.033s | | Loss: 0.1777 | top1:  0.7750
privacy res 0.7333333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.024s | | Loss: 0.1847 | top1:  0.7450
(60/500) Data: 0.006s | Batch: 0.026s | | Loss: 0.1676 | top1:  0.8250
privacy res 0.7633333333333333 tensor(94., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.1996 | top1:  0.7075
(90/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.2047 | top1:  0.6700
privacy res 0.7133333333333334 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(92.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1833 | top1:  0.7450
(301/500) Data: 0.002s | Batch: 0.016s | | Loss: 1.0065 | top1:  97.0000 | top5:  99.0000
privacy res 0.7366666666666667 tensor(96., device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.043s | | Loss: 0.1904 | top1:  0.7350
(30/500) Data: 0.007s | Batch: 0.038s | | Loss: 0.1696 | top1:  0.7900
privacy res 0.7533333333333333 tensor(97., device='cuda:0')
(40/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.1810 | top1:  0.7450
(60/500) Data: 0.015s | Batch: 0.047s | | Loss: 0.1746 | top1:  0.7500
privacy res 0.7466666666666667 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.022s | | Loss: 0.1686 | top1:  0.7625
(90/500) Data: 0.012s | Batch: 0.033s | | Loss: 0.1885 | top1:  0.7200
privacy res 0.7466666666666667 tensor(93.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(0/500) Data: 0.017s | Batch: 0.055s | | Loss: 0.1685 | top1:  0.7750
(401/500) Data: 0.006s | Batch: 0.031s | | Loss: 1.0117 | top1:  94.0000 | top5:  99.0000
privacy res 0.7533333333333333 tensor(94., device='cuda:0')
(10/500) Data: 0.032s | Batch: 0.046s | | Loss: 0.1776 | top1:  0.7500
(30/500) Data: 0.005s | Batch: 0.019s | | Loss: 0.1581 | top1:  0.8000
privacy res 0.74 tensor(97., device='cuda:0')
(40/500) Data: 0.026s | Batch: 0.052s | | Loss: 0.1818 | top1:  0.7425
(60/500) Data: 0.016s | Batch: 0.035s | | Loss: 0.1877 | top1:  0.7300
privacy res 0.7466666666666667 tensor(94., device='cuda:0')
(70/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.1901 | top1:  0.7175
(90/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.2115 | top1:  0.7050
privacy res 0.7233333333333334 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(94., device='cuda:0')
(1/100) Data: 0.206s | Batch: 0.212s | Loss: 4.3562 | top1:  36.0000 | top5:  54.0000
test acc tensor(36.6500, device='cuda:0')

Epoch: [37 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.041s | | Loss: 0.1622 | top1:  0.7700
(1/500) Data: 0.003s | Batch: 0.018s | | Loss: 0.9995 | top1:  98.0000 | top5:  100.0000
privacy res 0.755 tensor(96., device='cuda:0')
(10/500) Data: 0.020s | Batch: 0.044s | | Loss: 0.2013 | top1:  0.6925
(30/500) Data: 0.021s | Batch: 0.034s | | Loss: 0.1887 | top1:  0.7250
privacy res 0.7333333333333333 tensor(95., device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.040s | | Loss: 0.1861 | top1:  0.7325
```

```
(60/500) Data: 0.030s | Batch: 0.055s | | Loss: 0.1822 | top1:  0.7350
privacy res 0.76 tensor(96., device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.022s | | Loss: 0.1883 | top1:  0.7400
(90/500) Data: 0.008s | Batch: 0.027s | | Loss: 0.1915 | top1:  0.7100
privacy res 0.7633333333333333 tensor(94.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(0/500) Data: 0.016s | Batch: 0.051s | | Loss: 0.1990 | top1:  0.7000
(101/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0560 | top1:  96.0000 | top5:  98.0000
privacy res 0.735 tensor(96., device='cuda:0')
(10/500) Data: 0.030s | Batch: 0.044s | | Loss: 0.1861 | top1:  0.7500
(30/500) Data: 0.011s | Batch: 0.023s | | Loss: 0.1763 | top1:  0.7350
privacy res 0.6983333333333334 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.046s | | Loss: 0.1818 | top1:  0.7450
(60/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.1788 | top1:  0.7500
privacy res 0.7333333333333333 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.024s | Batch: 0.045s | | Loss: 0.1885 | top1:  0.7425
(90/500) Data: 0.014s | Batch: 0.037s | | Loss: 0.1950 | top1:  0.7150
privacy res 0.7033333333333334 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.1815 | top1:  0.7550
(201/500) Data: 0.002s | Batch: 0.040s | | Loss: 0.8611 | top1:  96.0000 | top5:  100.0000
privacy res 0.7466666666666667 tensor(95., device='cuda:0')
(10/500) Data: 0.004s | Batch: 0.018s | | Loss: 0.1884 | top1:  0.7100
(30/500) Data: 0.010s | Batch: 0.032s | | Loss: 0.1462 | top1:  0.8200
privacy res 0.7566666666666667 tensor(94., device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1841 | top1:  0.7400
(60/500) Data: 0.015s | Batch: 0.025s | | Loss: 0.1794 | top1:  0.7500
privacy res 0.725 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.2006 | top1:  0.7100
(90/500) Data: 0.025s | Batch: 0.044s | | Loss: 0.2112 | top1:  0.6800
privacy res 0.7466666666666667 tensor(97., device='cuda:0')
privacy res 0 tensor(94.5000, device='cuda:0')
(0/500) Data: 0.018s | Batch: 0.043s | | Loss: 0.1626 | top1:  0.7900
(301/500) Data: 0.016s | Batch: 0.040s | | Loss: 1.0187 | top1:  97.0000 | top5:  98.0000
privacy res 0.785 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.037s | Batch: 0.053s | | Loss: 0.1852 | top1:  0.7450
(30/500) Data: 0.005s | Batch: 0.019s | | Loss: 0.1674 | top1:  0.7800
privacy res 0.76 tensor(96., device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.029s | | Loss: 0.1953 | top1:  0.7300
(60/500) Data: 0.009s | Batch: 0.036s | | Loss: 0.1871 | top1:  0.7200
privacy res 0.72 tensor(94., device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.023s | | Loss: 0.1790 | top1:  0.7425
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1730 | top1:  0.7650
privacy res 0.76 tensor(96., device='cuda:0')
privacy res 0 tensor(93.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.051s | | Loss: 0.1726 | top1:  0.7700
(401/500) Data: 0.003s | Batch: 0.023s | | Loss: 1.1278 | top1:  94.0000 | top5:  98.0000
privacy res 0.7516666666666667 tensor(94.5000, device='cuda:0')
```

```
(10/500) Data: 0.029s | Batch: 0.056s | | Loss: 0.1876 | top1:  0.7225
(30/500) Data: 0.004s | Batch: 0.017s | | Loss: 0.1627 | top1:  0.7700
privacy res 0.7583333333333333 tensor(93.5000, device='cuda:0')
(40/500) Data: 0.022s | Batch: 0.035s | | Loss: 0.1954 | top1:  0.7125
(60/500) Data: 0.040s | Batch: 0.057s | | Loss: 0.1886 | top1:  0.7300
privacy res 0.7133333333333334 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.033s | | Loss: 0.1733 | top1:  0.7325
(90/500) Data: 0.030s | Batch: 0.047s | | Loss: 0.2027 | top1:  0.6950
privacy res 0.725 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(1/100) Data: 0.213s | Batch: 0.220s | Loss: 3.6682 | top1:  37.0000 | top5:  50.0000
test acc tensor(36.1200, device='cuda:0')

Epoch: [38 | 50] LR: 0.005000
(0/500) Data: 0.005s | Batch: 0.037s | | Loss: 0.1749 | top1:  0.7400
(1/500) Data: 0.002s | Batch: 0.013s | | Loss: 0.8876 | top1:  99.0000 | top5:  99.0000
privacy res 0.735 tensor(98., device='cuda:0')
(10/500) Data: 0.035s | Batch: 0.054s | | Loss: 0.1999 | top1:  0.7300
(30/500) Data: 0.020s | Batch: 0.031s | | Loss: 0.2010 | top1:  0.7450
privacy res 0.7516666666666667 tensor(93., device='cuda:0')
(40/500) Data: 0.022s | Batch: 0.037s | | Loss: 0.1860 | top1:  0.7375
(60/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.1785 | top1:  0.7450
privacy res 0.7433333333333333 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.038s | | Loss: 0.1807 | top1:  0.7450
(90/500) Data: 0.022s | Batch: 0.042s | | Loss: 0.1817 | top1:  0.7550
privacy res 0.7233333333333334 tensor(93.5000, device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.030s | | Loss: 0.1723 | top1:  0.7200
(101/500) Data: 0.018s | Batch: 0.027s | | Loss: 1.0991 | top1:  94.0000 | top5:  98.0000
privacy res 0.72 tensor(95.5000, device='cuda:0')
(10/500) Data: 0.036s | Batch: 0.060s | | Loss: 0.1805 | top1:  0.7300
(30/500) Data: 0.019s | Batch: 0.031s | | Loss: 0.1739 | top1:  0.7350
privacy res 0.7583333333333333 tensor(97., device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.030s | | Loss: 0.1855 | top1:  0.7650
(60/500) Data: 0.006s | Batch: 0.034s | | Loss: 0.1854 | top1:  0.7400
privacy res 0.7383333333333333 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.021s | | Loss: 0.1790 | top1:  0.7450
(90/500) Data: 0.033s | Batch: 0.058s | | Loss: 0.1567 | top1:  0.7700
privacy res 0.7616666666666667 tensor(97., device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.1727 | top1:  0.7900
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9497 | top1:  98.0000 | top5:  98.0000
privacy res 0.78 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.026s | Batch: 0.038s | | Loss: 0.1725 | top1:  0.7675
(30/500) Data: 0.004s | Batch: 0.035s | | Loss: 0.1643 | top1:  0.7850
privacy res 0.7483333333333333 tensor(96., device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.028s | | Loss: 0.1768 | top1:  0.7350
(60/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.1810 | top1:  0.7450
```

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privacy res 0.7383333333333333 tensor(96., device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.019s | | Loss: 0.1937 | top1:  0.7375
(90/500) Data: 0.016s | Batch: 0.036s | | Loss: 0.1784 | top1:  0.7400
privacy res 0.745 tensor(99., device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(0/500) Data: 0.011s | Batch: 0.040s | | Loss: 0.1657 | top1:  0.7750
(301/500) Data: 0.002s | Batch: 0.014s | | Loss: 1.1299 | top1:  93.0000 | top5:  96.0000
privacy res 0.7666666666666667 tensor(95., device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.041s | | Loss: 0.1757 | top1:  0.7625
(30/500) Data: 0.042s | Batch: 0.051s | | Loss: 0.1721 | top1:  0.7350
privacy res 0.76 tensor(97., device='cuda:0')
(40/500) Data: 0.009s | Batch: 0.031s | | Loss: 0.1668 | top1:  0.7550
(60/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.1596 | top1:  0.7600
privacy res 0.7316666666666667 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.033s | | Loss: 0.1710 | top1:  0.7450
(90/500) Data: 0.004s | Batch: 0.026s | | Loss: 0.1863 | top1:  0.7200
privacy res 0.725 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(0/500) Data: 0.015s | Batch: 0.048s | | Loss: 0.1754 | top1:  0.7150
(401/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.0742 | top1:  96.0000 | top5:  99.0000
privacy res 0.7416666666666667 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.009s | Batch: 0.034s | | Loss: 0.1644 | top1:  0.7800
(30/500) Data: 0.005s | Batch: 0.019s | | Loss: 0.1806 | top1:  0.7400
privacy res 0.74 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.040s | | Loss: 0.1878 | top1:  0.7500
(60/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1573 | top1:  0.8100
privacy res 0.7883333333333333 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.046s | | Loss: 0.1744 | top1:  0.7500
(90/500) Data: 0.006s | Batch: 0.039s | | Loss: 0.1802 | top1:  0.7400
privacy res 0.7466666666666667 tensor(95., device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(1/100) Data: 0.243s | Batch: 0.250s | Loss: 5.0322 | top1:  28.0000 | top5:  37.0000
test acc tensor(36.3300, device='cuda:0')

Epoch: [39 | 50] LR: 0.005000
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1756 | top1:  0.7300
(1/500) Data: 0.017s | Batch: 0.036s | | Loss: 1.1052 | top1:  96.0000 | top5:  99.0000
privacy res 0.75 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.022s | Batch: 0.049s | | Loss: 0.1887 | top1:  0.7450
(30/500) Data: 0.013s | Batch: 0.041s | | Loss: 0.1645 | top1:  0.7800
privacy res 0.775 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.029s | | Loss: 0.1952 | top1:  0.7150
(60/500) Data: 0.018s | Batch: 0.038s | | Loss: 0.1494 | top1:  0.8200
privacy res 0.7683333333333333 tensor(97., device='cuda:0')
(70/500) Data: 0.030s | Batch: 0.042s | | Loss: 0.1602 | top1:  0.7825
(90/500) Data: 0.014s | Batch: 0.027s | | Loss: 0.1736 | top1:  0.7150
privacy res 0.7333333333333333 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
```

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(0/500) Data: 0.006s | Batch: 0.039s | | Loss: 0.1651 | top1:  0.7750
(101/500) Data: 0.002s | Batch: 0.022s | | Loss: 0.9782 | top1:  99.0000 | top5:  99.0000
privacy res 0.7316666666666667 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.046s | | Loss: 0.1682 | top1:  0.7650
(30/500) Data: 0.009s | Batch: 0.041s | | Loss: 0.1566 | top1:  0.7800
privacy res 0.7566666666666667 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.1906 | top1:  0.7200
(60/500) Data: 0.021s | Batch: 0.035s | | Loss: 0.1834 | top1:  0.7400
privacy res 0.72 tensor(97., device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.029s | | Loss: 0.1674 | top1:  0.7375
(90/500) Data: 0.031s | Batch: 0.044s | | Loss: 0.1556 | top1:  0.8100
privacy res 0.7566666666666667 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.024s | | Loss: 0.1863 | top1:  0.7350
(201/500) Data: 0.002s | Batch: 0.034s | | Loss: 1.0054 | top1:  96.0000 | top5:  100.0000
privacy res 0.75 tensor(94.5000, device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.023s | | Loss: 0.1839 | top1:  0.7350
(30/500) Data: 0.007s | Batch: 0.017s | | Loss: 0.1672 | top1:  0.7750
privacy res 0.755 tensor(95., device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.032s | | Loss: 0.1740 | top1:  0.7375
(60/500) Data: 0.013s | Batch: 0.043s | | Loss: 0.1747 | top1:  0.7350
privacy res 0.72 tensor(96., device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.1673 | top1:  0.7900
(90/500) Data: 0.013s | Batch: 0.034s | | Loss: 0.1650 | top1:  0.7800
privacy res 0.755 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
(0/500) Data: 0.015s | Batch: 0.066s | | Loss: 0.1681 | top1:  0.7800
(301/500) Data: 0.003s | Batch: 0.012s | | Loss: 1.0458 | top1:  97.0000 | top5:  99.0000
privacy res 0.7616666666666667 tensor(96., device='cuda:0')
(10/500) Data: 0.030s | Batch: 0.050s | | Loss: 0.1782 | top1:  0.7575
(30/500) Data: 0.035s | Batch: 0.046s | | Loss: 0.1634 | top1:  0.7750
privacy res 0.7333333333333333 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.037s | | Loss: 0.1647 | top1:  0.7900
(60/500) Data: 0.028s | Batch: 0.040s | | Loss: 0.1628 | top1:  0.7750
privacy res 0.7633333333333333 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.025s | | Loss: 0.1979 | top1:  0.7100
(90/500) Data: 0.013s | Batch: 0.024s | | Loss: 0.1686 | top1:  0.7850
privacy res 0.77 tensor(96., device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(0/500) Data: 0.008s | Batch: 0.029s | | Loss: 0.1902 | top1:  0.7050
(401/500) Data: 0.002s | Batch: 0.011s | | Loss: 1.1022 | top1:  94.0000 | top5:  100.0000
privacy res 0.74 tensor(95.5000, device='cuda:0')
(10/500) Data: 0.024s | Batch: 0.046s | | Loss: 0.1868 | top1:  0.7225
(30/500) Data: 0.004s | Batch: 0.032s | | Loss: 0.1638 | top1:  0.7550
privacy res 0.7566666666666667 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.1777 | top1:  0.7750
(60/500) Data: 0.004s | Batch: 0.017s | | Loss: 0.1670 | top1:  0.7450
privacy res 0.7516666666666667 tensor(94.5000, device='cuda:0')
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(70/500) Data: 0.008s | Batch: 0.030s | | Loss: 0.1771 | top1:  0.7525
(90/500) Data: 0.016s | Batch: 0.038s | | Loss: 0.1829 | top1:  0.7050
privacy res 0.7183333333333334 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(1/100) Data: 0.217s | Batch: 0.223s | Loss: 5.6307 | top1:  39.0000 | top5:  51.0000
test acc tensor(36.6100, device='cuda:0')

Epoch: [40 | 50] LR: 0.005000
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.1950 | top1:  0.7450
(1/500) Data: 0.010s | Batch: 0.029s | | Loss: 0.9460 | top1:  97.0000 | top5:  99.0000
privacy res 0.7566666666666667 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.037s | | Loss: 0.1891 | top1:  0.7275
(30/500) Data: 0.034s | Batch: 0.054s | | Loss: 0.1791 | top1:  0.7350
privacy res 0.76 tensor(95., device='cuda:0')
(40/500) Data: 0.018s | Batch: 0.047s | | Loss: 0.1598 | top1:  0.7875
(60/500) Data: 0.009s | Batch: 0.021s | | Loss: 0.1764 | top1:  0.7600
privacy res 0.7566666666666667 tensor(97., device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.039s | | Loss: 0.1748 | top1:  0.7275
(90/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.1834 | top1:  0.7650
privacy res 0.7716666666666666 tensor(96., device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.047s | | Loss: 0.1631 | top1:  0.7850
(101/500) Data: 0.010s | Batch: 0.020s | | Loss: 1.0206 | top1:  97.0000 | top5:  100.0000
privacy res 0.74 tensor(95., device='cuda:0')
(10/500) Data: 0.042s | Batch: 0.064s | | Loss: 0.1572 | top1:  0.7675
(30/500) Data: 0.010s | Batch: 0.036s | | Loss: 0.1726 | top1:  0.7750
privacy res 0.7483333333333333 tensor(97., device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.020s | | Loss: 0.1678 | top1:  0.7600
(60/500) Data: 0.031s | Batch: 0.042s | | Loss: 0.1688 | top1:  0.7600
privacy res 0.755 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.024s | | Loss: 0.1802 | top1:  0.7375
(90/500) Data: 0.008s | Batch: 0.019s | | Loss: 0.1573 | top1:  0.8000
privacy res 0.755 tensor(97., device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.1733 | top1:  0.7600
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9953 | top1:  98.0000 | top5:  99.0000
privacy res 0.7816666666666666 tensor(97., device='cuda:0')
(10/500) Data: 0.025s | Batch: 0.038s | | Loss: 0.1584 | top1:  0.7700
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2133 | top1:  0.6500
privacy res 0.7333333333333333 tensor(96., device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.028s | | Loss: 0.1786 | top1:  0.7425
(60/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.1759 | top1:  0.7450
privacy res 0.7516666666666667 tensor(96., device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.021s | | Loss: 0.1686 | top1:  0.7500
(90/500) Data: 0.008s | Batch: 0.022s | | Loss: 0.1688 | top1:  0.7400
privacy res 0.755 tensor(98.5000, device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.1458 | top1:  0.8150
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(301/500) Data: 0.012s | Batch: 0.022s | | Loss: 0.9527 | top1:  96.0000 | top5:  99.0000
privacy res 0.76 tensor(95.5000, device='cuda:0')
(10/500) Data: 0.044s | Batch: 0.064s | | Loss: 0.1933 | top1:  0.6900
(30/500) Data: 0.026s | Batch: 0.046s | | Loss: 0.1611 | top1:  0.8000
privacy res 0.7466666666666667 tensor(96., device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.027s | | Loss: 0.1906 | top1:  0.7025
(60/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.1677 | top1:  0.7750
privacy res 0.7616666666666667 tensor(97., device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.033s | | Loss: 0.1717 | top1:  0.7725
(90/500) Data: 0.005s | Batch: 0.027s | | Loss: 0.1788 | top1:  0.7400
privacy res 0.7566666666666667 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(95., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.051s | | Loss: 0.1700 | top1:  0.7550
(401/500) Data: 0.011s | Batch: 0.049s | | Loss: 1.1137 | top1:  94.0000 | top5:  99.0000
privacy res 0.745 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.052s | Batch: 0.069s | | Loss: 0.1840 | top1:  0.7375
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.2031 | top1:  0.7100
privacy res 0.75 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.032s | | Loss: 0.1656 | top1:  0.7425
(60/500) Data: 0.005s | Batch: 0.032s | | Loss: 0.2036 | top1:  0.7200
privacy res 0.7416666666666667 tensor(98., device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.034s | | Loss: 0.1755 | top1:  0.7375
(90/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.1654 | top1:  0.7850
privacy res 0.7683333333333333 tensor(97., device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(1/100) Data: 0.190s | Batch: 0.196s | Loss: 3.8179 | top1:  40.0000 | top5:  56.0000
test acc tensor(35.7200, device='cuda:0')

Epoch: [41 | 50] LR: 0.000500
(0/500) Data: 0.009s | Batch: 0.037s | | Loss: 0.1714 | top1:  0.7350
(1/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.9946 | top1:  98.0000 | top5:  100.0000
privacy res 0.73 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.028s | Batch: 0.042s | | Loss: 0.1608 | top1:  0.7775
(30/500) Data: 0.013s | Batch: 0.043s | | Loss: 0.1824 | top1:  0.7300
privacy res 0.7616666666666667 tensor(97., device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.041s | | Loss: 0.1892 | top1:  0.7475
(60/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.1792 | top1:  0.7300
privacy res 0.7466666666666667 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.034s | | Loss: 0.1676 | top1:  0.7550
(90/500) Data: 0.011s | Batch: 0.029s | | Loss: 0.1669 | top1:  0.7750
privacy res 0.7783333333333333 tensor(99., device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1715 | top1:  0.7750
(101/500) Data: 0.002s | Batch: 0.035s | | Loss: 0.9963 | top1:  96.0000 | top5:  98.0000
privacy res 0.78 tensor(98., device='cuda:0')
(10/500) Data: 0.045s | Batch: 0.065s | | Loss: 0.1666 | top1:  0.7600
(30/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.1822 | top1:  0.7200
privacy res 0.75 tensor(97.5000, device='cuda:0')
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(40/500) Data: 0.026s | Batch: 0.040s | | Loss: 0.1663 | top1:  0.7825
(60/500) Data: 0.017s | Batch: 0.039s | | Loss: 0.1604 | top1:  0.7650
privacy res 0.7466666666666667 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.038s | | Loss: 0.1972 | top1:  0.7350
(90/500) Data: 0.006s | Batch: 0.029s | | Loss: 0.1869 | top1:  0.7450
privacy res 0.765 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.1679 | top1:  0.7800
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9993 | top1:  96.0000 | top5:  98.0000
privacy res 0.76 tensor(97., device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.034s | | Loss: 0.1777 | top1:  0.7750
(30/500) Data: 0.018s | Batch: 0.033s | | Loss: 0.1585 | top1:  0.7800
privacy res 0.7583333333333333 tensor(97., device='cuda:0')
(40/500) Data: 0.024s | Batch: 0.035s | | Loss: 0.1859 | top1:  0.7275
(60/500) Data: 0.004s | Batch: 0.027s | | Loss: 0.1570 | top1:  0.7650
privacy res 0.7633333333333333 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.1615 | top1:  0.7800
(90/500) Data: 0.012s | Batch: 0.046s | | Loss: 0.1842 | top1:  0.7300
privacy res 0.7666666666666667 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
(0/500) Data: 0.013s | Batch: 0.052s | | Loss: 0.1753 | top1:  0.7150
(301/500) Data: 0.002s | Batch: 0.024s | | Loss: 1.0421 | top1:  97.0000 | top5:  97.0000
privacy res 0.75 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.039s | Batch: 0.065s | | Loss: 0.1755 | top1:  0.7550
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1716 | top1:  0.7700
privacy res 0.735 tensor(97., device='cuda:0')
(40/500) Data: 0.029s | Batch: 0.041s | | Loss: 0.1703 | top1:  0.7625
(60/500) Data: 0.005s | Batch: 0.031s | | Loss: 0.1874 | top1:  0.7300
privacy res 0.7633333333333333 tensor(98., device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.022s | | Loss: 0.1552 | top1:  0.7700
(90/500) Data: 0.007s | Batch: 0.018s | | Loss: 0.1467 | top1:  0.8300
privacy res 0.7666666666666667 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.047s | | Loss: 0.1625 | top1:  0.7950
(401/500) Data: 0.013s | Batch: 0.036s | | Loss: 0.9792 | top1:  96.0000 | top5:  100.0000
privacy res 0.7733333333333333 tensor(95., device='cuda:0')
(10/500) Data: 0.035s | Batch: 0.050s | | Loss: 0.1523 | top1:  0.7975
(30/500) Data: 0.018s | Batch: 0.047s | | Loss: 0.1706 | top1:  0.7750
privacy res 0.7783333333333333 tensor(96., device='cuda:0')
(40/500) Data: 0.020s | Batch: 0.038s | | Loss: 0.1749 | top1:  0.7200
(60/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1667 | top1:  0.7850
privacy res 0.76 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.040s | | Loss: 0.1759 | top1:  0.7250
(90/500) Data: 0.022s | Batch: 0.037s | | Loss: 0.1790 | top1:  0.7600
privacy res 0.775 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(1/100) Data: 0.237s | Batch: 0.243s | Loss: 3.9407 | top1:  37.0000 | top5:  46.0000
test acc tensor(35.4800, device='cuda:0')
```

```
Epoch: [42 | 50] LR: 0.000500
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.1520 | top1:  0.7850
(1/500) Data: 0.012s | Batch: 0.022s | | Loss: 0.9408 | top1:  100.0000 | top5:  100.0000
privacy res 0.7716666666666666 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.029s | | Loss: 0.1670 | top1:  0.7625
(30/500) Data: 0.009s | Batch: 0.030s | | Loss: 0.1675 | top1:  0.7800
privacy res 0.7783333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.031s | | Loss: 0.1706 | top1:  0.7650
(60/500) Data: 0.012s | Batch: 0.023s | | Loss: 0.1508 | top1:  0.7650
privacy res 0.735 tensor(96., device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.027s | | Loss: 0.1638 | top1:  0.7725
(90/500) Data: 0.006s | Batch: 0.019s | | Loss: 0.1692 | top1:  0.7550
privacy res 0.7366666666666667 tensor(99., device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.040s | | Loss: 0.1665 | top1:  0.7800
(101/500) Data: 0.003s | Batch: 0.013s | | Loss: 0.9798 | top1:  98.0000 | top5:  100.0000
privacy res 0.7533333333333333 tensor(97., device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.045s | | Loss: 0.1485 | top1:  0.8125
(30/500) Data: 0.014s | Batch: 0.039s | | Loss: 0.1569 | top1:  0.7850
privacy res 0.76 tensor(100., device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.037s | | Loss: 0.1783 | top1:  0.7575
(60/500) Data: 0.006s | Batch: 0.033s | | Loss: 0.1851 | top1:  0.7300
privacy res 0.7433333333333333 tensor(94.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.020s | | Loss: 0.1871 | top1:  0.7525
(90/500) Data: 0.022s | Batch: 0.035s | | Loss: 0.1716 | top1:  0.7600
privacy res 0.765 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.1630 | top1:  0.7650
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0544 | top1:  97.0000 | top5:  99.0000
privacy res 0.7483333333333333 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.037s | | Loss: 0.1732 | top1:  0.7625
(30/500) Data: 0.013s | Batch: 0.024s | | Loss: 0.1722 | top1:  0.7750
privacy res 0.7766666666666666 tensor(95., device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.1531 | top1:  0.7775
(60/500) Data: 0.010s | Batch: 0.021s | | Loss: 0.1644 | top1:  0.7400
privacy res 0.7366666666666667 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.012s | Batch: 0.023s | | Loss: 0.1617 | top1:  0.7800
(90/500) Data: 0.014s | Batch: 0.041s | | Loss: 0.1877 | top1:  0.7050
privacy res 0.7316666666666667 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
(0/500) Data: 0.007s | Batch: 0.031s | | Loss: 0.1569 | top1:  0.7950
(301/500) Data: 0.002s | Batch: 0.031s | | Loss: 1.0798 | top1:  96.0000 | top5:  98.0000
privacy res 0.77 tensor(98., device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.038s | | Loss: 0.1715 | top1:  0.7300
(30/500) Data: 0.011s | Batch: 0.038s | | Loss: 0.1748 | top1:  0.7850
privacy res 0.77 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.032s | | Loss: 0.1731 | top1:  0.7500
```

```
(60/500) Data: 0.027s | Batch: 0.044s | | Loss: 0.1720 | top1:  0.7600
privacy res 0.7583333333333333 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.030s | | Loss: 0.1705 | top1:  0.7750
(90/500) Data: 0.030s | Batch: 0.042s | | Loss: 0.1792 | top1:  0.7500
privacy res 0.7733333333333333 tensor(98., device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.012s | Batch: 0.043s | | Loss: 0.1725 | top1:  0.7600
(401/500) Data: 0.013s | Batch: 0.022s | | Loss: 0.9851 | top1:  99.0000 | top5:  100.0000
privacy res 0.765 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.030s | Batch: 0.043s | | Loss: 0.1563 | top1:  0.7925
(30/500) Data: 0.012s | Batch: 0.038s | | Loss: 0.1780 | top1:  0.7650
privacy res 0.755 tensor(97., device='cuda:0')
(40/500) Data: 0.028s | Batch: 0.040s | | Loss: 0.1732 | top1:  0.7575
(60/500) Data: 0.015s | Batch: 0.033s | | Loss: 0.1747 | top1:  0.7300
privacy res 0.7616666666666667 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.027s | | Loss: 0.1654 | top1:  0.7525
(90/500) Data: 0.007s | Batch: 0.032s | | Loss: 0.1627 | top1:  0.7750
privacy res 0.7716666666666666 tensor(99., device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(1/100) Data: 0.233s | Batch: 0.241s | Loss: 4.0920 | top1:  34.0000 | top5:  49.0000
test acc tensor(35.5400, device='cuda:0')

Epoch: [43 | 50] LR: 0.000500
(0/500) Data: 0.016s | Batch: 0.060s | | Loss: 0.1730 | top1:  0.7300
(1/500) Data: 0.013s | Batch: 0.023s | | Loss: 0.9629 | top1:  99.0000 | top5:  100.0000
privacy res 0.7483333333333333 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.034s | | Loss: 0.1687 | top1:  0.7800
(30/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.1521 | top1:  0.7750
privacy res 0.7783333333333333 tensor(98., device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.030s | | Loss: 0.1593 | top1:  0.7950
(60/500) Data: 0.007s | Batch: 0.036s | | Loss: 0.1785 | top1:  0.7500
privacy res 0.74 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.039s | | Loss: 0.1733 | top1:  0.7400
(90/500) Data: 0.025s | Batch: 0.059s | | Loss: 0.1505 | top1:  0.8250
privacy res 0.7916666666666666 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
(0/500) Data: 0.016s | Batch: 0.035s | | Loss: 0.2246 | top1:  0.6550
(101/500) Data: 0.014s | Batch: 0.041s | | Loss: 1.1659 | top1:  98.0000 | top5:  100.0000
privacy res 0.7183333333333334 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.048s | Batch: 0.068s | | Loss: 0.1739 | top1:  0.7750
(30/500) Data: 0.004s | Batch: 0.019s | | Loss: 0.1805 | top1:  0.7400
privacy res 0.7533333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.026s | Batch: 0.045s | | Loss: 0.1802 | top1:  0.7475
(60/500) Data: 0.026s | Batch: 0.038s | | Loss: 0.1621 | top1:  0.7550
privacy res 0.7516666666666667 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.014s | Batch: 0.032s | | Loss: 0.1790 | top1:  0.7300
(90/500) Data: 0.017s | Batch: 0.028s | | Loss: 0.1586 | top1:  0.7900
privacy res 0.7766666666666666 tensor(97.5000, device='cuda:0')
```

```
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.1912 | top1:  0.7000
(201/500) Data: 0.002s | Batch: 0.018s | | Loss: 0.9769 | top1:  99.0000 | top5:  100.0000
privacy res 0.765 tensor(99.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.032s | | Loss: 0.1622 | top1:  0.7575
(30/500) Data: 0.009s | Batch: 0.021s | | Loss: 0.1676 | top1:  0.7600
privacy res 0.7633333333333333 tensor(97., device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.1648 | top1:  0.7775
(60/500) Data: 0.014s | Batch: 0.024s | | Loss: 0.1786 | top1:  0.7700
privacy res 0.7833333333333333 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.032s | | Loss: 0.1753 | top1:  0.7500
(90/500) Data: 0.028s | Batch: 0.040s | | Loss: 0.1438 | top1:  0.8450
privacy res 0.7883333333333333 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.016s | Batch: 0.060s | | Loss: 0.1659 | top1:  0.7600
(301/500) Data: 0.002s | Batch: 0.014s | | Loss: 1.0479 | top1:  99.0000 | top5:  100.0000
privacy res 0.7866666666666666 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.037s | | Loss: 0.1752 | top1:  0.7475
(30/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.1418 | top1:  0.8250
privacy res 0.7766666666666666 tensor(98., device='cuda:0')
(40/500) Data: 0.033s | Batch: 0.050s | | Loss: 0.1718 | top1:  0.7550
(60/500) Data: 0.004s | Batch: 0.036s | | Loss: 0.1625 | top1:  0.7850
privacy res 0.7916666666666666 tensor(96., device='cuda:0')
(70/500) Data: 0.026s | Batch: 0.037s | | Loss: 0.1691 | top1:  0.7800
(90/500) Data: 0.013s | Batch: 0.024s | | Loss: 0.1762 | top1:  0.7600
privacy res 0.7516666666666667 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.030s | | Loss: 0.1663 | top1:  0.7750
(401/500) Data: 0.002s | Batch: 0.017s | | Loss: 0.9866 | top1:  95.0000 | top5:  98.0000
privacy res 0.7716666666666666 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.050s | Batch: 0.073s | | Loss: 0.1739 | top1:  0.7400
(30/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.1503 | top1:  0.8000
privacy res 0.785 tensor(98.5000, device='cuda:0')
(40/500) Data: 0.016s | Batch: 0.035s | | Loss: 0.1633 | top1:  0.7825
(60/500) Data: 0.010s | Batch: 0.033s | | Loss: 0.1631 | top1:  0.7750
privacy res 0.7883333333333333 tensor(99.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.024s | | Loss: 0.1579 | top1:  0.7875
(90/500) Data: 0.018s | Batch: 0.030s | | Loss: 0.1906 | top1:  0.7600
privacy res 0.7716666666666666 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(1/100) Data: 0.216s | Batch: 0.222s | Loss: 4.2201 | top1:  34.0000 | top5:  51.0000
test acc tensor(35.3500, device='cuda:0')

Epoch: [44 | 50] LR: 0.000500
(0/500) Data: 0.006s | Batch: 0.053s | | Loss: 0.1698 | top1:  0.7750
(1/500) Data: 0.004s | Batch: 0.031s | | Loss: 0.9633 | top1:  99.0000 | top5:  99.0000
privacy res 0.7733333333333333 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.023s | Batch: 0.044s | | Loss: 0.1664 | top1:  0.7675
```

```
(30/500) Data: 0.015s | Batch: 0.026s | | Loss: 0.1663 | top1:  0.7700
privacy res 0.77 tensor(98., device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.033s | | Loss: 0.1852 | top1:  0.7375
(60/500) Data: 0.004s | Batch: 0.032s | | Loss: 0.1862 | top1:  0.7150
privacy res 0.7683333333333333 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.023s | | Loss: 0.1600 | top1:  0.7925
(90/500) Data: 0.018s | Batch: 0.038s | | Loss: 0.1709 | top1:  0.7850
privacy res 0.7816666666666666 tensor(98.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.009s | Batch: 0.027s | | Loss: 0.1724 | top1:  0.7550
(101/500) Data: 0.002s | Batch: 0.037s | | Loss: 1.1508 | top1:  93.0000 | top5:  96.0000
privacy res 0.7566666666666667 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.029s | Batch: 0.049s | | Loss: 0.1686 | top1:  0.7625
(30/500) Data: 0.024s | Batch: 0.043s | | Loss: 0.1430 | top1:  0.7750
privacy res 0.7433333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.026s | Batch: 0.039s | | Loss: 0.1571 | top1:  0.7775
(60/500) Data: 0.004s | Batch: 0.034s | | Loss: 0.1882 | top1:  0.7750
privacy res 0.7783333333333333 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.021s | | Loss: 0.1680 | top1:  0.7600
(90/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.2065 | top1:  0.6800
privacy res 0.735 tensor(98., device='cuda:0')
privacy res 0 tensor(93.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.023s | | Loss: 0.1778 | top1:  0.7350
(201/500) Data: 0.002s | Batch: 0.039s | | Loss: 1.1831 | top1:  95.0000 | top5:  97.0000
privacy res 0.77 tensor(95., device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.030s | | Loss: 0.1904 | top1:  0.7300
(30/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.1701 | top1:  0.7850
privacy res 0.785 tensor(99.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.035s | | Loss: 0.1739 | top1:  0.7700
(60/500) Data: 0.006s | Batch: 0.019s | | Loss: 0.1550 | top1:  0.7800
privacy res 0.7783333333333333 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.020s | | Loss: 0.1657 | top1:  0.7675
(90/500) Data: 0.011s | Batch: 0.027s | | Loss: 0.1794 | top1:  0.7300
privacy res 0.76 tensor(97., device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1782 | top1:  0.7400
(301/500) Data: 0.014s | Batch: 0.025s | | Loss: 1.0952 | top1:  95.0000 | top5:  97.0000
privacy res 0.745 tensor(97., device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.1718 | top1:  0.7775
(30/500) Data: 0.027s | Batch: 0.050s | | Loss: 0.1584 | top1:  0.7900
privacy res 0.7633333333333333 tensor(98., device='cuda:0')
(40/500) Data: 0.019s | Batch: 0.031s | | Loss: 0.1767 | top1:  0.7450
(60/500) Data: 0.007s | Batch: 0.029s | | Loss: 0.1793 | top1:  0.7300
privacy res 0.7716666666666666 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.029s | | Loss: 0.1574 | top1:  0.7900
(90/500) Data: 0.017s | Batch: 0.030s | | Loss: 0.1675 | top1:  0.7700
privacy res 0.7433333333333333 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
```

```
(0/500) Data: 0.007s | Batch: 0.026s | | Loss: 0.1539 | top1:  0.8000
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9978 | top1:  98.0000 | top5:  99.0000
privacy res 0.785 tensor(97., device='cuda:0')
(10/500) Data: 0.006s | Batch: 0.035s | | Loss: 0.1771 | top1:  0.7600
(30/500) Data: 0.025s | Batch: 0.039s | | Loss: 0.1382 | top1:  0.8150
privacy res 0.7783333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.021s | Batch: 0.035s | | Loss: 0.1504 | top1:  0.7725
(60/500) Data: 0.007s | Batch: 0.040s | | Loss: 0.1622 | top1:  0.8050
privacy res 0.795 tensor(97., device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.1577 | top1:  0.7650
(90/500) Data: 0.021s | Batch: 0.032s | | Loss: 0.1767 | top1:  0.7350
privacy res 0.7616666666666667 tensor(98., device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
(1/100) Data: 0.242s | Batch: 0.256s | Loss: 4.5941 | top1:  33.0000 | top5:  48.0000
test acc tensor(35.6800, device='cuda:0')

Epoch: [45 | 50] LR: 0.000500
(0/500) Data: 0.005s | Batch: 0.053s | | Loss: 0.1533 | top1:  0.8000
(1/500) Data: 0.014s | Batch: 0.028s | | Loss: 0.9399 | top1:  97.0000 | top5:  99.0000
privacy res 0.765 tensor(95.5000, device='cuda:0')
(10/500) Data: 0.021s | Batch: 0.044s | | Loss: 0.1662 | top1:  0.7675
(30/500) Data: 0.008s | Batch: 0.029s | | Loss: 0.1435 | top1:  0.7850
privacy res 0.755 tensor(98.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.027s | | Loss: 0.1714 | top1:  0.7600
(60/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.1892 | top1:  0.7450
privacy res 0.75 tensor(98., device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.039s | | Loss: 0.1381 | top1:  0.8250
(90/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1391 | top1:  0.8150
privacy res 0.7966666666666666 tensor(98., device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.050s | | Loss: 0.1865 | top1:  0.7400
(101/500) Data: 0.007s | Batch: 0.025s | | Loss: 0.9944 | top1:  96.0000 | top5:  98.0000
privacy res 0.72 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.034s | | Loss: 0.1538 | top1:  0.7775
(30/500) Data: 0.038s | Batch: 0.054s | | Loss: 0.2012 | top1:  0.7100
privacy res 0.7316666666666667 tensor(97., device='cuda:0')
(40/500) Data: 0.041s | Batch: 0.054s | | Loss: 0.1731 | top1:  0.7675
(60/500) Data: 0.012s | Batch: 0.023s | | Loss: 0.1487 | top1:  0.7950
privacy res 0.7933333333333333 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.1443 | top1:  0.8200
(90/500) Data: 0.009s | Batch: 0.040s | | Loss: 0.1706 | top1:  0.7650
privacy res 0.745 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(99.5000, device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.027s | | Loss: 0.1767 | top1:  0.7850
(201/500) Data: 0.002s | Batch: 0.031s | | Loss: 1.0185 | top1:  98.0000 | top5:  100.0000
privacy res 0.785 tensor(98., device='cuda:0')
(10/500) Data: 0.006s | Batch: 0.026s | | Loss: 0.1536 | top1:  0.7950
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1725 | top1:  0.7650
```

```
privacy res 0.75 tensor(96., device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.024s | | Loss: 0.1568 | top1:  0.7900
(60/500) Data: 0.006s | Batch: 0.017s | | Loss: 0.1833 | top1:  0.7250
privacy res 0.7383333333333333 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.036s | | Loss: 0.1741 | top1:  0.7575
(90/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.1543 | top1:  0.8150
privacy res 0.795 tensor(98., device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(0/500) Data: 0.020s | Batch: 0.042s | | Loss: 0.1474 | top1:  0.8000
(301/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.0994 | top1:  96.0000 | top5:  98.0000
privacy res 0.7733333333333333 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.036s | Batch: 0.052s | | Loss: 0.1606 | top1:  0.7700
(30/500) Data: 0.010s | Batch: 0.042s | | Loss: 0.1629 | top1:  0.8150
privacy res 0.8216666666666667 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.1896 | top1:  0.7300
(60/500) Data: 0.015s | Batch: 0.031s | | Loss: 0.1866 | top1:  0.7350
privacy res 0.7233333333333334 tensor(99., device='cuda:0')
(70/500) Data: 0.023s | Batch: 0.034s | | Loss: 0.1742 | top1:  0.7225
(90/500) Data: 0.007s | Batch: 0.033s | | Loss: 0.1585 | top1:  0.8100
privacy res 0.7583333333333333 tensor(98.5000, device='cuda:0')
privacy res 0 tensor(98.5000, device='cuda:0')
(0/500) Data: 0.024s | Batch: 0.067s | | Loss: 0.1722 | top1:  0.7700
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0158 | top1:  96.0000 | top5:  98.0000
privacy res 0.7866666666666666 tensor(98., device='cuda:0')
(10/500) Data: 0.012s | Batch: 0.036s | | Loss: 0.1640 | top1:  0.7750
(30/500) Data: 0.006s | Batch: 0.028s | | Loss: 0.1624 | top1:  0.7750
privacy res 0.7483333333333333 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.036s | | Loss: 0.1521 | top1:  0.7925
(60/500) Data: 0.019s | Batch: 0.033s | | Loss: 0.1762 | top1:  0.7350
privacy res 0.7833333333333333 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.030s | Batch: 0.058s | | Loss: 0.1688 | top1:  0.7600
(90/500) Data: 0.010s | Batch: 0.023s | | Loss: 0.1776 | top1:  0.7650
privacy res 0.7483333333333333 tensor(98., device='cuda:0')
privacy res 0 tensor(99., device='cuda:0')
(1/100) Data: 0.203s | Batch: 0.208s | Loss: 4.6406 | top1:  35.0000 | top5:  45.0000
test acc tensor(35.3400, device='cuda:0')

Epoch: [46 | 50] LR: 0.000500
(0/500) Data: 0.006s | Batch: 0.046s | | Loss: 0.1594 | top1:  0.7450
(1/500) Data: 0.008s | Batch: 0.052s | | Loss: 1.0531 | top1:  98.0000 | top5:  99.0000
privacy res 0.7683333333333333 tensor(98., device='cuda:0')
(10/500) Data: 0.041s | Batch: 0.056s | | Loss: 0.1764 | top1:  0.7475
(30/500) Data: 0.005s | Batch: 0.039s | | Loss: 0.1459 | top1:  0.7750
privacy res 0.76 tensor(98.5000, device='cuda:0')
(40/500) Data: 0.029s | Batch: 0.046s | | Loss: 0.1627 | top1:  0.7775
(60/500) Data: 0.005s | Batch: 0.030s | | Loss: 0.1721 | top1:  0.7550
privacy res 0.7633333333333333 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.007s | Batch: 0.022s | | Loss: 0.1642 | top1:  0.7500
```

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(90/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.1693 | top1:  0.7450
privacy res 0.7866666666666666 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.029s | | Loss: 0.2012 | top1:  0.6900
(101/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0393 | top1:  97.0000 | top5:  98.0000
privacy res 0.74 tensor(96., device='cuda:0')
(10/500) Data: 0.026s | Batch: 0.042s | | Loss: 0.1720 | top1:  0.7725
(30/500) Data: 0.024s | Batch: 0.042s | | Loss: 0.1744 | top1:  0.7400
privacy res 0.7566666666666667 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.037s | | Loss: 0.1458 | top1:  0.8175
(60/500) Data: 0.016s | Batch: 0.027s | | Loss: 0.1715 | top1:  0.7550
privacy res 0.7766666666666666 tensor(99., device='cuda:0')
(70/500) Data: 0.003s | Batch: 0.023s | | Loss: 0.1521 | top1:  0.7925
(90/500) Data: 0.009s | Batch: 0.030s | | Loss: 0.1626 | top1:  0.7800
privacy res 0.8033333333333333 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.028s | | Loss: 0.1785 | top1:  0.7550
(201/500) Data: 0.002s | Batch: 0.019s | | Loss: 1.0676 | top1:  96.0000 | top5:  99.0000
privacy res 0.7783333333333333 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.013s | Batch: 0.031s | | Loss: 0.1561 | top1:  0.7900
(30/500) Data: 0.012s | Batch: 0.034s | | Loss: 0.1849 | top1:  0.7150
privacy res 0.7616666666666667 tensor(95.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.022s | | Loss: 0.1681 | top1:  0.7800
(60/500) Data: 0.013s | Batch: 0.042s | | Loss: 0.1469 | top1:  0.8200
privacy res 0.795 tensor(98., device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.024s | | Loss: 0.1710 | top1:  0.7850
(90/500) Data: 0.029s | Batch: 0.048s | | Loss: 0.1754 | top1:  0.7150
privacy res 0.765 tensor(96., device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.012s | Batch: 0.045s | | Loss: 0.1766 | top1:  0.7700
(301/500) Data: 0.006s | Batch: 0.021s | | Loss: 1.0376 | top1:  98.0000 | top5:  99.0000
privacy res 0.755 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.029s | Batch: 0.063s | | Loss: 0.1612 | top1:  0.7800
(30/500) Data: 0.009s | Batch: 0.020s | | Loss: 0.1516 | top1:  0.7850
privacy res 0.8 tensor(97., device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.1782 | top1:  0.7575
(60/500) Data: 0.005s | Batch: 0.016s | | Loss: 0.1451 | top1:  0.7900
privacy res 0.7866666666666666 tensor(98., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.031s | | Loss: 0.1522 | top1:  0.7950
(90/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.1746 | top1:  0.7500
privacy res 0.7216666666666667 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.028s | | Loss: 0.1541 | top1:  0.7750
(401/500) Data: 0.005s | Batch: 0.025s | | Loss: 1.1170 | top1:  97.0000 | top5:  100.0000
privacy res 0.79 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.027s | Batch: 0.046s | | Loss: 0.1682 | top1:  0.7550
(30/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.1561 | top1:  0.7900
privacy res 0.7816666666666666 tensor(99., device='cuda:0')
```

```
(40/500) Data: 0.020s | Batch: 0.039s | | Loss: 0.1700 | top1:  0.7750
(60/500) Data: 0.005s | Batch: 0.033s | | Loss: 0.1595 | top1:  0.7600
privacy res 0.7416666666666667 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.009s | Batch: 0.038s | | Loss: 0.1884 | top1:  0.7425
(90/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.1771 | top1:  0.7300
privacy res 0.7733333333333333 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(1/100) Data: 0.213s | Batch: 0.221s | Loss: 5.1788 | top1:  36.0000 | top5:  49.0000
test acc tensor(35.5200, device='cuda:0')

Epoch: [47 | 50] LR: 0.000500
(0/500) Data: 0.006s | Batch: 0.025s | | Loss: 0.1434 | top1:  0.8150
(1/500) Data: 0.013s | Batch: 0.035s | | Loss: 0.9943 | top1:  98.0000 | top5:  99.0000
privacy res 0.8 tensor(98., device='cuda:0')
(10/500) Data: 0.024s | Batch: 0.044s | | Loss: 0.1699 | top1:  0.7775
(30/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.1622 | top1:  0.7750
privacy res 0.74 tensor(98., device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.035s | | Loss: 0.1648 | top1:  0.7650
(60/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.1898 | top1:  0.7250
privacy res 0.7616666666666667 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.025s | Batch: 0.036s | | Loss: 0.1785 | top1:  0.7575
(90/500) Data: 0.016s | Batch: 0.028s | | Loss: 0.1424 | top1:  0.8100
privacy res 0.79 tensor(97., device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.033s | | Loss: 0.1526 | top1:  0.8050
(101/500) Data: 0.003s | Batch: 0.017s | | Loss: 1.0284 | top1:  98.0000 | top5:  99.0000
privacy res 0.805 tensor(97., device='cuda:0')
(10/500) Data: 0.026s | Batch: 0.048s | | Loss: 0.1782 | top1:  0.7525
(30/500) Data: 0.012s | Batch: 0.025s | | Loss: 0.1722 | top1:  0.7700
privacy res 0.7933333333333333 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.033s | | Loss: 0.1655 | top1:  0.7600
(60/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.1711 | top1:  0.7600
privacy res 0.78 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.015s | Batch: 0.026s | | Loss: 0.1784 | top1:  0.7300
(90/500) Data: 0.004s | Batch: 0.025s | | Loss: 0.1810 | top1:  0.7450
privacy res 0.7866666666666666 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.022s | | Loss: 0.1410 | top1:  0.7900
(201/500) Data: 0.002s | Batch: 0.013s | | Loss: 1.0998 | top1:  96.0000 | top5:  97.0000
privacy res 0.7783333333333333 tensor(96., device='cuda:0')
(10/500) Data: 0.016s | Batch: 0.033s | | Loss: 0.1641 | top1:  0.7650
(30/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1456 | top1:  0.7950
privacy res 0.7833333333333333 tensor(95.5000, device='cuda:0')
(40/500) Data: 0.017s | Batch: 0.029s | | Loss: 0.1571 | top1:  0.7875
(60/500) Data: 0.011s | Batch: 0.031s | | Loss: 0.1583 | top1:  0.7850
privacy res 0.8 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.017s | Batch: 0.031s | | Loss: 0.1579 | top1:  0.7800
(90/500) Data: 0.016s | Batch: 0.044s | | Loss: 0.1519 | top1:  0.8100
```

```
privacy res 0.765 tensor(98., device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.033s | | Loss: 0.1889 | top1:  0.7000
(301/500) Data: 0.011s | Batch: 0.022s | | Loss: 1.1049 | top1:  99.0000 | top5:  100.0000
privacy res 0.7416666666666667 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.034s | | Loss: 0.1724 | top1:  0.7700
(30/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.1503 | top1:  0.8000
privacy res 0.7466666666666667 tensor(98.5000, device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.017s | | Loss: 0.1639 | top1:  0.7775
(60/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.1613 | top1:  0.7700
privacy res 0.7816666666666666 tensor(97.5000, device='cuda:0')
(70/500) Data: 0.031s | Batch: 0.052s | | Loss: 0.1771 | top1:  0.7375
(90/500) Data: 0.011s | Batch: 0.025s | | Loss: 0.1708 | top1:  0.7550
privacy res 0.7316666666666667 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.009s | Batch: 0.032s | | Loss: 0.1638 | top1:  0.7700
(401/500) Data: 0.002s | Batch: 0.035s | | Loss: 0.8944 | top1:  97.0000 | top5:  99.0000
privacy res 0.7866666666666666 tensor(97., device='cuda:0')
(10/500) Data: 0.006s | Batch: 0.018s | | Loss: 0.1559 | top1:  0.7750
(30/500) Data: 0.012s | Batch: 0.024s | | Loss: 0.1772 | top1:  0.7450
privacy res 0.775 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.026s | | Loss: 0.1600 | top1:  0.7850
(60/500) Data: 0.009s | Batch: 0.050s | | Loss: 0.1722 | top1:  0.7650
privacy res 0.765 tensor(96., device='cuda:0')
(70/500) Data: 0.019s | Batch: 0.037s | | Loss: 0.1746 | top1:  0.7500
(90/500) Data: 0.011s | Batch: 0.037s | | Loss: 0.1347 | top1:  0.8150
privacy res 0.7566666666666667 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(95.5000, device='cuda:0')
(1/100) Data: 0.165s | Batch: 0.169s | Loss: 5.3067 | top1:  36.0000 | top5:  47.0000
test acc tensor(35.5600, device='cuda:0')

Epoch: [48 | 50] LR: 0.000500
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1820 | top1:  0.7500
(1/500) Data: 0.002s | Batch: 0.029s | | Loss: 1.1018 | top1:  97.0000 | top5:  98.0000
privacy res 0.7916666666666666 tensor(97., device='cuda:0')
(10/500) Data: 0.026s | Batch: 0.045s | | Loss: 0.1736 | top1:  0.7600
(30/500) Data: 0.025s | Batch: 0.037s | | Loss: 0.1722 | top1:  0.7300
privacy res 0.7483333333333333 tensor(99., device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.025s | | Loss: 0.1745 | top1:  0.7525
(60/500) Data: 0.008s | Batch: 0.019s | | Loss: 0.1726 | top1:  0.7550
privacy res 0.75 tensor(99., device='cuda:0')
(70/500) Data: 0.021s | Batch: 0.034s | | Loss: 0.1695 | top1:  0.7725
(90/500) Data: 0.004s | Batch: 0.015s | | Loss: 0.1823 | top1:  0.7400
privacy res 0.73 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.023s | | Loss: 0.1491 | top1:  0.7950
(101/500) Data: 0.011s | Batch: 0.033s | | Loss: 1.0377 | top1:  98.0000 | top5:  98.0000
privacy res 0.7966666666666666 tensor(98., device='cuda:0')
```

```
(10/500) Data: 0.014s | Batch: 0.036s | | Loss: 0.1727 | top1:  0.7550
(30/500) Data: 0.005s | Batch: 0.029s | | Loss: 0.1801 | top1:  0.7350
privacy res 0.78 tensor(98.5000, device='cuda:0')
(40/500) Data: 0.011s | Batch: 0.027s | | Loss: 0.1720 | top1:  0.7650
(60/500) Data: 0.004s | Batch: 0.016s | | Loss: 0.1980 | top1:  0.7150
privacy res 0.74 tensor(97., device='cuda:0')
(70/500) Data: 0.008s | Batch: 0.023s | | Loss: 0.1633 | top1:  0.7750
(90/500) Data: 0.011s | Batch: 0.034s | | Loss: 0.1680 | top1:  0.7700
privacy res 0.765 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.027s | | Loss: 0.1739 | top1:  0.7800
(201/500) Data: 0.007s | Batch: 0.017s | | Loss: 1.0159 | top1:  98.0000 | top5:  100.0000
privacy res 0.7966666666666666 tensor(97., device='cuda:0')
(10/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.1710 | top1:  0.7550
(30/500) Data: 0.008s | Batch: 0.019s | | Loss: 0.1436 | top1:  0.8100
privacy res 0.7733333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.022s | Batch: 0.039s | | Loss: 0.1671 | top1:  0.7450
(60/500) Data: 0.008s | Batch: 0.033s | | Loss: 0.1639 | top1:  0.8000
privacy res 0.7883333333333333 tensor(96.5000, device='cuda:0')
(70/500) Data: 0.034s | Batch: 0.047s | | Loss: 0.1464 | top1:  0.8025
(90/500) Data: 0.004s | Batch: 0.027s | | Loss: 0.1710 | top1:  0.7550
privacy res 0.7516666666666667 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(94.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.1404 | top1:  0.8200
(301/500) Data: 0.014s | Batch: 0.024s | | Loss: 1.0231 | top1:  96.0000 | top5:  98.0000
privacy res 0.8016666666666666 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.009s | Batch: 0.038s | | Loss: 0.1512 | top1:  0.7950
(30/500) Data: 0.016s | Batch: 0.039s | | Loss: 0.1759 | top1:  0.7500
privacy res 0.7216666666666667 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.010s | Batch: 0.045s | | Loss: 0.1730 | top1:  0.7675
(60/500) Data: 0.008s | Batch: 0.019s | | Loss: 0.1271 | top1:  0.8250
privacy res 0.7883333333333333 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.040s | Batch: 0.053s | | Loss: 0.1800 | top1:  0.7100
(90/500) Data: 0.021s | Batch: 0.033s | | Loss: 0.1815 | top1:  0.7500
privacy res 0.75 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(97.5000, device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.027s | | Loss: 0.1767 | top1:  0.7800
(401/500) Data: 0.002s | Batch: 0.012s | | Loss: 0.9934 | top1:  100.0000 | top5:  100.0000
privacy res 0.7716666666666666 tensor(99., device='cuda:0')
(10/500) Data: 0.025s | Batch: 0.040s | | Loss: 0.1503 | top1:  0.7975
(30/500) Data: 0.005s | Batch: 0.028s | | Loss: 0.1685 | top1:  0.7550
privacy res 0.7733333333333333 tensor(96.5000, device='cuda:0')
(40/500) Data: 0.015s | Batch: 0.037s | | Loss: 0.1795 | top1:  0.7500
(60/500) Data: 0.004s | Batch: 0.030s | | Loss: 0.1714 | top1:  0.7650
privacy res 0.7716666666666666 tensor(98., device='cuda:0')
(70/500) Data: 0.020s | Batch: 0.040s | | Loss: 0.1490 | top1:  0.8000
(90/500) Data: 0.013s | Batch: 0.028s | | Loss: 0.1711 | top1:  0.7650
privacy res 0.7566666666666667 tensor(96.5000, device='cuda:0')
```

```
privacy res 0 tensor(98., device='cuda:0')
(1/100) Data: 0.161s | Batch: 0.165s | Loss: 4.9405 | top1:  34.0000 | top5:  45.0000
test acc tensor(35.8600, device='cuda:0')

Epoch: [49 | 50] LR: 0.000500
(0/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1794 | top1:  0.7650
(1/500) Data: 0.002s | Batch: 0.032s | | Loss: 0.9133 | top1:  98.0000 | top5:  99.0000
privacy res 0.7633333333333333 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.031s | | Loss: 0.1681 | top1:  0.7675
(30/500) Data: 0.005s | Batch: 0.015s | | Loss: 0.1422 | top1:  0.8100
privacy res 0.7983333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.034s | | Loss: 0.1655 | top1:  0.7800
(60/500) Data: 0.009s | Batch: 0.029s | | Loss: 0.1734 | top1:  0.7400
privacy res 0.7533333333333333 tensor(98., device='cuda:0')
(70/500) Data: 0.049s | Batch: 0.063s | | Loss: 0.1560 | top1:  0.7800
(90/500) Data: 0.006s | Batch: 0.021s | | Loss: 0.1703 | top1:  0.7450
privacy res 0.7583333333333333 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(99., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.024s | | Loss: 0.1718 | top1:  0.7500
(101/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.0558 | top1:  98.0000 | top5:  99.0000
privacy res 0.755 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.010s | Batch: 0.031s | | Loss: 0.1695 | top1:  0.7625
(30/500) Data: 0.021s | Batch: 0.037s | | Loss: 0.1612 | top1:  0.7950
privacy res 0.7683333333333333 tensor(97.5000, device='cuda:0')
(40/500) Data: 0.006s | Batch: 0.029s | | Loss: 0.1694 | top1:  0.7450
(60/500) Data: 0.018s | Batch: 0.031s | | Loss: 0.1784 | top1:  0.7400
privacy res 0.765 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.010s | Batch: 0.023s | | Loss: 0.1565 | top1:  0.8000
(90/500) Data: 0.005s | Batch: 0.027s | | Loss: 0.1712 | top1:  0.7550
privacy res 0.7733333333333333 tensor(99., device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.020s | | Loss: 0.1687 | top1:  0.7650
(201/500) Data: 0.002s | Batch: 0.012s | | Loss: 1.1126 | top1:  97.0000 | top5:  99.0000
privacy res 0.7616666666666667 tensor(98., device='cuda:0')
(10/500) Data: 0.009s | Batch: 0.024s | | Loss: 0.1505 | top1:  0.8000
(30/500) Data: 0.005s | Batch: 0.018s | | Loss: 0.1533 | top1:  0.7950
privacy res 0.755 tensor(97., device='cuda:0')
(40/500) Data: 0.035s | Batch: 0.047s | | Loss: 0.1634 | top1:  0.7800
(60/500) Data: 0.010s | Batch: 0.047s | | Loss: 0.1756 | top1:  0.7600
privacy res 0.7533333333333333 tensor(97., device='cuda:0')
(70/500) Data: 0.011s | Batch: 0.031s | | Loss: 0.1581 | top1:  0.7625
(90/500) Data: 0.005s | Batch: 0.020s | | Loss: 0.1297 | top1:  0.8400
privacy res 0.78 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.006s | Batch: 0.043s | | Loss: 0.1447 | top1:  0.7800
(301/500) Data: 0.003s | Batch: 0.014s | | Loss: 1.1390 | top1:  97.0000 | top5:  99.0000
privacy res 0.7616666666666667 tensor(97., device='cuda:0')
(10/500) Data: 0.019s | Batch: 0.035s | | Loss: 0.1813 | top1:  0.7475
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(30/500) Data: 0.023s | Batch: 0.035s | | Loss: 0.1670 | top1:  0.7650
privacy res 0.7416666666666667 tensor(98., device='cuda:0')
(40/500) Data: 0.005s | Batch: 0.025s | | Loss: 0.1719 | top1:  0.7575
(60/500) Data: 0.010s | Batch: 0.034s | | Loss: 0.1860 | top1:  0.7150
privacy res 0.735 tensor(99., device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.036s | | Loss: 0.1541 | top1:  0.7850
(90/500) Data: 0.012s | Batch: 0.036s | | Loss: 0.1811 | top1:  0.7050
privacy res 0.74 tensor(96.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.1482 | top1:  0.8050
(401/500) Data: 0.010s | Batch: 0.038s | | Loss: 1.0170 | top1:  97.0000 | top5:  99.0000
privacy res 0.7783333333333333 tensor(98., device='cuda:0')
(10/500) Data: 0.033s | Batch: 0.044s | | Loss: 0.1614 | top1:  0.7700
(30/500) Data: 0.007s | Batch: 0.027s | | Loss: 0.1545 | top1:  0.7900
privacy res 0.7633333333333333 tensor(98., device='cuda:0')
(40/500) Data: 0.022s | Batch: 0.035s | | Loss: 0.1704 | top1:  0.7450
(60/500) Data: 0.004s | Batch: 0.037s | | Loss: 0.1288 | top1:  0.8600
privacy res 0.8116666666666666 tensor(96., device='cuda:0')
(70/500) Data: 0.013s | Batch: 0.031s | | Loss: 0.1546 | top1:  0.7700
(90/500) Data: 0.015s | Batch: 0.040s | | Loss: 0.1748 | top1:  0.7250
privacy res 0.7533333333333333 tensor(97.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(1/100) Data: 0.150s | Batch: 0.156s | Loss: 5.0368 | top1:  38.0000 | top5:  47.0000
test acc tensor(35.5200, device='cuda:0')

Epoch: [50 | 50] LR: 0.000500
(0/500) Data: 0.005s | Batch: 0.044s | | Loss: 0.1603 | top1:  0.7700
(1/500) Data: 0.002s | Batch: 0.019s | | Loss: 1.0179 | top1:  97.0000 | top5:  98.0000
privacy res 0.7716666666666666 tensor(96.5000, device='cuda:0')
(10/500) Data: 0.034s | Batch: 0.049s | | Loss: 0.1563 | top1:  0.7825
(30/500) Data: 0.007s | Batch: 0.034s | | Loss: 0.1323 | top1:  0.8200
privacy res 0.785 tensor(97., device='cuda:0')
(40/500) Data: 0.014s | Batch: 0.029s | | Loss: 0.1779 | top1:  0.7450
(60/500) Data: 0.012s | Batch: 0.031s | | Loss: 0.1563 | top1:  0.7850
privacy res 0.7766666666666666 tensor(98.5000, device='cuda:0')
(70/500) Data: 0.031s | Batch: 0.043s | | Loss: 0.1677 | top1:  0.7525
(90/500) Data: 0.036s | Batch: 0.062s | | Loss: 0.1711 | top1:  0.7700
privacy res 0.77 tensor(99., device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.026s | | Loss: 0.1602 | top1:  0.7900
(101/500) Data: 0.003s | Batch: 0.031s | | Loss: 1.0033 | top1:  98.0000 | top5:  100.0000
privacy res 0.7716666666666666 tensor(97., device='cuda:0')
(10/500) Data: 0.011s | Batch: 0.022s | | Loss: 0.1643 | top1:  0.7700
(30/500) Data: 0.007s | Batch: 0.018s | | Loss: 0.1562 | top1:  0.7700
privacy res 0.7683333333333333 tensor(98.5000, device='cuda:0')
(40/500) Data: 0.012s | Batch: 0.029s | | Loss: 0.1610 | top1:  0.7675
(60/500) Data: 0.004s | Batch: 0.017s | | Loss: 0.1686 | top1:  0.7750
privacy res 0.7783333333333333 tensor(97.5000, device='cuda:0')
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(70/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.1687 | top1:  0.7625
(90/500) Data: 0.011s | Batch: 0.032s | | Loss: 0.1568 | top1:  0.7850
privacy res 0.7716666666666666 tensor(98.5000, device='cuda:0')
privacy res 0 tensor(96.5000, device='cuda:0')
(0/500) Data: 0.005s | Batch: 0.039s | | Loss: 0.1613 | top1:  0.7650
(201/500) Data: 0.013s | Batch: 0.023s | | Loss: 1.0227 | top1:  100.0000 | top5:  100.0000
privacy res 0.7933333333333333 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.015s | Batch: 0.028s | | Loss: 0.1720 | top1:  0.7650
(30/500) Data: 0.016s | Batch: 0.031s | | Loss: 0.1626 | top1:  0.7700
privacy res 0.7633333333333333 tensor(99., device='cuda:0')
(40/500) Data: 0.013s | Batch: 0.037s | | Loss: 0.1773 | top1:  0.7475
(60/500) Data: 0.007s | Batch: 0.019s | | Loss: 0.1728 | top1:  0.7450
privacy res 0.765 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.027s | Batch: 0.043s | | Loss: 0.1807 | top1:  0.7600
(90/500) Data: 0.005s | Batch: 0.020s | | Loss: 0.1584 | top1:  0.7600
privacy res 0.7666666666666667 tensor(95.5000, device='cuda:0')
privacy res 0 tensor(97., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.050s | | Loss: 0.1473 | top1:  0.8150
(301/500) Data: 0.002s | Batch: 0.031s | | Loss: 0.9675 | top1:  98.0000 | top5:  98.0000
privacy res 0.76 tensor(98.5000, device='cuda:0')
(10/500) Data: 0.017s | Batch: 0.039s | | Loss: 0.1837 | top1:  0.7425
(30/500) Data: 0.017s | Batch: 0.033s | | Loss: 0.1601 | top1:  0.8000
privacy res 0.7433333333333333 tensor(98., device='cuda:0')
(40/500) Data: 0.007s | Batch: 0.026s | | Loss: 0.1761 | top1:  0.7550
(60/500) Data: 0.010s | Batch: 0.034s | | Loss: 0.1588 | top1:  0.7750
privacy res 0.7683333333333333 tensor(97., device='cuda:0')
(70/500) Data: 0.004s | Batch: 0.041s | | Loss: 0.1635 | top1:  0.7525
(90/500) Data: 0.013s | Batch: 0.025s | | Loss: 0.1622 | top1:  0.7800
privacy res 0.7683333333333333 tensor(96., device='cuda:0')
privacy res 0 tensor(96., device='cuda:0')
(0/500) Data: 0.004s | Batch: 0.022s | | Loss: 0.1798 | top1:  0.7600
(401/500) Data: 0.002s | Batch: 0.017s | | Loss: 1.1045 | top1:  96.0000 | top5:  97.0000
privacy res 0.7733333333333333 tensor(97.5000, device='cuda:0')
(10/500) Data: 0.018s | Batch: 0.031s | | Loss: 0.1877 | top1:  0.7175
(30/500) Data: 0.022s | Batch: 0.034s | | Loss: 0.1786 | top1:  0.7550
privacy res 0.7466666666666667 tensor(97., device='cuda:0')
(40/500) Data: 0.008s | Batch: 0.025s | | Loss: 0.1478 | top1:  0.7850
(60/500) Data: 0.011s | Batch: 0.032s | | Loss: 0.1472 | top1:  0.7700
privacy res 0.75 tensor(95.5000, device='cuda:0')
(70/500) Data: 0.022s | Batch: 0.050s | | Loss: 0.1659 | top1:  0.7825
(90/500) Data: 0.005s | Batch: 0.021s | | Loss: 0.1518 | top1:  0.7950
privacy res 0.79 tensor(98.5000, device='cuda:0')
privacy res 0 tensor(98., device='cuda:0')
(1/100) Data: 0.150s | Batch: 0.155s | Loss: 4.8475 | top1:  36.0000 | top5:  49.0000
test acc tensor(75.8200, device='cuda:0')
Best acc:
tensor(79.1100, device='cuda:0')
```

In [ ]: