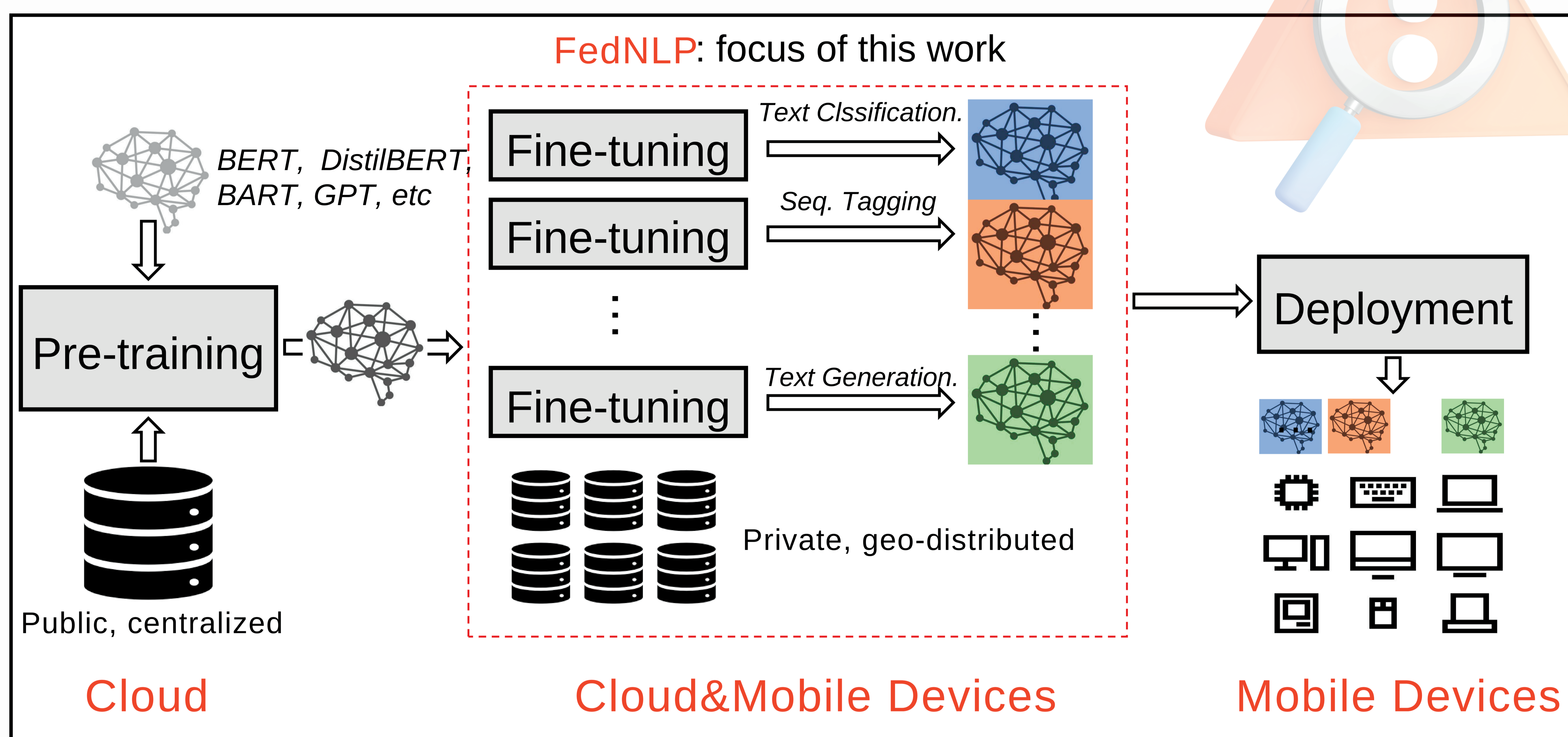# FedAdapter: Efficient Federated Learning for Mobile NLP

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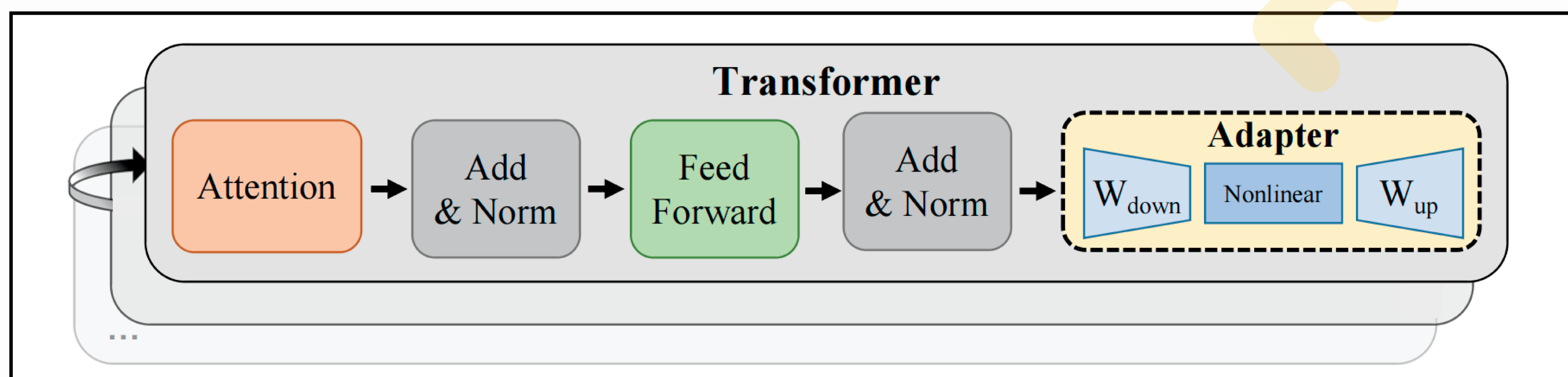
Problem

FedNLP is prohibitively slow due to the large model sizes and the resultant high network/computation cost.
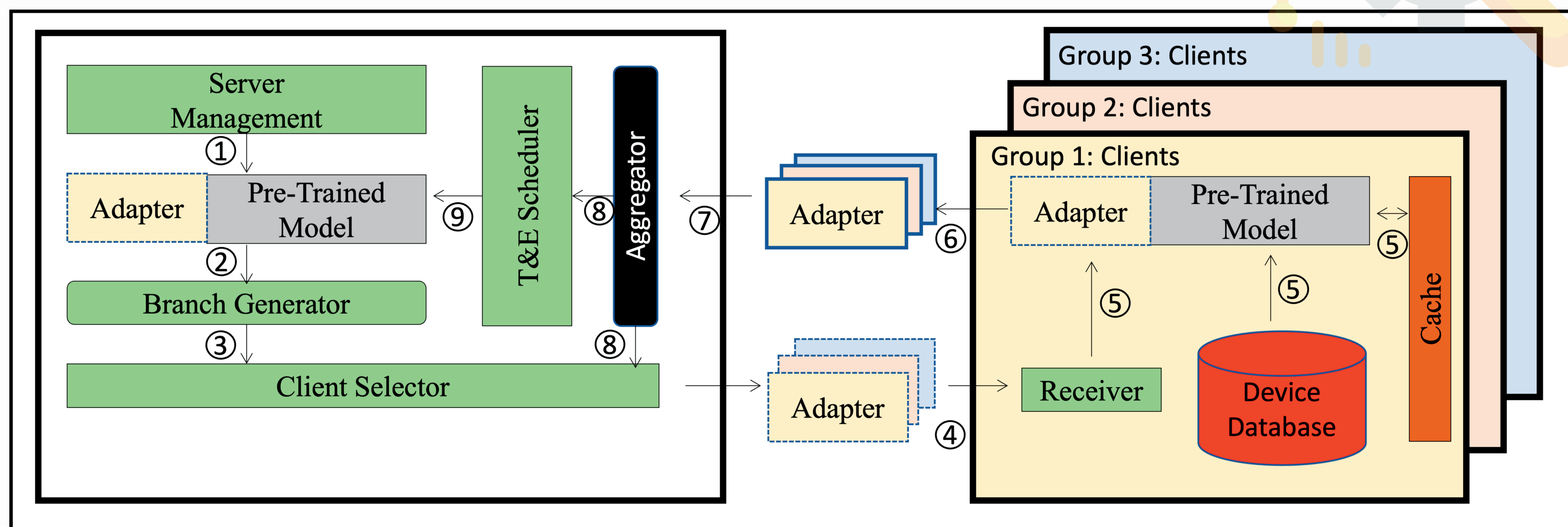

Key block

Towards practical FedNLP, we identify as the key building blocks adapters, small bottleneck modules inserted at a variety of model layers.

Workflow

To automate adapter configuration, we propose FedAdapter, a framework that enhances the existing FedNLP with progressive training and sideline trial.

Results

FedAdapter can reduce FedNLP's model convergence delay to no more than several hours.

Datasets	20NEWS			AGNEWS			SEMEVAL			ONTONOTES		
Relative Accuracy	99%	95%	90%	99%	95%	90%	99%	95%	90%	99%	95%	90%
FT	44.0	23.4	13.1	31.1	10.1	5.2	124.3	89.9	61.7	76.1	55.9	35.6
FTQ	12.7	6.8	3.8	9.1	2.6	1.7	32.0	23.1	15.9	21.2	15.5	9.9
LF$_{oracle}$	18.5	8.1	4.3	9.6	1.4	1.1	74.0	46.8	33.2	82.5	43.8	24.5
LFQ$_{oracle}$	5.2	2.5	1.1	1.6	0.3	0.2	16.8	11.0	7.7	23.9	12.9	7.2
AdaFL	**1.3**	**0.4**	**0.1**	**0.2**	**0.03**	**0.02**	**2.3**	**1.1**	**0.6**	**4.5**	**2.4**	**1.3**

Visit our code for more information.