Appendix

1 Searched transformation strategies

We display the channels of each block in the transformed network architecture.

Table 1: Setting of searched ResNet-50(G=16) transformation.

Layer Name	Groups	(1,1)	(2,2)	(3,3)	(4,4)	(5,5)	(1,3)	(3,1)	(1,5)	(5,1)
3-1	16	32	32	0	-	-	56	8	-	-
3-2	16	32	32	32	-	-	8	24	-	-
3-3	16	88	24	16	-	-	0	0	-	-
3-4	16	64	16	16	-	-	24	8	-	-
4-1	16	64	48	48	-	-	32	64	-	-
4-2	16	64	16	112	-	-	16	48	-	-
4-3	16	48	16	64	-	-	96	32	-	-
4-4	16	80	0	16	-	-	80	80	-	-
4-5	16	64	32	48	-	-	32	80	-	-
4-6	16	64	112	16	-	-	32	32	-	-
5-1	16	96	96	64	64	0	0	0	32	160
5-2	16	64	128	32	0	96	0	64	96	32
5-3	16	128	32	32	96	32	96	64	32	0

2 Other evidence

The training and evaluation log of different type of detectors are provided, which are *frcnn-nats-r50.log*, *mask-rcnn-nats-r50.log*, *cascade-rcnn-nats-r50.log* and *retina-nats-r50.log*. Training setting, loss of each iteration, training time and inference time are included in log.

The log *frcnn-baseline-eval.log* is provided to prove that our transformation does not influence inference time at all.