Sample size estimation for **test** group in Spark Post and Elastic Search AB test on AIT and total clicks, based on a sample of *registered* users in two weeks (150k), using Bootstrapping technique. The sizes are measured for one group (test), as it is assumed that the control group is all emails sent, which is big enough to have low level of uncertainty that affect the comparison.

Size	2weeks (150k)				4weeks (600k)				6weeks (1350k)				8weeks(2400k)			
%Difference	1%	.5%	.25%	.1%	1%	.5%	.25%	.1%	1%	.1%	.25%	.1%	1%	.1%	.25%	.1%
Confidence	.62	.56	.53	.51	.74	.63	.56	.52	.88*	.72	.61	.54	.92*	.76	.63	.55

KPI: AIT

Size	2weeks (150k)				4weeks (600k)				6weeks (1350k)				2months(2400k)			
%Difference	1%	.5%	.25%	.1%	1%	.5%	.25%	.1%	1%	.1%	.25%	.1%	1%	.1%	.25%	.1%
Confidence	.76*	.64	.57	.53	.92**	.76	.64	.55	.99***	.90**	.74	.59	.99***	.93*	.77	.62

KPI: Cclick_T (total clicks)

(*): close to 80% confidence level; (**): close to 90% confidence level; (***) close to 95% confidence level

Size:

- 2weeks data: 150k => data_enhance = 1
- 4weeks data: 150k*4 = 600k => data_enhance = 4
- 6weeks data: 150k*9 = 1350k => data_enhance = 9
- 8weeks data: 150k*16=2400k => data_enhance = 12

%Difference:

- 1% diff. => shifted_kpi = .9900 * mu
- .5% diff. => shifted_kpi = .9950 * mu
- .25% diff. => shifted_kpi = .9975 * mu
- .1% diff. => shifted_kpi = .999 * mu