	Experiment	1: Scalabil	itv with Nu	mber of # o	f threadss	(Mops)	
Balanced wo	rkloads		,			()	
Facebook							
threads	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
1	680270	1496288	901872	896328	736256	594305	901528
16	7752602	11755955	6536813	9697846	7601358	7187420	1.15E+07
32	10209397	12911404	6907886	18222193	12823356	13353083	1.86E+07
48	10340802	14140709	8570784	19918406	17133745	19247034	
64	10341325	16121905	9322970	23087801	22356990	24714094	
80	10159264	15379787	9509680	22067836	21703313	20597843	2.62E+07
96	10400108	15122312	9617145	21514462	18740812	20810482	2.71E+07
112	10157883	14270821	9522061	22154322	18453135	20928052	2.66E+07
128	10119727	13672075	11159347	21428578	19515676	20965225	2.63E+07
Genome							
threads	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
1	678568		943106	737712	825682	595924	
16	7781488	18415075	6448812	8548633	8343872	7555190	1.22E+07
32	10458058	23281376	7209206	15275841	14656720	14305172	1.91E+07
48	10309799	28247448	8077935	19147289	18143599	19707693	2.40E+07
64	10192047	31403431	9399407	17198211	22937945	25022772	3.06E+07
80	10040628	23439674	9805650	17172890	21952376	21816108	2.74E+07
96	10251777	15060405	9637230	17767023	21070625	21573695	
112	10125161	10048546	9189427	18831534	19162181	21259875	2.70E+07
128	10374453	7324896	9817461	17166463	21204868	21031432	2.70E+07
Gnomad	N.4	A1 5 V	LIDD	0.41.1	X /1 1	EINIE I	ODI I
threads	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
1	673811	2004105	1079494	1198803	822846	602920	1.02E+06
16	8108423	18551718	6400800	10530667	7258588	7356793	
32	10466954	23296490	8049811	18267291	13514933	14091118	1.85E+07
48	10564554	28291172	8221660	24163448	16961457	19796197	2.46E+07
64	10388013	31407016	9422331	24136499	21191514	25242069	
80	10055818	15496161	9179183	23695156	19682027	21395157	2.73E+07
96	10214966		10117332	22394315	21101134	21843903	
112	10418747	7252632	9685884	25386123	17776897	20799655	
128	8938529	6230484	9413416	25495203	19010559	20854106	2.74E+07
OSM three de	Manatraa	ALEV.	LIDD	CALL	Vladav	CINIC day	CDIndov
threads			LIPP+		XIndex	FINEdex	SRIndex
1	681059			1127985		594952	980725
16							
32		16470766					
48		18320806			16007420		
64					22795897 22388295	24558978	
80 96			9656480			21461250 20877925	
112	10371115		9671384				
							2.715+07
Planet	9801968	11990156	11081614	10311489	21075774	20504982	2.82E+07
	Macetron	ALEX+	LIPP+	SALI	Ylndov	FINEdex	SRIndex
threads 1	Masstree 717982		884157	1332146	XIndex 985898	593900	
16			5830690	14929634	7817721	7433968	
32	10445650	18817285	6961835	23176968	12357336	14099276	
48			7982858		16347342	18961451	2.59E+07
64		22924276	10508900	33637330	22263737	24709294	
80		18527264	10814438	31951574	23361817	21777846	
96		16077841	10987591	33300183	22624661	21769662	
112			9613131	33230865	22024001	21168273	
128		8622710		30148630	20142008	20696885	
128	5034220	0022/10	11100290	30140030	20142008	<u> </u>	∠./∪⊏+∪/
Amazon	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
1	630843			758754	867362	604247	1.04E+06
	030043	2000010	331201	750754	001302	004247	1.045+00

32 10314989 32986036 7256210 16002020 13821865 13946995 1.99E+07 48 10516923 39724477 9477841 16355046 16007128 1952342 2.53E+07 64 10311018 41462567 947586 21642404 19616578 25319448 2.95E+07 96 10232721 9826224 9733603 25955473 19163077 22033563 2.73E+07 112 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07 112 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07 112 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07 113 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07 114 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07 115 9998882 6084578 9674321 18032276 17667324 21034076 2.65E+07 116 6775275 7602732 4696917 6437543 6123285 6186027 1.03E+07 12 66775275 7602732 4696917 6437543 6123285 6186027 1.03E+07 12 6736394 11673561 5782630 18870303 18339790 21258510 2.51E+07 12 7072979 10345424 27157314 15704266 15806141 12929035 2.30E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 129 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 120 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 121 7072979 10345424 468046 433109 650658 489813 851250 121 7072979 15048635 4703602 12265980 12046738 11923602 2.51E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 129 7636160 15194651 5805304 1244939 19056866 2.77E+07 120 7636160 15194651 5805304 1244939 19056866 2.77E+07 121 7072979 10345424 468046 473408 4706773 1826434 2.25E+07 128 7629762 9816353 4703602 12265980 12046738 1192368 1324693 1325502 1.54E+07 129 7636160 15194651 5865193 5876107 1826488 12193348 2.35E+07 120 764686 120333 366403 5921221 19094566 149512								
Heart	16	8110838	23677941	6689568	8325504		7561515	
64 10311018 41463567 9547586 21642404 19616578 25319448 2.95E+07 80 10118777 19453417 9731383 91697978 21034063 21977679 284E+07 96 10232721 9926224 9735603 2595547 19163077 22033563 2.73E+07 112 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07 128 9998882 60984578 9674321 18032276 17667324 21034076 2.65E+07 Write-only workloads	32	10314989	32986036	7256210				
80 10118777 19453417 9731383 19679783 21034063 21977679 2.84E+D7 96 10232721 9826224 9735603 25955473 19163077 22033563 2.73E+D7 112 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+D7 128 9998882 6084578 9674321 18032276 17667324 21034076 2.65E+D7 Write-only workloads	48	10516923	39724477	9477841			19523842	
96 10232721 9826224 9735603 2595473 19163077 22033653 2.73E+07 112 10213876 7182901 9706779 20307472 18801084 21412830 2.53E+07 Write-only workloads	64	10311018	41463567	9547586	21642404	19616578	25319448	2.95E+07
112 10213878 7182901 9705779 20307472 18801084 21412830 2.53E+07	80	10118777	19453417	9731383	19679783	21034063	21977679	2.84E+07
128 999882 6084578 9674321 18032276 17667324 21034076 2.65E+07	96	10232721	9826224	9735603	25955473	19163077	22033563	2.73E+07
Write-only workloads	112	10213878	7182901	9705779	20307472	18801084	21412830	2.53E+07
Write-only workloads	128	9998882	6084578	9674321	18032276	17667324	21034076	2.65E+07
hreads	Write-only wo	orkloads						
1 635674 1076048 629599 536539 605132 496738 843673 16 6775275 7602732 4696917 6437543 6123285 6186027 1.03E+07 32 6540732 8869073 5260363 14045799 11504457 11352436 1.52E+07 48 7514004 10254216 536994 14794983 14915240 16802998 2.10E+07 64 7385394 11673661 5782630 18570303 18339790 21258510 2.51E+07 80 7287348 11297629 6100862 17960516 16773310 18323213 2.32E+07 96 7337022 10954680 5978560 17868017 16846562 18868702 2.21E+07 112 7072979 10345442 7157314 15704266 15806141 1829035 2.30E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 16 6967923 10891343 4616451 5802941 6677526 6300533 9.73E+06 32 7689079 15048635 4703602 12265980 12046738 11925502 1.54E+07 48 7386699 18655238 619120 14441912 4937771 1688629 2.06E+07 48 7386659 18655238 619120 14441912 4937771 1688629 2.06E+07 96 7050980 7633111 6002595 15751067 18260339 19056866 2.27E+07 128 7531856 4890087 7215448 13101511 17335401 17965593 2.11E+07 128 7531856 4890087 7215448 13101511 17335401 17965593 2.11E+07 128 7631856 4890087 7215448 13101511 17335401 17965593 2.11E+07 129 7361856 4890087 7215448 13101511 7435401 17965593 2.11E+07 120 736185 4890087 7215448 13101511 7435401 79656393 2.11E+07 121 736186 4890087 7215448 13101511 7435401 79656393 2.11E+07 122 7448489 4167438 58656790 138052599 11242888 2213834 2.33E+07 128 763283 3664003 6921228 19694566 14951266 18271371 2.36E+07 129 74389 1568506 4424594 9210423 6130769 6173057 9.57E+06 32 754763 18062525 5048142 19684644 14640809 16552529 2.14E+07 48 7625726 18062525 5048142 19684644 14640809 16595259 2.15E+07 48 7632736 1468478 922488	Facebook							
1 635674 1076048 629599 586539 605132 496738 843673 16 6775275 7602732 4696917 6437543 6123285 6186027 1.03E+07 32 6540732 8869073 5260363 14045799 11504457 11352436 1.52E+07 48 7514004 10254216 536994 14794983 14915240 1602998 2.10E+07 64 7385394 11673661 5782630 18570303 1833979 01502998 2.10E+07 80 7287348 11297629 6100862 17960516 16773310 18323213 2.32E+07 96 7337022 10954680 5978560 17868017 16846562 18868702 2.21E+07 112 7072979 10345442 7157314 15704266 15806141 1829033 2.30E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 16 6967923 10891343 4616451 5802941 6677526 6300533 9.73E+06 32 7689079 15048635 4703602 12265980 2246738 11925502 1.54E+07 48 7386659 18655232 619120 14441912 14937771 16688622 2.06E+07 48 7386659 18655232 619120 14441912 14937771 1668862 2.06E+07 96 7050980 7633111 6002595 15751067 18260393 19056866 2.27E+07 112 7202499 6055690 6969150 14735841 18024134 18456434 2.23E+07 128 7531856 4890087 7215448 13101511 17345401 17965593 2.11E+07 128 7631856 4890087 7215448 13101511 17345401 17965593 2.11E+07 129 7361856 4890087 7215448 13101511 7435401 17965593 2.11E+07 120 736185 1474747 5686790 13805259 11224288 12113834 2.33E+07 16 6740869 11568506 4424594 210423 6130769 6173057 9.57E+06 32 7543631 15478135 5656790 13805259 11224288 12113836 2.23E+07 96 7317384 5552863 6832067 19660321 15531671 18914390 2.11E+07 129 7464849 1464849 6375524 739225 1476403 1468643 2.23E+07 96 7317384 5552863 6832067 19660321 15531671 18914390 2.11E+07 120 748489 4167489 637553 738664 14951266 18271371 2.36E+07 96 7317384 5552863 6832067 136	threads	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
16 6775275			1076048	629599	586539			
32								
48								
64 7385394 11673561 5782630 18570303 18339790 21258510 2.51E+07 80 7287348 11297629 6100862 17960516 16773310 18323213 2.32E+07 96 7337022 10954680 5978560 17868017 16846562 18868702 2.21E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 16 696749 1260874 646946 433109 650658 498813 851270 16 6967923 10891343 4616451 5802941 6677526 6300533 9.73E+06 32 7689079 15048635 4703602 12265980 12046738 11925502 1.56E+07 48 7386659 18655328 6191206 14441912 1493771 16686629 2.06E+07 64 7445974 21468723 5678982 12607500 19838119 21353525 2.51E+07 80 7048817 13035047 6006492 15478127 20000312 19113348 2.33E+07 128 7505980 7633111 6002595 15751067 18260939 19056866 2.27E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 128 7543651 15478135 5665790 13805259 11224288 1213835 2.51E+07 48 7625726 18062525 5048142 19684644 1464089 16552529 2.38E+07 48 7625726 18062525 5048142 19684644 1464089 16552529 2.38E+07 128 7543651 15478135 5665790 13805259 11224288 1213835 138E5407 129 744889 4167489 6373753 17846501 15896900 18482762 2.33E+07 129 7044889 4167489 6373753 17846501 15896900 18482762 2.33E+07 129 7044889 4167489 6373753 17846501 15896900 18482762 2.33E+07 129 7044889 4167489 6373753 17846501 15896900 18482762 2.33E+07 120 7044889 4167489 6373753 17846501 15896900 18482762 2.33E+07 121 7044889 4167489 6373753 17846501 15896900 1848276 2.33E+07 122 7044889 4167489 6373753 17846501 15896900 18482762 2.33E+07 123 767638 10677913 4815594 1860437 1892597 18516683 2.05E+07 128 76368 1								
80 7287348 11297629 6100862 17960516 16773310 18323213 2.32E+07 96 7337022 10954680 5978560 17868017 16846562 18868702 2.21E+07 112 7072979 10345442 7157314 15704266 15806141 1829095 2.30E+07 128 7629762 9912051 6623821 16159905 15334966 18062441 2.38E+07 Genome threads								
96								
112								
Senome								
Masstree								
threads		1029102	331ZU31	0023021	10109905	15554900	10002441	∠.30⊑+07
1 626749 1260874 646946 433109 650658 498813 851270 16 6967923 10891343 4616451 5802941 6677526 6300533 9.73E+06 32 7689079 15048635 4703602 12265980 12046738 11925502 1.54E+07 48 7386659 18655328 6191206 14441912 14937771 16688629 2.06E+07 64 7445974 21468723 5678982 12607500 19838119 21353525 2.51E+07 80 7048817 13035047 6006492 15478127 20000312 19113348 2.33E+07 96 7050980 7633111 6002595 15751067 18260939 19056866 2.27E+07 112 7202499 6055690 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 Gnomad threads Masstree ALEX+ LIPP+ SALI XIndex FINEdex SRIndex 1 633156 1274973 726879 801379 637931 504861 860803 1 6 6740869 11568506 4424594 9210423 6130769 6173057 9.57E+06 32 7543651 15478135 5656790 13805259 11224288 12113835 1.68E+07 48 7625726 18062525 5048142 198684644 44640809 145652529 2.14E+07 96 7317384 5552863 6832067 19660321 15531671 18531671 18591490 128 7632383 3664003 6921228 19694566 14951266 18271371 2.36E+07 OSM threads Masstree ALEX+ LIPP+ SALI XIndex FINEdex SRIndex 1 614588 1099184 627524 739225 617796 501161 763547 1 614588 1099184 627524 739225 617796 501161 763547 1 614588 1099184 627524 739225 617796 501161 763547 1 614588 1099184 627524 739225 617796 501161 763547 1 614588 1099184 627524 739225 617796 501161 763547 1 614588 1099184 627524 739225 617796 501161 763547 1 614588 1099184 627524 739255 617996 501161 763547 1 614588 1099184 627524 739255 617996 501161 763547 1 614588 1099184 627524 739255 617996 501161 763547 1 614588 1099184 627524 739256 617996		Mosstraa	ALEV:	LIDD:	CVII	Vladov	EINEday	CDIodov
16 6967923 10891243 4616451 5802941 6677526 6300533 9.73E+06 32 7689079 15048635 4703602 12265980 12046738 11925502 1.54E+07 48 7386659 18655328 6191206 14441912 14937771 1668629 2.06E+07 64 7445974 21468723 5678982 12607500 19838119 21353525 2.51E+07 80 7048817 13035047 6006492 15478127 20000312 19113348 2.33E+07 96 7050980 7633111 6002595 15751067 18260939 19056866 2.27E+07 112 7202499 6055690 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 Gnomad threads Masstree ALEX+ LIPP+ SALI Xindex FINEdex SRIndex 1 633156 1274973 726879 801379 637931 504861 860803 16 6740869 11568506 4424594 9210423 6130769 6173057 9.57E+06 32 7543651 15478135 5656790 13805259 11224288 12113835 1.68E+07 48 7625726 18062525 5048142 19684644 14640809 16552529 2.14E+07 64 7386160 15194651 5883193 25418184 18864261 21492884 2.53E+07 96 7317384 5552863 6832067 19660321 15531671 18914390 2.31E+07 112 7044889 4167489 6373753 17846501 15896900 18482726 2.38E+07 128 763283 3664003 6921228 19694566 14951266 18271371 2.36E+07 OSM threads Masstree ALEX+ LIPP+ SALI Xindex FINEdex SRIndex 1 614588 1009184 627524 739225 617796 501161 763547 12 7044889 11981581 5289379 1486241 11310963 11640843 1.47E+07 12 8 7637638 10677913 4815594 11886241 11310963 11640843 1.47E+07 48 7420395 11981581 5289327 12615189 15266655 6119560 2.15E+07 48 7420395 11981581 5289327 1261589 15266655 619560 2.15E+07 48 7420395 11981581 5289327 1261589 15266655 619560 2.15E+07 128 7211459 8341794 5801207 7372756 18595000 17968515 2.40E+07 128 7211459 8341794 5801207 7372756 18595000 17968515 2.40E+07 128 7								
32 7689079 15048635 4703602 12265980 12046738 11925502 1.54E+07 48 7386659 18655328 6191206 14441912 14937771 16886629 2.06E+07 64 7445974 21468723 5678982 12607500 19838119 21353525 2.51E+07 80 7048817 13035047 6006492 15478127 20000312 19113348 2.33E+07 96 7050980 7633111 6002595 15751067 18260939 19056866 2.27E+07 112 7202499 6055690 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 Gnomad threads								
48 7386659 18655328 6191206 14441912 14937771 16688629 2.06E+07 64 7445974 21468723 5678982 12607500 19838119 21353252 2.51E+07 80 7048817 13035047 6006492 15478127 2000312 19113348 2.33E+07 96 7050980 7633111 6002595 15751067 18260939 19056866 2.27E+07 112 7202499 6055590 6969150 14735841 18024134 18456434 2.25E+07 112 75203499 6055590 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 Gnomad								
64								
80 7048817 13035047 6006492 15478127 20000312 19113348 2.33E+07 96 7050980 7633111 6002595 15751067 18260939 19056866 2.27E+07 112 7202499 6055690 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 Gnomad threads Masstree ALEX+ LIPP+ SALI Xindex FINEdex SRindex 16 6740869 11568506 4424594 9210423 6130769 6173057 9.57E+06 32 7543651 15478135 5656790 13805259 11224288 12113835 1.68E+07 48 7625726 18062525 5048142 19684644 14640809 16552529 2.14E+07 80 7362072 7142742 5894799 18728274 77920539 19556219 2.33E+07 96								
96 7050980 7633111 6002595 15751067 18260939 19056866 2.27E+07 112 7202499 6055690 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 Gnomad threads								
112 7202499 6055690 6969150 14735841 18024134 18456434 2.25E+07 128 7531856 4890087 7215448 13101511 17435401 17965593 2.11E+07 17965693 2.11E+07 17965693 2.11E+07 17965693 2.11E+07 17965693 2.11E+07 17965693 1.11E+07 1796608031 1.11E+07 1								
Table								
Canomad								
threads Masstree ALEX+ LIPP+ SALI XIndex FINEdex SRIndex 1 633156 1274973 726879 801379 637931 504861 860803 16 6740869 11568506 4424594 9210423 6130769 6173057 9.57E+06 32 7543651 15478135 5656790 13805259 11224288 12113835 1.68E+07 48 7625726 18062525 5048142 19684644 14640809 16552529 2.14E+07 64 7366160 15194651 5853193 25418184 18664261 21492884 2.53E+07 80 7362072 7142742 5894799 18728274 17920539 19556219 2.33E+07 96 7317384 5552863 6832067 19660321 15531671 18914390 2.11E+07 112 7044889 4167489 6373753 17846501 15896900 18482726 2.38E+07 OSM 1 6145581 1099184 <td>128</td> <td>7531856</td> <td>4890087</td> <td>7215448</td> <td>13101511</td> <td>17435401</td> <td>17965593</td> <td>2.11E+07</td>	128	7531856	4890087	7215448	13101511	17435401	17965593	2.11E+07
1 633156 1274973 726879 801379 637931 504861 860803 16 6740869 11568506 4424594 9210423 6130769 6173057 9.57E+06 32 7543651 15478135 5656790 13805259 11224288 12113835 1.68E+07 48 7625726 18062525 5048142 19684644 14640809 16552529 2.14E+07 64 7366160 15194651 5853193 25418184 18664261 21492884 2.53E+07 80 7362072 7142742 5894799 18728274 17920539 19556219 2.33E+07 96 7317384 5552863 6832067 19660321 15531671 18914390 2.11E+07 112 7044889 4167489 6373753 17846501 15896900 18482726 2.38E+07 128 7632383 3664003 6921228 19694566 14951266 18271371 2.36E+07 OSM	Gnomad							
16 6740869	threads	Masstree		LIPP+	SALI	XIndex	FINEdex	SRIndex
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	80	7230549	12951744	6384348	26075818	19798540	18838531	2.31E+07
	96	7248310	9843049	5947521	26620695	19150449	18514585	2.31E+07
	112	7202629	6940164	5426303	25399093	19335389	18039062	2.30E+07
	128	7304693	5790868	5551063	25019236	17978406	17941934	2.29E+07
Amazon								
threads		Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
	1	643004	1804977	676410	546075	636856	506035	864009
	16	7091329	14361723	4617943	7011900	6829965	6323080	9.76E+06
	32	7721553	22174915	4979974	13654661	12020653	11745817	1.47E+07
	48	7333582	26548145	5251572	15930985	16202887	16969589	2.10E+07
	64	7394740	29637226	6466750	16834806	17227626	21038367	2.50E+07
	80	7321189	11800767	5690354	15088137	17573748	19131534	2.33E+07
	96	7287757	5585800	6153632	23234068	16320263	18957795	2.23E+07
	112	7273397	4003670	6934588	18386319	15409114	18406849	2.33E+07
	128	7415505	3720946	6877506	14999056	14992962	18218865	2.28E+07

	Experiment 2: Performace with skewed workloads (Mops)									
Under a known of	distribution									
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex			
Facebook	7150050	4149398	5710318	21387406	6573013	81701	2.43E+07			
Genome	7451826	9898691	5930006	23776366	6040256	89283	2.40E+07			
Gnomad	7270108	6009571	5991454	35291521	6216795	72668	2.45E+07			
OSM	7359815	18290965	5797957	7195483	5292802	77859	2.51E+07			
Planet	7248917	10490457	6692782	26632864	7274354	89910	2.28E+07			
Amazon	7344295	28417405	6539808	28872380	8689870	71430	2.34E+07			
Under an unknow										
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	SRIndex				
Facebook	7256406	8862455	3824905	1788339	4857921	2.49E+07				
Genome	7213369	10020551	3499049	2041073	4298532	2.28E+07				
Gnomad	7201360	5307562	3699674	3173362		2.38E+07				
OSM	7313132	20629857	3729064	4854224	6158501	2.46E+07				
Planet	7311864	17040606	3446452	3139833	5634504	2.51E+07				
Amazon	7400556	10254201	3695262	4678675	6514277	2.54E+07				

Experiment 3: Change as Shifting Data Distributions									
X to Y	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex		
Amazon~Facebook	-0.01	-0.57	-0.19	0.1	0.14	-0.05	-0.07		
Facebook~Amazon	0	0.53	0.17	0.14	0.02	-0.11	-0.07		
Amazon~Planet	0.01	-0.33	-0.08	0.41	0.01	0.01	-0.06		
Planet~Amazon	0.02	0.51	0.03	-0.19	0.02	-0.08	0.03		
Amazon~Genome	-0.03	-0.47	-0.23	-0.02	0.03	-0.05	-0.05		
Genome~Amazon	-0.04	0.29	0.17	0.29	-0.02	-0.73	-0.03		
Facebook~Planet	-0.03	0.42	0.13	0.29	0.08	-0.11	-0.05		
Planet~Facebook	0.07	0	0.2	-0.19	0.06	-0.07	-0.06		
Facebook~Genome	0.02	0.49	0.12	-0.14	0.05	-0.08	-0.05		
Genome~Facebook	0	-0.36	-0.01	0.18	-0.01	-0.14	-0.08		
Planet~Genome	0.23	0.98	-0.01	-0.29	0.14	0.06	0		
Genome~Planet	-0.03	-0.23	0.09	0.4	-0.01	-0.9	0.02		

	Experiment 4: Tail latency (µs)									
p99 of tail latency (balanced workload)										
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex			
Facebook	244957	37995.5	105865	55216.7	29835.2	12052.6	7899.59			
Genome	267329	43821.3	21556.4	59935.9	54980	11422	8269.13			
Gnomad	250085	74941.9	23526.2	16378.2	28827.3	11511.1	8967.09			
OSM	263599	38123.4	24966.4	207527	34309	11143.5	7372.55			
Planet	257515	45811.9	43959.7	35059.4	49038.4	11130.6	7938.67			
Amazon	245535	67140.2	91546.9	33889.5	29566.2	11185.5	8341.12			
p99 of tail latence	y (write-only	workload)								

Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
Facebook	271676	71979.3	168364	113211	54017.2	15825.3	6878.04
Genome	271488	79106.9	51539.7	109932	52691.1	16189.7	8684.52
Gnomad	273236	143365	40287	39396.3	34843.1	15678.8	6948.56
OSM	273783	73963.9	78154.1	253784	46050.6	15470.3	7664.46
Planet	277824	85488.3	44220.8	64279.8	39789.7	15484.1	6819.21
Amazon	269979			101131	61697	15142.9	6928.71
p99.9 of tail later	ncy (balance	d workload)					
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
Facebook	468827	203664	303650	242626	236525		12115.4
Genome	527404	376088	36977.2	198146	332387	44366.9	12693.5
Gnomad	485708	680535	42100.7	89079.8	228883	45577.5	14109.2
OSM	514814	236295	49572.5	2.00E+06	257627	42243.9	11115.4
Planet	503446	328740	101951	198614	311844	41981.7	10328.7
Amazon	469056	640623	206572	132065	240748	43221	12977.2
p99.9 of tail later	ncy (write-or	lly workload)				
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex
Facebook	455542	303472	451281	364659	364681	50683.5	10744.2
Genome	455141	594408	113718	356990	344698	53463.9	14196.5
Gnomad	456590	1.19E+06	84772.9	166325	275243	49366.8	10294
OSM	459872	380426	154608	2.33E+06	305509	47726.9	11956
Planet	472216	558638	107060	295025	297632	47817.5	10217.4
Amazon	451375	1031000	246707	241663	397168	44847.5	10811.3

	Experiment 5: Index overhead (GB)									
With different an	nount of KVs	3								
# of KVs (M)	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex			
100	3.86	16.59	2.17	18.31	3.86	5.23	1.95			
120	4.64	23.11	2.65	21.85	4.45	6.49	2.41			
140	5.41	26.91	3	26.62	5.02	7.66	2.86			
160	6.18	29.89	3.54	29.17	5.5	8.76	3.31			
180	6.95	32.91	3.89	32.65	6	9.77	3.77			
200	7.73	37.17	4.34	36.96	6.4	10.73	4.22			
Under different d	latasets (100	millions K\	/s)							
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex			
Facebook	3.86	19.03	2.24	20.12	3.87	5.23	1.95			
Genome	3.86	14.58	2.2	20.42	3.74	5.23	1.95			
Gnomad	3.86	13.8	2.18	16.92	3.47	5.23	1.95			
OSM	3.86	14.58	2.23	20.29	3.82	5.23	1.95			
Planet	3.86	14.39	2.21	17.86	3.76	5.23	1.95			
Amazon	3.86	16.59	2.17	18.31	3.86	5.23	1.95			

	Experiment 6: peformace with range query (Mops)									
Range query wit	h different s	can size								
scan size	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex			
50	8278040	20860063	3674626	3460010	8498011	7924135	1.66E+07			
100	5209532	13972502	2104253	1829795	5684764	4584965	1.22E+07			
150	3670679	11484824	1408319	1366705	4313861	3262093	1.01E+07			
200	2818503	8947610	1131035	1046465	3399032	2582260	8.39E+06			
250	2303092	7922612	912606	957828	2749508	2142044	7.23E+06			
300	1953851	6968188	811150	807261	2456828	1895719	6.28E+06			
Rang query with	differnt data	sets (scan s	size = 300)							
Datasets	Masstree	ALEX+	LIPP+	SALI	XIndex	FINEdex	SRIndex			
Facebook	1952483	6580018	931432	698896	2241471	1826313	6.26E+06			
Genome	1951738	7179948	810831	686961	2084589	1884345	6.36E+06			
Gnomad	1926609	6845498	811955	865679	2341549	1891440	6.50E+06			
OSM	1966312	6918289	1153008	797788	1784127	1820723	6.37E+06			
Planet	1954598	6347974	1094128	854976	2071394	1866187	6.37E+06			
Amazon	1953851	6968188	811150	807261	2456828	1895719	6.28E+06			

	Experiment 7: Analysis of SRIndex										
Write-only worklo	oads (Mops)										
Datasets	Buffer capa	city = 2048	1024	512	256	128	64				
Facebook	2.12	E+07	2.43E+07	2.31E+07	2.09E+07	2.13E+07	1.94E+07				
Genome	2.08	E+07	2.43E+07	2.30E+07	2.27E+07	2.10E+07	1.95E+07				
Gnomad	2.03	Ξ+07	2.37E+07	2.14E+07	2.36E+07	2.18E+07	2.10E+07				
OSM	2.14	E+07	2.36E+07	2.31E+07	2.25E+07	2.18E+07	1.96E+07				
Planet	1.97	E+07	2.36E+07	2.31E+07	2.36E+07	2.12E+07	1.98E+07				
Amazon	1.98	E+07	2.34E+07	2.30E+07	2.41E+07	1.99E+07	2.09E+07				
Structure dat	a (without as	synchronous	thread)								
Buffer capacity	number of leaf node		# of interna	l node	average de	oth in transit	ion layer				
128	3484	1942	1160)345	4.95						
256	1084	1843	360	312	4.1						
512	996	421	330	838 4							
1024	253	591	83228		3.02						
2048	250	000	820)31	3						
Retrains times (s	s)						•				
Buffer capacity	100M	200M									
128	104.73	122.63									
256	103.82	121.78									
512	24.26	104.24									
1024	22.49	22.84									
2048	4.18	22.38									