

## Appendix

### Pprof output for 4 processors

Reading Profile files in profile.\*

NODE 0;CONTEXT 0;THREAD 0:

%Time	Exclusive msec	Inclusive total msec	#Call	#Subrs	Inclusive usec/call	Name
100.0	2	1,115	1	7	1115667	int main(int, char **) C
92.1	1,027	1,027	1	0	1027312	MPI_Init()
6.4	0.249	71	1	23	71167	double powerMethod(double *, double *, int, int) C
6.4	68	70	10	40	7088	void matVec(double *, double *, double *, int) C
1.1	12	12	1	2	12621	void generatematrix(double *, int) C
0.2	2	2	1	0	2505	MPI_Finalize()
0.1	1	1	10	0	145	MPI_Gather()
0.1	0.61	0.61	10	0	61	MPI_Bcast()
0.0	0.041	0.041	11	0	4	double norm2(double *, int) C
0.0	0.009	0.009	13	0	1	MPI_Comm_size()
0.0	0.004	0.004	13	0	0	MPI_Comm_rank()
0.0	0.004	0.004	1	0	4	void generatevec(double *, int) C

USER EVENTS Profile :NODE 0, CONTEXT 0, THREAD 0

NumSamples	MaxValue	MinValue	MeanValue	Std. Dev.	Event Name
10	2E+04	2E+04	2E+04	0	Message size for broadcast
10	5000	5000	5000	0	Message size for gather

NODE 1;CONTEXT 0;THREAD 0:

%Time	Exclusive msec	Inclusive total msec	#Call	#Subrs	Inclusive usec/call	Name
100.0	1	1,115	1	7	1115490	int main(int, char **) C
92.1	1,027	1,027	1	0	1027362	MPI_Init()
6.3	0.25	70	1	23	70733	double powerMethod(double *, double *, int, int) C
6.3	68	70	10	40	7045	void matVec(double *, double *, double *, int) C
1.2	13	13	1	2	13063	void generatematrix(double *, int) C
0.2	2	2	1	0	2332	MPI_Finalize()
0.1	1	1	10	0	128	MPI_Bcast()
0.0	0.408	0.408	10	0	41	MPI_Gather()
0.0	0.036	0.036	11	0	3	double norm2(double *, int) C
0.0	0.008	0.008	13	0	1	MPI_Comm_size()
0.0	0.004	0.004	1	0	4	void generatevec(double *, int) C
0.0	0	0	13	0	0	MPI_Comm_rank()

USER EVENTS Profile :NODE 1, CONTEXT 0, THREAD 0

NumSamples	MaxValue	MinValue	MeanValue	Std. Dev.	Event Name
10	2E+04	2E+04	2E+04	0	Message size for broadcast
0	0	0	0	0	Message size for gather

NODE 2;CONTEXT 0;THREAD 0:

%Time	Exclusive msec	Inclusive total msec	#Call	#Subrs	Inclusive usec/call	Name
100.0	1	1,115	1	7	1115586	int main(int, char **) C
92.1	1,027	1,027	1	0	1027346	MPI_Init()
6.3	0.25	70	1	23	70504	double powerMethod(double *, double *, int, int) C
6.3	69	70	10	40	7022	void matVec(double *, double *, double *, int) C
1.2	13	13	1	2	13232	void generatematrix(double *, int) C
0.2	2	2	1	0	2688	MPI_Finalize()
0.1	0.868	0.868	10	0	87	MPI_Bcast()
0.0	0.309	0.309	10	0	31	MPI_Gather()
0.0	0.037	0.037	11	0	3	double norm2(double *, int) C
0.0	0.007	0.007	13	0	1	MPI_Comm_size()
0.0	0.004	0.004	1	0	4	void generatevec(double *, int) C
0.0	0.001	0.001	13	0	0	MPI_Comm_rank()

USER EVENTS Profile :NODE 2, CONTEXT 0, THREAD 0