SOTR

Tutorial 2: Xenomai introduction

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In all exercises we decided to use the average, between the deviation from the expected value of both minimum and maximum inter-arrival times observed after at least one minute.
The load used is a MPI program that is run on 12 threads, ran on a 6 core cpu, and continually reads matrixes and calculates their determinant using the Gauss-Jordan elimination. The matrixes are stored in a file.

Assignment 2

In this assignment we created 3 tasks with increasing priority.
On the first test the highest priority task, task C, had 4 fold less average deviation from the period. We couldn't arrive at a conclusion on why task B had a higher average deviation compared to task A.
The results from the second test are consistent with the expectation that higher priority implies less jitter.

		Priority	MIN(ms)	MAX(ms)	Average Deviation
Task A	Test 1	24	999562.9	1023255.6	**11846.3**
	Test 2	0	972850.4	1022222.0	**24685.8**
Task B	Test 1	25	986691.8	1012889.9	**13099.1**
	Test 2	50	988791.9	1011241.7	**11224.9**
Task C	Test 1	26	999562.9	1000444.9	**441.0**
	Test 2	99	999934.9	1000065.6	**65.3**

Assignment 3

On this assignment we considered the following relevant events: activation time and all the message queue operations performed by every task. The diagram below shows the process of reading 5 sensor values, processing 1 average and storing the first filtered value.