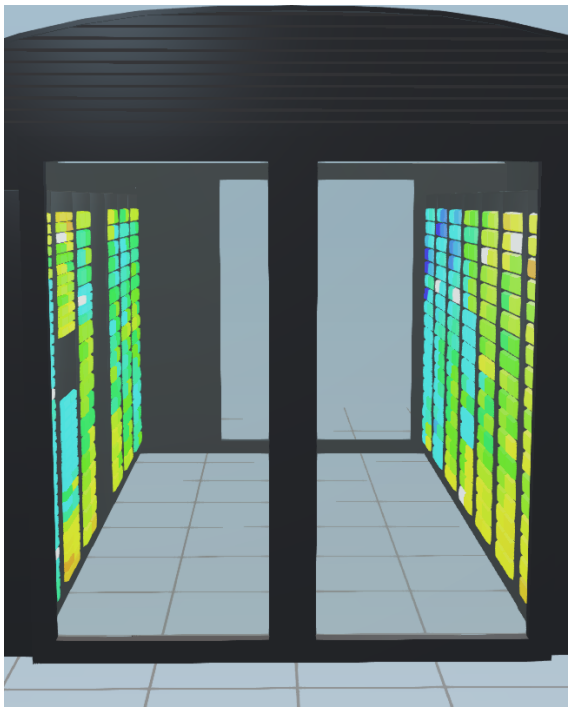
Visualising HPC System's Load

Petr Stehlík



Energy efficiency is one of the most timely problems in managing HPC facilities which can be addressed at different scale and perspective. Using Internet of Things technologies this project focuses on visualising data collected from the Galileo supercomputer in a web application.

This template is used for PRACE Summer of HPC project newsletter report in popular science format that should be 2-3 pages long with graphics. The target audience is an educated adult, without scientific education in the field of the project. The report should contain a title, abstract, references and acknowledgements. The report should cover an introduction, methods, results and conclusions but does not have to contain

You can use your blog posts as a basis for this report.

Graphics should be your own. Short title should be just few words. Highlight word or two to give some separation within the short title. Long name preceding short title is not necessarily the title of your project as facts about the projects, mentors and the author(s) are given at the end. Usually in magazines no two articles are the same in terms of formatting. You are free to do figure positioning and column spans. Bear in mind that with multiple columns spanning in LaTeXis non-trivial.

Example nearby shows how wrapfig can be used for spanning into two columns. Don't be afraid of large screenshots. To get an idea on the style take a look into PRACE digest, newsletter and other popular scientific texts available on Internet. Google for writing popular scientific. For example: http://awelu.srv.lu.se/genres-and-text-types/writing-in-academic-genres/popular-science-writing/

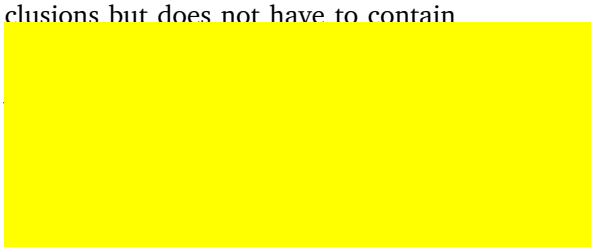


Figure 1: Use WrapFig only if you are wrapping a text

Paper format

We use A4 paper size with 10pt Charter or Georgia font. Text at the end and captions should be 9pt. Short title Helvetica (Arial) medium or light 45pt with 50pt spacing. Long title and Abstract 12pt. Margins should be 12mm everywhere except ob the bottom where 0.75 inch is reserved for page number. Other important dimensions:

column separation 10.0pt

column width 169.74042pt

textwidth 529.22128pt

For compiling LaTeXit is recommended (if having troubles) to use latest TeXlive

distribution. Use pdfLaTeXinstead of classical LaTeXas it outputs PDF directly, wraps URLs correctly and can include PNG files directly. Do not use JPEG for screenshots! JPEG is for photos only. For sketching use Inkscape.

General guidelines

- All articles should be in English.
- Articles should be a maximum of 3 pages.
- All articles should contain at least 2 images.

Who Am I writing for?

This article should be in the style of a popular science article. This means that is should be relatively simple to understand and entertaining.
The audience are not specialists in the field in questions, but rather interested laypeople. Adapt your content to the level of general knowledge of an educated adult who is not a computer scientist or scientist in your field Let your enthusiasm for your project show! Explain terms well.
Use vivid language. Use illustrations, graphics and examples.

Formatting

Final formatting will consist of a three column article 2-3 pages long. Please follow the formatting in the templates. Please provide links to hi-res version of any images submitted.

Title

This should succinctly describe the content of the article. Be descriptive!

The title should be at the top of your first page and centred. Do not use a title page.

Content

The following is the suggested content of the article. You do not have to include section heading to match, but should match the general flow and content.

Author

Author's names and institutional affiliation at the end.

Abstract – What did I do - in brief

An abstract is a one-paragraph summary of the entire article. It should describe the question/problem or research topic addressed in the project and the methods used to answer or explore this area. It should highlight the important parts of the article. This is easiest to write once you have completed the rest of the article. Include a sentence summarising the introduction, methods, results and discussion section. The abstract should not contain citations. Equations should be avoided if possible. And not numbered if not referenced in text.

Introduction – What is the project?

The introduction should describe the question/problem/research area addressed by the project and set the context for your work. It should explain why your project is interesting or important. It should introduce the techniques and approach you used to complete the project.

Methods – How did I complete the project?

Briefly describe what was actually done. This should include more detail on techniques and approaches, with enough detail that an interested person could attempt to reproduce your work (You do not have to include every detail, but use citations to give the required background).

Results – What did I find out?

Focus on what worked! Outline the outcomes and results of your project

Discussion & Conclusion

(What does that mean?) Explain your conclusions and your interpretation of your results. How did it compare to what was to be expected or previous work? What implications does this have for other work?

References

(what work did I reference?)

Acknowledgements

(who helped me?) PRACE acknowledgement will be given together at the colophon. Site acknowledgement if required. Other acknowledgement if requested.

Tables and Figures

Week 3 plans are given separately and contain the following items:

Workplan

Please append and up-to-date workplan (Week 3 reports) outlining what you did week by week. Introduction can be used for final report too.

Appendices

(Extra information) Optional — anything else you want to include, but not publish

Figure 2: Captions for figures should be used only

Appendices

(Compulsory)

Award statement

Please amend a section to "Week 3 plans" at end of the programme stating why you think you should win

1. The HPC Ambassador Award.
2. The Best Visualisation Award.

Information given as an update will be used to aid reviewers in evaluation of the projects and will not be publicly available.

Tables and Figures

All tables and figures should be captioned. All tables and figures should be put into context in the text. Give your main figure instead of SoHPC logo figure nearby the title. Tables and figures should sequentially numbered. Make sure that there isn't a page break in the middle. Sometimes it is easier to add more text to get good balancing between columns.

Acronyms, technical terms

Symbols, abbreviations and acronyms should be defined the first time they are used and then used consistently from there on. Note that too technical slang is not desired here.

Table 1: Random table

Name		
First name	Last Name	Grade
John	Doe	7.5
Richard	Miles	2

Videos and final presentations

We recommend that videos are prepared in 720p HD resolution (19:6). Screen casts can be recorded by Active Presenter – free edition.

It is advisable that you prepare a text that you will be recording along with the presentation. For quick check

Large figures should be placed at top and can be combination of several sub-figures. With or without caption. Do not number figures if they are not referenced in text. Several sentences can be used to describe the figures.

of how recording goes try the following:

1. Enter Full Motion Recording (FMR).
2. Select Custom resolution (1280x720) and portion of screen you will be capturing.
3. Disable Floating Toolbar (bottom left).
4. Unmute microphone on the desktop.

Once a capture has finished, one can:

- Edit the capture (Cut, delete, copy, part of the captured video)
- Insert text, shapes, spotlights, higlight boxes, images
- Other elements possible.
- Each added feature appears in the timeline and you can edit for how long it will appear, where it will appear and how it will appear/disappear through transitions
- Position of these can also be altered to give a sense of "animation".
- Export it into MP4 or AVI format.

There are many other ways to record a screen and edit such as VirtualBox screen recording and Windows Movie Maker. For video encoding one can use Super © or similar software. Please visit examples of SoHPC 2016 videos on Youtube.

Section 1

Section names should not be too technical. No numbering should be used. Sections can be even questions for the text that follows. Section names can state the fact explained in continuation.

Figure 3: Quickly explain the content of the figure if you reference it in the text.

$$A = \begin{bmatrix} A_{11} & A_{21} \\ A_{21} & A_{22} \end{bmatrix} \quad (1)$$

Please balance the size of figures and text in such way that you will have the complete page filled. It should not be half way ended. Use citations as superscript[1] if absolutely necessary.

References

[1] Figueredo, A. J. and Wolf, P. S. A. (2009). Assortative pairing and life history strategy - a cross-cultural study.

PRACE SoHPCProject Title

Web visualization of Energy load of an HPC system

PRACE SoHPCSite

CINECA, Italy

PRACE SoHPCAuthors

Petr Stehlík, BUT, Czech Republic

PRACE SoHPCMentor

Dr. Andrea Bartolini, UNIBO, Italy

Petr Stehlík

PRACE SoHPCMore Information

www.virtouso.org

PRACE SoHPCAcknowledgement

Write any requested acknowledgements or thanks here. Mentors should be asked for them too.

PRACE SoHPCProject ID

1705