

BOOTCAMP LPCDEV

Information Technology at LPC

- Thursday the 7th of november, 2024 -

IT Team

IT Services & Resources

Contact & Helpdesk



LPC IT Team

MISSIONS

- **Systems & network administration**
- **Software development & computation**
- **User helpdesk**

6 CNRS & 1 UNICAEN
4 DEV & 3 SYSADMIN



Informatique

T. Chaventré

Systèmes & Réseaux :

G. Cubero, AI

Y. Kermorvant, IE (resp.
ASR)

L. Noblet, AI

Développement logiciel :

T. Chaventré, IR

J. Hommet, IR

J. Poincheval, IE

Calcul scientifique :

P. Davis, IR

1- SYSADMIN

ACTIVITIES

- Infrastructure management
- Deployment & maintenance
- Purchases
- IT Security
- VoIP telephony
- User help & support

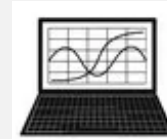
1 cooled servers room
4 equipment rooms
5 visio rooms



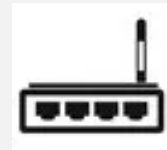
90 desktop & 60 laptop PC



30 hard & 50 virtual servers



3 CPU & 3 GPU server farms



10 switches, 10 WiFi hotspots, 10 VLAN



Services catalog & documentation



2- DEV & COMPUTING

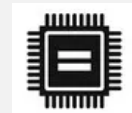
ACTIVITIES

- › Collaborative projects management
- › Software development & deployment
- › Scientific computing
- › Good practises & QA sharing
- › Scientist help & support

R&D
Physics experiments
Software models & frameworks



DAQ Systems



ASIC Test Bench (PLAS, FASTIME...)



Data modelisation, analysis & visualization (SPaM, TheSmog)



Computation for Physics



LIGO Scientific Collaboration



Best practices WG & teaching



HELP & USEFUL LINKS : entry point

<https://www.lpc-caen.in2p3.fr/ressources/>

The screenshot shows the 'RESSOURCES' page of the LPC CAEN website. The page features a grid of 20 service tiles, each with an icon, a title, and a brief description. Three tiles are highlighted with red circles and numbers: 'COMPUTER SCIENCE' (IT Services Catalog) is circled in red with a '1' above it; 'USERS DOC' (Computer documentation) is circled in red with a '2' to its left; and 'TICKET' (Ticket Management System) is circled in green. Other tiles include AGATE (Absence and leave management), GRAPHIC CHARTER (Slideshow Display), TRAINING (Planning Requests), IST (Documentary resources), DIRECTORY (IN2P3 Laboratory Directory), CLOUD (Cloud Management System), GRR (Reservations Vehicles, rooms, objects), MAGELAN (CNRS IT tools), ARIANE (Administrative Data Portal), EVENT (Event Planning), ASSIGNMENT (Transport Accommodation), VIDEO & CHAT (Visio Resources), ATRIUM (IN2P3 document management), FILE SENDER (Secure transfer of large files), CNRS INTRANET (CNRS internal information portal), IN2P3 PHOTO LIBRARY (IN2P3 laboratories photo library), and ZIMBRA (Messaging).

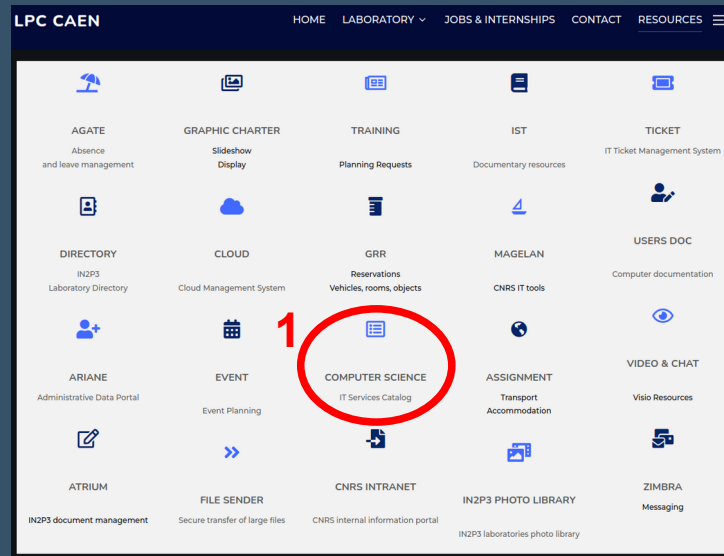
To keep in mind
Next focus...

HELP & SUPPORT FOCUS (1/2)

SERVICES CATALOG

- Server, PC, network, account...
- What, when, for who

Context & exploitation
Procedure
Delays



<https://www.lpc-caen.in2p3.fr/ressources/>

Service Informatique - Catalogue de services

SERVICE INFORMATIQUE - CATALOGUE DE SERVICES

ACCUEIL | INFRASTRUCTURE | SERVICES DE BASE | SUPPORT EXPLOITATION

Accueil

RECHERCHE PAR MOT CLE

RECHERCHER...

Ce catalogue de services permet de décrire les services offerts par le service informatique du laboratoire. Il est accessible uniquement depuis le réseau du laboratoire.

C'est une description des services opérationnels et doit être disponible à toute personne utilisant le système d'information du laboratoire.

Il est ici divisé en 3 catégories :

- Les services de base
- Le support exploitation
- La gestion de l'infrastructure

Il ne remplace en aucun cas la documentation qui est ici : <https://caedoc.in2p3.fr/>

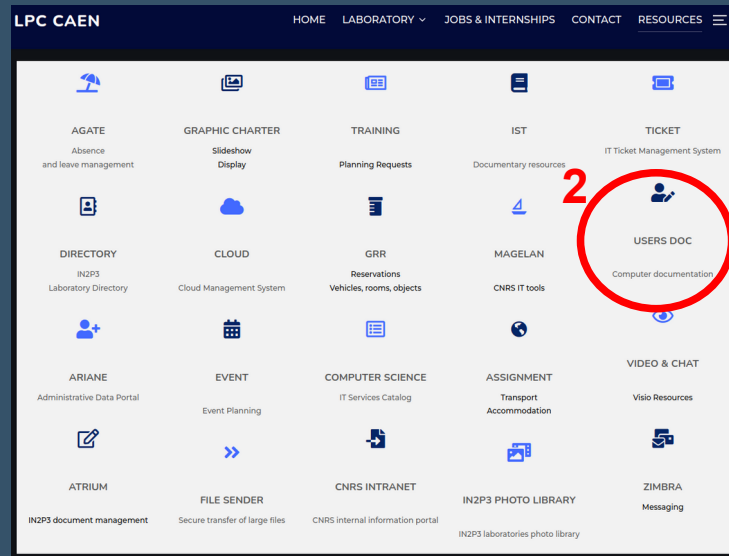
Le catalogue de services fait parti des bonnes pratiques **ITIL** (Information_Technology_Infrastructure_Library). Elles recommandent les meilleures pratiques pour structurer et améliorer les services du numérique.

HELP & SUPPORT FOCUS (2/2)

DOCUMENTATION

- Global sysadmin how-to
- Tips & tricks

Help & contact
User account
Mailing Zimbra
Networks
Data storage & backup
Linux & Windows
Services



<https://www.lpc-caen.in2p3.fr/ressources/>

Documentation utilisateur

Support

- Contact : support@lpccaen.in2p3.fr
- **Système de tickets** – Soumission de demandes et de problèmes

Compte utilisateur

- **Accueil nouvel entrant**
- **Userid – Mot de passe**
- **Demande d'ouverture de compte informatique**
- **Demande de prolongation de compte informatique**

Courrier électronique

- **Votre adresse mail et les listes mail du LPC**
- **Utilisation de Zimbra**
- **Configuration de thunderbird**

Réseau

- **Accès externes : SSH, VPN**
- **Transfert de données**
- **Wifi – Portail Captif**
- **Wifi – EDUROAM**
- **Wifi – LPC_interne**
- **Echange de gros fichiers**
- **Le réseau du LPC**



SPECIFIC FOCUS (1/5)

Data management

- **Local storage area**
- **3-2-1 backup strategy :**
 - Daily local backup
 - Nightly backup copy (outside server room)
 - Weekly external backup (CCIN2P3)

Private directories
Public directories
Shared area
Linux & Windows



Windows & Linux net storages :

- Private H: & /home/user : owner – 75 GB
- Public U: & /public : all users – 75 GB
- Data T: & /data : groups, projects – DMP in 2025



Windows & Linux local storages :

- C:\non_sauvegarde & /scratch unsaved
- C:\temp & /tmp cleaned on reboot



Good skills :

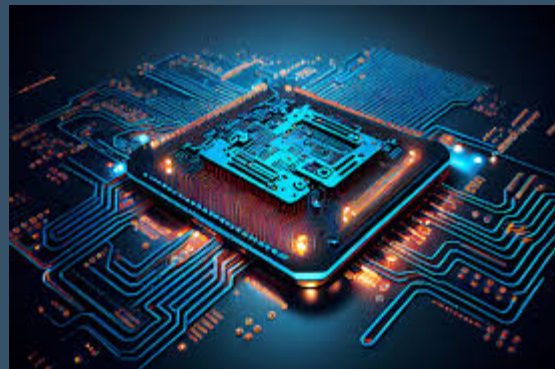
- Win : DO NOT modify C:\Users\your_name
- Consider storing data into right area
- Remove old/unused files & directories
- Clean trash frequently
- Prevent attempted big data volumes (contact us)

SPECIFIC FOCUS (2/5)

Simulation & computing

- Local shared & dedicated computation farms
- 3 CPUs & 3 GPUs

Experimental design & tests
Research groups & collaborations



- 1 CPU farm for MCNP/Serpent (Aval)
- 1 GPU server – 4 Tesla V100
- 1 GPU PC – 2 Tesla Quadro RTX
- 1 GPU server – 8 Tesla NVIDIA HGX (nFacet/KM3Net)
- 2 CPU servers U20 & U22



ubuntu22.lpc-caen.in2p3.fr ou ubuntu22	Ubuntu 22.04 – Serveur interactif et calcul
ubuntu20.lpc-caen.in2p3.fr ou ubuntu20	Ubuntu 20.04 – Serveur interactif et calcul
caeubuntu18.in2p3.fr	Ubuntu 18.04 – Serveur interactif et calcul
caelnx06.in2p3.fr	Scientific Linux 6 – Serveur cao électronique



- Use SLURM (Simple Linux Utility for Resource Management) to dispatch your jobs
- caecaolin & caecaowin soon available for Comsol, ANSYS, Matlab & Mathematica

SPECIFIC FOCUS (3/5)

Networks (1/2)

- **Wired Ethernet**
- **2 public WiFi ssid**

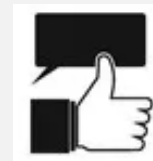
LPC_Visiteur
EDUROAM



- **Public network :**
 - « in2p3.fr » domain
 - caexxx.in2p3.fr servers
- **Private network :**
 - « lpc-caen.in2p3.fr » domain
 - Needs a proxy link for remote resources access (caeproxy.in2p3.fr:3128)



- **SSH & Win VPN securized access**
- **ProxyJump facilities if needed**
- **Resources remote access :**
 - Win : vpn_reconnect
 - Linux : SSH & ProxyJump on caelogin



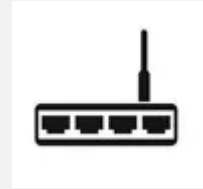
- **Connecting any wired device is forbidden**
- **DO NOT remove any RJ45 cable without sysadmin help to avoid security failure**

SPECIFIC FOCUS (3/5)

Networks (2/2)

- **Wired Ethernet**
- **2 public WiFi ssid**

LPC_Visiteur
EDUROAM



LPC Visiteur :

- Laptops (all OS) & smartphones
- 14 days term
- Web & SSH
- Account creation at connection
(needs a password printed on 1st floor)



- World wireless access from any ESR establishment member
- userid : your_name@lpc-caen.in2p3.fr
- pwd : your SSO LPC password

SPECIFIC FOCUS (4/5)

Laptops & workstations

- › Windows 10 Professional
- › Linux Ubuntu LTS

LPC devices
Personal computers
Self service



- Hard drive crypted (needs password)
- No root privileges
- Automatic updates



- GNOME environment (other on demand)
- Intranet connection « `lpc-caen.in2p3.fr` » : need proxy (`caeproxy.in2p3.fr:3128`)

■ Workstations :

- › INTO lpc domain (standard userid/pwd)
- › /home, /public & /data mounted by NFS

■ Laptops :

- › NOT in lpc domain : needs local account
- › /home is local
- › /public & /data access with SSHFS



- Personal computers are your responsibility (no support)
- Wired network connection demand needed

SPECIFIC FOCUS (5/5)

Web service

- Public & private web sites
- R&D projects

Email
GLPI (intranet only with Proxy)
GRR
DOC



Serveurs WWW

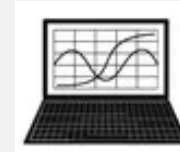
http://www.lpc-caen.in2p3.fr	Serveur WWW du laboratoire
https://lpccaen-mail.in2p3.fr/	Courrier électronique
https://caeresca.in2p3.fr/	GRR – Réservation de ressources
http://caeglpi.in2p3.fr/glpi/	support informatique – tickets
https://caedoc.in2p3.fr/doc-utilisateur/	Documentation informatique
https://caeccloud.in2p3.fr/	Accès à vos data
https://espardon.cnrs.fr	Projet espardon

HELPDESK

Contacts

- <https://caeglpi.in2p3.fr/glpi/>
- support@lpccaen.in2p3.fr

Help & support
Hardware & software
Purchases



- Software architecture
- OOP
- Languages & tools
- CI/CD with Git/Gitlab
- Tests & coverage
- QA



- Win & Linux Ubuntu
- Network access & VPN
- Data storage
- Virtualization
- Containerization
- Security

QUESTIONS & DISCUSSION

THANKS A LOT FOR YOUR ATTENTION !

