GT/OIT/CoC Computing Primer

COC / TSO STAFF: The College of Computing (CoC) Technology Services Organization (TSO) provides computing, networking and physical infrastructure, as well as technical support for all of the College's programs: Research, Instruction and Administration. Here are the primary points of contact along with respective areas of responsibility.

Name	Email	Room	Phone	Position	Area of Responsibility
Uwanna Smith	uwanna@ cc.gatech.edu	CCB 243	404-894-9678	Director	
Dan Forsyth	dan.forsyth@ cc.gatech.edu	CCB 242	404-385-6696	Assoc. Director, Research & Instruction	• Research computing: research lab technology, high performance computing, grad student desktops • Instructional computing • Critical servers & network
Kim MacLeod	kmacleod@ cc.gatech.edu	CCB 240	404-385-2680	Assoc. Director, Enterprise	• CoC, KACB & TSRB Help Desk • Faculty & Staff desktops • Web applications • Windows Server Infrastructure

USEFUL INFO ON THE TSO WEBSITE: https://support.cc.gatech.edu/

- Download the document you are now reading
- See a complete listing of TSO staff
- Learn about TSO services
- Frequently asked questions (FAQs)
- How to do things (Howtos)
- Request resources using online forms

COMPUTING SERVICE PROVIDERS @ GT: There are 2 computing service providers available to you at GT: 1) Office of Information Technology (OIT) and 2) Technology Services Organization (TSO).

Service Provider	Locations	Type of Service	Help References
OIT	Enterprise Service Desk (Central Campus) located in Clough Building Room 215	Centralized GT computing & networking support	**Web**: https://techsupport.gatech.edu/ **FAQ**: https://faq.oit.gatech.edu/ **Submit Request**: https://techsupport.gatech.edu/help-request **Phone**: 404-385-5555 **Hours**: 7AM-6PM, M-F
TSO	Help Desk located in: • CCB 148 (primary) • KACB 3123 • TSRB 347	CoC specific computing & networking support	**Web**: https://support.cc.gatech.edu/ **FAQ**: https://support.cc.gatech.edu/support-tools **E-mail**: helpdesk@cc.gatech.edu **Phone**: 404-894-7065 **Hours**: 8AM-4PM, M-F

IMPORTANT IT POLICIES: Please read the following IT Policies that **WILL** affect your computing life at GT. **The use of GT computers and networks constitutes agreement to these policies.** Additional policies can be found at https://www.policylibrary.gatech.edu.

Document	What Is This All About?	Online Reference
GT Computer Acceptable Use Policy, Cyber Security Policy, and Data Privacy Policy	Outlines employee and student ethical and professional behavior requirements for the protection of the GT information technology resources.	https://policylibrary.gatech.edu/information-technology/acceptable-use-policy https://policylibrary.gatech.edu/information-technology/cyber-security-policy https://policylibrary.gatech.edu/information-technology/data-privacy-policy
GT Data Access Policy	Provides guiding principles governing access to Institute data as well as defines data classification and related safeguards.	https://policylibrary.gatech.edu/information-technology/data-access
CoC User Account and Access Policy	Rules for CoC user account eligibility, expiration, behavior.	https://support.cc.gatech.edu/support-tools/pnp/coc-user-account-policy

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USER ACCOUNTS: You have a GT user account and may request a CoC user account, if eligible (see below).

Account Type	Account Format	Apply	Activate	Passwords, Remote Access, Disk Quota, Web Pages
GT	***flastXXX*** (f = first initial, last = last name, XXX = 2 or 3 digit #).	No need to apply. Your account is automatically created.	Go in person to the TSC, Clough Building Room 215. Bring a picture ID.	• Password expires every 120 days (single factor) and 365 days (multi-factor) • Reset password at https://passport.gatech.edu/ • Remote access only w/ SSH, SSL, IMAPS • [1]Personal web page via CampusPress in https://sites.gatech.edu • ***Most campus services require your GT account*** • ***CoC Instructional resources require your GT account*** • ***Two Factor Authentication now required, see: http://twofactor.oit.gatech.edu/students***
CoC	Will be the same as your GT account.	You must apply online (see the link to the right).	No activation necessary. You will receive email when the account is ready to use.	• ***CoC accounts are granted upon request for CoC graduate students involved in Institute-related research. You should only request one if you need access to resources that require it.*** • Apply for account online at https://support.cc.gatech.edu/resources/forms/coc-account-request • Reset password at https://support.cc.gatech.edu/resources/forms/coc-account-password-reset/coc-account-password-reset • Ask your lab manager to request access for research lab systems • 4GB home directory quota, 200MB web page quota • [2]Personal web page in your home directory ~/.www-home _https://www.cc.gatech.edu/~accountname • Always store data in your home directory (typically the H: drive on Windows). • ***Don't*** store files on local desktop disks (C: on Windows). ***Desktop systems are not backed up!***

[1]For information about setting up your CampusPress site, please visit https://sites.gatech.edu/faq/.

[2]For information about setting up your CoC web page, please visit https://support.cc.gatech.edu/faq/how-do-i-edit-my-webpage.

E-MAIL: Your GT email is delivered either to your opt-in MS Office 365 mailbox or the external email address of your choice.

Type	Email Address	Access
GT	*accountname*@gatech.edu alias@gatech.edu	• Setup your alias@gatech.edu and primary email address at http://passport.gatech.edu/ • Opt-in to o365 or set your external email address for forwarding at http://passport.gatech.edu/ • Webmail: https://mail.gatech.edu/ • For additional info, refer to the OIT FAQ website http://faq.oit.gatech.edu/
CoC	*accountname*@cc.gatech.edu *first.lastname*@cc.gatech.edu	• Only graduate students with a CoC account get @cc.gatech.edu email addresses. • These email addresses are automatically forwarded to your GT email address.

- ***Do not*** open email attachments or run software from unknown or untrusted individuals or sources.
- ***Do not*** respond to phishing emails that ask you for your GT passwords or personal information.
- Please report spam and phishing emails: https://support.cc.gatech.edu/support-tools/faq/what-should-i-do-when-i-receive-spam-or-phishing-email

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IMPORTANT SYSTEM NOTICE E-MAIL LISTS: Please subscribe to these e-mail lists for important notices regarding GT and CoC system outages and maintenance:

- **OIT:** https://status.gatech.edu/
- **TSO:** https://lists.gatech.edu/sympa/info/cc-tso-availability

You can also browse other mailing lists at the following:
- **GT:** https://lists.gatech.edu/
- **CoC:** https://mailman.cc.gatech.edu/

WIRELESS & WIRED MOBILE NETWORKING: Using your laptop (or other mobile device) you can access the GT network using wireless technology or using wired *"walk-up"* ports with an Ethernet cable.

Type	Network Name	Access
OIT	**LAWN** (*Local Area Walkup/Wireless Network*). Also known as **eduroam**.	• LAWN is available in many GT buildings including all CoC-occupied buildings (CCB, KACB, and TSRB) • 802.11n available in all CoC buildings (CCB, KACB, TSRB) • "Wired" wall-ports support LAWN, too (faster uploads and downloads) • Configure your device using instructions at http://lawn.gatech.edu/eduroam • Report connectivity issues at http://lawn.gatech.edu/debug

The GT Cyber Security Policy prohibits the use of wireless access points without prior written approval. If you need to run a wireless access point, you ***MUST*** register it. For instructions, please review the FAQ at https://support.cc.gatech.edu/support-tools/faq/can-i-operate-my-own-wifi-access-point.

SOFTWARE DOWNLOADS: You have access to the following software available for download.

Type	Available Software	Online Reference
OIT	MS Office 365 Pro Plus (Word, Excel, PowerPoint, Access, and more), Red Hat Enterprise Linux, Webroot Spy Sweeper, Endnote, Mindware, NAG, Mathematica, SecureCRT, WinSCP, WebDrive, Cisco VPN client, X-Win32, and more.	https://software.oit.gatech.edu/
CoC	MS Windows and other MS software (excluding Office) through Imagine program.	https://support.cc.gatech.edu/resources/downloads Must be enrolled in a CoC course for credit. See FAQ: https://support.cc.gatech.edu/resources/downloads/msdnaa-frequently-asked-questions
CoA	Autodesk (AutoCAD, 3ds Max, AliasStudio, Maya, Sketchbook Pro, and more)	https://central.design.gatech.edu/it/free-cheap-software

DISCOUNTED SOFTWARE FOR PURCHASE: You may purchase discounted software from the following:

Type	Available Software	Online Reference
OnTheHub eStore	MS Office and more…	https://estore.onthehub.com
USG Technology Store	MS Office, Adobe, Autodesk, and more…	http://personal.techstore.usg.edu

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PRINTERS & MOPIERS: TSO provides access to mopier printing in CCB, KACB, TSRB and Coda. Each building has at least one mopier per floor for easy access - for complete printing instructions and a full list of available mopiers please refer to http://support.cc.gatech.edu/services/printing.

The Schools and departments provide paper for the mopiers in their areas. For more information, please see the FAQ at https://support.cc.gatech.edu/faq/mopier-faq.

BUZZCARD ACCESS TO BUILDINGS: Your BuzzCard provides physical access to CoC Buildings (CCB, KACB and TSRB). All CoC grad students have access to CCB and KACB exterior doors. For TSRB exterior doors, requests must be approved by a faculty member located in TSRB. ***Access to any other doors is specific to a class or role or is granted on an individual basis when faculty or staff request access for the student.***

DATA CENTERS: There are several data centers operated by TSO and OIT that house instructional and research servers that you may have access to, such as file servers, database servers, web servers, project servers, high performance computing servers and more.

Type	Name	Location	Use
TSO	KACB Data Center	KACB 2219	• Critical "core" servers
TSO	CCB Data Center	CCB 247	• Instructional & Research servers
TSO	TSRB "MDF" Data Center	TSRB Basement	• Research servers
OIT	Rich Data Center	Rich Building	• Administrative, Instruction, Research servers
OIT	Business Continuity Data Center	845 Marietta St.	• Business continuity servers

REMOTE LOGIN SERVERS: There are several remote login servers that you can access using secure protocols like SSH (e.g. via SecureCRT on Windows, a terminal on Linux, Terminal.app on Mac OS X). There are also specific Research Area server and disk resources that you can obtain access to by being involved in those groups. Requires faculty permission from the area. Ask your Research Lab Manager.

Type	Name	Type	OS	Use
CoC	killerbee1 killerbee2 killerbee4	**IBM System x3550 M4 Server** (2 x 2.3GHz Intel Xeon, E5-2630 6-core, 64 GB memory, 120 GB SSD disk)	Red Hat Enterprise Linux	• Research use **ONLY** • Available to students with a CoC account • Login using CoC account • General purpose interactive computing • No **heavyweight** computing please • Use the "nice" command
CoC	shuttle1 shuttle2 shuttle3 shuttle4 shuttle5	**Virtual Machines** on CoC virtualization cluster	Red Hat Enterprise Linux	• Instructional / Class use **ONLY** • Available to all CoC students • Available to students enrolled in a CS course • Login using GT account

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RESEARCH AND INSTRUCTIONAL HIGH PERFORMANCE COMPUTING (HPC): CoC has a number of remotely accessible research-related High Performance Computing (HPC) resources located in CoC Data Centers for the purpose of performing computational work.

- Research HPC resources have been purchased by faculty for specific research area needs.
- Access to research HPC resources requires **faculty or lab manager approval.**
- Request access through the TSO Helpdesk (helpdesk@cc.gatech.edu)

Cluster Name	Nodes	Cores	Description	Operating System	Research Group
Deepthought	20	640	**Ace Powerworks** 2xAMD Opteron Processor 6378 256GB RAM	Red Hat Enterprise Linux 6	Instructional HPC Resource
Jedi	30 50	360 400	**Penguin Relion 1752** (2-socket, 6-core, 2.66GHz Intel X5650, 48GB RAM, cloud stack) **Penguin Relion 1702** (2 x 2.4 GHz Intel E5530, 24GB RAM, cloud stack)	OpenStack	CS/CERCS
KIDS	120	1440	**HP SL390s G7** (2 x Intel Xeon X5660, 24GB RAM, 3xTesla M2090)	OpenStack, Red Hat Enterprise Linux	CS/CERCS
Mimosa	80	640	**HP Proliant SE1102** (2 x Intel Xeon L5420 (4-core), 24GB DDR2 RAM, Hadoop)	Red Hat Enterprise Linux 6	CSE
Minsky	8	128	**HP Proliant, GPU Accelerated** Tesla K40M GPU cards per node, 224GB RAM	Ubuntu 14.04 LTS	IC
PACE-ICE	42	720	**Penguin Relion** Quad core Intel E5-2324v4 CPUs 128GB RAM per Node Nvidia P100 GPUs	Red Hat Enterprise Linux 6	PACE/CoC Instructional HPC Resource
Pasta	2 25	16 200	**Dell PowerEdge R410** (2 sockets x 2.6GHz Core2 Quad X5650 Xeon, 24GB RAM) **Dell PowerEdge 1950 III** (2 x 3GHz Core2 Quad)	Red Hat Enterprise Linux 5/6	CS/Computer Architecture
Skynet	22	352	**Penguin Computing Relion 2908GT** (8 Titan XP GPUs per node, 496GB RAM)	Ubuntu 16.04 LTS	IC
Terra	5	160	**Lenovo NextScale nx360 M5** (2 x Intel Xeon E5-2683 v4, 16 core, 256 DDR4 RAM)	Ubuntu 16.04 LTS	CSE
Vogue	11	88	**7 Penguin Computing Relion 1700** (2 x Intel E5506, 12GB RAM) **4 Dell PowerEdge R610** (2 x Intel E5550, 12GB RAM)	Red Hat Enterprise Linux 6	CS/CERCS
Wingtip	4	96	**2 Penguin Computing Relion 2903GT GPU**(2 x Intel Xeon E5-2650 v4 (12-core), 768GB DDR4 RAM, NVIDIA Tesla P100, Titan Xp, and Tesla K40c) **2 Dell PowerEdge R930** (4 x Intel E7-4850 v3, 14 core, 2TB DDR4 RAM)	Ubuntu 16.04 LTS	CSE

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INSTRUCTIONAL COMPUTER LABS: As a graduate student, you have instructional computing lab resources available for your use, some operated by OIT and one operated by CoC.

Caveats for Campus Instructional Labs and Virtual Lab Environment:

- *All GT/OIT and CoC lab machines use your GT account and password.*
- Always store data in your home directory (which is mounted as P: drive on Windows).
- ***Don't*** store files on local disks (C: on Windows). ***These systems are not backed up!***

Type	Lab Name	Seats	Equipment	Access
GT/OIT	**Library West**	114	• Dell PCs running Windows • Apple Macintosh OS X • Digital media software • Color laser printers, scanners, DV cameras	• All GT students • Open daily, closed nights
GT/OIT	**Student Center**	39	• Dell PCs running Windows • B/W & color laser printers	• All GT students • Open 24 hours
CoC	**VLAB**		• Virtual Machines (VMs) running Windows • Digital media software including Adobe CC and AutoDesk Maya/3ds Max.	• GT students enrolled in CS4455 • Accessible 24/7 via mycloud.gatech.edu

COC RESEARCH LABS: Extensive computing resources are available to graduate students associated with CoC Research Centers, Labs, Groups and Projects. Research labs typically have UNIX groups, mailing lists, etc. Talk with your faculty advisor or Lab Manager to obtain access.

- List of Labs and Lab Managers: https://support.cc.gatech.edu/facilities/research-labs
- ***Lab Managers*** are typically fellow graduate students who work to coordinate technical aspects of the lab and:
  - Answer simple questions about the research lab and resources
  - Approve login access to related lab desktops, servers, storage
  - Coordinate equipment issues in the lab (allocation, movement, repairs)
- ***1ST YEAR GRAD STUDENTS MAKE GREAT LAB MANAGERS…VOLUNTEER, IF INTERESTED!***
  - Talk with your faculty advisor to see if there is a need.
  - Some labs already have Lab Managers, so check the web site above.
  - **Volunteers ONLY…this is NOT a funded position.**
  - Being a Lab Manager is a great way to learn about research projects and the resources they need.

GRADUATE STUDENT DESKTOPS: Many research labs have desktop PCs running MS Windows and/or Linux as well as Macs running OS X. Talk with your Lab Manager to obtain access to those resources. TSO maintains managed OS loads that adhere to Institute best practices:

- **TSO Managed OS Loads:**
  - Windows 10
  - Red Hat Enterprise Linux
  - Ubuntu LTS
  - Mac OS X
- Authentication will be via GT user account/password
- Security patches are automatically installed.
- Host-based Anti-Virus, Anti-Spyware and Firewall are active.
- If you need local administrator/root on any of these systems, get authorization through your Lab Manager.

INLAND/OUTLAND NETWORKING: Desktops, servers, and printers in CoC are typically connected to one of two networks: 1) InLANd or 2) OutLANd.

Type	Network Name	Access
CoC	InLANd	• TSO managed and trusted network • All baseline equipment use this network
CoC	OutLANd	• A non-TSO managed and untrusted network • Appropriate for specialized research needs that stretch beyond TSO baseline • Static IPs • Requires faculty sponsorship

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WEB RESOURCES:

Type	Resource	Online Reference
OIT	**Personal home page** CampusPress	http://sites.gatech.edu
OIT	**ISP-like web hosting service** Offering general web programming, Drupal, WordPress, Mediawiki, and more.	https://hosting.gatech.edu/
OIT	**Hosted Code Version Control**	https://github.gatech.edu
CoC	**Personal home page**	https://www.cc.gatech.edu/~accountname For information about setting up your CoC web page, please visit https://support.cc.gatech.edu/faq/how-do-i-edit-my-webpage
CoC	**General web hosting**	http://support.cc.gatech.edu/services/web-hosting

BEST PRACTICES: Please review these points of reference for IT best practices.

- Endpoint Computing Best Practices: https://security.gatech.edu/endpoints
- The End Users Security Primer: https://support.cc.gatech.edu/sites/default/files/SANS-End-User-Security-Primer-Updated-20090410.pdf
- Top Cyber Security Tips: https://security.gatech.edu/habits
- Securing Your Password: https://security.gatech.edu/securing-your-password
- Two-Factor Authentication: http://www.twofactor.oit.gatech.edu/
- How do I obtain the CoC VPN client?: https://support.cc.gatech.edu/faq/how-do-i-obtain-coc-vpn-client
- Tips for Safe Desktops & Laptops: https://security.gatech.edu/desktop-laptop-security
- Sensitive Data Security Primer: https://support.cc.gatech.edu/sites/default/files/CoC-Sensitive-Data-Security-Primer.pdf
- Top 5 Things to Know About FERPA: http://www.news.gatech.edu/2013/09/03/top-5-things-know-about-ferpa-0
- Know the Facts about FERPA: http://www.news.gatech.edu/2015/03/23/know-facts-about-ferpa
- Data Protection Overview: https://security.gatech.edu/DataCategorization
- Reproduction of Copyright Materials & Fair Use: http://www.oit.gatech.edu/reproduction-copyright-materials-fair-use
- Files on local workstations are NOT backed up, but campus provides Enterprise DropBox to all Graduate Students: https://dropbox.gatech.edu/