

Information Technology

Reference Guide

Office of the Vice President
for Information Technology

Getting Started with Information Technology

Start with these basic steps, and for more detailed information, see "Help and Tutorials: Getting Started" on www.computing.vt.edu. Your department will assist with hardware for computing and communications.

- Read the Acceptable Use Standard to understand your responsibilities. www.policies.vt.edu/acceptableuse.php
- Create your personal online identifier—your PID. It is your key to e-mail, course management systems, library databases, online personal information, and many other services. See my.vt.edu.
- You or your departmental system administrator needs to be sure your computer has appropriate security settings. Download the VTNet 2010 software package (www.antivirus.vt.edu) to establish security settings and computer configurations helpful at the university.
- Connect to the Internet—from your office connections established by your department or through the wireless network.
- If you use Windows, consider VT WSUS to automatically install locally tested updates (See VT WSUS under "Security and Viruses" on www.computing.vt.edu).
- Configure your e-mail. Faculty and staff members are encouraged to use the Exchange (www.computing.vt.edu/exchange/) service, a premier e-mail and calendaring solution. Establish

your accounts for e-mail or individual storage through Hokies Self-Service. (<https://selfservice.w2k.vt.edu>).

- Set your preferences for VT Phone Alerts (www.alerts.vt.edu), and consider VT Desktop Alerts.
- Verify your emergency contacts (from my.vt.edu, select the "Personal Info" tab).
- Your first source for more information: www.computing.vt.edu.
- Your source for help with computing: www.4help.vt.edu or 540/231-4357, or contact your departmental support staff.

You will find additional services and sources of help in this guide.

This guide is posted at www.computing.vt.edu with detailed links to additional information and support.

Acceptable use of information technology is ethical, reflects academic honesty, and shows restraint in the consumption of shared resources. It demonstrates respect for intellectual property, ownership of data, system security mechanisms, and individuals' rights to privacy and to freedom from intimidation and harassment.

Virginia Tech is an equal opportunity/affirmative action employer.

Scholar

After three years of development and evaluation, Scholar has become Virginia Tech's collaborative learning environment. Support for Scholar continues with short courses and individual assistance. Scholar provides the academic community with a single environment to manage courses and to collaborate with colleagues on research, projects, and various other university activities. Scholar is fully integrated with ePortfolio and facilitates the work of both faculty and students through a consistent toolset for instruction, research collaboration, projects, advising, assessment, and committee work.

InnovationSpace

The InnovationSpace in Torgersen 1140 has new iPads, wireless slates, and digital note-taking devices, along with video cameras, audio kits, and digital still cameras that faculty, staff and students may borrow to engage these technologies in teaching and learning.

VT Desktop Alerts

University Relations has sponsored work on VT Desktop Alerts. The VT Desktop Alerts program accesses Virginia Tech's emergency notification system over the Internet to obtain important alert information. VT Desktop Alerts is available to individuals who are not university affiliates. For more information, see www.alerts.vt.edu.

CAS upgrade

The Virginia Tech Central Authentication Service, CAS, now provides both authentication and authorization information to online services using it.



For more information, see CAS under "Infrastructure Services" on computing.vt.edu.

Alumni e-mail

Virginia Tech alumni now get their "@vt.edu" mail through Google. The new service fulfills goals of the Alumni Association to promote close connections with alumni. Current employees who are also university alumni will continue to have their @vt.edu mail at Virginia Tech.

Software in HokieMart

ITA's Departmental Software Sales is run through HokieMart for software and laptop leasing orders (www.ita.vt.edu).

New standards

The project management standard for university information technology projects has a new Web location—www.pm.it.vt.edu. Find the procedures and forms that are required for managing any information technology project.

Two new standards promote security of Web applications and personal access to information resources. See all related policies and standards at www.it.vt.edu/administration/policies.html.

Security



Stay safe

For up-to-date information on keeping your systems and data secure, check the Information Technology Security website (security.vt.edu) for links, tools, and resources to protect hardware and data from attacks and inappropriate exposure.

Download the VTNet 2010 software package (www.antivirus.vt.edu) to set

your computer for both security and for computer configurations helpful at the university. Bring your Hokie Passport to pick up a copy from Software Distribution on Torgersen Bridge.

VT WSUS serves Windows systems and core Microsoft applications. Look under "Security" on computing.vt.edu. VT WSUS reduces the number of vulnerable and

exploited systems through testing and automatically installing security, operating system, and application updates.

Scan your system for vulnerabilities using the Virginia Tech intrusion detection system at www.ids.cirt.vt.edu.

Select a secure password for access to accounts at Virginia Tech as a first line of defense against inappropriate access. Don't share your password, don't leave it exposed for someone to see, create a difficult-to-guess password, and use a different password for non-VT systems.

Personal and sensitive data

Personally identifying information (PII)—Social Security numbers, credit/debit card numbers, bank account numbers, passport numbers, driver's license numbers, and names in combination with full dates of birth—is attractive to identity thieves. Use the free discovery tools listed on www.security.vt.edu to find and remove PII from desktops, laptops, and portable storage media.

Other sensitive data must also be carefully protected—research data, medical records, student records, detailed personnel records, and many other types.

The IT Security Office offers Microsoft Rights Management Service (RMS) to assist in the protection of sensitive data. RMS uses encryption and access control to prevent some functions of Microsoft Office products (Outlook e-mail, Word documents, Excel, etc.).

Remember that mobile "phones" have become multipurpose devices, receiv-

ing and storing data. Be careful about what university information is stored.

If you suspect an unauthorized exposure of personal information, report it immediately by calling 540/231-HELP (540/231-4357).

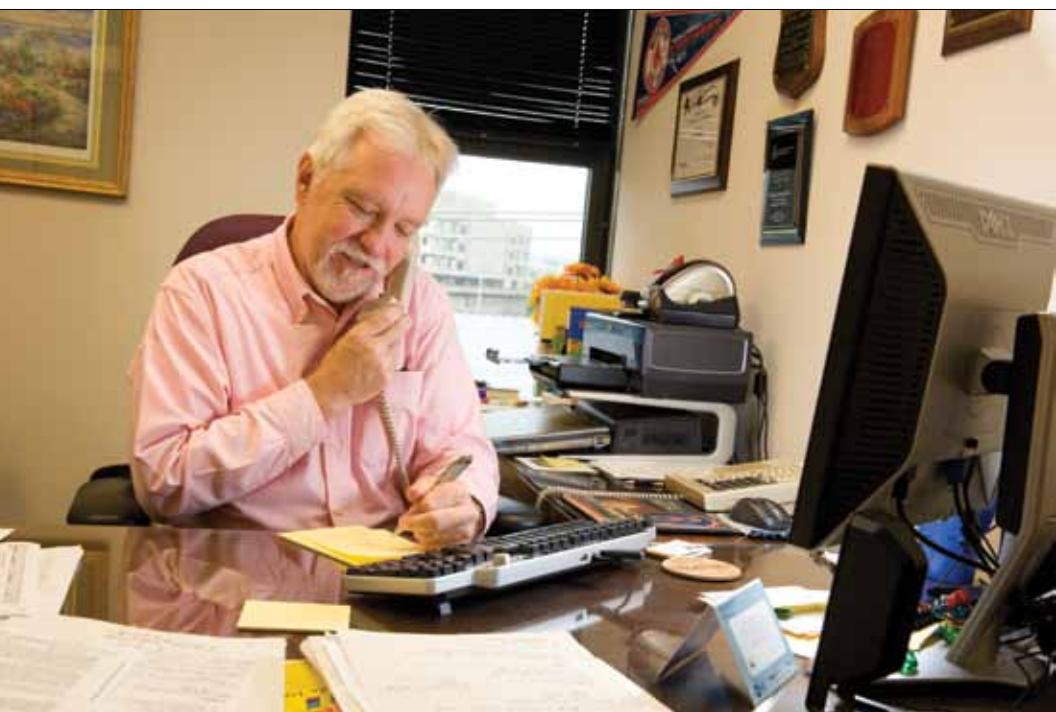
Threats

Awareness of online security threats and protection is the first step in avoiding hacking, data exposures, and other security breaches. The Security Office staff is available for presentations (540/231-9523). Also, see the FDI material on security (search for "computer security" at www.fdi.vt.edu).

E-mail phishing gets more sophisticated every year in attempts to steal your identity and your money! Virginia Tech will never request your PID and password in an e-mail note. No matter how eloquent, realistic, or grammatically correct an e-mail note appears, if it requests your password or other personal information, it is fake!

Apply the privacy settings on social networking sites you use (Hokie Nation Network, Facebook, LinkedIn, many more) to prevent would-be identity thieves from harvesting your personal information.

Communications



Emergency messages

Subscribe to VT Phone Alerts (www.alerts.vt.edu), the subscriber-only feature of VT Alerts, Virginia Tech's emergency notification system. VT Desktop Alerts provides alert information to both university affiliates and to others wishing to download the computer-based alerts (alerts.vt.edu/desktop/desktop.php).

Accessing the network

Use wired Ethernet ports and wireless access to the university network. Modem pool accounts continue to be available for more limited remote access. Subscribers to any of these methods are eligible to use the centrally provided virtual private network or VPN

service that enables access to services that may be restricted from off-campus. Departments may also sponsor guests to use wireless network access. See www.cns.vt.edu.

E-mail, calendaring, and instant messaging

Create up to three additional alternate addresses or aliases for your "PID@vt.edu" e-mail account through the "Personal Info" tab at my.vt.edu.

VT Mail is the e-mail service for students, and alumni now receive university-addressed e-mail through Google. Employees may use either VT Mail or Exchange. Exchange provides

e-mail, calendar management, and related tools, and permits you to delegate selective access to co-workers. Access Exchange through WebOutlook (weboutlook.vt.edu) or with software such as Outlook or Entourage. Establish your Exchange services at <https://self-service.w2k.vt.edu>. Use the "My Information" tab to select a "from/reply to" e-mail address.

Versatile mailing lists—LISTSERVs—can be configured for classes, discussions, event notifications, and news delivery. (See "E-mail & Calendaring" on computing.vt.edu).

Junk Mail Manager quarantines suspect ed e-mail spam in a separate folder. To set your rules and manage your folder, go to <https://junk.mail.vt.edu/spam>.

Information Technology offers mobile messaging capabilities for faculty and staff with continuous wireless synchronization of e-mail, address lists, and other information from the Exchange server. Check computing.vt.edu under "E-mail and Calendaring" and "Exchange."

Point your instant messaging (IM) client to Virginia Tech's service (see "IM" under "E-mail & Calendaring on computing.vt.edu).

Remote conferencing

The university phone system facilitates conference calling for up to eight participants. Use the state's teleconferencing service (www.cns.vt.edu) for more complex calls.

Interactive video conferencing facilities

enable Virginia Tech faculty and staff to offer classes and share expertise with peers worldwide (www.vbs.vt.edu).

The Access Grid node, an application of the Internet2 network architecture, provides technology for large-scale distributed meetings, collaborative work sessions, seminars, lectures, and training. Services include multimedia large-format displays, presentation and interactive environments, and interfaces to Grid middleware and visualization tools. Call 540/231-6460.



Instruction



Scholar

Scholar is Virginia Tech's online system for learning and collaboration. Tools include announcements, assignments, discussion forums, chat tools, tests and quizzes, grade book, wikis, blogs, podcasts, polls, RSS feeds, and an appointment tool for office hours. Scholar is also fully integrated with ePortfolio. For more information, see scholar.vt.edu.

Faculty Access

Designated instructors of record may access rosters, grade sheets, class listservs, and related tools by selecting "Faculty Access" under the "Courses" tab in My VT (www.my.vt.edu).

Enhancing instruction

Faculty Development Institute short courses and summer workshops provide participants with guidance in integrating technology into courses.

Faculty members are eligible to receive new hardware and software on a four-year cycle (www.fdi.vt.edu).

The Graduate Education Development Institute addresses graduate students' professional development, focusing on integrating advanced technologies (www.gedi.vt.edu).

InnovationSpace resources can assist with technology-enhanced teaching and learning and multimedia development. The InnovationSpace lab is available to explore emerging technologies and their classroom applications (www.is.vt.edu).

The Software Skills Gateway offers more than 600 software tutorials for faculty, staff, and students. Check under "Help & Tutorials" on computing.vt.edu.

Check with Information Technology Acquisition regarding possibilities for specialized software (ita.vt.edu).

Digital Imaging provides archival scanning for existing image collections for instructional and research purposes. To submit a proposal, see www.emd.vt.edu.

Video/Broadcast Services assists with streaming files, downloadable files, and video conferencing (vbs.vt.edu).

Evaluation and assessment

Testing and Data Services provides optical mark reader processing of forms (opscans) used for exams and course evaluations (www.testscore.vt.edu).

ePortfolio within Scholar offers student and programmatic assessment tools.

An online course evaluation tool for student ratings of instruction is available at courseeval.cc.vt.edu.

Computer-Integrated Classrooms

The staff of Computer-Integrated Classrooms (www.cclab.vt.edu) supports instruction needing specialized software or controlled environments—including online test-taking.

Assistive Technologies

The Assistive Technologies unit supports accommodations by applying assistive technologies for students, faculty, and staff. Call 540/231-3461.





High-performance computing

Ithaca, an IBM iDataPlex 84 node system, is the newest compute resource. The nodes are dual-socket, quad-core with Intel Nehalem processors running at 2.26 GHz and have 24 GB of RAM. Ten nodes have 48 GB of memory. Run research computing applications that are supported on an Intel-based platform running Linux, including MPI-based applications. The system uses the ARC queuing system.

For access to System X, submit project information at www.arc.vt.edu. Storage is available through mobybits on an SGI InfiniteStorage 4500. For training and support, see the "Services and Support" section of the Web page.

Dante and Styx are two Sun compute servers available for general research applications. The Inferno systems are SGI Enterprise ALTIX 3700 Superclusters and Cauldron is an SGI ALTIX 4700 Supercluster.

Visualization tools can lead to insights into new properties and relationships in data, using immersive visualization venues—active and passive stereo rendering walls, head and device tracking, and the fully surrounding CAVE. Visual Computing can help format or convert data, choose visual analysis tools and content pipelines, and develop visualization applications and proposals.

For access and information on all these systems, see www.arc.vt.edu.

Geographic information systems

The Center for Geospatial Information Technology, a part of VTGIS, assists with funded GIS research projects. Enterprise GIS provides secure centralized storage, hosting, and application development. See www.gis.vt.edu.

Access to global networks

The campus network connects to multiple high-performance research networks, including NetworkVirginia, Virginia's optical VORTEX network, and the mid-Atlantic node of the National LambdaRail, the Mid-Atlantic Crossroads network, and the Internet2 network services. These national networks link major laboratories and computational centers throughout the country and peer with international research networks. Use this connectivity to enhance research, teaching, and collaboration. For more information, contact Jeff Crowder at 540/231-3900.

Research repository

The research repository supports access to the fieldwork activities and findings of faculty and students. With a focus on dissemination, the repository provides a framework for preserving significant research and stimulating new discovery through exploration. Direct inquiries to Digital Imaging and Archiving, or use the form on www.emd.vt.edu to propose a project.

Grant management

The Data Warehouse assists grant management with information on proposals and grants. Visit www.iwa.vt.edu.

Research collaboration

Use Scholar to facilitate collaboration with access controls for shared calendars, announcements, a file repository, and other collaboration tools (scholar.vt.edu).

In addition to Research Computing and VTGIS, several other IT units collaborate with faculty and student researchers. The IT Security Lab's test facility for cyber-security research is available to faculty and qualified students. E-mail itseclab@vt.edu. The Assistive Technologies Lab collaborates on multidisciplinary research in the development and application of assistive technologies and welcomes faculty and student research projects. Call 540/231-3461.

Software, tools, and support

Information Technology Acquisition (ITA) offers specialized software for engineering, GIS, mathematics, statistical analysis, and bibliography management. ITA welcomes additional software suggestions (ita.vt.edu).

Use survey.vt.edu for online surveys, website feedback, and registration forms. Testing and Data Services assists with optically scanned paper survey forms (www.testscoing.vt.edu). The Faculty Development Institute offers workshops on specific research tools and on general research issues, including experimental design, external funding, and manuscript preparation (www.fdi.vt.edu).

Departmental administration



Reports and authorizations

See "Administrative Systems" on *computing.vt.edu*, and use the Data Warehouse for additional reports on select processes (www.iwa.vt.edu). Request specialized student reports by e-mailing *studentrequest@vt.edu*.

The Controller's Office's Banner system listing of department heads is used to verify some authorizing actions for Information Technology services. Update your department's information by contacting your senior management area.

Security responsibilities

For tools to help protect technology resources, see the security website at *security.vt.edu*. Follow the information on

sensitive data to protect against potential exposure of sensitive data.

If you have questions about the security of departmental technology resources, the IT Security Office can conduct a security review. This service helps departments identify potential problems that could result in improper data disclosures or other security problems. Call 540/231-9523.

Contact the IT Security Office when new computing hardware and software systems are considered. Information Technology Acquisitions (ITA) is the point of contact for all contracts related to computer hardware and software, including those contracts involving

money, not for money, for testing, and maintenance agreements (See University Policy 3015).

Networking and communications

Is the listing for your network liaison accurate and up-to-date? Network liaisons work with Communication Network Services to manage protocol address assignments and host name registrations. Through the network liaison listserv (*VT-DNET@listserv.vt.edu*), the liaison is informed about important changes and features. Contact *hostmaster@vt.edu*.

Share responsibilities for departmental or project correspondence through VT PACE Addresses. See "E-mail and Calendaring" on *computing.vt.edu*.

Hardware and software

Participate in the Faculty Development Institute (www.fdi.vt.edu) and the Academic Client Computer program (see "Administrative Systems: Banner" on *computing.vt.edu*) to help with technology refreshes. Information Technology Acquisition has software for departments and selected titles for sale direct to employees. ITA also leases laptops to departments for special needs (*ita.vt.edu*).

Web options

The Web hosting service provides departmental website space (see "Internet & Web: Web Publishing" on *computing.vt.edu*). The Blacksburg Electronic Vil-

lage (www.bev.net) can assist with Web development. Call 540/231-4786.

Web accessibility standards are posted at www.accessvt.atc.vt.edu.

Digital signatures

Personal digital certificates can be used by employees to streamline departmental online processing while retaining the value of "ink-on-paper" signatures (www.pki.vt.edu/pdc).



For technical personnel

See "Resources for Computer Support Personnel" under "Help & Tutorials" on *computing.vt.edu*. Use the site to find mailing lists and user groups. Share solutions, links, tips, scripts, and source code on the ITKnowHow wiki (*itknowhow.w2k.vt.edu*).

Authentication and authorization

Use GroupTools to manage Enterprise Directory group membership and subsidiary groups (www.ims.vt.edu, under "Forms").

The Central Authentication Service (CAS) provides affiliation and group information for online authorization as well as authentication. Find CAS under "Infrastructure services" on *computing.vt.edu*.

The Shibboleth project supports federated identity management among higher education and related institutions. Virginia Tech is a member of the InCommon federation. See "Infrastructure Services" on *computing.vt.edu*.

Consider personal digital certificates for departmental process authentication and digital signatures (www.pki.vt.edu/pdc).

Virginia Tech SSL server certificates enable server authentication and traffic encryption for Web communications. See "Security & Viruses: VT Digital Certificates" on *computing.vt.edu*.

Windows administration

The Hokies domain is the university's central Active Directory service. Select the management level that meets departmental needs. See "Infrastructure Services: Hokies Domain" on *computing.vt.edu*.

VT Windows Software Update Service (VT WSUS) provides automatic updates to Microsoft Windows and core applications along with reporting capabilities for employees' computers (Look under "Security" on *computing.vt.edu*).

Windows server administration

The Virtual Dedicated Windows Servers (VDWS) service provides a virtual instance for the Windows servers that a department may need. VDWS replaces some needs for departmental hardware. The service also increases security and flexibility, while offering environmental and financial benefits by reducing the need for many distributed servers operating at low capacity much of the time. See "Infrastructure Services" on *computing.vt.edu*.

Web hosting and development

For Web resources, see the Web hosting service ("Internet & Web: Web Publishing" on *computing.vt.edu*) and Web development assistance from the Blacksburg Electronic Village (540/231-4786).

Ensemble, Virginia Tech's content management system jointly administered by University Relations and Information Technology, allows website contributors to update content without specialized html or design skills (www.ensemble.cms.vt.edu).

Web accessibility standards (www.accessvt.atc.vt.edu), and the Webmasters' Toolkit are available under "Internet & Web: Web Publishing" on *computing.vt.edu*.



General help

Use the 4Help request form at www.4help.vt.edu to submit problems.

The Customer Support Center (4Help) consulting service is available from 8:00 a.m. to 5:00 p.m. Monday through Friday to assist with questions that require phone consulting or to schedule a walk-in service. Services are available to current Virginia Tech affiliates only.

If you need your PID or Hokies password reset, wish to report a system outage, or have difficulty using the 4Help Web form, please call 540/231-HELP (540/231-4357).

Index of services www.computing.vt.edu

For troubleshooting www.answers.vt.edu

Topical help

For information and help on the network or telephone service, see www.cns.vt.edu.

For help specific to Scholar, see "help" at learn.vt.edu or submit questions to 4help.vt.edu.

Security checklists are available on www.security.vt.edu. For antivirus protection, see www.antivirus.vt.edu.

Learn more

Increase your information technology skills with self-paced courses and tutorials at the Software Skills Gateway. See "Classes & Courseware: Software Skills" on www.computing.vt.edu.

Status reports

For notices of planned maintenance downtime of centrally provided services and for information about unplanned outages, see computing.vt.edu, or www.cns.vt.edu. Instructional systems outages are also posted at learn.vt.edu.



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