

Practical Use of MMC and IT Security for Medical Research (Lecture in Japanese)

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Multimedia Center manages 184 Windows 11 Pro and 13 macOS Ventura terminals for users, and software such as Microsoft Office 2021, SPSS, etc. are available for these terminals.

In the Center, there is a facility for preparing materials for research presentations, and special equipment such as a plotter (Plain paper, Glossy paper, Cloth - 3 types) capable of large-format printing of B0 size, an inkjet printer capable of printing up to A3 size in photographic quality, a flatbed scanner compatible with transparent originals, and a CD/DVD duplicator are installed.

In addition, we provide services that help reduce the financial burden on users and improve convenience, such as the free distribution of the antivirus software, literature retrieval from off-campus through the VPN service, and the secure transfer of the large capacity file between people inside and outside of the university by the large capacity file transfer.

Furthermore, with the renewal of the computer and network system in March 2023, it has become possible to start providing on-campus storage services and to install the latest Microsoft Office software on personal devices.

We are also working to provide services operated by the National Institute of Informatics, making it possible to use an international academic wireless LAN roaming infrastructure "eduroam" and a research data management platform "GakuNin RDM".

In this lecture, the facilities of the Multimedia Center and various services available on- and off-campus will be explained, as well as information security. And the facility tour will be given at the end of the lecture.

医学研究のための MMC活用法と情報セキュリティ Practical Use of MMC and IT Security for Medical Research

September 12, 2025
Multimedia Center
SHIGETOSHI Kenji

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Introduction to MMC's Services

- Email Account
- Multi-Factor Authentication
- Gmail
- VPN Service
- Anti-Virus Software
- SPSS29, JMP Pro
- Monochrome/Color Printing
- Wi-Fi Access
- Lending Laptop PC, Projector etc.
- Sending and Receiving Large Files
- On-campus Storage Services
- Office 365 A3
- Registering for WordPress Use
- Others
 - Hosting Your Website
 - Registering Your Devices for the Campus LAN Use
 - Registering for a Mailing List
 - Holding Workshops

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Email Account

- If you apply for a user ID with any string of eight characters or less, the following email address will be given to you.

user ID@belle.shiga-med.ac.jp

The user ID is the same as in the hospital information system (Niho), but the password is different, so be careful in managing it.

- Once a user ID is issued, it cannot be changed.

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Multi-Factor Authentication



- When accessing services with high security risks from outside the university, an additional authentication is required in addition to the ID/PW authentication
- There are three types of additional authentication available
 - TOTP(Time-based One-Time Password)
 - FIDO(First Identity Online)
 - Imaging Matrix

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Setting Up Multi-Factor Authentication



For more information, please visit the MMC website.
<https://www.shiga-med.ac.jp/mmc/service/tayoso/>



Gmail

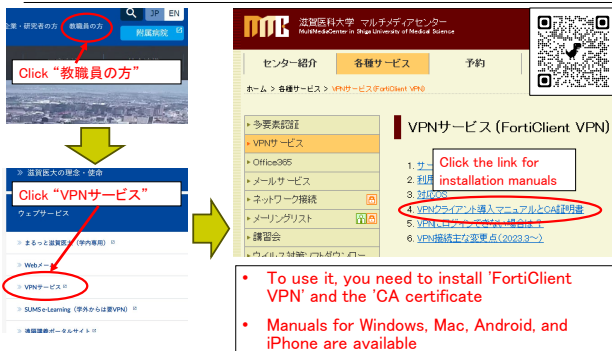


VPN Service

- The following services are available for use from outside the university
 - e-Learning(WebClass)
 - Online Journals
 - Marutto Shigaaidai
 - Download antivirus software
- However, the following preparations are required in advance
 - Install FortiClient VPN and CA certificate
 - Configure multi-factor authentication

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Install FortiClient VPN and CA certificate



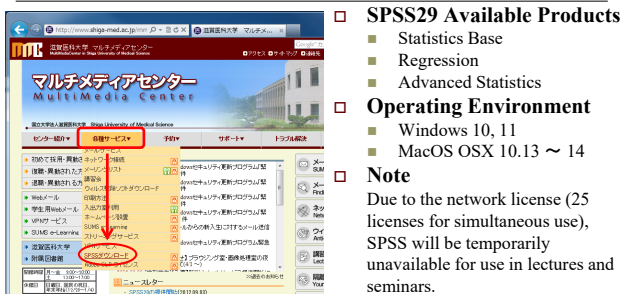
Anti-Virus Software

- Can be installed on your home computer



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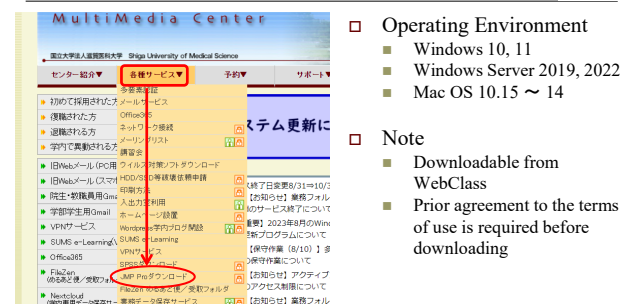
SPSS29 (Available Only from Inside SUMS)



For more information, please visit the MMC website.
<http://www.shiga-med.ac.jp/mmc/> → 各種サービス → SPSSダウンロード

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JMP Pro (No restrictions on usage location)



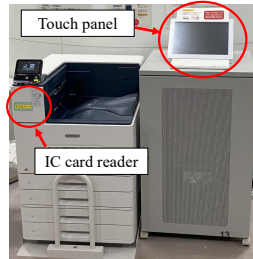
For more information, please visit the MMC website.
<http://www.shiga-med.ac.jp/mmc/> → 各種サービス → JMP Proダウンロード

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Monochrome/Color Printing

- Printers are located in six locations in the building
- On-demand printing, so you can output from an available printer
 - Log in with your user ID and password from the touch panel in the figure
 - Or, simply place your student ID card on the IC card reader
- Available Points: 500/year [Spending Points]
Color: 4 points/sheet
Monochrome: 1 point/sheet

Practice Room: 2
Browsing Room: 1
Open Space, 1st fl.: 1
Browsing Corner, 2nd fl.: 1
Library, 2nd fl.: 1



Wi-Fi Access

- University-wide installation
- SSID: sums-wireless
- authentication: Mail Account/PW
- You can use it by registering the MAC address of the wireless LAN card on the MMC website
- For information on how to set up your computer, please refer to the MMC website
<http://www.shiga-med.ac.jp/mmc/> → ネットワーク接続



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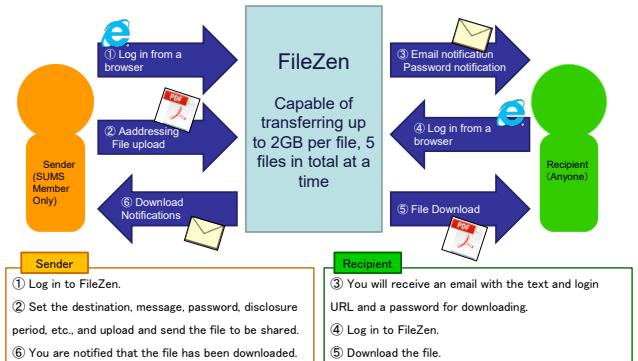
Lending Laptop PC, Projector etc.

- Windows Laptop
 - Windows 11 Pro
 - Microsoft Office 2021
 - Photoshop Elements2023
 - SPSS 29 / JMP Pro etc.
- Mac Laptop
 - macOS Ventura 13
 - Office for Mac
 - Adobe Creative Cloud
 - SPSS 29 / JMP Pro etc.
- Projector
- Web conferencing equipment
 - Tripod-mounted camera
 - Webcam with microphone
 - Speaker microphone



<http://www.shiga-med.ac.jp/mmc/> → 予約 物品貸出

FileZen: Secure File Transfer Service



- Sender**
- Log in to FileZen.
 - Set the destination, message, password, disclosure period, etc., and upload and send the file to be shared.
 - You are notified that the file has been downloaded.

- Recipient**
- You will receive an email with the text and login URL and a password for downloading.
 - Log in to FileZen.
 - Download the file.

<http://www.shiga-med.ac.jp/mmc/service/filezen/>

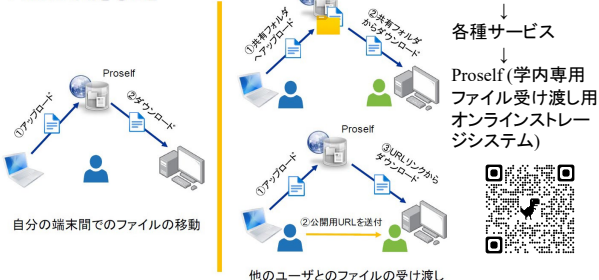
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Campus-exclusive file transfer service (Proself)



Capacity: 10GB, Duration: 10 Days (Automatic deletion)

Proselfでできること



Campus-exclusive data storage service (NextCloud)



- Capacity: 5GB
- File and folder sharing feature
- You can collaboratively edit Word and Excel files in a web browser
- You can review the action history, etc.

For more information, please visit the MMC website.
→ Nextcloud(学内専用データ保存サービス)



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Office 365 A3



- Eligible users: Undergraduate students, graduate students, and faculty members.
- Sign in to the Microsoft portal site (<https://login.microsoftonline.com/>) with your email address and email password.
- You can use Office 365 on personally owned PCs
- You can install apps like Word, Excel, and PowerPoint on a total of five PCs per person, including both Windows and Mac.
- In addition to PCs, you can also install them on tablets and smartphones, up to a maximum of five devices each.
※If you want to install them on PCs, tablets, and smartphones altogether, you can do so on a maximum of 15 devices
- OneDrive storage capacity: 1TB



For more information, please visit the MMC website.

<http://www.shiga-med.ac.jp/mmc/> → 各種サービス → Office365



Registering for WordPress Use (1)

Features of WordPress

- Easy to create a website/blog
- Ability to restrict viewing and editing by email account
- However, for on-campus use only

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Registering for WordPress Use (2)

Others

- Setting up a personal website
• MMC HP → ホームページ設置
- Access to the campus LAN for individual computers (registration required)
• MMC HP → ネットワーク接続 → 学内ネットワーク接続申請
- New mailing list subscriptions
• MMC HP → メールサービス → メーリングリスト
- Conducting workshops
• Cyber Security Seminar
• Medical Statistics (SPSS) etc.

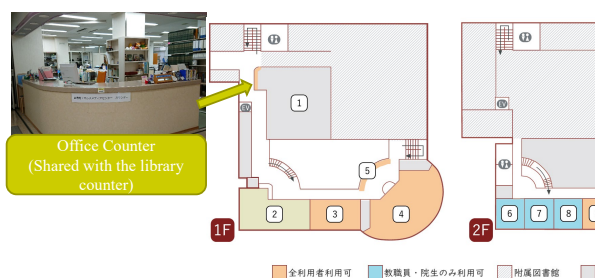
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Introduction to MMC's Facility

- MMC Office Location
- Software Programs Available on MMC Computers
- Practice Room
- Browsing Room
- Open Floor
- MMC Meeting Room R, B, G, Y
- Input / Output Room
- Location of the Other PCs
- Prohibited Matters in MMC

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MMC Office Location



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Software Programs Available on MMC Computers

Windows 11 Pro

- ❑ MS Office 2016
- ❑ SPSS 29
- ❑ JMP Pro
- ❑ Visual Studio Code
- ❑ Google Chrome
- ❑ Mozilla Firefox
- ❑ VLC

macOS Ventura 13

- ❑ Office for Mac
- ❑ SPSS 29
- ❑ JMP Pro
- ❑ Google Chrome
- ❑ Mozilla Firefox
- ❑ VLC

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Practice Room (1st Floor)

- ❑ Hours of Use: Weekday 8:30~19:00
- ❑ 82 Windows laptops (OS: Windows 11)
- ❑ Note: Lecture priority. It can be used freely except in lectures.



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Browsing Room (1st Floor)

- ❑ Hours of Use:
Weekday, Weekend, and Holidays 7:00~24:00
Note: Weekday 7:00~8:30, 19:00~24:00 and
All day on weekend and holidays, Staff/student ID card is required
- ❑ 36 Windows laptops (OS: Windows 10)
- ❑ Note: Lecture priority. It can be used freely except in lectures.



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Open Floor (1st Floor)

- ❑ Available 24 hours



4 Windows laptops

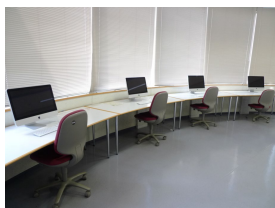


2 iMacs, 1 On-demand Printer

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Open Floor (2nd Floor)

- ❑ Available 24 hours



6 iMacs



Browsing Corner on the Second Floor
(12 Windows laptops, 3 Scanners)

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Meeting Room Red, Blue, Green (2nd Floor)

- ❑ Hours of Use: Weekday 8:00~24:00
- ❑ Capacity: 12 people
- ❑ LAN
- ❑ Whiteboard
- ❑ Screen (manual)
- ❑ 60-inch LCD monitor
- ❑ Zoom Rooms



Reservations are required through the MMC website

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Meeting Room Yellow (2nd Floor)

- Hours of Use: Weekday 8:00~24:00
- Capacity: 34 people
- LAN
- Whiteboard
- Ceiling-mounted Projector
- Electric Screen
- Zoom Rooms



Reservations are required through the MMC website

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Input / Output Room (2nd Floor)

- Hours of Use: Available 24 hours (Staff/student ID card is required)
Note: For paper replacement and problems, Weekday 9:00~17:00
- Poster printing, CD/DVD Duplicator, etc.



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Location of the Other PCs

- 1st and 2nd Floor of the Library



Library 1st Floor:
4 Windows laptops



Library 2nd Floor:
• 2 Windows laptops
• 1 On-demand Printer

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Location of the Other PCs

- Lounge on the 1st Floor of the Nursing Department building

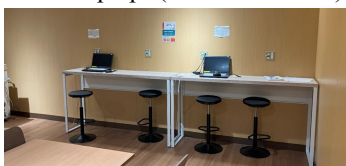


Nursing Dept. Building:
4 Windows laptops, 1 Printer

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Location of the Other PCs

- General Education and Research Building
Student Lounge, 1st Floor
Hours of Use: 8:00~22:00
Two Windows laptops (OS: Windows 11)



Note: Rules for using the student lounge
https://sumsdoc.shiga-med.ac.jp/ASTRUX2/ID_guest.aspx?did=137455

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Prohibited Matters in MMC

- Smoking
- Bringing in Food
- Use of Cell Phones (Courtyard use is allowed.)
- Disruptive behavior such as talking loudly or otherwise disturbing other users
- Installing software on the PCs

Note: Beverages are allowed (but only in plastic bottles or other containers with lids. You must close the lid when you are not drinking)

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Introduction to External Services

Services Provided by NII (National Institute of Informatics)

- eduroam (International Wireless LAN Roaming Infrastructure)
- GakuNin RDM (Research Data Management Platform)

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eduroam

(International Wireless LAN Roaming Infrastructure)



How to Use

1. SSID
"eduroam" or "eduroam-XXX" (XXX is an arbitrary string)
2. ID and Password
ID: xxxxxx@shiga-med.ac.jp
(xxxxxx: Your Mail Account of the University's email)
Password: Mail Password

Provided by the NII <https://www.eduroam.jp/about/>

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GakuNin RDM (Research Data Management Platform)



■GakuNin RDM

GakuNin RDM is a research data management platform that provides an environment within which individual researchers or research groups can manage their research data and relevant files during a research project. It works in a closed setting where files can be version and access controlled among project members. File modifications will be tracked, and long-term preservation will be provided for research integrity purposes. RDM stands for "research data management," and is increasingly required in the context of Open Science in recent years.

■e-Learning (WebClass)

Video recordings and materials of the workshop explained by lecturers from the National Institute of Informatics are available on WebClass.



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■GakuNin RDM Log In URL■
<https://rdm.nii.ac.jp/>

Information Security Threats and Countermeasures

- What is Information Security
- Security Incidents
- External Storage Medium
- Security Measures for Computers and External Storage Medium
- Precautions when disposing of storage media
- Disposal Methods of External Storage Mediums
- 10 Major Security Threats 2025
- What is Phishing
- What is Ransomware
- Advanced Persistent Threat (ATP)
- Virus infection and information leakage at medical institutions
- Countermeasures to Threats
- Self-inspection items on information security

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What is Information Security

- Confidentiality
Ensure that only those who have been granted access to the information have access to it.
- Integrity
Ensure that the information is not destroyed, altered or erased.
- Availability
Ensure that persons granted access to the information have uninterrupted access to that information when necessary.

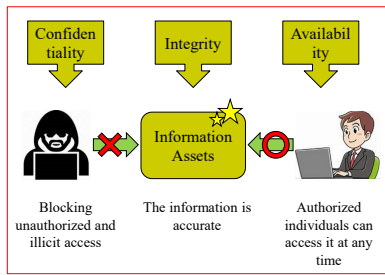
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Information Assets

- The contents of information
- The systems for creating, using, and managing information
 - Hardware
 - Software
 - Networks
 - Storage media, etc.

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Examples of Information Security Breaches



The state of maintaining information security

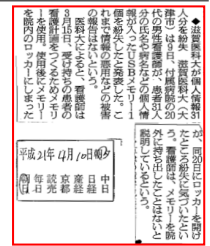
- The computer got infected with a virus, leading to a leakage of personal information (Confidentiality)
- The university's homepage was tampered with due to unauthorized access (Integrity)
- The email server malfunctioned, causing a disruption in the sending and receiving of emails (Availability)

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Information Security Incident

An information security incident refers to an event—such as an accident, cyberattack, or malware infection—that is highly likely to pose a threat to information security.

Theft or loss of portable external storage devices such as laptops, USB memory sticks, external hard drives, and other portable external storage devices used off-campus when returning home or when leaving the campus has led to problems such as the leakage of information stored on them.



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External Storage Medium

- Laptop
- USB Flash Drives
- External Hard Disk
- Cloud Storage etc.

Effective April 1, 2019, USB flash drives are no longer allowed on campus!

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Security Measures for Computers and External Storage Medium

- **Always set a login password for your computer.**
Essential security measures for computer use
- **Password the firmware to boot.**
Prevent a third party from starting the computer without knowing the password
- **Password your hard drive or USB flash drive.**
Software can be used to password-protect hard drives and USB flash drives (encryption)
- **Encrypt your files**
Encrypted password must be at least 12 characters including alphanumeric characters and symbols; 16 or more is recommended for better security.

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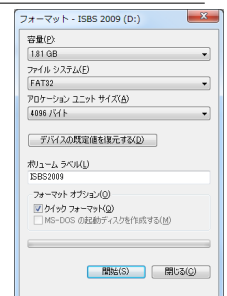
Precautions when disposing of storage media

When returning or destroying a used computer, server, or storage medium, it is necessary to ensure that the data stored on it is deleted. If someone uses data recovery software, it may be possible to re-read the deleted files.



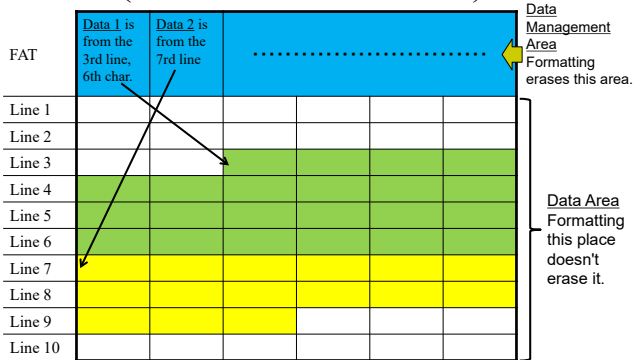
Cannot Erase Data with Disk Format

- Deleting a file or formatting a disk seemingly erases the data.
- However, only the data management information is erased, and the actual data remains.
- You can't get rid of real data using Windows quick format or standard format.



When formatting a USB flash drive in Windows

FAT (File Allocation Table)



JEITA「パソコンの廃棄・譲渡時におけるハードディスク上のデータ消去に関する留意事項」, p.7, 2010「ハードディスク中のデータ記憶方法」の図を参考に書き直し

Disposal Methods of External Storage Medium

- Data deletion by software is easy, but physical destruction is preferable
- In the MMC, paper shredders and floppy disk, CD/DVD, and MO shredders are installed in front of the counter for free use
- The MMC also accepts hard disk destruction of computers.

For more information, please visit the MMC website.
<http://www.shiga-med.ac.jp/mmc/>
 → 各種サービス → HDD/SSD等破壊依頼申請



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10 Major Security Threats 2025

Threats for Individuals	Rank	Threats for Organizations
Personal Information Theft from Services on the Internet	1	Ransomware Attacks
Unauthorized Login to Services on the Internet	2	Attacks Exploiting Supply Chain Weaknesses
Fraudulent Use of Leaked Credit Card Information	3	Attacks exploiting system vulnerabilities
Fraudulent Use of Smartphone Payment	4	Information Leakage by Internal Fraudulent Acts
Internet Fraud by Fake Warnings	5	Confidential Information Theft by APT
Cyberbullying and Fake News	6	Attacks targeting remote work environments and related systems
Phishing Fraud for Personal Information	7	Cyberattacks driven by geopolitical risks
Malicious Smartphone Applications	8	Distributed Denial of Service Attacks (DDoS Attacks)
Extortion of Money by Blackmail or Fraudulent Methods with Email, SNS, etc.	9	Business Email Compromise
Financial Loss by Fraudulent Billings such as One Click Fraud	10	Unintentional/Accidental Information Leakage

<https://www.ipa.go.jp/security/10threats/10threats2024.html>

What is Phishing

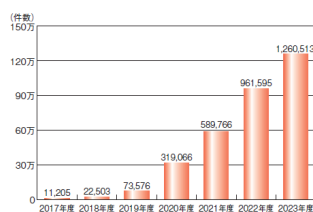
Phishing is a common technique where individuals or entities impersonate legitimate organizations to deceive people into disclosing personal information such as usernames, passwords, account IDs, ATM PINs, credit card numbers, and other sensitive data. They often achieve this by directing victims to fake websites (phishing sites) through links in email messages, where they are prompted to input their personal information



フィッシング対策協議会ホームページより抜粋
https://www.antiphishing.jp/consumer/abt_phishing.html

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Trends in the Number of Phishing-Related Incidents



■図 1-1-8 年度別フィッシング報告件数(2017～2023 年度)
 (出典)フィッシング対策協議会「月次報告書」(2017 年 4 月～2024 年 3 月)を基に IPA が作成

出典: IPA「情報セキュリティ白書2024」, p.12

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What is Ransomware

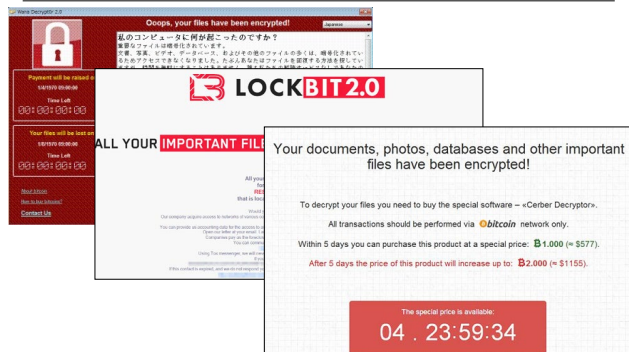
Ransomware is a collective term for malicious programs that impose restrictions on a computer, such as encrypting files without permission, and demand a ransom in exchange for removing these restrictions.



出典: IPA 情報セキュリティ2015年6月の呼びかけ
<https://www.ipa.go.jp/security/txt/2015/06outline.html>

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When Infected with Ransomware



Trends in the Number of Ransomware Related Incidents

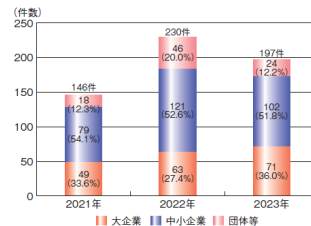
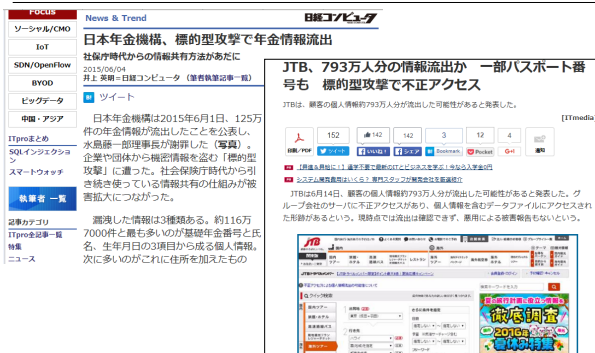


図 1-1-11 国内のランサムウェアによる被害件数 (2021~2023 年)
(出典) 2021~2023 年の警察庁資料を基に IPA が作成

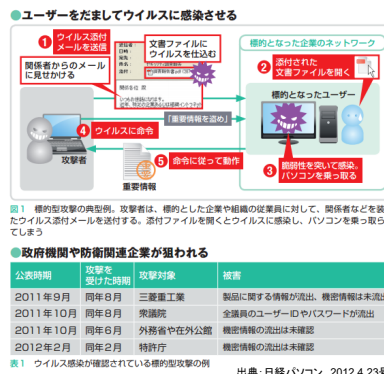
出典: IPA「情報セキュリティ白書 2024」, p.13

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Advanced Persistent Threat (ATP)



ATP Targets a Specific Entity

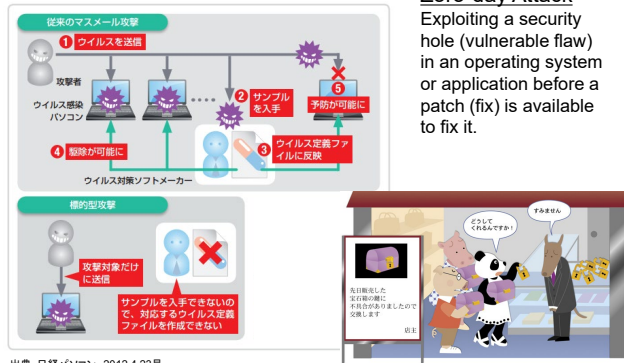


Since 2004, members of the Ground Self-Defense Force, Maritime Self-Defense Force, and Air Self-Defense Force have brought their personal computers to their workplaces and used them for business purposes, but they took them home with secret data stored and used Winny and other file-sharing software, which led to the exposure of Antinny and other software. Many cases of virus infection occur. As a result, classified military information such as equipment performance specifications and call signs were leaked.

出典: 日経パソコン 2012.4.23号

Zero-day Attack

ATP



出典: 日経パソコン 2012.4.23号

Examples of Information Leakage from Medical Institutions

February 5, 2016.	A hospital PC was infected with a virus (ransomware) at Hollywood Presbyterian Medical Center in Los Angeles, and operations using the PC were halted. Paid \$17,000 worth of Bitcoins to regain access to patient data.
May 12, 2017.	Ransomware (WannaCry) infection shuts down many computers in the UK's National Health Service (NHS)
October 31, 2021 - January 4, 2022	The hospital's electronic medical record server and computers at Handa Hospital in Tsunagi Town, Tokushima Prefecture, were infected with ransomware (LockBit), causing the hospital to stop accepting new patients and other damage.
October 31, 2022 - January 15, 2023	A major system disruption caused by ransomware occurred at Osaka Acute Care and General Medical Center, rendering the comprehensive information system, including electronic medical records (EMRs), inaccessible and severely affecting medical services.
May 19, 2024	The Okayama Psychiatric Medical Center experienced a ransomware cyberattack, disrupting its information system, including electronic medical records. Up to 40,000 patients' personal information (names, addresses, dates of birth, medical conditions, etc.) and ward meeting minutes may have been leaked.

Countermeasures to Threats

- OS and software security updates (99.8% of cases in 2012 reportedly exploited known vulnerabilities (IBM Japan))
- Install anti-virus software and update the definition files
- Always be suspicious of email, web and smartphone applications, and if you feel suspicious, do research on search sites first
- Do not reuse passwords

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Countermeasures to Threats

- Data backup (3-2-1 rule)
 - Make three or more copies
 - > Original data plus two or more copies
 - Stored on two different types of media (e.g., cloud and external USB HDDs)
 - One of them is stored in a different location than the other two (e.g., at home and in the cloud)

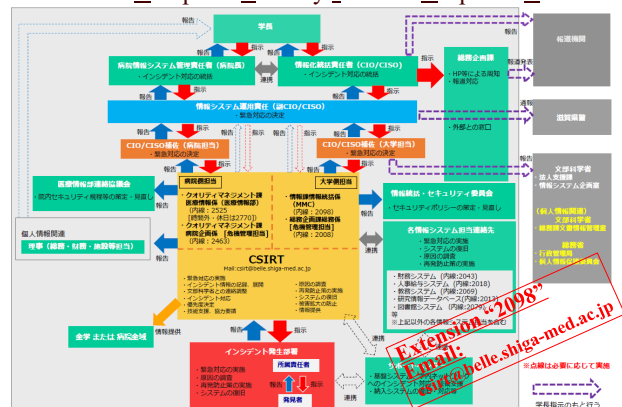
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Self-assessment items on information security

1. Do you keep the operating system and software of your computer, smartphone or other devices up to date?
2. Do you install anti-virus software on the devices connected to the University's network, and keep virus definition files up to date?
3. Do you use your university email address as an ID for cloud services? If so, is your password different from the one used for the University's authentication system?
4. Are you aware of malware infections via attachments or URL links in emails?
5. When you leave your seat, do you lock your computer screen to prevent others from peeking your data or manipulating the computer without your permission?
6. In principle, the use of USB memory device has been prohibited at the University since April 2019. Only USB memory devices with encryption function are allowed to be used in unavoidable cases. Do you comply with this university policy?
7. Do you take preventive measures against computer theft, such as keeping laptops, equipment, etc. in a locked cabinet or in a room with restricted access when you leave the office?
8. Do you know who is in charge of information security in your department?

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CSIRT Computer Security Incident Response Team



Let's move to
the Facility Tour

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References

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FileZen(めるあど便): Large File Transfer Service (Practice)

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Shiga University of Medical Science has banned the use of USB flash drives on campus.

- Ban date: April 1, 2019
- Due to repeated loss of USB memory devices in the hospital and on campus, the decision was made
- A good alternative to USB flash drives is to use FileZen, a large file transfer service
- If you have no choice but to use a USB memory stick, you can use the one specified by the university

http://isis.shiga-med.ac.jp/wp/csirt/usb_flash-drive_201904/

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Current Situation at SUMS

- May 2017 - January 2019 (1 year 9 months): 72 USB flash drive pickups (not including hospitals)
 - On average, 3.4 cases per month
 - 1 with patient information, 14 with non-patient personal information
 - No encrypted USB flash drives



Lost and found USB flash drives delivered to the Multimedia Center

USB flash drives are small and convenient, but easily lost.

Be aware of the importance of the files

- Is the information I'm handling classified?
 - Find out what information is included
 - Think about what the impact would be in the event of a leak
- Is this information that they're allowed to take out?
 - Check for violations of university regulations and operating rules
 - Make sure you don't need the permission of the person responsible for the data
- Does it have security based on importance?
 - Recognize that external storage media and laptops are at risk of being lost or stolen
 - Provide risk mitigation measures such as encryption and password settings
 - Confirmation of physical storage, network settings, etc.

What is FileZen ?

- FileZen is a system that allows users with an account (email address) at the university to share up to 5 files (1 file 2GB per account, up to 10GB in total) at a time. It can be accessed from both on and off campus.
- You can set the release period, the maximum number of times to download, and the password required when downloading.
- FileZen URL : <https://porter.shiga-med.ac.jp/>

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How to send files

1. Access the FileZen(<https://porter.shiga-med.ac.jp/>) and “log on” by entering your user ID and password.

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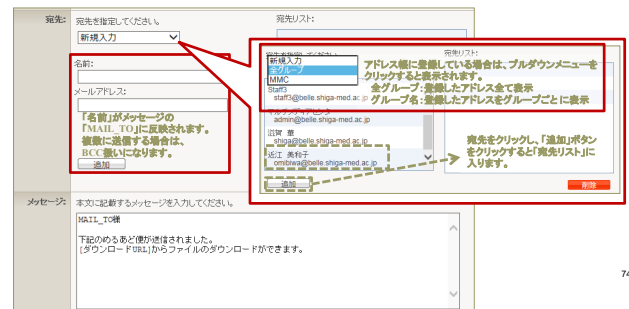
2. Click “めるあど便” tab and Select “新規作成”

Note: The amount of file space that can be shared is shown in the "Disk Space Used" in the upper right corner of the screen



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3. Enter the subject, addressee (anyone outside the university is acceptable) and the body of the mail. The "MAIL_TO" part of the message body is filled with the name of the recipient. (If you send the message to multiple recipients, it will be treated as a BCC.



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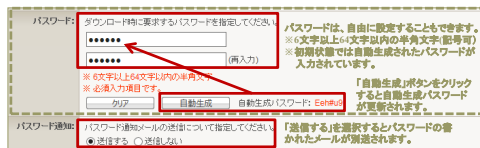
4. Set the password required to download the file.

□ “パスワード”

You can choose to use either freely configured or automatically generated ones.

□ “パスワード通知”

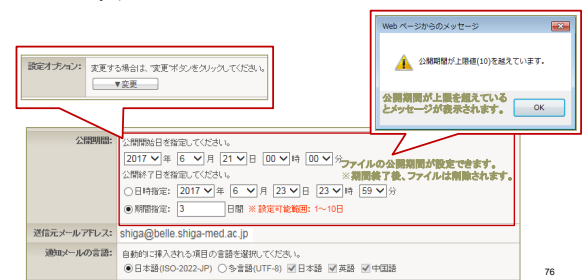
If you select “Send”, an email with the password will be sent to you separately. If you do not want to send it, please notify the password by other means.



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5. Click “設定オプション” button, Set the release period.

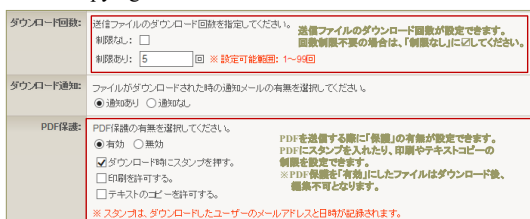
- The default setting for the release period is 3 days and can be set from 1 to 10 days.
- You can set the publication period by specifying the date (up to 10 days).



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6. Set the “Download Count”.

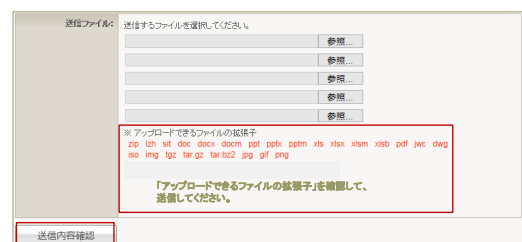
- You can select the number of downloads from 1 to 99 with no limit. The number of downloads is set for each recipient.
- Set the “PDF Protection” setting. Use it to share PDF files.
- If you enable PDF protection, you will not be able to edit the downloaded PDFs and you will be able to restrict printing and text copying.



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8. Select “送信ファイル” and Click “送信内容確認”

- Up to five files can be shared at a time.
- The total size of the files that can be uploaded is 2GB per file and 10GB in total per account.

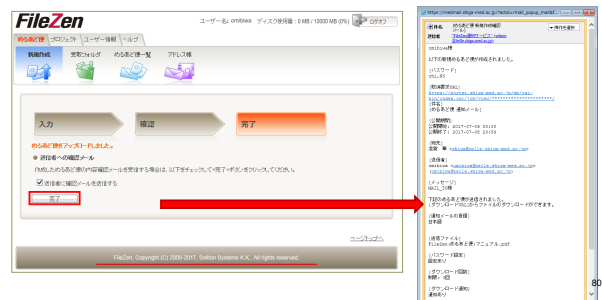


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9. Confirm the contents of the transmission and click the “送信” button.



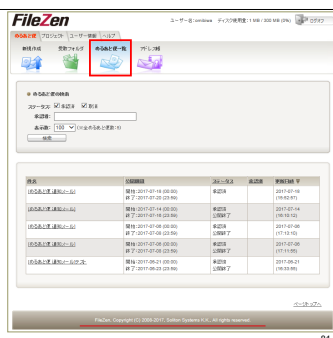
10. Clicking the “完了” button will send the message to the recipient. If you are signed with a “送信者に確認メールを送信する” checkbox, you will receive an email to confirm your transmission.



How to check sent “めるあど便”

Select “めるあど便一覧” from the “めるあど便” tab

- The history of sent messages, status, etc. can be checked.
- Click on the link in the subject line to see the details of the settings and the user who downloaded the file.
- “めるあど便” can be cancelled and reused.



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How to receive files

1. You will receive a notification email from FileZen.
2. Confirm the sender, publication period, and password, then click the download URL.



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3. When the password entry screen appears, enter the password that was sent to you by email.



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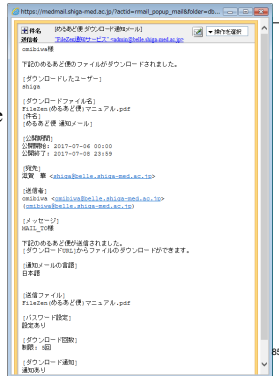
4. The download screen appears.
- Click on the file name or the icon to start the download.
 - Please “log off” when you are finished.



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Once the file has been downloaded

If you leave "Download Notification" as the default setting and set it to "With Notification", a download notification email will be sent to the sender when a file is downloaded.



Experience of the Intensity of a Password (Reference Material)

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Practice Flow

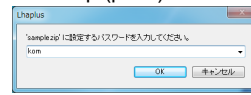
- Creating a compressed file with a password using the compression and decompression software "Lhaplus" (free software).
- Using the same software to crack passwords
- See for yourself how changing the number of characters in a password changes the time it takes to crack it.

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Creation of a Compressed File with PW

As an example, I will show you how to compress a file called "sample.pdf" with a password. Here we will use the free software "Lhaplus".

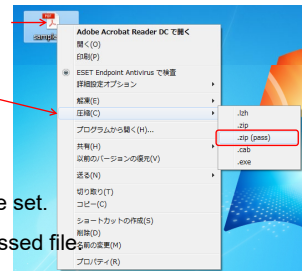
Select the file icon and right-click. Select the "Compress" menu and choose ".zip (pass)".



Enter the password (3 digits) to be set.

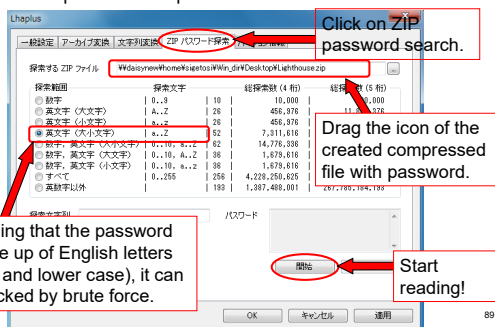


Completion of the compressed file. Double-click to confirm.



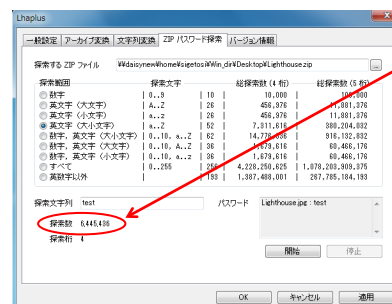
Decoding the Compressed File with PW

Start -> Use "Lhaplus" to crack passwords



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Result of Decoding the PW



Decoding completed after 6,445,436 total hits! It took only a short time to decode about four digits.

Now, see how long it takes to crack a password with more than five digits.

Now you know why combining alphanumeric characters and symbols in your password will increase its strength.

Number of Digits and Intensity of a Password

Type of characters to use	Number of characters that can be used	Maximum decoding time			
		Number of input digits			
		4	6	8	10
Lowercase [a-z] English alphabet characters	26	About 3 seconds	About 37 minutes	About 17 days	About 32 years
Uppercase [A-Z] and lowercase [a-z] English alphabet characters + numbers	62	About 2 minutes	About 5 days	About 50 years	About 200,000 years
Uppercase [A-Z] and lowercase [a-z] English alphabet characters + numbers + symbols	93	About 9 minutes	About 54 days	About 1,000 years	About 10 million years

Calculated the time required to try all combinations. It was assumed that 31 symbols could be used. Computer OS: Windows Vista Business 32bit, Processor: Intel Core 2 Duo T7200 2.00GHz, Memory: 3GB

The above table is reprinted from IPA, Japan.
<http://www.ipa.go.jp/security/txt/2008/10outline.html>

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Password Strength Check

Password Strength Check

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'--have i been pwned?

<https://haveibeenpwned.com/>

The website created by security expert Troy Hunt.

This service designed for the general public, allowing you to easily check if your account has been compromised by entering your email address.

Let's go ahead and enter your email address.



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END

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