Sekuriti dan Etika

Sekuriti

- Apakah Computer Security ?

  - Prosedur-prosedur technological & managerial yang diterapkan pada sistem komputer untuk menjaga availability, integrity & confidentiality informasi yang dikelola.
  [www.tsl.state.tx.us/ld/pubs/compsecurity/ glossary.html]

- Taksonomi pokok, CIA: **[www.albion.com/security/intro-4.html]**

  - Confidentiality - penjaminan bahwa informasi tidak dapat diakses oleh unauthorized persons.

  - Integrity - penjaminan bahwa informasi tidak diubah oleh unauthorized persons kecuali oleh authorized users.

  - Authentication - penjaminan bahwa users adalah persons they claim to be (yang berhak).

Sekuriti

- Taksonomi lain

  - Access control - penjaminan bahwa users hanya akses ke resources and services yang telah ditentukan & qualified users tidak ditolak akses ke services that legitimately expect to receive.

  - Nonrepudiation - penjaminan bahwa pengirim messages tidak dapat menyangkal fakta.

  - Availability - penjaminan bahwa sebuah sistem operational & functional tiap saat [redundancy], loss of availability disebut "denial-of-service".

  - Privacy - penjaminan bahwa individuals maintain the right to control what information is collected about them, how it is used, who has used it, who maintains it, and what purpose it is used for.

Domain

- Physical security - pengendalian comings and goings of people and materials; proteksi terhadap elements & natural disasters.

- Operational/procedural security - mencakup segala hal mulai dari managerial policy decisions sampai dengan reporting hierarchies.

- Personnel security - penjaringan pegawai: background screening, training, security briefings, monitoring, and handling departures.

- System security - pengawasan akses & otentikasi users, assignment of privilege, maintaining file and filesystem integrity, backups, monitoring processes, log-keeping, and auditing.

- Network security -- proteksi perangkat jari. & telekomunikasi, proteksi network servers & transmissions, memerangi penyadapan, pengendalian akses dari untrusted networks, firewalls, dan deteksi intrusi.

Net Dysfunctionality

- Accidental **[www.anu.edu.au/people/RogerClarke/II/Netethiquettecases]**

  – Information overload, karena kiriman data /email yang banyak/besar & tidak relevan.

  – Rumour & accidental misinformation, gosip.

  – Negligent defamation, sebaran fitnah krn ceroboh.

  – Persistence, anggota milis keluar lupa dihapus.

  – Minor plagiarism, info dari situs diakui hasil sendiri.

  – Inadequate care with data, me-reply email dengan tambahan info sensitif/rahasia.

  – Trawling / Spidering, pengomentari dengan hal-hal yang sifatnya rahasia.

Net Dysfunctionality

- Socially Aggressive

  – Intentional misinformation, penyebaran fitnah.
  – Flaming, kirim email berbahasa kasar/kotor (foul /abusive).
  – Intentional defamation, sebaran fitnah.
  – Harassment, progam / email untuk pengacauan trafik.
  – Mail-bombing, pengiriman banyak email ke suatu mailbox.
  – Obscenity, penyediaan material yang asusila di situs.
  – Incitement, berita hasutan melalui bulletin board.
  – Impersonation, pemalsuan identitas gender di milis.
  – Surveillance, ngintip isi email-email banyak orang.

Net Dysfunctionality

- Economically Aggressive

  – Spamming, sebaran iklan ke banyak milis dengan banyak jawaban sehingga mailbox overflow.
  – Advertising, promotion, & soliciting, sebaran iklan ke banyak milis tapi intruder, dll. merugikan terkirim.
  – Secondary use of data, pemakaian transaksi jaringan tanpa modal.
  – Serious plagiarism, penjiplakan karya tulis dari situs.
  – Abuse of intellectual property rights, pengambilan bahan dari situs tanpa menyebut sumber.
  – Hacking, pembobolan keamanan sistem.
  – Viruses & worms, ngirim program perusak melalui jar.
  – Security breach, penyebaran program SATAN (Security Administrator Tool for Analyzing Networks).

Net Dysfunctionality

- Avoidance

  – Circumvention [menghindari, contoh: Someone establishes a web-server in a tax haven, and offers merchants a service whereby net-facilitated sales are legally made in that location, thereby avoiding paying tax in which the buyer and/or seller operate.]

  – Anonymisation [A so-called 'anonymous remailer' receives email addressed to a third party, removes the sender's identification, and forwards it to the intended recipient.]

  – Obscuration [penyamaran, contoh: A sender encrypts their messages, but registers various parts of the encryption key with various different people and organisations, such that the messages can be decrypted provided that several of them collaborate.]

  – Compound cases [Someone brings the story to the attention of the 'victim'.]

Computer Crimes

- **Apa** Computer Crime **?** [www.hyperdictionary.com]

  - Breaking the criminal law by use of a computer.

  - Any criminal activity involving the copy of, use of, removal of, interference with, access to, manipulation of computer systems, and/or their related functions, to data or programs.

- **Pelaku ?**

  - Hacker, mereka yang berwatak arogan [bangga diri ?] (proud of) dengan apa yang mereka dilakukan dan publish their achievement.

  - Cracker, person which hacking for profit.

Computer Crimes

- Apa motif penyusup/pembobol ?
  - Kesombongan / ego [ingin menguji kemampuan yang lain] / mpo.
  - Politik (hactivism).
  - Iri / ingin merugikan perusahaan.
- Konsekuensi perusahaan
  - Kredibilitas turun
  - Kemajuan terhambat
  - Menyesatkan pelanggan
  - Kehilangan peluang bisnis

Computer Crimes

- Attacks yang sering ? [www.leccorder.com]

  - Password sniffing, misalnya dengan TCP Grab atau Passfinder.
  - CGI PHF (packet handling function) dapat dipakai untuk extract password file.
  - Holes in public commercial & domain software (sendmail, flexlm, ftpd, …)
  - Hostile [musuh ?] Java Applets.
  - Invasion of privacy, access & modification to private data.
  - Viruses.

Computer Crimes

- Attacks "favorit" ?
    - Theft of data and resources.
    - Denial-of-service attacks.
    - Malicious codes and viruses.
    - Malfeasance [penyalah-gunaan jabatan] by Computer.
- Jenis pencurian data ?
    - Menyusup ke sebuah komputer, mencuri private files.
    - Seseorang memakai computer account yang lain.
    - Pencurian fisik [Laptops, PC, dll.].
    - Penyerangan melalui email/internet.

Computer Crimes

- DoS attack

  - Caranya ?
    - Mengunci komputer / website sehingga tidak berfungsi, bahkan mungkin sampai crash.
    - Keeping you from doing any work, receiving any mail, getting any online orders.
  - Akibatnya ?
    - Pekerjaan terhambat
    - Menghalangi komunikasi melalui e-mail
    - e-activity [eCommerce, eLearning, ..] terganggu / mati.
  - Contoh ?
    - Web sit-ins [protes, demo], e-mail bombs, ……

Computer Crimes

- Apa Malfeasance by Computer ? [= "gray" areas of computer abuse]
  - Computer-related behavior stretches the bounds of legality and may be viewed as only technically wrong, despite its widespread, potentially negative impact.

- Apa yang mungkin jadi penyebabnya ?
  - Memakai /membeli SW bajakan.
  - Pegawai secara rahasia membangun DB sebagai usaha sampingan.
  - Seseorang memakai account number & password orang lain untuk melihat isi sebuah DB.
  - Pelanggan memberi unlisted telephone number di swalayan.
  - Pemrogram sebuah Univ. membuat program jadwal kuliah lalu pindah ke universitas lain dengan membawa kopi program untuk dipakai di tempat baru.

Malicious Program

- Apa Malicious Program ? [www.rbs2.com/cvirus.htm]
  - Program ganas/jahat penyebab kerugian (harm) ekstensif, tiap insiden harus dihadapi konsekwensi legal [penerapan hukum bagi pembuat program.

- Untuk apa tahu Malicious Program ?
  - Bila tahu kerusakan terjadi, agar tiap pemilik komputer selalu memproteksinya dari tiap attacks mendatang.
  - Hukum yang ada hanya bereaksi pada kerusakan yang terakhir, bila ada Malicious Program baru [dan mungkin lebih ganas] maka hukum perlu diperbaru.
  - Agar penegak hukum mengganjar pembuat Malicious Program seberat mungkin.

Malicious Program

- Apakah ini juga malicious program ?

  - Virus ~
    - Program that can reproduce by changing other programs to include a copy of itself. It is a parasite program, needing another program to survive.
    - Program that is designed to hide in the background and replicate itself from one computer to another by attaching itself to existing programs or parts of the operating system.

  - Hoax ~ something intended to deceive [bohong]; deliberate trickery intended to gain an advantage.
    [www.cogsci.princeton.edu/cgi-bin/webwn]

Malicious Program

- Apakah ini juga malicious program ?

  – Worm ~ Program yang menyebarkan diri sendiri dari sistem ke sistem sepanjang jaringan.

  – Trojan Horse ~ Program yang menyamar (masquerade) sebagai sesuatu yang useful or amusing, tetapi melakukan sesuatu yang tak terduga.

    - Pencurian passwords, credit card numbers, files, ..dsb.

    - Penyebaran DoS attacks or worms/viruses.

    - Sabotage, especially by insiders (time bombs).

    - Biasanya dikirimkan di dalam sebuah game

Malicious Program

- Beberapa jenis Malicious Program

    – Brain virus, virus untuk MS DOS dibuat 1986 berisi [unencrypted text] nama, adres, & nomor telefon Brain Computer Services (BCS) - swalayan di Lahore, Pakistan. Virus menginfeksi boot sector disket 5¼ . Robert Slade, ahli virus yakin virus dibuat sebagai bentuk iklan BCS.

    – Lehigh Virus, Nov. 1987, virus yang menginfeksi file **COMMAND.COM** pada disket DOS di Lehigh Univ.

    – Christma Worm, worm dalam bahasa REXX dibuat mahasiswa di Jerman Desember 1987 di jaringan IBM mainframe di Eropa. Worm memunculkan suatu citra pohon conifer di monitor, sambil mencari 2 files pada user's account to collect e-mail addresses kemudian secara otomatis sent itself ke adres-adres tersebut.

Malicious Program

- Beberapa jenis Malicious Program

  – Morris Worm, 2 November 1988 - Robert Tappan Morris, first-year CS graduate student Cornell Univ., worm yang secara efectif shut down Internet untuk beberapa hari.

  – MBDF Virus, 1992 - 4 undergraduate students [Blumenthal, Pilgrim, Doe, ?] di Cornell Univ. created and released virus MBDF, attacks Apple Mac., berupa 3 shareware programs:

  - Obnoxious Tetris [game]

  - Ten Tile Puzzle [game]

  - Tetriscycle [Trojan Horse berisi encrypted copy dari MBDF.

  – Komputer yang terinfeksi MBDF Virus ada di seluruh wilayah USA, Japan, Europe, Australia, and Canada.

Malicious Program

- Beberapa jenis Malicious Program

  - Pathogen Virus, April 1994 di-release di UK oleh Christopher Pile ["Black Baron", pemrogram] yang uploading infected file ke computer bulletin board, di mana korban dapat download a copy of the file.

  - Melissa virus, released on 26 March 1999 di-design to infect macros in wordprocessing documents used by the Microsoft Word 97 and Word 2000 programs.

  - ILOVEYOU worm, pertama ditemukan di Hong Kong 4 - 5 - 2000 menyerang ³ 1/2 perusahaan di USA dan ³ 105 mail servers di Eropa.[Internal e-mail systems at U.S. Senate & Britain's House of Commons were shut down.]

Sekuriti

- General Security Rules **[www.albion.com]**

  - R-1: Security through obscurity [samar] doesn't work.[X-Files: "There's always someone watching."]

  - R-2: Full disclosure of bugs & holes benefits security. [It's best if the vendors announced along with fixes].

  - R-3: [Farmer's Law, promulgated disebar-luaskan] by computer security researcher Dan Farmer:] "The Security of a Computer System Degrades in Direct Proportion to the Amount of Use the System Receives."

  - R-4: Do it before someone does it wrong for you. [Computer security can never be implemented in a vacuum.]

Sekuriti

- General Security Rules **[www.albion.com]**
  - R-5: The fear of getting cought is the beginning of wisdom. [Don't underestimate the value of deterrence / rintangan.]
  - R-6: There's always someone out there smarter, more knowledgeable, or better eqquiped than you [Be careful about the assumptions you make concerning the threats your systems face.].
  - R-7: There are no turnkey security solutions [There's no checklist that will account for all vulnerabilities.].
  - R-8: The Good & Evil blend into gray [There are "good guys" and "bad guys" out there, or "white hats" and "black hats."].
  - R-9: Think like the enemy [akibat R-8].
  - R-10: Trust is a relative concept ["Trust no one" is the strongest policy].

Etika - Etiket - Netiket

- Apa etiket = etika ? [pcwebopaedia.com]/www.hyperdictionary.com]

  – Ethic [etika] ~ the principles of right and wrong that are accepted by an individual or a social group; "the Puritan ethic"; "a person with old-fashioned values".
  – Etiquette [etiket] ~ rules governing socially acceptable behavior.
  – Netiquette ~
    - Internet/network etiquette, panduan etiket untuk posting pesan-pesan layanan online [newsgoups], mencakup segala aturan, cara diskusi, format sederhana, ..
    - A comprehensive guide to all aspects of electronic [do's and don'ts of online] communication, including Telnet and FTP.

Etika - Etiket - Netiket

- Prinsip umum etika [www.ccis.edu/Departments/TechnologyServices]
  - Respect for intellectual labor and creativity to academic discourse and enterprise. It applies to works of all authors and publishers in all media. It encompasses respect for the right to acknowledgment, right to privacy, and right to determine the form, manner and terms of publication and distribution.

  - Because electronic information is so volatile and easily reproduced, respect for the work and personal expression of others is especially critical in computer environments. Violations of authorial integrity, including plagiarism, invasion of privacy, unauthorized access, and trade secrets and copyright violations, may be grounds for sanctions against members of the academic community.

Etika - Etiket - Netiket

- **Bagaimana cara** Ethical and Responsible Use of Computers **?**

  – Ingat bahwa semua fasilitas & perangkat komputasi adalah for purposes of work [business, instruction, & research].

  – Taati semua aturan dan prosedur yang berlau.

  – Jaringan komputer & telekomunikasi untuk free exchange of ideas and information, jadi enhancing teaching & research, as well as enabling employees to work more efficiently and productively.

  – Users must not use systems of any kind to send material that is obscene, illegal, discriminating, or intended to defame or harass others, or to interfere with their work on the computer.

Etika - Etiket - Netiket

- Bagaimana ..... ?

    – Everyone who use the computers have the right to security of their computer programs and data.

    – Security systems for computers exist to ensure that only authorized users have access to computer resources.

    – Abusers of computing privileges will be subject to disciplinary action.

    – Software license agreements serve to increase compliance with copyright and patent laws, and to help insure publishers, authors and developers of return on their investments.

Etika - Etiket - Netiket

- **RFC 1855**, Netiquette Guidelines [www.dfcc.edu/cs/rfc1855.html]
  - Komunikasi 1 - 1
    - **Email** [ownership, mail on the Internet is not secure, respect the copyright, if forwarding / re-posting don't change the wording, never send chain letters via electronic mail, not send heated messages / "flames", check all your mail subjects before responding, make things easy for the recipient, etc.]
    - **Talk** is a set of protocols which allow two people to have an interactive dialogue via computer [use mixed case and proper punctuation, write out no more than 70 characters, and no more than 12 lines, leave some margin, remember that talk is an interruption to the other person, always say goodbye or some other farewell, .. etc.].

Etika - Etiket - Netiket

- **RFC 1855**
  - Komunikasi 1 - N
    - **General** [Read both mailing lists and newsgroups for one to two months before you post anything, Do not blame the system administrator for the behavior of the system users, Consider that a large audience will see your posts, Assume that individuals speak for themselves, Messages and articles should be brief and to the point, etc.].
    - **Mailing list** [Send subscribe and unsubscribe messages to the appropriate address, Save the subscription messages for any lists you join, it's not possible to retrieve messages once you have sent them, auto-reply feature of many mailers is useful for in-house communication, Don't send large files to mailing lists when Uniform Resource Locators (URLs) or pointers to ftp-able versions will do, etc.]

Etika - Etiket - Netiket

- **RFC 1855**
  - **NetNews** is a globally distributed system which allows people to communicate on topics of specific interest. [posting/cossposting, send mail when an answer to a question is for one person only, check the Distribution" section of the header, read all of a discussion in progress before posting replies, etc.]
  - Kelompok **NetNews**
    - sci - science related discussions;
    - comp - computer related discussions;
    - news - for discussions which center around NetNews itself;
    - rec - recreational activities;
    - soc - social issues;
    - talk - long-winded never-ending discussions;
    - biz - business related postings; and
    - alt - the alternate hierarchy

Etika - Etiket - Netiket

- **RFC 1855**
  - **Information services** [services belong to someone else, start problem solving by checking locally, information services also use conventions such as www.xyz.com, do NOT assume that ANY information you find is up-to-date and/or accurate, Remember that unless you are sure that security and authentication technology is in use, that any information you submit to a system is being transmitted over the Internet "in the clear", with no protection from "sniffers" or forgers].
    - Gopher
    - Wais
    - World Wide Web (WWW)
    - Multi-User Dimensions (MUDs)
    - Multi-User Dimensions which are Object Oriented (MOOs)