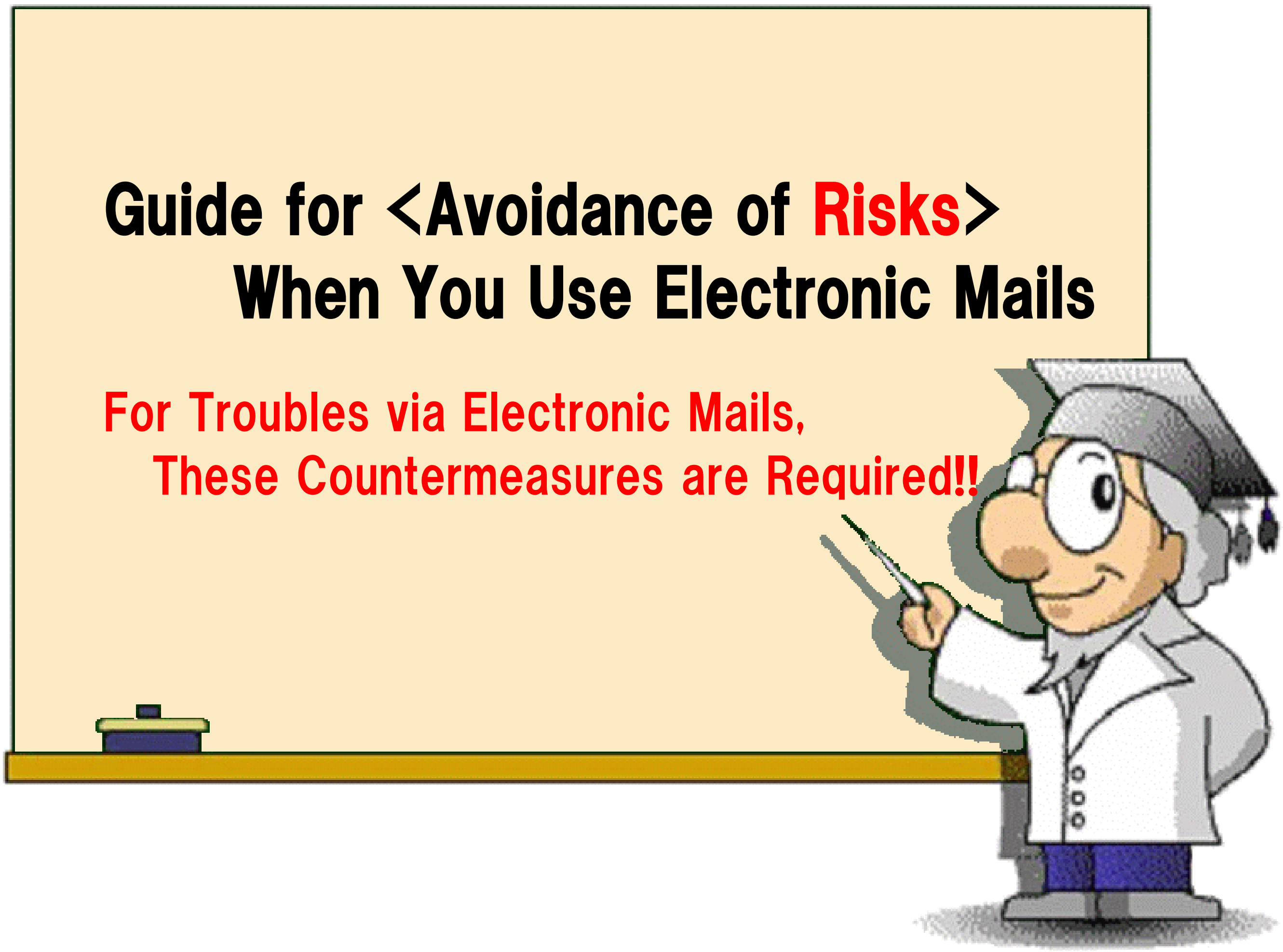
IPA Countermeasure Guide Series (7)



Guide for <Avoidance of Risks> When You Use Electronic Mails

For Troubles via Electronic Mails, These Countermeasures are Required!!

IPA 独立行政法人 情報処理推進機構
セキュリティセンター

http://www.ipa.go.jp/security/

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Introduction

Nowadays, electronic mail (hereinafter referred to as e-mail) is indispensable for not only corporate activities but also personal use. Thanks to the popularization of antivirus software and spam e-mail filtering software, countermeasures against computer viruses via e-mail and unsolicited (spam) e-mails are effectively implemented by organizations. However, recently, there were information leakage incidents resulting from improper e-mail handling, and virus infection/information leakage resulting from careless handling of suspicious e-mails sent as part of (the after-mentioned) Targeted Attack. Especially, in corporate activities, these problems can develop into the company's credibility problem.

In order to address the problems like these, it is important to raise security awareness on the part of those handling e-mails and to ensure that basic measures are implemented.

This countermeasures guide explicates the following:

- **To Prevent Wrong E-mail Transmission**
  - **Mailer Settings to Prevent Wrong Transmission**
  - **E-mail Encryption (Attachment Encryption）**
- **To Protect Oneself from Computer Viruses and Targeted Attack**
  - **Secure Mailer Settings**
  - **Targeted Attack**
  - **How to Handle Suspicious E-mails**

This guide describes how to strengthen the security of mailers (i.e., an application to read and write e-mails in a secure manner) ant the information is based on Microsoft Outlook Express (2003).

Recently, a variety of mailers and Web-based e-mail (applications) are used by people. It is effective to strengthen the security of each application, so we recommend that you strengthen the security of your mailer based on the contents of this guide.

While the previous editions recommended disabling e-mail preview function due to certain vulnerabilities in mailers, this edition omitted such recommendation as those vulnerabilities are not detected in recent mailers.

1. To Prevent Wrong E-mail Transmission

As for major information leakage incidents due to wrong e-mail transmission, the following instances are often observed.

- **An incident caused by specifying a wrong destination address**
- **E-mail address leakage caused by sending a broadcast mail[*1] in the wrong way**

*1) Broadcast mail is an identical e-mail sent simultaneously to multiple recipients.

While the former is often caused by e-mail users' carelessness, the latter is often caused by unaccustomed e-mail handling. In either case, the problems are related to e-mail destination address, so if users exercise caution, they can prevent such problems.

The following countermeasures are effective:

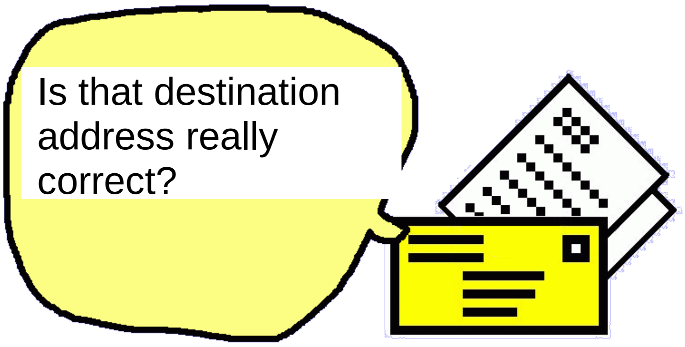
- **Prior to sending an e-mail, recheck its destination address and contents as well as the presence/absence of attachment(s);**
- **Understand the usage of TO, CC and BCC (make it a rule);**
- **Furthermore, in order to reduce the occurrence of problems, encrypt e-mails.**

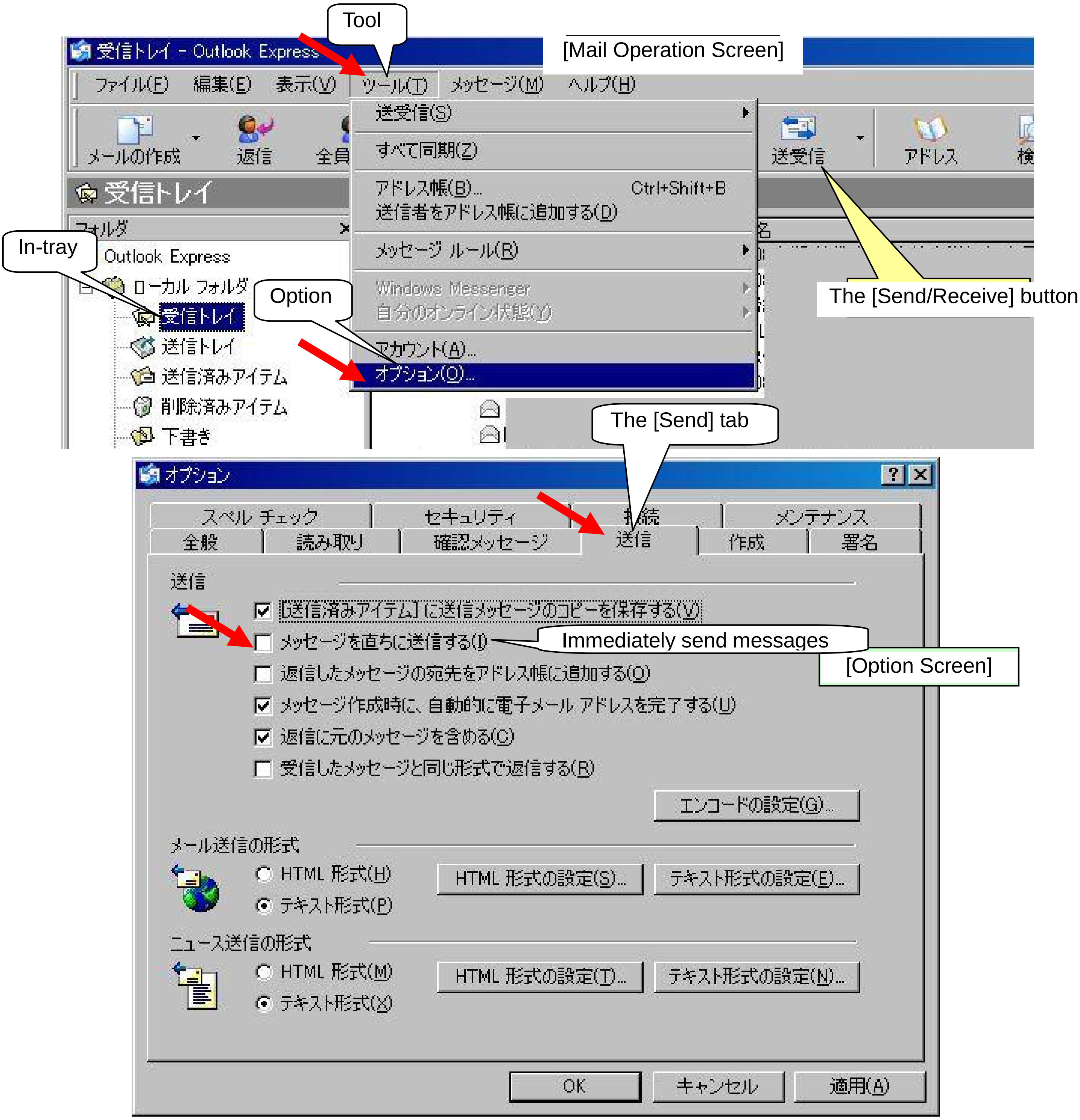
Prior to Sending an E-mail, Recheck its Destination Address etc.

In the Case of Microsoft Outlook Express

Let's take Microsoft Outlook Express as an example.

General (default) settings are: if you create an e-mail and press the [Send] button on the [Mail Creation Screen], the e-mail is sent immediately. It is recommended to recheck its destination address before pressing the [Send] button, and those who are still anxious may make settings as shown in Figure 1, which gives them an additional opportunity to recheck their e-mail's destination address.





Tool

[Mail Operation Screen]

In-tray

Option

The [Send/Receive] button

The [Send] tab

Immediately send messages

[Option Screen]

送信

☑ [送信済みアイテム] に送信メッセージのコピーを保存する(V)
☐ メッセージを直ちに送信する(I)
☐ 返信したメッセージの宛先をアドレス帳に追加する(O)
☑ メッセージ作成時に、自動的に電子メール アドレスを完了する(U)
☑ 返信に元のメッセージを含める(C)
☐ 受信したメッセージと同じ形式で返信する(R)

メール送信の形式

○ HTML 形式(H)
● テキスト形式(P)

ニュース送信の形式

○ HTML 形式(M)
● テキスト形式(X)

Figure 1: Option Settings to Enable Users to Recheck Their E-mail's Destination Address

On the [Mail Operation Screen], select [Tool] -> [Option] -> the [Send] tab and uncheck the checkbox "Immediately send messages" (this is checked by default), and then click the [OK] button (or the [Apply] button".) By making this setting, even if you press the [Send] button on the [Mail Creation Screen], that e-mail is not sent immediately and instead placed in the out-tray. That is to say, you can recheck the content (including destination address) of that e-mail in the out-tray.

Actual e-mail transmission takes place when you press the [Send/Receive] button on the [Mail Operation Screen].

■ In the Case of Mozilla Thunderbird

In the case of Mozilla Thunderbird, the application itself has no function (setting) to disable immediate transmission, but there are several add-ons*2 that prompt users to check their e-mail's content before sending it. By using these add-ons, you can check your e-mail's content (including destination address) before sending it. This gives you an additional opportunity to recheck your e-mail (Note, however, that add-ons should be used at your own risk.)

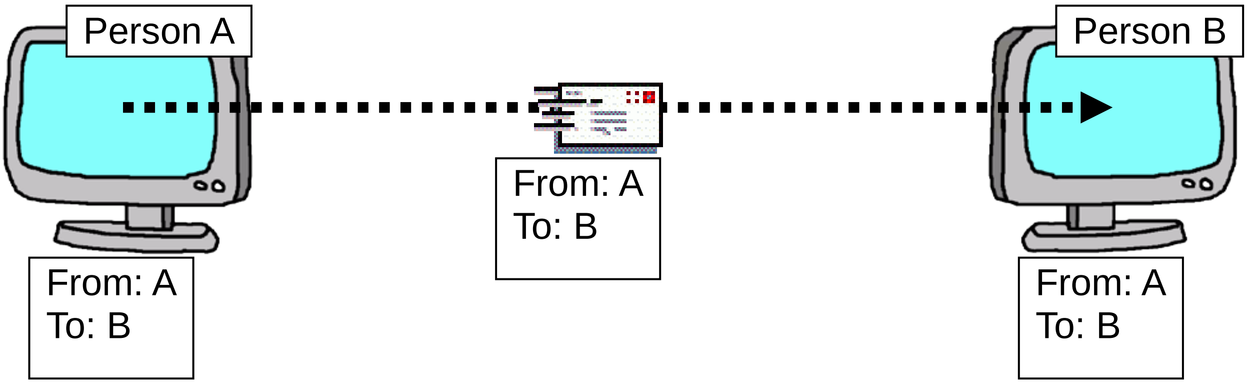
*2) Add-on is an extended function that can be added to software. Because Mozilla Thunderbird is open source software (OSS), there are a variety of add-ons by various developers.

Examples of add-ons are:
Check and Send: **https://addons.mozilla.org/ja/thunderbird/addon/2281**
Confirm-Address: https://addons.mozilla.org/ja/thunderbird/addon/5582
and so forth.

Usage of "TO", "CC" and "BCC"

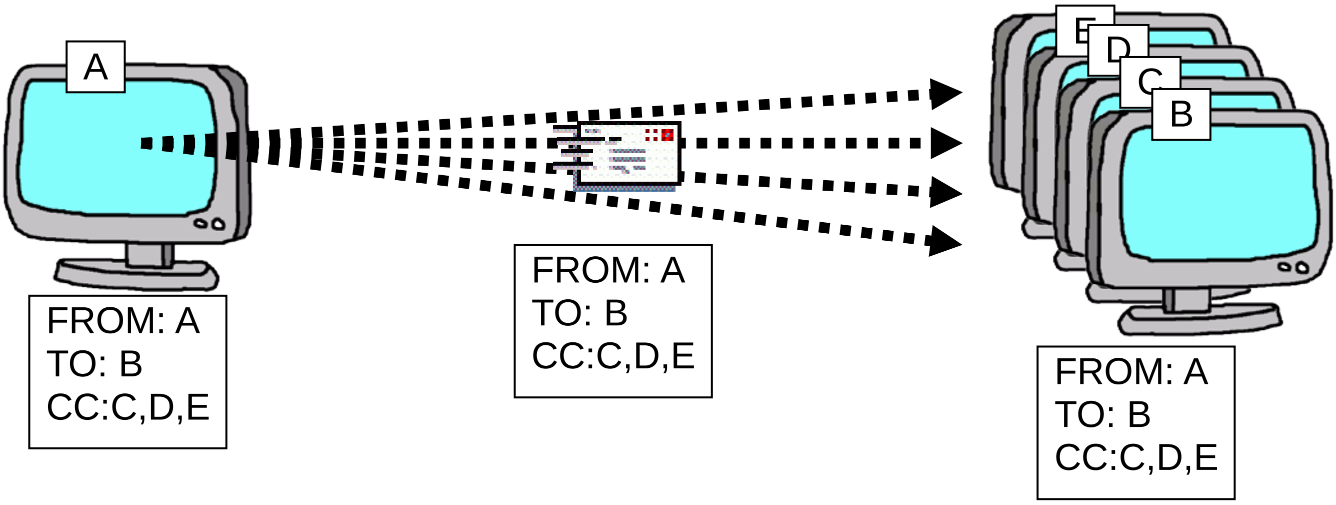
For e-mail destination address specification, you can use "TO", "CC" or "BCC". Here, we explain by taking Microsoft Outlook Express as an example again.

For "TO" specification, it is common to specify a primary destination address for that e-mail. When you specify a specific person's destination address, you can use this "TO" specification（NB: in the case of Outlook Express, this is called "destination address" instead of "TO"）.



"CC (Carbon Copy)" specification is used to send an identical e-mail to multiple destination addresses at the same time (i.e., broadcast mail). For example, it would be a pain to send an identical e-mail, one by one, to multiple members within the same company. By specifying multiple members' in the

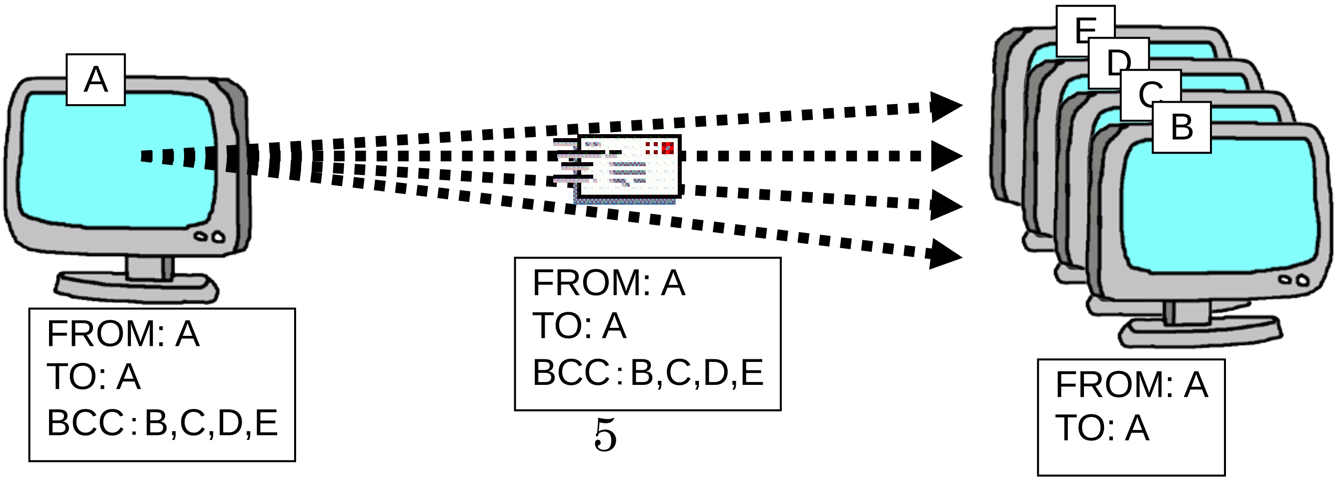
"CC" field, you can send such identical e-mail at a time. You may also specify each destination address in the "TO" field, but depending on the mail server which sends/receives e-mails or the mail provider, the number of destination address that can be specified in the "TO" or "CC" field may be limited, so, be careful.



In the above example, an identical e-mail is sent to person B as well as C, D and E. What needs to be noted here is that, all the recipients (i.e., person B, C, D and E) would notice that an e-mail to person B was also sent to person C, D and E (The reason why B is specified in the "TO" field is because person B is the primary recipient; if the "TO" field is left blank, this e-mail is regarded by Outlook Express as **"undirected" and might be mistaken for a virus e-mail or an unsolicited e-mail**. To avoid this, you need to specify at least one person (you may specify multiple recipients).

In this case, if person B, C, D and E **did not know each other**, they would be embarrassed by receiving such e-mail. For example, person C may not want anybody except A to know his e-mail address. In such case, this e-mail transmission results in e-mail address leakage (personal information leakage).

To avoid this problem, you can use "BCC (Blind Carbon Copy)" specification. "BCC" specification is used to send an identical e-mail to multiple destination addresses at the same time (i.e., broadcast mail). For example, it would be a pain to send an identical e-mail, one by one, to multiple clients. By specifying multiple clients in the "BCC" field, you can send such identical e-mail at a time.



In this case, an e-mail to person A is also sent to person B, C, D and E. However, person B, C, D and E would not notice that the e-mail they received has someone else's address in the "BCC" field (they even don't know if the e-mail was addressed only to them).

At least, the e-mail addresses specified in the "BCC" filed are not disclosed to the recipients, so except for body text and attachment contents, there is no risk of personal information leakage resulting from destination address specification (as mentioned earlier).

The reason why the sender himself is specified in the "TO" field is the same as that of "CC" (if the "TO" field is left blank, this e-mail is regarded by Outlook Express as **"undirected" and might be mistaken for a virus e-mail or an unsolicited e-mail.**) For "TO", "CC" and "BCC" specification, destination information (e-mail address) is a compulsory input item.

This is a little ingenuity, but if you are going to specify yourself in the "TO" field, **you may register in the address book your e-mail address with an explicit owner name** (e.g., "Broadcast mail by BCC") **so that such explicit destination address is displayed in the "TO" field**.

（Caution 1）Cannot Use BCC?

If you have never used "BCC" on your Outlook Express or if you are using your Outlook Express in initial state, the "BCC" entry field is not displayed on the [Message Creation Screen]. In such cases, by selecting [Display] on the [Message Creation Screen] and checking [All the headers], you can make the "BCC" entry field appear.

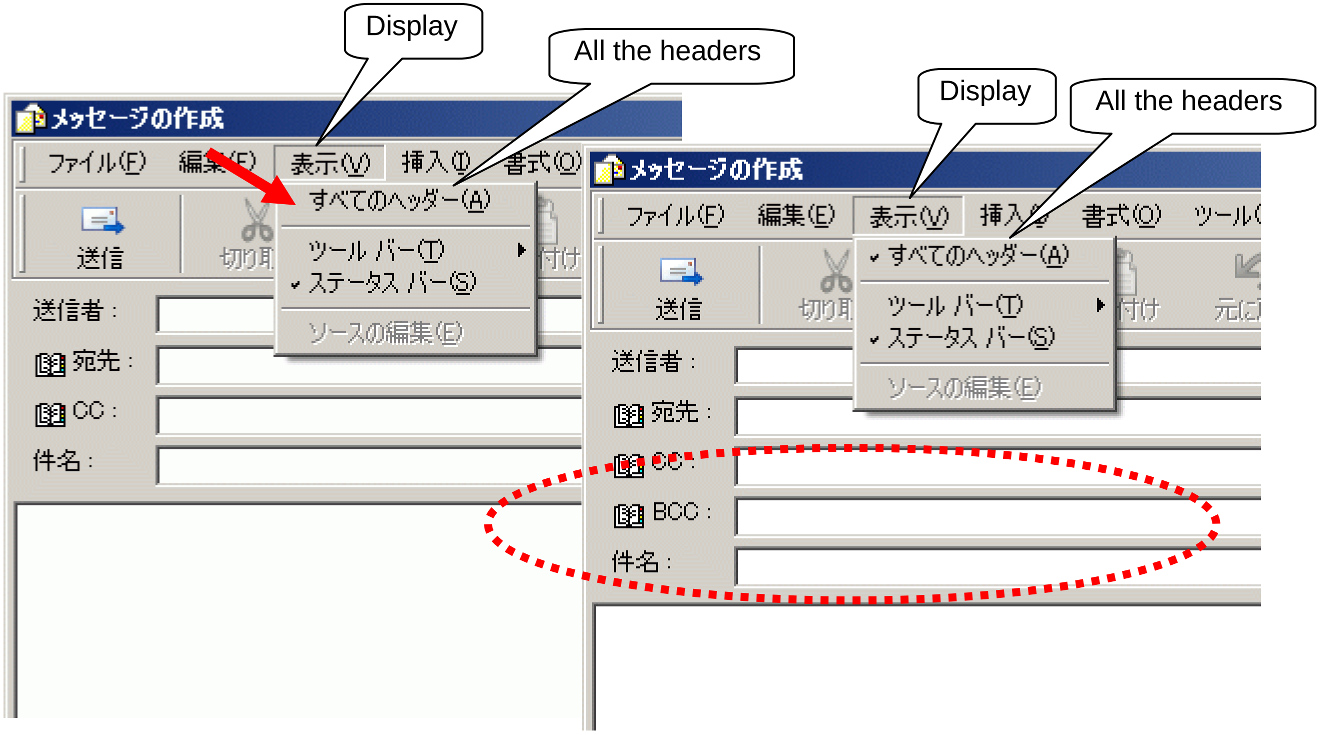
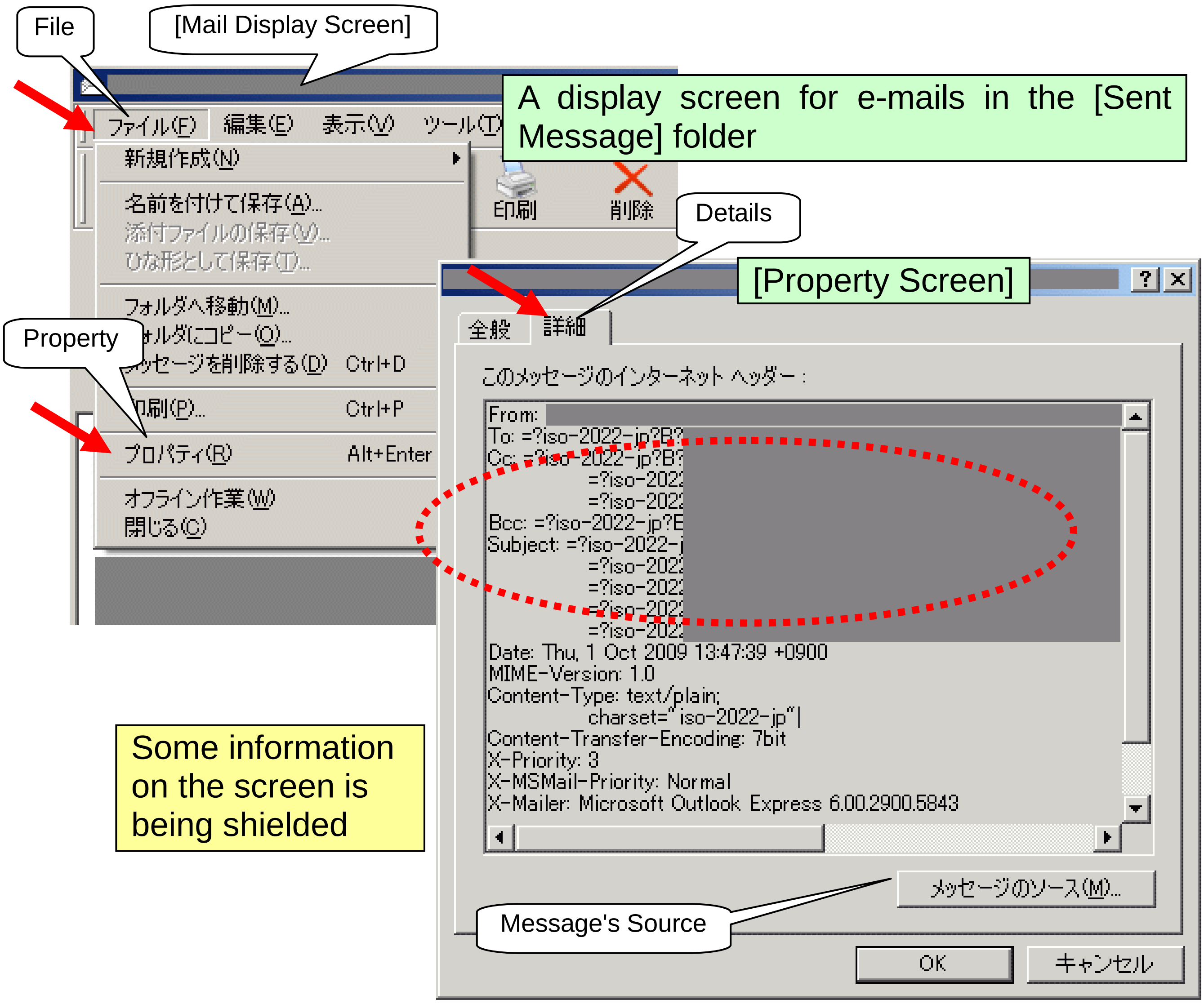


Figure 2: How to Make the "BCC" Entry Field Appear

（Caution 2）You Checked an E-mail in the [Sent Message] Folder, But You Could not See the "BCC" Content?

Even if you open an e-mail whose destination address specification is "BCC" in the [Sent Message] folder, the "BCC" content is not displayed. If you want to check the e-mail addresses specified in the "BCC" field, select [File] -> [Property] on the [Mail Display Screen], which opens the [Property Screen], and click the [Details] tab. Note, however, that only Base64-encoded information is displayed in the [Property Screen] and the [Message's Source Screen]. So, while English signage (e.g., e-mail address) is human-readable, Japanese signage needs to be decoded to be readable (if you want to see what is written on the part(s) of Japanese signage, you can use data compression/decompression utility.



```
From: [redacted]
To: =?iso-2022-jp?B?
Cc: =?iso-2022-jp?B?
        =?iso-2022
        =?iso-2022
Bcc: =?iso-2022-jp?B
Subject: =?iso-2022-j
        =?iso-2022
        =?iso-2022
        =?iso-2022
        =?iso-2022
Date: Thu, 1 Oct 2009 13:47:39 +0900
MIME-Version: 1.0
Content-Type: text/plain;
        charset="iso-2022-jp"
Content-Transfer-Encoding: 7bit
X-Priority: 3
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 6.00.2900.5843
```

File

[Mail Display Screen]

A display screen for e-mails in the [Sent Message] folder

Details

[Property Screen]

Property

Some information on the screen is being shielded

Message's Source

Figure 3: Checking a Sent Mail's BCC Content (in the case of Outlook Express)

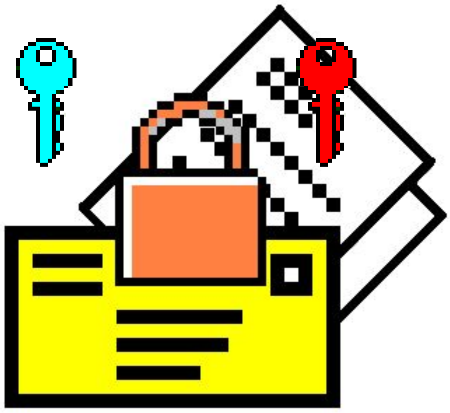
E-mail Encryption or Attachment Encryption

In order to send/receive e-mails in a secure manner, you may encrypt your e-mail's body text and attachment.

To encrypt an e-mail's body text and attachments, you need to have dedicated software (e.g., PGP[*3]) and environment (encryption key) for such encryption. A handy way is to encrypt (password-protect) the attachment by using file encryption software or the encryption function provided by the document creation software in use, or the encryption function provided by data compression/decompression software.

*3) PGP（Pretty Good Privacy）is encryption software developed by a development team lead by an American Philip R. Zimmermann and it is a worldwide standard.

■ An E-mail Encrypted by Using Public Key[*4]（Advanced Technique）

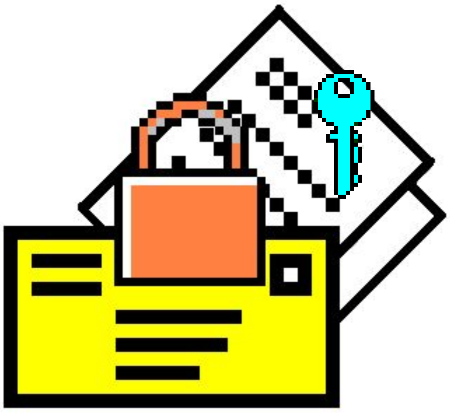


If the e-mail recipient is making his public key available to the public, you can use it to encrypt your e-mail. In this case, the encrypted e-mail can only be decrypted with the corresponding private key which is held by the one who published the public key. In short, nobody can see the e-mail's content except the recipient. Generally, free software with PGP function is used by the public, but e-mail encryption software products that use this technique are also available.

Because those products involve key management, they are not commonly used, but they certainly provide a reliable means for e-mail encryption.

*4)Public key is a key for encryption and used together with the corresponding private key. What is encrypted by using a public key can only be decrypted with the corresponding private key.

■ An Encrypted E-mail that Uses Password



If the e-mail's sender and recipient have the same key (password) for encryption, they can use it to encrypt their e-mails and exchange them. Generally, e-mail encryption software that automatically generates symmetric key and password at the time of encryption is available in the market. So, you may use it.

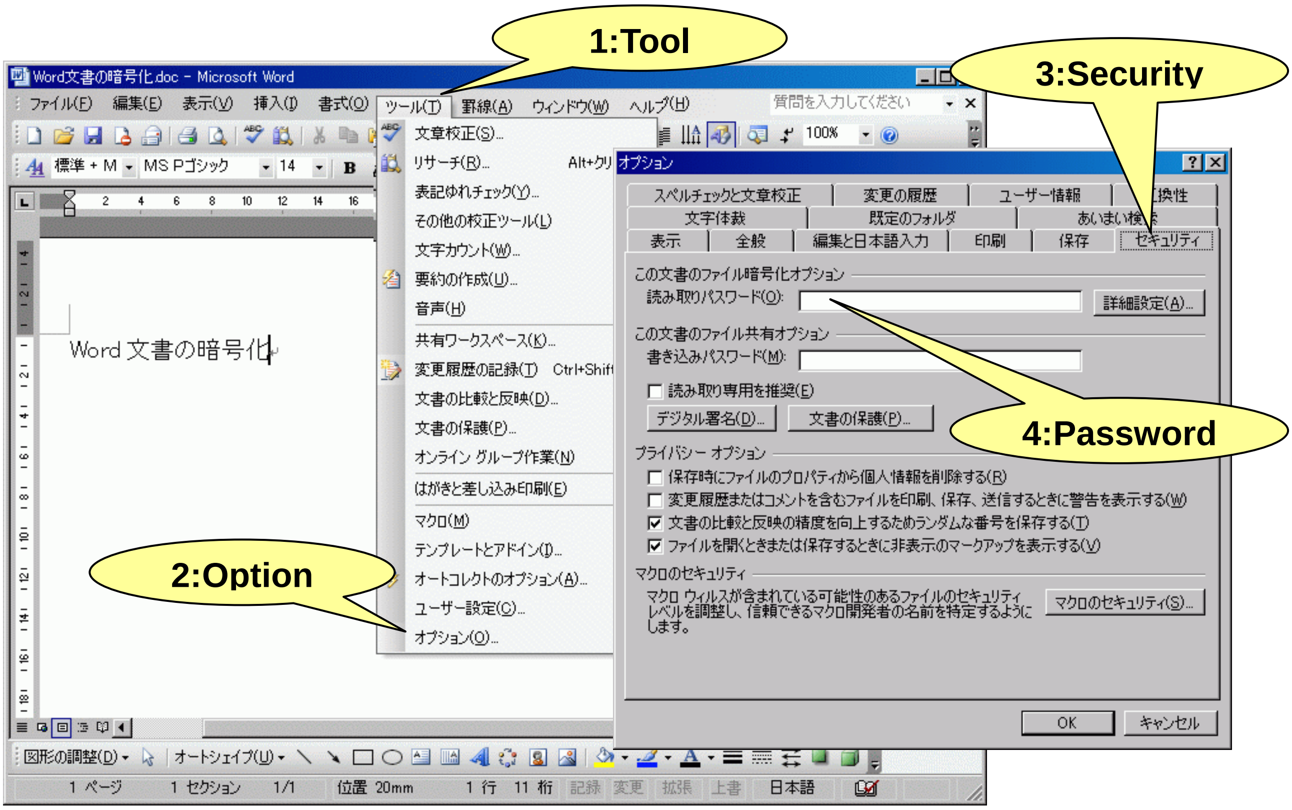
■ An E-mail whose Attachment is Encrypted

This is not about encrypting the e-mail itself but encrypting its attached document in advance and sending it by e-mail, which is also a handy way.

As for the password for decryption, it is important to let the receiving end know by using a communication method other than e-mail, and as for encrypting documents, you can use commercial software, or cryptographic processing (password protection) which is provided by document creation software (e.g., Office products) or data compression/decompression software.

This method is effective because, even if you sent critical information to a wrong address, it would not result in information leakage unless the recipient knew the password for decryption.

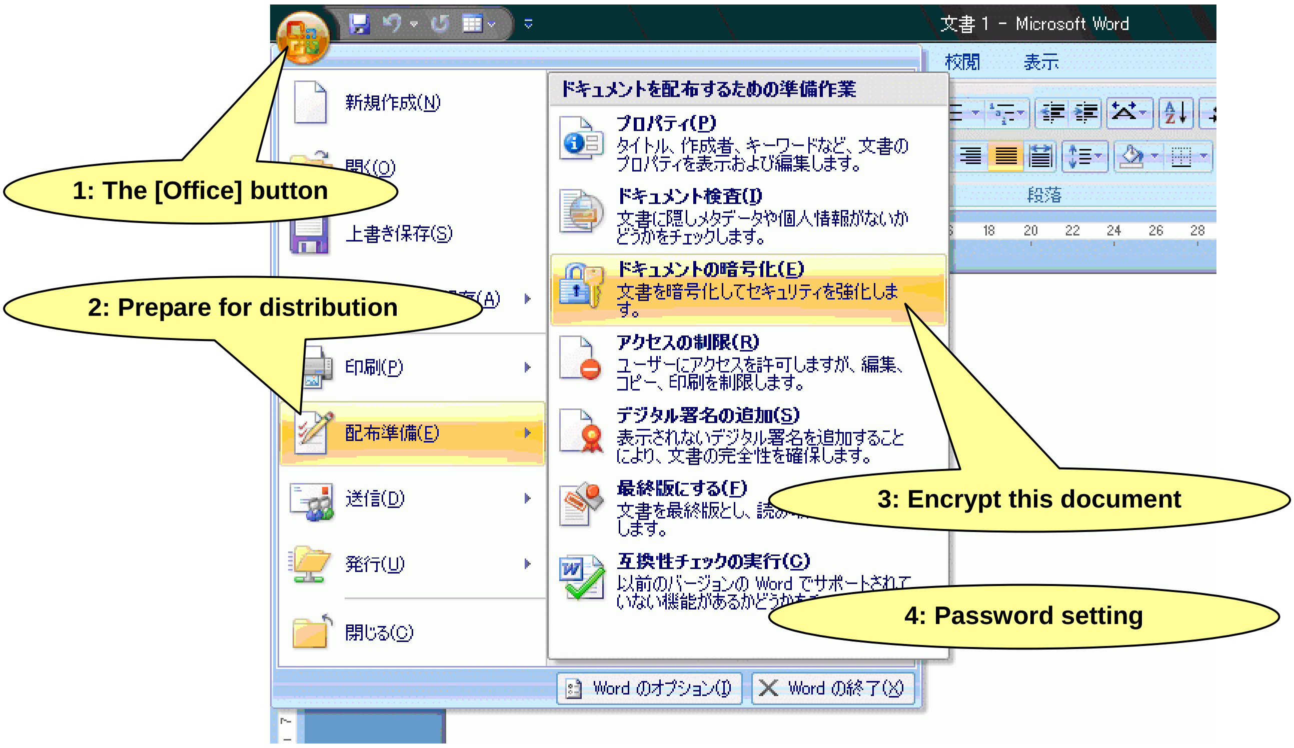
For example, if you are using Microsoft Office 2003 Word, you can encrypt your document as follows:


1:Tool
3:Security
2:Option
4:Password
Word文書の暗号化.doc - Microsoft Word
ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) ツール(T) 罫線(A) ウィンドウ(W) ヘルプ(H)
質問を入力してください
標準 + M MS Pゴシック 14 B
100%
Word 文書の暗号化
文章校正(S)...
リサーチ(R)... Alt+クリ
表記ゆれチェック(Y)...
その他の校正ツール(L)
文字カウント(W)...
要約の作成(U)...
音声(H)
共有ワークスペース(K)...
変更履歴の記録(T) Ctrl+Shift
文書の比較と反映(D)...
文書の保護(P)...
オンライン グループ作業(N)
はがきと差し込み印刷(E)
マクロ(M)
テンプレートとアドイン(I)...
オートコレクトのオプション(A)...
ユーザー設定(C)...
オプション(O)...
オプション
スペルチェックと文章校正 変更の履歴 ユーザー情報 互換性
文字体裁 既定のフォルダ あいまい検索
表示 全般 編集と日本語入力 印刷 保存 セキュリティ
詳細設定(A)...
デジタル署名(D)... 文書の保護(P)...
マクロのセキュリティ(S)...
OK キャンセル
図形の調整(D) オートシェイプ(U)
1 ページ 1 セクション 1/1 位置 20mm 1 行 11 桁 記録 変更 拡張 上書 日本語

この文書のファイル暗号化オプション
読み取りパスワード(O):
この文書のファイル共有オプション
書き込みパスワード(M):
□ 読み取り専用を推奨(E)
プライバシー オプション
□ 保存時にファイルのプロパティから個人情報を削除する(R)
□ 変更履歴またはコメントを含むファイルを印刷、保存、送信するときに警告を表示する(W)
☑ 文書の比較と反映の精度を向上するためランダムな番号を保存する(T)
☑ ファイルを開くときまたは保存するときに非表示のマークアップを表示する(V)
マクロのセキュリティ
マクロ ウィルスが含まれている可能性のあるファイルのセキュリティ レベルを調整し、信頼できるマクロ開発者の名前を特定するようにします。

Figure 4: Encrypting a File (in the Case of Office 2003 Word)

And, if you are using Microsoft Office 2007/2010 Word, you can encrypt your document as follows:



プロパティ(P)
タイトル、作成者、キーワードなど、文書のプロパティを表示および編集します。

ドキュメント検査(I)
文書に隠しメタデータや個人情報がないかどうかをチェックします。

ドキュメントの暗号化(E)
文書を暗号化してセキュリティを強化します。

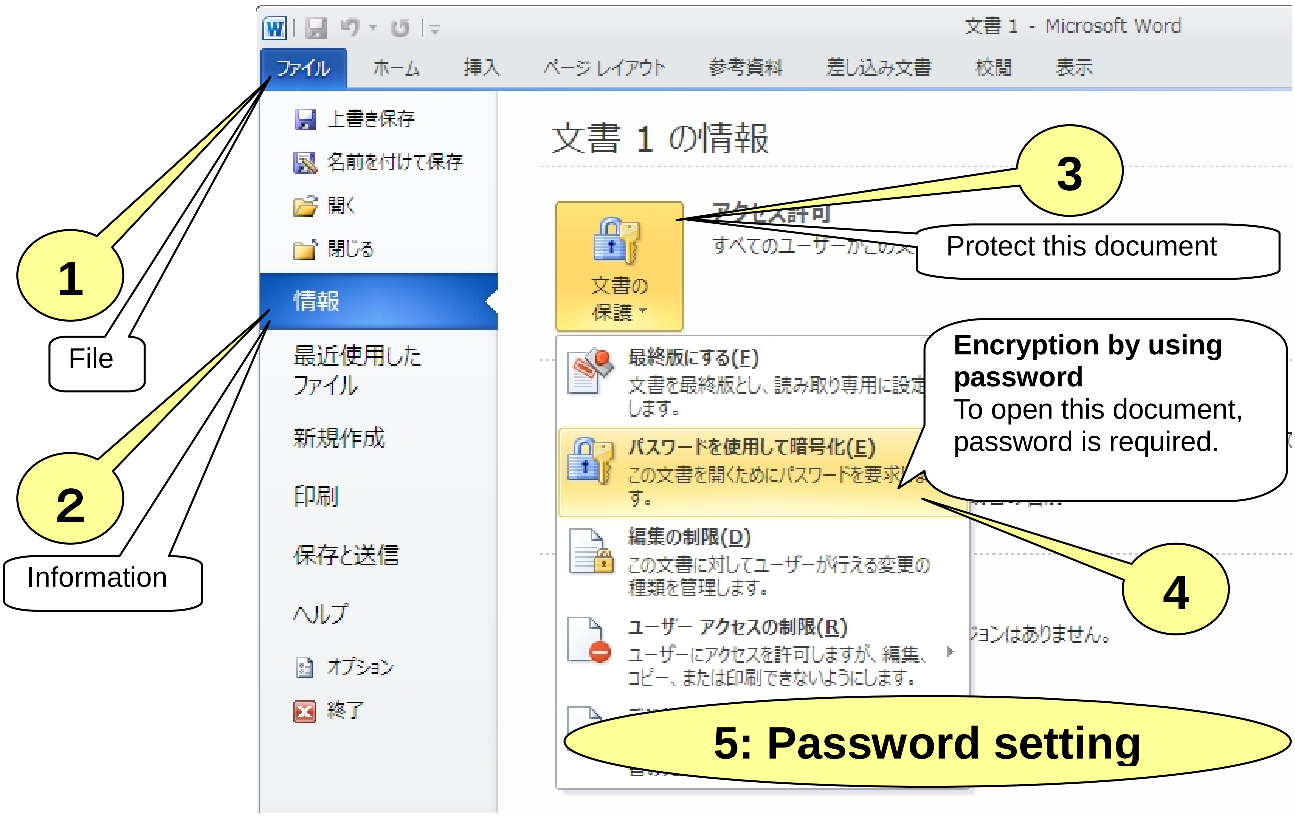
アクセスの制限(R)
ユーザーにアクセスを許可しますが、編集、コピー、印刷を制限します。

デジタル署名の追加(S)
表示されないデジタル署名を追加することにより、文書の完全性を確保します。

最終版にする(F)
文書を最終版とし、読み
します。

互換性チェックの実行(C)
以前のバージョンの Word でサポートされていない機能があるかどうか

Figure 5: Encrypting a File (in the Case of Office 2007 Word)



Encryption by using password
To open this document, password is required.

最終版にする(F)
文書を最終版とし、読み取り専用に設定します。

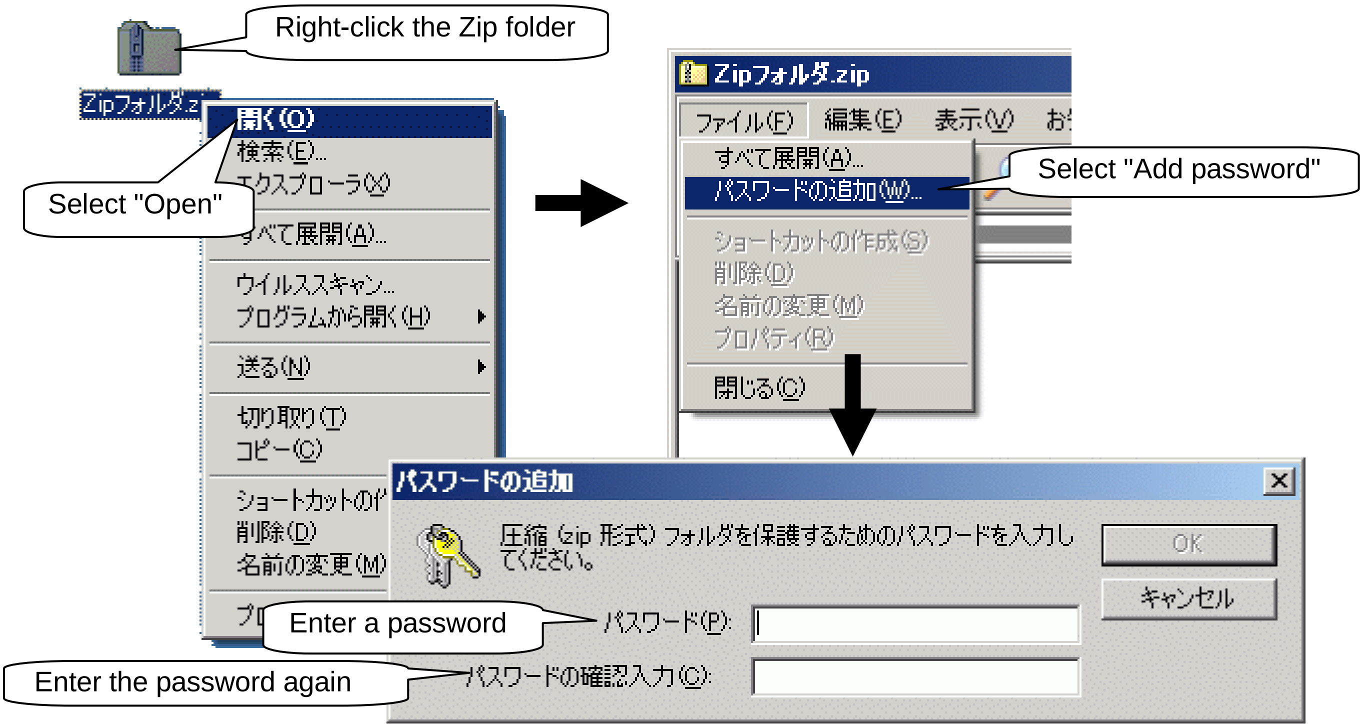
パスワードを使用して暗号化(E)
この文書を開くためにパスワードを要求します。

編集の制限(D)
この文書に対してユーザーが行える変更の種類を管理します。

ユーザー アクセスの制限(R)
ユーザーにアクセスを許可しますが、編集、コピー、または印刷できないようにします。

Figure 6: Encrypting a File (in the Case of Office 2010 Word)

Furthermore, if you are using Windows OS, you can password-protect the Zip folder as follows (NB: in this case, the files in the folder are also password-protected):



Right-click the Zip folder

Select "Open"

Select "Add password"

Enter a password

Enter the password again

圧縮 (zip 形式) フォルダを保護するためのパスワードを入力してください。

パスワード(P):

パスワードの確認入力(C):

Figure 7: Password Protection for the Zip Folder (Files in the Folder)

In every case, unless the user knows their assigned password, he cannot open these document files or the files in the Zip folder.

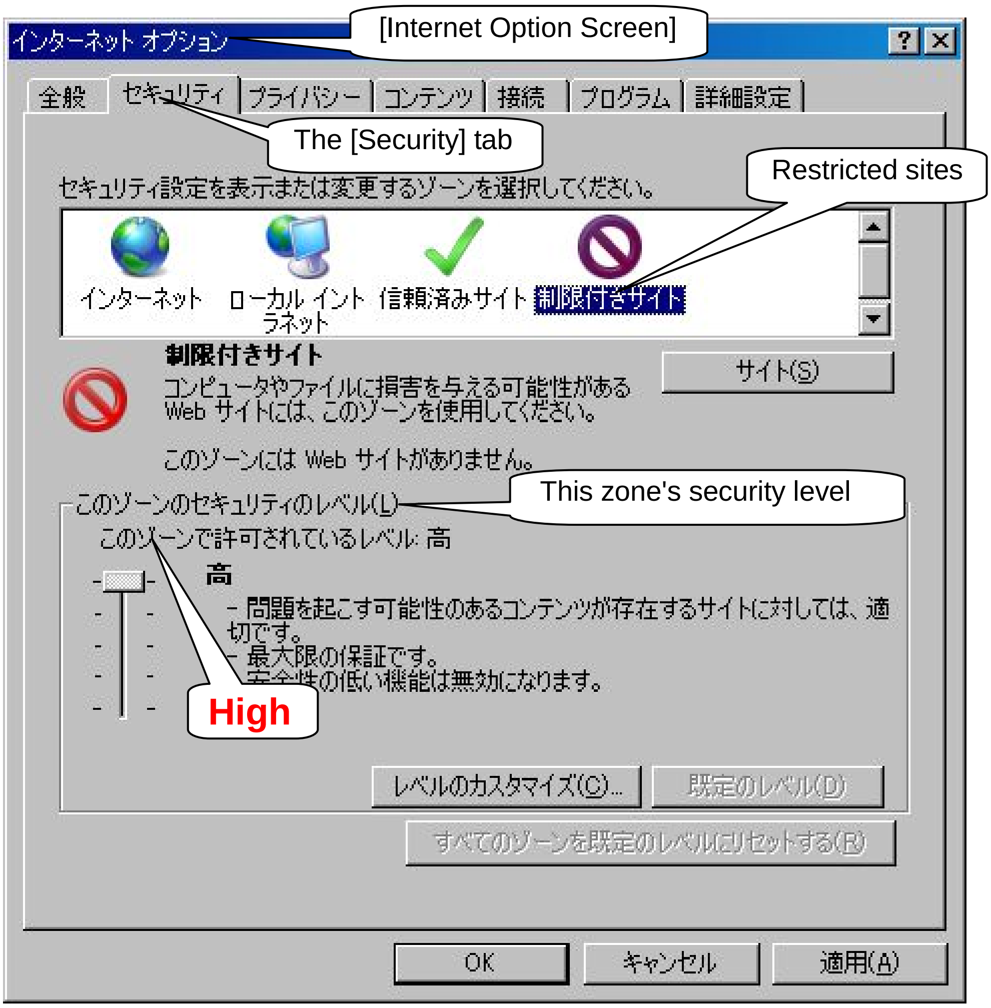
E-mail encryption is not for preventing wrong transmission but for protecting the e-mail's content in case a wrong transmission takes place. From the security aspect, it servers as a countermeasure against unauthorized access such as e-mail/communication interception, so it is good to try on a routine basis.

Furthermore, encrypting (password-protecting) documents and compressed folders is effective in ensuring secure e-mail exchange (i.e., sending and receiving) and protecting the information on your computer, so, give it a try.

2. Secure Settings for Microsoft Outlook Express

Here we explain how to make secure option settings on mailers by taking Microsoft Outlook Express as an example, so that readers can use e-mails in a secure manner. Note that Outlook Express uses Internet Explorer's display function (engine) to display e-mail contents. Therefore, we recommend that you strengthen your Internet Explorer's security settings as well.

What you need to do is, open the [**Internet Option Screen**], select the [**Security**] tab and click "**Restricted sites**", and then set "This zone's security level" to "**high**". For related items, refer to "**Figure 10: Security Option Settings**", which is described later.



セキュリティ設定を表示または変更するゾーンを選択してください。

制限付きサイト

コンピュータやファイルに損害を与える可能性がある Web サイトには、このゾーンを使用してください。

このゾーンには Web サイトがありません。

このゾーンのセキュリティのレベル(L)

このゾーンで許可されているレベル: 高

高

- 問題を起こす可能性のあるコンテンツが存在するサイトに対しては、適切です。
- 最大限の保証です。
- 安全性の低い機能は無効になります。

Figure 8: Security Level Setting for Restricted Sites

While the [Option Screen] of Outlook Express is also shown in Figure 1, Figure 9 shows how to open the [Option Screen] by selecting [Tool] -> [Option] on the [Mail Operation Screen].

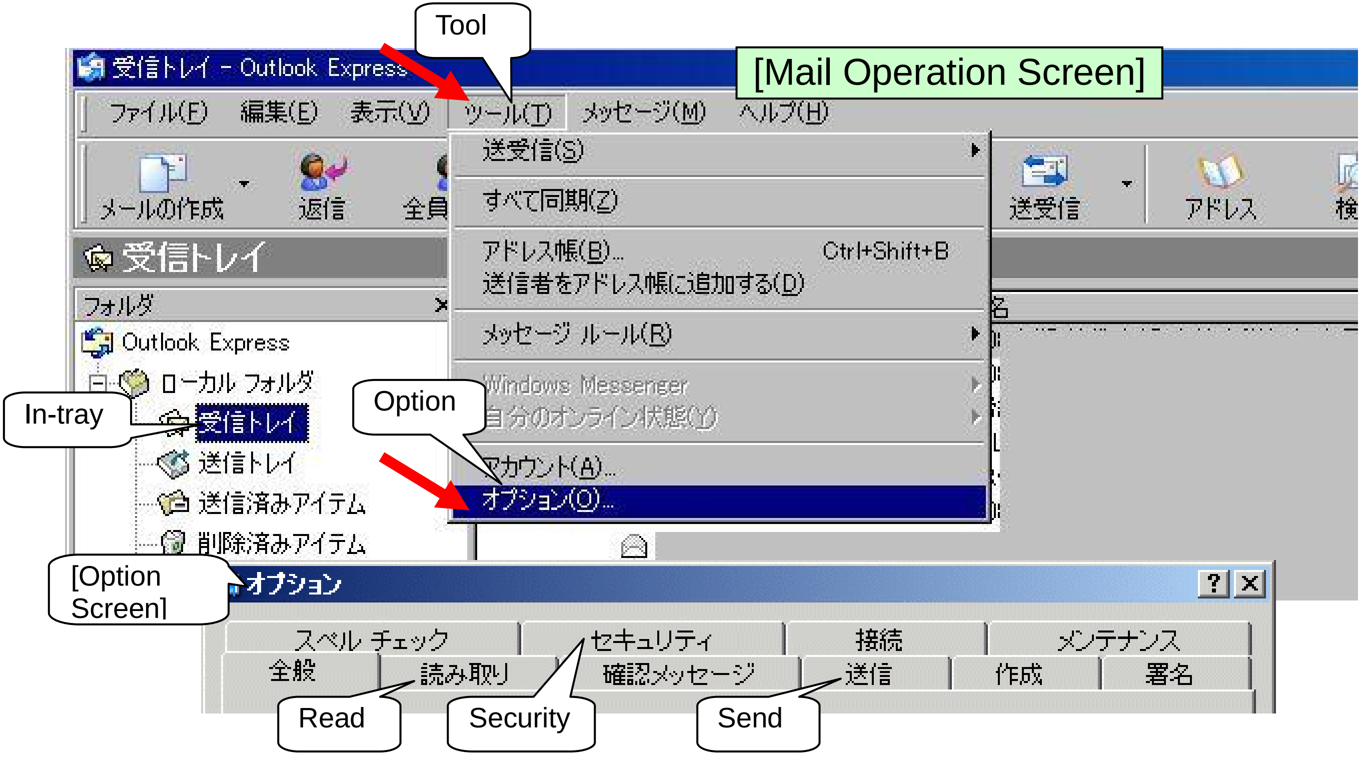


Figure 9: Display Image of the [Option Screen] of Outlook Express

The [Option Screen] has multiple tabs (See Figure 9), but the tabs on which you need to make basic secure settings are as follows:

- ❖ **Security (optional)**
- ❖ **Read (optional)**
- ❖ **Send (optional)**

(1) Outline of Secure Settings

Here we give the outline of secure settings for Outlook Express.

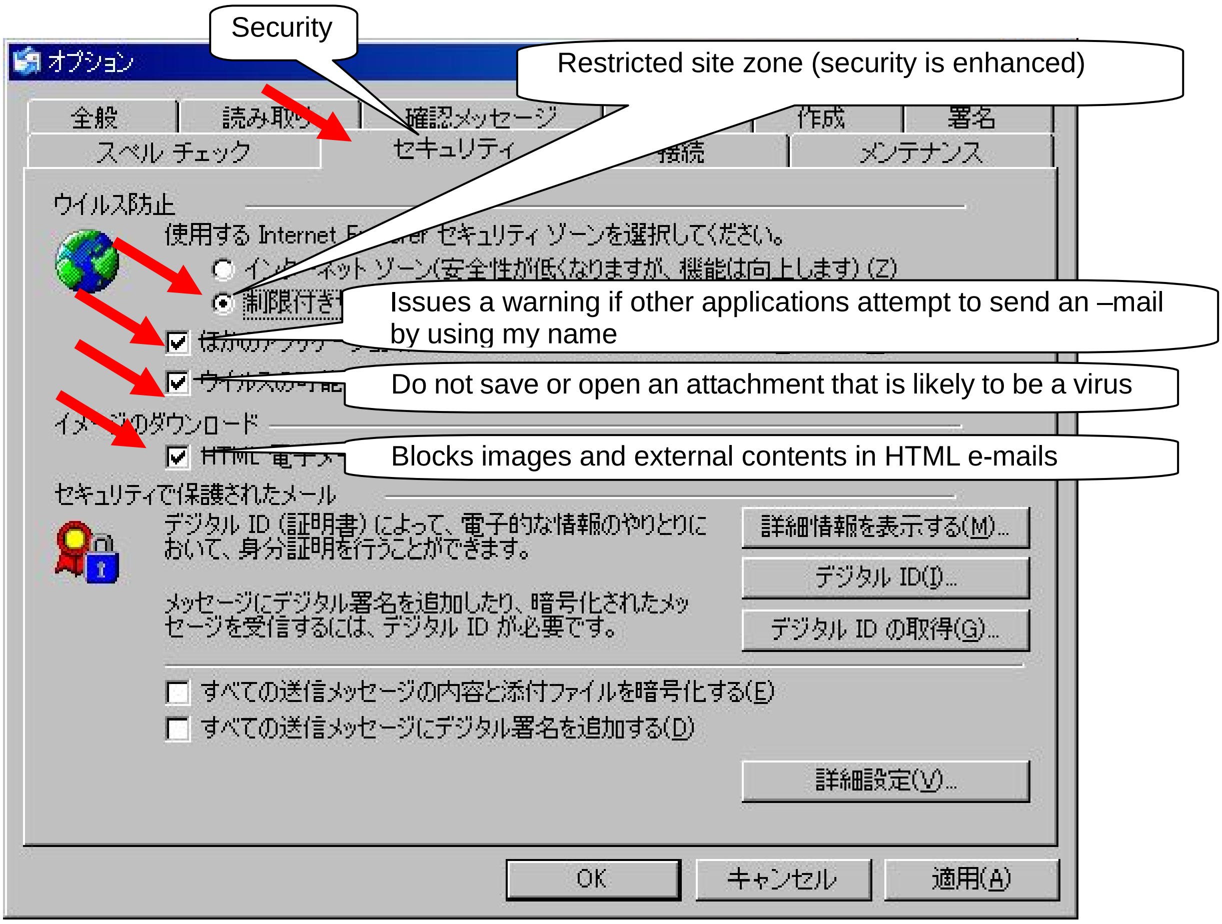
❖ Sending/Receiving an E-mail in Text Format

If you use HTML format for an e-mail's body text, you can make the e-mail's appearance much better. However, in the case of an e-mail in HTML format, an attacker can easily embed a malicious script, and if an e-mail containing such malicious script is opened, an unauthorized process might be executed on that PC against the recipient's will. In order to reduce this threat, it is recommended to receive e-mails only in text format. Furthermore, when you send an e-mail, if you know that the recipient is making the same settings as yours, it is a good manner to send it in text format so that the recipient feels safe.

Most of spam e-mails and direct mails use HTML format in order to attract recipients' interest. Furthermore, in the past, Outlook Express had security flaws in its preview function concerning HTML e-mails and attachment processing; and there was a case where a PC was infected with a virus only by previewing a doctored e-mail. In order to avoid such risk, it is important to not only disable the preview function, but also send/receive e-mails in text format.

If you want to make your e-mail decorative, put in writing the information you want to convey, obtain the recipient's consent and send it as an attachment.

(2) Security Options



Restricted site zone (security is enhanced)

Issues a warning if other applications attempt to send an –mail by using my name

Do not save or open an attachment that is likely to be a virus

Blocks images and external contents in HTML e-mails

ウイルス防止

使用する Internet Explorer セキュリティ ゾーンを選択してください。

○ インターネット ゾーン(安全性が低くなりますが、機能は向上します) (Z)

● 制限付きサ

☑ ほかのアプリケー

☑ ウイルスの可能

イメージのダウンロード

☑ HTML 電子メ

セキュリティで保護されたメール

デジタル ID (証明書) によって、電子的な情報のやりとりにおいて、身分証明を行うことができます。

メッセージにデジタル署名を追加したり、暗号化されたメッセージを受信するには、デジタル ID が必要です。

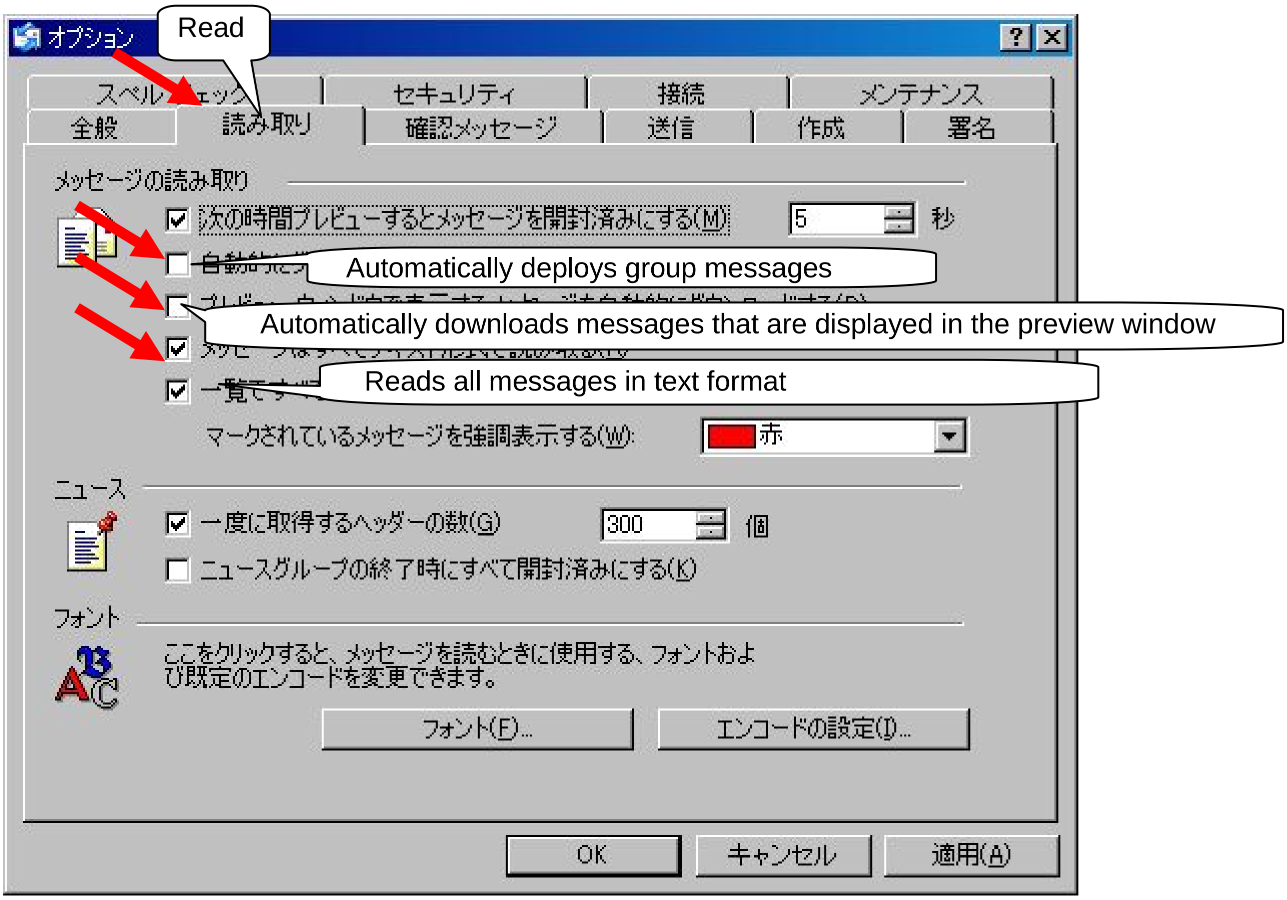
□ すべての送信メッセージの内容と添付ファイルを暗号化する(E)

□ すべての送信メッセージにデジタル署名を追加する(D)

Figure 10: Security Option Settings

- For security zone, select "**Restricted site zone**" (Details are described later);
- Check the checkbox "**Issues a warning if other applications attempt to send an –mail by using my name**";
- Check the checkbox "**Do not save or open an attachment that is likely to be a virus**";
- Check the checkbox "**Blocks images and external contents in HTML e-mails**".

(3) Read Options



オプション

Read

スペルチェック | セキュリティ | 接続 | メンテナンス

全般 | 読み取り | 確認メッセージ | 送信 | 作成 | 署名

メッセージの読み取り

☑ 次の時間プレビューするとメッセージを開封済みにする(M) 5 秒

□ Automatically deploys group messages

□ Automatically downloads messages that are displayed in the preview window

☑

☑ Reads all messages in text format

マークされているメッセージを強調表示する(W): 🟥 赤

ニュース

☑ 一度に取得するヘッダーの数(G) 300 個

□ ニュースグループの終了時にすべて開封済みにする(K)

フォント

ここをクリックすると、メッセージを読むときに使用する、フォントおよび既定のエンコードを変更できます。

Figure 11: Read Option Settings

As for the preview function of Outlook Express, let's make the following settings for security reason.

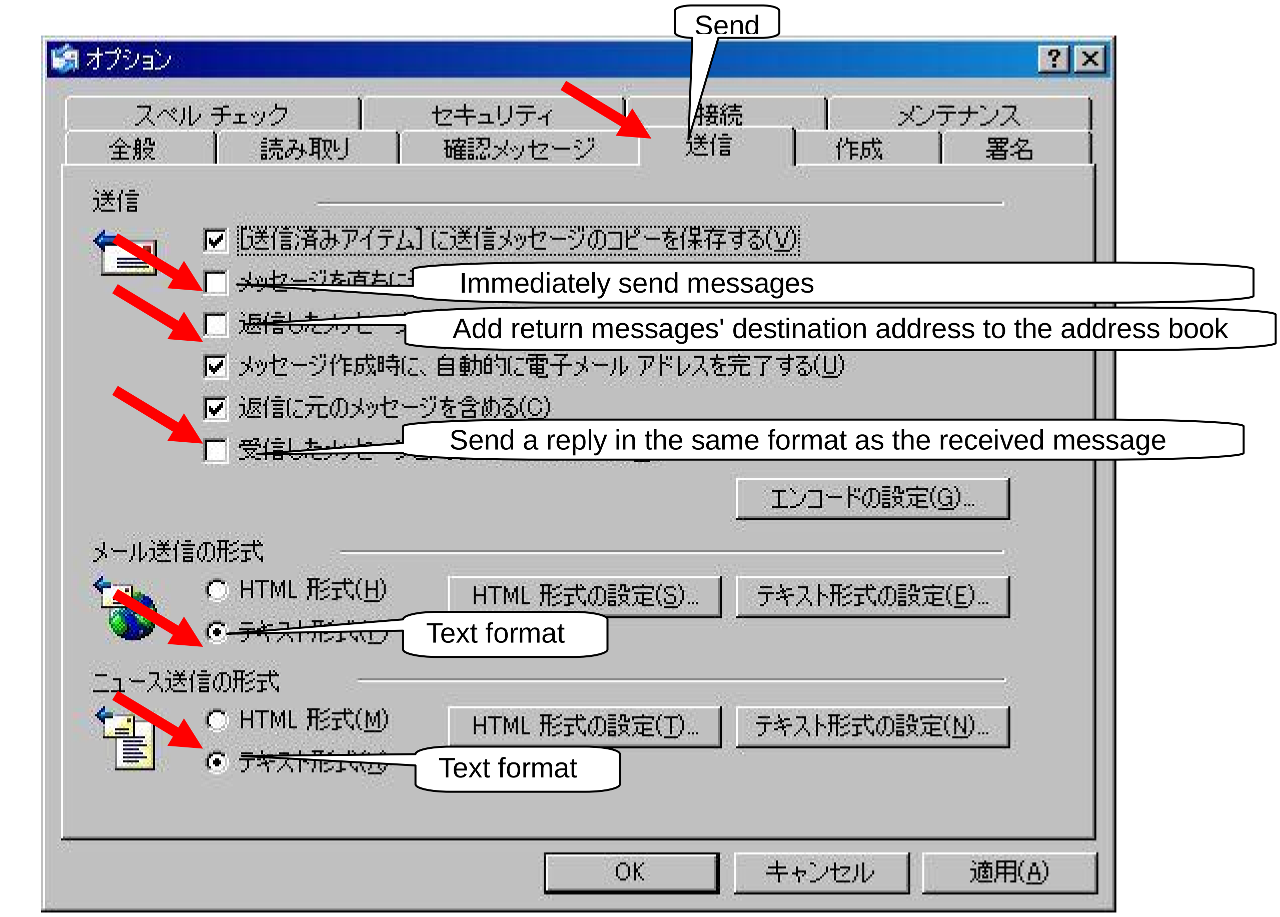
- ◆ Uncheck the checkbox "**Automatically deploys group message**";
- ◆ Uncheck the checkbox "**Automatically downloads messages that are displayed in the preview window**";

Furthermore, it is safe to display e-mails in text format …

- ◆ Check the checkbox "**Reads all messages in text format**".

These settings are effective.

(4) Send Options



Send

送信

☑ [送信済みアイテム] に送信メッセージのコピーを保存する(V)

□ メッセージを直ちに — Immediately send messages

□ 返信したメッセ — Add return messages' destination address to the address book

☑ メッセージ作成時に、自動的に電子メール アドレスを完了する(U)

☑ 返信に元のメッセージを含める(C)

□ 受信したメッセ — Send a reply in the same format as the received message

メール送信の形式

○ HTML 形式(H)

● テキスト形式(I) — Text format

ニュース送信の形式

○ HTML 形式(M)

● テキスト形式(X) — Text format

Figure 12: Send Option Settings

First of all, to minimize wrong e-mail transmission …

- Uncheck the item "**Immediately send messages**";
- Uncheck the item "**Add return messages' destination address to the address book**";

Furthermore, it is a good manner to send an e-mail in text format …

- Uncheck the checkbox "**Send a reply in the same format as the received message**";
- For mail transmission format, select "**Text format**";
- In addition, for news transmission format, select "**Text format**".

If you are using a mailer other than Outlook Express, by referring to the examples of Outlook Express, make security option settings for the mailer.

The impact of this closing statement may be weak, but if you are always aware of security issues and do not fail to take the following daily precautions, you will be able to use e-mails in a secure manner. After all, daily attitude is important …

Daily precautions
-> Check regularly for security patches for vulnerabilities in your operating systems and applications and apply them accordingly.
-> Constantly monitor viruses by using your antivirus software;
-> Do not open e-mails from unknown sources or suspicious e-mails (do not even preview them.)

3. To Protect Oneself against Targeted Attack

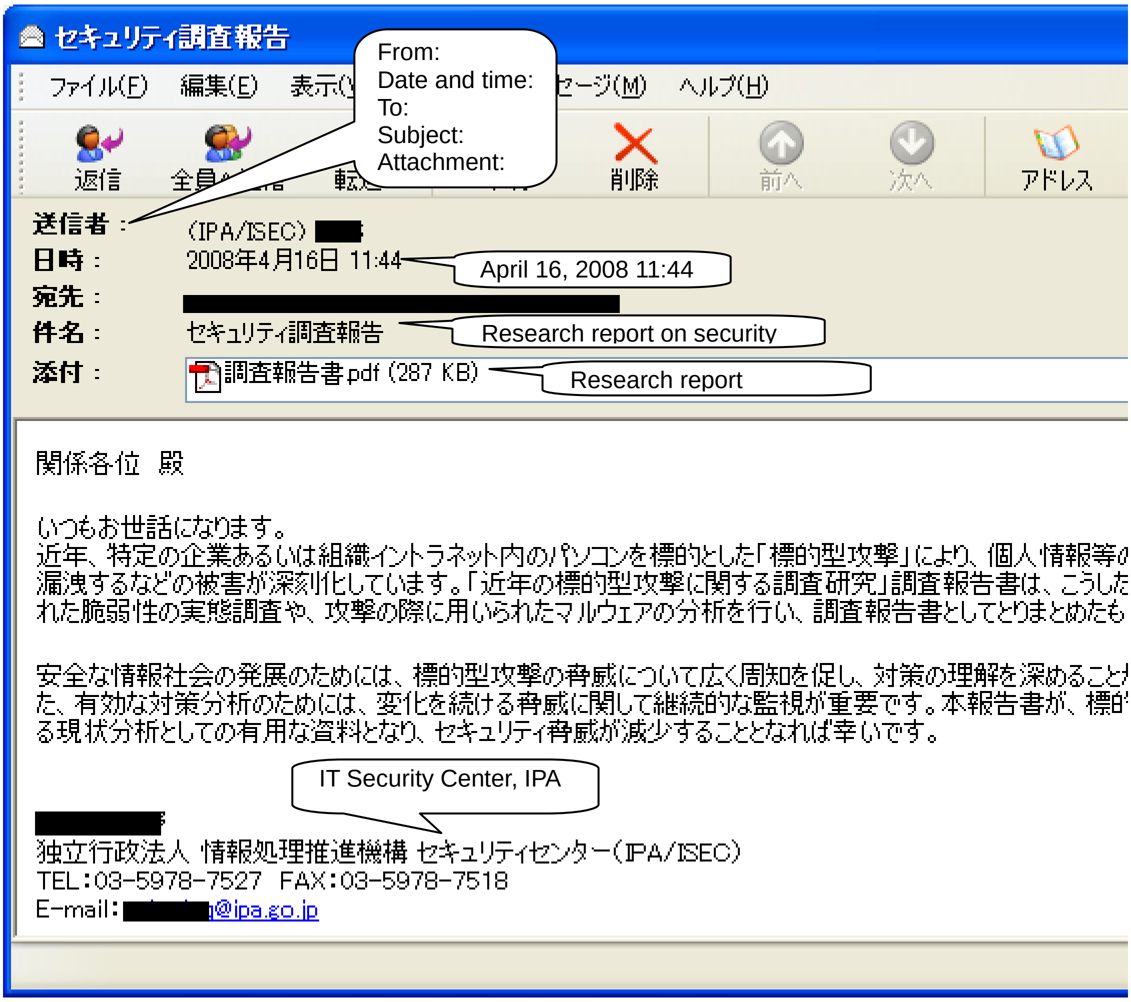
What is Targeted Attack?

Targeted attack is a malicious attack method that takes a shot at a specific organization or individual, mainly through e-mail.

A typical example is: sending a bogus e-mail whose subject or body text contains a topic that seems relevant to the recipient's job, so that the recipients who are interested in it open its attachment. This type has been confirmed in large numbers.

In the case like this, the attachment can be a computer virus itself or a file in which malicious code that exploits certain vulnerability in an application is embedded. If the recipients execute (open) this attachment, their PC might be infected with the virus or the malicious code executed, and then their PC hijacked or the information stored on their PC leaked.

Here we introduce an e-mail which was used for Targeted Attack.



From:
Date and time:
To:
Subject:
Attachment:

送信者：　(IPA/ISEC) [redacted]
日時：　2008年4月16日 11:44
宛先：　[redacted]
件名：　セキュリティ調査報告
添付：　調査報告書.pdf (287 KB)

April 16, 2008 11:44

Research report on security

Research report

関係各位　殿

いつもお世話になります。
近年、特定の企業あるいは組織イントラネット内のパソコンを標的とした「標的型攻撃」により、個人情報等
漏洩するなどの被害が深刻化しています。「近年の標的型攻撃に関する調査研究」調査報告書は、こうした
れた脆弱性の実態調査や、攻撃の際に用いられたマルウェアの分析を行い、調査報告書としてとりまとめたも

安全な情報社会の発展のためには、標的型攻撃の脅威について広く周知を促し、対策の理解を深めること
た、有効な対策分析のためには、変化を続ける脅威に関して継続的な監視が重要です。本報告書が、標的
る現状分析としての有用な資料となり、セキュリティ脅威が減少することとなれば幸いです。

IT Security Center, IPA

[redacted]
独立行政法人 情報処理推進機構 セキュリティセンター(IPA/ISEC)
TEL:03-5978-7527 FAX:03-5978-7518
E-mail:[redacted]@ipa.go.jp

Figure 13: The E-mail which was Used for Targeted Attack

In this instance, the sender is disguised as IPA and this e-mail was sent to e-mail addresses with government-affiliated domain (go.jp). In fact, its attachment was a doctored PDF file which, if opened by older versions of Adobe Reader, executes malicious code that exploits certain vulnerability in such older versions.

Making recipients trust that e-mail and getting them to open its attachment: this fraudulent technique is so subtle that even security-conscious computer users might be trapped.

Furthermore, having no attachment does not mean that the e-mail is safe. There is also a Targeted Attack in which phishing is carried out via HTML e-mails or an e-mail that contains a phony URL link to a malicious Website, so, be careful.

Precautionary Measures against Targeted Attack

Preventive measures against Targeted Attack that targets enterprises/organizations are:

- ◆ **Educate employees not to open suspicious e-mails;**
- ◆ **Share the information on suspicious e-mails;**
- ◆ **Ensure proper antivirus software operation;**
- ◆ **Filter out spam e-mails;**
- ◆ **Above all, eliminate OS/software vulnerabilities.**

To distinguish suspicious e-mails from benign ones, check if:

- ◆ **The e-mail is from a company with which you don't regularly exchange e-mails;**
- ◆ **The e-mail is from your organization's executive officer with whom you don't regularly exchange e-mails;**
- ◆ **The e-mail is from a free Web-based e-mail account;**
- ◆ **Bumble-headed Japanese (e.g., wrong Kanji characters) is used for the subject/body text/attachment name of that e-mail;**
- ◆ **A signature (including the division name and phone number) is missing in its body text;**
- ◆ **The e-mail's subject contains words such as "Urgent" apparently, to get recipients to open its attachment;**
- ◆ **The e-mail has an attachment which is not the kind of file you usually receive by e-mail.**

Derived from the "Research Report on Countermeasures against Targeted Attack" by JPCERT Coordination Center
http://www.jpcert.or.jp/research/2008/inoculation_200808.pdf (in Japanese)

IPA set up "Worry-Free Information Security Consultation Service", aiming at actively collecting information about "a suspicious e-mail which is sent to a specific organization to steal its information" and providing information on preventive measures and countermeasures so that real damages can be minimized.

4. Worry-Free Information Security Consultation Service

http://www.ipa.go.jp/security/anshin/ (in Japanese, domestic only)

Consultation service for computer viruses and unauthorized computer access

◆ If you receive any suspicious e-mail, contact the sender's organization, and if it is confirmed that the e-mail was not sent by the organization, contact our "Worry-Free Information Security Consultation Service".

◆ If IPA determines that it needs to investigate the suspicious e-mail in question, the person in charge at the consultation service will inform you of its dedicated e-mail address. In such cases, please send that suspicious e-mail to the address.

- Telephone Consultation Service

For the telephone number of "Worry-Free Information Security Consultation Service", please refer to the Web page below.

http://www.ipa.go.jp/security/anshin/ (in Japanese, domestic only)

NB: "Frequently-Asked Questions (FAQ)" information, which was compiled from what has been consulted by many people, is posted on the above "Worry-Free Information Security Consultation Service" page. So, please refer to it first.

For those having information security-related troubles, IPA provides e-mail consultation service.

E-mail : anshin@ipa.go.jp (in Japanese, domestic only)

NB: The above e-mail address is dedicated for its consultation service.
So, even if you send an e-mail with an attachment to this address, the consultation service personnel do not open such attachment for security reason.
(Do not send any **Specified Electronic Mail** to this address)

When you consult with us about suspicious e-mail, please prepare the answers to the following questions as far as you know, so that we can respond quickly.

(1) When did you receive that e-mail?
(2) What are the sender's organization name and e-mail address? And what was the result of the checking with the sender?
(3) What antivirus software do you use? And what is the detection status (including the name of the viruses detected if any)?
(4) What are the subject, attachment name and body text of that e-mail?
(5) How many people received the same e-mail? And how many of them opened its attachment?
(6) When the attachment was opened, what happened?
(7) In reality, what damage was caused?
(8) As for the operating system and applications on the infected PC, what are their versions?
(9) Do you mind if we forward this e-mail to a security software vender?

5. Reference Information

- ■ **If Leaked, it Would Lead to a Serious Problem! Personal Information**
  http://www.ipa.go.jp/security/kojinjoho/ (in Japanese)
- ■ **Security Settings for the Secure Use of E-mails**
  http://www.ipa.go.jp/security/personal/base/mail/ (in Japanese)
- ■ **Worry-Free Information Security Consultation Service**
  http://www.ipa.go.jp/security/anshin/ (in Japanese)
- ■ **Investigative research on Recent Targeted Attack - Research Report -**
  http://www.ipa.go.jp/security/fy19/reports/sequential/ (in Japanese)
- ■ **Research Report on Countermeasures against Targeted Attack**
  (JPCERT Coordination Center)
  http://www.jpcert.or.jp/research/2008/inoculation_200808.pdf (in Japanese)
- ■ **Report on Awareness Survey on Information Security Threats for 2011**
  http://www.ipa.go.jp/security/fy23/reports/ishiki/ (in Japanese)
- ■ **Information Security White Paper 2011**
  http://www.ipa.go.jp/security/publications/hakusyo/2011/hakusho2011.html (in Japanese)
- ■ **This month's reminder**
  http://www.ipa.go.jp/security/personal/yobikake/ (in Japanese)
  - □ **A new virus that spreads via a variety of routes (e.g., unsolicited e-mail) emerged!**
    http://www.ipa.go.jp/security/txt/2010/10outline.html (in Japanese)
  - □ **As for unfamiliar e-mails, do not open them out of curiosity and discard them immediately!**
    A variety of damages that begin with unsolicited e-mails are on the rise
    http://www.ipa.go.jp/security/txt/2008/09outline.html (in Japanese)
  - □ **Watch out for an e-mail disguising as a public institution!!**
    http://www.ipa.go.jp/security/txt/2008/05outline.html (in Japanese)
  - □ **What's this? Once you opened it, it would be too late.**
    http://www.ipa.go.jp/security/txt/2007/09outline.html (in Japanese)

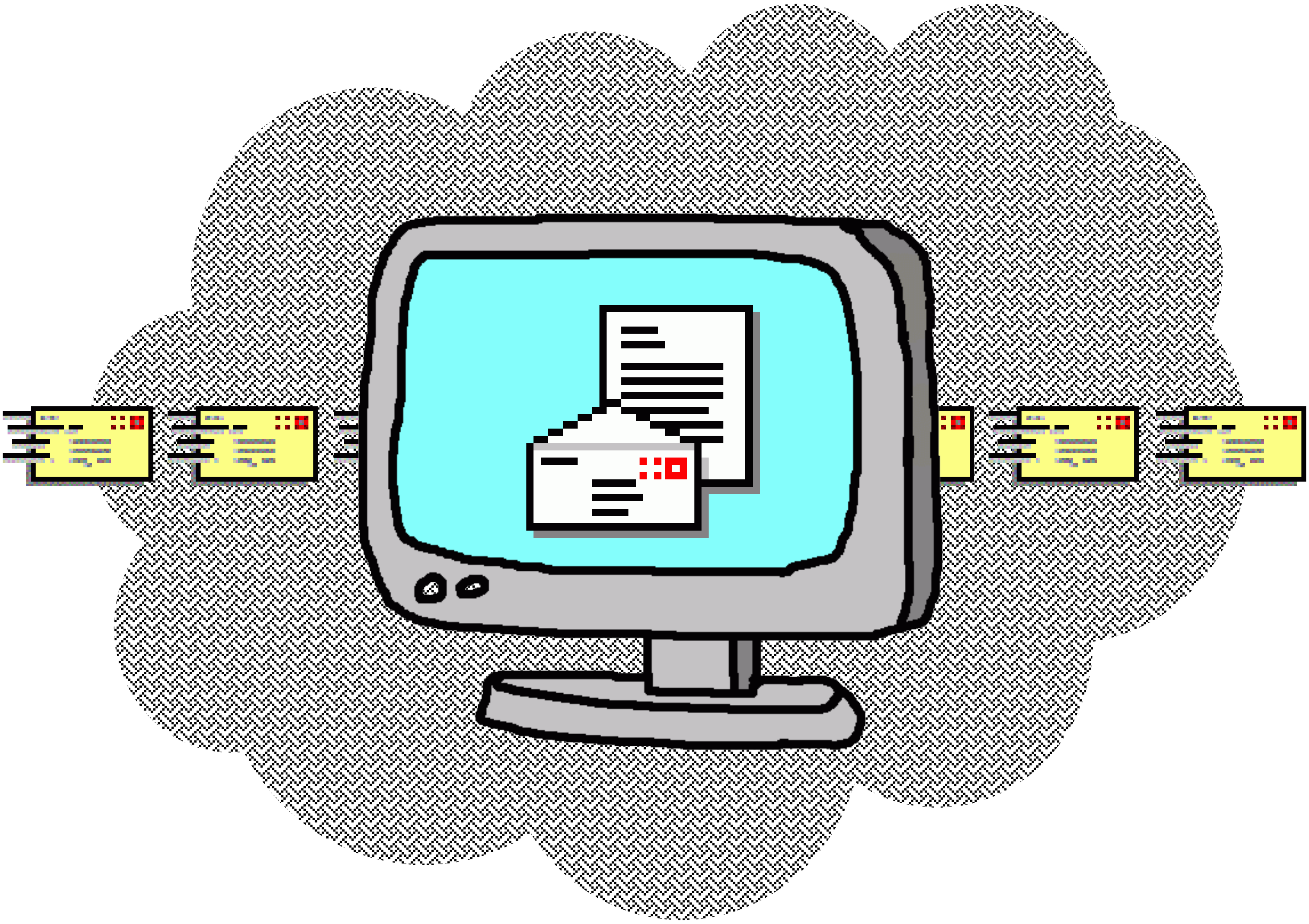
IPA Countermeasures Guide Series

http://www.ipa.go.jp/security/antivirus/shiori.html

- ● IPA Countermeasures Guide Series **(1) Countermeasures on Computer Virus**
- ● IPA Countermeasures Guide Series **(2) Countermeasures on Spyware**
- ● IPA Countermeasures Guide Series **(3) Countermeasures on Bots**
- ● IPA Countermeasures Guide Series **(4) Countermeasures on Unauthorized Access**
- ● IPA Countermeasures Guide Series **(5) Countermeasures on Information Leakage**
- ● IPA Countermeasures Guide Series **(6) Guide for <Avoidance of Risks> When You Use the Internet**
- ● IPA Countermeasures Guide Series **(7) Guide for <Avoidance of**

Risks> When You Use Electronic Mails

- IPA Countermeasures Guide Series **(8) Security Measures Guide For Smartphone <Avoidance of Risks>**
- IPA Countermeasures Guide Series **(9) Guide for First-Time Information Security Countermeasures**
- IPA Countermeasures Guide Series **(10) Countermeasures against Targeted Attack Mail <Avoidance of Risks>**



IPA 独立行政法人情報処理推進機構
セキュリティセンター

Bunkyo Green Court Center Office 16th Floors
2-28-8 Hon-Komagome, Bunkyo-ku, Tokyo, Japan 113-6591

URL http://www.ipa.go.jp/security/

[Worry-Free Information Security Consultation Service] (Computer Virus and Unauthorized Computer Access)

URL http://www.ipa.go.jp/security/anshin/
E-mail anshin@ipa.go.jp