



DM

Application Connector



Product Overview



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1 - General presentation

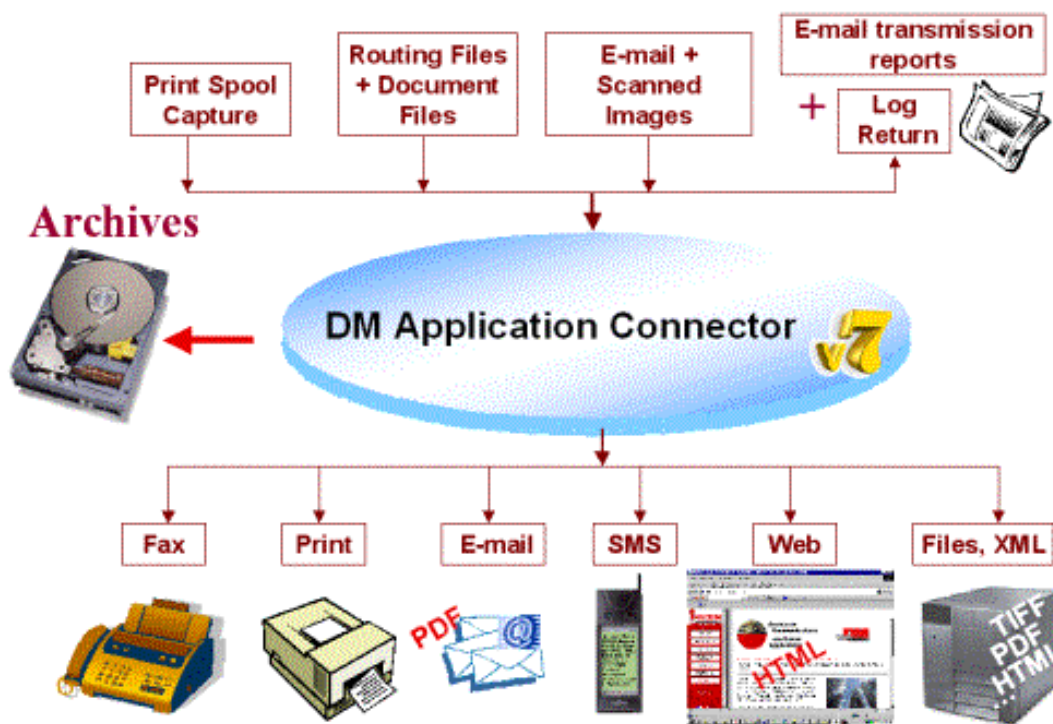
The Document Messaging Application Connector (DMAC) is one of a range of software products from Imecom and Prologue Software Group. Broadly, these products and services include utilities for creating and transmitting electronic documents and images, enterprise fax, secure delivery software, OS and communication systems for small businesses, Web meeting utilities, application hosting facilities, and developments and services for communications, thin client applications, EDI & HC portals, global directories, document authorization, etc.

The DMAC application runs on a Windows NT 4 WorkStation or Server platform and Windows 2000, alone or in association with other Imecom software.

1.1 Principle of operation

DM Application Connector enables the acquisition, processing, distribution, and communication of data and documents, coming from any information system.

The application provides a choice of methods for document communication (i.e., transmission by fax, e-mail and the Internet, file transfer, Web Page publication, printing), whatever the source of the processed data (print images coming from host systems, ASCII files, "office automation" files, Word, Excel, Lotus 123...)



1.2 User advantages

The DM Application Connector enables the addition of electronic document communication to existing applications without having to modify the structure of those applications. It therefore opens up the opportunity to use new services, particularly in the Intranet/Internet environment.

Examples of applications:

- **ERP:** SAP, Baan, PeopleSoft, JD Edwards, vertical ERP applications (property management, distribution, etc.)
- **Banking and finance applications:** Management of financial transactions, back office systems
- **CRM:** customer service management
- **Commercial applications:** product/price quotations
- **Applications for purchasing departments**

Due to its modular architecture, the DM Application Connector can manage multiple document communication processes via a single administrative interface. The different methods of document communication are:

- **Web Page Publication:** publication in HTML, DHTML and XML format
- **E-Mail:** transmissions via predominate commercial e-mail systems (i.e., Lotus Notes, Microsoft Exchange, Novell GroupWise, SMTP), and via the Internet.
- **Fax transmissions**
- **File transfer**

The document layout and overlay functions of DMAC change raw data into a structured format, providing a professional image for all forms of documents.

The administration and archiving modules integrated into DMAC make it an efficient tool for the management of the flow of data and documents.

The use of XML provides high-performance, logging and statistical follow-up.

NOTE:

The version of DMAC that you have downloaded contains the following "blocks" from Imecom's web site. These can be downloaded separately, according to your needs:

- *DMAC (16 Mb) - Version 7.0*
 - *functional, time limited*
 - *mail output, file output, print output *(for fax output, contact Imecom Group for access to DM Server versions).*
 - *Conversion to tiff*
 - *Support for pre-processors in VB*
 - *Print capture *(requires additional module for PS, PCL or PDF conversion)*
 - *Web publication (DMDT) included *(requires HTML conversion module)*
- *Driver for conversion to PDF included *(requires Adobe Distiller for color)*

Following installation, please refer to the following instructions and examples to introduce you to the Document Messaging Application Connectors from Imecom Group. Please contact us at the numbers listed below for any further information, or use igisupport@imecominc.com for support for North and South America and the Far East.

*** Contact Imecom Group for information on these complementary modules.**

Imecom Group, Inc. 603 569 0600 igisales@imecominc.com

2 - General operating instructions

The primary DM Application Connector operational stages are:

1. Acquiring data and instructions
2. Processing:
 - Formatting the documents
 - Conversion of addresses
 - Conversion of file formats
3. Communication and archiving of the documents
4. Logging

2.1 Acquiring data

As far as the initial stage is concerned - acquiring data and instructions - DM Application Connector operates by regularly polling specified file directories and print spool capture files, searching for particular submission files.

The different types of DM Application Connector submission file are described below.

XML File

The DM Application Connector standard submission file is an XML File. This file contains the data to be transmitted and the document communication instructions (i.e., recipient's address, conversion formats, sender's address, etc.).

The instructions are structured as follows: <KEY_WORD>Variable</KEY_WORD>

This information must be presented according to the architecture specific to the application.

However, DM Application Connector is also able to transform any XML submission file, where the architecture is different, "on the fly" and on the basis of an XSLT file.

XML Envelop and attached file(s)

The XML file presented above, containing data and commands, can also include instructions allowing the attachment of documents in various formats (ASCII, TIFF, DOC, XLS, WKS, PS...).

We will see later that these attached documents can be converted, compressed, and customized according to specific instructions already defined in the application or contained in the XML command file.

Each XML file can contain multiple recipients and multiple documents, and can be transmitted via various communication media.

• Example of a submission file - example.xml

```
<RTG_DOCUMENT>
<MAIL_OUTPUT>1</MAIL_OUTPUT>
<MAIL_BACKUP_ENABLE>1</MAIL_BACKUP_ENABLE>
<ATTACH_CONVERSION_FORMAT>PDF_DIST</ATTACH_CONVERSION_FORMAT>
<ATTACH_EXTENSION>PDF</ATTACH_EXTENSION>
<PDF_BCK_FILE>CDFOURN</PDF_BCK_FILE>
<ZIP_COMPRESSION_LEVEL>1</ZIP_COMPRESSION_LEVEL>
<SENDER_NAME>Denis GERARDIN</SENDER_NAME>
<SENDER_ALIAS>Gerardin, Denis</SENDER_ALIAS>
<SENDER_DEPT>Purchasing department</SENDER_DEPT>
<SENDER_FAX>33130120091</SENDER_FAX>
<SENDER_TEL>33130120092</SENDER_TEL>
<SENDER_EMAIL>denis.gerardin@imaginair.com</SENDER_EMAIL>
<SUBJECT>order from IMAG'IN AIR </SUBJECT>
<NOTE>
Dear Mr. Jensen,

Further to your quote mentioned in reference, please find attached our order.

Do not hesitate to contact me if you need more information.

Best Regards,

Dennis Gerard
</NOTE>
<RECIPIENT>
<RECIPIENT_COMPANY>IMECOM SA</RECIPIENT_COMPANY>
<RECIPIENT_NAME>John PROST</RECIPIENT_NAME>
<RECIPIENT_PHONE>33130648314</RECIPIENT_PHONE>
<RECIPIENT_EMAIL>john.prost@imecom.net</RECIPIENT_EMAIL>
<RECIPIENT_EMAIL_2>jprost@secure.fr</RECIPIENT_EMAIL_2>
<RECIPIENT_DEPT>Sales Department</RECIPIENT_DEPT>
<RECIPIENT_TITLE>Mrs</RECIPIENT_TITLE>
<RECIPIENT_FUNCTION>Sales Engineer</RECIPIENT_FUNCTION>
<FAX_NUMBER>33130641474</FAX_NUMBER>
</RECIPIENT>
<DOCUMENT>
<DOCUMENT_NAME>CFDG00323</DOCUMENT_NAME>
<DOCUMENT_REFERENCE>CF/DG/00323</DOCUMENT_REFERENCE>
</DOCUMENT>
</RTG_DOCUMENT>
```

In the above example, the DM Application Connector will generate the order to a provider and send it by e-mail (ESMTP), with a note written in the body of the message and an attachment in compressed PDF format.



Text submission file of commands and data

DM Application Connector provides standard key words

In this case, DMAC no longer searches for an XML file, but for a “text” file containing both the key words like //KEY_WORD//Variable - **and in the same file**, the text to be transmitted. These files can include several transmissions.

In the various examples illustrating this document, we will present two techniques for submitting text submissions: from XML files or Text files.

- *Example of a single combined submission file (data + commands):*

```
//VERSION//02
//IDENT_DOC//CDE-97011552
//START_RECIPIENT//
//EMAIL_TO//fjones@imagin-air.com
//END_RECIPIENT//
//START_DOCUMENT//
//OVERLAY//m:\overlays\letterhead.fax
//CHARACTERS_PER_LINE//80

Imecom
8 Governor Wentworth Hwy.
Wolfeboro, NH 03894

To: Mr. F. Jones

Dear Sir,

Following our conversation, we are happy to submit an order for a complete dynamic
system, etc.

Yours faithfully.

Paul Smith.
Purchasing Director
//END_DOCUMENT//
//VERSION//02
//IDENT_DOC//CDE-97011553
//START_RECIPIENT//
//FAX_NUMBER//0130120092
//RECIPIENT_NAME//Miss Sarah Kent
//END_RECIPIENT//
//START_DOCUMENT//
//OVERLAY//m:\overlays\letterhead.fax
//CHARACTERS_PER_LINE//80

Imeback
11 Avenue de la Gare
78181 Saint-Quentin en Yvelines
```

“Customized” key words in the submission file:

The recognized format in the example above, as well as in the following example, is an ASCII file. It includes both the transmission message settings and the text to be transmitted.

In the following example, the difference is that the key words are “**customized**” by the application which submits the documents. The *customized* key words and the DM Application Connector *standard* key words will be matched in the DM Application Connector administration interface.

This ASCII file may contain a group of documents to send to several destinations. If this is the case, the file will be separated into sections by DMAC according to a separator key word.

- Example of a submission file containing customized key words:

```
{START}
Imecom Group, Inc.
8 Governor Wentworth Hwy.
Wolfeboro, NH 03894
Fax: 1 603 569 0609

TO: Mr. F. Jones

Dear Sir,

Following our conversation, we are happy to submit an order for a complete system,
etc.

Yours faithfully,

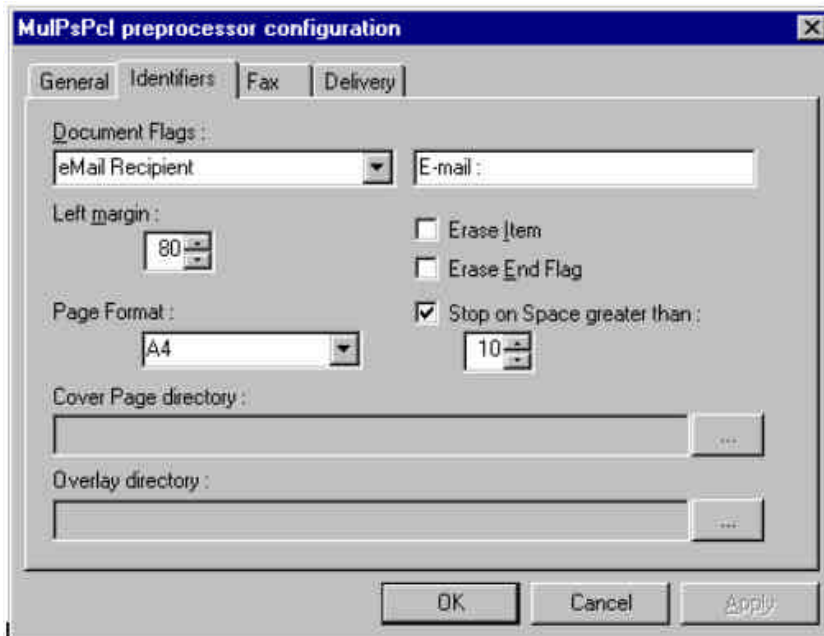
Paul Smith.
Purchasing Director

{END}
{START}
Imeback
11 Avenue de la Gare
78181 Saint-Quentin en Yvelines
E-mail: skent@imeback.com

Etc.
```

In this case, DMAC administration settings specify that:

{START}	=	Beginning of a new document
{END}	=	End of the document
Fax	=	Recipient's fax number
E-mail	=	Recipient's e-mail address



The key words: "{START}", "Fax:", "E-mail:" and "{END}" will be removed from the document to be sent.

NB: "{START}", "{END}" and "Fax", are examples only - any word can be used. However, check that these key words are not present in the document for another reason.

By using this method, it is possible to submit document transmission instructions to DMAC without changing the output currently produced by existing applications.

Sending of office automation files, without a submission file

In this case, DM Application Connector searches for WKS, PPT, XLS, DOC... files containing the transmission information identified by key words. Once the transmission information has been used, it can be deleted from the file.

The submitted files can contain the following transmission information:

- A fax number
- An e-mail address
- An HTTP address
- The sender name
- The document ID

For example, the information 'http://www.ImecomGroup.com/subsidiaries/tariff' in a document will result in the document being automatically published in the - /subsidiaries/tariffs - address on the Imecom Group Web server.

Capture of documents from a Windows NT printer spool file

The DM Application Connector is also able to capture documents which are waiting to be sent in a Windows NT4 spool file of a 'virtual' printer. The documents can be in PCL or PostScript format. In this case DM Application Connector extracts the sending parameters by identifying defined key words within the document itself.

- Example of a PCL document:

```
-12345X@PJL
@PJL ENTER LANGUAGE=PCL
(ON &10L &126A &100 &148C &10E &10C 9
*p711YEMAIL bruno.ballan@imagin-air.com $ IDENT ORDER002356 $ NAMEREC. Bruno BALLAN $
*p371 *p811YNOMEM Michel LAMOTTE $ OVERLAY France_order.fax $
&a4800 &a504H (ON (s0p12h0s0b4099TDeliv.terms.: CIF Place of destination
&a4920 &a504HTerms.paym.: 60 days after reception of the invoice
&a4920 &a4824HCurrency FRF
&a4980 &a5 04H_____
_____
&a5160 &a504H (ON (s1p10v0s0b4148T &k0008.333HPos.
&a5160 &a936HItem reference
&a5160 &a2304HDesignation
&a5280 &a1402H (ON (s1p10v0s0b4148T &k0008.333HQuantity
& 5280V &a1872HUnit
&a5280 &a3367Hunit price in FRF
```

Be careful that this is the document edited before PCL interpretation by DM Application Connector, but not the final document, in order to show the key words (EMAIL, NAMEREC, etc.)

In this example:

EMAIL	Recipient's e-mail address
NAMEREC	Recipient's name (for the cover page and the logs)
IDENT	Identification of the document (for the logs)
NAMESEN	Sender's name
OVERLAY	Choice of the overlay
COVERPAGE	Selection of the cover page

The choice of name to be given to the key words (NAMEREC, NAMESEN, etc.) is open. The lines, including the key words and the parameters, can be removed before sending.

2.2 Processing and conversion

DM Application Connector is able to enhance and convert documents, and resolve addresses, before transmitting them:

Cover pages, forms and overlays

DM Application Connector provides for the merging of data with specific forms or overlays. The information regarding the choice of the form or overlay can be contained in the submission file.

For example, the information:

```
<OVERLAY>F:\DM APPLICATION CONNECTOR\Form.fax</OVERLAY>  
Or  
//OVERLAY//F:\DM Application Connector\Form.fax
```

enables the association of a particular overlay (e.g. form) with the document, before sending it by fax.

The cover page and overlay forms associated with the documents can be created by any Windows application, using the DM Application Connector converter. This converter is, in fact, a printer driver that enables the conversion of any submitted document into a TIFF file (image).

During the creation of a cover page, the printer driver is able to recognize various key words to fill in variable fields in the form. These variable fields will be updated by DM Application Connector, for each transmission, with the information contained in the command file.

Conversion of addresses

The addresses of the document recipients and senders generally come from the databases of the application, which generates the transmission requests. For example, in an ERP application, the recipients' addresses are in the customer and supplier files, and those of the senders are in the application's user database.

As has already been described, DM Application Connector finds the information concerning the recipients and senders in the submission file or directly in the document to be sent. If conversion of the recipient or sender address is required, this can be carried out by DMAC.

The following is an example of such a conversion.

• Extract of an invoice created for sending via DM APPLICATION CONNECTOR

Your client number: **CC22301**

IMECOM GROUP, Inc.
8 Governor Wentworth Hwy.
Wolfeboro, NH 03894

Tel: 1 603 569 0600
Fax: 1 603 569 0609

Sales contact: **Mrs Savarin**
Your reference: 2654/BA

In this example the transmission information is contained in the document itself.

To send a fax, the recipient's address will be recognized by the DM Application Connector as a result of finding the customized keyword: "Fax".

If we are dealing with the transmission of an e-mail, and the information regarding the e-mail address of the recipient is not included in the document, DM Application Connector will have to convert the fax address of this recipient into an e-mail address.

In order to do this, DM Application Connector can run a request via a centralized address book using the LDAP protocol.

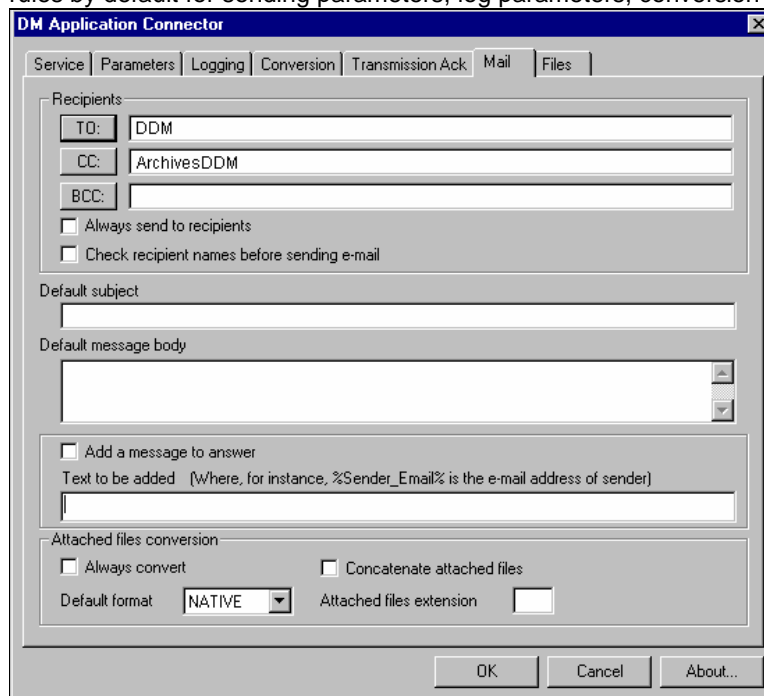
This centralized address book can be updated either manually or directly from the application's customer database.

Similarly, in order to notify the sender of the transmission result, DM Application Connector will be able to convert the information corresponding to "Sales contact" into an e-mail address.

Processing by default

In the absence of a particular field or command, DM Application Connector can carry out processing by default. These defaults are set via the DM Application Connector's administration interface.

In the example below, DM Application Connector will systematically send the documents to be processed to the Imecom' DDM application and also a copy to DM Archives. It is possible to set many rules by default for sending parameters, log parameters, conversion formats, transmission reports, etc.



Conversion of file formats

For each document transmission, it is necessary to convert the format of the file to make it compatible with the transmission vehicle.

Therefore, for a fax transmission, DM Application Connector will convert the document into the TIFF format. For an e-mail transmission, DM Application Connector will convert the document into the PDF (Adobe) format, or will keep it in its format of origin.

Documents published on the Web will be converted in the PDF, HTML or XML format.

Description of the conversions can be found in the Appendix.

Pre-processors and post-processors

Pre-processors and post-processors execute additional automatic tasks. They can be added to the process before the DM Application Connector standard processing stage (a pre-processor) or after the DM Application Connector specific processing stage (a post-processor).

DMAC is designed to allow the user, or Imecom, to customize and integrate the total application by adding pre-and post processors written in any programming language.

For example:

“Multidir” is a pre-processor providing for execution of commands that are specific to spool capture or to the delivery directory of submitted files.

2.3 Communication

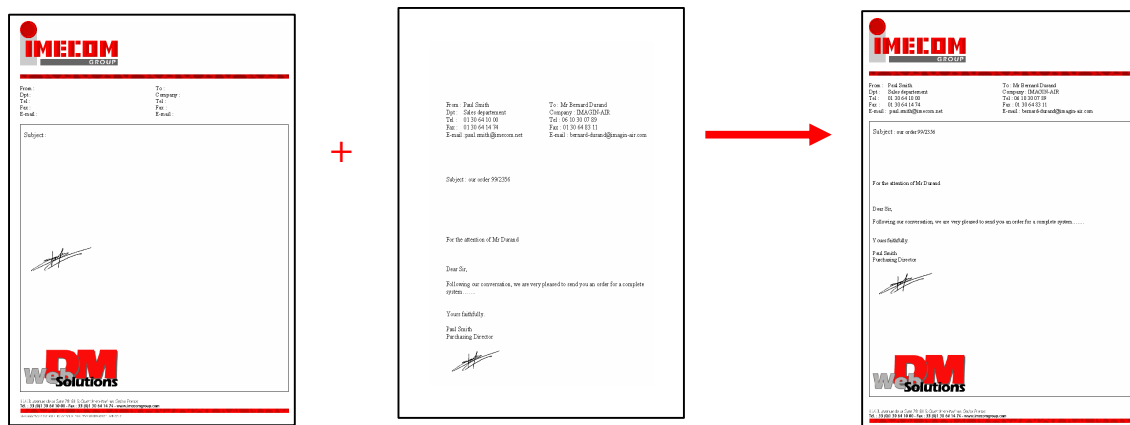
Sending a fax

- Example of a fax submission file below:

```
<SENDER>
  <SENDER_NAME>Paul Smith</SENDER_NAME>
  <SENDER_DPT>Sales Department</SENDER_DPT>
  <SENDER_TEL>01 30 64 10 00</SENDER_TEL>
  <FAX_SENDER>01 30 64 14 74</FAX_SENDER>
  <SENDER_EMAIL>p.smith@imecom.net</SENDER_EMAIL>
</SENDER>
<RECIPIENT>
  <FAX_NUMBER>01 30 64 83 11</FAX_NUMBER>
  <COMPANY>IMAGIN-AIR Cie</COMPANY>
  <RECIPIENT_NAME>M. Bernard Durand</RECIPIENT_NAME>
  <RECIPIENT_EMAIL>bernard-durand@imagin-air.com</RECIPIENT_EMAIL>
  <RECIPIENT_PHONE>06 10 30 07 89</RECIPIENT_PHONE>
</RECIPIENT>
<DATE>08/06/2001</DATE>
<TIME>08:26</TIME>
<COVER_PAGE>c:\DM APPLICATION CONNECTOR\Cover1.fax</COVER_PAGE>
<OVERLAY>c:\DM APPLICATION CONNECTOR\form.fax</OVERLAY>
<DOC_TITLE>CC992356</DOC_TITLE>
<SUBJECT>Our order 01/2356</SUBJECT>
<NOTE>
For the attention of Mr. Durand
Dear Sir,
Following our conversation, we are happy to submit an order for a complete system, etc.
Yours Faithfully,
Paul Smith
Purchasing Director
</NOTE>
<DOCUMENT>
F:\DM APPLICATION CONNECTOR\C002356.txt
</DOCUMENT>
```

DM Application Connector merges the data of the file to be sent with the designated cover page and overlay.

(<COVER_PAGE>c:\DM APPLICATION CONNECTOR\Cover1.fax</COVER_PAGE> and <OVERLAY>c:\DM APPLICATION CONNECTOR\form.fax</OVERLAY>)

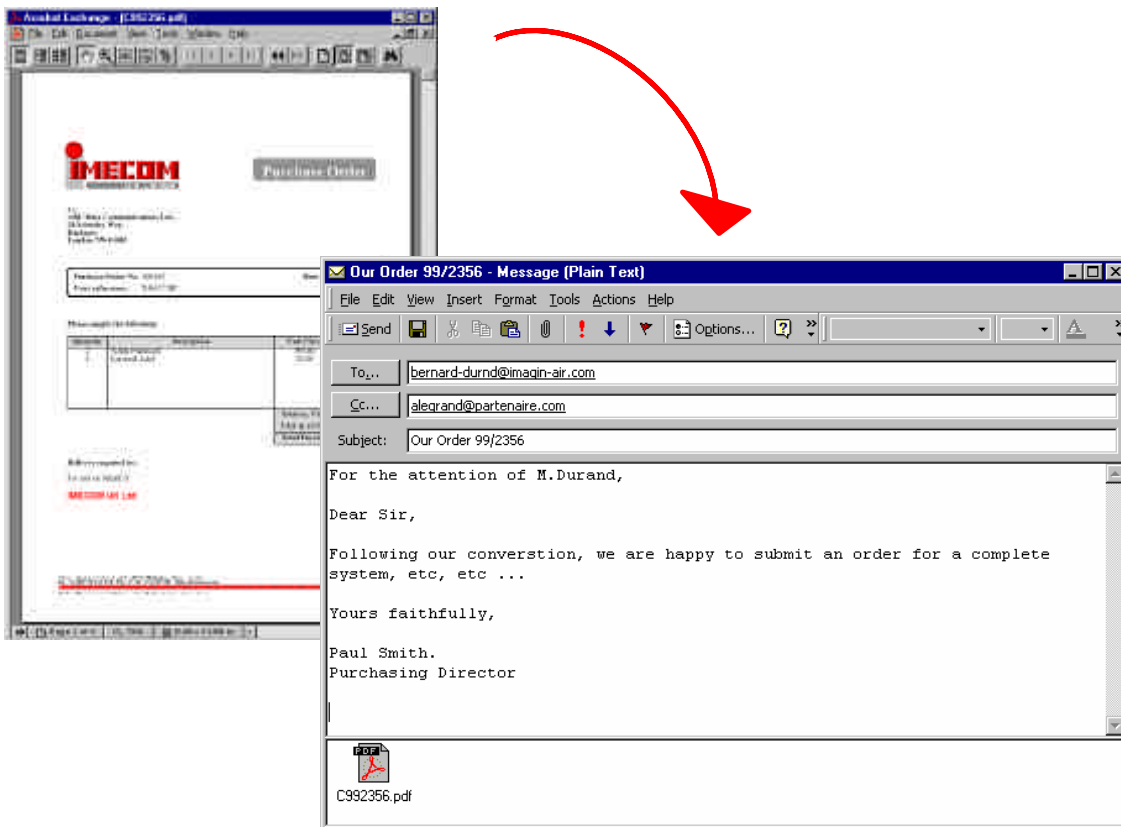


Sending an e-mail

- Example of an "E-mail" submission file below:

```
<SENDER_NAME>Paul Smith</SENDER_NAME>
<SENDER_DPT>Sales Department</SENDER_DPT>
<SENDER_TEL>01 30 64 10 00</SENDER_TEL>
<FAX_SENDER>01 30 64 14 74</FAX_SENDER>
<SENDER_EMAIL>p.smith@imecom.net</SENDER_EMAIL>
<MAIL_OUTPUT>1</MAIL_OUTPUT>
<EMAIL_TO>bernard-durand@imagin-air.com</EMAIL_TO>
<EMAIL_CC>alegrand@partenaire.com</EMAIL_CC>
<OVERLAY>c:\DM APPLICATION CONNECTOR\form.fax</OVERLAY>
<ATTACH_CONVERSION_FORMAT>PDF</ATTACH_CONVERSION_FORMAT>
<SUBJECT>Our order 99/2356</SUBJECT>
<NOTE>
For the attention of M. Durand,
Dear Sir,
Following our conversation, we are happy to submit an order for a complete system, etc.
Yours Faithfully,
Purchasing Director
</NOTE>
<DOCUMENT>
F:\DM APPLICATION CONNECTOR\C992356.txt
</DOCUMENT>
```

DM Application Connector will be able to send the enclosed document by e-mail:



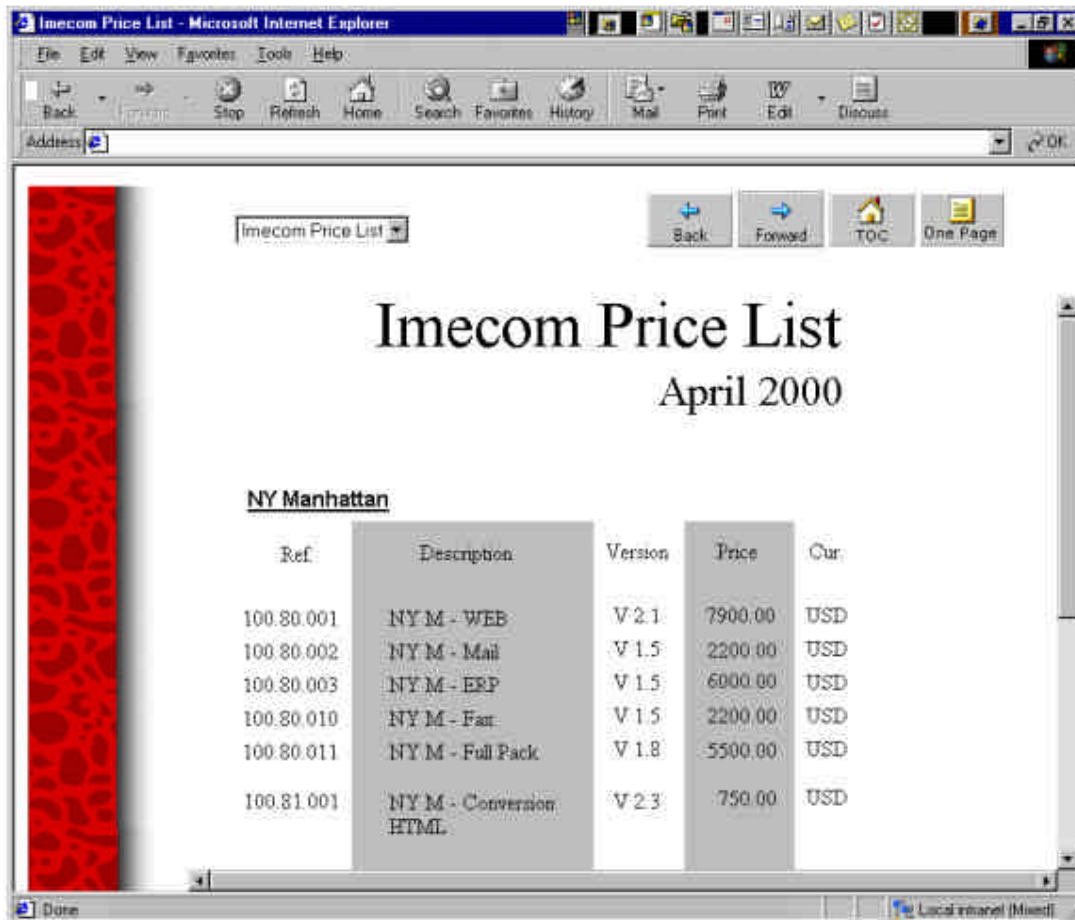
Publishing a Web Page

- Example of a " Web Publication" submission file below:

```
<TEMPLATE>tariff</TEMPLATE>
<HTTP_OUTPUT>1</HTTP_OUTPUT>
<DMDT_URL>www.imecomgroup.com/subsidiaries/tariff</DMDT_URL>
<DATE>08/06/1999</DATE>
<TIME>08:26</TIME>
<FREE_FIELD_1> T1 = Document Messaging</FREE_FIELD_1>
<FREE_FIELD_2> T2 = Document Messaging-Digital Document Manager</FREE_FIELD_2>
<NOTE>
Ref          Description          Version      Price        Currency
100.80.001   NYM - Web                    V 2.1       7900.00      USD
100.80.002   NYM - Mail                   V 1.5       2200.00      USD
100.80.003   NYM - ERP                    V 1.5       6000.00      USD
100.80.010   NYM - Fax                    V 1.5       2200.00      USD
100.80.011   NYM – Full Pack              V 1.8       5500.00      USD

100.81.001   NYM – Conversion HTML       V 2.3       750.00       USD
</NOTE>
```

DM Application Connector will publish the above price list on the Imecom Group Web server:



Delivery/Submission of Files

DM Application Connector can deliver the attached documents as files in one of the supported conversion formats.

Those documents merge with an XML “envelop”, following an Imecom direction, that provides for the indexing and the management of document authorizations.

DM Application Connector, therefore, makes it possible to:

- deliver a copy of the transmitted documents to an existing Document Image Processing and Storage application
- create a **gateway/link** between a spool capture and an application within the organization.

- Example of an XML file:

```
<?xml version="1.0" ?>
- <MSG>
- <HEAD>
  <REF>Demo Test</REF>
  <DATETIME>04/19/2000 17:01:37</DATETIME>
  <PROTOCOL>FTP</PROTOCOL>
  <FORMAT>HTML</FORMAT>
  <GRAPHIC>GIF</GRAPHIC>
  <RESOLUTION>0</RESOLUTION>
- <SENDER>
  <NAME>Sales Application</NAME>
  <EMAIL>dmac@imecom.net</EMAIL>
</SENDER>
</HEAD>
- <DOCUMENTS>
- <ITEM>
  <DESTPATH>C:\ImeDMserver\HostFax\Converted Files</DESTPATH>
- <SOURCEFILES>
  <ITEM>c:\imedoc\tariffTxt.doc</ITEM>
</SOURCEFILES>
- <RESULTFILES>
  <ITEM>tariffTxt.html</ITEM>
  <ITEM>tariffTxt_1.htm</ITEM>
  <ITEM>tariffTxt_2.htm</ITEM>
  <ITEM>tariffTxt_3.htm</ITEM>
  <ITEM>tariffTxt_4.htm</ITEM>
  <ITEM>tariffTxt_5.htm</ITEM>
  <ITEM>tariffTxt_6.htm</ITEM>
  <ITEM>tariffTxt_7.htm</ITEM>
  <ITEM>tariffTxt_8.css</ITEM>
</RESULTFILES>
</ITEM>
</DOCUMENTS>
</MSG>
```

2.4 Logging and archiving functions

DM Application Connector log

DM Application Connector systematically records each transaction in an activity log, regardless of the source (submission file or print spool file), and regardless of the destination format, (HTTP, FTP, Mail, Fax or file).

DM Application Connector creates an XML format log, visible by all users from an XML compatible browser, plus a specific ASCII log, usable by other applications.

- Extract of the global DM APPLICATION CONNECTOR log

	Date time	Service	Sender	Info
All	03/02/2000 04:02	Server	-	The service is started
HTTP Info	03/03/2000 23:56	Server	-	The service is stopped
Mail Info	01/25/2000 12:45	Publication	Accounting	Balance Sheet
Fax Info	02/25/2000 12:26	Publication	Accounting	Balance Sheet
Svc Info	02/28/2000 18:54	Mail	Sales Manager	Sales Flash
Error Info	02/15/2000 10:20	Fax	Product Management	Correct transmission
	01/01/2000 11:27	Mail	Product Management	Price List - January 2000
	03/01/2000 10:50	Mail	Product Management	Price List - March 2000
	01/01/2000 11:27	Publication	Product Management	Price List - January 2000
	02/15/2000 10:20	Publication	Product Management	Price List - February 2000
	03/01/2000 10:50	Publication	Product Management	Price List - March 2000
	03/01/2000 17:37	Fax	James	Correct transmission
	03/01/2000 8:15	Mail	James Woods	LogXML DOC :
	-	-	-	-

- Extract of the DM APPLICATION CONNECTOR -WEB Information - log

	Date	Reference	Subject	Sender	Service	Company	Email	Web Site	Code 1	Code 2
All	03/02/2000 11:07:19	Test Demo		DMAC	Test Dept		dmac@imecom.net		ERT2344	
HTTP Info	03/02/2000 11:09:11	Test Demo		DMAC	Test Dept		dmac@imecom.net		ERT2344	
Mail Info	03/02/2000 11:10:58	Test Demo		DMAC	Test Dept		dmac@imecom.net		ERT2344	
Fax Info	03/02/2000 11:16:12			DMAC	Test Dept		dmac@imecom.net		ERT2344	

3 - The DM Application Connector and other products of the Document Messaging range

3.1 Commercial packaging

Imecom provides the DM Application Connector application in several commercial packages:

- DM Application Connector - Fax** enables automatic transmission of documents by Fax.
- DM Application Connector - Mail** enables automatic transmission of documents by e-mail.
- DM Application Connector- Combo** enables automatic sending of documents by Fax and by e-mail.
- DM Application Connector - Web** enables automatic publication of documents on Web Internet/ Intranet servers.

3.2 Position in the Imecom range

DM Application Connector is a module which can be integrated into any existing client infrastructure, print spool application, e-forms management application, Document Image Processing and Storage application, etc.

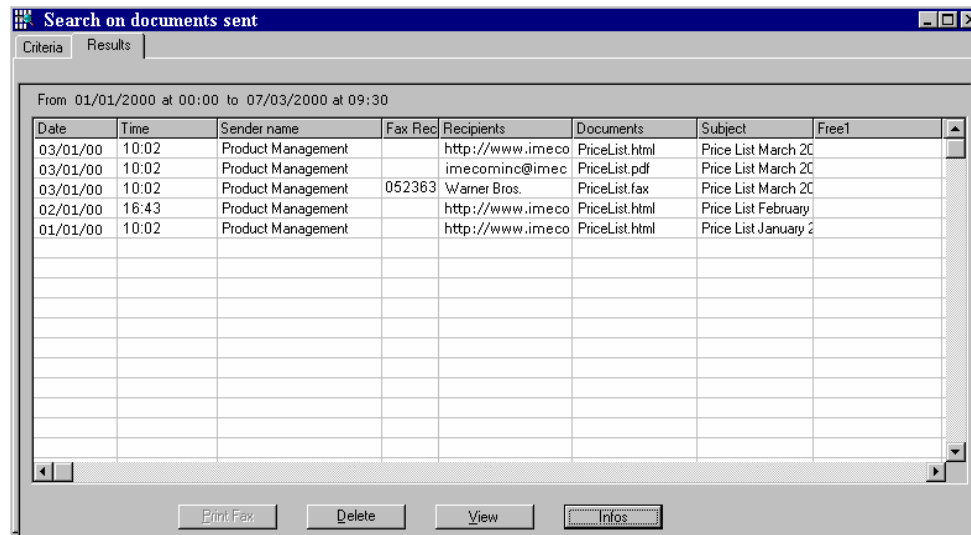
DM Application Connector is a standard Imecom Group document messaging product, and therefore will operate alongside the many other applications in the Imecom product range.

DM Application Connector and DM Server for Fax

DM Application Connector relies on the Imecom' DM Server and Fax Connector, for the automatic transmission of faxes.

DM Application Connector and DM Archives

DM Archives provides for archiving of all documents processed by the DM Application Connector, whatever the transmission media, (i.e., Fax, E-mail or Web server).



DM Application Connector and Imecom Digital Document Manager

DDM is an application enabling collaborative document processing by teams of users, including the documents processed by DM Application Connector.

DM Application Connector and LDAP (Critical Path Global Directory Server®)

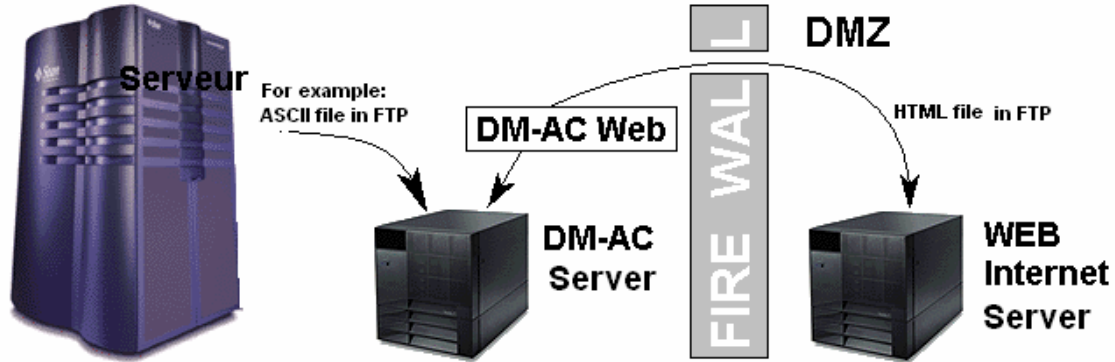
Imecom supports the Critical Path and IBM LDAP solutions, and provides complete implementation of this "meta-phonebook" and LDAP "meta-phonebook" in large-scale environments. As part of this implementation, Imecom provides for, as an example, the synchronization between existing address databases (ex: customer or provider database, ERP, etc.) and the global company address book.

With DM Application Connector, the transmission of documents to different destinations often requires the management of different addresses for one single correspondent. In this context, DM Application Connector provides address conversion by running phonebook requests to any LDAP compatible phonebook and particularly Critical Path Global Directory Server.

4 - Examples of applications

4.1 Publication of price lists on the Internet

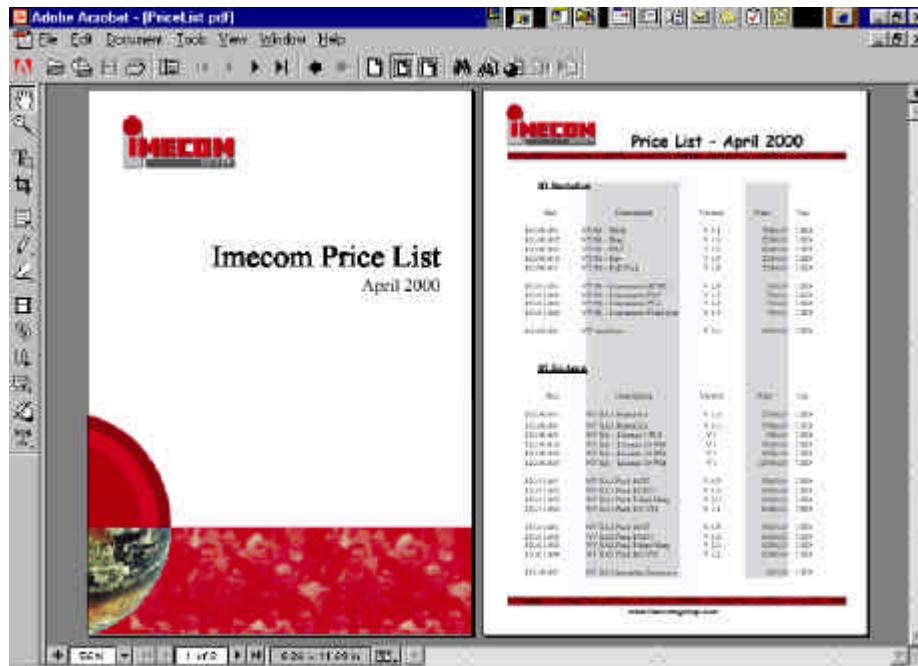
This example is of an organization wishing to publish information on a website without risking any intrusion, or those organizations whose system of commercial management does not directly communicate with an HTTP server.



In this case, DM Application Connector is authorized to transmit across the FireWall only, and the security is total. The Internet server is external, but the other servers of the company are protected.

The price list publication corresponds to a simple output from the commercial management's server; this price list can therefore be updated very frequently. This example would be suitable for the publication of stock levels, items on offer, etc...

The price list can be published in PDF:

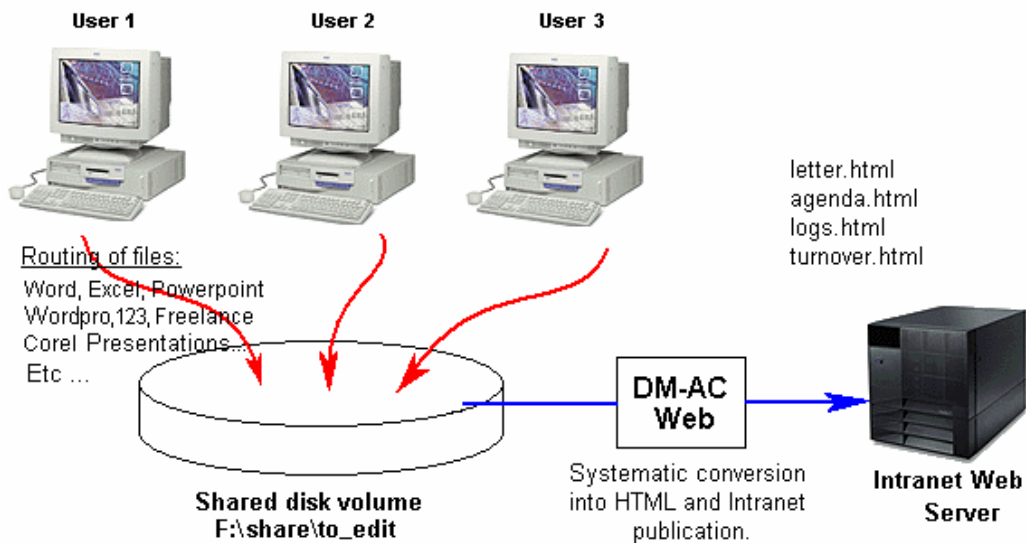


Or in HTML:



4.2 Publication of documents on the Intranet

In this example, all DM Application Connector Web compatible documents (see Appendix 1) are being converted into HTML and systematically published on the Intranet site from the moment that they are saved in a shared directory (created for that purpose).

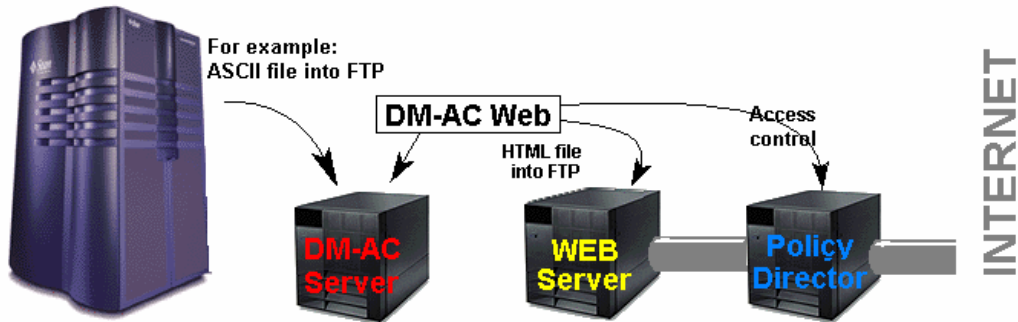


The users can, therefore, very simply create a document archive, which can be consulted from a simple HTML browser, whatever the original application.

4.3 Publication of client files on an External Network

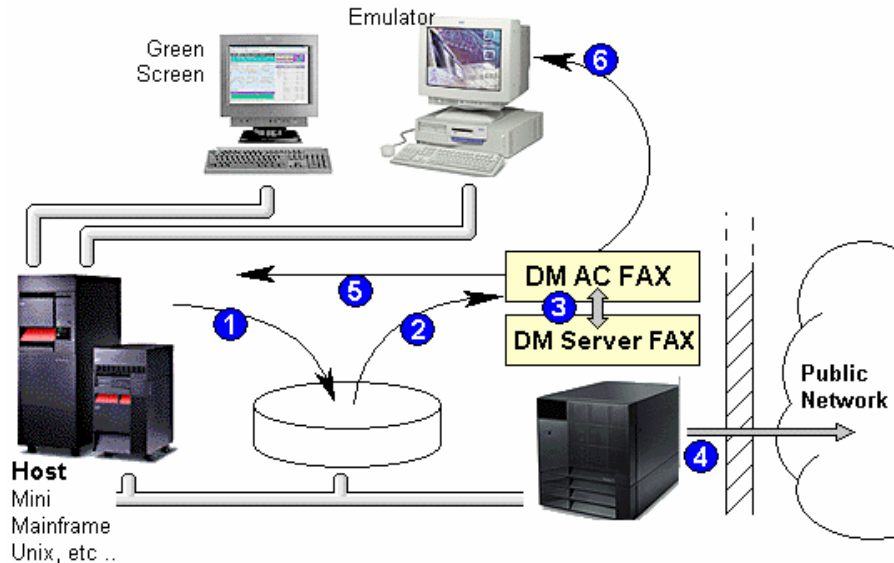
Technically speaking, this example is very similar to the first example since it consists of automatically publishing pieces of information coming from commercial applications, for instance: quotations, order confirmations, delivery notes, dispatch notes, invoices, etc ... Yet, in this case, access to the published documents must be restricted to authorized readers. Each client must be able to see his/her own file only.

DM Application Connector will therefore send, for each publication, the security settings for implementation by IBM Policy Director.

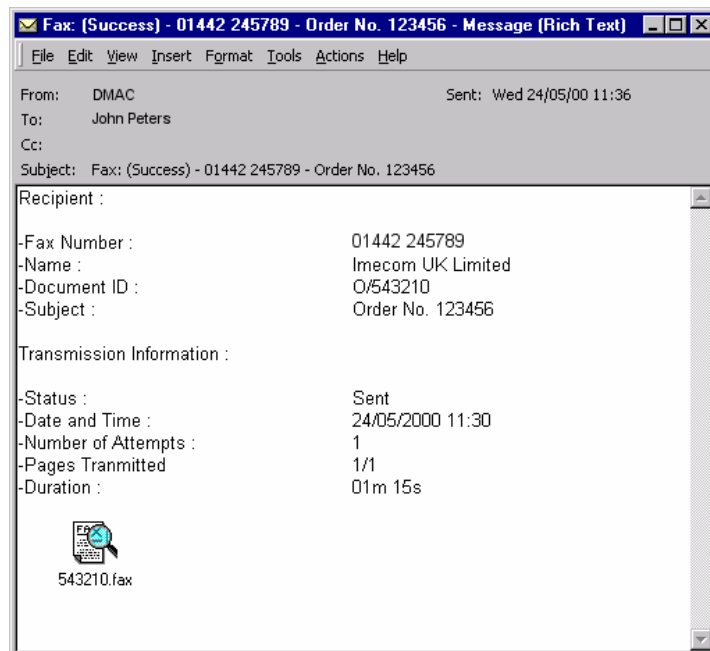


4.4 Automatic Transmission of supplier purchase orders by fax

DM Application Connector is often used to deal with purchase orders, delivery notes, invoices etc., that are to be faxed rather than printed... In these cases, the documents to be sent have to be captured via the methods mentioned previously, the transmission instructions have to be extracted and the document itself has to be converted into the TIFF format. Finally, DM Application Connector will deliver the transmission request to the Imecom Fax Server.



1. Capture of document (capture from print spooler, delivery of files routing files ...)
2. DM Application Connector processes the submitted files: i.e. format control (margins, fonts...), TIFF conversion, selection of form overlay and cover page, etc ...
3. DM Application Connector transmits the formatted documents to the Imecom Fax Server
4. The Fax Server faxes the documents according to the usual procedures.
5. When the transmission is finished, DM-AC updates the standard logs: both ASCII and XML
6. Alternatively, DM-AC can send the fax transmission reports directly to the user workstation via a Fax client, a Web Browser client or an e-mail client.



Example of a delivery report sent to a user, in this case the sender, by DM Application Connector via the company's e-mail system.

Apart from the information regarding the transmission itself, the transmission report can also contain an attachment, a copy of the transmitted fax or, in order to save space, a copy of the first page or cover page of the transmitted fax.

4.5 Fax transmission from a network scanner

DM Application Connector can interface with many network scanners, either through a file interface or an SMTP protocol.

This example utilizes the **HP9100C Digital Sender**. This is one of a family of scanners from Hewlett Packard which connect directly to the network.

This kind of scanner is composed of a keyboard and of a screen allowing direct entry of numbers on the scanner, just as on a standard fax machine. This scanner also comprises an Automatic Document Feeder and a Flatbed scanning capability, and will scan and send documents in color where appropriate.



This solution is a replacement for standard fax machines, which has many advantages. It still includes the kinds of fax functions that the users are familiar with whilst offering many additional possibilities:

- Standard scanning of documents (newspaper articles, photographs, and maps) for archiving.
- Publishing of documents on internal sites (internal notices, information letters...).
- Sending of document images via e-mail to Intranet and Internet recipients.

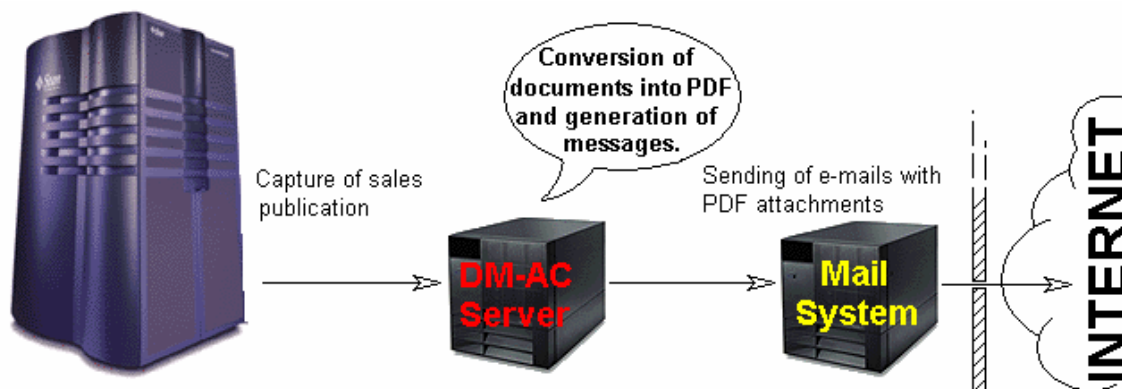
DM-AC takes the image from the scanner and a routing file (prepared by the HP9100C) giving details of the recipient, and prepares a fax which is passed on to the Imecom Fax Server for delivery. The user of the HP9100C logs-on to the Digital Sender and this log-on is used to send the fax transmission report back to the originator's e-mail inbox.

4.6 Automatic transmission of documents by e-mail

In this example, a pharmaceutical laboratory transmits complete daily sales reports giving details of the previous days purchases to each of its suppliers.

Previously, these documents were transmitted by fax (using the DM-AC fax capability). Today, these documents are transmitted by e-mail without any modification to the company's back office applications, and by only changing a very small number of settings in the administration of DM Application Connector. The documents are now converted into PDF format and sent by e-mail via the firm's messaging server.

Each transmission used to cost between 20 and 50p by fax in accordance with the size and destination of the documents. Today, the price of transmitting a document by e-mail costs from 0.7 to 1p.



Appendix 1: File formats

List of key words:

Basic functions	Page Layout	Management
ANSI	CHARACTERS_PER_LINE	SAVE_DOCUMENT
ATTACH_CONVERSION_FORMAT	OVERLAY	GROUP
ATTACH_EXTENSION	FONT_HEIGHT	DOC_TITLE
COMPANY	FONT_WIDTH	ORDER
CONSOLIDATE_REPORT	HORIZONTAL_MARGIN	PRIORITY
COVER_PAGE	VERTICAL_MARGIN	VERSION
COVER_PAGE_ONLY	LANDSCAPE	
DATE	RESOLUTION	
DEST_EXTENSION	ANSI_TEXT	
DEST_FILEPATH		
DEST_FORMAT		
DOC_TITLE		
EMAIL_BCC		
EMAIL_CC		
EMAIL_TO		
END_DOCUMENT		
END_NOTE		
END_RECIPIENT		
FAX_NUMBER		
FAX_SENDER		
FILE_OUTPUT		
MAIL_ADDRESS		
MAIL_ADDRESS_COPY		
MAIL_OUTPUT		
RECIPIENT_DEPT		
RECIPIENT_EMAIL		
RECIPIENT_NAME		
RECIPIENT_PHONE		
REPORT_CONTENTS		
SENDER_DEPT		
SENDER_EMAIL		
SENDER_TEL		
SINGLE_FILE_DEST		
START_DOCUMENT		
START_NOTE		
START_RECIPIENT		
SUBJECT		
TIME		
USER_NAME		
VALIDATE_REPORT		
X121		

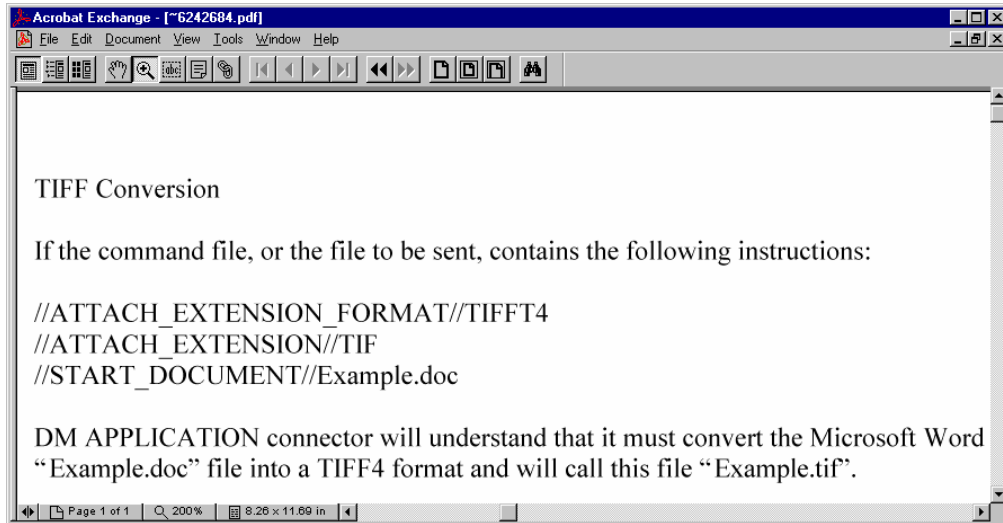
Appendix 2: Description of file conversions

TIFF conversion

If the command file, or the file to be sent, contains the following instructions:

```
//ATTACH_CONVERSION_FORMAT//TIFF4  
//ATTACH_EXTENSION//TIF  
//START_DOCUMENT//Example.doc
```

DM Application Connector will understand that it must convert the Microsoft Word "Example.doc" file into a TIFF4 format and will call this file: "Example.TIF".

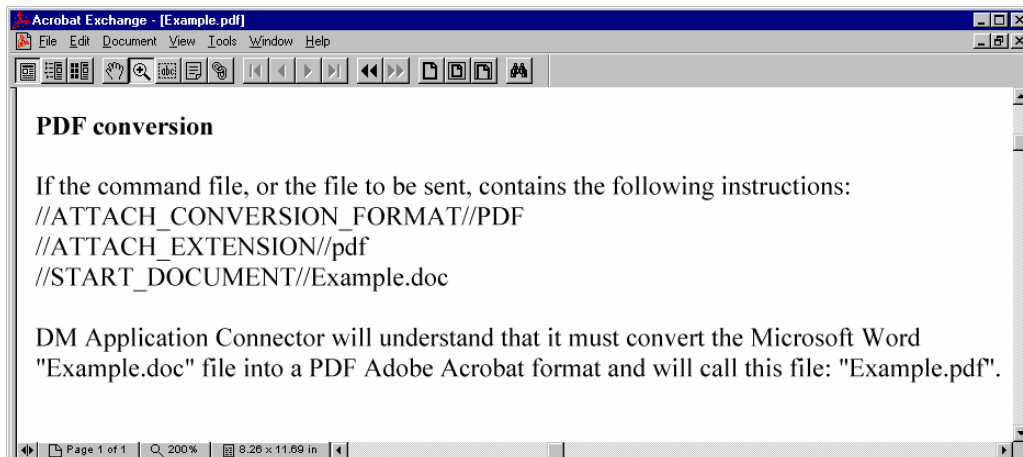


PDF conversion

If the command file, or the file to be sent, contains the following instructions:

```
//ATTACH_CONVERSION_FORMAT//PDF  
//ATTACH_EXTENSION//pdf  
//START_DOCUMENT//Example.doc
```

DM Application Connector will understand that it must convert the Microsoft Word "Example.doc" file into a PDF Adobe Acrobat format and will call this file: "Example.pdf".

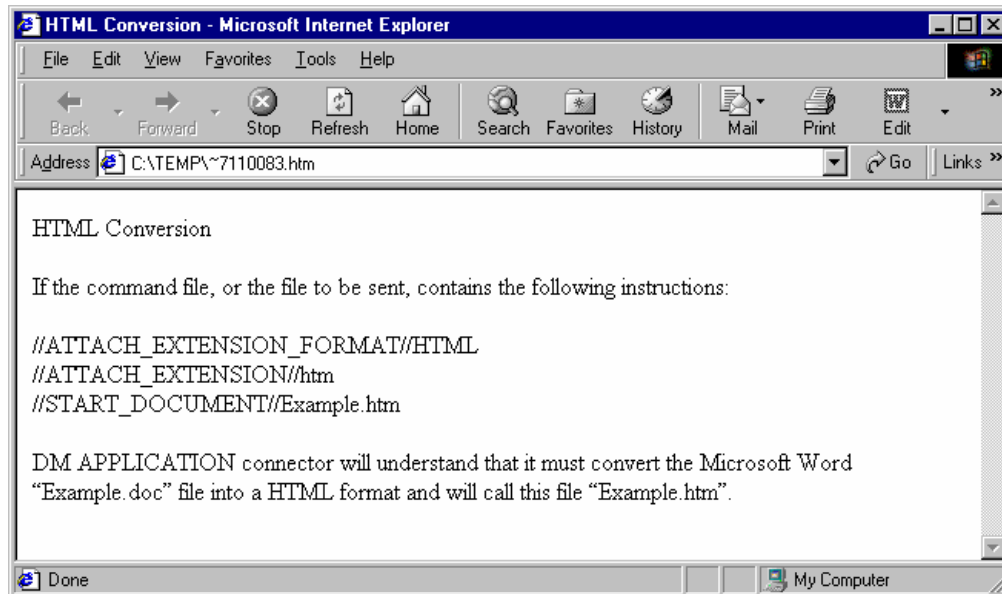


HTML conversions

If the command file, or the file to be sent, contains the following instructions:

```
//ATTACH_CONVERSION_FORMAT//HTML  
//ATTACH_EXTENSION//htm  
//START_DOCUMENT//Example.doc
```

DM Application Connector will understand that it must convert the Microsoft Word "Example.doc" file into an HTML format and will call this file: "Example.htm".



Native formats

If the command file, or the file to be sent, contains the following instructions:

```
//ATTACH_CONVERSION_FORMAT//NATIVE  
//ATTACH_EXTENSION//doc  
//START_DOCUMENT//Example.doc
```

Or, simply:

```
//START_DOCUMENT//Example.doc
```

DM Application Connector will understand that it must not convert the "Example.doc" file.

Grouping of files

If the command file, or the file to be sent, contains the following instructions:

```
//ATTACH_CONVERSION_FORMAT//PDF  
//ATTACH_EXTENSION//pdf  
//SINGLE_ATTACHMENT//  
//START_DOCUMENT//
```

```
Example.doc  
Example2.xls  
Example3.txt
```

DM Application Connector will understand that it must convert the "Example.doc", "Example.xls" and "Example.txt" files into a PDF Adobe Acrobat format.

DM Application Connector will group these three documents into one single file, and will call it "Example.pdf".

Appendix 3: List of files converted to HTML by DM-AC

<p>Data Processing</p> <p>ANSI Text (7 & 8 bit), all v. ASCII Text (7 & 8 bit all v.) Corel WordPerfect, Windows, all v. --> 9.0 DEC WPS Plus (DX), all v. --> 4.0 DEC WPS Plus (WPL), all v. --> 4.1 DisplayWrite 2 & 3 (TXT), all v. DisplayWrite 4 & 5, all v. --> Release 2.0 Enable, v. 3.0, 4.0 et 4.5 First Choice, all v. --> 3.0 Framework, v. 3.0 HTML, all v. --> 3.0 IBM FFT, all v. IBM Revisable Form Text, all v. IBM Writing Assistant, v. 1.01 JustSystems Ichitaro, v. 5.0, 6.0, 8.0 et 9.0 JustWrite, all v. --> 3.0 Legacy, all v. --> 1.1 Lotus AMI/AMI Professional, all v. --> 3.1 Lotus Manuscript, all v. --> 2.0 Lotus WordPro (<i>Win16 et Win32 / Intel platforms</i>), SmartSuite 96, 97 and Millennium Lotus WordPro (<i>Non-Windows platforms - text only</i>) SmartSuite 97 and Millennium MacWrite II, v. 1.1 MASS11, all v. --> 8.0 Microsoft Rich Text Format (RTF), all v. Microsoft Word, DOS, all v. --> 6.0 Microsoft Word, Macintosh, all v. 4.0 --> 98 Microsoft Word, Windows, all v. --> 2000 Microsoft WordPad, all v. Microsoft Works, DOS, all v. --> 2.0 Microsoft Works, Macintosh, all v. --> 2.0 Microsoft Works, Windows, all v. --> 4.0 Microsoft Write, all v. --> 3.0 MultiMate, all v. --> 4.0 Navy DIF, all v. Nota Bene v. 3.0 Novell Perfect Works v. 2.0 Novell WordPerfect, DOS, all v. --> 6.1 Novell WordPerfect, Mac v. 1.02 --> 3.0 Novell WordPerfect, Windows, all v. --> 7.0 Office Writer v. 4.0 à 6.0 PC-File Letter, all v. --> 5.0 PC-File+ Letter, all v. --> 3.0 PFS:Write, all v. A, B, and C Professional Write, DOS, all v. --> 2.1 Q&A, DOS v. 2.0 Professional Write Plus v. 1.0 Q&A Write, Windows v. 3.0 Samna Word, all v. --> Samna Word IV+ SmartWare II v. 1.02 Sprint v. 1.0 Total Word v. 1.2 Unicode Text, all v. Volkswriter 3 & 4, all v. --> 1.0 Wang PC (IWP), all v. --> 2.6 WordMARC, all v. --> Composer Plus WordStar 2000, DOS, all v. --> 3.0</p>	<p>Spreadsheet</p> <p>Enable, all v. 3.0, 4.0 and 4.5 First Choice, all v. --> 3.0 Framework v. 3.0 Lotus 1-2-3 (DOS & Windows), all v. --> 5.0 Lotus 1-2-3, SmartSuite 97 and Millennium Lotus 1-2-3 Charts (DOS & Windows), all v. --> 5.0 Lotus 1-2-3 (OS/2), all v. --> 2.0 Lotus 1-2-3 Charts (OS/2), all v. --> 2.0 Lotus Symphony, all v. 1.0, 1.1 and 2.0 Microsoft Excel, Mac, all v. 3.0 --> 4.0, 98 Microsoft Excel, Windows, all v. 2.2 --> 2000 Microsoft Excel Charts, all v. 2.x --> 7.0 Microsoft Multiplan v. 4.0 Microsoft Windows Works, all v. --> 4.0 Microsoft Works (DOS), all v. --> 2.0 Microsoft Works (Macintosh), all v. --> 2.0 Mosaic Twin v. 2.5 Novell Perfect Works v. 2.0 QuattroPro, DOS, all v. --> 5.0 QuattroPro, Windows, all v. --> 9.0 PFS:Professional Plan v. 1.0 SuperCalc 5, v. 4.0 SmartWare II v. 1.02 VP Planner 3D v. 1.0</p> <p>Databases</p> <p>Access, all v. --> 2.0 dBASE, all v. --> 5.0 DataEase v. 4.x DBXL v. 1.3 Enable v. 3.0, 4.0 and 4.5 First Choice, all v. --> 3.0 FoxBase v. 2.1 Framework v. 3.0 Microsoft Windows Works, all v. --> 4.0 Microsoft Works (DOS), all v. --> 2.0 Microsoft Works (Macintosh), all v. --> 2.0 Paradox (DOS), all v. --> 4.0 Paradox (Windows), all v. --> 1.0 Personal R:BASE v. 1.0 R:BASE 5000, all v. --> 3.1 R:BASE System V, v. 1.0 Reflex v. 2.0 Q & A, all v. --> 2.0 SmartWare II, v. 1.02</p> <p>Others</p> <p>* Not available on Linux platforms * AI - Adobe Illustrator File Format, all v. --> 7.0 * CDR - Corel Draw, all v. --> 8.0 * CMX - Corel Clip Art Format, all v. 5 --> 6 * DSF - Micrografx Designer, Windows 95, v. 6.0 * DWG - AutoCAD Native Drawing Format, all v. 12 --> 14 * FMV - FrameMaker graphics, Vector and raster format --> v. 5.0 * GDF - IBM Graphics Data Format v. 1.0 * GEM - Graphics Environment Manager</p>
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<p>WordStar, DOS, all v. --> 7.0 WordStar, Windows v. 1.0 XyWrite, all v. --> III Plus</p> <p>Graphic formats Binary Group 3 Fax, all v. BMP (including RLE, ICO, CUR & OS/2 DIB) CDR (if TIFF image is embedded in it), all v. 2.0 - 9.0 CGM - Computer Graphics Metafile, ANSI, CALS, NIST, v. 3.0 DCX (multi-page PCX) Microsoft Fax DRW - Micrografx Designer v. 3.1 DRW - Micrografx Draw, all v. --> 4.0 DXF (Binary and ASCII) AutoCAD, all v. --> 14 EMF Windows Enhanced Metafile EPS Encapsulated PostScript If TIFF image is embedded in it * FPX - Kodak Flash Pix GIF - Graphics Interchange Format, Compuserve GP4 - Group 4 CALS Format, Type I and Type II HPGL - Hewlett Packard Graphics Language, v. 2.0 IMG - GEM Paint JFIF (JPEG not in TIFF format), all v. JPEG – Joint Photographic Experts Group format, all v. PBM - Portable Bitmap * PCD - Kodak Photo CD, v. 1.0 PCX Bitmap, PC Paintbrush Perfect Works (Draw), Novell v. 2.0 PGM - Portable Graymap PIC – Lotus 1-2-3 Picture File Format PICT1 & PICT2 (Raster) Macintosh Standard PNG - Portable Network Graphics Internet Format v. 1.0 PNTG MacPaint PPM - Portable Pixmap PSP - Paintshop Pro (<i>Win16 and Win32 / Intel only</i>), all v. 5.0, 5.0.1 SDW (Ami Draw) Snapshot (Lotus), all v. SRS - Sun Raster File Format Targa Truevision TIFF, all v. --> 6 TIFF CCITT Group 3 & 4, Fax Systems VISO (Multi-page Page Preview mode only) Visio 4, 5, and 2000 WMF, Windows Metafile WordPerfect Graphics [WPG and WPG2], all v. --> 2.0 * Not available on Linux platforms * XBM - X-Windows Bitmap, x10 compatible * XPM - X-Windows Pixmap, x10 compatible * XWD - X-Windows Dump, x10 compatible</p>	<p>Metafile, Bitmap and Vector IGES - Initial Graphics Exchange Specification v. 5.1 * MET - OS/2 PM Metafile v. 3.0 PDF - Portable Document Format, Acrobat v. 2.1, 3.0, and 4.0 * PIF - IBM Picture Interchange Format v. 1.0 * PS – Postscript, Niveau 2 * PSD - Adobe Photoshop File Format v. 4.0 * RND - AutoShade Rendering File Format v. 2.0 Corel Presentations, all v. 8.0 and 9.0 Novell Presentations, all v. 3.0 and 7.0 Harvard Graphics DOS, all v. 2.x & 3.x * Harvard Graphics Windows , all v. Freelance Windows v. 1, 2, 96, 97 and Millennium Freelance OS/2, all v. --> 2.0 Microsoft PowerPoint, all v. --> 2000 Microsoft PowerPoint, Macintosh v. 4.0, 1198 MSG (text only) MS Outlook Mail format Microsoft Project (text only) v. 98 vCard Electronic Business Card</p>
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Imecom S.A.

11, avenue de la Gare
78181 Saint-Quentin-en-Yvelines Cedex
FRANCE

Tel: +33 (0) 1 30 64 10 00

Fax: +33 (0) 1 30 64 14 74



Imecom Iberica

Reina María Cristina 10, 4° B
48930 Las Arenas (Vizcaya)
SPAIN

Tel: +34 94 480 46 44

Fax: +34 94 480 42 53



Imecom Group, Inc.

8 Governor Wentworth Highway
Wolfeboro, NH 03894
USA

Tel: +1 (603) 569 0600

Fax: +1 (603) 569 0609



Imecom Belgium/Visionwize

Haasrode Research Park
Technologielaan 11
3001 Heverlee
BELGIUM

Tel: +32 (0) 16/38 11 22

Fax: +32 (0) 16/38 11 00



Imecom U.K. Limited

Viking House, Swallowdale Lane,
Hemel Hempstead,
Hertfordshire, HP2 7EA
ENGLAND

Tel: +44 (0) 1442 244272

Fax: +44 (0) 1442 245789



Imecom GmbH

Walter Kolb Str. 9-11
60594 Frankfurt
GERMANY

Tel: +49 (0) 69 96 21 76 38

Fax: +49 (0) 69 61 00 67 64