FORUM NOKIA

OMA Device Management DDF for Nokia Mail for Exchange

Version 1.2; September 8, 2009

OMA Device Management

NOKIA

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Change history

November 14, 2007	Version 1.0	Initial document release
May 5, 2009	Version 1.1	Minor updates throughout the document
September 8, 2009	Version 1.2	Section 1.3, 'DM Adapter logging', updated.

1 Introduction

This document introduces the management object used for remote management of Mail for Exchange (MfE) settings. Using Open Mobile Alliance (OMA) Device Management (DM), company IT managers can administer the Mail for Exchange client installations on their employees' devices.

The management features introduced here apply to S60 3rd Edition mobile devices from Nokia. A list of supported device models can be found in the Release Notes document on the Mail for Exchange download website (see Reference [5]). For more information about OMA Device Management, see Reference [3].

This document is a Nokia interpretation of the OMA Device Management specification. The intent of this document is to explain the organisation of the parameters associated with this functionality.

1.1 Conventions

***Occurrence: One* means that the node is required from the DM server.** Many items have reasonable default values (for example, UseSSL). However, some items (for example, UserName) have no reasonable default value. In this case, MfE does not have a valid profile after receiving settings, and the MfE profile cannot be saved. This may result in the client displaying errors or later attempts to read settings not being successful. Errors will be visible in the DM Adapter logs in this case (after MfE v2.5.5). Also, status responses to Replace commands will show an error.

***Occurrence: ZeroOrOne* means that the node is optional from the DM server.** When an item with Occurrence: ZeroOrOne is not received, the MfE DM Adapter will use the default value. These defaults are provided, if applicable, in the node's description.

1.2 Using the MfE DM Adapter

It is assumed that settings will be checked or set several at a time. For performance reasons, instead of opening and closing the profile for each setting in a *Get* or *Replace*, our DM Adapter makes a local copy, and consecutive operations are performed on it. *Complete* commits changes made to the temporary copy by *Replace*. It also allows the local copy to be destroyed by the next *Get* or *Replace*.

This requires the following considerations:

If you need the results count returned to be called back accurately, you must follow every *Replace* with a *Complete*. If you send, for example, 12 settings you will get either 12 Ok or 12 Error results. The results depend on whether the settings were committed successfully to the MfE profile (if the commit is successful, you will get 12 Ok results).

Multiple *Get* operations can be performed consecutively without a *Complete* between them. However, as stated previously, the *Complete* destroys the local copy of settings and the next *Get* creates a 'fresh' copy. So, if two *Get* operations are performed, for example, five minutes apart with no *Complete*, you will get 'stale' data if the profile has been changed manually by the user during those five minutes.

Finally, if you forget the final *Complete*, the adapter tries to clean things up properly, but this may leave Mail for Exchange in a strange state, especially with regard to DM.

1.3 DM Adapter logging

Logging is available, which is useful during the debugging phase of your DM server. The location of logs varies by version of MfE.

For older versions of MfE, create the directory:

`C:\Data\Logs\Adapter` on the device (may require a third-party file browser)

For newer versions, create the following:

`C:\Logs\Adapter`

After this, activity will be recorded while the MfE DM Adapter is processing items received from your server. This is in text format.

2 Management tree

The Mail for Exchange management object provides functionality for initialising the settings (that is, the Profile) required for the operation of the Mail for Exchange client. These settings specify the connection with a Microsoft Exchange Server, the user's credentials, the schedule for synchronisation, the data to be synchronised, and email-specific user interface options.

This chapter describes the management tree structure, instance identifiers, and the MailForExchange node in detail. The management object is recognised by the node next to the root named MailForExchange. See Reference [4] for more information.

2.1 Graphical description of the management tree

Figure 1 and Figure 2 illustrate the structure of the management tree.

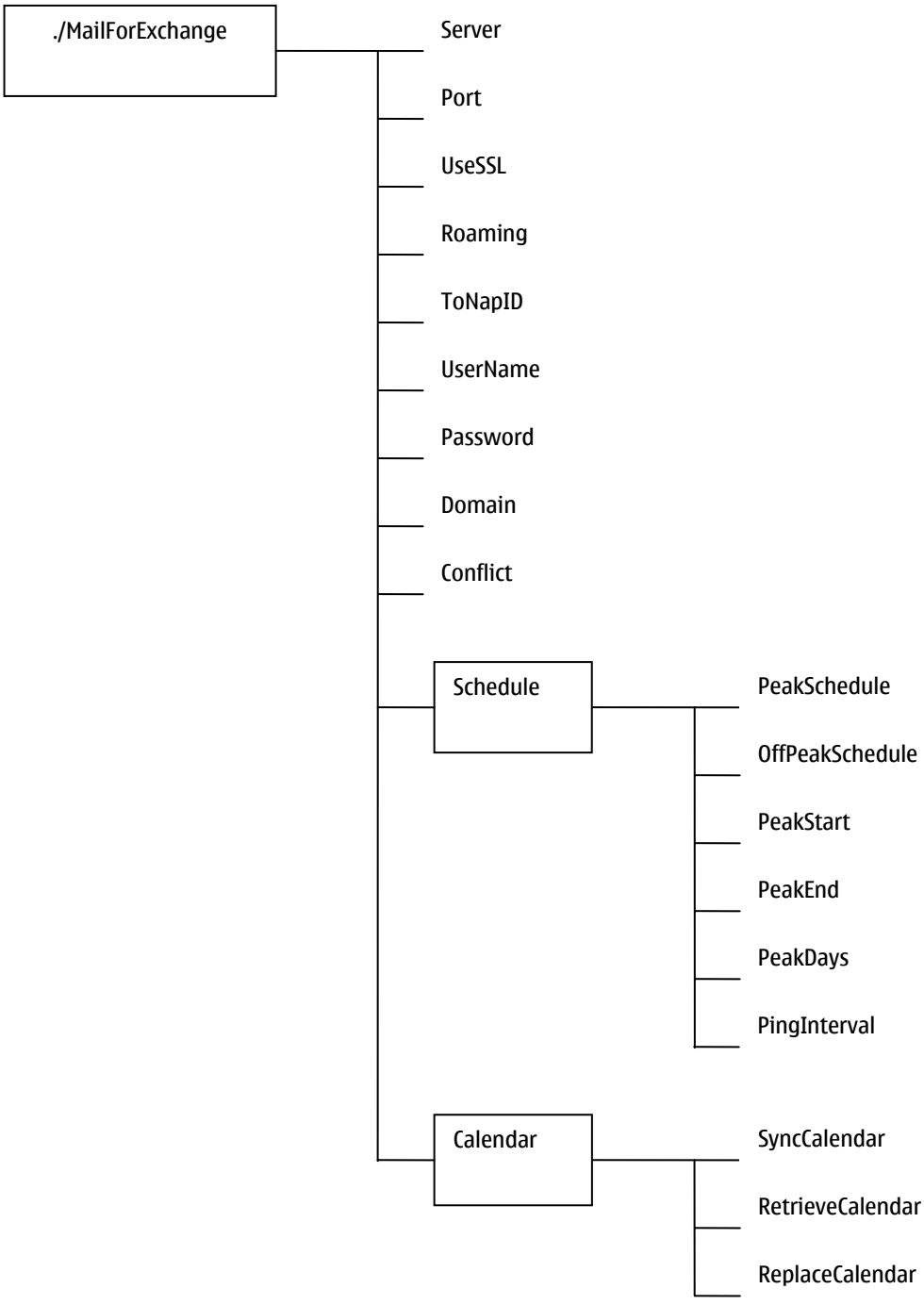

Figure 1: MailForExchange management tree

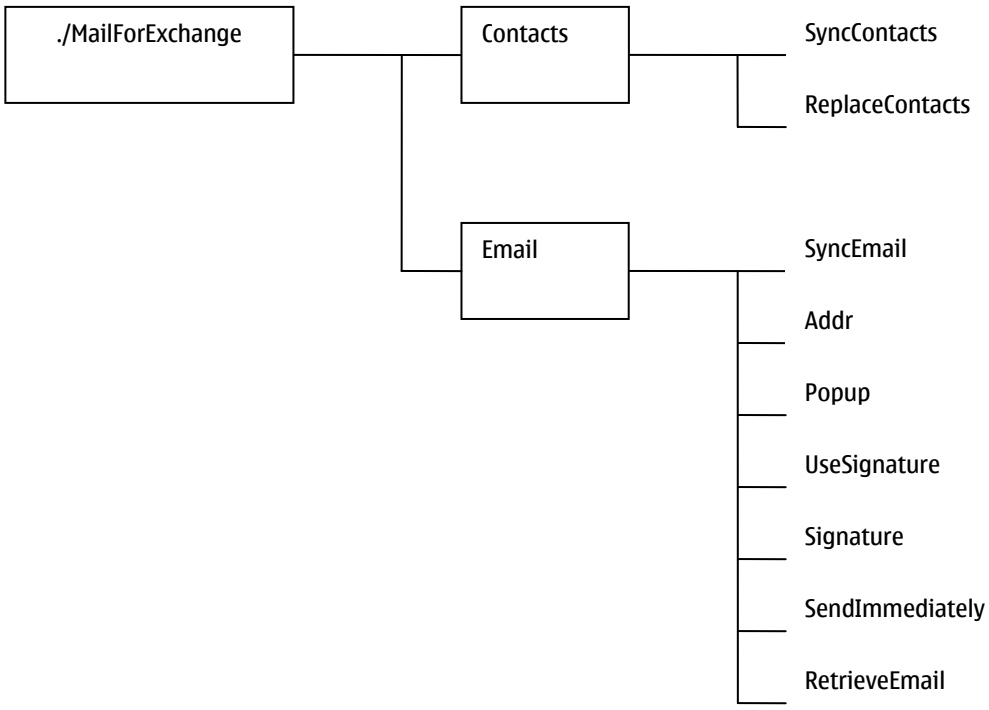

Figure 2: MailForExchange management tree, continued

2.2 ./MailForExchange node

The `MailForExchange` node is the parent to all Nokia Mail for Exchange settings.

- Support: Mandatory
- Occurrence: One
- Scope: Permanent
- Access Type: Get
- Format: Node

The following node objects are possible under the `MailForExchange` node:

- ./MailForExchange/Schedule (Section 2.3)
- ./MailForExchange/Calendar (Section 2.4)
- ./MailForExchange/Tasks (Section 2.5)
- ./MailForExchange/Contacts (Section 2.6)
- ./MailForExchange/Email (Section 2.7)

The following leaf objects are possible under the `MailForExchange` node:

- ./MailForExchange/Server
- ./MailForExchange/Port
- ./MailForExchange/UseSSL
- ./MailForExchange/Roaming

- ./MailForExchange/ToNapID
- ./MailForExchange/UserName
- ./MailForExchange/Password
- ./MailForExchange/Domain
- ./MailForExchange/Conflict

2.2.1 ./MailForExchange/Server

The `Server` leaf defines the Microsoft Exchange Server to which the device connects. Guidance: server should not include 'http://', 'https://', '/owa', '/Exchange', '/Microsoft-Server-Activesync', or port numbers. Use only the <host> part of the internet address.

- Support: Mandatory
- Occurrence: One
- Value: internet address (see [1]) (HTTP address, <host> part, no <port>)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr (max: 128)

2.2.2 ./MailForExchange/UseDefaultPort

This leaf defines whether or not to use the default port number. If True, the Port number sent via DM will be ignored. Note: When sending True, the client will still display False along with the default port.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.2.3 ./MailForExchange/Port

The `Port` leaf defines the port number of the Microsoft Exchange Server.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: (443) if UseSSL = ETrue, (80) if UseSSL = EFalse
- Value: 1...65535
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

2.2.4 ./MailForExchange/UseSSL

The `UseSSL` leaf defines whether a secure connection is used in synchronisation.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

Value	Meaning
True	Use secure connection
False	Do not use secure connection

Table 1: Values for the UseSSL leaf

2.2.5 ./MailForExchange/Roaming

The `Roaming` leaf defines whether synchronisation while roaming is allowed.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 2
- Value: 0/1/2 (see Table 2)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

Value	Meaning
0	No
1	Yes, on peak only
2	Yes, always

Table 2: Values for the Roaming leaf

2.2.6 ./MailForExchange/ToNapID

The `ToNapID` link is used to define the default logical reference to connectivity information stored elsewhere in the management tree (see Value).

Note: MfE v2.9.158 or later clients support Destinations or Access points.

- Support: Mandatory
- Occurrence: One
- Value: Relative URI, for example, 'AP/APId001'
- Scope: Dynamic

- Access Type: Get, Replace
- Format: Chr

2.2.7 ./MailForExchange/UserName

The `UserName` leaf defines the user name for the Microsoft Exchange account.

- Support: Mandatory
- Occurrence: One
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr (max: 128)

2.2.8 ./MailForExchange/Password

The `Password` leaf defines the password for the Microsoft Exchange account.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Scope: Dynamic
- Access Type: Replace
- Format: Chr (max: 128)

2.2.9 ./MailForExchange/Domain

The `Domain` leaf defines the domain for the Microsoft Exchange account.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: NULL
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr (max: 256)

2.2.10 ./MailForExchange/Conflict

The `Conflict` leaf defines whether the entries on the mobile device or the entries on the server prevail if a content conflict occurs during synchronisation.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Value: True/False (see Table 3)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

Value	Meaning
True	Server wins
False	Device wins

Table 3: Values for the Conflict leaf

The following node objects are under the `MailForExchange` node:

- ./MailForExchange/Schedule
- ./MailForExchange/Calendar
- ./MailForExchange/Contacts
- ./MailForExchange/Tasks
- ./MailForExchange/Email

2.3 ./MailForExchange/Schedule node

The `Schedule` node is parent to all Nokia Mail for Exchange schedule settings.

- Support: Mandatory
- Occurrence: One
- Scope: Permanent
- Access Type: Get
- Format: Node

The following leaf objects are possible under the `Schedule` node:

- ./MailForExchange/Schedule/PeakSchedule
- ./MailForExchange/Schedule/OffPeakSchedule
- ./MailForExchange/Schedule/PeakStart
- ./MailForExchange/Schedule/PeakEnd
- ./MailForExchange/Schedule/PeakDays
- ./MailForExchange/Schedule/PingInterval

2.3.1 ./MailForExchange/Schedule/PeakSchedule

The `PeakSchedule` leaf defines the synchronisation schedule for peak hours.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 1
- Value: 0...6 (see Table 4)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

Value	Meaning
0	Manual
1	Always on (leaf nodes `PeakStart`, `PeakEnd`, and `PeakDays` must be given)
2	Every 15 minutes
3	Every 30 minutes
4	Every hour
5	Every 4 hours
6	Every 12 hours

Table 4: Values for the PeakSchedule leaf

2.3.2 ./MailForExchange/Schedule/OffPeakSchedule

The `OffPeakSchedule` leaf defines the synchronisation schedule for off-peak hours.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 3
- Value: 0...6 (see Table 5)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

Value	Meaning
0	Manual
1	Always on (leaf nodes `PeakStart`, `PeakEnd`, and `PeakDays` must be given)
2	Every 15 minutes
3	Every 30 minutes
4	Every hour
5	Every 4 hours
6	Every 12 hours

Table 5: Values for the OffPeakSchedule leaf

2.3.3 ./MailForExchange/Schedule/PeakStart

The `PeakStart` leaf defines what time of day the peak hours start.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: '08:00'
- Value: 24-hour time, for example, '08:00'

- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr

2.3.4 ./MailForExchange/Schedule/PeakEnd

The `PeakEnd` leaf defines what time of day the peak hours end.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: '17:00'
- Value: 24-hour time, for example, '17:00'
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr

2.3.5 ./MailForExchange/Schedule/PeakDays

The `PeakDays` leaf defines which days are considered peak days.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 0x1F (Monday – Friday)
- Value: Bitwise representation of days, Mon. is LSB (SunSatFriThursWedsTuesMon)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

2.3.6 ./MailForExchange/Schedule/PingInterval

The `PingInterval` leaf defines the heartbeat (ping) interval posted to the server for always-on (PING) jobs. The interval is in minutes.

Note: Value is used as an initial value. Client will determine ideal. We recommend that DM servers not send this value to versions of Mail for Exchange v2.3.0 and later. Let the MfE client define the initial value.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 5
- Value: 1...59
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

2.4 ./MailForExchange/Calendar node

The `Calendar` node is parent to all Nokia Mail for Exchange calendar settings.

- Support: Mandatory
- Occurrence: One
- Scope: Permanent
- Access Type: Get
- Format: Node

The following leaf objects are possible under the `Calendar` node:

- ./MailForExchange/Calendar/SyncCalendar
- ./MailForExchange/Calendar/RetrieveCalendar
- ./MailForExchange/Calendar/ReplaceCalendar

2.4.1 ./MailForExchange/Calendar/SyncCalendar

The `SyncCalendar` leaf defines whether to synchronise the calendar.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.4.2 ./MailForExchange/Calendar/RetrieveCalendar

The `RetrieveCalendar` leaf defines how far back in time calendar entries are synchronised.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 1
- Value: 0...4 (see Table 6)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

Value	Meaning
0	All entries
1	2 weeks
2	1 month
3	3 months
4	4 months

Table 6: Values for the RetrieveCalendar leaf

2.4.3 ./MailForExchange/Calendar/ReplaceCalendar

The `ReplaceCalendar` leaf defines whether to delete the existing entries on the device and replace them with the entries from the Microsoft Exchange Server during the first synchronisation.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.5 ./MailForExchange/Tasks node

The `Tasks` node is parent to all Nokia Mail for Exchange tasks (to do) settings.

- Support: Mandatory
- Occurrence: One
- Scope: Permanent
- Access Type: Get
- Format: Node

The following leaf objects are possible under the `Tasks` node:

- ./MailForExchange/Tasks/SyncCalTasks
- ./MailForExchange/Tasks/RetrieveCalTasks
- ./MailForExchange/Tasks/ReplaceCalTasks

2.5.1 ./MailForExchange/Tasks/SyncCalTasks

The `SyncCalTasks` leaf defines whether to synchronise tasks.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.5.2 ./MailForExchange/Tasks/RetrieveCalTasks

The `RetrieveCalTasks` leaf defines whether to synchronise completed tasks. It is a filter just like the Calendar and Email filters with similar leaf names.

- Support: Mandatory
- Occurrence: ZeroOrOne

- Default Value: 0
- Value: 0...1 (see Table 7)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

Value	Meaning
0	Do not synchronise completed tasks
1	Synchronise completed tasks

Table 7: Values for the RetrieveCalTasks leaf

2.5.3 ./MailForExchange/Tasks/ReplaceCalTasks

The `ReplaceCalTasks` leaf defines whether to delete the existing tasks on the device and replace them with the entries from the Microsoft Exchange Server during the first synchronisation.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.6 ./MailForExchange/Contacts node

2.6.1 ./MailForExchange/Contacts

The `Contacts` node is the parent to all Nokia Mail for Exchange contacts settings.

- Support: Mandatory
- Occurrence: One
- Scope: Permanent
- Access Type: Get
- Format: Node

The following leaf objects are possible under the `Contacts` node:

- ./MailForExchange/Contacts/SyncContacts
- ./MailForExchange/Contacts/ReplaceContacts

2.6.2 ./MailForExchange/Contacts/SyncContacts

The `SyncContacts` leaf defines whether to synchronise contacts.

- Support: Mandatory
- Occurrence: ZeroOrOne

- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.6.3 ./MailForExchange/Contacts/ReplaceContacts

The `ReplaceContacts` leaf defines whether to delete the existing contacts on the device and replace them with the entries from the Microsoft Exchange Server during the first synchronisation.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.7 ./MailForExchange/Email node

2.7.1 ./MailForExchange/Email

The `Email` node is parent to all Nokia Mail for Exchange email settings.

- Support: Mandatory
- Occurrence: One
- Scope: Permanent
- Access Type: Get
- Format: Node

The following leaf objects are possible under the `Email` node:

- ./MailForExchange/Email/SyncEmail
- ./MailForExchange/Email/Addr
- ./MailForExchange/Email/Popup
- ./MailForExchange/Email/UseSignature
- ./MailForExchange/Email/Signature
- ./MailForExchange/Email/SendImmediately
- ./MailForExchange/Email/RetrieveEmail

2.7.2 ./MailForExchange/Email/SyncEmail

The `SyncEmail` leaf defines whether to synchronise email.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True

- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.7.3 ./MailForExchange/Email/Addr

The `Addr` leaf defines the email address of the Microsoft Exchange account.

- Support: Mandatory
- Occurrence: One
- Value: Email address (see Reference [2])
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr (max: 255)

2.7.4 ./MailForExchange/Email/Popup

The `Popup` leaf defines whether to show an alert pop-up window each time a new email is received.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default value: False
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.7.5 ./MailForExchange/Email/UseSignature

The `UseSignature` leaf defines whether to include the text specified in the `Signature` leaf within the body of the email messages.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default value: False
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.7.6 ./MailForExchange/Email/Signature

The `Signature` leaf defines the text that appears in sent email messages when the value of the `UseSignature` leaf is set to `True`.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: NULL

- Scope: Dynamic
- Access Type: Get, Replace
- Format: Chr (max: 255)

2.7.7 ./MailForExchange/Email/SendImmediately

The `SendImmediately` leaf defines whether email messages are sent immediately or during the next synchronisation.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: True
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Bool

2.7.8 ./MailForExchange/Email/RetrieveEmail

The `RetrieveEmail` leaf defines how far back in time email messages are synchronised.

- Support: Mandatory
- Occurrence: ZeroOrOne
- Default Value: 2
- Value: 0...5 (see Table 8)
- Scope: Dynamic
- Access Type: Get, Replace
- Format: Int

Value	Meaning
0	All messages
1	1 day
2	3 days
3	1 week
4	2 weeks
5	1 month

Table 8: Values for the RetrieveEmail leaf

3 Terms and abbreviations

Term or abbreviation	Meaning
DDF	Device Description Framework
DM	Device Management
OMA	Open Mobile Alliance
SyncML	Synchronisation Markup Language
MfE	Mail for Exchange
MfE Profile	Collection of all MfE settings. When settings are received and saved by MfE, the ‘profile’ is saved.

4 References

[1] Uniform Resource Locators, [RFC1738], IETF
http://www.ietf.org/rfc/rfc1738.txt

[2] Standard for the format of ARPA Internet text messages, [RFC822], IETF
http://www.ietf.org/rfc/rfc0822.txt

[3] Open Mobile Alliance, http://www.openmobilealliance.com

[4] Forum Nokia, Device Management resources, http://www.forum.nokia.com/dm/adm

[5] Nokia Business Software Downloads, Mail for Exchange page,
http://www.businesssoftware.nokia.com/mail_for_exchange_downloads.php