[MS-ASRM]:
ActiveSync Rights Management Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
08/04/2010	0.1	New	Released new document.
11/03/2010	0.2	Minor	Clarified the meaning of the technical content.
03/18/2011	0.3	Minor	Clarified the meaning of the technical content.

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1 Introduction

This document specifies the ActiveSync Rights Management protocol, which is used by a client, typically a mobile device, to create and consume **rights-managed e-mail messages**. A rights-managed e-mail message is used to protect e-mail content from inappropriate access, use, and distribution.

1.1 Glossary

The following terms are defined in [MS-GLOS]:

> **Hypertext Transfer Protocol (HTTP)**
> **XML**

The following terms are defined in [MS-OXGLOS]:

> **Information Rights Management (IRM)**
> **locale**
> **recipient**
> **rights policy template**
> **rights-managed e-mail message**
> **Wireless Application Protocol (WAP) Binary XML (WBXML)**
> **XML namespace**
> **XML schema definition (XSD)**

The following terms are specific to this document:

> **MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

[MS-ASAIRS] Microsoft Corporation, "ActiveSync AirSyncBase Namespace Protocol Specification", December 2008.

[MS-ASCMD] Microsoft Corporation, "ActiveSync Command Reference Protocol Specification", December 2008.

[MS-ASDTYPE] Microsoft Corporation, "ActiveSync Data Types", December 2008.

[MS-ASEMAIL] Microsoft Corporation, "ActiveSync E-Mail Class Protocol Specification", December 2008.

[MS-ASHTTP] Microsoft Corporation, "ActiveSync HTTP Protocol Specification", December 2008.

[MS-ASWBXML] Microsoft Corporation, "ActiveSync WAP Binary XML (WBXML) Protocol Specification", December 2008.

[MS-OXORMMS] Microsoft Corporation, "Rights-Managed E-Mail Object Protocol Specification", June 2008.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, http://www.ietf.org/rfc/rfc2119.txt

[XML] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Fourth Edition)", W3C Recommendation, August 2006, http://www.w3.org/TR/2006/REC-xml-20060816/

[XMLNS] World Wide Web Consortium, "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation 8 December 2009, http://www.w3.org/TR/REC-xml-names/

[XMLSCHEMA1] Thompson, H.S., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

1.2.2 Informative References

[MSFT-ARPTC] Microsoft Corporation, "AD RMS Policy Template Considerations", http://technet.microsoft.com/en-us/library/dd996658(WS.10).aspx

[MSFT-IRMEAS] Microsoft Corporation, "Understanding Information Rights Management in Exchange ActiveSync", June 2010, http://technet.microsoft.com/en-us/library/ff657743(EXCHG.141).aspx

[MS-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary", March 2007.

[MS-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary", April 2008.

1.3 Overview

This protocol defines a set of **XML** elements used by a client to create and consume rights-managed e-mail messages. A rights-managed e-mail message is used to protect e-mail content from inappropriate access, use and distribution. Each rights-managed e-mail message has an associated **rights policy template**, which controls the usage policy applied to each rights-managed e-mail message.

A rights policy template specifies whether a user can edit, forward, reply, reply all, print, extract (copy), export (remove protection), or programmatically access the content in the rights-managed e-mail message. When a user creates a rights-managed e-mail message, the user chooses and applies the rights policy template that has the protection settings they require. For example, a manager can send an employee confidential information using a template that prohibits forwarding or printing the e-mail, but does allow the user to respond to the e-mail. Or, a public relations manager can send confidential company information to users inside their organization, and select a template that only allows the protected content to be viewed, replied to, and forwarded within the organization, but not viewed outside the organization.

The creation of rights policy templates is external to this protocol. For more information about deployment and distribution of rights policy templates see [MSFT-ARPTC].

The XML elements specified in this protocol enable the client to:

- Retrieve the rights policy templates available to the client for composing rights-managed e-mail message.

- Indicate whether the client supports **IRM** when retrieving e-mail.

- Compose new e-mail by using rights policy templates.

- Retrieve rights-managed e-mail messages.

- Perform actions on a rights-managed e-mail message in accordance with the rights policy template applied to the e-mail message.

It is the responsibility of the client to enforce the rights specified by the rights policy template to the rights-managed e-mail message.

1.4 Relationship to Other Protocols

The ActiveSync Rights Management protocol consists of a series of XML elements that are embedded inside an XML-formatted command request or a command response. Command requests and responses are specified in [MS-ASCMD]. Command requests and responses are transmitted using **Wireless Application Protocol (WAP) Binary XML (WBXML)**, as specified in [MS-ASWBXML].

The protected content contained in rights-managed e-mail messages are synchronized between the client and the server by using the E-mail class elements defined in [MS-ASEMAIL].

The ActiveSync Rights Management protocol defines elements according to the data type definitions that are specified in [MS-ASDTYPE].

1.5 Prerequisites/Preconditions

The ActiveSync Rights Management protocol requires a secure connection between the client and server, as specified in section 5.1.

This protocol assumes that the client has been approved to consume and compose IRM content by the server. For more information about client-side and server-side IRM requirements, see [MSFT-IRMEAS].

1.6 Applicability Statement

This protocol is designed for the creation and consumption of rights-managed e-mail messages on a client, which is typically a mobile device.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The ActiveSync Rights Management protocol consists of a series of XML elements that are embedded inside a command request or a command response. The XML markup that constitutes the request body or the response body is transmitted between client and server by using Wireless Application Protocol (WAP) Binary XML (WBXML), as specified in [MS-ASWBXML].

2.2 Message Syntax

The markup MUST be well-formed XML, as specified in [XML], and use the commands that are specified in [MS-ASCMD].

The XML markup that constitutes the request body or the response body is transmitted between client and server by using Wireless Application Protocol (WAP) Binary XML (WBXML) [MS-ASWBXML].

The following are the **XML schema definition (XSD)** for the RightsManagement namespace elements in command requests and command responses.<1> Unless otherwise noted, the elements in this class are specified in the RightsManagement namespace, using the mechanisms specified in [XMLNS] and [XMLSCHEMA1].

RightsManagement namespace elements in command requests:

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema
        attributeFormDefault="unqualified"
        xmlns:rightsmanagement="RightsManagement:"
        elementFormDefault="qualified"
        targetNamespace="RightsManagement:"
        xmlns:xs="http://www.w3.org/2001/XMLSchema"
        xmlns="RightsManagement:">
    <xs:simpleType name="NonEmptyStringType">
        <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:element name="RightsManagementSupport" type="xs:boolean"/>
    <xs:element name="TemplateID" type="rightsmanagement:NonEmptyStringType"/>
    <xs:element name="RemoveRightsManagementProtection"/>
</xs:schema>
```

RightsManagement namespace elements in command responses:

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema
    attributeFormDefault="unqualified"
    xmlns:rm="RightsManagement:"
    elementFormDefault="qualified"
    targetNamespace="RightsManagement:"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns="RightsManagement:">
  <xs:simpleType name="NonEmptyStringType">
    <xs:restriction base="xs:string">
```

```
          <xs:minLength value="1"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:element name="RightsManagementTemplates" >
      <xs:complexType>
        <xs:sequence>
          <xs:element name="RightsManagementTemplate" maxOccurs="20"/>
            <xs:complexType>
              <xs:sequence>
                <xs:element name="TemplateID" type="rm:NonEmptyStringType"/>
                <xs:element name="TemplateName" type="rm:NonEmptyStringType"/>
                <xs:element name="TemplateDescription" type="rm:NonEmptyStringType"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="RightsManagementLicense">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="TemplateID" type="rm:NonEmptyStringType"/>
          <xs:element name="TemplateName" type="rm:NonEmptyStringType"/>
          <xs:element name="TemplateDescription" type="rm:NonEmptyStringType"/>
          <xs:element name="EditAllowed" type="xs:boolean"/>
          <xs:element name="ReplyAllowed" type="xs:boolean"/>
          <xs:element name="ReplyAllAllowed" type="xs:boolean"/>
          <xs:element name="ForwardAllowed" type="xs:boolean"/>
          <xs:element name="ModifyRecipientsAllowed" type="xs:boolean"/>
          <xs:element name="ExtractAllowed" type="xs:boolean"/>
          <xs:element name="PrintAllowed" type="xs:boolean"/>
          <xs:element name="ExportAllowed" type="xs:boolean"/>
          <xs:element name="ProgrammaticAccessAllowed" type="xs:boolean"/>
          <xs:element name="Owner" type="xs:boolean"/>
          <xs:element name="ContentExpiryDate" type="xs:dateTime"/>
          <xs:element name="ContentOwner" type="rm:NonEmptyStringType"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:schema>
```

For more information about how the RightsManagement namespace elements are used in command requests and responses, see sections 3.1.4 and 3.2.4.

2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [XMLNS]. Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

Prefix	Namespace URI	Reference
None	RightsManagement	
airsync	AirSync	[MS-ASCMD] section 2.2.2.19

Prefix	Namespace URI	Reference
airsyncbase	AirSyncBase	[MS-ASAIRS]
composemail	ComposeMail	[MS-ASCMD] sections 2.2.2.15, 2.2.2.17, and 2.2.2.18
email	Email	[MS-ASEMAIL]
email2	Email2	[MS-ASEMAIL]
itemoperations	ItemOperations	[MS-ASCMD] section 2.2.2.8
search	Search	[MS-ASCMD] section 2.2.2.14
settings	Settings	[MS-ASCMD] section 2.2.2.16
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]

2.2.2   Elements

2.2.2.1   RightsManagementSupport

The **RightsManagementSupport** element is an optional element that specifies whether the client supports the ActiveSync Rights Management protocol.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). If the client supports the protocol, the value of this element is **TRUE** (1); otherwise, the value is **FALSE** (0). If the **RightsManagementSupport** element is not included in a request message, a default value of **FALSE** is assumed.

The **RightsManagementSupport** element has no child elements.

2.2.2.2   TemplateID

The **TemplateID** element is a required element that contains a string that identifies a particular rights policy template.

If a rights-managed e-mail message is forwarded or replied to using the **SmartForward** or **SmartReply** command, and the following conditions are true:

▪ The original rights policy template has the **ExportAllowed** element set to **TRUE**

▪ The **TemplateID** on the new message is set to the "No Restriction" template (**TemplateID** value "00000000-0000-0000-0000-000000000000")

the IRM protection is removed from the outgoing message; the original message retains its IRM protection.

The **TemplateID** element has no child elements.

2.2.2.3   RemoveRightsManagementProtection

The **RemoveRightsManagementProtection** element is an optional element that indicates that the client is removing the IRM protection from the e-mail.

The **RemoveRightsManagementProtection** element is an empty tag element, meaning it has no value or data type. It is distinguished only by the presence or absence of the **RemoveRightsManagementProtection/** tag.

IRM protection can only be removed from e-mail messages when the **ExportAllowed** element is set to **TRUE**.

The **RemoveRightsManagementProtection** element has no child elements.

2.2.2.4   RightsManagementTemplates

The **RightsManagementTemplates** element is an optional element that contains the rights policy templates available to the client.

The value of this element is a **container** value ([MS-ASDTYPE] section 2.1).

The **RightsManagementTemplates** element can only have the following child element

- **RightsManagementTemplate** (section 2.2.2.4.1). This element is optional. A maximum of 20 **RightsManagementTemplate** elements can be returned to the client.

2.2.2.4.1   RightsManagementTemplate

The **RightsManagementTemplate** element is an optional element that contains the template identifier, name, and description of a rights policy template available on the client.

The value of this element is a **container** value ([MS-ASDTYPE] section 2.1).

The **RightsManagementTemplate** element can have only one of each of the following child elements:

- **TemplateID** (section 2.2.2.4.1.1). This element is required.

- **TemplateName** (section 2.2.2.4.1.2). This element is required.

- **TemplateDescription** (section 2.2.2.4.1.3). This element is required.

2.2.2.4.1.1   TemplateID

The **TemplateID** element is a required element that contains a string that identifies a particular rights policy template.

The **TemplateID** element has no child elements.

2.2.2.4.1.2   TemplateName

The **TemplateName** element is a required element that specifies the name of the rights policy template.

The **TemplateName** element has no child elements.

The **TemplateName** element is passed to the client in the language specified by the **locale** in the request header ([MS-ASHTTP] section 2.2.1.1.1.1). If no locale is specified or available, English (0x0009) is the default locale.

The maximum length of the **TemplateName** element is 256 characters.

2.2.2.4.1.3 TemplateDescription

The **TemplateDescription** element is a required element that contains a description of the rights policy template.

The **TemplateDescription** element has no child elements.

The **TemplateDescription** element is passed to the client in the language specified by the locale in the request header ([MS-ASHTTP] section 2.2.1.1.1.1). If no locale is specified or available, English (0x0009) is the default locale.

The maximum length of the **TemplateDescription** element is 10240 characters.

2.2.2.5 RightsManagementLicense

The **RightsManagementLicense** element is an optional element that contains the rights policy template settings for the template applied to the e-mail message being synchronized.

The value of this element is a **container** value ([MS-ASDTYPE] section 2.2).

The **RightsManagementLicense** element can only have the following child elements:

- **EditAllowed** (section 2.2.2.5.1). This element is required.

- **ReplyAllowed** (section 2.2.2.5.2). This element is required.

- **ReplyAllAllowed** (section 2.2.2.5.3). This element is required.

- **ForwardAllowed** (section 2.2.2.5.4). This element is required.

- **ModifyRecipientsAllowed** (section 2.2.2.5.5). This element is required.

- **ExtractAllowed** (section 2.2.2.5.6). This element is required.

- **PrintAllowed** (section 2.2.2.5.7). This element is required.

- **ExportAllowed** (section 2.2.2.5.8). This element is required.

- **ProgrammaticAccessAllowed** (section 2.2.2.5.9). This element is required.

- **Owner** (section 2.2.2.5.10). This element is required.

- **ContentOwner** (section 2.2.2.5.11). This element is required.

- **ContentExpiryDate** (section 2.2.2.5.12). This element is required.

- **TemplateID** (section 2.2.2.5.13). This element is required.

- **TemplateName** (section 2.2.2.5.14). This element is required.

- **TemplateDescription** (section 2.2.2.5.15). This element is required.

2.2.2.5.1 EditAllowed

The **EditAllowed** element is a required element that specifies whether the e-mail can be modified by the user when the user forwards, replies, or replies all to the e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.3). **TRUE** (1) if the e-mail can be modified by the user; otherwise, **FALSE** (0).

A value of **FALSE** requires that the client MUST exclude the original rights-managed e-mail message from the **SmartForward** or **SmartReply** request. Consequently, inline replies are not allowed if the **EditAllowed** element is set to **FALSE**. When **EditAllowed** is set to **FALSE** and **composemail:ReplaceMime** is set to **FALSE** in a **SmartForward** or **SmartReply** request, the server will add the original rights-managed e-mail message as an attachment to the new message. Conversely, if **composemail:ReplaceMime** is set to **TRUE**, the server will not attach the original rights-managed e-mail message as an attachment.

The **EditAllowed** element has no child elements.

2.2.2.5.2   ReplyAllowed

The **ReplyAllowed** element is a required element that specifies whether the user is allowed to reply to the e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the user can reply to the e-mail message; otherwise, **FALSE** (0).

The **ReplyAllowed** element has no child elements.

2.2.2.5.3   ReplyAllAllowed

The **ReplyAllAllowed** element is a required element that specifies whether the user can reply to all of the **recipients** of the original e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the user can reply to all of the recipients of the e-mail message; otherwise, **FALSE** (0).

The **ReplyAllAllowed** element has no child elements.

2.2.2.5.4   ForwardAllowed

The **ForwardAllowed** element is a required element that specifies whether the user can forward the e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the user can forward the e-mail message; otherwise, **FALSE** (0).

The **ForwardAllowed** element has no child elements.

2.2.2.5.5   ModifyRecipientsAllowed

The **ModifyRecipientsAllowed** element is a required element that specifies whether the user can modify the recipient list when the user forwards, or replies to the e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the user can modify the recipient list; otherwise, **FALSE** (0).

The **ModifyRecipientsAllowed** element has no child elements.

2.2.2.5.6   ExtractAllowed

The **ExtractAllowed** element is a required element that specifies whether the user can copy content out of the e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the content of the e-mail message can be cut, copied, or a screen capture can be taken of the content; otherwise, **FALSE** (0).

The **ExtractAllowed** element has no child elements.

2.2.2.5.7   PrintAllowed

The **PrintAllowed** element is a required element that specifies whether the e-mail can be printed by the user. This element does not indicate client support for printing e-mail messages, it only specifies whether the e-mail message can be printed if the client supports printing.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the e-mail can be printed by the user; otherwise, **FALSE** (0).

The **PrintAllowed** element has no child elements.

2.2.2.5.8   ExportAllowed

The **ExportAllowed** element is a required element that specifies whether the IRM protection on the e-mail message can be removed by the user.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the user can remove the IRM protection when the user forwards, replies, or replies all to the e-mail message; otherwise, **FALSE** (0).

If a rights-managed e-mail message is forwarded or replied to using the **SmartForward** or **SmartReply** command, and the following conditions are true:

- The original rights policy template has the **ExportAllowed** element set to **TRUE**

- The **TemplateID** on the new message is set to the "No Restriction" template (**TemplateID** value "00000000-0000-0000-0000-000000000000")

the IRM protection is removed from the outgoing message; the original message retains its IRM protection.

The **ExportAllowed** element has no child elements.

2.2.2.5.9   ProgrammaticAccessAllowed

The **ProgrammaticAccessAllowed** element is a required element that specifies whether the contents of the e-mail message can be accessed programmatically by third party applications.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if third party applications can access the content of the e-mail message programmatically; otherwise, **FALSE** (1). A value of **TRUE** indicates whether the protected content is accessible by other applications. Protected content consists of the message body and attachments.

The **ProgrammaticAccessAllowed** element has no child elements.

2.2.2.5.10   Owner

The **Owner** element is a required element that specifies whether the user is the owner of the e-mail message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). **TRUE** (1) if the user is the owner of the e-mail message; otherwise, **FALSE** (0). A value of **TRUE** indicates that the authenticated user has owner rights on this message. This element is used for information presentation purposes only. The **Allowed** elements (**EditAllowed**, **ReplyAllowed**, etc.) are used to evaluate whether a particular action is permitted or restricted.

The **Owner** element has no child elements.

2.2.2.5.11   ContentOwner

The **ContentOwner** element is a required element that specifies the e-mail address of the content owner. The **Owner** element is set to **TRUE** for the user specified by the **ContentOwner** element.

The **ContentOwner** element has no child elements.

The maximum length of the **ContentOwner** value is 320 characters.

2.2.2.5.12   ContentExpiryDate

The **ContentExpiryDate** element is a required element that specifies the expiration date for the license. The **ContentExpiryDate** element is set to MAXDATE if rights management license has no expiration date set. The client MUST purge the body and attachments of the e-mail message when the **ContentExpiryDate** has passed. The client can then use the **ItemOperations** command ([MS-ASCMD] section 2.2.2.8) to fetch the content again from the server. If the rights management license allows it, the content can be provided once more with a new **ContentExpiryDate**.

The value of this element is a **dateTime** value ([MS-ASDTYPE] section 2.3).

The **ContentExpiryDate** element has no child elements.

2.2.2.5.13   TemplateID

The **TemplateID** element is a required element that contains a string that identifies a particular rights policy template. This element is used in reply and forward requests to indicate that there is no change in rights management protection.

The **TemplateID** element has no child elements.

2.2.2.5.14   TemplateName

The **TemplateName** element is a required element that specifies the name of the rights policy template. This element is used for informational presentation purposes only.

The **TemplateName** element has no child elements.

The **TemplateName** element is passed to the client in the language specified by the locale in the request header ([MS-ASHTTP] section 2.2.1.1.1.1). If no locale is specified or available, English (0x0009) is the default locale.

The maximum length of the **TemplateName** element is 256 characters.

2.2.2.5.15 TemplateDescription

The **TemplateDescription** element is a required element that contains a description of the rights policy template. This element is used for informational presentation purposes only.

The **TemplateDescription** element has no child elements.

The **TemplateDescription** element is passed to the client in the language specified by the locale in the request header ([MS-ASHTTP] section 2.2.1.1.1.1). If no locale is specified or available, English (0x0009) is the default locale.

The maximum length of the **TemplateDescription** element is 10240 characters.

3   Protocol Details

3.1   Client Details

3.1.1   Abstract Data Model

None.

3.1.2   Timers

None.

3.1.3   Initialization

None.

3.1.4   Higher-Layer Triggered Events

The user triggers the client to create request messages when they synchronize, search, fetch, reply, or forward rights-managed e-mail messages from their mobile device.

3.1.4.1   Indicating Support for IRM

When the client sends a **Sync** ([MS-ASCMD] section 2.2.2.19), **ItemOperations** ([MS-ASCMD] section 2.2.2.8), or **Search** ([MS-ASCMD] section 2.2.2.14) command request, the client indicates that it supports IRM protection by including the **RightsManagementSupport** element set to TRUE (1).

In a **Sync** request, the **RightsManagementSupport** element is included as the child of the **sync:Options** element ([MS-ASCMD] section 2.2.3.107.5).

In an **ItemOperations** command request, the **RightsManagementSupport** element is included as the child of the **itemoperations:Options** element ([MS-ASCMD] section 2.2.3.107.2).

In a **Search** command request, the **RightsManagementSupport** element is included as the child of the **search:Options** element ([MS-ASCMD] section 2.2.3.107.4).

3.1.4.2   Getting Rights Policy Templates

The client obtains the details about the rights policy template by sending a **Settings** command request that includes the **settings:RightsManagementInformation** element ([MS-ASCMD] section 2.2.3.133) with a **settings:Get** child element. The server returns the rights policy template settings in the response, as defined in section 3.2.4.2. Once the server returns the templates, the client stores the templates locally for future use within the **SendMail**, **SmartReply** or **SmartForward** commands. Because the templates can change, it is recommended that the client caches the templates for no longer than 24 hours.

3.1.4.3   Sending Protected E-mail

The client protects an e-mail message by including the **TemplateID** element in the **SendMail** ([MS-ASCMD] section 2.2.2.15), **SmartReply** ([MS-ASCMD] section 2.2.2.18), or **SmartForward** ([MS-ASCMD] section 2.2.2.17) command requests. If the command request does not include the **TemplateID** element, the e-mail message is sent without rights management.

3.1.5 Processing Events and Sequencing Rules

The client creates request messages as specified in [MS-ASCMD].

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

3.2.1 Abstract Data Model

None.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

The client triggers the server to create response messages when it receives request messages that contain IRM-protected data or settings.

3.2.4.1 Enforcing Rights Policy Template Settings

The server returns **Status** value 168 if IRM is disabled on the server. For an example, see section 4.2.

The server returns **Status** value 169 if a transient failure was encountered. The client SHOULD retry the request in a few minutes if **Status** value 169 is returned.

The server returns **Status** value 170 if a permanent failure or multiple transient failures were encountered.

The server returns **Status** value 171 in a **SmartReply** or **SmartForward** command response if the request included an invalid **TemplateID** value.

The server returns **Status** value 172 if the client tries to perform an action on a rights-managed e-mail message that is prohibited by the rights policy template.

3.2.4.2 Sending Rights Policy Templates

The **settings:RightsManagementInformation** element that is included in the **Settings** response contains all the rights policy templates that are available to the client. The **RightsManagementTemplate** element contains the specific settings for each template.

3.2.4.3   Sending Rights-Managed E-Mail Messages to the Client

To respond to a **Sync**, **ItemOperations**, or **Search** command request message that includes the **RightsManagementSupport** element, the server includes the **RightsManagementLicense** element and its child elements in the **Sync**, **ItemOperations**, or **Search** command response message.

In a **Sync** command response, the **RightsManagementLicense** element is included as a child of the **sync:ApplicationData** element ([MS-ASCMD] section 2.2.3.10).

In an **ItemOperations** command response, the **RightsManagementLicense** element is included as a child of the **itemoperations:Properties** element ([MS-ASCMD] section 2.2.3.118.1).

In a **Search** command response, the **RightsManagementLicense** element is included as a child of the **search:Properties** element ([MS-ASCMD] section 2.2.3.118.2).

3.2.5   Processing Events and Sequencing Rules

The server processes request messages as specified in [MS-ASCMD].

3.2.5.1   Handling SmartForward and SmartReply Requests

When the client sends the server a **SmartForward** or **SmartReply** command request for a message with a rights policy template, the server MUST do the following to enforce the rights policy template:

1. If no **TemplateID** element is included in the command request, the server proceeds as follows:

   - If the original message being forwarded or replied to has no rights management restrictions, the server proceeds to step 6.

   - If the original message had rights management restrictions, the server replaces the body of the message with boilerplate text and the rights-managed e-mail message is added as an .rpmsg attachment [MS-OXORMMS].

2. If any of the following are true, the server fails the request and returns composemail:Status value 168:

   - The **RightsManagementSupport** element was set to FALSE or was not included in previous command requests. See section 3.1.4.1 for more details.

   - The connection to the server does not use SSL.

   - The server does not support IRM features. See section section 1.5 for more details.

3. If the **TemplateID** element is included in the command request, the server does the following:

   - If the original message is not protected, the server proceeds to step 5. If the template does not exist on the server, the server fails the request and returns a composemail:Status value of 171.

   - If the original message is protected and the specified **TemplateID** value is the same as the **TemplateID** value on the original message, the server proceeds to step 4.

   - If the original message is protected and the specified **TemplateID** value is different than the **TemplateID** value on the original message, the server verifies that the new TemplateID value exists on the server. If the **TemplateID** value does not correspond to a template on the

server, the server fails the request and returns a composemail:Status value of 171; otherwise, the server proceeds to step 4.

4. The server compares the recipients on the original message to the recipients sent by the client within the new message. The server verifies that the recipient list on the new message aligns with the granted permissions, as specified in the following table. If permissions allow it, the server creates the reply or forwarded message; otherwise, a composemail:Status value of 171 is returned by the server.

5. If the message has a **TemplateID** element, the server protects the new outgoing message with the specified rights policy template.

6. The server sends the new message.

The following table describes the reply, reply all, and forward enforcement that is performed by the server.

ReplyAllowed	ReplyAllAllowed	ForwardAllowed	Server-side enforcement
ModifyRecipientsAllowed = **TRUE**		**TRUE***	There are no restrictions.
ModifyRecipientsAllowed = **FALSE**		**TRUE***	For reply and reply all, refer to the last four rows in this table. For forwarding, attach the original message and send it with the appropriate restrictions.*
TRUE	**TRUE**	**FALSE**	Reply to exactly one recipient or all original recipients. Whether the sender chooses to include themselves in the reply message is optional. All other **SmartReply** command requests are restricted and error out with a **composemail:Status** value of 172. **SmartForward** requests are restricted and return a **composemail:Status** value of 172.
TRUE	**FALSE**	**FALSE**	Reply to exactly one recipient, the sender of the original message. All other **SmartReply** command requests are restricted and error out with a **composemail:Status** value of 172. **SmartForward** command requests are restricted and return a **composemail:Status** value of 172.
FALSE	**TRUE**	**FALSE**	Reply to exactly all original recipients. Whether the sender chooses to include themselves in the reply message is optional All other **SmartReply** command requests are restricted and error out with a **composemail:Status** value of 172. **SmartForward** command requests are restricted and return a **composemail:Status** value of 172.
FALSE	**FALSE**	**FALSE**	All **SmartReply** and **SmartForward** command requests error out with a **composemail:Status** value of 172.

*The server does not enforce the lack of reply and reply all rights.

The following table describes the edit and export enforcement that is performed by the server.

ExportAllowed value	EditAllowed value	composemail:ReplaceMime value	New message uses the same TemplateID value	New message uses a different TemplateID value
TRUE	TRUE	TRUE	Send the message.	Send the message.
TRUE	FALSE	TRUE	Send the message.*	Send the message.*
FALSE	TRUE	TRUE	Send the message.	Send the message.*
FALSE	FALSE	TRUE	Send the message.*	Send the message.*
TRUE	TRUE	FALSE	Send the message, including the original message as inline content.	Send the message, including the original message as inline content.
TRUE	FALSE	FALSE	Send the message, including the original message as an attachment.*	Send the message, including the original message as an attachment.*
FALSE	TRUE	FALSE	Send the message, including the original message as inline content.	Send the message, including the original message as an attachment.*
FALSE	FALSE	FALSE	Send the message, including the original message as an attachment.*	Send the message, including the original message as an attachment.*

*In these cases, the client MUST NOT include the original message inline in the new message due to the possible breach of IRM protection.

3.2.6 Timer Events

None.

3.2.7   Other Local Events

None.

4   Protocol Examples

4.1   Retrieve Rights Policy Templates by Using the Settings Command

To retrieve the rights policy templates available to the user, the client sends the **Settings** command to the server. The request message includes the **settings:RightsManagementInformation** and **settings:Get** elements, which instruct the server to include the rights policy template in the response. In this scenario, the successful response includes two rights policy templates, each specified in its own **RightsManagementTemplate** element. The unsuccessful response includes **settings:Status** value 168, which indicates that IRM protection is disabled on the server. Other error values are possible and are specified in section 3.2.4.1.

Request

```
<?xml version="1.0" encoding="utf-8"?>
<Settings xmlns="Settings:">
  <RightsManagementInformation>
    <Get/>
  </RightsManagementInformation>
</Settings>
```

Successful Response

```
<?xml version="1.0" encoding="utf-8"?>
<Settings xmlns:rm="RightsManagement:" xmlns="Settings:">
  <Status>1</Status>
  <RightsManagementInformation>
    <Status>1</Status>
    <Get>
      <rm:RightsManagementTemplates>
        <rm:RightsManagementTemplate>
          <rm:TemplateID>cf5cf348-a8d7-40d5-91ef-a600b88a395d</rm:TemplateID>
          <rm:TemplateName>Do Not Forward</rm:TemplateName>
          <rm:TemplateDescription>Recipients can read this message, but they can't forward,
print, or copy content. The conversation owner has full permission to their message and all
replies.</rm:TemplateDescription>
        </rm:RightsManagementTemplate>
        <rm:RightsManagementTemplate>
          <rm:TemplateID>abfafb18-80a0-4763-ac37-48deb93e51e4</rm:TemplateID>
          <rm:TemplateName>DoNotReplyAll</rm:TemplateName>
          <rm:TemplateDescription>Description for template
'DoNotReplyAll'</rm:TemplateDescription>
        </rm:RightsManagementTemplate>
      </rm:RightsManagementTemplates>
    </Get>
  </RightsManagementInformation>
</Settings>
```

Unsuccessful Response

```
<?xml version="1.0" encoding="utf-8"?>
<Settings xmlns:rm="RightsManagement:" xmlns="Settings:">
  <Status>1</Status>
  <RightsManagementInformation>
```

```
    <Status>168</Status>
    <Get>
      <rm:RightsManagementTemplates />
    </Get>
  </RightsManagementInformation>
</Settings>
```

4.2 Sync a Rights-Managed E-Mail Message When IRM Is Supported

To retrieve a new e-mail message from the server, the client sends the **Sync** command and sets the
RightsManagementSupport element to **TRUE**. The response includes a new rights-managed e-
mail message, which has the rights policy template included in the **RightsManagementLicense**
element.

Request

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:airsyncbase="AirSyncBase:" xmlns:rm="RightsManagement:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>624199877</SyncKey>
      <CollectionId>5</CollectionId>
      <GetChanges>1</GetChanges>
      <Options>
        <rm:RightsManagementSupport>1</rm:RightsManagementSupport>
        <airsyncbase:BodyPreference>
          <airsyncbase:Type>1</airsyncbase:Type>
          <airsyncbase:TruncationSize>1024</airsyncbase:TruncationSize>
        </airsyncbase:BodyPreference>
        <airsyncbase:BodyPartPreference>
          <airsyncbase:Type>2</airsyncbase:Type>
        </airsyncbase:BodyPartPreference>
      </Options>
    </Collection>
  </Collections>
</Sync>
```

Response

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:"
xmlns:rm="RightsManagement:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1556727147</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>5:1</ServerId>
          <ApplicationData>
            <email:To>"T0SyncUser3" &lt;T0SyncUser3@contoso.com;</email:To>
            <email:From>"T0SyncUser1" &lt;T0SyncUser1@contoso.com&gt;</email:From>
            <email:Subject>DoNotForward</email:Subject>
            <email:DateReceived>2010-07-01T00:23:24.232Z</email:DateReceived>
            <email:DisplayTo>T0SyncUser3</email:DisplayTo>
```

```
          <email:ThreadTopic>DoNotForward</email:ThreadTopic>
          <email:Importance>1</email:Importance>
          <email:Read>0</email:Read>
          <airsyncbase:Body>
            <airsyncbase:Type>1</airsyncbase:Type>
            <airsyncbase:EstimatedDataSize>64</airsyncbase:EstimatedDataSize>
            <airsyncbase:Data>This is a test message that we want to
use.</airsyncbase:Data>
          </airsyncbase:Body>
          <email:MessageClass>IPM.Note</email:MessageClass>
          <email:InternetCPID>28591</email:InternetCPID>
          <email:Flag />
          <email:ContentClass>urn:content-classes:message</email:ContentClass>
          <airsyncbase:NativeBodyType>1</airsyncbase:NativeBodyType>
          <email2:ConversationId>…</email2:ConversationId>
          <email2:ConversationIndex>…</email2:ConversationIndex>
          <email:Categories />
          <airsyncbase:BodyPart>
            <airsyncbase:Status>1</airsyncbase:Status>
            <airsyncbase:Type>2</airsyncbase:Type>
            <airsyncbase:EstimatedDataSize>90</airsyncbase:EstimatedDataSize>
            <airsyncbase:Data>&lt;div&gt;
&lt;div&gt;This is a test message that we want to use.&lt;/div&gt;
&lt;/div&gt;
</airsyncbase:Data>
          </airsyncbase:BodyPart>
          <rm:RightsManagementLicense>
            <rm:Owner>0</rm:Owner>
            <rm:ContentOwner>T0SyncUser1@contoso.com</rm:ContentOwner>
            <rm:ReplyAllAllowed>1</rm:ReplyAllAllowed>
            <rm:EditAllowed>1</rm:EditAllowed>
            <rm:ReplyAllowed>1</rm:ReplyAllowed>
            <rm:ForwardAllowed>0</rm:ForwardAllowed>
            <rm:ExportAllowed>0</rm:ExportAllowed>
            <rm:ModifyRecipientsAllowed>0</rm:ModifyRecipientsAllowed>
            <rm:TemplateID>cf5cf348-a8d7-40d5-91ef-a600b88a395d</rm:TemplateID>
            <rm:ExtractAllowed>0</rm:ExtractAllowed>
            <rm:TemplateDescription>Recipients can read this message, but they can't
forward, print, or copy content. The conversation owner has full permission to their message
and all replies.</rm:TemplateDescription>
            <rm:ContentExpiryDate>9999-12-30T23:59:59.999Z</rm:ContentExpiryDate>
            <rm:TemplateName>Do Not Forward</rm:TemplateName>
            <rm:PrintAllowed>0</rm:PrintAllowed>
            <rm:ProgrammaticAccessAllowed>0</rm:ProgrammaticAccessAllowed>
          </rm:RightsManagementLicense>
        </ApplicationData>
      </Add>
    </Commands>
  </Collection>
 </Collections>
</Sync>
```

4.3 Sync a Rights-Managed E-Mail Message When IRM Is Not Supported

When IRM is not supported on the client, the user can still retrieve rights-managed e-mail
messages; the content is just available as an attachment instead of being included in the body of
the e-mail message. In this scenario, the client does not support IRM, so the

RightsManagementSupport element is not included in the **Sync** command request, and a default value of **FALSE** is assumed on the server.

The response message includes message.rpmsg [MS-OXORMMS] as an attachment to the e-mail message. Message.rpmsg includes the protected content, which cannot be opened on a client that does not support IRM natively.

Request

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:airsyncbase="AirSyncBase:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>408238195</SyncKey>
      <CollectionId>5</CollectionId>
      <GetChanges>1</GetChanges>
      <Options>
        <airsyncbase:BodyPreference>
          <airsyncbase:Type>1</airsyncbase:Type>
        </airsyncbase:BodyPreference>
      </Options>
    </Collection>
  </Collections>
</Sync>
```

Response

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:"
xmlns:rm="RightsManagement:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>334913177</SyncKey>
      <CollectionId>5</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>5:1</ServerId>
          <ApplicationData>
            <email:To>"T0SyncUser3" &lt;T0SyncUser3@contoso.com&gt;</email:To>
            <email:From>"T0SyncUser1" &lt;T0SyncUser1@contoso.com&gt;</email:From>
            <email:Subject> ReplyReplyAllForward</email:Subject>
            <email:DateReceived>2010-07-01T02:14:43.245Z</email:DateReceived>
            <email:DisplayTo>T0SyncUser3</email:DisplayTo>
            <email:ThreadTopic>ReplyReplyAllForward</email:ThreadTopic>
            <email:Importance>1</email:Importance>
            <email:Read>0</email:Read>
            <airsyncbase:Attachments>
              <airsyncbase:Attachment>
                <airsyncbase:DisplayName>message.rpmsg</airsyncbase:DisplayName>
                <airsyncbase:FileReference>5%3a1%3a0</airsyncbase:FileReference>
                <airsyncbase:Method>1</airsyncbase:Method>
                <airsyncbase:EstimatedDataSize>9915</airsyncbase:EstimatedDataSize>
              </airsyncbase:Attachment>
            </airsyncbase:Attachments>
            <airsyncbase:Body>
              <airsyncbase:Type>1</airsyncbase:Type>
```

```
                  <airsyncbase:EstimatedDataSize>289</airsyncbase:EstimatedDataSize>
                  <airsyncbase:Data>The message you tried to open is protected with Information
     Rights Management.</airsyncbase:Data>
               </airsyncbase:Body>
               <email:MessageClass>IPM.Note</email:MessageClass>
               <email:InternetCPID>28591</email:InternetCPID>
               <email:Flag />
               <email:ContentClass>rpmsg.message</email:ContentClass>
               <airsyncbase:NativeBodyType>1</airsyncbase:NativeBodyType>
               <email2:ConversationId>…</email2:ConversationId>
               <email2:ConversationIndex>…</email2:ConversationIndex>
               <email:Categories />
            </ApplicationData>
          </Add>
        </Commands>
      </Collection>
    </Collections>
  </Sync>
```

4.4 Reply to a Rights-Managed E-Mail Message by Using the SmartReply Command

To reply to a rights-managed e-mail message, the client sends a **SmartReply** command message and includes the **TemplateID** element. In this scenario, the client retrieves the **TemplateID** from the local store, because it is responding to a message that it sent originally.

Request

```
<?xml version="1.0" encoding="utf-8"?>
<SmartReply xmlns:rm="RightsManagement:" xmlns="ComposeMail:">
  <ClientId>634135220584105742</ClientId>
  <Source>
    <FolderId>5</FolderId>
    <ItemId>5:1</ItemId>
  </Source>
  <Mime>From: T0SyncUser2@contoso.com
To: T0SyncUser1@contoso.com
Subject: Message
MIME-Version: 1.0
Content-Type: text/plain; Charset= us-ascii
Content-Transfer-Encoding: 7bit
X-MimeOLE: Produced By Microsoft MimeOLE V6.00.2800.1441

Message contents. </Mime>
  <rm:TemplateID>CF5CF348-A8D7-40D5-91EF-A600B88A395D</rm:TemplateID>
</SmartReply>
```

Response

```
HTTP/1.1 200 OK
Date: Thu, 01 Jul 2010 02:14:20 GMT
Content-Length: 0
```

4.5   Search for a Rights-Managed E-Mail Message by Using the Search Command

To search for a rights-managed e-mail message, the client sends the **Search** command and sets the **RightsManagementSupport** element to **TRUE**.

The response includes the rights-managed e-mail message.

Request

```xml
<?xml version="1.0" encoding="utf-8"?>
<Search xmlns:airsyncbase="AirSync:" xmlns:airsyncbase="AirSyncBase:"
xmlns:rm="RightsManagement:" xmlns="Search:">
  <Store>
    <Name>Mailbox</Name>
    <Query>
      <And>
        <airsyncbase:CollectionId>5</airsyncbase:CollectionId>
        <FreeText>IRMEAS</FreeText>
        <airsyncbase:Class>Email</airsyncbase:Class>
      </And>
    </Query>
    <Options>
      <Range>0-0</Range>
      <RebuildResults/>
      <DeepTraversal/>
      <airsyncbase:BodyPreference>
        <airsyncbase:Type>1</airsyncbase:Type>
        <airsyncbase:TruncationSize>512</airsyncbase:TruncationSize>
      </airsyncbase:BodyPreference>
      <rm:RightsManagementSupport>1</rm:RightsManagementSupport>
    </Options>
  </Store>
</Search>
```

Response

```xml
<?xml version="1.0" encoding="utf-8"?>
<Search xmlns:airsyncbase="AirSync:" xmlns:email="Email:" xmlns:airsyncbase="AirSyncBase:"
xmlns:email2="Email2:" xmlns:rm="RightsManagement:" xmlns="Search:">
  <Status>1</Status>
  <Response>
    <Store>
      <Status>1</Status>
      <Result>
        <airsyncbase:Class>Email</airsyncbase:Class>

<LongId>RgAAAAC56adCCdvKRYRrNA1IgBolBwB%2bSy6NhndsQ7ldDXB%2fCAqQAAAAbHbTAAB%2bSy6NhndsQ7ldDXB
%2fCAqQAAAAbJ5XAAAJ</LongId>
        <airsyncbase:CollectionId>5</airsyncbase:CollectionId>
        <Properties>
          <email:To>"T0SyncUser3" &lt;T0SyncUser3@contoso.com&gt;</email:To>
          <email:From>"T0SyncUser1" &lt;T0SyncUser1@contoso.com&gt;</email:From>
          <email:Subject>DoNotForward</email:Subject>
          <email:DateReceived>2010-06-30T23:52:51.908Z</email:DateReceived>
          <email:DisplayTo>T0SyncUser3</email:DisplayTo>
          <email:ThreadTopic>DoNotForward</email:ThreadTopic>
          <email:Importance>1</email:Importance>
```

```
      <email:Read>0</email:Read>
      <airsyncbase:Body>
        <airsyncbase:Type>1</airsyncbase:Type>
        <airsyncbase:EstimatedDataSize>64</airsyncbase:EstimatedDataSize>
        <airsyncbase:Data>This is a test message that we want to use.</airsyncbase:Data>
      </airsyncbase:Body>
      <email:MessageClass>IPM.Note</email:MessageClass>
      <email:InternetCPID>28591</email:InternetCPID>
      <email:Flag />
      <email:ContentClass>urn:content-classes:message</email:ContentClass>
      <airsyncbase:NativeBodyType>1</airsyncbase:NativeBodyType>
      <email2:ConversationId>…</email2:ConversationId>
      <email2:ConversationIndex>…</email2:ConversationIndex>
      <email:Categories />
      <rm:RightsManagementLicense>
        <rm:Owner>0</rm:Owner>
        <rm:ContentOwner>T0SyncUser1@contoso.com</rm:ContentOwner>
        <rm:ReplyAllAllowed>1</rm:ReplyAllAllowed>
        <rm:EditAllowed>1</rm:EditAllowed>
        <rm:ReplyAllowed>1</rm:ReplyAllowed>
        <rm:ForwardAllowed>0</rm:ForwardAllowed>
        <rm:ExportAllowed>0</rm:ExportAllowed>
        <rm:ModifyRecipientsAllowed>0</rm:ModifyRecipientsAllowed>
        <rm:TemplateID>cf5cf348-a8d7-40d5-91ef-a600b88a395d</rm:TemplateID>
        <rm:ExtractAllowed>0</rm:ExtractAllowed>
        <rm:TemplateDescription>Recipients can read this message, but they can't forward,
print, or copy content. The conversation owner has full permission to their message and all
replies.</rm:TemplateDescription>
        <rm:ContentExpiryDate>9999-12-30T23:59:59.999Z</rm:ContentExpiryDate>
        <rm:TemplateName>Do Not Forward</rm:TemplateName>
        <rm:PrintAllowed>0</rm:PrintAllowed>
        <rm:ProgrammaticAccessAllowed>0</rm:ProgrammaticAccessAllowed>
      </rm:RightsManagementLicense>
     </Properties>
   </Result>
   <Range>0-0</Range>
   <Total>1</Total>
  </Store>
 </Response>
</Search>
```

4.6 Fetch a Rights-Managed E-Mail Message by Using the ItemOperations Command

To fetch a rights-managed e-mail message, the client sends the **ItemOperations** command and sets the **RightsManagementSupport** element to **TRUE**.

The response includes the rights-managed e-mail message.

Request

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsyncbase="AirSync:" xmlns:airsyncbase="AirSyncBase:"
xmlns="ItemOperations:" xmlns:rm="RightsManagement:">
  <Fetch>
    <Store>Mailbox</Store>
```

```
      <airsyncbase:CollectionId>5</airsyncbase:CollectionId>
      <airsyncbase:ServerId>5:1</airsyncbase:ServerId>
      <Options>
        <airsyncbase:BodyPreference>
          <airsyncbase:Type>1</airsyncbase:Type>
          <airsyncbase:TruncationSize>1024</airsyncbase:TruncationSize>
        </airsyncbase:BodyPreference>
        <rm:RightsManagementSupport>1</rm:RightsManagementSupport>
      </Options>
    </Fetch>
  </ItemOperations>
```

Response

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsyncbase="AirSync:" xmlns:email="Email:"
xmlns:airsyncbase="AirSyncBase:" xmlns:rm="RightsManagement:" xmlns="ItemOperations:">
  <Status>1</Status>
  <Response>
    <Fetch>
      <Status>1</Status>
      <airsyncbase:CollectionId>5</airsyncbase:CollectionId>
      <airsyncbase:ServerId>5:1</airsyncbase:ServerId>
      <airsyncbase:Class>Email</airsyncbase:Class>
      <Properties>
        <email:To>"T0SyncUser3" &lt;T0SyncUser3@contoso.com&gt;</email:To>
        <email:From>"T0SyncUser1" &lt;T0SyncUser1@contoso.com&gt;</email:From>
        <email:Subject>IRMEAS_Subj_Enc_DoNotForward_V141</email:Subject>
        <email:DateReceived>2010-06-30T23:44:31.053Z</email:DateReceived>
        <email:DisplayTo>T0SyncUser3</email:DisplayTo>
        <email:ThreadTopic>DoNotForward</email:ThreadTopic>
        <email:Importance>1</email:Importance>
        <email:Read>0</email:Read>
        <airsyncbase:Body>
          <airsyncbase:Type>1</airsyncbase:Type>
          <airsyncbase:EstimatedDataSize>64</airsyncbase:EstimatedDataSize>
          <airsyncbase:Data>This is a test message that we want to use.</airsyncbase:Data>
        </airsyncbase:Body>
        <email:MessageClass>IPM.Note</email:MessageClass>
        <email:InternetCPID>28591</email:InternetCPID>
        <email:Flag />
        <email:ContentClass>urn:content-classes:message</email:ContentClass>
        <airsyncbase:NativeBodyType>1</airsyncbase:NativeBodyType>
        <email2:ConversationId>…</email2:ConversationId>
        <email2:ConversationIndex>…</email2:ConversationIndex>
        <rm:RightsManagementLicense>
          <rm:Owner>0</rm:Owner>
          <rm:ContentOwner>T0SyncUser1@contoso.com</rm:ContentOwner>
          <rm:ReplyAllAllowed>1</rm:ReplyAllAllowed>
          <rm:EditAllowed>1</rm:EditAllowed>
          <rm:ReplyAllowed>1</rm:ReplyAllowed>
          <rm:ForwardAllowed>0</rm:ForwardAllowed>
          <rm:ExportAllowed>0</rm:ExportAllowed>
          <rm:ModifyRecipientsAllowed>0</rm:ModifyRecipientsAllowed>
          <rm:TemplateID>cf5cf348-a8d7-40d5-91ef-a600b88a395d</rm:TemplateID>
          <rm:ExtractAllowed>0</rm:ExtractAllowed>
```

```
        <rm:TemplateDescription>Recipients can read this message, but they can't forward,
print, or copy content. The conversation owner has full permission to their message and all
replies.</rm:TemplateDescription>
        <rm:ContentExpiryDate>9999-12-30T23:59:59.999Z</rm:ContentExpiryDate>
        <rm:TemplateName>Do Not Forward</rm:TemplateName>
        <rm:PrintAllowed>0</rm:PrintAllowed>
        <rm:ProgrammaticAccessAllowed>0</rm:ProgrammaticAccessAllowed>
      </rm:RightsManagementLicense>
    </Properties>
  </Fetch>
  </Response>
</ItemOperations>
```

4.7   Remove IRM Protection by Using the ItemOperations Command

To remove IRM protection from a rights-managed e-mail message, the user first uses the **Sync**
command to sync the e-mail message to the client. The client then uses the **ItemOperations**
command to remove rights management protection. This section includes both successful and
unsuccessful **ItemOperations** responses.

ItemOperations Request

The **ItemOperations** command request includes the **RemoveRightsManagementProtection**
element to remove IRM protection from the e-mail message.

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsyncbase="AirSync:" xmlns:airsyncbase="AirSyncBase:"
xmlns="ItemOperations:" xmlns:rm="RightsManagement:">
  <Fetch>
    <Store>Mailbox</Store>
    <airsyncbase:CollectionId>5</airsyncbase:CollectionId>
    <airsyncbase:ServerId>5:1</airsyncbase:ServerId>
    <Options>
      <airsyncbase:BodyPreference>
        <airsyncbase:Type>1</airsyncbase:Type>
        <airsyncbase:TruncationSize>1024</airsyncbase:TruncationSize>
      </airsyncbase:BodyPreference>
      <rm:RightsManagementSupport>1</rm:RightsManagementSupport>
    </Options>
    <rm:RemoveRightsManagementProtection/>
  </Fetch>
</ItemOperations>
```

Successful ItemOperations Response

In this scenario, the **ItemOperations** command was successful because the **ExportAllowed** value
was set to **TRUE** for the rights policy template applied to the e-mail message. The e-mail message
included in the response has no IRM protection and includes the previously protected content in the
body of the message.

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsyncbase="AirSync:" xmlns:email="Email:"
xmlns:airsyncbase="AirSyncBase:" xmlns:email2="Email2:" xmlns="ItemOperations:">
  <Status>1</Status>
  <Response>
    <Fetch>
```

```
        <Status>1</Status>
        <airsyncbase:CollectionId>5</airsyncbase:CollectionId>
        <airsyncbase:ServerId>5:1</airsyncbase:ServerId>
        <airsyncbase:Class>Email</airsyncbase:Class>
        <Properties>
          <email:To>"T0SyncUser3" &lt;T0SyncUser3@contoso.com&gt;</email:To>
          <email:From>"T0SyncUser1" &lt;T0SyncUser1@contoso.com&gt;</email:From>
          <email:Subject>Confidential</email:Subject>
          <email:DateReceived>2010-06-30T23:47:06.961Z</email:DateReceived>
          <email:DisplayTo>T0SyncUser3</email:DisplayTo>
          <email:ThreadTopic>Confidential</email:ThreadTopic>
          <email:Importance>1</email:Importance>
          <email:Read>0</email:Read>
          <airsyncbase:Body>
            <airsyncbase:Type>1</airsyncbase:Type>
            <airsyncbase:EstimatedDataSize>64</airsyncbase:EstimatedDataSize>
            <airsyncbase:Data>This is a test message that we want to use.</airsyncbase:Data>
          </airsyncbase:Body>
          <email:MessageClass>IPM.Note</email:MessageClass>
          <email:InternetCPID>28591</email:InternetCPID>
          <email:Flag />
          <email:ContentClass>urn:content-classes:message</email:ContentClass>
          <airsyncbase:NativeBodyType>2</airsyncbase:NativeBodyType>
          <email2:ConversationId>…</email2:ConversationId>
          <email2:ConversationIndex>…</email2:ConversationIndex>
        </Properties>
      </Fetch>
    </Response>
  </ItemOperations>
```

Unsuccessful ItemOperations Response

In this scenario, the **ItemOperations** command to remove rights management protection was not successful because the **ExportAllowed** value was set to **FALSE** for the rights policy template applied to the e-mail message. The **ItemOperations** command response includes the protected content in the body of the message, but the message is still a rights-managed e-mail message and is using the ViewOnly template to restrict editing, forwarding, replying, replying all, exporting, or extracting the content.

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:airsync="AirSync:" xmlns:email="Email:"
xmlns:airsyncbase="AirSyncBase:" xmlns:rm="RightsManagement:" xmlns="ItemOperations:">
  <Status>1</Status>
  <Response>
    <Fetch>
      <Status>1</Status>
      <airsync:CollectionId>5</airsync:CollectionId>
      <airsync:ServerId>5:1</airsync:ServerId>
      <airsync:Class>Email</airsync:Class>
      <Properties>
        <email:To>"T0SyncUser3" &lt;T0SyncUser3@contoso.com&gt;</email:To>
        <email:From>"T0SyncUser1" &lt;T0SyncUser1@contoso.com&gt;</email:From>
        <email:Subject>Confidential</email:Subject>
        <email:DateReceived>2010-06-30T23:47:06.961Z</email:DateReceived>
        <email:DisplayTo>T0SyncUser3</email:DisplayTo>
        <email:ThreadTopic>Confidential</email:ThreadTopic>
```

```
<email:Importance>1</email:Importance>
<email:Read>0</email:Read>
<airsyncbase:Body>
  <airsyncbase:Type>1</airsyncbase:Type>
  <airsyncbase:EstimatedDataSize>64</airsyncbase:EstimatedDataSize>
  <airsyncbase:Data>This is a test message that we want to use.</airsyncbase:Data>
</airsyncbase:Body>
<email:MessageClass>IPM.Note</email:MessageClass>
<email:InternetCPID>28591</email:InternetCPID>
<email:Flag />
<email:ContentClass>urn:content-classes:message</email:ContentClass>
<airsyncbase:NativeBodyType>2</airsyncbase:NativeBodyType>
<email2:ConversationId>…</email2:ConversationId>
<email2:ConversationIndex>…</email2:ConversationIndex>
<rm:RightsManagementLicense>
  <rm:Owner>0</rm:Owner>
  <rm:ContentOwner>T0SyncUser1v14.1@contoso.com</rm:ContentOwner>
  <rm:ReplyAllAllowed>0</rm:ReplyAllAllowed>
  <rm:EditAllowed>0</rm:EditAllowed>
  <rm:ReplyAllowed>0</rm:ReplyAllowed>
  <rm:ForwardAllowed>0</rm:ForwardAllowed>
  <rm:ExportAllowed>0</rm:ExportAllowed>
  <rm:ModifyRecipientsAllowed>0</rm:ModifyRecipientsAllowed>
  <rm:TemplateID>e9225d21-a80e-4642-81eb-d5e9afe3f33a</rm:TemplateID>
  <rm:ExtractAllowed>0</rm:ExtractAllowed>
  <rm:TemplateDescription>Description for template
'ViewOnly'</rm:TemplateDescription>
  <rm:ContentExpiryDate>9999-12-30T23:59:59.999Z</rm:ContentExpiryDate>
  <rm:TemplateName>ViewOnly</rm:TemplateName>
  <rm:PrintAllowed>0</rm:PrintAllowed>
  <rm:ProgrammaticAccessAllowed>0</rm:ProgrammaticAccessAllowed>
</rm:RightsManagementLicense>
    </Properties>
  </Fetch>
 </Response>
</ItemOperations>
```

5   Security

5.1   Security Considerations for Implementers

The ActiveSync Rights Management protocol requires that communication between the client and server occurs over an **HTTP** connection that uses Secure Sockets Layer (SSL), as specified in [MS-ASHTTP] section 1.5, 2.2.1.1.2.1, and 5.1.

5.2   Index of Security Parameters

None.

6   Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft® Exchange Server 2010 Service Pack 1 (SP1)

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that the product does not follow the prescription.

<1> Section 2.2: The RightsManagement namespace is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0. For more information about the MS-ASProtocolVersion header see [MS-ASHTTP] section 2.2.2.1.2.1. For more information about the applicability of the MS-ASProtocolVersion header value to Exchange 2010, see [MS-ASHTTP] section 1.6.

7 Change Tracking

This section identifies changes that were made to the [MS-ASRM] protocol document between the November 2010 and March 2011 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements or functionality.

- An extensive rewrite, addition, or deletion of major portions of content.

- The removal of a document from the documentation set.

- Changes made for template compliance.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

- New content added.

- Content updated.

- Content removed.

- New product behavior note added.

- Product behavior note updated.

- Product behavior note removed.

- New protocol syntax added.

- Protocol syntax updated.

- Protocol syntax removed.

- New content added due to protocol revision.

- Content updated due to protocol revision.

- Content removed due to protocol revision.

- New protocol syntax added due to protocol revision.

- Protocol syntax updated due to protocol revision.

- Protocol syntax removed due to protocol revision.

- New content added for template compliance.

- Content updated for template compliance.

- Content removed for template compliance.

- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated.**

Some important terms used in the change type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.

- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

The changes made to this document are listed in the following table. For more information, please contact protocol@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1.1 Glossary	Removed "attachment", "message", "Multipurpose Internet Mail Extensions (MIME)", and "Secure Sockets Layer (SSL)" from list of terms.	N	Content updated.
1.1 Glossary	Removed local definition of "Information Rights Management (IRM)" and added it to list of terms in [MS-OXGLOS].	N	Content updated.

8 Index