Portable Document Rights Language (PDRL) Reference
simpleType PermissionAccessType..................................................................................................................................................50
PolicyEntryCondition elements ...............................................................................................................................................52
Property element ..................................................................................................................................................................52
Resource element .................................................................................................................................................................53
element ResourceType .......................................................................................................................................................53
complexType ResourceType ...............................................................................................................................................53
Publisher element .................................................................................................................................................................55
element ResourceType/Publisher ...........................................................................................................................................55
PublishTime element ...............................................................................................................................................................56
element ResourceType/PublishTime ........................................................................................................................................56
ResourceName element ............................................................................................................................................................57
element ResourceType/ResourceName ........................................................................................................................................57
ResourceLocation element .......................................................................................................................................................58
element ResourceType/ResourceLocation ................................................................................................................................58
ResourceID element .................................................................................................................................................................59
element ResourceType/ResourceID ...........................................................................................................................................59
Condition elements .................................................................................................................................................................60
ConditionAbstractType type ...................................................................................................................................................60
complexType ConditionAbstractType ................................................................................................................................60
PolicyCondition and PolicyConditionEntry base elements ................................................................................................61
element PolicyConditionMulti ................................................................................................................................................61
element PolicyConditionSingle ...............................................................................................................................................62
element PolicyEntryConditionMulti ........................................................................................................................................63
element PolicyEntryConditionSingle ........................................................................................................................................64
ValidityPeriodType condition .................................................................................................................................................65
complexType ValidityPeriodType ...............................................................................................................................................65
element ValidityPeriodType/ValidityPeriodAbsolute ..................................................................................................................66
element ValidityPeriodType/ValidityPeriodRelative .....................................................................................................................67
complexType ValidityPeriodAbsoluteType ................................................................................................................................67
element ValidityPeriodAbsoluteType/NotBeforeAbsolute ........................................................................................................68
element ValidityPeriodAbsoluteType/NotAfterAbsolute ...........................................................................................................69
complexType ValidityPeriodRelativeType ................................................................................................................................69
element ValidityPeriodRelativeType/NotBeforeRelative ..........................................................................................................70
element ValidityPeriodRelativeType/NotAfterRelative .............................................................................................................70
DeltaTimeType condition ...........................................................................................................................................................72
complexType DeltaTimeType ....................................................................................................................................................72
element DeltaTimeType/Duration ................................................................................................................................................73
AuditSettings condition ...............................................................................................................................................................74
element AuditSettings ..............................................................................................................................................................74
complexType AuditSettingsType ...............................................................................................................................................74
OfflineLeasePeriod condition ....................................................................................................................................................76
element OfflineLeasePeriod .....................................................................................................................................................76
PolicyEntryValidityPeriod condition ........................................................................................................................................77
element PolicyEntryValidityPeriod ..........................................................................................................................................77
PolicyValidityPeriod condition ..................................................................................................................................................79
element PolicyValidityPeriod ....................................................................................................................................................79
Watermark condition .................................................................................................................................................................81
element Watermark ..................................................................................................................................................................81
complexType WatermarkType ...................................................................................................................................................81
element WatermarkType/TemplateID .........................................................................................................................................82
5 Extension Schema

Acrobat conditions

element AcrobatCondition
complexType AcrobatConditionType
element AcrobatConditionType/PlaintextMetadata
element AcrobatConditionType/EncryptFileAttachmentOnly

Acrobat and Rights Management ES3 permissions

simpleType PermissionNameEnum

6 Security Considerations

Integrity
Privacy
Trust model
Authentication

7 References

Copyright notices
About this help

This Help explains Portable Document Rights Language (PDRL), which is a language for expressing rights and conditions for accessing digital content. PDRL meets the following business requirements:

- **Document control:** Allows for the expression of the document control features implemented in Adobe® LiveCycle® Rights Management 10.
- **Security:** Can be used for securely transmitting and attaching rights to protected resources.
- **Extensibility:** Can be extended to handle new document control features.
- **Compatibility with PDF:** Compatible with the PDF public specification [PDF]. Policies and licenses described within this document can be contained within a PDF file.

Additional information

The information in this table will help you to learn more about Adobe LiveCycle ES3.

<table>
<thead>
<tr>
<th>For information about</th>
<th>See</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiveCycle ES3 solution components</td>
<td>LiveCycle ES3 Overview</td>
</tr>
<tr>
<td>The features available with each service</td>
<td>LiveCycle ES3 Services</td>
</tr>
</tbody>
</table>
Introducing PDRL

PDRL incorporates the following design principles:

**Abstract:** PDRL provides the building blocks for communicating rights and conditions for access to protected resources. Although the first target implementation for this language is document control through Rights Management 10, it is abstract enough for use in expressing other types of policies in other implementations. For example, a resource is a very generic concept. Rights Management 10 defines a resource to be a document. However, a resource could just as easily be video, music, or some other form of digital content.

**Expressive:** PDRL provides enough richness in the language to support a number of document control features. Therefore, the language is designed in an object-oriented manner, with a key set of building block objects like conditions, permissions, policy entries, principals, and properties to allow for creation of sophisticated policies.

**Extensible:** PDRL provides several mechanisms for extensibility. The goal was to define the basic containers and building blocks in the core schema. Then, as new features are needed, they can be added in separate schema extension documents without need for modification to the core language.

**Interoperable:** The rights management space is still relatively new. There is no clear industry standard for rights language at this point. For this reason, each vendor has defined its own notion of policies. For Rights Management 10 to be successful, we must be able to convert between other rights languages and PDRL without loss of data. PDRL was designed with this goal in mind.

**XML Schema:** PDRL was defined using XML Schema. XML and XML Schema were chosen as the syntax to express this language because of their pervasiveness and wide acceptance.

**Non-implementation-specific:** PDRL is as implementation-neutral as possible so that it can be used in future implementations without change. It also makes the interoperability goal more achievable.
PDRL Concepts

PDRL consists of three primary XML elements: license, policy, and resource. These primary objects are combined to define the rights and policies for accessing a resource. All of the other elements and attributes defined within this specification are sub-elements to these three.

Example use case

Adobe LiveCycle Rights Management 10 and its integration with Adobe Acrobat® 8.0 is provided as an example of how these elements work together.

Note: PDRL can also be used by other policy servers to describe rights for non-PDF documents.

A user logs into Rights Management 10 and creates a policy that has the following properties:

- A list of users and groups (also known as principals) that can access a document; the permissions for each user or group.
- The expiration time on the document, if any.
- Other miscellaneous document control settings, such as auditing.

The policy is a stand-alone object. It is converted to XML (PDRL) and stored in the Rights Management 10 database.

A user can then open a PDF document using Acrobat and apply security to that document. The Acrobat user interface displays a list of existing policies. The user selects one of these policies based on the security needed for the business function and applies the policy to the document.

At this point, Acrobat contacts Rights Management 10. Rights Management 10 creates two new objects to complete the processing. The first object is a resource object. It contains metadata to identify the document being secured and the publisher of the document. The second object is a license object. As shown in the preceding figure, the license object is the binding between a resource object and a policy object. It represents the fact that a specific document has been secured and is now controlled based on the rules defined in the policy. All of these objects can exist independently from one another and can be converted to or from XML using the PDRL schema. The license is the glue that binds a resource to a policy and describes the exact rules used to control access to that document instance. Note that multiple resources can be controlled by the same policy. Also, a policy object’s rules can be changed dynamically, and all resources controlled by that policy will automatically enforce the new rules due to this indirection in the model.
License

A license contains the information to bind a secured resource to a policy. It gets created at the time of securing a document and consists of the issuing authority, resource, policy or policy ID, and signature. It specifies the rights available to a principal who attempts to access a secured resource. A license should be generated by a security system as part of the process of applying controls to a resource. The security system (or issuing authority) issues the license to encapsulate the fact that some kind of cryptographic controls have been put in place around that particular resource. The license can then be used in subsequent resource access operations by the security enforcement system to enforce the rights or policies that apply to the principal accessing the resource.

The license must include some kind of integrity protection, either a digital signature or an HMAC, to ensure that the binding has not been tampered with.

The following XML shows a license with a detached policy referenced by a policy ID. Policies may optionally be included within the license body.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<License
LicenseSchemaVersion="1.0"
LicenseID="21F70094-447F-07C5-EC13-01A6BEC4C2CC"
LicenseInstanceVersion="1"
xmlns="http://www.adobe.com/schema/1.0/pdrl">
<IssuingAuthority>http://aps.corp.adobe.com:8080/axis/services/urn:EDCLicenseService</IssuingAuthority>
<Resource>
    <Publisher PrincipalNameType="USER">
        <PrincipalDomain>adobe.com</PrincipalDomain>
        <PrincipalName>uid=bshapiro,ou=people,o=adobe.com</PrincipalName>
    </Publisher>
    <PublishTime>2004-06-23T18:37:06.465-07:00</PublishTime>
    <ResourceName>importantspec.pdf</ResourceName>
    <ResourceID>975AFE5F-D9B3-E623-2A79-CCCFFFA2087E</ResourceID>
</Resource>
<PolicyIDReference PolicyID="4F3F323D-5C45-3031-8A52-F6151AB82927"/>
<HMAC>kpRyejY4uxwT9I74FYv8nQ==</HMAC>
</License>
```

This example shows that a license for resource "importantspec.pdf" was issued by the issuing authority "http://aps.corp.adobe.com:8080/axis/services/urn:EDCLicenseService" on 6/23/2004. It binds the resource to the policy with ID="4F3F323D-5C45-3031-8A52-F6151AB82927". The publisher of the resource was bshapiro.
Resource

A resource is a reference to the resource or object for which rights are being granted. In Rights Management 10, a resource is the document being controlled, but in other contexts it could refer to other content types.

The resource is a relatively simple data type. It contains an optional resource name and some form of resource identifier. This identifier can be either a URI or some sort of alphanumeric ID. The interpretation of this identifier is implementation-specific.

The following XML shows a resource definition.

```xml
<Resource>
  <Publisher PrincipalNameType="USER">
    <PrincipalDomain>ldap://corp.adobe.com</PrincipalDomain>
    <PrincipalName>bshapiro</PrincipalName>
  </Publisher>
  <PublishTime>2001-12-17T09:30:47-05:00</PublishTime>
  <ResourceName>importantspec.pdf</ResourceName>
  <ResourceID>975AFE5F-D9B3-E623-2A79-CCCFFFA2087E</ResourceID>
</Resource>
```

Policy

A policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured resource. This is one of the primary elements in the model. A policy is defined independently of a resource being protected. Because policy definition is complex, the idea is to create a set of policies that can be reused when protecting new resources. A policy is not used to enforce rights until it is bound to a resource through the license.

At the most fundamental level, a policy lists the set of permissions or “rights” that principals have to a resource. Policies typically bundle together a set of rights that would be used to satisfy a single business requirement. For example, an administrator may create a policy named “Company Confidential” that ensures that corporate documents are only accessible to company employees. This policy would be applied to all documents that met those business criteria.

Another important point to note about policies is that they contain implementation-specific rights. The policy structure itself was designed to be very extensible. It can be used for defining policies for any arbitrary application. Therefore, the interpretation of a given permission or condition is really outside the scope of this specification. Instead, the language provides a basic set of policy building blocks within the core schema and then allows the extension of the schema to add implementation-specific rights.

A policy contains principals, policy entries, conditions, and properties. Principals are the actors on a resource. They are the users and groups of users trying to access controlled resources. Policy entries provide a way to build up a policy one piece at a time. They allow the flexibility
to give some principals different rights from others. **Conditions** are used to set restrictions on how and when a policy applies. One example of a condition is the date when access to a resource should expire. **Properties** provide an extensibility mechanism for adding name/value pairs that can potentially be used in the policy evaluation.

The following XML shows a typical policy.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Policy PolicyID="4F3F323D-5C45-3031-8A52-F6151AB82927"
PolicyInstanceVersion="1"
xmlns="http://www.adobe.com/schema/1.0/pdrl"
xmlns:pdrl-ex="http://www.adobe.com/schema/1.0/pdrl-ex"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.adobe.com/schema/1.0/pdrl-ex ../pdrl-ex.xsd">
  <PolicyEntry>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.onlineOpen"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.offlineOpen"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.policySwitch"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.revoke"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.printHigh"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.printLow"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.copy"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.edit"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.editNotes"
Access="ALLOW"/>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.fillAndSign"
Access="ALLOW"/>
    <Principal PrincipalNameType="SYSTEM">
      <PrincipalDomain>EDC_SPECIAL</PrincipalDomain>
    <PrincipalName>publisher</PrincipalName>
    </Principal>
  </PolicyEntry>
  <PolicyEntry>
    <Permission PermissionName="pdrl-ex:com.adobe.aps.onlineOpen"
Access="ALLOW"/>
  </PolicyEntry>
</Policy>
```
<Permission
PermissionName="pdrl-ex:com.adobe.aps.offlineOpen"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.policySwitch"
Access="ALLOW"/>
<Permission PermissionName="pdrl-ex:com.adobe.aps.revoke"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.printHigh"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.printLow"
Access="ALLOW"/>
<Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.copy"
Access="ALLOW"/>
<Permission PermissionName="pdrl-ex:com.adobe.aps.pdf.edit"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.editNotes"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.fillAndSign"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.accessible"
Access="ALLOW"/>
</PolicyEntryValidityPeriod isAbsoluteTime="true">
<ValidityPeriodAbsolute>
<NotBeforeAbsolute>2004-06-04T10:00:00+00:00</NotBeforeAbsolute>
</ValidityPeriodAbsolute>
</PolicyEntryValidityPeriod>
</Principal>
</PolicyEntry>
<PolicyEntry>
<Permission PermissionName="pdrl-ex:com.adobe.aps.onlineOpen"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.offlineOpen"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.accessible"
Access="ALLOW"/>
<Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.printHigh"
Access="ALLOW"/>

<Principal PrincipalNameType="USER">
  <PrincipalDomain>adobe.com</PrincipalDomain>
  <PrincipalName>uid=jpravetz,ou=people,o=adobe.com</PrincipalName>
</Principal>

<Principal PrincipalNameType="USER">
  <PrincipalDomain>adobe.com</PrincipalDomain>
  <PrincipalName>uid=jsanfili,ou=people,o=adobe.com</PrincipalName>
</Principal>

<PrincipalPrincipalNameType="GROUP">
  <PrincipalDomain>adobe.com</PrincipalDomain>
  <PrincipalName>cn=jsanfili-direct reports,ou=groups,o=adobe.com</PrincipalName>
</Principal>

</PolicyEntry>

<PolicyEntry>
  <Permission PermissionName="pdrl-ex:com.adobe.aps.onlineOpen"
Access="ALLOW"/>
  <Permission
PermissionName="pdrl-ex:com.adobe.aps.offlineOpen"
Access="ALLOW"/>
  <Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.accessible"
Access="ALLOW"/>
  <Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.printLow"
Access="ALLOW"/>
  <Permission
PermissionName="pdrl-ex:com.adobe.aps.pdf.fillAndSign"
Access="ALLOW"/>
  <Principal PrincipalNameType="GROUP">
    <PrincipalDomain>adobe.com</PrincipalDomain>
    <PrincipalName>cn=jsanfili-direct reports,ou=groups,o=adobe.com</PrincipalName>
  </Principal>
</PolicyEntry>

<Watermark isWatermarked="true">
  <TemplateID>FEF70094-447F-07C5-EC13-01A6BEC4C2CC</TemplateID>
</Watermark>

<pdrl-ex:AcrobatCondition>
  <pdrl-ex:PlaintextMetadata>true</pdrl-ex:PlaintextMetadata>
</pdrl-ex:AcrobatCondition>

<PolicyValidityPeriod isAbsoluteTime="false">
  <ValidityPeriodRelative>
    <NotAfterRelative>P30D</NotAfterRelative>
  </ValidityPeriodRelative>
</PolicyValidityPeriod>

<pdrl-ex:EncryptFileAttachmentOnly>false</pdrl-ex:EncryptFileAttachmentOnly>

</pdrl-ex:AcrobatCondition>

<PolicyValidityPeriod isAbsoluteTime="false">
  <ValidityPeriodRelative>
    <NotAfterRelative>P30D</NotAfterRelative>
  </ValidityPeriodRelative>
</PolicyValidityPeriod>

<OfflineLeasePeriod>
Each part of this sample policy is discussed below to highlight some of the key features:

- **Lines 6-65:** The policy contains four policy entries. A policy can contain zero or more policy entries.

- **Lines 6-21:** This is a single policy entry. It lists a single principal, which is a special SYSTEM principal that represents the document “publisher.” This principal is granted the permissions to open the document online and offline, switch the policy, print in high resolution, copy, edit, etc. “Publisher” gets bound to the principal defined within the resource object at the time of document publishing.

- **Lines 22-44:** This policy entry lists a USER, “jsanfili.” This principal is granted various permissions. The interesting difference in this policy entry is the policy entry validity period. This user is only granted the listed permissions between 6/4/2004 and 7/5/2004. The validity period at the policy level takes precedence. The policy entry validity period must be within the window of time granted by the policy level validity period. See Policy evaluation for the policy evaluation algorithm.

- **Lines 46-58:** This is an example of a policy entry that contains multiple principals. Both “jsanfili” and “jpravetz” are granted the listed permissions. Permissions are additive. A user can appear in multiple policy entries, and the union of all permissions is used to determine rights for a principal. See Policy evaluation for the policy evaluation algorithm.

- **Lines 59-69:** This is an example of a policy entry that contains a GROUP principal. Any user within that group will inherit the list permissions. Group membership is controlled by the external enterprise directory server so that membership changes can be dynamically changed per policy evaluation.

- **Lines 70-77:** These are examples of policy conditions. These conditions are very Acrobat-specific. They determine whether Rights Management 10 should audit user interactions with the document, whether a dynamic watermark should be applied to the document, and how to process metadata and file attachments. The behavior of Acrobat based on these conditions is defined outside the scope of this document.

- **Lines 78-82:** These lines define the validity period for the entire document. In this example the validity period is relative to the publish date, and the document will expire 30 days after being published. No users will have access to the document after the validity period has expired.

- **Lines 83-85:** These lines define the offline lease period. It is a condition which defines how long the document can be viewed offline before the user has to reconnect to the server and refresh the lease.

- **Lines 86-89:** This is an example of adding properties (name/value pairs) that can be used by a third-party evaluation engine.
Policy evaluation

PDRL does not define the policy evaluation algorithm. Since PDRL can be used in multiple policy evaluation systems, it is the responsibility of the system to define the evaluation rules.

For Rights Management 10, the following policy evaluation algorithm is implemented.

```java
boolean evaluateValidityPeriod(ValidityPeriod vp, Date evalTime, Date publishTime) {
    if (vp.isAbsolute)
        return whether evalTime is within the absolute range of vp
    if (!vp.isAbsolute && publishTime != null)
        return whether evalTime is within range relative to publishTime
    return false;
}
```

```java
// returns a set of permissions
Set evaluate(Principal userToEvaluate, Policy policy, Date evalTime, Date publishTime) {
    // publishTime can be null if evaluating a policy without a license
    Set relevantPrincipals = getGroupsForUser(user) union user;
    Set returnedPermissions = null;
    if (evalTime not within policy.getValidity())
        throw Exception("Policy expired.");
    foreach policyEntry in policy {
        if (!Date.now() within policyEntry.getValidity()) continue;
        Set policyEntryPrincipals = policyEntry.getPrincipals();
        if (isEmpty(policyEntryPrincipals intersect relevantPrincipals))
            continue;
        foreach permission in policyEntry.getPermissions {
            /* "permission" has name of the right and whether it is granted or denied */
            add permission to returnedPermissions;
        }
    }
    foreach granted permission in returnedPermissions{
        /* If a permission has been both granted and denied, it is denied. */
        if(denied permission in returnedPermissions) remove permission from returnedPermissions;
    }
}


return returnedPermissions;
}

There are several areas in which the PDRL schema can be extended. A basic set of building blocks are provided within the core schema, which can be extended with implementation-specific rights and data.

The primary elements that allow for extensibility are *policy* and *license*.

### Policy extensibility

The policy schema can be extended through *permissions*, *conditions*, and *properties*, as described in the following sections.

#### Permissions

New *permissions* can be added through additional XML schema namespaces. The following example demonstrates how permissions are defined for use by Rights Management 10.

The core schema contains this definition for a permission type. The extensibility point is the permission name itself which is simply a QName.

```xml
<complexType name="PermissionType">
  <annotation>
    <documentation>Type Definition: A permission to perform a document operation.</documentation>
  </annotation>
  <attribute name="PermissionName" type="QName" use="required"/>
  <attribute name="Access" type="pdrl:PermissionAccessType" use="required"/>
</complexType>
```

A separate schema, “pdrl-ex.xsd”, contains the permission names that are specific to Rights Management 10.

```xml
<schema targetNamespace="http://www.adobe.com/schema/1.0/pdrl-ex"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:pdrl="http://www.adobe.com/schema/1.0/pdrl"
  xmlns:pdrl-ex="http://www.adobe.com/schema/1.0/pdrl-ex"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <simpleType name="PermissionNameEnum">
    <restriction base="QName">
      <enumeration value="pdrl-ex:com.adobe.aps.onlineOpen"/>
      <enumeration value="pdrl-ex:com.adobe.aps.offlineOpen"/>
      <enumeration value="pdrl-ex:com.adobe.aps.revoke"/>
      <enumeration value="pdrl-ex:com.adobe.aps.policySwitch"/>
      <enumeration value="pdrl-ex:com.adobe.aps.pdf.printHigh"/>
      <enumeration value="pdrl-ex:com.adobe.aps.pdf.printLow"/>
      ...
    </restriction>
  </simpleType>
</schema>
```

Other permission namespaces should be defined in a similar manner.
To add a custom permission, specify the namespace, which should be unique and is typically a domain name, followed by a colon, followed by the name of the permission. The namespace and permission name are assigned to the PermissionName attribute. For example, the following line specifies a custom permission whose namespace is www.adele.com and whose permission name is DO_ANYTHING_YOU_WANT:

```
<pdrl:Permission
  PermissionName="www.adele.com:DO_ANYTHING_YOU_WANT" Access="ALLOW" />
```

The following examples illustrate the addition of custom permissions.

**Example: Adding a custom permission**

```xml
<?xml version="1.0" encoding="UTF-8"?>
<pdrl:Policy
  xmlns:pdrl="http://www.adobe.com/schema/1.0/pdrl"
  xmlns:pdrl-ex="http://www.adobe.com/schema/1.0/pdrl-ex"
  xmlns:www.adele.com="http://www.adele.com"
  PolicyID=""
  PolicyInstanceVersion="0"
  PolicySchemaVersion=""
  PolicyName="USER_POLICY:Wed Jan 17 16:53:42 2007 8027"
>
  <pdrl:PolicyEntry>
    <pdrl:Permission
      PermissionName="www.adele.com:DO_ANYTHING_YOU_WANT"
      Access="ALLOW"
    />
    <pdrl:Principal PrincipalNameType="SYSTEM">
      <pdrl:PrincipalDomain>EDC_SPECIAL</pdrl:PrincipalDomain>
      <pdrl:PrincipalName>publisher</pdrl:PrincipalName>
    </pdrl:Principal>
    <pdrl:Property PropertyName="isCertified">
      <pdrl:PropertyValue>false</pdrl:PropertyValue>
    </pdrl:Property>
    <pdrl:AuditSettings isTracked="true"></pdrl:AuditSettings>
    <pdrl:Watermark isWatermarked="false"></pdrl:Watermark>
    <pdrl-ex:AcrobatCondition>
      <pdrl-ex:PlaintextMetadata>false</pdrl-ex:PlaintextMetadata>
    </pdrl-ex:AcrobatCondition>
    <pdrl-ex:EncryptFileAttachmentOnly>false</pdrl-ex:EncryptFileAttachmentOnly>
    <pdrl-ex:AcrobatCondition/>
  </pdrl:PolicyEntry>
</pdrl:Policy>
```
Example: Adding multiple custom permissions

In this example, several custom permissions are added to the policy.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<pdrl:Policy
 xmlns:pdrl="http://www.adobe.com/schema/1.0/pdrl"
 xmlns:pdrl-ex="http://www.adobe.com/schema/1.0/pdrl-ex"
 xmlns:www.adle.com="http://www.adle.com"
 PolicyID=""
 PolicyInstanceVersion="0"
 PolicySchemaVersion=""
 PolicyName="USER_POLICY:Wed Jan 17 16:53:43 2007 8817"
 PolicyDescription="TestPDRLPolicyEntryFunc: addPermission/getPermissions:
 PolicyType="2"
>
 <pdrl:PolicyEntry>
  <pdrl:Permission
   PermissionName="www.adle.com:DO_ANYTHING_YOU_WANT"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.offlineOpen"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.onlineOpen"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.pdf.accessible"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.pdf.copy"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.pdf.fillAndSign"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.pdf.printHigh"
   Access="ALLOW"
  />
  <pdrl:Permission
   PermissionName="pdrl-ex:com.adobe.aps.pdf.printLow"
  />
</pdrl:PolicyEntry>
</pdrl:Policy>
```
Example: Adding multiple custom permissions

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Policy
  PolicyCreationTime="2007-03-16T20:03:47.375+00:00"
  PolicyDescription=""
  PolicyID="01E9A585-F153-418F-67B5-DC8C8E1C6705"
  PolicyInstanceVersion="3"
  PolicyName="Test"
  PolicySchemaVersion="1.0"
  PolicyType="2"
  xmlns="http://www.adobe.com/schema/1.0/pdrl"
>
  <AuditSettings isTracked="true"/>
</Policy>

<PolicyEntry>
  <ns1:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.onlineOpen"
    xmlns:ns1="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"
  />
</PolicyEntry>

<ns2:Permission
<ns2:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.offlineOpen"
    xmlns:ns2="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns3:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.policySwitch"
    xmlns:ns3="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns4:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.revoke"
    xmlns:ns4="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns5:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.printHigh"
    xmlns:ns5="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns6:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.printLow"
    xmlns:ns6="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns7:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.copy"
    xmlns:ns7="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns8:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.accessible"
    xmlns:ns8="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns9:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.edit"
    xmlns:ns9="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns10:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.editNotes"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>
<ns11:Permission
    Access="ALLOW"
    PermissionName="com.adobe.aps.pdf.fillAndSign"
    xmlns:ns11="http://www.adobe.com/schema/1.0/pdrl"
    xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"
/>  
<Principal PrincipalNameType="SYSTEM">
    <PrincipalDomain>EDC_SPECIAL</PrincipalDomain>
    <PrincipalName>publisher</PrincipalName>
</Principal>
</PolicyEntry>
<ns12:AcrobatCondition
xmlns:ns12="http://www.adobe.com/schema/1.0/pdrl-ex">
    <ns12:PlaintextMetadata>false</ns12:PlaintextMetadata>
    <ns12:EncryptFileAttachmentOnly>false</ns12:EncryptFileAttachmentOnly>
</ns12:AcrobatCondition>
<Watermark isWatermarked="false"/>
<OfflineLeasePeriod>
    <Duration>P30D</Duration>
</OfflineLeasePeriod>
<Property PropertyName="external authorizer">
    <PropertyValue>PrintControlSPISample</PropertyValue>
</Property>
<Property PropertyName="isCertified">
    <PropertyValue>false</PropertyValue>
</Property>
</Policy>

Conditions

There are four types of conditions. Conditions can apply either to the entire policy (for example, whether the actions taken by a principal using this policy should be audited) or to a particular policy entry within the policy (for example, a validity period that limits the use
of a policy entry). Conditions are all derived from the abstract complex type ConditionAbstractType:

**PolicyEntryConditionSingle**: Conditions that are specific to policy entries. Conditions of this type should set their substitution group attribute to this element. Use for 0..1 cardinality conditions.

**PolicyEntryConditionMulti**: Conditions that are specific to policy entries. Conditions of this type should set their substitution group attribute to this element. Use for 0..n cardinality conditions.

**PolicyConditionSingle**: Conditions that are specific to the entire policy. Conditions of this type should set their substitution group attribute to this element. Use for 0..1 cardinality conditions.

**PolicyConditionMulti**: Conditions that are specific to the entire policy. Conditions of this type should set their substitution group attribute to this element. Use for 0..n cardinality conditions.

The following XML shows a condition used for policy entries.

```xml
<element name="PolicyEntryValidityPeriod"
  type="pdrl:ValidityPeriodType"
  substitutionGroup="pdrl:PolicyEntryConditionMulti">
  <annotation>
    <documentation>PolicyEntry Condition: The time period between which an object is valid. It consists of the time not before and not after. If relative, it is relative to the License creation time.</documentation>
  </annotation>
</element>
<element name="PolicyValidityPeriod"
  type="pdrl:ValidityPeriodType"
  substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation>Policy Condition: The time period between which an object is valid. It consists of the time not before and not after. If relative, it is relative to the License creation time.</documentation>
  </annotation>
</element>
```

The following XML shows a condition that applies to the entire policy.

```xml
<element name="AuditSettings" type="pdrl:AuditSettingsType"
  substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation>Policy Condition: Audit settings. Is the document tracked. boolean.</documentation>
  </annotation>
</element>
```
Properties

A property element is a simple name/value pair container. The property value can be single or multi-valued. The type of the value can be any simple data type (integer, string, Boolean, ...), which allows for simple extensibility through the addition of application-specific name/value pairs to the policy. These properties are application-specific and typically used to customize the policy evaluation process with policy instance-specific data.

Here is the definition of a property type:

```xml
<complexType name="PropertyType">
    <annotation>
        <documentation>Type Definition: Property is a simple name/value pair container. It can be single or multi-valued. The type can be any simple data type.</documentation>
    </annotation>
    <sequence>
        <element name="PropertyValue" type="anySimpleType" maxOccurs="unbounded"/>
    </sequence>
    <attribute name="PropertyName" type="string" use="required"/>
    <attribute name="PropertyNamespace" type="string" use="optional"/>
</complexType>
```

The following XML shows how a property can be used within a policy.

```xml
<Property PropertyName="DocumentumProperty1">
    <PropertyValue>value1</PropertyValue>
    <PropertyValue>value2</PropertyValue></Property>
```

To use the external authorization SPI, set the PropertyName attribute to "external authorizer" and set the PropertyValue element to the name of the registered external authorization provider, as shown in the following example.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Policy
    PolicyCreationTime="2007-03-16T20:03:47.375+00:00"
    PolicyDescription=""
    PolicyID="01E9A585-F153-418F-67B5-DC8CEE1C6705"
    PolicyInstanceVersion="3"
    PolicyName="Test"
    PolicySchemaVersion="1.0"
    PolicyType="2"
    xmlns="http://www.adobe.com/schema/1.0/pdrl"
>
    <AuditSettings isTracked="true"/>
    <PolicyEntry>
        <ns1:Permission
            Access="ALLOW"
            PermissionName="com.adobe.aps.onlineOpen"
            xmlns:ns1="http://www.adobe.com/schema/1.0/pdrl"
        >
```
<ns2:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.offlineOpen"
  xmlns:ns2="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns3:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.policySwitch"
  xmlns:ns3="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns4:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.revoke"
  xmlns:ns4="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns5:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.pdf.printHigh"
  xmlns:ns5="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns6:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.pdf.printLow"
  xmlns:ns6="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns7:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.pdf.copy"
  xmlns:ns7="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns8:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.pdf.accessible"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"
  xmlns:ns8="http://www.adobe.com/schema/1.0/pdrl"/>

<ns9:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.pdf.edit"
  xmlns:ns9="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>

<ns10:Permission
  Access="ALLOW"
  PermissionName="com.adobe.aps.pdf.save"
  xmlns:ns10="http://www.adobe.com/schema/1.0/pdrl"
  xmlns="http://www.adobe.com/schema/1.0/pdrl-ex"/>
License extensibility

The license can be extended through properties. This type definition is the same one described in Properties.
This chapter defines the details of the core PDRPolicyIDL schema. The schema is described using diagrams created with Altova's XML Spy, which uses the following symbols.

The cardinality of the element (0..1, 1 exactly, 0..n, 1..n) is indicated by the border of the elements. Optional elements are drawn with a dashed line and required elements with a solid line. A maximum occurrence greater than one is indicated by a double border.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional element</td>
<td>Min. occurrence = 0, Max. occurrence = 1</td>
</tr>
<tr>
<td>Required single element</td>
<td>Min. occurrence = 1, Max. occurrence = 1</td>
</tr>
<tr>
<td>Required repeated element</td>
<td>Min. occurrence = 1, Max. occurrence = unbounded</td>
</tr>
</tbody>
</table>

The content model of elements is symbolized on the left and right side of the element boxes. The left side indicates whether the element contains a simple type (text, numbers, dates, etc.) or a complex type (further elements). The right side of the element symbol indicates whether it contains child elements.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>simple content</td>
<td></td>
</tr>
<tr>
<td>complex content</td>
<td></td>
</tr>
<tr>
<td>complex content with child elements</td>
<td></td>
</tr>
<tr>
<td>no element content (simple type, attributes only, or empty element)</td>
<td></td>
</tr>
</tbody>
</table>

Other symbols include these.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sequence of elements. The elements must appear exactly in the sequence in which they appear in the schema diagram.</td>
<td></td>
</tr>
<tr>
<td>A choice of elements. Only a single element from those in the choice may appear at this position.</td>
<td></td>
</tr>
<tr>
<td>The &quot;all&quot; model, in which the sequence of elements is not fixed.</td>
<td></td>
</tr>
</tbody>
</table>

Finally, if an element refers to a complex global type, the type is shown with a border and yellow background.
License element

License is the primary container for rights information. It consists of the issuing authority, resource, policy, and signature. It is a binding of policy to a resource that determines rights to the resource.

The License element contains the following attributes:

LicenseID: The unique identifier of the license instance. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

LicenseInstanceVersion: A counter that gets incremented each time a change is made to the license data. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

LicenseIssueTime: The time that the License was issued. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

LicenseSchemaVersion: The version of the schema used by this instance. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

element License

source

```xml
[element name="License" type="pdrl:LicenseType">
  <annotation>
    <documentation> License is the primary container for rights information. It consists of the IssuingAuthority, Resource, Policy, and Signature. It is a binding of Policy to a Resource to determine rights to the resource. </documentation>
  </annotation>
</element>
```
complexType LicenseType

diagram

Type Definition: License is the primary container for rights information. It consists of the IssuingAuthority, Resource, Policy, and Signature. It is a binding of Policy to a Resource to determine rights to the resource.

Resource is a reference to the resource or object for which rights are being granted. For EDC a resource is the document.

This is a reference to a Policy by ID and seq number.

Policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured document. This is one of the primary elements in the model. A policy contains Principals, PolicyEntry's, Conditions, and Properties.

Property is a simple name/value pair container. It can be single or multi-valued. The type can be any simple data type.

HMAC

ds:Signature

namespace

http://www.adobe.com/schema/1.0/pdrl

children

IssuingAuthority pdrl:Resource pdrl:PolicyIDReference pdrl:Policy pdrl:Property HMAC ds:Signature

used by

element License
attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>LicenseID</td>
<td>string</td>
<td>optional</td>
</tr>
<tr>
<td>LicenseInstanceVersion</td>
<td>int</td>
<td>optional</td>
</tr>
<tr>
<td>LicenseIssueTime</td>
<td>dateTime</td>
<td>optional</td>
</tr>
<tr>
<td>LicenseSchemaVersion</td>
<td>string</td>
<td>optional</td>
</tr>
</tbody>
</table>

source

```xml
<complexType name="LicenseType">
  <annotation>
    <documentation> Type Definition: License is the primary container for rights information. It consists of the IssuingAuthority, Resource, Policy, and Signature. It is a binding of Policy to a Resource to determine rights to the resource. </documentation>
  </annotation>
  <sequence>
    <element name="IssuingAuthority" type="anyURI"/>
    <element ref="pdrl:Resource"/>
    <choice>
      <element ref="pdrl:PolicyIDReference"/>
      <element ref="pdrl:Policy"/>
    </choice>
    <element ref="pdrl:Property" minOccurs="0" maxOccurs="unbounded"/>
    <element name="HMAC" type="pdrl:HMACType" minOccurs="0"/>
    <element ref="ds:Signature" minOccurs="0"/>
  </sequence>
  <attribute name="LicenseID" type="string" use="optional"/>
  <attribute name="LicenseInstanceVersion" type="int" use="optional"/>
  <attribute name="LicenseIssueTime" type="dateTime" use="optional"/>
  <attribute name="LicenseSchemaVersion" type="string" use="optional"/>
</complexType>
```
IssuingAuthority element

IssuingAuthority is the identifier for the trusted security domain that issued the license. It is represented as a URI.

element LicenseType/IssuingAuthority

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

anyURI

source

<element name="IssuingAuthority" type="anyURI"/>
**PolicyIDReference element**

*PolicyIDReference* is a reference to a policy by PolicyID. PolicyID must be a unique identifier.

**element PolicyIDReference**

**source**

```xml
<element name="PolicyIDReference" type="pdrl:PolicyIDReferenceType">
  <annotation>
    <documentation> This is a reference to a Policy by ID. </documentation>
  </annotation>
</element>
```

**complexType PolicyIDReferenceType**

**diagram**

![PolicyIDReference Type][1]

- **Type Definition:** This is a reference to a Policy by ID and seq number.

**namespace**

http://www.adobe.com/schema/1.0/pdrl

**used by**

- element PolicyIDReference

**attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PolicyID</td>
<td>string</td>
<td>required</td>
</tr>
</tbody>
</table>

**source**

```xml
<complexType name="PolicyIDReferenceType">
  <annotation>
    <documentation> This is a reference to a Policy by ID and seq number. </documentation>
  </annotation>
</complexType>
```
<documentation> Type Definition: This is a reference to a Policy by ID </documentation>

</annotation>

<attribute name="PolicyID" type="string" use="required"/>

</complexType>

Property element

Property is a simple name/value pair container. The property can be single or multi-valued. The type of the values can be any simple data type. This is an extensibility point to allow third parties to include application-specific data within licenses and policies.

Attributes:

PropertyName: The name of the property.

PropertyNamespace: Optional attribute and can be used to group “like” properties into a single category.

element Property

source

[element name="Property" type="pdrl:PropertyType">
 <annotation>
  <documentation>Property is a simple name/value pair container. It can be single or multi-valued. The type can be any simple data type.</documentation>
 </annotation>
</element>

ComplexType PropertyType

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
children

PropertyValue

used by

element Property

attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PropertyName</td>
<td>string</td>
<td>required</td>
</tr>
<tr>
<td>PropertyNamespace</td>
<td>string</td>
<td>optional</td>
</tr>
</tbody>
</table>

source

<complexType name="PropertyType">
    <annotation>
        <documentation>Type Definition: Property is a simple name/value pair container. It can be single or multi-valued. The type can be any simple data type.</documentation>
    </annotation>
    <sequence>
        <element name="PropertyValue" type="anySimpleType" maxOccurs="unbounded"/>
    </sequence>
    <attribute name="PropertyName" type="string" use="required"/>
    <attribute name="PropertyNamespace" type="string" use="optional"/>
</complexType>

element PropertyType/PropertyValue

The value of a property. This value can be any data type. Note that multi-valued properties are supported.

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

anySimpleType

source

<element name="PropertyValue" type="anySimpleType"
maxOccurs="unbounded"/>
HMAC element

HMAC is used to provide integrity protection to the license. The algorithm for creating the HMAC is defined in RFC 2104. The HMAC is Base64 encoded. The key used to create the HMAC is stored separately from the license. Note that either an HMAC or an XML digital signature can be used to protect the integrity of the license.

element LicenseType/HMAC

source

<element name="HMAC" type="pdr1:HMACType" minOccurs="0"/>

simpleType HMACType

namespace

http://www.adobe.com/schema/1.0/pdrl

type

base64Binary

used by

element LicenseType/HMAC

source

<simpleType name="HMACType">
  <annotation>
    <documentation> Type Definition: Stores the HMAC value as a Base64 encoded octet string.</documentation>
  </annotation>
  <restriction base="base64Binary"/>
</simpleType>
ds:Signature element

*ds:Signature* is used to provide integrity protection to the license. The algorithm for creating the signature is defined in the XML digital signature specification [DSIG]. The private key used to create the signature is stored separately from the license. Note that either an HMAC or an XML digital signature can be used to integrity protect the license.
Policy element

Policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured document. This is one of the primary elements in the model. A policy contains principals, policy entries, conditions, and properties.

Attributes:

- PolicyID: The unique identifier of the policy instance. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

- PolicyInstanceVersion: A counter that gets incremented each time a change is made to the policy data. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

- PolicyCreationTime: The time that the policy was created. It is optional when the instance is created, but the server must fill in a value before it can be saved and used in a security workflow.

- PolicySchemaVersion: The version of the schema used by this instance. It is optional when the instance is created, but the server must fill in a value before it can be used in a security workflow.

source

```xml
<element name="Policy" type="pdrl:PolicyType">
  <annotation>
    <documentation>Policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured document. This is one of the primary elements in the model. A policy contains Principals, PolicyEntry's, Conditions, and Properties.</documentation>
  </annotation>
</element>
```
complexType PolicyType

  diagram
Adobe LiveCycle ES3
Portable Document Rights Language (PDRL) Reference

**PolicyType**
Type Definition: Policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured document. This is one of the primary elements in the model. A policy contains Principals, PolicyEntry’s, Conditions, and Properties.

**pdltPolicyEntry**
0..∞
A single Control entry or Rule. Contains Principals, Permissions, and qualifiers.

**pdltPolicyConditionSingle**
Single Policy Condition. Conditions that are specific to Policies should set their substitution group to this element. Use for 0..1 cardinality conditions.

**AuditSettings**

**OfflineLeasePeriod**
Policy Condition: The time that a document can be viewed offline before a sync with the server occurs. This is always relative.

**PolicyValidityPeriod**
Policy Condition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the license creation time.

**Watermark**
Policy Condition: Defines whether a watermark is needed and if so what template to use.

**pdltPolicyConditionMulti**
0..∞
Multi Policy Condition. Conditions that are specific to Policies should set their substitution group to this element. Use for 0..n cardinality conditions.

**pdltProperty**
0..∞
Property is a simple name/value pair container. It can be single or multi-valued. The type can be any simple data type.
namespace

http://www.adobe.com/schema/1.0/pdrl

children

pdr1:PolicyEntry pdr1:PolicyConditionSingle
pdr1:PolicyConditionMulti pdr1:Property

used by

element Policy

attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PolicyID</td>
<td>string</td>
<td>optional</td>
</tr>
<tr>
<td>PolicyInstanceVersion</td>
<td>int</td>
<td>optional</td>
</tr>
<tr>
<td>PolicySchemaVersion</td>
<td>string</td>
<td>optional</td>
</tr>
<tr>
<td>PolicyCreationTime</td>
<td>dateTime</td>
<td>optional</td>
</tr>
</tbody>
</table>

source

<complexType name="PolicyType">
  <annotation>
    <documentation>Type Definition: Policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured document. This is one of the primary elements in the model. A policy contains Principals, PolicyEntry's, Conditions, and Properties.</documentation>
  </annotation>
  <choice minOccurs="0" maxOccurs="unbounded">
    <element ref="pdr1:PolicyEntry" minOccurs="0" maxOccurs="unbounded"/>
    <element ref="pdr1:PolicyConditionSingle" minOccurs="0" maxOccurs="unbounded"/>
    <element ref="pdr1:PolicyConditionMulti" minOccurs="0" maxOccurs="unbounded"/>
    <element ref="pdr1:Property" minOccurs="0" maxOccurs="unbounded"/>
  </choice>
  <attribute name="PolicyID" type="string" use="optional"/>
<attribute name="PolicyInstanceVersion" type="int" use="optional"/>
<attribute name="PolicySchemaVersion" type="string" use="optional"/>
<attribute name="PolicyCreationTime" type="dateTime" use="optional"/>
</complexType>
PolicyEntry element

This section describes a PolicyEntry element.

**element PolicyEntry**

*PolicyEntry* is a single control entry or rule. It contains principals, permissions, and qualifiers. Zero or more entries may exist in the policy.

**source**

```xml
<element name="PolicyEntry" type="pdrl:PolicyEntryType">
  <annotation>
    <documentation>A single Control entry or Rule. Contains Principals, Permissions, and qualifiers.</documentation>
  </annotation>
  </element>
```
complexType PolicyEntryType

diagram
ADOBE LIVECYCLE ES3
Portable Document Rights Language (PDRL) Reference

PolicyType
Type Definition: Policy is the container for the rules that determine the list of principals that can perform privileged operations on a secured document. This is one of the primary elements in the model. A policy contains Principals, PolicyEntry's, Conditions, and Properties.

AuditSettings

OfflineLeasePeriod
Policy Condition: The time that a document can be viewed offline before a sync with the server occurs. This is always relative.

PolicyValidityPeriod
Policy Condition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the license creation time.

Watermark
Policy Condition: Defines whether a watermark is needed and if so what template to use.

PolicyConditionSingle
Single Policy Condition. Conditions that are specific to Policies should set their substitution group to this element. Use for 0..1 cardinality conditions.

PolicyConditionMulti
Multi Policy Condition. Conditions that are specific to Policies should set their substitution group to this element. Use for 0..n cardinality conditions.

PolicyEntry
A single Control entry or Rule. Contains Principals, Permissions, and qualifiers.

PolicyProperty
Property is a simple name/value pair container. It can be single or multi-valued. The type can be any simple data type.
namespace

http://www.adobe.com/schema/1.0/pdrl

children

pdrl:Principal pdrl:Permission pdrl:PolicyEntryConditionMulti
pdrl:PolicyEntryConditionSingle

used by

element PolicyEntry

source

<complexType name="PolicyEntryType">
  <annotation>
    <documentation>Type Definition: A single Control entry or
    Rule. Contains Principals, Permissions, and
    qualifiers.</documentation>
  </annotation>
  <choice minOccurs="0" maxOccurs="unbounded">
    <element ref="pdrl:Principal" maxOccurs="unbounded"/>
    <element ref="pdrl:Permission" maxOccurs="unbounded"/>
    <element ref="pdrl:PolicyEntryConditionMulti" minOccurs="0"
      maxOccurs="unbounded"/>
    <element ref="pdrl:PolicyEntryConditionSingle"
      minOccurs="0"/>
  </choice>
</complexType>
Principal element

Principal contains the domain of the principal and the name of the principal. PrincipalDomain represents the user directory that stores the principal identities, and PrincipalName is the unique user ID within that user directory.

element Principal

<element name="Principal" type="pdrl:PrincipalType">
  <annotation>
    <documentation>Principal. Contains the Domain of the principal and the principal name.</documentation>
  </annotation>
</element>

complexType PrincipalType

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

children

PrincipalDomain PrincipalName

used by

elements Principal ResourceType/Publisher

attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrincipalNameType</td>
<td>pdrl:PrincipalNameTypeEnumeration</td>
<td>required</td>
</tr>
</tbody>
</table>
source

<complexType name="PrincipalType">
  <annotation>
    <documentation>Type Definition: Principal. Contains the Domain of the principal and the principal name.</documentation>
  </annotation>
  <sequence>
    <element name="PrincipalDomain" type="anyURI" />
    <element name="PrincipalName" type="string" />
  </sequence>
  <attribute name="PrincipalNameType" type="pdrl:PrincipalNameTypeEnumeration" use="required" />
</complexType>

element PrincipalType/PrincipalDomain
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

anyURI
source

<element name="PrincipalDomain" type="anyURI"/>

element PrincipalType/PrincipalName
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

string

source

[element name="PrincipalName" type="string"/>

Note: A DN value assigned to the PrincipalName element must be in lowercase and not contain spaces. For example:

<PrincipalName>uid=jsanfili,ou=people,o=adobe.com</PrincipalName>

simpleType PrincipalNameTypeEnumeration

Enumeration values:

USER: A person.
GROUP: A group of people.
ROLE: A name representing a persons title or responsibility within an organization.
SYSTEM: A server machine.
SERVICE: A software component that exposes an external interface.

namespace

http://www.adobe.com/schema/1.0/pdrl

type

restriction of string

used by

attribute PrincipalType/@PrincipalNameType

facets

enumeration USER
enumeration GROUP
enumeration ROLE
enumeration SYSTEM
enumeration SERVICE

source

<simpleType name="PrincipalNameTypeEnumeration">
    <annotation>
<documentation>Access qualifier for the Principal. It's a hint of what type of principal this is "User", "Group", "Role", "System", "Service"</documentation>
</annotation>
<restriction base="string">
  <enumeration value="USER"/>
  <enumeration value="GROUP"/>
  <enumeration value="ROLE"/>
  <enumeration value="SYSTEM"/>
  <enumeration value="SERVICE"/>
</restriction>
</simpleType>
Permission element

Permission represents a single right within a policy. It is an extensibility point. Application-specific permissions can be defined using this element. The permission is just a QName or string. The application needs to interpret that string and enforce a right based on the string.

Attributes:

PermissionName: The name of the permission.
Access: Is the permission enforcement algorithm supposed to ALLOW or DENY this right to the principal.

element Permission

source

```xml
<element name="Permission" type="pdrl:PermissionType">
  <annotation>
    <documentation> Permission Base class (abstract). Used as the extension base for permissions. </documentation>
  </annotation>
</element>
```

complexType PermissionType
diagram

Permission Type
Type Definition: A permission to perform a document operation.

namespace

http://www.adobe.com/schema/1.0/pdrl

used by
element Permission
attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PermissionName</td>
<td>QName</td>
<td>required</td>
</tr>
<tr>
<td>Access</td>
<td>pdrl:PermissionAccessType</td>
<td>required</td>
</tr>
</tbody>
</table>

source

```xml
<complexType name="PermissionType">
  <annotation>
    <documentation>Type Definition: A permission to perform a document operation.</documentation>
  </annotation>
  <attribute name="PermissionName" type="QName" use="required"/>
  <attribute name="Access" type="pdrl:PermissionAccessType" use="required"/>
</complexType>
```

simpleType PermissionAccessType

namespace

```
http://www.adobe.com/schema/1.0/pdrl
```

type

restriction of string

used by

attribute PermissionType/@Access

facets

enumeration ALLOW
enumeration DENY

source

```xml
<simpleType name="PermissionAccessType">
  <annotation>
    <documentation>Access qualifier for the PolicyEntry. Defines the enumeration of "ALLOW" or "DENY"</documentation>
  </annotation>
</simpleType>
```
<restriction base="string">
    <enumeration value="ALLOW"/>
    <enumeration value="DENY"/>
</restriction>
</simpleType>
PolicyEntryCondition elements

Condition elements

Property element

Property element
Resource element

*Resource* is a reference to the resource or object for which rights are being granted. In this case, a resource is the document. *Resource*

element Resource

source

```xml
<element name="Resource" type="pdrl:ResourceType">
  <annotation>
    <documentation> Resource is a reference to the resource or object for which rights are being granted. In this case a resource is the document. </documentation>
  </annotation>
</element>
```

complexType ResourceType

diagram

namespace

```
http://www.adobe.com/schema/1.0/pdrl
```

children

Publisher PublishTime ResourceName ResourceLocation ResourceID

used by

element Resource
<complexType name="ResourceType">
  <annotation>
    <documentation> Type Definition: Resource is a reference to the resource or object for which rights are being granted. In this case a resource is the document. </documentation>
  </annotation>
  <sequence>
    <element name="Publisher" type="pdl:PrincipalType"/>
    <element name="PublishTime" type="dateTime"/>
    <element name="ResourceName" type="string" minOccurs="0"/>
    <choice>
      <element name="ResourceLocation" type="anyURI"/>
      <element name="ResourceId" type="string"/>
    </choice>
  </sequence>
</complexType>
Publisher element

*Publisher* is the creator or owner of a document.

**element ResourceType/Publisher**

**diagram**

```xml
<Publisher type="pdrl:PrincipalType"/>
```

**namespace**

`http://www.adobe.com/schema/1.0/pdrl`

**type**

`pdrl:PrincipalType`

**children**

`PrincipalDomain PrincipalName`

**attributes**

<table>
<thead>
<tr>
<th>Name</th>
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<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrincipalNameType</td>
<td>PrincipalNameTypeEnumeration</td>
<td>required</td>
</tr>
</tbody>
</table>

**source**

```xml
<element name="Publisher" type="pdrl:PrincipalType"/>
```
PublishTime element

PublishTime is the time that a resource was registered with the security system. In other words, the time when a resource instance object was created on the server.

element ResourceType/PublishTime

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type
dateTime

source

<element name="PublishTime" type="dateTime"/>
ResourceName element

ResourceName is a friendly string to identify the resource. The string does not need to be unique.

element ResourceType/ResourceName

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

String

source

<element name="ResourceName" type="string" minOccurs="0"/>
**ResourceLocation element**

*ResourceLocation* is a possible way to uniquely identify a resource. It is a URI. If ResourceLocation is present, *ResourceID* is not present.

**element ResourceType/ResourceLocation**

**diagram**

```
#ResourceLocation
```

**namespace**

http://www.adobe.com/schema/1.0/pdrl

**type**

anyURI

**source**

```
(element name="ResourceLocation" type="anyURI")
```
ResourceId element

ResourceId is a possible way to uniquely identify a resource. It is a URI. If ResourceId is present, ResourceLocation is not present.

element ResourceType/ResourceId

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

String

source

<element name="ResourceId" type="string"/>
Condition elements

This section defines the condition schema. First, the base classes are defined. Then, the lists of conditions defined within the core schema are itemized.

ConditionAbstractType type

The abstract type for any conditions.

complexType ConditionAbstractType
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

used by

elements PolicyConditionMulti PolicyConditionSingle
PolicyEntryConditionMulti PolicyEntryConditionSingle
complexType AuditSettingsType DeltaTimeType ValidityPeriodType WatermarkType

source

<complexType name="ConditionAbstractType" abstract="true">
  <annotation>
    <documentation> Type Definition: Condition Type. This is the abstract type for any conditions. A condition puts a condition or restriction on policy processing.</documentation>
  </annotation>
</complexType>
PolicyCondition and PolicyConditionEntry base elements

The following types are used as base classes for conditions within policies. See Conditions for more details on conditions.

element PolicyConditionMulti

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

pdrl:ConditionAbstractType

used by

complexType PolicyType

source

<element name="PolicyConditionMulti"

type="pdrl:ConditionAbstractType">

<annotation>

<documentation> Multi Policy Condition. Conditions that are specific to Policies should set their substitution group to this element. Use for 0..n cardinality conditions. </documentation>

</annotation>

</element>
element PolicyConditionSingle

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

pdrl:ConditionAbstractType

used by

complexType PolicyType
source

```xml
<element name="PolicyConditionSingle"
  type="pdrl:ConditionAbstractType">
  <annotation>
    <documentation> Single Policy Condition. Conditions that are specific to Policies should set their substitution group to this element. Use for 0..1 cardinality conditions. </documentation>
  </annotation>
</element>
```

element PolicyEntryConditionMulti
diagram

```
PolicyEntryConditionMulti

Multi Policy Entry Condition. Conditions that are specific to PolicyEntry's should set their substitution group to this element. Use for 0..n cardinality.

PolicyEntryValidityPeriod

PolicyEntry Condition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the License creation time.
```

namespace

```
http://www.adobe.com/schema/1.0/pdrl
```

type

```
pdrl:ConditionAbstractType
```

used by

```
complexType PolicyEntryType
```

source

```xml
<element name="PolicyEntryConditionMulti"
  type="pdrl:ConditionAbstractType">
  <annotation>
    <documentation> Multi PolicyEntry Condition. Conditions that are specific to PolicyEntry's should set their substitution group to this element. Use for 0..n cardinality. </documentation>
  </annotation>
</element>
```
element PolicyEntryConditionSingle

diagram

class PolicyEntryConditionSingle

(namespace http://www.adobe.com/schema/1.0/pdrl)
type pdrl:ConditionAbstractType

used by complexType PolicyEntryType

source
<element name="PolicyEntryConditionSingle" type="pdrl:ConditionAbstractType">
  <annotation>
    <documentation>Single PolicyEntry Condition. Conditions that are specific to PolicyEntry's should set their substitution group to this element. Use for 0..1 cardinality conditions.</documentation>
  </annotation>
</element>
ValidityPeriodType condition

ValidityPeriodType is a complex type used in the definition of time-related conditions. A validity period can be either absolute or relative. Absolute time has an absolute before valid time and an absolute no longer valid time so that it defines a real-time range. Relative time also has a before and after time range. However, this range is relative to some absolute real-time starting point. The relative period start point is interpreted based on the condition type that this applies to.

complexType ValidityPeriodType
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

extension of pdrl:ConditionAbstractType
children

ValidityPeriodAbsolute ValidityPeriodRelative
used by

elements PolicyEntryValidityPeriod PolicyValidityPeriod
attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>isAbsoluteTime</td>
<td>boolean</td>
<td>required</td>
</tr>
</tbody>
</table>
source

```xml
<complexType name="ValidityPeriodType">
  <annotation>
    <documentation>Type Definition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the License creation time.</documentation>
  </annotation>
  <complexContent>
    <extension base="pdrl:ConditionAbstractType">
      <choice>
        <element name="ValidityPeriodAbsolute" type="pdrl:ValidityPeriodAbsoluteType"/>
        <element name="ValidityPeriodRelative" type="pdrl:ValidityPeriodRelativeType"/>
      </choice>
      <attribute name="isAbsoluteTime" type="boolean" use="required"/>
    </extension>
  </complexContent>
</complexType>
```

element ValidityPeriodType/ValidityPeriodAbsolute
diagram

namespace

```
http://www.adobe.com/schema/1.0/pdrl
```
type

```
pdrl:ValidityPeriodAbsoluteType
```
children

```
NotBeforeAbsolute NotAfterAbsolute
```
source

```xml
<element name="ValidityPeriodAbsolute"
type="pdrl:ValidityPeriodAbsoluteType"/>
```

element ValidityPeriodType/ValidityPeriodRelative
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

`pdrl:ValidityPeriodRelativeType`
children

`NotBeforeRelative NotAfterRelative`
source

```xml
<element name="ValidityPeriodRelative"
type="pdrl:ValidityPeriodRelativeType"/>
```

complexType ValidityPeriodAbsoluteType
diagram

Type Definition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the License creation time.
namespace

http://www.adobe.com/schema/1.0/pdrl

children

NotBeforeAbsolute NotAfterAbsolute

used by

element ValidityPeriodType/ValidityPeriodAbsolute

source

<complexType name="ValidityPeriodAbsoluteType">
  <annotation>
    <documentation>Type Definition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the License creation time.</documentation>
  </annotation>
  <sequence>
    <element name="NotBeforeAbsolute" type="dateTime" minOccurs="0"/>
    <element name="NotAfterAbsolute" type="dateTime" minOccurs="0"/>
  </sequence>
</complexType>

element ValidityPeriodAbsoluteType/NotBeforeAbsolute

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type
dateTime
source
<element name="NotBeforeAbsolute" type="dateTime" minOccurs="0"/>

element ValidityPeriodAbsoluteType/NotAfterAbsolute
diagram

namespace
http://www.adobe.com/schema/1.0/pdrl
type
dateTime
source
<element name="NotAfterAbsolute" type="dateTime" minOccurs="0"/>

complexType ValidityPeriodRelativeType
diagram

namespace
http://www.adobe.com/schema/1.0/pdrl
children
NotBeforeRelative NotAfterRelative
used by
element ValidityPeriodType/ValidityPeriodRelative
source

<complexType name="ValidityPeriodRelativeType">
    <annotation>
        <documentation>Type Definition: The time period between which
        an
        object is valid. It consists of the time not before and not
        after. It
        can be absolute or relative. If relative, it is relative to the
        License
        creation time.</documentation>
    </annotation>
    <sequence>
        <element name="NotBeforeRelative" type="duration" minOccurs="0"/>
        <element name="NotAfterRelative" type="duration" minOccurs="0"/>
    </sequence>
</complexType>

element ValidityPeriodRelativeType/NotBeforeRelative
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type
duration
source

<element name="NotBeforeRelative" type="duration" minOccurs="0"/>

element ValidityPeriodRelativeType/NotAfterRelative
diagram
namespace

http://www.adobe.com/schema/1.0/pdrl

type
duration

source

<element name="NotAfterRelative" type="duration" minOccurs="0"/>
DeltaTimeType condition

DeltaTimeType is a complex type used in the definition of time-related conditions. It represents a duration of time that is relative to some other absolute time. For example, this time duration could be added to the document publishing date to determine an absolute expiration date.

complexType DeltaTimeType
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

extension of pdrl:ConditionAbstractType

children

Duration

used by

element OfflineLeasePeriod

source

<complexType name="DeltaTimeType">
  <annotation>
    <documentation>Type Definition: A duration of time that is relative to some other absolute time. For example, this time duration could be added to the document publishing date to determine an absolute expiration date.
```
expiration date.</annotation>
</complexContent>
<extension base="pdrl:ConditionAbstractType">
  <sequence>
    <element name="Duration" type="duration"/>
  </sequence>
</extension>
</complexContent>
</complexType>

**element DeltaTimeType/Duration**

**diagram**

![Duration](duration.png)

**namespace**

[http://www.adobe.com/schema/1.0/pdrl](http://www.adobe.com/schema/1.0/pdrl)

**type**

duration

**source**

<element name="Duration" type="duration"/>
AuditSettings condition

AuditSettings is a policy condition that defines whether a document should be tracked. If the AuditSettings condition is not present within the policy, the document secured by that policy will not be tracked.

element AuditSettings

source

<element name="AuditSettings" type="pdrl:AuditSettingsType" substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation> Policy Condition: Audit settings. Is the document tracked. boolean. </documentation>
  </annotation>
</element>

complexType AuditSettingsType
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl
type

extension of pdrl:ConditionAbstractType
used by
element AuditSettings
attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>isTracked</td>
<td>boolean</td>
<td>required</td>
</tr>
</tbody>
</table>

source

```xml
<complexType name="AuditSettingsType">
<annotation>
  <documentation> Type Definition: Audit settings. Is the document tracked. boolean. </documentation>
</annotation>
<complexContent>
  <extension base="pdrl:ConditionAbstractType">
    <attribute name="isTracked" type="boolean" use="required"/>
  </extension>
</complexContent>
</complexType>
```
OfflineLeasePeriod condition

*OfflineLeasePeriod* is the time that a document can be viewed offline before a sync with the server is required to renew the lease. This condition is always relative to the last time the client synced with the server.

**element OfflineLeasePeriod**

```
<element name="OfflineLeasePeriod" type="pdrl:DeltaTimeType" substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation> Policy Condition: The time that a document can be viewed offline before a sync with the server occurs. This is always relative. </documentation>
  </annotation>
</element>
```

**namespace**

http://www.adobe.com/schema/1.0/pdrl

**type**

pdrl:DeltaTimeType

**children**

Duration

**source**

```
<element name="OfflineLeasePeriod" type="pdrl:DeltaTimeType"
  substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation> Policy Condition: The time that a document can be viewed offline before a sync with the server occurs. This is always relative. </documentation>
  </annotation>
</element>
```
PolicyEntryValidityPeriod condition

PolicyEntryValidityPeriod is the time period a policy entry is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the license creation time. This condition is typically used to allow certain users to have rights to a document for only a bounded amount of time, and other users can have permanent access. See Policy evaluation for details.

element PolicyEntryValidityPeriod

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

pdl:ValidityPeriodType

children

ValidityPeriodAbsolute ValidityPeriodRelative

attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>isAbsoluteTime</td>
<td>boolean</td>
<td>required</td>
</tr>
</tbody>
</table>

source

<element name="PolicyEntryValidityPeriod"
type="pdl:ValidityPeriodType"
substitutionGroup="pdl:PolicyEntryConditionMulti">
  <annotation>
<documentation> PolicyEntry Condition: The time period between which an object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the License creation time.</documentation>
</annotation>
</element>
PolicyValidityPeriod condition

`PolicyValidityPeriod` is the time period a policy is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the license creation time. This condition is typically used to allow access to a resource for only a bounded amount of time. See **Policy evaluation** for details.

**element PolicyValidityPeriod**

**diagram**

```
| ValidityPeriodType | ValidityPeriodAbsolute | ValidityPeriodRelative |
```

- **namespace**
  - http://www.adobe.com/schema/1.0/pdrl

- **type**
  - pdrl:ValidityPeriodType

- **children**
  - ValidityPeriodAbsolute ValidityPeriodRelative

- **attributes**
  - Name: isAbsoluteTime, Type: boolean, Use: required

- **source**
  ```xml
  <element name="PolicyValidityPeriod"
   type="pdrl:ValidityPeriodType"
   substitutionGroup="pdrl:PolicyConditionSingle">
    <annotation>
      <documentation> Policy Condition: The time period between which an
  ```
object is valid. It consists of the time not before and not after. It can be absolute or relative. If relative, it is relative to the License creation time.</documentation>
</annotation>
</element>
Watermark condition

*Watermark* defines whether a watermark is needed and, if so, what template to use. The watermark is identified in the *TemplateID* element using the watermark’s unique ID. If this condition is not present, no watermark is applied to the document.

element Watermark

```
<element name="Watermark" type="pdrl:WatermarkType"
substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation> Policy Condition: Defines whether a watermark is needed and if so what template to use. </documentation>
  </annotation>
</element>
```

complexType WatermarkType

diagram

![Watermark Diagram](image)

Type Definition: The type of watermarking required for the document.

namespace

[http://www.adobe.com/schema/1.0/pdrl](http://www.adobe.com/schema/1.0/pdrl)

type

extension of *pdrl:ConditionAbstractType*

children

*TemplateID*

used by

element Watermark
attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>isWatermarked</td>
<td>boolean</td>
<td>required</td>
</tr>
</tbody>
</table>

source

<complexType name="WatermarkType">
  <annotation>
    <documentation> Type Definition: The type of watermarking required for the document. </documentation>
  </annotation>
  <complexContent>
    <extension base="pdrl:ConditionAbstractType">
      <sequence>
        <element name="TemplateID" type="string" minOccurs="0"/>
      </sequence>
      <attribute name="isWatermarked" type="boolean" use="required"/>
    </extension>
  </complexContent>
</complexType>

element WatermarkType/TemplateID

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl

type

string

source

<element name="TemplateID" type="string" minOccurs="0"/>
This chapter describes conditions and permissions that are specific to Acrobat and LiveCycle Rights Management ES3. See Core Schema and Extensibility for the complete schema definition.

**Acrobat conditions**

This condition element defines Acrobat-specific policy conditions. It is extended from *PolicyConditionSingle*, which means that it is a policy-level condition.

Elements:

- **PlaintextMetadata**: Boolean type. If TRUE, metadata is stored as clear-text in the document. If FALSE or if not defined, metadata is stored encrypted in the document.

- **EncryptFileAttachmentOnly**: Boolean type. If the value is TRUE, the primary document is in clear text, and only file attachments are encrypted. If the value is FALSE or if not defined, the entire document is encrypted.

**Note**: If EncryptFileAttachmentOnly is TRUE, then metadata is always stored in clear text regardless of what the PlaintextMetadata flag is set to. If EncryptFileAttachmentOnly is FALSE, then the value of PlaintextMetadata determines how the metadata gets stored.

**element AcrobatCondition**

**diagram**

**namespace**

http://www.adobe.com/schema/1.0/pdrl-ex

**type**

pdrl-ex:AcrobatConditionType

**children**

PlaintextMetadata EncryptFileAttachmentOnly
source

<element name="AcrobatCondition"
type="pdrl-ex:AcrobatConditionType"
substitutionGroup="pdrl:PolicyConditionSingle">
  <annotation>
    <documentation> Policy Condition: Defines Acrobat specific policy conditions</documentation>
  </annotation>
</element>

complexType AcrobatConditionType
diagram

namespace

http://www.adobe.com/schema/1.0/pdrl-ex
type

extension of pdrl:ConditionAbstractType
children

PlaintextMetadata EncryptFileAttachmentOnly
used by

element AcrobatCondition
source

<complexType name="AcrobatConditionType">
  <annotation>
    <documentation> Type Definition: for Acrobat specific policy conditions.</documentation>
  </annotation>
  <complexContent>
    <extension base="pdrl:ConditionAbstractType">
      <sequence>
        AcrobatConditionType
        PlaintextMetadata
        EncryptFileAttachmentOnly
      </sequence>
    </extension>
  </complexContent>
</complexType>
element AcrobatConditionType/PlaintextMetadata

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl-ex

type

boolean

source

<element name="PlaintextMetadata" type="boolean" default="false" minOccurs="0"/>

---

element AcrobatConditionType/EncryptFileAttachmentOnly

diagram

namespace

http://www.adobe.com/schema/1.0/pdrl-ex

type

boolean
source

<element name="EncryptFileAttachmentOnly" type="boolean"
default="false" minOccurs="0"/>
Acrobat and Rights Management ES3 permissions

This list of permissions are enforced by Acrobat and Rights Management ES3. The definition of these permissions and how they map to Acrobat permissions are found in the Acrobat Permissions Engineering Specification [A-PERM].

simpleType PermissionNameEnum

namespace

http://www.adobe.com/schema/1.0/pdrl-ex

type

restriction of QName

facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Allow user to open document online.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.onlineOpen</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to open document online and offline.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.offlineOpen</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user the ability to revoke document access privileges.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.revoke</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user the ability to switch policy privileges.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.policySwitch</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to print with high and low resolution.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.pdf.printHigh</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to print with low resolution only.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.pdf.printLow</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to edit the document.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.pdf.edit</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to insert, delete, and rotate pages.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.pdf.docAssembly</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to use the Acrobat commenting tools.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.pdf.editNotes</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Allow user to fill in form fields and digitally sign the document.</td>
</tr>
<tr>
<td>pdrl-ex:com.adobe.aps.pdf.fillAndSign</td>
<td></td>
</tr>
<tr>
<td>Facet</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>enumeration pdr1-ex:com.adobe.aps.pdf.copy</td>
<td>Allow user to have replication capabilities, including copying of text, images, and other content.</td>
</tr>
<tr>
<td>enumeration pdr1-ex:com.adobe.aps.pdf.accessible</td>
<td>Allow user to use the document with a screen reader.</td>
</tr>
</tbody>
</table>
Security Considerations

Policies and licenses are used to convey rights to protected resources. Therefore, the security of persisting and transmitting these objects in a distributed environment is essential to the overall security of a rights management system.

Integrity

Licenses and policies are stored persistently within the content of a document. An application that tries to enforce rights based on these objects needs to validate their integrity. Without some form of integrity protection, malicious users could change their permissions in the policy (for example) and grant rights that were not intended.

The license object contains the following optional elements:

- `<element name="HMAC" type="pdrl:HMACType" minOccurs="0"/>
- `<element ref="ds:Signature" minOccurs="0"/>

The issuing authority should protect the integrity of the license by either including an HMAC of the entire license or applying an XML digital signature to the license as defined in [DSIG]. The client can then verify the integrity of the license by validating the signature or HMAC.

Privacy

The policy and license contain potentially sensitive information about the resource being protected. They contain information covering who is allowed to access a document, when the document expires, who published the document, etc. This information should be encrypted when persisted within a document file or while on disk so that malicious users cannot use it to plan attacks.

It is recommended that all implementations using PDRL encrypt this information whenever it is persisted.

It is also important that the data be protected while transferring these objects between a client and server in a distributed system. It is recommended that the implementation use SSL or some other transport protocol encryption algorithm for ensuring the privacy of this data while in transit.
Trust model

A trust model needs to be implemented to ensure that licenses and policies are managed and issued from a trusted source. The digital signature or HMAC of the license can be used for this purpose. The client should be configured out of band to trust licenses that are issued by the issuing authority.

In the case of digital signatures, the signing certificate should belong to the issuing authority. The client should be pre-configured with the issuing authority's public certificate. When the client validates the digital signature on the license, it should also verify that the signing certificate matches the pre-configured issuing authority's certificate, which it already trusts as a valid signer.

The case of HMAC is similar. The client should obtain a shared secret key from the issuing authority out of band. The client then uses that shared secret key to verify that the license was issued by a trusted source.

The specific implementation details of the trust model are outside the scope of this document.

Authentication

Before transferring licenses and policies between the client and server, a mutual authentication should occur. This will allow the client to know that it is receiving data from a trusted source. It will also allow the server to know that it is not giving data to an client that is not trusted.

The details of the authentication mechanism and the transport protocol are implementation-specific and outside of the scope of this document.
The following documents are referenced in this document.

<table>
<thead>
<tr>
<th>Document</th>
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