

Object Choice Structure



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Problem

- Need multiple ways of identifying certain objects
 - users by SID or name
- Currently solve this by using multiple tests
 - confusing
 - harder to maintain
 - more work to implement ??



Proposal – Choice Structure

- Utilize `<xsd:choice>` feature in schema
 - allow multiple different entities
 - collapse multiple tests into one test



Example

```
<user_object>  
  <trustee_name>Administrator</trustee_name>  
</user_object>
```

```
<user_object>  
  <trustee_sid>1-S-5-domain-501</trustee_sid>  
</user_object>
```



Schema

```
<xsd:element name="user_object" substitutionGroup="oval-def:object">
  <xsd:complexType>
    <xsd:complexContent>
      <xsd:extension base="oval-def:ObjectType">
        <xsd:sequence>
          <xsd:choice>
            <xsd:element ref="oval-def:set" minOccurs="0"/>

            <xsd:sequence minOccurs="0">
              <xsd:element name="user_name" type="oval-def:EntityObjectStringType" />
            </xsd:sequence>

            <xsd:sequence minOccurs="0">
              <xsd:element name="user_sid" type="oval-def:EntityObjectStringType" />
            </xsd:sequence>

          </xsd:choice>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
```



File Path Example

```
<file_object>  
  <path>\usr\bin</path>  
  <filename>fred</filename>  
</file_object>
```

```
<file_object>  
  <fullpath>\usr\bin\fred</fullpath>  
</file_object>
```



SC Item

- No change is needed
 - all entities are already included
 - no distinction between object and state entities

```
<xsd:element name="user_item" substitutionGroup="oval-sc:item">
  <xsd:complexType>
    <xsd:complexContent>
      <xsd:extension base="oval-sc:ItemType">
        <xsd:sequence>
          <xsd:element name="user_name" type="oval-sc:EntityItemStringType" />
          <xsd:element name="user_sid" type="oval-sc:EntityItemStringType" />
          <xsd:element name="enabled" type="oval-sc:EntityItemBoolType" />
          <xsd:element name="group" type="oval-sc:EntityItemStringType" />
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
```



Considerations

- Tools will have to know how to deal with both.
 - some definitions may use one method while others will use the choice
- Options for choices must be unique
 - both trustee name and sid can be used to uniquely id the object