**Weak XML Schema: Unbounded Occurrences Development Mitigation SOP**

Processing XML documents can be computationally expensive. Attackers can take advantage of schemas that allow unbounded elements by supplying an application with a very large number of elements causing the application to exhaust system resources.

**Defense Against Weak XML Schema: Unbounded Occurrences**

Limit maxOccurs to a reasonable number.

**Example**

The following is an example of a bad schema that allows unbounded bar elements.

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" >

<xs:element name="foo" >

<xs:complexType>

<xs:sequence>

<xs:element name="bar" maxOccurs="unbounded" />

</xs:sequence>

</xs:complexType>

</xs:element>

</xs:schema>

**Recommendation**

The following is an example of a good schema that allows 50 bar elements.

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" >

<xs:element name="foo" >

<xs:complexType>

<xs:sequence>

<xs:element name="bar" maxOccurs="50" />

</xs:sequence>

</xs:complexType>

</xs:element>

</xs:schema>

**References**

1. [HP Enterprise Security - Weak XML Schema: Unbounded Occurrences](http://www.hpenterprisesecurity.com/vulncat/en/vulncat/xml/weak_xml_schema_unbounded_occurrences.html)
2. [OWASP - Reviewing Web Services](https://www.owasp.org/index.php/Reviewing_Web_Services#Infinite_Occurrences_of_an_Element_or_Attribute)