

:mod:`xml.sax.handler` --- Base classes for SAX handlers

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 1); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 4)

Unknown directive type "module".

```
.. module:: xml.sax.handler
   :synopsis: Base classes for SAX event handlers.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 7)

Unknown directive type "moduleauthor".

```
.. moduleauthor:: Lars Marius Garshol <larsga@garshol.priv.no>
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 8)

Unknown directive type "sectionauthor".

```
.. sectionauthor:: Martin v. L  wis <martin@v.loewis.de>
```

Source code: :source:`Lib/xml/sax/handler.py`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 10); [backlink](#)

Unknown interpreted text role "source".

The SAX API defines five kinds of handlers: content handlers, DTD handlers, error handlers, entity resolvers and lexical handlers. Applications normally only need to implement those interfaces whose events they are interested in; they can implement the interfaces in a single object or in multiple objects. Handler implementations should inherit from the base classes provided in the module :mod:`xml.sax.handler`, so that all methods get default implementations.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 14); [backlink](#)

Unknown interpreted text role "mod".

This is the main callback interface in SAX, and the one most important to applications. The order of events in this interface mirrors the order of the information in the document.

Handle DTD events.

This interface specifies only those DTD events required for basic parsing (unparsed entities and attributes).

Basic interface for resolving entities. If you create an object implementing this interface, then register the object with your Parser, the parser will call the method in your object to resolve all external entities.

Interface used by the parser to present error and warning messages to the application. The methods of this object control whether errors are immediately converted to exceptions or are handled in some other way.

Interface used by the parser to represent low frequency events which may not be of interest to many applications.

In addition to these classes, :mod:`xml.sax.handler` provides symbolic constants for the feature and property names.

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Unknown interpreted text role "mod".

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Unknown directive type "data".

```
.. data:: feature_namespaces

| value: ``"http://xml.org/sax/features/namespaces"``
| true: Perform Namespace processing.
| false: Optionally do not perform Namespace processing (implies
| namespace-prefixes; default).
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: feature_namespace_prefixes

| value: ``"http://xml.org/sax/features/namespace-prefixes"``
| true: Report the original prefixed names and attributes used for Namespace
| declarations.
| false: Do not report attributes used for Namespace declarations, and
| optionally do not report original prefixed names (default).
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: feature_string_interning

| value: ``"http://xml.org/sax/features/string-interning"``
| true: All element names, prefixes, attribute names, Namespace URIs, and
| local names are interned using the built-in intern function.
| false: Names are not necessarily interned, although they may be (default).
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: feature_validation

| value: ``"http://xml.org/sax/features/validation"``
| true: Report all validation errors (implies external-general-entities and
| external-parameter-entities).
| false: Do not report validation errors.
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: feature_external_ges

| value: ``"http://xml.org/sax/features/external-general-entities"``
| true: Include all external general (text) entities.
| false: Do not include external general entities.
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: feature_external_pes

| value: ``"http://xml.org/sax/features/external-parameter-entities"``
| true: Include all external parameter entities, including the external DTD
|       subset.
| false: Do not include any external parameter entities, even the external
|       DTD subset.
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: all_features

List of all features.
```

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Unknown directive type "data".

```
.. data:: property_lexical_handler

| value: ``"http://xml.org/sax/properties/lexical-handler"``
| data type: xml.sax.handler.LexicalHandler (not supported in Python 2)
| description: An optional extension handler for lexical events like
|             comments.
| access: read/write
```

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Unknown directive type "data".

```
.. data:: property_declaration_handler

| value: ``"http://xml.org/sax/properties/declaration-handler"``
| data type: xml.sax.sax2lib.DeclHandler (not supported in Python 2)
| description: An optional extension handler for DTD-related events other
|             than notations and unparsed entities.
| access: read/write
```

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Unknown directive type "data".

```
.. data:: property_dom_node

| value: ``"http://xml.org/sax/properties/dom-node"``
| data type: org.w3c.dom.Node (not supported in Python 2)
| description: When parsing, the current DOM node being visited if this is
|             a DOM iterator; when not parsing, the root DOM node for iteration.
| access: (parsing) read-only; (not parsing) read/write
```

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Unknown directive type "data".

```
.. data:: property_xml_string

| value: ``"http://xml.org/sax/properties/xml-string"``
| data type: String
| description: The literal string of characters that was the source for the
|               current event.
| access: read-only
```

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Unknown directive type "data".

```
.. data:: all_properties

List of all known property names.
```

ContentHandler Objects

Users are expected to subclass :class:`ContentHandler` to support their application. The following methods are called by the parser on the appropriate events in the input document:

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Unknown interpreted text role "class".

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Unknown directive type "method".

```
.. method:: ContentHandler.setDocumentLocator(locator)
```

Called by the parser to give the application a locator for locating the origin of document events.

SAX parsers are strongly encouraged (though not absolutely required) to supply a locator: if it does so, it must supply the locator to the application by invoking this method before invoking any of the other methods in the DocumentHandler interface.

The locator allows the application to determine the end position of any document-related event, even if the parser is not reporting an error. Typically, the application will use this information for reporting its own errors (such as character content that does not match an application's business rules). The information returned by the locator is probably not sufficient for use with a search engine.

Note that the locator will return correct information only during the invocation of the events in this interface. The application should not attempt to use it at any other time.

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Unknown directive type "method".

```
.. method:: ContentHandler.startDocument()
```

Receive notification of the beginning of a document.

The SAX parser will invoke this method only once, before any other methods in this interface or in DTDHandler (except for :meth:`setDocumentLocator`).

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Unknown directive type "method".

```
.. method:: ContentHandler.endDocument()
```

Receive notification of the end of a document.

The SAX parser will invoke this method only once, and it will be the last method invoked during the parse. The parser shall not invoke this method until it has either abandoned parsing (because of an unrecoverable error) or reached the end of input.

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Unknown directive type "method".

```
.. method:: ContentHandler.startPrefixMapping(prefix, uri)
```

Begin the scope of a prefix-URI Namespace mapping.

The information from this event is not necessary for normal Namespace processing: the SAX XML reader will automatically replace prefixes for element and attribute names when the ``feature_namespaces`` feature is enabled (the default).

There are cases, however, when applications need to use prefixes in character data or in attribute values, where they cannot safely be expanded automatically; the :meth:`startPrefixMapping` and :meth:`endPrefixMapping` events supply the information to the application to expand prefixes in those contexts itself, if necessary.

```
.. XXX This is not really the default, is it? MvL
```

Note that :meth:`startPrefixMapping` and :meth:`endPrefixMapping` events are not guaranteed to be properly nested relative to each-other: all :meth:`startPrefixMapping` events will occur before the corresponding :meth:`startElement` event, and all :meth:`endPrefixMapping` events will occur after the corresponding :meth:`endElement` event, but their order is not guaranteed.

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Unknown directive type "method".

```
.. method:: ContentHandler.endPrefixMapping(prefix)
```

End the scope of a prefix-URI mapping.

See :meth:`startPrefixMapping` for details. This event will always occur after the corresponding :meth:`endElement` event, but the order of :meth:`endPrefixMapping` events is not otherwise guaranteed.

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Unknown directive type "method".

```
.. method:: ContentHandler.startElement(name, attrs)
```

Signals the start of an element in non-namespace mode.

The *name* parameter contains the raw XML 1.0 name of the element type as a string and the *attrs* parameter holds an object of the :class:`~xml.sax.xmlreader.Attributes` interface (see :ref:`attributes-objects`) containing the attributes of the element. The object passed as *attrs* may be re-used by the parser; holding on to a reference to it is not a reliable way to keep a copy of the attributes. To keep a copy of the attributes, use the :meth:`copy` method of the *attrs*

object.

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Unknown directive type "method".

```
.. method:: ContentHandler.endElement(name)
```

Signals the end of an element in non-namespace mode.

The **name** parameter contains the name of the element type, just as with the :meth:`startElement` event.

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Unknown directive type "method".

```
.. method:: ContentHandler.startElementNS(name, qname, attrs)
```

Signals the start of an element in namespace mode.

The **name** parameter contains the name of the element type as a ``(uri, localname)`` tuple, the **qname** parameter contains the raw XML 1.0 name used in the source document, and the **attrs** parameter holds an instance of the :class:`~xml.sax.xmlreader.AttributesNS` interface (see :ref:`attributes-ns-objects`)

containing the attributes of the element. If no namespace is associated with the element, the **uri** component of **name** will be ``None``. The object passed as **attrs** may be re-used by the parser; holding on to a reference to it is not a reliable way to keep a copy of the attributes. To keep a copy of the attributes, use the :meth:`copy` method of the **attrs** object.

Parsers may set the **qname** parameter to ``None``, unless the ``feature_namespace_prefixes`` feature is activated.

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Unknown directive type "method".

```
.. method:: ContentHandler.endElementNS(name, qname)
```

Signals the end of an element in namespace mode.

The **name** parameter contains the name of the element type, just as with the :meth:`startElementNS` method, likewise the **qname** parameter.

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Unknown directive type "method".

```
.. method:: ContentHandler.characters(content)
```

Receive notification of character data.

The Parser will call this method to report each chunk of character data. SAX parsers may return all contiguous character data in a single chunk, or they may split it into several chunks; however, all of the characters in any single event must come from the same external entity so that the Locator provides useful information.

content may be a string or bytes instance; the ``expat`` reader module always produces strings.

```
.. note::
```

The earlier SAX 1 interface provided by the Python XML Special Interest Group used a more Java-like interface for this method. Since most parsers used from Python did not take advantage of the older interface, the simpler signature was chosen to replace it. To convert old code to the new interface, use `*content*` instead of slicing content with the old `*offset*` and `*length*` parameters.

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Unknown directive type "method".

```
.. method:: ContentHandler.ignorableWhitespace(whitespace)
```

Receive notification of ignorable whitespace in element content.

Validating Parsers must use this method to report each chunk of ignorable whitespace (see the W3C XML 1.0 recommendation, section 2.10): non-validating parsers may also use this method if they are capable of parsing and using content models.

SAX parsers may return all contiguous whitespace in a single chunk, or they may split it into several chunks; however, all of the characters in any single event must come from the same external entity, so that the Locator provides useful information.

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Unknown directive type "method".

```
.. method:: ContentHandler.processingInstruction(target, data)
```

Receive notification of a processing instruction.

The Parser will invoke this method once for each processing instruction found: note that processing instructions may occur before or after the main document element.

A SAX parser should never report an XML declaration (XML 1.0, section 2.8) or a text declaration (XML 1.0, section 4.3.1) using this method.

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Unknown directive type "method".

```
.. method:: ContentHandler.skippedEntity(name)
```

Receive notification of a skipped entity.

The Parser will invoke this method once for each entity skipped. Non-validating processors may skip entities if they have not seen the declarations (because, for example, the entity was declared in an external DTD subset). All processors may skip external entities, depending on the values of the ```feature_external_ges``` and the ```feature_external_pes``` properties.

DTDHandler Objects

:class:`DTDHandler` instances provide the following methods:

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Unknown interpreted text role "class".

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main\Doc\library\ (cpython-main) (Doc) (library)xml.sax.handler.rst, line 362)

Unknown directive type "method".

```
.. method:: DTDHandler.notationDecl(name, publicId, systemId)

    Handle a notation declaration event.
```

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Unknown directive type "method".

```
.. method:: DTDHandler.unparsedEntityDecl(name, publicId, systemId, ndata)

    Handle an unparsed entity declaration event.
```

EntityResolver Objects

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Unknown directive type "method".

```
.. method:: EntityResolver.resolveEntity(publicId, systemId)

    Resolve the system identifier of an entity and return either the system
    identifier to read from as a string, or an InputSource to read from. The default
    implementation returns *systemId*.
```

ErrorHandler Objects

Objects with this interface are used to receive error and warning information from the :class:`~xml.sax.xmlreader.XMLReader`. If you create an object that implements this interface, then register the object with your :class:`~xml.sax.xmlreader.XMLReader`, the parser will call the methods in your object to report all warnings and errors. There are three levels of errors available: warnings, (possibly) recoverable errors, and unrecoverable errors. All methods take a :exc:`SAXParseException` as the only parameter. Errors and warnings may be converted to an exception by raising the passed-in exception object.

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Unknown interpreted text role "class".

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Unknown interpreted text role "class".

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Unknown interpreted text role "exc".

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Unknown directive type "method".

```
.. method:: ErrorHandler.error(exception)

    Called when the parser encounters a recoverable error. If this method does not
    raise an exception, parsing may continue, but further document information
    should not be expected by the application. Allowing the parser to continue may
    allow additional errors to be discovered in the input document.
```


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Unknown directive type "method".

```
.. method:: ErrorHandler.fatalError(exception)
```

Called when the parser encounters an error it cannot recover from; parsing is expected to terminate when this method returns.

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Unknown directive type "method".

```
.. method:: ErrorHandler.warning(exception)
```

Called when the parser presents minor warning information to the application. Parsing is expected to continue when this method returns, and document information will continue to be passed to the application. Raising an exception in this method will cause parsing to end.

LexicalHandler Objects

Optional SAX2 handler for lexical events.

This handler is used to obtain lexical information about an XML document. Lexical information includes information describing the document encoding used and XML comments embedded in the document, as well as section boundaries for the DTD and for any CDATA sections. The lexical handlers are used in the same manner as content handlers.

Set the LexicalHandler of an XMLReader by using the setProperty method with the property identifier 'http://xml.org/sax/properties/lexical-handler'.

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Unknown directive type "method".

```
.. method:: LexicalHandler.comment(content)
```

Reports a comment anywhere in the document (including the DTD and outside the document element).

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Unknown directive type "method".

```
.. method:: LexicalHandler.startDTD(name, public_id, system_id)
```

Reports the start of the DTD declarations if the document has an associated DTD.

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Unknown directive type "method".

```
.. method:: LexicalHandler.endDTD()
```

Reports the end of DTD declaration.

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Unknown directive type "method".

```
.. method:: LexicalHandler.startCDATA()
```

Reports the start of a CDATA marked section.

The contents of the CDATA marked section will be reported through the characters handler.

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Unknown directive type "method".

```
.. method:: LexicalHandler.endCDATA()
```

Reports the end of a CDATA marked section.