Darwin Information Typing Architecture (DITA) Version 1.3 Technical Content

OASIS Standard

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DITA Version 1.3 Specification

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1 Introduction to DITA technical content

The techncial content part of DITA models the semantics of information types for technical communications.

The technical content part of DITA adds the semantics of technical-communication information-types to base DITA. This is done through several specializations:

- Topic specializations:

  Concept
  Glossary entry
  Reference
  Task
  Troubleshooting

- Domain specializations:

  Abbreviated form
  Equation
  Hazard statement
  Highlight
  Indexing
  Markup
  MathML
  Programming
  Release management
  Software
  SVG
  User interface
  Utilities
  XML mention

- Bookmap map specialization

1.1 About the DITA technical content specification

The DITA technical content specification is designed for users who use information typing and document complex applications and devices, such as software, hardware, medical devices, machinery, and more.

1.2 Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT, "RECOMMEND", "MAY", and "OPTIONAL" in this document are to be interpreted as described in **[RFC 2119]**.

MUST
: This word, or the terms "REQUIRED" or "SHALL", mean that the definition is an absolute requirement of the specification.

MUST NOT
: This phrase, or the phrase "SHALL NOT", means that the definition is an absolute prohibition of the specification.

SHOULD
: This word, or the adjective "RECOMMENDED", means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.

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SHOULD NOT

This phrase, or the phrase "NOT RECOMMENDED", means that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.

MAY

This word, or the adjective "OPTIONAL", means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option must be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option must be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides).

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1.5 Formatting conventions in the XHTML version of the specification

Given the size and complexity of the specification, it is not generated as a single XHTML file. Instead, each DITA topic is rendered as a separate XHTML file. The XHTML version of the specification uses certain formatting conventions to aid readers in navigating through the specification and locating material easily: Link previews and navigation links.

Link previews

The DITA specification uses the content of the DITA `<shortdesc>` element to provide link previews for its readers. These link previews are visually highlighted by a border and a colored background. The link previews are not normative; they contain the content of the `<shortdesc>` element for the child topic, which is rendered in a normative context as the first paragraph of the topic; the content is identical in both renditions. The link previews serve as enhanced navigation aids, enabling readers to more easily locate content. This usability enhancement is one of the ways in which the specification illustrates the capabilities of DITA and exemplifies DITA best practices.

The following screen capture illustrates how link previews are displayed in the XHTML version of the specification:

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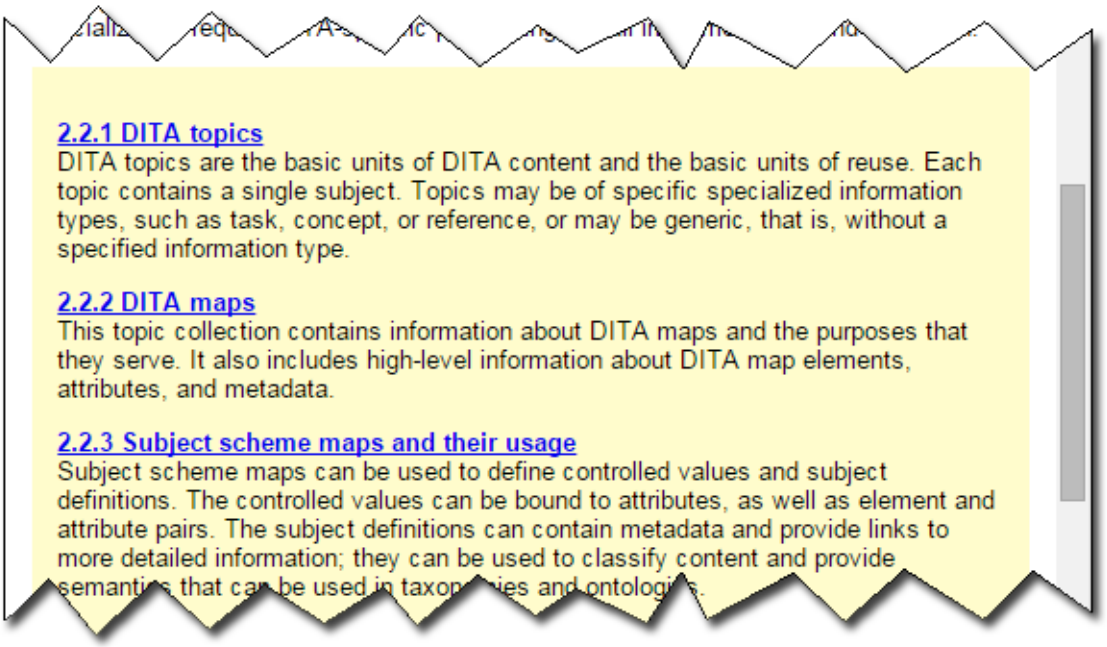

Figure 1: Link previews

Navigation links

To ease readers in navigating from one topic to another, each XHTML file generated by a DITA topic contains the following navigation links at the bottom:

Parent topic
: Takes readers to the parent topic, which the topic referenced by the closest topic in the containment hierarchy

Previous topic
: Takes readers to the previous topic in the reading sequence

Next topic
: Takes readers to the next topic in the reading sequence

Return to main page
: Takes readers to the place in the table of contents for the current topic in the reading sequence

The following screen capture illustrates how navigation links are displayed in the XHTML version of the specification:

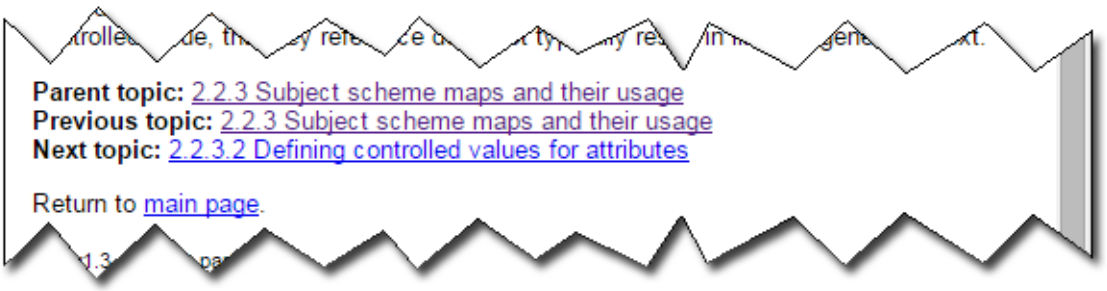

Figure 2: Navigation links

When readers hover over the navigation links, the short description of the DITA topic also is displayed.

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2 Technical content architectural specification

The technical content architectural specification contains information about the techical-content document types and domains, as well as a topic that provides an overview of the DITA elements that support documenting troubleshooting information.

2.1 Technical content: Document types

The Technical Content package contains various document types: concept, reference, general task, strict task, machinery task, troubleshooting, glossary entry, and glossary group. These document types are designed specifically for information that describes how to use products and processes. The Technical Content package also includes the map document type.

2.1.1 Concept topic

Concept topics are specialized from topic. They include the standard topic elements, including the short description, prolog, a body, and related links.

The purpose of the concept information type

Concepts provide background that helps readers understand essential information about a product, a task, a process, or any other conceptual or descriptive information. A concept might be an extended definition of a major abstraction such as a process or function. Conceptual information might explain the nature and components of a product and describe how it fits into a category of products. Conceptual information helps readers to map their knowledge and understanding to the tasks they need to perform and to provide other essential information about a product, process, or system.

The structure of the concept topic

The concept topic is specialized from the base topic information type. The top-level element for a DITA concept topic is the `<concept>` element. Every concept topic contains the standard topic elements, including title, short descriptions or abstract, prolog, a body, and related links.

The `<conbody>` element holds the main body-level elements of the concept topic. Like the `<body>` element of a base topic, the `<conbody>` allows paragraphs, lists, tables, figures and other general elements. It also provides two key elements that allow authors to subdivide the topic into parts, with or without titles. These subdivisions are called sections and examples. The `<conbody>` also allows `<div>`, `<bodydiv>`, and `<sectiondiv>` to facilitate grouping elements in the `<conbody>`.

Limitations within <conbody>

The `<conbody>` provides for an unlimited number of subdivisions in the form of sections and examples. However, once an author decides to incorporate a section or example in the `<conbody>`, only additional sections or examples are allowed. Sections and examples can not nest, meaning that only one level of subdivision is permitted in the concept topic.

Concept body primary subdivisions

<section>

Represents an organizational division in a concept topic. Sections organize subsets of information within a larger topic. You can only include a simple list of peer sections in a topic; sections cannot be nested. A section can have an optional title.

<example>

Provides examples that illustrate or support the current topic. The `<example>` element has the same content model as `<section>`.

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Following is an example of a simple concept topic. Note that once an example is used, it can be followed only by another example or by a section.

```
<concept id="concept">
 <title>Bird Songs</title>

<shortdesc>Bird songs are complex vocalizations used to attract mates or defend territories.
<conbody>
  <p>Bird songs vary widely among species, from simple songs that are genetically imprinted
to complex songs that are learned over a lifetime.</p>
  <example>
   <p>Flycatchers know their songs from birth:</p>
   <ul>
    <li>Flycatcher songs are simple sequences of notes.</li>
    <li>Flycatcher songs never vary but are unique to each member of the Flycatcher family.</
li>
   </ul>
  </example>
 </conbody>
</concept>
```

2.1.2 Reference topic

Reference topics are specialized from topic. They contain the standard topic elements, including title, short descriptions or abstract, prolog, a body, and related links.

Purpose of the reference topic

Reference topics provide data that supports users as they perform a task. Reference topics might provide lists and tables that include product specifications, parts lists, and other data that is often “looked up” rather than memorized. A reference topic also can describe commands in a programming language or required tools for a series of maintenance tasks.

Reference topics provide quick access to fact-based information. In technical information, reference topics are used to list product specifications and parameters, provide essential data, and provide detailed information on subjects such as the commands in a programming language. Reference topics can contain any subject matter that has regular content, such as ingredients for food in recipes, bibliographic lists, catalog items, and so on.

The structure of the reference topic

The top-level element for a reference topic is the `<reference>` element.

The `<refbody>` element contains the main body-level elements of the reference topic. Reference topics limit the body to tables (both simple and complex), property lists, syntax sections, generic sections, and examples.

All of the elements of `<refbody>` are optional; they can appear in any sequence and number.

Limitations on the reference body

The `<refbody>` provides for an unlimited number of subdivisions in the form of sections, examples, syntax sections, property lists, and tables. Simple and complex tables can appear within sections, examples, and syntax sections. They cannot appear within the property list or simple or complex table sections. Sections, examples, syntax sections, table subdivisions, and property lists cannot nest; only one level of subdivision is permitted in the reference topic.

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The elements in the reference body

<section>

Represents an organizational division in a reference topic. Sections organize subsets of information within a larger topic. You can only include a simple list of peer sections in a topic; sections cannot be nested. A section might have an optional title.

<refsyn>

Contains syntax or signature content (for example, a command-line utility's calling syntax or an API's signature). The `<refsyn>` contains a brief, possibly diagrammatic description of the subject's interface or high-level structure.

<example>

Provides examples that illustrate or support the current topic. The `<example>` element has the same content model as `<section>`.

<table>

Organizes information according into a rows and columns. Table markup also allows for more complex structures, including spanning rows and columns, as well as table captions.

<simpletable>

Holds information in regular rows and columns and does not allow a caption.

<properties>

Lists properties of a subject and their types, values, and descriptions.

Following is an example of a simple reference topic, including the `<refsyn>` element.

```
<reference id="boldproperty">
<title>Bold property</title>
<shortdesc>(Read-write) Whether to use a bold font for the specified text string.</shortdesc>
<refbody>
  <refsyn>
    <synph>
      <var>object</var><delim>.</delim><kwd>Font</kwd><delim>.</delim>
      <kwd>Bold</kwd><delim> = </delim><var>trueorfalse</var>
    </synph>
  </refsyn>
  <properties>
    <property>
      <proptype>Data type</proptype>
      <propvalue>Boolean</propvalue>
    </property>
    <property>
      <proptype>Legal values</proptype>
      <propvalue>True (1) or False (0)</propvalue>
    </property>
  </properties>
</refbody>
</reference>
```

Following is an example of a simple reference topic, including the `<property>` element.

```
<reference id="oiltypes">
  <title>Oil Types</title>
  <shortdesc>The tables provide the recommended oil types.</shortdesc>
  <refbody>
    <properties>
      <prophead>
        <proptypehd>Oil type</proptypehd>
        <propvaluehd>Oil brand</propvaluehd>
        <propdeschd>Appropriate use</propdeschd>
      </prophead>
      <property>
        <proptype>Primary oil</proptype>
        <propvalue>A1X<propvalue>
```


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```
        <propdesc>Appropriate for one-cylinder engines</propdesc>
      </property>
      <property>
        <proptype>Secondary oil</proptype>
        <propvalue>B2Z</propvalue>
        <propdesc>Appropriate for two-cylinder engines</propdesc>
      </property>
    </properties>
  </refbody>
</reference>
```

2.1.3 General task topic

The general-task document type was introduced in DITA 1.2. It provides a less-strict content model for task-oriented information than was available previously. Some organizations might prefer the general-task content model over the strict task model, as it can facilitate the migration of legacy content that does not follow the strict-task topic model. The general-task document type serves as the base for the strict-task and machine-industry-task document types. It also can be used to create new document types or specializations.

The purpose of the general task information type

Like the DITA strict task document type, the general task document and information types contain the essential building blocks to provide procedural information. Both task information types answer the "How do I?" question by providing step-by-step instructions that detail the requirements that must be fulfilled, the actions that must be performed, and the order in which the actions must be performed. Both task topics include sections for describing the context, prerequisites, expected results, and other aspects of a task.

The general task information type is specifically designed to accommodate task specializations that differ from the DITA task information type. It might also be used for the conversion of loosely structured tasks from other sources into DITA before they are restructured to follow the more restrictive DITA task model.

The structure of the general task topic

The `<task>` element is the top-level element for the general task topic. The general task topic contains a `<title>` and a `<taskbody>` with optional alternative titles (`<titlealts>`), a short description or `<abstract>`, a `<prolog>`, and `<related-links>`.

The following elements are described here because they are introduced as part of the general task model. All other elements are described in the strict task topic.

<section>
: Represents an organizational division in a task topic. Sections organize subsets of information within the larger topic. Sections cannot be nested. A section can have an optional `<title>`.

<steps-informal>
: Describes procedural task information that would not normally be ordered as `<steps>`, such as a group of general procedures that might all be applied in a particular situation. Instead of `<step>`, the `<steps-informal>` element uses `<ol>` and `<ul>` elements, which are less strictly defined than the `<step>` element. When converting legacy content, it might be simpler to convert numbered lists to `<ol>` elements than to `<step>` elements.

Comparison of general and strict task

The following table compares the structures of general and strict task:

General taskbody	Strict taskbody constraint
prerequisite (optional, in any order, any number)	prerequisite (optional, one only, must precede context)

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General taskbody	Strict taskbody constraint
context (optional, in any order, any number)	context (optional, one only, must follow prerequisite)
section (optional, in any order, any number)	(not defined for strict taskbody)
steps	steps
steps-unordered	steps-unordered
steps-informal	(not defined for strict taskbody)
result (optional, one only, precedes example)	result (optional, one only, precedes example)
[►] tasktroubleshooting (optional, one only)	tasktroubleshooting (optional, one only) [◄]
example (optional, any number, precedes post-req)	example (optional, one only, precedes post-req)
post-requisite (optional, any number)	post-requisite (optional, one only)

2.1.4 Task topic (strict task)

The strict task-document type supports the development of instructions for the completion of a procedure. The strict-task document type is built using the general-task information type combined with the strict taskbody constraint. See the reference below to ensure that you have the correct task document type when you update to DITA 1.3 from DITA 1.0 or DITA 1.1

The purpose of the standard task information type

Tasks are the essential building blocks to provide procedural information. A task information type answers the "How do I?" question by providing precise step-by-step instructions detailing the requirements that must be fulfilled, the actions that must be performed, and the order in which the actions must be performed. The `<task>` topic includes sections for describing the context, prerequisites, expected results, and other aspects of a task.

The structure of the <task> topic

The `<task>` element is the top-level element for the strict task topic. The strict task document type contains a `<title>` and a `<taskbody>` with optional alternative titles (`<titlealts>`), a short description or `<abstract>`, a `<prolog>`, and `<related-links>`.

The `<taskbody>` element is the main body element inside a strict task document type. The strict task body has a constrained structure, with these optional elements in the following order:

<prereq>
: Describes information that the user needs to know or do before starting the immediate task. This section can occur only once.

<context>
: Provides background information for the task. This information helps the users understand the purpose of the task and what they will gain by completing the task correctly. This section should be brief and does not replace or recreate a concept topic on the same subject, although the context section might include some conceptual information. This section can occur only once.

<steps>
: Provides the main content of the task topic. A `<task>` consists of a series of steps that accomplish the task. The `<steps>` element must have one or more `<step>` elements, which provide the specifics about each step in the task. The `<steps>` element can occur only once.

  The `<step>` element represents an action that a user must follow to accomplish a task. Each `<step>` in a `<task>` must contain a command `<cmd>` element which describes the particular action the user must perform to accomplish the overall task. The `<step>` element can also contain information `<info>`, substeps

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<substeps>, tutorial information <tutorialinfo>, a step example <stepxmp>, choices <choices>, a step result <stepresult> , or troubleshooting <steptroubleshooting> , although these are optional.

<steps-unordered>

Provides alternative content for the <task> topic, allowing for a single step in a procedure or a set of commands that need not be performed in a specific order.

<result>

Describes the expected outcome for the task as a whole.

<tasktroubleshooting>

Describes actions that a user might take if the task does not produce the expected results.

<example>

Provides an example that illustrates or supports the task.

<postreq>

Describes steps or tasks that the user should do after the successful completion of the current task. It is often supported by links to the next task or tasks in the <related-links> section.

Here is an example of a task topic:

```
<task id="birdhousebuilding">
    <title>Building a bird house</title>
    <shortdesc>Building a birdhouse is a perfect activity
    for adults to share with their children or grandchildren.
    It can be used to teach about birds, as well as the proper use of tools.
    </shortdesc>
 <taskbody>
  <prereq>To build a sound birdhouse, you will need a complete set of tools:
  <ul><li>hand saw</li>
      <li>hammer ... </li>
  </ul></prereq>
  <context>Birdhouses provide safe locations for birds to build nests and raise their young.
They also provide shelter during cold and rainy spells.</context>
 <steps>
   <step><cmd>Lay out the dimensions for the birdhouse elements.</cmd></step>
   <step><cmd>Cut the elements to size.</cmd></step>
   <step><cmd>Drill a 1 1/2" diameter hole for the bird entrance on the front.</cmd>
         <info>You need to look at the drawing for the correct placement of the
               hole.</info></step>
   <!--...-->
  </steps>
  <result>You now have a beautiful new birdhouse!</result>
  <postreq>Now find a good place to mount it.</postreq>
 </taskbody>
</task>
```

Maintaining specializations using the strict task model

Organizations that have created specializations based on the DITA 1.0 and 1.1 strict task model can review the recommendations in *Migrating from DITA 1.1 to 1.2* for information about how to maintain their specializations.

2.1.5 Machinery task topic

The machinery task document type supports the development of instructions for the completion of a procedure. The machinery task document type is built using the general task information type combined with the Machinery Taskbody Constraint.

The purpose of the machinery task information type

The machinery-task is designed to provide procedural information, similar to the strict task topic, and has a well-defined semantic structure that describes how to perform the steps required to accomplish a specific goal. Compared to the strict task information type, the machinery-task information type contains additional descriptive

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elements in the prelreqs section that add detail to the pre-requisites required to perform a task. The machinery-task topic is developed using the DITA constraint mechanism, in addition to specializations for new elements.

Machinery tasks are the essential building blocks to provide procedural information for machines, machinery equipment, assemblies, and apparatuses. A machinery-task information type answers the "How do I?" question by providing precise step-by-step instructions detailing the requirements that must be fulfilled, the actions that must be performed, and the order in which the actions must be performed. The machinery-task topic includes sections for describing the context, preliminary requirements, expected results, examples, closing requirements, and other aspects of a task.

The structure of the machinery-task topic

Similar to a strict DITA task, the `<task>` element is the top-level element for a machinery task topic. The machinery task document type contains a title and a taskbody with optional alternative titles (titlealts), a short description or abstract, a prolog,and related-links.

The `<taskbody>` element is the main body element inside a machinery-task topic. A machinery-task body has a very specific structure, with the following elements in this order: (<prelreqs> or `<context>` or `<section>`)*, `<steps>`, `<result>`, `<example>`, and `<closereqs>`. Each of the body sections is optional.

The machinery task includes two specialized element groups: `<prelreqs>` and `<closereqs>`. All other element groups are the same as the general task model.

<prelreqs>
: The preliminary-requirements section of a task is used to describe what the user needs to know or do before starting the immediate task. The `<prelreqs>` element is similar to the prerequisites section of the general task model but contains a more descriptive content model. The `<prelreqs>` element contains required conditions, required personnel, required equipment, supplies, spares, and safety information.

<closereqs>
: The close-requirements section is used to describe conditions that must be fulfilled after the successful completion of the current task. It is often supported by links to the next task or tasks in the `<related-links>` section. The `<closereqs>` element contains required conditions `<reqconds>`.

2.1.6 Troubleshooting topic

The troubleshooting topic type provides markup for corrective action information such as troubleshooting and alarm clearing.

The troubleshooting information type

In its simplest form, troubleshooting information follows this pattern:

1. A condition or symptom. Usually the condition or symptom is an undesirable state in a system, a product, or a service that a reader wants to correct.
2. A cause for the condition or symptom.
3. A remedy for the condition or symptom.

The troubleshooting topic provides sections for describing the condition, causes, and remedies needed to restore a system, a product, or a service to normal.

For some conditions there could be more than one cause-remedy pair. The troubleshooting topic accommodates this. Typically, a cause is immediately followed by its remedy. Multiple cause-remedy pairs can provide a series of successive fall-backs for resolving a condition.

Cause and remedy might occur in combinations other than pairs. It is possible to have:

- Multiple causes with the same remedy

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- A single cause with more than one remedy
- A remedy with no known cause
- A cause with no known remedy

The troubleshooting information type also can be used to document alarm clearing strategies.

The structure of the troubleshooting topic

The top-level element for troubleshooting topics is `<troubleshooting>`. The `<troubleshooting>` element contains a `<title>` with optional alternative titles (`<titlealts>`), a short description or `<abstract>`, a `<prolog>`, a `<troublebody>`, and `<related-links>`.

`<troublebody>` is the main body element in a troubleshooting topic. The `<troublebody>` element contains the following elements:

<condition>
: This optional element is the first child of `<troublebody>`, and it describes a condition or symptom that is associated with an undesirable state in a system, a product, or a service. In cases where the topic title fully explains the condition, do not use this element.

<troubleSolution>
: One or more `<troubleSolution>` elements must appear in the `<troublebody>` element. `<troubleSolution>` is a wrapper element for `<cause>` and `<remedy>`, each of which are a cause-remedy pair.

The `<troubleSolution>` element contains the following elements:

<cause>
: This optional, repeatable, first-child of`<condition>` `<troubleSolution>` describes a possible cause for the condition.

<remedy>

: This optional, repeatable, last-child of `<troubleSolution>` describes a possible remedy for the condition.

: The `<remedy>` element begins with an optional `<title>` element followed by an optional `<responsibleParty>` element followed by either a `<steps>` element, a `<steps-unordered>` element, or a `<steps-informal>` element. The content models for `<steps>`, `<steps-unordered>`, and `<steps-informal>` are borrowed from `<task>`. This allows remedy to reuse steps from tasks.

<responsibleParty>
: This optional first child of `<remedy>` indicates who is expected to perform the steps that are outlined in the `<remedy>` element.

Here is an example of a troubleshooting topic:

```
<troubleshooting id="nologon">
  <title>Cannot log on</title>
  <shortdesc>Login attempts have failed</shortdesc>
  <troublebody>
    <condition>
      <p>The system does not accept your login credentials.</p>
    </condition>
    <troubleSolution>
      <cause>
        <p>The CapsLock key might be on.</p>
      </cause>
      <remedy><steps-unordered>
        <step>
          <cmd>Verify that the CapsLock key is off.</cmd>
        </step>
```


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```
      </steps-unordered>
      </remedy>
    </troubleSolution>
    <troubleSolution>
      <cause>
        <title>Wrong password</title>
        <p>The password that you are using does not match the one
          that is stored in the system.</p>
      </cause>
      <remedy id="gotoaccountmanagement">
        <steps>
          <step>
            <cmd>Open a Web browser window</cmd>
          </step>
          <step>
            <cmd>Go to
              <xref href="http://itdept.example.com/reset.html"
                format="html" scope="external">
                Account management</xref>, and follow the
              instructions</cmd>
          </step>
        </steps>
      </remedy>
    </troubleSolution>
    <troubleSolution>
      <cause>
        <title>Unknown account name</title>
        <p>The account name you are using does not match the one
          stored in the system.</p>
      </cause>
      <remedy conref="#nologon/gotoaccountmanagement"/>
    </troubleSolution>
    <troubleSolution>
      <remedy>
        <title>Still cannot log on</title>
        <steps-informal>
          <p>If none of the previous solutions work,
            consider asking for help. Contact your system
            administrator if your organization has one; otherwise,
            contact our support team.</p>
        </steps-informal>
      </remedy>
    </troubleSolution>
  </troublebody>
</troubleshooting>
```

Related concepts

Troubleshooting information on page 31

Troubleshooting information is invaluable to technical content users because it provides advice to correct problems with task performance.

2.1.7 Glossary entry topic

Each glossary entry `<glossentry>` topic defines a single sense of one term. Besides identifying the term and providing a definition, the topic accommodates basic terminology information, such as part of speech. A glossentry topic might also include acronyms and acronym expansions. Glossentry topics can be assembled by authors or processes to create glossaries for various purposes, including books, websites, or other projects.

The purpose of the glossary entry topic

Defining terminology in a glossary ensures that a team of writers uses the same term for the same concept. A glossary added to a book or available online in conjunction with other subject matter provides the reader with definitions of unfamiliar terms and expands acronyms.

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The structure of the glossentry topic

The top-level element for a DITA glossentry topic is the `<glossentry>` element. Every glossentry topic contains a `<glossterm>` and a `<glossdef>` element and optional `<related-links>`.

Where a term has multiple definitions, best practices call for the writer to create multiple glossentry topics with the same term in the `<glossterm>` element but different definitions in the `<glossdef>` element. A process can collate and group glossentry topics by term when generating formatted output. Note that definitions with the same term in one language can have different terms in other languages, so translations can result in different collation and grouping of the same set of glossentry topics.

Here is an example of a simple glossentry topic:

```
<glossentry id="ddl">
    <glossterm>Data Definition Language</glossterm>
    <glossdef>A language used for defining database schemas.</glossdef>
</glossentry>
```

To create a glossary, authors can group multiple entries together by

- authoring in a single document using the Glossary group document type
- authoring in a single document under a container topic using the ditabase document type
- referencing the glossentry topics from a map
- using an automated process

For example, an automated process might assemble glossentry topics from a repository based on the `<term>` markup in a particular collection of topics.

Acronyms defined within glossentry topics

The glossentry topic can be used to provide expansions of acronyms in online text and assist in the proper translation of acronyms into multiple languages. The acronym elements of the glossentry topic include the following:

- <glossterm> to enter the full text to which the acronym refers
- <glossSurfaceForm> to provide the appropriate rendering of the full text plus the acronym in each language
- <glossAcronym> to provide the acronym text itself

Here is an example of an acronym used in the glossentry topic:

```
<glossentry id="wmd" xml:lang="en">
  <glossterm>Weapons of Mass Destruction</glossterm>
  <glossBody>
    <glossSurfaceForm>Weapons of Mass Destruction (WMD)</glossSurfaceForm>
    <glossAlt>
      <glossAcronym>WMD</glossAcronym>
    </glossAlt>
  </glossBody>
</glossentry>
```

Here is an example of how the glossentry topic would be translated into Spanish:

```
<glossentry id="wmd" xml:lang="es">
  <glossterm>armas de destrucción masiva</glossterm>
  <glossBody>
    <glossSurfaceForm></glossSurfaceForm>
    <glossAlt>
      <glossAcronym></glossAcronym>
    </glossAlt>
```


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```
  </glossBody>
</glossentry>
```

Note that because no acronym exists for the term in Spanish, the <glossSurfaceForm> and <glossAcronym> elements are left blank.

In some languages, the surface form that expands the acronym in its first use handles the formatting differently than in English. For example, in Polish, the acronym precedes the expansion.

```
<glossentry id="eu" xml:lang="pl">
  <glossterm>Unia Europejska</glossterm>
  <glossBody>
    <glossSurfaceForm>UE (Unia Europejska)</glossSurfaceForm>
    <glossAlt>
      <glossAcronym>UE</glossAcronym>
    </glossAlt>
  </glossBody>
</glossentry>
```

For more information about the correct use of acronym expansions in multiple languages, see *Best Practice for Managing Acronyms and Abbreviations in DITA*, produced by the DITA Translation Subcommittee. *http://www.oasis-open.org/committees/download.php/29734/AcronymBestPractice_08112008.doc*

2.1.8 Glossary group topic

The glossary group (<glossgroup>) topic enables authors to include one or more glossary entry (<glossentry>) topics in a single collection file, rather than authoring each glossary entry topic in a separate file. The glossary group topic is a specialization of concept.

2.1.9 Bookmap

The DITA bookmap specialization represents the key markup requirements for managing DITA content through book-oriented publication processes, including book metadata and book structures for organizing content.

The purpose of the bookmap specialization

Books and other printed media are popular ways to present DITA content. By specializing the general DITA map structure into the general structure and subject areas used by most book-oriented DTDs, bookmaps enable users to organize their DITA information into front matter, parts, chapters, and so forth. A rich set of metadata allows for recording information about the book, such as its authors and owners, versions, and production history.

The structure of the bookmap specialization

The <bookmap> element is the top-level element for a DITA bookmap. Most of the content for a bookmap is optional, allowing for specializations that further restrict the bookmap model.

A bookmap allows the following parts:

- An initial title or booktitle (booktitle has more semantics)
- Book metadata (publisher, author, copyright holders and dates, etc.)
- Front matter (placement for Table of Contents and other preliminary information)
- Any number of chapters or parts (parts can group chapters, chapters can group topics)
- An appendices section (similar to a part or a chapter, can group multiple appendices)
- Back matter (similar to front matter, notices, glossary, index, etc.)
- Relationship table

In book-oriented XML grammars, authors typically manage content structures as external entities, separate from the body of the book and referenced as embedded elements into the overall structure. Bookmap follows the

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same organizational approach, using the topicref-based structure of DITA maps as the archetype for the major divisions of a book.

Here is an example of a simple bookmap. It uses several mechanisms to include chapter content:

- Referencing a DITA map
- Referencing a DITA topic
- Nesting `<topicref>` elements

```
<bookmap id="taskbook">
  <booktitle>
    <mainbooktitle>Product tasks</mainbooktitle>
    <booktitlealt>Tasks and what they do</booktitlealt>
  </booktitle>
  <bookmeta>
    <author>John Doe</author>
    <bookrights>
      <copyrfirst>
        <year>2006</year>
      </copyrfirst>
      <bookowner>
        <person href="task_preface.dita">Jane Doe</person>
      </bookowner>
    </bookrights>
  </bookmeta>
  <frontmatter>
    <preface/>
  </frontmatter>
  <chapter format="ditamap" href="installing.ditamap"/>
  <chapter href="configuring.dita"/>
  <chapter href="maintaining.dita">
    <topicref href="maintainstorage.dita"/>
    <topicref href="maintainserver.dita"/>
    <topicref href="maintaindatabase.dita"/>
  </chapter>
  <appendix href="task_appendix.dita"/>
  </bookmap>
```

2.2 Technical content domains

This section contains information about the technical content domains, including a general overview and more specific information about the xNAL, release management, equation, and MathML domains.

2.2.1 The xNAL domain

The DITA xNAL domain specialization defines a number of metadata elements and attributes that are useful in representing personal/organizational names and addresses. The metadata can be used to identify authors and content owners. The OASIS xNAL Standard (extensible Name and Address Langauge) was selected to represent close mappings from the DITA bookmap metadata content model to an existing standard. xNAL is included in the Bookmap and the LearningBookmap document types.

The OASIS Customer Information Quality (CIQ) standard for global-customer information management contains the definition of the *OASIS extensible Name and Address Language (xNAL)* metadata elements. Version 2 of the standard states:

The objective of xNAL is to describe a common structure for Personal/Organization Names and Addresses that would enable any applications that want to represent customer names and addresses in a common standard format. The applications could be CRM/e-CRM, Customer Information Systems, Data Quality (Parsing, Matching, Validation, Verification, etc.), Customer Data Warehouses, Postal services, etc.

However, any party for its own purposes and applications can use xNAL grammar or parts of it.

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The DITA xNAL specialization is based on the OASIS extensible Name and Address Language metadata elements. Due to differences between the two processing architectures, the DITA xNAL domain does not incorporate all of the definitions from the OASIS xNAL standard directly. Instead, there is a transformational equivalence between the DITA and OASIS xNAL definitions for names and addresses. This equivalence enables XML-aware tools in workflow systems to capture and manipulate names and addresses in a standard manner.

The xNAL domain is available for use in the `<bookmap>` and `<learningBookmap>` document types, which are distributed as part of the DITA 1.3 specification. It can be included in specialized DITA document types that require metadata for names and addresses.

2.2.2 xNAL usage guidelines

Extended information and usage examples for DITA bookmap metadata elements associated with OASIS xNAL Standard (extensible Name and Address Language).

DITA bookmaps use a set of elements associated with a subset of the *OASIS extensible Name and Address Language (xNAL)* specification (Version 2) to denote name and address information related to persons and organizations.

While the elements share element names, and the expectation is that content written using this type of metadata is be straightforward to transform, the element name pairs do not share content models. The difference in content models reflects the different purposes of the two standards. The purpose of the name and address elements in DITA is to identify persons or organizations associated with the creation of a document; the purpose of the name and address elements in xNAL is to support customer resource management.

The examples shown after the table provide sample tagging methods for name and address information, using the DITA elements associated with xNAL.

DITA elements associated with xNAL elements

The set of bookmap elements associated with elements from the *OASIS extensible Name and Address Language (xNAL)* standard are listed in the table below.

Table 1: DITA elements associated with xNAL elements

`<addressdetails>`	`<honorific>`	`<otherinfo>`
`<administrativearea>`	`<lastname>`	`<person>`
`<authorinformation>`	`<locality>`	`<personinfo>`
`<contactnumber>`	`<localityname>`	`<personname>`
`<contactnumbers>`	`<middlename>`	`<postalcode>`
`<country>`	`<namedetails>`	`<thoroughfare>`
`<emailaddress>`	`<organization>`	`<url>`
`<emailaddresses>`	`<organizationinfo>`	`<urls>`
`<firstname>`	`<organizationname>`	
`<generationidentifier>`	`<organizationnamedetails>`	

Example 1: Tagging personal information in DITA

This example shows a way to tag the following personal name and description.

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Mr. Ram V. Kumar Jr.
Chief Technologist
MSI Business Solutions

```
<authorinformation>
  <personinfo>
    <namedetails>
      <personname>
        <honorific>Mr.</honorific>
        <firstname>Ram</firstname>
        <middlename>V.</middlename>
        <lastname>Kumar</lastname>
        <generationidentifier>Jr.</generationidentifier>
        <otherinfo>Chief Technologist</otherinfo>
      </personname>
    </namedetails>
  </personinfo>
  <organizationinfo>
    <namedetails>
      <organizationnamedetails>
        <organizationname>MSI Business Solutions</organizationname>
      </organizationnamedetails>
    </namedetails>
  </organizationinfo>
</authorinformation>
```

Example 2: Tagging address information in DITA

This example shows a way to tag the following address.

23 Archer St.
Chatsworth
NSW 2067
Australia

```
<addressdetails>
  <thoroughfare>123 Archer St.</thoroughfare>
  <locality>
    <localityname>Chatsworth</localityname>
    <postalcode>2067</postalcode>
  </locality>
  <administrativearea>NSW</administrativearea>
  <country>Australia</country>
</addressdetails>
```

Example 3: Tagging complex name and address information in DITA

This example shows two ways to tag a fairly complex collection of personal, organizational, and address information.

Mr. Samuel L. Johnson Jr.
Chief Technologist
c/o XYZ Corporation
52 New Main St.
Carrboro, NC 27510 USA
email: johnson@example.com
phone: 919-555-7987

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This method tags all the organizational information as associated with the identified person.

```
<personinfo>
   <namedetails>
      <personname>
          <firstname>Samuel</firstname>
          <middlename>L.</middlename>
          <lastname>Johnson</lastname>
          <generationidentifier>Jr.</generationidentifier>
          <otherinfo>Chief Technologist</otherinfo>
          <otherinfo>c/o XYZ Corporation </otherinfo>
      </personname>
   </namedetails>
   <addressdetails>
      <thoroughfare>52 New Main St.</thoroughfare>
      <locality>
         <localityname>Carrboro</localityname>
         <postalcode>27510</postalcode>
      </locality>
      <administrativearea>NC</administrativearea>
      <country>USA</country>
   </addressdetails>
   <contactnumbers>
      <contactnumber>919-555-7987</contactnumber>
   </contactnumbers>
   <emailaddresses>
      <emailaddress>johnson@example.com</emailaddress>
   </emailaddresses>
</personinfo>
```

The following method separates the person and organization information. It might be used if it were necessary to associate address information with organizations rather than persons.

```
<authorinformation>
  <personinfo>
    <namedetails>
      <personname>
        <firstname>Samuel</firstname>
        <middlename>L.</middlename>
        <lastname>Johnson</lastname>
        <generationidentifier>Jr.</generationidentifier>
        <otherinfo>Chief Technologist</otherinfo>
      </personname>
    </namedetails>
    <contactnumbers>
      <contactnumber>919-555-7987</contactnumber>
    </contactnumbers>
    <emailaddresses>
      <emailaddress>johnson@example.com</emailaddress>
    </emailaddresses>
  </personinfo>
  <organizationinfo>
    <namedetails>
      <organizationnamedetails>
        <organizationname>XYZ Corporation</organizationname>
        <otherinfo>c/o </otherinfo>
      </organizationnamedetails>
    </namedetails>
    <addressdetails>
      <thoroughfare>52 New Main St.</thoroughfare>
      <locality>
         <localityname>Carrboro</localityname>
         <postalcode>27510</postalcode>
      </locality>
      <administrativearea>NC</administrativearea>
      <country>USA</country>
    </addressdetails>
  </organizationinfo>
</authorinformation>
```


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2.2.3 MathML and equation domains

The MathML and equation domains provide general containers for equations (inline, block, and display) and an integration with the MathML standard. The equation containers identify equations separate from the data that provides the equation content, which might take many forms, including MathML markup, images, and non-XML formats like TeX and ASCII equations.

These two domains provide support for mathematics elements:

MathML domain

Provides the `<mathml>` element, which is a specialization of `<foreign>`. The `<mathml>` element can contain direct MathML markup, or it can use the `<mathmlref>` element to include MathML markup that is stored in a separate, non-DITA document. When this domain is integrated without additional constraints, the `<mathml>` element is allowed wherever `<foreign>` is allowed.

The equation domain elements can be used to distinguish equations semantically. While authors can include the `<mathml>` element directly in content, the recommended best practice is to always include `<mathml>` within one of the equation domain elements or their semantic equivalent in a non-OASIS-defined DITA vocabulary.

Equation domain

Provides the `<equation-inline>`, `<equation-block>`, and `<equation-figure>` elements. This domain can be used independently of the MathML domain. The elements in the equation domain enable authors to clearly distinguish equations from other type of content; these markup distinctions can enable formatting distinctions, numbering of equations, and more.

2.2.4 Release management domain

The release management domain provides markup that enables content developers to log information about changes that have been made to a DITA topic or map. This information can be used to generate release notes, which can help users locate significant changes in revisions of large documents.

Processors can gather the information and assemble it into an appendix or separate document, thus eliminating the need for separate release-note topics or external tracking mechanisms such as spread sheets or databases. Regulated industries can use the release management domain to provide the records that are required by regulatory agencies.

This figure shows the structure of the release management elements.

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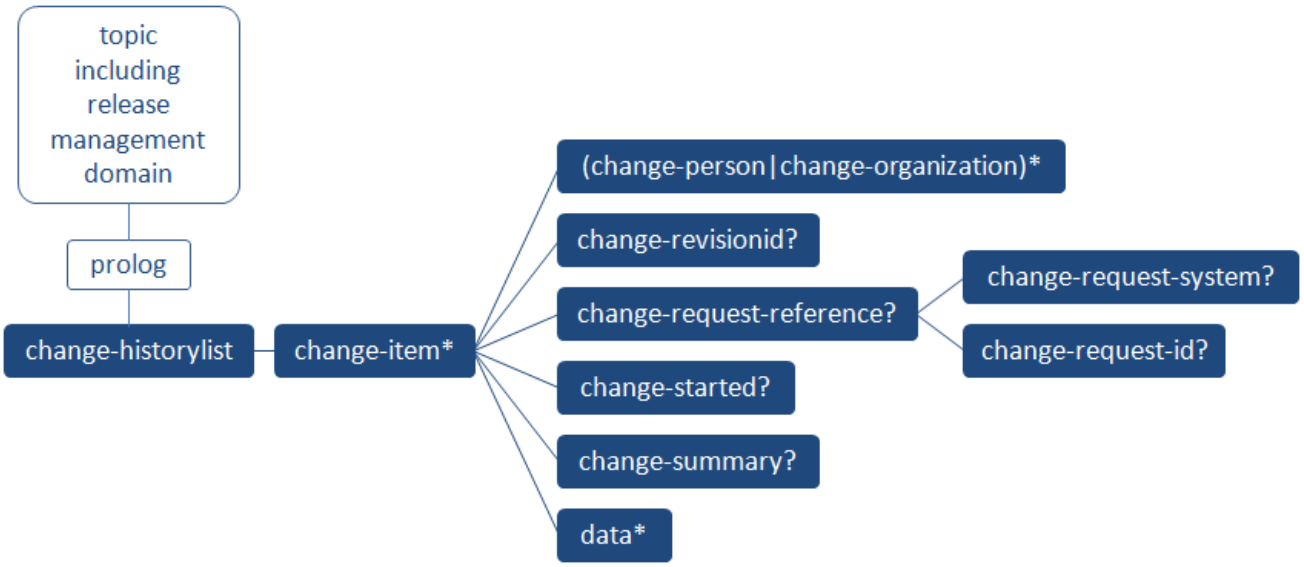

Figure 3: Release management elements

The following list provides a brief description of the element:

<change-historylist>
Contains `<change-item>` elements, each of which represents a *release note*, which is information about a single change

<change-item>
Contains information about a release note

<change-person>
Contains the name of a person who made the change

<change-organization>
Contains the name of the organization that requested the change

<change-revisionid>
Contains an identifier that is associated with the change

<change-request-reference>
Contains information that provides traceablity to an external change request or other ticketing system

<change-request-system>
Contains the name of the external system that is referenced

<change-request-id>
Contains an identifier that is associated with the change request, such as an issue ID or ticket number

<change-started>
Contains a string that holds date and time information about when the change was started

<change-completed>
Contains a string that holds date and time information about when the change was finished

<change-summary>
Contains a descriptive summary of the change

This figure shows three simple change-items added to a single topic. This topic is used in documentation for two products, A and B.

```
<prolog>
<!--...-->
  <change-historylist>
    <change-item product="productA productB">
      <change-person>Joan Smith</change-person>
```


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```
      <change-completed>2013-03-23</change-completed>
      <change-summary>Made change 1 to both products</change-summary>
      <data>Details of change 1</data>
    </change-item>
    <change-item product="productA">
      <change-person>Bill Carter</change-person>
      <change-completed>2013-06-07</change-completed>
      <change-summary>Made change 2 to product A</change-summary>
      <data>Details of change 2</data>
    </change-item>
    <change-item product="productA productB">
      <change-person>Richard Smith</change-person>
      <change-completed>2013-07-20</change-completed>
      <change-summary>Made change 3 to both products</change-summary>
      <data>Details of change 3</data>
    </change-item>
  </change-historylist>
<!--...-->
</prolog>
```

Figure 4: Excerpt from topic prolog

2.3 Troubleshooting information

Troubleshooting information is invaluable to technical content users because it provides advice to correct problems with task performance.

User studies show that users find troubleshooting information invaluable because they frequently access technical information only when they have encountered a problem in performing a task.

The DITA troubleshooting elements added in DITA 1.3 encourage authors to provide troubleshooting information directly within a task, at the point of need, and to label the troubleshooting information appropriately. Minimalism research indicates that users are most likely to read troubleshooting information if it is visibly labeled. We recommend that implementations use style sheets that add symbols or text to draw attention to the troubleshooting elements in the topics.

Troubleshooting information can be added to an individual step in a DITA task; it also can be added after the steps are completed. Troubleshooting information can be added in any topic type in a `<note>` element with the `@type` attribute set to "trouble". However, we recommend that users use either `<steptroubleshooting>` or `<tasktroubleshooting>` when working on a task topic, rather than inserting an `<note>` element with the `@type` attribute set to "trouble".

The examples below illustrate the three options.

Step troubleshooting

Troubleshooting information can be added following a step in a procedure if it is likely that the user will encounter a problem in performing the step.

The `<steptroubleshooting>` element can occur following the `<cmd>` element in the `<step>` or `<substep>` element. The `<steptroubleshooting>`element ends the `<step>` or `<substep>` element. Another element, such as `<info>` or `<stepxmp>`, cannot be added after the `<steptroubleshooting>` element.

The first example shows troubleshooting information added to a step. The second example shows the troubleshooting information following a step result.

```
<step>
    <cmd>Select <uicontrol>Shut Down</uicontrol> from the
         <uicontrol>File</uicontrol> Menu.</cmd>
    <steptroubleshooting>If a problem with the computer prevents you from choosing
          Shut Down—for example, if the computer “freezes” so that the pointer does
```


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```
          not respond to the trackpad—you can turn off the computer by holding down
          the Control, Option, Command, and Power On keys at the same time.
    </steptroubleshooting>
</step>
```

```
<step>
    <cmd>Select the element for which you want to assign a conditional-
         processing attribute, and, in the <wintitle>Attributes</wintitle>
         window, select the conditional-processing attribute.</cmd>
    <stepresult>The permissible values for the attribute are displayed in a
                drop-down list.
    </stepresult>
    <steptroubleshooting>If the list of controlled values is not displayed,
                         ensure that the root map is opened in the
                         <wintitle>DITA Maps Manager</wintitle> window.
    </steptroubleshooting>
</step>
```

Task troubleshooting

Troubleshooting information can be added after the procedural component to assist the user in correcting a problem that might have occurred. The `<tasktroubleshooting>` element is one of four optional elements that can follow the `<steps>` element. When these optional element are used, they must appear in the following order: `<results>`, `<tasktroubleshooting>`, `<example>`, and `<postreq>`.

```
<steps>
    <step>
        <cmd>When the fast blinking stops, press
             <uicontrol>small espresso</uicontrol>.</cmd>
    </step>
</steps>
<tasktroubleshooting>If the <uicontrol>small espresso</uicontrol>
                     button is not lit, recycle the unit by turning
                     the external <uicontrol>Power</uicontrol> off
                     and on.
</tasktroubleshooting>
```

Troubleshooting note

A `<note>` element can include `type="trouble"` to indicate that the note deals with a potential problem that the user might encounter. We recommend that DITA implementations configure their CSS or stylesheets to include appropriate text or an icon in the generated output.

Best practices for authoring DITA content mandate that the troubleshooting note should not be used in place of `<steptroubleshooting>` or `<tasktroubleshooting>` in a task topic.

```
<concept>
    <p>If you expose your camera to sudden changes in temperature or
       humidity, you might experience some condensation in the camera.
       Aavoid the possibility of condensation because it might
       result in soil on the lens or the monitor, cause mold, or damage
       the camera.</p>
    <note type="trouble">If you do get condensation, turn off the camera
                         and wait about two hours before using it. Once
                         the camera adjusts to the surrounding temperature,
                         the fogging will clear naturally.
    </note>
    <!-- ... -->
</concept>
```


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Related concepts

Troubleshooting topic on page 20

The troubleshooting topic type provides markup for corrective action information such as troubleshooting and alarm clearing.

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3 Technical content language reference

The technical content language reference contains topics for each element defined in the technical content specializations. These elements include the original Concept, Task, and Reference specializations, as well as specializations added in later releases . It also includes domains designed primarily for technical content.

3.1 Technical content elements, A to Z

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3.8.9.5 xmlelement on page 167
3.8.9.6 xmlnsname on page 167
3.8.9.7 xmlpi on page 168
3.7.2.33 year on page 122

3.2 Concept elements

DITA concept topics answer "What is..." questions. Use the concept topic to introduce the background or overview information for tasks or reference topics. The concept topic restricts content following a section or example to other sections or examples. For more details on when to use concept and other information types, please refer to the DITA architectural specification.

3.2.1 <concept>

The `<concept>` element is the top-level element for a topic that answers the question “what is?” Concepts provide background information that users must know before they can successfully work with a product or interface. Often, a concept is an extended definition of a major abstraction such as a process or function. It might also have an example or a graphic, but generally the structure of a concept is fairly simple.

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Usage information

Specialization hierarchy

- topic/topic concept/concept

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@id`, given below), *B.2 Architectural attribute group* on page 190, and *outputclass* on page 196.

@id (REQUIRED)

An anchor point. This ID is usually required as part of the `@href` or `@conref` syntax when cross referencing or reusing content within the topic; it also enables `<topicref>` elements in DITA maps to optionally reference a specific topic within a DITA document. This attribute is defined with the XML Data Type ID.

Example

```
<concept id="concept">
 <title>Introduction to Bird Calling</title>
 <shortdesc>If you wish to attract more birds to your Acme Bird Feeder,
learn the art of bird calling. Bird calling is an efficient way
to alert more birds to the presence of your bird feeder.</shortdesc>
 <conbody>
   <p>Bird calling requires learning:</p>
   <ul>
    <li>Popular and classical bird songs</li>
    <li>How to whistle like a bird</li>
   </ul>
 </conbody>
</concept>
```

3.2.2 <conbody>

The `<conbody>` element is the main body-level element for a concept.

Usage information

Like the `<body>` element of a general `<topic>`, `<conbody>` allows paragraphs, lists, and other elements as well as sections and examples. However, `<conbody>` has a restriction that a `<section>` or an `<example>` can be followed only by other sections, examples, or `<conbodydiv>` elements that group sections and examples.

Specialization hierarchy

- topic/body concept/conbody

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in *3.2.1 concept* on page 39.

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3.2.3 <conbodydiv>

The <conbodydiv> element is similar to the <bodydiv> element in that it provides an informal container for content that might be grouped within a concept. There are no additional semantics attached to the <conbodydiv> element; it is purely a grouping element provided to help organize content.

Usage information

The parent <conbody> element has a restriction that <section> or <example> elements can only be followed by other sections or examples. The <conbodydiv> element, which allows groupings of sections and examples, keeps the same restriction in place; once used, only sections, examples, or other <conbodydiv> groups are allowed.

Specialization hierarchy

- topic/bodydiv concept/conbodydiv

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

One common use case for the <conbodydiv> element is to group a sequence of sections for reuse, so that another concept can reference the entire set with a single @conref attribute.

```
<concept id="sample" xml:lang="en">
 <title>Conbodydiv example</title>
 <shortdesc>This concept is a sample of how to
use conbodydiv.</shortdesc>
 <conbody>
  <p>Introduce the example.</p>
  <p>Next group some sections that might be reused elsewhere.</p>
  <conbodydiv id="my_conbodydiv">
   <section><title>First</title> ... </section>
   <section><title>Second</title> ... </section>
  </conbodydiv>
 </conbody>
</concept>
```

3.3 Task elements

Task topics answer "How do I?" questions, and have a well-defined structure that describes how to complete a procedure to accomplish a specific goal. Use the task topic to describe the steps of a particular task, or to provide an overview of a higher-level task. The task topic includes sections for describing the context, prerequisites, actual steps, expected results, example, and expected next steps for a task. For more details on when to use task and other information types, please refer to the DITA architectural specification.

3.3.1 <task>

The <task> element is the top-level element for a task topic. Tasks are the main building blocks for task-oriented user assistance. They generally provide step-by-step instructions that will enable a user to perform a task. A task answers the question of "how to?" by telling the user precisely what to do and the order in which to do it. Tasks have the same high-level structure as other topics, with a title, short description and body.

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Usage information

Note: Beginning with DITA 1.2, the DTD and Schema packages distributed by OASIS contain two task models. The general task model allows two additional elements inside the task body (<section> and <steps-informal>); it also allows multiple instances and varying order for the <prereq>, <context>, and <section> elements. The strict task model maintains the order and cardinality of the DITA 1.0 and 1.1 <taskbody> content model. This strict task is implemented with a constraint module.

See the *taskbody* description for additional details about the two models and for a description of impacts to DITA 1.1 documents.

Specialization hierarchy

The <task> element is specialized from the <topic> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of @id, given below), *B.2 Architectural attribute group* on page 190, and *outputclass* on page 196.

@id (REQUIRED)

An anchor point. This ID is usually required as part of the @href or @conref syntax when cross referencing or reusing content within the topic; it also enables <topicref> elements in DITA maps to optionally reference a specific topic within a DITA document. This attribute is defined with the XML Data Type ID.

Example

```
<task id="sqlj">
 <title>Creating an SQLJ file</title>
 <taskbody>
  <context>Once you have set up SQLJ, you need to create a new SQLJ file.
  </context>
  <steps>
   <step><cmd>Open...</cmd></step>
  </steps>
 </taskbody>
</task>
```

3.3.2 <taskbody>

The task body contains information specific to completing a task, such as prerequisites, contextual information, and steps.

Usage information

Note: Beginning with DITA 1.2, the DTD and Schema packages distributed by OASIS contain two task models. The general task model allows two additional elements inside the task body (<section> and <steps-informal>); it also allows multiple instances and varying order for the <prereq>, <context>, and <section> elements. The strict task model maintains the order and cardinality of the DITA 1.0 and 1.1 <taskbody> content model. This strict task is implemented with a constraint module.

Authors that use the default task DTD or Schema provided by OASIS will continue to see the strict task model when upgrading to DITA 1.2 or DITA 1.3. Authors wishing to use the general task model will need to migrate their DITA 1.1 documents to reference the general task document type shell.

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DITA document type shells that include the task module as-is, or that specialize the <task> element without specializing <taskbody>, will also need to include the strict taskbody constraint module in order to maintain the order and cardinality of prior DITA versions.

Task specializations that specialize the <taskbody> element will not be affected by the new model, although they can be updated as needed to take advantage of the new elements.

Specialization hierarchy

The <taskbody> element is specialized from the <topic> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), @base from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See *3.3.1 task* on page 41.

3.3.3 <prereq>

Prerequisites are things that users must know or preliminary tasks that users must perform before starting the current task.

Formatting expectations

Implementations *MAY* render prerequisite links from the related-links section together with the content of the <prereq> element.

Specialization hierarchy

The <prereq> element is specialized from the section element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<task id="sqlj">
 <title>Creating an SQLJ file</title>
 <taskbody>
  <prereq>Before creating a new SQLJ file, you must
  log in to the SQLJ server.</prereq>
 </taskbody>
</task>
```


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3.3.4 <context>

The task context provides background information that helps users understand the purpose of the task and what they will gain by completing it.

Usage information

This section should be brief and does not replace or recreate a concept topic on the same subject, although the context section might include some conceptual information.

Specialization hierarchy

The `<context>` element is specialized from the `<section>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<task id="sqlj">
<title>Creating an SQLJ file</title>
<taskbody>
<context>Once you have set up SQLJ, you need to create a
new SQLJ file.</context>
</taskbody>
</task>
```

3.3.5 <steps>

Steps are a series of actions that are conducted in a specific order and manner.

Formatting expectations

Steps with only a single step might be rendered as a paragraph rather than as a list. Two or more steps should typically be rendered as an ordered list. If all of the contained steps are simple (that is, have no more than a `<cmd>` element each) then the step list should default to compact. Otherwise it should be rendered as expanded (with blank lines between each step).

Specialization hierarchy

The `<steps>` element is specialized from the `<ol>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<task id="sqlj">
<title>Creating an SQLJ file</title>
 <taskbody>
 <context>Once you have set up SQLJ, you need to create a new SQLJ file.</context>
  <steps>
   <step>
```


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```
    <cmd>In a text editor, create a new file.</cmd>
   </step>
   <step>
    <cmd>Enter the first query statement.</cmd>
   </step>
  </steps>
 </taskbody>
</task>
```

3.3.6 <steps-informal>

Informal steps allow authors to describe procedural task information without placing each step in an individual container element, which is a requirement of the related `<steps>` and `<steps-unordered>` elements.

Usage information

For example, `<steps-informal>` might contain a paragraph that describes more than one step in a single sentence, or it might contain sentences that mix steps together with information about the steps.

Specialization hierarchy

The `<steps-informal>` element is specialized from the `<section>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<steps-informal>
 <p>Put the soil in the container any old way. It doesn't really matter how
you do it as long as it is at least 12 cm deep. Once the soil is in place,
water appropriately and wait.</p>
</steps-informal>
```

3.3.7 <steps-unordered>

Like the `<steps>` element, the `<steps-unordered>` element provides the main content of a task topic, but particularly for cases in which the order of steps might vary from one situation to another. At least one `<step>` element is required inside the `<steps-unordered>` element.

Formatting expectations

Steps with only a single step might be rendered as a paragraph rather than as a list. Two or more steps should typically be rendered as an unordered list. If all of the contained steps are simple (that is, have no more than a `<cmd>` element each) then the step list should default to compact. Otherwise it should be rendered as expanded (with blank lines between each step).

Specialization hierarchy

The `<steps-unordered>` element is specialized from the `<ul>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

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Example

```
<task id="sqlj">
 <title>Creating an SQLJ file</title>
 <taskbody>
  <context>Once you have set up SQLJ, you need to create a new SQLJ file.</context>
  <steps-unordered>
   <step><cmd>In a text editor, create a new file.</cmd></step>
  </steps-unordered>
 </taskbody>
</task>
```

3.3.8 <step>

A step represents an action that a user must follow to accomplish a task.

Usage information

Each step in a task must contain a command `<cmd>` element which describes the particular action the user must do to accomplish the overall task. Beginning with DITA 1.2, it is possible to place a `<note>` element before the command in order to notify the user of dangers or other important information about the step. The `<step>` element can also contain additional optional information about the step, such as sub-steps, a list of choices, or result information.

Specialization hierarchy

The `<step>` element is specialized from the `<li>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

importance

Describes whether the current `<step>` or `<substep>` is optional or required. Output processors might highlight steps that are optional or required. Allowed values are "optional", "required", or *-dita-use-conref-target* .

Example

```
<task id="sqlj">
<title>Creating an SQLJ file</title>
<taskbody>
<context>Once you have set up SQLJ, you need to create a new SQLJ file.</context>
<steps>
<step>
 <cmd>Select <menucascade><uicontrol>File</uicontrol><uicontrol>New</uicontrol></
menucascade>.</cmd>
 <info>New files are created with default values based on a standard template.</info>
</step>
</steps>
</taskbody>
</task>
```


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3.3.9 <stepsection>

The <stepsection> element provides expository text before a <step> element. Although the element is specialized from <li> and has the same content model as a list item, it is not intended to represent a step in a task.

Formatting expectations

DITA applications which render <stepsection> elements among the <step> elements must provide a way to number the steps without numbering the <stepsection> elements (although this does not need to be the only or default presentation).

Specialization hierarchy

The <stepsection> element is specialized from the <li> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<steps>
  <step><cmd>Get out a bowl</cmd></step>
  <stepsection>The next two steps are very important!</stepsection>
  <step><cmd>Put on safety gloves</cmd></step>
  <step><cmd>Put on goggles</cmd></step>
  <step><cmd>Pour milk and cereal into the bowl</cmd></step>
</steps>
```

The sample above would typically be rendered with "Get out a bowl" as step number one, "Put on safety gloves" as step number two, and "The next two steps are very important!" as an unnumbered item in between the first two items.

3.3.10 <cmd>

A command provides an instruction for completing a step.

Usage information

A command provides the active voice instruction to the user for completing the step, and should not be more than one sentence. If the step needs additional explanation, place the explanation in an <info> element following the <cmd>.

Specialization hierarchy

The <cmd> element is specialized from the <ph> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

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Example

```
<step><cmd>In a text editor, create a new file.</cmd></step>
```

3.3.11 <info>

The <info> element provides additional information about the step.

Specialization hierarchy

The <info> element is specialized from the <itemgroup> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<step><cmd>Type a name for the widget.</cmd>
<info>The widget name is created when you configure the widget
in the Widget Configuration Dialog. It is not an actual class
name or file name, just a label for the widget as used in this
application.</info>
</step>
```

3.3.12 <substeps>

Sub-steps allow authors to break a step down into a series of separate actions.

Usage information

The <substeps> element should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of <substep> nesting, you should probably rewrite the task to simplify it.

Specialization hierarchy

The <substeps> element is specialized from the <ol> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<substeps>
<substep><cmd>Hold pencil in a steady, level position.</cmd></substep>
<substep><cmd>Turn handle until resistance diminishes.</cmd>
<info>Note: initially, it might be somewhat difficult to turn the handle if
pencil has never been sharpened before.</info></substep>
<substep><cmd>To determine if pencil is sharp, remove it from the sharpener
and inspect the tip.</cmd></substep>
</substeps>
```


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3.3.13 <substep>

A <substep> element has the same structure as a <step>, except that it does not allow lists of choices or sub-steps within it, in order to prevent unlimited nesting of steps.

Specialization hierarchy

The <substep> element is specialized from the <li> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of @importance, given below) and *outputclass* on page 196.

importance

Describes whether the current <step> or <substep> is optional or required. Output processors might highlight steps that are optional or required. Allowed values are "optional", "required", or *-dita-use-conref-target* .

Example

See *3.3.12 substeps* on page 48.

3.3.14 <stepxmp>

A step example illustrates a step of a task.

Usage information

The step example can be a couple of words, or an entire paragraph.

Specialization hierarchy

The <stepxmp> element is specialized from the <itemgroup> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<step>
 <cmd>Type a name for the widget.</cmd>
 <stepxmp>For example, <userinput>mywidget</userinput></stepxmp>
</step>
```

3.3.15 <choicetable>

The <choicetable> element contains a series of optional choices available within a step of a task.

Formatting expectations

By default, processors highlight the choice column using bold. To change the highlighting, set the @keycol attribute of the <choicetable> tag to 0 (zero).

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Specialization hierarchy

The <choicetable> element is specialized from the <simpletable> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, *B.10 Simpletable attribute group* on page 197 (with a narrowed definition of @keycol, given below), *outputclass* on page 196, and *spectitle* on page 197.

@keycol

On this element, the default value for @keycol is "1". Otherwise, the attribute is the same as defined in *B.10 Simpletable attribute group* on page 197.

Example

```
<step><cmd>Then this</cmd>
  <substeps>
    <substep importance="optional"><cmd>which is done by doing this</cmd></substep>
    <substep importance="required"><cmd>and then this.</cmd></substep>
  </substeps>
  <choicetable>
    <chhead>
      <choptionhd>Do something</choptionhd>
      <chdeschd>Or Else this</chdeschd>
    </chhead>
    <chrow><choption>Do this</choption>
      <chdesc>and this will happen</chdesc></chrow>
    <chrow><choption>Do that</choption>
      <chdesc>and that will happen</chdesc></chrow>
  </choicetable>
</step>
```

3.3.16 <chhead>

A choice table heading provides heading text for a choice table.

Processing expectations

The heading in <chhead> overrides any default headings for the <choicetable> (such as "Option" and "Description").

Specialization hierarchy

The <chhead> element is specialized from the <sthead> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<step><cmd>Then this</cmd>
  <substeps>
    <substep importance="optional"><cmd>which is done by doing this</cmd></substep>
    <substep importance="required"><cmd>and then this.</cmd></substep>
  </substeps>
  <choicetable>
```


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```
    <chhead>
      <choptionhd>Do something</choptionhd>
      <chdeschd>Or Else this</chdeschd>
    </chhead>
    <chrow><choption>Do this</choption>
      <chdesc>and this will happen</chdesc></chrow>
    <chrow><choption>Do that</choption>
      <chdesc>and that will happen</chdesc></chrow>
  </choicetable>
</step>
```

3.3.17 <choptionhd>

The <choptionhd> element provides a specific label for the list of options from which a user chooses in order to accomplish a step.

Processing expectations

The default label for the list of options could be a localized translation of **Option**.

Specialization hierarchy

The <choptionhd> element is specialized from the <stentry> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

Example

```
<step><cmd>Then this</cmd>
 <choicetable>
  <chhead>
   <choptionhd>Do something</choptionhd>
   <chdeschd>And this happens</chdeschd>
  </chhead>
  <chrow><choption>Do this</choption>
     <chdesc>and this will happen</chdesc></chrow>
  <chrow><choption>Do that</choption>
     <chdesc>and that will happen</chdesc></chrow>
 </choicetable>
</step>
```

3.3.18 <chdeschd>

A choice description heading provides a specific label for the list of descriptions of options from which a user chooses in order to accomplish a step.

Processing expectations

The default label for the list of options could be a localized translation of **Description**.

Specialization hierarchy

The <chdeschd> element is specialized from the <stentry> element in the topic module.

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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

Example

```
<step><cmd>Then this</cmd>
  <choicetable>
    <chhead>
      <choptionhd>Do something</choptionhd>
      <chdeschd>Or Else this</chdeschd>
    </chhead>
    <chrow><choption>Do this</choption>
      <chdesc>and this will happen</chdesc></chrow>
    <chrow><choption>Do that</choption>
      <chdesc>and that will happen</chdesc></chrow>
  </choicetable>
</step>
```

3.3.19 <chrow>

The <chrow> element is a container inside the <choicetable> element. The <chrow> element contains both a <choption> and <chdesc> element as a pair.

Specialization hierarchy

The <strow> element is specialized from the <strow> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<step><cmd>Then this</cmd>
  <substeps>
    <substep importance="optional"><cmd>which is done by doing this</cmd></substep>
    <substep importance="required"><cmd>and then this.</cmd></substep>
  </substeps>
  <choicetable>
    <chhead>
      <choptionhd>Do something</choptionhd>
      <chdeschd>Or Else this</chdeschd>
    </chhead>
    <chrow><choption>Do this</choption>
      <chdesc>and this will happen</chdesc></chrow>
    <chrow><choption>Do that</choption>
      <chdesc>and that will happen</chdesc></chrow>
  </choicetable>
</step>
```


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3.3.20 <choption>

A choice option describes an option in a choice table that a user could choose to accomplish a step of a task.

Usage information

In a user interface, for example, this might be the name of radio button.

Specialization hierarchy

The `<choption>` element is specialized from the `<stentry>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

Example

```
<step><cmd>Then this</cmd>
  <choicetable>
    <chhead>
      <choptionhd>Do something</choptionhd>
      <chdeschd>And this happens</chdeschd>
    </chhead>
    <chrow><b><choption></b>Do this<b></choption></b>
      <chdesc>and this will happen</chdesc></chrow>
    <chrow><b><choption></b>Do that<b></choption></b>
      <chdesc>and that will happen</chdesc></chrow>
  </choicetable>
</step>
```

3.3.21 <chdesc>

The `<chdesc>` element is a description of an option from a choice table that a user chooses while performing a step to accomplish a task. It explains why the user would choose that option and might explain the result of the choice when it is not immediately obvious.

Specialization hierarchy

The `<chdesc>` element is specialized from the `<stentry>` element in the topic modules.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

Example

```
<step><cmd>Then this</cmd>
  <substeps>
    <substep importance="optional"><cmd>which is done by doing this</cmd></substep>
    <substep importance="required"><cmd>and then this.</cmd></substep>
  </substeps>
  <choicetable>
    <chrow><choption>Do this</choption>
      <b><chdesc></b>and this will happen<b></chdesc></b></chrow>
    <chrow><choption>Do that</choption>
      <b><chdesc></b>and that will happen<b></chdesc></b></chrow>
```


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```
  </choicetable>
</step>
```

3.3.22 <choices>

Choices contain a list of choices for users that need to choose one of several actions while performing the steps of a task.

Specialization hierarchy

The `<choices>` element is specialized from the `<ul>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<step><cmd>Choose a server.</cmd>
<choices>
<choice>If you have a remote server you want to test on, type the
IP address or hostname of the server here.</choice>
<choice>If you want to do local testing, just type localhost.</choice>
</choices>
</step>
```

3.3.23 <choice>

Each `<choice>` element describes one way that the user could perform the current step.

Specialization hierarchy

The `<choice>` element is specialized from the `<li>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<step><cmd>Choose a server.</cmd>
  <choices>
    <choice>If you have a remote server you want to test on, type the
IP address or hostname of the server here.</choice>
    <choice>If you want to do local testing, just type localhost.</choice>
  </choices>
</step>
```


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3.3.24 <steptroubleshooting>

Step troubleshooting element provides information that is designed to help remedy the situation when a step does not complete as expected.

Usage information

In particular, this element can be used to explain how users can recover when the results of a step do not match those listed in the `<stepresult>` element.

Tip: Do not use `<note type="trouble">` inside of `<steptroubleshooting>` because its meaning there would be ambiguous.

Specialization hierarchy

The `<steptroubleshooting>` element is specialized from the `<itemgroup>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

The following example illustrates using the `<steptroubleshooting>` element with a single action:

```
<step>
  <cmd>Select <uicontrol>Perform system backup</uicontrol></cmd>
  <stepresult>
    <p>The message <systemoutput>Backup successfully
      completed</systemoutput> displays.</p>
  </stepresult>
  <steptroubleshooting>
    <p>If an error message displays during the system backup,
      locate the error ID in the <cite>Troubleshooting Guide
      </cite> and follow the instructions there.</p>
  </steptroubleshooting>
</step>
```

The following example illustrates using the `<steptroubleshooting>` element with several actions:

```
<step>
  <cmd>Log in to the system</cmd>
  <stepresult>
    <p>The <wintitle>Welcome</wintitle> screen appears.</p>
  </stepresult>
  <steptroubleshooting>
    <p>If the <wintitle>Welcome</wintitle> screen does not
      appear, try one or more of the following:
      <ul>
        <li>Verify that the user name was entered correctly</li>
        <li>Verify that the password was entered correctly</li>
        <li>Confirm that the maintenance contract is still
          active</li>
      </ul>
    </p>
  </steptroubleshooting>
</step>
```


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3.3.25 <stepresult>

The <stepresult> element provides information on the expected outcome of a step.

Usage information

If a user interface is being documented, the outcome could describe a dialog box opening or a progress indicator appearing. Step results are useful to assure a user that they are on track, but they should not be used for every step as this quickly becomes tedious.

Specialization hierarchy

The <stepresult> element is specialized from the <itemgroup> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<steps>
 <step>
  <cmd importance="urgent">Once you have the water place it in the microwave.</cmd>
  <info>Try not to spill any, as water is very wet.</info>
 </step>
 <step importance="required">
  <cmd>Start the Microwave.</cmd>
  <stepxmp>As an example, push the <b>Start</b> button</stepxmp>
  <stepresult>The Microwave starts running. You should hear it humming.</stepresult>
 </step>
 <step importance="optional">
  <cmd>Once the water begins to boil, stop the Microwave.</cmd>
 </step>
</steps>
```

3.3.26 <tutorialinfo>

Tutorial information contains additional information that is useful when the task is part of a tutorial.

Specialization hierarchy

The <tutorialinfo> element is specialized from the <itemgroup> element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<steps>
  <step>
    <cmd>Do this</cmd>
    <tutorialinfo>In your editor, open the first element and click on
      the dialog.</tutorialinfo>
  </step>
  <step>
    <cmd>Do that</cmd>
    <tutorialinfo>Move the framulator into the foobar box.</tutorialinfo>
```


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```
  </step>
</steps>
```

3.3.27 <tasktroubleshooting>

Task troubleshooting information is information that is designed to help users remedy the situation when a task does not complete as expected.

Usage information

In particular, the `<tasktroubleshooting>` element can be used to explain how users can recover when the results of a task do not match those listed in the `<result>` element. The troubleshooting remedy typically contains one or more actions for solving a problem. For complex remedies, link to another task.

Specialization hierarchy

The `<tasktroubleshooting>` element is specialized from the `<section>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<steps>
  <step><cmd>...</cmd></step>
  <!-- ... more steps ... -->
</steps>
<result>
  <p>The <uicontrol>User Type</uicontrol> menu updates to
    display the new types you added.</p>
</result>
<tasktroubleshooting>
  <p>If the User Type menu does not display the additions, try
    one or more of the following:
    <ul>
      <li>Refresh the page</li>
      <li>Verify that <wintitle>Add Types</wintitle> is not
        still open; if so, go to it and press
        <uicontrol>OK</uicontrol>.</li>
    </ul>
  </p>
</tasktroubleshooting>
<example>
  <p>For example, you could also do xyz.</p>
</example>
<postreq>
  <p>Once completed, you need to consider abc.</p>
</postreq>
```

Tip: Do not use `<note type="trouble">` inside of `<tasktroubleshooting>` because its meaning there would be ambiguous.

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3.3.28 <result>

A result describes the expected outcome for the task as a whole.

Usage information

Note: To describe the outcome of a specific step, use the `<stepresult>` element instead.

Specialization hierarchy

The `<result>` element is specialized from the `<section>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<task id="sqlj">
  <title>Creating an SQLJ file</title>
  <taskbody>
    <context>Once you have set up SQLJ, you need to create a new SQLJ file.
      You cannot add #sqlj statements directly in the Source pane of the
      Workbench.</context>
    <result>The SQLJ file is successfully created when the SQLJ server
      displays the "File Created" dialog.</result>
  </taskbody>
</task>
```

3.3.29 <postreq>

Post-requisites are steps or tasks that the users should perform after completing the current task.

Usage information

The `<postreq>` element often is supported by hyperlinks to the next task or tasks.

Specialization hierarchy

The `<postreq>` element is specialized from the `<section>` element in the topic module.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

```
<postreq>Notify the proctor upon completing this self-test.</postreq>
```

3.4 Reference elements

Reference topics describe factual material about a subject, such as the commands in a programming language. This format is also suitable for bibliographies, catalogues, the list of ingredients for recipes, and similar

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collections of structured descriptive prose. For more details on when to use reference and other information types, please refer to the DITA architectural specification.

3.4.1 <reference>

The `<reference>` element defines a top-level container for a reference topic. Reference topics document programming constructs or facts about a product. Examples of reference topics include (but are not limited to) product specifications, environmental specifications, equipment lists, parts lists, required tools, language elements, class descriptions, commands, functions, and API information. All of these topics provide quick access to facts, but they do not contain a deeper explanation of related concepts or tasks.

Reference topics have the same high-level structure as any other topic type, with a title, short description, and body. Within the body, reference topics are typically organized into one or more sections, property lists, and tables. The reference topic type provides general rules that apply to all kinds of reference information, using elements like `<refsyn>` for syntax or signatures, and `<properties>` for lists of properties and values

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/topic reference/reference

Example

```
<reference id="refexample">
  <title>A reference topic</title>
  <refbody>
    <refsyn>Describe command or api syntax here, possibly
using synph or syntax elements markup for explicit
definition of syntax or prototype construction.</refsyn>
    <section><title>Some section title</title></section>
    <properties>
      <property>
        <proptype>type</proptype>
        <propvalue>value</propvalue>
        <propdesc>description</propdesc>
      </property>
    </properties>
  </refbody>
</reference>
```

Figure 5: Reference topic for software material

The following information could apply to an entire set of maintenance procedures, each of which would link to this topic.

```
<reference id="requiredTools">
  <title>Tools required to maintain a big machine</title>
  <refbody>
    <section>
      <title>Small tools</title>
      <ul>
        <li>Hard hat</li>
        <li>Hammer</li>
        <li>Nail</li>
        <li>Metal polish</li>
        <!-- .... -->
      </ul>
    </section>
    <section>
      <title>Expensive tools</title>
```


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```
      ...
    </section>
  </refbody>
</reference>
```

Figure 6: Reference topic for hardware maintenance

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@id`, given below), *B.2 Architectural attribute group* on page 190, and *outputclass* on page 196.

@id (REQUIRED)

An anchor point. This ID is usually required as part of the `@href` or `@conref` syntax when cross referencing or reusing content within the topic; it also enables `<topicref>` elements in DITA maps to optionally reference a specific topic within a DITA document. This attribute is defined with the XML Data Type ID.

3.4.2 <refbody>

The `<refbody>` element is a container for the main content of the reference topic. Reference topics limit the body structure to tables (both simple and standard), property lists, syntax sections, and generic sections and examples, in any sequence or number.

Reference topics represent the kind of information that users typically consult to understand programming objects, configuration file options, recipes, terminological descriptions, product or other specifications, equipment or parts lists, or any other set of factual information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/body reference/refbody

Example

See *3.4.1 reference* on page 59.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

3.4.3 <refbodydiv>

The `<refbodydiv>` element is similar to the `<bodydiv>` element in that it provides an informal container for content that might be grouped within a reference. Reference topics place many restrictions on their content compared to generic topics; the `<refbodydiv>` element maintains these restrictions by only allowing elements that are already available within the body of a reference. There are no additional semantics attached to the `<refbodydiv>` element; it is purely a grouping element provided to help organize content.

The `<refbodydiv>` element can nest itself, which means that it can be specialized to create structured information within a specialized reference topic. Another common use case for the `<refbodydiv>` element is to

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group a sequence of related elements for reuse, so that another topic can reference the entire set with a single `@conref` attribute.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/bodydiv reference/refbodydiv

Example

```
<reference id="sample-refbodydiv" xml:lang="en">
 <title>Sample for refbody</title>
 <shortdesc>This shows how refbodydiv might be used.</shortdesc>
 <refbody>
  <refbodydiv id="widget1">
   <section>This is one part of the sample</section>
   <refsyn>Syntax for this part</refsyn>
  </refbodydiv>
  <refbodydiv id="widget2">
    <section>This is another part of the sample</section>
    <refsyn>Syntax for this part</refsyn>
  </refbodydiv>
 </refbody>
</reference>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.4.4 <refsyn>

The `<refsyn>` element is a special section inside a reference topic. The section often contains syntax or signature content (for example, the calling syntax for a command-line utility or an API signature). The `<refsyn>` contains a brief, possibly diagrammatic description of the subject's interface or high-level structure.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/section reference/refsyn

Example

```
<reference id="MyAPI">
  <title>MyAPI</title>
  <refbody>
    <refsyn>Describe the MyAPI syntax here, possibly
using synph or syntax elements markup for explicit
definition of syntax or prototype construction.</refsyn>
```


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```
  </refbody>
</reference>
```

Figure 7: Reference topic for software material

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *spectitle* on page 197.

3.4.5 <properties>

The `<properties>` element gives a list of properties for the subject of the current topic, for example whether a class is public or protected. Each property can include the type, value, and a description. The typical rendering is usually in a table-like format. To represent multiple values for a single type, create additional property elements and use only the `<propvalue>` element (and `<propdesc>` when needed) for each successive value.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/simpletable reference/properties

Example

```
<properties>
  <prophead>
      <proptypehd>Visual Element</proptypehd>
      <propvaluehd>Value</propvaluehd>
      <propdeschd>Implication</propdeschd>
  </prophead>
  <property>
    <proptype>color</proptype>
    <propvalue>red</propvalue>
    <propdesc>depicts anger</propdesc>
  </property>
  <property>
    <propvalue>green</propvalue>
    <propdesc>depicts permission</propdesc>
  </property>
</properties>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, *B.10 Simpletable attribute group* on page 197, *outputclass* on page 196, and *spectitle* on page 197.

3.4.6 <prophead>

The `<prophead>` element supports headings for the `<properties>` element.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

- topic/sthead reference/prophead

Example

See the example in *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.4.7 <proptypehd>

The `<proptypehd>` element supports headings for the type column of a properties table.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/stentry reference/proptypehd

Example

See the example in *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

3.4.8 <propvaluehd>

The `<propvaluehd>` element supports headings for the value column of a properties table.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/stentry reference/propvaluehd

Example

See the example in *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

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3.4.9 <propdeschd>

The <propdeschd> element supports headings for the description column of a properties table.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/stentry reference/propdeschd

Example

See the example in *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

3.4.10 <property>

The <property> element represents a single property of the current topic's subject. For example, if the current reference topic describes a programming class, the property might show that the class is protected rather than public. The <property> element generally appears together with a series of other properties; it contains three optional elements to provide a type, value, or description of the property.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/strow reference/property

Example

See *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.4.11 <proptype>

The <proptype> element describes the type of the property.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/stentry reference/proptype

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Example

See *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

3.4.12 <propvalue>

The `<propvalue>` element indicates one or more values for the current property type. Values can be placed in separate `<property>` elements if they need separate descriptions. The `<proptype>` element need not be repeated.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/stentry reference/propvalue

Example

See *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

3.4.13 <propdesc>

The `<propdesc>` element is used to provide a short description of the property type and its listed values.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/stentry reference/propdesc

Example

See *3.4.5 properties* on page 62.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *specentry* on page 197.

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3.5 Troubleshooting elements

[►] Troubleshooting topics document corrective action such as troubleshooting or alarm clearing. [◄]

3.5.1 <troubleshooting>

The `<troubleshooting>` element is the top-level element for a troubleshooting topic. Troubleshooting topics begin with a description of a condition that the reader might want to correct, followed by one or more cause-remedy pairs. Each cause-remedy pair is a potential solution to the trouble described in the condition.

Usage information

Troubleshooting topics represent the kind of information that users typically consult to fix a problem.

Specialization hierarchy

- topic/topic troubleshooting/troubleshooting

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@id`, given below), *B.2 Architectural attribute group* on page 190, and *outputclass* on page 196.

@id (REQUIRED)

An anchor point. This ID is usually required as part of the `@href` or `@conref` syntax when cross referencing or reusing content within the topic; it also enables `<topicref>` elements in DITA maps to optionally reference a specific topic within a DITA document. This attribute is defined with the XML Data Type ID.

Example

```
<troubleshooting id="resolve" xml:lang="en-us" >
  <title>E247 - Memory fault has occured</title>
  <shortdesc>The system has detected a problem in memory.
  </shortdesc>
  <troublebody>
    <condition>
      <p>The fault indicator flashes on the front panel, and
        the error log contains the following message:
        <msgph>E247 - Memory fault has occured</msgph></p>
    </condition>
    <troubleSolution>
      <cause>
        <p>Transient memory fault.</p>
      </cause>
      <remedy>
        <responsibleParty>System administrator
        </responsibleParty>
        <steps>
          <step>
            <cmd>Reset the alarm</cmd>
          </step>
          <step>
            <cmd>Monitor the system periodically to see whether
               the alarm recurs</cmd>
          </step>
        </steps>
      </remedy>
    </troubleSolution>
    <troubleSolution>
      <cause>
        <p>Recurring memory fault indicates possible problem
```


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```
          with the system memory board. Reseating the board
          may fix the problem.</p>
      </cause>
      <remedy>
        <responsibleParty>Maintenance technician
        </responsibleParty>
        <steps
          conref="BoardReseat.dita#BoardReseatg/steps">
          <step>
            <cmd/>
          </step>
        </steps>
      </remedy>
    </troubleSolution>
    <troubleSolution>
      <cause>
        <p>Reseating the system memory board did not fix
          the problem. Replacing the board may fix the
          problem.</p>
      </cause>
      <remedy>
        <responsibleParty>Maintenance technician
        </responsibleParty>
        <steps
          conref="BoardReplace.dita#BoardReplac/steps">
          <step>
            <cmd/>
          </step>
        </steps>
      </remedy>
    </troubleSolution>
  </troublebody>
</troubleshooting>
```

3.5.2 <troublebody>

The `<troublebody>` element is a container for the main content of the troubleshooting topic.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/body troubleshooting/troublebody

Example

See *3.5.1 troubleshooting* on page 66.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.5.3 <condition>

The `<condition>` element describes a state that the troubleshooting topic is intended to remedy. This information helps the user decide whether a troubleshooting topic might contain an applicable remedy for a problem. This section should add to or clarify information that is in the tile or short description of the troubleshooting topic.

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Usage information

Specialization hierarchy

- topic/section troubleshooting/condition

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *spectitle* on page 197.

Example

See *3.5.1 troubleshooting* on page 66.

3.5.4 <troubleSolution>

The `<troubleSolution>` element is a container element for cause and remedy information. The cause might be omitted if it is implicit or if the remedy is not associated with a cause. The remedy might be omitted if there is no known remedy for the cause.

Usage information

Specialization hierarchy

- topic/section troubleshooting/troubleSolution

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

See *3.5.1 troubleshooting* on page 66.

3.5.5 <cause>

The `<cause>` element describes a potential source of the problem that is described in the `<condition>` element, the topic `<title>` element, or the `<shortdesc>` element. This information should be brief; if it is not possible to make the information brief, this might be a sign that a full troubleshooting topic is needed

Usage information

Specialization hierarchy

- topic/section troubleshooting/cause

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *spectitle* on page 197.

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Example

See *3.5.1 troubleshooting* on page 66.

3.5.6 <remedy>

The `<remedy>` element contains steps that are a potential solution for the problem described in the `<condition>` element, the topic `<title>` element, or the `<shortdesc>` element. Typically, a `<remedy>` is preceded by a `<cause>`.

Usage information

Specialization hierarchy

- topic/section troubleshooting/remedy

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *spectitle* on page 197.

Example

See *3.5.1 troubleshooting* on page 66.

3.5.7 <responsibleParty>

Use the `<responsibleParty>` element to identify the party who is responsible for performing a remedy procedure.

Usage information

Specialization hierarchy

- topic/p troubleshooting/responsibleParty

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

See *3.5.1 troubleshooting* on page 66.

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3.6 Glossary elements

Glossary elements include those elements designed to specify terms and their definitions, as well as elements that are designed to group, reference, or otherwise make use of information in the glossentry topic.

3.6.1 Glossentry elements

Use the glossary entry topic type to define glossary terms. Each glossentry topic should define a single sense of a term.

3.6.1.1 <glossentry>

The `<glossentry>` element defines a single sense of a glossary term. Glossary entries for different term senses can be reused independently of one another.

Usage information

Formatting expectations

Processing expectations

The recommended (but not required) book processing is to sort and group glossary entries based on the localized term so a back-of-the-book glossary can contain a collated list of terms with the definitions of the individual senses of each term indented under the term. The glossary can have a different organization in different languages depending on the translation of the terms. One possible implementation of a glossary in online processing is to associate a hotspot for mentions of terms in `<term>` elements and display the definition on hover or click.

Specialization hierarchy

- topic/topic concept/concept glossentry/glossentry

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@id`, given below), *B.2 Architectural attribute group* on page 190, and *outputclass* on page 196.

@id (REQUIRED)

An anchor point. This ID is usually required as part of the `@href` or `@conref` syntax when cross referencing or reusing content within the topic; it also enables `<topicref>` elements in DITA maps to optionally reference a specific topic within a DITA document. This attribute is defined with the XML Data Type ID.

Example

```
<glossentry id="usbfd">
          <glossterm>USB flash drive</glossterm>
          <glossdef>A small portable drive.</glossdef>
          <glossBody>
          <glossPartOfSpeech value="noun"/>
          <glossUsage>Do not provide in upper case (as in "USB Flash
          Drive") because that suggests a trademark.</glossUsage>
          <glossAlt>
          <glossAcronym>UFD</glossAcronym>
          <glossUsage>Explain the acronym on first occurrence.</glossUsage>
          </glossAlt>
          <glossAlt id="memoryStick">
          <glossSynonym>memory stick</glossSynonym>
          <glossUsage>This is a colloquial term.</glossUsage>
          </glossAlt>
```


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```
<glossAlt>
<glossAbbreviation>stick</glossAbbreviation>
<glossStatus value="prohibited"/>
<glossUsage>This is too colloquial.</glossUsage>
<glossAlternateFor href="#usbfd/memoryStick"/>
</glossAlt>
<glossAlt>
<glossAbbreviation>flash</glossAbbreviation>
<glossStatus value="prohibited"/>
<glossUsage>This short form is ambiguous.</glossUsage>
</glossAlt>
</glossBody>
</glossentry>
```

Figure 8: The glossary term "USB flash drive" with additional information

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.2 <glossterm>

The `<glossterm>` element specifies the preferred term that is associated with a definition of a sense. If the same term has multiple senses, create a separate `<glossentry>` topic for each sense.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/title concept/title glossentry/glossterm

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in `<glossentry>`.

Content models

See appendix for information about this element in OASIS document type shells.

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3.6.1.3 <glossdef>

The `<glossdef>` element specifies the definition of one sense of a term. If a term has multiple senses, create a separate `<glossentry>` topic to define each sense.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/abstract concept/abstract glossentry/glossdef

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in `<glossentry>`.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.4 <glossAbbreviation>

The `<glossAbbreviation>` element provides an abbreviated form of the term that is contained in a `<glossterm>` element.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/title concept/title glossentry/glossAbbreviation

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in `<glossentry>`.

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Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.5 <glossAcronym>

The <glossAcronym> element defines an acronym for the term that is defined in the <glossterm> element.

Usage information

This element can be used with the <abbreviated-form> element to display an expanded version of an acronym the first time that acronym appears in a set of text. See <abbreviated-form> for information on how the two elements interact.

Note: Several issues arise when acronyms are translated into other languages. For example, an acronym in one language might not have an equivalent in another language. When acronyms are first displayed, some languages will display the expanded form first followed by the acronym in parenthesis, while other languages do the reverse. For some acronyms, a translation might need to render both the original and the translated version of the acronym. For all of these reasons, DITA allows an author or translator to control what is presented to a reader by using the <glossSurfaceForm> element, which will often accompany the <glossAcronym>. The <abbreviated-form> topic contains information on how the <glossSurfaceForm> and <glossAcronym> elements affect references to the primary term.

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/title concept/title glossentry/glossAcronym

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), @base from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in <glossentry>.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.6 <glossAlt>

The <glossAlt> element contains a variant term for the preferred term. The variant should have the same meaning as the term in the <glossterm> element; the variant is simply another way to refer to the same term. There might be many ways to refer to a term; each variant is placed in its own <glossAlt> element. The <glossUsage> element can be used within <glossAlt> to indicate when use of the alternate term is appropriate.

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Usage information

Note: A list of alternative terms is specific to the language, so the translation of a <glossentry> topic might result in empty elements within a <glossAlt> container.

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/section concept/section glossentry/glossAlt

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

Example

See the example in <glossentry>.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.7 <glossAlternateFor>

The <glossAlternateFor> element indicates when a variant term has a relationship to another variant term in addition to the preferred term.

Usage information

The <glossAlternateFor> element is available inside the <glossAlt> element, which is a container that provides a variant for the primary <glossentry> term. In some cases, the variant might also be an alternate for another term. In the example below, the abbreviation "stick" is a variant of the primary term (USB flash drive). The <glossAlternateFor> element indicates that "stick" is also a variant of the synonym "memory stick".

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/xref concept/xref glossentry/glossAlternateFor

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), @keyref , and *outputclass* on page 196.

@href

References a term for which the current variant is an alternate (in addition to the primary term of this <glossentry> topic). The reference will often be to another <glossAlt> element within the same

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<glossentry> topic, indicating that the current variant is an alternate for both the primary term and the referenced alternate term. See *B.13.1 The href attribute* on page 198 for details on syntax.

Example

See the example in <glossentry>.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.8 <glossBody>

The <glossBody> element is used to provide details about a glossary term (such as part of speech or additional forms of the term).

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/body concept/conbody glossentry/glossBody

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), @base from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in <glossentry>.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.9 <glossPartOfSpeech>

The <glossPartOfSpeech> element identifies the part of speech for the preferred and alternate terms. Alternate terms must have the same part of speech as the preferred term, because all terms in the <glossentry> topic designate the same subject.

Usage information

If validation is required for parts of speech, use a subject scheme to set up controlled values for the @value attribute. Alternatively, processing rules can be used to validate the values. This avoids the need to hard code values in the XML grammar files, which would limit extension and would make values difficult to change for different languages.

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Formatting expectations

Processing expectations

Specialization hierarchy

- topic/data concept/data glossentry/glossPartOfSpeech

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194 (with a narrowed definition of `@value`, given below), *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

@value
The part of speech for the term or terms.

Example

See the example in `<glossentry>`.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.10 <glossProperty>

The `<glossProperty>` element is a specialization of the `<data>` element. You can use it to specify additional details about the preferred term or its subject, for example, the gender of a noun.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/data concept/data glossentry/glossProperty

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

Example

```
<glossentry id="algorithm" xml:lang="es-es">
  <glossterm>El algoritmo</glossterm>
  <glossdef>Un algoritmo define un método de calcular un resultado.</glossdef>
  <glossBody>
    <glossPartOfSpeech value="noun"/>
    <glossProperty name="gender" value="masculine"/>
```


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```
  </glossBody>
</glossentry>
```

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.11 <glossScopeNote>

The `<glossScopeNote>` element contains a clarification of the subject that is designated by the `<glossterm>`, such as examples of included or excluded companies or products. For instance, a scope note for "Linux" might explain that the term doe not apply to UNIX products; it might give examples of Linux products that are included as well as UNIX products that are excluded.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/note concept/note glossentry/glossScopeNote

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, *spectitle* on page 197, and the attributes defined below.

@type

Defines the type of a note. For example, if the note is a tip, the word **Tip** might be used to draw the reader's attention to it. Note that this differs from the `@type` attribute on many other DITA elements. See *B.13.9 The type attribute* on page 209 for detailed information on supported values and processing implications. Available values are note, tip, fastpath, restriction, important, remember, attention, caution, notice, danger, warning, trouble, other, and *-dita-use-conref-target* .

@othertype

Indicates an alternate note type, when the type is not available in the `@type` attribute value list. This value is used as the user-provided note title when the `@type` attribute value is set to "other".

Example

```
<glossentry id="linuxOS" xml:lang="en-us">
  <glossterm>Linux Operating System</glossterm>
  <glossdef>An operating system based on the kernel created by Linus Torvald.</glossdef>
  <glossBody>
    <glossPartOfSpeech value="noun"/>
    <glossScopeNote>Doesn't apply to UNIX products that bundle other
kernels. Also, doesn't apply to the Linux Open Source Project that
work on Linux distributions but, instead, only to the distributions
themselves.  Examples include RedHat, SuSE, and Ubuntu. </glossScopeNote>
  </glossBody>
</glossentry>
```

Content models

See appendix for information about this element in OASIS document type shells.

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3.6.1.12 <glossShortForm>

The `<glossShortForm>` element provides a shorter alternative to the primary term that is specified in the `<glossterm>` element.

Usage information

Note: Any list of alternative terms is, of course, specific to the language, so translation of a `<glossentry>` topic might result in an empty `<glossShortForm>` element if there is no equivalent in the target language.

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/title concept/title glossentry/glossShortForm

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

```
<glossentry id="www">
  <glossterm>World Wide Web</glossterm>
  <glossdef>A collection of documents available through the Internet.</glossdef>
  <glossBody>
    <glossPartOfSpeech value="noun"/>
    <glossAlt>
      <glossShortForm>the Web</glossShortForm>
    </glossAlt>
  </glossBody>
</glossentry>
```

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.13 <glossStatus>

The `<glossStatus>` element identifies the usage status of a preferred or alternate term. If the status isn't specified, the `<glossterm>` provides a preferred term and an alternate term provides an allowed term.

Usage information

If validation is required for status values, use a subject scheme to set up controlled values for the `@value` attribute. Alternatively, processing rules can be used to validate the values.

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Formatting expectations

Processing expectations

Specialization hierarchy

- topic/data concept/data glossentry/glossStatus

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194 (with a narrowed definition of `@value`, given below), *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

@value
The usage status of the term or alternate term.

Example

See the example in `<glossentry>`.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.14 <glossSurfaceForm>

The `<glossSurfaceForm>` element specifies an unambiguous presentation of the `<glossterm>` that might combine multiple forms. The surface form is suitable to introduce the term in new contexts.

Usage information

The `<glossSurfaceForm>` element is most often used for terms that also specify the `<glossAcronym>` element. In that context, the `<glossSurfaceForm>` element contains the term in a manner that introduces both the term and the acronym, so that later references to the term can be replaced with the acronym alone. See the `<abbreviated-form>` element for a full description of how the surface form is used together with acronyms.

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/p concept/p glossentry/glossSurfaceForm

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

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Example

The following topic defines the term "Anti-lock Braking System". Within the topic, the <glossSurfaceForm> element provides a version of the term that combines both the primary term and the acronym. This allows references to the topic from <abbreviated-form> to different versions of the term in different contexts.

```
<glossentry id="abs">
  <glossterm>Anti-lock Braking System</glossterm>
  <glossBody>
    <glossSurfaceForm>Anti-lock Braking System (ABS)</glossSurfaceForm>
    <glossAlt>
      <glossAcronym>ABS</glossAcronym>
    </glossAlt>
  </glossBody>
</glossentry>
```

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.15 <glossSymbol>

The <glossSymbol> element identifies a standard image that is associated with the subject of the <glossterm> element.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/image concept/image glossentry/glossSymbol

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, @keyref , and the attributes defined below.

@href

Provides a reference to the image. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications.

@scope

The @scope attribute identifies the closeness of the relationship between the current document and the target resource. Allowable values are local, peer, external, and *-dita-use-conref-target* . See *B.13.11 The scope attribute* on page 212 for more information on values.

@height

Indicates the vertical dimension for the resulting image display. If necessary, the image *SHOULD* be scaled to the specified size. The value of this attribute is a real number (expressed in decimal notation) optionally followed by a unit of measure from the set of pc, pt, px, in, cm, mm, em (picas, points, pixels, inches, centimeters, millimeters, and ems respectively). The default unit is px (pixels). Possible values include: "5", "5in", and "10.5cm". If a height value is specified and no width value is specified, the width *SHOULD* be scaled by the same factor as the height. If both a height value and width value are specified, implementations *MAY* ignore one of the two values when they are unable to scale to each direction using different factors.

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@width

Indicates the horizontal dimension for the resulting image display. If necessary, the image *SHOULD* be scaled to the specified size. The value of this attribute is a real number (expressed in decimal notation) optionally followed by a unit of measure from the set of pc, pt, px, in, cm, mm, em (picas, points, pixels, inches, centimeters, millimeters, and ems respectively). The default unit is px (pixels). Possible values include: "5", "5in", and "10.5cm". If a width value is specified and no height value is specified, the height *SHOULD* be scaled by the same factor as the width. If both a height value and width value are specified, implementations *MAY* ignore one of the two values when they are unable to scale to each direction using different factors.

@align

Controls the horizontal alignment of an image when placement is specified as "break". Common values include left, right, and center.

@scale

Specifies a percentage as an unsigned integer by which to scale the image in the absence of any specified image height or width; a value of 100 implies that the image should be presented at its intrinsic size. If a value has been specified for this image's `@height` or `@width` attribute (or both), the `@scale` attribute is ignored.

It is an error if the value of this attribute is not an unsigned integer. In this case, the implementation might give an error message and might recover by ignoring this attribute.

@scalefit

Allow an image to be scaled up or down to fit within available space. Allowable values are yes, no, and *-dita-use-conref-target* . If, for a given image, any one of `@height`, `@width`, or `@scale` is specified, those attributes determine the graphic size, and any setting of `@scalefit` is ignored. If none of those attributes are specified and `scalefit="yes"`, then the image is scaled (the same factor in both dimensions) so that the graphic will just fit within the available height or width (whichever is more constraining).

The available width would be the prevailing column (or table cell) width - that is, the width a paragraph of text would have if the graphic were a paragraph instead. The available height is implementation dependent, but if feasible, it is suggested to be the page (or table cell) height or some other reasonable value.

@placement

Indicates whether an image should be displayed inline or separated from the surrounding text. The default is inline. Allowable values are: inline, break, or and *-dita-use-conref-target* .

@longdescref (DEPRECATED)

A reference to a textual description of the graphic or object. This attribute supports creating accessible content. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. For examples of how this attribute is used in output, see this topic on *long descriptions*. NOTE: This attribute is deprecated in favor of the *longdescref* subelement to this element.

Example

```
<glossentry id="atlanticpuffin">
  <glossterm>Atlantic Puffin</glossterm>
  <glossdef>A sea bird that lives in the atlantic</glossdef>
  <glossBody>
    <glossSymbol href="puffinicon.jpg" scope="local">
      <alt>Atlantic puffin icon</alt>
    </glossSymbol>
  </glossBody>
</glossentry>
```


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Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.16 <glossSynonym>

The `<glossSynonym>` element provides a term that is a synonym of the primary value in the `<glossterm>` element.

Usage information

Note: A list of synonyms is specific to the language, so translation of a `<glossentry>` topic might result in an empty `<glossSynonym>` element.

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/title concept/title glossentry/glossSynonym

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group), `@base` from the *B.1.2 Metadata attribute group* on page 188, and *outputclass* on page 196.

Example

See the example in `<glossentry>`.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.1.17 <glossUsage>

The `<glossUsage>` element provides information about the correct use of a term, such as where or how it can be used.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/note concept/note glossentry/glossUsage

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, *spectitle* on page 197, and the attributes defined below.

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@type

Defines the type of a note. For example, if the note is a tip, the word **Tip** might be used to draw the reader's attention to it. Note that this differs from the `@type` attribute on many other DITA elements. See *B.13.9 The type attribute* on page 209 for detailed information on supported values and processing implications. Available values are note, tip, fastpath, restriction, important, remember, attention, caution, notice, danger, warning, trouble, other, and *-dita-use-conref-target* .

@othertype

Indicates an alternate note type, when the type is not available in the `@type` attribute value list. This value is used as the user-provided note title when the `@type` attribute value is set to "other".

Example

See the example in `<glossentry>`.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.2 Glossary related elements

Elements related to the glossary specialization are not defined as part of the glossary topic type, but are often used in conjunction with those elements.

3.6.2.1 <abbreviated-form>

The `<abbreviated-form>` element represents a reference to a term that might appear in an abbreviated form (often an acronym). The long and short forms of the term are generally defined in a `<glossentry>` topic. Processors display the referenced term when rendering an `<abbreviated-form>` element.

Usage information

Formatting expectations

The `<abbreviated-form>` element is intended to reference a `<glossentry>` topic that contains both a term and an abbreviated form of that term. The topic might also provide a surface form that differs from the original term. The full term or surface form is rendered in introductory contexts where the term might be unfamiliar to a reader or in other contexts where a precise term is appropriate. In other contexts a processor substitutes the abbreviated form of the term. Note that the definition of an introductory context will differ for every deliverable format.

For instance, a process composing a book deliverable might emit the surface form of a term on the first reference to the `<glossentry>` topic within the book or for every reference within a copyright or a warranty-related warning. A process generating an online page might emit the surface form as a hover tooltip on every instance of the term.

The following rules determine how to render an `<abbreviated-form>` element. As described, the definition of "introductory context" will vary based on the rendered format and processor.

1. If the referenced topic is not a `<glossentry>` topic (or a specialization of `<glossentry>`), the title of the topic *SHOULD* be displayed.
2. Otherwise, if `<abbreviated-form>` is located in an introductory context, and the referenced topic contains a non-empty `<glossSurfaceForm>` element, processors *SHOULD* render the contents of the `<glossSurfaceForm>` element from the referenced `<glossentry>` topic.

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3. Otherwise, if <abbreviated-form> is located in an introductory context, processors *SHOULD* render the contents of the <glossterm> element from the referenced <glossentry> topic.
4. Otherwise (in non-introductory contexts), if the referenced <glossentry> topic contains a non-empty <glossAcronym> element, processors *SHOULD* render the abbreviated form of the term by displaying the contents of the <glossAcronym> element from the referenced <glossentry> topic.
5. Otherwise, processors *SHOULD* render the contents of the <glossterm> element from the referenced <glossentry> topic.

For instance, if an <abbreviated-form> element with the attribute keyref="abs" provided the first occurrence of the ABS term within a book, the sentence could be rendered as follows:

"The Anti-lock Brake System (ABS) will prevent the car from skidding in adverse weather conditions."

If the ABS term had appeared previously within the book, the same sentence could instead be rendered as follows:

"The ABS will prevent the car from skidding in adverse weather conditions."

Processing expectations

Specialization hierarchy

+ topic/term abbrev-d/abbreviated-form

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

Example

The term and acronym can be defined as follows, in a <glossentry> topic. Note that the @id attribute of the topic does not need to match the term or acronym.

```
<glossentry id="abs-definition">
  <glossterm>Anti-lock Braking System</glossterm>
  <glossBody>
    <glossSurfaceForm>Anti-lock Braking System (ABS)</glossSurfaceForm>
    <glossAlt>
      <glossAcronym>ABS</glossAcronym>
    </glossAlt>
  </glossBody>
</glossentry>
```

Note that there are three important elements for the purposes of rendering the <abbreviated-form> element.

- The <glossSurfaceForm> element defines the term as it should be displayed in an introductory context.
- The <glossAcronym> element defines the acronym associated with this term.
- The <glossterm> element provides a fallback version of the term, which will be displayed in situations where the preferred representation is unavailable.

The <glossentry> topic will be added to a map in the following manner. Again, the key (in this case "abs") does not need to match the term or acronym value.

```
<glossref keys="abs" href="antilock.dita"/>
```


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An author who wants to reference this topic can do so by using the <abbreviated-form> element. The @keyref attribute references the value defined on the @keys attribute above.

```
<section>An <abbreviated-form keyref="abs"/> helps a
driver to stop. For this reason many find an
<abbreviated-form keyref="abs"/> useful.
</section>
```

When rendered, the introductory usage of "abs" will display the surface form of the referenced term, while the later uses will display the acronym, as demonstrated here.

An Anti-lock Braking System (ABS) helps a driver to stop. For this reason many find an ABS useful.

Content models

See appendix for information about this element in OASIS document type shells.

3.6.2.2 <glossref>

The <glossref> element is a convenience element in maps for creating a reference to a glossary topic. It has a required @keys attribute, which forces the author to create a key by which inline terms can reference their definition. For example, when <glossentry> topics are used to define acronyms, this reminds authors to create a key which <abbreviated-form> elements can use to reference the short and expanded versions of that acronym.

Usage information

Note that the key value does not need to match the target term or acronym. In fact, using a more qualified value for the @keyref will reduce conflicts in situations where the same term or acronym might resolve in many ways. For example, an information set could use “cars.abs” as the key for the term Anti-lock Braking System, and “ship.abs” to refer to the term American Bureau of Shipping.

Formatting expectations

Processing expectations

Specialization hierarchy

+ map/topicref glossref-d/glossref

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.12 Topicref element attributes group* on page 197, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), *outputclass* on page 196, @keyref , and the attributes defined below. This element also uses @processing-role, @collection-type, @locktitle, @chunk, and @search from *B.3 Attributes common to many map elements* on page 190; this element also uses narrowed definitions of @linking, @toc, and @print from *B.3 Attributes common to many map elements* on page 190, given below.

@href

A pointer to a glossary definition, typically a <glossentry> topic. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to content other than DITA topics should use the @format attribute to identify the kind of resource being referenced.

@keys (REQUIRED)

Associates one or more space-delimited keys with the target of the glossary reference. See *B.13.2 The keys attribute* on page 199 for information on using the attribute.

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@toc

Specifies whether a topic appears in the table of contents (TOC). If the value is not specified locally, but is specified on an ancestor, the value will cascade from the closest ancestor. On this element the default value for `@toc` is "no". See *B.3 Attributes common to many map elements* on page 190 for a complete definition of `@toc`.

@print

Specifies whether the topic should be included in a print-specific rendition, such as PDF. On this element the value defaults to "no". Allowable values are:

yes

Include the topic in the print-oriented file.

no

Do not include the topic in a print-oriented file.

printonly

Only include the topic when rendering the DITA content in a print-oriented context; the topic is not appropriate for other contexts, such as when rendering as HTML.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

Note: Beginning with DITA 1.3, the `@print` attribute is deprecated. It is replaced with a conditional processing attribute: `@deliveryTarget`. See `@deliveryTarget` for more details.

@linking

Defines some specific linking characteristics of a glossary topic's current location in the map. On this element the value defaults to "none" in order to keep individual glossary entries from creating links based on their location in the map. Allowable values are:

targetonly

A topic can only be linked to and cannot link to other topics.

sourceonly

A topic cannot be linked to but can link to other topics.

normal

A topic can be linked to and can link to other topics. Use this to override the linking value of a parent topic.

none

A topic cannot be linked to or link to other topics.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

Example

```
<map>
  <!-- ... -->
  <topicref href="car-maintenance.dita"/>
  <!-- ... -->
  <glossref keys="cars.abs" href="antiLockBrake.dita"/>
  <!-- ... key declarations for other referenced acronyms ... -->
</map>
```

Content models

See appendix for information about this element in OASIS document type shells.

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3.6.2.3 <glossgroup>

The `<glossgroup>` is a specialized topic that can contain multiple `<glossentry>` topics within a single document.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- topic/topic concept/concept glossgroup/glossgroup

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@id`, given below), *B.2 Architectural attribute group* on page 190, and *outputclass* on page 196.

@id (REQUIRED)

An anchor point. This ID is usually required as part of the `@href` or `@conref` syntax when cross referencing or reusing content within the topic; it also enables `<topicref>` elements in DITA maps to optionally reference a specific topic within a DITA document. This attribute is defined with the XML Data Type ID.

Example

```
<glossgroup id="things" xml:lang="en">
  <title>Some terms</title>
  <glossentry id="bicycle">
    <glossterm>bicycle</glossterm>
    <glossdef>Human powered mode of transport
       with two wheels</glossdef>
  </glossentry>
  <glossentry id="fruitbat">
    <glossterm>Fruit bat</glossterm>
    <glossdef>A bat which likes fruit</glossdef>
  </glossentry>
</glossgroup>
```

Content models

See appendix for information about this element in OASIS document type shells.

3.7 Bookmap elements

Elements in the bookmap section are used to organize DITA content into book form. They include elements for dividing up content, such as chapter and appendix, as well as metadata specific to publishing.

3.7.1 Bookmap content elements

The Bookmap specialization of ditamap supports standard book production for collections of DITA topics.

The OASIS document type for the bookmap specialization also includes substantial book metadata for describing authors, based on the eXtensible Name and Address Language, or xNAL.

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3.7.1.1 <bookmap>

The <bookmap> element is a map specialization used to describe the relationships among a set of DITA topics intended to be configured as a traditional book. Bookmaps consist of references to topics organized as book content. The topic references therefore are labeled according to the book components they point to, such as book title, front matter, chapter, and appendix.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/map bookmap/bookmap

Example

```
<bookmap xml:lang="en-us">
  <booktitle>
    <booklibrary>Books about stuff</booklibrary>
    <mainbooktitle>A book about one thing</mainbooktitle>
  </booktitle>
  <bookmeta>
    <bookrights>
      <copyrfirst><year>1994</year></copyrfirst>
      <copyrlast><year>2006</year></copyrlast>
      <bookowner>OASIS</bookowner>
    </bookrights>
  </bookmeta>
  <frontmatter>
    <booklists>
      <toc/>
      <figurelist/>
      <tablelist/>
    </booklists>
    <bookabstract href="MyBookAbstract.dita"/>
    <preface href="preface.dita"></preface>
  </frontmatter>
  <chapter href="chapter1.dita">
    <topicref href="subchap1.dita"></topicref>
  </chapter>
  <chapter href="chapter2.dita">
    <topicref href="subchap2.dita"></topicref>
  </chapter>
  <appendix href="app1.dita">
    <topicref href="insideApp1.dita"></topicref>
  </appendix>
  <appendix href="app2.dita">
    <topicref href="insideApp2.dita"></topicref>
  </appendix>
  <backmatter>
    <amendments href="updatesToTheBook.dita"/>
    <booklists>
      <trademarklist href="listoftrademarks.dita"/>
      <indexlist/>
    </booklists>
  </backmatter>
</bookmap>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of @id, given below), *B.3 Attributes common to many map elements* on page 190, *B.2*

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Architectural attribute group on page 190, *outputclass* on page 196, and the attributes defined below. This element also uses `@type`, `@scope`, and `@format` from *B.8 Link relationship attribute group* on page 196.

@id

Allows an ID to be specified for the map. Note that maps do not require IDs (unlike topics), and the map ID is not included in references to elements within a map. This attribute is defined with the XML Data Type ID.

@anchorref

Identifies a location within another map document where this map will be anchored. Resolution of the map is deferred until the final step in the delivery of any rendered content. For example, `anchorref="map1.ditamap#a1"` allows the map with `@anchorref` to be pulled into the location of the anchor point "a1" inside `map1.ditamap` when `map1.ditamap` is rendered for delivery.

3.7.1.2 <abbrevlist>

The `<abbrevlist>` element references a list of abbreviations. It indicates to the processing software that the author wants an abbreviation list generated at the particular location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/abbrevlist

Example

```
<abbrevlist href="abbrev.dita"/>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no `@href` is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, `<toc href="toc.dita"/>` references a topic which contains a manual table of contents, while `<toc/>` indicates that a processor should generate the table of contents.

3.7.1.3 <amendments>

The `<amendments>` element references a list of amendments or updates to the book. It indicates to the processing software that the author wants an amendments list generated at the particular location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/amendments

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Example

See the example for *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.4 <appendices>

The `<appendices>` element is an optional wrapper for `<appendix>` elements within a bookmap.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/appendices

Example

```
<appendices toc="yes" print="no">
  <topicmeta>
    <navtitle>Appendices</navtitle>
  </topicmeta>
  <appendix href="return-codes.dita"/>
  <appendix href="messages.dita"/>
  <appendix href="extra-info.dita"/>
</appendices>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

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3.7.1.5 <appendix>

The <appendix> element references a topic as a appendix within a book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/appendix

Example

Appendix topics that include subtopics:

```
<appendix href="intro.dita">
 <topicref href="caring.dita"/>
 <topicref href="feeding.dita"/>
</appendix>
<appendix href="setup.dita">
 <topicref href="prereq.dita"/>
 <topicref href="download.dita"/>
</appendix>
```

Appendix that references a ditamap of content:

```
<appendix href="intro.ditamap" format="ditamap"/>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), *B.3 Attributes common to many map elements* on page 190, @navtitle and @copy-to from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and @keyref .

@href

A pointer to the resource represented by the <topicref>. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the @format attribute to identify the kind of resource being referenced.

3.7.1.6 <backmatter>

The <backmatter> element contains the material that follows the main body of a document and any appendices. It might include items such as a colophon, legal notices, and various types of book lists such as a glossary or an index.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/backmatter

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Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.3 Attributes common to many map elements* on page 190, *outputclass* on page 196, `@keyref` , and `@query` from *B.12 Topicref element attributes group* on page 197. This element also uses `@scope`, `@format`, and `@type` from *B.8 Link relationship attribute group* on page 196.

3.7.1.7 <bibliolist>

The `<bibliolist>` element references a topic containing a list of bibliographic entries within the book. It indicates to the processing software that the author wants a bibliography, containing links to related books, articles, published papers, or other types of material, generated at the particular location. If no `@href` attribute is specified on the `<bibliolist>` element, an external processor might generate a list of bibliographic entries at this location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/bibliolist

Example

```
<bookmap>
  <!-- ... -->
  <backmatter>
    <amendments href="updatesToTheBook.dita"/>
    <booklists>
      <trademarklist href="listoftrademarks.dita"/>
      <bibliolist href="bibliography.dita"/>
      <indexlist/>
    </booklists>
  </backmatter>
</bookmap>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no `@href` is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, `<toc href="toc.dita"/>` references a topic which contains a manual table of contents, while `<toc/>` indicates that a processor should generate the table of contents.

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3.7.1.8 <bookabstract>

The <bookabstract> element references a topic used within a bookmap as a brief summary of book content, generally output as part of the book's front matter. It is used to help the reader quickly evaluate the book's purpose.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/bookabstract

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), *B.3 Attributes common to many map elements* on page 190, @navtitle and @copy-to from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and @keyref .

@href

A pointer to the resource represented by the <topicref>. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the @format attribute to identify the kind of resource being referenced.

3.7.1.9 <booklibrary>

The <booklibrary> element contains the library information for a book. Library entries contain information about the series, library, or collection of documents to which the book belongs.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/booklibrary

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

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3.7.1.10 <booklist>

The <booklist> element is a general purpose element, designed for use in specializations, that references a topic or map containing a list of items within the book. For example, it could be used to reference a topic that contains a list of authors for the book. When a more specific element is already available, such as <tablelist> for a list of tables, use that element instead.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/booklist

Example

In this case the <booklist> element references a topic that contains a list of authors of topics in this document.

```
<booklists>
  <toc/>
  <tablelist/>
  <booklist href="authors.dita" navtitle="List of authors"/>
</booklists>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), *B.3 Attributes common to many map elements* on page 190, @navtitle and @copy-to from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and @keyref .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no @href is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, <toc href="toc.dita"/> references a topic which contains a manual table of contents, while <toc/> indicates that a processor should generate the table of contents.

3.7.1.11 <booklists>

The <booklists> element references lists of various kinds within the book. For example, it can be used within <frontmatter> to reference a <toc>, <tablelist>, and <figurelist>, or within <backmatter> to reference a <glossarylist>, <indexlist>, and <abbrevlist>. It indicates to the processing software that the author wants the lists generated at the <booklists> location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/booklists

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Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.3 Attributes common to many map elements* on page 190 (with a narrowed definition of `@chunk` given below), *B.12 Topicref element attributes group* on page 197, and `@keyref` . This element also uses `@scope`, `@format`, and `@type` from *B.8 Link relationship attribute group* on page 196.

3.7.1.12 <booktitle>

The `<booktitle>` element contains the title information for a book, including the library title, main title, subtitle, and other titles (as required).

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/title bookmap/booktitle

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (without the Metadata attribute group) and *outputclass* on page 196.

3.7.1.13 <booktitlealt>

The `<booktitlealt>` element contains the alternative title, subtitle, or short title for a book. It can be specialized into a specific element for those or other purposes.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/booktitlealt

Example

```
<bookmap>
  <booktitle>
    <mainbooktitle>This is my big and fancy book</mainbooktitle>
    <booktitlealt>Shorter title</booktitlealt>
  </booktitle>
  <!-- ... -->
</bookmap>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.1.14 <chapter>

The `<chapter>` element references a topic or map as a chapter within a book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/chapter

Example

Chapter topics that include subtopics:

```
<chapter href="intro.dita">
 <topicref href="caring.dita"/>
 <topicref href="feeding.dita"/>
</chapter>
<chapter href="setup.dita">
 <topicref href="prereq.dita"/>
 <topicref href="download.dita"/>
</chapter>
```

Chapter that references a ditamap of content:

```
<chapter href="intro.ditamap" format="ditamap"/>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.15 <colophon>

The `<colophon>` element references a topic describing how this document was created. In publishing, a colophon describes details of the production of a book. This information generally includes the typefaces used, and often the names of their designers; the paper, ink and details of the binding materials and methods might also receive mention. In the case of technical books, a colophon might specify the software used to prepare the text and diagrams for publication. The `<colophon>` can appear in the `<frontmatter>` or `<backmatter>`.

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Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/colophon

Example

```
<bookmap>
  <title>Sample book</title>
  <!-- ... -->
  <backmatter>
    <colophon href="ProdNot.dita" navtitle="Production Notes"/>
  </backmatter>
</bookmap>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.16 <dedication>

The `<dedication>` element references a topic containing a dedication for the book, such as to a person or group.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/dedication

Example

```
<frontmatter>
  <dedication href="dtm.dita"
                  navtitle="Dedicated to Mother"/>
</frontmatter>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.17 <draftintro>

The `<draftintro>` element references a topic used as an introduction to the draft of this book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/draftintro

Example

```
<frontmatter>
  <draftintro href="introducing.dita"
              navtitle="Introduction to this draft"/>
</frontmatter>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.18 <figurelist>

The `<figurelist>` element references a topic containing a list of figures in the book. It indicates to the processing software that the author wants a list of figures generated at the particular location. If no `@href`

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attribute is specified on the <figurelist> element, an external processormight generate a list of figures at this location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/figurelist

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), *B.3 Attributes common to many map elements* on page 190, @navtitle and @copy-to from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and @keyref .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no @href is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, <toc href="toc.dita"/> references a topic which contains a manual table of contents, while <toc/> indicates that a processor should generate the table of contents.

3.7.1.19 <frontmatter>

The <frontmatter> element contains the material that precedes the main body of a document. It might include items such as an abstract, a preface, and various types of book lists such as a <toc>, <tablelist>, or <figurelist>.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/frontmatter

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.3 Attributes common to many map elements* on page 190, *outputclass* on page 196, @keyref , and @query from *B.12 Topicref element attributes group* on page 197. This element also uses @scope, @format, and @type from *B.8 Link relationship attribute group* on page 196.

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3.7.1.20 <glossarylist>

The `<glossarylist>` element references a list of glossary entries within the book. It indicates to the processing software that the author wants a glossary list generated at the particular location.

Usage information

Formatting expectations

Processing expectations

Specialization hierarchy

- map/topicref bookmap/glossarylist

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no `@href` is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, `<toc href="toc.dita"/>` references a topic which contains a manual table of contents, while `<toc/>` indicates that a processor should generate the table of contents.

Example

See *3.7.1.6 backmatter* on page 91.

Content models

See appendix for information about this element in OASIS document type shells.

3.7.1.21 <indexlist>

The `<indexlist>` element indicates to the processing software that the author wants an index at the particular location. If no `@href` attribute is specified on the `<indexlist>` element, an external processor might generate an index at this location. If the `@href` attribute references a topic or map, that topic or map contains a manually created index.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/indexlist

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Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no `@href` is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, `<toc href="toc.dita"/>` references a topic which contains a manual table of contents, while `<toc/>` indicates that a processor should generate the table of contents.

3.7.1.22 <mainbooktitle>

The `<mainbooktitle>` element contains the primary title information for a book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/mainbooktitle

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.1.23 <notices>

The `<notices>` element references a topic containing special notice information, for example, legal notices about supplementary copyrights and trademarks associated with the book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/notices

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Example

This example references a notices topic that contains legal content.

```
<backmatter>
  <notices href="notices.dita" navtitle="Legal notices"/>
  <booklists>
    <!-- Index, glossary, or other lists -->
  </booklists>
</backmatter>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.24 <part>

The `<part>` element references a part topic or a map that references part topics for the book. Use `<part>` to divide a document's chapters into logical groupings. For example, in a document that contains both guide and reference information, you can define two parts, one containing the guide information and the other containing the reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/part

Example

Part topics that include chapters and subtopics:

```
<part href="guide.dita">
 <chapter href="intro.dita">
  <topicref href="caring.dita"/>
  <topicref href="feeding.dita"/>
 </chapter>
 <chapter href="setup.dita">
  <topicref href="prereq.dita"/>
  <topicref href="download.dita"/>
 </chapter>
</part>
<part href="ref.dita">
 <chapter href="commands.dita">
  <topicref href="care.dita"/>
  <topicref href="feed.dita"/>
 </chapter>
```


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```
 <chapter href="apis.dita">
  <topicref href="acare.dita"/>
  <topicref href="afeed.dita"/>
 </chapter>
</part>
```

Parts that reference ditamaps of content:

```
<part href="intro.ditamap" format="ditamap"/>
<part href="guide.ditamap" format="ditamap"/>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

3.7.1.25 <preface>

The `<preface>` element references a topic or map containing introductory information about a book, such as the purpose and structure of the document.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/preface

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

A pointer to the resource represented by the `<topicref>`. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

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3.7.1.26 <tablelist>

The <tablelist> element references a topic that contains a list of tables within the book. It indicates to the processing software that the author wants a list of tables generated at the particular location. If no @href attribute is specified on the <tablelist> element, an external processor might generate a list of tables at this location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/tablelist

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of @href, given below), *B.3 Attributes common to many map elements* on page 190, @navtitle and @copy-to from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and @keyref .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no @href is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, <toc href="toc.dita"/> references a topic which contains a manual table of contents, while <toc/> indicates that a processor should generate the table of contents.

3.7.1.27 <toc>

The <toc> element indicates to the processing software that the author wants a table of contents generated at the particular location. If no @href attribute is specified on the <toc> element, an external processor might generate a table of contents at this location. If the @href attribute references a topic or map, that topic or map contains a manually created table of contents.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/toc

Example

See the example in *3.7.1.1 bookmap* on page 88.

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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no `@href` is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, `<toc href="toc.dita"/>` references a topic which contains a manual table of contents, while `<toc/>` indicates that a processor should generate the table of contents.

3.7.1.28 <trademarklist>

The `<trademarklist>` element references a topic that contains a list of trademarks within the book. It indicates to the processing software that the author wants a list of trademarks generated at the particular location. If no `@href` attribute is specified on the `<trademarklist>` element, an external processor might generate a list of trademarks at this location.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicref bookmap/trademarklist

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition of `@href`, given below), *B.3 Attributes common to many map elements* on page 190, `@navtitle` and `@copy-to` from *B.12 Topicref element attributes group* on page 197, *outputclass* on page 196, and `@keyref` .

@href

References a manual listing for the current element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications. If no `@href` is specified, processors can choose to generate an appropriate listing for this element. All of the book listings operate in a similar manner; for example, `<toc href="toc.dita"/>` references a topic which contains a manual table of contents, while `<toc/>` indicates that a processor should generate the table of contents.

3.7.2 Bookmap metadata elements

The Bookmap specialization of ditamap supports standard book production for collections of DITA topics. This section contains the metadata elements used by bookmap to store book-related metadata.

Note: The OASIS document type for the bookmap specialization includes the xNAL domain specialization for describing the author or authors of a document. All elements that appear in that domain (the

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<authorinformation> element and all of its descendants) are described in the xNAL domain section, rather than in this bookmap metadata section.

3.7.2.1 <bookmeta>

The <bookmeta> element contains information about the book that is not considered book content, such as copyright information, author information, and any classifications.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- map/topicmeta bookmap/bookmeta

Example

In this example:

- The <authorinformation> contains the content for a reader's comment form; the <maintainer> element references that author information to create the reader comment form.
- The <prodinfo> element contains the book's product information. This includes the product name, and the version, release, and modification information.
- The <bookid> element contains the book's form number and part number information. The <maintainer> element contains information about the current maintainer of the book; it might reference the <authorinformation> element to provide detailed information about an author that is also the current maintainer.
- The <bookrights> element contains the book's copyright information.

This example makes heavy use of <authorinformation>, which is a domain element that OASIS delivers only with the <bookmap> specialization. However, other DTD, XSD Schema, or RELAX NG implementations of <bookmap> may not include the domain with <authorinformation>; likewise, <authorinformation> may be included in other document types.

```
<bookmeta>
  <authorinformation id="rcf">
    <organizationinfo>
      <namedetails>
        <organizationnamedetails>
          <organizationname>IBM</organizationname>
        </organizationnamedetails>
      </namedetails>
      <addressdetails>ATTN: Dept XYZ<thoroughfare>3905 37th Street NW</thoroughfare>
        <locality>Rochester, MN<postalcode>55901</postalcode></locality>
        <country>USA</country>
      </addressdetails>
      <contactnumbers>
        <contactnumber type="telephone">800-555-1212</contactnumber>
        <contactnumber type="fax">800-555-1213</contactnumber>
      </contactnumbers>
      <emailaddresses><emailaddress>fred@example.com</emailaddress></emailaddresses>
      <urls><url>http://www.example.com/fred</url></urls>
   </organizationinfo>
  </authorinformation>
  <prodinfo>
    <prodname>My Product</prodname>
    <vrmlist><vrm release="Release 1" version="Version 3"/></vrmlist>
  </prodinfo>
  <bookid>
    <bookpartno>99F9999</bookpartno>
    <booknumber>SC00-0000-00</booknumber>
    <maintainer href="#rcf"></maintainer>
```


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```
  </bookid>
  <bookrights>
    <copyrfirst><year>1996</year></copyrfirst>
    <copyrlast><year>2006</year></copyrlast>
    <bookowner><organization>OASIS</organization></bookowner>
  </bookrights>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and the attribute defined below.

@lockmeta

By default, metadata in the map supplements or overrides metadata that is specified at the topic level, unless the `@lockmeta` attribute of the `<topicmeta>` element is set to "no". Allowable values are "yes", "no", and *B.13.5.1 Using the -dita-use-conref-target value* on page 200.

3.7.2.2 <approved>

The `<approved>` element contains information about when and by whom the book was approved during its publication history.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/approved

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.3 <bookchangehistory>

The `<bookchangehistory>` element contains information about the history of the book's creation and publishing lifecycle, including who wrote, reviewed, edited, and tested the book. It also specifies when these events took place.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookchangehistory

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Example

```
<bookmeta>
  <bookchangehistory>
    <reviewed>
      <started><year>2007</year><month>10</month></started>
      <completed><year>2008</year><month>01</month></completed>
    </reviewed>
    <edited>
      <person>Joe T. Editor</person>
      <completed><year>2008</year><month>03</month><day>15</day></completed>
    </edited>
    <tested>
      <organization>OASIS</organization>
      <completed><year>2008</year><month>04</month></completed>
    </tested>
    <approved>
      <organization>OASIS</organization>
      <completed><year>2008</year><month>05</month></completed>
    </approved>
    <bookevent>
      <bookeventtype name="Type of Major Event"/>
      <completed><year>2009</year></completed>
    </bookevent>
  </bookchangehistory>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.4 <bookevent>

The `<bookevent>` element indicates a general event in the publication history of a book. This is an appropriate element for specialization if the current set of specific book event types does not meet your needs. If an element already exists to describe a specific type of event, such as `<reviewed>`, `<edited>`, or `<approved>`, use that element instead.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookevent

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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3.7.2.5 <bookeventtype>

The <bookeventtype> element indicates the specific nature of a <bookevent>, such as updated, indexed, or deprecated. The required @name attribute indicates the event's type.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookeventtype

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.6 <bookid>

The <bookid> element contains the publisher's identification information for the book, such as part number, edition number and ISBN number.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookid

Example

See *3.7.2.1 bookmeta* on page 106.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.7 <booknumber>

The <booknumber> element contains the book's form number, such as SC21-1920.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/booknumber

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Example

In this example, "99F1234" is a part number assigned to this book by the publisher, while SC21-1234-00 is a number that identifies this book among all of the author's works.

```
<bookmeta>
 <bookid>
  <bookpartno>99F1234</bookpartno>
  <booknumber>SC21-1234-00</booknumber>
 </bookid>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.8 <bookowner>

The `<bookowner>` element specifies the owner of the book's copyright.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookowner

Example

```
<bookmeta>
  <bookrights>
    <copyrfirst><year>1994</year></copyrfirst>
    <copyrlast><year>2006</year></copyrlast>
    <bookowner>
      <organization>Example Corporation</organization>
    </bookowner>
  </bookrights>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.9 <bookpartno>

The `<bookpartno>` element contains the book's part number, such as 99F1234. A publisher might use a number like this one to identify a book for tracking purposes.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

- topic/data bookmap/bookpartno

Example

In this example, "99F1234" is a part number assigned to this book by the publisher, while SC21-1234-00 is a number that identifies this book among all of the author's works.

```
<bookmeta>
 <bookid>
  <bookpartno>99F1234</bookpartno>
  <booknumber>SC21-1234-00</booknumber>
 </bookid>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.10 <bookrestriction>

The `<bookrestriction>` element indicates whether the book is classified or restricted in some way. The `@value` attribute indicates any restrictions on the use of the material, such as declaring the information confidential or for licensed use only.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookrestriction

Example

```
<bookrights>
  <copyrfirst><year>1994</year></copyrfirst>
  <copyrlast><year>2006</year></copyrlast>
  <bookowner><organization>Example Corporation</organization></bookowner>
  <bookrestriction value="unclassified"/>
</bookrights>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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3.7.2.11 <bookrights>

The <bookrights> element contains the information about the legal rights associated with the book, including copyright dates and owners.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/bookrights

Example

See *3.7.2.1 bookmeta* on page 106.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.12 <completed>

The <completed> element indicates a completion date for some type of book event, such as a review, editing, or testing.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/completed

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

3.7.2.13 <copyrfirst>

The <copyrfirst> element contains the copyright year, or the first copyright year within a multiyear copyright statement.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/copyrfirst

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Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.14 <copyrlast>

The `<copyrlast>` element contains the last copyright year within a multiyear copyright statement.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/copyrlast

Example

See the example in *3.7.1.1 bookmap* on page 88.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.15 <day>

The `<day>` element denotes a day of the month.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/day

Example

```
<bookchangehistory>
  <edited>
    <person>Joe T. Editor</person>
    <completed><year>2008</year><month>10</month><b><day>13</day></b></completed>
  </edited>
</bookchangehistory>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.2.16 <edited>

The `<edited>` element contains information about when and by whom the book was edited during its publication history.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/edited

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.17 <edition>

The `<edition>` element contains the edition number information, such as First Edition, or Third Edition, used by a publisher to identify a book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/edition

Example

```
<bookmeta>
  <bookid>
    <edition>1</edition>
  </bookid>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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3.7.2.18 <isbn>

The <isbn> element contains the book's International Standard Book Number (ISBN).

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/isbn

Example

```
<bookmeta>
  <bookid>
    <isbn>978-0141000039</isbn>
  </bookid>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.19 <maintainer>

The <maintainer> element contains information about who maintains the document; the maintainer might be an organization or a person.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/maintainer

Example

See the example in *3.7.2.1 bookmeta* on page 106.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.20 <month>

The <month> element denotes a month of the year.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

- topic/ph bookmap/month

Example

```
<bookchangehistory>
  <edited>
    <person>Joe T. Editor</person>
    <completed><year>2008</year><month>10</month><day>13</day></completed>
  </edited>
</bookchangehistory>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.2.21 <organization>

The `<organization>` element contains the name of an organization. Note that unlike `<organizationname>`, the `<organization>` element is not restricted to use within `<authorinformation>`; it does not have to contain the name of an authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/organization

Example

```
<bookmeta>
  <bookrights>
    <copyrfirst><year>1996</year></copyrfirst>
    <copyrlast><year>2006</year></copyrlast>
    <bookowner><organization>OASIS</organization></bookowner>
  </bookrights>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.22 <person>

The `<person>` element contains information about the name of a person. Note that unlike the `<personname>` element, the `<person>` element is not restricted to describing the names of authors.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

- topic/data bookmap/person

Example

```
<bookmeta>
  <bookrights>
    <copyrfirst><year>1977</year></copyrfirst>
    <copyrlast><year>2008</year></copyrlast>
    <bookowner><person>Jane Doe</person></bookowner>
  </bookrights>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.23 <printlocation>

The `<printlocation>` element indicates the location where the book was printed. Customarily, the content is restricted to the name of the country.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/printlocation

Example

See the example in *3.7.2.25 publisherinformation* on page 118.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.24 <published>

The `<published>` element contains information about the person or organization publishing the book, the dates when it was started and completed, and any special restrictions associated with it.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/published

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Example

See the example in *3.7.2.25 publisherinformation* on page 118.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.25 <publisherinformation>

The `<publisherinformation>` contains information about what group or person published the book, where it was published, and certain details about its publication history. Other publication history information is found in the `<bookchangehistory>` element.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/publisher bookmap/publisherinformation

Example

```
<bookmeta>
  <publisherinformation>
    <organization>Example Publishers</organization>
    <printlocation>Austin, TX</printlocation>
    <published>
      <publishtype value="general"/>
      <completed><year>1977</year></completed>
    </published>
  </publisherinformation>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.26 <publishtype>

The `<publishtype>` element indicates whether the book is generally available from the publisher or is restricted in some way. The `@value` attribute indicates the restrictions, such as beta release, limited availability, or general availability.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/publishtype

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Example

See the example in *3.7.2.25 publisherinformation* on page 118.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.27 <reviewed>

The `<reviewed>` element contains information about when and by whom the book was reviewed during its publication history.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/reviewed

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.28 <revisionid>

The `<revisionid>` element indicates the revision number or revision ID of the book. The processing implementation determines how the level is displayed. Common methods include using a dash, for example "-01", or a period, such as ".01".

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/revisionid

Example

```
<bookchangehistory>
  <edited>
    <person>Joe T. Editor</person>
    <revisionid>1</revisionid>
    <completed><year>2008</year><month>03</month><day>15</day></completed>
  </edited>
  <edited>
    <person>Joe T. Editor</person>
```


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```
    <revisionid>2</revisionid>
    <completed><year>2008</year><month>10</month><day>13</day></completed>
  </edited>
</bookchangehistory>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.2.29 <started>

The `<started>` element indicates a start date for some type of book event, such as a review, editing, or testing.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/started

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.2.30 <summary>

The `<summary>` element contains a text summary associated with a book event (such as `<approved>` or `<reviewed>`) or with the list of copyrights for the book.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/summary

Example

```
<bookchangehistory>
  <edited>
    <person>Joe T. Editor</person>
    <revisionid>1</revisionid>
    <completed><year>2008</year><month>03</month><day>15</day></completed>
    <summary>Added several new topics</summary>
  </edited>
  <edited>
    <person>Joe T. Editor</person>
    <revisionid>2</revisionid>
    <completed><year>2008</year><month>10</month><day>13</day></completed>
    <summary>Fixed a few typos</summary>
```


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```
  </edited>
</bookchangehistory>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.7.2.31 <tested>

The `<tested>` element contains information about when and by whom the book was tested during its publication history.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/tested

Example

See the example in *3.7.2.3 bookchangehistory* on page 107.

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.7.2.32 <volume>

The `<volume>` element contains the book's volume number, such as "2" to represent Volume 2.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data bookmap/volume

Example

```
<bookmeta>
  <bookid><volume>2</volume></bookid>
</bookmeta>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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3.7.2.33 <year>

The <year> element denotes a year.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/ph bookmap/year

Example

```
<bookchangehistory>
  <edited>
    <person>Joe T. Editor</person>
    <completed><year>2008</year><month>10</month><day>13</day></completed>
  </edited>
</bookchangehistory>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

3.8 Technical-content domains elements

Domains in this section include those generally associated with technical content, such as the programming and software domains.

3.8.1 Equation domain elements

The elements in the equation domain enable authors to clearly distinguish equations from other type of content. These markup distinctions can enable formatting distinctions, numbering of equations, and more. This domain can be used independently of the MathML domain.

The equation domain elements do not attempt to satisfy all possible requirements for representing equations semantically. More sophisticated users of equations might need to further specialize from these elements or provide an alternative vocabulary for semantic equations.

3.8.1.1 <equation-block>

Use the <equation-block> element to represent an equation that is presented as a separate block within a text flow. Block equations can be numbered.

When an <equation-block> element has multiple direct child elements, each child represents an alternative form of the equation. Processors are free to choose the form or forms that they use in deliverables. For example, if there is both an image and MathML markup, an HTML-generating processor could output both the image reference and the MathML with appropriate HTML @class or @id values to enable dynamic showing or hiding of one form or the other based on browser capability.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

+ topic/ [►] div [◄] equation-d/equation-block

Example

In the following example, a block equation uses MathML as its content:

```
<p>A block equation using MathML:</p>
<equation-block>
  <mathml>
    <m:math>
      <m:semantics>
        <m:mrow>
          <m:msqrt>
            <m:mrow>
              <m:msup>
                <m:mi>a</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
              <m:mo>+</m:mo><m:msup>
                <m:mi>b</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
            </m:mrow>
          </m:msqrt>
        </m:mrow>
      </m:semantics>
    </m:math>
  </mathml>
</equation-block>
```

In the following example, a block equation uses an image as its content:

```
<p>A block equation using an image:</p>
<equation-block>
  <image keyref="equation-image-01">
    <alt>a squared plus b squared.</alt>
  </image>
</equation-block>
```

In the following example, the block equation contains two alternative forms of the same equation:

```
<equation-block>
  <image keyref="equation-image-01">
    <alt>a squared plus b squared.</alt>
  </image>
  <mathml>
    <m:math>
      <m:semantics>
        <m:mrow>
          <m:msqrt>
            <m:mrow>
              <m:msup>
                <m:mi>a</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
              <m:mo>+</m:mo><m:msup>
                <m:mi>b</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
            </m:mrow>
          </m:msqrt>
        </m:mrow>
      </m:semantics>
    </m:math>
```


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```
  </mathml>
</equation-block>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.1.2 <equation-figure>

Use the `<equation-figure>` element to represent an equation that functions as form of figure or display. Display equations are intended to be numbered when numbering is desired.

Since the `<equation-figure>` element is specialized from `<fig>`, display equations can have titles, descriptions, figure groups, and all other figure components. The direct children of `<equation-figure>` can be the equation content itself (for example, `<mathml>` or an image reference), or it can be one or more `<equation-block>` elements, along with other elements allowed within `<fig>`, such as paragraphs.

When an `<equation-figure>` element has multiple direct child `<mathml>`, `<image>`, or `<pre>` elements, each child represents an alternative form of the equation. Processors are free to choose the form or forms that they use in deliverables. For example, if there is both an image and MathML markup, an HTML-generating processor could output both the image reference and the MathML with appropriate HTML `@class` or `@id` values to enable dynamic showing or hiding of one form or the other based on browser capability. All other direct-child elements of `<equation-figure>` are treated normally.

When the intent is to have equations combined with other commentary within an `<equation-figure>`, the recommended best practice is to use child `<equation-block>` elements to contain the equations and clearly distinguish them from the commentary.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/fig equation-d/equation-figure

Example

In the following example, the `<equation-figure>` element contains a title and MathML:

```
<equation-figure>
  <title>Display equation with a MathML container</title>
  <mathml>
    <m:math display='block'>
      <m:semantics>
        <m:mrow>
          <m:mfrac>
            <m:mrow>
              <m:mi>n</m:mi><m:mo>!</m:mo>
            </m:mrow>
            <m:mrow>
              <m:mi>r</m:mi><m:mo>!</m:mo><m:mrow><m:mo>(</m:mo>
                <m:mrow>
                  <m:mi>n</m:mi><m:mo>&#x2212;</m:mo><m:mi>r</m:mi>
                </m:mrow>
                <m:mo>)</m:mo></m:mrow><m:mo>!</m:mo>
            </m:mrow>
          </m:mfrac>
        </m:mrow>
```


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```
      </m:semantics>
    </m:math>
  </mathml>
</equation-figure>
```

In the following example, the `<equation-figure>` element contains a title and an `<equation-block>` element that contains MathML and commentary:

```
<equation-figure>
  <title>Display equation with a MathML container</title>
  <equation-block>
    <mathml>
      <m:math display='block'>
        <m:semantics>
          <m:mrow>
            <m:mfrac>
              <m:mrow>
                <m:mi>n</m:mi><m:mo>!</m:mo>
              </m:mrow>
              <m:mrow>
                <m:mi>r</m:mi><m:mo>!</m:mo><m:mrow><m:mo>(</m:mo>
                  <m:mrow>
                    <m:mi>n</m:mi><m:mo>&#x2212;</m:mo><m:mi>r</m:mi>
                  </m:mrow>
                  <m:mo>)</m:mo></m:mrow><m:mo>!</m:mo>
              </m:mrow>
            </m:mfrac>
          </m:mrow>
        </m:semantics>
      </m:math>
    </mathml>
  </equation-block>
  <p>Where
<equation-inline><mathml><m:math><m:mi>r</m:mi></m:math></mathml></equation-inline>
is greater than 1.</p>
</equation-figure>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, *outputclass* on page 196, and *spectitle* on page 197.

3.8.1.3 <equation-inline>

Use the `<equation-inline>` element to represent an equation that is presented inline within a paragraph or similar context. Inline equations are not intended to be numbered.

When an `<equation-inline>` element has multiple direct child elements, each child represents an alternative form of the equation. Processors are free to choose the form or forms that they use in deliverables. For example, if there is both an image and MathML markup, an HTML-generating processor could output both the image reference and the MathML with appropriate HTML `@class` or `@id` values to enable dynamic showing or hiding of one form or the other based on browser capability.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph equation-d/equation-inline

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Example

The following example contains a paragraph that contains an <equation-inline> element with MathML markup:

```
<p>MathML inline: <equation-inline>
  <mathml>
    <m:math display='inline'>
      <m:semantics>
        <m:mrow>
          <m:msqrt>
            <m:mrow>
              <m:msup>
                <m:mi>a</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
              <m:mo>+</m:mo><m:msup>
                <m:mi>b</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
            </m:mrow>
          </m:msqrt>
        </m:mrow>
      </m:semantics>
    </m:math>
  </mathml>
</equation-inline></p>
```

The following example contains an <equation-inline> element that uses an image as its content:

```
<p>An inline equation that contains an image:
<equation-inline>
  <image keyref="equation-image-01">
    <alt>a squared plus b squared.</alt>
  </image>
</equation-inline></p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

3.8.1.4 <equation-number>

Use the <equation-number> element to indicate that a block equation is numbered and, optionally, to specify the number to use for the block equation.

When the <equation-number> element has empty or whitespace-only content, the equation number *SHOULD* be generated. When the <equation-number> element has non-whitespace-only content the content *SHOULD* be used as the equation number. For explicit numbers the content of the element *SHOULD* be the number value without any surrounding punctuation, for example, "3.2a" rather than "(3.2a)". Processors *SHOULD* add punctuation or decoration to the number as appropriate.

In normal usage a block equation will have at most one number. However, <equation-number> can occur multiple times within <equation-block>, for example, to allow numbers with different (and exclusive) conditional properties.

The details of equation numbering and number presentation are processor-specific. However, common practice is to present the equation number to the right of the equation, centered vertically within the vertical extent of the block equation.

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Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph equation-d/equation-number

Example

An equation with a generated number:

```
<p>A block equation using an image:</p>
<equation-block id="eq-001">
  <equation-number/>
  <image keyref="equation-image-01">
    <alt>a squared plus b squared.</alt>
  </image>
</equation-block>
```

An equation with an explicit number:

```
<p>A block equation using an image:</p>
<equation-block id="eq-3.2a">
  <equation-number>3.2a</equation-number>
  <image keyref="equation-image-01">
    <alt>a squared plus b squared.</alt>
  </image>
</equation-block>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.2 Markup domain

The markup domain elements are used for the mention of named constructs in markup languages, such as XML.

3.8.2.1 <markupname>

Use the `<markupname>` element to identify mentions of named markup tokens, such as elements or attributes in XML or SGML, named groups in XSD schemas, or named patterns in RELAX NG schemas. This element also serves as the specialization basis for the elements in the XML mention domain; when that domain is present, use its more specific elements instead of `<markupname>` when appropriate.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname

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Example

```
The <markupname>p.attributes</markupname> attribute group defines
the allowed attributes for the <xmlelement>p</xmlelement> element.
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.3 MathML domain elements

The MathML domain elements enable direct use of MathML markup within DITA documents, as well as use-by-reference of MathML markup that is stored separate, non-DITA documents. MathML is a W3C standard.

For MathML markup that is stored directly in DITA documents that are validated using DTDs, the MathML elements must use a namespace prefix in order to avoid conflict with the DITA-defined elements of the same name. Documents validated using XSD or RELAX NG can default the MathML namespace on the MathML `<math>` element. MathML elements that are referenced using the `<mathmlref>` element do not need to have a namespace prefix, because they are parsed separately from the DITA documents that refer to them. By default, the MathML domain is configured to use the namespace prefix "m" for the MathML elements.

Related information

Mathematical Markup Language (MathML), Version 3.0

3.8.3.1 <mathml>

Use the `<mathml>` element to contain content that contributes to a semantic equation. Such content includes MathML elements, references to MathML elements held in separate, non-DITA documents, `<data>`, or `<data-about>` elements.

The `<mathml>` element is not intended to represent a semantic equation, only content that contributes to a semantic equation. Use the equation domain elements or their equivalent to represent equations semantically, for example, to enable numbering of equations.

The MathML markup must have a root element of `<math>` within the MathML namespace: "http://www.w3.org/1998/Math/MathML".

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/foreign mathml-d/mathml

Example

In the following example, a `<mathml>` element contains MathML content:

```
<equation-block>
  <mathml>
    <m:math xmlns:m ="http://www.w3.org/1998/Math/MathML">
      <m:semantics>
        <m:mrow>
          <m:msqrt>
            <m:mrow>
```


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```
              <m:msup>
                <m:mi>a</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
              <m:mo>+</m:mo><m:msup>
                <m:mi>b</m:mi>
                <m:mn>2</m:mn>
              </m:msup>
            </m:mrow>
          </m:msqrt>
        </m:mrow>
      </m:semantics>
    </m:math>
  </mathml>
</equation-block>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.3.2 <mathmlref>

Use the `<mathmlref>` element to reference a non-DITA XML document that contains MathML markup. This element enables you to use the markup by reference.

The reference must be to a MathML `<math>` element. The reference can be one of the following:

- A URI that addresses an XML document; the XML document has a MathML `<math>` element as the root element
- A URI that addresses an XML document and contains a fragment identifier that is the XML ID of a `<math>` element within the document

Processors *SHOULD* process the MathML as though the `<m:math>` element had occurred directly in the content of the containing `<mathml>` element.

The reference can be direct, using the `@href` attribute, or indirect, using the `@keyref` attribute. For indirect referencing, specify only the key name. Specify the ID of the `<mathml>` element as part of the value for the `@href` attribute on the key definition.

For example, to refer to the `<math>` element with the `@id` of "equation-02" within a larger document using a key reference, you would define the key in the following way:

```
<keydef
  keys="mathml-equation-02"
  href="math/mathml-equations.xml#equation-02"
  format="mathml"
/>
```

You would refer to this key using just the key name:

```
<mathml>
  <mathmlref keyref="mathml-equation-02"/>
</mathml>
```

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

+ topic/xref mathml-d/mathmlref

Example

Here is a reference to a `<mathml>` element that is the root element of its containing document:

```
<equation-block>
   <mathml>
     <mathmlref href="../mathml-source/mathml-root-mathml.mml"/>
   </mathml>
</equation-block>
```

The `mathml-root-mathml.mml` file contains the following content. Note that the `<math>` element sets the MathML namespace as the default namespace, so there are no namespace prefixes on the MathML markup:

```
<?xml version="1.0" encoding="UTF-8"?>
<math xmlns="http://www.w3.org/1998/Math/MathML"
        xmlns:xlink="http://www.w3.org/1999/xlink">
    <mstyle displaystyle="false" scriptlevel="0">
        <mrow>
            <mfrac>
                <mrow>
                    <mi mathcolor="gray">sin</mi>
                    <mo rspace="verythinmathspace"></mo>
                    <mi>θ</mi>
                </mrow>
                <mi>π</mi>
            </mfrac>
        </mrow>
    </mstyle>
</math>
```

Here is a reference to a specific `<math>` element in a containing XML file:

```
<equation-block>
  <mathml>
    <mathmlref
       href="../mathml-source/mathml-equation-library.xml#mathfrag-02"
    />
  </mathml>
</equation-block>
```

The `mathml-equation-library.xml` file contains the following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <part>
    <math
      id="timeinday"
      xmlns="http://www.w3.org/1998/Math/MathML">
      <mi>x</mi>
    </math>
    <math
      id="mathfrag-02"
      xmlns="http://www.w3.org/1998/Math/MathML">
      <math>
        <mrow>
          <mi>y</mi>
          <mo>=</mo>
          <mn>5</mn>
          <mi>x</mi>
          <mo>+</mo>
          <mn>2</mn>
        </mrow>
```


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```
      </math>
    </math>
  </part>
  <part>
    <m:math
      id="mathfrag-03"
      display="inline"
      overflow="scroll"
      xmlns:m="http://www.w3.org/1998/Math/MathML">
      <m:mi>y</m:mi>
      <m:mo>=</m:mo>
      <m:mi>m</m:mi>
      <m:mi>x</m:mi>
      <m:mo>+</m:mo>
      <m:mi>b</m:mi>
    </math>
  </part>
</root>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` . This element also uses `@href`, `@scope`, and a narrowed definition of `@format` (given below) from *B.8 Link relationship attribute group* on page 196.

@format

Specifies the format (data type) of the referenced resource. For MathML the format should be "mml", which is the default value for `@format` on this element.

3.8.4 Programming elements

The programming domain elements are used to define the syntax for programming languages. They also can be used to provide examples.

3.8.4.1 <apiname>

The `<apiname>` element provides the name of an application programming interface (API) such as a Java class name or method name. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword pr-d/apiname

Example

```
<p>Use the <apiname>document.write</apiname> method to create text
output in the dynamically constructed view.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

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3.8.4.2 <codeblock>

The <codeblock> element represents lines of program code. Like the <pre> element, line endings and spaces inside the element are preserved, and the content is typically rendered in a monospaced font. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/pre pr-d/codeblock

Example

```
<codeblock>
/* a long sample program */
Do forever
  Say "Hello, World"
End
</codeblock>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, *outputclass* on page 196, *xml:space* on page 196, and *spectitle* on page 197.

3.8.4.3 <codeph>

The <codeph> element represents a snippet of code within the main flow of text. The code phrase is displayed in a monospaced font for emphasis. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/codeph

Example

```
<p>The second line of the sample program code, <codeph>Do forever</codeph>,
represents the start of a loop construct.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

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3.8.4.4 <coderef>

The <coderef> element references an external file that contains literal code. When evaluated, the <coderef> element causes the target code to be displayed inline. If the target contains non-XML characters such as '<' or '&', those will need to be handled in a way that they can be displayed correctly by the final rendering engine. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/xref pr-d/coderef

Example

```
<example>
  <title>Processing DITA</title>
  <p>This code is an example of how to process DITA.</p>
  <codeblock><coderef href="process-dita.xsl"/></codeblock>
</example>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196, *outputclass* on page 196, and @keyref .

3.8.4.5 <option>

The <option> element describes an option that can be used to modify a command (or something else, like a configuration). This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword pr-d/option

Example

```
something <option>/modifier</option>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

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3.8.4.6 <parmname>

The <parmname> element is used to reference the name of an application programming interface parameter within the text flow of a topic. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword pr-d/parmname

Example

```
<p>Use the <parmname>/env</parmname> parameter of the <cmdname>config</cmdname>
command to update the field value.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

3.8.4.7 <parml>

The <parml> element contains a list of terms and definitions that describes the parameters in an application programming interface. This is a special kind of definition list that is designed for documenting programming parameters. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/dl pr-d/parml

Example

Example source:

```
This code example is a basic method signature:
<codeblock>returnType methodName(pList1, pList2) {</codeblock>
where
<parml>
 <plentry>
  <pt>pList1</pt>
  <pd>is the first variable declaration passed to methodName</pd>
 </plentry>
 <plentry>
  <pt>pList2</pt>
  <pd>is the second variable declaration passed to methodName</pd>
 </plentry>
</parml>
```


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Example output:

This code example is a basic method signature:

```
returnType methodName(pList1, pList2) {
```

where

pList1

is the first variable declaration passed to methodName

pList2

is the second variable declaration passed to methodName

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *compact* on page 196, *outputclass* on page 196, and *spectitle* on page 197.

3.8.4.8 <plentry>

The <plentry> element contains one or more parameter terms and definitions (<pt> and <pd>). This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/dlentry pr-d/plentry

Example

See *3.8.4.7 parml* on page 134.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.4.9 <pt>

The <pt> element specifies a parameter term within a parameter list entry. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/dt pr-d/pt

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Example

See *3.8.4.7 parml* on page 134.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.4.10 <pd>

The `<pd>` element specifies a parameter definition within a parameter list entry. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/dd pr-d/pd

Example

See *3.8.4.7 parml* on page 134.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.4.11 <synph>

The `<synph>` (syntax phrase) element is a container for syntax definition elements. It is used when a complete syntax diagram is not needed, but some of the syntax elements, such as `<kwd>`, `<oper>`, or `<delim>` are used within the text flow of the topic content. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/synph

Example

```
<synph><kwd>format</kwd> <var>volumename</var></synph>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.4.12 <syntaxdiagram>

The `<syntaxdiagram>` element is the main container for all the syntax elements that make up a syntax definition. The syntax diagram represents the syntax of a statement from a computer language or a command, function call, or programming language statement. Traditionally, the syntax diagram is formatted with "railroad tracks" that connect the units of the syntax together, but the presentation might differ depending on the output media. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/fig pr-d/syntaxdiagram

Example

```
<syntaxdiagram>
  <title>CopyFile</title>
  <groupseq><kwd>COPYF</kwd></groupseq>
  <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
  <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
  <groupchoice> <var>input-filename</var> <kwd>*INFILE</kwd></groupchoice>
  <groupchoice> <var>output-filename</var> <kwd>*OUTFILE</kwd></groupchoice>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, and *outputclass* on page 196.

3.8.4.13 <groupseq>

The `<groupseq>` element is part of the subset of elements that define syntax diagrams in DITA. A group is a logical set of pieces of syntax that go together. Within the syntax definition, groups of keywords, delimiters and other syntax units act as a combined unit, and they occur in a specific sequence, as delimited by the `<groupseq>` element. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/figgroup pr-d/groupseq

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Example

```
<syntaxdiagram frame="bottom">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors can indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

default

This section of the syntax is used by default or has this default value.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.14 <groupchoice>

The `<groupchoice>` element is part of the subset of elements that define syntax diagrams in DITA. A group is a logical set of pieces of syntax that go together. A group choice specifies that the user must make a choice about which part of the syntax to use. Groups are often nested. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/figgroup pr-d/groupchoice

Example

```
<syntaxdiagram frame="bottom">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
</syntaxdiagram>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors can indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

default

This section of the syntax is used by default or has this default value.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.15 <groupcomp>

The `<groupcomp>` element is part of the subset of elements that define syntax diagrams in DITA. A group is a logical set of pieces of syntax that go together. The group composite means that the items that make up the syntax diagram will be formatted close together rather than being separated by a horizontal or vertical line, which is the usual formatting method. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/figgroup pr-d/groupcomp

Example

```
<syntaxdiagram frame="bottom">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors can indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

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default
This section of the syntax is used by default or has this default value.
-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.16 <fragment>

The `<fragment>` element contains a labeled subpart of the syntax within a `<syntaxdiagram>`. The `<fragment>` element allows breaking out logical chunks of a large syntax diagram into named fragments. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/figgroup pr-d/fragment

Example

```
<syntaxdiagram frame="none">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
 <fragment>
  <groupchoice><kwd>*OVERLAP</kwd><kwd>*Prompt</kwd></groupchoice>
 </fragment>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.4.17 <fragref>

The `<fragref>` element provides a logical reference to a `<fragment>` element within a syntax diagram, so that you can reference a syntax fragment multiple times or pull a large section of syntax out of line for easier reading. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/xref pr-d/fragref

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Example

This markup example:

```
<syntaxdiagram frame="none">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <fragref href="#syntax/overlay"></fragref>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
 <fragment id="overlay">
  <title>Overlay</title>
  <groupchoice><kwd>*OVERLAP</kwd><kwd>*Prompt</kwd></groupchoice>
 </fragment>
</syntaxdiagram>
```

might produce output like the following:

```
CopyFile

>>-COPYF--input-filename*INFILE--output-filename--*OUTFILE------>

>--| Overlay |--+-input-filename-+--+-output-filename-+-------><
                 '-*INFILE--------'  '-*OUTFILE--------'

Overlay

|--+-*OVERLAP-+-------------------------------------------------|
   '-*Prompt--'
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below), *outputclass* on page 196, and the attributes defined below.

@href

A reference to a syntax diagram `<fragment>` element. The referenced `<fragment>` must be in the same diagram as the `<fragref>` element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications.

@importance

The attribute indicates whether this item in a syntax diagram is optional or required. Output processors might indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

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3.8.4.18 <synblk>

The <synblk> (syntax block) element organizes small pieces of a syntax definition into a larger piece. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/figgroup pr-d/synblk

Example

```
<synblk>
<groupseq><kwd>this</kwd><sep>-</sep><kwd>is</kwd><sep>-</sep><kwd>a</kwd>
<sep>-</sep><var>test</var></groupseq>
</synblk>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.4.19 <synnote>

The <synnote> element contains a note (similar to a footnote) within a syntax definition group or fragment. The syntax note explains aspects of the syntax that cannot be expressed in the markup itself. The note will appear at the bottom of the syntax diagram instead of at the bottom of the page. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/fn pr-d/synnote

Example

```
<groupcomp><var>one</var><var>two</var><var>three</var></groupcomp>
<synnote>My first syntax note.</synnote>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and the attribute defined below.

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@callout
Specifies what character is used for the footnote link, for example a number or an alpha character. The attribute can also specify a short string of characters. When no `@callout` value is specified, footnotes are typically numbered.

@datatype
Available for describing the type of data contained in the value attribute for this metadata element. The default value is the empty string "".

3.8.4.20 <synnoteref>

The `<synnoteref>` element references a syntax note element (`<synnote>`) that has already been defined elsewhere in the syntax diagram. The same notation can be used in more than one syntax definition. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/xref pr-d/synnoteref

Example

```
<synnoteref href="#topicid/mysyn"/>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and the attribute defined below.

@href
A reference to the target syntax note (`<synnote>`) element. The referenced syntax note must be in the same syntax diagram as the `<synnoteref>` element. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications.

3.8.4.21 <kwd>

The `<kwd>` element defines a keyword within a syntax diagram. A keyword is typed or output, either by the user or application, exactly as specified in the syntax definition. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword pr-d/kwd

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Example

```
<syntaxdiagram frame="bottom">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below), *outputclass* on page 196, and `@keyref` .

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors might indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

default

This section of the syntax is used by default or has this default value.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.22 <var>

The `<var>` element defines a variable within a syntax diagram for which the user must supply content, such as their user name or password. Processors typically represent the `<var>` element in output in an italic font, but are not required to do so. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/var

Example

```
<syntaxdiagram frame="bottom">
 <title>CopyFile</title>
 <groupseq><kwd>COPYF</kwd></groupseq>
 <groupcomp><var>input-filename</var><kwd>*INFILE</kwd></groupcomp>
 <groupseq><var>output-filename</var><kwd>*OUTFILE</kwd></groupseq>
 <groupchoice><var>input-filename</var><kwd>*INFILE</kwd></groupchoice>
 <groupchoice><var>output-filename</var><kwd>*OUTFILE</kwd></groupchoice>
</syntaxdiagram>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors can indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

default

This section of the syntax is used by default or has this default value.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.23 <oper>

The `<oper>` element defines an operator within a syntax definition. Typical operators are equals (=), plus (+) or multiply (*). This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/oper

Example

```
<syntaxdiagram>
  <title>Adding</title>
  <groupseq><kwd>1</kwd><oper>+</oper><var>two</var>
<delim>=</delim><kwd>something</kwd>
  </groupseq>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors can indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

default

This section of the syntax is used by default or has this default value.

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-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.24 <delim>

The `<delim>` element defines a character marking the beginning or end of a section within a syntax diagram. Typical delimiter characters are the parenthesis, comma, tab, vertical bar or other special characters. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/delim

Example

```
<syntaxdiagram>
 <title>Adding</title>
 <groupseq><kwd>1</kwd><oper>+</oper><var>two</var><delim>=</delim>
 <kwd>something</kwd>
</groupseq>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional or required. Output processors might indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.25 <sep>

The `<sep>` element defines a separator character that is inline with the content of a syntax diagram. The separator occurs between keywords, operators or groups in a syntax definition. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/sep

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Example

```
<syntaxdiagram>
 <title>Adding</title>
 <groupseq><kwd>1</kwd><oper>+</oper><sep>(</sep><var>two</var><sep>)</sep>
<delim>=</delim><kwd>something</kwd></groupseq>
</syntaxdiagram>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional, required, or default. Output processors can indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

default

This section of the syntax is used by default or has this default value.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.4.26 <repsep>

The `<repsep>` element provides a repeat separator character within a syntax diagram to indicate that a group of syntax elements can (or should) be repeated. If the `<repsep>` element contains a separator character such as a plus (+), this indicates that the character must be used between repetitions of the syntax elements. This element is part of the DITA programming domain, a special set of DITA elements designed to document programming tasks, concepts, and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph pr-d/repsep

Example

In this example, the group can be repeated. When repeated, a comma should be used between selections.

```
<groupchoice>
  <repsep>,</repsep>
  <kwd>This</kwd>
  <kwd>That</kwd>
  <kwd>The other</kwd>
</groupchoice>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 (with a narrowed definition of `@importance`, given below) and *outputclass* on page 196.

@importance

The attribute indicates whether this item in a syntax diagram is optional or required. Output processors might indicate this designation in a generated diagram. Allowable values are:

optional

This section of the syntax is optional.

required

This section of the syntax is required.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.5 Release-management domain elements

The release-management domain elements contain human-authored information about the changes that have been made to a DITA topic or map. A processor can retrieve this information and use it to assemble documents or topics that contain release note information.

3.8.5.1 <change-completed>

Use the `<change-completed>` element to indicate the date on which the change was completed.

The recommended best practice is to use date strings that conform to the ISO 8601 standard, unless a unix-style machine timestamp is used. The string might contain a date and time (for example, `2007-04-05T12:30-02:00`) or just a date (for example, `2014-03-04`).

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-completed

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.2 <change-historylist>

Use the `<change-historylist>` element as a container for individual release notes, as represented by the `<change-item>` element. It appears in the topic prolog or the map `<topicmeta>` element.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

- topic/metadata relmgmt-d/change-historylist

Example

This example shows three simple release notes added to a single topic. This topic is used in documentation for two products, A and B.

```
<prolog>
<!-- ... -->
  <change-historylist>
    <change-item product="productA productB">
      <change-person>Tom Cihak</change-person>
      <change-organization>JEDEC</change-organization>
      <change-completed>2013-03-23</change-completed>
      <change-summary>Made change 1 to both products</change-summary>
      <data>Details of change 1</data>
    </change-item>
    <change-item product="productA">
      <change-person>Tom Cihak</change-person>
      <change-completed>2013-06-07</change-completed>
      <change-summary>Made change 2 to product A</change-summary>
      <data>Details of change 2</data>
    </change-item>
    <change-item product="productA productB">
      <change-person>Tom Cihak</change-person>
      <change-completed>2013-07-20</change-completed>
      <change-summary>Made change 3 to both products</change-summary>
      <data>Details of change 3</data>
    </change-item>
  </change-historylist>
<!-- ... -->
</prolog>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *mapkeyref* on page 197.

3.8.5.3 <change-item>

Use the `<change-item>` element to represent a record of a single change to a DITA topic or map.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-item

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

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3.8.5.4 <change-organization>

Use the `<change-organization>` element to specify the name of an organization that required the change.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-organization

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.5 <change-person>

Use the `<change-person>` element to specify the name of the person who made the change.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-person

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.6 <change-request-id>

Use the `<change-request-id>` element to specify an identifier associated with the change request, such as an issue ID or ticket number.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-request-id

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Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.7 <change-request-reference>

Use the `<change-request-reference>` element to provide information that links the change to an external tracking system.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/metadata relmgmt-d/change-request-reference

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.8 <change-request-system>

Use the `<change-request-system>` element to specify the name of an information system that manages or serves the referenced change request, for example, an issue tracking system.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-request-system

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

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3.8.5.9 <change-revisionid>

Use the `<change-revisionid>` element to specify a revision ID string that can identify the change.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-revisionid

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.10 <change-started>

Use the `<change-started>` element to specify the date on which the change was initiated.

The recommended best practice is to use date strings that conform to the ISO 8601 standard, unless a unix-style machine timestamp is used. The string might contain a date and time (for example, `2007-04-05T12:30-02:00`) or just a date (for example, `2014-03-04`).

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

- topic/data relmgmt-d/change-started

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.5.11 <change-summary>

Use the `<change-summary>` element to summarize the change. It is the portion of the release note that might appear in a document.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

- topic/data relmgmt-d/change-summary

Example

See *3.8.5.2 change-historylist* on page 148.

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and *name* on page 194.

3.8.6 Software elements

The software domain elements are used to describe the operation of a software program.

3.8.6.1 <msgph>

The `<msgph>` element is a message phrase that contains the text content of a message produced by an application or program. It can also contain a variable name (`<varname>`) element to illustrate where variable text content can occur in the message. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph sw-d/msgph

Example

```
<p>A server log entry of <msgnum>I:0</msgnum> is equivalent to the
text message, <msgph>informational: successful</msgph>.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.6.2 <msgblock>

The `<msgblock>` element contains a multi-line message or set of messages. The message block can contain multiple message numbers and message descriptions, each enclosed in `<msgnum>` and `<msgph>` elements. It can also contain the message content directly. Line breaks and spaces are preserved when the element is rendered. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

+ topic/pre sw-d/msgblock

Example

```
<p>A sequence of failed password attempts generates the following
characteristic message stream:</p>
<msgblock>
I:0
S:3
I:1
S:3
I:1
S:4
S:99 (lockup)
</msgblock>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, *outputclass* on page 196, *xml:space* on page 196, and *spectitle* on page 197.

3.8.6.3 <msgnum>

The `<msgnum>` element contains the number of a message produced by an application or program. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword sw-d/msgnum

Example

```
<p>A server log entry of <msgnum>I:0</msgnum> is equivalent to the
text message, <msgph>informational: successful</msgph>.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.6.4 <cmdname>

The `<cmdname>` element specifies the name of a command when it is part of a software discussion. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

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Inheritance

+ topic/keyword sw-d/cmdname

Example

```
<p>Use the <cmdname>rm</cmdname> command when
you wish to remove something forever.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.6.5 <varname>

The `<varname>` element specifies a variable that must be supplied to a software application. The variable name element is very similar to the `<var>` element, but `<varname>` is available outside of syntax diagrams. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword sw-d/varname

Example

```
<filepath>
  <varname>install-dir</varname>\projects\working\<varname>project-dir</varname>
       \source\<varname>filename</varname>.java
</filepath>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.6.6 <filepath>

The `<filepath>` element indicates the name of a referenced file, system path, or both. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph sw-d/filepath

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Example

```
<p>Uncompress the <filepath>gbbrsh.gz</filepath> file to the
<filepath>/usr</filepath> directory. Ensure that the
<filepath>/usr/tools/data.cfg</filepath> path is listed in
the execution path system variable.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.6.7 <userinput>

The `<userinput>` element represents the text a user should input in response to a program or system prompt. This element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph sw-d/userinput

Example

```
<p>After you type <userinput>mealplan dinner</userinput>, the meal planning program
will print a <systemoutput>For what day?</systemoutput> message.
Reply by typing the day of the week for which you want a meal plan,
for example, <userinput>Thursday</userinput>.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.6.8 <systemoutput>

The `<systemoutput>` element represents computer output or responses to a command or situation. A generalized element, it represents any kind of output from the computer, so the author might want to choose more specific markup, such as `<msgph>` for messages from the application. The system output element is part of the DITA software domain, a special set of DITA elements designed to document software tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph sw-d/systemoutput

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Example

```
<p>After you type <userinput>mealplan dinner</userinput>, the meal planning program
will print a <systemoutput>For what day?</systemoutput> message.
Reply by typing the day of the week for which you want a meal plan,
for example, <userinput>Thursday</userinput>.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.7 SVG elements

The SVG domain elements enable direct use of SVG markup within DITA documents, as well as use-by-reference of SVG markup that is stored in separate non-DITA documents. SVG is a W3C standard.

For SVG markup that is stored directly in DITA documents that are validated using DTDs, the SVG elements must use a namespace prefix in order to avoid conflict with DITA-defined elements of the same name. Documents validated using XSD or RELAX NG can default the SVG namespace on the SVG `<svg>` element. SVG elements that are referenced using the `<svgref>` element do not need to have a namespace prefix, because they are parsed separately from the DITA documents that refer to them. By default, the SVG domain is configured to use the namespace prefix "svg" for the SVG elements.

Related information

Scalable Vector Graphics (SVG) 1.1 (Second Edition)

3.8.7.1 <svg-container>

Use the `<svg-container>` element to store content that contributes to a scalable vector graphic (SVG). Such content includes SVG elements, references to SVG elements that are stored in separate, non-DITA documents, `<data>`, or `<data-about>` elements.

The SVG markup must have a root element of `<svg>` with the SVG namespace: "http://www.w3.org/2000/svg".

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/foreign svg-d/svg-container

Example

In the following example, an `<svg-container>` element contains inline SVG markup:

```
<topic id="svg-test-topic-01">
  <title>SVG Domain Test: Namespace Prefixed SVG Elements</title>
  <body>
    <p>SVG inline: <svg-container>
      <svg:svg
        width="100"
        height="100">
        <svg:defs>
          <svg:filter
            id="f1"
            x="0"
            y="0">
```


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```
            <svg:feGaussianBlur
              in="SourceGraphic"
              stdDeviation="15"/>
          </svg:filter>
        </svg:defs>
        <svg:rect
          width="90"
          height="90"
          stroke="green"
          stroke-width="3"
          fill="yellow"
          filter="url(#f1)"/>
      </svg:svg>
      </svg-container></p>
    <p>SVG Directly in body:</p>
    <svg-container>
      <svg:svg width="200" height="200">
        <svg:ellipse cx="100" cy="100" rx="80" ry="80" style="fill:blue;
          stroke:rgb(0,0,100);stroke-width:2"/>
      </svg:svg>
    </svg-container>
    <fig>
      <title>Figure With SVG Container</title>
      <svg-container>
        <svg:svg width="4in" height="6in" version="1.1"
          >
          <svg:circle cx="150" cy="200" r="100" fill="url(#grad_blue)" >
            <svg:animate attributeName="r" begin="Go.click" end="Stop.click" dur="4s"
              values="100; 0; 100" repeatCount="indefinite"/>
          </svg:circle>
          <svg:radialGradient id="grad_blue" cx="20%" cy="20%" r="100%" fx="30%" fy="30%">
            <svg:stop stop-color="white" offset="0"/>
            <svg:stop stop-color="blue" offset="25%"/>
            <svg:stop stop-color="rgb(0,0,192)" offset="50%"/>
            <svg:stop stop-color="rgb(0,0,127)" offset="70%"/>
            <svg:stop stop-color="rgb(0,0,64)" offset="85%"/>
            <svg:stop stop-color="rgb(0,0,0)" offset="100%"/>
          </svg:radialGradient>
          <svg:g id="Go">
            <svg:rect x="70" y="320" height="40" width="80" fill="aqua"/>
            <svg:text x="90" y="350" font-size="30" fill="green">Go </svg:text>
          </svg:g>
          <svg:g id="Stop">
            <svg:rect x="160" y="320" height="40" width="80" fill="aqua"/>
            <svg:text x="170" y="350" font-size="30" fill="red">Stop</svg:text>
          </svg:g>
        </svg:svg>
      </svg-container>
    </fig>
  </body>
</topic>
```

In the following example, the <svgref> element uses the @keyref attribute to address SVG markup that is stored in a separate, non-DITA document:

```
<fig>
  <title>Figure with SVG Container</title>
  <svg-container>
    <svgref keyref="svg-fragment-01"/>
  </svg-container>
</fig>
```

The key "svg-fragment-01" is declared in the following way:

```
<map>
 ...
 <keydef keys="svg-fragment-01"
   href="media/svg/svg-library.xml#frag-0001"
   format="svg"
 />
```


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```
  ...
</map>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187 and *outputclass* on page 196.

3.8.7.2 <svgref>

Use the `<svgref>` element to reference a non-DITA XML document that contains scalable vector graphic (SVG) markup. This element enables you to use the markup by reference.

The reference must be to a SVG `<svg>` element. The reference can be one of the following:

- A URI that addresses an XML document; the XML document has a SVG `<svg>` element as the root element
- A URI that addresses an XML document and contains a fragment identifier that is the XML ID of a `<svg>` element within the document

Processors *SHOULD* process the SVG as though the `<svg>` element had occurred directly in the content of the containing `<svg-container>` element.

The reference can be direct, using the `@href` attribute, or indirect, using the `@keyref` attribute. For indirect referencing, only the key name should be specified. The ID of the `<svg>` element must be specified as part of the value for the `@href` attribute on the key definition.

For example, to refer to the `<svg>` element with the `@id` of "svg-fragment-02" within a larger document using a key reference, you would define the key in the following way:

```
<keydef
  keys="svg-fragment-0002"
  href="svg/svg-library.xml#svg-fragment-02"
/>
```

You would refer to this key using just the key name:

```
<svg-container>
  <svgref keyref="svg-fragment-0002"/>
</svg-container>
```

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/xref svg-d/svgref

Example

Here is a reference to an `<svg>` element that is the root element of its containing document:

```
<fig>
  <title>Figure With SVG Container</title>
  <svg-container>
    <svgref
       href="media/svg/svg-graphic-01.xml"
       format="svg"
    />
```


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```
  </svg-container>
</fig>
```

The `svg-graphic-01.xml` file contains the following content. Note that the `<svg>` element sets the SVG namespace as the default namespace, so there are no namespace prefixes on the SVG markup:

```
<?xml version="1.0" encoding="UTF-8"?>
<svg xmlns="http://www.w3.org/2000/svg"
  width="100"
  height="100">
  <defs>
    <filter
      id="f1"
      x="0"
      y="0">
      <feGaussianBlur
        in="SourceGraphic"
        stdDeviation="15"/>
    </filter>
  </defs>
  <rect
    width="90"
    height="90"
    stroke="green"
    stroke-width="3"
    fill="yellow"
    filter="url(#f1)"/>
</svg>
```

Here is a reference to a specific `<svg>` element in a containing XML file:

```
<fig>
  <title>Figure with SVG Container</title>
  <svg-container>
    <svgref
      href="media/svg/svg-library.xml#frag-0001"
    />
  </svg-container>
</fig>
```

The `svg-library.xml` file contains the following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<root>
  <part>
   <svg id="frag-0001"
     xmlns="http://www.w3.org/2000/svg"
     width="100"
     height="100">
     <defs>
        <filter
          id="f1"
          x="0"
          y="0">
          <feGaussianBlur
            in="SourceGraphic"
            stdDeviation="15"/>
        </filter>
      </defs>
      <rect
        width="90"
        height="90"
        stroke="green"
        stroke-width="3"
        fill="yellow"
        filter="url(#f1)"/>
    </svg>
    <svg id="frag-0002"
       width="4in" height="6in" version="1.1"
          >
```


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```
          <circle cx="150" cy="200" r="100" fill="url(#grad_blue)" >
            <animate attributeName="r" begin="Go.click" end="Stop.click" dur="4s"
              values="100; 0; 100" repeatCount="indefinite"/>
          </circle>
          <radialGradient id="grad_blue" cx="20%" cy="20%" r="100%" fx="30%" fy="30%">
            <stop stop-color="white" offset="0"/>
            <stop stop-color="blue" offset="25%"/>
            <stop stop-color="rgb(0,0,192)" offset="50%"/>
            <stop stop-color="rgb(0,0,127)" offset="70%"/>
            <stop stop-color="rgb(0,0,64)" offset="85%"/>
            <stop stop-color="rgb(0,0,0)" offset="100%"/>
          </radialGradient>
          <g id="Go">
            <rect x="70" y="320" height="40" width="80" fill="aqua"/>
            <text x="90" y="350" font-size="30" fill="green">Go </text>
          </g>
          <g id="Stop">
            <rect x="160" y="320" height="40" width="80" fill="aqua"/>
            <text x="170" y="350" font-size="30" fill="red">Stop</text>
          </g>
        </svg>
  </part>
</root>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` . This element also uses *B.8 Link relationship attribute group* on page 196, with narrowed definitions of `@href` and `@format` (given below).

@href

Reference to the `<svg>` element to be used. If the `<svg>` element is the root element of the referenced resource, then no fragment identifier is required, otherwise, a fragment identifier must be specified, where the fragment identifier is the XML ID of the `<svg>` element to be used. This attribute is not required, but must be specified if `@keyref` is not specified. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications.

@format

The data format of the resource.. For SVG the format should be "svg", which is the default value for `@format` on this element.

3.8.8 User interface elements

The user interface domain elements are used to describe the user interface of a software program.

3.8.8.1 <uicontrol>

The `<uicontrol>` element is used to mark up user interface controls, such as names of buttons, entry fields, menu items, or other objects that allow the user to control the interface. Use the `<uicontrol>` element inside a `<menucascade>` element to identify a sequence of menu choices in a nested menu, such as **File** > **New**. This element is part of the DITA user interface domain, a special set of DITA elements designed to document user interface tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph ui-d/uicontrol

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Example

```
<p>Press the <uicontrol>OK</uicontrol> button.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.8.2 <wintitle>

The `<wintitle>` element can be used to mark up names of windows or dialogs, or other user interface elements at the same level of grouping, including wizard titles, wizard page titles, and window pane titles. This element is part of the DITA user interface domain, a special set of DITA elements designed to document user interface tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword ui-d/wintitle

Example

```
<step>
  <cmd>Click <uicontrol>Configure</uicontrol>.</cmd>
  <stepresult>The <wintitle>Configuration Options</wintitle> window
  opens with your last set of selections highlighted.</stepresult>
</step>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.8.3 <menucascade>

The `<menucascade>` element is used to document a series of menu choices. The `<menucascade>` element contains one or more user interface control (`<uicontrol>`) elements, for example: `Start > Programs > Accessories > Notepad`. If there is more than one `<uicontrol>` element, a formatter might show connecting characters between the menu items to represent the menu cascade. This element is part of the DITA user interface domain, a special set of DITA elements designed to document user interface tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph ui-d/menucascade

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Example

This example:

```
<menucascade>
 <uicontrol>Start</uicontrol>
 <uicontrol>Programs</uicontrol>
 <uicontrol>Accessories</uicontrol>
 <uicontrol>Notepad</uicontrol>
</menucascade>
```

May produce output similar to the following: **Start** > **Programs** > **Accessories** > **Notepad**

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.8.4 <shortcut>

The `<shortcut>` element identifies a keyboard shortcut for a menu or window action. This element is part of the DITA user interface domain, a special set of DITA elements designed to document user interface tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword ui-d/shortcut

Example

This example:

```
<menucascade>
 <uicontrol>Start</uicontrol>
 <uicontrol><shortcut>P</shortcut>rograms</uicontrol>
</menucascade>
```

May produce output similar to the following: **Start** > **Programs**

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.8.5 <screen>

The `<screen>` element contains or refers to a textual representation of a computer screen or user interface panel (window).

Use `<screen>` to contain representations of text-based online panels, text consoles ("term" or "curses" windows, for example), or other text-based user interface components. The default print representation is to enclose the screen within a box, suggesting a computer display screen. In contrast to graphical screen captures normally used to represent GUI parts (see the `<image>` element description), this element specifically supports constructions for which text is the primary content.

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This element is part of the DITA user interface domain, a special set of DITA elements designed to document user interface tasks, concepts and reference information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/pre ui-d/screen

Example

```
<p>Type "edit" after the command line prompt and press Enter.  The following
editing interface will be displayed.</p>
<screen>
   File  Edit  Search  View  Options  Help
+--------------------------------- UNTITLED1 ----------------------------------+
¦                                                                             ¦
¦                                                                             ¦
¦                                                                             ¦
¦                                                                             ¦
¦  Line:1    Col:1  F1=Help                                                   ¦
+-----------------------------------------------------------------------------+
</screen>
```

Figure 9: Using the <screen> element to represent a DOS edit session

Figure 10: Potential result from an rendering process

Type "edit" after the command line prompt and press Enter. The following editing interface will be displayed.

```
   File  Edit  Search  View  Options  Help
+--------------------------------- UNTITLED1 ----------------------------------+
¦                                                                             ¦
¦                                                                             ¦
¦                                                                             ¦
¦                                                                             ¦
¦  Line:1    Col:1  F1=Help                                                   ¦
+-----------------------------------------------------------------------------+
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.7 Display attribute group* on page 195, *outputclass* on page 196, *xml:space* on page 196, and *spectitle* on page 197.

3.8.9 XML mention domain

Use the XML-mention domain elements for mentions of named XML constructs, including elements, attributes, entities, processing instructions, and document-type declaration components. These elements enable specific typographic effects for different construct types, precise search and retrieval of specific constructs, and automatic indexing of different constructs. This domain is intended to support the description and documentation of XML document types and XML applications.

Note: Although the original XML 1.0 Recommendation specifically reserved element names beginning with "xml" or "XML"' for the use of the XML standard itself, the subsequent introduction of namespaces made the restriction unnecessary. The restriction was formally removed in the *XML 1.0 Fifth Edition Specification Errata*. The OASIS DITA Technical Committee acknowledges this revised policy in its use of the semantically precise prefix "xml" for the XML mention domain.

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3.8.9.1 <numcharref>

Use the <numcharref> element to identify mentions of XML numeric character references, for example, "
" or "
". This element enables more precise semantic searching of the DITA source; it also enables distinct output formatting. The content of the <numcharref> element should be the numeric value without any leading or trailing characters added as style, for example, "10" or "x0a". This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/numcharref

Example

```
<p>Numeric character references represent characters from the Universal
Character Set (UCS) of Unicode. They are used to reference characters  that
cannot easily be directly encoded in a document, such as a copyright
symbol. When a markup-aware processor encounters a numeric  character
reference, for example, <numcharref>225</numcharref>, it renders the
reference as the Unicode character that it represents: a-acute.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

3.8.9.2 <parameterentity>

Use the <parameterentity> element to identify mentions of parameter entities, for example, "%keyword.content;". This element enables more precise semantic searching of the DITA source; it also enables distinct formatting, such as adding the percentage sign (%) or trailing semi-colon (;) delimiters to the parameter entity name. The content of the <parameterentity> element should be the entity name without the leading percentage sign or trailing semi-colon. This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/parameterentity

Examples

```
<p> ... The <parameterentity>p.content</parameterentity> parameter entity
defines the content model for the <xmlelement>p</xmlelement> element.</p>
```

```
<p>To include the XML-mention domain in a DTD document-type shell, you must
declare the <parameterentity>xml-d-dec</parameterentity> parameter entity.</p>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.9.3 <textentity>

Use the `<textentity>` element to identify mentions of XML text entities, for example, "&xml-d-att;". This element enables more precise semantic searching of the DITA source; it also enables distinct formatting, such as adding an ampersand (&) as a leading character and a semi-colon (;) as a trailing character. The content of the `<textentity>` element should be the entity name without the ampersand and semi-colon delimiters. This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/textentity p

Example

```
The <textentity>hi-d-att</textentity> entity holds the contribution for the
<xmlatt>domains</xmlatt> attribute.
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.9.4 <xmlatt>

Use the `<xmlatt>` element to identify mentions of XML attributes, for example, `@audience`. This element enables more precise semantic searching of the DITA source; it also enables distinct formatting, such as preceding the name of the attribute with a commercial at (@) sign. The content of the `<xmlatt>` element should be the attribute name without commercial at or equals (=) characters. This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/xmlatt

Example

```
The <xmlatt>collection-type</xmlatt> and <xmlatt>linking</xmlatt>
attributes affect how related links are generated for topics that are
referenced in the DITA map.
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.9.5 <xmlelement>

Use the `<xmlelement>` element to identify mentions of XML element types. This element enables more precise semantic searching of the DITA source; it also enables distinct formatting, such as surrounding the name of the element with angle brackets. The content of the `<xmlelement>` element should be the element type name without leading or trailing angle brackets. This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/xmlelement

Example

```
<p>Use the <xmlelement>uicontrol</xmlelement> (user interface control)
element to indicate the names of buttons, entry fields, menu items, or
other objects that enable a user to interact with a graphical user
interface.</p>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.9.6 <xmlnsname>

Use the `<xmlnsname>` element to identify mentions of namespace names, for example, "http://dita.oasis-open.org/architecture/2005/". This element enables more precise semantic searching of the DITA source; it also enables distinct formatting. This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/xmlnsname

Example

```
The namespace name for XHTML is <xmlnamespace>http://www.w3.org/1999/xhtml</xmlnamespace>.
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

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3.8.9.7 <xmlpi>

Use the <xmlpi> element to identify mentions of processing instruction names, such as <?*piname* pi value?>. This element enables more precise semantic searching of the DITA source; it also enables distinct formatting. This element is part of the XML mention domain.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/keyword markup-d/markupname xml-d/xmlpi

Example

```
While DITA does not define any processing instructions, some applications might
use some DocBook processing instructions, such as <xmlpi>dbhtml_bgcolor</xmlpi>.
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and @keyref .

3.8.10 xNAL domain elements

The xNAL domain elements represent a subset of the Extensible Name and Address Standard. It is used to encode information about the author or authors of DITA information. The domain can be included in any DITA document type shell that requires additional metadata for names and addresses, although the implementations provided by OASIS only include it in the bookmap document type.

3.8.10.1 <authorinformation>

The <authorinformation> element contains detailed information about the author or authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/author xnal-d/authorinformation

Example

```
<authorinformation>
 <personinfo>
  <namedetails><personname>
    <firstname>Derek</firstname>
    <middlename>L.</middlename>
    <lastname>Singleton</lastname>
    <generationidentifier>Jr.</generationidentifier>
    <otherinfo>noted psychologist</otherinfo>
  </personname></namedetails>
  <addressdetails>
    <thoroughfare>123 Yellow Brick Road</thoroughfare>
    <locality>Emerald City</locality>
    <administrativearea>Kansas</administrativearea>
    <country>USA</country>
```


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```
  </addressdetails>
  <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
  <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
 </personinfo>
</authorinformation>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *B.8 Link relationship attribute group* on page 196 (with a narrowed definition for `@type`, given below), and `@keyref` .

@type

Describes the target of a reference. See *B.13.9 The type attribute* on page 209 for detailed information on supported values and processing implications. Note that this differs from the `@type` attribute on many other DITA elements. Beginning with DITA 1.2, values in this attribute are not limited to a small number of choices; the following values were used in DITA 1.0 and DITA 1.1, and are also recognized for the `<author>` element (and its specializations):

creator

The primary or original author of the content.

contributor

An additional author who is not primary.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

3.8.10.2 <addressdetails>

The `<addressdetails>` element contains information about the address of the author or authoring group.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/addressdetails

Example

```
<personinfo>
 <namedetails><personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.3 <administrativearea>

The `<administrativearea>` element contains information about a county, state, or province.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/administrativearea

Example

```
<addressdetails>
<thoroughfare>123 Yellow Brick Road</thoroughfare>
<locality>Emerald City</locality>
<administrativearea>Kansas</administrativearea>
<country>USA</country>
</addressdetails>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.4 <contactnumber>

A `<contactnumber>` element contains the contact number of a person or organization, such as a telephone number, mobile phone number, or fax number.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/contactnumber

Example

```
<personinfo>
 <namedetails><personname>
  <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
```


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```
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.5 <contactnumbers>

The `<contactnumbers>` element contains a list of telephone and fax numbers.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/contactnumbers

Example

```
<personinfo>
 <namedetails><personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.6 <country>

The `<country>` element contains the name of a country.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/country

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Example

```
<addressdetails>
 <thoroughfare>123 Yellow Brick Road</thoroughfare>
 <locality>Emerald City</locality>
 <administrativearea>Kansas</administrativearea>
 <country>USA</country>
</addressdetails>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.7 <emailaddress>

The `<emailaddress>` element contains an e-mail address.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/emailaddress

Example

```
<personinfo>
 <namedetails><personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses>
  <emailaddress>wizard@example.org</emailaddress>
 </emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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3.8.10.8 <emailaddresses>

The `<emailaddresses>` element contains a list of e-mail addresses.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/emailaddresses

Example

```
<personinfo>
 <namedetails><personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.9 <firstname>

The `<firstname>` element contains the person's first name.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/firstname

Example

```
<namedetails>
 <personname>
  <honorific>Dr.</honorific>
  <firstname>Derek</firstname>
  <middlename>L.</middlename>
  <lastname>Singleton</lastname>
  <generationidentifier>Jr.</generationidentifier>
  <otherinfo>noted psychologist</otherinfo>
```


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```
 </personname>
</namedetails>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.10 <generationidentifier>

The `<generationidentifier>` element contains information about the person's generation, such as: Jr, III, or VIII.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/generationidentifier

Example

```
<namedetails><personname>
  <firstname>Derek</firstname>
  <middlename>L.</middlename>
  <lastname>Singleton</lastname>
  <generationidentifier>Jr.</generationidentifier>
  <otherinfo>noted psychologist</otherinfo>
</personname></namedetails>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.11 <honorific>

The `<honorific>` element contains the person's title, such as: Dr., Mr., Ms., or HRH.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/honorific

Example

```
<namedetails><personname>
 <honorific>Dr.</honorific>
 <firstname>Derek</firstname>
 <middlename>L.</middlename>
 <lastname>Singleton</lastname>
 <generationidentifier>Jr.</generationidentifier>
```


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```
 <otherinfo>noted psychologist</otherinfo>
</personname></namedetails>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.12 <lastname>

The `<lastname>` element contains the person's last name.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/lastname

Example

```
<namedetails><personname>
 <honorific>Dr.</honorific>
 <firstname>Derek</firstname>
 <middlename>L.</middlename>
 <lastname>Singleton</lastname>
 <generationidentifier>Jr.</generationidentifier>
 <otherinfo>noted psychologist</otherinfo>
</personname></namedetails>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.13 <locality>

The `<locality>` element contains information about the city and postal or ZIP code. It can contain the information directly, or by acting as a wrapper for `<localityname>` and `<postalcode>`.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/locality

Example

```
<addressdetails>
<thoroughfare>123 Yellow Brick Road</thoroughfare>
<locality>
<localityname>Emerald City</localityname>
<postalcode>66780</postalcode>
```


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```
</locality>
<administrativearea>Kansas</administrativearea>
<country>USA</country>
</addressdetails>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.14 <localityname>

The `<localityname>` element contains the name of the locality or city.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/localityname

Example

```
<addressdetails>
<thoroughfare>123 Yellow Brick Road</thoroughfare>
<locality>
<localityname>Emerald City</localityname>
<postalcode>66780</postalcode>
</locality>
<administrativearea>Kansas</administrativearea>
<country>USA</country>
</addressdetails>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.15 <middlename>

The `<middlename>` element contains the person's middle name or initial.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/middlename

Example

```
<namedetails><personname>
 <honorific>Dr.</honorific>
 <firstname>Derek</firstname>
 <middlename>L.</middlename>
 <lastname>Singleton</lastname>
 <generationidentifier>Jr.</generationidentifier>
```


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```
 <otherinfo>noted psychologist</otherinfo>
</personname></namedetails>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.16 <namedetails>

The `<namedetails>` element contains information about the name of the author or the authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/namedetails

Example

```
<personinfo>
 <namedetails><personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.17 <organizationinfo>

The `<organizationinfo>` element contains detailed information about an authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/organizationinfo

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Example

```
<organizationinfo>
 <namedetails>
  <organizationnamedetails>
   <organizationname>WizardWorks, Inc.</organizationname>
   <otherinfo>'Best wizard in Oz'</otherinfo>
  </organizationnamedetails>
 </namedetails>
 <addressdetails>
  <thoroughfare>123 Yellow Brick Road</thoroughfare>
  <locality>Emerald City</locality>
  <administrativearea>Kansas</administrativearea>
  <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
 <urls><url>www.wizardworks.example.org</url></urls>
</organizationinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.18 <organizationname>

The `<organizationname>` element contains name information about the authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/organizationname

Example

```
<organizationinfo>
 <namedetails>
  <organizationnamedetails>
   <organizationname>WizardWorks, Inc.</organizationname>
   <otherinfo>'Best wizard in Oz'</otherinfo>
  </organizationnamedetails>
 </namedetails>
 <addressdetails>
  <thoroughfare>123 Yellow Brick Road</thoroughfare>
  <locality>Emerald City</locality>
  <administrativearea>Kansas</administrativearea>
  <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
 <urls><url>www.wizardworks.example.org</url></urls>
</organizationinfo>
```


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Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.19 <organizationnamedetails>

The `<organizationnamedetails>` element contains information about the name of an authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/organizationnamedetails

Example

```
<organizationinfo>
 <namedetails>
  <organizationnamedetails>
   <organizationname>WizardWorks, Inc.</organizationname>
   <otherinfo>'Best wizard in Oz'</otherinfo>
  </organizationnamedetails>
 </namedetails>
 <addressdetails>
  <thoroughfare>123 Yellow Brick Road</thoroughfare>
  <locality>Emerald City</locality>
  <administrativearea>Kansas</administrativearea>
  <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
 <urls><url>www.wizardworks.example.org</url></urls>
</organizationinfo>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.20 <otherinfo>

The `<otherinfo>` element contains other name information about the author or authoring organization.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/otherinfo

Example

```
<organizationinfo>
 <namedetails>
  <organizationnamedetails>
   <organizationname>WizardWorks, Inc.</organizationname>
```


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```
    <otherinfo>'Best wizard in Oz'</otherinfo>
   </organizationnamedetails>
  </namedetails>
  <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
  </addressdetails>
</organizationinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.21 <personinfo>

The `<personinfo>` element is a wrapper containing all relevant data about a person, including name, address, and contact information.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/personinfo

Example

```
<personinfo>
 <namedetails><personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
 </personname></namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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3.8.10.22 <personname>

The <personname> element contains name information about the author.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/personname

Example

```
<personinfo>
 <namedetails>
  <personname>
   <firstname>Derek</firstname>
   <middlename>L.</middlename>
   <lastname>Singleton</lastname>
   <generationidentifier>Jr.</generationidentifier>
   <otherinfo>noted psychologist</otherinfo>
  </personname>
 </namedetails>
 <addressdetails>
   <thoroughfare>123 Yellow Brick Road</thoroughfare>
   <locality>Emerald City</locality>
   <administrativearea>Kansas</administrativearea>
   <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
</personinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.23 <postalcode>

The <postalcode> element contains information about the postal code or the ZIP code.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/postalcode

Example

```
<addressdetails>
<thoroughfare>123 Yellow Brick Road</thoroughfare>
<locality>
<localityname>Emerald City</localityname>
<postalcode>66780</postalcode>
</locality>
<administrativearea>Kansas</administrativearea>
```


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```
<country>USA</country>
</addressdetails>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.24 <thoroughfare>

The `<thoroughfare>` element contains information about the thoroughfare - for example, the street, avenue, or boulevard - on which an address is located.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/ph xnal-d/thoroughfare

Example

```
<addressdetails>
<thoroughfare>123 Yellow Brick Road</thoroughfare>
<locality>
<localityname>Emerald City</localityname>
<postalcode>66780</postalcode>
</locality>
<administrativearea>Kansas</administrativearea>
<country>USA</country>
</addressdetails>
```

Attributes

The following attributes are available on this element: *B.1 Universal attribute group* on page 187, *outputclass* on page 196, and `@keyref` .

3.8.10.25 <url>

The `<url>` element contains a Uniform Resource Locator (URL), such as a person's or company's internet address.

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/url

Example

```
<organizationinfo>
 <namedetails>
  <organizationnamedetails>
   <organizationname>WizardWorks, Inc.</organizationname>
   <otherinfo>'Best wizard in Oz'</otherinfo>
```


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```
  </organizationnamedetails>
 </namedetails>
 <addressdetails>
  <thoroughfare>123 Yellow Brick Road</thoroughfare>
  <locality>Emerald City</locality>
  <administrativearea>Kansas</administrativearea>
  <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
 <urls><url>www.wizardworks.example.org</url></urls>
</organizationinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

3.8.10.26 <urls>

The `<urls>` element contains a list of Uniform Resource Locators (URLs).

Content models

See appendix for information about this element in OASIS document type shells.

Inheritance

+ topic/data xnal-d/urls

Example

```
<organizationinfo>
 <namedetails>
  <organizationnamedetails>
   <organizationname>WizardWorks, Inc.</organizationname>
   <otherinfo>'Best wizard in Oz'</otherinfo>
  </organizationnamedetails>
 </namedetails>
 <addressdetails>
  <thoroughfare>123 Yellow Brick Road</thoroughfare>
  <locality>Emerald City</locality>
  <administrativearea>Kansas</administrativearea>
  <country>USA</country>
 </addressdetails>
 <contactnumbers><contactnumber>123-555-4678</contactnumber></contactnumbers>
 <emailaddresses><emailaddress>wizard@example.org</emailaddress></emailaddresses>
 <urls><url>www.wizardworks.example.org</url></urls>
</organizationinfo>
```

Attributes

The following attributes are available on this element: *B.5 Data element attributes group* on page 194, *B.8 Link relationship attribute group* on page 196, *B.1 Universal attribute group* on page 187, and *outputclass* on page 196.

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4 Technical content elements

Elements in the technical content section include the original Concept, Task, and Reference specializations, as well as specializations added [►] in later releases [◄] . It also includes domains designed primarily for technical content.

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5 Conformance

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A Acknowledgments

(Non-normative) Many members of the OASIS DITA Technical Committee participated in the creation of this specification and are gratefully acknowledged.

Bob Thomas, Individual Member

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B Attributes

The Attributes appendix contains definitions about commonly used attributes, with common definitions.

If an element uses a different definition, or narrows the scope of, an otherwise common attribute, it will be called out in the topic that defines the element.

Note:

The content in this appendix is copied from the base DITA specification. Any comments or corrections about this content should be directed to the DITA Technical Specification Editor.

B.1 Universal attribute group

The universal attribute group defines a set of common attributes available on most DITA elements. The universal attribute group includes all attributes from the metadata, ID, localization, and debug attribute groups, plus the `@class` attribute.

Note: Earlier versions of the DITA specification grouped some attributes under names taken directly from parameter entities in the standard DTD implementation of DITA. These groups used names such as "univ-atts", which had no meaning outside the context of a DTD module. In DITA 1.3, these groups are restructured and renamed in the specification document for greater clarity, and no longer have a connection to the DTD. For example, this grouping of "Universal attributes" was previously referred to as "univ-atts"; the updated group includes several universal attributes that are not part of the univ-atts group in the DTD.

@class ***(Not for use by authors)***

This attribute is not for use by authors. If an editor displays `@class` *attribute values, do not edit them.* The `@class` attribute supports specialization. Its predefined values allow DITA tools to work correctly with ranges of related content. In a generalized DITA document the `@class` attribute value in the generalized instance might differ from the default value for the `@class` attribute for the element as given in the DTD or schema. See *class attribute rules and syntax* for more information. This attribute is specified on every element except for the `<dita>` container element. It is always specified with a default value, which varies for each element.

B.1.1 ID attribute group

The ID attribute group includes attributes that enable the naming and referencing of elements in topics and maps.

@id

An anchor point. This ID is the target for references by `@href` and `@conref` attributes and for external applications that refer to DITA content. This attribute is defined with the XML data type NMTOKEN, except where noted for specific elements within the language reference. See *ID attribute* in the Architectural Specification for more details.

@conref

This attribute is used to reference an ID on content that can be reused. See *B.13.5 The conref attribute* on page 200 for examples and details about the syntax.

@conrefend

The `@conrefend` attribute is used when reusing a range of elements through `@conref`. The syntax is the same as for the `@conref` attribute; see *B.13.7 The conrefend attribute* on page 205 for examples.

@conaction

This attribute enables users to push content into a new location. Allowable values are mark, pushafter, pushbefore, pushreplace, and -dita-use-conref-target. See *B.13.6 The conaction attribute* on page 201 for examples and details about the syntax.

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@conkeyref
Allows the conref feature to operate using a key instead of a URI. See *B.13.8 The conkeyref attribute* on page 209 for more details about the syntax and behaviors.

B.1.2 Metadata attribute group

The metadata attribute group includes common metadata attributes, several of which support conditional processing (filtering and flagging) or the creation of new attribute domain specializations.

@props
Root attribute from which new metadata attributes can be specialized. This is a property attribute which supports conditional processing for filtering or flagging. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

@base
A generic attribute that has no specific purpose. It is intended to act as a base for specialized attributes that have a simple value syntax like the conditional processing attributes (one or more alphanumeric values separated by whitespace), but is not itself a filtering or flagging attribute.

The `@props` and `@base` attributes each take a space-delimited set of values. However, when acting as a container for generalized attributes, the attribute values will be more complex; see *Attribute generalization* for more details.

@platform
Indicates operating system and hardware. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

@product
Contains the name of the product to which the element applies. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

@audience
Indicates the intended audience for the element. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

@otherprops
This attribute can be used for any other properties that might be needed to describe an audience, or to provide selection criteria for the element. Alternatively, the `@props` attribute can be specialized to provide a new metadata attribute instead of using the general `@otherprops` attribute. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

The `@audience`, `@platform`, `@product`, and `@otherprops` attributes are property attributes which support conditional processing for filtering or flagging. Each takes a space-delimited set of values, with optional groups of space-delimited properties. Although these attributes are not specialized and not specializeable, the group syntax matches that for generalized attributes in *Attribute generalization* .

@deliveryTarget
The intended delivery target of the content, for example "html", "pdf", or "epub". This attribute is a replacement for the now deprecated `@print` attribute.

The `@deliveryTarget` attribute is specialized from the `@props` attribute. It is defined in the deliveryTargetAttDomain, which is integrated into all OASIS-provided document-type shells. If this domain is not integrated into a given document-type shell, the `@deliveryTarget` attribute will not be available.

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@importance
A range of values that describe an importance or priority attributed to an element. For example, in steps of a task, the attribute indicates whether a step is optional or required. This attribute is not used for DITAVAL-based filtering or flagging; applications might use the importance value to highlight elements. Allowable values are: obsolete, deprecated, optional, default, low, normal, high, recommended, required, urgent, and -dita-use-conref-target.

@rev
Indicates a revision level of an element that identifies when the element was added or modified. It can be used to flag outputs when it matches a run-time parameter; it cannot be used for filtering. It is not sufficient to be used for version control. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

@status
The modification status of the current element. Allowable values are: new, changed, deleted, unchanged, and -dita-use-conref-target.

B.1.3 Localization attribute group

The localization attribute group defines a set of common attributes related to translation and localization. These attributes are available on most DITA elements.

@translate
Indicates whether the content of the element should be translated or not. Allowable values are yes, no, and -dita-use-conref-target. See *Element-by-element recommendations for translators: Technical content edition* for suggested processing defaults for each element.

@xml:lang
Specifies the language of the element content. The `@xml:lang` attribute and its values are described in the XML Recommendation at *http://www.w3.org/TR/REC-xml/#sec-lang-tag*. Allowable values are language tokens or the null string.

@dir
Specifies the directionality of text: left-to-right (ltr, the processing default) or right-to-left (rtl). The value lro indicates an override of normal bidi text presentation, forcing the element into left-to-right mode; rlo overrides normal rules to force right-to-left presentation. Allowable values are ltr, rtl, lro, rlo, and -dita-use-conref-target. See *The dir attribute* for more information.

The `@translate`, `@xml:lang`, and `@dir` attributes identify language-specific words or phrases for specific processing (or non-processing, in the case of `translate="no"`).

```
<p>The cordial response to the question is
<q translate="no" xml:lang="de-de" dir="ltr">nein.</q></p>
```

B.1.4 Debug attribute group

The debug attributes group includes a set of debugging attributes that are normally hidden from authoring view. These attributes are defined for every DITA element.

These attributes are intended to store debugging information during intermediate processing. One possible implementation is to use `@xtrf` (xml-trace-filename) to store the original source file name through intermediate processing steps, and use `@xtrc` (xml-trace-counter) to store an element counter for repositioning authoring tools at the originating element location. If values are assigned in this way in the first stage of a processing stream, values in these attributes can then be used for error recovery.

Note: While this group of attributes is defined with the "Universal attribute group" within the specification, OASIS implementations of the DITA vocabulary do not currently group it with the common "univ-atts" attributes group.

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These attributes are normally hidden from authors and exposed only to processing tools or editor macros. Values used in these attributes might be implementation-dependent.

@xtrf
xml-trace-filename, the original filename.

@xtrc
xml-trace-counter, an element counter for repositioning editors at a known edit location.

B.2 Architectural attribute group

The architectural attributes group includes a set of attributes defined for document level elements such as `<topic>` and `<map>`. These attributes are intended to provide information about the DITA namespace, what level of DITA is in use, and what vocabulary modules are in use.

@DITAArchVersion
Designates the version of the architecture that is in use. The default value will increase with each release of DITA. This attribute is in the namespace "http://dita.oasis-open.org/architecture/2005/". This attribute is defined with the XML data type CDATA, but uses a default value of the current version of DITA. The current default is "1.3".

@xmlns:ditaarch
Declares the default DITA namespace. Although this is technically a namespace rather than an attribute, it is included here because it is specified as an attribute in the DTD grammar files distributed by OASIS. The value is fixed to "http://dita.oasis-open.org/architecture/2005/".

@domains
Indicates the specialized domains that are included in the DTD or Schema. This attribute is defined with the XML data type CDATA, and each new document type *SHOULD* specify a default. The value will differ depending on what domains are included in the current DTD or Schema; a sample value is "(topic ui-d) (topic hi-d) (topic pr-d) (topic sw-d) (topic ut-d) (topic indexing-d)".

B.3 Attributes common to many map elements

This attribute group collects several attributes that are used on a variety of map elements. For a few elements, the group is modified slightly to remove an attribute such as `@toc` or `@format`; in those cases the element definition will clarify that the element does not use this full set. That is generally done in order to specify a default for one attribute, such as defaulting `@format` to "ditamap" on the `<mapref>` element.

@cascade
Controls how metadata attributes cascade within a map. There are two defined values that should be supported: "merge" and "nomerge". If no value is set, and no value cascades from an ancestor element, processors *SHOULD* assume a default of "merge". See *Cascading of metadata attributes in a DITA map* for more information about how this attribute interacts with metadata attributes.

@collection-type
Collection types describe how links relate to each other. The processing default is "unordered", although no default is specified in the DTD or Schema. Allowable values are:

unordered
Indicates that the order of the child topics is not significant.

sequence
Indicates that the order of the child topics is significant; output processors will typically link between them in order.

choice
Indicates that one of the children should be selected.

family
Represents a tight grouping in which each of the referenced topics not only relates to the current topic but also relate to each other.

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-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

Usage of the `@collection-type` attribute on `<reltable>` and `<relcolspec>` is currently undefined and reserved for future use.

@processing-role

Describes the processing role of the referenced topic. The processing default is "normal". If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor. Allowable values are:

normal

Normal topic that is a readable part of the information.

resource-only

The topic is used as a resource for processing purposes. This topic should not be included in a rendered table of contents, and the topic should not be rendered on its own.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

@locktitle

If the `@locktitle` attribute is set to "yes", the content of the `<navtitle>` element or `@navtitle` attribute is used for a navigation title, if it is present. If the `@locktitle` attribute is not present or set to "no", the content of the `<navtitle>` element or `@navtitle` attribute is ignored, and the title of the referenced topic is used as a navigation title.

Note: The `@navtitle` attribute is deprecated in favor of the `<navtitle>` element. When both a `<navtitle>` element and a `@navtitle` attribute are specified, the `<navtitle>` element should be used.

Allowable values for `@locktitle` are:

yes

The content of the `<navtitle>` element or `@navtitle` attribute is used for a navigation title.

no

The content of the `<navtitle>` element or `@navtitle` attribute is ignored. This is the processing default.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

@linking

Defines some specific linking characteristics of a topic's current location in the map. If the value is not specified locally, the value might cascade from another element in the map (for cascade rules, see *Cascading of metadata attributes in a DITA map*). Allowable values are:

targetonly

A topic can only be linked to and cannot link to other topics.

sourceonly

A topic cannot be linked to but can link to other topics.

normal

A topic can be linked to and can link to other topics. Use this to override the linking value of a parent topic.

none

A topic cannot be linked to or link to other topics.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

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@toc

Specifies whether a topic appears in the table of contents (TOC). If the value is not specified locally, the value might cascade from another element in the map (for cascade rules, see *Cascading of metadata attributes in a DITA map*). Allowable values are:

yes

The topic appears in a generated TOC.

no

The topic does not appear in a generated TOC.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

@print

Specifies whether the topic should be included in a print-specific rendition, such as PDF. The processing default is "yes". If the value is not specified locally, the value might cascade from another element in the map (for cascade rules, see *Cascading of metadata attributes in a DITA map*).

Note: Beginning with DITA 1.3, the `@print` attribute is deprecated. It is replaced with a conditional processing attribute: `@deliveryTarget`. See `@deliveryTarget` for more details.

Allowable values are:

yes

Include the topic in the print-oriented file.

no

Do not include the topic in a print-oriented file.

printonly

Only include the topic when rendering the DITA content in a print-oriented context; the topic is not appropriate for other contexts, such as when rendering as HTML.

-dita-use-conref-target

See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

@search

Describes whether the target is available for searching. If the value is not specified locally, the value might cascade from another element in the map (for cascade rules, see *Cascading of metadata attributes in a DITA map*). Allowable values are:

yes

no

-dita-use-conref-target

@chunk

When a set of topics is transformed using a map, the `@chunk` attribute allows multi-topic documents to be broken into smaller files and multiple individual topics to be combined into larger combined documents.

For a detailed description of the `@chunk` attribute and its usage, see *Chunking* .

@keyscope

Specifies that the element marks the boundaries of a key scope. See *B.13.4 The keyscope attribute* on page 199 for details on how to use the `@keyscope` attribute.

B.4 Complex-table attribute group

The Complex-table attribute group includes several attributes that are defined on complex table elements. Most of these attributes are part of the OASIS Exchange model; table elements generally use only a subset of the attributes defined in this group. These attributes are not available for the `<simpletable>` elements.

@align

Describes the alignment of text in a table column. Allowable values are:

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left
Indicates left alignment of the text.
right
Indicates right alignment of the text.
center
Indicates center alignment of the text.
justify
Justifies the contents to both the left and the right.
char
Use the character specified on the `@char` attribute for alignment.
-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

The `@align` attribute is available on the following table elements: `<tgroup>`, `<colspec>`, and `<entry>`.

@char
Specifies the character for aligning the table entry data.

Default source for `<entry>` elements starting in this column. If character alignment is specified, the value is the single alignment character source for any implied `@char` values for entry immediately in this column. A value of "" (the null string) means there is no aligning character.

For example, if `align="char"` and `char="r"` are specified, then text in the entry should align with the first occurrence of the letter "r" within the entry.

The `@char` attribute is available on the following table elements: `<colspec>` and `<entry>`.

@charoff
Specifies the horizontal offset of alignment character when `align="char"`.

Default source for `<entry>` elements starting in this column. For character alignment on an entry in the column, horizontal character offset is the percent of the current column width to the left of the (left edge of the) alignment character.

This value should be number, greater than 0 and less than or equal to 100.

For example, if `align="char"`, `char="r"`, and `charoff="50"` are all specified, then text in the entry should align 50% of the distance to the left of the first occurrence of the character "r" within the entry.

The `@charoff` attribute is available on the following table elements: `<colspec>` and `<entry>`.

@colsep
Column separator. A value of 0 indicates no separators; 1 indicates separators.

The `@colsep` attribute is available on the following table elements: `<table>`, `<tgroup>`, `<colspec>`, and `<entry>`.

@rowsep
Row separator. A value of 0 indicates no separators; 1 indicates separators.

The `@rowsep` attribute is available on the following table elements: `<table>`, `<tgroup>`, `<row>`, `<colspec>`, and `<entry>`.

@rowheader
Indicates whether the entries in the respective column *SHOULD* be considered row headers. Allowable values are:

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firstcol
Indicates that entries in the first column of the table are functionally row headers (analogous to the way that a `<thead>` element provides column headers). Applies when `@rowheader` is used on the `<table>` element.

headers
Indicates that entries of a column described using the `<colspec>` element are functionally row headers (for cases with more than one column of row headers). Applies when `@rowheader` is used on the `<colspec>` element.

norowheader
Indicates that entries in the first column have no special significance with respect to column headers. Applies when `@rowheader` is used on the `<table>` element.

-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

Note: This attribute is not part of the OASIS Exchange Table model upon which DITA tables are based. Some DITA processors or output formats might not support all values.

The `@rowheader` attribute is available on the following table elements: `<table>` and `<colspec>`.

@valign
Indicates the vertical alignment of text in a table entry (cell). Allowable values are:

top
Align the text to the top of the table entry (cell).

bottom
Align the text to the bottom of the table entry (cell).

middle
Align the text to the middle of the table entry (cell).

-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

The `@valign` attribute is available on the following table elements: `<thead>`, `<tbody>`, `<row>`, and `<entry>`.

B.5 Data element attributes group

The data element attributes group includes attributes that are defined for the `<data>` element, and are reused on most or all specializations of the `<data>` element.

@name
Defines a unique name for the object.

@datatype
Describes the type of data contained in the `@value` attribute or within the `<data>` element. A typical use of `@datatype` will be the identifying URI for an XML Schema datatype.

@value
Specifies a value associated with the current property or element.

B.6 Date attributes group

The date attributes group includes attributes that take date values, and are defined on metadata elements that work with date information.

@expiry
The date when the information should be retired or refreshed, entered as YYYY-MM-DD, where YYYY is the year, MM is the month from 01 to 12, and DD is the day from 01-31.

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@golive
The publication or general availability (GA) date, entered as YYYY-MM-DD, where YYYY is the year, MM is the month from 01 to 12, and DD is the day from 01-31.

B.7 Display attribute group

The display attribute group includes attributes whose values can be used for affecting the display of many elements.

@expanse
Determines the horizontal placement of the element. Allowable values are:
page
Places the element on the left page margin for left-to-right presentation, or right page margin for right-to-left presentation.
column
Aligns the element with the current column margin
textline
Aligns the element with the left (for left to right presentation) or right (for right to left presentation) margin of the current text line and takes indention into account.
spread
Indicates that, if possible, the object should be rendered across a multi-page spread. If the rendition target does not have anything corresponding to spreads then spread has the same meaning as "page".
-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

In DITA tables, in place of the `@expanse` attribute used by other DITA elements, the `@pgwide` attribute is used in order to conform to the OASIS Exchange Table Model. The `@pgwide` attribute has a similar semantic (1=page width; 0=resize to galley or column).

Some DITA processors or output formats might not be able to support all values.

@frame
Specifies which portion of a border should surround the element. Allowable values are:
top
Draw a line before the element
bottom
Draw a line after the element
topbot
Draw a line both before and after the element
all
Draw a box around the element
sides
Draw a line at each side of the element
none
Don't draw any lines around this element
-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

Some DITA processors or output formats might not be able to support all values.

@scale
Specifies a percentage, selected from an enumerated list, that is used to resize fonts in relation to the normal text size. This attribute is primarily useful for print-oriented display.

The `@scale` attribute provides an acknowledged style-based property directly on DITA elements. For the `<table>` and `<fig>` elements, the intent of the property is to allow authors to adjust font sizes on the

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content of the containing element, primarily for print accommodation. An <image> in these contexts is to be scaled only by its own direct scale property. If not specifically scaled, such an <image> is unchanged by the scale property of its parent <table> or <fig>.

Allowable values are 50, 60, 70, 80, 90, 100, 110, 120, 140, 160, 180, 200, and *-dita-use-conref-target* . Some DITA processors or output formats might not be able to support all values.

B.8 Link relationship attribute group

The link relationship attribute group includes attributes whose values can be used for representing navigational relationships. These attributes occur only on elements that represent relationships among DITA elements or between DITA elements and non-DITA resources.

@href
Provides a reference to a resource. See *B.13.1 The href attribute* on page 198 for detailed information on supported values and processing implications..

@format
The @format attribute identifies the format of the resource being referenced. See *B.13.10 The format attribute* on page 211 for details on supported values.

@scope
The @scope attribute identifies the closeness of the relationship between the current document and the target resource. Allowable values are local, peer, external, and -dita-use-conref-target; see *B.13.11 The scope attribute* on page 212 for more information on these values.

@type
Describes the target of a reference. See *B.13.9 The type attribute* on page 209 for detailed information on supported values and processing implications.

B.9 Other common attributes

These common attributes are used across a wide variety of elements, with the common definition included below. These attributes are not defined as a group, and many elements only specify one or two from this list.

@keyref
@keyref provides a redirectable reference based on a key defined within a map. See *B.13.3 The keyref attribute* on page 199 for information on using this attribute.

@outputclass
Names a role that the element is playing. The role must be consistent with the basic semantic and expectations for the element. In particular, the @outputclass attribute can be used for styling during output processing; HTML output will typically preserve @outputclass for CSS processing.

@compact
Indicates close vertical spacing between list items. Expanded spacing is the processing default. The output result of compact spacing depends on the processor or browser. Allowable values are:

yes
Indicates compact spacing.

no
Indicates expanded spacing.

-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

@xml:space
This attribute is provided on <pre>, <lines>, and on elements specialized from those. It ensures that parsers in editors and transforms respect the white space, including line-end characters, that is part of the data in those elements. It is intended to be part of the default properties of these elements, and not for authors to change or delete. When defined, it has a fixed value of "preserve".

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@anchorref

Identifies a location within another map file where this map will be anchored at runtime. Resolution of the map is deferred until the final step in the delivery of any rendered content. For example, `anchorref="map1.ditamap/a1"` causes this map to be pulled into the location of the anchor point "a1" inside `map1.ditamap` when `map1.ditamap` is rendered for delivery.

@mapkeyref

Identifies the map, if any, from which the contained links or metadata are derived. This value might be automatically generated by a process that creates the links or metadata based on map context, as a way to identify which map the material came from. If the `<linklist>`, or `<linkpool>`, or metadata is manually created by an author, there is no need to use this attribute. Note that this attribute is not related to the `@keyref` attribute, and is not used for key based processing.

B.10 Simpletable attribute group

The simpletable attribute group includes several attributes that are defined on the `<simpletable>` element and `<simpletable>` specializations. These attributes are not defined for the OASIS exchange table (`<table>`).

@keycol

Defines the column that can contains headings for each row. No value indicates no key column. When present, the numerical value causes the specified column to be treated as a vertical header.

@relcolwidth

Specifies the width of each column in relationship to the width of the other columns. The value is a space separated list of relative column widths; each column width is specified as a positive integer or decimal number followed by an asterisk character.

For example, the value `relcolwidth="1* 2* 3*"` gives a total of 6 units across three columns. The relative widths are 1/6, 2/6, and 3/6 (16.7%, 33.3%, and 50%). Similarly, the value `relcolwidth="90* 150*"` causes relative widths of 90/240 and 150/240 (37.5% and 62.5%).

@refcols

The `@refcols` attribute is currently undefined, and is reserved for future use.

B.11 Specialization attributes group

These attributes are designed to be used by specializers, and are not intended for direct use by authors.

@specentry

The specialized entry attribute allows architects of specialized types to define a fixed or default header title for a specialized `<stentry>` element. Not intended for direct use by authors.

@spectitle

The specialized title attribute allows architects of specialized types to define a fixed or default title for a specialized element. Not intended for direct use by authors.

B.12 Topicref element attributes group

The topicref element attributes group includes attributes that are defined for the `<topicref>` element, and are reused on most or all specializations of the `<topicref>` element.

@copy-to

Use the `@copy-to` attribute on the `<topicref>` element to provide a different resource name for a particular instance of a resource referenced by the `<topicref>` (for example, to separate out the different versions of the topic, rather than combining them on output). If applicable, the `@copy-to` value can include path information. The links and navigation associated with that instance will point to a copy of the topic with the file name you specified. Applications *MAY* support `@copy-to` for references to local non-DITA

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resources. The `@copy-to` attribute is not supported for references to resources where the effective value for `@scope` is "peer" or "external".

Use the `<linktext>` and `<shortdesc>` in the `<topicref>`'s `<topicmeta>` to provide a unique name and short description for the new copy.

@navtitle

Specifies the title of the topic as it will appear in the navigation or tables of contents that are generated from the map. Beginning with DITA 1.2, the preferred way to specify the navigation title in a map is with the `<navtitle>` element, available inside the `<topicmeta>` element.

@query (DEPRECATED)

This attribute is deprecated. It might be removed in the future.

B.13 Complex attribute definitions

Several DITA attributes require more explanation than can fit in a single table cell. Those attributes are collected here.

B.13.1 The @href attribute

The `@href` attribute is used to reference another DITA topic or map, a specific element inside a DITA topic or map, an external Web page, or another non-DITA resource.

The value of a DITA `@href` attribute must be a valid URI reference [*RFC 3986*]. It is an error if the value is not a valid URI reference. An implementation *MAY* generate an error message; it *MAY* recover from this error condition by attempting to convert the value to a valid URI reference. Note that the path separator character in a URI is the forward slash (“/”); the backward slash character (“\”) is not permitted unescaped within URIs.

When an `@href` attribute references a DITA resource, an `@href` value that consists of a URI without a fragment identifier resolves to the document element in the referenced document. For the purposes of rendering, such as when a `<topicref>` reference to a DITA document is used to render the content as HTML, this means that all topics (and topic specializations) in the target document are included in the reference. For the purpose of linking, the reference resolves to the first (or only) topic (or topic specialization) in the document.

An `@href` value that consists of a URI with a fragment identifier must have a DITA local identifier as the portion after the hash. A DITA local identifier consists of *`topicID/elementID`* for a subelement of a topic, and of *elementID* for topics, maps, and subelements of a map. If the topic referenced by a DITA local identifier is for the same topic, then *topicID* can be replaced by a period; see *Processing xrefs and conrefs within a conref* for more information on how this syntax relates to conref resolution.

Note that certain characters - including but not limited to the hash sign ("#"), question mark ("?"), back slash ("\"), and space - are not permitted unescaped within URIs. Such characters must be percent-encoded. Also note that the ampersand ("&") and less than (“<”) characters are not permitted in XML attribute values; they must be represented by appropriate character or entity references. Some tools might perform this encoding automatically, while other tools might require that users either avoid the special characters or manually insert the encoding.

Example: Common syntax for the @href attribute

The following table includes some examples of common `@href` syntax. Note that these examples represent only a few common scenarios and are not all inclusive.

Target	Syntax
The first topic in a DITA document	`href="file.dita"`

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Target	Syntax
A specific topic in a DITA document	`href="file.dita#topicid"`
A non-topic element inside a DITA topic	`href="#topicid/elementid"`
A non-topic element inside the same DITA topic as the reference	`href="#./elementid"`
An element in a DITA map	`href="myMap.ditamap#map-branch"`
An image	`href="exampleImage.jpg"`
An external resource	`href="http://www.example.org"`

where:

- *topicid* is the value of the `@id` attribute on the DITA topic.
- *elementid* is the value of the `@id` attribute on the (non-topic) DITA element.
- *map-branch* is the value of the `@id` attribute on the DITA map element.

B.13.2 The @keys attribute

A `@keys` attribute consists of one or more space-separated keys. Map authors define keys using a `<topicref>` or `<topicref>` specialization that contains the `@keys` attribute. Each key definition introduces an identifier for a resource referenced from a map. Keys resolve to the resources given as the `@href` value on the key definition `<topicref>` element, to content contained within the key definition `<topicref>` element, or both.

The `@keys` attribute uses the following syntax:

- The value of the `@keys` attribute is one or more space-separated key names.
- Key names consist of characters that are legal in a URI. The case of key names is significant.
- The following characters are prohibited in key names: "{", "}", "[", "]", "/", "#", "?", and whitespace characters.

A key cannot resolve to sub-topic elements, although a `@keyref` attribute can do so by combining a key with a sub-topic element id.

B.13.3 The @keyref attribute

The `@keyref` attribute provides an indirect, late-bound reference to topics, to collections of topics (ditabase), to maps, to referenceable portions of maps, to non-DITA documents, to external URIs, or to XML content contained within a key definition topic reference. When the DITA content is processed, the key references are resolved using key definitions from DITA maps.

For elements that only refer to topics or non-DITA resources, the value of the `@keyref` attribute is a key name. For elements that can refer to elements within maps or topics, the value of the `@keyref` attribute is a key name, a slash ("/"), and the ID of the target element, where the key name must be bound to either the map or topic that contains the target element.

B.13.4 The @keyscope attribute

The `@keyscope` attribute consists of one or more space-separated key scope names. Map authors define the boundaries for key scopes by specifying the `@keyscope` attribute on `<map>` elements, `<topicref>` elements, or elements that are specializations of `<map>` or `<topicref>`. Such elements, their contents, and any locally-

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scoped content referenced from within the element, are considered to be part of the scope. Keys defined within a scope are only directly referenceable from within the same scope. They can be referenced from the parent scope using the scope's name, followed by a period, followed by the key name.

All key scopes are contiguous and non-intersecting. Within a root map, two distinct key scopes with the same name have no relationship with each other aside from that implied by their relative locations in the key scope hierarchy. They do not, for example, share key definitions. The only processing impact of a key scope's names is in defining the prefixes used when contributing qualified key names to the parent scope. For example, consider the following map segment:

```
<map>
  <topicgroup keyscope="xyz" id="scope1">
    <keydef keys="a" id="def1"/>
    <!-- other topic references -->
  </topicgroup>
  <topicgroup keyscope="xyz" id="scope2">
    <keydef keys="a" id="def2"/>
    <!-- other topic references -->
  </topicgroup>
  <!-- lots of other content -->
</map>
```

This map creates two distinct scopes that happen to use the same name (xyz). This results in the following:

- Each `<topicgroup>` sets a scope of "xyz" and includes a key "a". From outside of those two scopes, references to `keyref="xyz.a"` (key "a" within the scope "xyz") will always resolve to the first instance of that value, which is in the first `<topicgroup>`.
- Within the first `<topicgroup>`, content uses `keyref="a"` will resolve to the key in that branch (defined on the element with `id="def1"`).
- Within the second `<topicgroup>`, content uses `keyref="a"` will resolve to the key in that branch (defined on the element with `id="def2"`).

B.13.5 The @conref attribute

The `@conref` attribute is used to reference content that can be reused. It allows reuse of DITA elements, including topic or map level elements.

The value of the `@conref` attribute must be a URI reference to a DITA element. See *URI-based (direct) addressing* for details on specifying URI references to DITA elements. As with other DITA references, a `@conref` attribute that references a resource without an ID is treated as a reference to the first topic or map in the document.

Note: When using the `@conref` attribute on an element, the content of that element is ignored. For example, if a phrase is marked up like this:

```
<ph conref="#topic/ph">Something</ph>
```

the word "Something" will be replaced by the content of the referenced `<ph>` element.

B.13.5.1 Using the -dita-use-conref-target value

The value -dita-use-conref-target is available on enumerated attributes and can also be specified on other attributes. When an element uses `@conref` to pull in content, for any of its attributes assigned a value of "-dita-use-conref-target", the resulting value for those attributes is also pulled in from the referenced element.

Ordinarily, when an element uses `@conref`, any other attributes specified locally will be preserved when the reference is resolved. This causes problems when attributes are required, because required attributes must be specified regardless of whether the `@conref` attribute is present. The purpose of the -dita-use-conref-target value is to allow the author to specify a value for a required attribute while still allowing the conref resolution

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process to use the matching attribute from the referenced element. The value has the same result when the attribute is not required.

The -dita-use-conref-target token is allowed on any attribute where it is not prohibited by the XML grammar files or by the specification. For example, while `@cols` on the `<tgroup>` element is defined as being a number, this token is implicitly allowed in order to support conref processing for `<tgroup>`. However, the token is not allowed for the `@id` attribute on the `<topic>` element, because "-dita-use-conref-target" does not fit the syntax required by the XML grammar files.

This example shows a map where the `<topichead>` element uses `@conref`. It specifies the `@navtitle` attribute as well as the `@toc` attribute. In the resolved element, `@navtitle` from the referencing element is not preserved because it uses -dita-use-conref-target. The `@toc` attribute from the referencing element overrides the `@toc` attribute on the referenced element using normal conref resolution rules.

Note: In earlier versions of DITA, `@navtitle` was required on the `<topichead>` element. While it is no longer required, the example still illustrates the expected processing for both required and non-required attributes.

```
<map><title>Conref demonstration</title>
  <topichead id="heading"
             navtitle="This is a heading"
             toc="yes"
             linking="normal">
    <topicref href="topic.dita" navtitle="content"/>
  </topichead>

  <topichead conref="#heading"
             navtitle="-dita-use-conref-target"
             toc="no">
  </topichead>
</map>
```

Figure 11: Pre-resolution

```
<map><title>Conref demonstration</title>
  <topichead id="heading"
             navtitle="This is a heading"
             toc="yes"
             linking="normal">
    <topicref href="topic.dita" navtitle="content"/>
  </topichead>

  <topichead navtitle="This is a heading"
             toc="no"
             linking="normal">
    <topicref href="topic.dita" navtitle="content"/>
  </topichead>
</map>
```

Figure 12: Effective result post-resolution

B.13.6 The @conaction attribute

The `@conaction` attribute allows users to push content from one topic into another. It causes the `@conref` attribute to work in reverse, so that the content is pushed from the current topic into another, rather than pulled from another topic into the current one. Allowable values for `@conaction` are: pushafter, pushbefore, pushreplace, mark, and -dita-use-conref-target.

Note: In the descriptions below, the word *target* always refers to the element referenced by a `@conref` attribute.

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There are three possible functions using the `@conaction` attribute: replacing an element, pushing content before an element, and pushing content after an element. The `@conaction` attribute always declares the desired function while the `@conref` attribute provides the target of the reference using the standard `@conref` syntax.

In each case, an element pushed using `@conref` must be of the same type as, or more specialized than, its target. If the pushed element is more specialized than the target, then it should be generalized when the `@conref` is resolved. This ensures that the content will be valid in the target topic.

- It is valid to push using `@conref` when the two elements involved are of the same type. For example, a `<step>` element can use the conref push feature with another `<step>` as the target of the `@conref`.
- The target element can be more general than the source. For example, it is legal to push a `<step>` element to replace a general list item (`<li>`); the `<step>` element should be generalized back to a list item during the process.
- It is not possible to push a more general element into a specialized context. For example, it is not legal to push a list item (`<li>`) in order to replace a `<step>`, because the list item allows many items that are not valid in the specialized context.

Replacing content in another topic

When the `@conaction` attribute is set to "pushreplace", the source element will replace the target specified on the `@conref` attribute. The pushed content remains in the source topic where it was originally authored.

For example, assume that a task in `example.dita` has the id "example", and contains a `<step>` with the id "b":

```
<task id="example" xml:lang="en">
  <title>Example topic</title>
  <taskbody>
    <steps>
      <step id="a"><cmd>A</cmd></step>
      <step id="b"><cmd>B</cmd></step>
      <step id="c"><cmd>C</cmd></step>
    </steps>
  </taskbody>
</task>
```

In order to replace the step with id="b", another topic must combine a `@conaction` value of "pushreplace" with a `@conref` attribute that references this `<step>`:

```
<task id="other" xml:lang="en">
  ...
   <step conaction="pushreplace"
         conref="example.dita#example/b">
     <cmd>Updated B</cmd>
   </step>
  ...
</task>
```

The result will be an updated version of `example.dita` which contains the pushed `<step>`:

```
<task id="example" xml:lang="en">
  <title>Example topic</title>
  <taskbody>
    <steps>
      <step id="a"><cmd>A</cmd></step>
      <step id="b"><cmd>Updated B</cmd></step>
      <step id="c"><cmd>C</cmd></step>
    </steps>
  </taskbody>
</task>
```


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When resolving a conref push action, attributes are resolved using the same precedence as for normal `@conref`, with one exception. Attributes on the element with the `@conref` attribute (in this case, the source doing the push) will take priority over those on the referenced element. The exception is that if the source element does not specify an ID, the ID on the referenced element remains; if the source element does specify an ID then that replaces the ID on the referenced element.

It is an error for two source topics to replace the same element. Applications *MAY* warn users if more than one element attempts to replace a single target.

Pushing content before or after another element

Setting the `@conaction` attribute to "pushbefore" allows an element to be pushed before the element referenced by the `@conref` attribute. Likewise, setting the `@conaction` attribute to "pushafter" allows an element to be pushed after the element referenced by the `@conref` attribute. Multiple sources can push content before or after the same target; the order in which that content is pushed is undefined.

When an element is pushed before or after a target, the resulting document will have at least two of that element. Because this is not always valid, a document attempting to push content before or after a target must take an extra step to ensure that the result will be valid. The extra step makes use of the `conaction="mark"` value.

When pushing before, the `@conref` attribute itself looks just as it did when replacing, but the `@conaction` attribute is set to "mark" because it is marking the target element. This element remains empty; its purpose is to ensure that it is legal to have more than one of the current element. Immediately before the element which marks the target, you will place the content that you actually want to push. This element will set the `@conaction` attribute to "pushbefore".

When pushing after, the procedure is the same, except that the order of the elements is reversed. The element with `conaction="pushafter"` comes immediately after the element which marks the target.

Attributes on the element which is pushed (the one with `conaction="pushbefore"`) must be retained on the target, apart from the `@conaction` attribute itself. If this causes the result document to end up with duplicate IDs, an application can recover by dropping the duplicate ID, modifying it to ensure uniqueness, or warning the user.

The following restrictions apply when pushing content before or after an element:

- The elements that use `conaction="mark"` and `conaction="pushbefore"` are the same type as each other and appear in sequence. This restriction prevents a topic from trying to push a `<body>` element before or after another `<body>` element, because it is not valid to have two body elements in sequence.
- Either the container elements of the source and target match, or the container of the source element is be a specialization of the target's container. This is also to ensure validity of the target; for example, while it is possible to include multiple titles in a `<section>`, it is not possible to do so in a figure. Comparing the parents prevents a second `<section>` title from being pushed before a figure title (the resulting figure would not be valid DITA). This restriction only applies to the pushbefore or pushafter actions, not to the pushreplace action.

When content is pushed from one topic to another, it is still rendered in the original context. Processors might delete the empty element that has the `conaction="mark"` attribute. In order to push content from a topic without actually rendering that topic on its own, the topic should be referenced from the map with the `@processing-role` attribute set to "resource-only".

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Example: pushing an element before the target

The following example pushes a `<step>` before "b" in the `example.dita` file shown above.

```
<step conaction="pushbefore"><cmd>Do this before B</cmd></step>
<step conaction="mark" conref="example.dita#example/b">
  <cmd/>
</step>
```

The result contains the pushed `<step>` element before "b".

```
<task id="example" xml:lang="en">
  <title>Example topic</title>
  <taskbody>
    <steps>
      <step id="a"><cmd>A</cmd></step>
      <step><cmd>Do this before B</cmd></step>
      <step id="b"><cmd>B</cmd></step>
      <step id="c"><cmd>C</cmd></step>
    </steps>
  </taskbody>
</task>
```

Example: pushing an element after the target

Pushing an element after a target is exactly the same as pushing before, except that the order of the "mark" element and the pushed element are reversed.

```
<step conaction="mark" conref="example.dita#example/b">
  <cmd/>
</step>
<step conaction="pushafter"><cmd>Do this AFTER B</cmd></step>
```

In this case the resulting document has the pushed content after `<step>` b:

```
<task id="example" xml:lang="en">
  <title>Example topic</title>
  <taskbody>
    <steps>
      <step id="a"><cmd>A</cmd></step>
      <step id="b"><cmd>B</cmd></step>
      <step><cmd>Do this AFTER B</cmd></step>
      <step id="c"><cmd>C</cmd></step>
    </steps>
  </taskbody>
</task>
```

Combining @conaction with @conkeyref or @conrefend

The `@conkeyref` attribute can be used as an indirect way to specify a `@conref` target. If the `@conkeyref` attribute is specified on an element that also uses the `@conaction` attribute, the `@conkeyref` attribute is used to determine the target of the conref push (as it would normally be used to determine the target of `@conref`).

The conref push function does not provide the ability to push a range of elements, so it is an error to specify the `@conrefend` attribute together with the `@conaction` attribute. If the two are specified together an application can recover by warning the user, ignoring the `@conrefend` attribute, or with some other implementation strategy.

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B.13.7 The @conrefend attribute

The `@conrefend` attribute is used when referencing a range of elements with the conref mechanism. The `@conref` or `@conkeyref` attribute references the first element in the range, while `@conrefend` references the last element in the range.

Using @conref together with @conrefend

Several items must be taken into account when using or implementing `@conrefend`.

- Processors will resolve the range by pulling in the start target and following sibling XML nodes across to and including the end target.
- The start and end elements of a range *MUST* be of the same type as the referencing element or generalizable to the referencing element. For example, `@conref` and `@conrefend` attributes on an `<li>` element might reference other `<li>` elements, or they might reference specializations of `<li>` such as `<step>`.
- As with `@conref`, if the `@conrefend` references a more specialized version of the referencing element, applications should generalize the target when resolving.
- It is not valid to use `@conrefend` to reference a more general version of an element (such as using `<step>` to reference an `<li>` element).
- Other nodes (such as elements or text) between the start and end of a range do not have to match the referencing element.
- The start and end elements in a range *MUST* share the same parent, and the start element *MUST* precede the end element in document order.
- The parent of the referencing element *MUST* be the same as the parent of the referenced range or generalizable to the parent of the referencing element. For example, it is possible to pull a range from `<conbody>` into `<body>`, because `<conbody>` is generalizable to `<body>`. It is not possible to pull a range from `<body>` into `<conbody>`, because the result might not be valid in `<conbody>`.
- With single conref, an `@id` attribute from the referenced element will not be preserved on the resolved content. With a range, an `@id` on both the start and the end elements will not be preserved. `@id` attributes on intermediate or child nodes should be preserved; if this results in duplicate `@id` values, an application can recover by changing the `@id`, warning the user, or implementing another strategy.
- With a single conref, attributes specified on the referencing elementcan be used to override attributes on the referenced element. With a conref range, the same is true, with the following clarifications:
  - When an `@id` attribute is specified on the referencing element, it will only be preserved on the first element of the resolved range.
  - When other attributes are specified, they will only apply to referenced elements of the same type. For example, if `<step>` is used to pull in a range of sequential `<step>` elements, locally specified attributes apply to all steps in the range. If `<ol>` is used to pull in a series of (`<ol>`, `<p>`, `<ol>`), locally specified attributes apply only to the `<ol>` elements in that range.

Example: reusing a set of list items

```
<topic id="x">
     ...
     <body>
         <ol>
             <li id="apple">A</li>
             <li id="bear">B</li>
             <li id="cat">C</li>
```


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```
            <li id="dog">D</li>
            <li id="eel">E</li>
        </ol>
    </body>
</topic>
```

Figure 13: List example: Source* topic.dita *with ids

```
<topic id="y">
    ...
    <body>
        <ol>
            <li>My own first item</li>
            <li conref="topic.dita#x/bear" conrefend="topic.dita#x/dog"/>
            <li>And a different final item</li>
        </ol>
    </body>
</topic>
```

Figure 14: List example: Reusing topic with conrefs

```
<topic id="y">
    ...
    <body>
        <ol>
            <li>My own first item</li>
            <li>B</li>
            <li id="cat">C</li>
            <li>D</li>
            <li>And a different final item</li>
        </ol>
    </body>
</topic>
```

Figure 15: List example: Processed result of reusing topic

Example: Reusing a set of blocks

```
<topic id="x">
     ...
     <body>
   <p id="p1">First para</p>
      <ol id="mylist">
     <li id="apple">A</li>
     <li id="bear">B</li>
     <li id="cat">C</li>
     <li id="dog">D</li>
     <li id="eel">E</li>
   </ol>
   <p id="p2">Second para</p>
     </body>
</topic>
```

Figure 16: Block level example: Source* topic.dita *with ids

```
<topic id="y">
    ...
    <body>
        <p conref="topic.dita#x/p1" conrefend="topic.dita#x/p2"/>
```


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```
    </body>
 </topic>
```

Figure 17: Block level example: Reusing topic with conrefs

```
 <topic id="y">
     ...
     <body>
    <p>First para</p>
       <ol id="mylist">
      <li id="apple">A</li>
      <li id="bear">B</li>
      <li id="cat">C</li>
      <li id="dog">D</li>
      <li id="eel">E</li>
    </ol>
    <p>Second para</p>
     </body>
</topic>
```

Figure 18: Block level example: Processed result of reusing topic

Using @conrefend together with @conkeyref

When the `@conkeyref` attribute is used in place of `@conref`, a key is used to address the target of the reference. The `@conrefend` attribute, which indicates the end of a `@conref` range, cannot use a key. Instead the the map or topic element addressed by the key name component of the `@conkeyref` is used in place of whatever map or topic element is addressed by the `@conrefend` attribute.

For example, if the value of the `@conkeyref` attribute is "config/step1" and the value of the `@conrefend` is `defaultconfig.dita#config/laststep`, the conref range will end with the step that has id="laststep" in whatever topic is addressed by the key name "config". If the key name "config" is not defined, and the `@conref` attribute itself is not present for fallback, the `@conrefend` attribute is ignored.

Example: Combining @conrefend with @conkeyref

In this example the key "xmp" is defined as the first topic in the file `examples.dita`.

```
<map>
  <!-- ... -->
  <keydef keys="xmp" href="examples.dita"/>
  <!-- ... -->
</map>

examples.dita:
<topic id="examples">
  <title>These are examples</title>
  <body>
    <ul>
      <li id="first">A first example</li>
      <li>Another trivial example</li>
      <li id="last">Final example</li>
    </ul>
  </body>
</topic>
```


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To reuse these list items by using the key, the `@conkeyref` attribute combines the key itself with the sub-topic id (first) to define the start of the range. The `@conrefend` attribute defines a default high-level object along with the sub-topic id (last) that ends the range:

```
<li conkeyref="xmp/first"
    conrefend="default.dita#default/last"/>
```

The `@conkeyref` attribute uses a key to reference the first topic in `examples.dita`, so the range begins with the object `examples.dita#examples/first`. The high-level object in the `@conrefend` attribute (`default.dita#default`) is replaced with the object represented by the key (the first topic in `examples.dita`), resulting in a range that ends with the object `examples.dita#examples/last`.

***Figure 19: Defining and referencing a key with* @conkeyref**

When `@conref`, `@conkeyref`, and `@conrefend` are all specified, the key value takes priority.

```
<li conkeyref="thisconfig/start"
    conref="standardconfig.dita#config/start"
    conrefend="standardconfig.dita#config/end"/>
```

- If the key "thisconfig" is defined as `mySpecialConfig.dita#myconfig`, then the range will go from the list item with id="start" to the list item with id="end" in the topic `mySpecialConfig.dita#myconfig`.
- If the key "thisconfig" is defined as `myConfig.dita`, then the range will go from the list item with id="start" to the list item with id="end" within the first topic in `myConfig.dita`.
- If the key "thisconfig" is not defined, then the unchanged `@conref` and `@conrefend` attributes are used as fallback. In that case, the range will go from the list item with id="start" to the list item with id="end" within the topic `standardconfig.dita#config`.

***Figure 20: Combining* @conref, @conkeyref, *and* @conrefend**

Error conditions

When encountering an error condition, an implementation can issue an error message.

Condition or Issue	Result
The `@conref` attribute cannot be resolved in the target document (the target element might have been removed or its id has changed).	The `@conref` is ignored.
The `@conrefend` attribute cannot be resolved in the target document (the target element might have been removed or its id has changed).	Range cannot be resolved, optional recovery processes the result as a simple conref.
Start and end elements are not siblings in the target document.	If the start element exists, optional recovery processes the result as a simple conref.
End element occurs before the start element in the target document.	If the start element exists, optional recovery processes the result as a simple conref.
An element has a `@conrefend` attribute but is missing the `@conref` attribute.	No result.

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B.13.8 The @conkeyref attribute

The `@conkeyref` attribute provides an indirect content reference to topic elements, map elements, or elements within maps or topics. When the DITA content is processed, the key references are resolved using key definitions from DITA maps.

For content references from map elements to map elements or topic elements to topic elements, the value of the `@conkeyref` attribute is a key name, where the key must be bound to a map element (for references from map elements) or a topic element (for references from topic elements). For all other elements, the value of the `@conkeyref` attribute is a key name, an optional slash ("/"), and the ID of the target element, where the key name must be bound to the map or topic that contains the topic element.

When the key name specified by the `@conkeyref` attribute is not defined and the element also specifies a `@conref` attribute, the `@conref` attribute is used to determine the content reference relationship. If no `@conref` attribute is specified there is no content reference relationship. Processors *SHOULD* issue a warning when a `@conkeyref` reference cannot be resolved and there is no `@conref` attribute to use as a fallback. Processors *MAY* issue a warning when a `@conkeyref` cannot be resolved to an element and a specified `@conref` is used as a fallback.

The `@conrefend` attribute, which defines the end of a conref range, cannot include a key. Instead the map or topic element addressed by the key name component of the `@conkeyref` is used in place of whatever map or topic element is addressed by the `@conrefend` attribute. See *Using conrefend together with conkeyref* on page 207 for more information and for examples of this behavior.

B.13.9 The @type attribute

The `@type` attribute is used on linking elements to describe the target of a cross-reference. It also is used on the `<note>` element to describe the note type, as well as on several other elements for varying purposes.

The descriptions for the `@type` attribute on linking elements and on `<note>` are included in this section; for other elements, such as `<audience>`, `<copyright>`, and `<object>`, the description can be found with the topic for the specific element.

Using @type on a linking element

The `@type` attribute describes the target of a cross-reference and might generate cross-reference text based on that description. Only the `<xref>` element can link to content below the topic level: other types of linking can target whole topics, but not parts of topics. Typically `<xref>` should also be limited to topic-level targets, unless the output is primarily print-oriented. Web-based referencing works best at the level of whole topics, rather than anchor locations within topics.

If not explicitly specified on an element, the `@type` attribute value cascades from the closest ancestor element. If there is no explicit value for the `@type` attribute on any ancestor, a default value of “topic” is used. During output processing for references to DITA topics (`format="dita"`), it is an error if the actual type of a DITA topic and the explicit, inherited, or default value for the `@type` attribute are not the same as or a specialization of the `@type` attribute value. In this case, an implementation *MAY* give an error message, and *MAY* recover from this error condition by using the `@type` attribute value. During output processing for references to non-DITA objects (that is, either scope is “external" or format is neither “dita” nor “ditamap”) or other cases where the type of the referenced item cannot be determined from the item itself, the explicit, inherited, or default value for the `@type` attribute is used without any validation. When a referencing element is first added to or updated in a document, DITA aware editors *MAY* set the `@type` attribute value based on the actual type of a referenced DITA topic.

If the `@type` attribute is specified when referencing DITA content, it should match one of the values in the referenced element's `@class` attribute. The `@type` value can be an unqualified local name (for example, "fig") or

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a qualified name exactly as specified in the `@class` attribute (for example, "mymodule/mytype"). Processors might ignore qualified names or consider only the local name.

For example, if the value is set to `type="topic"`, the link could be to a generic topic, or any specialization of topic, including concept, task, and reference. Applications *MAY* issue a warning when the specified or inherited `@type` attribute value does not match the target (or a specialization ancestor of the target).

Some possible values for use on the `<xref>` element and its specializations include:

fig
: Indicates a link to a figure.

table
: Indicates a link to a table.

li
: Indicates a link to an ordered list item.

fn
: Indicates a link to a footnote.

section
: Indicates a link to a section.

Other values thatcan be used on any linking element include:

concept, task, reference, topic
: Cross-reference to a topic type.

(no value)
: The processor should retrieve the actual type from the target if available. If the type cannot be determined, the default should be treated as "topic".

-dita-use-conref-target
: See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

Other values can be used to indicate other types of topics or elements as targets. Processing is only required to support the above list or specializations of types in that list. Supporting additional types as targets might require the creation of processing overrides.

Using @type in a <note> element

In a `<note>` element, this defines the type of note. For example, if the note is a tip, the word **Tip** might be used to draw the reader's attention to it. The values danger, warning, and notice have meanings that are based on ANSI Z535 and ISO 3864 regulations.

If `@type` is set to "other", the value of the `@othertype` attribute can be used. If you use `@othertype`, many processors will require additional information on how to process the value. Allowable values for the `@type` attribute are:

note
: This is just a note.

attention
: Please pay extra attention to this note.

caution
: Care is required when proceeding.

danger
: Important! Be aware of this before doing anything else. When used with the `<hazardstatement>` element, this indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.

fastpath
: This note will speed you on your way.

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important
This note is important.
notice
Indicates a potential situation which, if not avoided, might result in an **undesirable result or state**.
remember
Don't forget to do what this note says.
restriction
You can't do what this note says.
tip
This is a fine little tip.
warning
Indicates a potentially hazardous situation. When used with the `<hazardstatement>` element, this indicates a situation which, if not avoided, **could** result in death or serious injury.
trouble
Provides information about how to remedy a trouble situation.
other
This is something other than a normal note.
-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

B.13.10 The @format attribute

The `@format` attribute identifies the format of the resource that is referenced. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.

The following values for `@format` have special processing implications:

dita
The destination uses DITA topic markup or markup specialized from a DITA topic. Unless otherwise specified, when `@format` is set to "dita", the value for the `@type` attribute will be treated as "topic".
ditamap
The linked-to resource is a DITA map. It represents the referenced hierarchy at the current point in the referencing map. References to other maps can occur at any point in a map, but because relationship tables are only valid as children of a map, referenced relationship tables are treated as children of the referencing map.

Note: If a `<topicref>` element that references a map contains child `<topicref>` elements, the processing behavior regarding the child `<topicref>` elements is undefined.

(no value)
The processing default is used. The processing default for the `@format` attribute is determined by inspecting the value of the `@href` attribute. If the `@href` attribute specifies a file extension, the processing default for the `@format` attribute is that extension, after conversion to lower-case and with no leading period. The only exception to this is if the extension is "xml", in which case the default format is "dita". If there is no extension, but the `@href` value is an absolute URI whose scheme is "http" or "https", then the processing default is "html". In all other cases where no extension is available, the processing default is "dita".

If the actual format of the referenced content differs from the effective value of the `@format` attribute, and a processor is capable of identifying such cases, it *MAY* recover gracefully and treat the content as its actual format, but *SHOULD* also issue a message.

For other formats, using the file extension without the "." character typically represents the format. For example, the following values are all possible values for `@format`:

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html
The format of the linked-to resource is HTML or XHTML.
pdf
The format of the linked-to resource is PDF.
txt
The format of the linked-to resource is a text file.

B.13.11 The @scope attribute

The `@scope` attribute identifies the closeness of the relationship between the current document and the target resource.

- Set `@scope` to "local" when the resource is part of the current set of content.
- Set `@scope` to "peer" when the resource is part of the current set of content but might not accessible at build time, or for maps to be treated as root maps for the purpose of creating map-to-map key references (peer maps). An implementation might open such resources in the same browser window to distinguish them from those with `@scope` set to "external".
- Set `@scope` to "external" when the resource is not part of the current information set and should open in a new browser window.
- See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information on -dita-use-conref-target.

If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor. The processing default is determined by the value of the `@href` attribute. In most cases, the processing default is "local". However the processing default is "external" whenever the absolute URI in the `@href` attribute begins with one of the following schemes:

- http
- https
- ftp
- mailto

Processors can consider additional URI schemes as "external" by default. Processors *MUST* always consider relative URIs as "local" by default.

B.13.12 The @role and @otherrole attributes

The `@role` attribute defines the role the target topic plays in relationship with the current topic. For example, in a parent/child relationship, the role would be "parent" when the target is the parent of the current topic, and "child" when the target is the child of the current topic. This structure could be used to sort and classify links at display time.

Supported values for @role

Allowable values for the `@role` attribute are:

parent
Indicates a link to a topic that is a parent of the current topic.
child
Indicates a link to a direct child such as a directly nested or dependent topic.
sibling
Iindicates a link between two children of the same parent topic.
friend
Indicates a link to a similar topic that is not necessarily part of the same hierarchy.

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next
Indicates a link to the next topic in a sequence.
previous
Indicates a link to the previous topic in a sequence.
cousin
Indicates a link to another topic in the same hierarchy that is not a parent, child, sibling, next, or previous.
ancestor
Indicates a link to a topic above the parent topic.
descendant
Indicates a link to a topic below a child topic.
sample
Deprecated.
external
Deprecated--use the scope="external" attribute to indicate external links.
other
Indicates any other kind of relationship or role. Enter that role as the value for the `@otherrole` attribute.
-dita-use-conref-target
See *B.13.5.1 Using the -dita-use-conref-target value* on page 200 for more information.

The `@otherrole` attribute is available to specify an alternate role that is not available in the list above, and should be used in conjunction with `role="other"`.

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