



BigFix[®] Enterprise Suite (BES[™])

Import-Export Reference

BigFix, Inc.
Emeryville, CA

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All inquiries regarding the foregoing should be addressed to:

BigFix, Inc.
6121 Hollis Street
Emeryville, CA 94608-2021

Contents

PREFACE	1
AUDIENCE	1
ORGANIZATION OF THIS MANUAL	1
CONVENTIONS USED IN THIS MANUAL	1
VERSIONS	2
INTRODUCTION	3
TOP-LEVEL BES XML ELEMENTS	4
FIXLETS/TASKS	5
BASELINES	5
SINGLE ACTIONS	7
MULTIPLE ACTION GROUPS	7
ANALYSES	8
COMPUTER GROUPS	8
PROPERTIES	9
SHARED BES XML ELEMENTS	10
FIXLETACTION	10
ACTIONSCRIPT	10
ACTIONSUCCESSCRITERIA	11
ACTIONSETTINGS	11
ACTIONSETTINGSLOCKS	14
RELEVANCESTRING	15
TIMEINTERVAL	16
NONNEGATIVETIMEINTERVAL	16
ACTIONMESSAGEMAXPOSTPONEMENTINTERVAL	16
ACTIONMESSAGETIMEOUTINTERVAL	16
EXAMPLES	17
APPENDIX A – BES.XSD	26
INDEX	38

Preface

Audience

This reference is for BES users who want to create .bes files to share content with other BES users or to use the BES Platform API XMLImporter object. The BES import mechanism supports creating actions, fixlets, tasks, baselines, analyses, automatic computer groups, and retrieved properties.

Organization of this manual

This document is organized as follows:

- **Introduction.** This chapter contains a brief introduction to the BES XML format.
 - **Top-level BES XML Elements.** This chapter describes the main BES XML document elements.
 - **Shared BES XML Element.** This chapter describes common element types that are shared by the main document elements.
 - **Examples.** This chapter contains examples illustrating different BES XML documents.
 - **BES.xsd.** This section contains the XML schema that defines the BES XML format.
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Conventions Used in this manual

This document makes use of the following conventions and nomenclature:

Convention	Use
Bold Sans	A bold sans-serif font is used for API headers.
Mono-space	A mono-spaced font is used to indicate scripts or code snippets.

The conventions used for describing the XML schema are as follows:

- `<ElementTagName> ElementType </ElementTagName>`
This identifies an XML element named “ElementTagName” of type “ElementType”. For more information on the contents of this element, see the section on “ElementType”.

- `<ElementTagName
Attribute="AttributeType">
...
</ElementTagName>`
This XML element has an attribute named "Attribute" of type "AttributeType". For more information on the possible attribute values, see the section on "AttributeType".
- `[x..y]`
This element or attribute occurs a minimum of x times and a maximum of y times.
- `[x..*]`
This element or attribute occurs a minimum of x times and has no maximum.
- `[x]`
This element or attribute must occur x times.

Versions

The document describes functionality introduced in BES, Version 6.0 and later.

Introduction

This document describes the XML format used by the Import/Export feature of the BES console and the BES Platform API XMLImporter object, and should be used as a reference for the structures and types of specific elements and attributes. The easiest way to start creating BES XML objects is to create them and then export them through the BES Console. Right-click on a set of fixlets, tasks, baselines, actions, analyses, or computer groups, and select “Export ...” To export retrieved properties, open Tools -> Manage Properties..., select some properties and click “Export...” Then open the saved BES file in an XML editor or plaintext editor.

Any content you create must validate against the XML schema contained in the file *BES.xsd* or it will be rejected during import. A listing of *BES.xsd* is provided in Appendix A. A copy of this file is also installed in the *BES Console\reference* directory. Many XML authoring tools make use of the schema to make XML authoring easier.

Note that in XML, the ‘<’, ‘>’, ‘&’, and ‘”’ characters must be escaped as “<”, “>”, “&”, and “"” respectively. Since many elements can contain arbitrary HTML, it may be easier to wrap the element’s unescaped contents in a CDATA tag, as in “<![CDATA[...]]>”. CDATA tags cannot be nested, so this will not work if the data already contains the CDATA end tag (“]]>”).

Top-level BES XML Elements

A BES XML file has a “BES” document element, containing at least one Fixlet, Task, Baseline, Analysis, SingleAction, MultipleActionGroup, ComputerGroup, or Property element.

```
<?xml version="1.0" encoding="UTF-8"?>
<BES xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="BES.xsd">
  <Fixlet>
    ...
  </Fixlet>
  <Task>
    ...
  </Task>
  <Baseline>
    ...
  </Baseline>
  <Analysis>
    ...
  </Analysis>
  <SingleAction>
    ...
  </SingleAction>
  <MultipleActionGroup>
    ...
  </MultipleActionGroup>
  <ComputerGroup>
    ...
  </ComputerGroup>
  <Property>
    ...
  </Property>
</BES>
```

Fixlets/Tasks

<Fixlet> | <Task>

<Title> xs:normalizedString </Title> [1]

This is the fixlet name.

<Description> xs:string </Description> [1]

The description is treated as HTML that is used to construct the fixlet body for the “Description” tab of the console fixlet document.

<Relevance> RelevanceString </Relevance> [1..*]

Each relevance element is shown as a separate relevance clause in the console fixlet document. The fixlet will be reported as relevant only for computers for which every relevance clauses evaluates to true.

<Category> xs:normalizedString </Category> [0..1]

Displayed on the “details” tab of the fixlet document and in the fixlet tree/list.

<WizardData> ... </WizardData> [0..1]

For use by wizards. Not used for importing through the console or through the Platform API.

<DownloadSize> xs:nonNegativeInteger </DownloadSize> [0..1]

The total number of bytes of all downloads in the fixlet’s action.

<Source> xs:normalizedString </Source> [0..1]

<SourceID> xs:normalizedString </SourceID> [0..1]

<SourceReleaseDate> NonNegativeDate </SourceReleaseDate> [0..1]

Must be of the form YYYY-MM-DD.

<SourceSeverity> xs:normalizedString </SourceSeverity> [0..1]

<CVENames> xs:normalizedString </CVENames> [0..1]

<SANSID> xs:normalizedString </SANSID> [0..1]

DownloadSize, Source, SourceID, SourceReleaseDate, SourceSeverity, CVENames, and SANSID are extra information about a fixlet that are displayed on the “details” tab of the fixlet document and in the fixlet tree/list.

<DefaultAction> FixletAction </DefaultAction> [0..1]

<Action> FixletAction </Action> [0..*]

</Fixlet> | </Task>

Baselines

<Baseline>

Baselines have the following fields in common with fixlets and tasks:

<Title> xs:normalizedString </Title> [1]

<Description> xs:string </Description> [1]

<Relevance> RelevanceString </Relevance> [1..*]

<Category> xs:normalizedString </Category> [0..1]


```
<WizardData> ... </WizardData> [0..1]
<DownloadSize> xs:nonNegativeInteger </DownloadSize> [0..1]
<Source> xs:normalizedString </Source> [0..1]
<SourceID> xs:normalizedString </SourceID> [0..1]
<SourceReleaseDate> NonNegativeDate </SourceReleaseDate> [0..1]
<SourceSeverity> xs:normalizedString </SourceSeverity> [0..1]
<CVENames> xs:normalizedString </CVENames> [0..1]
<SANSID> xs:normalizedString </SANSID> [0..1]
```

Baselines are also composed of a collection of named baseline component groups, which contain baseline components:

```
<BaselineComponentCollection> [1]
  <BaselineComponentGroup
    Name="xs:normalizedString [0..1]"> [0..*]
    <BaselineComponent
      Name="xs:normalizedString [0..1]"
        The "Name" attribute corresponds to the content ID of the action,
        which is a short identifier for the component that is used to match it
        up with a particular action of the source fixlet/task/baseline of the
        component.
        ActionName="xs:normalizedString [0..1]"
          The "ActionName" attribute is a longer description of the action
          shown on the "Components" tab of the baseline document.
          IncludeInRelevance="xs:boolean [0..1]"
            If true, then the relevance of the component will be included in the
            relevance for the baseline. If false, then the baseline will be relevant
            regardless of whether this component is relevant; the individual
            component will still not be executed if it is not relevant.
            SourceSiteURL="xs:anyURI [0..1]"
              The gather site URL for the source fixlet/task/baseline that this
              component comes from.
            SourceID="xs:nonNegativeInteger [0..1]"
              The ID of the fixlet/task/baseline that this component comes from.
          > [0..*]
        <Relevance> RelevanceString </Relevance> [1]
          This component will only be executed on computers for which the relevance
          clause evaluates to true.
        <ActionScript> ActionScript </ActionScript> [1]
        <SuccessCriteria> ActionSuccessCriteria </SuccessCriteria> [0..1]
      </BaselineComponent>
    </BaselineComponentGroup>
  </BaselineComponentCollection>
<Settings> ActionSettings </Settings> [0..1]
<SettingsLocks> ActionSettingsLocks </SettingsLocks> [0..1]
</Baseline>
```

Single Actions

<SingleAction>

<Title> xs:normalizedString </Title> [1]

The name of the action.

<Relevance> RelevanceString </Relevance> [1]

The action will only run on computers for which the relevance expression evaluates to true.

<ActionScript> ActionScript </ActionScript> [1]

<SuccessCriteria> ActionSuccessCriteria </SuccessCriteria> [0..1]

<Settings> ActionSettings </Settings> [0..1]

<SettingsLocks> ActionSettingsLocks </SettingsLocks> [0..1]

<SuccessCriteriaLocked> xs:boolean </SuccessCriteriaLocked> [0..1]

If this element is present and set to true, then the action will have a success criteria that the user taking the action will not be able to change in the Take Action Dialog.

</SingleAction>

Multiple Action Groups

<MultipleActionGroup>

<Title> xs:normalizedString </Title> [1]

The name of the multiple action group.

<PreGroupActionScript> ActionScript </PreGroupActionScript> [0..1]

An action to run before all the member actions of the multiple action group; corresponds to the Pre-Execution Action Script tab of the Take Action Dialog when taking multiple actions.

<MemberAction> [1..*]

<Title> xs:normalizedString </Title> [1]

The name of the member action.

<Relevance> RelevanceString </Relevance> [1]

The member action will only run on computers for which the relevance expression evaluates to true.

<ActionScript> ActionScript </ActionScript> [1]

<SuccessCriteria> ActionSuccessCriteria </SuccessCriteria> [0..1]

</MemberAction>

<PostGroupActionScript> ActionScript </PostGroupActionScript> [0..1]

An action to run once all member actions have finished executing; corresponds to the Post-Execution Action Script when taking multiple actions.

<Settings> ActionSettings </Settings> [0..1]

<SettingsLocks> ActionSettingsLocks </SettingsLocks> [0..1]

</MultipleActionGroup>

Analyses

```
<Analysis>
  <Title> xs:normalizedString </Title> [1]
    The name of the analysis.
  <Description> xs:string </Description> [1]
    The description is treated as HTML that is shown on the "Description" tab of the
    analysis document.
  <Relevance> RelevanceString </Relevance> [1..*]
    Only computers for which all relevance clauses are true will report results.
  <Property
  Name="xs:normalizedString [1]"
    The name of the property.
  EvaluationPeriod="NonNegativeTimeInterval [0..1]"
    Controls how often the property is evaluated.
  ID="xs:nonNegativeInteger [1]"
    Each property in the analysis must have a unique ID attribute.
  KeepStatistics="xs:boolean [0..1]"
    If true, then enables statistical inspection of the results for this property.
  > [0..*]
  RelevanceString
  </Property>
</Analysis>
```

Computer Groups

Membership in a computer group is defined by a combination of three types of components:

- 1 SearchComponentRelevance:** Contains a relevance expression and a comparison {'IsTrue'|'IsFalse'}. A computer is in the group if the expression is true for that computer and the comparison is 'IsTrue' or the expression is false and the comparison is 'IsFalse'.
- 2 SearchComponentPropertyReference:** Contains a retrieved property name, a comparison {'Contains' | 'DoesNotContain' | 'Equals' | 'DoesNotEqual'}, and text against which to compare the property result. A computer is in the group if its result for the property meets the comparison with the specified text.
- 3 SearchComponentGroupReference:** Contains another computer group name and a comparison {'IsMember'|'IsNotMember'}. A computer is in the current group if it is in the other group and the comparison is 'IsMember', or if it is not in the other group and the comparison is 'IsNotMember'.

Note that only automatic groups can be created through importing through the console, and no computer groups can be created using the BES Platform API.

<ComputerGroup>

<Title> xs:normalizedString </Title> [1]

The name of the computer group.

<JoinByIntersection> xs:boolean </JoinByIntersection> [1]

If true, then a computer will be in the group only if it meets the requirements of all of the group components. If false, a computer will be in the group if it meets any of the requirements of the group components.

<IsDynamic> xs:boolean </IsDynamic> [1]

Must be true. For internal use.

<EvaluateOnClient> xs:boolean </EvaluateOnClient> [1]

Must be true. For internal use.

The rest of the computer group definition includes any number of the group component types in any order:

<SearchComponentRelevance

Comparison="(possible values: {'IsTrue'|'IsFalse'}) [0..1]">

<Relevance> RelevanceString </Relevance> [1]

</SearchComponentRelevance>

<SearchComponentPropertyReference

PropertyName="xs:normalizedString [0..1]"

Comparison="xs:normalizedString (possible values: {'Contains'|'DoesNotContain'|'Equals'|'DoesNotEqual'}) [0..1]"> [0..*]

<SearchText> xs:normalizedString </SearchText> [1]

<Relevance> RelevanceString </Relevance> [1]

</SearchComponentPropertyReference>

<SearchComponentGroupReference

GroupName="xs:normalizedString [0..1]"

Comparison="xs:normalizedString (value comes from list: {'IsMember'|'IsNotMember'}) [0..1]">

</ComputerGroup>

Properties

This element creates a global retrieved property.

<Property

Name="xs:normalizedString [1]"

EvaluationPeriod="NonNegativeTimeInterval [0..1]">

Controls how often the property is evaluated.

RelevanceString

</Property>

Shared BES XML Elements

FixletAction

<...>

ID="xs:normalizedString [1]">

Each action inside a fixlet or task must have a unique ID, which is displayed on the actions tab of the Edit Fixlet Dialog and on the Details tab of the fixlet document.

<Description> [0..1]

<PreLink> xs:normalizedString </PreLink> [1]

<Link> xs:normalizedString </Link> [1]

<PostLink> xs:normalizedString </PostLink> [1]

</Description>

The description of the action is the HTML that is displayed in the actions section of the fixlet description tab. The content of the Prelink tag is the HTML that is displayed before the link that takes the action (i.e. "Click"). The content of the Link tag is HTML that the user can click on to take the action (i.e. "here"). The content of the PostLink tag is HTML following the link (i.e. "to deploy this action.")

<ActionScript> ActionScript </ActionScript> [1]

See the "ActionScript" type.

<SuccessCriteria> ActionSuccessCriteria </SuccessCriteria> [0..1]

See the "ActionSuccessCriteria" type. If this element is not preset and the action is inside a fixlet, the success criteria will default to match the relevance of the fixlet. If the action is inside a task, the success criteria will default to run to completion.

<SuccessCriteriaLocked> xs:boolean </SuccessCriteriaLocked> [0..1]

If this element is present and set to true, then the action will have a success criteria that the user taking the action will not be able to change in the Take Action Dialog.

<Settings> ActionSettings </Settings> [0..1]

<SettingsLocks> ActionSettingsLocks </SettingsLocks> [0..1]

</...>

ActionScript

<...>

MIMETYPE="xs:normalizedString [0..1]">

The attribute MIMETYPE specifies the type of the actionscript; if absent, it defaults to "application/x-Fixlet-Windows-Shell". For AppleScript, use "application/x-AppleScript". For a sh script, use "application/x-sh". The contents of the tag specify the contents of the action script.

xs:string

</...>

ActionSuccessCriteria

The ActionSuccessCriteria element corresponds to the ‘Success Criteria’ tab of the Take Action Dialog.

<...>

Option="xs:string (possible values: {'RunToCompletion'|'OriginalRelevance'|'CustomRelevance'}) [0..1]">

If the ‘Option’ attribute is ‘RunToCompletion’, the action will be considered successful when all lines of the action script have been executed. If the option is ‘OriginalRelevance’, the action will be considered successful when the applicability relevance of the action becomes false. If the option is ‘CustomRelevance’, then the action will be considered false when the custom relevance expression inside the tag evaluates to false.

RelevanceString

</...>

ActionSettings

The contents of the ActionSettings element correspond to the options available on the ‘Message’, ‘Constraints’, ‘Execution’, and ‘Post-Action’ tabs of the Take Action Dialog.

<...>

<HasMessage> xs:boolean </HasMessage> [0..1]

If true, a message will be displayed before running the action.

<Message> [0..1]

<Title> xs:normalizedString </Title> [0..1]

The title of the message shown before running the action.

<Text> xs:string </Text> [0..1]

The text of the message shown before running the action.

<ShowActionButton> xs:boolean </ShowActionButton> [0..1]

If true, the user is allowed to view the action script before running it.

<ShowCancelButton> xs:boolean </ShowCancelButton> [0..1]

If true, the user will be allowed to cancel running the action.

<AllowPostponement> xs:boolean </AllowPostponement> [0..1]

<MaxPostponementInterval> ActionMessageMaxPostponementInterval

</MaxPostponementInterval> [0..1]

If AllowPostponement is true, the user will be allowed to postpone running the action for a time up to the value specified here. See ActionMessageMaxPostponementInterval for possible values.

<HasTimeout> xs:boolean </HasTimeout> [0..1]

<TimeoutInterval> ActionMessageTimeoutInterval </TimeoutInterval> [0..1]

If HasTimeout is true, the action will run after displaying the message for the specified amount of time. See ActionMessageTimeoutInterval for possible values.

</Message>

<HasRunningMessage> xs:boolean </HasRunningMessage> [0..1]
If true, a message will be displayed while running the action.

<RunningMessage> [0..1]
 <Title> xs:normalizedString </Title> [0..1]
 The title of message displayed while running the action.
 <Text> xs:string </Text> [0..1]
 The text of the message displayed while running the action.
</RunningMessage>

<HasTimeRange> xs:boolean </HasTimeRange> [0..1]
<TimeRange> [0..1]
 <StartTime> xs:time </StartTime> [0..1]
 <EndTime> xs:time </EndTime> [0..1]
</TimeRange>
If HasTimeRange is true, then the action will only run between the StartTime and EndTime in client local time. Times have the form hh:mm:ss.

<HasStartTime> xs:boolean </HasStartTime> [0..1]
<StartDateTimeOffset> TimeInterval </StartDateTimeOffset> [0..1]
If HasStartTime is true, then the action will start at a date and time computed by adding the StartDateTimeOffset to the time the action is taken. For example, to have an action start one day from the time it is taken, specify “PID”. Note that this time can be negative – to create an action that starts a day before the action is taken (so that clients in every timezone will start executing immediately), specify “-PID”. See TimeInterval for possible values.

<HasEndTime> xs:boolean </HasEndTime> [0..1]
<EndDateTimeOffset> NonNegativeTimeInterval </EndDateTimeOffset> [0..1]
If HasEndTime is true, then the action will start at a date and time computed by adding the EndDateTimeOffset to the time the action is taken. See NonNegativeTimeInterval for possible values.

<HasDayOfWeekConstraint> xs:boolean </HasDayOfWeekConstraint> [0..1]
<DayOfWeekConstraint> [0..1]
 <Sun> xs:boolean </Sun> [0..1]
 <Mon> xs:boolean </Mon> [0..1]
 <Tue> xs:boolean </Tue> [0..1]
 <Wed> xs:boolean </Wed> [0..1]
 <Thu> xs:boolean </Thu> [0..1]
 <Fri> xs:boolean </Fri> [0..1]
 <Sat> xs:boolean </Sat> [0..1]
</DayOfWeekConstraint>
If HasDayOfWeekConstraint is true, then the action will only run on those days of the week that are specified and whose contents are true.

<ActiveUserRequirement> xs:string (value comes from list:
{'NoRequirement'|'RequireUser'|'RequireNoUser'}) </ActiveUserRequirement> [0..1]

NoRequirement = Run independently of user presence

RequireUser = Run only when a user is present

RequireNoUser = Run only when no user is present

<HasWhose> xs:boolean </HasWhose> [0..1]

<Whose> [0..1]

<Property> xs:string </Property> [0..1]

<Relation> xs:string </Relation> [0..1]

<Value> xs:string </Value> [0..1]

</Whose>

If HasWhose is true, then the action will only run on computers where the retrieved property named in Property has the relationship given in Relation to the value in Value. For example, to add the constraint that the action only runs on computers where the value of the retrieved property OS starts with Win:

<Property>OS</Property>

<Relation>starts with</Relation>

<Value>Win</Value>

The possible values of relation are {matches, does not match, contains, does not contain, starts with, ends with, =, <, >, <=, >=, !=}

<Reapply> xs:boolean </Reapply> [0..1]

If true, the action will automatically reapply if it becomes relevant again after it has successfully executed.

<HasReapplyLimit> xs:boolean </HasReapplyLimit> [0..1]

<ReapplyLimit> xs:nonNegativeInteger </ReapplyLimit> [0..1]

If the action is set to reapply and HasReapplyLimit is true, then the action will only reapply the specified number of times.

<HasReapplyInterval> xs:boolean </HasReapplyInterval> [0..1]

<ReapplyInterval> NonNegativeTimeInterval (possible values:

{'PT10M'|'PT15M'|'PT30M'|'PT1H'|'PT2H'|'PT4H'|'PT8H'|'PT12H'|'P1D'|'P2D'|'P5D'|'P7D'|'P15D'|'P30D'}) </ReapplyInterval> [0..1]

If the action is set to reapply and HasReapplyInterval is true, then the client will wait the specified time interval between reapplications. The possible values are in the list above. See TimeInterval for information on the value format.

<HasRetry> xs:boolean </HasRetry> [0..1]

<RetryCount> xs:nonNegativeInteger </RetryCount> [0..1]

If HasRetry is true, the action will be retried on failure the number of times specified in RetryCount.

<RetryWait

Behavior="xs:string (value comes from list: {'WaitForReboot'|'WaitForInterval'}) [0..1]"> [0..1]

RetryWaitInterval (TimeInterval)

</RetryWait>

If the action is set to retry and the attribute Behavior of the RetryWait element is WaitForReboot, the computer must be rebooted before the action will be retried. If the Behavior is WaitForInterval, then the action will be retried after the time interval specified inside the RetryWait tag. The possible values are:

{'PT15M'|'PT30M'|'PT1H'|'PT2H'|'PT4H'|'PT8H'|'PT12H'|'P1D'|'P2D'|'P3D'|'P5D'|'P15D'|'P30D'}

See TimeInterval for more information on the value format.

<HasTemporalDistribution> xs:boolean </HasTemporalDistribution> [0..1]

<TemporalDistribution> NonNegativeTimeInterval </TemporalDistribution> [0..1]

If HasTemporalDistribution is true, then the action will be distributed over the time duration specified in TemporalDistribution to reduce network load.

<PostActionBehavior

Behavior="xs:string (value comes from list: {'Nothing'|'Restart'|'Shutdown'}) [0..1]"> [0..1]

If the Behavior attribute is Restart or Shutdown, the computer will be restarted or shutdown (respectively) after the action completes.

<AllowCancel> xs:boolean </AllowCancel> [0..1]

If true, the user will be allowed to cancel the restart/shutdown.

<AllowPostponement> xs:boolean </AllowPostponement> [0..1]

<MaxPostponementInterval> ActionMessageMaxPostponementInterval
</MaxPostponementInterval> [0..1]

If AllowPostponement is true, the user will be allowed to postpone the restart/shutdown for up to the specified time interval. See ActionMessageMaxPostponementInterval for possible values.

<HasTimeout> xs:boolean </HasTimeout> [0..1]

<TimeoutInterval> ActionMessageTimeoutInterval </TimeoutInterval> [0..1]

If HasTimeout is true, the restart/shutdown will be forced after the specified time interval. See ActionMessageTimeoutInterval for possible values.

<Title> xs:normalizedString </Title> [0..1]

The title of the message displayed before the restart/shutdown.

<Text> xs:string </Text> [0..1]

The text of the message displayed before the restart/shutdown.

</PostActionBehavior>

</...>

ActionSettingsLocks

By default, all the action settings specified are taken as the new defaults to the Take Action Dialog. It is possible to have certain settings be locked so that the user cannot change them through the dialog. If a setting in ActionSettingsLocks is set to true, then the corresponding group of settings in ActionSettings will be locked. For example, if the TimeRange element of ActionSettingsLocks is true, then the values specified in ActionSettings for HasTimeRange, StartTime, and EndTime will not be allowed to change in the Take Action Dialog.

```
<...>
  <HasMessage> xs:boolean </HasMessage> [0..1]
  <Message> [0..1]
    <Title> xs:boolean </Title> [0..1]
    <Text> xs:boolean </Text> [0..1]
    <ShowActionButton> xs:boolean </ShowActionButton> [0..1]
    <ShowCancelButton> xs:boolean </ShowCancelButton> [0..1]
    <Postponement> xs:boolean </Postponement> [0..1]
    <Timeout> xs:boolean </Timeout> [0..1]
  </Message>
  <HasRunningMessage> xs:boolean </HasRunningMessage> [0..1]
  <RunningMessage> [0..1]
    <Title> xs:boolean </Title> [0..1]
    <Text> xs:boolean </Text> [0..1]
  </RunningMessage>
  <TimeRange> xs:boolean </TimeRange> [0..1]
  <StartDateTimeOffset> xs:boolean </StartDateTimeOffset> [0..1]
  <EndDateTimeOffset> xs:boolean </EndDateTimeOffset> [0..1]
  <DayOfWeekConstraint> xs:boolean </DayOfWeekConstraint> [0..1]
  <ActiveUserRequirement> xs:boolean </ActiveUserRequirement> [0..1]
  <Whose> xs:boolean </Whose> [0..1]
  <Reapply> xs:boolean </Reapply> [0..1]
  <ReapplyLimit> xs:boolean </ReapplyLimit> [0..1]
  <ReapplyInterval> xs:boolean </ReapplyInterval> [0..1]
  <RetryCount> xs:boolean </RetryCount> [0..1]
  <RetryWait> xs:boolean </RetryWait> [0..1]
  <TemporalDistribution> xs:boolean </TemporalDistribution> [0..1]
  <PostActionBehavior> [0..1]
    <Behavior> xs:boolean </Behavior> [0..1]
    <AllowCancel> xs:boolean </AllowCancel> [0..1]
    <Postponement> xs:boolean </Postponement> [0..1]
    <Timeout> xs:boolean </Timeout> [0..1]
    <Title> xs:boolean </Title> [0..1]
    <Text> xs:boolean </Text> [0..1]
  </PostActionBehavior>
</...>
```

RelevanceString

Equivalent to xs:string.

TimeInterval

Values of this type have the format (-)PdTThHmMsS, where dD represents the number of days, T is the date/time separator, hH is the number of hours, mM is the number of minutes, and sS is the number of seconds, which can have up to six decimal digits.

Examples:

- 1 PT1M – one minute
- 2 P32DT4H24M43.52S – 32 days, 4 hours, 24 minutes, 43.52 seconds
- 3 -P12H – negative 12 hours

NonNegativeTimeInterval

TimeInterval that cannot be negative.

ActionMessageMaxPostponementInterval

Possible values:

{'PT15M'|'PT30M'|'PT1H'|'PT2H'|'PT4H'|'PT6H'|'PT8H'|'PT12H'|'P1D'|'P2D'|'P3D'|'P5D'|'P7D'|'P15D'|'P30D'}

ActionMessageTimeoutInterval

Possible values:

{'PT1M'|'PT2M'|'PT3M'|'PT4M'|'PT5M'|'PT10M'|'PT15M'|'PT30M'|'PT1H'|'PT2H'|'PT4H'|'PT6H'|'PT8H'|'PT12H'|'P1D'|'P2D'|'P3D'|'P5D'|'P7D'|'P15D'|'P30D'}

Examples

The following example shows a BES XML file that includes every type of importable content:

```
<?xml version="1.0" encoding="UTF-8"?>
<BES xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="BES.xsd">
  <Fixlet>
    <Title>Custom Fixlet Message</Title>
    <Description><![CDATA[&lt;enter a description of the problem and the
corrective action here&gt;]]></Description>
    <Relevance>true</Relevance>
    <Source>Internal</Source>
    <SourceReleaseDate>2006-03-09</SourceReleaseDate>
    <DefaultAction ID="Action1">
      <Description>
        <PreLink><![CDATA[Click&nbsp;]]></PreLink>
        <Link>here</Link>
        <PostLink><![CDATA[&nbsp;to deploy this
action.]]></PostLink>
      </Description>
      <ActionScript MIMETYPE="application/x-Fixlet-Windows-Shell">//
enter your action script here</ActionScript>
      <SuccessCriteria Option="CustomRelevance">exists key
"HKLM\major\vulnerability" of registry</SuccessCriteria>
      <Settings>
        <HasMessage>true</HasMessage>
        <Message>
          <Title>Message from The MacHax Group support</Title>
          <Text>asdf</Text>
          <ShowActionButton>true</ShowActionButton>
          <ShowCancelButton>true</ShowCancelButton>
          <AllowPostponement>true</AllowPostponement>
          <MaxPostponementInterval>P1D</MaxPostponementInterval>
          <HasTimeout>true</HasTimeout>
          <TimeoutInterval>PT1H</TimeoutInterval>
        </Message>
        <HasRunningMessage>true</HasRunningMessage>
        <RunningMessage>
          <Title>Message from The MacHax Group support</Title>
          <Text>asdf</Text>
        </RunningMessage>
        <HasTimeRange>true</HasTimeRange>
        <TimeRange>
          <StartTime>01:00:00</StartTime>
          <EndTime>02:59:00</EndTime>
        </TimeRange>
      </Settings>
    </DefaultAction>
  </Fixlet>
</BES>
```

```

    </TimeRange>
    <HasStartTime>>true</HasStartTime>
    <StartDateTimeOffset>PT0S</StartDateTimeOffset>
    <HasEndTime>>true</HasEndTime>
    <EndDateTimeOffset>P2D</EndDateTimeOffset>
    <HasDayOfWeekConstraint>>true</HasDayOfWeekConstraint>
    <DayOfWeekConstraint>
      <Thu>>true</Thu>
    </DayOfWeekConstraint>
    <ActiveUserRequirement>NoRequirement</ActiveUserRequirement>
    <HasWhose>>true</HasWhose>
    <Whose>
      <Property>Active Directory Path</Property>
      <Relation>matches</Relation>
      <Value>asdf</Value>
    </Whose>
    <Reapply>>true</Reapply>
    <HasReapplyLimit>>true</HasReapplyLimit>
    <ReapplyLimit>3</ReapplyLimit>
    <HasReapplyInterval>>true</HasReapplyInterval>
    <ReapplyInterval>P1D</ReapplyInterval>
    <HasRetry>>true</HasRetry>
    <RetryCount>3</RetryCount>
    <RetryWait Behavior="WaitForInterval">PT1H</RetryWait>
    <HasTemporalDistribution>>true</HasTemporalDistribution>
    <TemporalDistribution>PT5M</TemporalDistribution>
    <PostActionBehavior Behavior="Restart">
      <AllowCancel>>false</AllowCancel>
      <AllowPostponement>>true</AllowPostponement>
      <MaxPostponementInterval>P1D</MaxPostponementInterval>
      <HasTimeout>>true</HasTimeout>
      <TimeoutInterval>PT1M</TimeoutInterval>
    </PostActionBehavior>
  </Settings>
</DefaultAction>
</Fixlet>
<Task>
  <Title>Start Service</Title>
  <Description><![CDATA[
Sometimes it is necessary to start a service on BES Client machines. This task
will start an arbitrary service on Windows NT based computers by running the DOS
'net start' command.<BR><BR><b>Note:</b> Do <b>not</b> set the "Reapply"
behavior when taking this action or you may cause the BES Client to constantly
try starting the service.<BR><BR><b>Note:</b> Client machines may briefly
display DOS windows during action execution.
]]></Description>
  <Relevance><![CDATA[version of client >= "5.0"]]></Relevance>
  <Relevance>name of operating system does not contain "Win9" AND name
of operating system != "WinME"</Relevance>

```

```

    <Relevance>name of operating system as lowercase starts with
"win"</Relevance>
    <Category>Common Tasks</Category>
    <DownloadSize>0</DownloadSize>
    <Source>BigFix</Source>
    <SourceID><![CDATA[<Unspecified>]]></SourceID>
    <SourceSeverity>Low</SourceSeverity>
    <Action ID="Action1">
      <Description>
        <PreLink><![CDATA[Click &nbsp;]]></PreLink>
        <Link>here</Link>
        <PostLink><![CDATA[&nbsp; to start a service.]]></PostLink>
      </Description>
      <ActionScript MIMeType="application/x-Fixlet-Windows-
Shell"><![CDATA[action parameter query "ServiceName" with description "Please
enter the service you would like to start:" With default "<Enter Service Name>"
dos net start "{parameter "ServiceName" of action}"]]></ActionScript>
    </Action>
  </Task>
  <Baseline>
    <Title>My Custom Baseline</Title>
    <Description><![CDATA[<STRONG>My baseline
description</STRONG>]]></Description>
    <Relevance>>true</Relevance>
    <Source>Internal</Source>
    <SourceReleaseDate>2006-03-13</SourceReleaseDate>
    <BaselineComponentCollection>
      <BaselineComponentGroup>
        <BaselineComponent Name="MS02-032: 26 June 2002 Cumulative
Patch for Windows Media Player 6.4" ActionName="Action1"
IncludeInRelevance="true"
SourceSiteURL="http://bigtest5.devlan.bigfix.com:52311/cgi-
bin/bfgather.exe/actionsite" SourceID="528">
          <Relevance><![CDATA[(((name of operating system as
lowercase starts with "win") AND ((language of version block of file
"kernel32.dll" of system folder contains "English") OR (exists value of key
"HKLM\System\CurrentControlSet\Control\Nls\MUILanguages" of registry))) AND
(exists regapp "mplayer2.exe" whose (version of it = "6.4") AND not exists
regapp "wmplayer.exe")) AND ((name of operating system = "Win2000" AND version
of file "msdxm.ocx" of system folder < "6.4.9.1124") OR ((name of operating
system = "Win98" OR name of operating system = "WinME" OR name of operating
system = "WinNT") AND version of file "msdxm.ocx" of system folder <
"6.4.7.1124")))]></Relevance>
          <ActionScript MIMeType="application/x-Fixlet-Windows-
Shell">download
http://download.microsoft.com/download/winmediaplayer/Update/320920/W98NT42KMe/E
N-US/wm320920_64.exe
continue if {(size of it = 913528 and sha1 of it =
"a7c6b4c812662b6b7bfa418a7bab8dc45a2db365") of file "wm320920_64.exe" of folder
"__download"}

```

```
wait __download\wm320920_64.exe /Q:A /R:N
run RunQuiet.exe qchain.exe</ActionScript>
    <SuccessCriteria
Option="OriginalRelevance"><![CDATA[(((name of operating system as lowercase
starts with "win") AND ((language of version block of file "kernel32.dll" of
system folder contains "English") OR (exists value of key
"HKLM\System\CurrentControlSet\Control\Nls\MUILanguages" of registry))) AND
(exists regapp "mplayer2.exe" whose (version of it = "6.4") AND not exists
regapp "wmplayer.exe")) AND ((name of operating system = "Win2000" AND version
of file "msdxm.ocx" of system folder < "6.4.9.1124") OR ((name of operating
system = "Win98" OR name of operating system = "WinME" OR name of operating
system = "WinNT") AND version of file "msdxm.ocx" of system folder <
"6.4.7.1124")))) AND (name of operating system != "Win2000" OR csd version of
operating system < "Service Pack 4")]]></SuccessCriteria>
    </BaselineComponent>
    <BaselineComponent Name="MS03-023: Buffer Overrun In HTML
Converter Could Allow Code Execution - Windows 2000" ActionName="Action1"
IncludeInRelevance="true" SourceSiteURL="http://sync.bigfix.com/cgi-
bin/bfgather/bessecurity" SourceID="302303">
    <Relevance>(((name of operating system as lowercase
starts with "win") AND ((language of version block of file "kernel32.dll" of
system folder contains "English") OR (exists value of key
"HKLM\System\CurrentControlSet\Control\Nls\MUILanguages" of registry))) AND
(name of operating system = "Win2000")) AND (csd version of operating system =
"Service Pack 3" OR csd version of operating system = "Service Pack 4")) AND
(not exists key "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Updates\Windows
2000\SP5\KB823559" of registry)</Relevance>
    <ActionScript MIMETYPE="application/x-Fixlet-Windows-
Shell">download http://download.microsoft.com/download/0/0/6/006cef65-34f3-4db4-
8153-e4a5bcc9b62e/Windows2000-KB823559-x86-ENU.exe
continue if {(size of it = 391216 and sha1 of it =
"8af191c04c299392c8d905c6a2def310d4cdef6d") of file "Windows2000-KB823559-x86-
ENU.exe" of folder "__download"}
wait __download/Windows2000-KB823559-x86-ENU.exe -q -z
run RunQuiet.exe qchain.exe</ActionScript>
    <SuccessCriteria Option="OriginalRelevance">(((name of
operating system as lowercase starts with "win") AND ((language of version block
of file "kernel32.dll" of system folder contains "English") OR (exists value of
key "HKLM\System\CurrentControlSet\Control\Nls\MUILanguages" of registry))) AND
(name of operating system = "Win2000")) AND (csd version of operating system =
"Service Pack 3" OR csd version of operating system = "Service Pack 4")) AND
(not exists key "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Updates\Windows
2000\SP5\KB823559" of registry)</SuccessCriteria>
    </BaselineComponent>
    <BaselineComponent Name="MS03-023: Buffer Overrun In HTML
Converter Could Allow Code Execution - Windows 2000" ActionName="Action1"
IncludeInRelevance="true" SourceSiteURL="http://testsite.bigfix.com/cgi-
bin/bfgather/bessecuritytest" SourceID="302303">
    <Relevance>((((name of operating system as lowercase
starts with "win") AND ((language of version block of file "kernel32.dll" of
system folder contains "English") OR (exists value of key
"HKLM\System\CurrentControlSet\Control\Nls\MUILanguages" of registry))) AND (not
exists key "HKLM\Software\Wow6432Node\Microsoft\Windows\CurrentVersion" whose
(exists value "ProductId" of it) of registry AND not exists values
```

```
"PROCESSOR_ARCHITECTURE" whose (it as string as lowercase = "ia64") of keys
"HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" of
registry)) AND (name of operating system = "Win2000")) AND (csd version of
operating system = "Service Pack 3" OR csd version of operating system =
"Service Pack 4")) AND (not exists key
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Updates\Windows 2000\SP5\KB823559" of
registry)) AND (not exists key
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Updates\Windows 2000\SP5\Update Rollup 1"
of registry)</Relevance>
      <ActionScript MIMEType="application/x-Fixlet-Windows-
Shell"><![CDATA[download http://download.microsoft.com/download/0/0/6/006cef65-
34f3-4db4-8153-e4a5bcc9b62e/Windows2000-KB823559-x86-ENU.exe
continue if {(size of it = 391216 and sha1 of it =
"8af191c04c299392c8d905c6a2def310d4cdef6d") of file "Windows2000-KB823559-x86-
ENU.exe" of folder "__download"}
wait __download/Windows2000-KB823559-x86-ENU.exe -q -z
run "{pathname of client folder of site "BESSupport" & "\RunQuiet.exe"}"
"{pathname of client folder of site "BESSupport" &
"\qchain.exe"}"]]></ActionScript>
      <SuccessCriteria Option="OriginalRelevance">((((name
of operating system as lowercase starts with "win") AND ((language of version
block of file "kernel32.dll" of system folder contains "English") OR (exists
value of key "HKLM\System\CurrentControlSet\Control\Nls\MUILanguages" of
registry))) AND (not exists key
"HKLM\Software\Wow6432Node\Microsoft\Windows\CurrentVersion" whose (exists value
"ProductId" of it) of registry AND not exists values "PROCESSOR_ARCHITECTURE"
whose (it as string as lowercase = "ia64") of keys
"HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" of
registry)) AND (name of operating system = "Win2000")) AND (csd version of
operating system = "Service Pack 3" OR csd version of operating system =
"Service Pack 4")) AND (not exists key
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Updates\Windows 2000\SP5\KB823559" of
registry)) AND (not exists key
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Updates\Windows 2000\SP5\Update Rollup 1"
of registry)</SuccessCriteria>
    </BaselineComponent>
  </BaselineComponentGroup>
</BaselineComponentCollection>
<Settings>
  <HasMessage>true</HasMessage>
  <Message>
    <Title>My message title</Title>
    <Text>My message text</Text>
    <ShowActionButton>true</ShowActionButton>
    <ShowCancelButton>true</ShowCancelButton>
    <AllowPostponement>true</AllowPostponement>
    <MaxPostponementInterval>P1D</MaxPostponementInterval>
    <HasTimeout>true</HasTimeout>
    <TimeoutInterval>PT1H</TimeoutInterval>
  </Message>
  <HasRunningMessage>true</HasRunningMessage>
  <RunningMessage>
    <Title>My running message title</Title>
```



```

    <Text>My running message text</Text>
  </RunningMessage>
  <HasTimeRange>>false</HasTimeRange>
  <HasStartTime>>false</HasStartTime>
  <HasEndTime>>true</HasEndTime>
  <EndDateTimeOffset>P2D</EndDateTimeOffset>
  <HasDayOfWeekConstraint>>false</HasDayOfWeekConstraint>
  <ActiveUserRequirement>RequireUser</ActiveUserRequirement>
  <HasWhose>>false</HasWhose>
  <Reapply>>false</Reapply>
  <HasReapplyLimit>>false</HasReapplyLimit>
  <HasReapplyInterval>>true</HasReapplyInterval>
  <ReapplyInterval>P5D</ReapplyInterval>
  <HasRetry>>false</HasRetry>
  <HasTemporalDistribution>>false</HasTemporalDistribution>
  <PostActionBehavior Behavior="Restart">
    <AllowCancel>>false</AllowCancel>
    <AllowPostponement>>true</AllowPostponement>
    <MaxPostponementInterval>P1D</MaxPostponementInterval>
    <HasTimeout>>false</HasTimeout>
  </PostActionBehavior>
</Settings>
<SettingsLocks>
  <HasMessage>>false</HasMessage>
  <Message>
    <Title>>false</Title>
    <Text>>false</Text>
    <ShowActionButton>>false</ShowActionButton>
    <ShowCancelButton>>false</ShowCancelButton>
    <Postponement>>false</Postponement>
    <Timeout>>false</Timeout>
  </Message>
  <HasRunningMessage>>false</HasRunningMessage>
  <RunningMessage>
    <Title>>false</Title>
    <Text>>false</Text>
  </RunningMessage>
  <TimeRange>>false</TimeRange>
  <StartDateTimeOffset>>false</StartDateTimeOffset>
  <EndDateTimeOffset>>false</EndDateTimeOffset>
  <DayOfWeekConstraint>>false</DayOfWeekConstraint>
  <ActiveUserRequirement>>true</ActiveUserRequirement>
  <Whose>>false</Whose>
  <Reapply>>false</Reapply>
  <ReapplyLimit>>false</ReapplyLimit>
  <ReapplyInterval>>false</ReapplyInterval>
  <RetryCount>>false</RetryCount>
  <RetryWait>>false</RetryWait>

```

```

    <TemporalDistribution>>false</TemporalDistribution>
    <PostActionBehavior>
      <Behavior>>false</Behavior>
      <AllowCancel>>false</AllowCancel>
      <Postponement>>false</Postponement>
      <Timeout>>false</Timeout>
      <Title>>false</Title>
      <Text>>false</Text>
    </PostActionBehavior>
  </SettingsLocks>
</Baseline>
<SingleAction>
  <Title>My Custom Action</Title>
  <Relevance>>true</Relevance>
  <ActionScript MIMEType="application/x-Fixlet-Windows-Shell">// Enter
your action script here</ActionScript>
  <SuccessCriteria Option="RunToCompletion"></SuccessCriteria>
  <Settings>
    <HasMessage>>true</HasMessage>
    <Message>
      <Title>My custom action message title</Title>
      <Text>My custom action message text</Text>
      <ShowActionButton>>false</ShowActionButton>
      <ShowCancelButton>>false</ShowCancelButton>
      <AllowPostponement>>true</AllowPostponement>
      <MaxPostponementInterval>P1D</MaxPostponementInterval>
      <HasTimeout>>true</HasTimeout>
      <TimeoutInterval>PT1H</TimeoutInterval>
    </Message>
    <HasRunningMessage>>true</HasRunningMessage>
    <RunningMessage>
      <Title>My running message title</Title>
      <Text>My running message text</Text>
    </RunningMessage>
    <HasTimeRange>>false</HasTimeRange>
    <HasStartTime>>false</HasStartTime>
    <HasEndTime>>true</HasEndTime>
    <EndDateTimeOffset>P1DT23H59M22S</EndDateTimeOffset>
    <HasDayOfWeekConstraint>>false</HasDayOfWeekConstraint>
    <ActiveUserRequirement>NoRequirement</ActiveUserRequirement>
    <HasWhose>>false</HasWhose>
    <Reapply>>false</Reapply>
    <HasReapplyLimit>>false</HasReapplyLimit>
    <HasReapplyInterval>>false</HasReapplyInterval>
    <HasRetry>>false</HasRetry>
    <HasTemporalDistribution>>true</HasTemporalDistribution>
    <TemporalDistribution>PT5M</TemporalDistribution>
    <PostActionBehavior Behavior="Nothing"></PostActionBehavior>
  </Settings>
</SingleAction>

```

```

    </Settings>
  </SingleAction>
  <MultipleActionGroup>
    <Title>Imported Multiple Action Group</Title>
    <PreGroupActionScript MIMEType="application/x-Fixlet-Windows-
Shell"><![CDATA[dos echo {"pre - " & now as string} >>
"c:\test.txt"]]></PreGroupActionScript>
    <MemberAction>
      <Title>imported action 1</Title>
      <Relevance>>true</Relevance>
      <ActionScript MIMEType="application/x-Fixlet-Windows-
Shell"><![CDATA[
dos echo {"1 - " & now as string} >>
"c:\test.txt"]]></ActionScript>
      <SuccessCriteria Option="RunToCompletion"></SuccessCriteria>
    </MemberAction>
    <MemberAction>
      <Title>imported action 2</Title>
      <Relevance>>true</Relevance>
      <ActionScript MIMEType="application/x-Fixlet-Windows-
Shell"><![CDATA[dos echo {"2 - " & now as string} >>
"c:\test.txt"]]></ActionScript>
      <SuccessCriteria Option="RunToCompletion"></SuccessCriteria>
    </MemberAction>
    <MemberAction>
      <Title>imported action 3</Title>
      <Relevance>>true</Relevance>
      <ActionScript MIMEType="application/x-Fixlet-Windows-
Shell"><![CDATA[dos echo {"3 - " & now as string} >>
"c:\test.txt"]]></ActionScript>
      <SuccessCriteria Option="RunToCompletion"></SuccessCriteria>
    </MemberAction>
    <PostGroupActionScript MIMEType="application/x-Fixlet-Windows-
Shell"><![CDATA[dos echo {"post - " & now as string} >>
"c:\test.txt"]]></PostGroupActionScript>
    <Settings>
      <HasMessage>>false</HasMessage>
      <HasRunningMessage>>false</HasRunningMessage>
      <HasTimeRange>>false</HasTimeRange>
      <HasStartTime>>false</HasStartTime>
      <HasEndTime>>false</HasEndTime>
      <HasDayOfWeekConstraint>>false</HasDayOfWeekConstraint>
      <ActiveUserRequirement>NoRequirement</ActiveUserRequirement>
      <HasWhose>>false</HasWhose>
      <Reapply>>false</Reapply>
      <HasReapplyLimit>>false</HasReapplyLimit>
      <HasReapplyInterval>>false</HasReapplyInterval>
      <HasRetry>>false</HasRetry>
      <HasTemporalDistribution>>false</HasTemporalDistribution>
      <PostActionBehavior Behavior="Nothing"></PostActionBehavior>
  
```

```
        </Settings>
    </MultipleActionGroup>
    <ComputerGroup>
        <Title>My computer group</Title>
        <JoinByIntersection>true</JoinByIntersection>
        <IsDynamic>true</IsDynamic>
        <EvaluateOnClient>true</EvaluateOnClient>
        <SearchComponentRelevance Comparison="IsTrue">
            <Relevance>exists key "HKLM\vulnerability" of
registry</Relevance>
        </SearchComponentRelevance>
        <SearchComponentGroupReference GroupName="new computer group"
Comparison="IsMember"></SearchComponentGroupReference>
        <SearchComponentPropertyReference PropertyName="CPU"
Comparison="Contains">
            <SearchText>Win</SearchText>
            <Relevance>exists ((significant digits 2 of (speed of main
processor / mhz)) as string & " MHz " & family name of main processor as
string & (if it > 1 then " x" & it as string else "")) of ( if (
exists true whose ( if true then ( exists physical processor count ) else false
) ) then physical processor count else number of processors )) whose (it as
string as lowercase contains "Win" as lowercase)</Relevance>
        </SearchComponentPropertyReference>
    </ComputerGroup>
    <Property Name="IP Address">addresses whose (it as string != "0.0.0.0") of
ip interfaces whose (loopback of it = false) of network</Property>
</BES>
```

Appendix A – BES.xsd

```

<?xml version="1.0"?>
<xs:schema id="BES" xmlns:xs="http://www.w3.org/2001/XMLSchema"
attributeFormDefault="qualified" elementFormDefault="qualified">
  <xs:element name="BES">
    <xs:complexType>
      <xs:choice maxOccurs="unbounded">
        <xs:element name="Fixlet" type="FixletWithActions" />
        <xs:element name="Task" type="FixletWithActions" />
        <xs:element name="Analysis">
          <xs:complexType>
            <xs:complexContent>
              <xs:extension base="Fixlet">
                <xs:sequence>
                  <xs:element name="Property" minOccurs="0"
maxOccurs="unbounded">
                    <xs:complexType>
                      <xs:simpleContent>
                        <xs:extension base="Property">
                          <xs:attribute name="ID"
type="xs:nonNegativeInteger" use="required" />
                          <xs:attribute name="KeepStatistics"
type="xs:boolean" use="optional" />
                        </xs:extension>
                      </xs:simpleContent>
                    </xs:complexType>
                  </xs:element>
                </xs:sequence>
              </xs:extension>
            </xs:complexContent>
          </xs:complexType>
        </xs:element>
        <xs:element name="SingleAction">
          <xs:complexType>
            <xs:complexContent>
              <xs:extension base="Action">
                <xs:sequence>
                  <xs:element name="Settings" type="ActionSettings"
minOccurs="0" />
                  <xs:element name="SettingsLocks"
type="ActionSettingsLocks" minOccurs="0" />
                  <xs:element name="SuccessCriteriaLocked"
type="xs:boolean" minOccurs="0" />
                </xs:sequence>
              </xs:extension>
            </xs:complexContent>
          </xs:complexType>
        </xs:element>
        <xs:element name="MultipleActionGroup">
          <xs:complexType>
            <xs:sequence>

```

```

    <xs:element name="Title" type="xs:normalizedString" />
    <xs:element name="PreGroupActionScript" type="ActionScript"
minOccurs="0" />
    <xs:element name="MemberAction" type="Action"
maxOccurs="unbounded" />
    <xs:element name="PostGroupActionScript" type="ActionScript"
minOccurs="0" />
    <xs:element name="Settings" type="ActionSettings"
minOccurs="0" />
    <xs:element name="SettingsLocks" type="ActionSettingsLocks"
minOccurs="0" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="Property" type="Property" />
<xs:element name="Baseline">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="Fixlet">
        <xs:sequence>
          <xs:element name="BaselineComponentCollection">
            <xs:complexType>
              <xs:sequence>
                <xs:element
name="BaselineComponentGroup" minOccurs="0" maxOccurs="unbounded">
                  <xs:complexType>
                    <xs:sequence>
                      <xs:element
name="BaselineComponent" minOccurs="0" maxOccurs="unbounded">
                        <xs:complexType>
                          <xs:sequence>
                            <xs:element
name="Relevance" type="RelevanceString" />
                            <xs:element
name="ActionScript" type="ActionScript" />
                            <xs:element
name="SuccessCriteria" type="ActionSuccessCriteria" minOccurs="0" />
                          </xs:sequence>
                        <xs:attribute
name="Name" type="xs:normalizedString" />
                        <xs:attribute
name="ActionName" type="xs:normalizedString" />
                        <xs:attribute
name="IncludeInRelevance" type="xs:boolean" />
                        <xs:attribute
name="SourceSiteURL" type="xs:anyURI" use="optional" />
                        <xs:attribute
name="SourceID" type="xs:nonNegativeInteger" use="optional" />
                      </xs:complexType>
                    </xs:element>
                  </xs:sequence>
                <xs:attribute name="Name"
type="xs:normalizedString" />
              </xs:complexType>
            </xs:element>
          </xs:sequence>
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  </xs:complexType>
</xs:element>

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```

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      <xs:element name="SettingsLocks"
type="ActionSettingsLocks" minOccurs="0" />
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minOccurs="1" />
      <xs:element name="IsDynamic" type="xs:boolean" minOccurs="1"
/>
      <xs:element name="EvaluateOnClient" type="xs:boolean"
minOccurs="1" />
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type="RelevanceString" />
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              <xs:simpleType>
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base="xs:normalizedString">
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                </xs:restriction>
              </xs:simpleType>
            </xs:attribute>
          </xs:complexType>
        </xs:element>
        <xs:element name="SearchComponentPropertyReference">
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            <xs:sequence>
              <xs:element name="SearchText"
type="xs:normalizedString" />
              <xs:element name="Relevance"
type="RelevanceString" />
            </xs:sequence>
            <xs:attribute name="PropertyName"
type="xs:normalizedString" />
            <xs:attribute name="Comparison">
              <xs:simpleType>
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base="xs:normalizedString">

```

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/ >
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    </xs:attribute>
  </xs:complexType>
</xs:element>
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</xs:element>
</xs:choice>
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</xs:element>
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    <xs:element name="Description" type="xs:string" />
    <xs:element name="Relevance" type="RelevanceString" maxOccurs="unbounded" />
    <xs:element name="Category" type="xs:normalizedString" minOccurs="0" />
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          <xs:element name="DataStore" type="xs:string" minOccurs="0" />
          <xs:element name="StartURL" type="xs:string" minOccurs="0" />
          <xs:element name="SkipUI" type="xs:string" minOccurs="0" />
        </xs:sequence>
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    </xs:element>
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/ >
  </xs:sequence>
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```



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    <xs:element name="SourceReleaseDate" type="NonNegativeDate" minOccurs="0" />
    <xs:element name="SourceSeverity" type="xs:normalizedString" minOccurs="0"
  />
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    <xs:element name="SANSID" type="xs:normalizedString" minOccurs="0" />
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    <xs:extension base="Fixlet">
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  />
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maxOccurs="unbounded" />
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    </xs:extension>
  </xs:complexContent>
</xs:complexType>
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          <xs:element name="PostLink" type="xs:normalizedString" />
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    </xs:element>
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    <xs:element name="SuccessCriteria" minOccurs="0"
type="ActionSuccessCriteria" />
    <xs:element name="SuccessCriteriaLocked" type="xs:boolean" minOccurs="0" />
    <xs:element name="Settings" type="ActionSettings" minOccurs="0" />
    <xs:element name="SettingsLocks" type="ActionSettingsLocks" minOccurs="0" />
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    <xs:element name="Relevance" type="RelevanceString" />
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    <xs:element name="SuccessCriteria" type="ActionSuccessCriteria"
minOccurs="0" />
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default="application/x-Fixlet-Windows-Shell" />
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</xs:complexType>

```

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  </xs:simpleContent>
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default="OriginalRelevance">
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            <xs:enumeration value="RunToCompletion" />
            <xs:enumeration value="OriginalRelevance" />
            <xs:enumeration value="CustomRelevance" />
          </xs:restriction>
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    </xs:extension>
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minOccurs="0" />
          <xs:element name="ShowCancelButton" type="xs:boolean"
minOccurs="0" />
          <xs:element name="AllowPostponement" type="xs:boolean"
minOccurs="0" />
          <xs:element name="MaxPostponementInterval" minOccurs="0"
type="ActionMessageMaxPostponementInterval" />
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          <xs:element name="TimeoutInterval" minOccurs="0"
type="ActionMessageTimeoutInterval" />
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          <xs:group ref="Message" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
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          <xs:element name="EndTime" type="xs:time" minOccurs="0" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

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<xs:element name="HasEndTime" type="xs:boolean" minOccurs="0" />
<xs:element name="EndDateTimeOffset" type="NonNegativeTimeInterval"
minOccurs="0" />
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<xs:element name="DayOfWeekConstraint" minOccurs="0">
  <xs:complexType>
    <xs:sequence>
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      <xs:element name="Mon" type="xs:boolean" minOccurs="0" />
      <xs:element name="Tue" type="xs:boolean" minOccurs="0" />
      <xs:element name="Wed" type="xs:boolean" minOccurs="0" />
      <xs:element name="Thu" type="xs:boolean" minOccurs="0" />
      <xs:element name="Fri" type="xs:boolean" minOccurs="0" />
      <xs:element name="Sat" type="xs:boolean" minOccurs="0" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
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      <xs:enumeration value="RequireUser" />
      <xs:enumeration value="RequireNoUser" />
    </xs:restriction>
  </xs:simpleType>
</xs:element>
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<xs:element name="Whose" minOccurs="0">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Property" type="xs:string" minOccurs="0" />
      <xs:element name="Relation" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string" />
        </xs:simpleType>
      </xs:element>
      <xs:element name="Value" type="xs:string" minOccurs="0" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
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<xs:element name="HasReapplyLimit" type="xs:boolean" minOccurs="0" />
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/>

<xs:element name="HasReapplyInterval" type="xs:boolean" minOccurs="0" />
<xs:element name="ReapplyInterval" minOccurs="0">
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    <xs:restriction base="NonNegativeTimeInterval">

```

```

    <xs:enumeration value="PT10M" />
    <xs:enumeration value="PT15M" />
    <xs:enumeration value="PT30M" />
    <xs:enumeration value="PT1H" />
    <xs:enumeration value="PT2H" />
    <xs:enumeration value="PT4H" />
    <xs:enumeration value="PT8H" />
    <xs:enumeration value="PT12H" />
    <xs:enumeration value="P1D" />
    <xs:enumeration value="P2D" />
    <xs:enumeration value="P5D" />
    <xs:enumeration value="P7D" />
    <xs:enumeration value="P15D" />
    <xs:enumeration value="P30D" />
  </xs:restriction>
</xs:simpleType>
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<xs:element name="RetryWait" minOccurs="0">
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    <xs:simpleContent>
      <xs:extension base="RetryWaitInterval">
        <xs:attribute name="Behavior" default="WaitForInterval">
          <xs:simpleType>
            <xs:restriction base="xs:string">
              <xs:enumeration value="WaitForReboot" />
              <xs:enumeration value="WaitForInterval" />
            </xs:restriction>
          </xs:simpleType>
        </xs:attribute>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
</xs:element>
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<xs:element name="TemporalDistribution" type="NonNegativeTimeInterval"
minOccurs="0" />
  <xs:element name="PostActionBehavior" minOccurs="0">
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        <xs:element name="AllowCancel" type="xs:boolean" minOccurs="0" />
        <xs:element name="AllowPostponement" type="xs:boolean"
minOccurs="0" />
        <xs:element name="MaxPostponementInterval"
type="ActionMessageMaxPostponementInterval" minOccurs="0" />
        <xs:element name="HasTimeout" type="xs:boolean" minOccurs="0" />
        <xs:element name="TimeoutInterval"
type="ActionMessageTimeoutInterval" minOccurs="0" />
        <xs:group ref="Message" />
      </xs:sequence>
      <xs:attribute name="Behavior" default="Nothing">

```

```

        <xs:simpleType>
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            <xs:enumeration value="Nothing" />
            <xs:enumeration value="Restart" />
            <xs:enumeration value="Shutdown" />
          </xs:restriction>
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      </xs:attribute>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexType name="ActionSettingsLocks">
  <xs:sequence>
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    <xs:element name="Message" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:group minOccurs="0" ref="MessageLocks" />
          <xs:element name="ShowActionButton" type="xs:boolean"
minOccurs="0" />
          <xs:element name="ShowCancelButton" type="xs:boolean"
minOccurs="0" />
          <xs:element name="Postponement" type="xs:boolean" minOccurs="0"
/>
          <xs:element name="Timeout" type="xs:boolean" minOccurs="0" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="HasRunningMessage" type="xs:boolean" minOccurs="0" />
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      </xs:complexType>
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    <xs:element name="Reapply" type="xs:boolean" minOccurs="0" />
    <xs:element name="ReapplyLimit" type="xs:boolean" minOccurs="0" />
    <xs:element name="ReapplyInterval" type="xs:boolean" minOccurs="0" />
    <xs:element name="RetryCount" type="xs:boolean" minOccurs="0" />
    <xs:element name="RetryWait" type="xs:boolean" minOccurs="0" />
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    <xs:element name="PostActionBehavior" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Behavior" type="xs:boolean" minOccurs="0" />

```

```

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  />
    <xs:element name="Postponement" type="xs:boolean" minOccurs="0"
  />
    <xs:element name="Timeout" type="xs:boolean" minOccurs="0" />
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</xs:element>
</xs:sequence>
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    <xs:enumeration value="PT30M" />
    <xs:enumeration value="PT1H" />
    <xs:enumeration value="PT2H" />
    <xs:enumeration value="PT4H" />
    <xs:enumeration value="PT6H" />
    <xs:enumeration value="PT8H" />
    <xs:enumeration value="PT12H" />
    <xs:enumeration value="P1D" />
    <xs:enumeration value="P2D" />
    <xs:enumeration value="P3D" />
    <xs:enumeration value="P5D" />
    <xs:enumeration value="P7D" />
    <xs:enumeration value="P15D" />
    <xs:enumeration value="P30D" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ActionMessageTimeoutInterval">
  <xs:restriction base="NonNegativeTimeInterval">
    <xs:enumeration value="PT1M" />
    <xs:enumeration value="PT2M" />
    <xs:enumeration value="PT3M" />
    <xs:enumeration value="PT4M" />
    <xs:enumeration value="PT5M" />
    <xs:enumeration value="PT10M" />
    <xs:enumeration value="PT15M" />
    <xs:enumeration value="PT30M" />
    <xs:enumeration value="PT1H" />
    <xs:enumeration value="PT2H" />
    <xs:enumeration value="PT4H" />
    <xs:enumeration value="PT6H" />
    <xs:enumeration value="PT8H" />
    <xs:enumeration value="PT12H" />
    <xs:enumeration value="P1D" />
    <xs:enumeration value="P2D" />
    <xs:enumeration value="P3D" />
    <xs:enumeration value="P5D" />
    <xs:enumeration value="P7D" />
    <xs:enumeration value="P15D" />
    <xs:enumeration value="P30D" />
  </xs:restriction>
</xs:simpleType>

```

```

    </xs:restriction>
  </xs:simpleType>
  <xs:group name="Message">
    <xs:sequence>
      <xs:element name="Title" type="xs:normalizedString" minOccurs="0" />
      <xs:element name="Text" type="xs:string" minOccurs="0" />
    </xs:sequence>
  </xs:group>
  <xs:group name="MessageLocks">
    <xs:sequence>
      <xs:element name="Title" type="xs:boolean" minOccurs="0" />
      <xs:element name="Text" type="xs:boolean" minOccurs="0" />
    </xs:sequence>
  </xs:group>
  <xs:complexType name="Property">
    <xs:simpleContent>
      <xs:extension base="RelevanceString">
        <xs:attribute name="Name" type="xs:normalizedString" use="required" />
        <xs:attribute name="EvaluationPeriod" type="NonNegativeTimeInterval"
use="optional" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
  <xs:simpleType name="RetryWaitInterval">
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      <xs:enumeration value="PT1H" />
      <xs:enumeration value="PT2H" />
      <xs:enumeration value="PT4H" />
      <xs:enumeration value="PT8H" />
      <xs:enumeration value="PT12H" />
      <xs:enumeration value="P1D" />
      <xs:enumeration value="P2D" />
      <xs:enumeration value="P3D" />
      <xs:enumeration value="P5D" />
      <xs:enumeration value="P15D" />
      <xs:enumeration value="P30D" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="RelevanceString">
    <xs:simpleContent>
      <xs:extension base="xs:string" />
    </xs:simpleContent>
  </xs:complexType>
  <xs:simpleType name="TimeInterval">
    <xs:restriction base="xs:duration">
      <xs:pattern value="\-?P([0-9]+D)?(T([0-9]+H)?([0-9]+M)?([0-9]+(\.[0-
9]{1,6})?S)?)?" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="NonNegativeTimeInterval">
    <xs:restriction base="xs:duration">

```

```
<xs:pattern value="P([0-9]+D)?(T([0-9]+H)?([0-9]+M)?([0-9]+(\.[0-9]{1,6})?S)?)?" />
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="NonNegativeDate">
  <xs:restriction base="xs:date">
    <xs:pattern value="\d{4}-\d{2}-\d{2}" />
  </xs:restriction>
</xs:simpleType>
</xs:schema>
```


Index

A

ActionScript · 10
ActionSettings · 11
ActionSettingsLocks · 14
ActionSuccessCriteria · 11
Analyses · 8
Audience · 1

B

Baselines · 5
BES.xsd · 1, 3, 4, 17, 26

C

Computer Groups · 8
Conventions Used in this manual · 1

E

Examples · 17

F

FixletAction · 10
Fixlets · 5

M

Multiple Action Groups · 7

R

Relevance Language · 1
RelevanceString · 15

S

Single Actions · 7

T

Tasks · 5
TimeInterval · 16

X

XMLImporter · 1, 3