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Setting Bladelet Properties, Variables, and Rules

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Basic tasks involving creating PEPs are discussed in Getting Started with Cisco ADS.

This section explains how to set Bladelet Properties, manage Variables, and set Rules within each Bladelet Properties window. However, each Bladelet and its Bladelet Properties is explained in ADS Bladelets Reference.



For more information on implementing an AON network, see the following:

- Other chapters in this guide:
 - Getting Started with Cisco ADS
 - ADS Bladelets Reference
 - ADS PEP Attributes Reference
 - ADS Message Types Reference
 - E-Mail to Cisco ADS Support
- Other guides in the AON library:
 - AON Installation and Administration Guide (for information on the AMC server and nodes)
 - AON Programming Guide (for information on custom Bladelets, custom adapters, and application program interfaces)

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Assigning Bladelet Properties

You assign Bladelet properties by means of the Bladelet Properties window (Figure 2-1) and subsequent dialog boxes. To open this window, follow the procedure in the "Creating PEPs" section on page 1-11, in "Getting Started with Cisco ADS" chapter. The window shown here is for the AccessHTTP Bladelet.



Shared resources are displayed as selectable options when you configure bladelets.

Required Fields

Each required field in the Bladelet Properties window is marked by a red asterisk. Until all required fields are completed with the correct value, an error message appears on top of the Bladelet Properties window to indicate which field remains to be completed or indicates that there is a parameter type mismatch and so on before the Bladelet is completely configured.

Text Area and Auto Complete Field

The Bladelet Properties window provides either a text area or an auto complete field. An Arrow icon—toggle button—allows to toggle between the text area and auto complete text field. If the data type is of the string type, the Text area is the default; otherwise it is an auto complete text field.

The Bladelet Properties window displays an auto complete text field with a yellow background. You can enter a \$ (dollar) sign to trigger the available list of variables in the current scope. You can select a variable from the list by double-clicking your mouse or by pressing the Enter key. After the variable is entered in the auto complete text field, you can use a . (dot) to get the attributes of the selected variable. You can enter \$ and . after the selected variable to see if the list includes more methods.

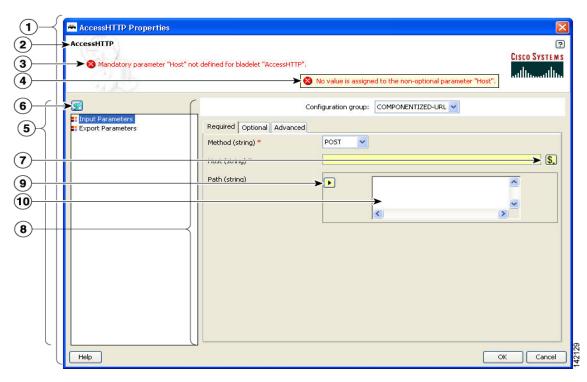


Figure 2-1 Bladelet Properties Window

1	Bladelet properties window.	6	Manage Variables icon (displays the Variables Picker dialog box with two tabs).
2	Bladelet label.	7	Advanced Variables icon (displays the Variables Picker dialog box with three tabs).
3	Error-log message.	8	Value Settings area (those marked with a red asterisk are required for validation).
4	Error-log messages popup window.	9	Arrow icon—toggle button. This allows to toggle between the text area and auto complete text field.
5	Properties area.	10	Text area. This is the default if the data type is of the String Type; otherwise it is an auto complete text field.

Managing Variables

ADS 2.1 has a new Variable Picker dialog box. It has a tabbed panel which allows you to perform all the operations with the variables in one single dialog box. You can add, delete, rename variables. You can also initialize variables and set values for the variables before and after a Bladelet Execution. It also binds the variables to parameters in the Bladelet Properties window. You can also scope variables through this dialog, where only the variables visible in the current scope are listed in this dialog. All the variables in the current scope and also from the parents scope are visible.

You can invoke the Variable Picker Dialog window (Figure 2-2) in two different ways:

- By clicking on Manage Variables icon on the top left panel of the Bladelet Properties window.
- By clicking on the Advanced Variable Options icon.

Figure 2-2 Icons to Open the Variables Dialog

ApplicationQo5 Bladelet Group "Message Har	ding".	Cisco Syst
S	ApplicatonQo5	
ApplicatonQoS	Input (Message) * \$REQUEST_MESSAGE ApplicationQoS (policy) * Default	
		/

1	Ũ	This opens a Variables Picker dialog window with two tab pages: Manage and Initialize.
		This opens a Variable Picker dialog window with three tab pages: Select, Manage, and Initialize.

Variable Picker Dialog—Manage and Initialize



Manage Variables Icon

The Variables Picker Dialog (Figure 2-3) with two tab pages—Manage and Initialize—appears when you click the **Manage Variables** icon within any Bladelets Properties window. You can also open the same window by **Right-Clicking** the mouse on a PEP, or Bladelets, or anywhere inside the PEP Developer Pane.

Variable Picker—Manage tab

You can select the Manage tab (Figure 2-3) to add, delete, and rename variables in the current scope. A list of existing variables is provided in a table view along with the Scope information. Variables names are treated unique in a parent/child hierarchy. Therefore, you can define variables of the same name in different scopes. Deleting variables is restricted to validate if the variable is being used in any of the Parameters of the bladelets in the current scope. Renaming of a variables renames the references in the variables in all the Assignment Blocks, Rules, and also in Bladelet Properties Dialog.

nage Initialize	11		
Name	Туре	Scope	
MSG_POLICY	MessagePolicyInfo	Global Global	
	MessageTypeInfo PEPMetadata	Global	
3 FLOW 4 PLATFORM	PEPMetadata	Global	
REQUEST_MESSAGE	Message	Global	
RESPONSE_MESSAGE	Message	Global	
SYSTEM	SystemInfo	Global	

Figure 2-3 Variable Picker—Manage Tab

Variables Definition

The Variables Definition window (Figure 2-4) appears when you click the Add button in the Manage Tab dialog window.

Figure 2-4	Variables Definition

🇮 Va	riable Definition	
(P	lanage Variables.	CISCO SYSTEMS
Name	1	
Туре	AONSSubject	~
Value		
Scope	Global	~
		OK Cancel

You can add new variables from the Variable Definition dialog window. You can also chose the Type and Scope of the variable along with an initialization Value. To see the complete list of Variable-Type choices, see

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Note

Variable Picker—Initialize Tab

You can select the Initialize tab (Figure 2-5) to initialize the variables in the current scope. Each variable has a value before and after a Bladelet Execution. You are able to complete the value fields by using the Auto Complete feature, which provides the drop-down selection window. This window provides an auto complete text field with a yellow background. You can enter a \$ (dollar) sign to trigger the available list of variables in the current scope. You can select a variable from the list and select it by double-clicking your mouse or by pressing the **Enter** key. After the variable is selected, you can also use a . (dot) to get the attributes of the selected variable. You can enter \$ (dollar) or a . (dot) after the variable to see if the list includes more methods.

🌥 Variable Picker		×
Initialize Tab : Initialize the Varia	bles in the current scope.	CISCO SYSTEMS
Manage Initialize MSG_POLICY MSG_TYPE PEP PLATFORM REQUEST_MESSAGE RESPONSE_MESSAGE SYSTEM	Datatype MessagePolicyInfo Scope Global Initialization before Bladelet Execution Value Initialization after Bladelet Execution Value	
	Save Close	9 FF 23 F

Figure 2-5 Variable Picker—Initialiaze Tab

Advanced Variable Picker Dialog—Select, Manage, and Initialize



Advanced Variables Options

The Variables Picker dialog window (Figure 2-6) with three tab pages—Select, Manage, and Initialize—appears when you click the Advanced Variables Options icon within any Bladelets Properties window.

Note

This option provides the extra Select tab.

Advanced Variable Picker—Select tab

You can bind variables to different parameters in Bladelet Properties based on the type of the parameter. The variables listed in this tab are either of the same type or the types convertible to the binding type visible in the current scope.

🏯 Variable Picker			
(Fa)			2
Variable Picker			CISCO SYSTEMS
201			ահնուսվիս
CALL			
Select Manage Initialize			
Name	Туре	Scope	1
1 intValue	int	Global	
2 stringValue	string	Global	



The variables names in the Select tab appear only after the variables are added in the Manage tab by adding and binding the new variable names in the Variable Definition window (Figure 2-8).

Advanced Variable Picker—Manage Tab

You can select the Manage tab (Figure 2-7) to add, delete, and rename variables in the current scope. A list of existing variables is provided in a table view along with the Scope information. Variables names are treated unique in a Parent/Child hierarchy. Therefore, you can define Variables of the same name in different scopes. Deletion of Flow Variables is restricted to validate if the Variable is being used in any of the Parameters of the bladelets in the current scope. Renaming of a Variables renames the references in the Variables in all the Assignment Blocks, Rules and also in Bladelet Properties Dialog.



The Mange tab provides the same function as in the two-tab window (Figure 2-3).

elect Manage Initialize			
	Туре	Scope	
1 MSG POLICY	MessagePolicyInfo	Global	
2 MSG_TYPE	MessageTypeInfo	Global	
3 FLOW	PEPMetadata	Global	
4 PLATFORM	PlatformInfo	Global	
5 REQUEST_MESSAGE	Message	Global	
6 RESPONSE_MESSAGE	Message	Global	
7 SYSTEM	SystemInfo	Global	
8 intValue	int	Global	
9 stringValue	string	Global	

Figure 2-7 Advanced Variable Picker—Manage Tab

The Variables Definition window (Figure 2-8) appears when you click the Add button in the Manage Tab dialog. You can add new variables from this dialog window. You can also chose the Type and Scope of the variable along with an initialization value.

//	riable Definition	
M	lanage Variables.	CISCO SYSTEMS
ann an t	1	
Name		
	AONSSubject	~
Name Type Value	AONSSubject	~

Variables Definition

Advanced Variable Picker—Initialize tab

Figure 2-8

You can select the Initialize tab (Figure 2-9) to initialize the variables in the current scope and assign Value. Each Variable has a value before and after a Bladelet Execution. You are able to complete the value fields by using the Auto Complete feature, which provides the drop-down selection window. This window provides an auto complete text field with a yellow background. You can enter a \$ (dollar) sign to trigger the available list of variables in the current scope. You can select a variable from the list and select it by double-clicking your mouse or by pressing the **Enter** key. After the variable is selected, you can also use a . (dot) to get the attributes of the selected variable. You can enter \$ (dollar) or a . (dot) after the variable to see if the list includes more methods.



The Initialize tab provides the same function as in the two-tab window (Figure 2-5).

(T)		?
Initialize Tab : Initialize the Variab	les in the current scope.	CISCO SYSTEMS
Select Manage Initialize		
MSG_POLICY MSG_TYPE PEP PLATFORM REQUEST_MESSAGE RESPONSE_MESSAGE SYSTEM intValue stringValue	Datatype int Scope Global Initialization before Bladelet Execut Value Value Value	

Figure 2-9 Advanced Variable Picker—Initialize Tab

Managing Rules Workbench

The Rules Workbench dialog box (Figure 2-10) appears when you click the Rules Wizard icon from the ADS icon bar (or choose **PEP > Rules Wizard**). It is also available from the Bladelet Properties window for bladelets, such as Branch, Distribute, SetDestination, Authorize, and BalanceLoad.

Figure 2-10 Rules Workbench Dialog Box

	J)		an maran a	
The wo from wl	rkbench is a summa hich rules can be ma	ary view of all the rules. It provides anaged.	s the central dashboard	CISCO SYSTEM
	New 🛓	😪 New Custom Rule	Edit	Delete
Available R	ule:			
Rule Descri	iption (click on u	nderlined value to edit):		
Rule Descri	iption (click on u	nderlined value to edit):		
Rule Descri	iption (click on u	nderlined value to edit):		

1	New icon	3	Edit icon
2	New Custom Rule icon	4	Delete icon

Rules Workbench—New Rules

The Rules Wizard—Add Conditions dialog box (Figure 2-11) appears when you click the **New** icon in the Rules Workbench dialog box. You can select and configure rules from the list.

After you create a rule, this dialog box is also available from the **Edit** or **Delete** icon in the Rules Workbench dialog box. You are able to edit or delete a rule as needed.

Figure 2-11 Rules Wizard—Add Conditions

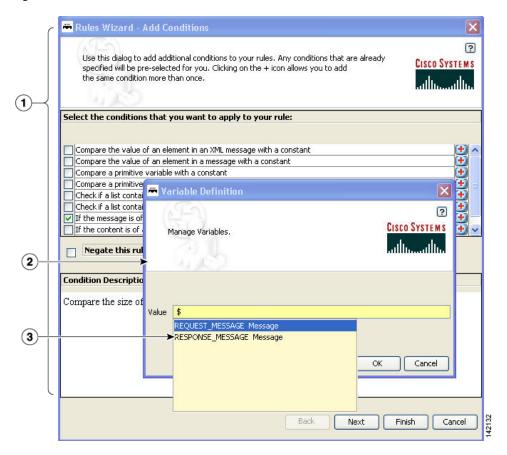
Use this dialog to add additional conditions to your rules. Any conditions that are already specified will be pre-selected for you. Clicking on the + icon allows you to add the same condition more than once.	Cisco Syst
Select the conditions that you want to apply to your rule:	
Compare the value of an element in an XML message with a constant	
Compare a primitive variable with another primitive variable	
Check if a list contains a primitive variable Check if a list contains a primitive variable	
If the content is a certain size If the content is a certain size If the content is of a certain type	
No web this with	
Negate this rule Condition Description (click on underlined value to edit):	
Condition Description (click on underlined value to edit):	
Condition Description (click on underlined value to edit):	
Condition Description (click on underlined value to edit):	
Condition Description (click on underlined value to edit): Compare the size of message to a <u>constant</u> using <u>this</u> operator	

1	List of available conditions from which to	2	Conditions Description area
	select (click a condition and set its values)		

The Variable Definition window (Figure 2-12) appears when you select "If the message is of a certain size" and then select **message** in the Condition Description area of the Rules Wizard—Add Conditions dialog box (Figure 2-11) to define the message.

This window provides an auto complete text field with a yellow background. You can enter a \$ (dollar) sign to trigger the available list of variables in the current scope. You can select a variable from the list by double-clicking your mouse or by pressing the Enter key. After the variable is selected, you can also use a . (dot) to get the attributes of the selected variable. You can enter \$ and . to see if the list includes more methods.





1Available Templates area (click a template)2Rule value	e Description area (click a rule and set its ues)
--	---

Rules Workbench—Custom Rules

The Rules Workbench—Specify Custom Rules dialog box (Figure 2-13) appears when you click the **New Custom Rules** icon in the Rules Workbench dialog box. You can manually enter values that you want to include in a condition. The rules must conform to the rules XML schema. For the custom rules XML schema, see the Custom Rule XML Schema section.



🖷 Specify Custom Rule	
Use this dialog to enter a rule when the wizard does not meet your needs. The rules must conform to the rules XML schema.	Cisco Systems .utiliuutiliu.
Enter Rule XML:	
Ok Cancel	

Custom Rule XML Schema

```
<!-- ARML (AONS Rule Markup Language) DTD -->
<!ELEMENT ruleset (rule*)>
   <!ATTLIST ruleset name NMTOKEN #IMPLIED>
<!ELEMENT rule (condition?, action*) >
       <!ATTLIST rule name NMTOKEN #REQUIRED>
<!ENTITY % booleanExp "(unaryExp | binaryExp | naryExp)">
<!ELEMENT condition (%booleanExp;)>
<!ELEMENT action (assignment)* >
   <!ATTLIST action conditionValue NMTOKEN #REQUIRED>
   <!ENTITY % expression "(variable | %booleanExp; | constant)">
<!ELEMENT unaryExp (%expression;)>
   <!ATTLIST unaryExp operator (not) #REQUIRED>
<!ELEMENT binaryExp (%expression;,%expression;)>
   <!ATTLIST binaryExp operator (eq | neq | lt | lte | gt | gte) #REQUIRED>
<!ELEMENT naryExp (%expression;)+>
   <!ATTLIST naryExp operator (and | or) #REQUIRED>
<!ELEMENT assignment (variable,(%expression;)?)>
<!ELEMENT constant EMPTY>
   <!ATTLIST constant
```

type (string | boolean | byte | short | char | long | int | float | double | null)
#REQUIRED
value CDATA #REQUIRED>
</Pre>

<!ELEMENT variable EMPTY>

<!ATTLIST variable
name NMTOKEN #REQUIRED
type (string | boolean | byte | short | char | long | int | float | double |
object) #REQUIRED
extensionType (xpath | regex) #IMPLIED
applyTo CDATA #IMPLIED
applyToType (Document | string) #IMPLIED
applyToValue CDATA #IMPLIED>