✅ If Controller in JMeter



The **If Controller** in JMeter is a **Logic Controller** that allows conditional execution of its **child elements** (Samplers, other Logic Controllers, etc.). It behaves like an if statement in traditional programming.

**🔍 How It Works**

* **Condition Evaluation**: The controller checks a user-defined boolean condition.
* **Execution Flow**:
  + ✅ If the condition is true: All child elements are executed.
  + ❌ If the condition is false: Child elements are skipped.

**⚙️ Configuration Options**

When you add an If Controller (Right-click > Add > Logic Controller > If Controller), you’ll configure the following:

| **Field** | **Description** |
| --- | --- |
| **Name** | Descriptive label (e.g., *If User Is Logged In*) |
| **Condition (Expression)** | Boolean expression evaluated at runtime |
| **Variables** | Use JMeter variables: ${myVar} == "value" |
| **Functions** | Use built-in functions like \_\_groovy(), \_\_jexl3(), etc. |
| **JMeter Properties** | Access using \_\_P(propName) or props.get("propName") |

**🧪 Common Operators**

| **Operator** | **Purpose** |
| --- | --- |
| ==, != | Equality, inequality |
| >, <, >=, <= | Numeric comparisons |
| &&, ` |  |
| .contains() | String contains check |
| .matches() | Regex match |
| .startsWith() / .endsWith() | String prefix/suffix checks |

**💡 Expression Examples**

**✅ Status code equals 200**

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"${statusCode}" == "200"

**✅ Numeric comparison (no quotes)**

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${statusCode} == 200

**✅ Login success**

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"${loginSuccess}" == "true"

**✅ Combined condition**

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"${statusCode}" == "200" && "${loginSuccess}" == "true"

**✅ Substring in response**

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"${responseBody}".contains("Welcome")

**✅ Using \_\_groovy for advanced logic**

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${\_\_groovy(vars.get("myNumber").toInteger() > 100 && vars.get("myText") == "valid",)}

🔸 Note: The trailing comma is required in \_\_groovy.

**⚙️ Accessing Previous Sampler Result**

JMeter provides a built-in variable:

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${JMeterThread.last\_sample\_ok}

* Returns true if the last sampler succeeded.
* Commonly used for error handling or alternate flows.

**⚠️ Legacy Options (Deprecated in Modern JMeter)**

| **Option** | **Description** |
| --- | --- |
| **Interpret Condition as Variable Expression?** | Was used to directly evaluate variables like ${myVar}. Now handled implicitly by scripting. |
| **Evaluate for all children?** | Deprecated; condition now evaluated once by default for performance. |

**🧭 Use Cases**

**✅ Conditional Navigation**

* Proceed to **checkout** only if **add-to-cart** is successful.

**✅ Dynamic Content Handling**

* Skip login if user is already authenticated.
* Avoid "add to cart" if product is out of stock.

**✅ Data-Driven Scenarios**

* Execute flows based on values read from **CSV Data Set Config**.

**✅ Error Handling**

* If assertion fails, log a message or redirect flow.

**🧠 Best Practices**

| **Tip** | **Reason** |
| --- | --- |
| **Keep logic simple** | Use JSR223 Samplers for complex conditions |
| **Use variables wisely** | Ensure they're initialized before use |
| **Use Debug Sampler** | Validate variable values and expressions |
| **Avoid deprecated options** | Modern JMeter versions handle evaluation efficiently |

**🛠️ Debugging Tips**

* Add a **Debug Sampler** and **View Results Tree** listener to inspect variable values.
* Use \_\_log() function or JSR223 Sampler with log.info() for console debugging.

**🧷 Summary**

| **Feature** | **Benefit** |
| --- | --- |
| Conditional execution | Simulates real-world branching logic |
| Supports variables and functions | Highly flexible |
| Simple to configure | Yet powerful in control flow |
| Integrates with assertions, extractors | Enables smart, adaptive flows |