

Rational Build Forge



# Tutorial 5: Environment variables in Rational Build Forge

*Version 7.1.3*

**Note**

Before using this information and the product it supports, read the information in "Notices," on page 7.

This edition applies to version 7.1.3 of Rational Build Forge and to all subsequent releases and modifications until otherwise indicated in new editions.

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## Tutorial 5: Environment variables in Rational Build Forge

An *environment* is a named set of variables. You can use environment variables in IBM® Rational® Build Forge® to abstract common parts of code, such as paths to binary files, addresses to code repositories, and version numbers.

In this tutorial, you will use environment variables to create two "sentences" using the following command: `echo ${HELLO}, ${WELCOME} build forge`.

In the first environment, the value of the variables will be:

- HELLO = Hello
- WELCOME = welcome to

In the second environment, the value of the variables will be:

- HELLO = Goodbye
- WELCOME = leaving

By changing the environment at project run time, you will see the differences in the output of the same echo command.

The tutorial shows you how to do the following tasks:

- Create an environment with standard variables
- Run a project with standard environment variables
- Create an environment with pulldown variables
- Run a project with pulldown environment variables

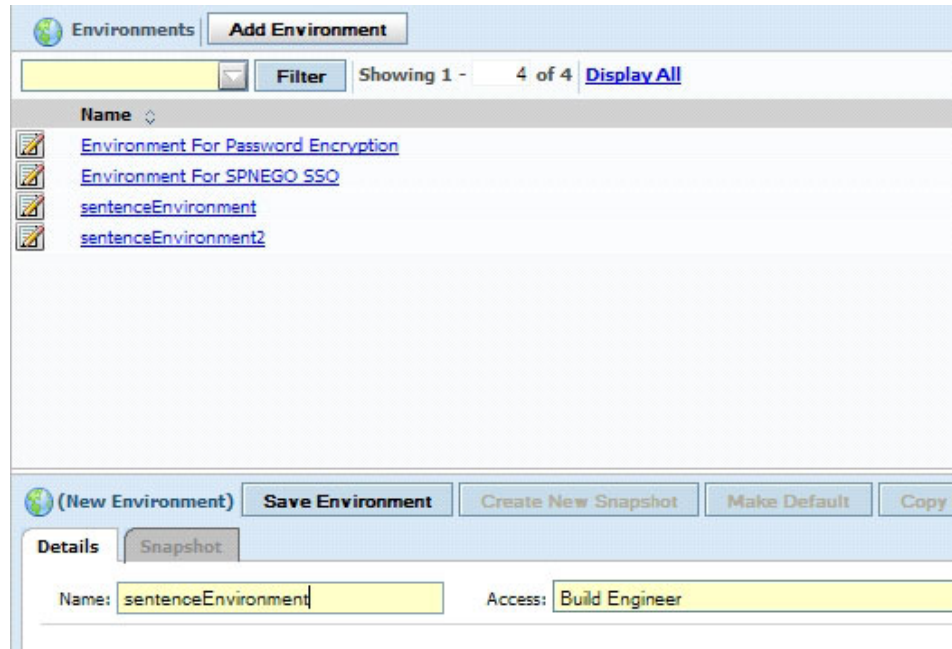
Time required: 20 minutes


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### Creating an environment with standard variables

Standard variables are predefined and populated by the system every time it creates the environment for a step.

1. Open the Rational Build Forge Console.
2. In the menu on the left, click **Environments**.
3. Click **Add Environment**.
4. In the **Name** field, type `sentenceEnvironment`; then select the appropriate access group.
5. Click **Save Environment**. The following image shows an example of a newly created environment named `sentenceEnvironment`.



6. Create an environment variable by completing the following steps:
  - a. In the **Environments** list, click the edit button  next to **sentenceEnvironment**.
  - b. Click **Add Environment Variable**.
  - c. In **Name**, type HELLO.
  - d. In **Value**, type Hello.
  - e. Leave **Type** set as **Standard Variable**.

**Learn more about variable types:** There are *Include* variables, in which you can include another environment and its variables. There are also *Pulldown* variables, in which you can specify different possible options for each variable.

- f. Click **Save Variable**.
7. Create another environment variable named "WELCOME" by repeating the steps above, this time with the value set to "welcome to".
8. Click **Save Variable**.
9. Click **Environments**.
10. Create another environment, named "sentenceEnvironment2" and save the environment.
11. Create two environment variables, HELLO and WELCOME, with values "Goodbye" and "leaving".

**Remember:** Save each variable.  
The following image shows a screen capture of the sentenceEnvironment2 variables.

Name	Type	Value
HELLO	Standard Variable	Goodbye
WELCOME	Standard Variable	leaving

## Running a project with different environment settings

1. In the menu on the left, click **Projects**.
2. Create a project called "environmentSentence."
3. Create a step for the project and call it "echo."
4. On the Details page, in the **Command** field, type the following code:  
`echo ${HELLO}, ${WELCOME} build forge`

**Note:** You can use either a UNIX-style or Windows-style variable syntax in step commands or environment variables definitions. The system uses a preprocessor to interpret both UNIX-style (\$VAR) or Windows-style (%VAR%) syntax into an appropriate format for the server where the step is run. The preprocessing can enable a step to run on either a Windows-based server or a UNIX-based server.

The following image shows an example of the settings for the echo step.

#	Step Name	Selector	Environment
1	echo		sentenceEnvironment
2	echo2		sentenceEnvironment2
3	echo3		

Step: echo [Save Step] [Delete Step]

**Details** [Notes (0)]

echo [Enabled]

Directory: / Path: Relative

Step Type: Regular Inline: -- None --

Command: `echo ${HELLO}, ${WELCOME} build forge.`

Environment: sentenceEnvironment Selector: -- Default --

5. Click **Save Step**.
6. In the **Environment** list, select **sentenceEnvironment**.
7. Create a new step called “echo2.”
8. On the Details page, in the **Command** field, type the following code:  

```
echo ${HELLO}, ${WELCOME} build forge
```
9. In the **Environment** list, select **sentenceEnvironment2**.
10. Run the project and view the output.

The following image shows an example of the output for echo.

Step	Step Name	Result	Server (Selector)
1	echo	Passed	localhost (Default)
<input checked="" type="checkbox"/> STEP <input checked="" type="checkbox"/> MANIFEST <input checked="" type="checkbox"/> AUTH <input checked="" type="checkbox"/> SET <input checked="" type="checkbox"/> EXEC <input checked="" type="checkbox"/> SSL <input checked="" type="checkbox"/> ENV <input checked="" type="checkbox"/> M			
Showing 1 - 232 of 232 <a href="#">Auto Paginate</a>			
199	8/16/11 4:54 PM	ENV	BF_T=165426
200	8/16/11 4:54 PM	ENV	BF_TAG=BUILD_6
201	8/16/11 4:54 PM	ENV	BF_TAG_PHYS=BUILD_6
202	8/16/11 4:54 PM	ENV	BF_THRESHOLD_COUNT=0
203	8/16/11 4:54 PM	ENV	BF_USER=Root User
204	8/16/11 4:54 PM	ENV	BF_USER_EMAIL=root@localhost
205	8/16/11 4:54 PM	ENV	BF_USER_LOGIN=root
206	8/16/11 4:54 PM	ENV	BF_W=2
207	8/16/11 4:54 PM	ENV	HELLO=Hello
208	8/16/11 4:54 PM	ENV	HISTSIZE=1000
209	8/16/11 4:54 PM	ENV	HOME=/home/emredmil
210	8/16/11 4:54 PM	ENV	HOSTNAME=rightmeow
211	8/16/11 4:54 PM	ENV	INPUTRC=/etc/inputrc
212	8/16/11 4:54 PM	ENV	LANG=en_US.UTF-8
213	8/16/11 4:54 PM	ENV	LOGNAME=root
214	8/16/11 4:54 PM	ENV	LS_COLORS=no=00:fi=00:di=00;34:ln=00;36:pi=40;33:
215	8/16/11 4:54 PM	ENV	MAIL=/var/spool/mail/emredmil
216	8/16/11 4:54 PM	ENV	PATH=/usr/bin:/bin
217	8/16/11 4:54 PM	ENV	SHELL=/bin/bash
218	8/16/11 4:54 PM	ENV	SUDO_COMMAND=/usr/local/bin/bfagent -s
219	8/16/11 4:54 PM	ENV	SUDO_GID=5011
220	8/16/11 4:54 PM	ENV	SUDO_UID=5010
221	8/16/11 4:54 PM	ENV	SUDO_USER=emredmil
222	8/16/11 4:54 PM	ENV	TERM=xterm
223	8/16/11 4:54 PM	ENV	USER=root
224	8/16/11 4:54 PM	ENV	USERNAME=root
225	8/16/11 4:54 PM	ENV	WELCOME=welcome to
226	8/16/11 4:54 PM	EXEC	Performing variable expansion on command line
227	8/16/11 4:54 PM	EXEC	spawning shell [/bin/bash]
228	8/16/11 4:54 PM	SCRIPT	echo Hello, welcome to build forge.
229	8/16/11 4:54 PM	EXEC	start [/home/emredmil/environmentSentence/BUILD_6
230	8/16/11 4:54 PM	EXEC	Hello, welcome to build forge.
231	8/16/11 4:54 PM	EXEC	end [/home/emredmil/environmentSentence/BUILD_6@
232	8/16/11 4:54 PM	RESULT	0 (0)

## Pulldown environment variables

Pulldown environment variables are single variables with a set of options.

1. Click **Environments** and then create an environment variable, “pullDownSentenceEnvironment”.
2. Set **Type** to **Pulldown List**.
3. In **Name**, type HELLOoptions.
4. Click **Save Variable**.
5. Click the **Pulldown Options** tab.
6. In **Name**, type HELLO1. and value “Hello”
7. In **Value**, type Hello.
8. Click **Create**.

- Repeat steps 6 on page 4 through 8 on page 4, substituting "HELLO2" for the name and "Goodbye" for the value.

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## Running a project with pulldown environment variables

- Click **Projects** and then select the **sentenceEnvironment** project.
- Set **Environment** to **pullDownSentenceEnvironment**.
- Create a step, called "echo3":
  - Click **Add Step**.
  - In **Name**, type echo3.
  - In **Command**, type the following code:

```
echo ${HELLOoptions}, ${WELCOMEoptions} build forge
```
  - In the **Environment** list, select **None**.
  - Click **Save Step**.
- Click **Start Project**.
- On the Job Details page, in the **Project Environment** section, you select the HELLOoptions and WELCOMEoptions variable values to use. For this lesson, select **HELLO1** and **WELCOME1**. The following image shows a screen capture of the sample **Project Environment** section.



- Click **Execute** and view the job output.
- Click **Start Project**.
- This time, in **HELLOoptions** select **HELLO2** and in **WELCOMEoptions** select **WELCOME**.
- Click **Execute** and view the job output.

Changing the environment variables changed the output for the project build.

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## Tutorial summary

Now that you have completed this tutorial, you can:

- Create an environment with standard or pulldown variables
- Run a project which specifies the standard or pulldown environments





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## Appendix. Notices

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