

# IBM WebSphere CloudBurst Appliance V1.1

## Command-line tool



This presentation covers the WebSphere® CloudBurst™ command-line tool.

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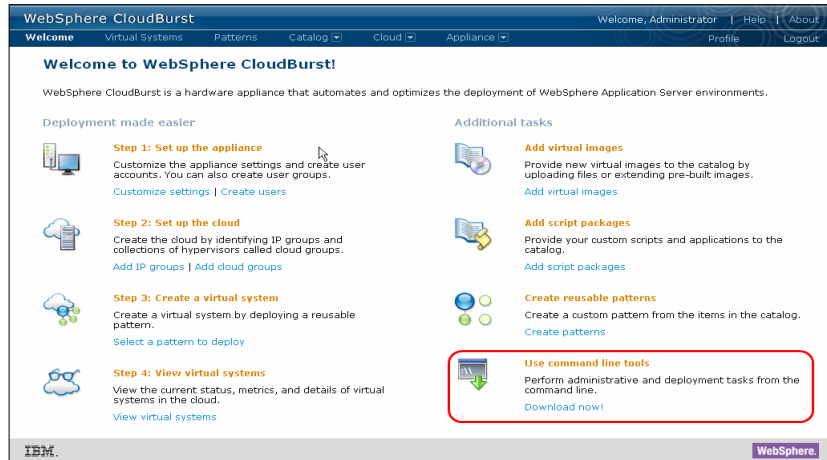
This presentation will cover the download and installation of the command-line tool, command syntax and examples.

## ***Command-line tool download and installation***

The next section will discuss the command-line tool download and installation.

## Download command-line tool

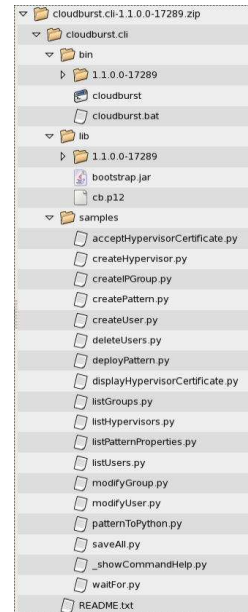
- Download the command-line tool environment to your local system



Before you are able to interact with a WebSphere CloudBurst appliance using the command-line tool you will need to download the environment to your local system. The download link is located in the main welcome page under the “Use command-line tool” section.

## Extract command-line tool

- Command-line tool download is packaged as “cloudburst.cli-<version>.zip”
- Extract into local file system
- Contains both Windows® and Linux® utilities
- Requires Java™ Runtime Environment (JRE), version 6 or above



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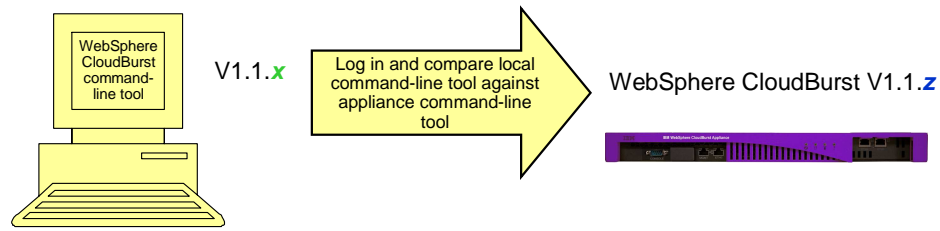
The command-line tool environment is packaged in the .zip format. This single archive file contains both the Windows and Linux versions of command-line tool environment.

Extract this package into a directory of your choosing. This will create a directory called “cloudburst.cli”. The “cloudburst.cli” directory is where you will interact with WebSphere CloudBurst by way of the command-line tool.

The WebSphere CloudBurst command-line tool requires a Java Runtime Environment version 6 or above.

## Automatic update

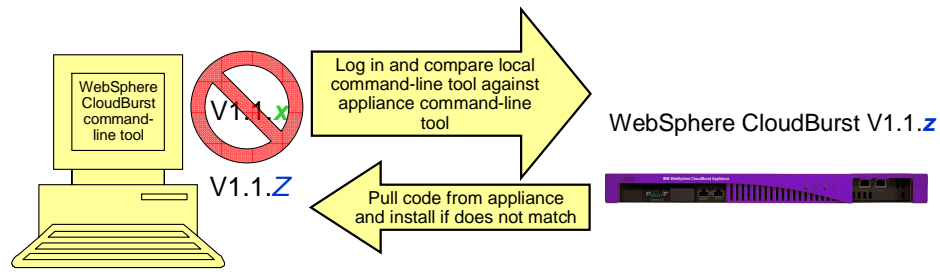
- Command-line tool updates its codebase to match codebase of appliance it is connecting to



The command-line tool runs a small piece of bootstrapping code when it starts. This code compares the version of the appliance to the version of the command-line tool.

## Automatic update

- Command-line tool updates its codebase to match codebase of appliance it is connecting to



If the versions do not match, the command-line tool bootstrapping code downloads and installs the appliance's version of the command-line tool. All of this logic is completely hidden from the user.

# ***Syntax***

This section will go through the various modes you can interact with the command-line tool and the general syntax of the commands and data.



## Command-line tool operational modes

- Execute in interactive mode
  - cloudburst -h <host> -u <user> -p <password>
- Execute in single command mode
  - cloudburst -h <host> -u <user> -p <password> -c “<command>”
- Execute in batch mode
  - cloudburst -h <host> -u <user> -p <password> -f “<filepath>” <script\_args>
- Optional environment variables
  - CLOUDBURST\_HOSTNAME
  - CLOUDBURST\_USERID
  - CLOUDBURST\_PASSWORD

There are three different ways in which you can interact with the command-line tool. It has an interactive mode, single command mode and a batch mode.

Interactive mode requires you to start the interpreter first and then you are free to enter commands individually. This mode supports command history and a subset of emacs commands.

Single command mode allows you to run a single command.

Batch mode allows you to pass in a file containing one or more commands.

All three operational modes require the host name or address of the WebSphere CloudBurst appliance, and a valid user name and password on that appliance. These arguments can be specified as part of the command invocation or through environment variables

## Command-line tool syntax

- Command-line tool commands are written in Jython

```
cloudburst.<object_type>[.<command[<data_or_file>>]
```

- Data passed into the commands are in the JSON format
  - Passed in directly at command line
  - Placed in file and file location is passed into command

```
[  
  {  
    "name": "value",  
    ...  
  }  
]
```

The command-line tool uses Jython syntax to construct the commands and uses JSON syntax to construct the data objects passed to the commands.

If you are not familiar with JSON you can either read up on it or just keep a few things in mind when constructing your JSON objects. JSON objects are created from name/value pairs. Both the name and value should be contained within quotation marks and separated by a colon. Each name/value pair should be separated by a comma. And finally all name/value pairs should be contained within a set of square and wiggle brackets. JSON data can be specified directly on the command line or placed in a file and the file location passed to the command.

## ***Capabilities***

This section will cover some of the capabilities of the WebSphere CloudBurst command-line tool.

## What you can do

- Manage
  - Virtual systems
  - Patterns
  - The catalog
  - Cloud resources
  - The WebSphere CloudBurst Appliance itself
- Problem determination
  - Set trace
  - View logs
  - Download log bundle

The WebSphere CloudBurst command-line tool provides an interpreted Jython scripting environment that allows you to manage a WebSphere CloudBurst Appliance from a remote machine. You can perform most functions that are available from the console.

You can list and query WebSphere CloudBurst configuration objects, such as virtual systems or IP groups. You can view and modify attributes on objects that are not marked read-only, including relationships between objects. You can create and remove objects.

On the appliance itself you can manage access control lists, users and groups. You can configure appliance settings such as Ethernet settings and time server settings; and you can configure backup and restore for the appliance, and upgrade the firmware.

Problem determination functions include the ability to query and configure appliance trace levels, view the error and trace files, and download the log files bundle.

## New features



- Ability to manage appliance settings
  - Command-line resources to manage many of the settings found in the Appliance → Settings page
- Export and import patterns
- Export virtual image
- Emergency fixes
  - Upload and manage emergency fixes
  - Apply fixes to a virtual system
- Cooperation with external virtual machine management products
  - VMware VirtualCenter
  - IBM Systems Director support
- Additional samples

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Version 1.1 of the command-line tool introduces several new features to add command-line interface support for features that already existed in the console interface.

Support has been added to directly manage the appliance using the command-line interface. You can now manage many of the settings found on the Appliance → Settings page.

You can export patterns from one appliance and import into another appliance. Running the command-line interface command to export a pattern will produce a Jython script which can be used to reconstruct the pattern in another appliance.

Similarly, you can now export a virtual image from one appliance and import into another appliance. (The import operation is not new and has been around since V1.0 of the appliance). You can use this feature as a way to transfer stand-alone virtual images or use it in conjunction with the pattern export and import feature.

Other additions include the ability to create and apply emergency fixes and support for hypervisor management products such as VirtualCenter and System Director.

Version 1.1 also includes additional sample scripts that demonstrate how to use many of the command-line tool capabilities. Sample scripts are located in the “cloudburst.cli/samples” directory.

This slide does not cover all of the new command-line interface features; but attempts to highlight the most significant or sought-after features.

## ***Examples***

This section contains a set of examples. These examples are run against the hypervisor object, but the same syntax and commands can be applied to any object type. This section by no means covers every command or syntax format, but it should provide you with enough information to increase your comfort level with the command-line tool.

## Creating a hypervisor manually

- Create a hypervisor
  - `cloudburst.hypervisors.create(<DATA_OR_FILE_PATH>)`

```
>>> cloudburst.hypervisors.create(['address':'venus01.rainmaker.raleigh.ibm.com','userid':'root','type':'ESX','name':'Venus01','password':'password'])
[{"address": "https://venus01.rainmaker.raleigh.ibm.com/sdk",
  "certificate": (nested object),
  "certified": "1",
  "cloud": None,
  "created": "Tue Mar 31 18:27:10 2009",
  "currentmessage": "RM03106",
  "currentmessage_text": "Maintenance mode (must add to a cloud group to start)",
  "currentstatus": "RM01025",
  "currentstatus_text": "Maintenance mode",
  "desiredstatus": "RM01025",
  "desiredstatus_text": "Maintenance mode",
  "id": 2,
  "name": "Venus01",
  "networks": (nested object),
  "password": "123854203095921",
  "storage": (nested object),
  "type": "ESX",
  "updated": "Tue Mar 31 18:27:10 2009",
  "userid": "root"}]
```

There are two ways to create each object type in WebSphere CloudBurst. You can create using the manual method or using the WebSphere CloudBurst wizard. The example in this slide is using the manual method. This approach requires that you pass the JSON data in at the command line directly or pass in a file that contains the JSON data.

## Creating a hypervisor using wizard

- Create a hypervisor using the WebSphere CloudBurst wizard
  - cloudburst.hypervisors.create(cloudburst.wizard)
  - Will be prompted for each attribute

```
>>> cloudburst.hypervisors.create(cloudburst.wizard)
Enter ? for help.
name: Venus01
type: ESX
address: https://venus01.rainanker.raleigh.ibm.com/sdk
userid: root
password: password
{
  "address": "https://venus01.rainanker.raleigh.ibm.com/sdk",
  "certificate": {nested object},
  "certified": "I",
  "cloud": None,
  "created": "Tue Mar 31 18:32:05 2009",
  "currentmessage": "RM03106",
  "currentmessage_text": "Maintenance mode (must add to a cloud group to start)",
  "currentstatus": "RM01025",
  "currentstatus_text": "Maintenance mode",
  "desiredstatus": "RM01025",
  "desiredstatus_text": "Maintenance mode",
  "id": 3,
  "name": "Venus01",
  "networks": {nested object},
  "password": "123854232431522",
  "storage": {nested object},
  "type": "ESX",
  "updated": "Tue Mar 31 18:32:05 2009",
  "userid": "root"
}
```

This slide shows an example of using the WebSphere CloudBurst wizard. When using the wizard you are not required to pass in the data in JSON format instead you are prompted for each piece of required data. Each object type can be created using the manual or wizard approach.



## Listing hypervisors

- List a specific hypervisor by name
  - `cloudburst.hypervisors["HV-aimcp059"]`
- List all hypervisors
  - `cloudburst.hypervisors`

```
>>> cloudburst.hypervisors
{
  <
    "address": "https://aimcp059.austin.ibm.com/sdk",
    "certificate": <nested object>,
    "certified": "I",
    "cloud": <nested object>,
    "created": Tue Mar 31 10:58:35 2009,
    "currentmessage_text": "RM03103",
    "currentmessage_text": "Started <move to maintenance mode to make changes>",
    "currentstatus": "RM01006",
    "currentstatus_text": "Started",
    "desiredstatus": "RM01006",
    "desiredstatus_text": "Started",
    "id": 1,
    "name": "HU-aimcp059",
    "networks": <nested object>,
    "password": "12385151154670",
    "storage": <nested object>,
    "type": "ESX",
    "updated": Tue Mar 31 11:03:52 2009,
    "userid": "root"
  >,
  <
    "address": "https://venus01.rainanker.raleigh.ibm.com/sdk",
    "certificate": <nested object>,
    "certified": "I",
    "cloud": None,
    "created": Tue Mar 31 18:32:05 2009,
  >
}
```

You can either list all objects by type or list a specific object using the name of the object. The screen capture in this slide shows the listing of all hypervisors using the `cloudburst.hypervisors` command.

## Modifying and deleting hypervisors

- Modifying an attribute is two steps
  - Get a handle to the object
  - Modify the attribute

```
>>> hyper=cloudburst.hypervisors["Venus01"][0]
>>> hyper.name="New venus01"
```

- Delete an object by object ID

```
>>> hyper.id
17L
>>> cloudburst.hypervisors.delete(17)
```



Modifying an object's attribute and deleting an object are consistent across object types.

Modifying an object attribute is a two step process. The first step is to get a handle to the object. The second step is to modify the attribute.

Delete an object by calling the delete method on the object type and passing in the ID of the object you want to delete.

## ***Summary***

The next section provides a summary of this presentation.

## Summary

- There are three ways to interact with WebSphere CloudBurst
  - Administrative console
  - REST APIs
  - Command-line tool
- Setting up an operational command-line tool environment is a five minute activity
  - Download
  - Unzip
- The WebSphere CloudBurst command-line tool syntax is simple yet flexible
- This presentation listed some but not all of the available commands

There are three ways to interact with the WebSphere CloudBurst appliance and they are the administrative console, REST APIs and the command-line tool. If you are looking to automate certain tasks the command-line tool can be an option.

Getting an operational command-line tool environment can take as little as five minutes which is the amount of time it takes to download and extract the package.

This presentation went through just a subset of the available commands and syntax but it should have demonstrated to you just how flexible and easy it is to use.

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