



IBM Software Group

IBM WebSphere eXtreme Scale V7.0

Sample administration utility

xsadmin



@business on demand.

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This presentation discusses the WebSphere® eXtreme Scale sample administration utility, *xsadmin*.

xsadmin utility

- Provides state, diagnostic information, and some control functions
 - ▶ Show grids, mapsets, containers, shards, hosts, mbeanservers, coregroups, and routing table
 - ▶ Set trace specifications
 - ▶ Stop container servers
- Command line utility
- Provided as a sample
 - ▶ Extensible
 - ▶ Source included



WebSphere eXtreme Scale V7.0 includes a sample administration utility called xsadmin. This utility allows you to examine the internal state of your eXtreme Scale grid. Additionally, it allows you to set trace specification, turn traces on and off, stop servers, and override quorum. The xsadmin utility provides a command-line input and command-line output interface only; there is no graphical interface. Java™ source code is included, allowing you to customize or extend the available functionality.

xsadmin – basic commands

Only **one** of these might be specified:

- -containers Show all containers
- -primaries Show all primaries
- -unassigned Show all unassigned shards
- -mapsizes <-continuous> Show all map sizes
- -hosts Show all hosts
- -mbeanservers Show all MBean server end points
- -coregroups Show all coregroups
- -settracespec <specification> Sets the TraceSpec
- -overridequorum Notifies catalog server to override quorum
- -quorumstatus Show catalog server quorum status
- -l Show all known grids and mapsets
- -teardown <server,server> Stop servers – same as stopOgServer
- -routetable Show the current routing table

Here is a list of all the basic commands provided with the administration utility. Note that it supports only one command per invocation. Some commands require or support a secondary argument; for example, *mapsizes* will display the number of records inserted into the grid, unless you additionally specify *continuous*, which will cause the command to be automatically invoked every 20 seconds. The *settracespec* command requires a trace specification. And the *-teardown* command requires at least one server name.

You can optionally specify filters, mentioned later in this presentation, to further qualify the output displayed.

xsadmin -containers

```
xsadmin -containers
...
Connecting to Catalog service at localhost:1099
*** Show all online containers for grid - Grid & mapset - mapSet
Host: WSBETA061.austin.ibm.com
Container: server0_C-0, Server:server0, Zone:DefaultZone
  P:0 Primary
  P:1 Primary
  P:10 Primary
  P:11 Primary
  P:12 Primary
  P:2 Primary
...
Container: server1_C-0, Server:server1, Zone:DefaultZone
  P:0 SynchronousReplica
  P:1 SynchronousReplica
  P:10 SynchronousReplica
  P:11 SynchronousReplica
  P:12 SynchronousReplica
  P:2 SynchronousReplica
...
Num containers matching = 2
Total known containers = 2
Total known hosts = 1
```

This is an example of output from the “xsadmin –containers” command. Portions of the output have been deleted to improve readability. This command lists all of the servers in the eXtreme Scale grid along with detailed information on partitions within those servers.

xsadmin -mapsizes

xsadmin -mapsizes

```
...
Connecting to Catalog service at localhost:1099
*****Displaying Results for Grid - Grid, MapSet - mapSet*****
*** Listing Maps for server0 ***
...
Map Name: Map1 Partition #: 10 Map Size: 30 Shard Type: Primary
Map Name: Map1 Partition #: 6 Map Size: 41 Shard Type: Primary
Map Name: Map2 Partition #: 6 Map Size: 20 Shard Type: Primary
Map Name: Map1 Partition #: 7 Map Size: 16 Shard Type: Primary
Map Name: Map2 Partition #: 7 Map Size: 42 Shard Type: SynchronousReplica
Map Name: Map1 Partition #: 5 Map Size: 18 Shard Type: SynchronousReplica
...
Server Total: 3
*** Listing Maps for server1 ***
...
Map Name: Map1 Partition #: 5 Map Size: 18 Shard Type: Primary
Map Name: Map1 Partition #: 7 Map Size: 16 Shard Type: SynchronousReplica
Map Name: Map2 Partition #: 7 Map Size: 42 Shard Type: Primary
Map Name: Map2 Partition #: 5 Map Size: 20 Shard Type: SynchronousReplica
Map Name: Map1 Partition #: 6 Map Size: 41 Shard Type: SynchronousReplica
...
Server Total: 3

Total Domain Count: 6
```



This is an example output from the “xsadmin –mapsize” command. Portions of the output have been deleted to improve readability. This command lists all of the backing maps currently configured in the eXtreme Scale grid along with partition information and the number of records in each partition.

xsadmin -settracespec

xsadmin -settracespec ObjectGrid*=all=enabled

Connecting to Catalog service at localhost:1099

*****Setting TraceSpec for Grid - Grid, MapSet – mapSet *****

Setting TraceSpec on server0

Setting TraceSpec on server1

- The trace.log file is created in:
<app_root>/logs/<servername>



This is an example output from the “xsadmin –settracespec” command as used to enable trace for all ObjectGrid components.

In this example, server0 and server1 are connected to the catalog associated with port 1099. The trace.log file is created immediately within each server’s log file directory.

xsadmin – security and SSL arguments

- The following arguments are required if any security is enabled
 - ▶ -username 'Username'
 - ▶ -password 'Password'
- The following arguments are required if SSL is enabled
 - ▶ -ssl Enables SSL authentication
 - ▶ -trustPath Absolute path to trust store
 - ▶ -trustPass Trust store password
 - ▶ -trustType Trust store type



If eXtreme Scale security is enabled you must specify the relevant logon and transport information. This slide shows a list of the security and SSL-related arguments supported by the sample administration utility.

xsadmin – optional arguments

- The following arguments are optional
 - ▶ -g ObjectGrid name
 - ▶ -m Mapset name
 - ▶ -ch Catalog service JMX host name, default value=localhost
 - ▶ -p Catalog service JMX port. default: 1099 or 9809 for DMGR host
 - ▶ -jmxUrl MBean Server URL for if already known and utility generation fails
 - ▶ -dmgr Specify this flag if connecting to WebSphere DMGR host.
 - ▶ -empties Specify this flag if you want to show empty containers in the output.
 - ▶ -continuous Specify this flag if you want continuous map size results
 - ▶ -nopredetermine Specify this flag if you want to disable predetermination of necessary endpoints



Here is a list of optional arguments supported by the administration utility. These arguments are covered in more detail in the eXtreme Scale information center.

xsadmin - filters

- Use the these parameters to filter the data:
 - ▶ -fnp Filter servers with no primaries.
 - ▶ -fh Filter only for this host
 - ▶ -fc Filter only for this container
 - ▶ -fp Filter only for this partition
 - ▶ -fs Filter only for this server name
 - ▶ -fz Filter only for this zone
 - ▶ -fm Filter only for this map
 - ▶ -fst [P,A,S] Filter only for this shard type
 - P = Primary
 - A = AsynchronousReplica
 - S = SynchronousReplica



Here is a list of all the filter arguments supported by the administration utility, which can help you reduce and specialize the command line output.

For more information

- Issue the “xsadmin” command with no arguments to receive general help
- Information center
 - ▶ Administration Guide

<http://publib.boulder.ibm.com/infocenter/wxsinfo/v7r0/topic/com.ibm.websphere.extremescale.admin.doc/txsxsadmin.html>

- Search developerWorks® for articles related to xsadmin

<http://www.ibm.com/developerworks/search/searchResults.jsp?searchType=1&searchSite=dW&searchScope=WSD&query=xsadmin>



You can issue the “xsadmin” command without parameters to receive general help. The eXtreme Scale V7 Administration Guide, part of the information center, provides more information about the xsadmin sample utility. Finally, you can search within IBM developerWorks for articles related to xsadmin, including articles that tell you how to extend the functions of the xsadmin utility.

Summary

- WebSphere eXtreme Scale sample administration utility
 - ▶ xsadmin
- View grid objects
- View grid state
- View diagnostic information
- Some control over grid operations
- Source included



The WebSphere eXtreme Scale sample administration utility, xsadmin, allows you to view eXtreme Scale grid objects. It also allows you to view the grid state, provides some control over the grid, and can help you diagnose issues within the grid. Java source code is included, allowing you to customize or extend the available functionality.

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