IBM Platform Support Tool Suite

1. **Introduction**

   The IBM Platform Computing Support Tool Suite contains many valuable tools to help analyze and troubleshoot problems. The LSF cluster health checker can help you find actual or potential problems regarding product system daemons, working files or running environments. Other tools can help you troubleshoot file system, network, DNS/NIS issues, etc. For example, the LSF lsb.event file analyzer and daemon timing log file analyzer generate summary reports or diagnostic information for troubleshooting.

   1) LSF cluster health checker

   Run on LSF master to check health of an LSF cluster. It checks the following:
   - Operating system environment
   - LSF daemon versions and patch levels
   - LSF binary owner and permissions
   - LSF daemon CPU and memory usage
   - LSF master communications and connections
   - LSF working directory owner, permissions, available space and performance
   - LSF daemon log directory available space, and size
   - Host name resolution performance
   - User name resolution performance

   2) LSF binary version checker

   Output all binary versions and patch levels in the directory $LSF_SERVERDIR and $LSF_BINDIR for all installed platforms.

   3) LSF file system profiler

   Profile the performance of the file system of $LSB_SHAREDIR.

   4) Network system diagnosis
   - Test and diagnose issues related to network connections, socket ports, data size, etc
   - In LSF mode, it can run as a client to connect to the server port and "ping" the daemon
   - In standalone mode, it can run either in server or client mode using either TCP or UDP protocol
   - Check any communication related LSF problems

   5) Host name resolution profiler

   Check DNS hostname resolution performance
   - In LSF mode, it evaluates all LSF server hosts
   - In standalone mode, it evaluates all available hosts in the DNS database

   6) User name resolution profiler

   Run in standalone mode to evaluate the performance of user name resolution of all users in the NIS database.

   7) LSF lsb.events file analyzer
   - Create a statistical report
   - Create a resource requirement and scheduler metrics report
   - Check duplication of event records

- Parse an event
- Generate a clean events file
- Display specific fields for a specific event
- Check missing events associated with a job
- Export data to an Excel file

8) LSF daemon timing log file analyzer
  - Run in standalone mode outside of LSF
  - Report the time the daemons spend in major functions.
  - Trace single or multiple processes (parent and all its children)
  - Trace time used by a specific function

2. Run interactively

Simply launch the tool in LSF environment without any arguments, follow the prompted options.
~> source cshrc.lsf (or . profile.lsf)
~> support_tools
Support Tool Suite 1.0 Linked with LSF 8.0.1, Apr 15 2013
Do you agree with license agreement and continue? [y/n]: y
Input a log file name [no log]:
Running on host: suplin01 ...... Tue Apr 23 20:43:32 2013
Please choose one of the following tools:
1) LSF cluster health checker
2) LSF binary version checker
3) LSF work file system profiler
4) Network system diagnosis
5) Host name resolution profiler
6) User name resolution profiler
7) lsb.events file analyzer
8) LSF daemon timing log file analyzer
Which one do you want to run? ([1-8]):
……
Note: The "Network system diagnosis" tool can only be run interactively.

3. Run as command

- Display version and help info
  - ➢ support_tools -V|-v|-h

- LSF cluster health checker:
  - ➢ support_tools -C [-O <logfile>]

- LSF binary version checker
  - ➢ support_tools -B <0|1> [-O <logfile>]
  "-B 0" checks un-shared installation
  "-B 1" checks shared installation

- LSF file system profiler
  - ➢ support_tools -F <pathname> [-O <logfile>]

- Network system diagnosis

- support_tools -N [-S <datasize>] [-O <logfile>]

- Host name resolution profiler
  - support_tools -H <0|1> [-O <logfile>]
  "-H 0" checks servers in an LSF cluster
  "-H 1" checks hosts found in DNS repository

- User name resolution profiler
  - support_tools -U [-O <logfile>]

- LSF lsb.events event analyzer usage:
  - Generate LSF statistic report
    - support_tools -E -c <event_file>
  - Generate resreq & sched report
    - support_tools -E -l <event_file>
  - Check duplications
    - support_tools -E -d <event_file>
  - Parse events
    - support_tools -E -p <event_file>
  - Generate a clean event file
    - support_tools -E -o <new_event_file> <event_file>
  - Display specific event fields
    - support_tools -E -r "record field1 [field2...]" <event_file>
  - Check missing events
    - support_tools -E -m <event_file>
  - Export events to Excel
    - support_tools -E -e <export_file> <event_file>

- LSF daemon timing log file analyzer usage:
  - Total timing summary
    - support_tools -A [-p <pid>] -l <time_log_file>
  - Total timing summary (include children)
    - support_tools -A -c -l <time_log_file>
  - Timing data for subroutine
    - support_tools -A [-s <function_name>] -l <time_log_file>
  - Plot time usage of a subroutine
    - support_tools -A [-P][-s <function_name>] -l <time_log_file>

4. **The following can run outside of LSF**
   - The Network system diagnosis tool can test any kind of network connection
   - The Host name resolution profiler can run on any hosts in the DNS repository
   - The User name resolution profiler can run via all user names in NIS
   - The Daemon timing log file analyzer doesn't need an LSF environment

5. **Who should run the tools?**
   Log in as the primary LSF administrator to run the tools in LSF. If you run the LSF cluster health checker as root, it will also check the following:
   - OS resource limit for LSF daemons (running as root)
   - The effectiveness of "suid root" LSF binaries
   Note: You can login as any user to run the standalone tools.

6. The following features are unavailable on Windows
- LSF cluster health checking
  - UDP error checking on the master host.
  - LIM UDP Send-Q
  - LIM UDP Recv-Q
  - File descriptor limit
- Host name resolution profiler
- User name resolution profiler

If you have any questions or would like to report a bug, please email: platsupp@ca.ibm.com with the Subject: "IBM Platform Support Tool Suite".