New Features Bulletin Adaptive Server® Enterprise 15.0.2 ESD #4

Document ID: DC00803-01-1502-01

Last revised: April 9, 2008

Downgrading from version15.0.2 ESD #4

Before downgrading an Adaptive Server version 15.0.2 ESD #4, set either of the following options:

- Disable the Replication Agent
- Set the optimization goal to allrows_mix or allrows_dss

If you downgrade the server with both options set incorrectly, you will be unable to start your downgraded server.

Workaround: Set the parameters correctly in your configuration file, and restart the server.

See Chapter 5, “Controlling Optimization,” in *Performance and Tuning Series: Query Processing and Abstract Plans*, for details on optimization goals.

Changed monitoring tables

Adaptive Server 15.0.2 ESD #4 includes the following changes to the Monitoring and Diagnostic Access (MDA) tables:

MDA table name	New column name	Datatype	Description
monProcessProcedures	StmtNumber	int	The currently executing statement
monProcessNetIO	networkEngineNumber	smallint	The network engine for a process
monLocks	DBName	varchar(30)	The database name for a DBID
monCachedStatement	DBName	varchar(30)	The database name for a DBID
monProcessStatement	DBName	varchar(30)	The database name for a DBID
monSysPlanText	DBName	varchar(30)	The database name for a DBID
monSysStatement	DBName	varchar(30)	The database name for a DBID

New and changed commands, functions and stored procedures

This section describes new and changed stored procedures and built-in functions for Adaptive Server 15.0.2 ESD #4. For complete information about changed procedures and functions, see the *Adaptive Server Reference Manual*.

set statistics io

Description

Adaptive Server Enterprise 15.0.2 ESD #4 and later supports set statistics io for parallel queries.

Syntax

```
set statistics io on
```

Usage

Use set statistics io on to obtain a representation of the parallel access nodes.

See Chapter 6, “Ensuring Stability and Performance,” in the *Migration Guide* for command syntax and usage details.

Example

```
set statistics io on
go
select a.c1, max(a.c2) from r10 a, r10 b where a.c2 =
b.c2 group by a.c1
go

Table: Worktable2 scan count 1, logical reads:
(regular=5 apf=0 total
physical reads: (regular=0 apf=0 total=0), apf IOs
used=0
Table: r10 scan count 1, logical reads: (regular=10
apf=0 total=10),
reads: (regular=0 apf=0 total=0), apf IOs used=0
Table: r10 scan count 1, logical reads: (regular=10
apf=0 total=10),
reads: (regular=0 apf=0 total=0), apf IOs used=0

Total writes for this command: 0
```

set statistics plancost

Description

Adaptive Server Enterprise 15.0.2 ESD #4 and later supports set statistics plancost on for parallel queries.

Syntax

```
set statistics plancost on
```

Usage

Use set statistics plancost on to obtain a representation of the parallel access nodes in the lava operator tree.

See Chapter 6, “Ensuring Stability and Performance,” in the *Migration Guide* for command syntax and usage details.

Note For an easy-to-read output format, use isql -w 132. The -w 132 flag indicates a column width of 132. For more information on isql options, please see Chapter 2: “Using the ISQL Utility” in the *Utility Guide for the Adaptive Server Enterprise*

Example

```
set statistics plancost on
go
select a.c1, max(a.c2) from r10 a, r10 b where a.c2 =
b.c2 group by a.c1
go

===============Lava Operator Tree ================
```

```
                        Emit
                        (VA = 6)
                        r:100 er:100
                        cpu: 0
                      /
                      HashVectAgg
                      Max
                      (VA = 5)
                      r:100 er:100
                      l:5 el:5
                      p:0 ep:0
                      bufct: 16
                   /
                   Exchange
                   P(2)  C(1)
                   (VA = 4)
                   r:100 er:100
                   l:0 el:1
                   p:0 ep:0
              /
              ExchangeEmit
              (VA = 3)
              r:100 er:100
              l:0 el:1
              p:0 ep:0
         /
         HashJoin
         Inner Join
         (VA = 2)
         r:100 er:100
         l:10 el:5
         p:0 ep:0
         bufct: 16
/                        \
TableScan                 TableScan
r10 (a)                   r10 (b)
(VA = 0)                  (VA = 1)
r:100 er:100              r:100 er:100
l:100 el:100              l:100 el:100
p:0 ep:100                p:0 ep:100

=====================================================
```

update statistics

Description

The update statistics command has been extended to specify an out-of-range histogram adjustment at the column level.

Column statistics for rapidly growing tables may become out-of-date when an update statistics command completes. This results in out-of-range SARGs (search clauses) that select a greater range of values than described by the column's histogram. Out-of-range SARGS have a selectivity of 0. The out-of-range histogram adjustment feature adjusts a column's histogram, and assigns an appropriate selectivity value to such SARGs.

Syntax

```
update statistics table_name (column_name)using
out_of_range [on | off| default]
```

Parameters

- on – Enables out-of-range histogram adjustment for *column_name*.
- off – Disables out-of-range histogram adjustment for *column_name*.
- default – Affects the out-of-range histogram adjustment depending on the value of trace flag 15355:
  - Disables out-of-range histogram adjustment when Traceflag 15355 is on.
  - Enables out-of-range histogram adjustment when Traceflag 15355 is off.

Note With Adaptive Server Enterprise version 15.0.2 ESD #4 and later, histogram adjustment for out of range SARGS is enabled server wide by default. You can turn it off using Traceflag 15355.

Example

Example 1: When an out_of_range SARG is detected for a column, the optimizer adjusts the column's histogram and assigns an appropriate selectivity value to the out-of-range clause.

```
update statistics TOFO_FUOP_ORD(OrdDt) using
out_of_range on
```

Example 2: In this example, if trace flag 15355 is turned on, the column's histogram is not adjusted for out-of-range SARGs.

```
update statistics TOFO_FUOP_ORD(OrdDt) using
```

```
out_of_range default
```

Note optdiag has been enhanced to display the out_of_range histogram adjustment value and to read this value from optdiag output files. The default value is used for reading optdiag files that do not have out_of_range histogram adjustment information (for example, from a version earlier than 15.0.2 ESD #4).

Usage

Error 16015 is raised if you attempt to use out_of_range options for update statistics alongside other options such as consumers or sampling.

Error 16016 is raised if you specify out_of_range options for a column that currently has no column level statistics.

Permissions

update statistics permission defaults to the table owner and is not transferable. The command can also be executed by the Database Owner, who can impersonate the table owner by running the setuser command.

See also

For optdiag syntax and usage, see Chapter 6, "Statistics Tables and Displaying Statistics with optdiag" in *Performance and Tuning Series: Monitoring and Analyzing*:

sp_errorlog

Description

Dynamically changes the path of the error log.

Syntax

```
sp_errorlog "change log", "new_path"[,{"jslog true"|
"jslog false"}]

sp_errorlog "help", "change log"
```

Parameters

new_path – new path of the error log. Maximum length of *new_path* is 255 characters.

jslog true – the default option. If the Job Scheduler is running, change log attempts to change the Job Scheduler Agent log to the directory where the new Adaptive Server error log will reside. Both logs will indicate error messages, if any.

jslog false – do not change the location of the Job Scheduler Agent log.

Example

Example 1: To change the Adaptive Server error log to use a new location without changing the location of the Job Scheduler log, use:

```
sp_errorlog "change log",
"$SYBASE/$SYBASE_ASE/install/new.log", "jslog false"
```

Adaptive Server error log location is changed to *$SYBASE/$SYBASE_ASE/install/new.log*. However, the location of the Job Scheduler Agent log is not changed.

Example 2: This example changes the errorlog location to *$SYBASE/$SYBASE_ASE/install/new.log*.

If the Job Scheduler Agent is running, the agent log location is also changed to *$SYBASE/$SYBASE_ASE/install/new.log*.

If the Job Scheduler Agent is not running, Adaptive Server does not change the agent log location.You see a message that the agent log location is unchanged.

```
sp_errorlog "change log",
"$SYBASE/$SYBASE_ASE/install/new.log", "jslog true"
```

Example 3: This example changes the Adaptive Server errorlog to *$SYBASE/$SYBASE_ASE/install/new.log*.

If the Job Scheduler Agent is running, the agent log is also changed to *$SYBASE/$SYBASE_ASE/install/new.log*.

If the Job Scheduler Agent is not running, Adaptive Server does not change the path of the Job Scheduler Agent log. You do not see a message that the agent log location is unchanged.

```
sp_errorlog "change log",
"$SYBASE/$SYBASE_ASE/install/new.log"
```

Usage

sp_errorlog returns 0 if the switch to the new location is successful. A non-zero return value implies an error.

Note To pick up the new location of the errorlog when the server is restarted, update the -e argument in the runserver file.

Auditing

A new auditing option errorlog audits changes to the error log administration.

When the errorlog audit option is enabled, any change to the errorlog generates an audit record with event=127. To view the event from sybsecurity, issue:

```
select * from sybsecurity..sysaudits01 where event=127
```

To enable the errorlog audit option enter:

```
sp_audit "errorlog", "all", "all", "on"
```

Permissions

sp_errorlog requires sa permission.

See also

See Chapter 8, “Logging Error Messages and Events,” in the *Configuration Guide* for information on the runserver file.

get_internal_date

Description

Returns the current date and time from the internal clock maintained by the Adaptive Server.

Syntax

```
get_internal_date
```

Example

Example 1: The system clock is synchronized with the Adaptive Server internal clock. Current system date: January†20,†2007,†5:04AM.

```
select get_internal_date()
Jan 20 2007 5:04AM
```

Example 2: The system clock is not synchronized with the Adaptive Server internal clock.Current system date: August 27, 2007, 1:08AM.

```
select get_internal_date()
Aug 27 2007 1:07AM
```

Usage

get_internal_date may return a different value than getdate. getdate returns the system clock value, while get_internal_date returns the value of the server’s internal clock.

At startup, Adaptive Server initializes its internal clock with the current value of the operating system clock, and increments it based on regular updates from the operating system.

Adaptive Server periodically synchronizes the internal clock with the operating system clock. The two typically differ by a maximum of one minute.

Adaptive Server uses the internal clock value to maintain the date of object creation, timestamps for transaction log records, and so on. To retrieve such values, use get_internal_date rather than getdate.

Permissions

Any user can execute this function.

See also

getdate

Using SYBASE_JRE_RTDS

If you have not defined SYBASE_JRE_RTDS or if it does not exist, you cannot enable Real-Time Data Services (RTDS). Use SYBASE_JRE to enable RTDS.

auditinit utility for Windows

Adaptive Server Enterprise 15.0.2 ESD #4 includes the auditinit utility for Windows. Although we do not describe the auditinit utility in the Windows Configuration Guide, it behaves similar to the UNIX version of the auditinit utility. See the *Configuration Guide for Unix* for information on syntax and usage.

New audit event for LDAP state changes

Adaptive Server 15.0.2 ESD #4 includes the new LDPUA State Change audit event, with a value of 123. The LDAPUA state change audit record includes this information in the extrainfo column:

- Keyword or Option:
  - Primary URL state for primary URL state change
  - Secondary URL state for secondary URL state change
- Previous state:
  - NOT SET
  - READY
  - ACTIVE
  - FAILED
  - SUSPENDED
  - RESET
- Current state:
  - NOT SET

  - READY
  - ACTIVE
  - FAILED
  - SUSPENDED
  - RESET
- Other information:
  - Manual: If the state change is caused by a manual command
  - Automatic: If the state change is automatic

Example: Primary URL state; READY; NOT SET; Manual;

New value for *sp_modifylogin* options

The sp_modifylogin options passwd expiration, min passwd length and max failed_logins supports the clear value which clears the previous setting of the attribute for the specific user.

Example: Set the password expiration value to 30:

```
sp_modifylogin "John", "passwd expiration", 30
go
```

User John's password will expire in 30 days even though the system default for passwd expiration is 90 days.

To clear the passwd expiration value for user John:

```
sp_modifylogin "John", "passwd expiration", "clear"
go
```

Adaptive Server displays a message that the login-specific attribute has been removed. The attribute is now set to the system default.

Note If you use the clear option for a user attribute that does not have a previously set value, Adaptive Server displays a message that there is no login-specific attribute set. However, the user continues to use the system default for that attribute.
