



W1 Getting Started: DBA Basics (2 hours)

Congratulations! You're Our New Progress DBA! Now What?

Tom Bascom, White Star Software & James Palmer, Consultingwerk

Abstract: People often ask what tasks a newly minted OpenEdge DBA should be performing? What should my daily, weekly, monthly etc checklist have on it? What's good? What's BAD? Where do I even look to find out? What do I need to pay attention to? What can I ignore? What should I lose sleep over? When should I update my resume? Who can help me? In this hands on workshop we will show you the way through the challenges that lie in front of you and help bring peace to your weekends and evenings!



Getting Started: DBA Basics

What A Newly Minted OpenEdge DBA Needs to Know

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Agenda

- proenv: proutil describe, prostrct list, dbanalys, prolog, (333), conmgr.properties
- Starting & stopping a db: exploder, dbman, proserve/proshut
- Backup (online) & restore
- Tweaking: ai/bi block & cluster size
- Setting params: *range – dangers of exploder (-hash...)
- Enabling after imaging (online)
- Add extents (online)
- Install ProTop
- Setup SQL
- Dump .df, create .st, build an empty db
- Obtain delta .df
- Apply .df (online)
- idxactivate
- Monitor db, with protop, find problems
- tablemove improperly placed tables and indexes, omsize, -B, -Mm
- proGetStack, disconnect a user
- dbtool (sql width)
- Update stats
- Update to new release
- Idxcompact



The Workshop Environment

- AWS t3.medium instance with:
 - 2 cores at 2.5GHz
 - 4GB of RAM
 - 7 filesystems, 20GB each
- Windows Server 2012
- OpenEdge 11.7
- A copy of “bigsports”, a 1GB slightly tweaked version of the standard sports2000 db



Lab: Fixing PROENV

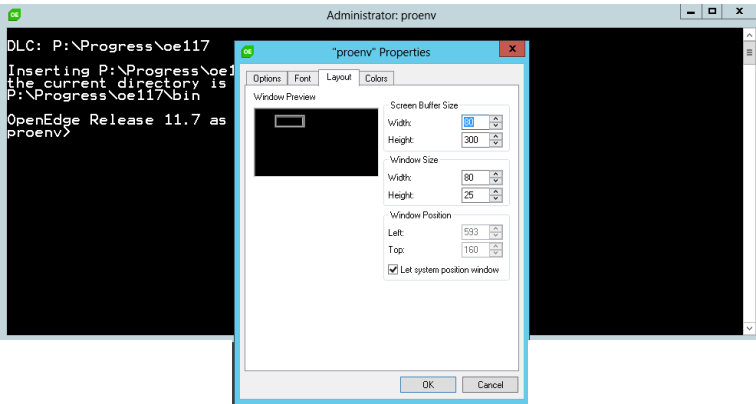
- `proenv>`

proenv



```
Administrator: proenv
DLC: P:\Progress\oe117
Inserting P:\Progress\oe117\bin to beginning of path and
the current directory is
P:\Progress\oe117\bin
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDI 2017
proenv>_
```

proenv



proenv



```
Administrator: proenv
DLC: P:\Progress\oe117
Inserting P:\Progress\oe117\bin to beginning of path and
the current directory is
P:\Progress\oe117\bin
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
proenv>_
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proenv>_
```


proenv



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OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDI 2017
proenv>_
```

```
Administrator: proenv
DLC: P:\Progress\oe117
Inserting P:\Progress\oe117\bin to beginning of path and
the current directory is
P:\Progress\oe117\bin
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
proenv>
proenv>
proenv>_
```

proenv



```
proenv> mode con cols=160 lines=72
```

```
proenv> color c0
```



Lab: Checking Out Your Database



- `proenv>`
- finding your databases...
 - Windows Explorer / find
 - `taskmgr / ps`
 - `dbman`
 - Open Edge Explorer
- `proutil describe`, `prostrct list`, `dbanalys`, `prolog`, (333),
`conmgr.properties`



Finding Databases with Windows Explorer

The screenshot shows a Windows Explorer window with the search bar containing the query `*.lg`. The search results are displayed in a table format:

File Name	Location	Date modified	Size
fathom.lg	D:\oemgmt	2/22/2019 4:17 PM	162 KB
sports2000.lg	D:\bigsports	2/20/2019 7:42 PM	838 KB
empty.lg	P:\Progress\oe117\prolang\utf	3/27/2017 3:32 PM	0 bytes

The interface includes a ribbon with tabs for File, Home, Share, View, and Search. The Search tab is active, showing options like 'Current folder', 'All subfolders', 'Date modified', 'Kind', 'Size', 'Other properties', 'Recent searches', 'Advanced options', 'Save search', 'Open file location', and 'Close search'. The left sidebar shows the navigation pane with 'Computer' selected, and the bottom status bar indicates '3 items'.



Taskmgr – fairly useless out of the box...

The screenshot shows the Windows Task Manager window with the 'Processes' tab selected. The window title is 'Task Manager'. The menu bar includes 'File', 'Options', and 'View'. The tabs are 'Processes', 'Performance', 'Users', 'Details', and 'Services'. The main area displays a table of running processes. The 'cmd.exe' process is highlighted. At the bottom left, there is a 'Fewer details' button, and at the bottom right, there is an 'End task' button.

Name	PID	Status	User name	CPU	Memory (p...	Description
admsvc.exe	1140	Running	SYSTEM	00	912 K	OpenEdge Admin Server
amazon-ssm-agent...	1168	Running	SYSTEM	00	3,760 K	amazon-ssm-agent.exe
chrome.exe	3676	Running	Administra...	00	37,796 K	Google Chrome
chrome.exe	1288	Running	Administra...	00	1,104 K	Google Chrome
chrome.exe	1784	Running	Administra...	00	1,040 K	Google Chrome
chrome.exe	2164	Running	Administra...	00	9,128 K	Google Chrome
chrome.exe	936	Running	Administra...	00	56,448 K	Google Chrome
chrome.exe	3532	Running	Administra...	00	7,056 K	Google Chrome
cmd.exe	3396	Running	Administra...	00	508 K	Windows Command Processor
cmd.exe	4416	Running	Administra...	00	500 K	Windows Command Processor
conhost.exe	1328	Running	SYSTEM	00	472 K	Console Window Host
conhost.exe	3064	Running	SYSTEM	00	472 K	Console Window Host
conhost.exe	2292	Running	Administra...	00	1,928 K	Console Window Host
csrss.exe	388	Running	SYSTEM	00	1,092 K	Client Server Runtime Process
csrss.exe	464	Running	SYSTEM	00	1,376 K	Client Server Runtime Process
csrss.exe	3668	Running	SYSTEM	00	1,336 K	Client Server Runtime Process
dwm.exe	840	Running	DWM-1	00	19,028 K	Desktop Window Manager
dwm.exe	2188	Running	DWM-3	00	11,376 K	Desktop Window Manager
Ec2Config.exe	1416	Running	SYSTEM	00	14,780 K	EC2ConfigService
explorer.exe	4060	Running	Administra...	00	48,484 K	Windows Explorer
java.exe	1384	Running	SYSTEM	00	430,636 K	Java(TM) Platform SE binary
java.exe	1232	Running	SYSTEM	00	55,372 K	Java(TM) Platform SE binary
LogonUI.exe	832	Running	SYSTEM	00	8,088 K	Windows Logon User Interface Host
lsass.exe	564	Running	SYSTEM	00	8,448 K	Local Security Authority Process
msdtc.exe	2616	Running	NETWORK...	00	2,208 K	Microsoft Distributed Transaction Coordinator Service
netsession_win.exe	3752	Running	Administra...	00	2,064 K	Akamai NetSession Client



Taskmgr – customize the columns!

The screenshot shows the Windows Task Manager window with the 'Details' tab selected. A 'Select columns' dialog box is open, allowing the user to customize the columns displayed in the task list. The dialog box contains a list of columns with checkboxes next to them. The columns that are currently checked are: PID, Status, User name, and CPU. The columns that are not checked are: Package name, Session ID, CPU time, Cycle, Working set (memory), Peak working set (memory), and Working set delta (memory). The 'OK' button is highlighted.

Name	PID	Status	User name	CPU	Memory (p...	Description
admsrv.exe	1140	Running	SYSTEM	00	912 K	OpenEdge Admin Server
amazon-s...	00			00	3,760 K	amazon-ssm-agent.exe
chrome.e...	00			00	37,756 K	Google Chrome
chrome.e...	00			00	1,104 K	Google Chrome
chrome.e...	00			00	1,040 K	Google Chrome
chrome.e...	00			00	9,128 K	Google Chrome
chrome.e...	00			00	56,448 K	Google Chrome
chrome.e...	00			00	7,056 K	Google Chrome
cmd.exe	00			00	508 K	Windows Command Processor
cmd.exe	00			00	500 K	Windows Command Processor
conhost.e...	00			00	472 K	Console Window Host
conhost.e...	00			00	472 K	Console Window Host
conhost.e...	00			00	1,928 K	Console Window Host
csrss.exe	00			00	1,092 K	Client Server Runtime Process
csrss.exe	00			00	1,376 K	Client Server Runtime Process
csrss.exe	00			00	1,340 K	Client Server Runtime Process
dwm.exe	00			00	19,028 K	Desktop Window Manager
dwm.exe	00			00	11,376 K	Desktop Window Manager
Ec2Config.exe	1470	Running	SYSTEM	00	14,796 K	EC2ConfigService
explorer.exe	4060	Running	Administra...	00	48,488 K	Windows Explorer
java.exe	1384	Running	SYSTEM	00	430,632 K	Java(TM) Platform SE binary
java.exe	1232	Running	SYSTEM	00	55,372 K	Java(TM) Platform SE binary
LogonUI.exe	832	Running	SYSTEM	01	8,088 K	Windows Logon User Interface Host
lsass.exe	564	Running	SYSTEM	00	8,432 K	Local Security Authority Process
msdtc.exe	2616	Running	NETWORK...	00	2,208 K	Microsoft Distributed Transaction Coordinator Service
netsession_win.exe	3752	Running	Administra...	00	2,064 K	Akamai NetSession Client



Taskmgr – much more useful!

Name	PID	Status	User name	CPU time	Working se...	Memory (p...	Memory (...)	I/O reads	I/O wri...	Command line
svchost.exe	748	Running	LOCAL SE...	0:00:12	11,888 K	5,260 K	6,628 K	0	1	C:\Windows\system32\svchost.exe -k LocalServiceNoNetwork
svchost.exe	1340	Running	SYSTEM	0:00:12	12,356 K	4,252 K	8,104 K	966	636	C:\Windows\System32\svchost.exe -k LocalSystemNetworkRestricted
svchost.exe	1692	Running	NETWORK...	0:07:14	214,244 K	154,876 K	59,368 K	2,389	65,111	C:\Windows\System32\svchost.exe -k termsvcs
svchost.exe	816	Running	NETWORK...	0:00:00	4,608 K	1,092 K	3,516 K	0	0	C:\Windows\system32\svchost.exe -k NetworkServiceNetworkRestricted
System	4	Running	SYSTEM	0:05:01	316 K	76 K	240 K	102	47,015	
System Idle Pro...	0	Running	SYSTEM	486:32:42	20 K	20 K	0 K	0	0	
System interrupts	-	Running	SYSTEM	0:00:00	0 K	0 K	0 K	0	0	
taskhostex.exe	3468	Running	Administra...	0:00:00	9,052 K	2,664 K	6,388 K	27	86	taskhostex.exe
Taskmgr.exe	3848	Running	Administra...	0:00:04	23,716 K	7,036 K	16,680 K	54	1	taskmgr
wininit.exe	456	Running	SYSTEM	0:00:06	3,700 K	740 K	2,960 K	1	0	wininit.exe
winlogon.exe	492	Running	SYSTEM	0:00:00	5,208 K	804 K	4,404 K	2	0	winlogon.exe
winlogon.exe	2076	Running	SYSTEM	0:00:00	4,996 K	900 K	4,096 K	3	0	winlogon.exe
_dbagent.exe	324	Running	SYSTEM	0:00:02	9,700 K	1,160 K	8,540 K	25,884	4	"P:\Progress\oe117\bin_dbagent" -db D:\oemgmt\fathom -port 8846 -u DB_Agent -propertyfile P:\Progress\oe117\properti...
_dbagent.exe	1856	Running	SYSTEM	0:00:03	31,396 K	1,184 K	30,212 K	26,261	4	"P:\Progress\oe117\bin_dbagent" -db d:\bigsports\sports2000 -port 8846 -u DB_Agent -propertyfile P:\Progress\oe117\prop...
_mprsrv.exe	3096	Running	SYSTEM	0:00:00	18,452 K	1,520 K	16,932 K	474	4,500	"P:\Progress\oe117\bin_mprsrv" -properties "P:\Progress\oe117\properties\conmgr.properties" -servergroup fathomtrend...
_mprsrv.exe	3328	Running	SYSTEM	0:00:00	35,188 K	1,568 K	33,620 K	430	2,788	"P:\Progress\oe117\bin_mprsrv" -properties "P:\Progress\oe117\properties\conmgr.properties" -servergroup bigsports.def...
_mprsrv.exe	548	Running	SYSTEM	0:00:03	8,328 K	1,500 K	6,828 K	4,746	5,507	"P:\Progress\oe117\bin_mprsrv" -m1 "d:\bigsports\sports2000" -N TCP -S 21012 -ipver IPV4 -H 0.0.0.0 -s 128 -hs 0 -Mm 10...
_mprshut.exe	3340	Running	SYSTEM	0:00:00	5,856 K	1,160 K	4,696 K	35	847	"P:\Progress\oe117\bin_mprshut" D:\oemgmt\fathom -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream iso88...
_mprshut.exe	3820	Running	SYSTEM	0:00:00	5,844 K	1,220 K	4,624 K	51,476	2	"P:\Progress\oe117\bin_mprshut" D:\oemgmt\fathom -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream iso88...
_mprshut.exe	3956	Running	SYSTEM	0:00:00	7,876 K	1,160 K	6,716 K	35	11,906	"P:\Progress\oe117\bin_mprshut" D:\oemgmt\fathom -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream iso88...
_mprshut.exe	1636	Running	SYSTEM	0:00:00	5,828 K	1,180 K	4,648 K	33	9	"P:\Progress\oe117\bin_mprshut" d:\bigsports\sports2000 -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream is...
_mprshut.exe	3760	Running	SYSTEM	0:00:00	5,812 K	1,228 K	4,584 K	51,336	2	"P:\Progress\oe117\bin_mprshut" d:\bigsports\sports2000 -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream is...
_mprshut.exe	1496	Running	SYSTEM	0:00:00	6,956 K	1,172 K	5,784 K	33	22	"P:\Progress\oe117\bin_mprshut" d:\bigsports\sports2000 -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream is...
_mprshut.exe	2572	Running	SYSTEM	0:00:00	6,892 K	1,176 K	5,716 K	33	19	"P:\Progress\oe117\bin_mprshut" d:\bigsports\sports2000 -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream is...
_mprshut.exe	1704	Running	SYSTEM	0:00:00	6,932 K	1,172 K	5,760 K	33	18	"P:\Progress\oe117\bin_mprshut" d:\bigsports\sports2000 -adminport 7846 -cpinternal iso8859-1 -cpcoll BASIC -cpstream is...



Mysterious Errors

```
proenv> dbman -query -all
```

```
ERROR: Unable to locate database plugin: ensure AdminServer is running and is properly configured (DBMan023)
```




AdminServer not alive!

```
proenv> dbman -query -all
```

```
ERROR: Unable to locate database plugin: ensure AdminServer is running and is properly configured (DBMan023)
```

```
proenv> proadsv -query  
AdminServer not alive. (8543)
```

```
proenv> proadsv -start
```



Admin Server

The screenshot shows the Windows Services console with the 'Services' tab selected. The 'AdminService for OpenEdge11.7 (64-bit)' service is highlighted in blue, indicating it is running. Other services listed include AeLookupSvc, ALG, AllUserInstal..., AmazonSS..., AppIDSvc, Appinfo, AppMgmt, AudioEndpo..., Audiosrv, AWSLiteAge..., BFE, and BITS.

Name	PID	Description	Status	Group
AdminServi...	3696	AdminService for OpenEdge11.7 (64-bit)	Running	
AeLookupSvc		Application Experience	Stopped	netsvcs
ALG		Application Layer Gateway Service	Stopped	
AllUserInstal...		Windows All-User Install Agent	Stopped	LocalSyste...
AmazonSS...	1168	Amazon SSM Agent	Running	
AppIDSvc		Application Identity	Stopped	LocalServi...
Appinfo	820	Application Information	Running	netsvcs
AppMgmt	820	Application Management	Running	netsvcs
AudioEndpo...		Windows Audio Endpoint Builder	Stopped	LocalSyste...
Audiosrv		Windows Audio	Stopped	LocalServi...
AWSLiteAge...		AWS Lite Guest Agent	Stopped	
BFE	748	Base Filtering Engine	Running	LocalServi...
BITS	820	Background Intelligent Transfer Service	Running	netsvcs

DBMAN



```
proenv> dbman -query -all
```

```
Database Name: BigSports
```

```
database path: d:\bigsports\sports2000
```

```
database is running: Running Uptime: 1-23:38:12
```

```
default configuration: defaultConfiguration
```

```
running configuration: defaultConfiguration
```

```
valid configurations: defaultConfiguration
```

```
Database BigSports agent: Running
```

```
Database BigSports auxiliary processes:
```

```
AI Writer: Not Running
```

```
APW: Running: 3
```

```
BI Writer: Running
```

```
Watchdog: Running
```

OE Exploder



A screenshot of a web browser window showing the login page for Progress OpenEdge Management. The browser's address bar shows 'localhost:9090/login.jsp'. The page features a dark background with a laptop displaying a dashboard. A white login form is overlaid on the right side of the laptop. The form includes the Progress OpenEdge Management logo, the text 'Login', 'Username' with an input field, 'Password' with an input field, and a red 'LOGIN' button. Below the form, there are links for 'Support', 'Privacy', 'Terms Of Use', and 'About'. At the bottom, a copyright notice reads: 'Copyright © 1984-2017 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.'



Finding Databases with OE Explorer

The screenshot displays the Progress OpenEdge Explorer interface. The browser address bar shows `localhost:9090/resources/resourcegrid.jsp`. The user is logged in as 'admin'. The main content area is titled 'Resources / win-1vkl0ikmujr' and shows a tree view of resources. A search bar at the top left of the tree view contains the text '--Search on resource name or tag: --Type--'. The tree view is expanded to show the following categories and items:

- CPU (3 Items)**
 - win-1vkl0ikmujr.CPU
 - win-1vkl0ikmujr.CPU-0
 - win-1vkl0ikmujr.CPU-1
- Collection (1 Item)**
 - My Collections.Home
- Database (2 Items)**
 - win-1vkl0ikmujr.BigSports
 - win-1vkl0ikmujr.FathomTrendDatabase
- Log File (2 Items)**
 - win-1vkl0ikmujr.AdminServerLog
 - win-1vkl0ikmujr.ExceptionsLog
- Memory (1 Item)**
 - win-1vkl0ikmujr.Memory
- MetaServer (1 Item)**

On the right side of the interface, the 'Resource Summary' panel shows 'Resource Count: 0'. The footer of the application contains the text: 'Help Me | Support | Privacy | Terms of Use | About Copyright © 1984-2017 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.'



Finding Databases with OE Explorer

The screenshot displays the Progress OpenEdge Explorer interface. The browser address bar shows the URL: localhost:9090/database/dbinsthome.jsp?key=localhost%3Aresource.database.local.BigSports. The page title is 'Progress OpenEdge Explorer' and the user is logged in as 'admin'. The breadcrumb navigation is 'Resources / Local / BigSports'. The main content area shows the database 'BigSports' is 'Running (22 Hours)'. Below this, there are two buttons: 'STOP DATABASE' and 'STOP AGENT'. A list of configuration details is provided, including AdminServer, Database, Monitoring Agent, Active port(s), Configuration name, Active page writers, After image writer, Before image writer, Watch dog, Database name, and Database connection home. At the bottom, there are sections for 'Command and Control' with a 'Control' button and 'Monitoring Plans'.

Managed Database x +

localhost:9090/database/dbinsthome.jsp?key=localhost%3Aresource.database.local.BigSports

Progress® OpenEdge® Explorer Hello, admin

Resources Database Administration

Resources / Local / BigSports

AdminServer: win-1vkl0ikmujr
Database: BigSports

Running (22 Hours)
Not Polled
Last Failure: Feb 25, 2019 5:05:28 PM
Poll Count: 0 Fail Count: 0 (0.0%)

STOP DATABASE STOP AGENT

AdminServer: win-1vkl0ikmujr
Database: Running
Monitoring Agent: Running
Active port(s): 21012
Configuration name: defaultConfiguration
Active page writers: Running: 3
After image writer: N/A
Before image writer: 3658
Watch dog: 3828
Database name: d:\bigsports\sports2000
Database connection home: win-1vkl0ikmujr.BigSports

Command and Control

Control Start or stop database

Monitoring Plans Database conditions on which to alert

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Exploder



The screenshot shows a web browser window titled "Database Control" with the URL `localhost:9090/database/dbcontrol.jsp?key=localhost%3Aresource.database.local.BigSports`. The page header includes "AdminServer: win-1vkl0ikmujr" and "Database: BigSports Database Control". There are three buttons: "EDIT", "STOP DATABASE", and "STOP AGENT".

Database information

Database name: d:\bigsports\sports2000
Active port(s): 21012
Configuration name: defaultConfiguration

Database status

	PID	State	CPU Use	Memory Use	Started
Database:	1484	Running	0.07 %	35148.0 KB	02/26/2019 17:11:10
Monitoring agent:	680	Running	0.02 %	6296.0 KB	02/26/2019 17:11:21

Database auxiliary status

	PID	State	CPU Use	Memory Use	Started
After image page writer (aiw):	N/A	Not Running	N/A %	N/A KB	N/A
Before image page writer (biw):	1440	Running	0.02 %	5772.0 KB	02/26/2019 17:11:18
Auxiliary page writers (apw):	3656	Running: 3	0.0 %	5796.0 KB	02/26/2019 17:11:17
	5086	Running: 3	0.02 %	5772.0 KB	02/26/2019 17:11:19
	4528	Running: 3	0.02 %	5784.0 KB	02/26/2019 17:11:21
Watch dog (wdog):	4564	Running	0.03 %	5900.0 KB	02/26/2019 17:11:16
After image management daemon (aimgt):	1500	Running	0.02 %	6064.0 KB	02/26/2019 17:11:10

Properties

Monitor Enabled

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Poking around...

- proutil describe
- prostrct list
- dbanalys
- conmgr.properties
- db.lg (333)



PROUTIL dbName -C describe

```
proenv> cd /d d:\bigsports
```

```
proenv> proutil sports2000 -C describe
```

```
Database Name      : D:\bigsports\sports2000
Version           : 173.0
Block Size        : 8192
Largest Cluster   : 64
Create Date       : Wed Feb  6 15:39:34 2019
Last Open Date    : Mon Feb 25 18:46:18 2019
Prior Open Date   : Mon Feb 25 18:46:18 2019
Schema Change Date : Wed Feb 20 19:05:57 2019
```

```
Before Imaging information
```

```
Block Size      : 8192
Cluster Size (16K Units) : 32
Last Open Date  : Mon Feb 25 18:46:17 2019
```

```
...
```

```
...
```

```
Backup Information
```

```
Last Full Backup Date   : Mon Feb 25 19:55:20 2019
Last Incremental Backup  : *** Not yet performed ***
```

```
Database Features
```

ID	Feature	Active	Details
5	Large Files	Yes	
9	64 Bit DBKEYS	Yes	
10	Large Keys	Yes	
11	64 Bit Sequences	Yes	
23	New VST Tables	Yes	



PRSTRCT list dbName

```
proenv> cd /d d:\bigsports
```

```
proenv> prostrct list sports2000
```

```
Warning: another user is using this database in update mode.
```

```
Accessing the database with -RO may give unexpected results. (1531)
```

```
Area Name: Control Area, Type 6, Block Size 8192, Extents 1, Records/Block 64, Cluster Size 1
```

```
  Ext # 1, Type VARIABLE, Size 640 KByte, Name: D:\bigsports\sports2000.db
```

```
Area Name: Primary Recovery Area, Type 3, Block Size 8192, Extents 1
```

```
  Ext # 1, Type VARIABLE, Size 2176 KByte, Name: B:\bigsports\sports2000.b1
```

```
Area Name: Schema Area, Type 6, Block Size 8192, Extents 1, Records/Block 64, Cluster Size 1
```

```
  Ext # 1, Type VARIABLE, Size 3200 KByte, Name: D:\bigsports\sports2000.d1
```

```
Area Name: Data, Type 6, Block Size 8192, Extents 1, Records/Block 32, Cluster Size 8
```

```
  Ext # 1, Type VARIABLE, Size 891520 KByte, Name: D:\bigsports\sports2000_7.d1
```

```
Area Name: Index, Type 6, Block Size 8192, Extents 1, Records/Block 32, Cluster Size 64
```

```
  Ext # 1, Type VARIABLE, Size 88576 KByte, Name: D:\bigsports\sports2000_8.d1
```

```
Area Name: Lobs, Type 6, Block Size 8192, Extents 1, Records/Block 2, Cluster Size 64
```

```
  Ext # 1, Type VARIABLE, Size 2560 KByte, Name: D:\bigsports\sports2000_9.d1
```



PROUTIL dbName -C dbanalys

```
proenv> cd /d d:\bigsports
```

```
proenv> proutil sports2000 -C dbanalys > sports2000.dba
```

```
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
```

```
PROGRESS Database Analysis
```

```
Database: d:\bigsports\sports2000
```

```
Blocksize: 8192
```

```
RecSpaceSearchDepth: 5
```

```
Options: chanalys ixanalys tabanalys
```

```
Date: Fri Feb 22 20:24:05 2019
```

```
[Warning] database in use - reported statistics are approx
```

```
. . .
```

```
. . .
```

```
DATABASE BLOCK ANALYSIS:
```

```
-----
```

```
1 master block(s) found in the database.
```

```
3 area block(s) found in the database.
```

```
1 control block(s) found in the database.
```

```
2 object block(s) found in the database.
```

```
89 cluster list block(s) found in the database.
```

```
89 cluster allocation block(s) found in the database.
```

```
89 object block(s) found in the database.
```

```
3 object list block(s) found in the database.
```

```
89 object allocation block(s) found in the database.
```

```
3472 free block(s) found in the database.
```

```
1 sequence block(s) found in the database.
```

```
127 empty block(s) found in the database.
```

```
123307 total blocks found in the database.
```

```
[Warning] database in use - reported statistics are approximations. (2486)
```

```
Database analysis complete Fri Feb 22 20:24:07 2019
```



%DLC%\properties\conmgr.properties

```
proenv> cd /d %DLC%\properties\conmgr.properties
proenv> copy conmgr.properties conmgr.properties.save
proenv> write conmgr.properties
```

. . .



conmgr.properties

```
#
# Connection Manager Properties File
#
%% Juniper Properties File
%% version 1.1
%% Feb 26, 2019 5:20:04 PM

[configuration.bigsports.defaultconfiguration]
  afterimageprocess=false
  alternatebufferpool=10000
  archivaldir=a:\bigsports
  asynchronouspagewriters=3
  beforeimageprocess=true
  blocksindatabasebuffers=10000
  database=bigsports
  displayname=defaultConfiguration
  monitored=true
  otherargs=-pf D:\bigsports\bigsports.pf
  servergroups=bigsports.defaultconfiguration.defaultservergroup
  watchdogprocess=true
. . .
```



Parameter File

```
# bigsports.pf
#

-B 100000
-spin 10000
-lruskips 50

-basetable -361
-tablerangesize 436

-baseindex -1610
-indexrangesize 2753
```

Editing %DLC%\properties\conmgr.properties



```
proenv> cd /d %DLC%\properties\conmgr.properties
proenv> copy conmgr.properties conmgr.properties.save
proenv> write conmgr.properties
```

. . .

```
proenv> dbconfig
```

```
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
```

```
Validating property file P:\Progress\oe117\properties\conmgr.properties (CMNMsg017)
```

```
Validation successful (CMNMsg019)
```



Startup Parameters and Configuration

Tue Feb 26 17:05:42 2019

```
[2019/02/26@17:05:42.723+0000] P-5100      T-2320  I BROKER  0: (333)   Multi-user session begin.
[2019/02/26@17:05:42.727+0000] P-5100      T-2320  I BROKER  0: (5326)  Begin Physical Redo Phase at 0 .
[2019/02/26@17:05:42.739+0000] P-5100      T-2320  I BROKER  0: (7161)  Physical Redo Phase Completed at blk 8 off 2909 upd 303.
[2019/02/26@17:05:42.740+0000] P-5100      T-2320  I BROKER  0: (13547) At end of Physical redo, transaction table size is 128.
[2019/02/26@17:05:42.757+0000] P-5100      T-2320  I BROKER  0: (452)   Login by SYSTEM on batch.
. . .
[2019/02/26@17:05:42.779+0000] P-5100      T-2320  I BROKER  0: (4250)  Before-Image Cluster Size: 524288.
[2019/02/26@17:05:42.780+0000] P-5100      T-2320  I BROKER  0: (4251)  Before-Image Block Size: 8192.
[2019/02/26@17:05:42.782+0000] P-5100      T-2320  I BROKER  0: (17555) Starting index number for statistics range (-baseindex): 1
[2019/02/26@17:05:42.782+0000] P-5100      T-2320  I BROKER  0: (17554) Starting table number for statistics range (-basetable): 1
[2019/02/26@17:05:42.783+0000] P-5100      T-2320  I BROKER  0: (4252)  Number of Before-Image Buffers (-bibufs): 20
[2019/02/26@17:05:42.783+0000] P-5100      T-2320  I BROKER  0: (6552)  BI File Threshold Stall (-bistall): Disabled.
[2019/02/26@17:05:42.784+0000] P-5100      T-2320  I BROKER  0: (9238)  BI File Threshold size (-bithold): 0.0 Bytes
[2019/02/26@17:05:42.784+0000] P-5100      T-2320  I BROKER  0: (6573)  Database Blocksize (-blocksize): 8192
[2019/02/26@17:05:42.784+0000] P-5100      T-2320  I BROKER  0: (12812) BIW writer delay (-bwdelay): 0
[2019/02/26@17:05:42.784+0000] P-5100      T-2320  I BROKER  0: (12813) Allowed index cursors (-c): 84
[2019/02/26@17:05:42.785+0000] P-5100      T-2320  I BROKER  0: (4264)  Character Set (-cpinternal): ISO8859-1
[2019/02/26@17:05:42.785+0000] P-5100      T-2320  I BROKER  0: (4235)  Physical Database Name (-db): d:\bigsports\sports2000
[2019/02/26@17:05:42.791+0000] P-5100      T-2320  I BROKER  0: (4238)  Direct I/O (-directio): Not Enabled
[2019/02/26@17:05:42.793+0000] P-5100      T-2320  I BROKER  0: (4244)  Crash Recovery (-i): Enabled
[2019/02/26@17:05:42.797+0000] P-5100      T-2320  I BROKER  0: (17560) Number of LRU force skips (-lruskips): 0
. . .
```




Lab: Starting and Stopping a DB



- exploder
- dbman
- proserve/proshut



Explooder – Stopping method 1

Managed Database
localhost:9090/database/dbinsthome.jsp?key=localhost%3Aresource.database.local.BigSports

Progress® OpenEdge® Explorer
Resources Database Administration Hello, admin

Resources / Local / BigSports

AdminServer: win-1vkl0ikmujr
Database: BigSports

Running (22 Hours)
Not Polled
Last Failure: Feb 25, 2019 5:06:28 PM
Poll Count: 0 Fail Count: 0 (0.0%)

STOP DATABASE STOP AGENT

AdminServer: win-1vkl0ikmujr
Database: Running
Monitoring Agent: Running
Active port(s): 21012
Configuration name: defaultConfiguration
Active page writers: Running: 3
After image writer: N/A
Before image writer: 3663
Watch dog: 3928
Database name: d:\bigsports\sports2000
Database connection home: win-1vkl0ikmujr:BigSports

Command and Control

Control Start or stop database Monitoring P Database Con

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Stop Database

Are you sure you want to stop "BigSports"?

YES NO

AdminServer: win-1vkl0ikmujr
Database: BigSports
Database Control

EDIT START DATABASE START AGENT

Database information

Database name: d:\bigsports\sports2000
Active port(s): 21012
Configuration name: defaultConfiguration

Database status	PID	State	CPU Use	Memory Use	Started
Database:	N/A	Not Running	N/A %	N/A KB	N/A
Monitoring agent:	N/A	Not Running	N/A %	N/A KB	N/A

Database auxiliary status

	PID	State	CPU Use	Memory Use	Started
After image page writer (aiw):	N/A	Not Running	N/A %	N/A KB	N/A
Before image page writer (biw):	N/A	Not Running	N/A %	N/A KB	N/A
Auxiliary page writers (apw):	N/A	None running	N/A %	N/A KB	N/A
Watch dog (wdog):	N/A	Not Running	N/A %	N/A KB	N/A



Exploder – Stopping method 2

Resources / win-1vk10ikmujr

Select	Resource	Type	Status	Alerts
	Collection (1 Item)			
	My Collections.Home	Collection	Not Running	
	Database (2 Items)			
<input checked="" type="checkbox"/>	win-1vk10ikmujr.BigSports	Database	Running	
<input checked="" type="checkbox"/>	win-1vk10ikmujr.FathomTrendDatabase	Database	Running	
	Log File (2 Items)			
	win-1vk10ikmujr.AdminServerLog	Log File	Not Check...	
	win-1vk10ikmujr.ExceptionsLog	Log File	Not Check...	
	Memory (1 Item)			
	win-1vk10ikmujr.Memory	Memory	Not Check	

Stop Resources

Are you sure you want to stop selected resources ?

YES NO

Database (2 Items)

<input type="checkbox"/>	win-1vk10ikmujr.BigSports	Database	Not Running
<input type="checkbox"/>	win-1vk10ikmujr.FathomTrendDatabase	Database	Not Running



Exploder – Starting method 1

Progress® OpenEdge® Explorer

Resources / Local / BigSports

AdminServer: win-1vkl0ikmujr
Database: BigSports
 Database Control

Starting...

Database information

Database name: d:\bigsports\sports2000
 Active port(s): 21012
 Configuration name: defaultConfiguration

Database status

	PID	State	CPU Use	Memory Use	Started
Database:	N/A	Starting	N/A %	N/A KB	N/A
Monitoring agent:	N/A	Starting	N/A %	N/A KB	N/A

Database auxiliary status

	PID	State	CPU Use	Memory Use	Started
After image page writer (aiw):	N/A	Starting	N/A %	N/A KB	N/A
Before image page writer (biw):	N/A	Starting	N/A %	N/A KB	N/A
Auxiliary page writers (apw):	N/A	Starting	N/A %	N/A KB	N/A
Watch dog (wdog):	N/A	Starting	N/A %	N/A KB	N/A

Progress® OpenEdge® Explorer

Resources / Local / BigSports / Database Control

AdminServer: win-1vkl0ikmujr
Database: BigSports
 Database Control

EDIT STOP DATABASE STOP AGENT

Database information

Database name: d:\bigsports\sports2000
 Active port(s): 21012
 Configuration name: defaultConfiguration

Database status

	PID	State
Database:	N/A	Running
Monitoring agent:	N/A	Running

Database auxiliary status

	PID	State
After image page writer (aiw):	N/A	Not Running
Before image page writer (biw):	N/A	Starting
Auxiliary page writers (apw):	N/A	None running, Starting: 3
Watch dog (wdog):	N/A	Starting



Exploder – Starting method 2

Progress® OpenEdge® Explorer

Resources / win-1vkl0ikmujr

Select	Resource	Type	Status	Alerts
<input type="checkbox"/>	My Collections.Home	Collection	Not Running	
<input checked="" type="checkbox"/>	win-1vkl0ikmujr.BigSports	Database	Not Running	
<input checked="" type="checkbox"/>	win-1vkl0ikmujr.FathomTrendDatabase	Database	Not Running	
<input type="checkbox"/>	win-1vkl0ikmujr.AdminServerLog	Log File	Not Check...	
<input type="checkbox"/>	win-1vkl0ikmujr.ExceptionsLog	Log File	Not Check...	
<input type="checkbox"/>	win-1vkl0ikmujr.Memory	Memory	Not Check...	
<input type="checkbox"/>	win-1vkl0ikmujr.NameServer	NameServer	Not Check...	

Resource Summary

Resource Count: 2

Database (2 Items)

<input type="checkbox"/>	win-1vkl0ikmujr.BigSports	Database	Running
<input type="checkbox"/>	win-1vkl0ikmujr.FathomTrendDatabase	Database	Running



Exploder – Starting too soon after stop

The screenshot shows the Progress OpenEdge Explorer interface. At the top, the title bar reads "Progress® OpenEdge® Explorer". Below the title bar, there are navigation tabs for "Resources" and "Database Administration". The breadcrumb path is "Resources / Local / BigSports / Database Control". The main content area shows "AdminServer: win-1vkl0ikmujr" and "Database: BigSports" with "Database Control" below it. There are three buttons: "EDIT", "START DATABASE", and "START AGENT". A yellow warning banner at the bottom states: "The database d:\bigsports\sports2000.db is in use in multi-user mode".



DBMAN -query -db

```
proenv> dbman -query -db sports2000
```



DBMAN -query -db

```
proenv> dbman -query -db sports2000
```

```
ERROR: Unable to locate database sports2000 (DBMan005)
```




DBMAN -query -all

```
proenv> dbman -query -all
```

Database Name: **BigSports**

```
database path: d:\bigsports\sports2000  
database is running: Running Uptime: 1-23:38:12  
default configuration: defaultConfiguration  
running configuration: defaultConfiguration  
valid configurations: defaultConfiguration
```

Database BigSports agent: Running

Database BigSports auxiliary processes:

```
AI Writer: Not Running  
APW: Running: 3  
BI Writer: Running  
Watchdog: Running
```



DBMAN -query -db

```
proenv> dbman -query -db bigsports
```

Database Name: BigSports

database path: d:\bigsports\sports2000

database is running: Running Uptime: 4-21:24:54

default configuration: defaultConfiguration

running configuration: defaultConfiguration

valid configurations: defaultConfiguration

Database BigSports agent: Running

Database BigSports auxiliary processes:

AI Writer: Not Running

APW: Running: 3

BI Writer: Running

Watchdog: Running



DBMAN -stop

```
proenv> dbman -stop -db bigsports
```

```
Database BigSports, configuration defaultConfiguration stopping... (18058)
```

```
Database BigSports, configuration defaultConfiguration stopped (DBMan021)
```

```
Database BigSports agent: Not Running
```

```
Database BigSports auxiliary processes:
```

```
AI Writer: Not Running
```

```
APW: None running
```

```
BI Writer: Not Running
```

```
Watchdog: Not Running
```



DBMAN -start

```
proenv> dbman -start -db bigsports
```

```
Database BigSports, configuration defaultConfiguration starting... (18054)
```

```
Database BigSports, configuration defaultConfiguration started (DBMan028)
```

```
Database BigSports agent: Running
```

```
Database BigSports auxiliary processes:
```

```
AI Writer: Not Running
```

```
APW: Running: 3
```

```
BI Writer: Running
```

```
Watchdog: Running
```

PROSHUT



```
proenv> cd /d d:\bigsports
```

```
proenv> proshut -by sports2000
```

```
Shutdown is executing. (1613)
```

```
Shutdown complete. (1614)
```

PROSERVE



```
proenv> proserve sports2000
```

```
16:31:01 BROKER      This broker will terminate when session ends. (5405)
16:31:01 BROKER      The startup of this database requires 29Mb of shared memory.  Maximum segme
16:31:01 BROKER 0: Multi-user session begin. (333)
16:31:01 BROKER 0: Before Image Log Initialization at block 7  offset 3810. (15321)
16:31:01 BROKER 0: Login by Administrator on CON:. (452)
```



PROSERVE & DBMAN

```
proenv> dbman -query -db bigsports
```

Database Name: BigSports

database path: d:\bigsports\sports2000

database is running: **Not Running**

default configuration: defaultConfiguration

running configuration: defaultConfiguration

valid configurations: defaultConfiguration

Database BigSports agent: Not Running

Database BigSports auxiliary processes:

AI Writer: Not Running

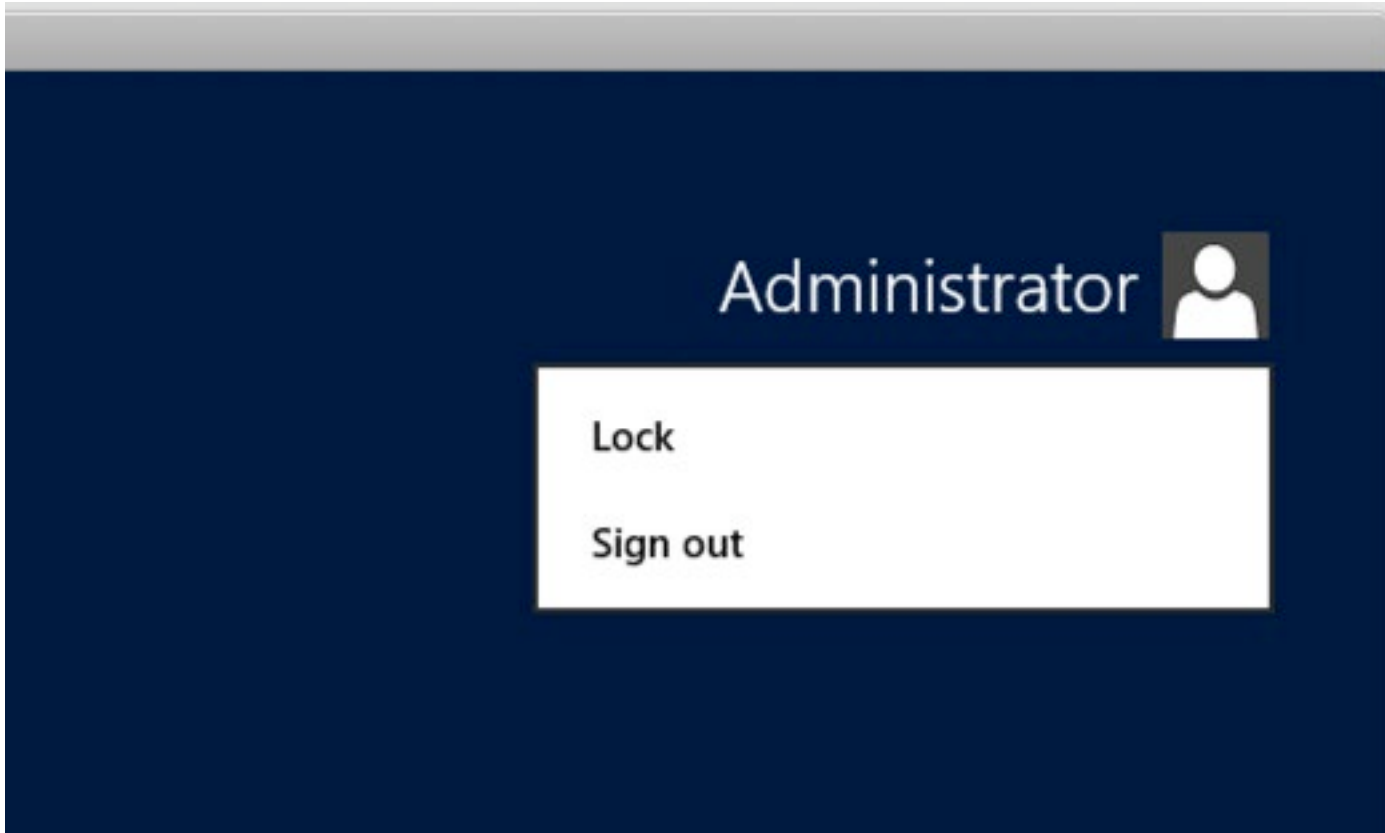
APW: None running

BI Writer: Not Running

Watchdog: Not Running



PROSERVE is NOT a “Service”!





PROSERVE & logging out...

```
proenv> cd /d d:\bigsports  
proenv> mpro sports2000
```

```
————— Error —————  
There is no server for database sports2000. (1423)  
—————  
                <OK>
```



Windows Console Logouts

```
[2019/02/25@17:04:21.595+0000] P-3280 T-592 I ABL 11: (452) Login by Administrator on CON:.  
[2019/02/25@17:04:21.602+0000] P-3280 T-592 I ABL 11: (7129) Usr 11 set name to .  
[2019/02/25@17:05:05.962+0000] P-3260 T-4080 I ABL 12: (452) Login by Administrator on CON:.  
[2019/02/25@17:05:05.969+0000] P-3260 T-4080 I ABL 12: (7129) Usr 12 set name to .  
[2019/02/25@17:05:27.501+0000] P-4496 T-1980 I WDOG 6: (2523) User 11 died with 1 buffers locked.  
[2019/02/25@17:05:27.501+0000] P-4496 T-1980 I WDOG 6: (2527) Disconnecting dead user 11.  
[2019/02/25@17:05:27.520+0000] P-3968 T-1328 I BIW 5: (2520) Stopped.  
[2019/02/25@17:05:27.520+0000] P-3968 T-1328 I : (453) Logout by SYSTEM on batch.  
[2019/02/25@17:05:27.564+0000] P-4940 T-2572 I APW 8: (453) Logout by SYSTEM on batch.  
[2019/02/25@17:05:28.502+0000] P-4496 T-1980 I WDOG 6: (2527) Disconnecting dead user 12.  
[2019/02/25@17:05:28.503+0000] P-2300 T-4612 I BROKER 0: (15192) The database will complete shutdown...  
[2019/02/25@17:05:28.504+0000] P-2300 T-4612 I BROKER 0: (2249) Begin ABNORMAL shutdown code 2  
[2019/02/25@17:05:29.503+0000] P-4496 T-1980 I WDOG 6: (2520) Stopped.  
[2019/02/25@17:05:29.503+0000] P-4496 T-1980 I : (453) Logout by SYSTEM on batch.  
[2019/02/25@17:05:29.506+0000] P-2300 T-4612 I BROKER 0: (453) Logout by SYSTEM on batch.  
[2019/02/25@17:05:30.511+0000] P-2300 T-4612 I BROKER : (16869) Removed shared memory with segment_id: ...  
[2019/02/25@17:05:30.512+0000] P-2300 T-4612 I BROKER : (334) Multi-user session end.
```



Lab: Backup and Restore



- probkup (online), prorest
- **BAD IDEAS: backup strategies that will get you fired!**
- Safely automating backups



PROBKUP

```
proenv> probkup online sports2000 e:\pbkup\sports2000.pbk -com -Bp 10
```

```
123175 active blocks out of 123228 blocks in sports2000 will be dumped. (6686)
256 BI blocks will be dumped. (6688)
Backup requires an estimated 965.3 MBytes of media. (9285)
Restore would require an estimated 123558 db blocks using 964.3 MBytes of media. (9286)
Backed up 123431 db blocks in 00:00:03
Wrote a total of 1010 backup blocks using 268.3 MBytes of media. (13625)

Backup complete. (3740)
```

```
proenv> dir e:\pbkup\sports2000.pbk
```

```
Volume in drive E is Backup
Volume Serial Number is F48F-F64E
```

```
Directory of d:\bigsports
```

```
02/25/2019  06:47 PM          281,320,448 sports2000.pbk
             1 File(s)         281,320,448 bytes
             0 Dir(s)  18,475,999,232 bytes free
```

PROREST



```
proenv> prorest s2k e:\pbkup\sports2000.pbk
```

```
This is a full backup of D:\bigsports\sports2000.db. (6759)
```

```
This backup was taken Mon Feb 25 18:47:12 2019. (6760)
```

```
The blocksize is 8192. (6994)
```

```
Start of extending target DB to needed size... (9432)
```

```
It will require a minimum of 123452 blocks to restore. (6763)
```

```
Start of restoring the target DB... (9433)
```

```
Read 123431 db blocks in 00:00:03
```



PROREST - Notes

- Restored db does not need to have the same name as the source
- If there is an existing db it will be over written!
- If there is a structure file (dbName.st) it will be used
 - The structure must have the same **logical** storage areas
 - The **physical** extents can be differently sized and on different paths
 - This can be helpful when you want to change the physical structure



”Backups” That Will Get You Fired

- Virtual Machine Snapshots
- SAN Snapshots
- 3rd Party Backup Tools
- OS Level Copy Commands
- Untested Scripts
- Deleting old backups before you have a new backup



Copying Files

```
----- Error -----  
T:\tmp\sports2000.db is a copy of D:\bigsports\sports2000.db. Database cannot  
be opened. (598)  
-----  
<OK>
```

```
----- Error -----  
** Cannot find or open file t:\tmp\sports2000_8.d1, errno = 2. (43)  
-----  
<OK>
```


Copying Files



```
----- Error -----  
                Last open date mismatch. (9215)  
Extent t:\tmp\sports2000.b1 has a different last opened date Mon Feb 25  
                18:46:17 2019, (9213)  
Control Area has a last open date of Mon Feb 25 18:58:08 2019. (9217)  
                Probable backup/restore error. (605)  
                Database is damaged, see documentation. (1486)  
  
-----  
                <OK>
```



Safely Automating Backups

- If you are on Windows and using Task Scheduler:
 - Do NOT use a real user (or Administrator)
 - Use a userid that NEVER LOGS IN
 - Use a userid that does not have an expiring password
- Windows does not like to overwrite old backups 😞
- 3rd Party tools need to:
 - First use probkup to disk
 - Or shutdown db
 - Or properly script a quiet point
 - MUST wait for confirmation in the .lg file, return of proquiet is NOT sufficient
 - MUST backup ALL files (it is easy to miss some, especially if they are added later)



What is After-Imaging?

- The Key to a robust recovery strategy.
- Similar to other database's "REDO LOG".
- ROLL FORWARD RECOVERY:
 - Restore a backup – even a very old backup.
 - Roll forward archived after-image logs.
 - Until you have recovered to a point in time or a specific transaction.
- Protects your database from:
 - Hardware errors
 - Human errors (much more common)
 - Malfeasance of all sorts



Lab: After-Imaging



- add extents (online)
- probkup online ... enable after-imaging
- process some transactions...
- restore and roll-forward, check the results



Add After-Image Extents

```
proenv> type ai.st
```

```
a a:\bigsports\  
a a:\bigsports\  
a a:\bigsports\  
a a:\bigsports\
```

```
proenv> prostrct addonline sports2000 ai.st -validate
```

```
The structure file format is valid. (12619)  
Device: a:, KBytes needed: 512, KBytes available: 20378253 (12616)  
There is sufficient free space to initialize the defined extents. (12618)
```

```
proenv> prostrct addonline sports2000 ai.st
```

Formatting extents:

size	area name	path name
16	After Image Area 1	a:\bigsports\sports2000.a1 00:00:00
. . .		



Enable After-Imaging with PROBKUP

```
proenv> probkup online sports2000 e:\pbkup\s2k_aiinit.pbk enableai enableaiarchiver -aiarcdir e:\ailogs -aiarcinterval 120 -com -Bp 10
```

```
123175 active blocks out of 123228 blocks in sports2000 will be dumped. (6686)
256 BI blocks will be dumped. (6688)
Backup requires an estimated 965.3 MBytes of media. (9285)
Restore would require an estimated 123558 db blocks using 964.3 MBytes of media. (9286)
After-image block size set to 8 kb (8192 bytes). (644)
After-image has been enabled online successfully. (13781)
The After-image Archiver has been enabled. (13918)
The After-image Management Daemon will begin in a few moments. (13920)
Backed up 123431 db blocks in 00:00:09
Wrote a total of 3534 backup blocks using 938.7 MBytes of media. (13625)

Backup complete. (3740)
```

```
proenv> rfutil sports2000 -C aimage list
```

```
Extent: 1
Status: Busy
Type: Variable Length
Path: a:\bigsports\sports2000.a1
. . .
```



Update Some Data

```
proenv> mpro sports2000 -p putfirstcust.p -param "New Name"
```



Restore and **Safely** Check Data Values

```
proenv> cd /d t:\tmp  
proenv> prorest sports2000 e:\pbkup\s2k_aiinit.pbk
```

```
This is a full backup of D:\bigsports\sports2000.db. (6759)  
This backup was taken Mon Feb 25 19:55:20 2019. (6760)  
The blocksize is 8192. (6994)  
Start of extending target DB to needed size... (9432)  
It will require a minimum of 123452 blocks to restore. (6763)  
Start of restoring the target DB... (9433)  
Read 123431 db blocks in 00:00:05  
After-image Extent Management has been disabled for the database. (13292)
```

```
proenv> pro sports2000 -RO -p getfirstcust.p
```

```
----- Error -----  
WARNING: Before-image file of database sports2000 is not truncated. (1552)  
-----  
<OK>
```

Cust Num	Name
1	Lift Tours



Roll Forward

```
proenv> dir e:\ailogs
```

Directory of e:\ailogs

```
02/25/2019  08:15 PM    <DIR>          .
02/25/2019  08:15 PM    <DIR>          ..
02/25/2019  08:15 PM                131,072 d!~bigsports~sports2000.20190225.195520.00000001.sports2000.a1
                1 File(s)       131,072 bytes
                2 Dir(s)    20,867,198,976 bytes free
```

```
proenv> rfutil sports2000 -C roll forward -a e:\ailogs\d!~bigsports~sports2000.20190225.195520.00000001.sports2000.a1
```

```
After-image dates for this after-image file: (1633)
  Last AIMAGE BEGIN Mon Feb 25 19:55:20 2019 (1640)
  This is aimage file number 1 since the last AIMAGE BEGIN. (1642)
  This file was last opened for output on Mon Feb 25 19:55:20 2019. (1643)
```

```
20:38:25: 10% of aimage file processed (1 notes processed)... (17060)
```

```
1 notes were processed. (1634)
0 in-flight transactions. (3785)
0 transactions were started. (1635)
0 transactions were completed. (11138)
At the end of the .ai file, 0 transactions were still active. (1636)
```



Roll Forward

```
proenv> rfutil sports2000 -C roll forward -a e:\ailogs\d!~bigsports~sports2000.20190225.195520.0000001.sports2000.a1
```

```
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
```

```
Expected ai file number 3 but file specified is 1 in sequence. (8019)
```

```
** The database was last changed Mon Feb 25 20:27:28 2019. (831)
```

```
** The after-image file expected Mon Feb 25 19:32:57 2019. (832)
```

```
** Those dates don't match, so you have the wrong copy of one of them. (833)
```

```
roll forward open e:\ailogs\d!~bigsports~sports2000.20190225.195520.0000001.sports2000.a1 error: -1. (11014)
```



Safely Check Data Values

```
proenv> pro sports2000 -R0 -p getfirstcust.p
```

```
----- Error -----  
WARNING: Before-image file of database sports2000 is not truncated. (1552)  
-----  
<OK>
```

```
Cust Num Name  
-----  
1 New Name
```



Wrap-Up Comments About After-Imaging

- The DBA's Best Friend.
- Easy to implement, easy to manage.
- Running a database without after-imaging is grossly irresponsible.
- Without after-imaging your data, and the business that depends on that data, is at risk!
- After-imaging prevents DBA self-unemployment!



Lab: Tweaking Settings & Parameters



- bi cluster size, bi & ai block sizes, large files, etc.
- -*rangesize, -omsize, -B, -L, -spin
- proutil increaseto (online changes)



Tweaking Settings & Parameters

Log file notification
Log file errors on which to alert

Configuration
Property file configuration associated with this database

AdminServer: win-1vkl0ikmujr
Database: BigSports

EDIT COPY CREATE

AdminServer: win-1vkl0ikmujr
Database: BigSports
Configuration

EDIT

Database name: d:\bigsports\sports2000
Autostart:
Cluster enabled:
Default configuration: bigsports.defaultconfiguration

Broker

configuration.bigsports.defaultconfiguration

servergroup.bigsports.defaultconfiguration.defaultservergroup

Database

General Background Writers After Image Management International Advanced Statistics Collection Configuration SQL Configuration SSL Configuration Agent

Blocks in database buffers (primary):	10000
Alternate buffer pool:	10000
Hash table entries:	0
Lock table entries:	8192
Tenant lock table governor(%):	100
Max users:	20
Tenant max user governor:	32000
Max servers:	4
Maximum private database buffer per user:	0
Direct I/O:	<input type="checkbox"/>
Other arguments:	-pf D:\bigsports\bigsports.pf

```

8740 [2019/02/26@17:20:28.933+0000] P-1704 T-2404 I BROKER 0: (18405) Number of tables per user included in statistics co
8741 [2019/02/26@17:20:28.933+0000] P-1704 T-2404 I BROKER 0: (14017) Area block consistency check (-AreaCheck): Not Enab
8742 [2019/02/26@17:20:28.934+0000] P-1704 T-2404 I BROKER 0: (4239) Number of Database Buffers (-B): 100000
8743 [2019/02/26@17:20:28.934+0000] P-1704 T-2404 I BROKER 0: (17562) Number of Alternate Database Buffers (-B2): 10000
8744 [2019/02/26@17:20:28.934+0000] P-1704 T-2404 I BROKER 0: (9422) Maximum private buffers per user (-Bpmax): 64
8745 [2019/02/26@17:20:28.998+0000] P-1704 T-2404 I BROKER 0: (14016) Database block consistency check (-DbCheck): Not En

```



Change -B with a PF file

```
proenv> type bigsports.pf

# bigsports.pf
#

-B 100000
-spin 10000
-lruskips 50

-basetable -361
-tablerangesize 436

-baseindex -1610
-indexrangesize 2753

proenv> write bigsports.pf

. . .
```



Change the BI Cluster Size

```
proenv> proutil sports2000 -C truncate bi -bi 16384
```

Before-image cluster size set to **16384 kb**. (1620)

```
proenv> proutil sports2000 -C describe
```

```
Database Name      : D:\bigsports\sports2000
Version            : 173.0
Block Size         : 8192
Largest Cluster   : 64
Create Date        : Wed Feb  6 15:39:34 2019
Last Open Date     : Wed Feb 27 18:03:03 2019
Prior Open Date    : Wed Feb 27 18:03:03 2019
Schema Change Date : Wed Feb 20 19:05:57 2019
```

Before Imaging information

```
Block Size          : 8192
Cluster Size (16K Units) : 1024
Last Open Date      : Wed Feb 27 18:02:52 2019
```

. . .



Lab: The Care and Feeding of SQL



- Many 3rd party tools require SQL
- SQL is very different from OpenEdge
- SQL is often not configured or is poorly configured
- The default SQL DBA user is “sysprogress”



SQLXP – It Is Always Available

```
proenv> sqlxp -user sysprogress -password sysprogress -db sports2000 -H localhost -S 21012
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
Connecting user "sysprogress" to URL "jdbc:datadirect:openedge://localhost:21012;databaseName=sports2000"... (8920)
```

```
SQLExplorer> select count(*) from customer;
```

```
=== SQL Exception 1 ===
```

```
SQLState=42S02
```

```
ErrorCode=-210083
```

```
[DataDirect][OpenEdge JDBC Driver][OpenEdge] Table/view/synonymm "SYSPROGRESS.CUSTOMER" cannot be found. (15814)
```

SQL EXP



```
proenv> sqlexp -user sysprogress -password sysprogress -db sports2000 -H localhost -S 21012
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
Connecting user "sysprogress" to URL "jdbc:datadirect:openedge://localhost:21012;databaseName=sports2000"... (8920)

SQLExplorer> select count(*) from customer;

=== SQL Exception 1 ===
SQLState=42S02
ErrorCode=-210083
[DataDirect][OpenEdge JDBC Driver][OpenEdge] Table/view/synonym "SYSPROGRESS.CUSTOMER" cannot be found. (15814)

SQLExplorer> select count(*) from pub.customer;
      count(*)
-----
      201120

SQLExplorer> quit

proenv>
. . .
```



DBTOOL and SQL Width

```
proenv> dbtool sports2000
```

```
          DATABASE TOOLS MENU - 11.7
          -----
          1. SQL Width & Date Scan w/Report Option
          2. SQL Width Scan w/Fix Option
          . . .
          Q. Quit

          Choice: 2
```

The option will process all records including template records in the specified range.

```
<connect>:  (0=single-user 1=self-service >1=#threads)? 1
Padding % above current max: 25
<table>:    (Table number or all)? all
<area>:    (Area number or all)? all
<display>:  (verbose level 0-4)?
```

```
Total records read: 3561171
SQLWidth errors found: 7, Date errors found: 0
SQLWidth errors fixed: 7
```

```
proenv>
```



Update SQL Statistics

```
proenv> mbpro sports2000 -p d:\protop\util\genUpdateSQL.p
```

```
proenv> more updSQLStats.sql
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Benefits";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."BillTo";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Bin";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Country";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Customer";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Department";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Employee";
```

```
commit work;
```

```
UPDATE TABLE STATISTICS AND INDEX STATISTICS AND ALL COLUMN STATISTICS FOR PUB."Family";
```

```
commit work;
```

```
. . .
```

```
proenv> sqlexp -db sports2000 -S 21012 -user sysprogress -password sysprogress -infile updSQLStats.sql -outfile updSQLStats.log
```



Applying Service Packs

- Download SP from progress.com and unzip
- Shutdown
- Truncate BI
- Install service pack
- `updateevst`, `updateschema`
- Take advantage of the downtime to adjust startup parameters
- Restart



Lab: Installing a Service Pack



```
proenv>dbman -all -stop_
```

Name	Description	Status	Startup Type	Log
AdminService for OpenEdg...	Manages Pr...	Running	Automatic	Loc
Amazon SSM Agent	Amazon SS...	Running	Automatic	Loc
Problem Reports and Soluti...	This service ...	Manual	Manual	Loc
ProTop3 DB Monitor	DB monitor ...	Running	Automatic (D...	Loc
Remote Access Auto Conn...	Custom...	Manual	Manual	Loc

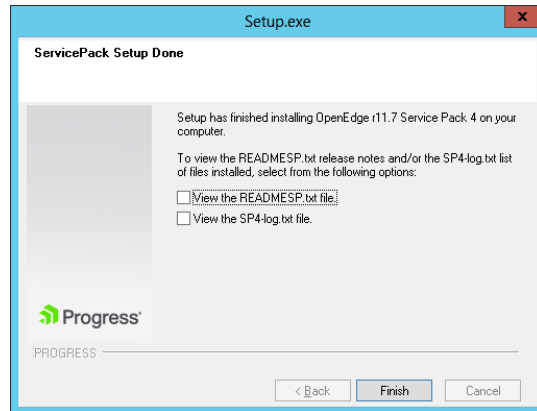
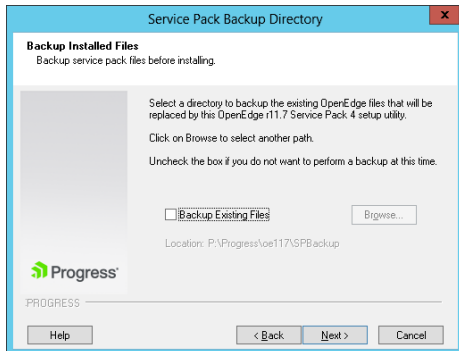
```
D:\bigsports>proutil sports2000 -C truncate bi
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
```

```
D:\oemgmt>proutil fathom -C truncate bi
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
```

```
D:\bigsports>proutil sports2000 -C updateschema
OpenEdge Release 11.7.4 as of Wed Oct 10 19:02:14 EDT 2018
Schema update ignored as the database already has the latest schema definition. (12600)
```

```
D:\bigsports>proutil sports2000 -C updatevst
OpenEdge Release 11.7.4 as of Wed Oct 10 19:02:14 EDT 2018
VST Table Deletion has begun. Please stand by. (6876)
VST Table Deletion has completed successfully. (6885)
Adding VST file: _Connect. (6875)
Adding VST file: _MstrBlk. (6875)
Adding VST file: _DbStatus. (6875)
Adding VST file: _BuffStatus. (6875)
Adding VST file: _Logging. (6875)
Adding VST file: _Segments. (6875)
Adding VST file: _Servers. (6875)
Adding VST file: _Startup. (6875)
Adding VST file: _Filelist. (6875)
Adding VST file: _UserLock. (6875)
Adding VST file: _ActSummary. (6875)
Adding VST file: _ActServer. (6875)
Adding VST file: _ActBuffer. (6875)
Adding VST file: _ActPws. (6875)
Adding VST file: _ActBILog. (6875)
Adding VST file: _ActAILog. (6875)
Adding VST file: _ActLock. (6875)
Adding VST file: _ActIOType. (6875)
Adding VST file: _ActIOFile. (6875)
Adding VST file: _ActSpace. (6875)
Adding VST file: _ActIndex. (6875)
Adding VST file: _ActRecord. (6875)
Adding VST file: _ActOther. (6875)
Adding VST file: _Block. (6875)
Adding VST file: _UserIO. (6875)
Adding VST file: _LockReq. (6875)
Adding VST file: _Checkpoint. (6875)
Adding VST file: _Lock. (6875)
Adding VST file: _Trans. (6875)
Adding VST file: _License. (6875)
Adding VST file: _TableStat. (6875)
Adding VST file: _IndexStat. (6875)
Adding VST file: _Latch. (6875)
Adding VST file: _Resrc. (6875)
Adding VST file: _TxLock. (6875)
Adding VST file: _StatBase. (6875)
Adding VST file: _UserStatus. (6875)
Adding VST file: _MyConnection. (6875)
Adding VST file: _AreaStatus. (6875)
Adding VST file: _Repl-Server. (6875)
Adding VST file: _Repl-AgentControl. (6875)
Adding VST file: _Repl-Agent. (6875)
Adding VST file: _Database-Feature. (6875)
Adding VST file: _Code-Feature. (6875)
Adding VST file: _AreaThreshold. (6875)
Adding VST file: _UserTableStat. (6875)
Adding VST file: _UserIndexStat. (6875)
Adding VST file: _DbParams. (6875)
Adding VST file: _Repl-AgentControlActivity. (6875)
Adding VST file: _Repl-AgentActivity. (6875)
Adding VST file: _DbServiceManager. (6875)
Adding VST file: _DbServiceManagerObjects. (6875)
Adding VST file: _Cache. (6875)
Adding VST file: _Repl-InterAgentActivity. (6875)
Total number of Virtual System Tables is 54. (6250)
```

"P:\Download\Service Pack\PROGRESS_OE_11.7.4_WIN_64\setup.exe"





Production Support



Lab: Solving Problems with ProTop



- Blocked user
- Rapid reader
- Long transaction
- Lots of Locks in use
- proGetStack
- Disconnecting a user



ProTop – Enable Client Statement Cache

```
pt3_sports2000
sports2000 Auto Interval Rate DS 67 4675 0.384 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/01 17:10:13
sports2000 0 0 d:\bigsports\sports2000 WIN-1VKL0IKMUJR
```

Global Client Statement Cache

The client statement cache is a powerful feature that sometimes causes problems. If you are not comfortable with the potential issues, please do not enable it in Production.

Rather than globally enabling CSC, ProTop can enable or disable the client statement cache for specific users by using the "*" command and entering a usr#.

You can also use the menu at PROMON R&D, 1, 18 for fine-grained control over individual sessions.

Global Client Statement Cache status: **On** On, Off, ? = no change

time: 00:57 Connections: 8
Age: 19:34 -n % 38
TRX: 00:00:00 Brokers: 1
str: 0 SQL Servers: 0
str: 0 SQL Clients: 1
trs: 0 SQL Clients: 0
sed: 0 App Server: 0
Ext: Disabled BIW/AIW/WDOG: 1 0 1
eq#: 0 AI Mgmt: 0
AI: 0 APWS: 3
AI: 0 Local: 1
Remote: 0
Batch: 0
AI: 0
pica Used: 0 TRX: 0
pica Used% 0.00 Blocked Rec: 0
Other Blkd: 0

Rec Waits: 0 Busy Waits: 0 0 pica
Resrc Waits: 0 Empty Wts: 0 0 pica
Latch Waits: 0
Latch Reqs: 106128
Latch/logRd: 3.18

Table Activity

Tbl#	Area#	BX	Table Name	RM Chain	#Records	Frag% Scat	Churn	AvgRow	Create	Read v	Update	Delete	OS Read
-361	6	B1	_Constraint-Keys		0	0.00%	0.00		0	0	0	0	0
-360	6	B1	_Constraint		0	0.00%	0.00		0	0	0	0	0
-351	6	B1	_Partition-Set-Detail		0	0.00%	0.00		0	0	0	0	0
-350	6	B1	_Partition-Set		0	0.00%	0.00		0	0	0	0	0
-340	6	B1	_Tenant		0	0.00%	0.00		0	0	0	0	0
-208	6	B1	_KeyEvent		0	0.00%	0.00		0	0	0	0	0
-207	6	B1	_sec-authentication-domain		5	0.00%	1	140	0	0	0	0	0
-206	6	B1	_sec-authentication-system		3	0.00%	1	66	0	0	0	0	0
-205	6	B1	_sec-granted-role-condition		0	0.00%	0.00		0	0	0	0	0
-204	6	B1	_sec-granted-role		0	0.00%	0.00		0	0	0	0	0
-203	6	B1	_sec-role		0	0.00%	0.00		0	0	0	0	0
-202	6	B1	_Db-Option		6	0.00%	1	77	0	0	0	0	0

Index Activity

Idx#	Area#	BX	Index Name	Blocks	Util	Lvl/s	Idx Root	Note	Create	Read v	Split	Delete	Blkd1
-1610	6	B1	_Constraint-Keys..._Con-Key-Ord	0	0.00%	0	21248	PU	0	0	0	0	0
-1604	6	B1	_Constraint..._Con-dependency	0	0.00%	0	21312		0	0	0	0	0
-1603	6	B1	_Constraint..._Con-Migration-Seq	0	0.00%	0	21376	U	0	0	0	0	0
-1602	6	B1	_Constraint..._Con-Migrate	0	0.00%	0	21440		0	0	0	0	0
-1601	6	B1	_Constraint..._Con-Present	0	0.00%	0	21504	U	0	0	0	0	0
-1600	6	B1	_Constraint..._Con-Num	0	0.00%	0	21568	PU	0	0	0	0	0
-1591	6	B1	_StorageObject..._Object-Area-Number	0	0.00%	0	21632		0	0	0	0	0
-1590	6	B1	_StorageObject..._Object-PartitionId	0	0.00%	0	21696		0	0	0	0	0
-1581	6	B1	_User..._User-domain-name	0	0.00%	0	21760		0	0	0	0	0
-1580	6	B1	_User..._User-sql-only-user	0	0.00%	0	21824		0	0	0	0	0
-1561	6	B1	_Sysautostats..._Sysautostats-Table	0	0.00%	0	21888		0	0	0	0	0
-1560	6	B1	_Sysautostats..._Sysautostats-Policy	0	0.00%	0	21952	PU	0	0	0	0	0

User IO Activity

Usr#	Tenant Name	PID	Flags	Blk Ac v	OS Rd	OS Wr	Hit%	Rec Lck	Lk HWM	Line#	Program Name
0	-32767 SYSTEM BROK	3700	LXB	0	0	0	0.00%	0	1		
5	-32767 SYSTEM BIW	3948	HXB	0	0	0	0.00%	0	1		
6	-32767 SYSTEM WDOG	3032	HXB	0	0	0	0.00%	0	1		
7	-32767 SYSTEM APW	1744	HXB	0	0	0	0.00%	0	1		
8	-32767 SYSTEM APW	2672	HXB	0	0	0	0.00%	0	1		
9	-32767 SYSTEM APW	1796	HXB	0	0	0	0.00%	0	1		
10	-32767 DB_Agent OEMA	1876	OXB	0	0	0	0.00%	0	0		
11	0 protop	4856	PT3	0	0	0	0.00%	0	2		

Enter data or press F4 to end.

"*" to bring up the dialog, "on" to enable



ProTop – Find Problems

```
pt3_sports2000
sports2000 Auto Interval Rate DS 93 6739 1.251 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/01 15:16:20
sports2000 0 0 d:\bigsports\sports2000 WIN-1VKL0IKMUJR
```

Summary statistics:

Hit%	100.00	Commits:	85	Examined:	0	APW Writes:	4	DB UpTime:	01:28	Connections:	15
Log Reads:	293664	Undos:	0	New RM:	0	APW Write%	98	Backup Age:	17:40	-n %	71
OS Reads:	0			From RM:	0	Bufs Scanned:	188	oldest TRX:	00:00:30	4gl Servers:	0
Rec Reads:	135904	Curr # Locks:	7380	RM Locked:	0	APW Scan Wrs:	0	Curr BIClstr:	50	SQL Servers:	0
Idx Reads:	136775	Lock Tbl%	26.04%	Front2Bk:	0	APW Q Wrs:	0	Old BIClstr:	50	4gl Clients:	8
LogRd/RecRd:	2.16	Rec Lk/s:	61	Mod Bufs:	25	Flushed Bufs:	0	Num BIClstrs:	0	SQL Clients:	0
Log Writes:	232	Lk Dura (ms):	32.0	Evicted:	0	Chkpt Q Wrs:	0	BI MB Used:	0	App Server:	0
OS Writes:	4					Chkpt Len:00:00:0				Web Speed:	0
Rec Creates:	0									BIW/AIW/WDOG:	1 0 1
Idx Creates:	0									AI Mgmt:	0
Rec Updates:	84									APWs:	3
Rec Deletes:	0	Sync IO (sec):	6.95							Local:	1
Idx Deletes:	75	Random IO (ms):	0.72							Remote:	0
Idx Blk Spl:	0	BogoMIPS:	1.81							Batch:	7
		User Exp SHM:	144729							Locked AI:	0
Rec Waits:	0									pica Used:	0
Resrc Waits:	0									pica Used%	0.00
Latch Waits:	10									TRX:	4
Latch Reqs:	925672									Blocked Rec:	1
Latch/LogRd:	3.15									Other Blkd:	0

Table Activity:

Tbl#	Area#	BX	Table Name	RM Chain	#Records	Frag% Scat	Churn	AvgRow	Create	Read	Update	Delete	OS Read
25	7	B1	Vacation	4	12	0.00%	1	10772.44	0	129269	0	0	0
17	7	B1	PurchaseOrder	4	2129	0.00%	1	1.86	33	3965	0	0	0
16	7	B1	POLine	6	5337	0.00%	1	0.36	42	1904	0	0	0
14	7	B1	Order	5	727285	0.00%	1	0.00	92	167	83	0	0
-1	6	B1	_File	203	28.57%	4	0.76	371	0	154	0	0	0
-2	6	B1	_Field	2156	16.28%	4	0.07	299	0	151	0	0	0
-4	6	B1	_Index-Field	429	0.00%	2	0.35	154	0	151	0	0	0
-70	6	B1	_StorageObject	289	0.00%	3	0.52	52	0	151	0	0	0
-3	6	B1	_Index	235	2.53%	2	0.64	180	0	151	0	0	0
-361	6	B1	_Constraint-Keys	0	0.00%	0	0.00	0	0	0	0	0	0
-360	6	B1	_Constraint	0	0.00%	0	0.00	0	0	0	0	0	0
-351	6	B1	_Partition-Set-Detail	0	0.00%	0	0.00	0	0	0	0	0	0

Index Activity:

Idx#	Area#	BX	Index Name	Blocks	Util	Lvl	Idx Root	Note	Create	Read v	Split	Delete	Blkd1
62	8	B1	Vacation.EmpNoStartDate	1	1.90%	1	112768	PU	0	140386	0	0	0
50	8	B1	PurchaseOrder.PONum	4	58.90%	2	88192	PU	0	4075	0	0	0
49	8	B1	POLine.PONumLinenum	8	80.30%	2	86144	PU	0	1958	0	0	0
41	8	B1	Order.OrderNum	816	99.00%	2	69760	PU	0	170	0	0	0
1	6	B1	_File_File-Name	0	0.00%	0	16128	P	0	158	0	0	0
5	6	B1	_Index_File/Index	0	0.00%	0	16384	PU	0	155	0	0	0
2	6	B1	_Field_File/Field	0	0.00%	0	16192	PU	0	155	0	0	0
1026	6	B1	_StorageObject_Object-Id	0	0.00%	0	17408	PU	0	155	0	0	0
6	6	B1	_Index-Field_Index/Number	0	0.00%	0	16448	PU	0	155	0	0	0
45	8	B1	Order.SalesRep	173	51.80%	2	77952	P	76	0	0	76	0
-1610	6	B1	_Constraint-Keys_ Con-Key-Ord	0	0.00%	0	21248	PU	0	0	0	0	0
-1604	6	B1	_Constraint_ Con-dependency	0	0.00%	0	21312	PU	0	0	0	0	0

User IO Activity:

Usr#	Tenant Name	PID	Flags	Blk Ac v	OS Rd	OS Wr	Hit%	Rec Lck	Lk HWM	Line#	Program Name
15	0	chugger	4060	S4B	141614	0	0	100.00%	0	2	churn.p
12	0	readalot	4064	S4B	139086	0	0	100.00%	0	2	churn.p
13	0	lockalot	920	S4B*	11792	0	0	100.00%	2129	7309	lockalot.p
11	0	protop	3008	PT3	1680	0	0	100.00%	0	2	lib/vstlib.p
14	0	updorder	3084	S4B	651	0	0	100.00%	0	2	updorder.p
0	-32767	SYSTEM BROK	2248	LXB	0	0	0	0.00%	0	1	
5	-32767	SYSTEM BIW	2692	HXB	0	0	0	0.00%	0	1	
6	-32767	SYSTEM WDOG	1800	HXB	0	0	0	0.00%	0	1	
7	-32767	SYSTEM APW	2384	HXB	0	0	1	0.00%	0	1	
8	-32767	SYSTEM APW	1744	HXB	0	0	0	0.00%	0	1	
9	-32767	SYSTEM APW	2904	HXB	0	0	2	0.00%	0	1	
10	-32767	DB_Agent OEMA	3044	OXB	0	0	0	0.00%	0	0	

Notice:

Roughly 130k record reads per second.

1 user blocked on a record lock.

Enormous “churn” on vacation (12 records).

A session with quite a few record locks.



ProTop - Blocked Sessions

```
pt3_sports2000
sports2000 Auto Interval Rate DS 94 6878 0.933 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/01 15:18:15
sports2000 0 0 d:\bigsports\sports2000 WIN-LVKL0IKMUJR

b_ypb Hit% 100.00 Commits: 88 Examined: 0 APW Writes: 4 DB UpTime: 01:29 Connections: 15
Log Reads: 304394 Undos: 0 New RM: 0 APW Write%: 95 Backup Age: 17:42 -n % 71
OS Reads: 3 From RM: 0 Bufs Scanned: 176 Oldest TRX: 00:02:26 Brokers: 1
Rec Reads: 140768 Lock Tbl HWM: 7425 RM Locked: 0 APW Scan Wrt: 0 Curr BIClstr: 50 4gl Servers: 0
Idx Reads: 140765 Curr # Locks: 2133 From Free: 0 APW Q Wrts: 0 Old BIClstr: 50 SQL Servers: 0
LogRd/RecRd: 2.16 Lock Tbl% 26.04% Front2Bk: 0 Chkpt Q Wrts: 4 Num BIClstrs: 0 4gl Clients: 8
Log Writes: 238 Rec Lk/s: 50 Flushed Bufs: 0 BI MB Used: 0 SQL Clients: 0
OS Writes: 4 Lk Dura (ms): 40.0 Mod_Bufs: 34 Chkpt Len:00:00:0 BI MB Used: 0 App Server: 0
Rec Creates: 0 Notes: BI AI Curr AI Ext: Disabled BI/AIW/WDOG: 1 0 1
Idx Creates: 0 BI/AI Write% 48 0 0 Empty AI: 0 APWs: 3
Rec Updates: 86 Wrts to Log: 9 0 Full AI: 0 Local: 1
Rec Deletes: 0 Sync IO (sec): 6.95 BI/AI Wrt: 8 0 0 Locked AI: 0 Remote: 0
Idx Deletes: 76 Random IO (ms): 0.62 Partial Wr: 1 0 0 pica Used: 0 Batch: 7
Idx Blk Spl: 0 BogoMIPS: 2.41 Busy Waits: 0 0 0 pica Used% 0.00 Other TRX: 5
Rec Waits: 0 User Exp SHM: 234255 Empty Wts: 0 0 0 pica Used% 0.00 Blocked Rec: 1
Resrc Waits: 0 BI/AI Wrt: 8 0 0 pica Used% 0.00 Other Blkd: 0
Latch Waits: 10
Latch Reqs: 944750
Latch/logRd: 3.10
```

Blocked Sessions

Usr	Tenant	Name	PID	Flags	Durati	v Wait	Resrc	Id	Table	Blocker-Usr#	Device	PID	Blocker-Stat	Cache	WaitList
18	0	victim	1576	S4B*	00:00:11	REC	XQH	2433	Feedback	16	CON:	3920	17	blocker.p	

Table Activity

Tbl#	Area#	BX	Table Name	RM	Chain	#Records	Frag%	Scat	Churn	AvgRow	Create	Read v	Update	Delete	OS Read
25	7	B1	Vacation		4	12	0.00%	1	11194.06	24	0	134329	0	0	0
17	7	B1	PurchaseOrder		2	2129	0.00%	1	1.90	33	0	4035	0	0	0
16	7	B1	POLine		6	5337	0.00%	1	0.15	42	0	777	0	0	0
-2	6	B1	_Field			2156	16.28%	4	0.11	299	0	227	0	0	0
-3	6	B1	_Index			235	2.55%	3	0.97	180	0	227	0	0	0
-4	6	B1	_Index-Field			429	0.00%	2	0.53	154	0	227	0	0	0
-1	6	B1	_File			203	28.57%	4	1.12	371	0	227	0	0	0
-70	6	B1	_StorageObject			289	0.00%	2	0.77	52	0	222	0	0	0

Index Activity

Idx#	Area#	BX	Index Name	Blocks	Util	Lvls	Idx Root	Note	Create	Read v	Split	Delete	Blkd1
62	8	B1	Vacation.EmpNoStartDate	1	1.90%	1	112768	PU	0	143680	0	0	0
50	8	B1	PurchaseOrder.PONum	4	58.90%	2	88192	PU	0	4036	0	0	0
49	8	B1	POLine.PONumLinenum	8	80.30%	2	86144	PU	0	778	0	0	0
5	6	B1	_Index._File/Index	0	0.00%	0	16384	PU	0	227	0	0	0
1	6	B1	_File._File-Name	0	0.00%	0	16128	P	0	227	0	0	0
2	6	B1	_Field._File/Field	0	0.00%	0	16192	PU	0	227	0	0	0
6	6	B1	_Index-Field._Index/Number	0	0.00%	0	16448	PU	0	227	0	0	0
1026	6	B1	_StorageObject._Object-Id	0	0.00%	0	17408	PU	0	222	0	0	0

User IO Activity

Usr#	Tenant	Name	PID	Flags	Blk	Ac v	OS Rd	OS Wr	Hit%	Rec	Lck	Lk	HWM	Line#	Program Name
12	0	readalot	4064	S4B	147226	0	0	0	100.00%	0	0	2	2	16	churn.p
15	0	chugger	4060	S4B	144400	0	0	0	100.00%	0	0	2	2	16	churn.p
13	0	lockalot	920	S4B*	9667	0	0	0	100.00%	2129	7419	0	0	23	lockalot.p
11	0	protop	3008	PT3	2509	0	0	0	100.00%	0	0	0	0	778	lib/vstlib.p
14	0	uporder	3084	S4B	669	3	0	0	99.57%	0	0	0	0	27	uporder.p
0	-32767	SYSTEM BROK	2248	LXB	0	0	0	0	0.00%	0	0	0	0	1	
5	-32767	SYSTEM BIW	2692	HXB	0	0	0	0	0.00%	0	0	0	0	1	
6	-32767	SYSTEM WDOG	1800	HXB	0	0	0	0	0.00%	0	0	0	0	1	
7	-32767	SYSTEM APW	2384	HXB	0	0	0	2	0.00%	0	0	0	0	1	

“b” to bring up “blocked sessions”

User 18 (aka “victim”) is blocked, waiting for an exclusive-lock on RECID 2433 of FeedBack which is currently being held by user 16 who is executing line 17 of blocker.p.



Disconnect a User

```
proenv> proshut sports2000 -C disconnect 16
```

```
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
```

```
User 16 disconnect initiated. (6796)
```



ProTop - Long Transaction

```
pt3_sports2000
sports2000 Auto Interval Rate DS 98 7203 0.746 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/01 17:15:30
sports2000 0 0 d:\bigsports\sports2000 WIN-1VLK0IKMUJR
x *xp
Hit% 100.00 Commits: 86 Examined: 0 APW Writes: 4 DB UpTime: 01:02 Connections: 15
Log Reads: 284238 Undos: 0 New RM: 0 APW Write% 97 Backup Age: 19:40 -n % 71
OS Reads: 1 From RM: 0 Bufs Scanned: 188 Oldest TRX: 00:00:46 4gl Servers: 0
Rec Reads: 131485 Lock Tbl HWM: 7436 RM Locked: 0 APW Scan Wrs: 0 Curr BIClstr: 15 SQL Servers: 0
Idx Reads: 131482 Curr # Locks: 2134 Front Free: 0 APW Q Wrts: 0 Old BIClstr: 10 4gl Clients: 8
LogRd/RecRd: 2.16 Lock Tbl% 26.05% Front2Bk: 0 Chkpt Q Wrts: 4 Flushed Bufs: 5 SQL Clients: 0
Log Writes: 234 Rec Lk/s: 49 Mod_Bufs: 27 BI MB Used: 3 App Speed: 0
OS Writes: 4 Lk Dura (ms): 43.2 Evicted: 0 Notes: 402 BI AI Curr AI Ext: Disabled BIW/AIW/WDOG: 1
Rec Creates: 0 BI/AI Write% 93 AI 0 Curr Seq#: 0 AI Mgmt: 0
Idx Creates: 0 Wrts to Log: 8 0 Empty AI: 0 APWs: 3
Rec Updates: 84 Random IO (ms): 0.51 Full AI: 0 Local: 1
Rec Deletes: 0 Sync IO (sec): 6.95 BI/AI Wrts: 8 0 Remote: 0
Idx Deletes: 75 BogoMIPS: 1.84 Partial Wrt: 1 0 Locked AI: 0 pica Used: 0
Idx Blk Spl: 0 User Exp SHM: 202020 Busy Waits: 1 0 pica Used% 0.00 Batch: 7
Rec Waits: 0 Resrc Waits: 0 Latch Waits: 10 Latch Reqs: 883042 TRX: 5
Latch/logRd: 3.11 Latch/logRd: 3.11 Other Blkd: 1
```

Usr#	Tenant Name	PID	Flags	Device	TRX#	BI Clstr	Stat	Durati	v	Wait	Resource (dbkey)
15	0 badtrx	3372	S4B*	CON:	262723	10	ACTV	00:00:46	--	0	
16	0 blocker	4308	S4B*	CON:	262728	10	ACTV	00:00:45	--	0	
18	0 victim	4312	S4B*	CON:	263330	0	BEGI	00:00:00	REC	2433	
14	0 lockalot	4684	S4B*	CON:	266928	0	BEGI	00:00:00	--	0	
17	0 upddorder	4680	S4B*	CON:	266941	15	ACTV	00:00:00	--	0	

Tbl#	Area#	BX	Table Name	RM	Chain	#Records	Frag%	Scat	Churn	AvgRow	Create	Read v	Update	Delete	OS Read
25	7	B1	Vacation		4	12	0.00%	1	10374.35	24	0	124492	0	0	0
17	7	B1	PurchaseOrder		2	2129	0.00%	1	1.84	33	0	3907	0	0	0
16	7	B1	POLine		6	5337	0.00%	1	0.13	42	0	668	0	0	0
-2	6	B1	_Field			2156	16.28%	4	0.10	299	0	214	0	0	0
-3	6	B1	_Index			235	2.55%	3	0.91	180	0	214	0	0	0
-1	6	B1	_File			203	28.57%	4	1.05	371	0	214	0	0	0
-4	6	B1	_Index-Field			429	0.00%	2	0.48	154	0	204	0	0	0
-70	6	B1	_StorageObject			289	0.00%	2	0.71	52	0	204	0	0	0

Idx#	Area#	BX	Index Name	Blocks	Util	Lvl	Idx Root	Note	Create	Read v	Split	Delete	Blkd
62	8	B1	Vacation.EmpNoStartDate	1	1.90%	1	112768	PU	0	134084	0	0	0
50	8	B1	PurchaseOrder.PONum	4	38.90%	2	88192	PU	0	4086	0	0	0
49	8	B1	POLine.PONumLineNum	8	80.30%	2	86144	PU	0	668	0	0	0
5	6	B1	_Index-_File/Index	0	0.00%	0	16384	PU	0	212	0	0	0
1	6	B1	_File-_File-Name	0	0.00%	0	16128	P	0	212	0	0	0
2	6	B1	_Field-_File/Field	0	0.00%	0	16192	PU	0	212	0	0	0
6	6	B1	_Index-Field._Index/Number	0	0.00%	0	16448	PU	0	202	0	0	0
1026	6	B1	_StorageObject-_Object-Id	0	0.00%	0	17408	PU	0	202	0	0	0

Usr#	Tenant Name	PID	Flags	Blk	Ac v	OS Rd	OS Wr	Hit%	Rec	Lk	HWM	Line#	Program Name
13	0 chugger	4384	S4B	136034	0	0	0	100.00%	0	2	16	16	churn.p
12	0 readalot	4672	S4B	135154	0	0	0	100.00%	0	2	7	24	churn.p
14	0 lockalot	4684	S4B*	9273	0	0	0	100.00%	212	6785	23	23	lockalot.p
11	0 protop	4856	PT3	2299	0	0	0	100.00%	0	2	778	2	lib/vstlib.p
17	0 upddorder	4680	S4B*	653	1	0	0	99.89%	1	2	58	2	upddorder.p
0	-32767	SYSTEM BROK	LXB	0	0	0	0	0.00%	0	0	0	0	
5	-32767	SYSTEM BIW	HXB	0	0	0	0	0.00%	0	0	0	1	
6	-32767	SYSTEM WDOG	HXB	0	0	0	0	0.00%	0	0	0	1	
7	-32767	SYSTEM APW	HXB	0	0	1	0	0.00%	0	0	0	1	

“x” to bring up “Active Transactions”

Notice:

Oldest TRX is 46 seconds

Gap of 5 bi clusters

3MB of BI in use

Oldest TRX is not actually doing anything...

TRX that is really updating records



proGetStack - Client Stack Trace

```
proenv> proGetStack 1576
```

```
proenv> type \protop\s2k_demo\protrace.1576
```

```
=====
PROGRESS stack trace as of Fri Mar  1 15:46:49 2019
=====
```

Startup parameters:

```
-pf P:\oe117\startup.pf,-cpinternal IS08859-1,-cpstream IS08859-1 . . . (end .pf),-b,-db d:\bigsports\sports2000,-rand 2,-p updorder.p
```

** ABL Stack Trace **

```
--> updSalesRep updorder.p at line 67  (.\updorder.p)
    updorder.p at line 29  (.\updorder.p)
```

** Persistent procedures/Classes **

** PROPATH **

```
.,P:\oe117\tty,P:\oe117\tty\adecomm.pl,P:\oe117\tty\adecomp.pl,P:\Progress\oe117\tty\product.pl,P:\Progress\oe117,P:\Progress\oe117\bin
```

** Databases (logical/type/physical) **

```
sports2000          PROGRESS  d:\bigsports\sports2000
```

** End of Protrace **



ProTop – User Drill Down

pt3_sports2000

sports2000 Auto Interval Rate DS 67 4675 0.293 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/04 14:09:50
sports2000 0 0 di:\bigsports\sports2000 WIN-1VKLOIKMUJR

HitX 100.00
Log Reads: 73047
OS Reads: 0
Rec Reads: 33503
Idx Reads: 30974
LogRd/RecRd: 2.18
Log Writes: 0
OS Writes: 0
Rec Creates: 0
Idx Creates: 0
Rec Updates: 0
Rec Deletes: 0
Idx Deletes: 0
Idx Blk Spl: 0
Rec Waits: 0
Resrc Waits: 0
Latch Waits: 0
Latch Reqs: 234718
Latch/LogRd: 3.21

ProTop Help
Command Keys are Case-Sensitive

d = Performance Dashboard
t = Table Activity
i = Index Activity
u = User IO Activity
x = Active Transactions
L = Login Brokers
a = Storage Areas
Ab = Buffer Pools

c = Configuration Viewer
l = Latches and Resources
k = Checkpoints
b = Blocked Sessions
r = OE Replication Agents
s = Server Activity
f = File IO
B = Debug Guesstimator
= Set User#
* = Client Statement Cache
6 = Set Table Name
7 = Set Index Name
Ap = programmer mode
Ad = dump & load scripts
I = Set Refresh Interval
R = Switch between Raw and Rate Sampling
p = Pause to allow manual Screen Capture
Z = Set Top X Row Limit

0 = OS Info (if avail)
Q = SQL activity
D = Disk Free Space
/ = Sequences
N = Network Traffic
m = Multi-Task Info
w = After-Imaging Info
e = Application Specific
P = Set Process Id
C = Clear Client Statement Cache
8 = Monitor Users of a Table
9 = Monitor Users of an Index
At = show session temp-tables
Y = show session user*stat
y = run profiler on this session
& = Show Global Properties
S = Switch between Auto and On-Demand Sampling
M = Send Screen Capture as an e-mail
A = Modify _Lock Scan Limit
<space> = Refresh Sample
h, ? = Help
q = Quit

Tbl#	Area#	BX	Table	ate	Delete	OS Read
-361	6	B1	_Const	0	0	0
-360	6	B1	_Const	0	0	0
-351	6	B1	_Parti	0	0	0
-350	6	B1	_Parti	0	0	0
-340	6	B1	_Teman	0	0	0
-208	6	B1	_KeyEv	0	0	0
-207	6	B1	_sec-a	0	0	0
-206	6	B1	_sec-a	0	0	0
-205	6	B1	_sec-g	0	0	0
-204	6	B1	_sec-g	0	0	0
-203	6	B1	_sec-r	0	0	0
-202	6	B1	_Db-Op	0	0	0

Idx#	Area#	BX	Index Name	Blocks	Util	Lvl	Idx Root	Note	Create	Read v	Split	Delete	BlkDl
-1610	6	B1	_Constraint-Keys..._Con-Key-Ord	0	0.00%	0	21248	PU	0	0	0	0	0
-1604	6	B1	_Constraint..._Con-dependency	0	0.00%	0	21312		0	0	0	0	0
-1603	6	B1	_Constraint..._Con-Migration-Seq	0	0.00%	0	21376	U	0	0	0	0	0
-1602	6	B1	_Constraint..._Con-Migrate	0	0.00%	0	21440	U	0	0	0	0	0
-1601	6	B1	_Constraint..._Con-Present	0	0.00%	0	21504	U	0	0	0	0	0
-1600	6	B1	_Constraint..._Con-Num	0	0.00%	0	21568	PU	0	0	0	0	0
-1591	6	B1	_StorageObject..._Object-Area-Number	0	0.00%	0	21632		0	0	0	0	0
-1590	6	B1	_StorageObject..._Object-PartitionId	0	0.00%	0	21696		0	0	0	0	0
-1581	6	B1	_User..._User-domain-name	0	0.00%	0	21760		0	0	0	0	0
-1580	6	B1	_User..._User-sql-only-user	0	0.00%	0	21824		0	0	0	0	0
-1561	6	B1	_Sysautostats..._Sysautostats-Table	0	0.00%	0	21888		0	0	0	0	0
-1560	6	B1	_Sysautostats..._Sysautostats-Policy	0	0.00%	0	21952	PU	0	0	0	0	0

USR#	Tenant Name	PID	Flags	Blk Ac v	OS Rd	OS Wr	HitX	Rec Lck	Lk HWM	Line#	Program Name
0	-32767 SYSTEM BROK	1868	LXB	0	0	0	0.00%	0	1		
5	-32767 SYSTEM BIW	1852	HXB	0	0	0	0.00%	0	1		
6	-32767 SYSTEM WDOG	2108	HXB	0	0	0	0.00%	0	1		
7	-32767 SYSTEM APW	2748	HXB	0	0	0	0.00%	0	1		
8	-32767 SYSTEM APW	1720	HXB	0	0	0	0.00%	0	1		
9	-32767 DB_Agent OEMA	3164	OXB	0	0	0	0.00%	0	0		
10	-32767 SYSTEM APW	3172	HXB	0	0	0	0.00%	0	1		
11	0 protop	2156	PT3	0	0	0	0.00%	0	2		

Press space bar to continue.

Select user # or PID

"U" to drill down to user info



ProTop – User Selection

pt3_sports2000

sports2000 Auto Interval Rate DS 109 7931 0.327 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/04 14:13:50
 sports2000 0 0 d:\bigsports\sports2000 WIN-1VKLOIKMUJR
 ? #? DB Connection Number

Enter the DB Connection Number for the session of interest. This is the "User#".
 found on many ProTop screens, in the DB .log file, and in many Progress error messages.

Usr# 14

Client statement cache type: 1
 0 = Off
 1 = Single (Top of Stack)
 2 = Full Call Stack

Most of the time you want "1". You typically do not need the full stack unless you are planning to look at the detailed User Info screen (the "U" command). The full_stack option obviously takes more memory, uses more space in the client/server networking communications and is more likely to use the scratch disk (resulting in extraneous IO operations).

Tbl#	Area#	BX	Table Name	RM	Chain	#Records	Frag%	Scat	Churn	AvgRow	Create	Read v	Update	Delete	OS Read
25	7	B1	Vacation		4	12	0.00%	1	14325.96	24	0	171911	0	0	0
17	7	B1	PurchaseOrder		2	2129	0.00%	1	2.01	33	0	4269	0	0	0
-1	6	B1	_File			203	28.57%	4	1.93	371	0	392	0	0	0
-2	6	B1	_Field			2156	16.28%	4	0.18	299	0	378	0	0	0
-4	6	B1	_Index-Field			429	0.00%	2	0.88	154	0	377	0	0	0
-3	6	B1	_Index			235	2.55%	3	1.60	180	0	376	0	0	0
-70	6	B1	_StorageObject			289	0.00%	2	1.29	52	0	374	0	0	0
16	7	B1	POLine		6	5337	0.00%	1	0.06	42	0	299	0	0	6
14	7	B1	Order		5	727285	0.00%	1	0.00	92	0	186	93	0	3
-202	6	B1	_Db-Option			6	0.00%	1	0.09	77	0	1	0	0	0
-6	6	B1	_Db			1	100.00%	3	0.36	658	0	0	0	0	0
-207	6	B1	_sec-authentication-domain			5	0.00%	1	0.04	140	0	0	0	0	0

Idx#	Area#	BX	Index Name	Blocks	Util	Lvl	Idx Root	Note	Create	Read v	Split	Delete	BlkD1
62	8	B1	Vacation.EmpNoStartDate	1	1.90%	1	112768	PU	0	185664	0	0	0
50	8	B1	PurchaseOrder.PONum	4	58.90%	2	88192	PU	0	4270	0	0	0
1	6	B1	_File._File-Name	0	0.00%	0	16128	P	0	392	0	0	0
6	6	B1	_Index-Field._Index-Number	0	0.00%	0	16448	PU	0	379	0	0	0
6	6	B1	_Index._File-Index	0	0.00%	0	16384	PU	0	377	0	0	0
1026	6	B1	_StorageObject._Object-Id	0	0.00%	0	17408	PU	0	374	0	0	0
2	6	B1	_Field._File-Field	0	0.00%	0	16192	PU	0	374	0	0	0
49	8	B1	POLine.PONumLinenum	8	80.30%	2	86144	PU	0	301	0	0	0
41	8	B1	Order.OrderNum	816	99.00%	2	69760	PU	0	186	0	0	0
4	6	B1	_Field._Field-Position	0	0.00%	0	16320	U	0	1	0	0	0
1088	6	B1	_Db-Option._Option-code	0	0.00%	0	20864	PU	0	1	0	0	0
-1309	6	B1	_sec-authentication-system._Domain-type	0	0.00%	0	23104	PU	0	0	0	0	0

Usr#	Tenant Name	PID	Flags	Blk	Ac	v	OS Rd	OS Wr	HitX	Rec	Lck	Lk	HWM	Line#	Program Name
14	0	chugger	4048	S4B	190555	0	0	0	100.00%	0	0	2			
12	0	readalot	664	S4B	181936	0	0	0	100.00%	0	0	2			
16	0	lockalot	3604	S4B*	9161	6	0	0	99.93%	2129	4281				
11	0	protop	2156	PT3	4130	0	0	0	100.00%	0	2				
13	0	updorder	32	S4B	721	3	0	0	99.57%	0	2				
0	-32767	SYSTEM BROK	1868	LXB	0	0	0	0	0.00%	0	1				
5	-32767	SYSTEM EDW	1852	HXB	0	0	0	0	0.00%	0	1				
6	-32767	SYSTEM WDOG	2108	HXB	0	0	0	0	0.00%	0	1				
7	-32767	SYSTEM APW	2748	HXB	0	0	1	0	0.00%	0	1				
8	-32767	SYSTEM APW	1720	HXB	0	0	1	0	0.00%	0	1				
9	-32767	DB_Agent OEMA	3164	OXB	0	0	0	0	0.00%	0	0				
10	-32767	SYSTEM APW	3172	HXB	0	0	1	0	0.00%	0	1				

Enter data or press F4 to end.

Specify user#...

Optionally enable Client Statement Cache (if relevant)



ProTop – User Drill Down Details

pt3_sports2000

sports2000 Auto Interval Rate DS 93 5442 0.029 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/04 14:19:20
sports2000 0 0 d:\big\sports\sports2000 WIN-1VK10IKMUR

U #Up
Login Name: readalot Login Time: Mon Mar 4 14:17:46 2019 Logical Rd: 190486 BI Reads: 0
Usr#: 13 Device/IP: CON: Disk Reads: 0 BI Writes: 0
Connect Id: 14 Full Name: Hit% 100 AI Reads: 0
PID: 3988 Phone: ? Logical Wr: 0 AI Writes: 0
Server: 0 E-Mail: ? Record Locks: 0
Session Info: ABL SELF 54B Batch
TRX Info: --None--

Session Table Activity													
Tbl#	Area#	Table Name	RM Chain	#Records	Frag%	Scat	Turns	AvgRow	Create	Read v	Update	Delete	OS Read
25	7	Vacation	4	12	0.00%	1	7325.75	24	0	87909	0	0	?
1	7	Benefits	4	21	0.00%	1	0.00	40	0	0	0	0	?
2	7	BillTo	59	2	0.00%	1	0.00	111	0	0	0	0	?
3	7	Bin	4	770	0.00%	1	0.00	35	0	0	0	0	?
4	7	Country	4	15	0.00%	1	0.00	51	0	0	0	0	?
5	7	Customer	7	201120	0.00%	1	0.00	162	0	0	0	0	?
6	7	Department	4	7	0.00%	1	0.00	30	0	0	0	0	?
7	7	Employee	59	55	0.00%	1	0.00	115	0	0	0	0	?
8	7	Family	2	72	0.00%	1	0.00	44	0	0	0	0	?
9	7	Feedback	4	8	0.00%	1	0.00	128	0	0	0	0	?
10	7	InventoryTrans	2	75	0.00%	1	0.00	49	0	0	0	0	?

Session Index Activity												
Idx#	Area#	Index Name	Blocks	Util	Lvl	Idx Root	Note	Create	Read v	Split	Delete	BlkDl
62	8	Vacation.EmpNoStartDate	1	1.90%	1	112768	PU	0	95222	0	0	0
64	8	Warehouse.warehousename	1	3.80%	1	116864	U	0	0	0	0	0
63	8	Warehouse.warehousenum	1	1.60%	1	114816	PU	0	0	0	0	0
61	8	TimeSheet.EmpNoDayRecorded	1	3.60%	1	110720	PU	0	0	0	0	0
60	8	SupplierItemXref.ItemNumSupplierID	1	7.60%	1	108672	U	0	0	0	0	0
59	8	SupplierItemXref.SupplierIDItemNum	1	6.60%	1	106624	PU	0	0	0	0	0
58	8	Supplier.SupplierID	1	1.20%	1	104576	PU	0	0	0	0	0
57	8	State.State	1	5.90%	1	102528	PU	0	0	0	0	0
56	8	ShipTo.custnumshipto	1	0.40%	1	100480	PU	0	0	0	0	0
55	8	Salesrep.SalesRep	1	1.30%	1	98432	PU	0	0	0	0	0
54	8	RefCall.Txt	1	27.50%	1	96384	PU	0	0	0	0	0

Session 4GL Call Stack

Dep v	Line#	Program Name
	1	16 churn.p

User's Other Sessions

USR v	PID	Flags	Server	Device/IP	Address	Login Time	Line#	Program Name
-------	-----	-------	--------	-----------	---------	------------	-------	--------------

Press space bar to continue.

General Session Info

Connection specific table and index usage

Client Statement Cache

Other Sessions logged in with this user name.



ProTop – Reports

pt3_sports2000

sports2000 Auto Interval Rate DS 67 4675 0.293 ProTop Version 3.14x as of February 28, 2019 17:04 2019/03/04 14:09:50
sports2000 0 0 di:\bigsports\sports2000 WIN-1VKLOIKMUJR

HitX 100.00
Log Reads: 73047
OS Reads: 0
Rec Reads: 33503
Idx Reads: 30974
LogRd/RecRd: 2.18
Log Writes: 0
OS Writes: 0
Rec Creates: 0
Idx Creates: 0
Rec Updates: 0
Rec Deletes: 0
Idx Deletes: 0
Idx Blk Spl: 0
Rec Waits: 0
Resrc Waits: 0
Latch Waits: 0
Latch Reqs: 234718
Latch/LogRd: 3.21

ProTop Help
Command Keys are Case-Sensitive

d = Performance Dashboard
t = Table Activity
i = Index Activity
u = User IO Activity
x = Active Transactions
L = Login Brokers
a = Storage Areas
Ab = Buffer Pools

c = Configuration Viewer
l = Latches and Resources
k = Checkpoints
b = Blocked Sessions
r = OE Replication Agents
s = Server Activity
f = File IO
B = Debug Guestimator
@ = App Servers

0 = OS Info (if avail)
Q = SQL activity
D = Disk Free Space
/ = Sequences
N = Network Traffic
m = Multi-Tenant Info
w = Who is Connected?
As = Server-Imaging Info
@ = Application Specific

U = User Information Viewer
= Set User#
* = Client Statement Cache

T = Show Table and Index Range Info
A = Generate DBAnalys Output

Ap = programmer mode
Ad = dump & load scripts

I = Set Refresh Interval
R = Switch between Raw and Rate Sampling
p = Pause to allow manual Screen Capture
Z = Set Top X Row Limit

Au = SQL update stats script
Ar = dbanalys review & reports

z = Modify Sort Columns

S = Switch between Auto and On-Demand Sampling
M = Send Screen Capture as an e-mail
A = Modify _Lock Scan Limit

<space> = Refresh Sample
h, ? = Help
q = Quit

Connections: 8
Brokers: 1
4gl Servers: 0
SQL Servers: 0
4gl Clients: 1
Clients: 0
App Server: 0
Web Speed: 0
BIW/AIW/WDOG: 1 0 1
AI Mgmt: 0
APWs: 3
Local: 0
Remote: 0
Execn: 0
TRX: 0
Blocked Rec: 0
Other Blkd: 0

Tbl#	Area#	BX	Table	Blocks	Util	Lvl	Idx	Root	Note	Create	Read	v	Split	Delete	OS	Read
-361	6	B1	_Const	0	0.00%	0	21248	PU	0	0	0	0	0	0	0	0
-360	6	B1	_Const	0	0.00%	0	21312	U	0	0	0	0	0	0	0	0
-351	6	B1	_Parti	0	0.00%	0	21376	U	0	0	0	0	0	0	0	0
-350	6	B1	_Parti	0	0.00%	0	21440	U	0	0	0	0	0	0	0	0
-340	6	B1	_Tenant	0	0.00%	0	21504	U	0	0	0	0	0	0	0	0
-208	6	B1	_KeyEv	0	0.00%	0	21568	PU	0	0	0	0	0	0	0	0
-207	6	B1	_sec-a	0	0.00%	0	21632	U	0	0	0	0	0	0	0	0
-206	6	B1	_sec-a	0	0.00%	0	21696	U	0	0	0	0	0	0	0	0
-205	6	B1	_sec-g	0	0.00%	0	21760	U	0	0	0	0	0	0	0	0
-204	6	B1	_sec-g	0	0.00%	0	21824	U	0	0	0	0	0	0	0	0
-203	6	B1	_sec-r	0	0.00%	0	21888	U	0	0	0	0	0	0	0	0
-202	6	B1	_Db-Op	0	0.00%	0	21952	PU	0	0	0	0	0	0	0	0

USR#	Tenant	Name	PID	Flags	Blk	Ac	v	OS	Rd	OS	Wr	HitX	Rec	Lck	Lk	HWM	Line#	Program Name
0	-32767	SYSTEM BROK	1868	LXB	0	0	0	0	0	0	0	0.00%	0	0	1			
5	-32767	SYSTEM BIW	1852	HXB	0	0	0	0	0	0	0	0.00%	0	0	1			
6	-32767	SYSTEM WDOG	2108	HXB	0	0	0	0	0	0	0	0.00%	0	0	1			
7	-32767	SYSTEM APW	2748	HXB	0	0	0	0	0	0	0	0.00%	0	0	1			
8	-32767	SYSTEM APW	1720	HXB	0	0	0	0	0	0	0	0.00%	0	0	1			
9	-32767	DB_Agent OEMA	3164	OXB	0	0	0	0	0	0	0	0.00%	0	0	0			
10	-32767	SYSTEM APW	3172	HXB	0	0	0	0	0	0	0	0.00%	0	0	1			
11	0	protop	2156	PT3	0	0	0	0	0	0	0	0.00%	0	0	2			

Press space bar to continue.

dbanalys first...

"control-r" to generate reports



ProTop - Reports

Within ProTop: Control-R to generate reports...

```
proenv> dir d:\protop\rpt
```



ProTop – sports2000.dict.rpt

Table	Indexes	Field	Order	Type	Extent	Format
Benefits	U	EmpNum	10	integer	0	zzzzzzzzz9
		HealthCare	20	character	0	x(8)
		LifeInsurance	30	integer	0	\$>>, >>>, >>>
		Pension401K	40	integer	0	>>, >>9
		StockPurchase	50	integer	0	>>, >>9
		MedicalSpending	60	integer	0	>>, >>9
		DependentCare	70	integer	0	>>, >>9
BillTo	U	CustNum	10	integer	0	>>>>9
	U	BillToID	20	integer	0	zzzzzzzzz9
		Name	30	character	0	x(30)
		Address	40	character	0	x(35)
		Address2	50	character	0	x(35)
		City	60	character	0	x(25)
		State	70	character	0	x(20)
		PostalCode	80	character	0	x(10)
		Contact	90	character	0	x(30)



ProTop – sports2000.tbl.rpt

Table Summary Report for sports2000 d:\bigsports\sports2000

Table Nam	Size	Records	Reads/sec	Upd/sec	Avg Rec	Suggested		
=====	=====	=====	=====	=====	=====	RPB	Ord	
Customer	32610714	201120	0	0	162.15	64	64	[Data]
Item	8192	69	0	0	118.72	64	64	[Data]
Employee	6349	55	0	0	115.43	64	64	[Index]
RefCall	2458	13	0	0	189.05	64	64	[Data]
Salesrep	1331	9	0	0	147.91	64	64	[Data]
Supplier	1126	10	0	0	112.64	64	64	[Data]
Feedback	1024	8	0	0	128.00	64	64	[Data]
BillTo	221	2	0	0	110.50	64	64	[Lobs]
OrderLine	115553075	2619963	0	0	44.10	128	128	[Data]
Order	67004006	727285	0	0	92.13	128	128	[Data]
InventoryTrans	3686	75	0	0	49.15	128	128	[Data]
Family	3174	72	0	0	44.09	128	128	[Data]
Warehouse	1331	14	0	0	95.09	128	128	[Data]
TimeSheet	1126	25	0	0	45.06	128	128	[Data]



ProTop – sports2000.area.rpt

Existing Storage Area Summary for sports2000 d:\bigsports\sports2000

Area Name	Data Size	Num Recs	Avg Rec	Blk	CSZ	RPB	Frag	Scat	%MaxRecs	Tbls	Idxs	LOBs
=====	=====	=====	=====	===	===	===	=====	=====	=====	=====	=====	=====
Data	215522683	3557221	60.59	8	8	32	0.00%	1.00	0.17%	24	3	0

Table Name

Benefits	848	21	40.38			256*	0.00%	1.00	0.00%			
Bin	26829	770	34.84			256*	0.00%	1.00	0.00%			
Country	762	15	50.80			128*	0.00%	1.00	0.00%			
Customer	32610714	201120	162.15			64*	0.00%	1.00	0.01%			
Department	211	7	30.14			256*	0.00%	1.00	0.00%			
Family	3174	72	44.09			128*	0.00%	1.00	0.00%			
Feedback	1024	8	128.00			64*	0.00%	1.00	0.00%			
InventoryTrans	3686	75	49.15			128*	0.00%	1.00	0.00%			
Invoice	5632	147	38.31			256*	0.00%	1.00	0.00%			
Item	8192	69	118.72			64*	0.00%	1.00	0.00%			

. . .



ProTop – sports2000.idxcompact.rpt

Index Compaction Summary for sports2000 d:\bigsports\sports2000

Table.Index Name	Blocks	Util%
-----	-----	-----
OrderLine.itemnum	1164	51.20%



Developer Support



Lab: Build a Fresh Database



- Structure File
- Prostrct create, prodb etc...
- Load .df



Lab: Working with .df Files

- Dump .df
- Create incremental .df
- Load .df
 - Online
- Idxactivate

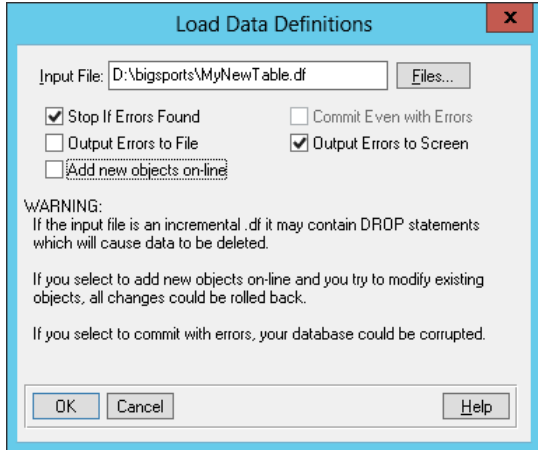
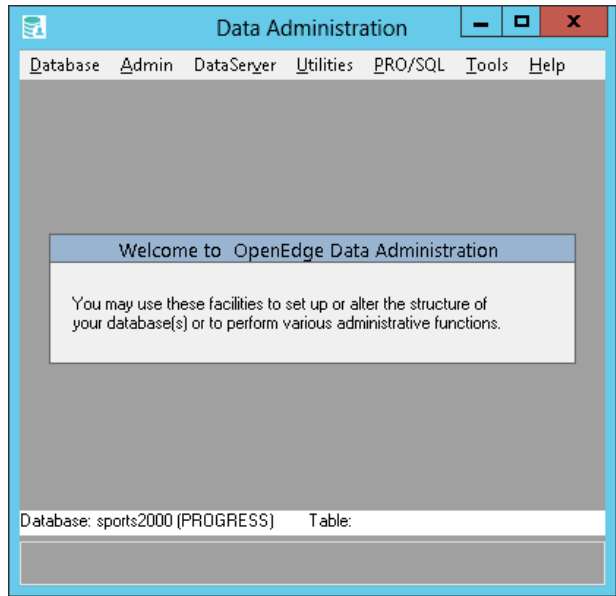


Lab: Load a .df



```
MyNewTable.df x
1  ADD TABLE "MyNewTable"
2    AREA "Schema Area"
3    DUMP-NAME "mynewtable"
4
5  ADD FIELD "MyNewKey" OF "MyNewTable" AS int64
6    FORMAT "->, >>>, >>9"
7    INITIAL "0"
8    POSITION 2
9    MAX-WIDTH 8
10   ORDER 10
11
12  ADD FIELD "MyNewCode" OF "MyNewTable" AS character
13    FORMAT "x(8)"
14    INITIAL ""
15    POSITION 3
16    MAX-WIDTH 16
17    ORDER 20
18
19  ADD FIELD "MyNewDescription" OF "MyNewTable" AS character
20    FORMAT "x(50)"
21    INITIAL ""
22    POSITION 4
23    MAX-WIDTH 100
24    ORDER 30
25
26  .
27  PSC
28  cpstream=ISO8859-1
29  .
30  0000000471
```

```
proenv>prowin sports2000 -1
```





Lab: Make an incremental .df



OOOPS! I gave you the wrong file! Here's a full .df from my system!

```
d:\tempdb>procopy %DLC%\empty8 sports2000
OpenEdge Release 11.7 as of Mon Mar 27 10:21:54 EDT 2017
Procopcy session begin for Administrator on CON:.. (451)

Formatting extents:
size      area name      path name
  4      Primary Recovery Area D:\tempdb\sports2000.b1 00:00:00
 16      Schema Area D:\tempdb\sports2000.d1 00:00:00
 16      Data D:\tempdb\sports2000_7.d1 00:00:00
 64      Index D:\tempdb\sports2000_8.d1 00:00:00
 64      Lobs D:\tempdb\sports2000_9.d1 00:00:00

Copying P:\Progress\oe117\empty8 to sports2000... (6715)

Start writing data blocks. (6718)
12:08:39 10 Percent complete.
12:08:39 20 Percent complete.
12:08:39 30 Percent complete.
12:08:39 40 Percent complete.
12:08:39 50 Percent complete.
12:08:39 60 Percent complete.
12:08:39 70 Percent complete.
12:08:39 80 Percent complete.
12:08:39 90 Percent complete.
12:08:39 100 Percent complete.
385 blocks copied. (6720)

...Copy complete. (6722)
Database copied from P:\Progress\oe117\empty8. (1365)
Procopcy session end. (334)
```

Connect Database dialog box showing Physical Name: d:\bigsports\sports2000, Logical Name: Production, Database Type: PROGRESS, and Network: (None). The Multiple Users checkbox is checked.

Select Working Database dialog box showing a table with columns: Logical Name, Physical Name, Type, Schema Holder, and Conn. The table contains two rows: temp (sports2000, PROGRESS, temp, yes) and Production (D:\bigsports\sports2000, PROGRESS, Production, yes).

Create Incremental Definition dialog box showing a text area with instructions: "This procedure compares the data definitions stored in the database you choose with the schema of the current database. This produces a new definition file with all new, changed and deleted data definitions." Below the text area is a list box containing "Production".

Dump Incremental Definitions dialog box showing Output File: D:\tempdb\delta.df and Code Page: ISO8859-1.

```
d:\tempdb>prowin sports2000 -ld temp -1
```

Load Data Definitions dialog box showing Input File: D:\tempdb\MyNewFull.df. The Stop If Errors Found checkbox is checked. The Output Errors to Screen checkbox is checked. A warning message is displayed: "WARNING: If the input file is an incremental .df it may contain DROP statements which will cause data to be deleted. If you select to add new objects on-line and you try to modify existing objects, all changes could be rolled back. If you select to commit with errors, your database could be corrupted."



Lab: Make an incremental .df



```
UPDATE FIELD "MyNewKey" OF "MyNewTable"  
  LABEL "KeyField"  
  
UPDATE FIELD "MyNewCode" OF "MyNewTable"  
  FORMAT "x(10)"  
  
ADD FIELD "MyMissingData" OF "MyNewTable" AS character  
  FORMAT "x(25)"  
  POSITION 5  
  INITIAL ""  
  ORDER 40  
  MAX-WIDTH 50  
  
ADD INDEX "MyKeyIdx" ON "MyNewTable"  
  AREA "Schema Area"  
  INDEX-FIELD "MyNewKey" ASCENDING  
  
UPDATE PRIMARY INDEX "MyKeyIdx" ON "MyNewTable"  
  
.PSC  
cpstream=ISO8859-1  
  
.0000000409
```



Lab: Add Schema Object Online



```
ADD FIELD "MyStupidField" OF "MyNewTable" AS character
  FORMAT "x(50)"
  INITIAL ""
  POSITION 5
  MAX-WIDTH 100
  ORDER 50
.
PSC
cpstream=ISO8859-1
.
0000062676
```

Load Data Definitions [X]

Input File:

Stop If Errors Found Commit Even with Errors
 Output Errors to File Output Errors to Screen
 Add new objects on-line

WARNING:
If the input file is an incremental .df it may contain DROP statements which will cause data to be deleted.

If you select to add new objects on-line and you try to modify existing objects, all changes could be rolled back.

If you select to commit with errors, your database could be corrupted.



Thank You!