

OmniPayments

HP NonStop X First User Experience

Yash Kapadia, CEO
Yash@OmniPayments.com



Reasons for upgrade

- Infiniband – Our Big Data and Dashboards run on Linux
- Performance improvements
- Critical for our OmniCloudX offering

First impressions - its beautiful



The back



Surprises !!

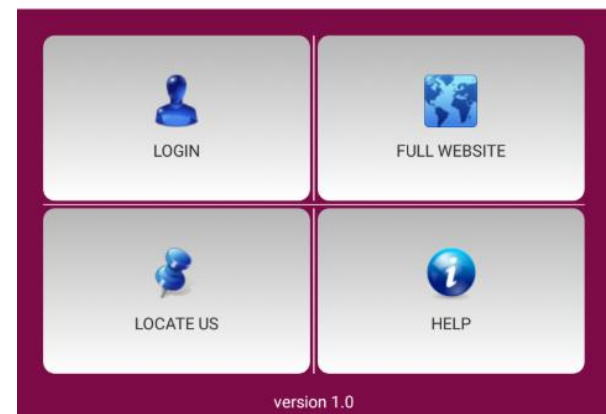
- TUXEDO is not supported !! HP had been talking about this for many years but we were hopeful
- Performance is fantastic

Project Scope - OmniPayments Suite



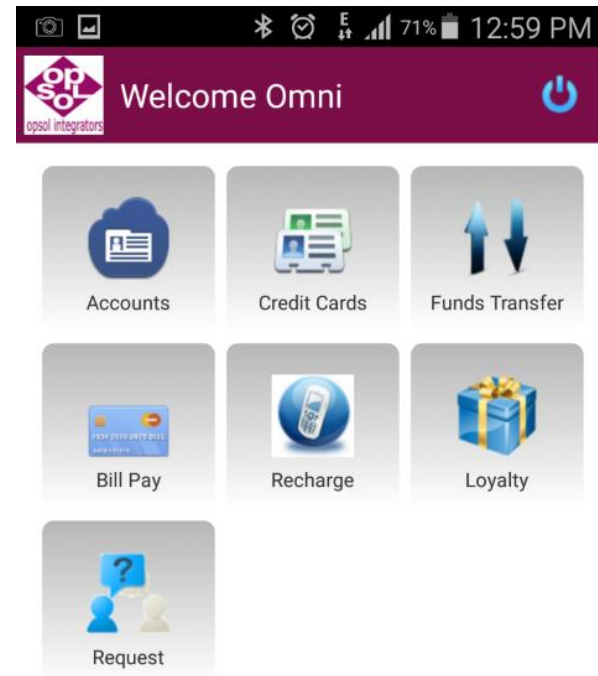
OmniPayments Mobile app

- Connects using SOA
- Full SSL encryption
- Integrated with Google Maps



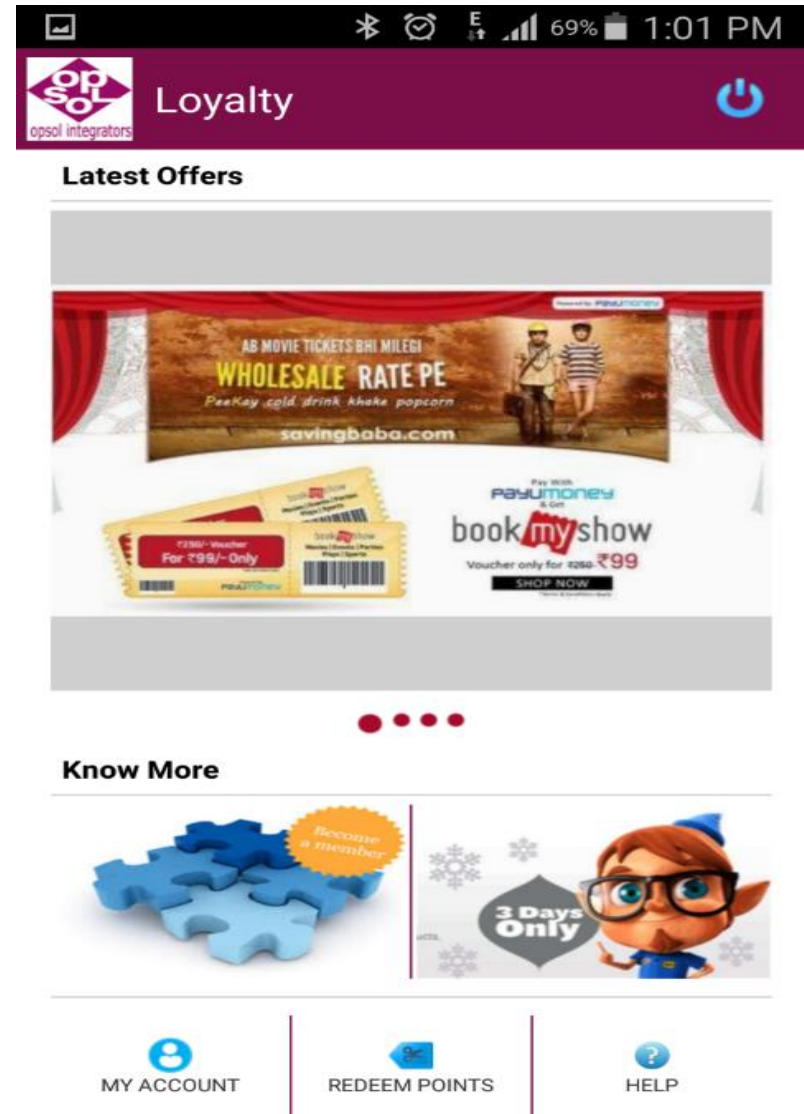
OmniPayments Services

- Various supported options are displayed
- Accounts – Displays the account details of the customer
- Credit Cards – Displays the credit card details of the customer
- Funds Transfer – Provides fund transfer facility to already registered Payees
- Bill Pay – Provides facility to pay your bills such as electricity, water
- Recharge – Provides facility to recharge a cell phone
- Loyalty – Provides an interface for Loyalty cards and features
- Request – Provides facility to raise requests such as Block Credit Card, Re-issue statement, Stop Check



OmniPayments Loyalty Module

- If a customer is enrolled for Loyalty scheme, then this feature is enabled.
- Click on My Account to log into the Loyalty app.



Library Structure

- OmniPayments has created libraries to support its infrastructure. These libraries need to be linked in TD.
- Below are some important libraries used in TD infrastructure.

Header Files

od_intf.h
authOds.h
authRule.h
authsor.h
authCommon.h
sendMail.h
adapt.h
mime.h
srvcomn.h
opsgenipc.h
iso8583.h
utils.h
feesCommon.h
currencyCommon.h
extractOps.h
feecalc.h

....

Objs

biztd.o
od_intf.o
omnirouter.o
genipc.o
bsMsgHandler.o
lic.o

....

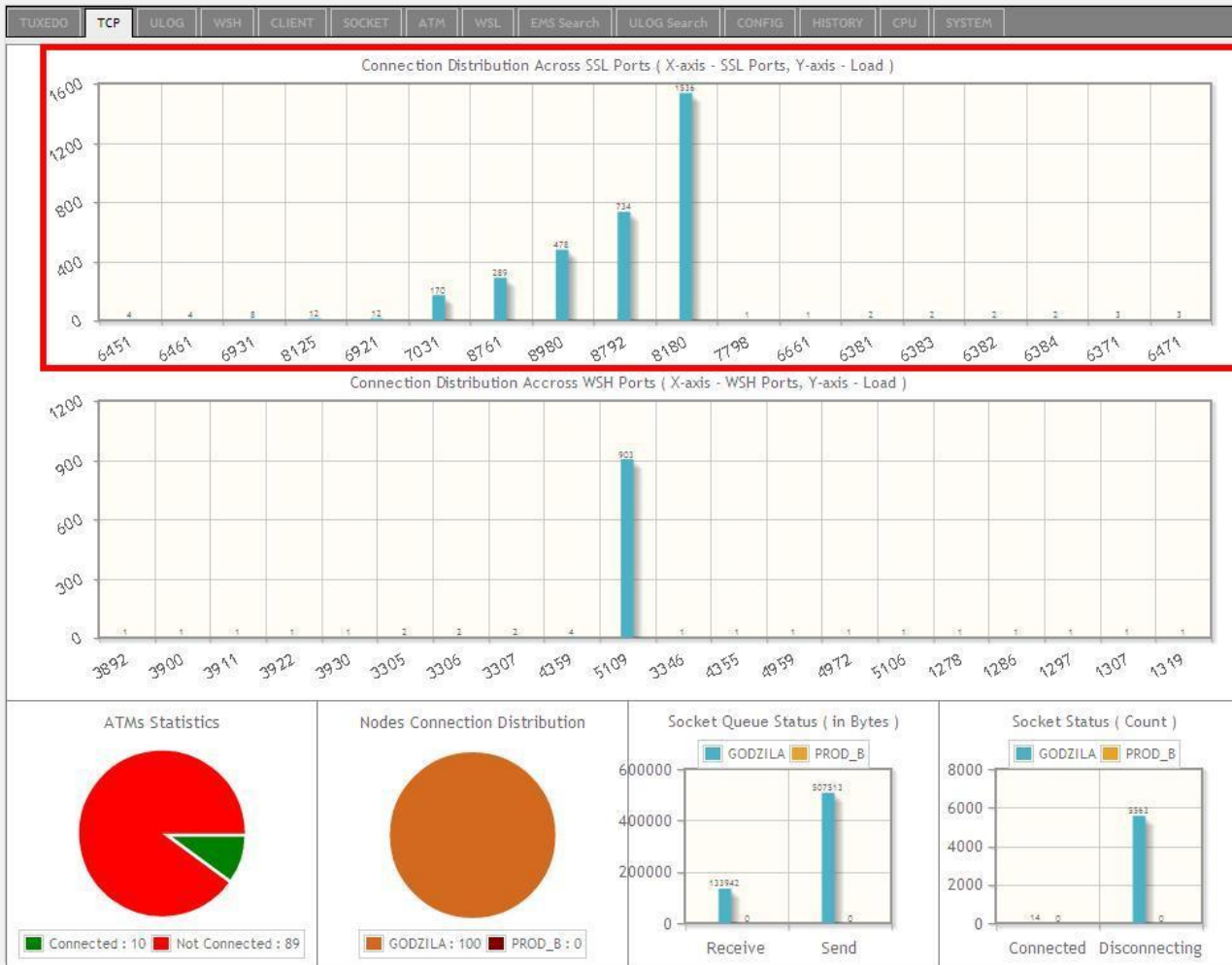
Libraries

libauth.a liblogproc.a
libauthods.a libmime.a
libbsdb.a libmt.a
libcrypto.a libocintf.a
libcurrency.a libocomni.a
libdash.a libocsha.a
 libodsapilite.a

....

....

OmniDash TCPIP Dashboard



NOTIFICATION

Data queueing up on socket from [99.115.135.202:4359] to [99.115.135.202:3347]

NOTIFICATION

Data queueing up on socket from [99.115.135.202:4359] to [99.115.135.202:3346]

NOTIFICATION

Data queueing up on socket from [99.115.135.202:4359] to [99.115.135.202:3334]

ERROR

Socket down from [99.115.135.202:3620] to [114.143.110.50:4448]

ERROR

Socket down from [99.115.135.202:3619] to [114.143.110.50:4448]

ERROR

Socket down from [99.115.135.202:3618] to [114.143.110.50:4448]

ERROR

Socket down from [99.115.135.202:3617] to [114.143.110.50:4448]

Steps to build TD user exits

- User needs to use OmniPayments infrastructure libraries in TD compilation.
- Copy all required libraries, objects, header files at common location. e.g.
 1. /build/common/libs
 2. /build/common/objs
 3. /build/common/include
- Create build location and Copy source files, header files, makefile, defines.makefile.
- Point common location and bind required libraries in TD executable compilation
- Create TD executable using below command
make all

Linker Changes

eld is the TNS/E linker.

xld is the TNS/X linker.

To specify linker options to c89 you should replace all instances of -Weld in your makefiles with -Wxld.

Blades:

```
c89flags = -Wextensions -Wsystype=oss -Weld="-set floattype  
Tandem_FLOAT" -Wsaveabend -Wallow_cplusplus_comments -  
Wverbose -Whighpin=on -Wnowarn=11213 -Weld="-  
allow_duplicate_procs"
```

X:

```
c89flags = -Wextensions -Wsystype=oss -Wxld="-set floattype  
Tandem_FLOAT" -Wsaveabend -Wallow_cplusplus_comments -  
Wverbose -Whighpin=on -Wnowarn=11213 -Wxld="-  
allow_duplicate_procs"
```


Library changes

Old TNS/E library names like zcpp2dll, zppcdll

New Libraries have names starting with 'x' instead of 'z'

Blades:

SYSSRLS = -l zcpp2dll -l zppcdll -l c -l C

X:

SYSSRLS = -l xcpp2dll -l xppcdll -l c -l C

NSDEE Project compilation steps

```
$SYSTEM SYS00 57> fi xcp.dll

$SYSTEM. SYS00

CODE          EOF    LAST MODIFIED  OWNER  RWP  PExt  SExt
XCPPCDLL  O    500      530232  20JAN2015  15:50  255,255  NUNU    28    518
$SYSTEM SYS00 58> fi xcp2.dll

$SYSTEM. SYS00

CODE          EOF    LAST MODIFIED  OWNER  RWP  PExt  SExt
XCPP2DLL  O    500      3581328  20JAN2015  15:49  255,255  NUNU    28    518
$SYSTEM SYS00 59> fi *dll

$SYSTEM. SYS00

CODE          EOF    LAST MODIFIED  OWNER  RWP  PExt  SExt
INITDLL   O    500      169228080  20JAN2015  15:42  255,255  NUNU    28    518
LILDLL    O    500      148544    20JAN2015  15:42  255,255  NUNU    28    518
MCPDLL    O    500      2944592    20JAN2015  15:42  255,255  NUNU    28    518
WCLIDLL   O    500      8934680    20JAN2015  15:50  255,255  NUNU    28    518
WCPP3DLL  O    500      10501560   20JAN2015  15:49  255,255  NUNU    28    518
WCPPCDLL  O    500      525896     20JAN2015  15:50  255,255  NUNU    28    518
WCREDLL   O    500      1584208    20JAN2015  15:50  255,255  NUNU    28    518
24 19 | VT320 | 80 COL | 7 BIT MODE | REPLACE
```

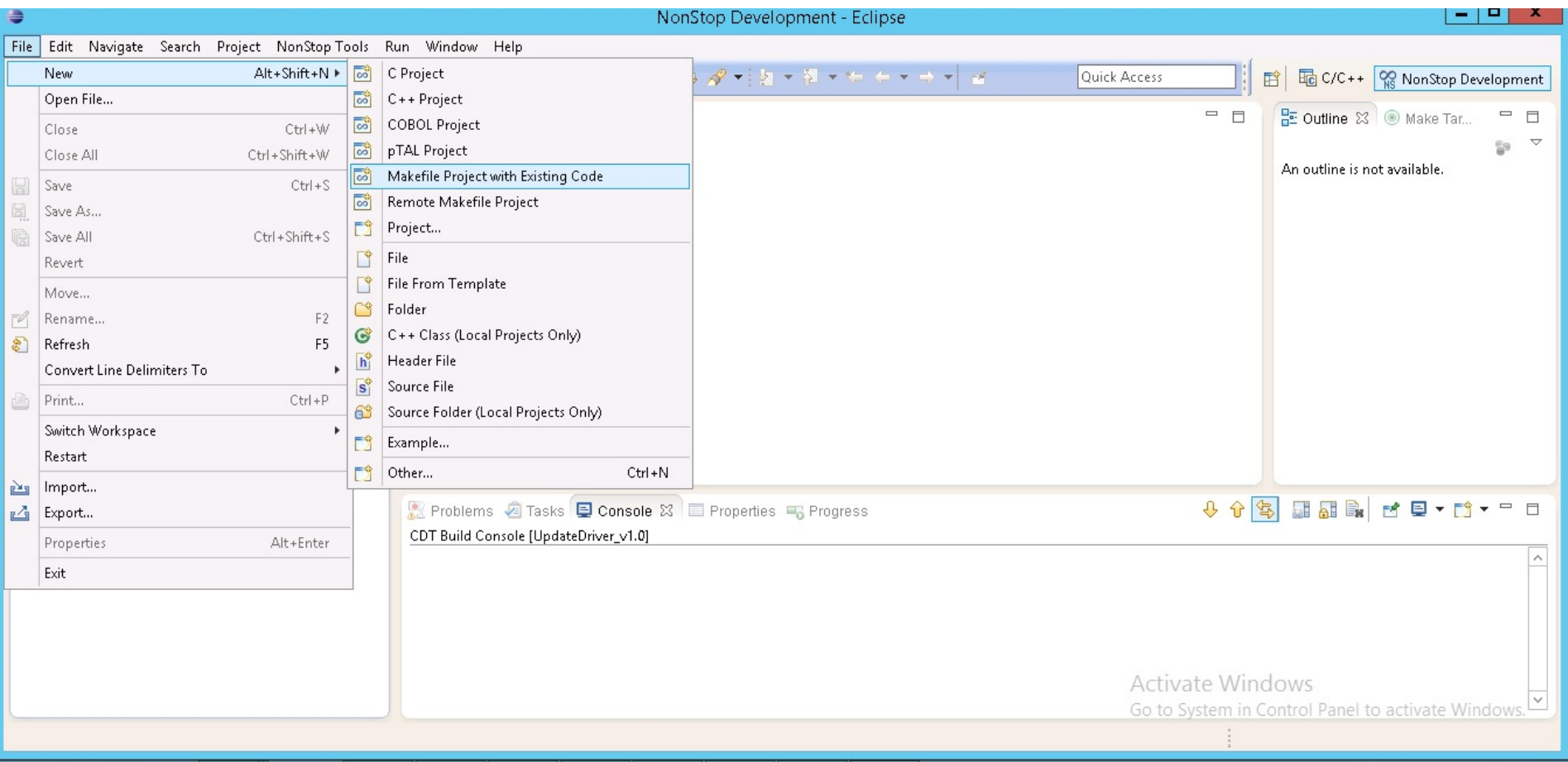
Difference in H/J series and L series

	H- and J-Series DLL Name		L-Series DLL Name		Shared DLL Name
Library	NSK ¹	PC	NSK ¹	PC	Abbreviated Form
COBOL run-time library	ZCOBDLL	libcob.so	XCOBDLL	libcobx.so	-l cob
COBOL arithmetic	Not available: this library is not used on TNS/E systems.	Not available: this library is not used on TNS/E systems.	XCOBADLL	libcobax.so	-l cobra ²
Common Run-Time Environment (CRE)	ZCREDLL (32-bit) YCREDLL (64-bit)	libcre.so (32-bit) libcrey.so (64-bit)	XCREDLL (32-bit) WCREDLL (64-bit)	libcrex.so(32-bit) libcrew.so(64-bit)	-l cre
C run-time library	ZCRTDLL (32-bit) YCRTDLL (64-bit)	libcrt.so (32-bit) libcrty.so (64-bit)	XCRTDLL (32-bit) WCRTDLL (64-bit)	libcrtx.so libcrtw.so	-l crt
C++ VERSION2 standard run-time library	ZCPPCDLL ZCPP2DLL	libcppc.so libcpp2.so	XCPPCDLL XCPP2DLL	libcppcx.so libcpp2x.so	-l cppc -l cpp2
C++ VERSION3 standard run-time library	ZCPPCDLL (32-bit) ZCPP3DLL (32-bit) YCPPCDLL (64-bit) YCPP3DLL (64-bit)	libcppc.so (32-bit) libcpp3.so (32-bit) libcppcy.so (64-bit) libcpp3y.so (64-bit)	XCPPCDLL (32-bit) XCPP3DLL (32-bit) WCPPCDLL (64-bit) WCPP3DLL (64-bit)	libcppcx.so (32-bit) libcpp3x.so (32-bit) libcppcw.so (64-bit) libcpp3w.so (64-bit)	-l cppc -l cpp3

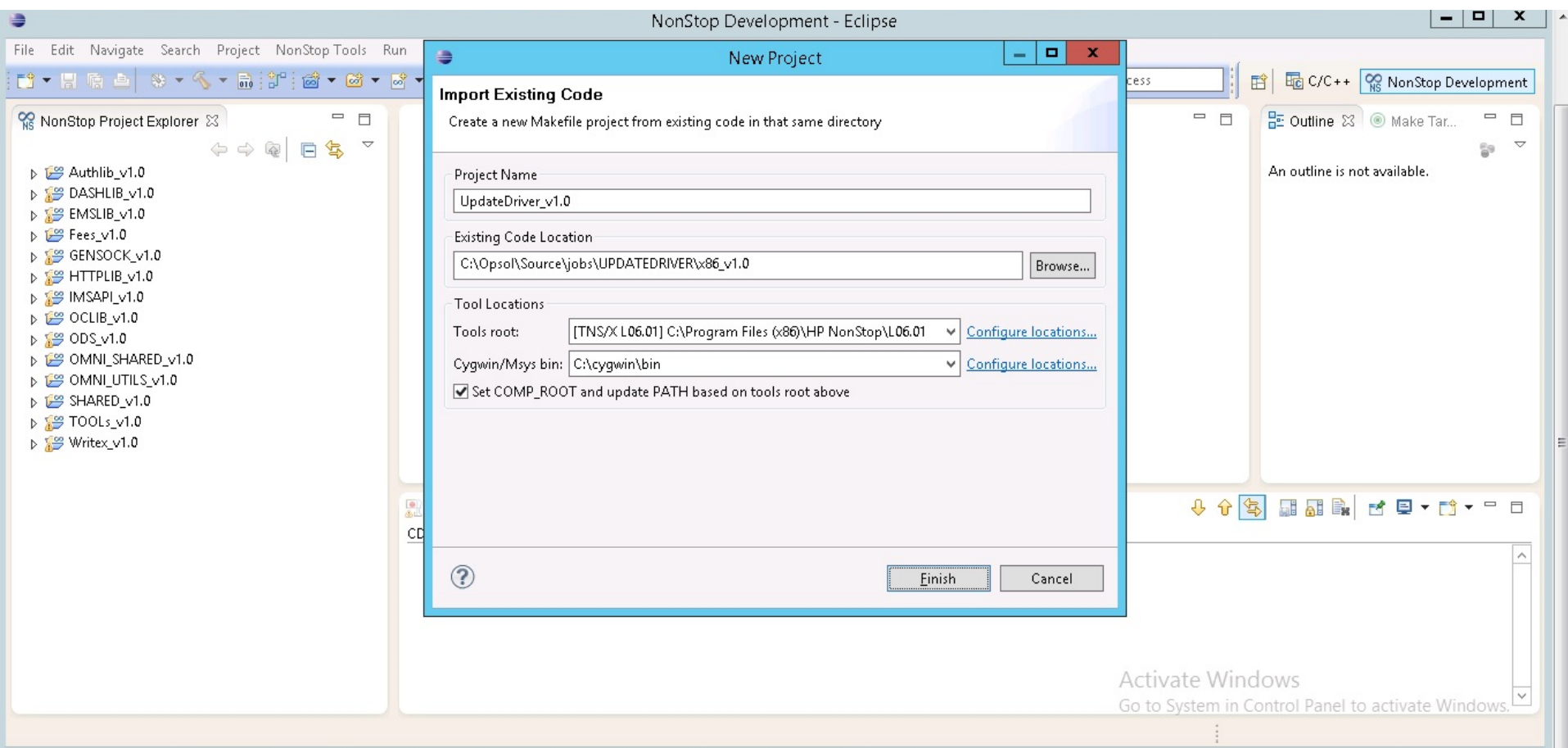
C89 and C99 flags changed

Flag	Reason for Change	Action Required
-Weld	L-series has new linker when the target is TNS/X.	Replace with -Wxld if the target is TNS/X.
-Weld_obey (the corresponding pragma is LINKFILE, which is unchanged but submits commands to xld instead of eld)	L-series has new linker when the target is TNS/X.	Replace with -Wxld_obey if the target is TNS/X.
-Wglobalized	L-series has a new default for TNS/X; -Wglobalized is always turned on.	No action required; -Wglobalized is ignored.
-Wtarget	New supported value: -Wtarget=tns/x to generate x86 code. No longer supported value: -Wtarget=tns/r because TNS/R is not supported on L-series.	No action required. Default target platform is TNS/X.

NSDEE Project compilation steps



Notice the X Directory locations



Build in progress

The screenshot shows the Eclipse IDE interface with the title bar "NonStop Development - Eclipse". The menu bar includes File, Edit, Navigate, Search, Project, NonStop Tools, Run, Window, and Help. The toolbar contains various icons for file operations and development tools. The left sidebar shows the "NonStop Project Explorer" with a tree view of projects. The "UpdateDriver_v1.0" project is selected, showing its contents: Includes, baselineensc.c, insertensc.c, macroensc.c, manualensc.c, ptlfc.c, updateensc.c, utility.c, makefile, makefile.bak, and Writex_v1.0. The right sidebar shows the "Outline" view with the message "An outline is not available." and a "Make Tar..." button. A "Build Project" dialog box is open in the center, displaying "Building project..." with a progress bar and the text "Invoking Command: make clean". There is an unchecked checkbox for "Always run in background" and buttons for "Run in Background", "Cancel", and "Details >>". The bottom of the IDE shows the "Console" view with the "CDT Build Console [UpdateDriver_v1.0]" output. The console text includes build commands, a cygwin warning about MS-DOS style paths, and a URL for more details. The status bar at the bottom indicates "Build Project: (19%)" with a progress bar.

NonStop Development - Eclipse

File Edit Navigate Search Project NonStop Tools Run Window Help

Quick Access

C/C++ NonStop Development

Outline Make Tar...

An outline is not available.

Build Project

Building project...

Invoking Command: make clean

☐ Always run in background

Run in Background Cancel Details >>

Problems Tasks Console Properties Progress

CDT Build Console [UpdateDriver_v1.0]

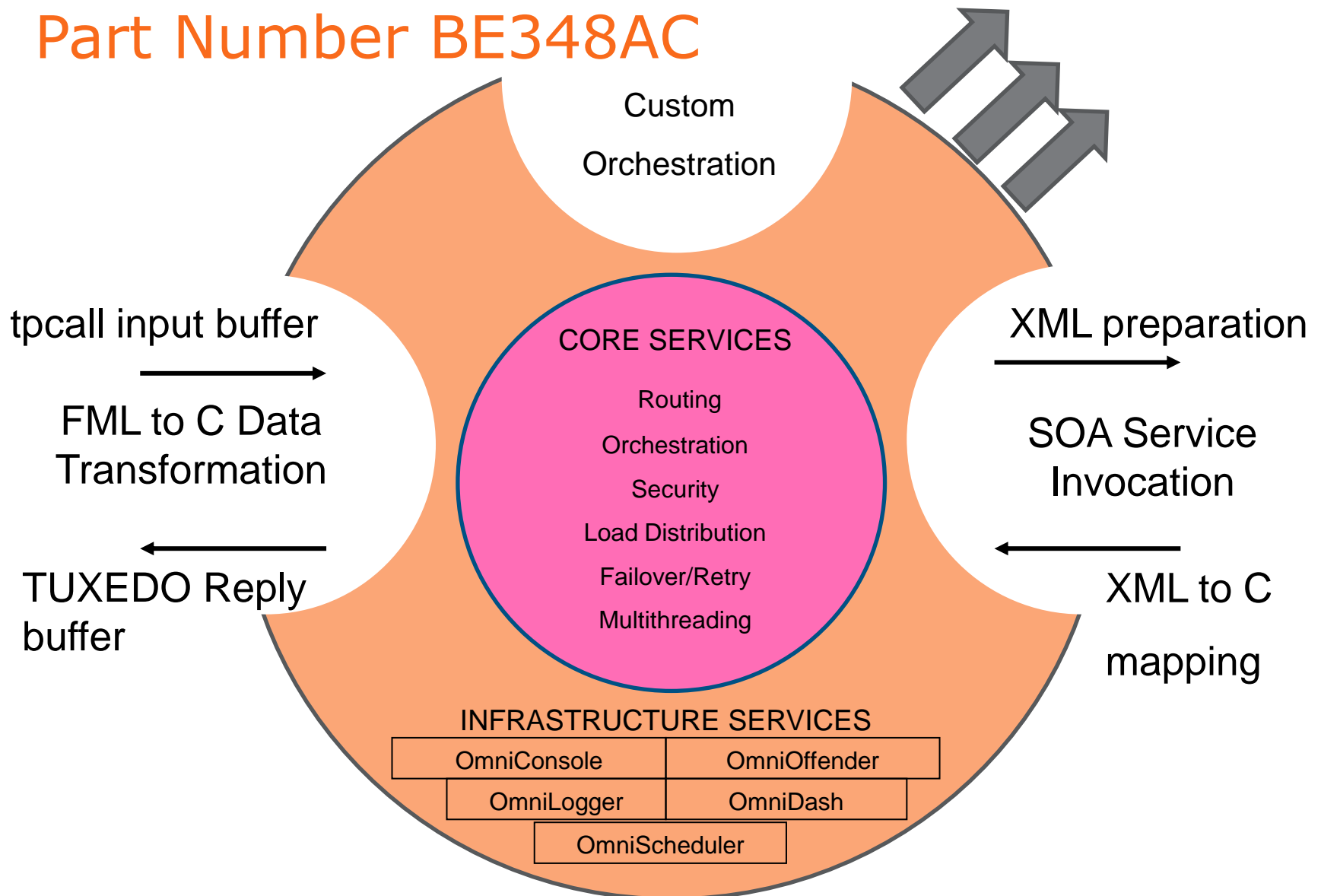
```
-Wnowarn=11213 -D _ALLSERV_ -D _OSS_ -o updateensc.o -c updateensc.c 2>>compile.log 1>&2
cygwin warning:
MS-DOS style path detected: C:\Opsol\Source\jobs\UPDATEDRIVER\x86_v1.0\
Preferred POSIX equivalent is: /cygdrive/c/Opsol/Source/jobs/UPDATEDRIVER/x86_v1.0/
CYGWIN environment variable option "nodosfilewarning" turns off this warning.
Consult the user's guide for more details about POSIX paths:
http://cygwin.com/cygwin-ug-net/using.html#using-pathnames
```

Activate Windows
Go to System in Control Panel to activate Windows.

/UpdateDriver_v1.0

Build Project: (19%)

Tuxedo replacement using HP NONSTOP REAL TIME INFORMATION DIRECTOR SW – Part Number BE348AC



Our observations

- HP Installation team was outstanding
- Very easy migration – takes time – but easy
- TUXEDO not supported – caused us rework – we replaced using HP NONSTOP REAL TIME INFORMATION DIRECTOR SW – Part Number BE348AC
- Performance is fantastic

Next steps

- Test Infiniband for Hybrid configuration
- Upgrade OmniDash using Infiniband
- Upgrade our Big Data using Infiniband
- Run volume tests