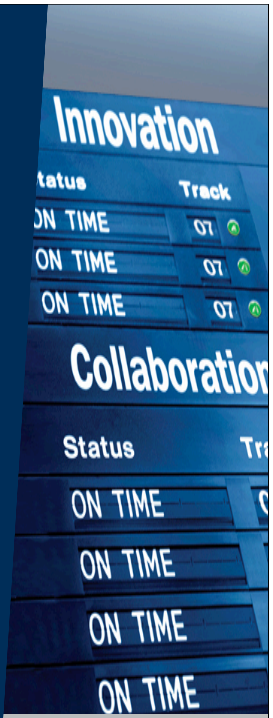


Using DOORS to Update and Configure DOORS Clients

Kevin Murphy

Innovation2007
TELELOGIC USER GROUP CONFERENCE

Telelogic

DOORS Configuration Methodology

- DOORS is configured on a **per-client** basis. There is no server-based configuration control for DOORS clients.
- Windows-based DOORS clients can be configured via a mix of registry information, environment variables and DOORS icons.
- DOORS users may be running DOORS via Citrix clients or local installations.
- DOORS local installations may be customized. Users may be running different versions of DOORS clients. (8.0 vs. 8.1 vs. 8.2)
- There is no centralized, standard way to update DOORS client configuration throughout the enterprise using Telelogic software.

The Problem

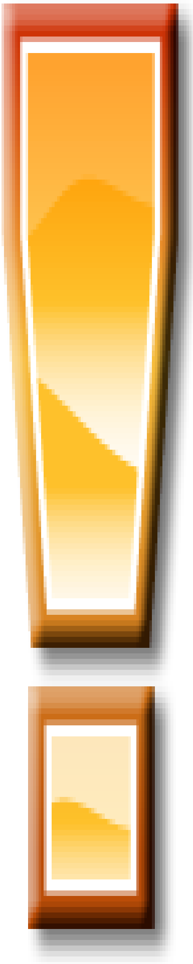
DOORS was not configured properly at the company.

- All users' clients needed to be updated.
- Approximately 150 users.
- There was no standard configuration.
- Users located in many different buildings.
- Remote Citrix users
- Limited IT support

The Consequences

HOME pointed to network drive. Because of this…

- Users could not access DOORS built-in Help.
- DOORS client ran off local drive, but supporting files were on network drive.
- Files on network were not updated when patch was installed!
- Simple functions like Edit>Find would cause a crash.
- Data corruption more likely as network could go down during critical operation.
- Due to lack of configuration standards being followed, not everyone was configured using HOME switch.
- Data corruption errors occurred.



Background

Reasons for this configuration:

- Data Security required specific rights to network share for all DOORS users.
- DXL menus needed to be updated easily
- Legal department required pop-up message upon DOORS login
- DOORS Admins did not involve IT department.
- DOORS Admins were not entirely aware of other options.
- DOORS Admins did not realize or admit that the problems in the database may be caused because of HOME switch pointing to the network.

Constraints

- Over 100 DOORS clients to update in different buildings, sometimes located more than a mile apart
- Limited IT budget/support
- No dedicated DOORS Admin had the time to visit each user's machine
- Custom DOORS installations (D:\ drive, Citrix, Doors 7 directory, Doors 7.1 directory, and maybe even other unknowns)
- HOME needed to be configured for all users to run from their local DOORS installation
- DOORS users cannot be down for a prolonged period of time

Other Information

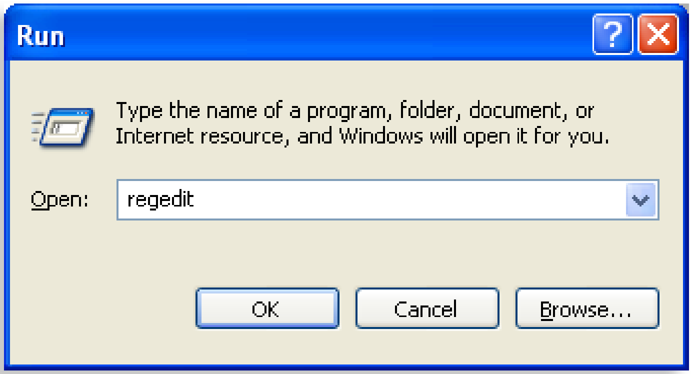
- No UNIX clients in company environment.
- Almost every user had Administrator rights to their Windows PC.

Before discussing the solution, some background information about how Windows works is necessary.

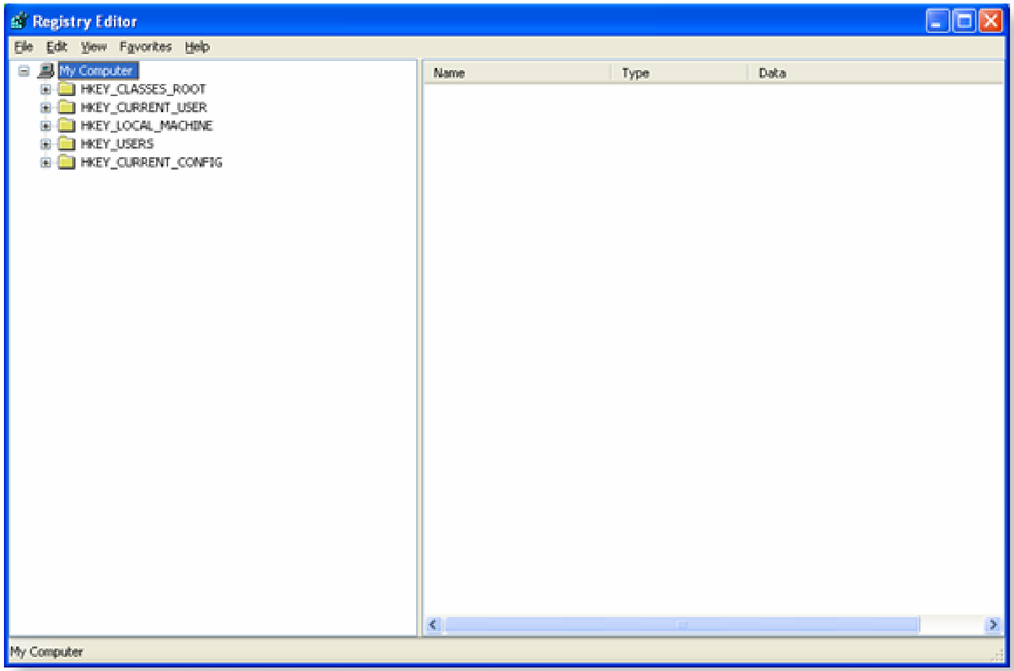
The Registry

In Windows, the registry stores configuration information for the software installed on a system, as well as software configuration details for each user.

To view the registry, click **Start>Run**, and type regedit.

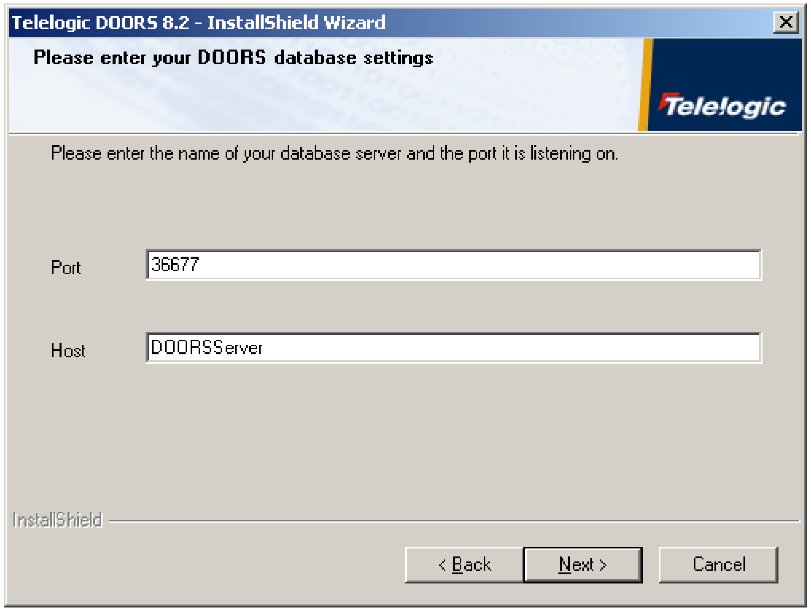

Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
OK
Cancel
Browse...

Open: regedit



The Registry

The installation for DOORS asks for information such as the License Server name and the DOORS Database name.



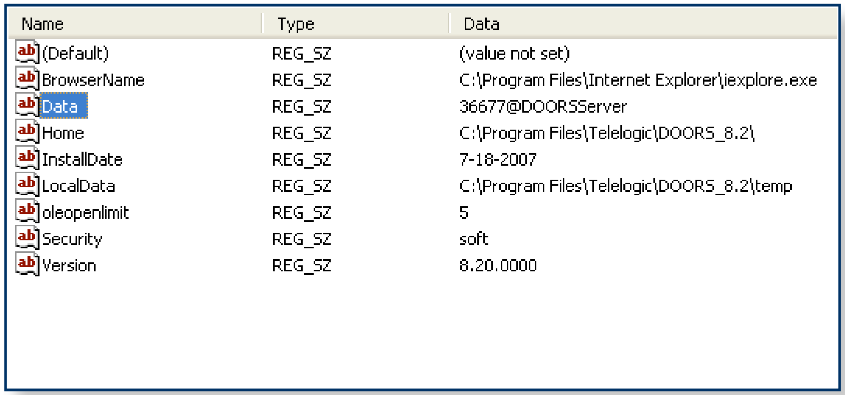
Telelogic DOORS 8.2 - InstallShield Wizard

Please enter your DOORS database settings

Please enter the name of your database server and the port it is listening on.

Port: 36677

Host: DOORSServer



Name	Type	Data
(Default)	REG_SZ	(value not set)
BrowserName	REG_SZ	C:\Program Files\Internet Explorer\iexplore.exe
Data	REG_SZ	36677@DOORSServer
Home	REG_SZ	C:\Program Files\Telelogic\DOORS_8.2\
InstallDate	REG_SZ	7-18-2007
LocalData	REG_SZ	C:\Program Files\Telelogic\DOORS_8.2\temp
oleopenlimit	REG_SZ	5
Security	REG_SZ	soft
Version	REG_SZ	8.20.0000

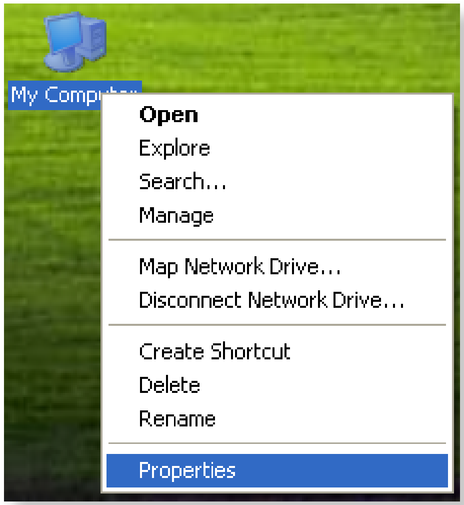
This information is entered into the Windows Registry.

Environment Variables

Environment Variables store information about the user's operating environment. Environment Variables are basically shortcuts to configuration data. They can be used with or in lieu of registry information.

To see Environment Variables on a PC:

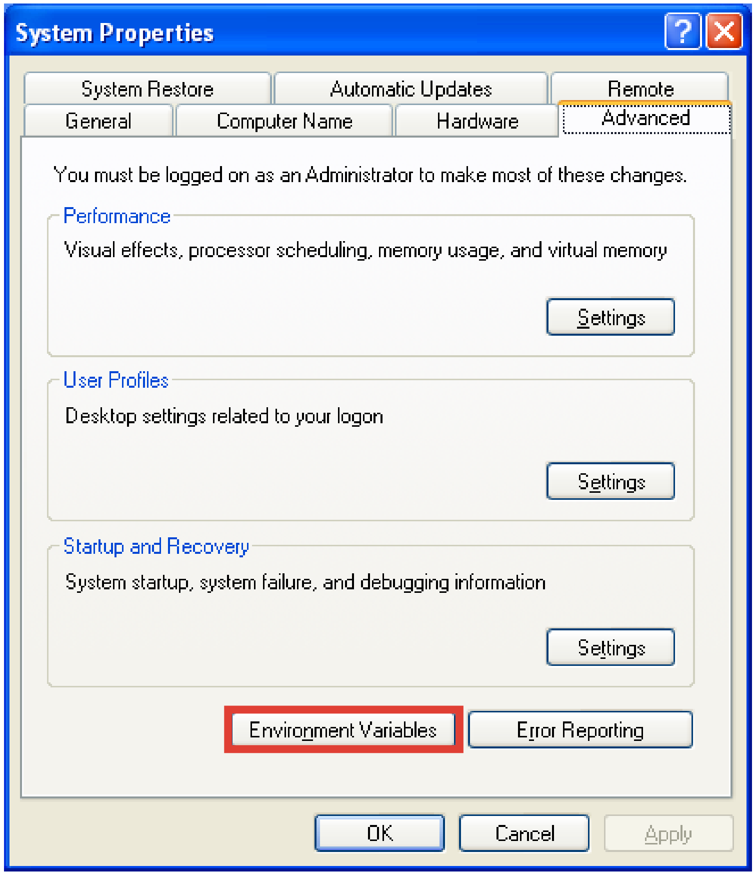
1 . Right-click the **My Computer** icon and choose **Properties**



Environment Variables

2. Click the **Advanced** tab

3. Click the **Environment Variables** button



System Properties

You must be logged on as an Administrator to make most of these changes.

Performance

Visual effects, processor scheduling, memory usage, and virtual memory

User Profiles

Desktop settings related to your logon

Startup and Recovery

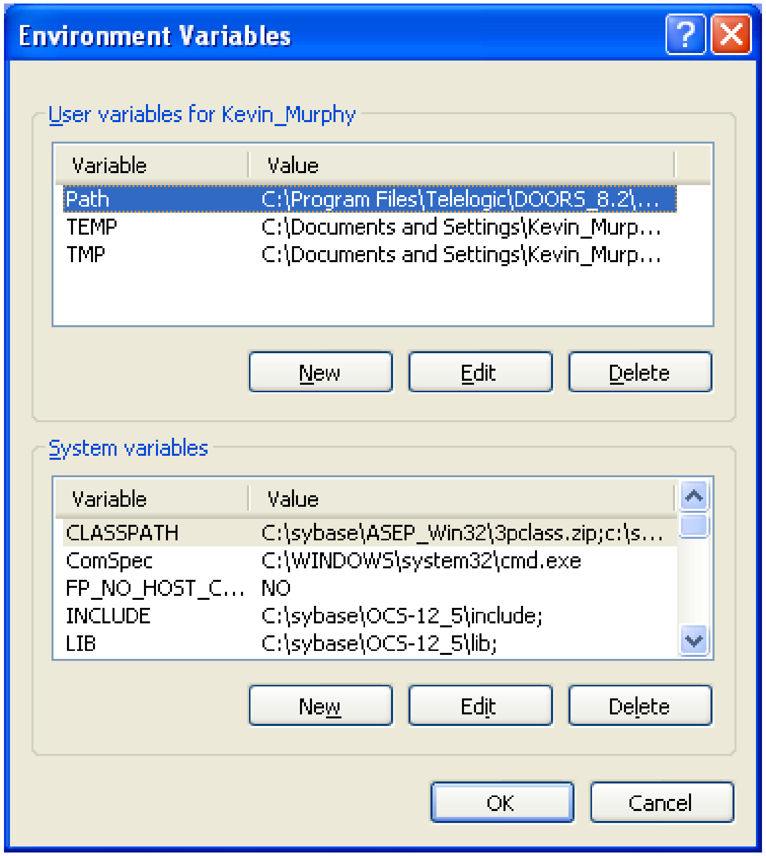
System startup, system failure, and debugging information

Environment Variables

The Environment Variables dialog appears.

Environment Variables can be created and edited here.

Environment Variables can be used on The Command Prompt and read by DXL programs.

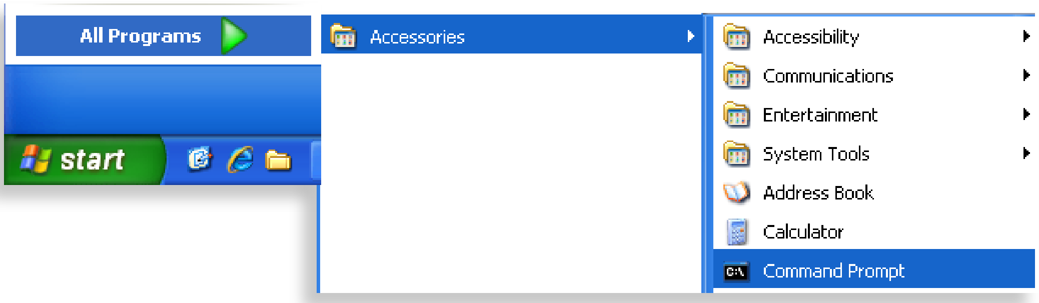


Variable	Value
Path	C:\Program Files\Telelogic\DOORS_8.2\...
TEMP	C:\Documents and Settings\Kevin_Murp...
TMP	C:\Documents and Settings\Kevin_Murp...

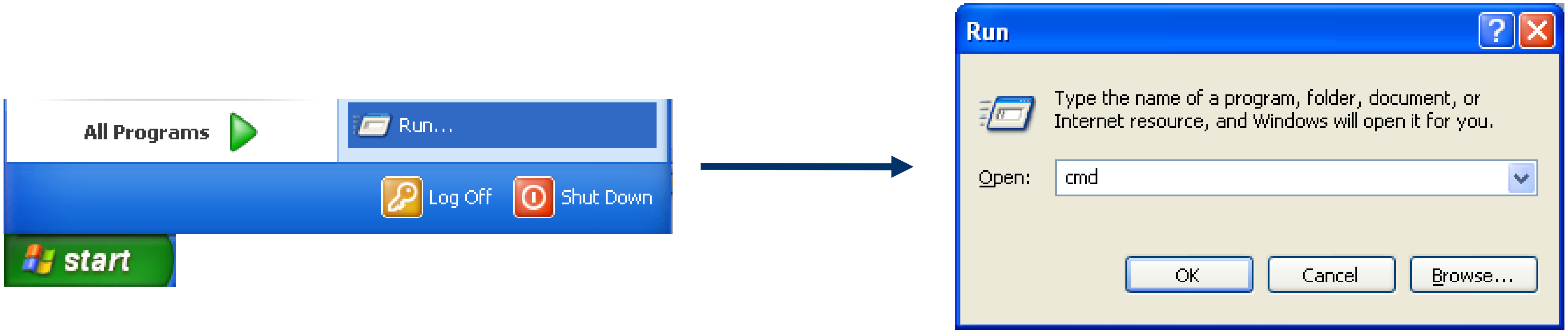
Variable	Value
CLASSPATH	C:\sybase\ASEP_Win32\3pclass.zip;c:\s...
ComSpec	C:\WINDOWS\system32\cmd.exe
FP_NO_HOST_C...	NO
INCLUDE	C:\sybase\OCS-12_5\include;
LIB	C:\sybase\OCS-12_5\lib;

The Command Prompt

Windows Programs are usually launched by double-clicking an icon. They can also be launched by typing a command in The Command Prompt.



OR

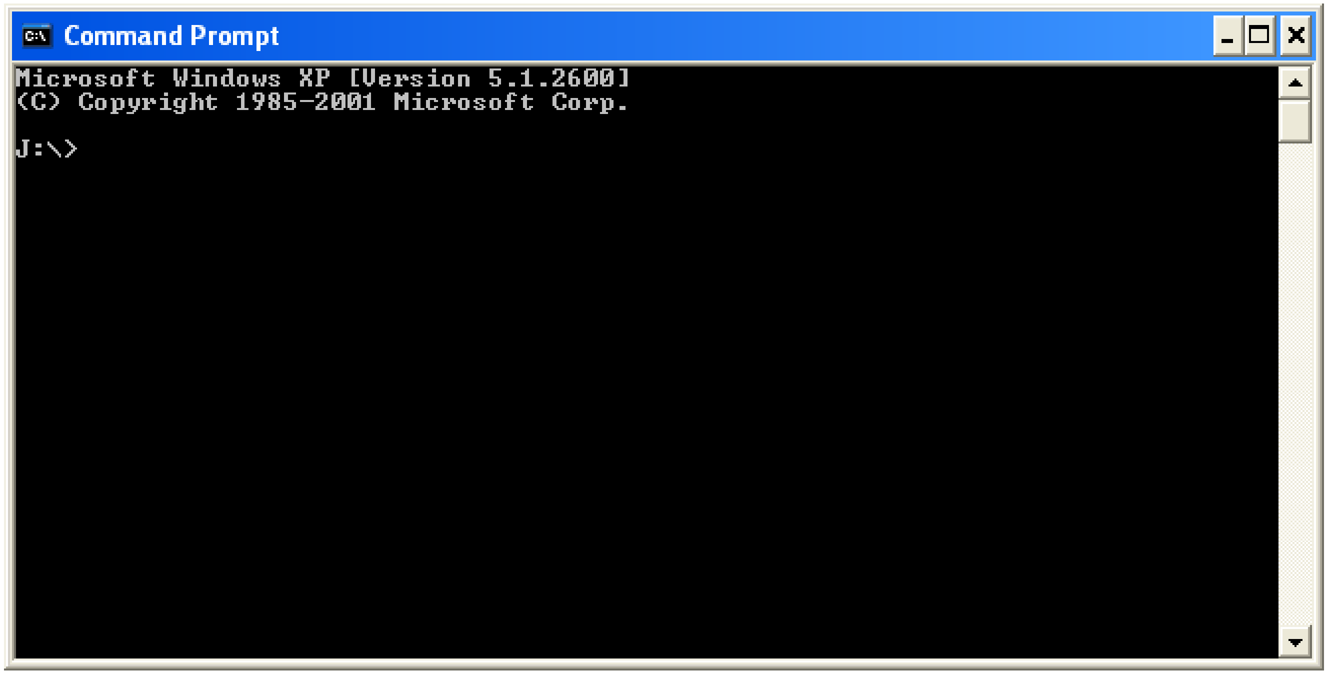


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: cmd

The Command Prompt

The Command Prompt is displayed.

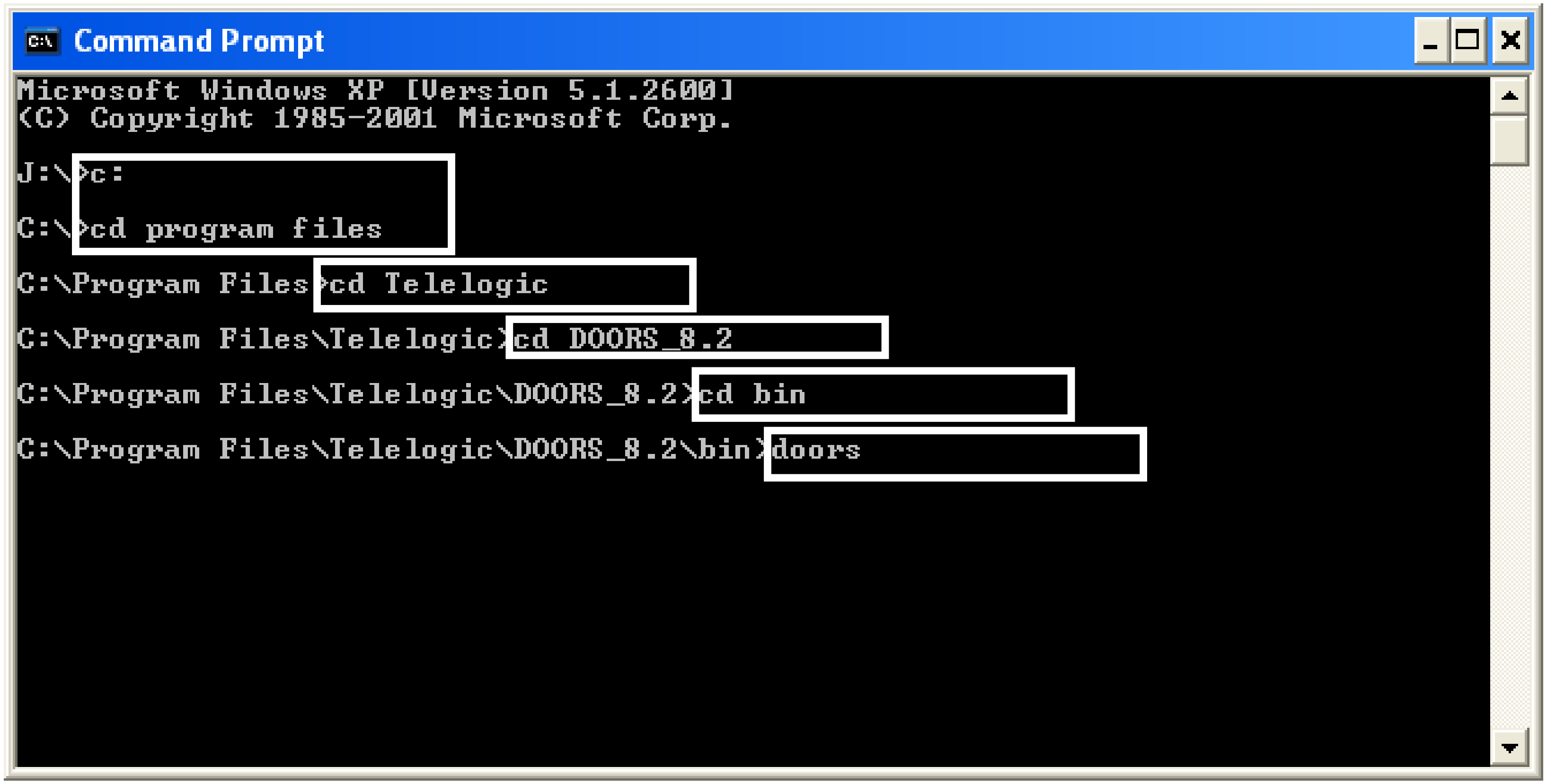


```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

J:\>
```

DOORS, like any other Windows program, can be started from a Command Prompt.

The Command Prompt

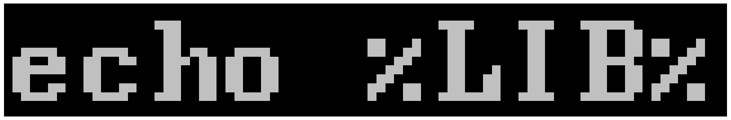
To start DOORS from The Command Prompt:



```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

J:\>c:

C:\>cd program files

C:\Program Files>cd Telelogic

C:\Program Files\Telelogic>cd DOORS_8.2

C:\Program Files\Telelogic\DOORS_8.2>cd bin

C:\Program Files\Telelogic\DOORS_8.2\bin>doors
```

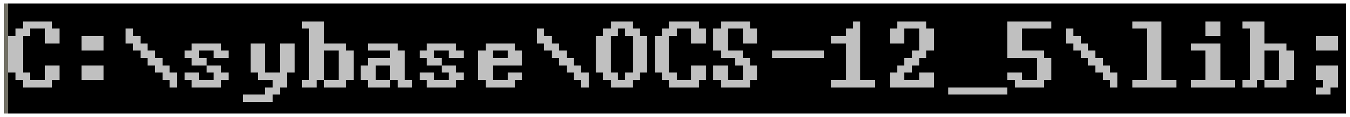
Environment Variables and The Command Prompt

To use an Environment Variable, surround it by % symbols. For instance, typing:



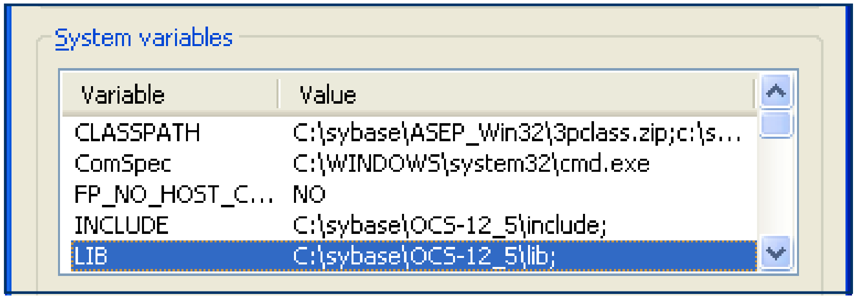
```
echo %LIB%
```

Outputs



```
C:\sybase\OCS-12_5\lib;
```

When LIB is an environment variable as shown below.



System variables

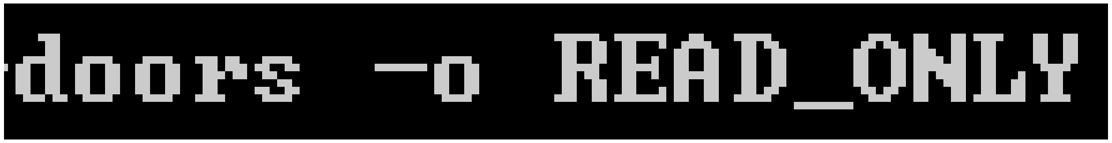
Variable	Value
CLASSPATH	C:\sybase\ASEP_Win32\3pclass.zip;c:\s...
ComSpec	C:\WINDOWS\system32\cmd.exe
FP_NO_HOST_C...	NO
INCLUDE	C:\sybase\OCS-12_5\include;
LIB	C:\sybase\OCS-12_5\lib;

Setting DOORS Configuration via Switches

DOORS can be launched from The Command Prompt with options called *Switches*. Switches change the behavior of DOORS. Switches are in the format:

-<switch> <option>

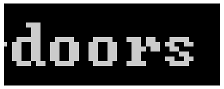
By default, when a module is double-clicked in the DOORS explorer, the module is opened in Exclusive Edit mode.



```
doors -o READ_ONLY
```

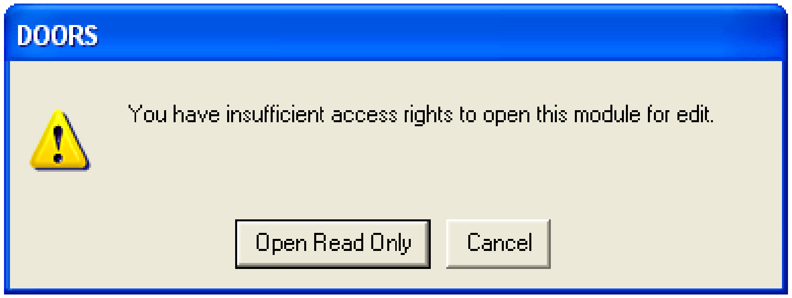
Setting DOORS Configuration via Switches

By default, if a user with only R access double-clicks a module without –o being READ_ONLY, they get an error.



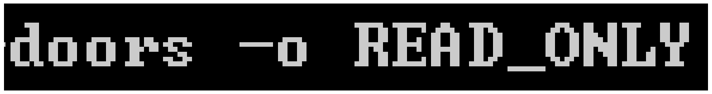
```
doors
```

Double-click



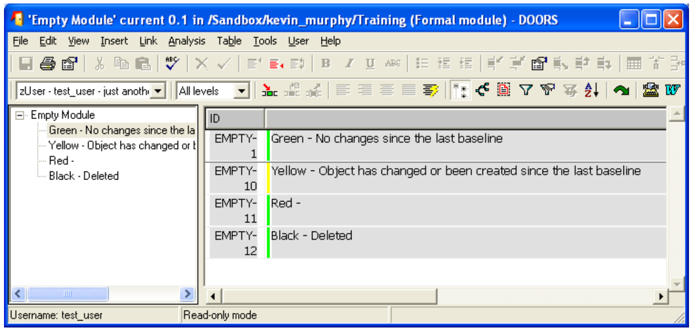
DOORS

You have insufficient access rights to open this module for edit.



```
doors –o READ_ONLY
```

Double-click



'Empty Module' current 0.1 in /Sandbox/kevin_murphy/Training (Formal module) - DOORS

File Edit View Insert Link Analysis Table Tools User Help
zUser - test_user - just anoth
All levels

- Empty Module
  - Green - No changes since the la
  - Yellow - Object has changed or b
  - Red -
  - Black - Deleted

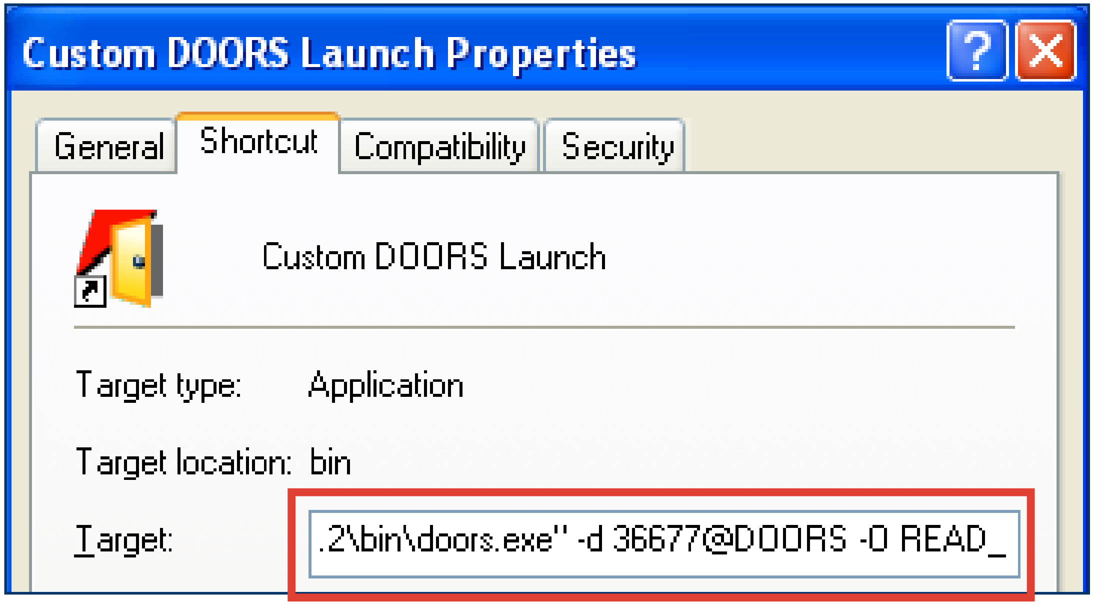
ID	
EMPTY-1	Green - No changes since the last baseline
EMPTY-10	Yellow - Object has changed or been created since the last baseline
EMPTY-11	Red -
EMPTY-12	Black - Deleted

Username: test_user

Read-only mode

Icons Vs. Command Lines

A Windows shortcut/icon is really just a single, saved Command Prompt command.



Custom DOORS Launch

Target type: Application

Target location: bin

Target: .2\bin\doors.exe" -d 36677@DOORS -O READ_

Getting Around Icon Limitations

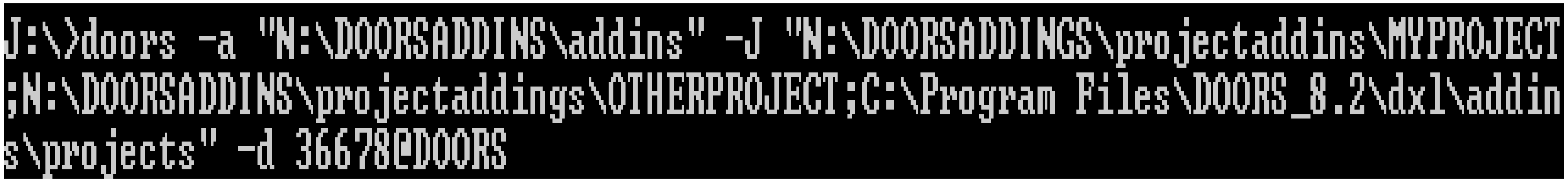
PROBLEM:

Windows shortcuts can only contain 255 characters. Using various switches, one can easily surpass 255 characters.

SOLUTION:

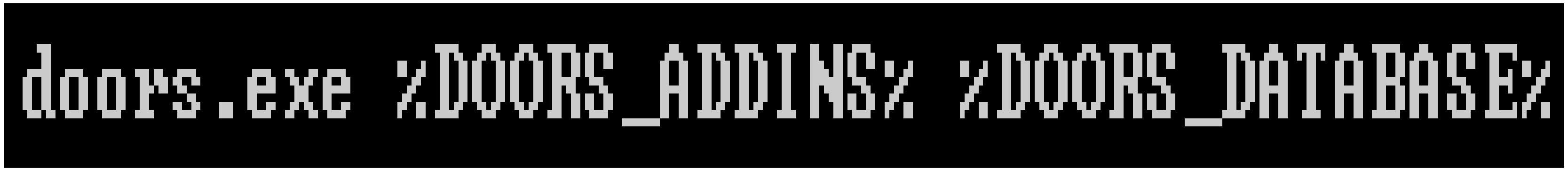
Environment Variables!

Getting Around Icon Limitations



```
J:\>doors -a "N:\DOORSADDINS\addins" -J "N:\DOORSADDINGS\projectaddins\MYPROJECT
;N:\DOORSADDINS\projectaddings\OTHERPROJECT;C:\Program Files\DOORS_8.2\dxl\addin
s\projects" -d 36678@DOORS
```

…is the same as this...



```
doors.exe %DOORS_ADDINS% %DOORS_DATABASE%
```

VBScript can also be used for long commands. See related white paper for more details.

Precedence

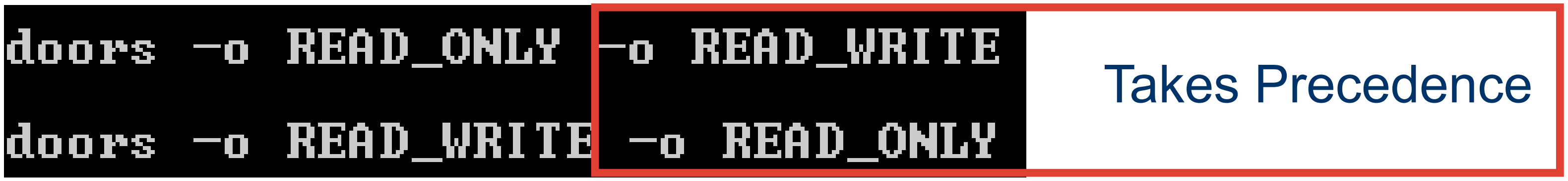
All command line switches may be set in the registry.

All command line switches take precedence over related registry settings.

In case of a conflict, the command line/icon values always override registry settings.

Therefore, not specifying a switch on the command line, means that the value in the registry sets the configuration option for the switch.

In case of a conflict on the command line, the last switch gets precedence.



```
doors -o READ_ONLY -o READ_WRITE
doors -o READ_WRITE -o READ_ONLY
```

Takes Precedence

Useful DXL Snippets

Global Constants

```
const string WindowsRegPath = "HKEY_LOCAL_MACHINE\\SOFTWARE\\Microsoft\\Windows NT\\CurrentVersion"
const string SystemRoot = "SystemRoot"      //Windows Registry Key for Windows Install path
const string DOORSConfigRegPath = "HKEY_LOCAL_MACHINE\\SOFTWARE\\Telelogic\\DOORS\\7.1\\Config"
const string DOORSHomeKey = "Home" //Windows Registry Key for DOORS Home switch
const string DOORSRegKey = "HKEY_LOCAL_MACHINE\\SOFTWARE\\Telelogic\\DOORS\\7.1"
const string InstallationDirectory = "InstallationDirectory"              //Windows Registry Key for DOORS
                                             //install path. DOORS HOME should be this plus \\bin
const string DOORSExecutable = "doors.exe"
```

The DXL snippets on the following slides refer to these constants.

Useful DXL Snippets

```
string getWindowsInstallPath() {
        //Returns path where Windows is installed
        return getRegistry(WindowsRegPath, SystemRoot)
}
```

This will help determine which drive Windows is running from. Useful for figuring out if Clients are running Citrix.

getRegistry(Key, Value) returns the Data for the specified Registry key and value as a string.

Useful DXL Snippets

The *system(string command)* function runs the given string as a command line command.

```
//Example 1
string strCmd = "ping www.telelogic.com"
system ( strCmd )

//Example 2
strCmd = "c:\\temp\\mybatchfile.bat"
system ( strCmd )
```

Useful DXL Snippets

The *getenv(string env_var)* function runs the value for the given environment variable/registry entry/command line switch.

```
//Example 1 - Environment Variable
string envvar = "LIB"
print envvar ": " getenv ( envvar )
print "\n"

//Example 2 - Registry or Command Line Switch
envvar = "defopenmode"
print envvar ": " getenv ( envvar )
print "\n"

//Example 3 - No such variable or command line switch
envvar = "does_not_exist" //returns nothing
print envvar ": " getenv ( envvar )
print "\n"
```

Useful DXL Snippets

To implement a trigger that runs after a module is opened…

```
//ensure that this entire statement is on one line!

Trigger t = trigger( "DOORSUpdate", module->"DOORS Update", post, open, 5,
 "#include <N:/Doors/Path_To_DXL/updateDOORS.dxl>")
```

Useful DXL Snippets

Putting the *exit()* function within an eval_ statement ensures that DOORS will quit.

```
eval_("exit_()")
```

There are many more DXL snippets in the white paper for this presentation.

Back To The Original Problem

- No standard DOORS configuration.
- Many users in different locations.
- Constraints from Project/Data Security/Legal.

What does everyone have in common?

They all use DOORS!

Thus, DOORS can be used to update client configurations!

Solution Flow

- User signs into DOORS
- User goes into Project “Update DOORS”
- User opens module “Update DOORS”
- Module runs post-open trigger that calls DXL to update registry settings.
- DXL calls DOS batch file for copying files
- DXL calls VBScript to create new icons
- DOORS exits, forcing the user to restart with the updates applied.

I met with IT group and documented everything the update did. Further, I received their blessing to roll this out to the users.

Benefits

- Lower IT cost
- Faster time to deployment
- More control over the client configuration (it gets done the same way, every single time)
- Every DOORS user can access DOORS, and thus, the update.
- Possible to modify startup.dxl to automatically check for new updates
- Working with other groups, the DOORS administrator is likely forced to document exactly what the update does, in great detail
- Less reliance on schedules of other groups
- No need to physically visit each user

The End