

The Nuair Group Fan Selector Excelsior JET Case Study

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The Nuair Group is a ventilation manufacturer who designs and builds ventilation products for distribution around the world. The range and variation of fans manufactured runs into many thousands of different units so with conventional catalogues it's not possible to show every product clearly with full technical details. Nuair developed their Fan Selector program to make it easy to select the best fan for a given project and to print out detailed fan specific technical data sheets. The program was developed as a Java/Swing application and is used internally throughout The Nuair Group and is distributed freely to engineers and consultants.

The image displays two screenshots of the 'Fan Selector' software interface. The left screenshot shows the 'Axial Flow Fans' section, featuring a list of fan models (AXB, AXD) and a 3D model of a fan. The right screenshot shows a 'Performance Curve' graph and a table of fan specifications.

Fan Code	m³/s	Pa	Phase	dBa	KW	Price	SFP
AXB3P-423A	2.838	280	3	56	1.1	457	0.645
AXB3P-433A	2.833	284	3	57	1.5	483	0.77
AX71F-413A	2.071	265	3	50	1.1	0	0.631
AX40F-233A	2.082	438	3	61	1.8	604	0.889
AX40F-243A	2.220	502	3	61	2.2	502	0.907
AXB0P-413A	2.322	350	3	61	1.5	0	0.545
AXBDA-623A	2.844	267	3	62	1.5	863	1.044
AXB0P-233A	2.109	449	3	62	1.8	543	1.035
AX40M-273A	2.116	452	3	62	1.8	495	1.014
AX40F-253A	2.323	545	3	62	3	596	0.996

The first release of the program used Sun's 1.3 JRE and there were a number of issues that needed addressing, these included:

- problems deploying the application
- the size of the download with the JRE included (this was before the widespread uptake of broadband)
- the slow start up times associated with Java applications
- general performance issues on lowly specified PCs

With this first release the user was requested to install a Java Runtime Environment before installing the Fan Selector application, which caused confusion for many users and problems for some as each micro revision of the JRE could behave slightly different to its predecessor. So the decision was taken to redistribute a known working JRE packaged within the Fan Selector. This of course added many megabytes to the download size.

With successive releases of the Sun JVM and the ever increasing power of modern PCs the performance issues have become less relevant but because the 1.4 and 1.5 JRE's have a larger disk space footprint we continued to distribute the application with the 1.3.1 JRE. This meant we couldn't make full use of the performance improvements or indeed any of the other new features added to the Java language.

We evaluated Excelsior JET 4.0 Standard and were instantly impressed by the performance gains it produced. Start up time was quicker and the overall feel was that of a more responsive, slicker program. We also had the added benefits of being able to use the latest Java 1.5 enhancements and the protection from decompilation of our jars.

The only disadvantage we had with our JET 4.0 Standard compiled distribution was the increase in package size due to the use of the larger 1.5 runtime instead of the older, smaller 1.3.1 JRE we were using. It was felt though that the increase in package size was a reasonable trade off against the other benefits that using JET offered - especially in these days of high speed broadband access. However, after releasing a new version of the application and having many more users than usual download it over the course of a few days we soon hit bandwidth limits imposed by our ISP.

With Excelsior JET 4.5 Professional when used with JetPackII to package the application the package size has reduced considerably, the application also appears to run quicker than the JET 4.0 Standard compiled version. I wouldn't hesitate in recommending Excelsior JET 4.5 to anyone who distributes a Java application.

The following table shows the relative sizes of our application when built with a redistributed JRE or Excelsior JET.

	Package Size (MB)	Hard Disk Footprint (MB)
Internationalized JRE 1.3.1_16. Packaged with InstallShield	16	39
JRE 1.5.0_06. Packaged with InstallShield	26	69
JET 4.0 Standard. Packaged with InstallShield	27	67
JET 4.5 Professional. Packaged with JetPackII	18	64