ORACLE® White Paper

Oracle Designer/2000™
Oracle Developer/2000™

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Introduction

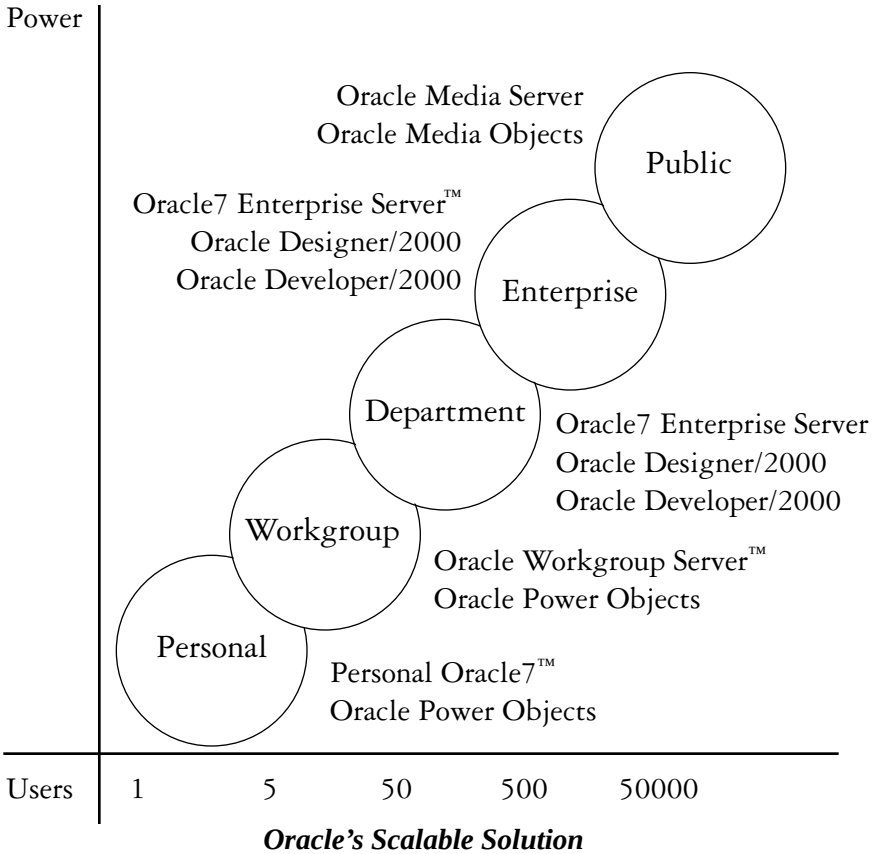
Oracle's scalable application development solution includes two product suites, Oracle Designer/2000 and Oracle Developer/2000. Designer/2000 supports the modelling of complex systems with business process reengineering (BPR), analysis, and design diagrammers. Developer/2000 empowers organizations with the ability to rapidly and productively build sophisticated systems which scale from workgroup to enterprise. With flexible modelling and methodology support, a unified client and server development environment, and a portable, open architecture, Designer/2000 and Developer/2000 are the industry's only second generation client/server design and development tools.

Oracle's Scalable Solution

Oracle's strategy is to deliver to its customers scalable solutions for personal, workgroup, department, and enterprise computing, as well as support the emerging information superhighway. With Oracle's software products, enterprises can manage all their information with a productive, scalable database, connecting all their computers and data sources to all enterprise clients, and develop manageable, scalable applications rapidly to support all enterprise information requirements.

In January 1995, Oracle announced the final piece of its scalable solution for its customers–Oracle Workgroup/2000™. Combined with Oracle's solutions for departments, enterprises, and public users, this series of products provides the only scalable architecture to take customers from personal and workgroup use up to departments and enterprises.

Oracle's traditional strength has been in departmental computing. With increased scalability to the enterprise provided by Oracle7™ and Oracle's recent tools releases, scalability to public use with Oracle Media Server™ and Oracle Media Objects™, as well as scalability to the workgroup and desktop with Oracle Workgroup/2000, Oracle is now the first vendor capable of delivering to users a scalable solution from the desktop to the data center, and the first vendor on the information superhighway.



Oracle's Scalable Solution

Oracle's Workgroup Solution

Workgroup computing is a major trend today, spurred on by users upsizing from isolated individual computing with tools such as dBASE, Paradox, Visual Basic, and Access. Workgroups consist of up to dozens of users on desktop computers connected via local area networks

(LANs). Corporate developers targeting workgroups typically work alone or in very small teams.

Many users have heard of the benefits of shared, workgroup computing –improved functionality, performance, reliability, and scalability. On the other hand, "upsizers" find themselves hampered by the complexity and cost of moving to a client/server workgroup paradigm. Oracle Workgroup/2000 is the first and only solution delivering the benefits of workgroup upsizing while avoiding the barriers.

Workgroup/2000 is low cost, easy to acquire, easy to install, easy to develop, and easy to operate. The major components of Workgroup/2000 are Oracle7 Workgroup Server and Oracle Power Objects, providing database and development for personal and workgroup users. Based on standard SQL data access and workgroup-standard BASIC language, Workgroup/2000 provides a comfortable transition from isolated computing to workgroup productivity.

Oracle's Department and Enterprise Solution

Just as individual users yearn for the elimination of their barriers to workgroup productivity, many department and enterprise users find that although they can share their work, they would like to improve their operations as well. Systems based on IMS and DB2 today do not provide the functionality, productivity, and cost advantages of open systems client/server computing. A second trend in data processing, downsizing, is emerging as large system users search for those advantages.

Downsizing can provide access to the media-rich functionality, developer and user productivity, and hardware and software cost advantages of open systems client/server computing over mainframe-based proprietary systems. However, downsizing is limited by the twin barriers of missing reliability and scalability of many client/server systems.

Oracle's enterprise client/server goal is to enable organizations to achieve the benefits of open systems client/server without suffering its current limitations.

Department and Enterprise Server Evolution

A few short years ago, database servers were either department oriented

relational databases or enterprise oriented non-relational databases. Oracle's server has evolved from these roots to become the first database that provides relational flexibility and enterprise robustness. Today, Oracle7 not only scales from the desktop to the enterprise, but also provides benefits unmatched in the industry.

Oracle7 Benefit	Supporting Features
Media-rich functionality	Tables, text, image, audio, and video
Declarative and programmatic productivity	Declarative integrity, code reuse, triggers, and stored procedures
Open systems low cost	Efficient use of hardware resources from desktop and LAN CISC microprocessors to Unix RISC servers and massively parallel systems
Reliability	No single point of failure for replication and parallelism
Distributed scalability	Performance optimization even in geographically distributed architectures supporting up to tens of thousands of users

Scalable Server Evolution

Department and Enterprise Tool Requirements

While servers, particularly Oracle7, have evolved rapidly, department and enterprise tools did not keep up with the rate of change. Tools must deliver mainframe reliability and scalability as well as desktop ease of use, flexibility, and productivity. Lessons must be learned from both existing mainframe and desktop tools.

From mainframe tools, the industry can learn the benefits of modelling support, code generation, robust reliability, and enterprise scalability. Desktop tools can teach the benefits of rapid application development (RAD), graphical user interface (GUI) productivity, and ease of use.

Enterprise Tool Evolution

Before client/server, developers had toolsets that allowed them to deliver scalable applications. However, the productivity of these tools proved unable to meet the challenges of complex maintenance and requirement changes. Information Technology (IT) departments became so bogged down in maintenance tasks that the needs of the business went unmet. Many users turned to desktop and workgroup computing as a result.

With the introduction of workgroup computing came the introduction of client/server systems. First generation client/server tools were targeted at getting small scale systems in production quickly, and many other requirements of robust systems were ignored. To get systems up and running quickly, first generation client/server tools provided

- Physical modelling and table generation
- Client-centric ("fat client") two-tier development
- RAD methodology
- GUI support for MS-Windows

Users experienced rapid deployment of attractive, productive systems for small workgroups with these first generation tools. However, when attempting to maintain these systems, the same limitations in maintenance productivity were encountered in client/server systems as in host-based mainframe systems. In addition, scalability was severely limited. Even worse, 4GL tools were limited in their exploitation of advanced functionality, frequently resulting in the need to resort to less productive and more complicated 3GL (i.e. C or C++) development.

What users need is an evolution of tools from first generation limitations to second generation benefits, similar to the evolution undergone in the servers accessed by these tools.

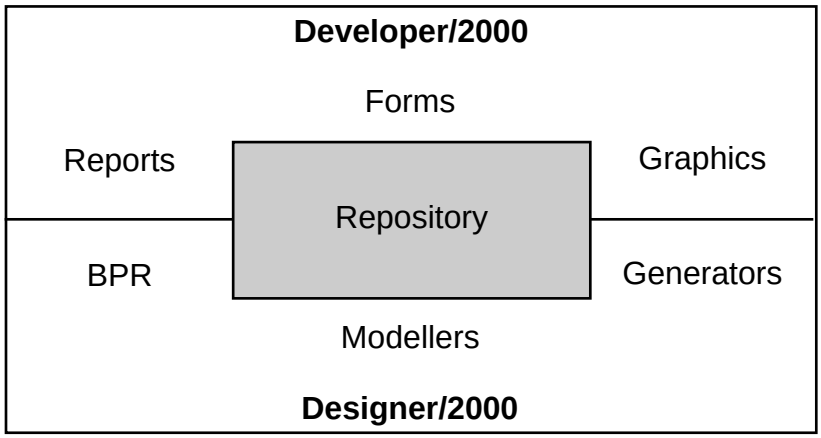
First Generation Tools	Second Generation Tools
Physical modelling and table generation	Physical, logical, and conceptual modeling with complete server and client object generation
Client-centric "fat client" two-tier development	Unified client/server development with support for multi-tier partitioned and distributed applications
RAD methodology only	Flexible methodology support including RAD, BPR, and full life cycle development with integration through generation and reverse engineering
GUI support for MS-Windows	Portable GUI support for MS-Windows, Macintosh, Motif and character mode as well as openness to other tools useful for developer productivity

First and Second Generation Tools

Oracle's Scalable Design and Development Product Suites

Oracle is delivering the first toolsets that combine the nimble nature of desktop tools with the proven power of mainframe tools. In addition, Oracle has gone several steps beyond, delivering the industry's first unified client/server development environment, first full reverse engineering capability, first portability across GUIs and character mode devices, first integrated modelling and development repository, and first integrated business process reengineering (BPR) functionality. Oracle's advanced technical capabilities shows through in the product suites with features including complete OLE2 support, objects by example, automated style guide enforcement, TP Monitor support, and drag-and-drop application partitioning.

Oracle's scalable design and development solution includes two product suites: Oracle Designer/2000 and Oracle Developer/2000. Both are built around a shared repository. Designer/2000 is a toolset for modelling complex systems, and which includes BPR, analysis and design modelling, system generation and reverse engineering, team support, and model management. Developer/2000 is a suite of tools for developing scalable second generation client/server systems, either together with Designer/2000 for complex systems or stand-alone for rapid application development.



Oracle Design and Development Product Suites: Oracle Designer/2000 and Oracle Developer/2000

Oracle Designer/2000

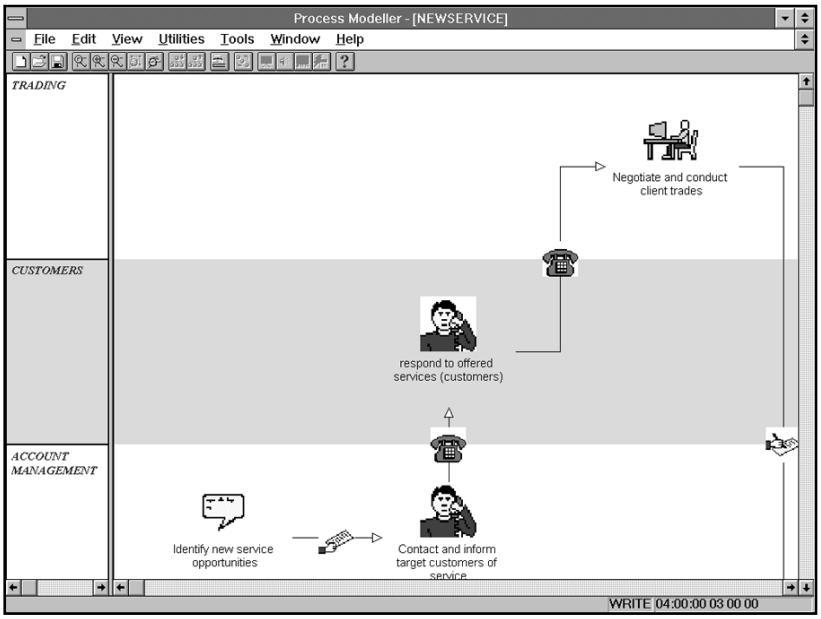
Oracle Designer/2000 enables the modelling of complex processes. It can also generate systems from these models, reverse engineer systems developed with Oracle Developer/2000 back into models, and enable the maintenance and evolution of complex systems. It includes business process reengineering (BPR), analysis, and design diagramming tools.

There are many first generation design tools on the market. These tools have limited life cycle support, limited integration with other tools, and limited openness. Oracle Designer/2000 is the only design toolset to achieve second generation design functionality.

First Generation Design Tools	Second Generation Design Tools
Physical modelling and table generation	Physical, logical, and conceptual modeling with complete server and client object generation
RAD methodology only	Flexible methodology support including RAD, BPR, and full life cycle development with integration through generation and reverse engineering

First and Second Generation Design Tools

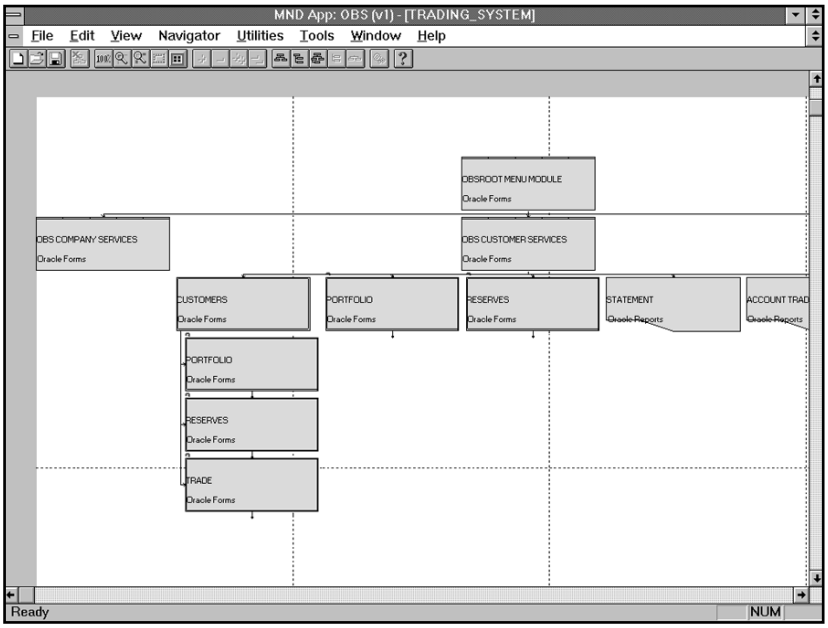
One of the highlights of Oracle Designer/2000 is its support for advanced business process modelling and business process reengineering (BPR). While there are other BPR tools on the market, few can run on a stand-alone laptop, few are based on an open repository, and none are fully integrated with the full range of analysis, design, generation, and development tools as is Oracle Designer/2000.



Business Process Reengineering can be very difficult, but Oracle Designer/2000 provides integration with business analysis, metrics, and animation to bring the power of BPR to any organization

Designer/2000 gives organizations a productive suite of tools for analysis, design, generation, and reverse engineering. The modular construction of Designer/2000 enables organizations to maintain enterprise consistency with the utmost in flexibility. When used together with Oracle Developer/2000, projects can be developed using RAD techniques and then reverse engineered back into models with Designer/2000. For large scale projects, development might begin with analysis and design, before generating systems and then iteratively refining through to production. Where major organizational changes are being considered, Designer/2000 provides, whether used with Oracle Developer/2000 or not, the ability to model their business processes and derive an optimal new process design.

Whether used stand-alone, with third-party tools, or with its integrated partner Developer/2000, Oracle Designer/2000 provides a productive, visually appealing, second generation design environment.



Oracle Designer/2000 provides productive, integrated physical modelling of applications and data

Oracle Developer/2000

Oracle Developer/2000 empowers organizations with the ability to rapidly and productively build sophisticated systems which can scale from workgroups to the enterprise. With support for RAD, user interface portability, and open interoperability, as well as unique capabilities including unified client/server development, objects by example, full object component (e.g. OLE2 and VBX3) support, and drag-and-drop application partitioning, Developer/2000 is the leading choice for second generation client/server development.

Developer/2000 includes forms, reports, graphics, client/server development, and translation management components. Developers can build systems using any combination of these features, as well as complementary functionality provided by third-parties, specifically tested and guaranteed to work well together.

While today's enterprises have many options available for developing applications, only Oracle Developer/2000 supports second generation client/server development, with the productivity, reliability, and scalability to satisfy existing mainframe and desktop users.

First Generation Development Tools	Second Generation Development Tools
Client-centric "fat client" two-tier development	Unified client/server development with support for multi-tier partitioned and distributed applications
RAD methodology only	Flexible methodology support including RAD, BPR, and full life cycle development with integration through generation and reverse engineering
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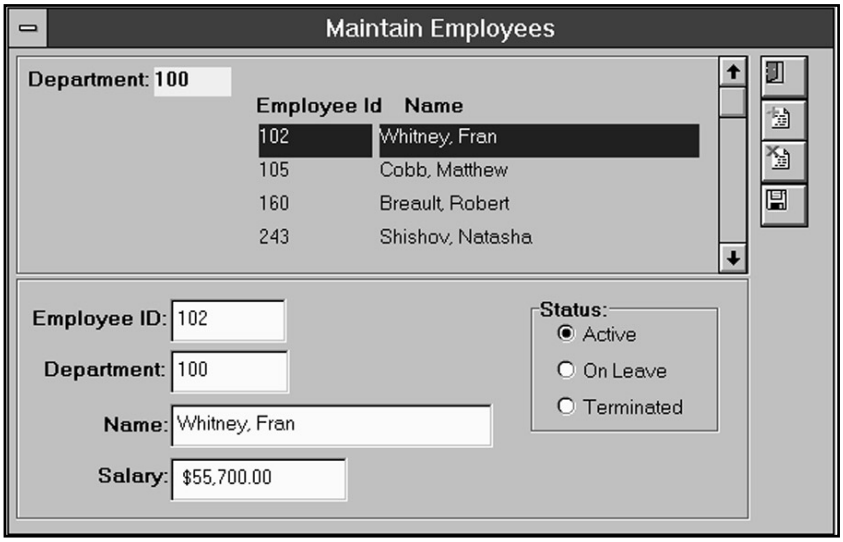
First and Second Generation Design Tools

In addition to its advanced functionality, Oracle Developer/2000 supports full component reuse through object standards like OLE2 and VBX3, RAD, full life cycle methodologies through integration with Designer/2000, team development, heterogeneous data access, open tool interoperability, and the broadest range of functionality for forms and reports applications.

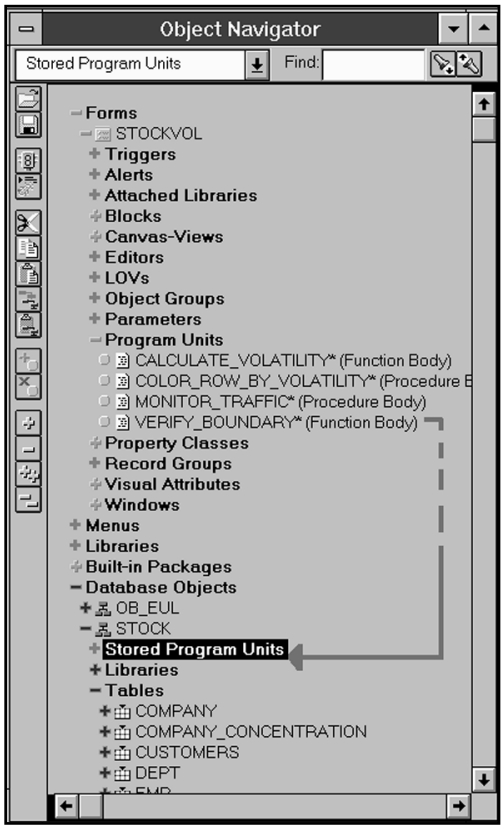
Developer/2000 increases the productivity of your developers, with declarative programming and powerful built-in functionality, to avoid writing lots of code to get the job done. After all, the only line of code which you know won't have any bugs is the one you don't have to write! And just as Oracle delivers Oracle7, the most scalable database, Oracle also delivers inherently scalable tools. The applications you develop in your workgroups will not "hit the wall" when you scale them to the enterprise, unlike first generation client/server development tools.



Scalable applications can be built rapidly and with virtually no manual coding using Oracle Developer/2000's declarative approach

There are many technology firsts in Oracle Developer/2000, but perhaps the most impressive is its support for multi-tier development, or application partitioning. Application partitioning is the ability to take

pieces of an application and re-host them to other computers in order to increase reliability or performance. Several tools on the market support application partitioning, but require that a developer use limited proprietary 4GLs or unproductive and complicated 3GLs to achieve this partitioning. With Oracle Developer/2000, application partitioning is easy and productive–simply develop your application logic, and then drag it from client to server or vice versa for maximum performance with maximum productivity.

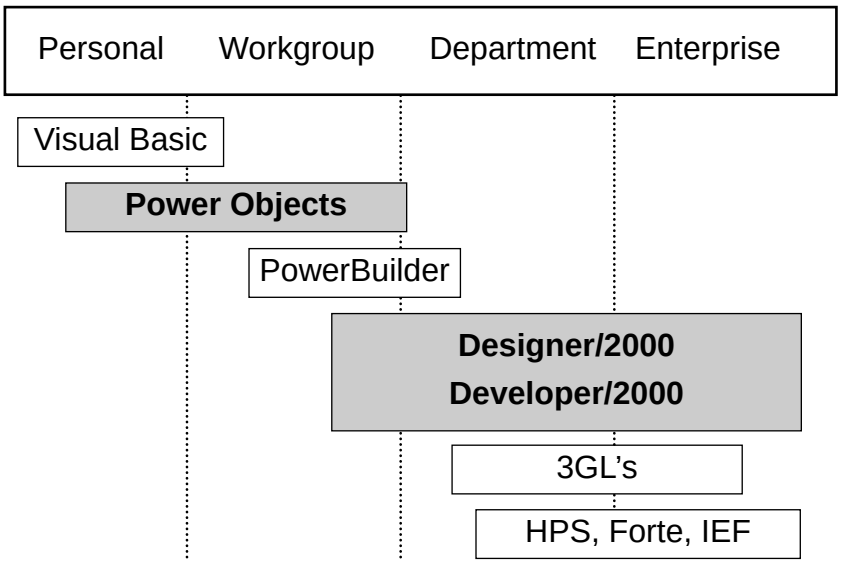


Application partitioning can result in performance improvements reaching several orders of magnitude for some operations, but generally with a very steep productivity impact–until the introduction of Oracle Developer/2000's "drag-and-drop application partitioning"

The Scalable Enterprise

With Oracle7, Workgroup/2000, Designer/2000, and Developer/2000, enterprises finally have a set of development products which will enable them to deliver the benefits of open client/server computing across the entire range of enterprise users. With scalability from desktop to data center, customers can not only build systems which achieve their cost and ease of use objectives, but can also scale with reliability and performance.

Oracle's development solutions target the needs of a broad class of users in the enterprise. Workgroup/2000 includes Oracle Power Objects and other tools to meet the needs of personal and workgroup developers–optimized for low cost and ease of use. Designer/2000 and Developer/2000 provide the productivity, reliability, and scalability to meet the needs of the higher end developers.



Oracle's scalable development tools solution versus the state of the industry today

With the products and services to meet the needs of isolated individual users and existing mainframe users, and to achieve cost-effectiveness, scalability, performance, and functionality, Oracle's product sets truly manage all your information and put you on the right track for the year 2000.

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