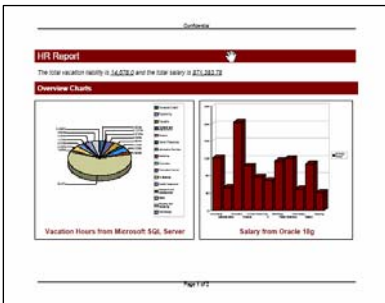


Oracle BI Publisher Enterprise

An Oracle White Paper
March 2007

Oracle BI Publisher Enterprise



BI Style Reports

The screenshot shows an Oracle Financials report with a table of financial data. The table has columns for Date, Amount, and Description. The data is organized into rows, with a summary row at the bottom.

Financial Reports



Checks

The screenshot shows a W-2 Wage and Tax Statement for 2003. It includes fields for the employee's name, address, and Social Security number, as well as boxes for reporting wages, taxes, and other information.

Government Forms (W2)

EXECUTIVE OVERVIEW

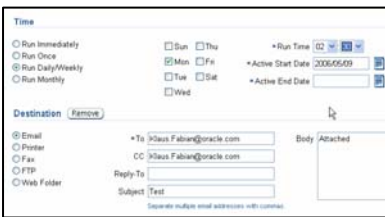
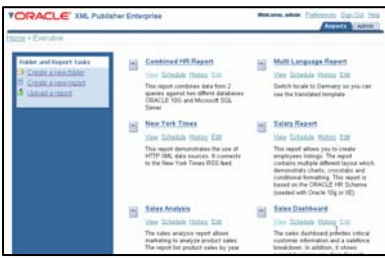
Oracle BI Publisher Enterprise is Oracle's revolutionary new reporting and document output management solution. BI Publisher offers multiple innovations that substantially lower the total cost of ownership for reporting solutions, such as:

- End user desktop applications — Microsoft Word, EXCEL and Adobe Acrobat Professional — allow functional users to define and customize the layout of documents. This results in a more efficient cooperation between IT and functional departments and reduces the need for external consultants.
- A single web-based solution for producing and delivering a broad range of business documents such as: sales orders, invoices, purchase orders, management and financial reports, government forms, checks, labels, and electronic documents (EDI/EFT). Since OracleBI Publisher can replace multiple systems, it results in less complex and easier to maintain solutions.
- BI Publisher facilitates the global consolidation of your reporting solutions. A single instance supports multiple user interface and document languages. The same user can create documents in English, German, Chinese or Arabic (bi-directional) and print them to a local or remote printer.
- BI Publisher reduces report customization and maintenance cost – due to the separation of data extract, layout, and translation. For examples changes to a report query require you to change only a single report file and none of the layouts or translations of this report.

Oracle BI Publisher is “hot pluggable” - meaning it is completely based on open standards. As such it can run on any J2EE compliant application server and can access data from practically any database. This makes BI Publisher fit into any IT environment and protects your investment into legacy systems.

INTRODUCTION

Oracle BI Publisher was originally developed to solve the reporting problems faced by Oracle Applications. It was first released with Oracle E-Business Suite 11.5.10 in 2003. In the last 2 years BI Publisher has matured and now satisfies all reporting requirements for Oracle Applications. Impressed by its capabilities, the



J.D. Edwards EnterpriseOne application has just integrated with BI Publisher and Peoplesoft Enterprise will uptake BI Publisher in the next release.

Many customers outside of Oracle Applications face the same reporting issues. On the Oracle World 2004 customers asked us for a standalone version of BI Publisher. BI Publisher Enterprise was developed for these customers with no dependency on Oracle Applications.

It is a complete web-based reporting application that allows user to:

- Manage reports in a folder structure
- Create reports combining multiple databases as well as web services
- Define the report layout in Microsoft Word or Adobe Acrobat
- Connect from Microsoft EXCEL to BI Publisher reports
- Extract and translate the boilerplate text in reports
- Schedule and deliver reports via a variety of delivery channels such as email, fax, or print

All BI Publisher solutions – the ones embedded into Oracle applications as well as BI Publisher Enterprise – offer multiple innovations that will be covered in the following sections.

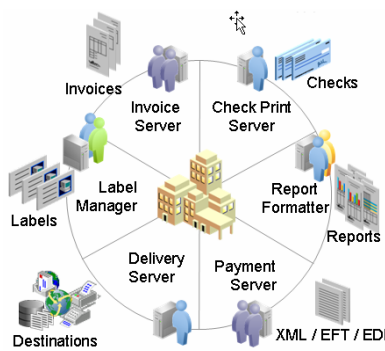
COMPLETE SOLUTION

A typical enterprise has to create such diverse documents as invoices, purchase orders, sales orders, financial and management reports, government forms, checks, labels and electronic documents. These documents need to be delivered to customer, supplier and partners by email, fax, or print and stored in an archive or document management system. BI Publisher provides a complete solution for creating, managing and delivering all your business documents.

Before BI Publisher, no single solution was able to satisfy all these requirements. As a result many business – including Oracle – were required to maintain several reporting solutions: invoice server, a label print server, a report server, a check print sever, a fax server, etc...

BI Publisher allowed Oracle's IT department to consolidate their printing solution and retire multiple third party solutions. Since then, many of Oracle's customers were able to consolidate their printing and document management solution by replacing multiple systems with BI Publisher.

BI Publisher Enterprise: Repository, Report Viewer and Scheduler



Solutions that can be consolidated with Oracle BI Publisher Enterprise

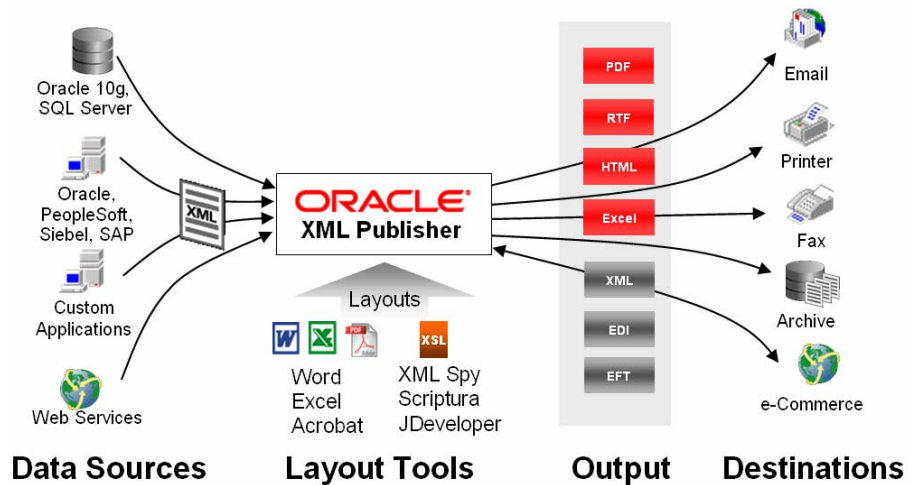


Figure 1: BI Publisher Capabilities



Label Including Bar Code

The picture above gives an overview of the many capabilities of BI Publisher. BI Publisher Enterprise can get the data from multiple sources and combine them in a single report. BI Publisher can access databases (using SQL) or access data from web services or a website that provide XML data.

The data can be formatted with end user layout tools (see below) or using XSL-FO stylesheets – an open W3C standard supported by many third party tools. Layouts may contain any kind of fonts – including MICR fonts for check printing or bar code fonts for label printing.

The report output can be formatted as PDF for printing, Microsoft Word readable RTF files for modifiable documents (contracts, marketing letter...), EXCEL readable files (financial reports) as well as HTML that you may sent by email or publish to a website. Oracle BI Publisher can also generate machine readable output formats such as XML, EFT or EDI.

These output files can be delivered by email, fax or print. They can also be stored in an external archive or document management system. All these capabilities are provided by a single system.

END USER LAYOUT TOOLS

Oracle BI Publisher allows functional users to design report or document layouts in familiar desktop applications. Your users can choose from the following tools the one that matches the task at hand:

- Microsoft Word with the Oracle BI Publisher Template Builder
- Microsoft Excel with the Oracle BI Publisher Analyzer for EXCEL
- Adobe Acrobat Professional

Each tool has its unique advantages to create specific reports. For example most end users would create customer letters such as marketing material or dunning

“For example, with 18 variations of our AR Invoice, we were able to put the templates in the control of a functional analyst, while a programmer was only needed to make small data model extensions to the RDF. For the most part, template changes were able to be turned around in minutes, and retested within the same session.”

**—Mike Tobin,
IT Manager, QUALCOMM, Inc.**

letters in Microsoft Word. Members of a finance team would like to create layouts in Microsoft Excel, while governments typically provide PDF forms.

Template Builder for Microsoft Word

With a classic reporting tool a functional user would prototype a dunning letter in Microsoft Word and then writes a requirements document – possibly with the help of an IT analyst. An IT developer then would have to recreate the document in a report development tool trying to match the requirements. There would be a lot of communication between these two parties trying to perfect the layout and behavior of the report before it could actually be delivered to the report consumers.

With Oracle BI Publisher the functional user can provide the Microsoft Word file to the IT developer as the layout specification. The IT developer just needs to mark up the document using the Template Builder for Word Add-In.

In many cases, experienced end users were able to insert data fields into Word documents without any help from the IT department. Changes to the format such as replacing the company logo, changing column width, fonts or boilerplate text can be performed solely in Microsoft Word – requiring no additional training. The template builder add-in allows end users to mark up word documents easily with charts, data tables and calculations.

In addition, the IT department can hide standard XSL code in word documents – invisible to the functional users – that may perform sophisticated functions such as conditional execution, data transformations and complex calculations.



BI Publisher Template Builder for Word

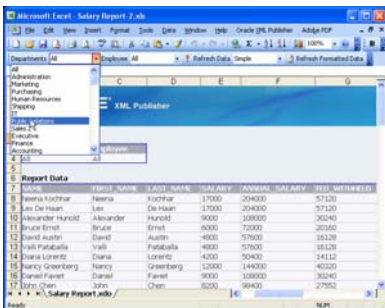
Analyzer for EXCEL

The Oracle BI Publisher Analyzer for EXCEL allows you to connect EXCEL spreadsheet with live report data using a secure web service connection. The user can change parameters from a toolbar and refresh the data any time.

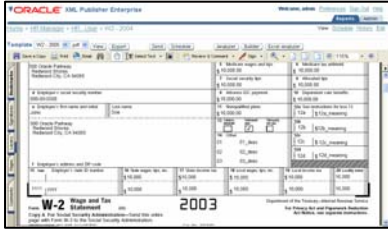
It offers the following advantages compared to other solutions:

- The end user can change report prompts and refresh the data based on the new parameters.
- The end user connects to the BI Publisher Enterprise server using their username and password. It is a secure solution that does not require end user access to the operational database.
- The spreadsheets can apply any kind of EXCEL functionality to the report data – including formulas, pivot tables, and macros.
- The Add-In can be installed on demand and is very easy to use.

The Oracle BI Publisher Analyzer for EXCEL is the ideal solution for end users that work daily in EXCEL and need to access data in their tool of choice.



BI Publisher Analyzer For EXCEL



W2 PDF Form filled out with BI Publisher

PDF Forms

Many government agencies around the world – for example the US internal revenue service – now publish their forms as PDF forms on the internet. For example US agencies provide tax forms, government purchase forms, and grant applications as PDF forms.

With a classical reporting tool the IT department needs to recreate the report in a report design tool. This can be tedious task taking weeks to match the government forms up. Any mistake can result in rejection by the government, expensive deployment delays, and rework.

BI Publisher contains a complete PDF form engine that allows you to map data fields to the form fields by simply changing the names of the PDF form fields to match the data field names. This process is so much easier that even government agencies are adopting BI Publisher.

GLOBAL REPORTING SOLUTION

Many reporting solution are not suitable for a global deployment, requiring international offices to use their own reporting and document management solutions. BI Publisher was developed from the start for global deployment.

- BI Publisher ships with a complete set of Unicode fonts that include simplified and traditional Chinese, Japanese and Korean.
- BI Publisher has extensive support for bi-directional languages such as Arabic or Hebrew.
- BI Publisher supports international date, time and number formats as well as different calendars.

A single instance of BI Publisher allows users to print their report in multiple languages – supporting even different translation for British or American English. PDF documents generated by BI Publisher contain all characters required to print the document on any printer. As a result, you can print a Japanese document even in the US office that may not have a printer with a Japanese character set.

Creating multiple language reports with BI Publisher is easy. The functional users just creates a document in Microsoft Word – BI Publisher extracts all the boilerplate text from the document into an industry standard translation file (XLIFF) that is understood by any translation service or translation software package. Dates, times and currency can be defined in a language and territory independent way. For bi-directional languages such as Arabic and Hebrew translation, BI Publisher will automatically adjust the direction of the text to match the requested locale for the document.

All these innovations allow you to consolidate the generation of your reports and business documents to a single system – or even a single instance. One BI Publisher customers uses our solution to create their invoices and sales order for all of Europe on a single server.

Dear Sirs/Madam,

According to our records as of Thursday, January 1, 2004, we show balances.

Your CAD balance is 31,500.00 made up as follows:

| Invoice Number | Date | Amount |
|----------------|-------------|-----------|
| 502444 | Dec 8, 2003 | 19,125.00 |
| 502445 | Dec 8, 2003 | 12,375.00 |

各位

2004年1月1日 Thursday 日付の御社の残高は次の通りです。

御社の CAD の残高は 31,500.00 で、詳細は以下の通りです。

| 請求書番号 | 日付 | 請求金額 |
|--------|------------|-----------|
| 502444 | 2003/12/06 | 19,125.00 |
| 502445 | 2003/12/06 | 12,375.00 |

السادة،

حسب سجلاتنا حتى تاريخ ٠١ January, ٢٠٠٤، فاننا نظهر الارصدة أن رصيدك ب CAD هو ٣١,٥٠٠.٠٠ مقصلاً كما يلي:

| رقم الفاتورة | التاريخ | المبلغ |
|--------------|------------|------------|
| ٥٠٢٤٤٤ | ٠٦/١٢/٢٠٠٣ | ١٩,١٢٥,٠٠٠ |
| ٥٠٢٤٤٥ | ٠٦/١٢/٢٠٠٣ | ١٢,٣٧٥,٠٠٠ |

English report fragment - translated to Japanese and Arabic.



Separate data logic, layout and translation

LOW MAINTENANCE AND CUSTOMIZATION COST

BI Publisher splits reports into three components: data extract, layout and translation. The three components map naturally to business functions: data extracts are provided by the IT department, layouts by functional users and translations by local offices or translation companies. This separation of duty is not only natural; it also reduces the maintenance costs of reports noticeably.

The Oracle E Business Suite with every translation installed contained about 90,000 report definition files. Maintaining these files is very costly and tedious. When we examined the problem we realized two issues:

- Many reports contain basically very similar data – the only difference is an additional column, calculation, a different grouping or layout.
- Every translation requires a new report definition file that replicates the layout and the translation.

The screenshot shows an Oracle Corporation invoice. At the top, it says 'ORACLE CORPORATION INC.' and 'INVOICE'. Below this is a table with columns: 'DESCRIPTION', 'QTY', 'UNIT PRICE', 'AMOUNT', and 'TAX'. The table lists various Oracle products and services, such as 'Oracle Applications Database Standard Edition', 'Oracle Applications Database Standard Edition', 'Oracle Applications Database Standard Edition', etc. The total amount is listed as \$325,859.68.

Invoice

When these reports were replaced with BI Publisher there was a consolidation ratio of about 10 reports into a single XML data extract. Since the E-Business Suite is shipped with about 30 translations, each data extract is replicated $10 * 30 = 300$ times.

That means any change to a query requires the users to touch 300 files – as opposed to 1 data extract in BI Publisher. Similarly, each change to a layout – such as expanding the column width, changing the logo, or changing the color scheme would require developers to replicate the same change in 30 report files – versus only 1 layout in BI Publisher.

In extreme cases such as Oracle Payments more than 100 reports could be consolidated into a single data extract, in other cases the gains from consolidation are more modest. However, even worst case scenarios can't hide the huge efficiency gains that stem from the modern architecture of BI Publisher.

TECHNOLOGY BENEFITS

Oracle BI Publisher is built on modern technologies which provide tangible benefits. For example, BI Publisher's support of open standards protects your investment in existing infrastructure. BI Publisher also provides the performance, scalability and security you expect from an enterprise application. The following detail sections on standards, performance address your IT staff.

Standards

BI Publisher is completely based on open standards and will protect your investment in existing infrastructure:

- BI Publisher is implemented in pure Java and can therefore be easily embedded into other applications. This also means that BI Publisher Enterprise server is not dependent on Microsoft Windows or Microsoft

BI Publisher is a J2EE application written in pure Java and supports all major standards – allowing you to leverage your existing IT assets.

office on the server. You may run BI Publisher on any inexpensive Linux operating system.

- BI Publisher can access practically any database – Oracle9i or 10g, Microsoft SQL sever, IBM DB2 or MySQL - using the JDBC standard.
- BI Publisher can be deployed on any J2EE compliant application server such as Oracles AS 10g, Apache Tomcat 5.x, IBM Websphere or BEA Weblogic.
- BI Publisher supports authentication through LDAP
- BI Publisher uses XML as a data format and supports the W3C standard XSL-FO stylesheets for formatting. Thus any design tool based on XSL-FO will work with BI Publisher – as will any existing stylesheets. You can rely on existing resources and consulting know-how.
- Translation files are extracted from Microsoft Word documents as industry standard XLIFF files that are understood by most translation software packages and companies.
- The BI Publisher Template Builder for Word and Analyzer for EXCEL do support Office 2000 and later. Templates created in Microsoft Word are uploaded as RTF files – allowing some support for alternative Word processors.

Performance

BI Publisher has shown to be capable of rendering 10,000 invoices on a single CPU, process 6 GByte of XML data and render 50,000 page documents.

The BI Publisher team invested a significant effort working with the Oracle performance team to create one of the fastest and most scalable reporting solutions available. The team is convinced that performance is a factor that makes or breaks BI Publisher.

Many XSL based solutions are inefficient and memory hungry. The BI Publisher team worked closely with the performance team to create the fastest and most efficient XSL-FO implementation to our knowledge.

The Oracle Financials team tested BI Publisher with 6 GByte of XML data to generate a 50,000 page PDF document, since some governments require companies to print out their books on paper. BI Publisher was able to generate the document on a single process PC in less than 50 minutes.

The Siebel Analytics team tested BI Publisher as a replacement for Apache FOP. After BI Publisher generated 5000 emails in less than 20 minutes, the team was convinced that BI Publisher is the better solution.

One of our customers is rendering more than 20,000 multi-page documents per hour on a 4 processor server based on pre-extracted XML. In stress tests BI Publisher could render more than 10,000 documents an hour on a single CPU.

Security

BI Publisher supports role based security and allows the administrator to give users access to individual folders and roles such as end user, development, scheduling and administration privileges.

Authentication is possible against BI Publishers own security or an LDAP server. BI Publisher security allows small installations such as development or small business instances to run without setting up an LDAP server. Enterprise installations can rely on single sign-on based on a centralized LDAP server.

PDF documents generated by BI Publisher can be secured. BI Publisher can be configured to password protect documents, remove or protect form fields or protect documents against changes.

CONCLUSIONS

Oracle BI Publisher is a new, innovative reporting and output management solution that is designed to lower the total cost of ownership of reporting and document output management. In summary, you will benefit from BI Publisher the following ways:

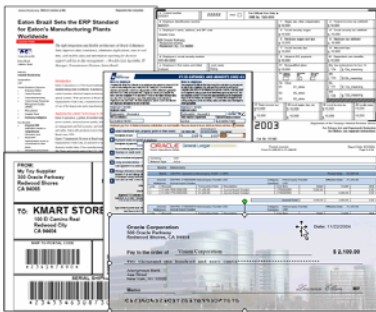
- Deploy reports faster and lower your dependence on consulting services
- Consolidate your reporting and document output management solution
- Consolidate reporting and output management internationally.
- Reduce the associated maintenance cost.
- Protect your investment in existing IT infrastructure.

We hope that the BI Publisher addresses your reporting pain points and that you will come to the same conclusion as many other customers who have seen a demonstration: *BI Publisher is exactly what I need.*

Additional information can also be found at:

<http://www.oracle.com/technology/products/applications/publishing/index.html>

Please contact your Oracle sales representative to schedule a demonstration of Oracle BI Publisher.



Marketing material, invoices, financial reports, government forms, checks, and labels - generated by BI Publisher



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