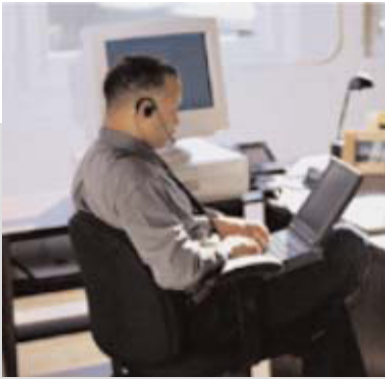


# Alcatel-Lucent nmake Product Builder



## Enhancing the productivity of your development team.

The Alcatel-Lucent nmake Product Builder allows developers to convert source code into a machine-executable product efficiently.

## Overview

In software development, product building is the process of converting source code into a machine-executable product. Typically, source code is integrated using a build process, which is repeated many times over the course of development. As such, the efficiency of the build process directly affects the productivity of the development team.

The nmake product, developed in Bell Labs, is designed to provide you with an efficient build process that does the minimum work necessary to construct a new version of a product. It can significantly reduce the project build effort by shortening each phase of your product development cycle. Our product allows your developers to work more efficiently and reduce disk space by a factor of 2 using the Viewpathing feature, which enables each developer to share code while maintaining private development areas. By utilizing the years of expertise in solving product-building problems, nmake can help improve the productivity of your project team and minimize the work required to update a product.

## Benefits

- Shortens each phase of the product development cycle, as well as making it more robust
- Reduces build times by a factor of 4 to 6 through parallel target script execution and remote building in local area network
- Decreases large makefile processing time by a factor of 10 when targets are up to date
- Reduces disk space by a factor of 2 due to viewpathing
- Decreases makefile size by a factor of 5 to 10
- Overall project build effort is reduced by a factor of 1 to 2 because less effort is needed to write and maintain makefiles
- Avoids errors so your product is of higher quality
- Reduces the effort for setting up builds and maintaining makefiles by a factor of 2
- Increases the portability of your applications to other compilers and platforms

## Features

- Viewpathing significantly decreases build times by sharing a project's common set of up-to-date generated files and allows a clean separation of platform-specific targets
- Provides access to common source files while maintaining private development areas.
- Automatic dependency generation determines implicit prerequisites dynamically, by means of a programmable scanning language
- Distributed and parallel execution supports product builds on both single processor and multiprocessor machines, which can be distributed over a network of workstations

## Features continued

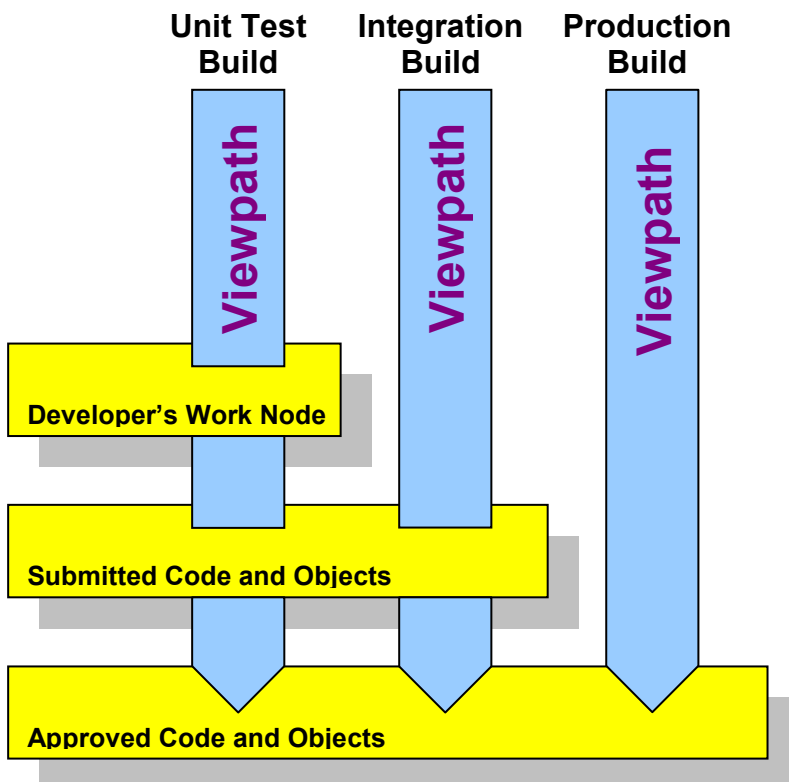
- Powerful rule language uses variables, flow control and built-in attributes to allow fine-tuning
- Efficient shell interface allows nmake to communicate with the shell via pipes. Actions are passed to the shell in a block without intervening backslash and semicolon characters
- Project-specific and user-specific rules, along with high level user-definable assertions, facilitate the creation of concise, consistent and flexible makefiles
- Efficient makefile processing improves accuracy and minimizes work by compiling makefiles and “remembering” the previous build status
- Language support provided for source files written in various languages (C, C++, JAVA, ESQ/C, IDL, FORTRAN, and others)
- Probe tool automatically detects and records hardware environment and compiler information

## The Bell Labs Advantage

Bell Laboratories provides world class services in end-to-end software development for small as well as geographically distributed projects. We bring real-world experience in software life cycle management, along with tools and practices that provide innovative means for projects to reduce their Time-to-Quality. Our focus is both on leading-edge software technologies and world-class software realization practices.

To learn more about nmake and other Bell Labs products and services, please contact us at [software@alcatel-lucent.com](mailto:software@alcatel-lucent.com) or visit our Web site at: <http://www.bell-labs.com/software>.

## nmake Viewpathing Feature



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