

Intel(R) Application Software Development Tool Suite 2.0 Moblin* Integration Guide

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Introduction

This document explains how to integrate the Intel(R) Application Software Development Tool Suite 2.0 for Intel(R) Atom(TM) Processor product with Moblin* 2.x. The Intel(R) Application Software Development Tool Suite 2.0 for Intel(R) Atom(TM) Processor offers two distinct options for tight integration of Intel's development tools with Moblin*'s development and testing environment. You can download an existing Moblin* image from <http://www.moblin.org> for development and testing on this image and install target specific components of the Intel(R) Application Software Development Tool Suite into it. Alternatively you can also download and install the Moblin Image Creator 2 from <http://www.moblin.org> and integrate development tool suite components into it's jailroot environment as well as prepare the target image created by Moblin Image Creator to contain the Intel(R) VTune(TM) Performance Analyzer Sampling Collector (SEP) and Intel(R) Application Debugger debug agent (idbserver) for testing and performance tuning.

Please read this document in its entirety before beginning and follow the steps in sequence. Each of the tool suite components has its own installation guide and its own release notes. Please follow them closely. For information about the product contents, including new and changed features, please refer to the separate Release Notes.

Additional Legal Notices

This product includes software developed at:

The Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:

- software copyright (c) 1999, IBM Corporation., <http://www.ibm.com>.
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- the W3C consortium (<http://www.w3c.org>) ,
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This product includes software from the book
"Linux Device Drivers" by Alessandro Rubini and Jonathan Corbet,
published by O'Reilly & Associates.

This product includes hashtab.c.
Bob Jenkins, 1996.

System Requirements

Host Software Requirements

The different tools components included in this tool suite have different sets of host Linux* OS versions that they have been validated against. Please look at the individual component's installation guide and release notes after you unpacked the tool suite distribution using `> tar -zxvf l_MID_APPDBG_p_2.0.xxx.tar.gz` for details.

You can find individual installation guides at:

- `~/l_MID_APPDBG_p_2.0.xxx/INSTALL_VTUNE.txt`
- `~/l_MID_APPDBG_p_2.0.xxx/Install_Guide_IDB.htm`

Furthermore you can find individual release notes after successful installation at

- `/opt/intel/atom/documentation`

Target Software Requirements

The target platform should be based on one of the following environments:

- Moblin* 2.0 (<http://www.moblin.org>) compatible environment

Installing the Compiler into KVM*

For additional information not covered in this document and for latest updates on the Moblin* Integration of the Intel(R) Application Software Development Tool Suite 2.0 for Intel(R) Atom(TM) Processor please check the Intel(R) Software Network article located at:

<http://software.intel.com/en-us/articles/installing-compiler-into-kvm-atom/>

Whether you intend to do most of your development on a live Moblin* image running inside a KVM* virtual machine or whether you intend to do your development in a protected jailroot/chroot environment, there are tools components that should be installed on your development host system and should be independent of your Moblin* based Intel(R) Atom(TM) Processor target.

It is recommended to register for the Intel(R) Application Software Development Tool Suite 2.0 for Intel(R) Atom(TM) Processor at <http://software.intel.com/en-us/intel-compilers/> and download it at <https://registrationcenter.intel.com>. It is also recommended to install at least the Intel(R) VTune(TM) Performance Analyzer and the Intel(R) Debugger following the steps outlined in the product installation guide `Install_All.htm`. This will take care of installing the host components to take advantage of the Intel(R) Application Software Development Tool Suite's performance analysis, tuning and debug capabilities.

To install the Intel(R) C++ Compiler and the Intel(R) Integrated Performance Primitives as well as the `idbserver` debug agent on an existing live Moblin* image please follow the steps below:

1. Open a shell on the Moblin* image, enable root access and change to the `/etc/yum.repos.d` directory. There create a `*.repo` repository file with the following contents:

[inteltools]

name=inteltools

baseurl=http://downloads.moblinzone.com/development-tool-suite-2

enabled=1

gpgcheck=0

A template repository file can also be found at <http://software.intel.com/en-us/articles/installing-compiler-into-kvm-atom/> .

If your network setup requires the use of a proxy server you may want to add a line with the following contents

proxy=http://myProxyIP:myProxyPort/

where myProxyIP and myProxyPort reflect the actual proxy configuration in your network environment

2. Still at the Moblin* Linux* prompt enter the following command:

```
> yum groupinstall "Compiler" "IPP" "Server agent for  
Application Debugger"
```

and follow the installation messages.

This will install the Intel(R) C++ Compiler, the Intel(R) Integrated Performance Primitives (Intel(R) IPP) and the Intel(R) Application Debugger idbserver debug agent on the Moblin* image to be used there locally.

3. To additionally install the Intel(R) VTune(TM) Analyzer Sampling Collector (SEP) you would download it directly from http://downloads.moblinzone.com/development-tool-suite-2/rpm/vtune91_target.tar.gz and unpack it and install it in the Moblin* environment. Please be advised that using SEP is only supported on real Intel(R) Atom(TM) Processor based hardware and not on OS images running under KVM*.
4. To use the Intel(R) Application Debugger to connect to idbserver running inside KVM* and attach to processes running on Moblin* there you will need to redirect TCP/IP port 2000 to point at KVM*:

```
> qemu-kvm my_moblin_image.raw -redir tcp:2000::2000
```

Installing Tool Suite Components into Moblin* Image Creator

For additional information not covered in this document and for latest updates on the Moblin* Integration of the Intel(R) Application Software Development Tool Suite 2.0 for Intel(R) Atom(TM) Processor please check the Intel(R) Software Network article located at: <http://software.intel.com/en-us/articles/moblin-integration-software-development-tool-suite-atom/>

Whether you intend to do most of your development on a live Moblin* image running inside a KVM* virtual machine or whether you intend to do your development in a protected jailroot/chroot environment, there are tools components that should be installed on your development host system and should be independent of your Moblin* based Intel(R) Atom(TM) Processor target.

It is recommended to register for the Intel(R) Application Software Development Tool Suite 2.0 for Intel(R) Atom(TM) Processor at <http://software.intel.com/en-us/intel-compilers/> and download it at <https://registrationcenter.intel.com>. It is also recommended to install at least the Intel(R) VTune(TM) Performance Analyzer and the Intel(R) Debugger following the steps outlined in the product installation guide Install_All.htm. This will take care of installing the host components to take advantage of the Intel(R) Application Software Development Tool Suite's performance analysis, tuning and debug capabilities.

To install the Intel(R) C++ Compiler and the Intel(R) Integrated Performance Primitives into the Moblin* Image Creator jailroot environment and prepare the Moblin* Image Creator produced target image to also include the Intel(R) Application Debugger debug agent (Idbserver) and the Intel(R) VTune(TM) Analyzer Sampling Collector (SEP) please follow the steps below:

1. Go to <http://www.moblin.org> and download Moblin* Image Creator 2. Detailed Moblin* Image Creator documentation can be found at <http://moblin.org/documentation/moblin-image-creator-2/using-moblin-image-creator> and the Moblin* Image Creator itself can be downloaded at <http://git.moblin.org/cgi.cgi/moblin-image-creator-2> .
2. Follow the instructions you find at [moblin.org](http://www.moblin.org) for installing the Moblin* Image Creator.
3. Go to <http://software.intel.com/en-us/articles/moblin-integration-software-development-tool-suite-atom/> and download the two scripts **netbook-core-developer_JAILROOT.ks** and **netbook-core-developer_TARGET.ks** .
4. To create a KVM* image or a Live-CD of the target Moblin* system, please use **netbook-core-developer_TARGET.ks**:

```
> moblin-image-creator -c <path_to_ks>/netbook-core-developer_TARGET.ks -f raw --cache=/tmp/mycache
```

The image created will contain The Intel(R) Application Debugger iLdbserver and the Intel(R) VTune(TM) Analyzer Sampling Collector for target system located as a tarball in the /tmp directory. TheParameter '-f raw' of the moblin-image-creator command instructs the Moblin* Image Creator to create an image which can be loaded into a KVM* virtual machine. For more information on Moblin* Image Creator usage please consult moblin.org.

5. To create an image with the Intel(R) C++ Compiler & the Intel(R) Integrated Performanced Primitives that you can then use to do builds in a protected jailroot/chroot environment before creating the target image please use netbook-core-developer_JAILROOT.ks:

```
> moblin-image-creator -c <path_to_ks>/netbook-core-developer_JAILROOT.ks -f loop --cache=/tmp/mycache
```

The image will contain the Intel(R) C++ Compiler and the Intel(R) IPP at /opt/intel/Compiler. The command parameter '-f loop' of moblin-image-creator tells it to create a loop image. You can mount this image and then chroot into it for your protected builds using the following commands:

```
> mount -o loop moblin-netbook-core-developer_JAIROOT.img /mnt/loop
> chroot /mnt/loop su
```

6. To additionally install the Intel(R) VTune(TM) Analyzer Sampling Collector (SEP) you would download it directly from http://downloads.moblinzone.com/development-tool-suite-2/rpm/vtune91_target.tar.gz and unpack it and install it in the Moblin* environment. Please be advised that using SEP is only supported on real Intel(R) Atom(TM) Processor based hardware and not on OS images running under KVM*.

Advanced

If you would like to modify the kickstart script templates provided with the Moblin* Image Creator yourself, below is a short outline of the changes we apply to the template scripts provided with the Moblin* Image Creator to enable our integration. The example kickstart scripts for the Moblin* Image Creator can be found in the /usr/share/mic2 after you installed it.

To enable integration of the Intel(R) Software Development Tool Suite you would do the following:

1. add a repository entry for the Intel(R) Software Development Tool Suite to the header of ks file:

```
> repo --name=intel-tools --
baseurl=http://downloads.moblinzone.com/development-tool-suite-2
```

2. add packages which you want to install into Moblin image in %packages section of the ks file.

There are 4 group of Intel packages which you may need to install:

@Compiler

@IPP

@Application Debugger

@Server agent for Application Debugger

Each of these groups contains a set of rpm files related to the corresponding products.

@Compiler contains the Intel(R) C++ Compiler for applications running on IA-32

@IPP contains the Intel(R) IPP for Intel(R) Atom(TM) Processor

@Application Debuggers contains the Intel(R) Application Debugger 2.0 for Intel(R) Atom(TM) Processor

@Server agent for Application Debugger contains the Intel(R) Debugger Remote Server (idbserver)

Each group of packages contains the information about its dependencies which will be automatically resolved during the installation.

Technical Support

For general support information please visit Intel's [Software Developer Support](#) homepage.

To submit issues related to this product please visit the [Intel Premier Support](#) webpage and submit issues under the product **Intel(R) Application SW Dev Tools Atom**.

For information on how to register for and purchase support for the Intel(R) Application Software Development Tool Suite for Intel(R) Atom(TM) processor please visit the [Intel Software Development Products](#) webpage.

Additional support for this product is available at the [Intel\(R\) Software Development Tool Suites for Intel\(R\) Atom\(TM\) Processor](#) forum which is a sub-forum of the [Intel Software Network Community Forums](#) for issue discussion and community support.

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