



# **NuDesign's SNMP / HTTP Evaluation Agent for VxWorks on Pentium**

## **Technical Notes**

**NuDesign Team, Inc.**



## Table of Contents

<b>1</b>	<b>EVALUATION AGENT VERSION HISTORY</b>	<b>3</b>
<b>2</b>	<b>INTRODUCTION</b>	<b>4</b>
<b>3</b>	<b>REQUIREMENTS</b>	<b>4</b>
<b>4</b>	<b>INSTALLATION</b>	<b>6</b>
<b>5</b>	<b>EXECUTABLE</b>	<b>7</b>
<b>5.1</b>	<b>Filename: NDAgE.out</b>	<b>7</b>
5.1.1	Description:	7
5.1.2	Configuration	7
5.1.2.1	Default V3 SNMP Community/USM Configuration	8
5.1.3	Start the eval agent	9
5.1.4	Stop the eval agent	9
<b>6</b>	<b>EVALUATION AGENT LIMITATIONS</b>	<b>10</b>
<b>7</b>	<b>ABOUT NUDESIGN TEAM</b>	<b>11</b>



# 1 Evaluation Agent Version History

1. Ver 6.30 - Jan 17, 2005 - Vxworks/Pentium Evaluation Agent release based on rev 6.3 NuDesign SNMPv3/HTTP libraries. Tested on Vxworks Pentium PC computer.



## 2 Introduction

This document describes where to install and how to execute NuDesign's MultiProtocol (SNMP/HTTP) Agent Evaluation on a Vxworks Pentium PC computer.

NuDesign's MultiProtocol Agent includes a fully functional V1, V2c, V3 SNMP agent, as well as a Web interface to the agent.

This document is broken into the following four components:

- Requirements
- Installation
- Executable use
- Evaluation Agent Limitations

To completely access this Evaluation Agent, it should be evaluated in conjunction with NuDesign's Visual Embedded xAgentBuilder for C++. This product generates SNMP agent C++ source code for any MIB (user or standard) along with Tornado projects and optionally MIB based Web pages (see <http://www.ndt-inc.com> for an evaluation version of this software).

## 3 Requirements

The software in this distribution is intended to be installed and executed on platforms conforming to the following specifications.

- Vxworks 5.4 kernel on Pentium PC computer
- Vxworks kernel has to support Mib2 component
- Vxworks kernel must include TCP/IP stack
- Vxworks kernel must include a file system
- Vxworks kernel must include the shell, for loading and running the agent
- Vxworks kernel must include a communication channel (e.g. ftp) for copying the installed files

If any of the components is missing you may get missing symbols error when you try to load the eval agent.

The management information provided by the Eval Agent may be accessed by software as described below:

- A SNMP management application, such as NuDesign's MIBrowser Professional. (see <http://www.ndt-inc.com> for an evaluation version of this software).



- A web browser capable of executing javascript, such as Internet Explorer or Netscape.



## 4 Installation

This evaluation release comes in the form of a Windows® Zip file named “NuDesign\_EvalAgent4VxWorksPentiumNNN.zip”.

:

This may be uncompressed using any utility capable of processing the file, such as WinZip®.

The content of the zip file is hierarchical and convey where the various files should be installed. The contents are as follows:

```
/
  NDAgE.out
  NDAgE.xnv
  ReadMe.pdf This file with 8.3 compatible filename.

/web/
  gaws.gif
  Home.htm
  Index.htm
  nbar.gif
  NDMib.css
  NDMib.js
  Title.htm

/web/config/
  :
  :

/web/NDAgE/
  :
  :
```

Expand the zip file on a Windows computer, maintaining the file hierarchy depicted above.

Next, copy all these files into respective directories on the target (Vxworks Pentium computer). The ‘PDF’ file in the root directory doesn’t have to be copied to the target.

The directory may be located anywhere you choose but the configuration file (NDAgE.xnv) default to this directory being located from the root directory.



## 5 Executable

### 5.1 NDAgE.out

#### 5.1.1 Description:

This is the evaluation version of the NuDesign MultiProtocol (SNMP/HTTP) agent. It should reside in the /directory or any directory on the execution path. It is the core agent, including the system, interfaces and snmp groups from MIB-II.

#### 5.1.2 Configuration

NDAgDE utilizes the file "/NDAgE.xnv" for nonvolatile storage. This file contains global configuration items for the agent.

(See xAgentBuilder help documentation for more information on the format of this file.)

The file, NDAgE.xnv has a wide range of configurable options. See xAgentBuilder documentation for more information. The following is taken from a sample XNV file:

```
[Web Agent]
Port=8080
Root=/web
HomePage=Home.htm

[Web VACM]
SecurityName=private
SecurityModel=secSNMPv2c(2)
SecurityLevel=noAuthNoPriv(1)
ContextName=""

[SNMP Agent]
Version=SNMPv3(3)
Port=161
```

Where:

**[Web Agent]** identifies the section associated with the HTTP server.

**Port=** is the TCP port number on which the HTTP server responds to requests. By default, this is set to TCP port 8080, to avoid port conflicts with a possibly resident web server.



- Root=** is the path to the root directory for the server's HTML pages. (Note, if during installation, the web directories was placed somewhere other than at the root, then this item will need to reflect the change.)
- HomePage=** identifies the specific default HTML page.
- [Web VACM]** identifies the VACM section associated with the HTTP server. This specifies the MIB "view" available to web server. Objects requested in pages that are "in view" will return results. Those outside will not. Changing this configuration should generally not be necessary unless the default configuration provided is invalidated by administrative changes to the V3 configuration of the agent.
- SecurityName=** is the V3 security name the web server uses when accessing MIB objects. This may be any `usmUserSecurityName` currently in the `usmUserTable`. By default 'private' is specified. An entry in the `usmUserTable` for this name is also default.
- SecurityModel=** is the V3 security model the web server uses when accessing MIB objects. This may be one of `secSNMPv1(0)`, `secSNMPv2c(1)` or `secSNMPv3(3)`.
- SecurityLevel=** is the V3 security level the web server uses when accessing MIB objects. Default is `noAuthNoPriv(1)`. It could also take the values `authNoPriv(2)` or `authPriv(3)`
- [Snmp Agent]** identifies the section associated with the SNMP component.
- Port=** is the UDP port number on which the SNMP agent responds to requests.
- Version=** is the maximum SNMP version number the SNMP agent will respond to. Default is `SNMPv3(3)`. `SNMPv1(1)` or `SNMPv2c(2)` may also be used.

### 5.1.2.1 Default V3 SNMP Community/USM Configuration

By default, the following configurations are available for accessing the agent.

**Note:** the configuration provided is the default configuration for all NuDesign SNMP products and as a result is more or less public information. As such it should only be used for a test and or development deployment. Deploying this configuration in a production environment is **NOT** recommended.





<b>public</b>	V1/V2c read-only community string with access to all implemented MIB objects.
<b>private</b>	V1/V2c read-write community string with access to all implemented MIB objects.
<b>public</b>	<b>noAuthNoPriv</b> , V3 read-only USM User with access to all implemented MIB objects. No authorization or privacy passwords.
<b>md5</b>	<b>authNoPriv</b> (MD5), V3 read-write USM User with access to all implemented MIB objects. Auth password: <b>md5auth</b> , privacy password: none.
<b>sha</b>	<b>authNoPriv</b> (SHA), V3 read-write USM User with access to all implemented MIB objects. Auth password: <b>shaauth</b> , privacy password: none.
<b>md5des</b>	<b>authPriv</b> (MD5, DES), V3 read-write USM User with access to all implemented MIB objects. Auth password: <b>md5desauth</b> , privacy password: <b>md5despriv</b> .
<b>shades</b>	<b>authNoPriv</b> (SHA, DES), V3 read-write USM User with access to all implemented MIB objects. Auth password: <b>shadesauth</b> , privacy password: <b>shadespriv</b> .
<b>private</b>	<b>authPriv</b> (MD5, DES), V3 read-write USM User with access to all implemented MIB objects. Auth password: <b>privateauth</b> , privacy password: <b>privatepriv</b> .

### 5.1.3 Start the eval agent

To start the eval agent, you can use the following Vxworks shell commands:

- ➔ `ld 0,1, "NDAgE.out"`
- ➔ `sp NuDesignEntryPt`

where "ld" is the Vxworks load module command, "sp" is the Vxworks spawn task command.

"NuDesignEntryPt" is the main initialization task of the eval agent.

After the eval agent finished with all the initialization, it will then suspend the "NuDesignEntryPt" initialization task. At this point the agent is fully operational.

### 5.1.4 Stop the eval agent

To stop the eval agent, you can use the "tr" task resume command.

- ➔ `tr t1`



Where “tr” is the task resume command, “t1” is the “NuDesignEntryPt” task. The eval agent then continues and shut itself down.

## 6 Evaluation Agent Limitations

The following are the limitations for this evaluation software.

1. Only the `system`, `interfaces` and `snmp` MIB groups from MIB-II are accessible. (Full MIB implementation is available with the retail version).
2. The evaluation software does not support V3 proxying - as defined by the `snmpProxyMIB` (Full proxy implementation is available with the retail version)



## 7 About NuDesign Team

NuDesign provides software development tools, libraries, components and applications for the management and monitoring of networks, systems, services, applications, desktop and embedded devices. The company also provides professional services to customers requiring specific management solutions.

NuDesign's focus is on industry standard management protocols like SNMP and emerging management protocols using HTTP and XML/SOAP transport.

NuDesign's customers are Original Equipment Manufacturers, System Integrators, Service Providers and End Users worldwide.

The benefits of deploying NuDesign's management software technologies are lower costs and reliable, low risk, quick-to-market solutions:

- The End User management products are feature rich, extensible, yet very easy to use out of a box.
- The middleware components come with easy to understand and re-use coding examples.
- The highly automated agent development tools with associated tutorials enable fast prototyping and development, and facilitate organization and design process while supporting multiple target environments with generation of very complete and immediately compilable agent code.

NuDesign's products and services include:

- SNMP development tools and components - SNMP / WEB / CLI agent code visual generation tools for multiple desktop and embedded targets, with standalone Agent and Master Agent / Extension Subagent architectures.
- SNMP components for development of management applications and SNMP MIB building / browsing, managing and testing applications.
- SNMP Management Applications - supporting SNMPv3 Agent and MIB management features, including Graphing, Get, Set, Walk, SNMP packet Trace and Scripting capabilities, Trap Send / Receive applets.
- Host resource monitoring products, and IP services and infrastructure monitoring products.
- Design and Support Services - specific network / element management & monitoring products, porting SNMP code to custom embedded hardware, developing custom management applications. Developing new products that require SNMP / WEB based management interfaces or adding WEB interfaces to existing products.

For more information please visit [www.ndt-inc.com](http://www.ndt-inc.com), it contains SNMP and MIB development tools and management product descriptions, tutorials and full feature product evaluations packages or call 416 737 0328 to discuss your specific needs.