

User Guide Addendum

Nomadix Service Engine (NSE) - Release 7.0

May 2010

Patent Information

This Addendum is intended to modify and amend certain terms and provisions contained in our User Guide, including but not limited to, the applicable Notice of registered patents. Please note that the Notice below supersedes that Notice contained in the User Guide. To review the most current Notice of registered patents, please visit www.nomadix.com.

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Introduction

This User's Guide Addendum provides information and procedures that will enable system administrators to configure and use the specific features introduced in Release 7.0 for the Nomadix Access Gateway product line.

The features covered are:

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Feature Configurations

Redirection Parameter Signing

Overview

A feature is now available through which External Web Server (EWS) and Internal Web Server (IWS) Portal Page Parameters can be digitally signed, preventing malicious subscribers from intercepting, forging and replaying URL redirection strings used by the NSE and EWS or IWS Portal Page to validate subscriber access. This capability eliminates a vulnerability that was previously exploited to gain unauthorized Internet access at charge-for-use sites.

The signing feature can create a cryptographically strong signature that protects the sensitive portions of a URL redirection string (i.e., NSE ID, MAC address of the subscriber, etc), while letting the EWS/Portal Page verify that the URL string has not been tampered or forged by the subscriber.

The feature is configured by selecting a signing method, the parameters to be signed, and assigning a secret key.

Two signature methods are supported:

- HASH-CRC32
- HMAC-MD5

Not all parameters that are part of the URL redirection string need to be included in the signature calculation. The following parameters are considered sensitive and can be selected:

- UI (the ID of the NSE)
- MA (the subscriber's MAC address)
- RN (the Room Number)
- PORT (the port number the subscriber is connected to)
- SIP (the subscriber IP address)

The desired secret key simply needs to be entered in the field. Once entered, it is not visible to the user.

Information that indicates which parameters were signed, along with the resultant hash value, are then included in some additional parameters that are appended to the redirection string.

In order to utilize the parameter signing feature, the EWS or Portal Page Server used must be configured to correctly parse and verify the signing information. Documentation that includes guidelines for configuring a server to support signing can be obtained by contacting Nomadix Technical Support.

Subscriber IP Address Parameter

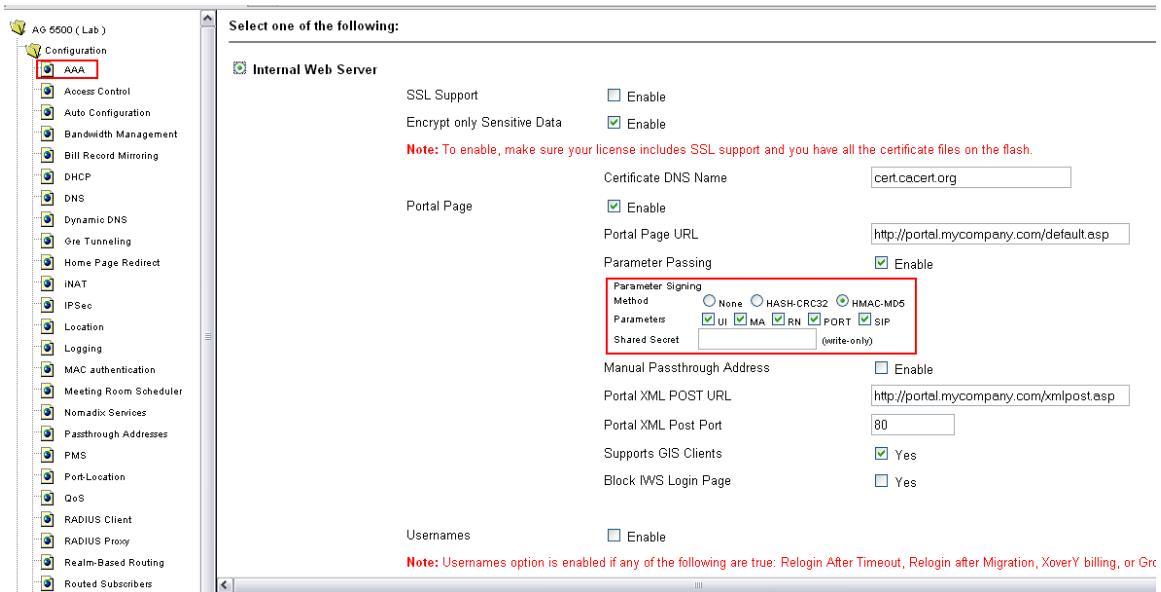
A parameter that holds the value of the Subscriber IP address has been added to the redirection parameter list. This parameter can also be optionally signed in the manner described above.

Configuration of Redirection Parameter Signing

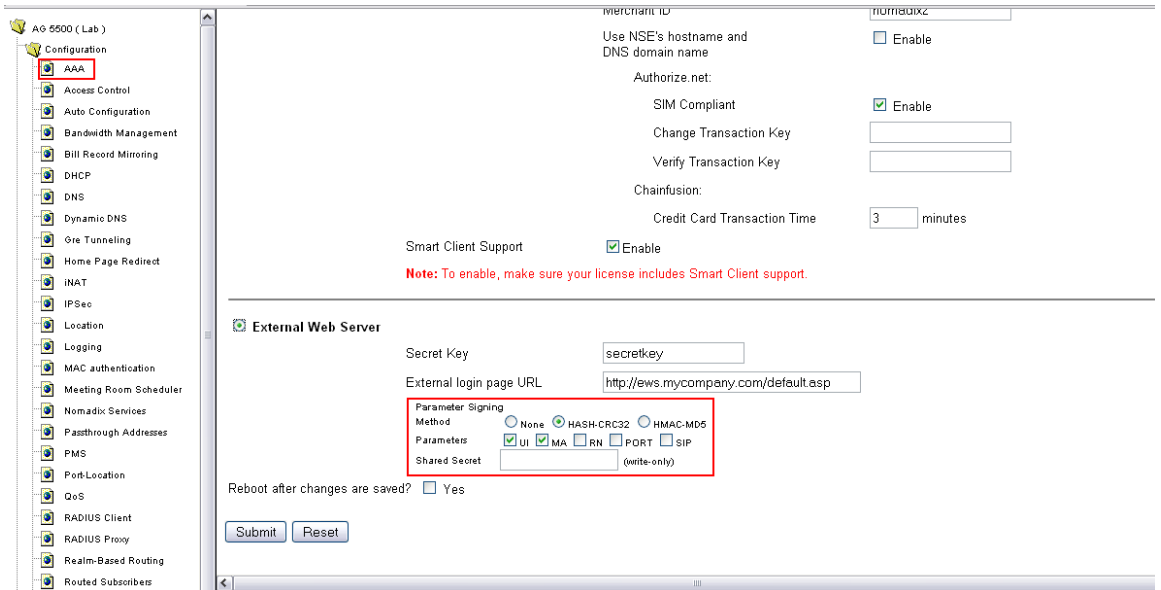
This functionality can be accessed under the following Menus:

- **WMI Configuration**
 - Go to Configuration -> AAA
- **CLI Configuration**
 - Go to configuration -> aaa
- **SNMP Configuration**
 - Go to aaa -> aaaInternalAuth or aaa -> aaaExternalAuth

AAA page - Internal Web Server example



AAA page - External Web Server example



XML Enhancements

Overview

Several new XML capabilities have been added to the NSE functionality with this release.

Current Table Query (Subscriber_Query_Current command).

The XML Subscriber_Query_Current command provides the means for administrators to query the NSE's current table for the status of a currently resident subscriber.

The command allows retrieval of information for a single subscriber, as identified by the MAC address, and when executed will reflect the real-time status of the subscriber at the time of the request. This query pertains only to actual subscribers, not to any other type of entity that may also happen to occupy a slot in the current subscriber table. Specifically, the query does not pertain to Devices.

Detailed information about command specifics can be found in the Nomadix XML Interface DTD.

Authorization Database Query (Subscriber_Query_Auth command).

The XML Subscriber_Query_Current command provides the means for administrators to query the NSE's authorization database (authfile) for the status of an authorized subscriber.

The command allows retrieval of information for a single subscriber, as identified by the MAC address or the Username, and when executed will reflect the information of the subscriber saved in the authorized database at the time the subscriber was added or last modified.

Detailed information about command specifics can be found in the Nomadix XML Interface DTD.

Authorization Database Listing

A complete listing of the contents of the NSE's Subscriber Authorization Database can now be obtained by performing an HTTP GET to the following URL:

http://NSE_IP/api/subAuth

More information can be found in the Nomadix XML Interface DTD.

Secure connection (https) for WMI

The NSE now supports secure https connections to the Web Management Interface (WMI). In order for these connections to function properly, correct certificates must be installed on the NSE flash memory. The same certificate set that is used to support SSL connections for subscribers is used for this purpose. Documentation about configuring the system to support secure connections can be obtained by contacting Nomadix Technical Support.

In addition, corresponding options to block https connections (independent of http) have been added to the NSE's Access Control functionality, for both the network and subscriber sides.

Note that if the required certificates are not resident on the flash, an attempted https connection will generate an error syslog.

Access Control page - HTTPS additions

The screenshot displays the 'Access Control' configuration page. On the left is a navigation tree for 'AG 5600 (Lab)' with categories like Configuration, AAA, Access Control, etc. The main content area is titled 'Access Control' and is divided into three sections:

- Configurable Ports:** A table with three rows: Telnet Port (23), HTTP Port (80), and HTTPS Port (443). Each row has a red warning message: 'Make sure that the port is not allocated already'.
- Block Network-side Interfaces:** A list of checkboxes for blocking various network-side accesses. 'Block Network-side Web Management Access (HTTPS)' is checked and highlighted with a red box. A red warning message 'Please note that this will terminate the current network-side session' is visible next to the 'Block Network-side Web Management Access (HTTP)' option.
- Block Subscriber-side Interfaces:** A list of checkboxes for blocking various subscriber-side accesses. 'Block Subscriber-side Web Management Access (HTTPS)' is checked and highlighted with a red box. A red warning message 'Please note that this will terminate the current subscriberside session' is visible next to the 'Block Subscriber-side Web Management Access (HTTP)' option.